ALADIN™

Relational Problem Solver

USER MANUAL

USER MANUAL
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A Little Known Fact . . .

Once upon a time (if legends are true), there were flying carpets, magic lamps, and genies . . . clever genies who could grant wishes, banish enemies to distant lands, and create minor miracles with just a snap of their fingers. People held genies in a great deal of awe because they could do things that no one else knew how to do. Genies were also very secretive; they never wrote anything down so that no one else could come along and steal their magic.

As the demand for their services grew, the genies one day decided to go on strike for shorter hours, longer vacations and, of course, higher pay. At the start, the people they worked for agreed to these requests; after all, genies and their talents might be hard to live without. Unfortunately, the genies got carried away with their own greed . . . and priced themselves out of the job market shortly before the end of the 1800's.

Fortunately for the rest of us, a new kind of magic came on the scene at that very moment called The Magic of Science and Technology. And, unlike the genies, this new kind of magic came with a set of instructions so that anyone who wanted to could learn how to use it.

For instance, they could learn how to send their voices from one room into another . . . or how to fly through the air like birds. People were very excited. The new magic was just the beginning of many changes. And very soon, they learned not only how to talk to someone across the ocean, but how to send someone to the stars that they had believed long ago were beyond their reach.

All of these new discoveries had to be written down, of course, and stored somewhere for future use. Shoeboxes and files soon became impractical; they simply couldn't hold enough, nor could anyone find the information without weeks and weeks of search.

For this purpose, computers were invented. People were afraid of them at first. It was hard to believe that little blinking boxes could hold much of anything. And what if someone pulled the plug? Would everything that the boxes held all fall out on the floor and be swept out by someone careless? And what would happen if a person pushed the wrong button? Would half of Ohio fall into the sea? People were very worried about such things.

If this is your first time at a computer, maybe you worry about such things, too. Relax! This book will take you through it one step at a time . . . and very soon you'll discover some magic at the ends of your own fingers!

Of course, we can't guarantee that you'll be able to cast spells or charm snakes out of baskets, but a push of the right buttons will bring about some miracles you've never done before!

If you are an advanced user, the next few pages may contain information that you already know, in which case you're invited to skim along and then take a break while the rest of us catch up. (Even if you ARE well versed on bits, bytes and floppies, you have probably discovered by now that this text is a major departure from traditional computer literature — skimming OR studying, you'll enjoy reading it.)

What is a Computer?

If you asked someone 10 years ago what a computer did, they might describe metal giants that could think, talk, and perhaps even control humankind. Many would imagine early science fiction movies where computers had minds of their own, saving or destroying worlds. Others simply saw them as machines that might possibly take over their jobs. While computers can be very powerful and "magical" to the imagination, there is really nothing to fear from them.

In truth, a computer is just a tool to help people get things done — like a hammer and saw. The main reason we use them is because they are faster, more efficient and accurate than the human mind. Computers come in all shapes and sizes, depending on the size and nature of the work you need done. Our discussion will deal with microcomputers — small, yet powerful computers.

Today's microcomputers can handle over a million pieces of information (data) per second. This information is processed according to set rules and instructions, usually in the form of software programs. Because the terms "software" and "hardware" are heard so much these days, an explanation might be helpful.

Hardware and Software

Hardware and software are like a stereo system and its accompanying record albums. Hardware, like the stereo itself, will not do anything until you put a recorded program into it. Microcomputer hardware is comprised of nuts, bolts, wires, plastic, and other materials that will accept software programs.

Software enables the computer to perform tasks for you, as a record allows your stereo to play music. Without software programs, your computer would be of little or no use to you.

Microcomputer software comes in the form of floppy magnetic disks (or diskettes) that are usually about the size of a 45 RPM record. Software programs are written in various computer languages and recorded electronically on these magnetic disks.

Just as the needle on your turntable picks up vibrations from the record grooves, your computer "picks up" coded information from the disk and interprets it for you. The main point to remember is that software is a programmed set of instructions which allow your computer to function in the way it was designed — to make life easier for you.

A Microcomputer System

A basic microcomputer system is made up of five pieces of equipment (hardware). They are the keyboard, microcomputer (Central Processing Unit or CPU and memory), video display device (a TV-like screen), disk drive(s), and a printer (optional).

The KEYBOARD is used to enter data (words and numbers) into the microcomputer. It looks and operates much like a typewriter, except that no paper goes into it. You "talk" to your computer with this piece of equipment.

The MICROCOMPUTER is the meat-and-potatoes of the whole operation. It does all the "thinking," storing, and coordinating of information that is fed into it. Imagine the Central Processing Unit (CPU) as the "brain" of the system and all the other devices as arms and legs. The microcomputer also contains memory chips.

The VIDEO DISPLAY device is usually in the form of a television-like screen which is often referred to as a CRT (Cathode Ray Tube). CRT's let you see messages and the work your computer has done for you.

DISK DRIVES enable your computer to "read" software programs from diskettes. They also allow storage of information that your computer has created.

The PRINTER, also controlled by the CPU, does just what the name says: It prints out your results on paper. It can print letters, addresses, and diagrams — just about anything — but do not try to print any U.S. currency on it.

How Is Information Processed?

Now you are probably asking, "How does a microcomputer really work?"

Imagine that a microcomputer system "thinks" and processes information like the human brain. This, in fact, is nearly true.

Picture a student in a classroom being questioned by the teacher. The student's ears pick up the information and pass it on to the brain. The brain interprets the information, searches its memory, and performs any functions that are necessary. Computed results are sent through the student's voice in the form of an answer.

In the same way, a computer keyboard acts as "ears" by accepting information. The information is passed to the CPU which uses memory or software to solve a problem. The solution is then displayed on the video screen.

Modern Software Uses

Who would have thought back in the late 1800's when the first punch card was used for the U.S. Census that computer technology could go so far? For instance, software today is used in:

- Sales and marketing trends

- Automated banking

- Home and office security

- Interactive-computer education

- Airline reservations

- Weather prediction

Prediction? Sounds like we are back to magic again. Not really. A computer can do this with a data base and problem solver.

Data Base and Problem Solver

Think of a "data base" as a city parking lot or garage. On the lot or within the different levels of the building, there is room for a certain number of cars ranging in size from Volkswagens to Cadillacs. When you arrive at the parking lot, you find that other cars are there already, just like you'll find that your computer already contains some data or information before you add any yourself.

Adding new data to an existing data base can be compared to giving your car keys to a parking attendant so that he or she can park it for you. The attendant knows the layout of the lot or garage better than you do and takes your car to the space where it will best fit. When you return at the end of the day to pick up the car, the attendant (hopefully) knows where it is. This saves you the time of wandering through a dark garage yourself in search of it. Likewise, when you ask the computer system to find a certain piece of data, it doesn't take very long for the system to find it for you.

A "problem solver" goes a step beyond this process of data storage and retrieval. Suppose you have a file in your desk that lists the names of all of the people who park their cars at the garage every week. A second file lists all of the types of cars that are parked there. A third file lists all of the colors of cars that are seen each day at the garage. Now suppose that you wanted to find out how many women park yellow Datsuns. To go through the individual files manually would take a long time.

The problem solver function, however, can scan the computer's files for those things that fit the exact description you want: women, Datsuns, yellow. When it finds them, it displays them on your screen in a matter of seconds!

How can you use this function? Based on the data that you give it, a relational problem solver can help you figure out:

How many 5'6" female brunettes in your department have birthdays in April?

OR

How many customers who bought waffle irons from your store in February brought them back for repairs in August?

OR

Which recipes in your cooking files contain milk, eggs, cheese and onions?

OR

If you just can't wait until the last chapter, who is the murderer and what was the motive in the mystery story you're reading?

Don't let the phrase "problem solver" or the idea of computers "predicting events" confuse you, though. A problem solver can only search the computer's files and take out data that you or someone else at some point put into it. As smart as the computer seems to be, it doesn't have common sense, personal opinion or the ability to tell the future. Therefore, it won't offer advice on what we should do about foreign oil, suggest that we put bananas in the fruit salad on Tuesday instead of waiting until Wednesday, or warn us that, quite frankly, we should drop so-and-so because he's a real flake.

Who's Who and What's What

Advanced Data Institute (ADI)
ADI, located in West Germany, is one of Europe's leading software research and development centers.

Advanced Data Institute of America (ADI America)
ADI America, located in Sacramento, California, is an offspring of the West German company. Its purpose is to develop, manufacture and distribute computer software and hardware in the United States and other English-speaking countries.

ALADIN
Aladin was the name of an Arabian youth who had a magic lamp that he used to great advantage. ALADIN is also the name of an easy-to-use software system by ADI that can be of great advantage to computer users. How to use ALADIN is what this book is all about.

A Brief Explanation of How ALADIN Works

The ALADIN software is:

1. User-Friendly
2. Menu-Driven
3. Flexible

A "user-friendly" system is one that understands that you are more used to talking to people than to computers and, as a result, may not know where to begin. Therefore, it will guide you through each step from beginning to end. With a user-friendly system, you don't have to know a special code or secret language to get it to work for you. If you make a mistake, it will not only tell you what went wrong, but how to correct it and continue on your way. User-friendly systems want you to feel at home right from the start.

A "menu-driven" system is one that uses menus in much the same way that restaurants use menus to tell you what kind of food they have.

Instead of, for example:

CHICKEN   ROAST BEEF   FISH

A computer menu might say:

ENTER   CHANGE   REMOVE

Whatever choice you select from the menu is what you will get. The difference is that the service is faster from a computer than a restaurant and you don't have to leave a tip.

Within the main menus, you will also find sub-menus. Think of these as main courses and side dishes.

Instead of:

"With your ROAST BEEF, would you like RICE or a POTATO?",

The computer menu will ask:

"With your CHANGE, would you like UPDATE or DELETE?"

And, just like a friendly waiter, a user-friendly computer system will be happy to describe what you will get in your order if you're not sure it's what you'd really like.

A "flexible" system is one that has lots of uses and can work well with other systems. ALADIN, for instance, can be put together with word processors, calculators and graphics.

It can also interface with other software and hardware products from IBM, Apple, DEC, Victor, etc. Your ADI software distributor can tell you how to do this.

Speaking of ADI software, why don't you make some backup copies of the ALADIN diskettes that you received in this package? (Actually, you don't have to do it THIS VERY SECOND — just make sure that you have made them before proceeding with the hands-on lessons in this Tutorial. Your computer handbook will tell you how to do this if you have never done it before.) After you have made your copies, put the original program diskettes in a safe place (at last! — something to put in your private vault in Paris . . .) and use the backups for your practice sessions with ALADIN.

How To Use This Book

The first three parts of the book provide a "Tutorial" or "hands-on" learning experience. The lessons contain exercises and examples for you to practice. The last part of the book is a Reference Guide, which goes into more detail on each function of the system.

A WORD ABOUT MISTAKES . . .

Don't be afraid about making mistakes. Pushing the wrong key on your computer will not:

Send missiles to Moscow,

Accidentally erase Delaware from the map,

Turn poodles around the world into killers, or

Blow up the office next door.

Nor will an error cause your computer to break into squeals of laughter. ALADIN, as you will soon discover, is a very patient teacher and will coach you on what to do next.

DOCUMENTATION CLARIFICATIONS, ALADIN USER MANUAL (2.6)

ALADIN
RELATIONAL PROBLEM SOLVER — IBM MS-DOS ™

START-UP

Diskette
Labels

The disks for IBM MS-DOS version of ALADIN are labeled **"System," "Installation,"** and **"Demo and Examples."** You are instructed in the Manual to use disks with different labels.

System disks were formerly called Exec disks and should be used when the lesson asks you to Work with an Already Existing Data Base. Type in ALADIN S.

Installation disks were formerly called Init disks and should be used when the lesson asks you to Install or Change a Data Base. Type in ALADIN I.

Disk Write
Protection

If you try to boot your System disk and get a "write protect error writing to Drive A" message, make a backup copy of your disk and use that. Do not write-protect the backup. This error message is caused when a disk is write-protected.

Function
Keys
and
Escape
Sequences

In the Start-Up Procedure, Menu Options, and Tutorial, reference is made to **Escape sequences.** You can use these with your IBM, but it is usually easier to use the corresponding Function Keys. Instead of using the "caret key" to make a selection in the various modules, it is easier to use your IBM Function Key marked SELECT. You can also use the HOME and END keys to move quickly to the beginning or end, respectively, of a screen form in the various modules.

The Function Key for **"Cancel"** and **"Done"** is F1.

ALADIN-INIT

**Installing
a New System
or Changing
an Existing
System
Definition
T2.11
T3.15
T7.7
T7.21**

In setting up a relational system in MS-DOS, if you cancel in Screen Forms ALADIN asks you, "Do you want to save your relational system?" Even if you say Yes, the definition is not saved as the program now works. This is NOT an error in the Tutorial, as the Tutorial currently warns you that you MUST generate screen forms. When you are defining the relational system's files, fields, field lengths and types, pressing the Save key will save the definition, but you must still generate screen forms. It is a good idea to lay out the data base and screen forms on paper first.

**T2.3
T2.11
T3.5
T3.13
R18,R122**

In generating screen forms, if you get the message about **Fixing your Screen Layout, Fields Interfere or Margins Exceeded,** press the Space Bar to continue and consult the rules for Screen Layout attached to these Errata.

T2.8

In the Address File of the CLIENT relational system, the City Field is KEY.

**Storage
Allocation
INIT.INSTALL
T2.10
T7.20
R112
R132**

In allocating storage for data and keys, look at the numbers in parentheses on the lines, "Number of disk blocks for data:" and "Number of disk blocks for keys:" Divide each number by 100 and multiply each by the total K bytes available on Drive B. Type the resulting numbers after the prompts.

If you want to specify the maximum space allowable, given the capacity of your disk drives, use a blank formatted disk in Drive B. You should subtract at least 50 K bytes to allow space for calc, query, report, group, stat definitions, and some textfiles.

For example, if you had 320 K drives and the number in parentheses for **data** was (80), you would multiply 270 (320 minus 50 K bytes for definitions and textfiles) by .80. You would type the resulting number, 216, after the prompt. The number in parentheses for **keys** would be 120 in this case, so you would multiply 270 by 1.20. You would type the resulting number, 324, after the prompt for keys.

Notice that if you add 216 and 324 together, the answer is 540, or twice the number of K bytes available for data and keys on Drive B. This (540) is also the total number of **disk blocks** you have allocated for storage for data and keys. 1 BLOCK = ½ K bytes

The number of blocks on Drive B is twice the capacity of the disk drive.

Example

	Approx. Drive Capacity	No. of Blocks
IBM MS-DOS		
1.1	320K	640
2.0	360K	720
IBM p-System	400K	800
Apple II	140K	280

A diagram of the matrix you will see on the screen is shown below, with appropriate numbers of blocks allocated for data and keys, given this particular data base and 320 K bytes on Drive B. (The numbers will vary with every data base.)

Required space File	! # of Records !	Length !	Mass Storage Requirements Data !	Keys !
CUSTOMER !	200 !	212 !	90 !	158 !
ORDER !	200 !	60 !	30 !	100 !
INVENTORY !	200 !	60 !	30 !	100 !
!	!	!	150 !	358 !

Number of disk blocks for data (52)> 140
Number of disk blocks for keys (148)> 400

The numbers you type in after the prompts should be fairly close to the numbers indicated in the lower right corner of the matrix if you anticipate that your data base will be filled to capacity.

The numbers in the lower right corner of the matrix show the storage space needed in the "worst case," i.e., if all the fields and files were filled to capacity. Since ALADIN uses variable record lengths with data compression, the actual storage needed may be considerably less. Notice in the example below how the numbers in the lower right corner of the matrix and under the heading, # of Records, vary from the numbers in the matrix above.

Required space File	!	# of Records !	Length !	Mass Storage Requirements Data !	Keys	!
CUSTOMER	!	50 !	212 !	23 !	44	!
ORDER	!	50 !	60 !	8 !	30	!
INVENTORY	!	50 !	60 !	8 !	30	!
	!	!	!	39 !	104	!

Number of disk blocks for data (54)> 145
Number of disk blocks for keys (146)> 394

If you anticipated only 50 records, you could get by in this particular data base with a disk capacity less than 270 K bytes (540 blocks) on Drive B. **It is essential that you allocate for keys at least the number of disk blocks indicated in the lower right corner of the matrix plus 9 blocks.**

Changing an Existing System Definition T3.5, T7.2 R116

Once you have set up a data base, **DO NOT GO BACK INTO THE INSTALL MODULE. This would destroy your former data and tree files (the tree file contains your key field index structure). To view the relational system, add fields or files, change protection, keys, or branching, go into the Change Module.**

T3.6

You may want to read the details on T3.11 about changing an existing system definition at this time.

T3.6

ALADIN changes N to L for Long Integer if the number is over 4 digits. If the number is 4 digits or less, ALADIN changes the N to I for Integer.

T3.10

Delete step 29.

T3.11

If you would like to keep a field from showing on the screen, you can move the cursor to that field and press the Space Bar once followed by <Return>. This effectively erases the field, and the data within it will no longer be seen. If the field is a key field, it is good procedure to change it to a non-key field before "zapping" it, so that it will not be taking up space in the tree file. When you go into the ALADIN System, you will be asked about reorganization. Answer "Y" for Yes, since you do want the tree file to be reorganized without the field you have just changed to a non-key.

Changing
an Existing
System
T7.6
T8.15
T8.31

When you go into Change and add a field, then add the field to a Screen Form, placing the new field before some of your previously defined fields, the fields after and including the new field, are renumbered. Since the ALADIN program uses field numbers in its Query, Calc, Report and Statistics Modules (even though these field numbers are transparent to the user), such changes in your relational system will cause problems in your definitions, and you will have to redefine Q1, R1, etc. The Tutorial pages affected by the relational system change in Chapter 7, Lesson 1, are listed at left. Redefine Q1, using the same procedure you used in Chapter 1, Lesson 4, before starting these lessons in Chapters 7 and 8.

DATA, QUERY

Wild Cards
T1.27

Wild Cards can only be used on fields which are both **Character and Key.**

R109

You do not have to enter commas when typing in values on Money-type fields.

REPORT

Report Format
R37

It is not yet possible to **join Report formats** in ALADIN as stated in the Reference Guide.

T1.44
T7.15

It is important to **conserve memory** in setting up a Report format. If you wanted 45 spaces between two fields, for example, you would press 45, then Space Bar (rather than pressing Space Bar 45 times). Pressing the number and then Space Bar takes two bytes of the 512 total available, while pressing Space Bar 45 times would take 90 bytes.

Branching
Reports
R35

If you define a report that branches between files, you must return to the file in which you began the definition. Press the FINISH key or Escape 4 until you get back to the first file from which you jumped. (FINISH works like Escape 4 by "Crossing-back" to the files from which you jumped.)

INFO

Deleting
Files
M7
T4.18

A reminder from the IBM MS-DOS Menu Options: At present there is **no Files option** available in the Info Module. You must delete files by returning to the MS-DOS operating system and using the ERAse and DELete commands.

S5

Info
T4.21

The **six components of a relational system** are listed as CAR.TEXT, CAR.DATA, CAR.TREE, CAR.DECL, CAR.BASE, AND CAR.USER. In MS-DOS, these are CAR.TXT, CAR.REC, CAR.INX, CAR.DCL, CAR.DFN, and CAR.ACC, respectively.

WORD PROCESSING BRIDGE MODULE

Print
Pause
T5.9
T8.19
R66

If you want to **stop processing between pages** (for example, with letterhead paper), place the "!" symbol in column 1 at the beginning and end of your document. When you are in the Info Module, Printer Format option, set the page length to 66, the top and bottom margins to 0 (so text length is 66).

Repeating
Fields
R66

To print out the first line only of a repeating field or array, type with your word processing program: **@address(1)@** (for an array named **address**).

File
Reference
Names
T5.6
T8.20

A reminder: **Do not type in the name of the data base** before the word processing file name once you are in ALADIN. If you have saved a file with your word processor as CARLETTR.TXT, type in LETTR when prompted in ALADIN's Word Proc Bridge (or you can type LETTR.TXT).

WordStar
T8.24

WordStar cannot access **VisiCalc DIF files.** It can access VisiCalc files stored on disk as ASCII code textfiles, with the extension .PRF. This is the usual extension VisiCalc assigns if you print your spreadsheet to a textfile (on disk).

STATISTICS

Ck Statistic
T6.19
T6.22
R77

In the Statistics Module, **Ck** is a statistic related to the **Chi-Square** statistic (adjusted for number in the sample). The value of the Chi-Square statistic is directly proportional to the size of the sample. The Ck statistic extracts this dependency. The Degrees of Freedom and Level of Significance shown on the table are related to the Chi-Square statistic. **Rg** is **correlation coefficient.**

Mean T6.12	In order to get a mean on the **data** in Statistics, go to the field of concern and press "U" for Ungrouped, "A" for Accumulation, and "S" for Single-dimensional analysis, or use the corresponding Function Keys. (Note the counter in the lower left corner, which changes from "F, G" to "A, U".) Press the FINISH Function Key, then EVAL. When prompted for the Group Table, press <Return>. The analysis will be performed. When you request output, you will see the Sum, Min, Max, and Mean (vertical) on the data. (The lesson in the Tutorial shows you how to get a mean on **groups.**)
T6.12	The NOTE on this page should read: You may request **before** any type of selection different values than the F,G defaults: "F" is for Frequency of Occurrences, "A" is for Accumulation (formerly called Total), "G" is for Grouped data in accordance with defined Group Table, and "U" is for Ungrouped data (Group Table not used).
Mean and Standard Deviation T6.19	To get a mean and standard deviation on the **data** for one or two-digit fields, go to the field of interest and press the SINGLE Function Key, then the FINISH Function Key. Press EVAL and when prompted for the Group Table, press <Return>. The analysis will be performed. When you request output, you will see the Mean (MVh) and Standard Deviation (SDh) for the data. On fields of more than two digits, set up a Group Table for every **potential** value in a range of values. (You can have up to 65 separate groups in a single Group Table defininition. Even if there is not an observation for every value in the range of values, you need to set up a Group Table for every value.) Save the Group Table. Go into Statistics.Define, move to the field of concern and press the SINGLE Function Key, then the FINISH Key. Save the statistical definition for later use. Press EVAL and type in the name of the Group Table when prompted. The analysis will be performed. When you request output, you will see the Mean (MVH) and Standard Deviation (SDh). If you have set Group 1 equal to a score of 1, Group 2 equal to a score of 2, etc., the Mean and Standard Deviation shown will be valid for data as well as groups. If you have set Group 1 equal to a score of 25, Group 2 equal to a score of 26, etc., you must add, in

this example, 24 to the Mean (your minimum score of 25 minus 1 for Group 1).

Maximum Records in Statistics	The maximum number of records which can be analyzed is 32,767. If you have more than 32,767 records in your data base, you will need to define a query to limit the number of records analyzed.

CALCULATE

T7.47	Insert step 33 between steps 27 and 28. Delete steps 30 - 32.
T7.48	Change step 37 to: Answer Yes to "Use this record?"

GENERAL

Quit T8.12-T8.15	The **Quit** option is **ALADIN** in MS-DOS. If you want to use the first letter rather than the Function Key press "A". Also, in any **Script** programs (e.g., see Chapter 8, Lesson 2), use ".aladin" rather than ".Quit" (or you can just type .a).
CON	The **Monitor** and **Keyboard** options in the Tutorial appear as **CON** on the IBM screen. If you wish to use the first letter rather than the function key, press "C" for Console.
R149	If the INFO switch is OFF, you cannot enter Duplicate Keys under any circumstances.
T1.45 T4.10 R150	The fifth software switch appears in the Tutorial as 5AP, on your screen as **5AB**. They both stand for Absolute Position.
T8.14 T8.15	The steps on pages T8.14 and T8.15 should be reversed.
Multi-level Sorting T8.1-T8.8	**Substitute the enclosed Multi-level Sort Lesson** (Lesson 1A) for Lesson 1 in Chapter 8. Note especially the pages of the new lesson which contain helpful rules on Screen Layout. **This list of rules is also included with these Errata as a stand-alone addendum. You may want to substitute them for steps 26-31, Ch. 2, Lesson 1; steps 37-40, Ch. 3, Lesson 1; and steps 22-32, Ch. 7, Lesson 1 in your User manual.** The new lesson on Multi-level Sorting includes a better explanation of String Substitution

(Global Replacement) than appears in the Reference Guide.

TXT

When **redirecting output** from CON to FILE, use the file extension .TXT, not .TEXT.

Transporting
Data
T8.28

In Example #1, you should pad the **larger** field with blanks. See page T8.31, step 26.

File
Conversion
Utility

File Conversion Utility — The only time you need to use this program is when you have delimiters such as single quotes around fields, as in dBASE II. Otherwise, ALADIN will accept data from other data bases (including spreadsheet programs like Lotus and SuperCalc) if they are in this form:

Generally speaking, files must be in standard ASCII code. Fields in the ASCII file should be the same length as fields in the data base you set up with ALADIN's Installation Module. If the "sending" field is shorter than the "receiving" field, you must add blanks to the shorter field to equal the length of the receiving field. There must be some character as a field delimiter. Any character is all right, but commas or trailing blanks are common ones. Each record should be on a separate line.

The information you are transferring must be of a compatible type (i.e., you cannot transfer Dates into Money fields, or vice versa. You cannot transfer Numeric data into Money fields or vice versa. You can transfer all types of data into Character fields, except that you cannot then use the data for computational purposes). The order of your output for the transfer file must also be the order for your input.

File
Module,
Done

The **DiskUtil** option which appears throughout the Manual is **FILE** on the MS-DOS ALADIN-INIT Menu, and the **Cancel** option is **DONE**.

Screen
Forms
Module

From the ALADIN-INIT Menu, if you want to choose the Forms option by pressing the first letter, press "S" for Screen Forms.

Bad
Seek

If you ever get a BAD SEEK message right after booting up ALADIN, turn off the computer and reboot. This problem occasionally occurs if you have

been using certain other programs immediately before going into ALADIN. It is an MS-DOS error message.

Fuller
Explanation
of Hardware
Configurations
with
ALADIN
S6-S7

After following steps in START-UP, when you see the prompt, Enter Relational System Name, you would normally type in the name of the relational system.

For most users, the default settings work fine and you don't have to do **anything** besides type in the name of your relational system, Userid, and Password. However, if you want to customize your hardware configuration, ALADIN is perfectly willing to accommodate your needs.

If you wanted to change the default port setting for your printer or the default location of the User Disk (if you were using a hard disk, for example), you could type in certain characters which would specify different settings. An example might look like this:

,,C:,=,=,car:adi:adi

Elements in this line refer (in this order) to the settings for the Console, Printer, User Disk (the disk on which any textfiles created by redirecting output to disk will be stored), Tree Disk (the disk on which the structure of your data base is kept), Data Disk (the disk on which your data and report, query, calc, group and stat definitions are kept), relational system name, Userid, and Password. In other words:

The first comma says, "Keep the default setting for the Console as CON:"; this is the usual setting.

The second comma says, "Keep the default setting for the Printer as PRN:"; this is the usual setting in MS-DOS and is for a parallel printer port, but the setting could also be COM1: or LPT1:, to indicate different serial ports.

The C: says, "Change the User Disk setting from its usual default setting of B: to C:, because I am using a hard disk."

The next comma is just a separator between C: and the next symbol.

The first = says, "Make this setting for the Tree Disk the same as that which I just specified for the User Disk."

The next comma is a separator between the two = signs.

The second = says, "Make this setting for the Data Disk the same as that which I specified for the Tree Disk (the immediately previous parameter)."

The next comma is a separator.

CAR is the name of your relational system.

The first ADI is the Userid for the CAR demo data base.

The second ADI is the Password for the CAR demo data base.

Some other variations of the settings follow:

,COM1:,b:,c:,=,client

This would say, "Keep CON: as the Console device, use COM1: for the Printer, use Drive B for storage of textfiles, use the hard disk C: for the Tree and Data Disk; the name of my data base is CLIENT, and I have not specified a Userid or Password."

,LPT1:,c:,=,=,sales:jpb:adi

This would say, "Keep CON: as the Console device, use LPT1: for the Printer, use Drive C: as User Disk, use the same Drive (C:) for Tree and Data Disks; the name of my data base is SALES, my Userid is JPB, and my Password is ADI."

car:adi:adi

This is a commonly used shortcut, which says, "Keep CON:, PRN:, User Disk, Tree Disk, and Data Disk at their usual default settings; the name of my data base is CAR, my Userid is ADI, and my Password is ADI."

Disk-Full
Problems

To avoid problems of having too many report, query, calc, group, or statistics definitions and textfiles on disk, be sure to check your disk periodically (with the MS-DOS™ CHKDSK command). If the disk is getting full, delete some of your old definitions to allow space for future definitions and textfiles.

RULES FOR ALADIN SCREEN FORMS LAYOUT

Use these commands to paint the screen to resemble the examples in the lessons. (They don't have to be exact.)

D — down one line (5D moves down 5 lines, 10D moves down 10 lines, etc.)

U — up one line (4U moves up 4 lines, etc.)

R — Right one character (6R moves right 6 characters, etc.)

L — left one character (9L moves left 9 characters, etc.)

N — puts this field down to "next" line, over to left margin

P — puts this field on the next page (all fields after it will also go to the next page)

S — changes window (screen) set-up. See Reference Guide, Section IV.3 and IV.4.

H — horizontal, arranges field name and line on same line

V — vertical, arranges field name and line vertically

Use the Space Bar or right arrow to bring up each new field. Position that field where you want it and then bring up the next field.

Any time you press the <Return> key twice, the screen will be repainted. This is an important step to do often during the process. When you repaint the screen form, the fields are renumbered.

If you are rearranging a screen form and part of a field disappears in the process, move the cursor to that field (since part of it is showing, you will be able to see where to move) and press <Return>. The field should reappear.

If one field overlaps another, move the first one out of the way with the LEFT, RIGHT, UP, DOWN, and NEWLINE commands. Go back to any field that has partially disappeared and press <Return>. The arrow keys will allow you to move to different fields that are displayed.

If the cursor is ever just sitting on the screen and does not appear to be on any field whatsoever, press <Return> twice. A field you had forgotten about will probably reappear.

In Change, use the Space Bar from the **last visible field** to bring up new fields.

If you need to move one field up or down through others, position the cursor on that field, use the UP or DOWN commands, then press the <Return> key twice to repaint the screen and reorder the fields. If a field is temporarily obliterated, pressing the <Return> key twice will bring it back.

To move a field to the previous page, move it to the upper left corner of the second page, press <Return> twice, press the left arrow once, and press Space Bar to bring up the field to page one.

In the case of repeating fields, all lines coming under one heading (e.g., all five lines/fields with the heading COMMENTS) must be on one page.

If you get the FIX SCREENS message, press the Space Bar to continue. ALADIN will return your cursor to the erring field. Go back to fields which seem to be too close to the margins or overlapping and adjust them using the above commands. It helps to have the data base layout you sketched on paper during this process, so you can see if a field has disappeared.

To renumber the counter in the lower left, go to the last field on the entire form. Press right arrow and answer No to "Have you finished with this screen form?" The counter will renumber.

If you need to spread out fields on a form, work backwards (move the last field way down on the form, then the next-to-last-field, etc.) Watch the counters in the lower left corner which tell where you are on a form.

The meaning of the counter items is explained below.

If your counter looked like this:

$$15:16 * 1 (34,18)$$

15 is the field you are on
16 is the total number of fields on the form
1   is the number of this screen page
34 is the number of this column
18 is the number of this line

IMPORTANT NOTE: Do not press CANCEL at any time during the screen layout process. To save all the work you have done in defining your relational system, you must go through the process of generating screen forms. It is helpful to start out with small data bases first, until you get the knack of screen layout.

(You might also want to substitute this list of rules for Ch. 2, Lesson 1, steps 26-31; Ch. 3, Lesson 1, steps 37-40; Ch. 7, Lesson 1, steps 22-32 in your User Manual. They seem to be easier for people to use in laying out the screen form. Also, check page T3.11 in the User Manual for special tips on screen forms.)

PART I

START-UP PROCEDURE WITH ALADIN AND YOUR IBM PERSONAL COMPUTER

Instructions on how to steer a car aren't much good if no one has told you exactly how to get the engine started (or how to apply the brakes!). Knowing exactly how to get a software system started up — or stopped — is an equally critical (and often overlooked) matter. For this reason, we have put this vital information front and center for you.

When you give friends directions on how to drive over to your home, you don't normally begin by telling them to insert the ignition key and turn it on . . . you assume they already know that much. Similarly, from now on in this text, when we begin exercises we will simply refer to this START-UP PROCEDURE, assuming you have already mastered it. For this reason, you should pay close attention to what follows. It's short and very easy. Still, you might practice it a few times to be sure.

Before you begin, read and become thoroughly familiar with the beginning chapters of your IBM PC's Operator Reference Guide. And please! Make a duplicate or backup copy of both your "ALADIN" and your "Demo and Examples" diskettes, then store your precious originals away in some safe place. Work with only the copies. Finally, always treat your diskettes with tender loving care. If you have never worked with diskettes before (nowadays, lots of folks already have, because they're so common in offices), you ought to review the paragraphs below on how to develop a satisfying long-term relationship with your diskettes.

The Care and Feeding of Diskettes

One way of storing information is to write it down using pen and paper. But imagine your problems if someone took your files and dunked them in a sinkful of water, or spilled a bottle of ink over them, or held a match to them. Your ability to accurately retrieve the information you wrote down might be a bit impaired!

A diskette, which uses sophisticated magnetic recording techniques, can hold vastly more information than sheets of paper; one diskette can hold about as much information as the average book. But diskettes are consequently somewhat more fragile than sheets of paper. Now don't imagine that you have to use some immensely complicated or delicate techniques, because diskettes were designed for everyday use by everyday folks. It's just a matter of a little common sense and respect for what they are. Everybody plays records, but most people know better than to use them for coasters! Just follow these few easy rules — which will soon become reflex — and you'll be fine.

● Diskettes are called "floppy disks" because they are not perfectly rigid. But DON'T bend or flex them. Be especially careful with inserting them into the disk drives on your IBM PC. Don't force or jam them in. Slide them gently in until you feel and hear the soft "catch." If you sense resistance, pull the diskette out and reinsert it. (Never slam drive doors open or shut . . . just open and close them firmly but gently.)

● Diskettes are brown plastic disks, permanently encased in stiff paper holders. The holders have small cut-out areas (such as the hole in the center) through which you can see the diskette proper. NEVER touch the exposed diskette surfaces with anything (including your fingers)! Don't confuse the permanent holder with the paper sleeves or jackets diskettes are normally stored in. The sleeves are just storage covers for the exposed diskette surfaces, like record jackets. Always put your diskettes back in their sleeves for storage.

● Because diskettes record magnetically, putting them near a magnetic field can give them severe amnesia! Common generators of magnetic fields are telephones (ringing), fluorescent lamps, motors of any kind, and television sets. Never keep a diskette anywhere close to a generator of a magnetic field for very long. (A couple of feet of separation is normally sufficient.)

● Diskettes don't like extremes of temperature. Cold isn't usually a problem, but take care not to leave them near a major source of heat like a radiator or heat vent, in the car with the windows closed, or out in the direct sun.

● Diskettes are also somewhat pressure-sensitive. Don't put things down on top of them, and don't write on a diskette paste-on label or jacket with a ball-point pen. Fill in the label before you paste it on.

• Try to keep dust and grease away from your diskettes. There are many fine products on the market intended for proper storage of your diskettes. They are excellent investments because your diskettes are protected and together in one place, allowing logical organization.

• Again, let us remind you to make backup copies of your ALADIN and Demo and Examples diskettes. This is standard procedure whenever you buy a new piece of software. See your IBM PC Operator Reference Manual for instructions on copying disks.

NOTE:

The diskettes you received may be labeled "System" and "Installation" rather than "ALADIN Plus Exec" and "ALADIN Plus Init." If this is the case, use your "System" diskette when the "Exec" diskette is called for, and use your "Installation" diskette when the "Init" diskette is called for.

For ease of use of ALADIN, you may want to copy the file "COM-MAND.COM" from your DOS diskette to both the ALADIN System/Exec and Init diskettes. If you do this, when you exit ALADIN, you will be returned to the A> rather than the "Insert DOS disk" message. From the A> you can type either ALADIN S or ALADIN I (depending on whether you have the System or Installation disk in Drive "A") if you wish to continue working with ALADIN. With "COM-MAND.COM" copied onto the ALADIN diskettes, you can skip rein-serting the DOS disk as described in START-UP.

To copy the file "COMMAND.COM" from your DOS diskette to ALADIN's System and Installation diskettes, put your DOS diskette in Drive "A," the System diskette in Drive "B," turn on the computer and close the disk drive door. When you see the A> prompt, type:

COPY COMMAND.COM B:

This will copy the file "COMMAND.COM" to the disk in Drive "B." Repeat this procedure with the Installation diskette in Drive "B."

What follows is the sequence of steps you need to follow to get up and going with ALADIN. You will need to perform this sequence every time you first enter ALADIN (whether from doing something else on your computer or starting with the computer off altogether). Besides your computer itself, you'll need your ALADIN diskettes and a data diskette; for now you'll be using your "Demo and Examples" diskette.

Now Let's Get Started!!

Begin by making sure there are no diskettes already in the computer disk drives, and that all drive doors are open. (If there's a brass lamp handy, you might rub it — that's optional though.) OPEN SESAME . . .

1) Insert your PC-DOS diskette in Drive "A."

2) Turn on the power to your IBM PC.

3 Close the Drive "A" disk drive door.

4) When you see the prompt, "Enter new date," you may enter the date today or press [RETURN].

5) When you see the prompt, "Enter new time," you may enter the time or press [RETURN].

Next you will see the prompt:

    A>

6) Take out your DOS diskette and put it in a safe place.

7) Remove the ALADIN System diskette from its protective paper sleeve and place it in Drive "A."

8) Remove the ALADIN Demo and Examples diskette from its protective paper sleeve and place it in Drive "B."

9) Close both disk drive doors.

10) After the A>, type ALADIN S

You will see mention of the operating systems and A.D.I. America on your screen. Then you will see "Running . . ." and, after a few moments, the ALADIN logo, date and version number. Next, you will be prompted by ALADIN:

Enter Relational System name (⟨RETURN⟩ exits) =

When this prompt appears in the upcoming lessons, you will be typing in the name of an existing data base or identifying a new data base on which to perform functions such as entering and removing information, generating reports or using calculations. You might, for instance, be instructed to type the word, "CAR," which is the name of an existing data base in the ALADIN system. Or perhaps you will be called upon to install a new system and give it a name such as "CLIENT" to identify it for future use. On your IBM PC, these entries can be typed in upper or lower case letters; i.e., CAR or client.

While you would normally type in the name of a relational system, the full possibilities of what you can enter are explained at the end of this chapter under the heading OPTIONAL INFORMATION. (For future reference, OPTIONAL INFORMATION will refer you to additional exercises and applications of the lesson at hand, as well as technical or "trivia" text that would otherwise break the continuity of the procedures and draw attention to itself like an elephant in the geraniums. OPTIONAL INFORMATION can be studied, skimmed or skipped at the discretion of the user.)

After you have entered the name of your relational system, ALADIN will prompt you for "Userid" and "Passwd". For both prompts, you'll be typing ADI and pressing ⎡RETURN⎤. By the way, ALADIN will scramble the Password for your security; don't panic if it looks as if sloppy typing has turned ADI into VMF!

Once you have entered the relational system name, Userid and Passwd: YOU HAVE COMPLETED THE START-UP PROCEDURE!

The steps described above will be referred to in the future as START-UP and should be followed whenever you are starting "cold" with the system. If you wanted to create or change a data base rather than use an existing data base, as in this example, you would insert the ALADIN Installation diskette in Drive "A" and a formatted blank diskette in Drive "B." When the A> prompt appeared, you would type in ALADIN I. You would see mention of the operating systems and A.D.I. America on your screen. Then you would see "Running . . ." and, after a few moments, the ALADIN logo, date and version number. You could proceed with creation of yor very own data base or change an already existing data base.

S19

Exiting From ALADIN

Leaving the system is as easy as entering it. If you have just completed the last step and would like to stop at this time, the next steps will tell you how to exit. If you'd like to proceed, don't touch that dial! The first lesson will be coming up after a short section on menu options and a "roadmap" of the ALADIN system.

11) When prompted by ALADIN for the name of your relational system, press [RETURN] without entering a name. You will be returned to the "Insert PC-DOS disk" message encountered at the beginning of START-UP unless you followed our advice and placed "COM-MAND.COM" on your diskette.

12) If you wish to quit work now, open your disk drive doors and remove your diskettes.

13) Return them to their protective sleeves and store them in a safe place (a neat desk drawer will usually do).

Optional Information

As promised, here is some Optional Information. While text of this nature may turn out someday to be helpful and/or interesting, it is akin to knowing that the average African elephant weighs less than the tongue of a blue whale: nice to throw into a lull in the conversation but not particularly necessary to your long-term survival. If you'd like to ignore it and go on to the next section, go right ahead. Of course, if you're still reading at this point, you're probably hooked and may as well continue . . .

After following the steps in START-UP, when you see the prompt, Enter Relational System Name, you would normally type in the name of the relational system. The full possibilities of what you can enter are:

⟨Console⟩, ⟨Printer⟩, ⟨User Disk⟩, ⟨Tree Disk⟩, ⟨Data Disk⟩, ⟨Data Base Name⟩: User ID: Password.

Their definitions are as follows:

⟨Console⟩   : This specifies the Console device. Normally, it will be set to "CON:".

⟨Printer⟩   : This specifies the Printer device. This is normally set to "PRN:", but may also be set to "COM1:".

⟨User Disk⟩   : This specifies the disk volume which ALADIN will use to store as well as retrieve the "User Files" that you generate during your ALADIN sessions.

⟨Tree Disk⟩   : This specifies the disk volume on which your relational system tree file is kept. Normally, this will be the same volume on which the data file is kept.

⟨Data Disk⟩   : This specifies the disk volume on which your relational system ".REC" file and the other data base files (except the tree file) are kept. This normally defaults to the "B:" Drive.

⟨Data Base Name⟩ : This is the name of your relational system or data base.

⟨User ID⟩   : You can, if you wish, enter your Userid on the same line as the relational system name.

⟨Password⟩   : You can enter the Passwd and the Userid with your data base name so that you don't have to enter them on separate lines.

An example would look like this (and remember what we said earlier about syntax in computer entries):

     ,,B:, = , = ,car:adi:adi

The B: in this example ensures that B: is designated as User Disk. See the Reference Guide for more information.

Another example would be to type in:

     car:adi:adi

Once you've become familiar with the START-UP Procedure, you'll find that this will save time.

Minimum System Requirements For IBM PC: PC-DOS™

1.	Internal Memory	: 128K DOS1.1, or 192K DOS 2.0.
2.	External Memory	: Two (2) Double-Sided, Double-Density Floppy Disk Drives at 320K/400K each.
3.	CRT	: Monochrome, color, composite video.
4.	Maximum length for file reference names	: Six (6) characters for data base name. PC-DOS file names in general have the following form:

xxxxxxxx . xxx

8 characters   period 3 characters

For saving definitions in the Report, Query, Calc, Group and Statistics Modules, you could use this form:

(data base name) x x . xxx

up to 6 characters   infix   file name with which to save a definition.

These are supplied by ALADIN.

NOTE:

If the data base name is shorter than 6 characters, you can use more characters for the ALADIN file name before the period ("."). Periods are counted.

In the Word Processing Bridge Module, the file names follow the above rules except that there is no "infix" character between the data base name and file name. Therefore, you could name a textfile created on your word processor with a file name of this form:

(data base name) xx.xxx

In this instance, you *do* need to type in the data base name.

Examples of file names:

    a. clientre.txt (a textfile in CLIENT data base; textfile created with your word processor and used within ALADIN's WordProc Module).

    b. carfm.txt (a textfile created with your word processor and used within ALADIN's WordProc Module. Data base name is CAR).

    c. clientrr.001 (a report definition with the standard PC-DOS "r" infix and report file name of r.001. Data base name here is CLIENT).

  5. Number of files per Relational System   =   32

  6. Maximum number of records per file   = 65,535

  7. Maximum number of bytes per record   = 4,096
                                                      (4 KB)

  8. Maximum number of 512-byte blocks for data   = 32,767
                                                   (16 MB)

  9. Maximum number of 512-byte blocks for keys   = 32,767
                                                   (16 MB)

10. Maximum number of fields per Relational System   =   512

11. Maximum number of key fields per Relational System =   192

12. Maximum number of protected items
    per Relational System   =   128

13. Maximum number of 512-byte blocks for names   =   8
                                                  (4KB)

14. Maximum number of screen pages per Relational System
                                                    =   64

15. Maximum number of instructions/calc, query   =   256
                                 (or 60 connected factors)

16. Maximum number of items in one report   =   512

17. Maximum number of "summation" tables in one report =   128

CONFIGURING ALADIN on the
IBM XT and COMPATIBLES

If you have an IBM XT or compatible, follow these procedures to install ALADIN on your hard disk rather than using the steps on page S4 of the Start-Up Procedure for the IBM PC. You may use the IBM PC Start-Up Procedure and Menu Options for other information, except that wherever you see "Drive B", you would have "Drive C".

1) Insert the PC-DOS diskette in Drive A.

2) Turn on the power to your computer.

3) Close the disk drive door.

4) After you have entered the date and time, you will see the A⟩ prompt. From the A⟩ prompt, make a directory called ALADIN using the command:

MKDIR C:ALADIN

followed by ⎡ RETURN ⎤ .

5) Remove the PC-DOS diskette and return it to its protective paper sleeve.

6) Insert the ALADIN System diskette in Drive A.

7) Copy the contents of this disk to the ALADIN directory using the command:

COPY A:*.* C:\ALADIN*.*

followed by ⎡ RETURN ⎤ .

8) Remove the ALADIN System diskette and insert the ALADIN Installation diskette in Drive A.

9) Copy the contents of this disk to the ALADIN directory using the command:

COPY A:*.* C:\ALADIN*.*

followed by ⎡ RETURN ⎤ .

10) Remove the ALADIN Installation diskette and insert the ALADIN Demo and Examples diskette in Drive A.

11) Copy the contents of this disk to the ALADIN directory using the command:

COPY A:*.* C:\ALADIN*.*

followed by ⌈ RETURN ⌉.

ALADIN has now been installed on the hard disk.

Now you must "tell" ALADIN that the data base is on C:

12) Set the current drive to C: by typing C: and pressing ⌈ RETURN ⌉.

You must also specify that the directory be ALADIN.

13) Type:

CD C:\ALADIN

and press ⌈ RETURN ⌉.

14) In response to the C> prompt, type ALADIN S and press ⌈ RETURN ⌉. This is the option to Work with an Already Existing Relational System.

You will see mention of the copyright, A.D.I. America, then "Running . . . " and, after a few moments, the ALADIN logo will appear on your screen.

You will then be prompted:

Enter Relational System name =

15) Type:

!,,c:,=,=,CAR

and press ⌈ RETURN ⌉.

The exclamation point sets the User Disk to C: *permanently*. The first two commas specify the Console and Printer devices as set to CON: and PRN:, respectively. C:, sets the User Disk to C: The two " = " signs leave Tree Disk and Data Disk set to the same

drive as the User Disk. CAR is the name of the relational system in this example.

For a complete explanation of various hardware configurations, see the **Optional Information** after step 17 below.

16) After you have entered the name of your relational system, ALADIN will prompt you for "Userid" and "Password." For both prompts in the CAR demo data base you'll be typing ADI and pressing ┃ RETURN ┃ . By the way, ALADIN will scramble the Password for your security. Don't panic if it looks as if sloppy typing has turned ADI into VMF!

17) Now that you have installed ALADIN on your IBM XT, you will not have to do so again. All the files you create for your data bases will be on Drive C, and the User Disk has been set to Drive C permanently.

NOTE: If you wanted to **create** or **change** a data base, rather than work with an already existing data base, you would type ALADIN I instead of ALADIN S. This is the option to Install or Change a Data Base.

FURTHER EXPLANATION OF HARDWARE CONFIGURATIONS

After following the steps in START-UP, when you see the prompt, "Enter Relational System Name," you would normally type in the name of the relational system.

For most users, the default settings work fine and you don't have to do *anything* besides type in the name of your relational system, Userid, and Password. However, if you want to customize your hardware configuration, ALADIN is perfectly willing to accommodate your needs.

If you wanted to change the default port setting for your printer or the default location of the User Disk (if you were using a hard disk, for example), you could type in certain characters which would specify different settings. An example might look like this:

$$„C:, =, = ,car:adi:adi$$

Elements in this line refer (in this order) to the settings for the Console, Printer, User Disk (the disk on which any textfiles created by

redirecting output to disk will be stored), Tree Disk (the disk on which the key structure of your data base is kept), Data Disk (the disk on which your data and report, query, calc, group and stat definitions are kept), relational system name, Userid, and Password. In other words:

The first comma says, "Keep the default setting for the Console as CON:"; this is the usual setting.

The second comma says, "Keep the default setting for the Printer as PRN:"; this is the usual setting in MS-DOS and is for a parallel printer port, but the setting could also be COM1: or LPT1:, to indicate different serial ports.

The C: says, "Change the User Disk setting from its usual default setting of B: to C:, because I am using a hard disk."

The next comma is just a separator between C: and the next symbol.

The first = says, "Make this setting for the Tree Disk the same setting just specified for the User Disk."

The next comma is a separator between the two = signs.

The second = says, "Make this setting for the Data Disk the same setting just specified for the Tree Disk."

The next comma is a separator.

CAR is the name of your relational system.

The first ADI is the Userid for the CAR demo data base.

The second ADI is the Password for the CAR demo data base.

Some other variations of the settings follow:

<div align="center">,COM1:,b:,c:, = ,client</div>

This would say, "Keep CON: as the Console device, use COM1: for the Printer, use Drive B for storage of textfiles, use the hard disk C: for the Tree and Data Disk; the name of my data base is CLIENT, and I have not specified a Userid or Password."

<div align="center">,LPT1:,c:, = , = ,sales:jpb:adi</div>

This would say, "Keep CON: as the Console device, use LPT1: for the Printer, use Drive C: as User Disk, use the same Drive (C:) for

Tree and Data Disks; the name of my data base is SALES, my Userid is JPB, and my Password is ADI.

Another example would be:

car:adi:adi

This is a commonly used shortcut, which says, "Keep CON:, PRN:, User Disk, Tree Disk, and Data Disk at their usual default settings; the name of my data base is CAR, my Userid is ADI, and my Password is ADI.

IBM PC and XT
COLOR UTILITY PROGRAM

(November 21, 1983, Version 1.0)

Many people prefer to work with a color screen. ALADIN offers many color combinations for foreground, background, intensity and function key labels. This program will enable you to choose various monitor color combinations. It will function only if the computer is equipped with a color graphics board and color monitor.

WARNING   * PLEASE READ CAREFULLY *

There are two situations in which you will need to be aware of the following information. These situations are:

1) You are the lucky owner of *both* an IBM PC with a color monitor and an IBM PC with a monochrome monitor.

2) You are the proud owner of an IBM PC with a color graphics card and a black and white composite monitor.

If you find yourself in either of the above situations, read on . . .

1)* OWNING BOTH COLOR & MONOCHROME MONITORS:

Before you do anything with ALADIN on either machine, you *must* make separate copies of your disks for each machine. Label your System and Installation disks according to the machine on which they will be used. Label your back-up copies also.

Do not use the program disks you have designated for your color monitor IBM PC on your monochrome monitor IBM PC and visa versa. You may, however, use your data disks on both.

2)* OWNING A COMPOSITE MONITOR WITH A COLOR GRAPHICS CARD:

These directions should be followed before attempting to use **ALADIN** on your IBM PC with a color graphics board and a B/W

composite monitor. You will need to follow the steps below for both your System and Installation disks.

1) Boot your system using your PC-DOS boot disk in drive A.

2) When the A> prompt appears, remove your boot disk and insert your **ALADIN** (System or Installation) disk.

3) Type **aladin c** at the A> prompt and press ⌷ RETURN ⌷ . Your screen will soon become very difficult to read. Follow the next few steps very carefully and this problem will disappear.

4) Press ⌷ SPACE BAR ⌷ .

5) Type B.

6) Type 1 and ⌷ RETURN ⌷ .

7) Type F.

8) Type 8 and ⌷ RETURN ⌷ .

9) Type I.

10) Type 16 and ⌷ RETURN ⌷ .

11) Type L.

12) Type 2 and ⌷ RETURN ⌷ .

13) Type Q.

14) You will then return to the A> prompt and the screen will still appear fuzzy. Type **aladin s** or **aladin i** (depending on whether you are using your System or Installation disk). The screen will no longer be fuzzy. Refer at this time to the **START-UP** Procedures.

It will not be necessary to repeat these steps each time you use **ALADIN.**

If the first color combination you select isn't to your liking, you can continue to pick and choose until you find one that is right.

1) With either your ALADIN System diskette or ALADIN Installation diskette in Drive A, type **aladin c** at the A prompt and press ⌈ RETURN ⌉ .

   You will see a welcome message and Color Selection Menu:

   f] Foreground color selection

   b] Background color selection

   i] High-intensity color selection

   l] Label color for function keys

   q] Quit the program

2) For example, choose "f" for Foreground color selection.

3) Choose one of 16 colors for foreground by typing the corresponding number followed by ⌈ RETURN ⌉ .

4) When you return to the Menu, choose "b" for Background color selection.

5) Choose one of 8 colors for background by typing the corresponding number followed by ⌈ RETURN ⌉ .

6) When you return to the Menu, choose "i" for High-intensity color selection.

7) Choose one of 16 colors for high intensity by typing the corresponding number followed by [RETURN] .

8) When you return to the Menu, choose "l" for Function Key Labels color selection.

9) Choose one of 2 colors for function key labels by typing the corresponding number followed by [RETURN] .

10) When you return to the Menu, choose "Q" for Quit.
You will return to the A prompt. Your color selection will be saved and will appear when any of the ALADIN programs on that disk are executed.

IBM PC and XT
MAXIMUM RECORD UTILITY PROGRAM

ALADIN comes optimized for 32,000 records by default. If any file in your data base will contain more than 32,000 records, you will have to use the following procedure to adjust the Maximum Number of Records Specification. This program enables you to change the maximum number of records allowed in your data base, either from 32,000 to 64,000, or from 64,000 to 32,000.

If you are using more than one data base, each time you use ALADIN you must change the Maximum Number of Records Specification to fit the specific data base, because the Utility Program changes the ALADIN program itself. Once you have changed ALADIN's Maximum Number of Records Specification from the default value of 32,000 to 64,000, it will stay that way until you change it back.

For example, you might have two data bases called CAR and CLIENT. For CAR you estimate that there will be no more than 32,000 records. The default setting of ALADIN will work fine. Your CLIENT data base has over 32,000 records. Before installing the CLIENT data base, you must use this Utility Program to change the Maximum Number of Records Specification from 32,000 to 64,000. If you wish to return to the CAR data base, you must change the Maximum Number of Records Specification back to 32,000, and so on, always being sure that the Maximum Number of Records Specification is appropriate for a given data base.

1) Insert the System Disk in Drive A. (Later you will have to repeat this procedure with the Installation Disk.)

2) When you see the A prompt, type **aladin u** and press ┌─────────┐ │ RETURN │ . └─────────┘

The program tells you it is looking for **aladine.inf.**

When the file **aladine.inf** has been found, the screen clears and the prompt appears:
Please enter A or B for number of records desired.

3) Press A or B in response to the prompt.

A: 32,000.

B: 64,000.

(You can use either upper or lower case letters.)

4) You will receive a message that the Maximum Number of Records change was successful. The program has changed the file **aladine.inf** so ALADIN can use the desired maximum number of records in a data base.

5) Now you must repeat this procedure with your ALADIN Installation Disk.

NOTE:
When you are installing a new data base with the Installation Program of ALADIN, you will be asked for the maximum number of records in each file. Even if you have followed the above steps exactly and done everything you are supposed to do to change the Maximum Number of Records to 64,000, at present ALADIN will not allow you to type in any value larger than 32,759. If you ARE using 64,000 maximum records, you should type in 32,759. Don't worry! ALADIN will still accommodate the 64,000 records you have specified using the above Utility Program.

If you are concerned with the technicalities of this, you may want to know that when the Maximum Record Specification is 32,000, records are numbered from 1 to 32,000. When the Specification is 64,000, records are numbered from -32,000 to + 32,000.

PART II
ALADIN MENU OPTIONS

As you work through ALADIN, you will be presented with many choices. These are called Menu Options and vary from computer to computer. What appears on your IBM PC screen, for instance, may be different in placement, phrasing or function key use from what appears on the screen of an Apple III. In principle, however, the menu options available to all ALADIN users operate in very much the same way — to allow a variety of alternatives with which to manipulate data.

The menu lines that will appear on your screen throughout the lessons let you "order" modules and commands with as much ease as using a restaurant menu to order your lunch. The difference is that the service is much faster with ALADIN, and it is far easier to cancel your choice and send it back to the depths of the computer than to hail a waiter and send your chicken à la king back to the kitchen.

Basically, the menu options available to you fall into two major categories, Command Menus and Control Function Menus. This may be a little confusing at first, as they will not only appear intermixed and alternately on your screen, but will be present in the system even when they are not physically listed in the selection line. To clear up some of the initial befuddlement about this process, let's take a look at some of the menus and see how they compare on the screen, in the Tutorial and in the Reference Guide. (You may also find it helpful to refer to the QUICK REFERENCE CARD.)

NOTE:

The purpose of the next few pages is to acquaint you with Command Menus and Control Functions, and especially to show you how they will appear in the Tutorial and Reference Guide sections of this Manual. You will probably be tempted to try out what we're talking about as you read. PLEASE TRY TO WAIT until the Practice Exercise at the end of this section; your reading will go more smoothly. You will also get lots of practice in the Tutorial lessons.

Command Menu Options

In the START-UP Procedure when you have inserted the ALADIN System diskette to Work with an Already Existing Data Base and accordingly entered the name of your relational system, Userid (ADI) and Passwd (ADI), you will start to see Command Menus that look like this at the bottom of your screen:

| 1 Done | | 2 Data | | 3 Report | | 4 Query | | 5 Calc | | 6 Group | | 7 Stats | | 8 Others | | 9 Srvice | | 10 Help |

The numbers correspond to the "FUNCTION KEYS" (other systems refer to these as "soft keys"), which are the keys at the far left of your IBM PC keyboard. (DO NOT CONFUSE FUNCTION KEYS WITH THE NUMBERS 1-0 AT THE TOP OF YOUR KEYBOARD!) Within each of these selections are additional choices that are not seen until you press one of the following: the function key itself (e.g., F7) or the first letter of the corresponding word or abbreviation displayed on the key, (e.g., "S" for Statistics).

Function keys are usually easier for people who don't type. It should be noted here that the alternative of striking the first letter applies to all items in Command Menus with the exception of "Done," "Others," and "Service"; to select one of these three options, it will be necessary for you to PRESS THE FUNCTION KEY. ALADIN provides you with a choice of pressing function keys OR the first letter most of the time to make it easier for you, depending on your inclinations and typing ability.

As you go through the exercises in the Tutorial, you will see instructions like this:

1) From the Command Menu, choose the Data Module.

This is telling you to use one of the selection methods described above to call up the Data Module of ALADIN to your screen.

Command Menus are defined in the Tutorial and Reference Guide in the following manner:

Done   : This command tells ALADIN you are finished for the time being with the current relational system.

Data   : This command lets you enter, change, find, display or remove information within your relational system.

Report   : This command lets you generate specialized reports and lists.

Query : This command lets you select groups of records from your ALADIN relational system that meet certain criteria.

Calc : This command lets you set up free-form spreadsheet calculations, modify the data in your data base or establish multi-level sorting criteria.

Group : This command lets you organize your data into groups for use with the Statistics Module.

Stats : This command activates ALADIN's Statistics Module.

Word : This command lets you use ALADIN with textfiles created with your word processor.

Info : This command gives you various details about your files — the extent to which your relational system is filled, a listing of files in your relational system, and more.

Service : This command helps you perform "housekeeping" on your relational system.

Help : This command assists you with the task at hand.

At first glance, it seems that what appears on the screen and what appears in the text are inconsistent. Not really. Given the dimensions of the monitor and limitations of the keyboard, it would be impossible to list the entire spectrum of ALADIN options and their corresponding selection numbers along the horizontal axis of your screen. For that reason, the options are defined for you in the text like the example above, as well as listed on the QUICK REFERENCE CARD so that you will always be aware of the choices available during a particular operation. To view these additional items on the screen, a user would select the "Others" option. This selection rotates the user through the list of options available off the Command Menu and generates a display similar to the one below:

| 1 Done | 2 Data | 3 Report | 4 Query | 5 Calc | 6 Word | 7 Info | 8 Others | 9 Srvice | 10 Help |

Notice that "Group" and "Stats" changed to "Word" and "Info."

Selecting "Others" once more would return you to the main ALADIN Command Menu.

Speaking of returning to the main Command Menu, you will see instructions like this throughout the lessons:

Choose the "option" that will return you to the ALADIN Command Menu.

(OPTION? Good grief! What are they talking about now?) "Option" is used here as an all-purpose term, given the variety of words that refer to the process of stopping what you're doing and moving on to something else (i.e., Done, Exit, Quit, Finish, Cancel . . . just to name a few). For the sake of simplicity, a command such as the one above is telling you to perform the step(s) specific to your computer in order to return to a previous menu or gracefully take a break and duck out for lunch.

Within each of the Command Menu selections, such as "Data," there are action commands related to the manipulation of items within that module. The QUICK REFERENCE CARD shows how this "tree" of options is constructed.

Let's take a look at the main menu line again:

| 1 Done | 2 Data | 3 Report | 4 Query | 5 Calc | 6 Group | 7 Stats | 8 Others | 9 Srvice | 10 Help |

The choice "Data" has multiple options: Enter? Change? Remove? View? To return to the restaurant example, imagine that #2 in the Command Menu said "Eggs" instead of "Data." The word by itself tells you nothing of how they are fixed — Scrambled? Poached? Over easy? Hard-boiled? When you select "Data" from the Command Menu, a submenu will appear on the screen that looks like this:

| 1 ALADIN | 2 Enter | 3 Change | 4 Remove | 5 View | 6 | 7 | 8 | 9 Srvice | 10 Help |

In the Tutorial, you will see instructions like this:

7) From the menu, choose the Change command.

In the Reference Guide, however, the instruction is presented in a slightly different fashion:

Data: Enter, Change, Remove, View, Quit, ?)

Both presentations are telling you that you are going to be altering some of the information in the current data base.

These commands will be described in the Tutorial and Reference Guide like this:

Aladin   : Return to the previous menu line.

Enter   : Enter a new record into an ALADIN relational system.

Change   : Change an existing record in your relational system.

Remove   : Remove an existing record from your relational system.

View   : View the contents of an existing record.

Service   : Perform "housekeeping" on your relational system.

Help   : Receive assistance with the task at hand.

Curious about the "Service" selection that keeps appearing in the menus? That leads us into a discussion of another type of menu line that you will be using in upcoming lessons: CONTROL FUNCTIONS.

Control Function Options

The availability of the Control Functions in the ALADIN system means that you're not likely to "outgrow" your software, as they provide you with a multitude of additional commands with which to redefine input/output sources, jump between files and even activate global switches. This capacity to utilize CONTROL FUNCTIONS and to be able to activate them at almost any time during an operation using Escape sequences (even if they are not displayed on the screen) gives you more flexibility than software programs that operate in only one realm.

Although Control Functions will have more meaning to you as you actually apply them in the upcoming exercises, here's a short preview of what you can expect, using the "Service" Module as an example.

By definition, the "Service" Module enables you to perform housekeeping. Unfortunately, it doesn't do windows, make coffee for you or defrost the refrigerator. What it DOES do is provide additional services and timesaving steps related to the maintenance and upgrading of your relational system. Selection of the "Service Module" from the Command Menu enables you to enter a new realm of choices, specifically, the Control Functions. These functions are activated by selecting the function key or by pressing an escape sequence.

Suppose you selected "Service" while in the Query Module. You would have these Control Function options:

| 1 Query | | | | 5 Output | 6 Jump | | | 9 Vars | 10 Help |

Perhaps you would now like to "jump" to another file in your relational data base. In your Tutorial, you would see the following series of short definitions related to this menu:

Output   : Redirects ALADIN's output to a device or file.

Jump   : Allows you to cross over to another data file.

Vars   : Lets you change any of several Control Switches.

Help   : Gives various useful bits of information.

You would follow the step as it is given in the text:

17) Choose the Jump function.

Or, let's say you want to redirect the output from the monitor to the printer. In the Tutorial, you would see this instruction:

21) Choose the Output option.

By referring to the Tutorial Control Function Menu explanation above, you would understand the meaning of the Output Control Function.

In the Reference Guide, Control Functions (which can be activated by function keys or Escape sequences) are described in this manner:

ESC 8 : Select the ALADIN output device. ALADIN will offer the following choices:

1 Menu	2 CON	3 File	4 Script	5 PRN					10 Help

This function allows you to choose whether ALADIN's reports and certain other output will be shown on your monitor's screen, be saved in a disk file, become part of a script, or be printed.

The full list of Control Functions can be found in both the Reference Guide and the QUICK REFERENCE CARD.

As we saw with the Command Menus, there are additional Control Functions available to you that do not appear on the screen. They are, nonetheless, active in the system and can be called up at any time. The QUICK REFERENCE CARD is a handy reminder of what you can do and when you can do it.

Additional Menu Lines

You will also be presented with menu lines that do not really fit into the two major categories covered in this overview. For example, selection of the "Info" Module from a Command Menu leads to a series like this:

| 1 ALADIN | 2 Info | 3 Map | 4 Format | | | | | 9 Srvice | 10 Help |

If you were to select the Info option, you would receive information on the extent to which your relational system is filled.

The "Format" choice would give you options related to printer set-up.

NOTE:

Throughout the Tutorial and Reference Guide, you will see references to the Files option in the Info Module. This option is not available in PC-DOS. To view or remove files from your disk (which is what the Files option lets you do), exit ALADIN and return to DOS. After the A>, type DIR for a directory listing of files. Use the standard DOS commands to remove files.

MINI-MENUS

Very short menus such as the following might appear in a Help Module:

| 1 CANCEL | 2 PREV | 3 NEXT | | | | | | | |

Selecting the "Cancel" option with the function key enables the user to return to a previous menu line after reviewing the useful information that the Help screen provides. "Prev" and "Next" are selections that allow the user to advance or review the pages of information presented on the screen.

Throughout the lessons, you will see even shorter menu selections of YES/NO. These choices can be made by pressing the function key or first letter.

In the practice exercise that follows, you will have the opportunity to call up different options and view the choices within them. This "road-map" of options can also be found easily on the QUICK REFERENCE CARD you received with the ALADIN package. The QUICK REFER-ENCE CARD enables you to find where you are at any time within the system, as well as where you would like to go next.

Practice Exercise

If you have not already done so, follow the START-UP procedure for ALADIN. When ALADIN prompts you for the name of your relational system, type CAR and press RETURN. Enter ADI as your Userid and Passwd per the instructions in START-UP.

In a few seconds, the main ALADIN Command Menu will appear at the bottom of your screen:

| 1 Done | 2 Data | 3 Report | 4 Query | 5 Calc | 6 Group | 7 Stats | 8 Others | 9 Srvice | 10 Help |

1) Press function key #8 for "Others." (Hereafter, function key numbers will be referred to as F__.)

   A new menu line will appear, replacing the previous line from which you made your selection:

| 1 Done | 2 Data | 3 Report | 4 Query | 5 Calc | 6 Word | 7 Info | 8 Others | 9 Srvice | 10 Help |

   These are additional choices that are available to you with ALADIN. You probably noticed that another "Others" is listed here. Curious?

2) Press F8 to return to the ALADIN Command Menu you saw before. (Note that "Group" and "Stats" appear in place of "Word" and "Info.")

   Suppose you'd like to refresh your memory during a lesson and review short definitions or explanations of the available commands. In that case, the "Help" Module will be of value to you. Since it is a choice available to you now in the current menu, let's take a look at what it can tell you.

3) Press F10.

   The ability to call up assistance when the "Help" command is listed is a demonstration of ALADIN's user-friendliness. As easily as Aladin was able to summon his own personal genie by rubbing a brass lamp, you'll be able to summon an on-the-spot expert to your display screen to help you perform the steps at hand!

At the bottom of the current Help screen is a short menu line that looks like this:

| 1 CANCEL | 2 PREV | 3 NEXT | | | | | | |

4) Press F3.

The next page of text will appear on your screen.

5) Press F2.

The page that you were reading previously will be called back to your screen.

6) Press F1.

ALADIN will return you to your previous menu.

If you would like to continue practicing and view the full range of menus that you will encounter during your sessions with ALADIN, feel free to do so. Or, if you like, take a look at your QUICK REFERENCE CARD. The capabilities of each of the commands will, of course, become more familiar to you as you use them throughout the Tutorial.

The purpose of this short exercise was to give you a glimpse of what's in store, and to introduce you to the power and versatility that ALADIN and your IBM PC will utilize in streamlining your operations and organizing your life!

Note About IBM PC Keyboard:

To produce a caret or "^" on your monitor, press Shift 6.

ALADIN™ in an HOUR

CONDENSED TUTORIAL

ALADIN™ in an HOUR

ALADIN CONDENSED TUTORIAL — IBM™ MS-DOS™

PART I

Overview

This Short Tutorial will introduce you to many important functions of ALADIN. It will take you about an hour to complete. When you are finished, there will still be more to learn about ALADIN, but you'll know enough to set up some practice data bases, enter data into them, and produce reports which list some or all of your data.

If you need information on data bases in general:

> What is a data base? A relational system?
> What is a file? A field? A record?

please call or write ADI and request copies of the two articles, **Why Every Business Needs a Data Base Management System** and **Review of the ALADIN Relational Problem Solver**. They will give you some background before you start working with ALADIN.

If you are unfamiliar with the IBM PC keyboard, consult the Operator's Manual for the IBM PC or ask someone to give you a brief introduction.

As you go through the steps below, notice that the information indented considerably to the right provides TIPS on use of ALADIN. These Tips are not essential to your progress through the Tutorial, but they are nice to know. You may want to go through the Condensed Tutorial twice, once without reading the Tips, then a second time with the Tips. Additional Tips on the finer points of ALADIN appear in Part II of the Condensed Tutorial.

You will probably find it helpful to use a ruler to keep your place as you proceed through the Tutorial. Also, since reference is made so often to the main ALADIN Command Menu, it is displayed below for easy reference:

ALADIN
DONE DATA REPORT QUERY CALC GROUP STATS OTHERS SRVICE HELP

This is the Menu from which you'll be entering ALADIN's various Modules. It's a good place to return to, if you ever lose your way. Another important thing to remember is to press **Function Key 1** to exit any module. It may be

labeled CANCEL, MENU, ALADIN, DONE, or something else, but it means "Leave this module."

1. First, you'll use the **CAR** demo data base to learn some essentials. This data base comes with the ALADIN program.

Getting Started

In response to the A> prompt (or C> prompt, if you have a hard disk), put the System disk in Drive A and Demo and Examples disk in Drive B. Type **ALADIN S** and press Return.

2. When prompted for relational system name, type **CAR:ADI:ADI** and press Return. (This is the quick way to enter, typing your UserID and Password immediately after typing name of relational system. For more information, see the IBM Start-up Procedure in the Manual.)

You will see the list of files contained in this data base.

SPECS   DEALER   CUSTOMER

ALADIN will automatically go to the file listed at the far left; however, you may jump to another file.

Structure of ALADIN

3. At the bottom of the screen, you will see the main ALADIN Command Menu:

<div align="right">ALADIN</div>

DONE DATA REPORT QUERY CALC GROUP STATS OTHERS SRVICE HELP

The chart below shows the structure of ALADIN. When you typed ALADIN S, you entered the System. You use the System part of the program to work with an already existing data base. Later in this Tutorial you will use the Installation part of the program to create your own data base, or to change an already existing data base.

Installation

INIT

DONE   INSTALL   CHANGE   FORMS   ACCESS   FILE   SRVICE

System

MAIN MENU

DONE	DATA	REPORT	QUERY	CALC	GROUP
	.Aladin	.Aladin	.Aladin	same as for	
	.Enter	.Define	.Define	Query	
	.Change	.Save	.Save		
	.Remove	.Recall	.Recall		
	.View	.View	.View		
	.Srvice	.Generate	.Srvice		
	HELP	.Srvice	HELP		
		.HELP			

	STAT		OTHERS		SRVICE	HELP

.Aladin   WORD – – INFO
.Define
.Save
.Recall   .Aladin
.View   .Info
.Evaluate   .Map
.Srvice   .Format
.HELP   .Info
              Define
             .Save
             .Recall
             View
             .HELP
         .Srvice
         .HELP

The Modular Structure of ALADIN

Viewing, Entering, Changing and Removing Data

4. From the main ALADIN Command Menu, choose the **Data** Module by pressing the Function Key labeled DATA, then choose the **View** option.

> To choose a module, you can press the appropriately labeled Function Key, or you can press the first letter of the module name (e.g., **D** for **Data**).

Press Return several times to bring up records in ascending order (A to Z).

Jumping between Files

5. With a record for a car Manufacturer showing, choose the JUMP option, then the NUMBER 3 (**not the Function Key!!!**) to jump into the CUSTOMER File. The record for the first customer in the data base owning this type of car will be displayed.

> You are jumping on a KEY field; KEYS function as pathways between your files. Notice how easily you could jump between all the files in your relational system, even if you had 32 files.

Wild Cards

6. Press Return to view records in this file. Go to the Customer Name Field with the HOME Key. Then type in Chr? and press Return to use a Wild Card in searching for any records starting with CHR on the Customer Name Field. If you get the message, **Cannot find specified record**, it means you have come to the last record in your relational system, or that there are no records which match this Wild Card. Press Space Bar to continue and try another Wild Card match.

> Refer to page T1.7 in the Manual for information on all types of Wild Cards. You can use Wild Cards in the Data Module on fields which are both character and key. You can use Wild Cards in the Query and Group Modules on any character fields.

Changing the Sort Direction

7. To view the records in descending order (Z to A), press the SORT Function Key. Press Return several times to view records in descending order.

8. Try some more Wild Cards using the first few letters of a name and the ? symbol (some possibilities are BO?, AAR?, J?). Notice how the counter in the lower left of the screen changes.

If you see 1:2, for example, it would mean that there are two records matching this Wild Card, and you are looking at the first one.

Entering Data

9. Choose CANCEL to return to the **Data Menu**, then choose the **Enter** option. Fill in the screen form with your own personal information. (If you completely fill a field, the cursor will automatically advance to the next field. If you don't fill the field with data, press Return after making your entry.) Answer **Y** for **Yes** to the prompt about entering record in this way. (In this Tutorial, whenever you are instructed to "answer Yes," either press Y or the Function Key marked "Yes." The same applies to "answer No.")

Changing Data

10. Choose CANCEL to return to the **Data Menu**, then choose the **Change** option. Use the first few letters of your name (six or seven letters should be enough to locate your personal record) and the ? Wild Card to call up the record you just entered. Answer **Yes** to the prompt about using this record.

Change one field in the form by moving the cursor to that field and typing in the change (for example, a change in spelling). Press Return. Choose FINISH and answer **Yes** to the prompt about changing the record in this way.

(If, by chance, a record different from the one you entered comes up, answer **No** to "Use this record?" and press Return until your record is displayed.)

A common mistake in changing data records is to go into Data.Enter rather than Data.Change. What happens in this case is that a second record is entered, with the changes you've made, but the first record remains. (You can always go into Data.Remove to remove the first record, but why make work for yourself? Go into Data.Change right off the bat!)

Removing Data

11. Choose CANCEL to return to the **Data Menu**. Choose the **Remove** option. Use the first six or seven letters of your name and the ? Wild Card to call up the record you just changed. Press FINISH and answer **Yes** to the prompt about removing this record.

12. Press Function Key 1 twice (CANCEL and ALADIN) to return to the main ALADIN Command Menu.

13. Choose the SRVICE option, then JUMP and the NUMBER 1 to jump back to the SPECS File.

Using a Query

14. Now you'll define a **query** (selection criteria) before generating a report. Let's say that you want to list only records containing information on Porsches and Ferraris, the two types of car you drive. Choose the **Query Module,** then the **Define** option. Type PORSCHE (you can use upper or lower case letters) in the Manufacturer's Field and press Return.

The following list explains each **Comparison Operator:**

F4   =   The expression is satisfied when the value of the field is **EQUAL** to the value you entered.

F5   <>   The expression is satisfied when the value of the field is **NOT EQUAL** to the value you entered.

F6   <   The expression is satisfied when the value of the field is **LESS THAN** the value you entered.

F7   <=   The expression is satisfied when the value of the field is **LESS THAN OR EQUAL TO** the value you entered.

F8   >=   The expression is satisfied when the value of the field is **GREATER THAN OR EQUAL TO** the value you entered.

F9   >   The expression is satisfied when the value of the field is **GREATER THAN** the value you entered.

Space Bar   The field is not compared with the value you entered. NO ACTION is taken. (This is useful if you have made a mistake in this part of the query definition.)

15. For this particular query, choose the = option. Move the cursor back to the Manufacturer's Field and type FERR? (using a Wild Card). Choose the = option.

16. You will be prompted for a Connector:

      DEFER   **AND**   **OR**   **XOR**   **HELP**

For a Connector, choose OR. The list on page T1.33 of the User Manual explains all the Connectors. A quick overview of the most frequently used Connectors appears below.

AND   The two criteria will be used **simultaneously** to screen records

OR   One criterion or the other or both will be used to screen records

XOR   One criterion or the other will be used but not both

> When you have used two = (EQUALS signs) as Comparison Operators on the same field, it is important to remember to use **OR** (not AND) as the Connector. Otherwise, ALADIN will search for a Manufacturer of Porsche and Ferrari simultaneously.

You could have up to 60 connected selection criteria in one query definition. You can also define short queries, then easily chain them together to form one long query.

17. Choose FINISH and answer **Yes** to the prompt about your definition's being complete. The query definition will be displayed, and you will return to the Query Menu.

Manufacturer = 'Porsche'

OR Manufacturer = 'Ferr?'

You could save the query for later recall and use. For now, press F1 (ALADIN) to return to the main ALADIN Command Menu.

18. Note the **Street Sign** at the top of the screen (++−), which shows that a query is active on Output and Input.

CAR.SPECS (CON:, CON:) (++−)

<div align="right">

ALADIN
</div>

DONE DATA REPORT QUERY CALC GROUP STATS OTHERS SRVICE HELP

Preparing a Report

19. Choose **Report** from the main ALADIN Command Menu, answer **Yes**, you do want to use your query, then choose the **Define** option. You are going to prepare a report that looks like this:

Manufacturer
Model   LIST PRICE   **List Price**
(2 blank lines between each record)

(The bold-faced items above will be replaced by data from the CAR relational system, SPECS File, when the report is actually generated.)

> When you are doing this on your own, it is a good idea to sketch out on paper what you want to include in the report, and how you want it to look. Where do you want double spacing, indentations, new lines, field labels, etc.? Once you have defined the report you want, you should save it for later recall, viewing, and use.

For now, define the report by selecting (with the SELECT Function Key) the Manufacturer's Field, then pressing Return to start a new line. A "caret" will appear on the field when it has been selected. Watch the **Report Definition Line** at the bottom of the screen to see how much space the field you have selected takes on the line.

Select the Model Field (with the SELECT Key). To insert three spaces on the Report Definition Line, press the NUMBER 3, then Space Bar once to put the spaces between the Model Field and next field selected.

Move with the END Key to the List Price Field, VERY CAREFULLY type in LIST PRICE (again, watch the line at the bottom of the screen). Press the NUMBER 2 and Space Bar once to leave two spaces between the label and the data, then select the List Price Field with the SELECT Function Key.

Press the NUMBER 2, then Return once to give you two lines between each record listing, then press FINISH and answer **Yes** to the prompt about your report definition's completeness.

20. The report format you have defined is shown on the screen. From the **Report Menu** choose **Save**. Enter a short name for file name to save under, such as R1 for report format 1, and press Return.

> Whenever saving report, calc, query, group or stat definitions, keep the name short. (See the IBM Start-Up Procedure in the User Manual for more information on maximum length of file names. Data base name and file name combined cannot exceed eight characters.)

You can choose a maximum of 512 fields for inclusion in your report. Each time you press Space Bar or Return, or type in a character, you use two bytes of the total 512 available. You can conserve memory by typing, for example, 45* to generate 45 asterisks across the screen, rather than typing * 45 times. The former way takes only two bytes, the latter way takes 90 bytes. The same applies to the repeating use of Space Bar or Return Key. To create 38 spaces, for example, you would press 38 and then Space Bar. To create 2 blank lines between record listings, you would press 3 and then Return.

21. From the **Report Menu**, choose **GENERATE** Since a query is active, you will see the records for Porsches and Ferraris scrolling before your eyes.

Once the report is finished, you can choose **GENER** to generate the report again. Press Space Bar to stop scrolling, Space Bar to restart. At the end of the report, note the number of records matching your query and displayed on the screen out of the total records in this file. Press ALADIN (Function Key 1) until you are on the main ALADIN Command Menu.

Using the Word Processing Bridge Module

22. Choose the SRVICE option, then JUMP and the NUMBER 3 to jump to the CUSTOMER File. Choose the **Word Processing Bridge** option by pressing the Function Key marked "Others", then the Function Key marked "Word", OR by pressing **W** directly from the main ALADIN Command Menu. Answer **No** to the question about using your query, enter **FM** as the file reference name, and press Return.

You will be prompted to enter a DATE, so type in the current date and press Return. A letter that was saved using a word processing program such as WordStar™ or MultiMate™ (any MS-DOS based program that will generate ASCII textfiles works) will scroll on the screen. To stop scrolling at the end of a letter, press Space Bar; press Space Bar to restart. Press CANCEL to leave the Word Proc Module before all the letters have scrolled by.

If you wanted to redirect output to the printer (DON'T DO IT NOW!), before entering the Word Proc Bridge, you would choose SRVICE, then **Output, Printer**, and answer **Yes** to the prompt about activating current format. If you wanted to use single page letterhead paper, you would type the ! in column 1 at the beginning and end of the letter with your word processor, and in ALADIN'S Info Module (the Printer Format option), set Page Length to 66. Top and Bottom margins to 0 (which causes Text Length to be 66). Do not use headers or footers.

If you have to cancel when printing out, back out to the relational system prompt before you restart printing. You may have to turn the printer off and on to get the paper lined up appropriately.

The "matrix" or form letter created with the word processor is shown on page T5.8 An example of another letter is on page T8.18. Note the use of the question mark in @?Date@, which allows input from the keyboard. @ is the symbol ALADIN recognizes as a field delimiter or marker. If you want output to be sorted on a field, type ! after the first @ symbol, e.g., @!city@. The form letter created with your word processing program should be saved on the disk which is your data disk for ALADIN.

NOTE: If you use WordStar, be sure to use the **Non-document** mode for creating your text. If you use MultiMate, you must use the **File Conversion Utility** program provided by MultiMate to convert your files to ASCII code. When typing in field names, you can use upper or lower case. Be sure to spell field names just as you spelled them in ALADIN, using the underscore character between words, if necessary. Save your documents while in the word processing program with the **.TXT** suffix, not .TEXT. You also need to put the relational system name before the document name, so it will be accessible by ALADIN. It is a good idea to keep file names short (see pp. S8-9 in the User Manual for limits).

And REMEMBER, when you go into ALADIN's Word Proc Module and are asked for the file reference name, DO NOT TYPE IN THE NAME OF THE DATA BASE. ALADIN supplies that for you. If the name of your data base is **CLI** and you have named the document in your word processing program **CLILETTR.TXT**, for example, all you have to type in within ALADIN's Word Proc Module is **LETTR**. In the example we just used, the **FM** letter was actually named **CARFM.TXT** with the word processing program. The Word Proc Bridge is unique in this way.

Exploring a Data Base with the Info Module

23. From the main ALADIN Command Menu, choose the **Info Module** by pressing the Function Key marked "Others", then the Function Key marked "Info", OR by pressing **I** for **Info** directly from the main ALADIN Command Menu. (As with the Word Processing Bridge Module, the latter way is the quick way to enter the Module.)

This is the INFO Menu:

ALADIN   INFO   MAP   FORMAT   SRVICE   HELP

Choose the **Format** option, then **Define**. You will see the FORMAT Menu, then the menu used to define formats for use with the Word Processing Bridge Module or the Report Module (e.g., you could specify a 132-column report, a 50-line page length, special top and bottom margins, page numbers or not, special printer control codes such as compressed print, and headers and footers).

INFO   DEFINE   SAVE   RECALL   VIEW   HELP

If you were connected to a printer, you might want to define the settings for letterhead paper (see step 22). It is important that you define (or recall) a Printer Format definition **before** going into the Report Module to generate a printed report by redirecting output to the printer. For now, just look at your options and then return to the Info Menu by choosing Function Key 1 twice (CANCEL and INFO).

24. From the **Info Menu**, choose the **Map** option. This is an overview of the CAR relational system. Files, the number of records allowed for each file, the present number of records entered, key fields and their branching relationships are shown. (A field designated as branching, even it it is not key, will also be shown.) You may want to refer to Chapter 4, Lesson 3 (Tutorial) or Section III.9 in the Reference Guide for a full explanation of the Info Module.

At present there is no **Files** option (referred to in the User Manual for the Info Module) in the MS-DOS version of ALADIN. You must delete definitions (e.g., report definitions, calc definitions) from within the operating system.

If you feel like taking a break, this would be a good spot.

Creating a Data Base with ALADIN

25. Now you're going to set up a new relational system, so completely exit ALADIN by pressing Function Key 1 until you see the A> prompt. Remove both disks and insert the ALADIN Installation disk in Drive A and a blank formatted disk in Drive B. (If you have a hard disk, you do not have to swap disks. You will see the C prompt.) Type **ALADIN I** and press Return.

> (If you are using a monochrome screen and the logo looks strange, it is because you or someone else has been using the disks with a color monitor. To make the logo look right on a monochrome screen, use the ERAse command from the A> prompt in DOS to remove the ALADIN.CLR file:
>
> ERASE ALADIN.CLR
>
> Some MS-DOS versions of ALADIN do not have a lamp logo.)

26. When ALADIN prompts for the name of your relational system, type **SHEET** and press Return.

27. From the ALADIN-INIT Command Menu:

DONE   INSTAL   CHANGE   FORMS   ACCESS   FILE   SRVICE

Choose the **Install** option by pressing the INSTAL Function Key. Press Function Key 1 to continue when you see, "No relational system with that name exists."

28. Install the relational system below. **Watch the prompts at the top of the screen.** If you get an error message about **Valid Characters**, press the Space Bar to continue and look at the prompt on the screen to see what the valid characters are.

Enter the file name SALES SUMMARY and press Return twice.

(If you were going to enter a second file in your relational system, you would press Return only once and enter the file name on the second line, etc., for all files in the relational system up to 32 files.)

Enter 10 as the number of records in this file and press Return.

Set up the fields this way: (Press Return to advance after entering each item except Type and Key. For the repeat factor of 1, you can press Return instead of typing 1. You will not Protect any fields in this data base, so press Return every time you see the prompt about Protecting a field.)

Name	Repeat	Type	Length	Key
City	1	C	15	K
Oct-Dec	1	M	15	
Jan-Mar	1	M	15	
Apr-Jun	1	M	15	
Jul-Sep	1	M	15	
Total	1	M	15	

See the Reference Guide, pp. R105-111 and R130 for information on field types, lengths, repeat factors, protection and branching. You will not have any branching fields in this relational system, but you were using a branching field in the CAR data base when you jumped between the three files on the Manufacturer's Field. If you did have two or more files in this relational system, you would be prompted about branching; type **B** and **Y** for Yes on insertion.

NOTE: It is crucial to avoid Canceling during the process of defining a relational system (even pressing SAVE will not completely save your work) or during the process of laying out a screen form. **In the MS-DOS version of ALADIN, you must go all the way through the process of generating**

screen forms to save the definition. It is a good idea to lay out the entire relational system definition and screen pages on paper first.

29. Press the END Key until you see the prompt, Have you finished defining your ALADIN relational system? and answer **Yes**.

Allocating Storage for Data and Keys

30.

Storage	In allocating block storage for data and keys, look at the
Allocation	numbers in parentheses on the lines, "Number of disk
INIT.INSTALL	blocks for data:" and "Number of disk blocks for keys:"
	Each number is a percentage to be multiplied by the
	total K bytes useable on Drive B, the drive on which
	your relational system definitions are normally stored.
	Type the resulting block numbers after the prompts.

For this lesson, since you have a very small relational system and few records, type in 34 for data, press Return, type 36 for keys, and press Return. (We're assuming you have only 35 K bytes useable on Drive B. (1 BLOCK = ½ K BYTES)

Instructions for hard disk systems and more examples of allocating storage appear in the TIPS section of this Short Tutorial (Part II).

A diagram of the matrix similar to what you see on the screen is shown below, with appropriate numbers of blocks allocated for data and keys, given this data base and 85 K bytes of space on Drive B. You would reserve 50 K bytes for calc, query, report, group, stat definitions and textfiles, leaving 35 K bytes for data and keys. (The numbers in the matrix will vary with every relational system, but you should always reserve at least 50 K bytes for definitions and textfiles.)

Required space				Mass Storage Requirements		
File	!	# of Records !	Length !	Data	! Keys	!
Sales Summary	!	10 !	56 !	2 !	1 !	
				2 !	1 !	

Number of disk blocks for data (96) 34
Number of disk blocks for keys (104) 36

Another example for a different data base, and 320 K bytes total on Drive B (270 after subtracting 50 for definitions):

Required space File	! # of Records !	Length !	Mass Storage Requirements Data ! Keys !
CUSTOMER	! 200 !	212 !	90 ! 158 !
ORDER	! 200 !	60 !	30 ! 100 !
INVENTORY	! 200 !	60 !	30 ! 100 !
	! !	!	150 ! 358 !

Number of disk blocks for data (52) 140
Number of disk blocks for keys (148) 400

The numbers you type in after the prompts should be fairly close to the numbers indicated in the lower right corner of the matrix if you anticipate that your data base will be filled to capacity. Number of disk blocks for **keys** must be at least **9 greater than** the number shown in the lower right matrix.

31. Answer **Y** for Yes, create a textfile for the relational system definition. This way you could print out a description of your relational system from DOS, or use the MS-DOS TYPE command to see your relational system definition when at the A> prompt.

32. Answer **N** for No to the question about creating a description as a Pascal interface program, since you are not planning on using the Program Genie. (Call A.D.I. for information on this powerful programming tool.)

33. Answer **Y** for Yes, generate screen forms.

Generating Screen Forms

34. Use the **Rules for Screen Forms Layout** (on the last two pages of this Short Tutorial Part I), ready for easy reference in the future when you are creating your own relational systems) to generate your screen form like this:

```
     City: _____
  Oct-Dec: ..............................
  Jan-Mar: ..............................
  Apr-Jun: ..............................
  Jul-Sep: ..............................
    Total: ..............................
```

It works best to position each field as you go. for example, position the City Field using the UP, RIGHT, DOWN, LEFT, NEWLINE Function Keys, then press Space Bar to bring up the next field and position it with NEWLINE. The counter in the lower left corner of the screen tells you where you are. (See **Rules for Screen Forms Layout** for an explanation of the counter. The counter is updated when you press Return twice.)

You can use the first letter of each command, e.g., U for UP. Try the NEWLINE Command often to see how it saves time. Press the Return key twice to repaint the screen form. And, **DO NOT PRESS CANCEL during this process.**

35. When you have finished setting up the screen form. press the Space Bar until you see the next prompt and answer **Yes**, you have finished defining this screen form.

36. Answer **Yes** to the next prompt; YOU DO WANT TO SAVE YOUR RELATIONAL SYSTEM. Again, this is your first chance to save all the work you have done.

37. Press Return when prompted **User ID**, as you will not have a UserID for this relational system. If you want to have a UserID and Password for security reasons, refer to pp. T2.14-T2.16 and R127-130 of the User Manual. **Be sure to keep track of the different UserID and Password combinations you set up.**

If you feel like taking a break, this would be a good spot. If you do take a break and turn off the computer, you will need to redo steps 25 and 26 of this Short Tutorial, then return to step 38.

Changing a Data Base

38. From the ALADIN-INIT menu, choose the **Change** Module.

WARNING:

After you have completed the installation of a relational system with the **Install** Module, DO NOT re-enter the **Install** Module. This will destroy your former data and "tree" files (the key index structure). To view the relational system, add fields of files, change protection, keys, or branching, go into the **Change** Module.

If you should press **Install** rather than **Change** by mistake, and you answer **Yes** or **No** to the prompt about using existing system specification, press CANCEL as soon as you see the relational system definition on your screen. You will return to the main ALADIN Command Menu, from which you will choose **Change**. You will not have lost your data and tree files.

Because the process of installing a new relational system and making changes in it takes some practice, it is a good idea to practice setting up data bases using **small** data bases first.

And **ALWAYS backup** your data by copying the files on the disk in Drive B to another disk, or by using the BACKUP command in MS-DOS if you are using a hard disk.

After choosing the Change Module, the relational system you have defined will appear on the screen. For now we'll make a simple change, adding a field after the Total Field. This field could be used for storing a calculation. (In creating your own data bases, you could add more files at this point. In allocating storage for this data base, you have allowed enough space to add one small file with a few records.)

39. Move with the END Key to any field in the Sales Summary File. Press the INSLIN Function Key. The new line appears after the last field defined. Once you have saved a relational system and asterisks appear at the right side, you cannot directly insert or delete these fields. If you want to insert a field between two fields previously defined in the Install Module, you follow this same procedure and MOVE THE FIELD TO THE DESIRED PLACE when you get into Changing Screen Forms.

Refer to page T3.11 for more details on "deleting" fields, establishing headers within the screen form, and keeping field names from showing on the form.

Type in Extra Field as the name of the field, and press Return. Press Return again, as this will not be a repeating field. Type in M15 and press Return. Press Return since it is not protected, and press **K** since it is Key. Press the END Key and answer **Yes**, you have finished defining your relational system. Notice that the storage allocation matrix shows on the screen, but you are not asked for input.

> Sometimes if you have added a Key field, you will have to reorganize your data base when you go into the ALADIN System. It will tell you if you need to do this. All you do is answer **Yes** when ALADIN asks about reorganizing. In this lesson, you will not have to reorganize because you have allowed enough space for keys.

> For an example of more complex use of the Change Module in which new files and key fields are added, see Chapter 3 in the User Manual.

40. Answer **Yes** about creating a textfile, **No** about creating a Pascal interface description for the Program GENIE. Answer **Yes** about generating screen forms. When the screen form is displayed, move with the END Key to

the last field. Bring up the new Extra Field by pressing Space Bar. If you want to insert it between any of the other fields, move it up by pressing the Function Key marked UP, or by pressing U for UP. Be sure you have a blank line to move it to. Repaint the screen by pressing Return twice. Refer to the Rules for Screen Layout at the end of this Tutorial (Part I) as necessary.

> If you insert a field in this way after having defined queries, calcs, reports, groups and statistics with the ALADIN System program, you will have to redo your definitions, since inserting a field causes the fields to be renumbered. Again, for more information on inserting and deleting fields and field names, see p. T3.11 of the Manual.

41. When finished, press the END Key until you see the next prompt and answer **Yes** to the prompts about finishing your screen layout and saving your relational system. Again, this last prompt is extremely important, because it is your only opportunity to save your changed relational system definition. Press Return for UserID. Again, if you want to set up access restrictions, refer to pp. T2.14–T2.16 and R127–R130 of the User Manual.

42. If you wanted to change only your screen forms layout, you would choose the **Forms** option from the INIT Command Menu (or press **S** for Screen Forms). If you wanted to change **Access** (UserID and Password), you would choose that option. If you wanted to change storage allocation, you would choose the **File** option (called **DiskUtil** in the User Manual). Refer to Sections IV.4 and IV.5 of the Reference Guide for more information on these options.

> It is a good idea to keep a "Data Base Case History" for each relational system. Write down the name of the data base, the UserIDs, Passwords, and restrictions, all the numbers in the storage allocation matrix and the numbers of disk blocks you allocated for data and keys. When you get an error message, write down exactly what it says and what you did to get it. Take this to your dealer for assistance.

> And no matter what happens, do not turn off the computer while in the middle of an ALADIN operation. Try to back all the way out with F1, until you see the A> prompt.

43. Press F1 until you have completely exited ALADIN's Installation program and you see the A> prompt.

If you want to take a break, this would be a good place.
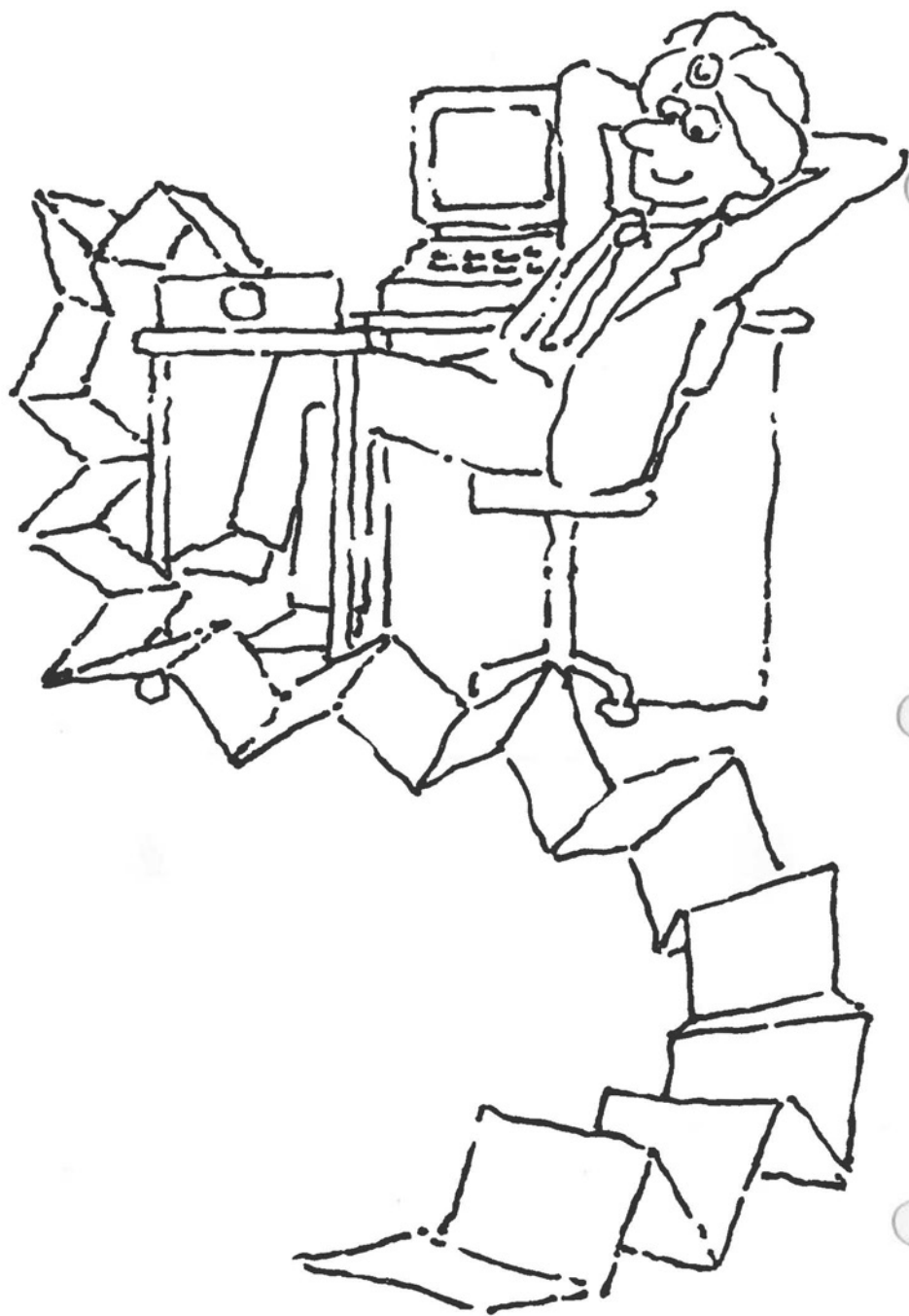
44. Now you will be entering data with ALADIN's Data Module. When working with your own relational systems, you have the options of entering data directly or importing data into ALADIN from another data base or another ALADIN file.

> Generally speaking, to import data into ALADIN, files must be in standard ASCII code. Fields in the ASCII file should be the same length as their corresponding fields in the data base you set up with ALADIN's Installation Module, plus there must be some character as a field delimiter or marker (any character is all right, but a comma or trailing blank (at the end of the field) are common ones).

> If the "sending" field is shorter than the "receiving" field, you must add blanks to the shorter field to make it equal in length to the receiving field.

> Each record should be on a separate line. The information you are transferring must be of a compatible type (i.e., you cannot transfer Dates into Money fields, or vice versa. You cannot transfer Numeric data into Money fields, or vice versa. You can transfer all types of data into Character fields, except that you cannot then use the data for computational purposes). The order of your field output for the transfer file must also be the order for your field input.

45. For now, you are going to enter data directly and also use the ALADIN Calculator function to generate data for one field.

When you see the A> prompt, remove the ALADIN Installation disk from Drive A and insert the ALADIN System disk. Type **ALADIN S** and press Return. For relational system name, type **SHEET** and press Return.

Using the ALADIN Calculator

46. From the main ALADIN Command Menu, choose the **Calc Module**. You are going to define a simple calculation which will generate data for you in the Data Module. The four quarterly field dollar amounts will be added and stored (displayed) in the Total Field. Choose **Define**. Note that key fields are underlined on the screen.

Many times when defining calculations, you need to know what type of field a certain field is. For example, you cannot do numeric calculations on a Character type field. Let's find out what kind of field the City Field is. Press Function Key 10 for FIELD. Information on the field type and size is displayed at the bottom left of the screen.

Move to the Oct-Dec Field using the right arrow key. Press the SELECT Function Key twice to choose the Oct-Dec and the Jan-Mar Fields. (Notice that a caret appears on the field when it has been selected.) Choose the **Add** option.

SELECT the Apr-Jun Field and choose the **Add** option. SELECT the Jul-Sep Field and choose the **Add** option. Move to the Total Field, SELECT it and then choose the **Store** option. **The sales summary figures for these four quarters will be totalled in the Total Field** when you use the Calculator just a little later in this lesson.

Press FINISH and answer **Yes** about your definition's being complete. You'll see the definition displayed on the screen. Then choose ALADIN (F1) to return to the ALADIN Command Menu.

47. Notice the **Street Sign** at the top of the screen ($--+$), which shows that you now have a calculation active. Choose the **Data Module**, answer **Yes** about using your calculation, then choose the **Enter** option. Type in a city and some quarterly dollar amounts. Try using ALADIN's buffering capability, which enables you to type ahead. If you get the message, **Invalid Sum or Money**, you have probably entered a decimal and nothing to the right of it. Press Space Bar or F1 to continue and try again.

Press the CALC Function Key, and data will be entered in the Total Field. If you do not already see the prompt about entering the record in this way, press FINISH and answer **Yes** to the prompt about entering the record in this way.

Changing Data Globally

48. Now we'll show you a faster way to change data. You will do a Global change on the data to enter the calculated data into the Total Field. Press F1 to return to the **Data Menu**. From the Data Menu, choose SRVICE, then VARS for Variables Menu. Turn the Global Switch ON ($+$) and the Info (Prompts) Switch OFF ($-$) by pressing the NUMBERS 6 and 9 (NOT THE FUNCTION KEYS!). Press Space Bar to clear the VARS line.

49. Choose the **Enter** option and enter some data for city and quarter fields. DO NOT ENTER data for the Total Field. Do not enter commas on Money fields. ALADIN will do it for you when you save the record.

Press FINISH and answer **Yes** for entering record in this way. Repeat this process several times, until you have entered data for several records.

Choose CANCEL to return to the **Data Menu**, then choose **Change**. Once you are in **Change**, answer **Yes** about globally changing records and **Yes** about changing records in this way (when the first record is displayed on the screen

for you to check). With the calculation active, the Global Switch ON and INFO OFF. all records will be changed automatically. This is one way to enter data in a batch mode with ALADIN.

When processing is complete, choose the **View** option and press Return several times to see the globally changed records. Notice that they are already sorted, A to Z.

> If, by chance, you had turned off the calculation by answering No to the question about using the calculation, you simply turn it back on at the VARS line by pressing 0 for CAL+, then Space Bar to leave the VARS line. Then go into the Data Module, and enter or change data as described above.
>
> NOTE: One advantage of the ALADIN Calculator is that you don't have to change the data records permanently to see the results of the calculation. You can go into **Data.View** and activate the calculation, or you can **Generate** a report with the calculation active. In both cases, the output shows the results of the calculation, but since you have not used Data.Change to change the records, your data records are still intact.

50. Return to the main ALADIN Command Menu by pressing F1 (once or twice, depending on where you are in ALADIN). Choose SRVICE, then VARS. The Global Switch (6) should still be on and INFO (9) is OFF. Change them back to their default settings by pressing the NUMBERS 6 and 9 (NOT THE FUNCTION KEYS). Press Space Bar to leave the VARS line.

NOTE: If you are entering data for records with duplicate keys (i.e., the first key field is the same, and when you type in the entry for that field, a record with the same key is displayed and you are asked, "Use this record?"), **press Space Bar** if you **do not** want to use the record as a template in entering new data and you want all of the record "wiped clean" except for the first field.

Generating a Report with Sub-totals and Totals

51. Check to make sure you are at the main ALADIN Command Menu, then choose **Report**, answer **No** about using your calculation, then choose **Define**.

The report you are going to define will look like this:

Display of the data files: SALES SUMMARY (*city:3*)

City

Oct-Dec Jan-Mar Apr-Jun Jul-Sep
Total (+)

You will set up a report in which you will get a Sub-total for Cities' quarterly sales summaries every time the first three letters on the City Field change, and you will get a Grand Total for all quarters at the end of the Report Listing. (More details on this method appear in **TIPS**, Part II, of this Short Tutorial. You could design the Sub-totalling format in many different ways.)

To set up this report, select the City Field with the SELECT key, move back to the City Field with the left arrow and press ! or the SORT key (they do the same thing), then Space Bar three times and Return.

Press the NUMBER 2 and Return, to put one blank line into your report. (If you wanted 10 blank lines, you would press 11 and Return.)

Move to the first quarter field and SELECT it, SELECT the other quarter fields, and press Return. Move to the Total Field with the right arrow and press + (or the SUM Function Key).

Press FINISH, answer **Yes**, your definition is complete, and note the display of the report format on your screen.

(*city:3*) shows the field that will be used for sorting and that Sub-totals will occur every time the first three letters change.

If you ever see a ? after a field name when you are defining a report, it means you should press Return to start a new line, because that field won't fit on the current report line.

52. Choose the **Generate** option to see all your records on the screen, with Sub-totals and Totals.

53. You have come to the end of the Short Tutorial. You may also want to try the new Multi-level Sorting Lesson (Chapter 8, Lesson 1a), Script (ALADIN's **"macros"**) and Transporting data lessons in the User Manual (Chapter 8, Lessons 2 and 4). Take a look at the Quick Reference Guide, list of Error Messages, and Advanced Techniques at the back of the User Manual. There will still be some things you won't know about ALADIN's power and flexibility until you read the complete Tutorial and Reference Guide (see the list below), but you will have a good start.

NOTES:

Before you begin the complete User Manual be sure you have a copy of the Documentation Clarifications for the User Manual. It will make your progress through the Manual smoother.

If you ever get the MS-DOS Bad Seek message right after booting up ALADIN, turn off the computer and reboot. This problem occurs if you have been using certain other programs immediately before going into ALADIN.

Be sure to make a backup of your data diskette at the end of each work session, using the MS-DOS **diskcopy** or **copy** commands; if you're on a hard disk, use **backup**.

These items are not covered in the Condensed Tutorial , Part I :

1. Adding a file, branching (except brief mention; branching covered somewhat in **TIPS**, Part II of Condensed Tutorial). See also Tutorial Chapter 3, in User Manual.
2. Any calcs except for addition, which is covered. See Manual.
3. Statistics (covered in Documentation Clarifications somewhat). See Tutorial, Chapter 8, Lesson 3 on Integration of Word Proc and Stats, and Chapter 6.
4. Screen printing. See Manual.
5. Input query. See Manual.
6. Extending query or calc definitions. See Advanced Techniques, Manual.
7. Jumping between files in Report (covered in Documentation Clarifications somewhat). See Manual.
8. Script. See Tutorial, Chapter 8, Lesson 2, and new lesson.
9. Multi-level Sorting (covered in Multi-level Sorting Lesson, included with Documentation Clarifications).
10. Global replacement (see **TIPS**, Part II of Condensed Tutorial).
11. Masking (see **TIPS**, Part II, and new Multi-level Sorting Lesson)
12. Software Switches: 3DK, 5AB, 7SV, 8NOT (4DIR is included in the new Multi-Level Sorting Lesson). See Manual.
13. Use of HELP. See Manual.
14. Redirecting input from a file or script. See new lessons on Importing data from Lotus™ and Manual.
15. Adding or deleting character from field in Screen Forms. See Manual.
16. Transporting data. See the Tutorial, Chapter 8, Lesson 4, and also the new lesson on Importing data from Lotus into ALADIN.
17. Protected fields, access. See Manual.
18. Use of FILE option, ALADIN-INIT. See Manual.
19. Batch removal of files. See Advanced Techniques, Manual.
20. Mailing labels. See Advanced Techniques, Manual.
21. Repeating fields. See Reference Guide, R107, R111 (branching).
22. Disk utilization (to change the storage size for data and key files, and provide for reorganization of relational systems). See Reference Guide, R131-R134.

(Order new lessons from A.D.I.)

RULES FOR ALADIN SCREEN FORMS LAYOUT

Use these commands to paint the screen to resemble the examples in the lessons. (They don't have to be exact.)

> **D**— down one line (5D moves down 5 lines, 10D moves down 10 lines, etc.)
>
> **U**— up one line (4U moves up 4 lines, etc.)
>
> **R**— right one character (6R moves right 6 characters, etc.)
>
> **L**— left one character (9L moves left 9 characters, etc.)
>
> **N**— puts this field down to "next" line, over to left margin
>
> **P**— puts this field on the next page (all fields after it will also go to the next page)
>
> **S**— changes window (screen) set-up. See Reference Guide, Section IV.3.
>
> **H**— horizontal, arranges field name and data on same line
>
> **V**— vertical, arranges field name and data vertical to one another
>
> **Right arrow**— move to next field or next page
>
> **Left arrow**— move to previous field
>
> **Up arrow**— move to first field on this page
>
> **Down arrow**—has same effect as Space Bar. CAREFUL!

Use the **Space Bar** or right arrow to bring up each new field. Position that field where you want it using the above commands and then bring up the next field.

Any time you press the Return key twice, the screen will be repainted. This is an important step to do often during the process. When you repaint the screen form, the fields are renumbered. (Notice the counter in the lower left corner.) If you have saved query, calculation, report, group, or statistical definitions in this file, then change the screen form in such a way that fields are renumbered, you will have to redo the definitions.

If you are rearranging a screen form and part of a field disappears in the process, move the cursor to that field (since part of it is showing, you will be able to see where to move) and press Return. The field should reappear.

If one field overlaps another, move the first one out of the way with the LEFT, RIGHT, UP, DOWN, and NEWLINE commands. Go back to any field that has partially disappeared and press Return. The arrow keys will allow you to move to different fields that are displayed.

If the cursor is ever just sitting on the screen and does not appear to be on any field whatsoever, press Return twice. A field you had forgotten about will reappear

In Change, use the Space Bar from the last visible field to bring up new fields.

If you need to move one field up or down through others, position the cursor on that field, use the UP or DOWN commands, then press the Return key twice to repaint the screen and reorder the fields. If a field is temporarily obliterated, pressing the Return key twice will bring it back.

To move a field to the previous page, move it to the upper left corner of the second page, press Return twice, press the left arrow once, press Space Bar to bring up the field to page one.

In the case of repeating fields, all lines coming under one heading (e.g., all five lines/fields with the heading COMMENTS) must be on one page.

If you get the FIX SCREENS message:

Fix your screen layout: Fields interfere or Margins exceeded

press the Space Bar to continue. ALADIN will return your cursor to the erring field. Go back to fields which seem to be too close to the margins or overlapping and adjust them using the above commands. **It helps to have the data base layout you sketched on paper during this process, so you can see if a field has disappeared.**

To renumber the counter in the lower left, go to the last field on the entire form. Press right arrow and answer **No** to "Have you finished with this screen form?" The counter will renumber.

If you need to spread out fields on a form, work backwards (move the last field way down on the form, then the next-to-last-field, etc.) Watch the counters in the lower left corner which tell where you are on a form.

The meaning of the counter items is explained below.

If your counter looked like this:
$$15:16 * 1 (34,18)$$
15 is the field you are on
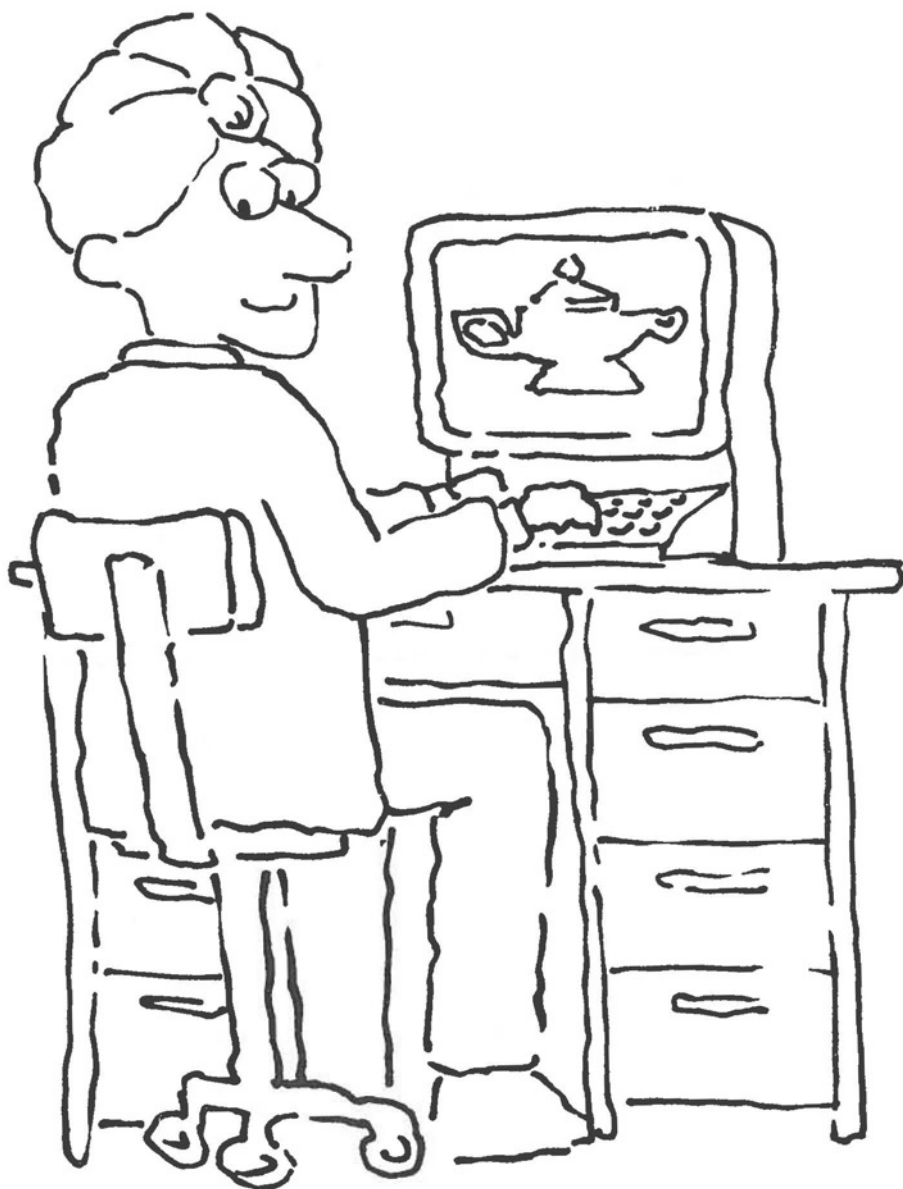16 is the total number of fields on the form
1 is the number of this screen page
34 is the number of this column
18 is the number of this line

IMPORTANT NOTE: Do not press CANCEL at any time during the screen layout process. To save all the work you have done in defining your relational system, you must go through the process of generating screen forms. It is helpful to start out with small data bases first, until you get the knack of screen layout.

(You might also want to substitute this list of rules for Ch. 2, Lesson 1, steps 26-31; Ch. 3, Lesson 1, steps 37-40; Ch. 7, Lesson 1, steps 22-32 in your User Manual. They seem to be easier for people to use in laying out the screen form. Also, check page T3.11 in the User Manual for special tips on screen forms.)

CONDENSED TUTORIAL, PART II
TIPS ON THE FINER POINTS OF ALADIN

ALADIN INIT

Branching Fields across Files

ALADIN is structured in such a way that you can prepare reports, invoices, checks, etc. which branch across files using the Report Module. When **creating your relational system**, it is a good idea to have one key field which branches across all your files. It functions as a pathway on which you can jump across files. You may want to keep these branching fields to somewhat of a minimum, in order to avoid updating many of the same fields across several files. You should also make branching fields branch in both directions (i.e., from CLIENT to CREDIT, and from CREDIT to CLIENT).

Branching to Another Field within the Same File

If you have a screen form with several pages, it is helpful to establish a branch between two fields in the same file, so that you can jump quickly around your screen form. To branch to another field within the same file, the two fields must be identical in type and length, and both be key fields. Press JUMP when you are on one of the two fields, and you will see the options for jumping. Then press the number of the field to which you want to jump.

Creating Your Own HELP Files

ALADIN's HELP Module is referenced to the task you are performing when you ask for HELP. However, you may want to create a **Personal Help File**, containing customized hints, tailored to your needs. You might describe the contents of the various queries, reports, groups, etc. which you have defined. To be able to jump into this file when you are on a screen form, put a key field in the HELP File which appears as a key field in all your other files, and which branches to and from your other files.

It is best to make this branching key field the first field in your HELP File and make the rest of the file a repeating field named Comments, character, non-key. Put the first field on the first line of the form, the Comments Field on the second line, arranged vertically. When done this way, the Comments Field can have a Repeat Factor of **17**, length of **78**.

Storage Allocation

The numbers in the lower right corner of the matrix show the storage space needed in the "worst case," i.e., if all the fields and files were filled to capacity. Since ALADIN uses variable record lengths with data compression, the actual storage needed for data may be considerably less.

In MS-DOS you can always increase space allocated for data, but you cannot decrease it. It is better to underestimate and increase it later than to overestimate and not have enough room for something else.

Here are three more examples of storage allocation, for varying disk capacities and relational system sizes:

Using Percentages

Required space File	! # of Records !	Mass Storage Requirements Length ! Data ! Keys !

Required space File	! # of Records !	Length !	Data !	Keys !
CUSTOMER	! 50 !	410 !	42 !	48 !
PURCHASES	! 150 !	718 !	216 !	290 !
	! !	!	258 !	338 !

Number of disk blocks for data (78)
Number of disk blocks for keys (122)

The percentages .78 and 1.22 multiplied by 270 K bytes available on Drive B yield numbers somewhat smaller than those shown in the lower right corner of the matrix (211 and 329). As in the example above, this is probably not a problem for data, but **it is essential that you allocate for keys at least the number of disk blocks indicated in the lower right corner of the matrix plus 9 blocks** overhead (1 BLOCK = ½ K BYTES). In this example, therefore, we would enter 347 (338 + 9), not 329.

Number of disk blocks for data (78) 211
Number of disk blocks for keys (122) 347

Using the Numbers in the Matrix

Required space File	! # of Records !	Length !	Data !	Keys !
CUSTOMER	! 50 !	410 !	42 !	48 '
PURCHASES	! 50 !	718 !	72 !	105 !
	' !	!	114 !	153 !

Number of disk blocks for data (76) 114
Number of disk blocks for keys (124) 162

In this example, you have fewer records in the PURCHASES File than before. Notice how the numbers in the matrix differ from those in the first example. The percentages .76 and 1.24 multiplied by 270 K bytes available on Drive B would yield 205 blocks for data and 335 blocks for keys. Perhaps you do not want to use all your available disk space for this data base. You can choose to enter the exact numbers in the lower right corner of the matrix, being sure to add 9 to the estimate for keys.

Using Percentages, ALADIN matrix estimate greater than disk space

Required space File	! # of Records !	Length !	Mass Storage Requirements Data !	Keys !
CUSTOMER	! 1000 !	410 !	833 !	884 !
PURCHASES	! 5000 !	718 !	7168 !	9431 !
	! '	!	8001 !	10315 !

Number of disk blocks for data (78) 211
Number of disk blocks for keys (122) 329

The percentages multiplied by available disk space (270 K bytes) yield numbers which are significantly lower than the ALADIN matrix estimates. You have created a relational system which exceeds the storage capacity of your disk drive. You have two choices:

1) Create a smaller relational system by decreasing the number of records or the number of keys. (In floppy disk systems, be conservative when specifying fields as key fields.) OR

2) Have separate data bases using exactly the same relational system definitions with data divided in a convenient manner. For example, since 211 is approximately 1/40th of 8001, you could divide your data base alphabetically or numerically on some field, use one data disk for each category, and enter data only on the appropriate disk. You might have all records with Customer Numbers 1-25 on one disk, 26-50 on a second disk, etc. Be aware that these are separate relational systems and the

data are independent. When working back and forth between relational systems, you must "back" all the way out of ALADIN to the prompt, "Enter relational system name." Even though the names and relational system definitions for all disks are the same, the other definitions and data are different from one disk to another, and you need to tell ALADIN this by backing all the way out to this prompt.

You could generate a report merging all relational systems by sending data from each one to a textfile.

If you have a hard disk, you may be able to just enter the numbers in the lower right corner of the matrix, ADDING 9 to the number indicated for KEYS. The data base in the above example would require approximately 19000 blocks, or 9500 K bytes available on disk. You would need at least a 10 MB hard disk.

It is a good idea to do a directory of your data disk before starting each session with ALADIN, to see how much space you have left on disk.

ALADIN SYSTEM

Editing Text on a Screen Form

You can insert and delete text from field entries in Data.View, Data.Enter, and Data.Change by pressing the UP arrow to delete a character, DOWN arrow to insert a space for a character.

Finding Records with Missing Information

To find records with missing information, define a query on the field of concern:

!?

with a Comparison Operator <>.

Masking and Replacement

Masking

You would use masking if you wanted to use only certain characters of a field in a calculation or report. For example, if you wanted to use only the first four characters of the Salesperson Field, you would go into Calculate.Define, move to the Salesperson Field, type in !!!! and press Return. The ! says, in

effect, "Keep this character." You would move back to the Salesperson Field and select it, then choose the Multiply option. Select a character field for storage of the results of the calculation, and choose the Store option. Define and generate a report with the calculation active, or use Data. View to see the results of the **Masking** procedure.

Defining the calculation in this order will select the first four characters of the field. If you wanted to select the last four characters of a field, you would select the field, move back to that field, type !!!!, press Return, then choose the Multiply option. You could even select only the first, fifth, and 14th characters in a field by setting up the mask like this: **!xxx!xxxxxxxx!**

You can see the results of the **masking** process by going into Data. View and pressing the CALC Key, or by defining and generating a report (being sure to select the field in which you stored the results of the mask). In both instances, answer **Yes** to the question about using your calculation.

Example:

You want to do a multi-level sort involving salespersons' names, order numbers and order dates. Since the salespersons' names vary in length and you need data of the same length for the multi-level sort, you set up a mask using the procedure in the first example above. (See the Multi-level Sorting Lesson for an example of this procedure: Chapter 8, Lesson 1A, a new lesson.)

Replacement

Replacement involves the Divide operation. If you set up the calculation so that (x=y) divided by a selected field, when the calculation is activated, all occurrences of x are changed to y. In the **Replacement** function, ALADIN is case-sensitive, so that you are able to replace capital letters with lower case and vice versa.

If you set up the calculation so that the selected field is divided by (x=y), the calculation will change only the first occurrence of x to y.

If you would like to search and replace all occurrences of a character that occurs several places within a field, and in more than one record, follow these steps:

Example:

You want to remove all occurrences of a $ and replace it with nothing, so the $ is deleted and no space is left. (Try this example with the $ on a non-key field, i.e., the City Field of the CUSTOMER File in the CAR data base.)

Record 1   Comment: $20,000 $10
Record 2   Comment: $.01 $42.34$2
Record 3   Comment: $450 $16.82

- From the main ALADIN Command Menu, choose the Calc Module, then Define. Go to the Comment Field and type $=Return (i.e., carriage return).

- Go back to the Comment Field and select it. Choose the Divide option.

- Go back to the Comment Field and select it. Choose the Store option. Press FINISH and answer, **Yes**, you're done. (You could save the calc now if you wanted to.)

- Press F1 to return to the main Menu. Press SRVICE, VARS, 6 and 9 to turn the Global switch ON and Info OFF. Press Space Bar to exit the VARS line. Choose **Data**, answer **Yes** on using your calculation, then choose **Change**. Answer **Yes** to changing all the records in this way. After processing is complete, go into Data. View to make sure all the $ are gone, or define and generate a report, being sure to select the Comment Field.

Report Sub-totals

If you want to set up a grouping within the Report Module on a certain field so that every time the first character on the field changes, ALADIN will give you a Sub-total on another field, go into Report.Define and move to the field which will be used for Sub-total groupings (e.g., the Manufacturers' Field for Sub-totals on List Price Field). Select the field, then press Space Bar several times to create space between the field listings. Move back to this field and press ! so that the report will be sorted on this field. Press the Space Bar once, then press Return. Then move to the summation field and press + (not the caret key).

This will set up a grouping on a field, say, the Manufacturers' Field, such that every time the first letters of the manufacturers' names change (e.g., you go from "Audi" — which starts with "A" — to "BMW" — which starts with "B"), ALADIN will give you a Sub-total on the List Price Field.

This procedure works with any number of spaces across a field. For example, if you wanted the Sub-total every time the first 25 letters changed, you would press !, then Space Bar 25 times, then press Return. In this way, you could get Sub-totals for stores in different locations, all of which have the same name:

Pioneer Chicken Milpitas
Pioneer Chicken San Mateo

Report Generation — Turning INFO Off

If you do not want the usual information displayed at the top of the report listing ("Display of the data records", etc.), turn the INFO Switch OFF at the VARS Line.

Space Bar To Clear Screen in DATA.ENTER

In Data Enter when you enter a value on a key field for which there is a duplicate key, a formerly entered record appears and you are asked about using this record If you do not want to use a record as a template, press Space Bar in response to the prompt. All fields except the key field will be cleared.

Statistics

Ck Statistic, Chi-Square Statistic, Correlation Coefficient

In the Statistics Module, Ck is a statistic related to the Chi-Square statistic (adjusted for number in the sample). The value of the Chi-Square statistic is directly proportional to the size of the sample. The Ck statistic extracts this dependency. The Degrees of Freedom and Level of Significance shown on the table are related to the Chi-Square statistic. Rg is correlation coefficient.

Mean

In order to get a mean on the data in Statistics, go to the field of concern and press U for Ungrouped, A for Accumulation, and S for Single-dimensional analysis, or use the corresponding Function Keys. (Note the counter in the lower left corner, which changes from "F, G" to "A, U".) Press the FINISH Function Key, then EVAL. When prompted for the Group Table, press Return.

The analysis will be performed. When you request output, you will see the Sum, Min, Max, and Mean (vertical) on the data. (The lesson in the Tutorial shows you how to get a mean on groups.)

You may request before any type of selection different values than the F,G defaults: "F" is for Frequency of Occurrences, "A" is for Accumulation (formerly called Total), "G" is for Grouped data in accordance with defined Group Table, and "U" is for Ungrouped data (Group Table not used).

Mean and Standard Deviation

To get a mean and standard deviation on the data for one or two-digit fields, go to the field of interest and press the SINGLE Function Key, then the FINISH Function Key. Press EVAL and when prompted for the Group Table, press Return. The analysis will be performed. When you request output, you will see the Mean (MVh) and Standard Deviation (SDh) for the data.

On fields of more than two digits, set up a Group Table for every potential value in a range of values. (You can have up to 65 separate groups in a single Group Table definition. Even if there is not an observation for every value in the range of values, you need to set up a Group Table for every value.) Save the Group Table. Go into Statistics.Define, move to the field of concern and press the SINGLE Function Key, then the FINISH Key. Save the statistical definition for later use.

Press EVAL and type in the name of the Group Table when prompted. The analysis will be performed. When you request output, you will see the Mean (MVh) and Standard Deviation (SDh). If you have set Group 1 equal to a score of 1, Group 2 equal to a score of 2, etc., the Mean and Standard Deviation shown will be valid for data as well as groups. If you have set Group 1 equal to a score of 25, Group 2 equal to a score of 26, etc., you must add, in this example, 24 to the Mean (your minimum score of 25 minus 1 for Group 1).

Maximum Records in Statistics

The maximum number of records which can be analyzed is 32,767. If you have more than 32,767 records in your data base, you will need to define a query to limit the number of records analyzed.

Description of Backspace Key Operation in ALADIN

Destructive

ALADIN-INIT

—Typing in aladin i
—Typing in date
—Typing in name of relational system, UserID, and Password
—When defining a relational system, typing in file and field names, no. of records per file, field definitions (repeating, type, length, P)rotected, K)ey, B)ranching, branching file names).
—Typing in disk block allocations

ALADIN SYSTEM (EXEC)

—Typing in aladin s
—Typing in date
—Typing in name of relational system, UserID, and Password
—In Query, Calc, Group, and Stats, typing in the file reference names under which a definition should be saved.

Non-destructive

ALADIN SYSTEM (EXEC)

—On Screen Forms (e.g., when typing in data in Data, Query, Calc, and Group), the backspace does not appear to be destructive because the characters still remain as you backspace over them. However, if you type in an entry, then backspace over it and replace only the first two characters (meaning to leave the rest as they were), then press Return, the characters after and including the character the cursor was on when you pressed Return disappear

Example.

You enter 00002
You backspace and change the entry to 00202. The cursor is on the third 0
from the left: 00202

You press Return.
The last two digits disappear.

If you want the last two digits to remain, you should press the right arrow until
you have passed through all letters in the entry, then press Return.

The left arrow key works the same as the backspace key.

Additional information:

The right arrow key will move from one field to another when you are on a
screen form, unless you have already started typing an entry in that field. In
that case, the right arrow moves through the entry on the field, one character at
a time. (This is not true for Date, Decimal, Integer or Money fields. The right
arrow will not move through them, even after you have started typing within
the field.)

Once you are within a field, the down arrow key will insert a space and the up
arrow key will delete a space. These functions can also be accomplished by
Escape 7 and Escape 8, respectively.

ALADIN™

Relational Problem Solver

PART III
TUTORIAL

INTRODUCTION

In Part III of the ALADIN User Manual, you will learn how to use the various modules and special features of ALADIN. Because the Query, Calculate, Statistics, Report and Word Processing Bridge Modules can be used individually or in combination, ALADIN is capable of resolving a wide variety of problems in the diversified world of business and industry. The exercises included in this Tutorial are designed to introduce the new ALADIN user to the terms, concepts and applications of the system and to provide a comprehensive framework for future productivity, user involvement and business efficiency.

To get the most out of this section, the first question to ask is:

Why do you need ALADIN?

The answer is clear if you have ever found yourself in one of these situations:

IT'S A QUARTER TO FIVE ON CHRISTMAS EVE AND YOUR BOSS — EN ROUTE TO A FIVE-THIRTY PLANE — SUDDENLY GETS A WHIM AND SNAPS, "I WANT A STATISTICAL PRINT-OUT AND ANALYSIS OF ALL MALES OVER 40 WHO WERE BORN DURING A FULL MOON IN MILWAUKEE AND WHO ARE CURRENTLY THREE MONTHS LATE IN THEIR HOUSE PAYMENTS. AND HURRY IT UP, CRATCHIT, I HAVEN'T GOT ALL DAY . . ."

A challenging task, of course, considering that the company has over 2,000 clients whose records are stored in 34 file drawers kept in two separate rooms located at opposite ends of the building. But relax! With ALADIN you can save your trackshoes, eyesight and sanity. The Query, Statistics and Word Processing Bridge Modules enable you to set up queries, access records that meet defined criteria, set up statistical analyses, incorporate graphics and redirect the output to a printer for hard copy and distribution. And all in time to hand a finished product to your boss on his way out the door, straighten up your desk and get home for Christmas Eve dinner.

IN THE MIDDLE OF ENTERING AND CHANGING SOME DATA IN YOUR RELATIONAL SYSTEM, YOU ARE MOMENTARILY OVERCOME BY AN ATTACK OF AMNESIA. YOU STARE AT THE MONITOR AND THE KEYBOARD AND REALIZE THAT YOU DON'T HAVE THE FOGGIEST IDEA WHERE YOU ARE IN THE SYSTEM OR WHAT YOU SHOULD DO NEXT. AFTER MUCH RUMMAGING, YOU FIND THE INSTRUCTION BOOK THAT CAME WITH YOUR COMPUTER AND ENDEAVOR TO LOOK UP THE APPROPRIATE CHAPTER. YOU FINALLY FIND IT, ONLY TO DISCOVER THAT THE TEXT RESEMBLES THE ORIGINAL DRAFT OF PLATO'S *REPUBLIC*. YOU LOOK AROUND FOR SOMEONE TO TRANSLATE IT INTO SIMPLE ENGLISH FOR YOU . . . AND DISCOVER THAT EVERYONE HAS TAKEN AN EARLY LUNCH.

The prompts, menu selections, and "Street Signs" throughout the ALADIN system take the guesswork out of "What shall I do next?" And the readily accessible HELP screens give you on-the-spot assistance. They can, for instance, give you short definitions of the various Control Functions and Menu Options, enabling you to review the available choices on the screen before actually selecting one for implementation. And because the text is written in easy-to-understand English, coupled with everyday examples and follow-up exercises, you don't have to be a computer whiz or fugitive from Star Trek to sit down and start using it. The Tutorial, in addition to taking you step-by-step through each module, also presents helpful hints, notes and short-cuts to save you time, inspire creativity and reduce errors. Warnings, where appropriate, are also included (useful information such as the detrimental effects of using your diskette as a coaster for your morning coffee).

HALFWAY THROUGH TWO HUNDRED RECORDS THAT YOU HAVE BEEN FURIOUSLY TYPING SINCE ONE O'CLOCK IN THE MORNING, YOUR TWO SMALL CHILDREN AND FAMILY DOG CHASE THE FAMILY HAMSTER THROUGH THE KITCHEN AND UNDER THE KITCHEN TABLE. DURING THE ENSUING CHASE, YOUR POWER CORD BECOMES DISCONNECTED FROM THE OUTLET, RETURNING ALL OF YOUR DATA ONCE MORE TO THE RECESSES OF THE STRATOSPHERE. YOU ARE MORE THAN A LITTLE UPSET.

ALADIN takes into account that small children, family dogs and family hamsters are not always careful around your work space. Whether you are entering data in a file, defining a query, storing a calculation or composing award-winning text, ALADIN has a safety storage feature that can ensure that you will not lose more than one data record in the event of a power or hardware failure. And with prompts such as "Remove this record?," "Update Directory?" or "Discard old definition?" ALADIN offers you a chance to change your mind and/or gracefully exit.

"STOP THE PRESSES!" THE EDITOR BARKS. THE PRESSES IMMEDIATELY COMPLY. "GET ME THAT FEATURE CLIP WE DID THREE YEARS AGO ON ROSCOE JBOBBASALOSOVITCH, THE CALLIGRAPHER FROM SOUTHWESTERN RURAL RUMANIA." "RIGHT, CHIEF," YOU REPLY, WASHING DOWN THE LAST OF YOUR BOLOGNA SANDWICH WITH LUKEWARM COFFEE (A REPORTER'S LIFE IS NOT ALL GLAMOUR). "AND HOW DO YOU SPELL THAT?" YOU ASK, BUT THE EDITOR IS ALREADY DOWN THE HALL IN PURSUIT OF THE NEXT SCOOP. YOU RACK YOUR BRAIN ON ALL POSSIBLE SPELLINGS, WONDERING IF YOU'LL FIND YOUR MAN IN TIME FOR THE MORNING EDITION.

With ALADIN, you can save all that time on brain-racking by using Wild Cards and letting the system search FOR you. It takes, for instance, far less time to type in ?Bob? or Roscoe? and let ALADIN do the rest. Or, for instance, bypass spelling completely and set up a query to search for Famous Rural Rumanians or Foreign Calligraphers or Features on Foreigners. With ALADIN's speed of access and retrieval, you'll have the story on the editor's desk faster than a speeding bullet.

YOU WERE BUSY AT THE BUFFET SAMPLING THE CRAB DIP AND REFILLING YOUR CHAMPAGNE GLASS WHEN YOU TURNED AND DISCOVERED THAT THE ATTRACTIVE STRANGER WITH WHOM YOU HAD BEEN DANCING HAD JUST VANISHED INTO THIN AIR. CONCERNED THAT SHE MIGHT MISS THE SHOE SHE LEFT ON THE VERANDA, YOU ANX-IOUSLY QUERY YOUR FELLOW PARTY-GOERS, WHO BABBLE NONSENSICAL THINGS ABOUT TWO-DOOR PUMPKINS AND DAPPLED MICE. YOU DECIDE TO GENERATE A PERSONAL-IZED LETTER TO ALL 4,117 MAIDENS WHO LIVE IN THE NEIGHBORHOOD IN THE HOPES OF FINDING MS. RIGHT. THE ONLY PROBLEM, OF COURSE, IS THAT — AT THE RATE YOU TYPE — THEY WON'T BE READY FOR MAILING FOR THREE YEARS. AND WHO KNOWS? — BY THAT TIME SHE MAY HAVE MOVED AND TAKEN A JOB AS A STATE WORKER IN MILPITAS, OUT OF YOUR LIFE FOREVER . . .

With ALADIN, the solution is literally at your fingertips. The power and flexibility of the system comes from its ability to interface with other application packages. For instance, you can combine multi-level query selections to isolate a specific group of people from the relational system, produce a matrix letter with your word processor, save it as a textfile and perform a mail merge with ALADIN's Word Processing Bridge. And while you're waiting for the 4,117 replies to pour in, you can use the ALADIN Calculate Module to determine drawbridge depreciation, raise taxes on the serfs by 17% and project labor and shipping costs for the armor factory. Or, you can incorporate spreadsheets produced with other software packages and saved as textfiles into a report for all your knights-in-armor. You can even design a time-saving "script" of commands for ALADIN to perform automatically while you're off slaying dragons or competing in archery tournaments.

And that's why you need ALADIN, the system that takes the mystery out of the magic and makes your data base management problems disappear.

Speaking of disappearing acts, it would be a good idea at this point to make sure that you have made copies of the ALADIN diskettes you received in this package. (Your computer handbook will tell you how to do this.) As you prepare diskettes of your own in the future, you'll discover that it's a wise practice to make back-up copies of your work. You just never know when some klutz with a chocolate malt will come along and spill it all over your only diskette that lists the names and addresses of Soviet agents residing in Parma, Ohio.

After you make your copies, you can return to this page. Do not turn it, however, UNLESS you have read Part I and Part II of the User Manual first. If you dare to smirk, ignore this warning and skip over the very important information contained in those two parts, you will be entering this Tutorial at your own risk . . . .

TUTORIAL TABLE OF CONTENTS

Chapter 1: BASIC OPERATIONS

Lesson 1: Becoming Familiar with ALADIN

LESSON OBJECTIVE   : To learn the basic operations of ALADIN
through a short hands-on session.

REQUIRED TIME   : 5 to 10 minutes.

MATERIALS REQUIRED : ALADIN Plus diskette and ADI Demo
and Examples diskettes.

1) Refer to the START-UP procedure and the special instructions
immediately below:

2) In this lesson, you will be working with an already existing data
base; therefore, select that option (Work with an Already Existing
Data Base).

3) When ALADIN prompts you for the name of your relational system,
type CAR and press [RETURN].

ALADIN will then prompt you for Userid.

4) Type ADI and press [RETURN].

You will next be asked to enter your Password.

5) Type ADI and press [RETURN].

This sequence of steps will tell ALADIN to recall the CAR Relational
System (a previously defined data base) from the diskette and prepare it
for display on your screen.

The names that will then appear on the screen under the Userid and
Passwd are related files within the CAR relational data base. In this case,
there are three such "filing cabinets" of information: SPECS, DEALER,
and CUSTOMER.

The SPECS (specifications) are related to the DEALER who sells that
model of car and to the CUSTOMER who buys that kind of car.

These types of relationships are the basic building blocks of relational data bases. Let's take a closer look at the data base ALADIN has just recalled for you.

The CAR Relational System consists of the following:

SPECS ⟶ A file containing information about a car's specifications, i.e.

Manufacturer
Model
List Price
Maximum Speed
Fuel Consumption
etc. . . .

DEALER ⟶ A file containing information about the car dealers, i.e.

Name
Address
Cars they sell
etc. . . .

CUSTOMER ⟶ A file containing information about the customer who bought a car, i.e.

Name
Sex
Age
Address
Make or Model of Car Purchased
etc. . . .

At the bottom of the screen you see the ALADIN Command Menu. The list below summarizes the options that are available to you in the ALADIN Command Menu (and remember from what you learned in Part II of this manual that although all these options are available, not all of them appear on your screen at once):

Done   : This command tells ALADIN you are finished for the time being with the current relational system.

Data   : This command lets you enter, change, find, display or remove information within your relational system.

Report   : This command lets you generate reports and lists.

Query   : This command lets you select from your ALADIN relational system groups of records that meet certain criteria.

Calc   : This command lets you set up free-form spreadsheet calculations, modify the data in your data base, or establish multi-level sorting criteria.

Group   : This command lets you organize your data into groups for use with the Statistics Module.

Statistics   : This command activates ALADIN's Statistics Module, which will give you information on mean, standard deviation, chi-square, regression and correlation in absolute, percent or graphic terms.

Word-Proc : This command lets you fill in "forms" from your relational system, or combine ALADIN records with word processing.

Info   : This command gives you various details about your files — the extent to which your relational system is filled, a listing of files in your relational system, and more.

Service   : This option helps you perform "housekeeping" on your relational system.

Help   : This option assists you with the task at hand.

See the QUICK REFERENCE CARD and Reference Guide for more information on these options.

6) Choose the Data Module.

At the top left hand side of your computer screen is a status line. This "Street Sign" will tell you the status of your session with ALADIN.

The "Street Sign" should read:

CAR.SPECS (Console:, Console:) ($-$ $-$ $-$)

The "Street Sign" is telling you that you are in the CAR relational system, in the Specifications File.

(Console:,Console:) This tells you that you're using the Keyboard for Data Input and the Screen for Data Output:

($-$ $-$ $-$) is a status indicator. " $-$ " is OFF and " $+$ " is ON.

The first " $-$ " tells you if the Query Module of ALADIN is OFF (or ON) for Data Input.

The second " $-$ " tells you if the Query Module of ALADIN is OFF (or ON) for Data Output.

The third " $-$ " tells you if the Calculate Module of ALADIN is OFF (or ON).

Within the Data Module you have just selected, there are several options available.

Aladin : Leave the Data Module and return to the ALADIN Command Menu.

Enter : Enter a new record into an ALADIN relational system.

Change : Change an existing record in your relational system.

Remove : Remove an existing record from your relational system.

View : View the contents of an existing record.

Service : Perform "housekeeping" on your relational system.

Help : Receive assistance with the task at hand.

7) Choose the View option from the Data Command Menu.

The "Street Sign" now has an additional element:

CAR. SPECS (Console:, Console:) (− − −)   DATA. VIEW

CAR SPECS (Console:,Console:) (---)   Data.View
_____
                        Manufacturer:>_____

                            Model:_____

Horse_Power_in_PS: ___   Volume_of_Engine_in_CM: 1997
Maximum_Speed_in_MPH: ___ Acceleration_time_from_0_to_60: 07.7

Fuel_Consumption___City_Highway_HS: ___ ___ ___   Gasoline_Type: .

Five_Gear_Model_Available: .   Automatic_Transmission_Available: .

Number_of_Doors: .   Sun_Roof_Available: .

Colors_Availiable: ....
                   ....
                   ....
                        List_Price $ ____

This addition tells you that you are in the Data Module, using the View function.

The cursor will now be resting on the first FIELD in the SPECS (specifications) FILE.

Manufacturer: <cursor rests here>_____
Model: _____

etc. . . .

8) Press RETURN.

The first car RECORD will be displayed.

9) Press RETURN five or six times in rapid succession.

ALADIN will display succeeding records in "ascending" order, i.e., A,B,C,D. . . or 1,2,3,4. . .

Getting Around the Screen
Mask Control

This exercise will show you the rapid access method ALADIN uses to recall data from the system.

In order to move to different fields within the SPECS screen, you will use the cursor control keys. These may be called "arrow keys" or "vector keys." They control the up, down, left and right movement of the cursor.

10) Press the right arrow key once.

   The cursor should now be resting on the Model: _____ Field.

11) Press ⎡RETURN⎤ five or six times in rapid succession.

12) Now move the cursor all the way to the bottom of the SPECS screen by pressing the down arrow key once OR by pressing the right arrow key several times until the cursor rests on the List Price: _____ Field.

13) Press ⎡RETURN⎤ five òr six times in rapid succession.

   This fast access to data can be made on any "Underlined" Field. Underlined Fields are called KEY FIELDS. (Because some fields' data completely fills the field, you can only see their underlines during the very brief pause between records — but in real work, you'll know which are Key Fields because you'll be the one who made them Key!)

14) Now move the cursor all the way to the top of the SPECS Screen by pressing the up arrow key once OR by pressing the left arrow key several times until it rests on the Manufacturer: _____ Field.

15) Type the following in the Manufacturer's Field: mit?

   Don't be afraid to type over existing data. As you enter new data in the selected field, it will replace whatever was typed in that field before. These entries, by the way, may be typed in upper- or lower-case letters.

The entry that you just typed, "mit?", is an example of the use of WILD CARDS by ALADIN. If you are unsure of the correct spelling of an entry, you can search with Wild Cards in the following way:

> ? matches any number of characters.
> ! matches any one character.
> # matches a single numeric character among 0..9.
> $ matches a single alphabetic character A..Z or a..z.

For example:

> MIT?   matches MITSUBISHI, MITCHELL, MIT,
>   and MIT1a.
> V!CTOR   matches VICTOR and VECTOR
>   but not VICTORIOUS.
> TURBO ### matches TURBO 161 and TURBO 175
>   but not TURBO 161a.
> TURBO ##$ matches TURBO 61a and TURBO 71B
>   but not TURBO 161.
> !A?Y   matches HAILY, HALEY, BAILY and
>   BALEY.

16) Press ⌐RETURN⌐.

The data record for MITSUBISHI will be displayed.

17) With the cursor resting on the Manufacturer's Field, type the following: de?

Again, you are using Wild Cards in your search, this time to find the data record for DE LOREAN.

18) Press ⌐RETURN⌐.

The data record for DE LOREAN will be displayed.

19) Using the down arrow or right arrow key move the cursor to the List Price Field.

20) Type the following: 15000 and press ⌐RETURN⌐.

The first data record for cars costing between $15,000.00 and $15,999.99 will be displayed.

Look at the bottom left side of your computer screen. You will see:

1 : 3 — > List Price: 15000

Here, the second number (the 3) shows the total number of data records that meet the Wild Card criterion of "15?", while the first number (the 1) shows which of those records the one you're looking at is (that is, this is the first of a total of three records that meet the criterion of beginning with "15").

21) Press RETURN again.
The prompt at the bottom of the screen will now display:

2 : 3 — > List Price: 15000·

This is the second data record for cars costing more than $15,000 but less than $16,000.

22) Press RETURN again.
The prompt at the bottom of the screen will now display:

3 : 3 — > List Price: 15000

This is the third and final data record for cars costing $15,000 but less than $16,000.

23) Using the arrow keys, move the cursor to the Manufacturer's Field.

24) Type the following: Fer? and press RETURN.

The first Ferrari will be displayed.

"Jumping" To Different Files — True Joining

Your next step will be to "jump" to another file. This control function in ALADIN allows you to access other "file folders" within your relational system "filing cabinet."

25) Choose the "Jump" Control Function or press ESC 3 .

At the bottom of your screen you should now see the following:

Data file: 1: SPECS, 2: DEALER, 3: CUSTOMER

These are the files available to you to "jump" into from the Manufacturer's Field.

26) Press the number "2." (CAUTION: If your computer has function keys, be careful NOT to press them now; you want the number 2 instead.)

ALADIN will now access the DEALER file and display the first Ferrari dealer in the system.

The "Street Sign" at the top of the screen now reads:

CAR.DEALER (Console:,Console:) (– – –)   DATA. VIEW

27) Press RETURN five or six times in rapid succession.

As you can see, it does not matter what file you are in — access time to your data is quick and easy.

28) Using the arrow keys, move the cursor to the Manufacturer's Field (if it is not already there).

29) Type the following: roll?

A Wild Card is being used here to search for "Rolls Royce."

30) Press RETURN

The first Rolls Royce dealer in the system will be displayed.

31) Choose the "Jump" Control Function or press ESC 3 .

At the bottom of your screen you should now see the following:

Data file: 1: SPECS, 2: DEALER, 3: CUSTOMER

These are the files which are available to "jump" into from the Manufacturer's Field in the DEALER File.

32) Press the number "1."

ALADIN will move you into the SPECS File and you will see the specifications for the first Rolls Royce in the system.

33) Choose the "Jump" Control Function or press ESC 3 .

At the bottom of your screen you should now see the following:

Data file: 1: SPECS, 2: DEALER, 3: CUSTOMER

34) Press "3."

ALADIN will move you into the CUSTOMER File and you will see the first customer in the system who owns a Rolls Royce.

35) Using the arrow keys, move the cursor to the Customer Name: __ Field.

36) Type ?Carson and press RETURN .

One of the cars Johnny Carson drives will be displayed.

37) Select the options that will return you to the main ALADIN Command Menu (the one with Data, Report, Query, etc.).

This ends the Lesson 1 demonstration. If you'd like to continue, go ahead to the next lesson. If you're a little overwhelmed and would like to take a break to think about all of this, select the option to exit and follow the procedures in the START-UP section on how to exit from ALADIN.

Although you have only used a small part of ALADIN in this introductory lesson, the easy-to-use functions and the potential power of the software are just the tip of the iceberg. As you work through each section of the Manual, you will become more comfortable with ALADIN and start exploring new ways to use the system, whether it's to streamline your office . . . or to simplify your life.

Optional Information

ALADIN uses B-Star-Plus Trees as a data access method. B-Trees were developed by Dr. Bayer at the University of Munich in West Germany and refined by Dr. August Wegemann at the Advanced Data Institute in Karlsruhe, West Germany.

Regardless of how many records are in your system — two to a million or more — access time to any record will be less than one second.

Chapter 1: BASIC OPERATIONS

Lesson 2: Familiarization with New Terminology

LESSON OBJECTIVE : To learn the basic terminology associated with ALADIN and relational systems in general.

REQUIRED TIME : 5 to 10 minutes.

MATERIALS REQUIRED : None.

Here are some definitions that will help you understand the concepts and principles behind the ALADIN Relational Problem Solver.

Relational Problem:

A "real world" problem, application, case or situation that has one or more components that may be related to each other.

Example: The business of running a retail store is the Relational Problem. The components are: Order Entry, Payroll, Inventory Control, etc.

A Relational Problem is usually three dimensional (like the real world) although it may be two dimensional (like relational data bases).

The ALADIN software from ADI solves most relational problems in a minimum of time by setting up a "Relational System."

Relational System:

> A group of files that can, together, provide a solution to a real-world problem.

> A representation of a "real world" problem, application or situation which has been transferred to a computer in order to solve, streamline, or automate it — thus saving time and money.

> A relational system may be "static", i.e., put data in, get data out — a simple relational data base.

> Example: A library card catalog providing information concerning the author, publisher, title, and classification of the book.

> The information that comes out of the system does not affect any other part of the system.

> A relational system may be "dynamic", i.e., data entered may affect, impact or cause an action to take place within the system.

> Example: A computerized quality control system in a nuclear power plant may shut down the reactor if data received is beyond tolerance levels.

> Your ALADIN software is capable of creating, maintaining and operating both static and dynamic relational systems.

Relational Data Base:

> As used in this Manual, a pool of information created by logical or natural associations between two or more items with a defined connection.

Schema:

> A schema is a description of a relational system's data in terms of files, records, fields, and the relation between items of data contained in these elements. A schema initially defines the structure of a data base, and then makes the description available to the users of the data base.

File:

Files are groups of similar records within a data base. (Think of them as manila folders within a filing cabinet.) The similarity is based on the records using the same form. Note that a file will typically consist of many different records, but only a single form. The records in a file should be ordered according to one or more of their fields, so that individual records are easy to retrieve. Fields that are used for this ordering are called key fields (see below).

The ALADIN relational system schema descriptions are designed to be simple and concise definitions of how your relational system should be built. Every schema definition begins with the word ".BASE" followed by the name of the relational system (e.g., CAR) and an equal sign (=). Following the base name is a list of the various relational files that comprise the data base or relational system. The relational name can be as long as six characters, and each file name can be up to sixteen characters in length.

Field:

A single item of information that makes up part of what we want to know about an object. A field may be represented as a blank to be filled in on a form.

Key Field:

An otherwise ordinary field within a form that is used for ordering the records that use that form. A particular record within a file can be found by "looking it up" according to a key field. ALADIN can perform this look-up automatically. Key fields can also be used to create relations between separate files. In other words, a key field can branch to files with the same key field. However, these files must be defined as part of the same relational system. For each field you create, you will be asked if you want it to be a key field.

NOTE:

The first field in every file must be a key field, and is called the Primary Key Field.

Branching Field:

> When more than one file has been defined within your relational system, you will be asked, for each field, if you want that particular field to be a branching field. A branching field is one which forms part of a relationship with other files. It is also possible to branch to another field within the same file; however, the two fields involved must be identical in type and size and both must be key fields.

Form:

> A collection of information fields that describe an object. We create forms as a convenience to help standardize the kinds of information we collect about our objects. When a form has been filled out, we can say that we have a record for that object.

Record:

> A "filled-out" form. In other words, a number of data items that describe a particular object. A record differs from a form primarily in that the record is "filled-out" while the form is "empty." Records are groups of fields in a file.

Relation:

> A connection or "access-path" between two or more separate files that share a key field. These files must be defined as part of the same relational system.

Chapter 1: BASIC OPERATIONS

Lesson 3: Entering, Changing and Removing Data

LESSON OBJECTIVE : To learn how to enter and change data in ALADIN.

REQUIRED TIME : 10 to 20 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

LESSON OVERVIEW :

Between sixty and seventy percent of your computer's time will be spent just entering and changing data.

Almost forty percent of all the information typed from one data entry record is the same (or with minor changes) as most other data entry records. Because there is so much repetition involved, it is important to know how to enter, change and remove data efficiently.

EXAMPLE:

RECORD 456   RECORD 567

Last Name: FONDA   Last Name: FONDA
First Name: HENRY   First Name: JANE
Occupation: ACTOR   Occupation: ACTRESS
Address: Beverly Hills   Address: Beverly Hills
              California 90069   California 90069

Client Number: 10093   Client Number: 10094

RECORD 3287

Last Name: FONDA
First Name: PETER
Occupation: ACTOR
Address: Beverly Hills
              California 90069

Client Number: 10095

BENEFITS:

Redundant data entries cost time and money and may also increase the error rate.

If, for instance, you run a retail business that has a fairly regular clientele, you are constantly preparing records that reflect new purchases, credit limits, payments, etc. In addition, there are changes in names, addresses and telephone numbers, as well as additions and deletions as new clients discover your store and former clients move out of town. The ability to add, substitute, or remove only selected items from your files reduces the chances for error.

Rapidly disappearing from classrooms are worn-out gradebooks with scribbled pencil entries. Information containing student names, I.D. numbers, grades for assignments and exams, and attendance records can now be entered into a computer system, as well as comments, commendations and concerns, which can be retrieved for tutoring sessions or coursework reviews during the semester. Such uses of the system reduce the entry error rate, take less space to store than bulky gradebooks, are compatible with print-out systems for distribution to individual students, and reduce the chances of losing records on an entire class in the event the instructor gets off the cross-town bus and the gradebook doesn't.

1) Refer to the START-UP procedures and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select the option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press RETURN.

   ALADIN will then prompt you for Userid.

4) Type ADI and press RETURN.

   You will next be asked to enter your Password.

5) Type ADI and press RETURN.

6) From the ALADIN Command Menu, choose the Data Module.

   At the top left side of your computer screen is a status line. This "Street Sign" will tell you exactly where you are within ALADIN.

The "Street Sign" should begin:

CAR.SPECS

For this exercise, however, we want to be in the CUSTOMER File, as we will be entering, changing and removing customer information in the Car relational system.

7) To choose the "Jump" Control Function, press ESC 3 .

Remember that Control Functions can be activated even when they are not displayed on your screen.

At the bottom of your screen, you should now see the following:

.Data file: 1: SPECS, 2: DEALER, 3: CUSTOMER

8) Press the number "3" to jump to the CUSTOMER File.

BE CAREFUL NOT TO PRESS FUNCTION KEY #3 IF YOUR COMPUTER HAS FUNCTION KEYS.

The "Street Sign" will reflect this change by now reading:

CAR.CUSTOMER

The following choices are available to you in the Data Module:
    Enter   : Enter a new record into an ALADIN relational system.
    Change   : Change an existing record in your relational system.
    Remove   : Remove an existing record from your relational system.
    View   : View the contents of an existing record.
    Service   : Perform "housekeeping" on your relational system.
    Help   : Receive assistance with the task at hand.
    Aladin or Quit : Leave the Data Module and return to
                    Command Menu.

9) From the Data Command Menu, choose the Enter Command.

The cursor should be resting on the Customer Name: _____
Field in the CUSTOMER Screen.

10) Type in your name and press RETURN .

NOTE:

On some computer systems the Backspace Key may not be accepted to correct an error. If this happens to you, use the left arrow key to backspace.

The cursor will have jumped to the City: _____ Field.

11) Type in the city where you live and press [RETURN].

12) Type in your state, age and sex. The cursor will again jump to the next field.

13) Type in the manufacturer of the car you drive and press [RETURN].

On the bottom right hand side of your screen ALADIN will prompt:

.Enter the record in this way?

14) If you have made no errors, answer by pressing "Y" for Yes.

If the data you have typed is incorrect press "N" for No. ALADIN will return you to the mask. Use the cursor control keys ([UP], [DOWN], [LEFT], [RIGHT] arrow keys) to move to the field that needs to be changed.

Skip over a field by using the cursor control keys.

15) When you have finished making any corrections, press the down arrow key or the right arrow key until ALADIN prompts:

.Enter the record in this way?

16) If everything is correct, press "Y" for Yes and continue to the next step.

Otherwise, press "N" for No and repeat the steps to enter new data.

Once you have entered the data correctly and pressed "Y" for Yes, ALADIN will automatically save your record on the disk. This is an important safety feature of the ADI software, and is unequaled in most other types of computer software — main-frame to micro.

After a new record is entered into the system, it is immediately stored. This ensures that in case of a power or other hardware failure you can never lose more than one data item.

After you have entered your new record, the CUSTOMER Screen will appear and the cursor will rest on the Customer Name: _____ Field again.

17) Press ⌈RETURN⌉.

The first CUSTOMER Record will be displayed.

In the bottom right side of your screen ALADIN will prompt:

.Use This Record?

If you wanted to use this record to pattern a new data entry you would press "Y" for Yes.

18) Press "N" for No and type: Bo?

19) Press ⌈RETURN⌉.

ALADIN will display the customer record information for BO DEREK.

Again ALADIN will prompt:

.Use This Record?

20) Press "Y" for Yes.

21) Move the cursor back to the Customer Name: _____ Field.

22) Type: John Derek and press ⌈RETURN⌉.

23) With the right arrow key move the cursor to the Age: _____ Field.

24) Type: 47.

ALADIN will automatically position the Cursor on the Sex: _____ Field.

25) Type: M.

ALADIN will automatically position the Cursor on the Manufacturer: _____ Field.

26) Press the down arrow key or the right arrow key until ALADIN prompts:

.Enter the Record in this way?

27) Press "Y" for Yes and the new record: John Derek, will be added to the system.

Further data entries for any relational system are made exactly the same way.

The CUSTOMER Screen will appear and the cursor will rest on the Customer Name: ＿＿＿＿＿＿＿ Field again.

28) Select the option that will return you to the Data Command Menu which offers you the choices of Enter, Change, Remove, View, ALADIN (or Quit).

29) From the Data Command Menu, choose the Change Command.

The CUSTOMER Screen will appear and the cursor will again rest on the Customer Name: ＿＿＿＿＿＿＿ Field.

The "Street Sign" will now read:

CAR.CUSTOMER (CONSOLE : CONSOLE) (　　　) DATA CHANGE

30) Type: Jerry? and press [RETURN].

The customer data record for former California Governor Jerry Brown will be displayed.

```
┌─────────────────────────────────────────────────────────┐
│ CAR.CUSTOMER (CON:,CON:) ( - - - )          Data.Change   │
│ ───────────────────────────────────────────────────────  │
│           Customer__Name:>Jerry Brown_____          │
│                                                           │
│           City: Sacramento..........   State: Ca          │
│                                                           │
│           Age: 42      Sex: M                             │
│                                                           │
│           Manufacturer:_____            │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│ ───────────────────────────────────────────────────────  │
│   1 :    1 - > Customer__Name: Jerry?      Use this Record?│
└─────────────────────────────────────────────────────────┘
```

31) Answer "Y" for Yes when ALADIN prompts if you want to use this record.

32) Check to see that your cursor is on the CITY: .... Field.

33) Replace Sacramento as his resident city by typing: Los Angeles and pressing ⌷RETURN⌷.

34) Press the down arrow key or the right arrow key until ALADIN prompts:

.Change the record in this way?

35) Press "Y" for Yes and the changes to Jerry Brown's data record will be made to the system.

The CUSTOMER Screen will appear and the cursor will rest on the Customer Name: _____ Field again.

36) Type: Deu? and press ⌷RETURN⌷.

The customer data record for new California Governor George "Duke" Deukmejian will be displayed.

37) Answer "Y" for Yes when ALADIN prompts if you want to use this record.

38) With the cursor on the City Field, replace Long Beach as his resident city by typing: Sacramento and pressing ⌷RETURN⌷.

39) Press the down arrow key or the right arrow key until ALADIN prompts:

Change the record in this way?

40) Press "Y" for Yes and the changes to the new Governor's data record will be made to the system.

Changes or modifications to already existing data records within any relational system are made exactly the same way.

The CUSTOMER Screen will appear and the cursor will rest on the Customer Name: _____ Field again.

41) Select the option that will return you to the Data Command Menu.

42) From the Command Menu, choose the Remove Command.

The CUSTOMER Screen will appear and the cursor will rest on the Customer Name: _____ Field again.

The "Street Sign" will now read:

CAR.CUSTOMER (CONSOLE:, CONSOLE:)(– – –) DATA.REMOVE

43) Type: Fon? and press RETURN .

The customer data record for the late Henry Fonda will be displayed.

44) Press the down arrow key or the right arrow key until ALADIN prompts:

.Remove record(s) ?

45) Press "Y" for Yes and the data record for Mr. Fonda will be removed from the system.

If you select "N" for No. ALADIN will not remove this record and you will be returned to the CUSTOMER Screen.

The CUSTOMER Screen will appear and the cursor will rest on the Customer Name: _____ Field again.

46) Select the options that will enable you to return to the main ALADIN Command Menu.

This is the end of the lesson. If you would like to stop at this time, select the option to exit and follow the procedures in the START-UP section on how to exit from ALADIN. If you would like to continue with this exercise, there are some practice exercises under FOLLOW-UP SUGGESTIONS.

Review Points:

Some of these points were introduced in the first lesson.

**"Wild Cards" can be used in any of the Data Functions: Enter, Change, Remove, and View.

**"Wild Cards" may be used on any underlined Key Field.

**"Wild Cards" save time because they allow fast access to the data via the B-Star-Plus Trees.

**You can save time in data entry by using existing data records as "templates" or "patterns" for new data entries.

**The "Street Sign" at the top left side of the screen lets you know where you are in ALADIN at all times.

**The "counter" at the bottom left side of the screen keeps track of the Wild Card that was used and the number of data records that fit that pattern.

You have now learned how to use the Data Module of ALADIN.

FOLLOW-UP SUGGESTIONS

1) Run through the lesson again for further practice.

2) Try entering your own customers, friends and co-workers into the CUSTOMER File.

3) Is your car in the SPECS File? How about your friends' cars? Add new cars into the SPECS File and new car dealers into the DEALER File.

4) Practice changing, removing and viewing the new data you have entered.

When you feel comfortable with your mastery of the Data Module, begin the next lesson.

Chapter 1: BASIC OPERATIONS

Lesson 4: Working with Query

LESSON OBJECTIVE   : To learn how to set up a simple query.

REQUIRED TIME   : 20 to 25 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

LESSON OVERVIEW   :

In the Data Module of ALADIN, we learned how to recall data records based on our requirements on an individual Field.

Example:

> When we typed "Mit?" in the Manufacturer's Field, we were looking for any record that met the pattern "Mit" plus any other characters.

Our criteria for selecting records were limited to a single variable.

Example:

> When we Typed "15?" in the List Price Field, we were looking for any records that were between $15,000 and $15,999 dollars.

At that time we were unable to make multiple level selections in the Data Module. For example, we could not find cars that cost less than ten thousand dollars AND go faster than 120 miles per hour.

However, the QUERY Module of ALADIN is designed to make use of multi-level selections, not only within an individual file, but including information from other files as well.

Example:

> Display all cars that are Mercedes-Benz (SPECS File) that are sold in Northern California (DEALER File) and list all the female customers who purchased them (CUSTOMER File).

You set up the pattern for these types of "queries" by working with a screen form. Each time you make a selection on a Field, ALADIN will prompt for the type of comparison you want to make. You can have up to 256 instructions in one query. Your computer hardware will be the only limitation.

Unlike the DATA Module, Query will not display the records immediately after you have finished defining your questionnaire. Query is designed to work as a "filter" for all the other Modules of ALADIN.

This means that you can return to the Data Module and call up individual records that meet your selection criteria, or you can design a report in the Report Module and get a complete listing of all qualifying data records. With the Query Module, you could sort client reports, first alphabetically by last name, second by amount of payment due, third by due date and fourth by products purchased.

In addition, Query works not only as a "filter" on data output, but also as a "net" in data entry, change or removal. Those data records that do not meet your selection criteria cannot be entered into the system:

Example:

> You can set up the query as a protection against spelling errors, format errors for engineering part numbers, etc.

Those data records which do not meet your selection criteria cannot be changed or removed from the system.

Example:

> You can set up the query as protection against unintentional modifications or removals, ensuring that only data records for a particular range of dates or times are changed or deleted, etc.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select the option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press $\boxed{\text{RETURN}}$.

ALADIN will then prompt you for your Userid.

4) Type ADI and press [RETURN].

You will next be asked to enter your Password.

5) Type ADI and press [RETURN].

6) From the ALADIN Command Menu, choose the Query Module.

The Query Module is used to define your "query," which will then affect the other modules of ALADIN. Within the Query Module, there are several options:

Define	:	Define a new query.
Save	:	Save your current query definition.
Recall	:	Recall a query that was previously saved.
View	:	Display the current query (if any) on current output device.
Service	:	Perform "housekeeping" on your relational system.
Help	:	Receive assistance with the task at hand.

7) From the Query Command Menu, choose Define.

The "Street Sign" should read:

CAR.SPECS (Console:,Console:) (− − −)   Query.Define

The SPECS screen should be displayed with the cursor resting on the Manufacturer's Field.


```
CAR.SPECS (CON:,CON:) ( − − − )                    Query.Define
_____

                    Manufacturer:_____
                    Model:LANCER 2000 TURBO_____

Horse__Power__in__PS: ___      Volume__of__Engine__in__CM: __
Maximum__Speed__in__MPH: __    Acceleration____time__from__0__to__60:___


Fuel__Consumption____City__Highway__HS: __ __ __      Gasoline__Type:

Five__Gear__Model__Available:      Automatic__Transmission__Available:

Number__of__Doors:                      Sun__Roof__Available:

Colors__Availiable: ........................ ........................
                    ........................ ........................
                    .................... ....
                    List__Price $: _____
_____
```

We want to set up the following definition for our query:

> We want all cars EXCEPT Hondas and Toyotas. We also want all cars capable of speeds of at least 100 miles per hour. In addition, we want all these cars to cost less than $15,000.00.

8) Type: Honda and press RETURN.

ALADIN will prompt with a Comparison Menu.

You will choose one of the following "comparison operators." It will be applied to the data value that you have just entered to form an "expression" as part of your Query. In general, records which satisfy the resulting expression will be selected by ALADIN.

The following list will help explain each "comparison operator:"

1: " = "	: The expression is satisfied when the value of the field is EQUAL TO the value you entered.
2: "<>"	: The expression is satisfied when the value of the field is NOT EQUAL TO the value you entered.
3: ">"	: The expression is satisfied when the value of the field is GREATER THAN the value you entered.
4: "< = "	: The expression is satisfied when the value of the field is EQUAL TO OR GREATER THAN the value you entered.
5: "<"	: The expression is satisfied when the value of the field is LESS THAN the value you entered.
6: " = >"	: The expression is satisfied when the value of the field is EQUAL TO OR LESS THAN the value you entered.
SPACE BAR	: The field is not compared with the value you entered. No action is taken.

9) Press the number "2" for NOT EQUAL since we want all cars except Honda. (If your computer has function keys, you can press the NOT EQUAL function key instead. Either way will work.)

10) Position the cursor on the Manufacturer's Field again.

As before, use the the arrow keys to control the location of the cursor on the screen.

11) Type: Toyota and press RETURN .

ALADIN will prompt you for the comparison.

12) Since we also want to exclude Toyotas from our selection, press the number "2" for NOT EQUAL in response to the prompt for a comparison operator.

Now ALADIN will ask you how to compare and "join" the two questions (or "form an expression") with the following prompt:

.Connectors

1: AND: An expression built with the AND connector is satisfied when the two connected expressions are BOTH true.

e.g.: Select cars costing more than $20,000 AND less than $30,000.

2: OR: An expression built with the OR connector is satisfied when EITHER ONE or BOTH of the two connected expressions are true.

e.g.: Select cars with 5-speed OR Overdrive transmissions (or both).

3: XOR: An expression built with the XOR (exclusive OR) is satisfied when ONLY ONE but NOT BOTH of the two connected expressions is true.

e.g.: Select cars with 5-speed or Overdrive transmissions but NOT both.

SPACE BAR defers the logical connection until later, overriding the normal "left-to-right" expression grouping. This has the effect of "parenthesizing" the most recent expression with an expression yet to follow.

NOTE:
You may view these options on your screen by choosing the "Help" option.

13) We want to exclude both Hondas AND Toyotas from the list. Therefore we select AND by pressing the number "1" (or the function key) for AND in response to the prompt.

14) Move the cursor to the Maximum Speed Field.

15) Type: 100.

ALADIN will make the [RETURN] automatically.

16) Since we are interested in cars that go at least 100 miles per hour, select 4: for GREATER THAN or EQUAL TO in response to the prompt for a comparison operator.

ALADIN will now ask how this new "question" fits in with the other two just asked.

Up to now we have selected cars which are NOT EQUAL to HONDA AND cars that are NOT EQUAL to TOYOTA. But we also want cars which go at least 100 miles per hour.

Is OR the correct expression? No, it is not, because it would allow cars which were either Hondas AND/OR Toyotas that went 100 miles per hour or more to be included in the selection criteria.

17) Since we still want to exclude Hondas AND Toyotas from the list, the correct response is made by selecting "1" (or the appropriate function key) for AND in response to the prompt:

.Connectors

18) Now move the Cursor to the List Price Field.

19) Type: 15000 and press [RETURN].

20) Since we want cars which cost less than $15,000.00, select "5" (or the appropriate function key) for LESS THAN, in response to the prompt.

ALADIN will now ask you how to connect this additional question to the others.

Is OR the correct response? No, it is not. It would allow any cars with maximum speeds of less than 100 miles per hour, costing less than $15,000, and Hondas or Toyotas to be included in our selection list.

21) The correct response is AND, so press "1" (or the appropriate function key) for AND, in response to the prompt.

Because we have exited the screen from the bottom side, ALADIN will now ask us if we have completed our selection criteria or if we would like to "jump" to another file and continue with the query.

At the bottom right side of the screen you should now see:

.Is your definition complete?

If you haven't finished your query, press "N" for No and ALADIN will return you to the screen.

When you want to end your query session press the right arrow or down arrow key until ALADIN presents you with the prompt:

.Is your definition complete?

If you want to "jump" to another FILE within your relational system, choose the "Jump" Control Function.

22) Because we have finished our query, press "Y" for Yes.

ALADIN will now display the query we have set up.

```
Select records meeting the following criteria

SPECS

                Manufacturer < > 'Honda'
        AND Manufacturer < > 'Toyota'
     AND Maximum__Speed__in__(MPH) > = 100
AND List__Price < '15000'




                                                          Query
```

23) Press the SPACE BAR to clear the screen.

ALADIN should now be displaying the Query Command Menu.

Once you have defined a query, it is stored in your computer's internal memory. As you enter other modules of ALADIN you will be asked whether you wish this selection criteria query to be activated.

If you wish to save the selection criteria query for later use, it must first be stored on the disk using the Save function.

You can bring back a query that has been saved by using the Recall function.

You can view the query that is active in the system by using the View function.

24) From the Query Command Menu, choose the Save Command.

ALADIN will prompt for the name you want to call this query.

25) Type: Q1 and press RETURN.

You can have up to six characters in the name of your query. Letters, Numbers, "_", "." can be used in the name. Example: Query1, Job_Q1, ACT.RE.

When setting up new queries, ALADIN may prompt:

.Discard previous selection criteria?

If this is the first query you have defined since your start-up, answer "N" for No, because there is nothing to discard in the internal memory of your system.

If you have defined other queries, press "Y" for Yes.

26) You have now finished the lesson. If you would like to continue practicing these techniques, see FOLLOW-UP SUGGESTIONS. If you would like to stop at this time, select the option to exit and follow the procedure in the START-UP section on how to exit from ALADIN.

FOLLOW-UP SUGGESTIONS:

1) Run through the lesson again for further practice.

2) Define the following queries:

Select cars which are either Porsches, BMWs, Audis, or Mercedes-Benz. Save this as Q2.

Select cars which begin with "A" and go faster than 90 miles per hour. Save this as Q3. (Remember you can use Wild Cards in the Query.)

Select cars which have "Turbo" or "GT" in them. Save this as Q4.

3) Make up your own queries.

Review Points:

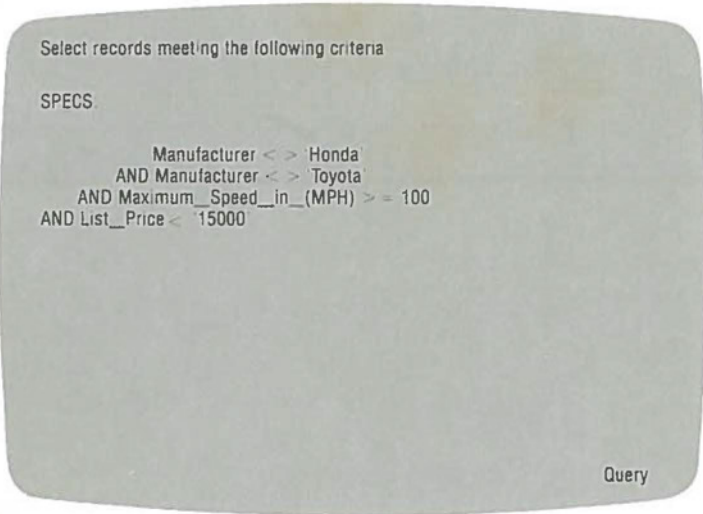**Use the the arrow keys to control the location of the cursor on the screen.

**When you want to end your query session, press the right arrow or down arrow key until ALADIN presents you with the prompt:

.Is your Query complete?

**If you haven't finished your query, press "N" for No and ALADIN will return you to the screen.

**If you want to "jump" to another file within your relational system, choose the "Jump" Control Function.

**Once you have defined a query, it is stored in your computer's internal memory. As you enter other modules of ALADIN you will be asked whether you wish this selection criteria query to be activated.

**If you wish to save the selection criteria query for later use, it must first be stored on the disk using the Save function.

**You can bring back a query that has been saved by using the Recall function.

**You can view the query that is active in the system by using the View function.

**You can have up to six characters in the name of your query. Letters, Numbers, "_", "." can be used in the name (no blank spaces). Example: Query1, Job_Q1, ACT.RE.

**If you would like to sort on one of the key fields when preparing a report, use the "!" as explained in the lesson on making reports.

When you feel comfortable with your mastery of the Query Module, begin the next lesson.

Chapter 1: BASIC OPERATIONS

Lesson 5: Making Reports

LESSON OBJECTIVES : To learn how to set up user-defined reports, including borders, headers, footers, subtotals and totals on numeric fields.

To learn how to activate a query selection for a report.

To demonstrate the speed of ALADIN in sorting and retrieving records even when Query has been activated.

To demonstrate how to request sub-totals and totals in a report.

To demonstrate how to specify special report formatting.

REQUIRED TIME : 30 to 45 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

OPTIONAL : Printer.

LESSON OVERVIEW :

In the Data Module of ALADIN, you learned how to recall data records based on requirements for an individual field. However, you were unable to view the contents of other files at the same time, or to select the individual fields that you wanted to appear.

You use the Data Module much like you would a filing cabinet. The "electronic" manila folders are the File screens.

You use the Reports Module to arrange the data from those files in a logical way.

In this lesson you will learn how to tailor reports to your needs, ensuring that only pertinent information is listed. You will also learn how to mix the contents of different files in your reports.

BENEFITS:

The Report Module of ALADIN will enable you to access selected information from individual fields and set up reports in a visually appealing form.

Suppose you wanted to print a report that would reflect women and minority hirings over a three-month period in each of the six departments of your company.

Because the Data Module of ALADIN does not allow you to see information from multiple files all at the same time, or to select individual fields for review, it would be a time-consuming process to view each of the files separately. The chances for error would also increase with this process, as the person extracting data for the report might accidentally set up a query for one field that is inconsistent with queries established for related fields.

Even if all figures from each of the departments were tabulated by hand and submitted to a coordinator for inclusion in the report, imagine the time that it would take to set up margins, measure columns and enter the data under the right categories. Again, the chances of entry error are high.

The Report Module of ALADIN not only scans the files for the information you wish to include and allows you to "jump" between files in your relational data base, but generates an easy-to-read visual display on the screen as well which can be directed to a printer for hard copy and distribution.

Let's say that you're in the skin-diving business and your newest product on the market is a fuchsia wet-suit (chemically treated with "Shark-Off") and matching flippers. With the Report Module, you could produce a report listing all scuba customers alphabetically state by state. For each state, you could obtain a Sub-total on the dollar volume for products sold; at the end of the state-by-state listing, you would receive a Total dollar amount for all states. The report could have borders at any spot you choose and could be double-spaced. It could then be printed out with any margins you desired, page numbers (or no page numbers), and appropriate headers and footers. With the Query and Word Processing Bridge Modules, you could send this report (including a personalized greeting) to those dealers across the United States who had done over $1,000,000 of business in the last year. You could do all of this and much, much more because YOU HAVE ALADIN!

1) Refer to the START-UP procedure and the special instructions im-
   mediately below:

2) In this lesson, you will be working with an already existing data
   base; therefore, select that option (Working with an Already Existing
   Data Base).

3) When ALADIN prompts you for the name of your relational system,
   type CAR and press [RETURN].

   ALADIN will then prompt you for your Userid.

4) Type ADI and press [RETURN].

   You will next be asked to enter your Password.

5) Type ADI and press [RETURN].

6) From the ALADIN Command Menu, choose the Query Module.

   Your computer screen should now be displaying the Command
   Menu in the Query Module of ALADIN.

   With the Query Module you can ask ALADIN to select groups of
   records that satisfy the "query" or selection criteria that you estab-
   lish. The Query Module is used to define your "query," which will
   then affect the other modules of ALADIN. You have the following
   commands available:

   Define : Define a new query.
   Save   : Save your current query definition in a disk file so you
             can recall it later. ALADIN asks for the name you wish
             to give it.
   Recall : Recall a query that was previously saved.
   View   : Display the current query (if any) on the current output
             device.

7) From the Query Command Menu, choose Recall.

   If ALADIN asks if you wish to extend your definition, type "N"
   for No.

   ALADIN will ask you for the name of the query you wish to recall.

8) Type: Q1 and press RETURN.

ALADIN will display the selection criteria defined in "Q1."

"Q1" has now been loaded.

9) Choose the option that will return you to the main ALADIN Command Menu.

10) From the ALADIN Command Menu, choose the Report Module.

Since you have set up a query and it is loaded in the internal memory of the computer ALADIN will prompt:

.Do you want to use your Query?

11) Press "Y" for Yes.

Your Computer screen should now be displaying the Command Menu in the Report Module of ALADIN.

The Report Module allows you to create reports and listings from the information stored within your data base.

You have the following commands available:

Define   : Define a report format.
Save   : Save your report format on disk so you can recall it later.
Recall   : Recall a report that was previously saved.
View   : Display the current report format.
Generate : Generate a report using the current format.

12) From the Report Module Menu, choose Define.

The "Street Sign" should now read:

```
CAR.SPECS (CON:.CON:) ( + + − )                          Report Define
───────────────────────────────────────────────────────────────────
              Manufacturer: _____
              Model: _____

Horse__Power__in__PS:____        Volume__of__Engine__in__CM: ____
Maximum__Speed__in__MPH:__ Acceleration__time__from__0__to__60:_____
Fuel__Consumption__City__Highway__HS:____ ____ ____ Gasoline__Type: .
Five__Gear__Model__Available:     Automatic__Transmission__Available: .
Number__of__Doors:                        Sun__Roof__Available: .
Colors__Available:     ......  .......  .......  .......
                       ......  .......  .......  .......
                       ......  .......

              List__Price $: _____


───────────────────────────────────────────────────────────────────
>1< ...........................................................
```

The SPECS screen should now be displayed and the cursor should be resting on the Manufacturer's Field.

Let's set up a simple double-spaced report that includes:
The Manufacturer, Model, Maximum Speed, List Price

Use the the arrow keys to control the location of the cursor on the screen.

The bottom of your screen will help you lay out your report. Right now it should look like this:

>1< ....

The cursor should now be positioned on the Manufacturer's Field.

13) Press the key that will generate a caret ("^") on this field.

14) Press the `SPACE BAR` five times.

The bottom of your screen will now display the number of characters the Manufacturer's Field will take up in your report. You've made a five space margin between the Manufacturer's Field and the next field so you can read the final report more easily. The ending number is the character position across the report.

15) If the cursor is not already positioned in the Model Field, move it there now.

16) Again, press the key on your keyboard that will generate a "caret" ("^") character.

17) Press the [SPACE BAR] five times.

18) Move the cursor to the Maximum Speed Field.

19) Press the caret key ("^").

20) Press the [SPACE BAR] five times.

21) Move the cursor to List Price Field.

22) Press the caret key.

23) Press the down or right arrow key until ALADIN asks if your definition is complete.

24) Press "N" for No since you have not specified a double-spaced report yet.

   ALADIN will return you to the SPECS screen and the last field.

25) Press [RETURN] twice. This will produce a report with double spacing between each record's listing. If your report fields occupied more than one line, you would need to press [RETURN] twice at the end of each line of headings to create a double-spaced report.

   NOTE:

   To receive a sorted output from your report, move the cursor to the desired Key Field (any underlined Field) and type "!" for sort.

   If you typed "!" in the Manufacturer's Field, your report would be produced with records in the Manufacturer's Field sorted alphabetically.

   If you wanted to include other fields from other files in your report, move the cursor to the Key Field which "Jumps" to the file you want. Choose the "Jump" Control Function or press [ESC] [3] to move to a different file in your relational data base.

   If you want to make a border or dividing line in your report, press [RETURN] after the field which will precede the border. Then type "77" and "*" to make a "****" border.

26) Move the cursor to the Manufacturer's Field and press "!" for sort output.

27) Press the down arrow or right arrow key until ALADIN prompts:

.Is your definition complete?

28) Press "Y" for Yes since our report is now completed.

ALADIN will display the layout of our report on the screen and return you to the Report Module Command Menu. The sort Field indicated by "!" above is indicated this way: (* (sort field) *).

29) Save this report format for later use by choosing the Save Command.

ALADIN will prompt for the name you wish to call this report.

30) Type: R1 and press RETURN .

31) To generate a list that utilizes this report format, choose the Generate Command.

NOTE:

To stop the scrolling of a generated report, press SPACE BAR .

32) To turn off or "de-activate" a query (selection criteria) choose the Control Function that will enable you to change the Variables switches or press ESC 2 .

The following menu will be displayed:

Vars: 10Q + , 2IQ + , 3DK + , 4DIR + , 5AP − , 6GL − , 7NOT − , 8SV + , 9INFO + , 0CAL

The Software Switches let you activate or de-activate various features of ALADIN.

Each "switch" may be turned ON (" + ") or OFF (" − ") by typing the digit that precedes it. (Be careful NOT to press the numbered function key if your computer has function keys. You want the NUMBER.)

1: OUTPUT QUERY : Is a query active during output? Turns ON or OFF the use of query selection criteria when ALADIN is selecting records from your system. If ON, only records matching the query are displayed.

2: INPUT QUERY : Is a query active during input? Turns ON or OFF the use of a query as a "filter" when entering new data. When ON, only those records which match the query can be saved or updated. By restricting the data values that can be entered, you can eliminate certain data entry errors.

3: DUPLICATE KEYS : Are records with duplicate key values allowed? When ON, duplicate key values are allowed when entering data. Otherwise a warning message appears, enabling you to avoid inadvertently entering data a second time. This is helpful when you want, for example, to avoid entering two records with the same employee number.

4: DIRECTION OF SORT : Are keys sorted in ascending order? When ON, sorting of records is in ASCENDING order, i.e., 1,2,3, . . . A,B,C, . . . When OFF, sorting is in DESCENDING order, 10,9,8, . . . Z,Y,X, . . .

5: ABSOLUTE POSITION : Are fields filled with blanks? If the switch is OFF, fields are filled with blanks in the Report Module. You could type "20" in column "4," for example, and SPACE BAR and the indicator at the bottom of the screen would move 20 spaces. If this switch is ON for Absolute Position, fields are NOT filled with blanks. If you type "20" and SPACE BAR, the indicator moves to column 20. You have specified the ABSOLUTE column position for the field to start in.

6: GLOBAL   : Is it possible to perform global operations? When ON, it is'possible to perform removals and changes over an entire file within your data base. This is also affected by the INFO switch. When INFO is ON, the system will prompt you before removing or changing each record. When INFO is OFF, ALADIN will perform the operations without stopping for your input. Global operations may work in conjunction with queries and calculations.

7: NOT, Logical Conn.   : Can "NOT" be used within queries? When ON, the "NOT" connector may be used in queries.

8: SAVE RECORD NOW!   : Save immediately after insert or update? Turns ON or OFF the Safety Feature: When ON, records are saved immediately on the disk after an insert or update. This way, if there is a power failure or someone trips over the cord, you don't lose any of your work.

9: INFORMATION   : Are all operations displayed on the screen? When ON, all functions are displayed on the screen. For instance, you are asked if you want to change each record using a certain calculation in the Calculate Module.

0: CALCULATOR   : Is a calculation active? Turns ON or OFF the use of a calculation as a "filter" for new data.

`SPACE BAR`   : Return to the previous menu.

More information on these options is provided in the lesson on software switches and in the Reference Guide.

33) At the bottom of the screen check to see if there is a " + " sign after
1:OQ + . If there is a " + " after the 1:OQ, press the number "1."
The selection query will be turned off.

The bottom of the screen for 1: should now look like this:

1:OQ −

34) Press the SPACE BAR .

The Reports Module Command Menu will return.

Now that you have created a report this way, you will try it again
and request Sub-totals and Totals in the report. You'll also specify
special report formatting.

35) From the Report Menu, choose Define.

36) The message "Discard old definition" will appear. Answer "Yes."

37) Move the cursor to the Manufacturer's Field and select it using the
"^" key, then press SPACE BAR nine times.

38) Move back to the Manufacturer's Field and type "!" so that the
report will be sorted on this field.

39) Press the SPACE BAR once, then press RETURN .

This will set up a grouping within the Manufacturer's Field such that
every time the first letters of the Manufacturer's names change (e.g.,
you go from "Audi" — which starts with an A — to "BMW" —
which starts with a B), ALADIN will give you a Sub-total on the
money field of List Price $.

40) Move to the Model Field and select it using the "^" key, then
press SPACE BAR eight times.

41) Move to the List Price $ field and press " + " instead of the "^"
key, then SPACE BAR .

This " + " tells ALADIN that you want to receive Sub-totals and
Totals on the List Price $ field. You will receive the List Price $
sub-totals for Audis, BMW's, etc., sorted alphabetically by Man-
ufacturer name. At the end of the report, you will see a Total for
the List Price $ field.

42) Press the down or right arrow key until ALADIN asks if your definition is complete.

43) Press "N" for No since you have not specified a report with spacing between records.

ALADIN will return you to the SPECS screen and the last field.

44) Press RETURN twice.

This will produce a report with space between the records.

45) Press the down or right arrow key until ALADIN prompts:

Is your definition complete?

46) Press "Y" for Yes.

ALADIN will display the layout of the report on the screen and return you to the Report Module Command Menu. The "Sort" Field indicated by "!" above is indicated this way on the format screen: (*(sort field)*).

Example: 1 (* Manufacturer : 1 *)

The above example shows: Sorted on Manufacturer and Grouped on the first character in that field.

47) To save this report format for later use, choose the Save command.

ALADIN will prompt for the name you wish to call this report.

48) Type RE1 and press RETURN.

49) To generate the report, choose the Generate option.

You can select up to 512 fields using the "^" key or the " + ." You can go across files using key fields as pathways. (You would press ESC 3 to bring up the list of files to which you could jump, followed by the number of the file you desired.) (Refer to the Reference Guide for more information on the maximum number of fields per report.)

Let's see how this report would look printed out with some of the special Formatting features that ALADIN provides.

NOTE:

From this point on in the lesson, a printer is necessary.

50) Choose the options that will return you to the main ALADIN Executive Command Menu.

51) Choose the Info Module.

52) From the Info Command Menu, choose the Printer/Format option.

For your printed output, ALADIN has a variety of formatting options to make your report appealing to the eye and generally spiffy.

53) From the Printer/Format Command Menu, choose Define.

A description of the formatting possibilities, along with their default (initial setting) values, will appear on your screen. It will look something like this:

```
CAR (CON: CON:) ( - + -)

                      Printer Initialization Image

    PageLength > 66<                        PageWidth > 85<
     TopMargin >  3<                        LeftMargin >  7<
    TextLength > 60<                         TextWidth > 72<
  BottomMargin >  3<                        RightMargin >  6<
     Paginate? > No<
     InitString> L
        Header
        Footer
```
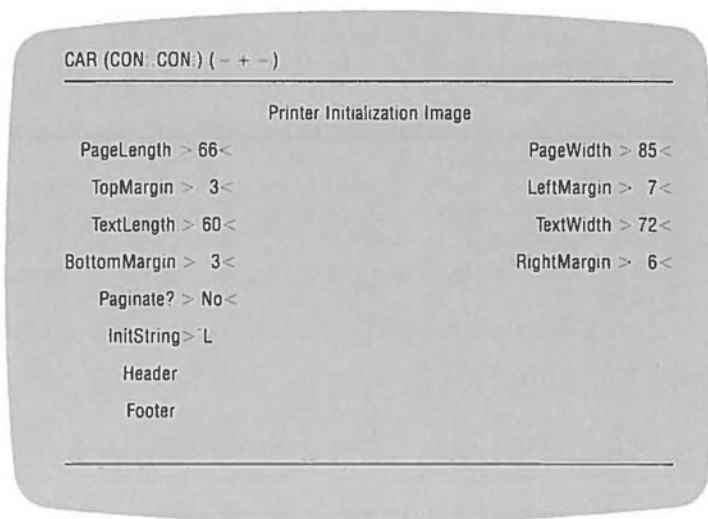
The various measures refer to the physical placement of text on the page.

For "PageNumbers," you will want to type Yes if you want page numbers.

For "InitString," your printer manual will have the hex code you need if you want a special printer set-up. InitString is the sequence of initializing characters sent to the printer. Whenever output is redirected to the printer, control characters are defined by "^" followed by a character (i.e., Form Feed may be "^L" for your printer). ESC characters are "^" followed by "[" followed by a number. Your printer manual and/or computer manual should specify the hexadecimal to ASCII translation table.

If you want "Headers" or "Footers" in your report, type them in, center them yourself, and press RETURN. (Limit of one line each on Headers and Footers.)

When you specify these special Printer/Format options, it constitutes a one-time initialization process for the Printer. If you wanted to use this format again, you would choose the Save option and type in a short file reference name which could be recalled later.

For now, let's specify special Headers and Footers.

54) Move the cursor to "Header."

55) Press SPACE BAR 21 times, then type in "My Neat-Looking CAR Report."

The spaces were necessary to center the Header on your 85-column paper.

56) Press RETURN.

57) Check to make sure the cursor is on "Footer."

58) Press SPACE BAR 11 times, then type in "ALADIN Footers Can Add Spice to Small Reports!"

59) Press RETURN.

60) ALADIN will prompt:

.Is your definition complete?

61) Answer Yes, you have finished.

Next, ALADIN will prompt:

Use this new format?

62) Answer Yes.

63) Choose the options to return you to the main ALADIN Command Menu.

64) Choose the Report Module. If ALADIN asks you if you want to use your Query, answer No.

65) Choose the Recall option.

66) For file reference name, type in RE1 and press ⌶RETURN⌶.

67) Check to see that your printer is set up and ready to print according to the instructions in your printer manual.

   WARNING:

   If you are not hooked up to a printer at this point, do not proceed. ALADIN won't understand and will "lock up," and you will have to "reboot," or restart the entire program.

68) Press ⌶ESC⌶ ⌶8⌶ to redirect the output.

69) Choose the Printer output mode.

   ALADIN will prompt you:

   Activate current format?

70) Answer Yes.

71) From the Report Command Menu, choose Generate.

   The report you have been working on so hard will now be printed out.

   Check to see that there are alphabetical groupings for Manufacturers; that there are Sub-totals for each grouping in the Maximum Speed Field; that there is a Total of all Maximum Speeds at the end of the report; and that your Headers and Footers were printed out.

   ISN'T ALADIN WONDERFUL????!!!!

This is the end of the lesson. In later lessons, you will learn how to combine your ALADIN files with word processing, statistics and graphics. If you would like to continue, refer to the FOLLOW-UP SUGGESTIONS. If you would like to stop for awhile, select the options to exit and follow the procedures in the START-UP section on how to exit from ALADIN.

Review Points:

**Define: Define the layout of your report by following these steps . . .

1) You may type RETURN , SPACE BAR or non-alphanumeric characters to include them in your report, or jump across files by choosing that Control Function.

2) Move the cursor to a desired field and press "^" (the "caret" character) or the select function key, to include the field in your report.

3) If you wish to sort according to this field, move back to it and press "!" (The "!" goes over the "^"). You can only sort on one field unless you use special procedures for Multi-level Sorting in Chapter 8.

4) Repeat steps 1 and 2 until all the desired fields and formatting characters have been entered. Complete your definition by moving the cursor off the last field of the form.

**Use Save to save a report format for later Recall.

**Use Recall to recall a report format that has been previously Saved.

**Use View to view the currently defined report.

**Use Generate to generate a report using the currently defined report format. The report will appear on the currently defined output.

**"!" with SPACE BAR sets up your groupings for Sub-totals. If you wish to have a Sub-total produced every time the first TWO characters in the field change (rather than only the first character, as in the above example), press the SPACE BAR TWICE after typing "!" to specify a "Sort."

FOLLOW-UP SUGGESTIONS

1) Go over the lesson again for additional practice.

   If you decide to go on to the suggestion below and define a new report, RE1 will still be current and ALADIN will prompt:

   Discard old definition?

   If you have not saved RE1, you should answer No and then save it. Otherwise, answer Yes to define a new report.

2) Define the following Reports: List Price (sorted), Manufacturer, Model, Acceleration Time. Put each of these items on a separate line:

   List Price
   Manufacturer
   Model
   Acceleration Time

   Save this report as R2.

   Maximum Speed (sorted), Manufacturer, Model. Put each of these items on a separate line. Separate each "segment" of the report with a dashed line:

   i.e.: Maximum Speed:
         Manufacturer:
         Model:

   Save this report as R3.

Dealer Name, City, Street, State, Zip, Manufacturer, Model, List
Price. Set up the report like this:

Dealer Name:
Street:
City:
State:
Zip Code:
Manufacturer: Model: List Price:

= = = = = = = = = = = = = = = _ = = = = = = = = = = = =

Save this report as R4.

3) Practice recalling and generating these reports.

4) Recall queries Q2, Q3, and Q4 (from the FOLLOW-UP section of
   the Query lesson) respectively, and print out reports that use those
   selection criteria.
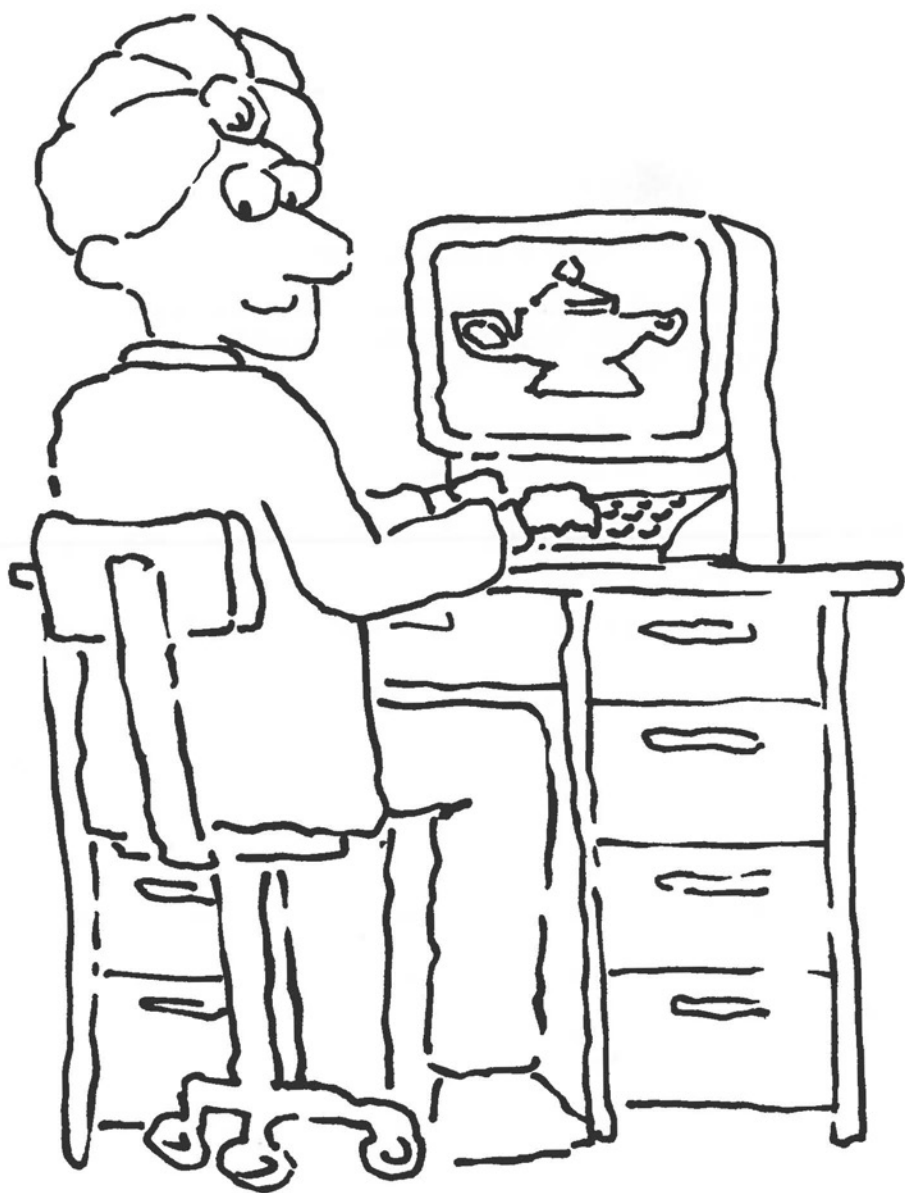
Chapter 2: CREATING A NEW SYSTEM

Lesson 1: Learning How To Install a System

LESSON OBJECTIVE   : To learn how to set up ALADIN for use with any relational system.

REQUIRED TIME   : 15 to 20 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples Diskettes.

LESSON OVERVIEW   : The procedures listed below are examples of the routines you should follow if you want to install a new relational system.

We want to install a simple relational system that will keep track of a list of clients for us. We will call the system CLIENT.

In this particular example there will be only one FILE ("filing folder") which we will call the ADDRESS File.

We want the ADDRESS File in the CLIENT system to include the following information:

Last Name
First Name
Company
Title or Position
Street
City
State
Zip Code
Telephone
Name of additional contact
Comments

The first step is to lay out the system on paper:

Use underlining to help identify Key Fields.

Also indicate "Protected" Fields — those fields in the system that you want to restrict later access to through the ALADIN Access Module.

NOTE:

Since there is only one file in this example, there will be no Secondary key fields for "jumping" or "branching."

Relational System Name: CLIENT

File : ADDRESS

Last Name: _____ {KEY Field (Protected)} _____

First Name: ....
Company: _____ {KEY Field} _____
Title or Position: _____ {KEY Field} _____
Street: ....
City: _____ {KEY Field} _____   State: _____ { KEY Field } _____
Zip Code: _____ {KEY Field }

Telephone: ....

Name of additional contact: ....

Comments: ....

It may also help you to layout the system under categories like this:

Field	Type	Items	Length	Protect	Key	Name
1	Char	1	30	Yes	Yes	Last Name
2	Char	1	30	No	No	First Name
3	Char	1	40	No	Yes	Company
4	Char	1	40	No	Yes	Title or Position
5	Char	1	40	No	No	Street
6	Char	1	40	No	Yes	City
7	Char	1	2	No	Yes	State
8	Num	1	9	No	Yes	Zip Code
9	Char	1	15	No	No	Telephone
10	Char	1	40	No	No	Name of additional contact
11	Char	5	50	No	No	Comments

We are now ready to transfer this "model" into ALADIN.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be installing a new system; therefore, select that option (Install or Change a Data Base).

3) When ALADIN prompts you for the name of your relational system, type CLIENT and press [RETURN].

The following options are now available to you in the Command Menu of ALADIN's INIT Program:

Install   : Is used to set up a new relational system.

Change   : Is used to change or modify an existing system.

Screen Forms   : Allows you to view or change the system's screens.

Access   : Allows you to set up or change the system's security functions.

Disk Util   : Will tell you how much room has been allocated for the relational system. Also used to reorganize your relational system and allocate more space for your key or data files.

Service   : Allows you to specify Input source and Output destination.

Quit   : Ends the INIT Program of ALADIN and returns you to the Control Program.

4) From this Command Menu, choose the Install option.

ALADIN will beep and display the following message:

No ALADIN Relational System with that name exists.

5) Press [SPACE BAR] to continue.

ALADIN will then display:

Enter name of file (max 16 chars)

BASE Client = ...

6) Type: Address and press RETURN.

If you make a mistake, use the cursor control keys to move to the beginning of the field where you made an error.

You can also use Escape ESC keys to insert or delete fields, protect definitions, etc. Refer to the Reference Guide for more information.

ALADIN will prompt you for the name of the next file.

7) Since you are only setting up one file (the ADDRESS File) for this example, press RETURN again.

ALADIN will then display:

Please estimate the maximum number of records in this file.

.BASE Client = Address

.FILE Address (.....)

8) Type 20 and press RETURN.

With most computer systems, you can have up to 32 different files with ALADIN. (See Reference Guide and Start-Up Procedure for more information on your particular system.)

Floppy-diskette-based systems are more efficient when a separate diskette is used for each relational system.

ALADIN will now display:

Enter name of field (max 32 chars)

.BASE Client = Address

.FILE Address (20...)

.... (1) . ...;

9) Type: Last Name and press RETURN.

The cursor will now rest on the Repeat Factor. ALADIN will prompt:

.Enter number of times to repeat this item (max 31, default is once)

The Repeat Factor allows us to set up blocks of text or to segment parts of our data in an individual field. These are called "arrays."

Here are some examples:

Suppose you define a field called "Comments" like this:

(Field Name)	→	Comments
(Repeat factor)	→	5
(Type of Field)	→	Character
(Length)	→	40

This sets up the following:

Comments: ....
....
....
....
....

Suppose you define a field called "Telephone" like this:

(Field Name)	→	Telephone
(Repeat factor)	→	3
(Type of Field)	→	Numeric
(Length)	→	4

This sets up the following:

Telephone: ....

10) Since this field is needed only once, use the default value of 1 by pressing RETURN .

ALADIN will now prompt you for the type of field:

Enter data type: Number(integer), Character, Term(date), Money, Decimal

.BASE Client = Address

.FILE Address (20...)

Last Name.................... (1) . ...

11) Type: C for Character Field

ALADIN will move to the Field Length and prompt:

Enter length of field (max N12, C78, T8, M15, D157)

(Your computer system may allow less than 157 in a Decimal field. Check Start-Up procedure for your particular system's limits.)

12) Type: 30 (since you want the Name Field to be able to contain at least 30 characters) and press [RETURN].

Here's a guide to what ALADIN has been asking you:

Last Name......   (1)   C   30. .   .

→ Length of Field
→ Type of Field (Char, Num, etc.)
→ Repeat Factor (How many Fields)
→ Name of Field

ALADIN will now ask you to define the "purpose" of the field:

Here is an overview of what ALADIN will be asking you for:

NOTE:

Don't type anything yet!

Last Name......   (1)   C   30. .   .   .

"P" makes this a
Protected Field

"K" makes this a Key Field

"B" makes this a
Branching Field

ALADIN will prompt:

Restrict access into this field?: P(rotected

13) Since you want to make this a Protected Field in this example type "P" for Protected.

ALADIN will prompt:

Do you want this to be a key field?: K(ey field

Since you want to have fast access to this field, you want this to be a Key Field. ("Keys" are fields whose values can be sorted on or searched for.)

14) Type: "K" for Key Field.

The first field defined in any file MUST be a Key Field. It is best to make this a CHARACTER field. This field must also be the first field to appear on the file's Screen Layout.

Example:

File: Mailing List

Name: _____(Primary Key)_____ Defined first in the File and appears first on screen
Address: _____
              _____
              _____

Since there is no other file to "branch" or "jump" into, ALADIN will skip the "branching" question and bring up a new field for you to name.

AN ASIDE REMARK ABOUT BRANCHING:

For relational systems with more than one file, ALADIN would display the following prompt:

Do you want this to be a "branching" field?: B(ranching field.

You would then type "B" for Branching if you wanted this to be a "branching" field.

ALADIN would then prompt for the name of the FILE you wanted to branch to:

Enter the name of a File to which you want this Field to branch.

You would respond by typing the name of the File and pressing ⟦RETURN⟧.

ALADIN would then display another line and ask if there was an-
other file to "branch" into:

Enter the name of a File to which you want this Field to branch.

You would then type the name of the file, if there was one, and
press RETURN .

If there were no more files, you would press RETURN .

BACK TO THE LESSON AT HAND:

ALADIN will now ask for the name of the next field:

```
.BASE Client = Address
.FILE Address (20...);
Last Name.....................    (1)  C  30.   P     K  .    :
First Name....................    (1)  C  30.   .        .  .    ;
```

15) Using the chart below and following the steps described above, enter
the remaining definitions for the CLIENT relational system.

NOTE:

You may want to use a ruler to keep track of your place in this chart.

Field	Name	Items	Type	Length	Protect	Key
1	Last Name	1	Char	30	Yes	Yes
2	First Name	1	Char	30	No	No
3	Company	1	Char	40	No	Yes
4	Title or Position	1	Char	40	No	Yes
5	Street	1	Char	40	No	No
6	City	1	Char	40	No	No
7	State	1	Char	2	No	Yes
8	Zip Code	1	Num	9	No	Yes
9	Telephone	1	Char	15	No	No
10	Name of additional contact	1	Char	40	No	No
11	Comments	5	Char	50	No	No

ALADIN System description for the CLIENT relational system:

```
BASE CLIENT = Address.
FILE address(20);

Last Name ........................... (1)   C   30   P   K           :
First Name .......................... (1)   C   30       .           :
Company ............................. (1)   C   40       .   K       .
Title or Position ................... (1)   C   40       .   K       :
Street .............................. (1)   C   40       .           :
City ................................ (1)   C   40       .   K       :
State ............................... (1)   C    2       .   K       :
Zip Code ............................ (1)   N    9       .   K       :
Telephone ........................... (1)   C   15                   :
Name of additional contact .......... (1)   C   40                   :
Comments ............................ (5)   C   50       .  '        :
```

NOTE:

Don't be surprised when, later on in the Tutorial, your "N" in the Zip
Code Field has turned into an "L." This stands for Long Integer. Refer
to the Reference Guide for more information on field types and lengths.

16) When you have finished with the system definition press the down
or right arrow key until ALADIN prompts:

Have you finished defining your ALADIN Relational System?

17) Press "Y" for Yes.

ALADIN will now "proofread" your system definition. If there are
errors ALADIN will return you to the definition session and tell you
how to correct the problem.

If your definition is error-free, ALADIN will then advise you of the
amount of external mass storage (disk or diskette space) that will be
required to save and then operate your relational system.

ALADIN will now help you make some mass storage management
decisions.

ALADIN will prompt:

Number of disk blocks for data (104) >

ALADIN is asking you how many "blocks" you want to allocate for your data. (Do not be concerned if your number differs slightly from the number shown here in parentheses.)

18) Because you don't need so many blocks, type: 20 and press RETURN.

CAUTION:

Do NOT press RETURN for default. You will use up too much of your available space.

ALADIN will prompt:

Number of disk blocks for keys (96)

19) Type: 20 and press RETURN.

A GENERAL GUIDE:

You need at least 10 blocks free or you will get a message that your Tree is full. It may sound funny but it isn't. When you're just beginning to get acquainted with ALADIN, specify a figure in the range of 20-30. See the Reference Guide for more information.

Check your diskettes or your computer system's manual if you are not sure how many "blocks" are on your floppies. (A block is equal to 512 bytes.)

Example:
Apple II   :   280 blocks
Victor 9000   :   1130 blocks

ALADIN bases its management decisions on your estimate of the maximum number of records for each file. ALADIN then computes the amount of room necessary to store and operate the system effectively assuming EVERY Record and Space was used. Remember, ALADIN uses variable length record storage. This "worst case" view of your system ensures that mass storage limitations will not limit or handicap system operations.

ALADIN will prompt:

Create a document (textfile)?

20) Press "N" for No.

Next, ALADIN will prompt:

Create Pascal interface program?

21) Press "N" for No. You will not need the Program Genie for this exercise.

ALADIN will then prompt:

Generate screen forms?

22) Press "Y" for Yes since you MUST define the Screen Layout.

CAUTION:

If you do not define the Screen Layout, you will NOT have a chance to save your relational system and all of your diligent work will promptly go down the drain. (sigh)

ALADIN will place the first field on the screen.

ALADIN can automatically generate the layout if you wish.

23) To see the screen that ALADIN will develop, press the `SPACE BAR` repeatedly until the following prompt appears:

Have you finished with this Screen Layout?

24) Even if you like the layout, pretend that you don't and press "N" for No.

NOTE:

You may get the prompt:

Fix your Screen Layout: Fields interfere or Margins exceeded

In any event, continue with the next step.

25) The choices available to you for painting your screen are:

Left, Right, Up, Down, Newline, Page, Horiz, Vertic, Setup

To use each one, you press the first letter of the option.

26) To experiment with the Screen Layout, use the arrow keys to position the cursor on the Name Field and try the following:

27) Press "N" for New Line and the Name Field will begin a new line.

28) Press "R" for Right and the Name Field will go to the right one space.

29) Press "U" for UP and the Name Field will go up one line.

30) Press 5 and then "R" for Right and the Name Field will go to the right five spaces.

   This is called the "repeat brush" and it works with all the paint-brush keys.

31) Press 5 and then "L" for Left and the Name Field will go to the left five spaces.

   If part of a field disappears in this process, move the cursor to that Field and press [RETURN]. If one field overlaps another, move the first one out of the way with the Left, Right, Up, Down, Newline commands. Go back to the field that has partially disappeared and press

   [RETURN].

   The cursor control keys will allow you to move to different fields that are displayed.

   Use the [RETURN] to bring back a field which has partially disappeared. Press [RETURN] twice to repaint the entire screen. (You may wish to refer to Section IV.3 of the Reference Guide for a discussion of the process of "painting" a screen.)

32) Continue using the paint-brush keys until your form resembles the form at the beginning of this lesson.

33) Press the down or right arrow keys until you see this prompt:

   Have you finished with this screen form?

34) Answer "N" for No.

   You will return to the last field.

35) Use the cursor control keys to move to the first field, then move this field around slightly (in any way you like), just to see how it goes.

You can move only the fields you want without having to change everything.

36) Press "S" for Set-Up.

Set-Up allows you to define a "window" on your screen.

37) Press the `SPACE BAR` slowly four times and you can see what the default values are for this window. Changing these values changes the size of your "window."

If you consider the screen a canvas, then the window is the boundary of that canvas. You can only paint within the bounds of this area.

38) Press the `SPACE BAR` to continue.

39) Press the right or down arrow keys until you see this prompt:

Have you finished with this screen form?

40) Answer "Y" for Yes.

ALADIN will then prompt:

Do You Want To Save Your Relational System?

41) Press "Y" for Yes and ALADIN will complete the installation of your relational system.

NOTE:

Pressing "N" for No stops this process and returns you to the ALADIN-INIT Command Menu. Your new form will NOT be saved.

ALADIN will now ask about installation of security functions.

Because ALADIN has six main levels of security with more than 40 options which you can mix and match, you can be assured that confidential data will remain intact and that inadvertent or unauthorized modification of the system or data will not occur.

ALADIN has six principal levels of security:

**Device Level (Input Source and Output Destination): Restricted use and access to keyboard, file, monitor, printer, and scripts.
**Operations Level: Restricted use and access to specific ALADIN operations, functions and modules.
**Control Level: Restricted use and access to escape, function keys and software switches.
**System Level: Restricted use and access to specific relational systems.
**File Level: Restricted use and access to specific relational system files.
**Field and Record Level: Restricted use and access to specific fields and records.

ALADIN will prompt:

Userid >

42) Type ADI and press RETURN.

ALADIN will prompt for a password:

Passwd >

43) Type ADI and press RETURN.

ALADIN will now initialize the security functions for your relational system.

NOTE:

For complete information on security features, see the Reference Guide.

A series of prompt lines will appear. If you type the first letter of the Device or System Function, you will restrict access to that function.

ALADIN will prompt:

Access Rights: Address

Input Source: Keyboard, File, Script, ?

If you were to type "F" you would be restricted from using a disk file, modem or external device other than the keyboard.

44) To grant yourself total and complete access DO NOT TYPE ANYTHING, just press RETURN.

ALADIN will prompt:

Output Destination: Monitor, File, Script, Printer, ?

If you were to type both "P" and "F" you would be restricted from using both the printer and the file.

45) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stats, Info, Exit, ?

46) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

Data: Enter, Change, Remove, View, Quit, ?

47) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

Query: Define, Save, Recall, View, Quit, ?

48) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

Vars: 1Q−, 2IQ−, 3DK+, 4DIR+, 5AP−, 6GL−, 7NOT−, 8SV+, 9INFO+, 0CAL−

This line refers to the software switches of ALADIN which greatly expand your capabilities for managing information. They are explained in the lesson entitled "Setting the Software Switches."

49) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

CTRL Keys: Input, Output, Xover, Tabulate, Vars, What, Print, <Escape>

T2.15

This line refers to the Control Functions (escape sequences) which you've already read about briefly in Part II of this Manual. They are thoroughly explained in the lesson entitled, "Using Escape Sequences."

50) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will now prompt you for the Access Restrictions for the fields you defined as "protected."

ALADIN will prompt:

Name: Read, Write, Update

If you were to type "W" and "U" this would become a READ ONLY Field. In other words, you would no longer be able to enter or change information in this field.

51) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will now ask you to set up security access for another user.

52) In response to the prompt: Userid, press [RETURN].

Refer to the Reference Guide for information on setting up security access for other users.

ALADIN will return you to the ALADIN INIT Command Menu. Your system is now installed and ready to be used.

This is the end of the lesson on Learning How To Install a System.

When you feel comfortable with your mastery of the Installation Module of ALADIN, begin the next lesson.

CHAPTER 2: LESSON 1 (continued)

FOLLOW UP:

The same type of "paper" modeling and layout is used to construct more complex relational systems:

Here's the model and layout for the CAR Relational System:

Name of Relational System: CAR

Name of Files in Relational System: SPECS, DEALER, CUSTOMER;

Fields in the SPECS File:

FILE SPECS250; ←——— Estimated Number of Records

Manufacturer = C15:SPECS,DEALER,CUSTOMER;
 ⌐→Files Accessed by "Branching"
 ——→ File of Key Field
 ——→ Type of Field, and Field Length
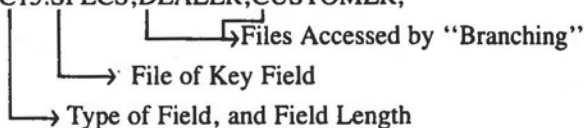
Model = C25:SPECS;
Horse Power in PS = N3:SPECS;
Volume of Engine in CM = N4:SPECS;
Maximum Speed in MPH = N3:SPECS;
Acceleration time from 0 to 60 = C4:SPECS;
Fuel Consumption City Highway HS3 = C4:SPECS;
Gasoline Type =.C1;   ——→ This number indicates
Five Gear Model Available = C1;   a repeat factor.
Automatic Transmission Available = C1;
Number of Doors = N1;
List Price = M11:SPECS;
Sun Roof Available = C1;
Colors Available10 = C10;
              ——→ This number indicates a repeat factor.

.FILE DEALER50; ⟵—— Estimated Number of Records

Manufacturer = C15:DEALER,SPECS;CUSTOMER;
Name = C25:DEALER;
City = C20;
Street = C25;
State = C2;
Zip Code = C5:DEALER;
Telephone = C14;
Service = C1:DEALER;

.FILE CUSTOMER150; ⟵—— Estimated Number of Records

Customer Name = C25:CUSTOMER;
City = C20;
State = C2:CUSTOMER;
Age = C2:CUSTOMER;
Sex = C1:CUSTOMER;
Manufacturer = C15:DEALER,SPECS,CUSTOMER;

BASE : CAR

FILE : SPECS

Manufacturer: KEY & Branching Field ⟶ DEALER & CUSTOMER

Model: ＿＿ KEY Field ＿＿＿＿

Horse Power in PS: ＿＿ KEY Field   Volume of Engine: KEY

Maximum Speed in MPH: KEY Acceleration time from 0 to 60: KEY

Fuel Consumption City Highway HS: KEY KEY KEY Gasoline type:.

Five Gear Model Available:. Automatic Transmission Available:.

Number of Doors:.   Sun Roof Available:.

Colors Available: ....
                   ....
                   ....

List Price: ＿＿ KEY Field

FILE : DEALER

> Manufacturer: _____ KEY & Branching Field ———→ SPECS
>
> Name: _____ KEY Field _____
>
> City: ....
>
> Street: ....
>
> State: ..   Zip Code: _____ KEY Field
>
> Telephone: ....
>
> Service: KEY Field

FILE : CUSTOMER

> Customer Name: _____ KEY Field _____
>
> City:...................   State: _____ KEY Field
>
> Age: KEY   Sex: KEY Field
>
> Manufacturer: _____ KEY & Branching Field ———→ DEALER & SPECS

Field	Type	Items	Length	Key	Branch	Name
1	C		15	Yes	Cust/Dlr	Manufacturer
2	C		25	Yes	No	Model
3	N		3	Yes	No	Horse Power in PS
4	N		4	Yes	No	Volume of Engine in CCs
5	N		3	Yes	No	Maximum Speed in MPH
6	C		4	Yes	No	Acceleration time from 0 to 60
7	C	3	4	Yes	No	Fuel Consumption City Highway HS
10	C		1	No	No	Gasoline Type
11	C		1	No	No	Five Gear Model Available
12	C		1	No	No	Automatic Transmission Available
13	N		1	No	No	Number of Doors
14	C		1	No	No	Sun Roof Available
15	C	10	10	No	No	Colors Available
25	M		11	Yes	No	List Price
1	C		15	Yes	Spec/Cost	Manufacturer
2	C		25	Yes	No	Name
3	C		20	No	No	City
4	C		25	No	No	Street
5	C		2	No	No	State
6	C		5	Yes	No	Zip Code
7	C		14	No	No	Telephone
9	C		1	Yes	No	Service
1	C		25	Yes	No	Customer Name
2	C		20	No	No	City
3	C		2	Yes	No	State
4	C		2	Yes	No	Age
5	C		1	Yes	No	Sex
6	C		15	Yes	Spec/Dlr	Manufacturer
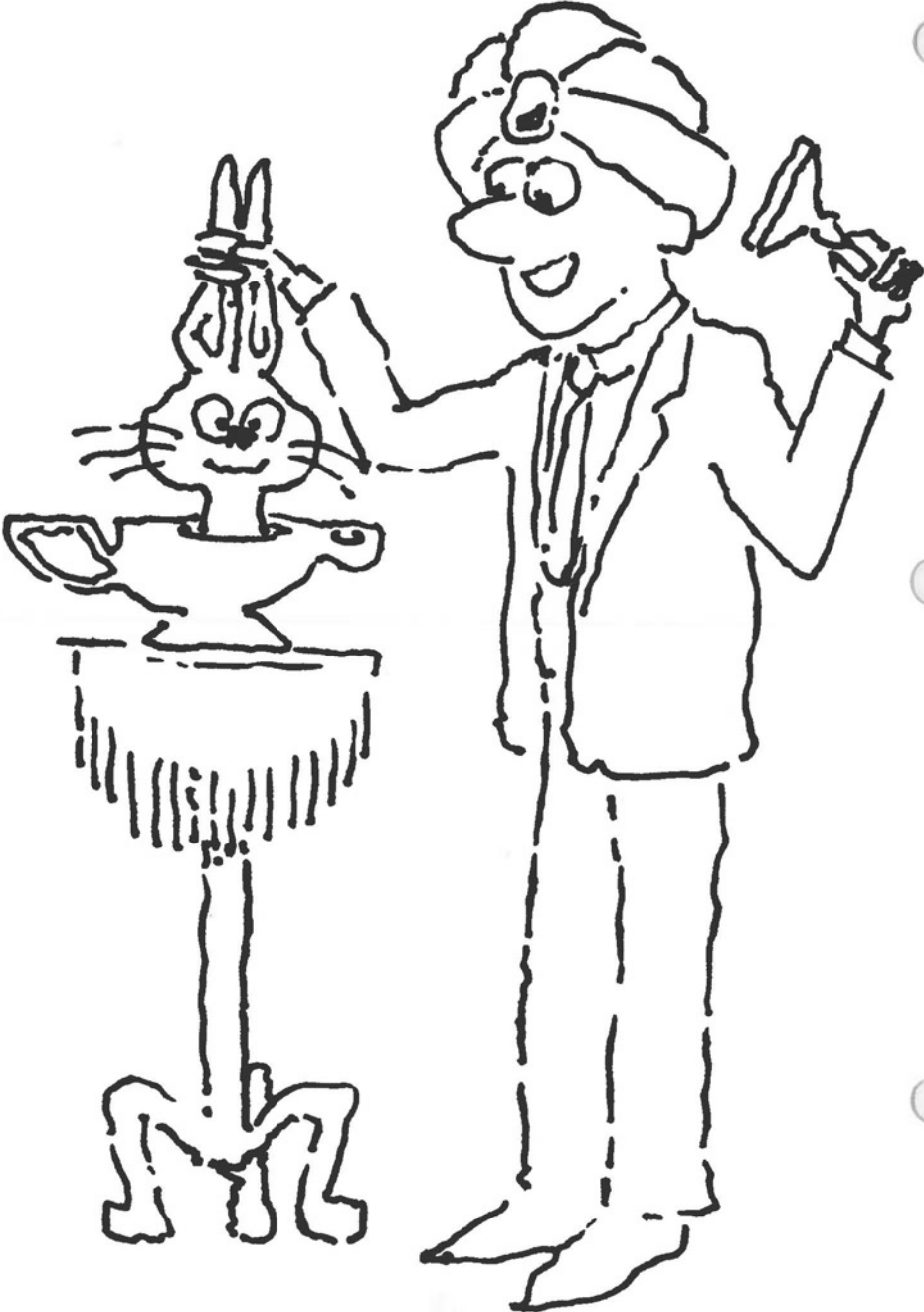
Chapter 3: CHANGING A SYSTEM

Lesson 1: Learning How To Change a System

LESSON OBJECTIVES   : To learn how to change an already exist-
ing relational system.

To demonstrate ALADIN's unique ability
to add, or delete fields, keys, and files on
the fly without having to reconfigure the
entire system.

REQUIRED TIME   : 45 to 60 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and
Examples Diskettes.

OPTIONAL   : Printer.

One of ALADIN's most powerful features is its capability to change an
already existing and fully operational system without having to regen-
erate the entire system. This process preserves all the data that was in
the original system.

That means that ALADIN provides you with one of the most important
benefits a software system can provide—a flexible solution that can grow
and change as your needs and business changes.

We want to change the CLIENT relational system that we established in
the lesson on Installing a System.

As it stands now, the CLIENT system contains only one File (Address)
which keeps track of our list of customers and some information about
them.

We now want to add some additional information (Fields) in the Address
File and then add an additional file that will keep track of the orders
those customers have placed with us.

We want the Address File in the CLIENT system to include new fields
to provide us with more information about our clients. This way the
Address File cannot only be used to print mailing lists, it can be a valuable
tool — a computerized "black book" for a sales department.

As a client calls in to make an order or check on the status of an existing order, the sales person can have "on-line" information concerning the customer's company and personal background in addition to current sales order data.

The first step is to lay out the changes to the system on paper:

It may help you to lay out the system under categories like this:

Field	Name	Items	Type	Length	Key	Branch
ADDRESS FILE						
1	Last Name	1	Char	30	Yes	
2	First Name	1	Char	30	No	
3	Company	1	Char	40	Yes	O/E,O/S
4	Title or Position	1	Char	40	Yes	
5	Street	1	Char	40	No	
6	City	1	Char	40	No	
7	State	1	Char	2	Yes	
8	Zip Code	1	Num	9	Yes	
9	Telephone	1	Char	15	No	
10	Name of additional contact	1	Char	40	No	
11	Comments	5	Char	50	No	
16	Customer #	1	Char	10	Yes	O/E,O/S
17	Company Background & Info	5	Char	50	No	
22	Company Size - Small, Med, Lrg	1	Char	10	No	
23	Approx. # of Employees	1	Num	7	No	
24	Type of Business	1	Char	40	Yes	
ORDER ENTRY FILE						
1	Company	1	Char	40	Yes	Add,O/S
2	Customer #	1	Char	10	Yes	Add,O/S
3	Invoice #	1	Num	5	Yes	O/S
4	Date Ordered	1	T(date)	8	No	
5	Product Ordered	1	Char	40	Yes	
6	Product Description	3	Char	40	No	
9	# Ordered	1	Num	8	Yes	
10	Price	1	Money	10	No	
11	Special Comments	2	Char	40	No	

ORDER STATUS FILE

1	Company	1	Char	40	Yes	Add,O/E
2	Customer #	1	Char	10	Yes	Add,O/E
3	Invoice #	1	Num	5	Yes	O/E
4	Status- W(rking, B(ck/ordr, S(hpd	1	Char	1	Yes	
5	Date Shipped or Will Ship	1	T(date)	8	Yes	
6	Special Notes or Comments	2	Char	40	No	

Let's take another look at the changes to the layout.

Underlining identifies "Key Fields."

Relational System Name: CLIENT

FILE : Address

Name:
First Name:
Company: _____Branching → Order Entry, & Order Status ____
Title or Position: _____
Street:
City: _____State: ____ Zip Code_____
Telephone:
Name of additional contact:
Comments:

Customer Number : _____Branching → Order Entry, & Order Status
Company Background & Information:

Company Size — Small, Medm, Lrg:
Approximate Number of Employees:
Type of Business: _____

FILE : Order_Entry

Company: _____Branching → Order Status, & Address_____

Customer Number : _____Branching → Order Status, & Address

Invoice Number: _____   Date Ordered: ....

Product Ordered: _____

Product Description: ....
....
....

Number Ordered: _____   Price: ....

Special Notes or Comments:
....
....

FILE : Order_Status

Company: _____Branching → Order Entry, & Address _____

Customer Number : _____Branching → Order Entry, & Address

Invoice Number: _____

Status W(rking, B(ck/ordr, S(hpd:_   Date Shipped or Will Ship: _____

Special Notes or Comments:
....
....

We are now ready to transfer this new "model" into ALADIN and change the "old" CLIENT System.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be making changes to a system; therefore, select that option (Install or Change a Data Base).

3) When ALADIN prompts you for the name of your relational system, type CLIENT and press ⌈RETURN⌋.

The following options are now available to you in the Command Menu of ALADIN's Installation Module:

Explanation of the Menu:

Install : Is used to set up a new relational system.

Change : Is used to change or modify an existing system.

Screen Forms : Allows you to view or change the system's screens.

Access : Allows you to set up or change the system's security functions.

Disk-Util : Will tell you how much room has been allocated on the Disk for the relational system and allow you to reorganize, if necessary.

Service : A Control Function which allows you to specify Input source and Output destination.

Quit : Ends the installation module of ALADIN and returns you to the menu.

4) Choose the Change Module from this Command Menu.

ALADIN will display the current definition of the CLIENT system:

```
BASE CLIENT = Address;

.FILE address(20 . );
Last Name . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   30  P  K   .  :  •
First Name . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   30     .  .  :  •
Company . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   40     K  .  :  •
Title or Position . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   40  .  K  .  :  •
Street . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   40     .  .  :  •
City . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   40  .  K  .  :  •
State . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C    2     K  .  :  •
Zip Code . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) L    9     K  .  :  •
Telephone . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(1) C   15     .  .  :  •
Name of additional contact . . . . . . . . . . . . . . .(1) C   40     .  .  :  •
Comments . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .(5) C   50     .  .  :  •
```

NOTE:

The "N" you typed for Zip Code Field type has changed to "L" for Long Integer. Also notice the "*"'s on the right side of the screen. You will not be able to insert or delete new fields within this * section.

The cursor rests on the .BASE line.

5) Move the cursor to the "A" in Address and either press ⬚RETURN⬚ or the ⬚ESC⬚ sequence (see QUICK REFERENCE CARD) to Add a File.

.BASE CLIENT = Address;

└───────→ Move cursor here.

ALADIN will display a new line under the Address File and prompt:

Enter name of file (max 16 chars) .BASE CLIENT = Address;

. . . . ;

6) Type: Order_Entry and press ⬚RETURN⬚.

Another line will appear under Order Entry.

7) Type: Order_Status and press <kbd>RETURN</kbd> twice.

If you make a mistake, use the cursor control keys to move to the beginning of the field where you made an error.

The next thing we must do is make the Company Field a "branching" field since we want to have access to both the Order_Entry and Order_Status files from this field.

8) Move the cursor to the Company Field.

9) Move the cursor until you see the "Branching" prompt.

10) Type: B for "Branching."

This is what ALADIN has been asking you:

Company Name............ (1)   C   40.   P   K   B

    "P" makes this a ⟵
    Protected Field

    "K" makes this a ⟵
    Key Field

    "B" makes this a ⟵
    Branching Field

ALADIN will then prompt for the name of the file you want to branch to.

Enter the name of a file to which you want this field to branch.

11) Type: Order_Entry and press <kbd>RETURN</kbd>.

The following prompt will appear at the bottom of the screen:

Insert Item − > Company < − in File − >Order Entry<

12) Press "Y" for Yes.

ALADIN will insert that field into the Order_Entry file, with Branching to the Address File.

Again ALADIN will prompt for the name of another file to branch to.

13) Type: Order_Status and press [RETURN].

The following prompt will appear at the bottom of the screen:

Insert Item − > Company< − in File − >Order_Status<

The Company Field will automatically be written to the Order_ Entry and Order_Status Fields. This means that you will be able to jump to the Order_Entry and Order_Status Fields from the Company Field.

14) Press "Y" for Yes.

ALADIN will then display another line and ask if there is another field to "branch" into.

15) Since there are no more files, press [RETURN].

We must now add the new fields to the Address File.

16) Move the cursor to the Comments Field definition and press [ESC] [7] for an Insert. (The new line will appear after Comments.)

ALADIN will prompt you for the name of the new field.

Enter name of field (max 32 chars)

17) Type: Customer Number and press [RETURN].

The cursor will now rest on the Repeat Factor. ALADIN will prompt:

Enter number of times to repeat this item (max 31, default is once)

18) Since this field is only needed once, use the default value (1) by pressing [RETURN].

ALADIN will now prompt you for the type of Field.

Enter data type: Number(integer), Character, Term(date), Money, Decimal

We will make the Customer Number Field a character field so that we will have the option of mixing letters, numbers and dashes.

19) Type: C for Character Field.

ALADIN will move to the Field Length and prompt:

Enter length of field (max N12, C78, T8, M15, D157)

20) Type: 10 and press RETURN.

Here's a guide to what ALADIN has been asking you:

Customer Number ....   (1)   C   10 . .   .

⟶ Length of Field

⟶ Type of Field (Char, Num, etc.)

⟶ Repeat Factor (How many fields)

⟶ Name of Field

ALADIN will now ask you define the "purpose" of the Field:

Here is what ALADIN will be asking you for:

Customer Number ....(1)   C   10. .   K   B

"P" makes this a
Protected Field ⟵

"K" makes this a
Key Field ⟵

"B" makes this a
Branching Field ⟵

ALADIN will prompt:

Restrict access into this field?: P(rotected

21) Press RETURN since we don't want to make this a "protected" Field.

ALADIN will prompt:

Do you want this to be a key field?: K(ey field.

22) Since we want this to be a Key Field, type: "K" for Key Field.

-ALADIN will ask you if you want this to be a Branching Field.

Since we want to be able to "jump" from the Customer Number to Order Status or Order Entry we must make this a "Branching Field."

T3.9

23) Type "B" for Branching in response to the prompt:

Do you want this to be a "branching" field?: B(ranching field.

ALADIN will then prompt for the name of the File to which you want to branch.

Enter the name of a file to which you want this field to branch.

24) Type: Order_Entry and press [RETURN].

The following prompt will appear:

Insert Item – > Company< – in File – >Order_Entry< –

25) Press "Y" for Yes.

Again ALADIN will prompt for the name of another File to branch to.

26) Type: Order_Status and press [RETURN].

The following prompt will appear:

Insert Item – > Company< – in File – >Order_Status< –

27) Press "Y" for Yes.

Again ALADIN will prompt for the name of another File to branch to.

NOTE:

The Customer Number Field will be automatically written to the Order_Entry and Order_Status Files.

ALADIN will then display another line and ask if there is another File to "branch" into.

28) Since there are no more Files, press [RETURN].

29) Press [RETURN] again since we do not want to insert further Fields.

30) Using the definition "road-map" below, change the old CLIENT system over to the new model.

Remember that you can use the [ESC] keys:
[ESC] [7] : Add a field
[ESC] [8] : Delete a field you have just added
[ESC] [0] : Cancel the operation

NOTE:

- In change, you cannot directly delete a field that was created and saved at a previous time nor can you change its Repeat Factor, Type or Length. (These existing fields are indicated by "*"'s at the right side of the screen.) It should also be noted that you cannot insert new fields between two "*" fields. You are allowed however, to change Field Names (Protected Key or Branching).

- If you would like to keep a field from showing on the screen, you can move the cursor to that field and press the space bar once followed by [RETURN]. This effectively erases the field and the data within it will no longer be seen. Keep in mind that if you do this, you have quietly "ZAPPED" your field and will no longer be able to access or enter any more data in it.

- If you want to have a field without a name displayed, you can move the cursor to the field desired and press the space bar twice, followed by [RETURN].

- Finally, you can show a name of field without a field showing by specifying "character" and the length of field as "0", thus creating a "header."

ALADIN description for the CLIENT Relational System

```
BASE CLIENT = Address..........,
              Order_Entry.....,
              Order_Status....;
.FILE Address    (20...);
     Last Name.............................(1) C    30   P   K          :
     First Name ...........................(1) C    30                  :
     Company ..............................(1) C    40       K   B      :
                                           Order_Entry,
                                           Order_Status:
     Title or Position.....................(1) C    40       K   B      :
     Street................................(1) C    40                  :
     City..................................(1) C    40       K          :
     State.................................(1) C     2       K          :
     Zip Code..............................(1) L     9       K          :
     Telephone.............................(1) C    15                  :
     Name of additional contact............(1) C    40                  :
     Comments..............................(5) C    50                  :
     Customer Number.......................(1) C    10       K   B      :
                                           Order_Entry,
                                           Order_Status:
     Company Background & Information .....(5) C    50                  :
     Company Size — Small, Medm, Lrg......(1) C    10                  :
     Approximate Number of Employees .......        7                   :
     Type of Business .....................(1) C    40       K          :
```

```
.FILE Order__Entry(20...);
    Company .............................(1) C   40  .  K  B   :
                                                 Address,
                                                 Order Status;

    Customer Number.....................(1) C   10  .  K  B   :
                                                 Address .
                                                 Order__Status;

    Invoice Number......................(1) N    5  .  K  B   :
                                                 Order__Status;

    Date Ordered........................(1) T    8  .  .  .   :
    Product Ordered.....................(1) C   40  .  K  .   :
    Product Description.................(3) C   40  .  .  .   :
    Number Ordered......................(1) N    8  .  K  .   :
    Price ..............................(1) M   10  .  .  .   :
    Special Notes or Comments...........(2) C   40  .  .  .   :
```

```
.FILE Order__Status(20...):
    Company ............................(1) C   40  .  K  B   :
                                                 Address,
                                                 Order__Entry.

    Customer Number.....................(1) C   10  .  K  B   :
                                                 Address.
                                                 Order__Entry;

    Invoice Number......................(1) N    5  .  K  B   :
                                                 Order__Entry;

    Status-W(rking, B(ck/ordr, S(hpd ...(1) C    1  .  K  .   :
    Date Shipped or Will Ship ..........(1) T    8  .  K  .   :
    Special Notes or Comments...........(2) C   40  .  .  .   :
```

NOTE:

Normally, if you add this much more to your system, it is advisable to increase the amount of storage for your key and data files in the Disk/Utility Module of ALADIN-INIT. Since this is only an example, we installed the Client data base with only 20 blocks, which is enough for this demonstration.

Installing the System You Have Changed

31) When you have finished with the system definition, press the down or right arrow key until ALADIN prompts:

Have you finished defining your ALADIN Relational System?

32) Press "Y" for Yes.

ALADIN will now "proofread" your system definition. If there are errors ALADIN will return you to the definition session and tell you how to correct the problem.

If your definition is error-free, ALADIN will then advise you of the amount of external mass storage (disk or diskette space) that will be required to save and then operate your relational system.

ALADIN will prompt:

Create a document (textfile)?

33) Press "N" for No.

See Reference Guide for more information.

ALADIN will prompt:

Create Pascal interface program?

34) Press "N" for No since you are not using the Genie Program Generator.

ALADIN will prompt:

Change Screen Forms?

35) Press "Y" for Yes.

Whenever you have added fields, you **must** answer Yes to this question so that you can add the fields to our screen forms.

ALADIN will place the first field on the screen.

36) Try that now. Your choices for painting the Client Screen are:

Left, Right, Up, Down, Newline, Page, Horiz, Vertic, Setup

See the Reference Guide, Section IV.3, for a complete discussion of the "paintbrush" keys.

37) Press SPACE BAR .

38) Go to the last field showing on your form and press the SPACE BAR .

ALADIN can automatically generate the layout of the new part of the form.

39) To see the screen that ALADIN would develop, press the SPACE BAR repeatedly until the following prompt appears:

Have you finished with this screen form?

40) Press "N" for No.

(Even if you DO like this screen form, pretend that you don't.) Use the commands you practiced in Chapter 2 (Left, Right, Up, Down, etc.) to "re-paint" your screen. (You will note that these steps are not numbered to allow for some flexibility in redefining your layout.)

If part of a field disappears in this process, move the cursor to that field and press RETURN . If one field overlaps another, move the first one out of the way with the Left, Right, Up, Down, Newline commands. Go back to the field that has partially disappeared and press RETURN . Pressing RETURN twice will re-paint the entire screen and re-order the fields.

The cursor control keys will allow you to move to different fields that are displayed.

NOTE:

If you should get the following prompt repeatedly:

.Fix your screen layout: Fields interfere or Margins exceeded

It will usually mean that one field has covered another one up completely. Check that first. If you still can't tell what's wrong with your screen form, refer to the Reference Guide, Section IV.3, for more information.

ALADIN will prompt:

Have you finished with this screen form?

41) Continue using the paint brush keys until your form resembles the form at the beginning of this lesson (it doesn't have to be exact!).

42) When you're done, press the right or down arrow keys until you see this prompt:

Have you finished with this screen form?

43) Answer "Y" for Yes.

44) Paint the other two screens so they resemble the forms at the beginning of this lesson and answer Yes when you are prompted:

Have you finished with this screen form?

ALADIN will then prompt:

Do You Want To Save Your Relational System?

45) Press "Y" for Yes and ALADIN will complete the installation of your relational system.

NOTE:

Pressing "N" for No aborts the installation process and returns you to the ALADIN INSTALLATION Command Menu. Your new relational system will not be saved.

ALADIN will now ask you whether or not you want to install the security functions.

ALADIN will prompt:

Userid >

46) Since you do NOT want to install the security functions at this time, press [RETURN].

ALADIN will return you to the Command Menu. Your system is now installed and is ready to be used.

This is the end of the lesson on Learning How To Change a System.

WARNING:

If you choose Install rather than Change for an existing relational system, all of your data will be destroyed.

Chapter 4: EXPLORING ALADIN'S CAPABILITIES

Lesson 1: Using Escape ESC Sequences

LESSON OBJECTIVE : To learn how to use the Escape ESC sequences by understanding what keys are used, when, and for what purpose.

REQUIRED TIME   : 5 to 8 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

LESSON OVERVIEW :

This lesson will show you how to use Escape ESC sequences to access Control Functions, one of the many capabilities of ALADIN which allow you considerable flexibility. The use of Escape ESC sequences in the ALADIN system means that you're not likely to "outgrow" your software. With such a variety of options at your fingertips to redefine input/output sources, jump between files, activate software switches and more, ALADIN gives you more power and flexibility than software programs that operate only in one realm.

NOTE:

You may use ESC sequences in place of function keys even if your computer has function keys.

At most times during the execution of ALADIN, there is on the screen either a "menu," which shows you a list of keys that will invoke various functions, or a "prompt line," which asks you to type something into the computer. But ALADIN also has some special commands that are called Control Functions. They are called "control" not only because they help you to control your ALADIN session, but because of how they work. Specifically, each Control Function is activated by pressing the ESC (escape) key, followed by the appropriate numeric key. The numeric keys will be designated by ⓪...⑨. The correct procedure for the ESC sequence is to press ESC, release it, then press the numeric key. (For example, to enact the ESC sequence for "Cancel," you would press ESC, release it, and press ⓪.) DO NOT HOLD THE ESC KEY DOWN WHILE PRESSING THE NUMERIC KEY.

The Control Functions available to you are:

[ESC] [0] : Cancel any present procedure. Return to the Module Command Menu.

[ESC] [1] : Help. Provide help information concerning the most recent menu.

[ESC] [2] : Set any of ALADIN's software switches. There are a number of these switches that can be turned ON or OFF. ALADIN will display them all, along with their current value, in a menu line.

[ESC] [3] : Jump to another data file. This can be used either from a menu line within a module or from a key field within a screen form. Note that if more data files exist than can be printed in a single menu line, ALADIN will show as many as it can. You can view the additional files by pressing [SPACE BAR].

[ESC] [4] : Return from the last cross-over to another file.

[ESC] [5] : Print. Copies the screen form to the current output device.

[ESC] [6] : Redefine the statistical universe if you are in the Statistics Module. Refer to the section on the Statistics Module for more details.

[ESC] [7] : Select the ALADIN input device. In this case, ALADIN will offer the choices:

Input Source: Keyboard, File, Script

The normal way of entering information into ALADIN is through your terminal's keyboard, but you may have information saved in a disk file or script that you wish to use.

[ESC] [8] : Redirect the ALADIN output device. ALADIN will offer the choices:

Output Destination: Monitor, File, Script, Printer, ?

This function allows you to choose whether ALADIN's reports and certain other output will be shown on your screen, saved in a disk file, saved in a script, or printed.

`ESC` `9` : Set the contrast between the forms that ALADIN uses and the data within the forms. (Only functional on terminals with variable intensity screens.)

The following control functions apply in specific cases:

`ESC` `6` : Evaluate — Activate the calculation if one has been defined. This will modify the data in the current screen form, provided that the calculation has been defined on the current file.

`ESC` `1` : What — When used in conjunction with a screen form will list on the bottom of the screen the data type of the field at the current cursor position.

`ESC` `7` : Add — Insert a blank character at the current cursor position within a field. The character under the cursor and all following characters move to the right one space. Applies only within screen forms.

`ESC` `8` : Delete — Delete the character at the current cursor position within a field. The character to the right of the cursor and the characters following it will move to the left one space. Applies only within screen forms.

`ESC` `0` : Escape or Cancel — By pressing `ESC` `0` or `ESC` `ESC`, you will cancel the current operation. This applies within screen forms and during data processing, such as reading or writing files or printing reports. It has no meaning at an ALADIN menu.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select that option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press [RETURN].

   ALADIN will then prompt you for Userid.

4) Type ADI and press [RETURN].

   You will next be asked to enter your Password.

5) Type ADI and press [RETURN].

   Although you will not actually be manipulating any of the data in the CAR relational system, you will be selecting the Data Module as an example for this exercise.

6) From the ALADIN Command Menu, press [ESC] [1]. You will see ALADIN's welcome message and an explanation of the ALADIN Command Menu.

7) Press "Q" (or use the function key) to quit and return to the main Command Menu.

   For practice, you will now have the chance to experiment with the escape keys and get used to seeing the corresponding menus that will appear. To escape from each selection, press [RETURN].

8) Press [ESC] [7] to redirect Input.

   With this command you can change the way ALADIN takes in information.

Your choices are: Keyboard, File, Script or [SPACE BAR].

Keyboard
: All input is simply taken from your keyboard as you type it. This is the usual way of doing business with ALADIN.

File
: ALADIN still takes commands from your keyboard, but certain data is taken from the file that you specify. ALADIN will prompt for the location and name of the file. Exactly how this works will depend on what ALADIN operation you activate, and on the contents of your file.

Script
: ALADIN will take commands from a "script" command file that has been previously defined, executing such commands just as if they were being entered from the keyboard. When you choose Script, ALADIN will prompt you for the location and name of the file.

[SPACE BAR]
: No action is taken. ALADIN returns to the previous menu line.

9) Choose the Keyboard option. Nothing will appear to have happened on your screen. The reason for this is that the input is simply being taken from your keyboard as you type it. Press [RETURN] to escape.

10) Press [ESC] [7] again.

11) This time, choose the File option. ALADIN will prompt for the name of your file. In this mode, ALADIN would take data from an input file that you have specified.

In choosing File, you are able to perform batch data entry into ALADIN as long as the data format matches the input format you have laid out. (See the Reference Guide for more information.)

12) Press [RETURN] to return to the ALADIN Command Menu.

13) Return to the Redirect Input Menu by pressing [ESC] [7].

14) Choose Script. ALADIN will prompt for the name of your file. In this mode, you would be giving ALADIN a series of commands. ALADIN would then carry out these commands just as if they were being entered from the keyboard.

15) Press <kbd>RETURN</kbd> to return to the ALADIN Command Menu.

16) Press <kbd>ESC</kbd> <kbd>8</kbd> this time to redirect Output.

With this command you can change the place where ALADIN displays or stores certain information. It is used when you wish to print or save a report or a listing of your data.

Your choices are: Monitor, File, Script, Printer, <kbd>SPACE BAR</kbd>

17) Choose Monitor. This is ALADIN's usual mode; all output will appear on your screen if you select this option.

18) Press <kbd>ESC</kbd> <kbd>8</kbd> to return to the Redirect Output Menu.

19) Choose the File option.

This means that certain output is directed to the file that you specify. While all command menu lines, forms and messages continue to appear on your screen, the output of, say, a report will be sent to the file. ALADIN will prompt for name of file.

Although "Printer" is one of your choices in the menu, do not press it at this time. If you do, and you are not connected to the printer for output of data, you will not be able to return to the menu line without re-booting your ALADIN program.

Like the File option, "Printer" redirects your output.

20) Press <kbd>RETURN</kbd> to return to the ALADIN Command Menu.

21) Press <kbd>ESC</kbd> <kbd>9</kbd> for Screen Forms Contrast.

With this function you can control the brightness of the form when displayed on the screen. This allows you to establish a contrast between the forms and your data.

Bright: The screen forms are displayed at their brightest intensity.
Normal: The screen forms are displayed at normal intensity.
Dark : The screen forms are displayed with the lowest intensity.

<kbd>SPACE BAR</kbd> The screen forms are displayed at normal intensity.

NOTE:

This function works only with terminals that support variable intensity screens.

22) Press [RETURN] to return to the ALADIN Command Menu.

23) From the ALADIN Command Menu, press [ESC] [3] for Jumping. (If you have a "Service" function key, you can also use that.)

ALADIN will display the files available for branching.

This function allows you to "Jump" between the various relational files that make up your ALADIN relational system. Simply select the NUMBER of the file that you wish to use. (Be careful not to press the function key when selecting the file to which you wish to jump.)

The [SPACE BAR] causes no action to be taken.

24) Press the [SPACE BAR].

We will cover [ESC] [2], Software Switches, in the lesson on Software Switches.

This ends the lesson on how to use the [ESC] sequences.

When you feel comfortable with your mastery of the [ESC] sequences, begin the next lesson.

Chapter 4: EXPLORING ALADIN'S CAPABILITIES

Lesson 2: Setting The Software Switches

LESSON OBJECTIVE   : To learn how to set the software switches in ALADIN and to understand their individual applications.

REQUIRED TIME   : 5 minutes.

MATERIALS REQUIRED   : ALADIN Plus and ADI Demo and Examples diskettes.

OPTIONAL   : Printer.

The software switches allow you to fine tune many of the operations within your relational system. For example, you can use the sort key to prioritize or alphabetize mailing lists to customers. Activation of the global switch permits you to automatically update designated files for sales forecasting, inventory changes, market changes or many other purposes.

With an Output Query active, you do not have to wade through a long report listing data you aren't concerned about at the present moment. You get only what you want. When an Input Query is active, you can specify that input be in a certain format, preventing data in any other format from being entered. For example, auto part numbers could have this format:

$ $/ # #. ###

All part numbers entered would have to start with two letters, followed by a slash, two numerals, a decimal point, and ending with three numerals. If an operator tried to enter a part number in any other format, it would not be accepted. In this way, ALADIN's Input Query prevents data entry errors. It also ensures that certain data fields are always filled in.

Use of the Duplicate Key switch could prevent a data entry operator from entering two records for the same social security number.

With the Information Switch, you have the option of being asked about changes in every record. When you're doing global changes, you can switch "Info OFF" and ALADIN will speedily make the changes in all of your records.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select that option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press RETURN.

   ALADIN will then prompt you for Userid.

4) Type ADI and press RETURN.

   You will next be asked to enter your Password.

5) Type ADI and press RETURN.

6) From the ALADIN Command Menu, press ESC 2. (If your computer has function keys, choose the Service option, then choose Variables [Vars].)

   ALADIN will display the following menu:

   Vars: 1OQ−, 2IQ−, 3DK+, 4DIR+, 5AP−, 6GL−, 7NOT−, 8SV+, 9INFO+, 0CAL−

The "Switch" module lets you activate or deactivate various features of ALADIN. Each "switch" may be turned ON (" + ") or OFF (" − ") by typing the number that precedes it.

1: OUTPUT QUERY : Is a query active during output? Turns ON or OFF the use of query selection criterion when ALADIN is selecting records from your system. If ON, only records matching the query are displayed. If OFF, even if you have defined a query, it will not be used as ALADIN produces output from your data base.

2: INPUT QUERY : Is a query active during input? Turns ON or OFF the use of a query as a "filter" when entering new data. When ON, only those records which match the query can be saved or updated. By restricting the data values that can be entered, you eliminate certain data entry errors.

3: DUPLICATE KEYS : Are records with duplicate key values allowed? When ON, duplicate key values are allowed when entering data. Otherwise, a warning message appears, thus enabling you to avoid entering non-unique data.

4: SORT DIRECTION : When ON, sorting of records is in ASCENDING order (i.e., 1,2,3, or A,B,C,D). When OFF, sorting is in DESCENDING order (10,9,8, or Z,Y,X). It is also possible to change the direction switch while you are within a screen form in the Data Module by pressing ESC 2. You will observe that the small arrow at the cursor position will reverse its direction. Pressing ESC 2 will toggle the direction, so that if it was forward it will become backward and vice versa.

5: ABSOLUTE POSITION : When OFF, fields are filled with blanks in the Report Module. Each field will be displayed with its full length including spaces. The cursor will be positioned after the last blank entered. You could type "20" in column 4, for example, and `SPACE BAR` and the indicator at the bottom of the screen would move 20 spaces. If this switch is ON for Absolute Position, fields are NOT filled with blanks. Each file will be displayed with the actual length of the field. No spaces will be displayed. If you type "20" and `SPACE BAR`, the indicator moves to column 20. You have specified the Absolute column position for the field to start in.

6: GLOBAL SWITCH : Is it possible to perform global operations? When ON, it is possible to perform REMOVALS and CHANGES over an entire file within your data base. (This is also affected by the INFO switch.) When INFO is ON, the system will prompt you before removing or changing each record. When INFO is OFF, ALADIN will perform the operations without stopping for your input. Global operations may work in conjunction with queries and calculations.

7: "NOT" CONNECTOR : Can "NOT" be used within queries? When ON, the "NOT" connector may be used in queries.

8: SAVE RECORD NOW! : Save immediately after insert or update? Turns ON or OFF the Safety Feature. When ON, records are saved immediately on the disk after an insert or update. This way, if there is a power failure or someone trips over the cord, you don't lose any of your work.

9: INFORMATION : Are all operations displayed on the screen? When ON, all functions are displayed on the screen. For instance, you are asked if you want to change each record using a certain calculation in the Calculate Module. This can be especially useful when your output is being sent to a disk file or printer.

0: CALCULATOR : Is a calculation active? Turns ON or OFF the use of a calculation as a "filter" for new data. The calculator switch controls whether or not a calculation will be applied automatically to global data operation. When the switch is OFF, calculations can only be applied by pressing ESC 6, which effectively limits their use to interactive data manipulations. When the calculator switch is ON, interactive data manipulations continue to require the use of ESC 6, but global operations will now be affected automatically by the calculator. This switch is relevant only when a calculation has been defined.

SPACE BAR : Return to the previous menu.

OPTIONAL INFO

**The purpose of switch 3: DUPLICATE KEYS is to give you the option of allowing duplicate keys in the system.

Example:

MOVIE PRODUCTION COMPANY FILE

Movie Company:
Title of Film:
Producer:
Director:
Leading Stars:
Budget:

It makes sense to have duplicate keys in the Movie Production File since a movie company may produce more than one film. When the DUPLICATE KEYS soft switch is ON (DK +), the system will allow duplicate key records to be entered into files.

However, the system still checks through the key index and will tell you that a duplicate key is being entered into the system. This value checking is done during record entry.

EMPLOYEE FILE:

Employee Number:
Employee Name:
Department:
Title:

In the EMPLOYEE File, it does not make sense to allow employees to have the same number (since employee numbers are supposed to be distinct). When the DUPLICATE KEYS soft switch is OFF (DK −), the system checks through the key index to ensure that there is no redundancy. This value checking is done during record entry and, if there is a duplication, ALADIN will prompt for a new, distinct entry.

**Switch 7: NOT should not be turned on unless you have an excellent understanding of Boolean logic. Check your Reference Guide for more information.

This ends the lesson on how to set the software switches.

When you feel comfortable with a basic understanding of the purpose and function of the software switches, you may begin the next lesson.

Chapter 4: EXPLORING ALADIN'S CAPABILITIES

Lesson 3: System Information Commands

LESSON OBJECTIVE : To learn how to use the Information Module of ALADIN.

REQUIRED TIME : 5 to 8 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

OPTIONAL : Printer.

LESSON OVERVIEW :

The Information Module of ALADIN gives you a complete status report of the entire relational system. In this lesson you will learn how to activate the Information functions.

The Information Module of ALADIN will tell you the status of your ALADIN session and provide you with management information concerning your relational problem or relational data base. The Info Module allows you to see, remove or adjust files and definitions created by ALADIN.

Info : Will display the current status of your system, informing you how much data has been entered and how much room is left on your disk, etc. Information regarding the percentage of used space in your key and data files is displayed, along with the percentage of total space available. You may find that you have no space or very little space available for your key file or data file. If this is the case, you may increase the size of these files by using the "Disk" option from ALADIN's Init program. Refer to the section on ALADIN Disk Utilization for information on how this can be done.

Map : Will display the layout — a road map so to speak — of your relational system, either on the screen or on the printer. The files in your relational system and all the key fields within each file will be shown. Listed beside each key field will be the files to which that field branches. For each file, ALADIN will display the file name followed by the number of records in that file and the number of records declared to be in that file. For example, ALADIN may display:

Data file SPECS (125:250).

SPECS is the name of a file within the relational system. The actual number of records currently in the SPECS file is 125. The maximum number of records defined for the SPECS file is 250.
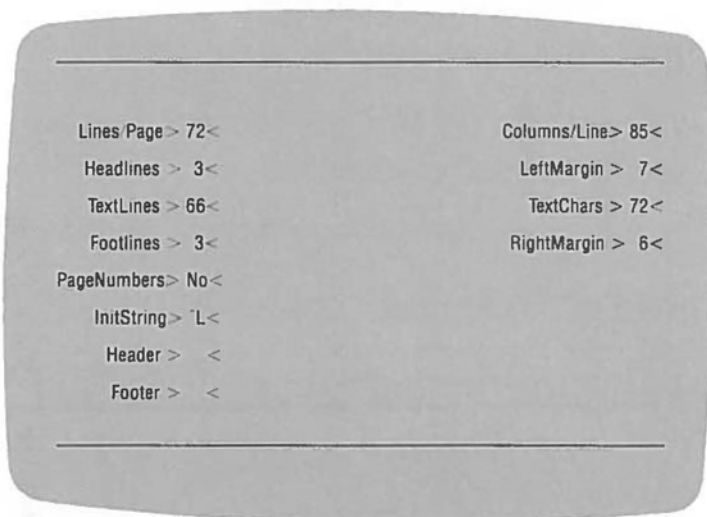
Files : Lists and, if desired, removes the files that you have saved from within the various ALADIN modules. ALADIN will list the files defined in each of the other modules. The Files menu line will list those modules which contain files generated by your relational system.

Files: Report, Query, Calc, Group, Stats, UserFiles, Exit, ?

When you choose any of the options above, ALADIN will ask you if you want to remove some files. If you answer Yes, ALADIN will, for each file, ask if you want to remove that particular file. ALADIN will mark each file with a pointer (>) to indicate that you have chosen to remove that file. If you answer No, the Files menu will return to the screen. You will then be asked if you want to remove those files that are marked. If you answer NO, none of the marked files will be removed from your disk. A Yes answer will cause each of the marked files to be removed from the list and your data base. Either response will return you to the Files Command Menu.

Format : The Format option provides formatting specifications for a printed page layout. In the Format option, you can Define, Save, Recall or View a specialized format. While this is discussed in greater detail both in the lesson on Making Reports and in the Reference Guide, the Format Option allows you to define your borders, add page numbers, and include one-line Headers and Footers.

The format selection menu will look like this:

```
Lines/Page > 72<                    Columns/Line> 85<
Headlines  > 3<                      LeftMargin >  7<
TextLines  > 66<                     TextChars > 72<
Footlines  > 3<                     RightMargin > 6<
PageNumbers> No<
InitString> ˆL<
Header >   <
Footer >   <
```

The Define option will display the specifications and allow you to select your desired values prior to directing output to a printer. The Save and Recall options enable you to save the format that you have defined and recall it for future reports. The View option will display on your screen the format description which is currently activated.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select that option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press [RETURN].

   ALADIN will then prompt you for Userid.

4) Type ADI and press [RETURN].

   You will next be asked to enter your Password.

5) Type ADI and press [RETURN].

6) From the ALADIN Command Menu, choose the Information Module.

7) Choose the Information function.

   ALADIN will now display the current status of the CAR relational system.

```
ADI: CAR

Your ALADIN Relational System is filled to this extent
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Keys                    =     42.73%
Data Records            =     14.87%
Available Storage       =     84.78%
A.D.I. ALADIN v2.6 (6)
```

NOTE:

Your percentages may be different from these, depending on what you've been doing with your Demo and Examples diskette.

The information above tells us exactly how much room has been used to store information in the relational system as well as how much mass storage remains for future data entry.

KEYS: Keys are the "road map" ALADIN uses to track down your DATA. Often called the "data dictionary," the Keys are loaded into your internal memory and account for the extremely fast access speeds the system is able to develop.

DATA RECORDS: This is the data that has been entered into the system.

AVAILABLE STORAGE: This is how much storage remains for the system. This is not necessarily the amount of mass storage remaining on the disk.

Since you can have many relational systems residing on a single disk, the Available Storage information is telling you how much mass storage remains for that individual system. This is based on the amount originally allocated during the relational system's installation.

COMPOSITE: A.D.I. ALADIN v2.6 (6) This tells you that there are six components which comprise the relational system. Although these are transparent to the user they are listed below:

Component Name	Description of File
#1 : CAR.TEXT	The original relational system definition
#2 : CAR.DATA	The data files for the relational system
#3 : CAR.TREE	The relational system's B-Star-Plus Trees
#4 : CAR.DECL	The relational system's declarations
#5 : CAR.BASE	Information as to the relational system's configuration and design – the "base-plate" of the system
#6 : "CAR".USER	The relational system's security access information

8) Choose the option which will return you to the Info Module Command Menu.

9) Choose the Map option.

```
.Data file SPECS (125:250)
   Manufacturer  - > SPECS,DEALER,CUSTOMER;
   Model  - > SPECS;
   Horse_Power_in_PS  - > SPECS;
   Volume_of_Engine_in_CM  - > SPECS;
   Maximum_Speed_in_MPH  - > SPECS;
   Acceleration_time_from_0_to_60  - > SPECS;
   Fuel_Consumption_City_Highway_HS(1)  - > SPECS;
   Fuel_Consumption_City_Highway_HS(2)  - > SPECS;
   Fuel_Consumption_City_Highway_HS(3)  - > SPECS;
   List_Price  - > SPECS;
.Data file DEALER (47:50)
   Manufacturer  - > SPECS,DEALER;
   Name  - > DEALER;
   Zip_Code  - > DEALER;
   Service  - > DEALER;
.Data file CUSTOMER (88:150)
   Customer_Name  - > CUSTOMER;
   State  - > CUSTOMER;
   Age  - > CUSTOMER;
   Sex  - > CUSTOMER;
   Manufacturer  - > SPECS,DEALER,CUSTOMER.
```

ALADIN will display the files in your relational system and all of the key fields within each file. Beside each key field are the files to which that field branches.

10) Choose the option which returns you to the Info Module Command Menu.

11) Choose the Format option.

ALADIN will display all the formatting specifications available to you for a printed page layout. This option is discussed more fully in the lesson on Making Reports.

12) Choose the option which returns you to the main ALADIN Command Menu.

This ends the lesson on System Information Commands.

When you feel comfortable with your understanding of the Information Module of ALADIN begin the next lesson.

Chapter 5: WORD PROCESSING WITH ALADIN

Lesson 1: Word Processing Example

LESSON OBJECTIVES : To learn how a word processor can interface with the ALADIN system.

To see how the speed of ALADIN is not impaired, even when word processing is activated with Query Selection Criteria.

REQUIRED TIME : 5 to 8 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

OPTIONAL : Printer.

LESSON OVERVIEW :

One facet of ALADIN's power and flexibility comes from its ability to integrate with other application packages.

In this example, you will learn how to combine query selections to isolate a group of people from the relational system and then send them letters.

You will also learn the correct format in which to write letters, mailing labels, forms, etc. when you want to combine word processing with ALADIN.

NOTE:

The WordProc function in ALADIN acts as a bridge between the stand-alone word processor and the data in your relational system. It is not in itself a word processor.

ALADIN	↔	WordProc Bridge Function	↔	Stand-Alone Word Processor or Text Editor
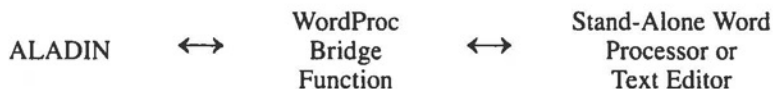
If you do not have a text editor or word processor, you will still be able to run the first example here, because it is included on the Demo and Examples diskette. However, you will not be able to create your own forms, letters, mailing labels, etc. without one.

Text and Word Processing Systems recommended for use with ALADIN are those running under MS-DOS™, p-System, or Apple Pascal.

Word Processor	Vendor
UCSD Pascal™ Editor	SofTech Microsystems
In-Scribe™	ADI and Hyperion
WordStar™	MicroPro
Volkswriter™	Lifetree
Perfect™	Perfect Software
BLUE™	Symmetric Software
MultiMate™	Softword Systems, Inc.
Others	Contact your A.D.I. software distributor

BENEFITS

The larger your business and the wider your circle of clientele, the less attention can be paid to the "personal" approach, whether it is a response to complaints, notice of a special sale, or concern about overdue payments. The fact of the matter is that no one enjoys going through life being addressed as "Occupant" or receiving you-have-been-personally-selected letters in which the ink and typeface of the salutation are worlds apart from the recipient's first name. Word processing puts the personal touch back into business correspondence. And, with ALADIN, the job is even easier.

Suppose you are having a mid-season clearance and want to target, say, those customers in a specific mailing area. By using the Query function of ALADIN, you can define your target population (in this example, it would be by Zip Code), choose a comparison operator (those records that satisfy your definition), and generate a "personalized" letter to your customers. You can also produce mailing labels for the letters' envelopes.

In personnel administration, you might wish to generate an action memo to a specific classification of employees; i.e., all secretaries, office managers and administrative assistants.

In the area of grants and fundraising, your organization might want to direct a newsletter item to those foundations that promote arts activities for the elderly and disabled.

Or perhaps you have a form which contains payment and due date information on "Sea Horses By Mail." You would like to send a pleasant but firm reminder to those clients who have had their sea horses for two months but have yet to send any money. Using ALADIN's Query and Word Processing Bridge Module, along with your word processing program, you will be able to send personalized notices to this select group of twits and advise them to promptly forward a check or return the merchandise in the prepaid envelope enclosed.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select the option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press RETURN.

   ALADIN will then prompt you for your Userid.

4) Type ADI and press RETURN.

   You will next be asked to enter your Password.

5) Type ADI and press RETURN.

6) From the ALADIN Command Menu, press ESC 3 (or you can choose the Service option if your computer offers it).

7) Choose the "Jump" Control Function if you pressed Service.

   ALADIN will prompt:

   1 : SPECS, 2 : DEALER, 3 : CUSTOMER

8) Press the NUMBER 3 for CUSTOMER.

9) Choose the Query Module.

   With the Query Module you can ask ALADIN to select groups of records that satisfy the "query" or selection criteria that you establish. The Query Module is used to define your "query," which will then affect the other modules of ALADIN.

10) From the Query Command Menu, choose Define.

If ALADIN prompts:

Discard previous selection criteria?

and you have defined other queries today, first check to make sure that they have been saved, then press "Y" for Yes, discarding previous selection criteria.

The CUSTOMER Screen should be displayed with the cursor resting on the Customer Name Field.

We want to set up query selection criteria that will pick only women who have purchased cars in the State of California.

Once we have the selection established, we will send them a letter.

11) Move the cursor to the Sex Field.

12) Type: F for Female.

ALADIN will prompt you for a comparison operator, which will be applied to the data value which you have just entered to form an "expression" as part of your Query. In general, records which satisfy the resulting expression will be selected by ALADIN. The following choices are available to you from the menu:

1: " = "   : The expression is satisfied when the value of the field is **EQUAL** to the value you entered.

2: "<>"   : The expression is satisfied when the value of the field is **NOT EQUAL** to the value you entered.

3: ">"   : The expression is satisfied when the value of the field is **GREATER THAN** the value you entered.

4: "> = "   : The expression is satisfied when the value of the field is **GREATER THAN OR EQUAL TO** to the value you entered.

5: "<"   : The expression is satisfied when the value of the field is **LESS THAN** the value you entered.

6: "< = "   : The expression is satisfied when the value of the field is **LESS THAN OR EQUAL TO** the value you entered.

[SPACE BAR]   : The field is not compared with the value you entered. No action is taken.

13) Choose the Equal option since we want to consider only women.

14) Position the cursor on the State Field.

15) Type: CA.

Again, ALADIN will prompt for the comparison.

16) Since we want women who purchased their cars in California, choose the Equal option in response to the prompt for a comparison operator.

Now ALADIN will ask you how to compare and "join" the two questions we have asked:

We want to select women car buyers
AND
We want to ensure that they are from California

The following "connectors" are available from the menu:

1: AND: An expression built with the AND connector is satisfied when the two connected expressions are BOTH true.

e.g.: Select cars costing more than $20,000 AND less than $30,000

2: OR: An expression built with the OR connector is satisfied when EITHER or BOTH of the two connected expressions are true.

e.g.: Select cars with 5-speed OR overdrive transmissions (or both).

3: XOR: An expression built with the XOR (exclusive OR) is satisfied when ONE but NOT BOTH of the two connected expressions is true.

e.g.: Select cars with 5-speed or overdrive transmissions but NOT with both.

SPACE BAR defers the logical connection until later, overriding the normal "left-to-right" expression grouping. This has the effect of "parenthesizing" the most recent expression with an expression yet to follow.

17) In response to the prompt for a "connector," choose the AND option.

18) Now press the down or right arrow cur ;or control key until ALADIN prompts:

.Is your definition complete?

19) Press "Y" for Yes.

ALADIN will display the selection criteria you have defined:

Sex " = " F AND State " = " CA

20) Press SPACE BAR and ALADIN will display the Query Command Menu.

21) Choose the option that will return you to the ALADIN Command Menu.

22) Choose the Word Processing Module.

ALADIN will prompt if you want to use your query.

23) Answer "Y" for Yes.

ALADIN will prompt for the name of the word processing file for reference.

24) Type: FM and press RETURN.

ALADIN will prompt for today's date.

25) Enter the date in any format you wish:

Example:

Date> 12-1-82 or December 1st, 1982 or 12/1/82 etc.

26) Press ⟨RETURN⟩ after entering the current date.

ALADIN will begin processing the letters.

NOTE:

You may interrupt the processing with ⟨PAUSE/CONT⟩ or ⟨BREAK⟩ if your system is equipped with this function.

ALADIN processes "Big Al's" letter by making substitutions from the data within the relational system and the text. The matrix letter (a "form" or "pattern" letter which works like a template) is stored on your Demo and Examples diskette.

```
┌─────────────────┐
│  The ALADIN     │
│  System         │
└────────┬────────┘
         │
┌────────┴────────┐      ┌──────────┐      ┌────────────────────┐
│ All data in the │ ───> │ Customer │ ───> │ Only women who     │
│ relational      │      │ File Data│      │ bought cars from   │
│ system          │      │          │      │ California         │
└─────────────────┘      └──────────┘      └──────────┬─────────┘
                                                       │
         ┌─────────────────────┐                       │
         │  Big Al's Letter     │ <────────────────────┘
         └──────────┬──────────┘
                    │
         ┌──────────┴──────────┐
         │  Text Editor or     │
         │  Word Processor     │
         └─────────────────────┘
```
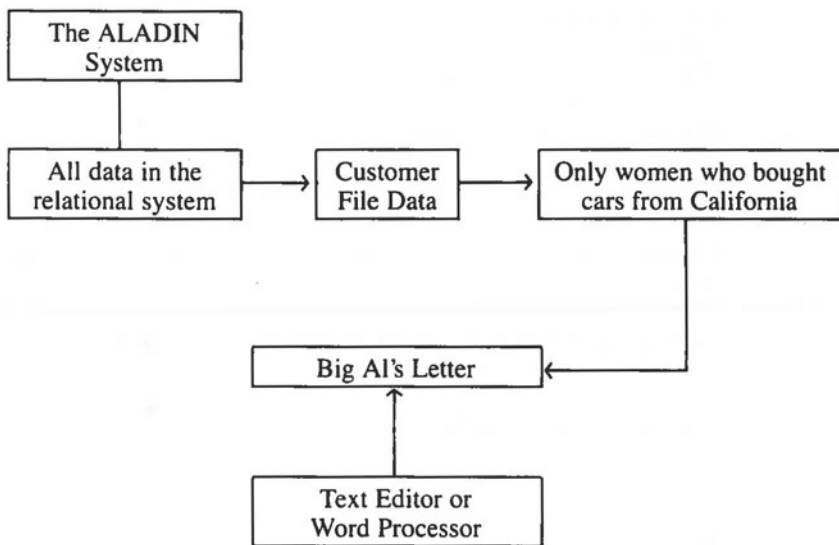
Here is the format of the letter that was created by a text editor:

@?Date@
Big Al's Easy Finance
(Or Repossession)
44 Magnum Drive
Chicago, Illinois

Mrs. @**Customer_Name**@
@**Street**@
@**City**@, @**State**@@**Zip**@

Dear Mrs. @**Customer_Name**@,

We hope you are enjoying your new @**Manufacturer**@.

But haven't you forgotten something? Like your last three car payments!! Do you think that @**Manufacturer**@s grow on trees?

If we don't get your payment for $@**Payment**@ we may have to break your husband's other leg, too.

Hope the kids are doing fine.

Best wishes,

BIG AL

NOTE:

The "@" character is used to "flag" the WordProc Bridge and tells it to substitute information from the ALADIN files under this field name.

The "@" character followed by a ? and the word "date" allows you to put in your own date.

Be sure you spell the names of your fields exactly as they appear in the ALADIN files.

Make sure that every "@" is matched by another "@". They must be in pairs.

This is the end of the lesson.

When you feel comfortable with your mastery of the Word Processing Module of ALADIN, begin the next lesson.

Chapter 6: STATISTICS WITH GRAPHICS

Lesson 1: Statistics with Graphics

LESSON OBJECTIVES : To learn about the Statistics Module of ALADIN and develop a working understanding of how to set up basic groupings and perform statistical analyses.

To learn more about the integration potential of the ALADIN relational system with other software packages.

To gain insight into how this software package can save small and medium scale businesses time and money.

REQUIRED TIME : 15 to 20 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

OPTIONAL : Printer.

LESSON OVERVIEW :

ALADIN offers you a powerful statistics package that is more flexible and easier to use than SPSS on a main-frame computer system, which has long been considered a standard of the industry.

Statistics are a part of our daily lives. They're in the sports scores and player stats. We hear about them on the news, and the President talks about them in terms of percentage of unemployment or the latest inflation figures. We get angry when Chase Manhattan or CitiCorp raises the prime interest rate. We are annoyed when we make a bad business decision because a marketing report didn't take into account cost variances or adjust for changes in the mean value or standard deviation.

Most business people recognize the importance of statistics, but until now the cost of the "tools" for applying statistical analysis to small and medium scale business has been prohibitive.

More important, those businesses which went through the expense of using statistical modeling found it was difficult to interpret exactly what the "figures" really meant. Those businesses that hired outside agencies and consultants to perform the analyses and interpret the data soon found themselves in a "time-lag" due to the inability to "customize" or tailor reports for unique circumstances and situations.

The ALADIN statistical package was designed as a powerful yet easy-to-use "tool" that enables small and medium scale businesses access to information not available to them before.

Using the Query Module in combination with the Statistics Module will allow you to receive greater definition in statistical reports. By integrating Query, Word Processing Bridge and Statistics with Graphics as described in the lesson on Integration of ALADIN Modules, you will be able to send personalized letters containing numerous statistical tables and graphs to a selected group on your mailing list. Just think how impressed all of your dealers who sell fuchsia wetsuits will be when they see, graphically depicted, a summary of your nationwide sales, broken down by males, females and age groups!

NOTE:

The more you learn about statistical theory and practice the more use you'll get from ALADIN's Statistics Module. See the list of suggested reference books at the end of this lesson.

The Statistics package in ALADIN is broken into two distinct operations: Grouping and Statistical Analysis (computation).

Grouping: Prior to conducting a statistical analysis, you must first organize the basis for comparing your data.

Example:

We want to see if there is any correlation between how fast a car goes (maximum speed) and how much you must pay for a car (list price). Although we have a hunch that the more we pay the faster we can go, this can be easily proved or disproved using statistical analysis.

First you would divide the maximum speeds into distinct groups: (Please be patient with us for a few pages before trying to do any of these things on your own.)

MAXIMUM SPEED GROUP TABLE

Group Number	Range
1	0 to 90 MPH
2	90 to 100 MPH
3	100 to 120 MPH
4	120 to 150 MPH
5	150 to 999 MPH

Now we must divide the list prices into distinct groups:

LIST PRICE GROUP TABLE

Group Number	Range
1	0 to $5000
2	$5001 to $9000
3	$9001 to $15000
4	$15001 to $20000
5	$20001 to $30000
6	$30001 to $99999

NOTE:

The total number of groups within a Group Table DOES NOT have to match the total number of groups in the Group Table you are going to compare them against.

Example:

The Maximum Speed Group Table has 5 distinct groups, while the List Price Group Table has 6.

Better statistical results are usually obtained by making the ranges within the groups small.

Example:

You could take group 1 in the list price Group Table and make five or six sub-groups: 0 to $1000, $1001 to $2000 etc. You can break down an analysis (using your computer to its maximum ability) by running your statistical problems in these smaller segments. Once you put all the segments together, you have a complete "picture" of the statistical analysis.

Statistical Analysis (computation):

This is the number-crunching module of the program. First you must tell the system what kind of an evaluation you want:

Example:

Single- or 1-dimensional analysis (in this case, an age breakdown of car buyers)

File that Analysis was performed on: CUSTOMER

Group Table Used: G1

Date and User: ADI : 01.22.82

Evaluate # 1 (86:80) $MVh = 2.8$ $SDh = 1.2$

Total No.
of Data Records   Standard
                                                   Deviation,
                                                   Horizontal
Number Analyzed
                                        Mean Value, Horizontal

Age   (1..5)
(1−>16..20|2−>20..25|3−>26..30|4−>31..35|5−>35..50)

The Age Group Table
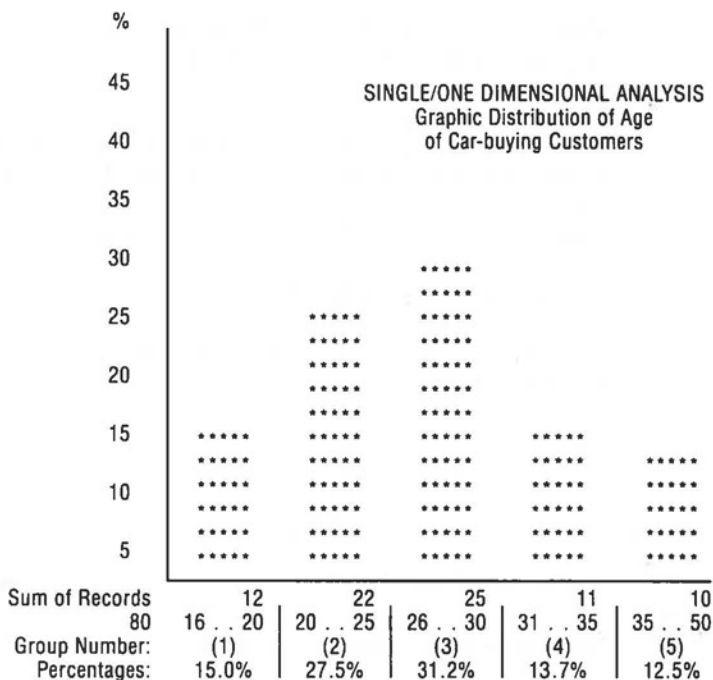
```
  %
                                 SINGLE/ONE DIMENSIONAL ANALYSIS
 45                                   Graphic Distribution of Age
 40                                      of Car-buying Customers

 35

 30                            • • • • •
                               • • • • •
 25                • • • • •    • • • • •
                   • • • • •    • • • • •
                   • • • • •    • • • • •
 20                • • • • •    • • • • •
                   • • • • •    • • • • •
                   • • • • •    • • • • •
 15   • • • • •    • • • • •    • • • • •    • • • • •
      • • • • •    • • • • •    • • • • •    • • • • •    • • • • •
 10   • • • • •    • • • • •    • • • • •    • • • • •    • • • • •
      • • • • •    • • • • •    • • • • •    • • • • •    • • • • •
      • • • • •    • • • • •    • • • • •    • • • • •    • • • • •
  5   • • • • •    • • • • •    • • • • •    • • • • •    • • • • •
```

Sum of Records	12	22	25	11	10
80	16 . . 20	20 . . 25	26 . . 30	31 . . 35	35 . . 50
Group Number:	(1)	(2)	(3)	(4)	(5)
Percentages:	15.0%	27.5%	31.2%	13.7%	12.5%

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select the option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press RETURN .

   ALADIN will then prompt you for Userid.

4) Type ADI and press RETURN .

   You will next be asked to enter your Password.

5) Type ADI and press RETURN .

6) From the ALADIN Command Menu, choose the Group option.

Prior to performing a Statistical Evaluation with ALADIN, the data, records, fields, and files must be grouped or categorized for comparison.

We want to define one Group Table that has the following components: German Car Manufacturers, Maximum Speed and List Price.

7) From the Group Menu, choose the Define option.

   ALADIN will display the SPECS Screen.

8) With the cursor on the Manufacturer's Field, press the key that will generate a caret ("'^'").

   The screen will clear and the system will be ready to set up the group definitions for the Manufacturer.

9) Type: Audi and press `RETURN`.

   Group #1: Audi_____ to . . . .

10) Since we want to set up individual comparisons there are no ranges involved. Therefore, press the left arrow key twice.

11) Type: BMW and press `RETURN`.

   Group #1: Audi_____ to . . . .

   Group #2: BMW_____ to . . . .

12) Again, we want only individual comparisons; there are no ranges involved. Therefore, press the left arrow key twice.

13) Type: Porsche and press `RETURN`.

14) Press the left arrow key twice.

15) Type Mercedes-Benz and press `RETURN`.

16) Press the left arrow key twice.

   An individual group can contain more than one item or range.

17) Type: Opel and press `RETURN` twice. This makes a solid line after Opel (Opel__ to _____).

WARNING:

Whether you have a dotted or solid line in the second column is VERY IMPORTANT. If you have two manufacturers within a group, as you do in Group 5 below, you want a SOLID line after the first manufacturer. Otherwise, this manufacturer is left out of the analysis.

18) Type: VW.

19) Press RETURN.

20) Press the left arrow key ONCE.

Your Group Table should now look like this:

```
Grouptable: Manufacturer

Group 1: Audi_____    to  ...............................

Group 2: BMW_____    to  ...............................

Group 3: Porsche_____    to  ...............................

Group 4: Mercedes-Benz_____    to  ...............................

Group 5: Opel_____    to  _____

Group 5: VW_____    to  ...............................

Group 5:  ...............................
```

21) Press the left arrow key again, then the right or down arrow key once.
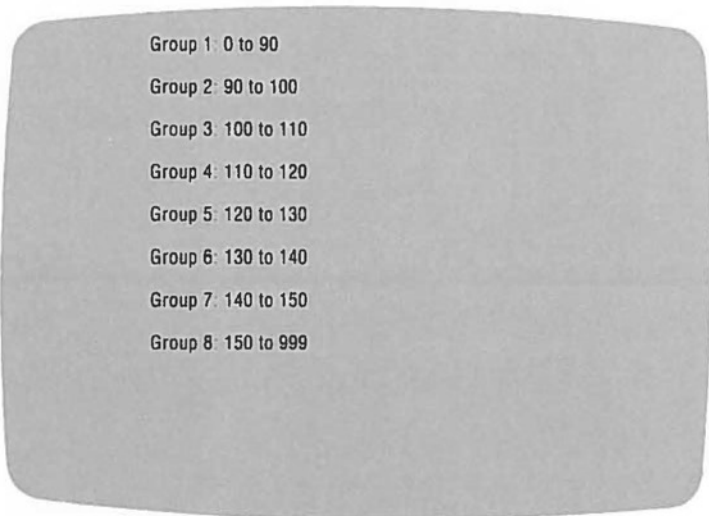
ALADIN will return you to the SPECS Screen. The letter "R" will be resting on the Manufacturer's Field. "R" stands for Reference Point. If you wanted to have the same grouping on another field, you would position the cursor on that field and type "S" for Same.

22) Move the cursor to the Maximum Speed Field.

23) Press the key that will generate a caret ("^").

The screen will clear and the Group Table set-up for the Maximum Speed Field will move to the bottom of the screen. Using the guidelines above, set up the following table (using ranges):

NOTE:

Watch carefully the location of your cursor on the screen. Starting in Group 2, it will automatically move to the next step (because you have used the maximum length for that field). Remember to use the left arrow key to separate groups. If you make a mistake setting up any of these Group Tables, press the down or right arrow key once and you will return to the SPECS screen. Go back to the field for which you need to redefine a Group Table. Select it with the caret key and set up a new Group Table for that field. The other Group Tables you have set up from the SPECS screen will NOT be affected.

Group 1: 0 to 90

Group 2: 90 to 100

Group 3: 100 to 110

Group 4: 110 to 120

Group 5: 120 to 130

Group 6: 130 to 140

Group 7: 140 to 150

Group 8: 150 to 999

NOTE:

Pressing the left arrow key sets up a new group.
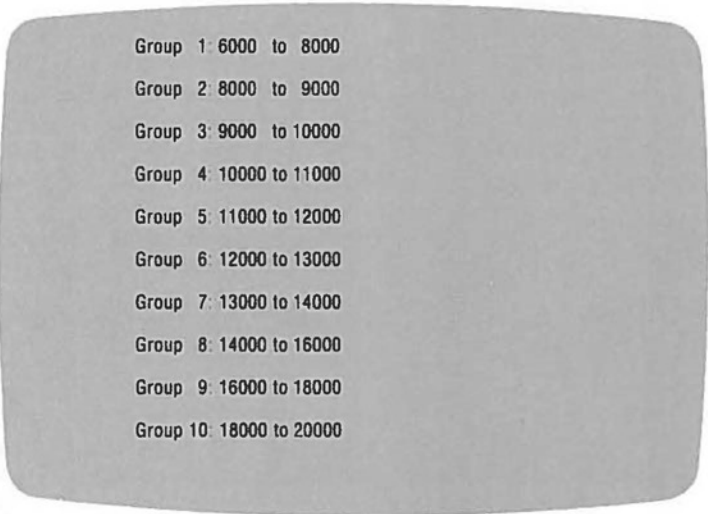
24) Press the left arrow key twice.

ALADIN will bring up the SPECS Screen.

25) Move the cursor to the List Price Field.

26) Press the key that will generate a caret (^).

The SPECS Screen will clear. Using the guidelines above, set up the following table:

```
Group  1  6000  to   8000
Group  2  8000  to   9000
Group  3  9000  to  10000
Group  4 10000  to  11000
Group  5 11000  to  12000
Group  6 12000  to  13000
Group  7 13000  to  14000
Group  8 14000  to  16000
Group  9 16000  to  18000
Group 10 18000  to  20000
```

27) Press the left arrow key twice, then the right or down arrow key once until ALADIN prompts:

.Is your definition complete?

28) Press "Y" for Yes.

ALADIN will return you to the Group Menu.

29) Choose the Save option.

ALADIN will ask you for the name under which you wish to save these groupings.

30) Type: G1 and press ⟨RETURN⟩.

ALADIN will return you to the Group Menu. Now that you've defined and saved a Group Table, let's pause for a look at all of the options in the Group Menu.

Define : A "group" or "map" in the categorization of records for statistical evaluation.

To review how to define a Group Table:

a) Position the cursor on the desired field.

b) Press the caret key. The field will appear on the bottom of the screen with a #1 before it.

c) Type in the item to be categorized. This is the first item in the Group Table.

d) Press ⟨RETURN⟩ (unless the item is exactly the length of the field, in which case the cursor will automatically move to the second field). A second field will appear. This is used for ranges; it represents the upper limit of the range.

e) Press the left arrow key once to make within-group comparisons of individual items; i.e., Opel, VW, OR press the left arrow key twice to bring up a new group.

f) Press the left arrow key twice in a new group to exit.

g) Repeat as required for different fields.

NOTE: Wild cards are allowed. You may also use a previously defined group or map on another field by typing "S" for Same.

Save : Saves your currently defined Group Table for later Recall or for use by the Statistics Module.

Recall : Recalls a Group Table that has been previously saved.

View : Displays the Group Table on the screen or printer.

Quit : Returns to the ALADIN Command Menu.

NOTE:

ALADIN allows you to extend your Group Table definition. After you have set up and saved groupings under a file reference name, you would choose Recall from the Group Menu; enter the file reference name for the Group Table definition you want to extend; choose Define from the Group Menu; answer No when ALADIN asks about discarding your old definition; move your cursor to the field for which you want to define a Group Table; set up the Group Table using the usual Define steps; save the old and new groupings under the old file reference name; answer Yes to remove the file already existing by that name. If you want to check the new groupings, choose Recall from the Group Menu, then View. The newly defined grouping will appear, in addition to the old groupings.

31) Choose the option that will return you to the ALADIN Command Menu.

32) From the Command Menu, choose the Statistics option.

If you have a query or selection criteria loaded in RAM, ALADIN will prompt:

Do you want to use your QUERY?

We can have a query active during our analysis, thereby selecting only certain records which qualify. However, should this message be displayed during this example, please type "N" for No so we can analyze the entire system.

The Statistics Module of ALADIN allows the user access to one of the most powerful statistical evaluation packages offered on a microcomputer.

Define : Allows you to define various types of evaluations. For Single or One-dimensional evaluations position the cursor on the desired field and type "S." For Two or Multi-dimensional evaluations position the cursor on the field to be used as the Horizontal axis and type "H". Move to the next field to be used as the corresponding Vertical axis and type "V". There is no software limit to the number or combinations of "H's" and "V's" you select. You need to select the "H" before the "V."

NOTE: You may also return to a field immediately after any type of selection (single or multi) and request:

"F" : Frequency of occurrences.
"T" : Provide a Total or Summation.
"G" : Group data in accordance with the Group Table.
"U" : Ungrouped: Do Not Use the Group Table.

For help in making decisions about which specifications you want to use, see the Reference Guide and statistical reference books.

Save : Saves the statistical evaluation definition.

Recall : Recalls a previously saved statistical evaluation definition.

View : Lists the actual defined statistics.

Evaluate : Activates the evaluation ALADIN displays and prompts for the name of the Group Table, then performs the evaluation.

Quit : Exits the Statistics Module of ALADIN.

33) Choose the Define option.

The SPECS Screen should now be displayed.

34) Check to see that the cursor is on the Manufacturer's Field.

35) Type "S" for a Single Statistical Analysis.

36) Move the cursor to the Maximum Speed Field.

37) Type "S" for a Single Statistical Analysis.

38) Move the cursor to the List Price Field.

39) Type "S" for a Single Statistical Analysis.

```
CAR.SPECS (CON: CON:) ( – – – )              Statistics Define
_____
           Manufacturer: S_____
           Model: _____

Horse_Power_in_PS: ___        Volume_of_Engine_in_CM: _____
Maximum_Speed_in_MPH: S_ Acceleration_time_from_0_to_60: ___

Fuel_Consumption__ City_Highway_HS: __ __ __      Gasoline_Type: .

Five_Gear_Model_Available: .      Automatic_Transmission_Available: .

Number_of_Doors: .                       Sun_Roof_Available: .

Colors_Available: .......... .......... .......... ..........
                 .......... .......... .......... ..........
                 .......... ..........
           List_Price $: _____
_____
(F.G) (3  $ 19.78 KB )
```

At the bottom of your screen, ALADIN keeps count of the number and types of analyses you are requesting.

We have now defined three single evaluations. Let us see if there is any correlation between how much a German car costs and how fast it goes.

40) With the cursor on the List Price Field, type "H" for Horizontal.

This means that the group of price ranges will form the horizontal ("X") axis of our evaluation.

NOTE:

You must specify the "H" before specifying the "V."

41) Using the left arrow key, position the cursor on the Maximum Speed Field.

42) Type: "V" for Vertical.

This means that the group of maximum speeds will form the vertical ("Y") axis of our evaluation.

43) Press the down or right arrow cursor control key until ALADIN prompts:

.Is your definition complete?

```
CAR SPECS (CON: ,CON:) ( – – –)                    Statistics Define
_____

                Manufacturer: _____
                Model: _____

Horse_Power_in_PS: ___        Volume_of_Engine_in_CM: _____
Maximum_Speed_in_MPH: V_  Acceleration_time_from_0_to____60

Fuel_Consumption__ City_Highway_HS __ __ __    Gasoline_Type:

Five_Gear_Model_Available:       Automatic_Transmission_Available:

Number_of_Doors: .                      Sun_Roof_Available:

Colors_Available: ........ ......... ......... .........
                  ......... ......... ......... .........
                  ......... .........

                List_Price $: H _____

_____
                                       .Is your definition complete?
```

44) Press "Y" for Yes.

ALADIN will redisplay the Statistics Command Menu.

NOTE:

If you wanted to save this definition for later recall, you would choose the Save option here before proceeding.

45) Choose the Evaluate option.

ALADIN will prompt for the name of the Group Table with which to make the statistical comparisons.

46) Type: G1 and press RETURN .

ALADIN will now begin the evaluation process. At the bottom of your screen, ALADIN will display the "KEY" of each record that is being analyzed.

In a minute or two, ALADIN will signal with a "beep" that the analysis is complete and is ready to be viewed.

NOTE:

If you wanted to rerun the evaluation using a query, before defining your "S's," "V's," and "H's," you would: Recall the query. Answer Yes, you DO want to use your query. Define the statistical analysis and continue as usual. Once your query has been recalled, you can turn it OFF and ON using ESC 2 and setting OQ to " − " or " + " respectively.

You can view your evaluations in three ways. ALADIN will present you with the following choices:

Absolute : The data from the evaluation is displayed in absolute terms.

Percent : The data from the evaluation is displayed in percentages.

NOTE: ESC 6 has a special function in the Statistics Module for redefining the universe. See the Reference Guide.

Graphics : The data from the evaluation is displayed in histograms, bar charts and scattergrams.

NOTE: You may use the arrow keys to go back through the evaluations. You may direct output to the printer or a disk textfile (for use in word processing) with ESC 8 .

47) Choose the Absolute option.

The first statistical table will be displayed.

48) Choose the Graphics option.

The table will be redisplayed graphically.

49) Choose the Percent option.

The Table will be redisplayed in terms of percentages of the entire system.

50) Press the [SPACE BAR] to bring up the next table.

If you have function keys that take you backwards and forwards, once you are in the "backwards mode," [SPACE BAR] will take you backwards until you press the function key to go forwards again. If you press the left arrow key once, ALADIN will show you the display options available.

NOTE:

Choosing the Percent option during a multi-dimensional analysis will give you the predicted values and "weight" factors for that table. If you wanted to redirect output from your monitor to a textfile for incorporation into another textfile, you would press [ESC] [8], the Redirect Output Control Function, and then "File."

51) Choose the option that will enable you to quit.

Here are some examples of the statistical tables:

```
.Evaluate #  1  (125:29)  MVh = 3.4  SDh = 1 4

Manufacturer        (1 . . 5)
(1 -> Audi !2 -> BMW !3 -- Porsche !4  > Mercedes-Benz !5 - >Opel    .VW )


        1   2   3   4   5
---- : ---------------------------------
  29!   4   3   8   4   10
```

NOTE:

Notice the dots and comma after Opel. They must be there or else Opels will not have been included.


```
 %        Manufacturer        (1 . . 5)
50 │
45 │
40 │
35 │                                        · · · · ·
30 │                                        · · · · ·
25 │                           · · · · ·     · · · · ·
20 │                           · · · · ·     · · · · ·
15 │  · · · · ·                · · · · ·     · · · · ·
10 │  · · · · ·                · · · · ·  · · · · ·  · · · · ·
 5 │  · · · · ·   · · · · ·     · · · · ·  · · · · ·  · · · · ·
   │  · · · · ·   · · · · ·     · · · · ·  · · · · ·  · · · · ·
   └─────────────────────────────────────────────────────
     29        4        3        8        4        10
                                              Evaluate #1 ▷
```
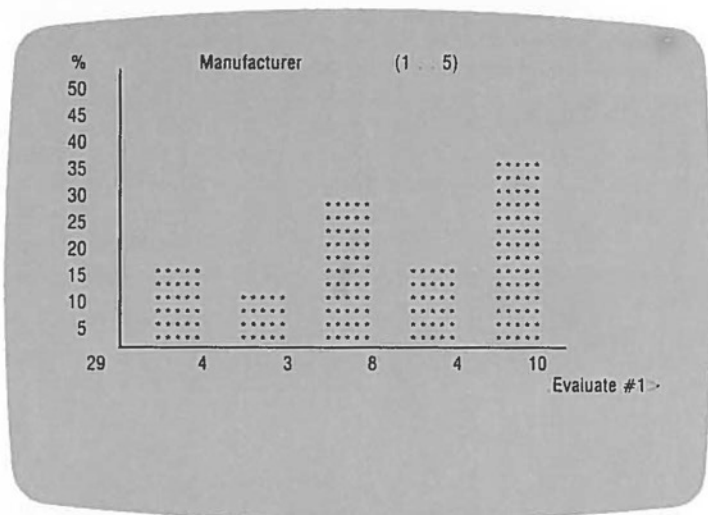
Absolute terms are displayed on the horizontal side of the graph, with the corresponding percentage values displayed on the vertical edge.

In this case there were 29 cars in the entire system that qualified with our Group Table #1.

Four were Audis, accounting for nearly 15% of the cars "polled" in Group Table #1 (4 cars out of 29 were Audis, which is 4/29 or approximately 15%). If we wanted to see what the total percentage of Audis was (sampled from the entire data set of the relational system), we could redefine our Group Table in broader terms and use the Query Module to select the cars we want.

Here is an example of a bar graph on maximum speeds for the cars in the survey. Note that it may have been preferable to break Group 8 into several more sections to get more validity in that bar.

.Evaluate # 2   (125 125)   MVh = 4 1   SDh = 2 2

Maximum_Speed_in_MPH   (1 . 8)
(1 – > 0..90 !2 – > 90 . 100 !3 – > 100 . 110 !4 – > 110 . 120 !5 – >
120..130 !6 – > 130..140 !7 – > 140 . 150 !8 – > 150 . 999)

	1	2	3	4	5	6	7	8
125	13	27	16	22	14	11	8	14

.Evaluate #2>

%   Maximum_Speed_in_MPH   (1 . 8)
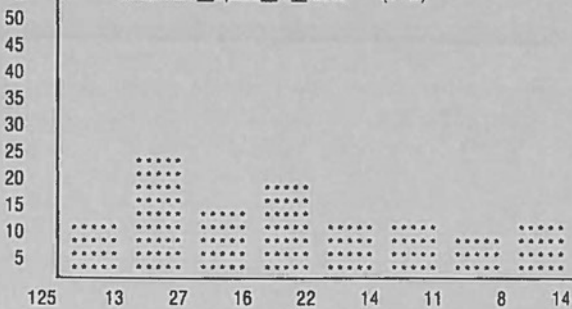
On your monitor, look at the graph on List Price. The Group Table for List Price is also inadequate, as reflected in the Mean Value and Standard Deviation figures. There are too many cars that cost between $5000 and $20,000. Therefore, our analysis may be somewhat inaccurate.

OPTIONAL INFORMATION

For extra practice, return to the Group Module and redefine G1 so that your List Price ranges are smaller and start from $6,000 to $20,000. Then make a new Group Table (call it G1a) with ranges of $20,000 and greater.

Here is our multi-dimensional analysis. Notice that it has been performed using the redefined Group Table.

The examples below will show you how to read and interpret your statistical analysis.

>   .Evaluate #4   # 1   (125:46)   MVh = 6.4   SDh = 2.8
>   MVv = 4.5   SDv = 1.9   Q = 64.1   DegFree = 56   Sign
>   = 78.6%   Rg = -0.37   Ck = 0.81

The first row:
>   (125:46) tells us that there are 125 data records in the system. Of the 125, 46 records met the Group Table's criteria for the comparison.
>
>   MVh = 6.4 is the Mean Value in the horizontal
>   SDh = 2.8 is the Standard Deviation, horizontal
>   MVv = 4.5 is the Mean Value in the vertical
>   SDv = 1.9 is the Standard Deviation, vertical

The second row:
>   ChiQ = 64.1 is the result of the Chi Square test
>   DegFree = 56 is degree of freedom in the analysis
>   Sign = 78.6% is the significance percentage — it puts a value on the question: Are these two factors (i.e. price and speed) related? In this case there's a better than 78% chance that they are.
>   Rg = -0.37 is the Pearson Coefficient for linear regression
>   Ck = 0.81 is the Pearson Coefficient for linearity

If these statistical concepts are unfamiliar to you, you may want to consult one or more of these statistical reference books:

Reading Statistics and Research by Schuyler W. Huck, William H. Cormier, and William G. Bounds, Jr. New York: Harper and Row, 1974.

Fundamentals of Behavioral Statistics (4th ed.) by Richard P. Runyon and Audrey Haber. Menlo Park, CA: Addison Wesley, 1980.

Introductory Statistics for the Behavioral Sciences (3rd ed.) by Joan Welkowitz, Robert B. Ewen, and Jacob Cohen. New York: Academic Press, 1982.

Below are the new statistical evaluations:

```
Horiz        List Price $         (1..10)

( 1->    6,000.00   8,000.00       |2->     8,000.00   9,000.00
 |3->    9,000.00  10,000.00       |4->    10,000.00  11,000.00
 |5->   11,000.00..12,000.00       |6->    12,000.00..13,000.00
 |7->   13,000.00..14,000.00       |8->    14,000.00..16,000.00
 |9->   16,000.00..18,000.00      (10->    18,000.00..20,000.00  )


Vert       Maximum Speed   (MPH)   (1..8)

 ( 1->    0..90     2->   90..100   |3->  100..110   |4->  110..120
  |5->  120..130   |6->  130..140   |7->  140..150   |8->  150..999 )
```

The table that follows is the actual scattergram plot of the analysis:

		1	2	3	4	5	6	7	8	9	10
	81	19	15	8	3	7	6	4	7	4	8
1:	11	5	3	2		1				1	
2:	24	11	6	2		2	1		1	1	
3:	12	2	3	2		1	1	1	1		1
4:	17	1	1		1	2	3	1	2	1	5
5:	11		2	1	1	1	1	1	2	1	1
6:	4			1	1			1	1		
7:											
8:	2									1	1

In the top line, 46 is the total number of records in the analysis. If we read across we see that in Horizontal Group 1 cars costing between $6000 and $8000 have 5 cars in that group. Of those 5 cars 2 of them were in Vertical Group 7 (cars that had a maximum speed between 141 to 150 miles per hour), and 3 were in Vertical Group 8 (cars with a maximum speed greater than 150 miles per hour).

We read the rest of the chart the same way.

The "P" Percentage chart of the analysis which follows not only gives the figures in terms of percentages, but also tells us how much each item contributed toward the two factors being related (linearity), or not related (regression). These figures (the line after the percentages) are called the weight factors.

If the weight factors and percentages are large, we must check our Group Table to see if it can be refined further; otherwise the analysis may not be correct.

```
.Evaluate # 1(124:81)   MVh = 4.4   SDh = 3.1   MVv = 3.2
              SDv = 1.6   ChiQ = 68.2   DegFree = 54   Sign = 90.8%
              Rg = 0.57   Ck = 0.72

    Horiz         List Price $           (1..10)

  ( 1 ->    6,000.00..  8,000.00      |2 ->    8,000.00..  9,000.00
   |3 ->    9,000.00..10,000.00       |4 ->   10,000.00..11,000.00
   |5 ->   11,000.00..12,000.00       |6 ->   12,000.00..13,000.00
   |7 ->   13,000.00..14,000.00       |8 ->   14,000.00..16,000.00
   |9 ->   16,000.00..18,000.00       |10 ->  18,000.00..20,000.00  )

    Vert        Maximum Speed   (MPH)    (1..8)

  ( 1 ->    0.. 90      2 -> · 90..100   |3 ->  100..110   |4 -> 110..120
   |5 ->  120..130     |6 ->  130..140   |7 ->  140..150   |8 -> 150..999  )
```

		1	2	3	4	5	6	7	8	9	10
	100.0%	23.5	18.5	9.9	3.7	8.6	7.4	4.9	8.6	4.9	9.9
	%	26.3	20.0	25.0	.	14.3	.	.	.	.	.
1:	13.6%	45.5	27.3	18.2	.	9.1	.	.	.	.	.
		2.4	1.0	0.9	-0.4	0.0	-0.8	-0.5	-1.0	-0.5	-1.1
	%	57.9	40.0	25.0	.	28.6	16.7	.	14.3	25.0	.
2:	29.6%	45.8	25.0	8.3	.	8.3	4.2	.	4.2	4.2	.
		5.4	1.6	-0.4	-0.9	-0.1	-0.8	-1.2	-1.1	-0.2	-2.4
	%	10.5	20.0	25.0	.	14.3	16.7	25.0	14.3	.	12.5
3:	14.8%	16.7	25.0	16.7	.	8.3	8.3	8.3	8.3	.	8.3
		-0.8	0.8	0.8	-0.4	-0.0	0.1	0.4	-0.0	-0.6	-0.2
	%	5.3	6.7	.	33.3	28.6	50.0	25.0	28.6	25.0	62.5
4:	21.0%	5.9	5.9	.	5.9	11.8	17.6	5.9	11.8	5.9	29.4
		-3.0	-2.1	-1.7	0.4	0.5	1.7	0.2	0.5	0.2	3.3
	%	.	13.3	12.5	33.3	14.3	16.7	25.0	28.6	25.0	12.5
5:	13.6%	.	18.2	9.1	9.1	9.1	9.1	9.1	18.2	9.1	9.1
		-2.6	-0.0	-0.1	0.6	0.0	0.2	0.5	1.0	0.5	-0.1
	%	.	.	12.5	33.3	.	.	25.0	14.3	.	.
6:	4.9%	.	.	25.0	25.0	.	.	25.0	25.0	.	.
		-0.9	-0.7	0.6	0.9	-0.3	-0.3	0.8	0.7	-0.2	-0.4
	%	.	.	.	.	.	.	.	.	.	.
7:	%	.	.	.	.	.	.	.	.	.	.
		.	.	.	.	.	.	.	.	.	.
	%	.	.	.	.	.	.	.	.	25.0	12.5
8:	2.5%	.	.	.	.	.	.	.	.	50.0	50.0
		-0.5	-0.4	-0.2	-0.1	-0.2	-0.1	-0.1	-0.2	0.9	0.8

HORIZONTAL (X AXIS)

This is the end of the lesson on Statistics with Graphics. If you would like a printed version of your tables, use the Control Function ESC 8 to redirect output to the printer. The lesson on Integration of ALADIN Modules will tell you how to combine the Statistics with Graphics Module with the Word Processing Bridge and Query Modules.

Chapter 7: THE ALADIN CALCULATOR
Lesson 1: ALADIN Calculator Basics

LESSON OBJECTIVE : To learn how to use the Calculator Module and prepare a report including calculations.

REQUIRED TIME : 10 to 15 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

LESSON OVERVIEW :

We will use the Calculator function to convert the maximum speeds of cars in the data base from miles per hour to kilometers per hour.

INTRODUCTION: ·

The Calculate Module of ALADIN — Aladi-Calc — is a very powerful, yet easy to use, free-form spread sheet. Aladi-Calc is as different from the typical Visi-Calc™ or Multi-Plan™ electronic spreadsheets as they were from the days when accountants used to prepare spreadsheets by hand.

Any calculator can subtract 4 from 9 and get a result of 5, but only Aladi-Calc can subtract Benz from Mercedes-Benz and get a result of Mercedes.

For the business man or woman the benefits and uses of Aladi-Calc will be limited only by your own creativity.

** Aladi-Calc works with all other modules of ALADIN.

** You can temporarily store your calculations in other data fields without destroying the data in those fields.

** You can set up a query, perform an Aladi-Calculation, send a report formatted the way you want out to a textfile. You can edit that text file with a word processor or text editor, make a letter and do a mail-merge with ALADIN, and send the whole thing out to your customers.

** You can prepare a profit-and-loss statement for your business and do budget forecasts involving "what if..." calculations. (What if we hired those extra salespeople? What would the extra expenses be and what extra income could we project?)

** You can use Aladi-Calc in combination with the Data Module to automatically enter or change any type of data in your relational system.

** You can use Aladi-Calc to help balance your checkbook, keep track of your tax information, prepare a home budget or office expense account.

1) Refer to the START UP procedure and the special instructions immediately below:

2) In this lesson, you will be making changes to a system; therefore, select that option (Install or Change a Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press RETURN .

The following options are now available to you in the Command Menu of ALADIN's Installation Module.

Explanation of the menu:

Install	: Is used to set up a new relational system.
Change	: Is used to change or modify an existing system.
Screen Forms	: Allows you to view or change the system's screens.
Access	: Allows you to set up or change the system's security functions.
Disk Util	: Tells you how much room has been allocated for the relational system.
Quit	: Ends the installation module of ALADIN and returns you to the Control Program.

4) Choose the Change option.

ALADIN will then display the current definition of the CAR system.

We want to add a new field in the SPECS File to be called: Calculate and Sort.

5) Move the cursor to the Manufacturer's Field.

6) Press [ESC] [7] to Insert.

ALADIN will prompt you for the name of the added field. (The new line will appear at the BOTTOM of the screen display.)

7) On the new line, type: Calculate and Sort.

8) Press [RETURN].

9) The cursor will now rest on the Repeat Factor.

ALADIN will prompt:

Enter number of times to repeat this item (max 31, default is once).

10) Since this field is needed only once, use the default value (1) by pressing [RETURN].

ALADIN will now prompt you for the type of field.

Enter data type: Number(integer), Character, Term(date), Money, Decimal

We will make the Calculate and Sort Field a character field so that we have the option of performing Aladi-Calculations on any type of data — mixing letters, whole numbers, and fractions.

11) Type: C for Character Field.

ALADIN will move to the Field Length and prompt:

Enter length of field (max N12, C78, T8, M15, D157)

12) Type: 35 and press [RETURN].

Here's a guide to what ALADIN has asked you:

```
Calculate and Sort        (1)   C    35. . . .
      |                     |    |     |_____→Length of Field
      |                     |    |_____→Type of Field (Char, Num, etc.)
      |                     |_____→Repeat Factor (How many fields)
      |_____→Name of Field
```

ALADIN will now ask you to define the "purpose" of the field:

ALADIN will prompt:

Restrict access into this field?: P(rotected

13) Press RETURN since you don't want to make this a "protected" field.

ALADIN will prompt:

Do you want this to be a key field?: K(ey field

14) Since you want this to be a Key Field, type: "K" for Key Field.

ALADIN will ask you if you want this to be a Branching Field:

Do you want this to be a "branching" field?: B(ranching field

15) Press RETURN, since you do not want this to be a branching field.

ALADIN will then display another line, thus asking if there is another field to insert into the SPECS File.

16) Press RETURN again, since you do not want to insert further fields.

Here is what ALADIN has been asking you:

Calculate and Sort ....(1)   C   35. .   K   .

"P" makes this a   ←
Protected Field

"K" makes this a   ←
Key Field

"B" makes this a   ←
Branching Field

We have finished the system definition.

17) Press the down arrow key repeatedly until ALADIN prompts:

Have you finished defining your ALADIN Relational System?

18) Press "Y" for Yes,

ALADIN will now "proofread" your system definition. If there are errors ALADIN will return you to the definition session and tell you how to correct the problems.

If your definition is error-free, ALADIN will then advise you of the amount of external mass storage (disk or diskette space) that will be required to save and then operate your relational system.

19) Answer "N" for No when ALADIN prompts:

Create a document (textfile)?

20) Answer "N" for No when ALADIN prompts:

Create Pascal interface program?

Here, ALADIN is asking if you will be using this relational system with the optional Program Genie programmer's tool kit. Genie allows you to make custom turnkey packages for resale. For more information about Program Genie contact your ADI/ALADIN dealer.

ALADIN will automatically set up the mass storage requirements necessary to implement your changes.

ALADIN will prompt:

Generate Screen Forms?

21) Press "Y" for Yes since you must redefine the screen layout. (Otherwise the new field will not be saved.)

ALADIN will place the SPECS File on the screen.

You will want to "paint" the screen to look like this:

```
            Manufacturer: _____
            Model: _____

Horse_Power_in_PS: ___          Volume_of_Engine_in_CC: _____
Maximum_Speed_in_MPH: _____    Acceleration__time_from_0_to_60: _

Fuel_Consumption_City_Highway_HS: __ __ __    Gasoline_Type: .

Five_Speed Transmission Avail.          Automatic_Transmission_Avail: .

Number_of_Doors: .                      Sun_Roof_Avail: .

Colors_Available: ............ ............ ............ ............
                  ............ ............ ............ ............
                  ............ ............

Calculate and Sort: _____

                 List Price: _____
```

22) Using the right arrow key, move the cursor to the last visible field.

23) Press the right arrow key again.

   The new Calculate and Sort Field will appear.

24) Move the cursor back to the List Price Field.

25) Press "D" for Down once.

26) Now press "10" and then "R" for Right.

27) Press the RETURN key twice and the screen will be repainted.

28) Move the cursor to any field which needs to be moved so it is placed as in the form above.

29) Press "N" for Newline to create an extra line.

30) Move back to any field which has partially disappeared and press RETURN.

31) Refer to the Reference Guide section on screen forms if you run into problems.

32) If you need to move one field up or down through others, position the cursor on that field, use the Up or Down commands, then press the RETURN key twice and the screen will be repainted.

33) Move the cursor to the last field.

34) Press the SPACE BAR until the following prompt appears:

    Have you finished with this Screen Form?

35) Answer Yes or No per the instructions immediately below:

    If you do not like the layout, press "N" for No and continue to paint your screen, using the commands you've learned, to make your form look like the one above. The Reference Guide explains your options. If you repeatedly get the prompt about fixing your screen, check the Reference Guide.

    If you Press "Y" for Yes ALADIN will accept this screen layout definition.

    ALADIN will then prompt:

    DEALER: Change screen forms?

    Since you have not added any fields to the DEALER file, it is not necessary to change the screen layout.

36) Answer "N" for No.

    ALADIN will then prompt:

    CUSTOMER: Change screen forms?

    Since you have not added any fields to the Customer File, it is not necessary to change the screen layout.

37) Answer "N" for No.

    ALADIN will now ask you:

    .Do You Want To Save Your Relational System?

38) Press "Y" for Yes and ALADIN will complete the installation of your relational system.

NOTE:

Pressing "N" for No aborts this process and returns you to the ALADIN Command Menu. Your changed form will NOT be saved.

ALADIN will now ask you whether or not you want to install the security functions.

ALADIN will prompt:

Userid >

39) Type: ADI and press [RETURN].

ALADIN will ask you for your password.

40) Type ADI and press [RETURN].

Because ALADIN has six main levels of security, with more than 40 options which you can mix and match, you can be assured that confidential data will remain intact and that inadvertent or unauthorized modification of the system or data will not occur.

A series of prompt lines will appear. If you type the first letter of the Device or System Function, you will restrict access to that function.

ALADIN will prompt:

Access Rights: SPECS

Input Source: Keyboard, File, Script, ? >

If you were to type "F" you would be restricted from using a disk file, modem or external device other than the keyboard.

41) To grant yourself total and complete access DO NOT TYPE ANYTHING, just press [RETURN].

ALADIN will prompt:

Output Destination: Monitor, File, Script, Printer, ? >

If you typed both "P" and "F" you would be restricted from using both the printer and the file.

42) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stats, Info, Exit, ? >

If you wanted to restrict your access to any of these modules, you would type its first letter and press [RETURN].

43) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

Data: Enter, Change, Remove, View, Quit, ?>

If you wanted to restrict your access to any of these modules, you would type its first letter and press [RETURN].

44) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

Query: Define, Save, Recall, View, Quit,?>

If you wanted to restrict your access to any of these modules, you would type its first letter and press [RETURN].

45) To grant yourself total and complete access do not type anything, just press [RETURN].

ALADIN will prompt:

Vars: 1OQ, 2IQ, 3DK, 4DIR, 5AP, 6GL, 7NOT, 8SV, 9INFO, 0CAL

If you wanted to restrict your access to any of these software switches, you would type its first letter and press [RETURN].

46) To grant yourself total and complete access, do not type anything, just press [RETURN].

ALADIN will prompt:

CTRL Keys: Input, Output, Xover, Tabulate, Vars, What, Print,
<Escape> >

If you wanted to restrict your access to any of these ESC keys, you
would type its first letter and press RETURN.

47) To grant yourself total and complete access do not type anything,
just press RETURN.

ALADIN will now ask you for the Access Rights for the DEALER
File.

48) Press RETURN to all the questions, thus granting yourself total access
for the entire file. Repeat this step for the CUSTOMER FILE.

ALADIN will now ask you to set up security access for another
user:

Userid >

49) There is no need to do so at this time. Press RETURN to complete the
security set-up process.

ALADIN will return you to the ALADIN-INIT Command Menu.
Your system is now installed and is ready to be used.

50) Choose the options to exit ALADIN.

51) You now want to work with an already existing data base (ALADIN-
EXEC). Once this program is running, then continue.

52) Type CAR as the name of your relational system and press RETURN.

ALADIN will prompt you for Userid.

53) Type ADI and press RETURN.

Next, you will be asked for your Password.

54) Type ADI and press RETURN.

ALADIN will recall the CAR relational system and display it on the
screen, along with the Command Menu.

55) From the Command Menu, choose the Calculate Module.

56) From the Calc Command Menu, choose the Define option.

The "Street Sign" should now read:

CAR.SPECS (Console:,Console:) (− − −)   Calculate.Define

The cursor should be resting on the Manufacturer's Field.

57) Press the right arrow key and move the cursor to the Maximum Speed in MPH Field.

58) Press the caret ("^") to show that this is the field with which you want to work.

59) When the cursor moves to the next field reposition it on the Maximum Speed Field with the left arrow key.

We know that MPH multiplied by 1.6 will equal kilometers per hour. Because we can use only whole numbers, we will multiply MPH by 16 and divide by 10.

Be sure that you are in the Maximum Speed Field before you perform the next step.

60) Type in 16 and press RETURN.

The following prompt will appear:

.Operation

61) Choose the Multiply option.

62) Return the cursor to the Maximum Speed Field with the left arrow key.

63) Type in 10 and press RETURN.

64) Choose the Divide option.

ALADIN presents us with two choices: First, we can store the value of our calculation in the new field we defined called Calculate and Sort, or we can temporarily store this calculation in another field without disturbing the actual data in that field.

This example will demonstrate both these choices.

65) Move the cursor to the Volume of Engine Field.

66) Select this field by pressing the caret key.

67) Choose the Store option.

Although we are storing our calculation in the Volume of Engine Field, we are not destroying or changing the actual data in that field.

68) Again move the cursor to the Volume of Engine Field and select it by pressing the caret key.

69) Now move the cursor to the Calculate and Sort Field. Select this field using the caret key.

70) Choose the Store option.

What you have done is taken the result that was stored temporarily in the Volume of Engine Field and copied it into the Calculate and Sort Field.

71) Now move the cursor to the bottom of the screen using the down or right arrow key.

72) After it is resting on the last field, press the down or right arrow key again.

ALADIN will ask:

.Is your definition complete?

73) Press "Y" for Yes.

Your entries and the Calculate Command Menu will be displayed.

74) Choose the Save option.

ALADIN will prompt you for the file name of your calculation.

75) Type: CALC1 and press [RETURN].

NOTE:

If someone has used your diskette and Tutorial before you, ALADIN will tell you that a file already exists by that name. You should make up a new name and save your calculation under that name, or else answer Yes to "Remove it?"

76) Choose the option that will return you to the ALADIN Command Menu.

The Street Sign should indicate that the Calculation you defined is now active:

CAR.SPECS (Console:,Console:) (− − +)

You will now define a report that uses your calculation.

NOTE:

You may wish to refer back to the lesson on Making Reports.

77) Choose the Report Module.

ALADIN will set up the Report Module and then ask if you want to use your calculation.

78) Press "Y" for Yes.

The Report Menu will be displayed.

Check to see that your software switch "5AP" is set to OFF " − " by pressing ESC 2.

You have the choice of whether or not to use the variable length record capability of ALADIN. Keeping "5AP" to OFF says No, don't use variable length records.

Usually when you want to set up a report you will want the "AP" switch OFF, which fills fields with blanks. When you want to send out envelopes or mailing labels, you should set "AP" to ON " + " (don't fill fields with blanks). For more information on the Absolute Position soft switch, see the Reference Guide and the lesson on software switches.

Example:

Manufacturer:_____ This field is 15 characters long.
List Price: This field is 5 characters long.

Manufacturer: List Price:

If the "AP" switch is set to OFF " − " ALADIN will disregard the variable record length and use the default or "defined" record length, i.e., the Manufacturer's Field is 15 characters long. This ensures that everything in the report lines up nicely, i.e.:

```
Manufacturer  Audi                    List Price $  15,350.00
Manufacturer  BMW                     List Price $  18,450.00
Manufacturer  Ford                    List Price $  10,235.00
Manufacturer  Mercedes-Benz           List Price $  46,570.00
Manufacturer  Toyota                  List Price $  11,780.00
```

If the "AP" switch is set to ON " + " (don't fill fields with blanks), ALADIN will use the variable length capability. In this case the length of the field equals the number of characters in the record entry: i.e., BMW takes up only three characters, FORD takes up four and Mercedes-Benz takes up fourteen.

Here's our example with no blanks:

Manufacturer:Audi List Price: 15,350.00
Manufacturer:BMW List Price: 18,450.00
Manufacturer:Ford List Price: 10,235.00
Manufacturer:Mercedes-Benz List Price: 46,570.00
Manufacturer:Toyota List Price: 11,780.00

79) Press the `SPACE BAR` when you have made any necessary changes (so "5AP" is " – ").

80) From the Report Menu, choose Define.

The SPECS File screen will appear. The cursor will be resting on the Manufacturer's Field.

81) Type: Manufacturer: (space)

82) Press the caret key.

WARNING:

Be very careful of your typing here. If you make a mistake, you can't backspace.

83) Return the cursor to the Manufacturer's Field.

84) Press the "!" key (this will set up an alphabetical sort).

Move the cursor to the Model Field.

85) Press the `SPACE BAR` five times.

86) Type: Model: (space)

87) Press the caret key

88) Press the `RETURN` key.

89) Move the cursor to the Maximum Speed in MPH Field.

90) Type: Fastest Speed in MPH: (space)

91) Press the caret key.

92) Move the cursor to the Volume of Engine Field.

93) Press the `SPACE BAR` two times.

94) Type: Volume of Engine: (space)

95) Press the caret key.

96) Press the `RETURN` Key.

97) Move the cursor to the Calculate and Sort Field.

98) Type: The same speed in KPH : (space)

99) Press the caret key.

100) Press the [RETURN] key.

101) Type: "60" then press the "*" key. This will set up a border.

102) Press the [RETURN] key twice.

103) Now press the down arrow until ALADIN prompts:

   Is your definition complete?

104) Press "Y" for Yes.

   ALADIN will display the layout of your report. If you don't like this layout, choose the Define option and redefine the layout.

   If you have made a typographical error, you probably don't want to save your report format. You should redefine it.

   If you do like your report format and want to save it, do so by using the steps learned in the lesson on Making Reports.

105) Choose the Generate option.

ALADIN will quickly sort through the data, perform the Aladi-Calculation, then write out the report to the screen. You can send any of your reports to a printer or to a textfile by changing the output with a Control Function. (Refer to the lesson on Control Functions.)

You can stop the scrolling with the SPACE BAR or PAUSE key if your machine has one.

After the report is finished the Report Menu will reappear.

106) Choose the options that will enable you to exit.

You have now had a basic introduction to one of the most powerful modules of ALADIN. Subsequent lessons will teach you how to get the maximum benefit from this useful business tool.

Chapter 7: THE ALADIN CALCULATOR

Lesson 2: Working with the ALADIN Calculator

LESSON OBJECTIVE   : To learn how to use the Calculate Module to modify data in the relational system and to use Aladi-Calculations with other modules in ALADIN.

REQUIRED TIME   : 60 to 80 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

LESSON OVERVIEW   :

This lesson will give you the basic skills and confidence to use your Aladi-Calculations to increase your productivity many times over.

In this lesson you will construct a simple one-file data base for costing parts. You will see that by entering only the name of the part and the raw cost for that part, ALADIN can calculate the shipping cost, labor cost, overhead, sales tax, and total selling price for that part. ALADIN automatically enters this derived data into the relational system. Imagine the amount of work this can save you and the number of errors this type of system can eliminate. Moreover, as the cost of labor or shipping changes, ALADIN can automatically modify the data in the system to reflect those changes.

You will also learn how Aladi-Calculations can work with other modules of ALADIN. In this example, we will see what happens when the President imposes an import tax on all Japanese parts in our system.

NOTE:

This lesson will teach you a step-by-step approach to setting up Aladi-Calculations. After you have worked with the system a couple of times, you will begin to see some timesaving short-cuts you can employ. We have left them out of this lesson so we can stress the fundamentals of this module.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be constructing a simple PARTS data base; therefore, select the option (Install or Change a Data Base).

3) When ALADIN prompts you for the name of your relational system, type PARTS and press [RETURN].

4) Install the following system, using the steps learned in previous lessons:

```
.BASE PARTS. = COST...........;
.FILE COST........... (20...);
        Name of Part...............................(1.) = C   30. . K . ;
        Raw Cost .....................................(1.) = M   10. . K . ;
        Labor Cost ..................................(1.) = M   10. . K . ;
        Shipping Cost..............................(1.) = M   10. . K . ;
        Overhead ...................................(1.) = M   10. . K . ;
        Sub-Total with Profit Margin.................(1.) = M   10. . K . ;
        Sales Tax.....................................(1.) = M   10. . K . ;
        Total Selling Price ..........................(1.) = M   10. . K . ;
        Calculate and Sort..........................(1.) = C   10. . K . ;
```

5) Allocate 25 blocks of disk space for the storage of the data and 25 blocks for the keys as well.

6) Answer No when ALADIN asks if you want to create a document (textfile).

7) It will not be necessary to have a Pascal interface generated for Program Genie. Answer "N" for No.

8) Answer Yes to the prompt:

Generate Screen Forms?

9) Lay out the PARTS File screen similar to this form:

```
PARTS.cost (CON:, CON:)
_____

                      Name of Part: _____

                                       Raw Cost: _____

                                      Labor Cost: _____

                                   Shipping Cost: _____

                                       Overhead: _____

                    Sub-Total with Profit Margin: _____

                                      Sales Tax: _____

                             Total Selling Price: _____

                 Calculate and Sort: _____

_____
9: 9 * 1 (25,21)
```

10) Use the steps you have learned to get the next prompt and save your relational system.

11) You will not need security for this example, so press [RETURN] when ALADIN prompts: Userid>

Once you have completed the installation of the PARTS system, end your ALADIN session by choosing the options to exit.

12) Select the option Work with an Already Existing Data Base.

13) When ALADIN prompts for the name of your relational system, type PARTS and press [RETURN].

14) Choose the Data Module from the Command Menu.

15) Choose the Enter Command.

To prepare this example you must enter a small set of data.

16) Enter the following ten sets of data into the PARTS system:

NOTE ON HOW TO DO IT:

After entering each set of data (i.e., Name of Part: Japanese Coils Raw Cost: 125.70), press the down or right arrow key until you see the prompt:

.Enter the record in this way?

Press "Y" for Yes.

Repeat these steps for the entire list.

Name of Part: Japanese Coils
Raw Cost: 125.70

Name of Part: Japanese Flanges
Raw Cost: 345.70

Name of Part: Japanese Hibachis
Raw Cost: 99.34

Name of Part: Japanese Transistors
Raw Cost: 1.59

Name of Part: Japanese Widgets
Raw Cost: 231.30

Name of Part: American Coils
Raw Cost: 130.12

Name of Part: American Flanges
Raw Cost: 370.50

Name of Part: American Hibachis
Raw Cost: 101.10

Name of Part: American Transistors
Raw Cost: 1.79

Name of Part: American Widgets
Raw Cost: 247.30

17) Once you have entered the data, choose the options that will return you to the main ALADIN Command Menu.

18) Choose the Calc Module.

You want to set up an Aladi-Calculation that will compute the value of various fields. Once it is set up, you can have ALADIN automatically enter this derived data into the PARTS system.

Here's an overview of what you know about the value of the Cost Fields in relation to the Raw Cost data you entered: (Don't do anything with this information yet.)

Raw Cost: Equal to the value you entered.

Labor Cost: Equal to 82 percent of Raw Cost.

Shipping Cost: Equal to 3 percent of Raw Cost plus Labor Cost.

Overhead: Equal to Shipping Cost plus 20 percent of Labor Cost plus Raw Cost.

Sub-Total with Profit Margin: Equal to Raw Cost plus Labor Cost plus Shipping Cost plus Overhead plus 15 percent.

Sales Tax: Equal to Sub-Total with Profit Margin times 6 percent.

Total Selling Price: Equal to Sub-Total with Profit Margin plus Sales Tax.

19) To set up your Aladi-Calculation, choose the Define Command from the Calc Module Command Menu. The PARTS File screen will appear and the cursor will be resting on the Name of Part Field.

You know Raw Cost is equal to the value you enter. Labor Cost is equal to 82% of Raw Cost.

20) Move the cursor to the Raw Cost Field and select it using the caret ("^") key.

21) With the cursor on the Labor Cost Field select it using the caret key.

What you are doing is copying the value of the Raw Cost data into the Labor Cost Field so you can set up the Aladi-Calculation.

ALADIN will prompt:

.Operation

NOTE:

For an explanation of what the operations do (Add, Subtract, Multiply, Divide, Store), refer to the Reference Guide. It may also be helpful in this lesson to use a ruler to keep your place.

22) Choose the Store Option from the Command Menu.

23) Now move the cursor back to the Labor Cost Field and select it using the caret key.

24) Move back to the Labor Cost Field, type in .82, and press [RETURN].

ALADIN will prompt:

.Operation

25) Choose the Multiply option.

You must now store the calculated value into the Labor Cost Field.

26) Move the cursor to the Labor Cost field and press the caret key.

ALADIN will prompt:

.Operation

27) Choose the Store option.

28) Press the down or right arrow key until you see the prompt:

.Is your definition complete?

29) Press "Y" for Yes.

30) Choose the Save option.

31) Save this first calculation as C1.

```
Calculation with the following operations

cost:

Labor Cost  =
    Raw Cost

Labor Cost  =
    Labor Cost
  ·      0.82





Calculate Save   Enter file reference name  >c1
```

32) From the Calculate Module Command Menu, choose the Define Command.

33) In response to the prompt:

   .Discard old definition?

   Press "Y" for Yes. (This only takes the "old" definition out of transient memory. It is still stored on disk.)

   Shipping cost is equal to 3 percent of total Raw Cost and Labor Cost.

34) Move the cursor to the Raw Cost Field and select it using the caret key.

35) Move the cursor to-the Shipping Cost Field and select it using the caret key.

   ALADIN will prompt:

   .Operation

36) Choose the Store option.

   This stores the contents of the Raw Cost Field into Shipping Cost.

37) Move the cursor to the Labor Cost Field and select it using the caret key.

38) With the cursor on the Shipping Cost Field, press the caret key.

    ALADIN will prompt:

    .Operation

39) Choose the Add option.

    This adds the Labor Cost Field to the contents of the Shipping Cost Field, which is the former Raw Cost.

40) Move the cursor back to the Shipping Cost Field.

41) Type in .03 and press RETURN.

    ALADIN will prompt:

    .Operation

42) Choose the Multiply option.

    This multiplies the contents of the Shipping Cost Field by .03.

43) Move the cursor back to the Shipping Cost Field and press the caret key.

    ALADIN will prompt:

    .Operation

44) Choose the Store option.

    This stores the results of your operations in the Shipping Cost Field.

45) Press the down or right arrow key until you see the prompt:

    .Is your definition complete?

46) Press "Y" for Yes.

47) Choose the Save option.

48) Save this calculation as C2.

```
Calculation with the following operations

cost

Shipping Cost : =
    Raw Cost

Shipping Cost : =
    Labor Cost
    + 'Shipping Cost
 •    0.03




Calculate Save  Enter file reference name >c2
```

Overhead is equal to Shipping Cost plus 20 percent of Raw Cost plus Labor Cost.

49) Choose the Define option.

50) Answer Yes to the prompt:

   Discard old definition?

51) Move the cursor to the Raw Cost Field and select it using the caret key.

52) Move the cursor to the Overhead Field and select it using the caret key.

   ALADIN will prompt:

   .Operation

53) Choose the Store option.

   This stores the contents of the Raw Cost Field in the Overhead Field.

54) Move the cursor to the Labor Cost Field and select it using the caret key.

55) Move the cursor to the Overhead Field and select it using the caret key.

ALADIN will prompt:

.Operation

56) Choose the Add option.

This adds the contents of the Labor Cost Field to the contents of the Overhead Field.

57) Move the cursor to the Overhead Field.

58) Type in .20 and press RETURN .

ALADIN will prompt:

.Operation

59) Choose the Multiply option.

This multiplies the contents of the Overhead Field by .20.

You must store the result in a field.

60) Move the cursor to the Overhead Field and press the caret key.

ALADIN will prompt:

.Operation

61) Choose the Store option.

This stores the results of the multiplication into the Overhead Field.

62) Move the cursor to the Shipping Cost Field and select it using the caret key.

63) With the cursor on the Overhead Field, press the caret key.

ALADIN will prompt:

.Operation

64) Choose the Add option.

This adds the contents of the Shipping Cost Field to the contents of the Overhead Field.

65) To store the final result, move the cursor to the Overhead Field and select it using the caret key.

66) Choose the Store option.

67) Press the down or right arrow key until you see the prompt:

.Is your definition complete?

68) Press "Y" for Yes.

69) Choose the Save option.

70) Save this calculation as C3.

```
Calculation with the following operations

cost:

Overhead : =
   Raw Cost

Overhead : =
        Labor Cost
      + Overhead
 •        0.20

Overhead : =
    Shipping cost
  + Overhead




Calculate Save   Enter file reference name >c3
```

Sub-Total with Profit Margin is equal to everything above plus 15 percent.

For this calculation, we are going to teach you a faster way of defining calculations.

71) From the Calculate Command Menu, choose the Define option.

72) Answer Yes to the prompt:

   Discard old definition?

73) Move the cursor to the Raw Cost Field and select it using the caret key.

74) Move the cursor to the Labor Cost Field and select it using the caret key.

   ALADIN will prompt:

   .Operation

75) Choose the Add option.

76) Move the cursor to the Shipping Cost Field and select it using the caret key.

77) Choose the Add option.

78) Move to the Overhead Field and select it with the caret.

79) Choose the Add option.

80) Move the cursor to the Sub-Total Field and select it using the caret key.

81) Choose the Store option.

82) Move back to the Sub-Total Field and select it.

83) Move back to the Sub-Total Field again and select it once more.

   This sets up the Aladi-Calculator "stack" correctly. See the Reference Guide for more information.

84) Choose the Defer option.

85) Move the cursor to the Sub-Total Field and type in .15 (the profit margin) and press RETURN .

86) Choose the Multiply option.

87) Choose the Add option.

88) Move the cursor up to the Sub-Total and select it using the caret key.

89) Choose the Store option.

90) Press the down or right arrow key until you see the prompt:

.Is your definition complete?

91) Press "Y" for Yes.

You'll see on the screen:

```
Calculation with the following operations

cost:

Sub-Total with Profit Margin : =
                          Raw Cost
                        + Labor Cost
                     + Shipping Cost
               + Overhead

Sub-Total with Profit Margin : =
            Sub-Total with Profit Margin
      +            Sub-Total with Profit Margin
              •       0.15




                                              Calculate
```
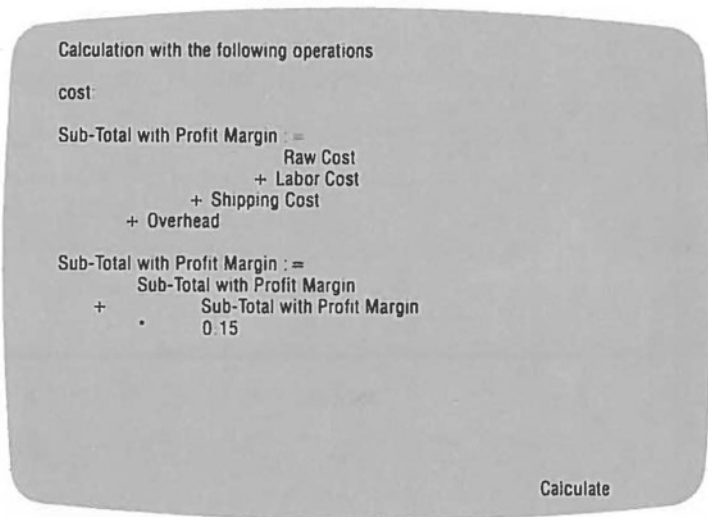
92) Choose the Save option.

93) Save this calculation as C4.

94) Choose the Define option.

95) Answer Yes to the prompt:

Discard old definition?

Sales Tax is the value of the Sub-Total times 6 percent.

96) Move the cursor to the Sub-Total Field and select it with the caret key.

97) Move the cursor to the Sales Tax Field and select it using the caret key.

98) Choose the Store option.

99) Move to the Sales Tax Field and select it using the caret key.

100) Move back to the Sales Tax Field, type in .06 and press RETURN.

101) Choose the Multiply option.

102) Move back to the Sales Tax Field and select it with the caret key.

103) Choose the Store option.

104) Press the down or right arrow key until you see the prompt:

.Is your definition complete?

105) Press "Y" for Yes.

106) Choose the Save option.

107) Save this calculation as C5.

```
Calculation with the following operations

cost:

Sales Tax  =
   Sub-Total with Profit Margin

Sales Tax  =
    Sales Tax
 .      0.06




Calculate Save  Enter file reference name >c5
```

Finally, the Total Selling Price is equal to Sales Tax plus Sub-Total.

108) Choose the Define option.

109) Answer Yes to the prompt:

Discard old definition?

110) Move to the Sub-Total field and select it using the caret key.

111) Move to the Selling Price Field and select it using the caret key.

112) Choose the Store option.

113) Move to the Sales Tax Field and select it using the caret key.

114) With the cursor on the Total Selling Price Field, press the caret key.

115) Choose the Add option.

116) Move back to the Selling Price Field and select it using the caret key.

117) Choose the Store option.

118) Press the down or right arrow until ALADIN asks if your definition is complete.

119) Answer "Y" for Yes (finally!).

We want to save this definition.

120) From the Calc Command Menu, choose the Save option.

121) Save this calculation under the name of C6.

Calculation with the following operations

cost:

Total Selling Price : =
    Sub-Total with Profit Margin

Total Selling Price : =
    Sales Tax
    + Total Selling Price

Calculate.Save : Enter file reference name >c6

Now we must string all of our calculations (C1-C6) into one great BIG calculation (which may or may not fit into the State of Delaware...)

Start this process by recalling C1. (Or, better yet, start by pouring yourself a cup of coffee — this could take awhile...)

122) From the Calc Command Menu, choose the Recall option.

123) When ALADIN asks if you would like to extend your definition, answer "N" for No.

124) In response to the prompt to enter the file reference name, type C1 and press [RETURN].

The calculation you saved as C1 is now loaded into transient memory.

125) From the Calc Module Command Menu, choose the Recall option.

126) When ALADIN asks if you would like to extend your definition, press "Y" for Yes.

NOTE:

In stringing together the calculations, you will answer "Yes" at this point for every calculation except the first one (C1).

127) In response to the prompt for a file reference name, type C2 and press [RETURN].

The calculation you saved as C2 is now joined to C1.

128) From the Calc Module Command Menu, choose the Recall option.

129) Answer "Y" for Yes in response to the prompt to extend the definition.

130) In response to the file reference name, type C3 and press [RETURN].

131) From the Calc Module Command Menu, choose the Recall option.

132) Answer "Y" for Yes in response to the prompt to extend the definition.

133) Type C4 as the file reference name and press [RETURN].

134) From the Calc Module Command Menu, choose the Recall option.

135) Answer "Y" for Yes in response to the prompt to extend the definition.

136) Type C5 as the file reference name and press [RETURN].

137) From the Calc Module Command Menu, choose the Recall option.

138) Answer "Y" for Yes in response to the prompt to extend the definition.

139) Type C6 as the file reference name and press [RETURN].

140) From the Calc Module Command Menu, choose the Save option.

141) Save all the calculations as Calc1.

Calc1 is the name of all of the calculations joined together.

142) Now select the option which returns you to the main ALADIN Command Menu.

Now that we have set up the framework for the calculation, we want to have ALADIN automatically enter Data into the system.

143) Choose the Data option.

ALADIN will ask if you want to use your calculation.

144) Press "Y" for Yes.

To set up an automatic data entry you must first activate some software switches.

145) Choose the Services option or press [ESC] [2].

146) From the Services Menu, choose the Variables option.

The following menu will appear.

Vars: 1OQ − , 2IQ − , 3DK + , 4DIR + , 5AP − , 6GL − , 7NOT − , 8SV + , 9INFO + , 0CAL +

We need to turn the Global Switch (#6) ON (+).

147) Do this by pressing "6".

We also need to turn the prompts (9INFO) OFF (−).

148) Do this by pressing "9".

149) Now press the [SPACE BAR] and you will be back at the Data Module Command Menu.

NOTE:

The switches will stay this way until you completely exit from ALADIN and reboot your program. You may want to set the switches back to their default settings (6GL − , 9INFO +) immediately after completing this lesson.

150) Now choose the Change option.

ALADIN will prompt:

.Do you want to (globally) change ALL such records?

151) Press "Y" for Yes.

ALADIN will put up the first record for you to verify if all the Aladi-Calculations are correct.

152) If everything is OK press "Y" in response to the prompt:

.Change the record in this way?

```
PARTS.cost (CON:, CON:) ( − + )              Data Charge

        Name of Part: Japanese Coils_____

                        Raw Cost:     125 70

                       Labor Cost:    103.07

                    Shipping Cost:      6.86

                         Overhead:     52.61

        Sub-Total with Profit Margin:  331.47

                        Sales Tax:     19.88

               Total Selling Price:    351.35

               Calculate and Sort:_____

                            .Change the record in this way?
```

ALADIN will then automatically compute the new field values and enter them into the PARTS system. (This may take a little time — a lot of work is going on! Now you can rest while the computer works!)

153) From the Data Module Command Menu, choose the View option.

154) Type: Japanese Widgets and press RETURN.

Here's what you should have had for **Japanese Widgets**:

Name of Part: Japanese Widgets

Raw Cost:	231.30
Labor Cost:	189.66
Shipping Cost:	12.62
Overhead:	96.81
Sub-Total with Profit Margin:	609.94
Sales Tax:	36.59
Total Selling Price:	646.53

155) Choose the options which return you to the ALADIN Command Menu.

We will now see how to use an Aladi-Calculation with the Query Module of ALADIN. In this example, the President of the United States has determined that the Japanese have an unfair price advantage for their parts. He or she has ordered that a ten percent import tariff be imposed on the raw cost of all Japanese parts.

First we must set up a query that will identify only Japanese parts.

156) Choose the Query Module.

157) From the Query Module Command Menu, choose Define.

The PARTS File screen will appear with the cursor resting on the Name of Part Field.

158) Since we want only Japanese parts, type: ?PAN? (the use of the Wild Card saves us time) and press [RETURN]. (We used the Wild Card in a different way here to show you variations.)

ALADIN will ask if you want to compare values that are equal or not equal to the "?PAN?" Wild Card.

159) Since you want those that are equal, choose the Equal option.

160) Now press the down arrow key until ALADIN asks you if your definition is complete.

161) Answer "Y" for Yes.

162) Choose the option which returns you to the ALADIN Command Menu.

We must now define a calculation that adds ten percent to the Raw Cost.

163) Choose the Calc Module.

164) Choose Define from the Calc Command Menu.

The PARTS File screen will appear with the cursor resting on the Name of Part Field.

NOTE:

If ALADIN prompts whether you want to discard your old definition, press "Y" for Yes.

165) Move the cursor to the Raw Cost Field and select it using the caret key.

166) Move back to the Raw Cost Field, type: .10 and press ⌷RETURN⌷.

ALADIN will prompt:

.Operation

167) Choose the Multiply option.

You have now calculated the import tariff but we must add this to the old Raw Cost.

168) To do this, move to the Raw Cost Field and press the caret key. We want to add the calculated value to the field.

ALADIN will prompt:

.Operation

169) Choose the Add option.

170) Move back to the Raw Cost Field and select it using the caret key.

171) Choose the Store option.

172) Press the down arrow key until ALADIN asks if you have completed your definiton.

173) Answer "Y" for Yes.

You will be returned to the Calc Command Menu.

174) Choose the option which returns you to the ALADIN Command Menu.

Since the Variable software switches have already been set to allow for automatic processing, it should not be necessary to reset them. However, you may want to check them by pressing ⌷ESC⌷ ⌷2⌷. (6GL + , 9INFO −).

175) Choose the Data Module from the ALADIN Command Menu.

176) When asked if you want to activate your query, answer "Y" for Yes.

177) When asked if you want to use your calculation answer "Y" for Yes.

178) Choose the Change option.

179) Answer "Y" for Yes when you are asked if you want to change globally.

180) Answer "Y" for Yes when you are asked if you want to change the record in this way.

ALADIN will then automatically process the tariff increase from your Aladi-Calculation. However, the derived fields are no longer correct. To make them correct, we must recall "Calc1" from the Calc Module and have ALADIN recalculate the derived data for us and enter it back into the system.

181) Choose the option which returns you to the ALADIN Command Menu.

182) Choose the Calc Module.

183) Choose the Recall option.

184) Answer No in response to the prompt about extending your definition.

185) Type: Calc1 in response to the prompt for the file reference name and press RETURN .

186) Choose the option which returns you to the main ALADIN Command Menu.

187) Choose the Data Module from the ALADIN Command Menu.

188) Answer Yes in response to the prompt about using your query.

189) Answer Yes in response to the prompt about using your calculation.

190) Choose the Change option.

191) Answer "Y" for Yes, change globally.

The "pattern" record will be displayed with the new values.

192) Press "Y" for Yes, change records this way.

Here's what you should have had for Japanese Widgets before the tariff was imposed:

Name of Part: Japanese Widgets

Raw Cost: 231.30

Labor Cost: 189.66

Shipping Cost: 12.62

Overhead: 96.81

Sub-Total with Profit Margin: 609.94

Sales Tax: 36.59

Total Selling Price: 646.53

Here are the values you should have now that the tariff is installed:

Name of Part: Japanese Widgets

Raw Cost: 254.43

Labor Cost: 208.63

Shipping Cost: 13.89

Overhead: 106.50

Sub-Total with Profit Margin: 670.96

Sales Tax: 40.25

Total Selling Price: 711.21

193) Select the options to exit.

If you go to the Report Module of ALADIN and set up a list of the parts in the PARTS system, you will see that the President's order had the desired effect. American parts are now cheaper than their Japanese counterparts.

You may also want to print out a copy of the report, not only to dazzle and amaze your friends with how much work you've been doing for the last hour on this lesson, but to keep as a reminder of how much ALADIN can do for you. To print out a report, redirect the output to a printer with the [ESC] [8] Control Function.

If you save this report as a textfile on disk, you can use your word processor (see the chapter on Word Processing) to make changes and additions to the report. You could then incorporate the report in a mail merge letter and, using ALADIN's Word Processing Bridge in combination with Query, send the letter containing the tariff information to a selected group of your friends (those who care about such things).

At long last, you have finally come to the end of this lesson on Working with the ALADIN Calculator. As you've discovered in previous lessons, these exercises and applications reveal only the tip of the iceberg; how you use the variety of modules will be limited only by your creativity and the patience of your family, who will probably see you only when you come out for meals. Assure them that the investment of time and commitment to practice will be well worth it, especially when you figure out how to raise the price of E.F. Hutton stock by 25% and transfer the assets to your private account in Guam.

NOTE:

You may wish to reset the switches 6 and 9 back to their default settings: 6GL − and 9INFO + .

Chapter 7: WORKING WITH THE ALADIN CALCULATOR

Lesson 3: Simple Calculations

LESSON OBJECTIVE : To learn how to use the simplest capabil-
ities of the ALADIN Calculate Module.

REQUIRED TIME : 5 to 10 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and
Examples diskettes.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select that option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type PARTS and press ⎡RETURN⎤.

4) From the ALADIN Command Menu, choose the Calculate Module.

5) From the Calc Menu, choose Define.

If you are asked about discarding your old definition, answer "Y" for Yes.

6) Move to the Raw Cost Field and select it using the caret key.

7) Select the Labor Cost Field using the caret key.

ALADIN will prompt:

Operation

8) Choose the Add option.

9) Select the Shipping Cost Field using the caret key.

10) Choose the Add option.

11) Select the Overhead Field using the caret key.

12) Choose the Add option.

13) Move the cursor to the Calculate and Sort Field and select it using the caret key.

14) Choose the Store option.

15) ALADIN will prompt:

.Is your definition complete?

16) Press "Y" for Yes.

You'll see on the screen:

Calculation with the following statements

```
Cost:

Calculate and Sort:  =

   .      Raw Cost
   +      Labor Cost
   +      Shipping Cost
   +      Overhead
```
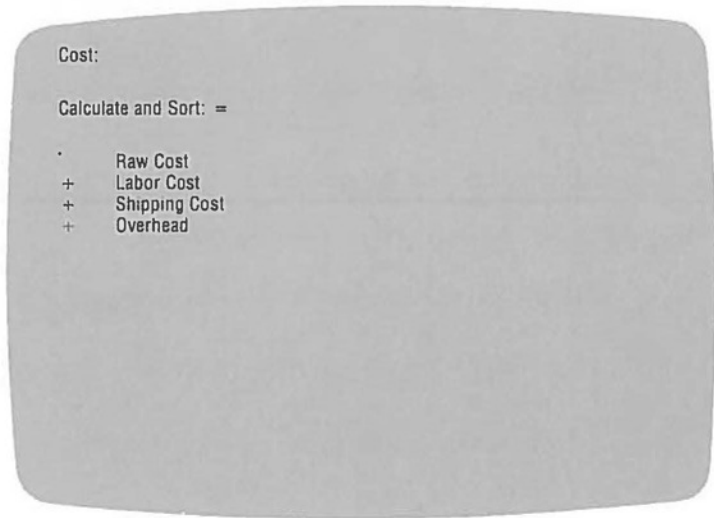
17) Choose the Save option.

18) Save this calculation as CA1.

19) Choose the options which return you to the main ALADIN Command Menu.

20) Choose the Data Module.

21) Answer Yes to the prompt:

.Do you want to use your Calculation?

22) Choose Enter.

23) In the Name of Part Field, type: American Buffers and press RETURN.

24) In the Raw Cost Field, type: 56.00 and press RETURN.

25) In the Labor Cost Field, type 65.56 and press RETURN.

26) In the Shipping Cost Field, type: 12.53 and press RETURN.

27) In the Overhead Field, type: 7.90 and press RETURN.

28) Press the down or right arrow key until you see the prompt:

Enter the record in this way?

29) Press "Y" for Yes.

30) With the cursor on the Name of Part Field, press RETURN. Your record for American Buffers will reappear.

31) Answer Yes to the prompt:

.Use this record?

32) Move to the Calculate and Sort Field.

This is the field which you have indicated for storage of the results of your calculation.

33) Press ESC 6 to activate the calculation.

The total of Raw Cost, Labor Cost, Shipping Cost and Overhead will appear in the Calculate and Sort Field.

34) Choose the option which returns you to the Data Menu.

35) Choose Change.

36) Enter "J.? Coils" in the Name of Part Field, then press `RETURN`.

    Notice the sum in the Calculate and Sort Field.

37) Move to the Calculate and Sort Field. *Answer Yes*

38) Press `ESC` `6` to activate the calculation.

    The sum will change to reflect the calculation currently in use.

This is the end of the lesson on Simple Calculations.

Chapter 8: PROBLEM SOLVING WITH ALADIN
Lesson 1A: Multi-Level Sorting with ALADIN

LESSON OBJECTIVE   : To learn how to use the multi-level sorting capabilities of ALADIN.

REQUIRED TIME   : 30 to 45 minutes.

LESSON OVERVIEW

This lesson will demonstrate how you can use an Aladi-Calculation to perform multi-level sorting of data for your use with the ALADIN Report Generator. You will set up a small relational system and then generate a report sorted on three different criteria: first, alphabetically by the name of a salesperson; second, numerically by order date; and third, numerically by order number. You will set the software switches so that the sort is performed in descending order.

This lesson will give you the basic skills and confidence to sort your own reports for increased productivity. For example, you could set up a sort that would print a report giving you largest payment due, longest overdue, alphabetically (descending) by client, and by zip code for bulk mailing. You can, of course, use queries in combination with multi-level sorting.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson you will begin by installing a new relational system; therefore, select that option (Install or Change a Data Base). Use a blank formatted diskette in your second disk drive, if you are not using a hard disk system.

3) If prompted by ALADIN for the date, type in the date today or press RETURN .

When prompted by ALADIN for the the name of the relational system, type: SALES and press RETURN .

4) From the ALADIN-INIT Menu, choose the Install Module. When you see, "no relational system by that name exists," press SPACE BAR to continue.

5) When the .BASE SALES screen appears, set up this new relational system definition as you learned how to do in the other lessons on installing and changing relational systems:

.FILE ORDER (10);

Company Name	1	C25	K
SALES ORDER FILE	1	C0	
Order Number	1	C6	
Order Date	1	T8	
Salesperson	1	C25	
Multi-level Sort	1	C18	K

Note the special Multi-level Sort Field, which will be used to store the "sum" of three other fields (Salesperson, Order Date, and Order Number), added together with ALADIN's Calculator. (As you will be using only the first four characters of the Salesperson's name on the Multi-level Sort Field, you specify a total of 18 characters for the Multi-level Sort Field: 4 for the Salesperson Field, 8 for Order Date, and 6 for Order Number.) When you set up the report format, you will indicate the Multi-level Field as the sort field.

At this point in time, ALADIN cannot do multi-level sorts on Integer, Money, or Decimal fields. If you wish to do multi-level sorts on these types of fields, you should set up two fields for each piece of data. For example, if you knew you would be needing multi-level sorts involving Cost of Goods Sold, you would include one field for Cost of Goods (Money type) and one field for Cost of Goods (Character type). For reports not involving multi-level sorts, you would select the Money type of field. For multi-level sorted reports, you would select the Character type of field for Cost of Goods Sold. It is also important to fill in the Character field completely, using zeroes if necessary, so that ALADIN can perform the multi-level sort accurately. For dates (the "Term" type of field), ALADIN fills in the zeroes for you.

NOTE: If an error message about valid characters appears at the top of your screen while defining your relational system, press $\boxed{\text{SPACE BAR}}$ before proceeding.

6) When you have finished with the system definition, press the down arrow key until ALADIN asks if your definition is complete.

7) Answer "Y" for Yes.

If you have made a mistake in your definition, ALADIN will return you to the erring field. Make the appropriate correction(s) and continue.

8) When ALADIN prompts you for the number of disk blocks for keys and data, type 30 for both.

9) When asked about creating a document textfile, answer "Y" for Yes. This will save your relational system on disk as backup for what you have typed in.

10) When asked about creating an interface for the Program Genie, answer "N" for No.

11) When asked about generating screen forms, answer "Y" for Yes.

12) Lay out the ORDER File screen similar to this, using the rules below:

SALES ORDER FILE

Company Name_____

Order Number......

Order Date........

Salesperson.........................

Multi-Level Sort Field _____

(Note that only the Company Name and Multi-level Sort Fields have continuous underlining on the field, since they are the key fields. You could do Wild Card searches on those two fields, since they are CHARACTER type and KEY fields, the two requirements for Wild Card searches.)

Use these commands to paint the screen to resemble the example in this lesson. (It doesn't have to be exact!)

D — down one line (5D moves down 5 lines, 10D moves down 10 lines, etc.)

U — up one line (4U moves up 4 lines, etc.)

R — right one character (6R moves right 6 characters, etc.)

L — left one character (9L moves left 9 characters, etc.)

N — puts this field down to "next" line, over to left margin

P — puts this field on the next page (all fields after it will also go to the next page)

S — changes window (screen) set-up (see Reference Guide)

H — horizontal, arranges field name and line on same line

V — vertical, arranges field name and line vertically

Use the SPACE BAR or right arrow to bring up each new field. Position that field where you want it and then bring up the next field.

If you want to rearrange the screen form later and part of a field disappears in the process, move the cursor to that field and press RETURN. If one field overlaps another, move the first one out of the way with the LEFT, RIGHT, UP, DOWN, NEWLINE commands. Go back to any field that has partially disappeared and press RETURN. The arrow keys will allow you to move to different fields that are displayed.

Press the RETURN key twice and the screen will be repainted.

In change, use the SPACE BAR from *the last visible field* to bring up new fields. If you need to move one field up or down through others, position the cursor on that field, use the UP or DOWN commands, then press the RETURN key twice to repaint the screen and reorder the fields. If a field is temporarily obliterated, pressing the RETURN twice will bring it back.

To move a field to the previous page, move it to the upper left corner of the second page, press RETURN twice, press the left arrow once, and press SPACE BAR to bring up the field to page one.

If you need to spread out fields on a form, work backwards (move the last field way down on the form, then the next-to-last-field, etc.) Watch the counters in the lower left corner which tell where you are on a form.

In the case of repeating fields, all lines coming under one heading (e.g., all five lines/fields with the heading COMMENTS) must be on one page.

If you get FIX SCREENS message, press the SPACE BAR to continue. Go back to fields which seem to be too close to the margins or overlapping and adjust them using the above commands. It helps to have the data base layout you sketched on paper during this process, so you can see if a field has disappeared.

To renumber the counter in the lower left, go to the last field on the entire form. Press right arrow and answer No to "Have you finished with this screen form?" The counter will renumber.

The meaning of the counter items is explained below.

If your counter looks like this:

15:16 * 1 (34, 18)

15 is the field you are on.
16 is the total number of fields on the form.
1 is the number of this screen page.
34 is the number of this column.
18 is the number of this line.

(You might also want to substitute this list of rules for steps 26-31, Ch. 2, Lesson 1; steps 37-40, Ch. 3, Lesson 1; and steps 22-32, Ch. 7, Lesson 1 in your User Manual. They seem to be easier for people to use in laying out a screen form. Also, check page T3.11 in the User Manual for special tips on screen forms.)

13) Press the down arrow key until ALADIN asks if you are finished with this screen form.

14) Answer "Y" for Yes.

15) When asked if you want to save this new relational system, press "Y" for Yes.

16) When prompted for Userid, press RETURN , as you will have no Userids or Passwords for this relational system.

17) Once you have completed the installation of the SALES system, choose the options to exit to the ALADIN-INIT Command Menu.

18) Follow the START-UP procedure to Work with an Already Existing Relational System.

19) From the main ALADIN Command Menu, choose the Calc Module.

You are going to set up an Aladi-Calculation that you can use with the Report Generator of ALADIN. The report will provide you with the following information:

Salesperson (sorted alphabetically)
Order Date (within each salesperson category, sorted numerically; all dates are for the year 1984)
Order Number (within each order date, sorted numerically)

You will set the DIR software switch to "-", so that the sort will be in descending order. By adding fields together and sorting on the result, you will get the desired sort.

20) From the Calculate Menu, choose the Define option.

The SALES.ORDER File screen will appear, and the cursor will be resting on the Company Name Field.

21) Move to the Salesperson Field, type in !!!!, and press RETURN

The ! symbol says, "Keep this character."

22) Move back to the Salesperson Field and select it using the caret key (or SELECT Function Key, if you have one).

23) Choose the Multiply option.

The last three steps have set up a "mask" which will enable ALADIN to use only the first four characters in the Salesperson's name for the Multi-level Sort Field. This is important, because it is necessary that every entry for a given field have exactly the same number of characters in the Multi-level Sort Field. Otherwise, the sort may not perform accurately.

Just as you must enter the leading zeroes for an entry like 000203 so that all entries for this field have exactly the same number of characters as represented on the Multi-level Sort Field, you must use this masking procedure on fields containing names of persons, cities, parts, etc.

24) Move to the Order Date Field and select it.

25) Choose the Add option.

26) Move to the Order Number Field and select it.

27) Choose the Add option.

28) Move to the Multi-Level Sort Field and select it.

29) Choose the Store option.

30) When asked if your definition is complete, press "Y" for Yes.

ALADIN will show you the calculation definition on the screen:

ORDER:

Multi-level Sort =
      '!!!!'
    *Salesperson
   + Order Date
   + Order Number

31) From the Calculate Menu, choose the Save option.

32) Save this definition as CML.

33) From the Calculate Menu, choose the option to return to the main ALADIN Command Menu.

Now you must enter some data for this relational system. Each time you enter a record, you will activate the calculation on the Multi-level Sort Field. This will provide ALADIN with the information it will need to do the multi-level sort.

34) From the ALADIN Command Menu, choose the Data Module.

35) When asked about using your calculation, press "Y" for Yes.

36) From the Data Menu, choose the Enter option.

37) Enter the following record:

   Company Name: Valley Software
   Order Number: 000010 (remember that you need to
       enter the leading zeroes)
   Order Date: 3/8/84
   Salesperson: Sailors

   (Note that the Multi-level Sort will use only the first four characters of this name.)

   If any of your names do not have at least four characters, fill in the missing characters with a symbol (a period or =, for example) during data entry. We assume that the number we have chosen for this lesson (4 characters) will work in most cases.

38) Press ESC E or the CALC Function Key to activate the calculation.

You will see the entries for the three fields, Salesperson (first four characters only), Order Date, and Order Number "added" together on the Multi-Level Sort Field (e.g., Sail03/08/84000010).

39) Press the down arrow once, until ALADIN asks about entering the record in this way.

40) Press "Y" for Yes.

41) Enter the following records in the same way, remembering to press ⎡ESC⎤ ⎡6⎤ or the CALC key for the Multi-level Sort Field for each record.

Mojave Software
456731
9/7/84
Mooney

Lands End Data Base
987654
7/31/84
Sailors

Mojave Software
208999
9/7/84
Mooney

Grand Mesa Software
164783
4/6/84
Mooney

Peaceful Valley Systems
020003
7/23/84
Sailors

Mountain Software
000002
2/9/84
Burgess

Oceanfront Data Base, Inc
000015
4/5/84
Sailors

Desert Sands Data
037888
7/23/84
Burgess

Desert Sands Data
020004
4/5/84
Burgess

Desert Sands Data
037899
7/23/84
Burgess

Microcomputer Software
000001
2/8/84
Burgess

NOTE: If you wish, you can turn the Global Software Switch on (6GL÷) in Data.Enter. With your calculation active and the Global Switch on, the calculation will be performed automatically as the record is inserted into the data base. This is done after you answer the question, "Enter the record in this way?" with Yes. Note that the result of the calculation is not displayed on the screen.

This means that you won't have to activate the calculation for every record. Some people like to see the calculation on the Multi-level Sort field every time it is performed, so they leave the Global Switch off. It's up to you.

42) After all data has been entered, choose the options to return to the main ALADIN Command Menu.

43) From the ALADIN Command Menu, choose the Report Module.

ALADIN will ask you if you want to use your calculation. Since all the necessary calculations have been performed to do the multi-level sort, press "N" for No.

44) From the Report Menu, choose the Define option. Using what you learned in the lesson on Making Reports, define this format:

45) Move to the Salesperson Field, select it and press RETURN .

46) Move to the Order Date Field, select it and press RETURN .

47) Move to the Order Number Field, select it and press RETURN .

48) Move to the Multi-Level Sort Field and press ! or the Sort Function Key. This will set up a sort on the Multi-Level Sort Field, even though this field will not be printed out in your report.

49) Press RETURN twice so there will be space between each record listing.

50) Press the down or right arrow key until ALADIN asks you if your definition is complete.

51) Press "Y" for Yes.

ALADIN will put your report format on the screen. It should look similar to this:

Report format: ORDER   (*Multi-Level Sort*)

Salesperson
Order Date
Order Number

Again, the field within the (*_____*) is the sort field for this particular report format.

52) From the Report Menu, choose the Save option.

53) Save this report format as RML.

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54) Press the SRVICE Function Key, then the VARS function key (or press `ESC` `2` if you don't have function keys).

55) Set 4DIR to OFF "-" by pressing the number 4.

This means ALADIN will perform the sort in descending order. (If you wanted the sort to be performed in ascending order, you would leave the DIR switch as it is by default (+).)

56) Press `SPACE BAR` to continue.

57) From the Report Menu, choose the Generate option.

The report will be displayed on your screen. If you wish to stop the scrolling during report generation, press `SPACE BAR` .

Notice the alphabetical (descending) order of Salespersons, the numerical ordering of Order Dates, and, within Order Dates, the numerical ordering of Order Numbers.

Display of the data files : ORDER   (*Multi-level Sort*)

Salesperson
Order Date
Order Number

Sailors
07/31/84
987654

Sailors
07/23/84
020003

Sailors
04/05/84
000015

Sailors
03/08/84
000010

Mooney
09/07/84
456231

Mooney
09/07/84
208999

Mooney
04/06/84
164783

Burgess
07/23/84
037899

Burgess
07/23/84
037888

Burgess
04/05/84
020004

Burgess
02/09/84
000002

Burgess
02/08/84
000001

Number Of Data Records : 12 (12)

58) When the report generation process is done, choose the options which return you to the main ALADIN Command Menu.

59) Check your Software Switch line by pressing the SRVICE function key, then the VARS Function Key or press ESC 2, to make sure each is set the way you want it to be, given your next project with ALADIN.

OPTIONAL INFORMATION

The DIR switch will stay set to OFF until you reset it to ON or go into the Data Module. When you leave the Data Module, the switch will be reset to ON.

If you wanted to redirect output to the printer, before choosing the Generate option, you would press the SRVICE function key, followed by the OUTPUT Function Key. Then choose the PRNTR option, and answer Yes to the question about activating current format. (If your machine doesn't have Function Keys, press ESC 8, then P for Printer.)

MASKING

You would use masking if you wanted to use only certain characters of a field in a caluclation or report. For example, if you wanted to use only the first four characters of the Salesperson Field, you would go into Calculate. Define, move to the Salesperson Field, type in !!!! and press RETURN . The ! says, in effect, "Keep this character," You would move back to the Salesperson Field and select it, then choose the Multiply option. Select a character field for storage of the results of the calculation, and choose the Store option. Define and generate a report with the calculation active, or use Data.View to see the results of the **Masking** procedure.

Defining the calculation in this order will select the first four characters of the field. If you wanted to select the last four characters of a field, you would select the field, move back to that field, type !!!!, press RETURN , then choose the Multiply option. You could even select only the first, fifth, and 14th characters in a field by setting up the mask like this: !xxx!xxxxxxxx!

You can see the results of the masking process by going into Data.View and pressing the CALC Key or ESC 6 , or by defining and generating a report (being sure to select the field in which you stored the results of the mask). In both instances, answer Yes to the question about using your calculation.

Example

You want to do a multi-level sort involving salespersons' names, order numbers and order dates. Since the salespersons' names vary in length and you need data of the same length for the multi-level sort, you set up a mask using the procedure in the first example above.

REPLACEMENT

Replacement involves the Divide operation. If you set up the calcuation so that (x = y) divided by a selected field, when the calculation is activated, all occurrences of x are changed to y. In the Replacement function, ALADIN is case-sensitive, so that you are able to replace capital letters with lower case and vice versa.

If you set up the calculation so that the selected field is divided by (x = y), the calculation will change only the first occurrence of x to y.

If you would like to search and replace all occurrences of a character

that occurs several places within a field, and in more than one record, follow these steps:

Example

You want to remove all occurrences of a $ and replace it with nothing, so the $ is deleted and no space is left. (Try this example with the $ on a non-key field, i.e., the City Field of the CUSTOMER File in the CAR data base.)

Record 1   Comment: $20,000 $10
Record 2   Comment: $.01 $42.34 $2
Record 3   Comment: $450 $16.82

• From the main ALADIN Command Menu, choose the Calc Module, then Define. Go to the Comment Field and type $ = Return (i.e., carriage return).

• Go back to the Comment field and select it. Choose the Divide option.

• Go back to the Comment Field and select it. Choose the Store option. Press FINISH or down arrow and answer, Yes, you're done. (You could save the calc now if you wanted to.)

• Choose the option to return to the main Menu. If you have Function Keys press SRVICE, VARS, 6 and 9 to turn the Global switch ON and Info OFF. (If not, press ESC 2 , then 6 and 9.) Press Space Bar to exit the VARS line. Choose Data, answer Yes on using your calculation, then choose Change. Answer Yes to changing all the records in this way. After processing is complete, go into Data.View to make sure all the $ are gone, or define and generate a report, being sure to select the Comment Field.

Chapter 8: PROBLEM SOLVING WITH ALADIN

Lesson 2: Using the Script Mode Facility in ALADIN

LESSON OBJECTIVE : To learn how to use script (batch) mode facility in ALADIN to save time and reduce errors.

REQUIRED TIME : 10 to 15 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

NEW WORDS : "Batch:" a method for gathering and processing quantities of data automatically, thereby increasing efficiency.

: "Strings:" a group of characters, letters, numbers or combination thereof. In ALADIN strings are used for naming reference files, i.e.: Q1, Rpt1, Calc1, Stats6, etc.

LESSON OVERVIEW :

ALADIN is a menu-driven system; however, you can "teach" the system to perform a series of tasks automatically using the Script Module.

This lesson will give you the basic skills and confidence to use ALADIN's Script Module to give you even greater productivity. Reports, calculations and statistical evaluations you need ALADIN to process on a regular basis can now be run automatically.

Using the CAR relational system we will "teach" ALADIN to activate some of our queries and reports from previous lessons and then have these tasks executed automatically.

There are three types of commands you can use in Script: Menu Selections, Control Keys and "strings" (user reference file names). You will enter each command on a separate line.

** All menu selections must be prefixed by a ".." For example:

→ .Report

→ .Recall   (Recall a Report)

** ESC sequences can be entered by prefixing the number with a "!" key. For example, to direct a report be sent to a printer:

→ !8   (Redirect Output)

→ .Printer   (Send ALADIN Output to the Printer)

→ .Report   (Enter the Report Module)

→ .Recall   (Recall a Report)

** "Strings" are used when you need to enter a file reference name. You enter them as you normally would. "Strings" do not require a prefix character. For example, to recall and view a Query called Q1:

→ .Query   (Enter the Query Module)

→ .Recall   (Recall a Query)

→ Q1   (The name of the Query file)

→ .View   (Display that Query)

** You will use the screen-oriented input of ALADIN modules to build reference files which you will then ask the system to execute with Script. You cannot directly enter Screen-oriented input into a Script file. From the examples above, you can see that it would be difficult to tell the system where to move the cursor and what field to select. For this reason, you cannot directly enter the Data Module with Script or use the Define functions in other modules.

To transfer large sets of data into a relational system or from one ALADIN system to another, you will utilize automatic facilities within ALADIN other than Script.

Here's another example to show you what's happening:

→ .Statistics   (Enter the Statistics Module)

→ .Recall   (Recall a previously saved Statistics definition)

→ Sales   (The name of that definition)

→ .Evaluate   (Now begin the statistical evaluation)

→ Group1   (The name of the Group Table to be used)

→ !8   (Redirect the Output)

→ .Printer   (Direct Output to the Printer)

→ .Graphics   (Display the evaluation graphically)

→ .All   (Display all evaluations)

→ .Quit   (End the graphic display)

→ .Quit   (End the Statistics Session)

→ .   (Tells the System this is the last command)

→ `RETURN`   (Ends the Script "program")

9) Perform the following steps:

Type: .Query	and press `RETURN`
Type: .Recall	and press `RETURN`
Type: Q1	and press `RETURN`
Type: .Quit	and press `RETURN`
Type: .Report	and press `RETURN`
Type: .Recall	and press `RETURN`
Type: R1	and press `RETURN`
Type: .Generate	and press `RETURN`
Type: .Quit	and press `RETURN`
Type: .	and press `RETURN`

Press `RETURN` once.

You will be returned to the ALADIN Command Menu. You must now tell ALADIN to accept commands not from the keyboard (Input), but from your newly created Script file: Script1.

10) You may do this by pressing `ESC` `7` to redirect the Input.

ALADIN will now ask you which Input Source you want to use.

11) Choose the Script option.

Now you will be prompted for the file name you chose.

12) Type in "Script1" and press `RETURN`.

ALADIN will display your "program" commands on the screen and will then execute your Script program.

If you wish to run another script immediately, you must "turn off" your query by pressing `ESC` `2` (for Variable switches), then `1` and `2`.

This is the end of the lesson on the Script Module of ALADIN.

NOTE:

You might want to look in the Reference Guide now at the expanded Script File Table (see Section V.7).

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson, you will be working with an already existing data base; therefore, select that option (Work with an Already Existing Data Base).

3) When ALADIN prompts you for the name of your relational system, type CAR and press ⎡RETURN⎤.

   ALADIN will then prompt you for Userid.

4) Type ADI and press ⎡RETURN⎤.

   You will next be asked to enter your Password.

5) Type ADI and press ⎡RETURN⎤.

6) From the ALADIN Command Menu, press ⎡ESC⎤ ⎡8⎤ for Output.

   ALADIN will prompt:

   Output Destination

7) Choose the Script option.

   ALADIN will prompt you for the name you wish to use to save this set of batch commands.

8) Type: Script1 and press ⎡RETURN⎤.

   In place of the ALADIN Command Menu you will now see:

   ->

   In this example you will recall the "Q1" query from the Query Lesson and then activate it. Then you will Recall report "R1" from the Reports Lesson and have the selected information displayed.

Chapter 8: PROBLEM SOLVING WITH ALADIN

Lesson 3: Integration of ALADIN Modules

Try this exercise for a Grand Finale! The purpose of this lesson is to show you how to integrate the following modules:

QUERY

STATISTICS WITH GRAPHICS

WORD PROCESSING

BENEFITS:

As you will see in the exercise coming up, the integration capability of ALADIN will have a multitude of applications in home and office use.

For instance, let's suppose that your company has sales representatives throughout the United States. You may want to send a letter only to those employees in the Northwestern Region and include a statistical graph that displays the results of a defined query. In the past, this sort of endeavor would involve: typing a form letter (the kind where you type in the addressee afterwards and the ink and letter line-up never match), looking up the desired statistics for analysis, using your ruler and graph paper to draw a visual representation of your findings, and making lots of trips to the Xerox machine. Lucky you — living in the age of computers and having ALADIN to do all of those things for you!

Or perhaps you would like to perform a statistical analysis on the projected number of new hires and internships within the various departments of your agency during the next fiscal year. You then plan to send this need analysis (in the body of a public relations letter) to selected employment agencies and placement officers at the local colleges and universities.

Or, if you like, graphically display the number of presents you have received at Christmas over a five-year period and, using a mail merge, send this statistical trivia out to those individuals who have been derelict in their shopping so that they will be made aware of their responsibility for the slump and decline. This will either remedy the situation or make you realize that the time has come to find new friends.

Sound like fun? Let's get started:

For this lesson, you'll be creating a letter like the one below, its distribution aimed at potential female clients residing in California. Here is how the raw beginning might look.

SAMPLE LETTER

@ ?Date@

ADI America
1215 Howe Avenue
Sacramento, CA 95825

Ms. @·Customer_Name@
@ City@ @ State@

Dear Ms. @·Customer_Name@ :

Here is the statistical information you requested. While the table is presented graphically here, we can also provide it in percentages and/or absolute terms.

The table shows a graph of the number and percent of males and females in your sales territory who might be potential clients for you.

```
          CUSTOMER: ADI: 09/15/83
        Sex     (1.2)
                ( 1 –> m      !2 –> f)
        %
        100
         90
         80
         70
         60
         50     *****            *****
         40     *****            *****
                *****            *****
         30     *****            *****
         20     *****            *****
                *****            *****
         10     *****            *****
                *****            *****
     +————————————————————————————————————————————>
         88     42               46
        ...... : ..........      ........
                1                2
```
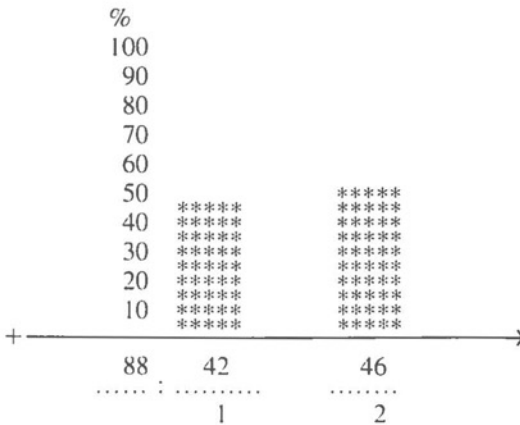
Hope this will be of help in your work!

Best wishes,

ADI America

NOTE:

The period (optional) set off by itself will have ALADIN stop after printing each letter. This allows you to change your letterhead. This is also very effective for envelope printing.

The finished product will look like this:

September 16, 1983

ADI America
1215 Howe Avenue
Sacramento, CA 95825

Ms. Reagan
San Diego, CA

Dear Ms. Reagan:
Here is the statistical information you requested. While the table is presented graphically here, we can also provide it in percentages and/or absolute terms.

The table shows a graph of the number and percent of males and females in your sales territory who might be potential clients for you.

```
            CUSTOMER: ADI: 09/15/83

    Sex      (1.2)
             ( 1 -> m      !2 -> f)

    %
   100
    90
    80
    70
    60
    50       *****          *****
    40       *****          *****
             *****          *****
    30       *****          *****
             *****          *****
    20       *****          *****
             *****          *****
    10       *****          *****
             *****          *****
  +------------------------------------------->
           88    42           46
        ...... : ..........    ........
                1             2
```
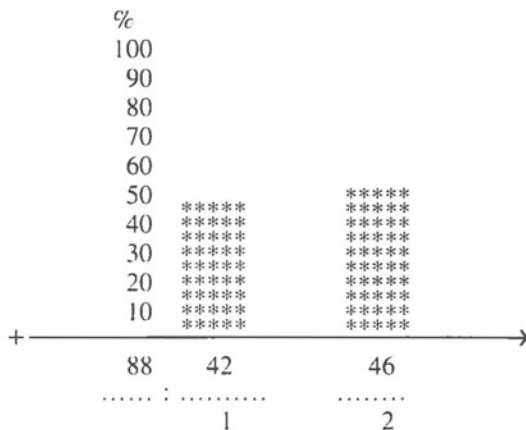
Hope this will be of help in your work!
Best wishes,

ADI America

The steps involved in generating such a letter which incorporates a statistical graph are as follows:

1) With your word processing program, type the form letter (which will be referred to as a "matrix" letter) appearing on the first page of this lesson. The guidelines listed immediately below will be helpful to you.

   Don't worry about the statistical graph just yet — we'll be calling upon ALADIN to create that!

   (See the list of word processors compatible with ALADIN in the chapter on Word Processing.)

   NOTE:

   Use "@ 's" around each variable. ALADIN's Word Processing Bridge recognizes the "@ " symbol; it does NOT recognize WordStar's™ Mail Merge™ symbol, which uses the "&." Therefore, if you are using WordStar™, it is important that you use "@ " instead of "&" on either side of your variables. **Also if you are using WordStar™, be sure to use the Non-Document (N) Mode to create the letter!!**

   Use @ ?_____ @ if you want to input from the keyboard any specifics (like the date today).

2) Save your matrix letter as a textfile. Put the name of the relational system before the name of the textfile; e.g., for the textfile "integ.text," you would type in "carinteg.text" with your word processor. However, when you enter the file reference name in ALADIN's Word Processing Module, you enter only "integ". ALADIN supplies both the prefix "car" and suffix ".text" for you. You may or may not have to put a period between "car" and "integ," depending on your computer system. Try naming it first without the period in that spot. If the WordProc Bridge cannot access that file, rename the textfile "car.integ.text."

NOTE:

Be sure that all textfiles are stored on your second drive if you have two disk drives. If you run into problems with file names, ask for a directory listing. Your word processor may save textfiles with the suffix ".txt".

3) Refer to the START-UP procedure.

4) Choose the option (Work with an Already Existing Data Base).

5) When ALADIN prompts you for the name of your relational system, type CAR and press [RETURN].

   ALADIN will then prompt you for your Userid.

6) Type ADI and press [RETURN].

   You will next be asked to enter your Password.

7) Type ADI and press [RETURN].

8) From the ALADIN Command Menu, choose the Group Module.

9) Press [ESC] [3] to jump to another file.

10) Press ''3'' to choose CUSTOMER.

11) From the Group Command Menu, choose Define.

12) To set up the desired Group Tables, move the cursor to the Sex Field.

13) Select it using the caret key.

14) For Group 1, type M.

15) Press the left arrow key twice.

16) For Group 2, type F.

17) Press the left arrow key twice.

18) Press the right arrow key twice.

19) Answer Yes to the prompt:

   Is your definition complete?

20) Choose the Save option.

21) Save this Group Table as GINT.

22) Choose the option which returns you to the ALADIN Command Menu.

23) Choose the Statistics Module.

24) From the Statistics Command Menu, choose Define.

25) Move the cursor to the Sex Field.

26) Type "S" for a Single Dimensional Analysis.

27) Press the down or right arrow key once.

28) Answer "Y" for Yes to the prompt:

Is your definition complete?

29) Choose the Save option.

30) Save this definition as STINT.

31) From the Statistics menu, you now want to choose the Evaluate option.

32) For Group Table, type GINT as your file reference name.

33) Ask for the statistical information in graphic terms. (You may have to wait a moment first.)

34) Press ESC 8 to redirect the output.

35) Choose the File option to redirect it from the monitor to a disk file.

36) Call this file STINT.text.

This textfile should be stored on the same disk as your matrix letter.

37) Choose the Graph option again.

WARNING!!!!

This is a crucial step! If you don't request the graphic output again, nothing will be stored on your disk.

38) Choose the options to completely exit ALADIN.

39) Go back to your word processing program and enter the textfile containing the matrix letter.

40) At the appropriate spot (refer to the sample letter at the beginning of this lesson), copy the statistical output file into the matrix letter.

   If you have trouble, check the disk directory for file names.

41) Do any editing you wish on the graph and matrix letter.

42) Save the matrix letter with the statistical graph using your word processing program.

43) Repeat Steps 3-7 to re-enter ALADIN (in CAR again) and call up the main Command Menu.

44) Press ESC 3 to jump to another file.

45) Press the "3" to jump to the CUSTOMER File.

   Since we want to use a query to send our letter only to women in California, we must define and save a query.

46) From the main ALADIN Command Menu, choose the Query Module.

47) Choose Define.

48) Move the cursor to the State Field.

49) Type: CA.

50) Choose the " = " option.

51) Move the cursor to the Sex Field.

52) Press "F" for Female.

53) Choose the " = " option.

54) For connectors, choose "And."

55) Press the down or right arrow until you get the next prompt.

56) Answer Yes to the prompt:

   Is your definition complete?

57) Choose the Save option.

58) Save this query as QUINT.

59) Return to the ALADIN Command Menu.

60) Choose the Word Processing Module.

61) Answer Yes to the prompt about using your query.

62) Type in the name of the matrix letter saved as a textfile in your word processor.

In this example, type in "integ".

Remember that you do not have to type "car" before "integ" or ".text" or ".txt" after "integ". ALADIN supplies them for you.

You will be asked to input the date from the keyboard.

The letters to all of the people on your mailing list, selected according to the criteria you have specified in your query, will scroll before your very eyes. You can stop the scrolling by pressing SPACE BAR.

NOTE:

If you have created a spreadsheet with Super Calc™ (by Sorcim running under MS-DOS) and want to integrate it into a letter or report produced on your word processor running under MS-DOS™ (e.g., WordStar™) and then send the letter or report to all of the people in your ALADIN files, you should follow the steps in the latter part of this lesson and also do the following: After saving your spreadsheet to disk, request output to disk as a textfile. Put your WordStar™ diskette in Drive A, the diskette on which your Super Calc™ textfile spreadsheet is stored in Drive B. The textfile spreadsheet will be listed in the directory with the suffix ".PRN." Using the "Block Read" command, integrate the textfile spreadsheet into your WordStar™-created matrix letter (being sure to use the "@" symbol, not "&," around variable names). Then follow the steps above for use of ALADIN's Word Processing Bridge function. If your spreadsheet was created with Visi Calc™ or Advanced Visi Calc™ (by VisiCorp™) running under MS-DOS™ and you want to do the same thing as described for Super Calc™ above, save your spreadsheet as a "DIF™" file (Data Interchange Format). The DIF™ file will be accessible by WordStar™ in the same way as the Super Calc™ "PRN™" file would be.

REMINDERS

** After leaving your word processor and re-entering ALADIN, you must Jump to the appropriate file.

** You must also recall your query (or define a new one).

** You must first have defined and saved a Group Table and Statistical Evaluation and redirected output from the Monitor to the File before being able to generate your mail merge letters using your matrix letter and your ALADIN CUSTOMER (or other) data file of names and addresses.

** You must copy your statistical analysis textfile into your matrix letter textfile. You can edit both of these to your heart's content with your word processor before re-entering ALADIN's Word Processing Bridge Module.

** If ALADIN's Word Processing Bridge Module doesn't seem to be able to find your textfiles, check the directory for exact textfile names. You may have to use your operating system program to re-name a textfile so it is accessible by ALADIN. For example, if you saved a textfile as "car.integ.text," you might have to rename it to "carinteg.text." When prompted in the Word Processing Module for file name, you would type in "integ".

Chapter 8: PROBLEM SOLVING WITH ALADIN

Lesson 4: Transporting Data from One Relational System to Another

LESSON OBJECTIVE : To learn how to transport data from one data base to another.

REQUIRED TIME : 30 to 45 minutes.

MATERIALS REQUIRED : ALADIN Plus and ADI Demo and Examples diskettes.

LESSON OVERVIEW :

In this lesson, ALADIN will demonstrate its power, flexibility, and "friendly nature" by setting up a new data base that will further enhance an existing one.

ALADIN may also take data files from other software manufacturers and merge them into an ALADIN relational system. For example, data from spreadsheets produced by VisiCalc™ or SuperCalc™ may be incorporated into various data bases and then generated into well-integrated reports. These reports can be produced and printed by ALADIN. Before printing, the reports can be edited by other software packages such as WordStar™ or MultiMate™.

Using the CAR system as the "master" data base, we will create a smaller "slave''' data base. This "slave" data base acts as an intermediate file that ALADIN will later use for its final compilation.

General Rules:

#1 You can take information from a field in one relational system and transfer its contents into a field in another relational system if the field sizes are exactly the same; or you can transfer its contents into a larger field in another relational system if you "pad" the larger field with spaces as explained later in this lesson.

Example:

Manufacturer: (Character field of length 15)

Can be transferred into:

Automobile Maker (Character field of length 15)

But cannot be transferred into:

Car Builder: (Character field of length 10)

Remember, if you must transfer into a larger field in another relational system, you must pad the smaller field with blanks.

#2 The information you are transferring must be of a compatible type.

Example:

You cannot transfer Dates into Money fields or vice versa. Exception: You can transfer all types of fields into Character fields, except that data of a numeric nature cannot be used for computational purposes. For example, Dates, Money, and Numbers can be transferred into Character fields; however, you must follow the rules that apply to Character fields when using the Calculate Module.

#3 When you set up the transfer file, all your data must be on separate lines. The correct file format is shown below.

Example:

> Manufacturer:
> Model:
> List Price:
> Maximum Speed:

Example of incorrect file format:

> Manufacturer: Model:
> List Price: Maximum Speed:

#4 The order of your output for the transfer file must also be the order for your input.

Example:

> OUTPUT FILE   INPUT FILE
> Manufacturer: Car Builder:
> Model: Type of Car:
> List Price: Base Sticker Price:
> Maximum Speed: Fastest Speed:

This ends the General Rules on transporting data from one data base to another.

The next section will describe the step-by-step procedure for transporting data.

1) Refer to the START-UP procedure and the special instructions immediately below:

2) In this lesson you will be installing a new system; therefore, select that option (Install or Change a Data Base).

3) When ALADIN prompts you for the name of the relational system you want to construct, type: AUTO and press RETURN. From the ALADIN-INIT Menu, choose the Install Module, followed by the SPACE BAR. When the BASE AUTO screen appears, you will be entering new data just as you did in the lessons on installing and changing systems.
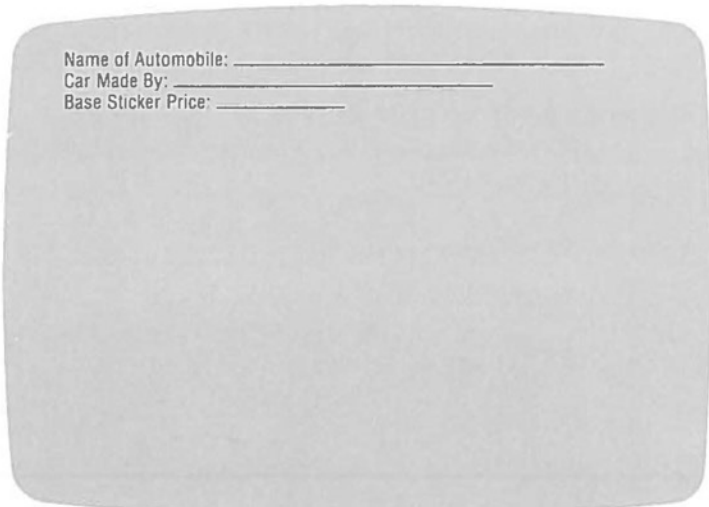
Install the following system:

```
.BASE AUTO.  = CARINFORMATION..:

.FILE CARINFORMATION.. (.30.):
    Name of Automobile  ................  (1.) = C 25. . K . :
    Car Made By  .....................  (1.) = C 20. . K . :
    Base Sticker Price  ................  (1.) = M 11 . . K . :
```

4) When you have finished with the system definition, press the down or right arrow until ALADIN asks if your definition is complete.

5) Answer "Y" for Yes.

6) When ALADIN prompts you for the number of disk blocks and number of keys you wish to allocate for the data, type 33 for both.

7) When asked to create a document text file, answer "N" for No.

8) It will not be necessary to have a Pascal interface generated for Program Genie. Answer "N" for No.

9) Answer "Y" for Yes when ALADIN asks if you would like to generate screen forms.

10) Lay out the AUTO File screen similar to this plan:

```
Name of Automobile: _____
Car Made By: _____
Base Sticker Price: _____
```

11) Press the down or right arrow until ALADIN asks if you are finished with this screen form.

12) Answer "Y" for Yes.

13) Answer Yes when ALADIN asks if you want to save this new relational system.

14) Type in ADI for Userid and Password.

15) Once you have completed the installation of the AUTO system, end your ALADIN session by choosing the options to exit ALADIN's INIT program.

16) Now execute the command that starts the ALADIN EXEC program to access an already existing relational system.

17) Type in: CAR when ALADIN prompts for the name of your system.

18) Type in ADI for your Userid and Password.

You want to transfer a subset of the Car system to the new Auto data base. The Auto system will contain only those cars which cost less than $15,000, go faster than 100 miles per hour, and are not Hondas or Toyotas. (These are the criteria from Query: "Q1".)

19) Choose the Query Module.

20) Choose the Recall option.

21) Type in "Q1" and press ⌊RETURN⌋.

22) Choose the options that will return you to the Command Menu.

It is first necessary to define the fields you want to transfer ("export") into the new system. You will do this in the Report Module.

23) Choose the Report Module.

24) When you are asked if you want to use your query, answer "Y" for Yes.

25) When the Report Menu appears, choose Define.

26) Select the fields in accordance with the following report layout. Do not use any text or header material, select only the field.

Model: Select with the caret key and press ⌊RETURN⌋.
Manufacturer: Select with the caret key and press ⌊SPACE BAR⌋ 5 times to pad the new larger field with blanks, then press ⌊RETURN⌋. It is critical that you pad the new field with 5 blanks before pressing ⌊RETURN⌋.
List Price: Select with the caret key and press ⌊RETURN⌋.

27) Press the down or right arrow key until ALADIN prompts:

Is your definition complete?: Yes, No

28) Press "Y" for Yes.

You do not want duplicate entries for the dealers; therefore, you must turn off the duplicate entry switch.

29) Press ⌊ESC⌋ ⌊2⌋ for Variable switches.

30) Press "3"(+) ON to make it "3"(−) OFF, then press [SPACE BAR].

Now you must send this information out to a file where it can be "loaded" into the AUTO data base.

31) Press the OUTPUT function key or [ESC] [8].

ALADIN will prompt:

Output Destination: Monitor, File, Script, Printer, ?

32) Choose the File option.

33) When prompted for the name, type: Slave and press [RETURN].

34) Now generate the transfer file by choosing the Generate option.

On the bottom of your screen you will see the data being considered for transfer.

35) When processing has stopped, choose the options that will return you to the main Command Menu.

36) Choose the option that will return you to the prompt, "Enter Relational System name."

37) When asked for the name of your relational system, type: AUTO and press [RETURN].

You now want to "load" (import) the data into the AUTO system. You want this to be an automatic process as well.

38) Choose the Data Module.

You must now tell ALADIN that input will no longer come from the keyboard, but from an "external" file called "Slave."

39) Do this by pressing the Input function key or [ESC] [7] for Redirect Input.

ALADIN will prompt:

Input Source: Keyboard, File, Script, ?

40) Choose the File option.

41) When asked for the name of the reference file, type: Slave and press `RETURN`.

42) Choose the Enter command. ALADIN will prompt:

Data.Enter: Keyboard, File, ?

43) Choose the File option.

The AUTO File screen will appear with the cursor resting on the Name of Automobile Field. You must now tell ALADIN the fields in which you want to have data entered. You will use the caret key just as you did in the Report Module. Remember, the order in which you select the fields must match the order selected for the output format from the CAR system.

44) Select the Name of Automobile Field by pressing the caret key.

45) Select the Car Made By Field with the caret key.

46) Select the Base Sticker Price Field with the caret key.

ALADIN will ask if your definition is complete.

47) Answer "Y" for Yes.

ALADIN will then ask if you want to enter the record this way.

48) Answer "Y" for Yes.

ALADIN will now automatically process the import file and complete the transfer process.

When ALADIN has finished, you may view the information as it appears on the screen.

49) From the Data Menu, choose View and press `RETURN` to see the records.

NOTE:

At this time you may want to redirect input to come from the keyboard. This lesson has demonstrated how you can "import" as well as "export" data from one ALADIN system to another. However, this "transfer" concept is a fundamental building block in ALADIN's ability to work in conjunction with the software programs from other manufacturers.

ALADIN™

Relational Problem Solver

USER REFERENCE GUIDE

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Includes contributions from Dr. Judith Bowman, KT Campbell, Christina Hamlett, Karen P. Orell, Dr. Edward Patterson, Edward M. Porrazzo, Thomas Swegles, Vaughn Wolffe

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REFERENCE GUIDE TABLE OF CONTENTS

I. How to Use This Book

You are reading A.D.I. America's ALADIN User Reference Guide. This book is intended to serve as just that — a reference to be used after one is familiar with the basic operation of ALADIN. If you are not yet familiar with the ALADIN Relational Problem Solver, we recommend that you first read the ALADIN Introduction and Tutorial. It is our intention that this Manual serve as a detailed reference guide for the ALADIN functions, but not as a training guide.

The ALADIN User Reference Guide is organized along the same lines as the ALADIN system itself. That is, just as the ALADIN commands are organized into functional groups called "modules," so this book will usually have a section for each module, and subsections for the functions found within that module. When you want to know how to use a specific function, you can easily find the appropriate section by using the Table of Contents.

II. Introduction to ALADIN

ALADIN is a data base management system that you can use to model and solve most of the information processing problems encountered by a business or other organization.

ALADIN is designed to take advantage of the fact that most of these information processing tasks involve information "records." Records can describe people, machines, books, inventory, customers, reservations, contracts and even research experiments.

A group of similar records, such as the card catalogue in a library, is referred to as a "file." So, if you need to process information about 5000 books, you will need 5000 records, but the records are all part of the same file.

If you examine the individual record cards in a card catalogue, you can see that they each contain the same types of information: Author, Title, Call Number, etc. For collecting this type of information, people often create a written form with a number of boxes or blanks that are then filled in with the appropriate data. Some files contain nothing but a single form repeated thousands of times, but with different data in the blanks.

One of the basic applications of ALADIN, therefore, is to serve as an "electronic filing cabinet." With ALADIN you can create your own forms and organize them into various files without ever touching a piece of paper. ALADIN also takes care of such basic tasks as looking up a record, adding new records and deleting old ones.

NOTE:

For futher explanation of this and other terminology refer to the chapter "Terminology and Concepts" in the back of this Manual.

ALADIN is much more than an electronic file clerk. You can perform statistical analysis on the data in your records with ALADIN'S optional built-in Statistical Evaluation Module. The integrated Report Generator is also available to automatically produce the reports and lists that you design. In addition, ALADIN'S built-in Calculator Module can perform a variety of computations with your data.

II.1. The Relational Problem Solver

What is a "Relational Problem"? When the lists and data in your various files are interrelated to each other, you have a Relational Problem that cannot be solved by most data base management systems. If, for example, you are an automobile dealer, you might maintain a file that contains specific information on many different autos. You may also keep a file of the various auto manufacturers, their distributors and other pertinent information.

In this case, there is an obvious relationship between each automobile and a particular manufacturer: every car has a single manufacturer.

With paper files, if you want to look up a car and then find some information about its manufacturer, you would either have to keep a copy of the manufacturer's record with each automobile record or refer to the separate manufacturer's file.

With ALADIN, things are much easier. You can establish a relational system which solves your relational problem. In this case, you would maintain the two files (one for the cars and one for the manufacturers) within a single data base. Then, when you want to find the manufacturer's information for a given car, ALADIN will automatically take you to the correct record with only two keystrokes.

This "relational" approach can be applied to many problems in the real world, not only to speed up your work, but also to accomplish tasks that would have been impossible with a manual system.

II.2. Operation

ALADIN is an interactive, menu-driven program with a built-in self-teaching Tutorial. This means that a session with ALADIN resembles a conversation. The program suggests some things that you may wish to do, and you give it a reply. At most stages, your replies are really selections from a "menu" of possible choices.

Tutorial and Help information is available throughout ALADIN to guide you in the meanings of the various choices. Whenever the HELP option is displayed on your screen, you can press the "?" key.

III. Using a Relational System

III.1. Overview

Once a relational system has been installed you will use the ALADIN Executive Program for nearly all your work. To activate this portion of ALADIN consult the section of this Manual entitled "Start-Up Procedure." Upon entering the Executive Program your screen should appear like that in Figure 1.1.

```
A.D.I. --- ALADIN.EXEC v2.6        00/00/00
Advanced Data Institute, Relational Systems:ALADIN


© Copyright by Advanced Data Institute, Sacramento, CA 1984
Enter Relational System name
```
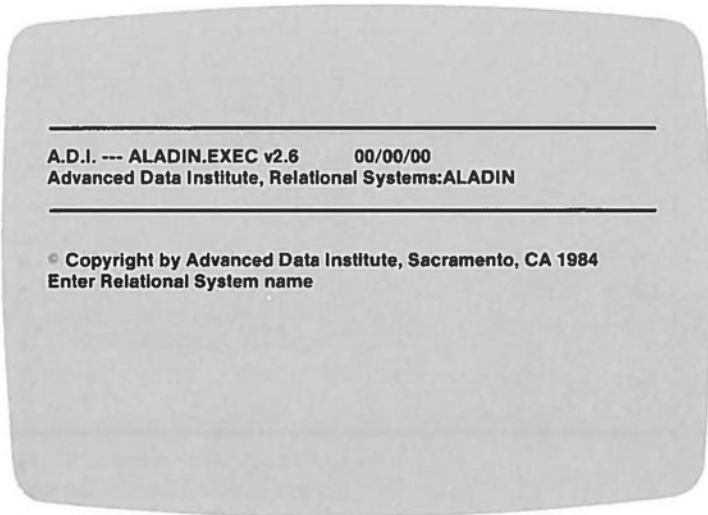
FIGURE 1.1

Note that the cursor is positioned immediately after the request "Enter Relational System name." ALADIN is asking you to specify the name of the data base you wish to access. For example, if you wish to use the demonstration data base provided with ALADIN, you would type in "CAR" followed by RETURN. If you enter the name of a non-existent relational system or one for which not all the correct files can be found, ALADIN will give you the message

Cannot find all the files for that relational system.

This signifies that the data base cannot be found where ALADIN expects it to be found, which is usually on your "#5" disk drive. If you get this message, simply press SPACE BAR to return to the request "Enter Relational System name."

It sometimes happens that you want to redefine the disk volumes on which ALADIN should look for your data base files. Or, you may want to redefine the unit number which ALADIN will use as the printer. This is possible using some optional parameters to the "Enter Relational System name" request. While you would normally type in the name of the relational system, such as "CAR," the full possibilities of what you can enter are as follows:

<Console>, <Printer>, <User Disk>, <Tree Disk>, <Data Disk>, <Data Base Name> : User ID: Password. Each of these items has the following meaning:

<Console>   : specifies the console device. Normally this will be set to "Console:"

<Printer>   : specifies the printer device. This is normally set to "Printer:" but may also be set to "REMOUT:"

<User Disk>   : specifies the disk volume which ALADIN will use for both storage and retrieval of the "User Files" that you generate during an ALADIN session.

<Tree Disk>   : specifies the disk volume on which your relational system tree file is kept. Normally this will be the same volume as that on which the data file is kept.

<Data Disk>   : specifies the disk volume on which your relational system ".DATA" file and the other data base files (except the tree file) are kept. Normally this defaults to "#5".

<Data Base Name>   : specifies the name of your relational system or data base.

<User ID>   : You can, if you wish, enter your User ID on the same line as the relational system name.

<Password>   : You can enter the password and the User ID with your data base name so that you don't have to enter them on separate lines.

Here are a few examples:
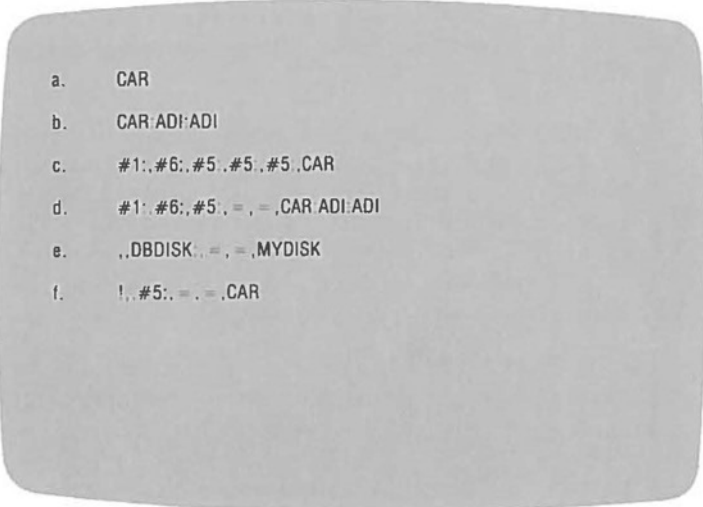
```
a.      CAR

b.      CAR:ADI:ADI

c.      #1:,#6:,#5:,#5:,#5:,CAR

d.      #1:,#6:,#5:,=,=,CAR:ADI:ADI

e.      ,,DBDISK:,=,=,MYDISK

f.      !,,#5:,=,=,CAR
```

FIGURE 1.2

Notice from the examples in Figure 1.2 that when several of the parameters are identical you can indicate this by using the " = " (see Figure 1.2d). Note also that it is possible to skip parameters, thereby leaving them unchanged from their default values, by using commas (,) as placeholders (See Figure 1.2e).

If you reset the volume parameters in the manner shown above, the disk does not make a permanent change in your ALADIN system. However, if you precede your response with an exclamation mark "!", these changes will become permanent. (See Figure 1.2f.)

Normally when you enter the ALADIN Executive program, you will enter the name of a relational system (such as "CAR") followed by a [RETURN] ; ALADIN will then ask you for a "User ID". To do this you enter a valid User ID (such as "ADI") followed by a [RETURN]. ALADIN will then ask you for a password "Passwd". Enter the password that corresponds to your User ID. In the examples used in this book, both the User ID and Password are "ADI." If you have entered a valid User ID and password you will see a number of dots on the screen, the names of the files that comprise your relational system and the ALADIN menu line on the bottom of the screen (See the "Menu Options" part of this Manual).

Note that, in entering a password, ALADIN will "scramble" the characters that you type. For example, if you type a password "ADI", what

may appear on your screen is something like "YBK". This doesn't mean you're a bad typist, but that ALADIN is protecting your password from prying eyes.

The ALADIN Executive makes a large number of separate functions available to you; these are organized into functional groups called "MODULES." The modules themselves may be activated by the commands contained in the "ALADIN Command Menu." This "menu" is a list of the modules and their names. There are various keys you can press to activate these Modules. See the "Menu Options" section of this manual.

Each of the ALADIN executive modules is discussed in turn in the following sections of this manual, but here is a brief description of each of them:

Data   : The "Data" module is used for entering, changing, removing and viewing the raw data values contained within your computer as part of your Relational System.

Report   : The "Report" module is a tool for creating reports based upon the data within your Relational System.

Query   : The "Query" module permits you to automatically screen your data. This is so you can select only records meeting certain criteria you choose.

Calculate   : The "Calculate" module allows you to perform calculations to manipulate your ALADIN data, similar to spreadsheet operations.

Grouping   : The "Grouping" module is part of ALADIN's statistical package. It allows you to divide your data into categories for statistical evaluation.

Statistics : ALADIN's "Statistics" module offers a full range of interactively controlled statistical evaluations.

WordProc   : The "Word Processing" Bridge module enables you to merge your ALADIN data into form letters, reports or even mailing labels.

Info   : The Info module provides you with a variety of information about your ALADIN data base.

Exit   : The Exit command simply takes you out of this relational system and back to the question "Enter Relational System name."

III.2. The "Data" Module

PURPOSE

The Data Module enables you to enter, change, remove, or examine the data within your relational system. Without it, you might have a great relational system structure but no way to use that structure in solving your data management problems.

OVERVIEW

The choices available to you in the Data Module are:

Enter   : Enter a new record into an ALADIN relational system.

Change: : Change an existing record in your relational system.

Remove   : Remove an existing record from your relational system.

View   : View the contents of an existing record.

Quit   : Leave the Data Module and return to the Command Menu.

INTEGRATION

Once you have entered some data on a screen form in your relational system, you can use the Report, Query, Calculate, Grouping, Statistics and Word Processing Bridge modules of ALADIN. You can use the Calculate Module to automatically change any type of data in your relational system. While in Data, you can use predefined queries to screen/ filter your data.

When the "Data" Module of ALADIN is activated, new Command Options appear at the bottom of your screen:

Data: Enter, Change, Remove, View, Quit, ? >

Each of the command names in this menu describes an important function of ALADIN that may be activated in the manner described in the "Menu Options" part of this manual. While they are all discussed in detail in the sections that follow, they are, briefly:

Enter   : Enter new data into your ALADIN Relational System. Please do not confuse this with change.

Change   : Change or update existing data within your Relational System. You should use "Change" whenever you wish to modify any record that is already part of ALADIN's data base. Use "Enter" to enter a new record.

Remove   : When an existing data record is no longer needed, use ALADIN's "Remove" function to throw it away.

View   : If all you want to do is look at (but not change) the information within your Relational System, the "View" function is the one you want.

Quit   : This takes you back to the ALADIN Command Menu.

ENTER

III.2.1. Enter

The "Enter" function is for entering new records into your ALADIN Relational System. Activate Enter from the Data Command Menu:

Data: Enter, Change, Remove, View, Quit, ? >

New records are usually entered through the screen forms that were defined when your Relational System was installed. The only exception to this is when data is entered from an external text file.

When the Enter function is activated, the form for your current file is displayed on your screen. The form is "empty" at this point; that is, none of the fields have any data in them. They are all blank. At the upper right corner of the screen, the words "Data.Enter" should be visible as a "street sign" to tell you which function you are using. At the upper left corner of the screen, you will notice first the name of your relational system followed by the name of the current file within your relational system. Then, within the parentheses are the names of your input and output files, respectively. This is similar to the display for the ALADIN Init program.

Following the two file names (within a second set of parentheses) are three dashes (---). These tell you the status of three of ALADIN's "switches" (the precise meaning of the switches is discussed elsewhere). The three switches are, respectively, the "OQ" or output query switch, the "IQ" or input query switch, and the "CAL" or calculation switch. The --- tells you that these switches are off. If a switch is on, there will be a plus (+). Thus you can always tell whether or not a query is active on input "IQ", active on output "OQ" or a calculation "CAL" is active. For example "-- +" means that there is no query active, but there is a calculation active. The information displayed on the top line of the screen is called the "Status Line" because it gives you information regarding the current status of your ALADIN session. You are now ready to enter data into the form.

III.2.1.1. The Use of Screen Forms

We have described earlier in this manual how a relational system is made up of files, how the files consist of a number of records, and how each record is based upon a common form. ALADIN uses the concept of a form to simplify and unify many of the operations that you will be performing on your data.

On paper, a form is a group of blanks or fields that you fill in with the data particular to the object (or person, etc.) that you wish to describe. ALADIN lets you design your own forms on the screen of your computer. The actual arrangement of the fields occurs when your Relational System is first installed (see the section of this manual entitled "Installing a Relational System").

Whether you are entering new records, reviewing old ones, defining a report or performing a statistical evaluation, ALADIN uses the screen form that has been constructed for that particular file. Figure 2.1 is a typical form that might have been constructed for some type of name-and-address file:

Name: _____

Company: . . . .

Address: . . . .

City: . . . . State: . . . . . .

Zip: _____

FIGURE 2.1

NOTE:

ALADIN makes it easy for you to tell which fields are defined as "key" fields: they are shown with underscores ("_") instead of with periods ("."). In Figure 2.1 above, the fields "Name" and "Zip" are key fields.

While the precise operations that you can perform with a screen form vary depending on the function that is active, there are certain operations in common. The most important of these are the cursor movement commands.

The "cursor" is the little rectangle (sometimes blinking) that marks your position on the screen of your terminal. ALADIN uses the cursor to tell you what field you are on in the screen form, and uses cursor movement keys to move you from field to field. These are the "vector" or "arrow" keys for your particular keyboard. There are usually four of them (up, down, right, left) found in a cluster somewhere on your keyboard. We will refer to these keys as `UP`, `DOWN`, `RIGHT` and `LEFT`.

Here's how it works: When ALADIN first presents a screen form, your cursor is positioned at the very first field. In the sample above, that would be the "Name" field. Pressing the `RIGHT` key will move the cursor to the next field, which is "Company" in the example. If you continue to press `RIGHT` repeatedly, you will move through all the fields.

When you get to the last field, pressing `RIGHT` again will actually take you "off the form." ALADIN will interpret this as a signal that you are finished with the form, although it will always give you a chance to go back.

Similarly, pressing the `LEFT` key will always move you to the preceding field, as from "Company" back to "Name." If you press `LEFT` when you are at the first field, you will again be moving "off the form," this time from the "upper left" rather than the "lower right." In this case the cursor will "wrap around" to the last field.

You can also use the `UP` and `DOWN` keys within the screen form. Pressing `UP` will always move you to the first field (top left), and pressing `DOWN` moves you to the last field (bottom right).

In most ALADIN functions, you can also escape from a form by pressing `ESC` `0` or the "Cancel" key, if you have one. The `ESC` key will also work on most keyboards, if you press it twice. "Escaping " from a form means that you cancel what you were doing.

ALADIN will place the cursor at the very first field of your screen form. Remember that once the form is filled in to your satisfaction, it becomes a record within your file. Enter the data field by field. The cursor will tell you which field you are on, and you can move between the fields by using the cursor movement keys. You can skip fields, back up to make corrections, or complete the data entry process simply by controlling the position of your cursor on the screen.

When you enter a value into a field, you are really just typing a sequence of keys that ALADIN recognizes as appropriate for that field. If you type a key that is not valid for that field, ALADIN will react by giving you a warning message at the bottom of the screen. An example would be accidentally pressing an "&" instead of a "7" when in a numeric field.

ALADIN will also react to some special "escape" keys while you are entering data. If you press RETURN, ALADIN will consider that you have finished with this field. It will then fill the remainder of the field with blank and skip to the next field. ALADIN also keeps track of the number of keys you press so that it can jump automatically to the next field when the current field is full. (You cannot overflow a field.)

CHANGING A FIELD

It is possible to change the value in a given field after it has been entered. First, move the cursor to the field you wish to change. Second, either retype the entire entry or type only the first character of the entry and then use RIGHT and LEFT to go to the error and correct it. Note that the entry will be "truncated" (or "cut off") wherever the cursor happens to be when you press RETURN. This is useful when there are extra characters that you would like to dispose of. Be careful, however, that you do not press RETURN without first moving the cursor to the end of your entry, otherwise part of that entry will be lost.

To edit or change the contents of a field while you are entering or changing a data record, first move the cursor to the field with the existing data. Next either (1) move the cursor to the end of the data in that field and add data, or (2) move the cursor part way through the field and type over the existing data, or (3) use the "up" arrow key to delete characters within the field, or (4) use the "down" arrow key to insert blank characters within a field. When you insert blanks, you can then type into those blanks. This is useful if you need to change a single character to two or more characters. Remember, when you have finished editing the field, move the cursor to the end of the field with the right arrow key and then hit RETURN.

If you want to remove the entire contents of a field, just move the cursor to it and press RETURN.

KEY FIELDS

Normally a data record is identified through a particular field called the primary key field which describes the "primary category" into which that record falls. This could be a person's name or social security number, or it could be the manufacturer of a particular automobile. The primary key field should always be the very first field of a record.

With ALADIN, it is also possible to name a large number of secondary key fields. A secondary key field is any key field other than the first or primary key.

Any of the keys (either primary or secondary) may be used with equal ease to find a data record within your Relational System. There is really very little difference between primary and secondary keys in ALADIN.

The key fields are used within the Data Module to locate a given record or group of records that has already been entered into your relational system. For the Change, Remove and View functions, the need for this may be obvious, since you must first find the record you want before you can perform any of those operations. Key fields are also useful within the Enter function.

ALADIN makes it possible to minimize much of the tedium of data entry by "capturing" the contents of existing records and using them to get a "head start" on a new record. This not only speeds things up, it also reduces the probability of error.

To locate all records matching a particular key:

> Move the cursor to the desired key field. Type in the item which you would like to match (e.g. MITSUBISHI if you are searching a field specifying the manufacturers of particular automobiles), followed by a [RETURN].

ALADIN will now search the data base for your relational system and locate all the records that have matching keys (e.g. all cars manufactured by MITSUBISHI). Figure 2.2 shows how the first of these records will be displayed on your screen.

```
CAR.SPECS (Console:.Console:) (---)                    Data Enter
────────────────────────────────────────────────────────────────
               Manufacturer: >-MITSUBISHI_____

               Model:LANCER 2000 TURBO_____

Horse_Power_in_PS: 170              Volume_of_Engine_in_CM: 1997
Maximum_Speed_in_MPH: 120 Acceleration_time_from_0_to_60: 07 7

Fuel_Consumption___City_Highway_HS: 0019 0033 0026Gasoline_Type: U

Five_Gear_Model_Available: Y       Automatic_Transmission_Available: Y

Number_of_Doors 2                        Sun_Roof_Available: Y

Colors_Availiable: .........  ..........  ..........  ..........
                   ..........  ..........  ..........  ..........
                   ..........  ..........

               List_Price $: 9,789.00
────────────────────────────────────────────────────────────────

1 : 3 -> Manufacturer: mit?            .Use this Record? Yes.No
```

FIGURE 2.2

Notice that on the bottom line to the right side, ALADIN is asking you whether or not to "Use this record." You should answer "yes" or "no" depending on whether you wish to use the data that is on your screen as the basis for a new record. On the left hand side of the bottom line is information regarding the matching of the key value that you entered. There is, first, a number followed by a ":" and a second number. The second number tells you how many records were found that matched your key value. The first number tells you which of those you are currently using. For example "1:3" means that you are looking at the first of three records. Following the second number is a little arrow and the name of the field which you are using as a key (e.g. manufacturer). After the field name is the key value which you entered.

If you answer "N" for "no" to the question "Use this record," the data in the screen form will clear and you will see only the key value. The bottom line will still contain the information regarding the number of matches. Your cursor should now be on the key field which you were using. If you now press RETURN you should get the second of the matches with this key field. Note that the first of the numbers on the bottom of the line will change to "2" (e.g. 2:3). Again you will be asked whether you wish to use this record or not. You may repeat this process as many times as necessary to examine all the records that matched your key value.

To reduce the possibility of error, and for speedy access to your data, ALADIN supports "wild-card" matches. In a wild-card match, you enter only part of the key value you want, along with one or more "wild-card symbols." These symbols are called "wild cards" because they can be interpreted as matching a number of different data values instead of only one.

ALADIN's "wild-card" characters are as follows:

?   matches any character sequence. For example: MIT? matches MITSUBISHI, MITCHELL and MIT.

!   matches any single character. For example: !NIX matches UNIX, ONIX and 6NIX but not EUNIX.

$ matches any single alphabetic character (upper or lower case). For example: $NIX matches UNIX, but not 6NIX.

\#   matches a single numeric character (0..9 only). For example: #NIX matches 6NIX, but not UNIX.

Here are some examples of "wild-card" searches:

A?	key begins with A, e.g. ARTICLE, ANIMAL
Fre?	key begins with Fre, e.g. FRESH, FRECKLE
?ers	key ends with ers, e.g. Headquarters, LETTERS
M?enz	key begins with M and ends with enz, e.g. Mercedes-Benz.
?mm?	key contains mm, e.g. hammer
!!?F?	The key begins with any two characters, followed by some character sequence (0 or more characters), then an "F" followed by yet another sequence. This would match anything with an "F" in it past the second character.
###	will match a numeric key containing exactly three digits.
$##?	matches any key beginning with a letter and two digits.

After you have finished entering the data into the screen form, you can either have ALADIN accept this data as a new record for your data base, or, if you do not wish to enter the data, you can cancel the entire procedure. To accept the data, move the cursor to the last field of the record (the easy way is to simply use the down arrow, which will always move you to the last field on the screen). Next move the cursor "off the bottom" of the form by using either the down or the right arrows. ALADIN will ask you:

Enter the record in this way?: yes, no .

If you are satisfied with the data as it appears on your screen, answer "Y" for yes; otherwise press "N" for no to return to the form. This will allow you to make further changes. If instead you want to cancel this record, you can press [ESC] [O] or you may select the "cancel" option if available. When you cancel the entry of a record you will return immediately to the Data Menu and everything will be as if you had not entered that particular record at all, but the other data you have entered will be intact. You will, however, have to re-enter the Data Module if you wish to add yet more data.

CHANGE

III.2.2. Change

If you wish to modify your data after it has been entered, use ALADIN's "Change" function. You can activate Change from the Data Menu:

Data: Enter, Change, Remove, View, Quit, ? >

The screen form for whatever file is currently selected will appear, with the cursor located at the first field. The Street Sign at the upper right corner of the screen will say:

Data.Change

The next thing you need to do is to "call up" the particular data record you wish to change. This works in the same way as the Enter function. Likewise, when you have found the record you want to change, you can make the changes the same way you entered and modified the data fields while in Enter. Please refer to the "Data Enter" section of this Manual if you need more detailed information.

When you have finished changing the record, move the cursor off the bottom of the form. Or, if you decide not to make any changes, press ESC 0 . Again, this is the same as for Enter.

REMOVE

III.2.3. Remove

Within the Data Module of ALADIN, the "Remove" function is used to rid your relational system of unwanted records. The information stored in the records is thus permanently lost, so be careful about what you throw away. Activate Remove from the Data Command Menu:

Data: Enter, Change, Remove, View, Quit, ? >

Remove is operated in a manner very similar to Enter and Change. An empty form will appear on the screen, through which you can call up any of the records in your Relational System, changing files if need be. Please refer to the earlier section in this manual which describes the Enter function if you have questions about calling up a record. When the record you want to remove appears in the screen form, move the cursor off the bottom of the form. ALADIN will ask you:

OK to Remove this Record? Yes, No

Answer Yes or No.

III.2.4. View

ALADIN's "View" function supplements the other Data Module functions by letting you look at your data records without modifying them in any way. Activate View from the Data menu line:

Data: Enter, Change, Remove, View, Quit, ? >

Within View you can find records in the same way as within the other Data functions. Please refer to the earlier section on Enter in this manual if you have questions about how to locate records within your relational system.

III.2.5. Branching Between Files

If your relational system is made up of identical fields either within the same file or in separate files, then you need to be able to "branch" from one data field to another. Within the Data Module, this can be done in either of two ways:

— Skip to the other data field and use any of the Data functions, or

— Branch along a "relation" or "connection" that may exist between similar fields in two different files. In this case, ALADIN can automatically connect you to records in the second file that match the data value in the branching field of the first file.

In either case, the branching is activated by pressing the ESC 3 (for "cross-over") escape key or the "jump" control function. If identical fields (identical in size and type) exist in the same file ALADIN will ask you which field you want to jump to.

Suppose, for example, that your relational system contains information describing a product, its supplier and perhaps a customer who has purchased this product. It is simple to get this information when all the fields are in the same data file, but what about when they are in separate files? This is where "branching" comes in.

Let us assume that the products are all described in a PRODUCTS file, the suppliers described in a SUPPLIERS file and the customers listed in the CUSTOMERS file. All three files have been defined as containing a field "Part Number" which contains a number unique to a particular product. This field, in our example, is used as the "branching field" between the three files.

Suppose you have a data record from the PRODUCTS file displayed on the screen and you want to find out who the supplier is for this particular product. To do so, simply move the cursor to the "Part Number" field on the screen and press [ESC] [3]. The names of the three files will displayed on the bottom line of the screen. Choose the SUPPLIERS file by pressing the number ("1", "2" or "3") that appears before its name. Now you will "branch" into another file and a record having the same "Part Number" as the record in the PRODUCTS file will appear. In this way you can determine the name of the supplier for a given product. The same technique could be used to determine the name of a customer who had purchased this product.

If ALADIN cannot find a record in the new file with a matching value in the branching field, it will display an empty form and the prompt: cannot find specified record. This allows you to search further using the usual commands.

When you have finished a relational branch, you can return to the original file by using [ESC] [4]. ALADIN will return to the previous record which you were viewing when you made the branch in the first place. Branches can be "nested," meaning that you can branch down several levels through your fields (and also return several levels).

The simplest form of branching between files does not use the relational capability. Instead, when the Data Menu is visible at the bottom of the screen, you may press [ESC] [3] and select a file to branch to. ALADIN will, at first, return to the Data Menu. Then when you go to use one of the Data functions, you will see on the status line (at the top of the screen) that you are actually in a different file. Even more obvious will be the fact that the screen form is the screen form for the new file, not the one you were in before.

REPORT

III.3. The Report Module

PURPOSE

The Report Module of ALADIN enables you to access selected information from individual fields and set up Reports in a visually appealing form.

OVERVIEW

This is one of ALADIN's most innovative modules. With the Report Module, you can generate reports with headers, footers, page numbers, borders, varying margins, subtotals and totals on numeric fields. You can incorporate information from various files into one report, and receive output in sorted form. (Sorting can be from A to Z or 1, 2, 3 . . . (ascending order), or Z to A etc. (descending order)). The screen display can be directed to a printer for hard copy, thus offering an important alternative to the Data Module's View option.

The choices available to you in the report Module are:

Define   : Define a Report format.

Save   : Save your Report format on disk so you can recall it later.

Recall   : Recall a Report that was previously saved.

View   : Display the current Report format.

Generate   : Generate a Report using the current format.

Quit   : Leave the Report Module and return to the Command Menu.

INTEGRATION

The Report Module can be used in combination with several other modules. If you want a listing of records selected by various criteria (e.g., only Hondas and Toyotas costing less than $9000), you would define that Query and use it to select the appropriate records for inclusion in your report. You might also define a Calculation (e.g., to determine depreciation or percentage tax increases) and generate a report with the data changed according to your Calculation. By combining several fields using the Calc Module, it is possible to sort on more than one field within the Report Module.

Enter the Report Module from the ALADIN Executive Command Menu:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stat, Info, Exit

When Report is activated, the following Command Menu is available:

Report: Define, Save, Recall, View, Generate, Quit, ? >

These Report Module functions are described in the various sections that follow.

NOTE

that if a query is defined, then before you see the "report" menu ALADIN will ask:

Do you want to use your Query?: Yes, No

ALADIN is asking whether or not you wish to use your query in conjunction with your report. If you answer Yes, the two switches "IQ" and "OQ" will be set on. Otherwise, these switches will be off thus deactivating the query during your report. The switches can, of course, be set manually using the [ESC] [2] control function.

If a calculation has been defined, the Report Module will ask:

Do you want to use your calculation?: Yes, No

You have a chance to control whether or not your calculation will be active during the report generation process (please see the section on the ALADIN Control Functions). If you answer yes, the "CAL" switch will be set to true, thereby enabling your calculation. Otherwise, the "CAL" switch is set to false. (See section on Control Functions.)

The current status of the "IQ," "OQ" and "CAL" switches is always shown in the status line at the top of your screen.

DEFINE

III.3.1. Define

Enter the Define function from the Reports Command Menu.

Report: Define, Save, Recall, View, Generate, Quit, ? >

If you have already defined a report during this ALADIN session, or have recalled a report definition that was saved on disk, then ALADIN will ask whether you want to :

Discard old definition?: Yes, No

Since ALADIN keeps your report definitions stored within your computer's memory, discarding the old one will make room for the new one. If the old report definition is one that you want to save and you have not already saved it, then answer No; this will return you to the Report Menu, from which you can use the Save function to save your previous Report definition (after which you can return to the Define function). If you don't have to save the old definition (or have already done so), answer Yes.

After you enter the Define function, the video display will contain the screen form for your current file. The cursor will be positioned at the first field. Now you can move the cursor, using the cursor-movement ("arrow") keys, to whatever field you need to.

To incorporate a field into your report, first move the cursor to that field in the screen form, possibly branching to another file if necessary. Then select the field for inclusion by pressing the "^" key. If you wish to include a field and accumulate totals for that field, then select the field with a plus sign " + " instead of the "^" key. Each time your report breaks for a change in a multi-group sort, a subtotal will be printed. This means that, if you jump to another file to do summations in that file, the Report module will print subtotals for the file you jumped to immediately upon returning to the original file. Separate subtotals will be maintained for the original file. The two sets of subtotals cannot be combined. At the end of the report, grand totals for original file will be printed.

You can sort your report according to a single key field or according to a sort mask. Select the key field you wish to sort on by moving the cursor to that field and pressing "!". A sort mask can be specified by inputting characters after the exclamation mark. Sort masks are particularly useful when accumulating subtotals, as discussed in the previous paragraph. Any character can be used to designate the covered portion of the mask. (A SPACE BAR or <X> would be conventional for this purpose.) The effect of having a mask would be to cause subtotals to be printed for each group of records in which the key values under the mask remains the same. As soon as the key value under the covered portion of the mask changes, the subtotal is printed. For example, if the field "employee id" was composed of eight characters, with the first four as the department number and the last four as the last four digits of a social security number, you could type (in the "employee id" field) "!xxxx_____". The "!" means you will sort on this field. The four "x's" compose the mask. This would cause any subtotals within the records to be printed each time there was a change in the department number. You would receive a subtotal of numbers of employees in each department. Of course the file will have been sorted by employee (last four digits ssn) within department. Note that this field does not have to be selected for inclusion in the report.

As you select the fields you want in your report, you are controlling an invisible "report cursor" which controls the position in your report at which these fields will appear. This "report cursor" is similar in concept to the "screen cursor" which shows you your screen position. When you select a field, it will appear in your report at the current location of the report cursor. The report cursor will then be moved automatically to the right by a sufficient number of spaces to allow room for the field.

You can control the position of the report cursor (and hence the layout of your report) by using the [RETURN] and [SPACE BAR] keys. Pressing either key will insert that character into your report format. For example, pressing [RETURN] once will move the report cursor to the start of a new line. Pressing it again will leave a blank line in your report.

You can also place special characters and text into your report layout simply by typing them in. They will appear in your report at the current location of the report cursor, which then moves to the right.

Although we described the "report cursor" as invisible, ALADIN will actually display the current line of your report at the bottom of the screen, along with the position of the report cursor within that line. This may be used for observing the positioning of your fields. Also, if there is not room for a field to fit in its entirety on the current line of the report, ALADIN will warn you by displaying a question mark ("?") by that field. You should then press [RETURN] to start off a new line.

If you do not start a new line by pressing [RETURN], ALADIN's Report Module will start one for you if you select a field that is marked by the "?". ALADIN determines whether or not a field will fit on the basis of a 78-column report width. This is the standard width of a display screen and also the standard width of most report paper.

If you want to produce a report with more columns, you can do this quite easily through the Info Module. Get to Info from the ALADIN Command Menu, then press "P" or select "printer" for "printer format." Please refer to the section on Info for further details.

You may select up to 512 items per report. An "item" is defined as any field chosen for the report or as special characters and text which you type into your report. Each special character constitutes two report items. For example, if you type in "Name:" on your report definition line, 10 items will be used. If you create a border as part of your report, for example by typing "78" and then "*", this will constitute only two report items.

When you have finished defining your report, leave the form by moving the cursor off the "bottom right." ALADIN will ask:

Is your definition complete?: Yes, No >

If you are really finished, then respond with "Y" for Yes, otherwise, you can press "N" to return to the form.

When you have completed the definition of your report, your screen will clear and ALADIN will display the report format that you have defined. Please refer to Figure 3.1 for a sample display of a report format.

```
Report format : SPECS

Report format : SPECS
<1> SPECS.Manufacturer – > DEALER.Manufacturer

<2> DEALER.Name  – > DEALER.Name

<3> DEALER -< DEALER

<4> DEALER -< SPECS


<1> Manufacturer          Name <2> <3>
<4>

                                                    Report
```

Figure 3.1

The first four numbered lines of Figure 3.1 describe the source and destination of all the joins ALADIN will make to construct this report. The next two lines specify the sequence of steps that the Report module will follow to lay out the report. In this example the processing of each record will start with the jump described in step **1** followed by the printing of the Manufacturer field. Next ALADIN will skip over six spaces and print the value in the Dealer.name field. Finally, the jumps in steps **2**, **3** and **4** will be made before processing of the next record.

III.3.1.1. Defining a Report That Branches Between Files

The full power of the ALADIN relational data base management system can be seen by producing reports that reflect the relational structure of your data. For example, if you are listing automobile dealers you may also wish to make a list of all the cars that each DEALER can sell. If we use the "CAR" data base for our example (which is provided with ALADIN as a demonstration tool), then we start such a report by setting the current file to DEALER, since this will be the main file on which the report is based. You do this while still at the Report Menu and pressing ESC 3 .

When you begin to define your report within the DEALER file, you first select the fields of the DEALER file that you would like to include within the report and then arrange them in a suitable format. Then when you wish to begin listing the particular automobiles that this DEALER can sell, you move the cursor to the Manufacturer Field (which is the relational field between dealers and the "SPECS" file). Next branch that field (by pressing ESC 3) to the SPECS file. The screen will clear and you will see the screen form for SPECS.

Select the fields within the SPECS file that you wish to display. For example, you would probably want to list the model and a few other fields, but you may not want to list the manufacturer since it will be the same as the Manufacturer Field at the DEALER level. When you have selected all the information about a specific car you want displayed, you return to the DEALER file by pressing ESC 4 . You then complete your report definition by moving the cursor off the bottom of the screen form.

When the report is generated (with the "generate" command) you will find that there is one listing for every DEALER, but that under each DEALER all cars that have the same manufacturer as that DEALER will be listed.

SAVE

III.3.2. Save

Once you have defined a report; you can save it for later use with the Save function. Enter the Save function from the Report Command Menu.

Report: Define, Save, Recall, View, Generate, Quit, ? >

If no report has been defined, then selecting Save will have no effect.

After you enter the Save function, ALADIN will ask you for a "reference name" under which the report definition will be saved:

Report.Save : Please enter file reference name >

Enter the name you wish to use followed by a ⌐RETURN⌐ . The name can be any sequence of up to six alphanumeric characters. Do not, however, try to use any of these characters as part of the name you give:

$! # ?

ALADIN will then save your Report definition under this name for future reference.

The file name under which your Report definition will be saved on disk includes more than just the reference name you use. The full name is a "concatenation" (putting together) of

1) the name of your relational system;

2) the letter "L" (designating a Report definition); and

3) the reference name you supplied.

For example, if you chose the reference name "TEST" for the Report we just discussed, the disk file that would be created by saving it would be CAR.L.TEST.

If a report has already been saved under the reference name you supply, ALADIN will prompt:

File by that name exists. Remove it?: Yes, No

This gives you a chance to say whether or not you really want to get rid of the old definition saved under this name. If you answer Yes, the old one will be discarded and the new one saved; if you answer No, you will be returned to the Report Menu, giving you a chance to save the new Report under a different name (if you wish).

RECALL

III.3.3. Recall

Once you have saved a Report definition, you can recall it for later use with the Recall function. Enter the Recall function from the Report Command Menu:

Report: Define, Save, Recall, View, Generate, Quit, ? >

After you enter the Recall function, ALADIN will ask you for the "reference name" under which the Report was saved:

Report.Recall : Please enter file reference name >

Enter the Report name you want, followed by a RETURN . If you decide you didn't really want to recall a Report after all, instead of entering a name, just hit RETURN : this will take you back to the Report Menu. If you find you can't remember the name of the Report you want, leave the Report Module and use ALADIN's Info Module to list the names of all of your currently saved Reports.

After you enter a valid reference name for a Report (and press RETURN), ALADIN will display the format of that Report as shown in Figure 3.1.

If you entered an incorrect reference name, ALADIN will prompt you with the message:

Input file cannot be opened. − > <SPACE BAR> to continue, ? for HELP.

If you try to recall a previously saved Report while another one currently exists in the computer's transient memory (that is, while you are already working with one), before ALADIN even asks for the reference name, it will first ask:

.Extend definition?: Yes, No

By this, ALADIN is asking whether or not you want to add the new Report that you are going to recall to the existing Report that you currently have defined. If you answer Yes, after you recall the new Report, you will see that the resulting Report includes both the original one and the new one.

The ability to build new, compound Reports from saved smaller Reports is very useful. With it, you can define a number of smaller operations and then combine them in a variety of ways to produce larger, more complex operations. The new Reports can, of course, then be in turn saved and recalled just like their component parts.

VIEW

III.3.4. View

When ALADIN has an active Report, you can use the View function to get a detailed listing of its exact description. This is helpful when you want to check for mistakes, or when you just plain don't remember the precise contents of a Report that has been saved. Enter the View function from the Report Command menu:

Report: Define, Save, Recall, View, Generate, Quit, ?

If no Report has been defined, selecting View will have no effect.

Note that there are two distinct parts to a listing of the report format. The first part is present only if you have performed relational branches within your report definition. The list will be a listing of each branch and return. Every branch or return is specified by a number shown within angle brackets similar to "<1>". The listing in part 1 will show the branch from a field in one file to a field in another file. Usually the fields will have the same name but the file names will differ. When a return is shown, no field needs to be specified, since it is understood that the return refers to the preceding branch.

In the second part of the report format listing, you will see the actual layout of the report. The presence of a field is indicated by the name of the field, and the sequence of branches and returns will be indicated by the numeric indicator.

The report definition may be listed on a printer or in a disk file through the use of ALADIN's output redirection capability. (Please refer to the section describing the "Escape" functions.)

GENERATE

III.3.5. Generate

The Report Module's Generate function is used to actually create the desired report, using the current report definition. If no report has been defined, Generate will not work.

Invoke the Generate function by selecting it from the Report Command Menu:

Report: Define, Save, Recall, View, Generate, Quit, ? >

ALADIN will first display a listing of the report layout that you have defined and will then begin to generate the report. However, since you will probably want to print the report, you can use ⌈ESC⌉ ⌈8⌉ output redirection to send the report to the printer. To do this you should set the output device as the printer before you begin to generate the report. For further information, please refer to the section describing the "Escape" functions.

You can interrupt the report generation process at any time by pressing ⌈SPACE BAR⌉. To make the report resume press ⌈SPACE BAR⌉ again. If you want to cancel the report, press ⌈ESC⌉ ⌈0⌉ or hit ⌈ESC⌉ twice.

At the end of your report, whether it runs to completion or is cancelled before completion, ALADIN will print a message something like:

Number of data records: 57(125)

This means that out of 125 total records within your data base, the report generator printed 57 of them. The number printed will be less than the total if (1) the report was interrupted early, or (2) a query was active (thereby restricting the number of records selected).

III.3.6. Quit

When you have finished your work with Reports, you will want to be able to leave the Report Module. Select the Quit function from the Report Command Menu:

Report: Define, Save, Recall, View, Generate, Quit, ?

This selection will have no effect except to return you to the main ALADIN Executive Command Menu.

III.4. The Query Module

PURPOSE

The Query Module lets you set up a "filter" through which data records are screened so that only those matching criteria you specify are used. You can specify criteria from different files within the same relational system.

OVERVIEW

The Query Module is designed to make use of multi-level selections (e.g., display all cars that are Mercedes-Benz (SPECS File) sold in northern California (DEALER File) and list all the female customers who purchased them (CUSTOMER File)). You set up the pattern for a query by working with a screen form. Each time you make a selection on a field, ALADIN will prompt for the type of comparison you want to make. Six options are available: EQUAL, NOT EQUAL, GREATER THAN, GREATER THAN OR EQUAL TO, LESS THAN, LESS THAN OR EQUAL TO. The menu-driven nature of this component makes complicated logical functions easy to use! You can have up to 256 instructions in one query. Query acts as a filter on data output, as in the car example above, or as a "net" in data entry, change, or removal. Data records which do not meet your selection criteria cannot be entered

in the system, thus preventing many data entry errors. Records which do not meet other selection criteria cannot be changed or removed from the system.

The choices available to you in the Query Module are:

Define   : Define a new query.

Save   : Save current query definition.

Recall   : Recall a query that was previously saved.

View   : Display the current query (if any) on current output device.

Quit   : Leave the Query Module and return to the main Command Menu.

INTEGRATION

The Query Module can be used in combination with all Modules. In the Report Module (see Section III.3) and the Word Processing Bridge Module, you could define a Query to select only men in New Hampshire who had bought Buicks in the last ten months, type a form letter telling them that their mufflers were bound to fall off any day now, and, with ALADIN's Word Proc Module, send a personalized version of this letter to each one. You could even incorporate a statistical graph or percentage table showing how many other poor souls in the various states were in the same situation.

By combining Query with the Calc Module, you cold also receive a listing of various new muffler styles available from distributors whose names start with "T," with and without a 10% markup.

Enter the Query Module from the ALADIN Executive Command Menu:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stat, Info, Exit

When Query is activated, the following Command Menu is then available:

Query: Define, Save, Recall, View, Quit, ?

These Query Module functions are described in the various sections that follow.

III.4.1. Define

Enter the Define function from the Query Command Menu:

Query: Define, Save, Recall, View, Quit, ?

If you have already defined a query during this ALADIN session, or have recalled a query definition that was saved on disk, ALADIN will ask whether you want to:

Discard old definition?: Yes, No

Since ALADIN keeps your query definitions stored within your computer's transient memory, discarding the old definition will make room for the new one. If the old query definition is one that you want to save on disk, and you have not already saved it, then answer No; this will return you to the Query Menu, from which you can use the Save function to save your previous Query definition (after which you can return to the Define function). If you don't need to save the old definition (or have already done so), answer Yes.

After you enter the Define function, the video display will contain the screen form for your current file. The cursor will be positioned at the first field. Now you can move the cursor, using the cursor-movement ("arrow") keys, to whatever field you need to. In the fields you choose, you enter values that form your selection criteria.

For example, if you wished to select automobiles with a maximum speed greater than 120 mph, then (using the CAR data base and the SPECS file) you would move the cursor to the "maximum speed in mph" field and enter 120. Since 120 completely fills the field, ALADIN will not wait for you to press RETURN but will immediately understand that you have completed entry of the value. Now, on the bottom line, a list of possible comparison operators will appear. (Refer to Figure 4.1 for an illustration of the screen at this time.)

```
CAR.SPECS (Console:.Console:) (---)                    Data Enter
─────────────────────────────────────────────────────────────────
                     Manufacturer >_____
                     Model:LANCER_____

Horse_Power_in_PS: ___        Volume_of_Engine_in___CM: _____

Maximum_Speed_in_MPH: 120 Acceleration___time_from_0_to_60: __

Fuel_Consumption___City_Highway_HS.... .......        Gasoline_Type: .

Five_Gear_Model_Available: .    Automatic_Transmission_Available: .

Number_of_Doors: .                      Sun_Roof_Available: .

Colors_Availiable: ......... ..........  ..................
                   ......... ... ......  ...................
                   ......... ..........
             List_Price: _____
─────────────────────────────────────────────────────────────────
Compare: 1:Equal, 2:NotEql, 3:Greater, 4:GtrOrEql, 5:Less, 6:EqlOrLess. ?>_
```

Figure 4.1

ALADIN is waiting for you to choose one of the six comparison operators presented. In this example, they would have the following meanings:

1) Equal — This would select cars whose top speed is exactly equal to 120mph.

2) Not equal — This would select all cars whose top speeds are anything greater or less than 120 mph but not exactly 120 mph.

3) Greater than — This will select cars whose speeds are more than 120 mph. In other words, starting at 121 mph.

4) Greater than or equal to — Would select cars with top speeds starting at 120 mph and greater.

5) Less than — Would select cars whose top speeds are less than 120 mph. In other words, 119 mph or less.

6) Less than or equal to — would select cars whose top speeds are 120 mph or less.

If you press SPACE BAR the comparison will not take place and it will be as if you had not entered the "120". You can also enter "?" and ALADIN will give a summary of the information presented here.

Since we want cars that have a top speed greater than 120 mph you would pick choice #3 "greater than". Make the selection by pressing the "3" key.

After the comparison selection has been made, the bottom line will clear and the cursor will jump to the next field on the screen form. We could continue to define additional selection criteria, but we can now leave the screen form by pressing the down arrow key to leave from the bottom of the screen form.

ALADIN will ask:

Is your definition complete ?:

If it is, answer Yes, otherwise answer No. A third choice, "Jump," allows you to continue defining a Query that may include fields from another file of your Relational System.

You can define as many comparisons as you wish within the selection criteria before you quit. But if you do use more than one, you must declare how you want them "connected." The following connectors are possible:

AND   : The last two conditions are linked with "and" (it is true if both conditions are simultaneously met in a data record)

OR   : The last two conditions are linked with "or" (it is true if at least one of the two conditions is met, also both could be met)

XOR   : The last two conditions are linked through the operation "either/or" (it is true when one, but not both of the two conditions are met)

Choose a connector by pressing the number key corresponding to the connector you want, as shown in the prompt line at the bottom of the screen.

Each of the comparisons is known as an "expression," and after you connect two expressions, the resulting combined comparison is also called an "expression." This means that you can continue to connect these expressions to just about any level.

If, instead of selecting a connector, you simply press ⌈SPACE BAR⌋ , ALADIN will consider that you want to defer the connection until later. This has the effect of "parenthesizing" the expression that you are building, or (in other words) overriding the normal left-to-right expression grouping. The result is that, after you define your next expression, ALADIN will ask twice about how to connect the expressions. Your first answer will refer to the last two expressions and the following answer will refer to the first expression — the one you deferred.

Eventually you will complete the total definition. "Query" will then display its own Command Menu with these options:

Query: Define, Save, Recall, View, Quit, ?>

The selection that you define within "Query" will remain active until you either (1) turn off the "IQ" and "OQ" switches, (2) define a new Query, or (3) leave the Executive Program.

III.4.1.1. Using Wild Cards Within Queries

ALADIN allows you to use the same wild-card characters that were described in the "DATA.ENTER" section within a query. Thus, if you want to find all the car manufacturers whose names begin with "M" you could enter "M?" as your comparison value. This would, if you selected the comparison operator "equal," match any string beginning with the letter M. Here are some other examples:

Chap?   (key begins with "Chap")

?pin   (key begins with any character order and ends with "pin")

?a?ri?   (matches a key such as "Ferrari").

?###?   (key begins and ends with any character(s) but must contain three consecutive numerals)

!###$ (key begins with any character, followed by three numerals and a letter)

The symbols used mean :

!	any character
#	any numeral
$	any letter
?	any character(s) order (also a character or none)

NOTE:

If the value that you enter includes a "?", or if it consists only of wild card symbols, ALADIN will only allow the comparisons EQUAL and NOT EQUAL.

ALADIN will normally convert all strings into upper case and eliminate blanks when making a string comparison. Thus, "Smithson Ian" is equivalent to "SMITHSONIAN".

The Query Module offers also the ability to compare two fields within a data record to see, for example, if they are the same or different.

To do this, after you are positioned at the first of the fields to be compared, mark the field by pressing the "^" key. Then move the cursor to the second field and press "^" again. ALADIN will then prompt for the comparison operator, just as for the previous cases.

Using the "NOT" Operator

When you are constructing complex expressions, you may wish to use an additional operator that is actually "hidden" from inexperienced users: the "NOT" operator. This operator has the effect of "negating" the expression over which it is applied.

For example, if you select cars where the "Manufacturer = 'PORSCHE'" OR "Manufacturer = 'AUDI'", you could apply the NOT operator to the combined expression to obtain all cars EXCEPT Porsches or Audis.

You cannot use NOT unless you have first turned on its "switch" with the ESC 2 keys.

III.4.1.2. Using a Query On Input

Since Query definitions can be used for either input or output, you can set them up to restrict the data values that can be entered, if you wish. This will help to avoid certain kinds of input errors.

You can ensure, for example, that a "Part Number" must have one of the following formats:

$?   i.e.   1st space   = letter
                           remainder   = any character order (or
                                           one character or none)

?#   i.e.   the first spaces accept every character,
                            the last character must be a numeral

$$/##.###   i.e.   1st & 2nd   = letters
                          3rd space   = /
                          4th & 5th   = numerals
                          6th space   = .
                          7th, 8th, 9th   = numerals

If this Query selection is active during "Enter" within the Data Module, ALADIN will accept only records that match these format restrictions.

You can also use this technique to ensure that certain data fields are always filled in.

SAVE

III.4.2. Save

Once you have defined a Query, you can save it for later use with the Save function. Enter the Save function from the Query Command Menu:

Query: Define, Save, Recall, View, Quit, ?

If no Query has been defined, then selecting Save will have no effect.

After you enter the Save function. ALADIN will ask you for a "reference name" under which the Query will be saved:

Query.Save:Enter file reference name >

Enter the name you want to use, followed by a [RETURN]. The name can be any sequence of up to six alphanumeric (numbers or letters or both, intermixed) characters. Do not, however, try to use any of these characters as part of the name you give:

$! # ?

ALADIN will then save your Query definition under this name for future reference.

The full file name under which your Query will be saved on disk includes more than just the reference name you use. The full name is a concatenation (putting-together) of three components:

1) the name of your relational system;

2) the letter "S" (designating a Query definition); and

3) the reference name you supplied.

For example, if you chose the reference name "TEST" for the Query we just discussed, the disk file that would be created by saving it would be CAR.S.TEST.

If a Query has already been saved under the reference name you supply, ALADIN will prompt:

File by that name exists. Remove it?: Yes, No

This gives you a chance to say whether or not you really want to get rid of the old definition saved under this name. If you answer Yes, the old one will be discarded and the new one saved; if you answer No, you will be returned to the Query Menu, giving you a chance to save the new Query under a different name (if you wish).

RECALL

III.4.3. Recall

Once you have saved a Query definition, you can recall it for later use with the Recall function. Enter the Recall function from the Query Command Menu:

Query: Define, Save, Recall, View, Quit, ?

After you enter the Recall function, ALADIN will ask you for the "reference name" under which the Query was saved:

Query.Recall: Enter file reference name

Enter the Query name you want, followed by a RETURN. If you decide you didn't really want to recall a Query after all, instead of entering a name, just press RETURN; this will take you back to the Query Menu. If you find you can't remember the name of the Query you want, leave the Query Module and use ALADIN's Info Module to list the names of all your currently saved Queries.

After you enter a valid reference name for a Query (and hit RETURN), ALADIN will display the format of that Query.

If you entered an incorrect reference name, ALADIN will prompt you with the message:

Input file cannot be opened. → <SPACE BAR> to continue "?" for HELP.

If you try to recall a previously saved Query while another one currently exists in the computer's transient memory (that is, while you are already working with one), before ALADIN even asks for the reference name, it will first ask:

Extend definition?: Yes, No

By this, ALADIN is asking whether or not you want to add the new
Query that you are going to recall to the existing Query that you currently
have defined. If you answer Yes, after you recall the new Query,
ALADIN will ask for a "connector" with which to join these two Query
definitions:

Connectors-SPECS: 1:and, 2:or, 3:xor, ?

Choose one of the three indicated connectors by typing the appropriate
digit (☐1☐, ☐2☐, or ☐3☐). The word SPECS indicates the name of the current
file within your data base; in this example, you would be in the file called
SPECS. If you just press ☐SPACE BAR☐, then the first selection ("and") will
automatically be chosen.

The ability to build new, compound Queries from saved smaller Queries
is very useful. With it, you can define a number of smaller operations
and then combine them in a variety of ways to produce larger, more
complex operations. The new Queries can, of course, then be in turn
saved and recalled just like their component parts.

VIEW

III.4.4. View

When ALADIN has an active Query in memory, you can use the View
function to get a detailed listing of its exact description. This is helpful
when you want to check for mistakes, or when you just plain don't
remember the precise contents of a Query. Enter the View function from
the Query Command Menu:

Query: Define, Save, Recall, View, Quit, ?

ALADIN will display the format of that Query as shown in Figure 4.2.

```
Select records meeting the following criteria

SPECS:

                Manufacturer < > "por?"
          AND Maximum Speed (MPH) > 120
        AND List Price > = "12000"




                                                    Query
```
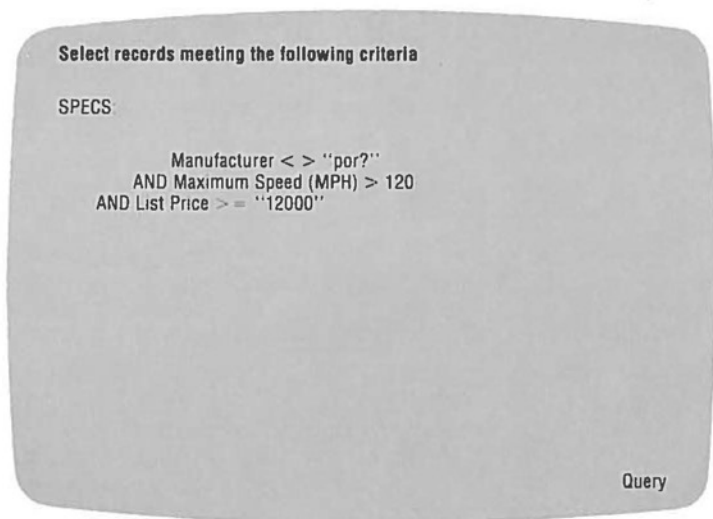
Figure 4.2

If no Query has been defined, selecting View will have no effect.

III.4.5. Quit

When you have finished your work with Queries, you will want to be able to leave the Query Module. Select the Quit function from the Query Command Menu:

Query: Define, Save, Recall, View, Quit, ?

This selection will have no effect except to return you to the main ALADIN Executive Command Menu.

III.5. The Calculate (Calc) Module

PURPOSE

The Calculate Module of ALADIN lets you create your own free-form spreadsheets to present numerical information and to modify the data within your data base, as in "what if" manipulations. You can also use it to set up multi-level sorting criteria within the Report Module.

OVERVIEW

With the Calculate Module, you can prepare profit-and-loss statements for your business, do budget forecasts, calculate mortgage payments at various interest rates, keep track of tax information, prepare a home budget, or balance your checkbook.

Calculations can be defined in small groups of steps, then chained together in one long, complex expression which ALADIN uses to perform lots of work for you.

The choices available in the Calculate Module are:

Define : Define a calculation.

Save : Save a calculation definition.

Recall : Recall a calculation.

View   : Display the current calculation definition.

Quit   : Leave the Calculate Module.

INTEGRATION

You can use the Calculate Module to set up a multi-level sort for use within the Report Module and to change data records within the Data Module. You can temporarily store your calculations in other data fields without destroying the data in those fields. You can set up a Query, perform an Aladi-Calculation, and send a report formatted the way you want out to a text file. You can then edit that text file with a word processor, incorporate your calculations into a matrix letter, perform a mail merge with ALADIN's Word Proc Bridge Module, and send the whole thing to customers selected by your query.

Enter the calculator module from the ALADIN Command Menu:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stat, Info, Exit

When Calculate is activated, the following Command Menu is then available:

CALCULATE: Define, Save, Recall, View, Quit, ?

These Calculate Module functions are described in the various sections that follow.

DEFINE

III.5.1. Define

Enter the Define function from the Calculate Command Menu:

Calculate: Define, Save, Recall, View, Quit, ?

If you have already defined a calculation during this ALADIN session, or have recalled a calculation definition that was saved on disk, then ALADIN will ask whether you want to:

Discard old definition?: Yes, No

Since ALADIN keeps your calculation definitions stored within your computer's transient memory, discarding the old definition will make room for the new one. If the old calculation definition is one that you want to save and you have not already saved it, then answer No; this will return you to the Calculate Menu, from which you can use the Save function to save your previous Calculation definition (after which you can return to the Define function). If you don't have to save the old definition (or have already done so), answer Yes.

After you enter the Define function, the video display will contain the screen form for your current file. The cursor will be positioned at the first field. Now you can move the cursor, using the cursor-movement ("arrow" keys), to whatever field you need to.

You will have to select the desired fields from within the screen form or else enter constants to be used as operands, then select the operations that you wish to perform. The method you will use to lay out expressions is commonly referred to as "Reverse Polish" or "Postfix" notation. The basic sequence of operations is:

1) Move the cursor to a field on which you wish to calculate. Select the field by pressing the caret key.

2) Enter a "second operand" by either a) selecting another field, or b) entering a constant value such as "25" or "Evelyn." The constant value that you enter must be of the same data type as the field in which you enter it. In other words, you couldn't enter a string such as "Renee" if the cursor is positioned at a numeric field.

3) ALADIN will prompt for the operation you wish to perform. You can choose between add, subtract, multiply, divide and store.

You can repeat those three steps as many times as you want in order to complete the calculation that you wish to perform upon this file. When you are finished, leave the screen form by moving the cursor "off the bottom." ALADIN will then ask:

.Is your definition complete?:

If you have really finished defining your calculation then answer Yes. If you didn't really intend to leave Define then answer No and you will be back in the screen form. As a third possibility, if you would like to continue defining a calculation that involves a second file, select File.

If you define the calculation over more than one file, this does not mean that using the calculation will always affect both files. It simply means that whichever file you are using will be affected by the appropriate calculation.

Example for defining a calculation:

Suppose you want to calculate the amount of discount from two columns of numbers by the formula:

Discount amount = subtotal × discount / 100.00.
Where subtotal   = price (1) + price (2)
and price (1)   = amount (1) × retail price (1)
and price (2)   = amount (2) × retail price (2).

All of these fields would exist in our sample record. From the Define mode of the Calculate Module you would enter the following:

-select the amount (1) field by placing a "^" in that field
-select the retail price (1) field by placing a "^" in that field
-select multiply from the operational menu
-select the price (1) field by placing a "^" in that field
-select store from the operational menu (this will store the result of amount (1) × retail price (1) in price (1))
-select the amount (2) field by placing a "^" in that field
-select the retail price (2) field by placing a "^" in that field
-select multiply from the operational menu
-select the price (2) field by placing a "^" in that field
-select store from the operational menu (the next part will determine subtotal)
-select the price (1) field by placing a "^" in that field
-select the price (2) field by placing a "^" in that field
-select add from the operational menu
-select the subtotal field by placing a "^" in that field
-select store from the operational menu (the next part will determine discount amount)
-select the subtotal field by placing a "^" in that field
-select the discount field by placing a "^" in that field
-select multiply from the operational menu
-enter 100.00 into the discount field
-select divide from the operational menu
-select the discount amount field by placing a "^" in that field
-select store from the operational menu
-exit the screen at lower edge via the arrow key
-answer menu "Is your definition complete?" with "Y"

You would then "save" and "name" this calculation for future reference.

An example for string substitution :

Suppose you want to change "The doctor parked his Porsche." into "The doctor parked his/her Porsche." The following procedure would accomplish this. For our example let this sentence be in a field named "Remarks".

-move the cursor to the remarks field
-enter the substitution "his = his/her" into the remarks field
-select divide from the operational menu
-select the remarks field by placing a "^" in that field
-select store from the operational menu
-exit the screen from the lower edge via the arrow key
-answer menu "Is your definition complete?" with "Y"

You would then "save" and "name" this calculation for future reference.

III.5.2. Save

Once you have defined a calculation, you can save it for later use with the Save function. Enter the Save function from the Calculate Command Menu:

Calculate: Define, Save, Recall, View, Quit, ?

If no calculation has been defined, then selecting Save will have no effect.

After you enter the Save function, ALADIN will ask you for a "reference name" under which the calculation will be saved:

Calculate.Save : Please enter file reference name

Enter the name you want to use, followed by a [RETURN]. The name can be any sequence of up to six alphanumeric (numbers or letters or both, intermixed) characters. Do not, however, try to use any of these characters as part of the name you give:

$! # ?

ALADIN will then save your calculation definition under this name for future reference.

The full file name under which your calculation will be saved on disk includes more than just the reference name you use. The full name is a concatenation (putting together) of three components:

1) the name of your relational system;

2) the letter "P" (designating a calculation definition); and

3) the reference name you supplied.

For example, if you chose the reference name "TEST" for the calculation we just discussed, the disk file that would be created by saving it would be CAR.P.TEST.

If a calculation has already been saved under the reference name you supply, ALADIN will prompt:

File by that name exists. Remove it?: Yes, No

This gives you a chance to say whether or not you really want to get rid of the old definition saved under this name. If you answer Yes, the old one will be discarded and the new one saved; if you answer No, you will be returned to the Calculate Menu, giving you a chance to save the new calculation under a different name (if you wish).

RECALL

III.5.3. Recall

Once you have saved a calculation definition, you can recall it for later use with the Recall function. Enter the Recall function from the Calculate Command menu.

Calculate: Define, Save, Recall, View, Quit, ?

After you enter the Recall function, ALADIN will ask you for the "reference name" under which the calculation was saved:

Calculate.Recall : Please enter file reference name.

Enter the calculation name you want, followed by a RETURN . If you decide you didn't really want to recall a calculation, instead of entering a name, just press RETURN ; this will take you back to the Calculate Menu. If you find you can't remember the name of the calculation you want, leave the Calculate Module and use ALADIN's Info Module to list the names of all your currently saved calculations.

After you enter a valid reference name for a calculation (and press RETURN), ALADIN will display the format of that calculation as shown in Figure 5.1.

Calculation with the following statements

INVENTORY:

Discount Amount = subtotal
$\times$ discount / 100.00
subtotal = price (1) + price (2)
price (1) = Amount (1) $\times$ retail price (1)
price (2) = Amount (2) $\times$ retail price (2).
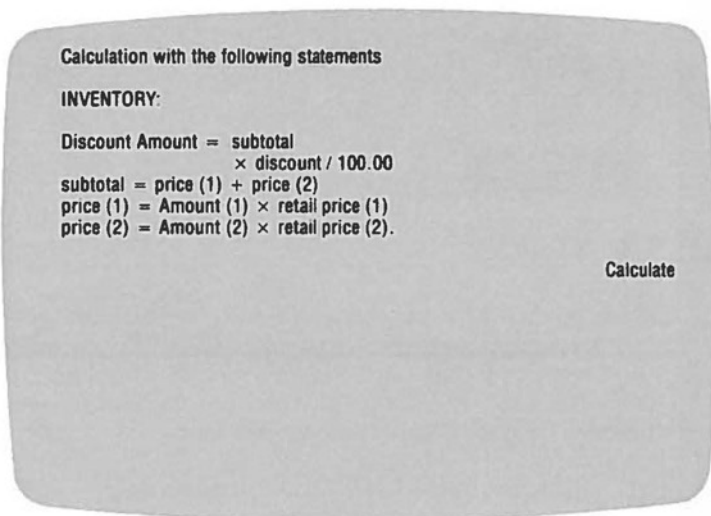
Calculate

Figure 5.1

If you enter an incorrect reference name, ALADIN will prompt you with the message:

Input file cannot be opened. → <SPACE BAR> to continue , "?" for HELP.

If you try to recall a previously saved calculation while another one currently exists in the computer's transient memory (that is, while you are already working with one), before ALADIN even asks for the reference name, it will first ask :

.Extend definition?: Yes, No

By this, ALADIN is asking whether or not you want to add the new calculation that you are going to recall to the existing calculation that you currently have defined. If you answer Yes, after you recall the new calculation, you will see that the resulting calculation includes both the original one and the new one.

The ability to build new, compound calculations from saved smaller calculations is very useful. With it you can define a number of smaller operations and then combine them in a variety of ways to produce larger, more complex operations. The new calculations can then be saved and recalled just like their component parts.

VIEW

III.5.4. View

When ALADIN has an active calculation, you can use the View function to get a detailed listing of its exact description. This is helpful when you want to check for mistakes, or when you just plain don't remember the precise contents of a calculation that has been saved. Enter the View function from the Calculate Command Menu:

Calculate: Define, Save, Recall, View, Quit, ?

ALADIN will display the format of that calculation as shown in Figure 5.1.

If no calculation has been defined, selecting View will have no effect.

III.5.5. Quit

When you have finished your work with calculations, you will want to be able to leave the Calculate Module. Select the Quit function from the Calculate Command Menu:

Calculate: Define, Save, Recall, View, Quit, ?

This selection will have no effect except to return you to the main ALADIN Executive Command Menu.

WORDPROC

III.6. Word Processing Bridge Module

PURPOSE

ALADIN's Word Processing Module is provided as a bridge between your ALADIN data base and word processing system, if you have one.

Text and Word Processing Systems recommended for use with ALADIN are those running under MS-DOS, p-System, or Apple Pascal. (See the Tutorial lesson Word Processing for a partial listing.)

OVERVIEW

The Word Processing Bridge Module allows you to prepare form letters, reports, even mailing labels on a "mass production" yet personalized basis. You set up your form (matrix) letter or report format with your word processor. Then you use the Word Proc Module to personalize within the body of the letter or report, using the names of people in your data base. (You can include other pertinent information as well.)

INTEGRATION

The Word Processing Bridge Module gives you one of the best examples of ALADIN's capability for combination of modules within itself and integration with other software applications packages. Using the Grouping and Statistics Modules, you could produce statistical data in graphic, absolute or percentage terms and save this information as a text file on disk. After typing a form (matrix) letter with your word processor, you could copy the statistical text file into the matrix letter. Then you could define a query, and, with the Word Proc Bridge and output directed to your printer, send a personalized letter to each person selected according to your query criteria. Or, if you had worked a long time on a spreadsheet prepared with a program running under MS-DOS or p-System, you could incorporate that into your matrix letter and send it to a selected group of clients, again using the Word Proc Bridge and Query Modules.

Enter the Word Processing Bridge by selecting WordProc from the ALADIN Command Menu:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stat, Info, Exit

The screen will clear and on the command line you will see:

ALADIN .WordProc : enter file reference name.

ALADIN is asking you for the name of the word processing file that you wish to combine with your ALADIN data. The file naming must follow certain conventions. First of all, it must be on the same disk as the rest of your ALADIN data base. Second, it must begin with the name of your ALADIN data base. For example, if your data base is "CAR" then the word processing file must begin with "CAR". This is in keeping with the format for the other data base files such as "CAR.DATA", "CAR.TREE", etc. Finally, the file name should end with the suffix ".TEXT". This is also in keeping with the existing convention. Most word processing systems that will be used with ALADIN contain the same ".TEXT" suffix. For example, if you are editing a file called "Renee" the actual full file name will be "Renee.TEXT". In order to use it with ALADIN's word processing bridge it should be called "CAR RENEE.TEXT" (if your data base is "CAR").

In accordance with the above example, when the Word Processing Module asks for a file reference name and the file is named "CAR RENEE.TEXT" you would actually have to enter only the middle part: "Renee" followed by a [RETURN]. ALADIN will, after a few seconds, begin to read through the text file, sending its contents to the current output destination (which you may change using [ESC] [8]) and inserting data from your data base as discussed below.

The Word Processing Bridge will produce as many copies of the text files as there are ALADIN records that are selected. In other words, if you have no query active, then it will produce as many copies of the text file as there are records in your current ALADIN file. This would allow you to produce a form letter with a customized name and address to everybody within a data base. Or, if you use a query, it will produce letters only to all those individuals whom you wish to select. ALADIN will ask you if you want to "Use your query" or "Use your calculation". These requests will be made only if you have definitions currently available in memory. If you have them only on disk, you must recall them before you enter the WordProc Module.

III.6.1. Combining Your Text Files With ALADIN Data

In order to use the Word Processing Bridge effectively, you must be able to combine ALADIN data with your text file. This is done very easily by placing some special "marker characters" within your text file when you create it with your word processor. The basic form of this is to give the name of a field enclosed within "at" signs ("@"). So if you want to send a letter to all the car dealers within the "CAR" data base you might start out with something in your word processing file that says:

@ name@

Wherever this appears within the word processing file, even in the middle of a line, ALADIN will substitute an actual name from your data base as it goes through the DEALER file. A question mark "?" within the "@" specifies that the user must input that value once for use throughout the report. Refer to Figure 6.1 for an example.

```
@ ?Date@
Big Al's Easy Finance (Or Repossession)
44 Magnum Drive
Chicago, Illinois

Mrs. @ Customer Name@
Cheap River Drive
@ City@ , @ State@  95826

Dear Mrs. @ Customer Name@ ,

We hope you are enjoying your new @ Manufacturer@ .

But haven't you forgotten something? Like your last three car payments!! Do
you think that @ Manufacturer@ s grow on trees?

If we don't get your payment for @ Payment@ , we may have to break your
husband's other leg too.

Hope the kids are doing fine.

Best Wishes,
BIG AL
```

Figure 6.1

If you have declared a field to be an "array" (that is, a multi-part field)
then you can refer to the separate parts of that field as follows:

"address 1".

This would be the first component of a multi-part "address" field.

A blank line with an exclamation mark ("!") in column one will cause
ALADIN to pause printing to allow you to change paper in your printer
if needed.

A word processing file can only be merged with information from a
single ALADIN file from within your relational system. If you specify
names of fields that are not within the current ALADIN file, they will
not be recognized and ALADIN will give you the message:

Item not in current ALADIN file.

This can also occur if you forget to set ALADIN on the correct file within
your data base (using ESC 3) before running a word processing file.

III.6.2. Using Aladin With Text Formatting Programs

While it is possible to run your word processing file directly to your printer, you may wish to process it further using a text formatter. This allows you greater control over margins and page breaks as well as the ability to perform underlining, boldfacing, proportional spacing, and other special features which your printer may support. To use ALADIN's word processing facility with such a program, you must set the output destination to disk file, rather than the printer. Later you can use that disk file as input for the text formatter.

Here is how to send the word processing output to a disk file for further processing. BEFORE you select WordProc set the output destination. After pressing ESC 8, you should see on the bottom of your screen:

Output destination: keyboard,file script, printer,?

If you select "file" you will see:

Output destination.file: enter file reference name

Now you should enter the name under which you want to save the output from the word processing run. Choose a name that is compatible with the naming conventions of your text formatter or word processor.

When ALADIN creates the file for output, it will actually add an "X." to the front of the name you type, so that "Ernie.TEXT" is saved as "X.Ernie.TEXT". Please note that this file will be created and saved on the "user disk" as defined for your ALADIN system.

III.7. The Grouping Module

PURPOSE

The Grouping Module of ALADIN is used in conjunction with the Statistics Module. With it you set up categories for statistical comparisons (called Group Tables).

OVERVIEW

In order to do most statistical analyses, you need to specify groupings for the comparisons. Before running a statistical evaluation with the Statistics Module, you generally need to have set up at least one grouping.

The choices available to you in the Group Module are:

Define : Set up groupings for statistical analyses.

Save : Save a Group Table definition.

Recall : Recall a Group Table definition.

View : View a Group Table.

Quit : Leave the Grouping Module.

INTEGRATION

This Module integrates with the Statistics Module. (See Section III.8 for more information.)

Enter the Grouping Module from the ALADIN Command Menu:

ALADIN: Data, Report, Query, Calc, WordProc,Groups, Stat, Info, Exit,?

If your data is "pregrouped", then you may not need to use the Grouping Module. However, most data should be divided into certain classifications or "groups" for convenient analysis. The Grouping Module is a tool for defining the classification scheme to be used.

Suppose, for example, you have a data base containing information about various companies, and you wish to prepare a statistical report on the distribution of these companies by number of employees. You will need to define a classification scheme (or "grouping table") that establishes some categories for the companies, such as "10 or fewer," "11 to 25," "26 to 50," etc. With the Grouping Module you can establish up to 128 such categories, which are then used by the Statistics Module to classify your data records.

The functions of the Grouping Module are shown in its Command Menu line:

Group: Define, Save, Recall, View, Quit, ? >

These functions are described in their respective sections below.

Using the Grouping Module

You will find it easier to use the Grouping Module if you keep in mind the following strategy; Define your groups first. A group table may consist of several groups, and each group can consist of several ranges of values or sets of values. A group can apply to one or more fields, and a field may have zero or more groups.

Since the Statistics Module requires group definitions, always save the groupings you define.

DEFINE

III.7.1. Define

Enter the Define function from the Grouping Command Menu:

Group: Define, Save, Recall, View, Quit, ? >

If you have already defined a grouping during this ALADIN session, or have recalled a grouping definition that was saved on disk, then ALADIN will ask whether you want to:

Discard old definition?: Yes, No

Since ALADIN keeps your grouping definitions stored within your computer's transient memory, discarding the old definition will make room for the new one. If the old grouping definition is one that you want to save and you have not already saved it, then answer No: this will return you to the Grouping Menu, from which you can use the Save function to save your previous Grouping definition (after which you can return to the Define function). If you don't have to save the old definition (or have already done so), answer Yes.

After you enter the Define function, the video display will contain the screen form for your current file. The cursor will be positioned at the first field. Now you can move the cursor, using the cursor-movement ("arrow") keys, to whatever field you want.

To select a field for use as a grouping field, move the cursor to that field and press the "^" key. When you have selected a field, ALADIN will display at the bottom of the screen:

Grouptable: < field name>

Group 1: ....

Now you can enter either the minimum value for the first interval of a numeric field (as in "1 to 10") or the first value for a group of discrete values (as in "CADILLAC, LINCOLN, IMPERIAL"). Press [RETURN] and ALADIN will ask:

to ....

If you are entering a numeric interval, you can now enter the maximum value, followed by RETURN . Or, if you are entering discrete values, press the left arrow key to continue.

NOTE:

It is important, while entering a group table, to pay attention to which keys you press, since they will have quite different effects. For example, if you wish to skip entering an item into a group do NOT press RETURN . That would cause a blank item to be entered into the group table. Instead you should use one of the arrow keys. In general, the left arrow key will skip to the next item but keep you within the same group. But if you press the left arrow key for the first item of an interval, it will skip automatically to the next group.

ALADIN will ask again for a base value for Group 1, since a group can be made up of several discrete values or of several intervals. When you are finished defining a particular group, just press the ⇐ key and ALADIN will move on to the next group. When you have no more groups to define, press ⇐ again and ALADIN will return to the screen form, so that you can specify additional fields for grouping.

Notice that there is an "R" visible within the field contents for the last field defined. This means that a "reference grouping" has been assigned to this field. A reference grouping is simply a means whereby the same groupings can be shared among several fields, instead of having to be redefined. If you wish to "refer" to the reference grouping from another field, all you need to do is move the cursor to the new field and press "S" (instead of "^").

If you wish to refer to a previously grouped field that is no longer designated by "R", move the cursor to that field and press "R". You have now manually designated that field to be the reference grouping. You can now proceed to another field and use the reference by pressing "S".

For a reference grouping to work properly it is important that the two fields be of the same data type. If they are not, you will see this message on the bottom of the screen:

> Reference is for wrong data type : →<SPACE BAR> to
> continue, "?" for help

When you have finished defining your groupings, leave the screen form at the lower right by using the cursor movement keys.

SAVE

III.7.2. Save

Once you have satisfactorily defined a Grouping, you MUST save it with the Save function. Groupings are for use with the Statistics Module, and that Module can use ONLY a grouping that has already been saved to disk. Enter the Save function from the Grouping Command Menu:

Group: Define, Save, Recall, View, Quit, ?

If no grouping has been defined, then selecting Save will have no effect.

After you enter the Save function, ALADIN will ask you for a "reference name" under which the grouping will be saved.

Group.Save : Please enter file reference name

Enter the name you want to use, followed by a RETURN. The name can be any sequence of up to six alphanumeric (numbers or letters or both, intermixed) characters. Do not, however, try to use any of these characters as part of the name you give:

$!   #   ?

ALADIN will then save your grouping definition under this name for further reference.

The full file name under which your grouping will be saved on disk includes more than just the reference name you use. The full name is a concatenation (putting together) of three components:

1) the name of your relational system;

2) the letter "M" (designating a grouping definition); and

3) the reference name you supplied.

For example, if you chose the reference name "TEST" for the grouping we just discussed, the disk file that would be created by saving it would be CAR.M.TEST.

If a grouping has already been saved under the reference name you supply, ALADIN will prompt:

File by that name exists. Remove it?: Yes, No

This gives you a chance to say whether or not you really want to get rid of the old definition saved under this name. If you answer Yes, the old one will be discarded and the new one saved; if you answer No, you will be returned to the Grouping Menu, giving you a chance to save the new Grouping under a different name (if you wish).

RECALL

III.7.3. Recall

Once you have saved a grouping definition, you can recall it for examination or change with the Recall function. Enter the Recall function from the Grouping Command Menu:

Group: Define, Save, Recall, View, Quit, ?

After you enter the Recall function, ALADIN will ask you for the "reference name" under which the grouping was saved:

Group. Recall : Please enter file reference name

Enter the grouping name you want, followed by a RETURN. If you decide you didn't really want to recall a grouping, instead of entering a name, just press RETURN; this will take you back to the Grouping Menu. If you find you can't remember the name of the grouping you want, leave the Grouping Module and use ALADIN's Info Module to list the names of all your currently saved groupings.

After you enter a valid reference name for a grouping and press RETURN, ALADIN will recall the definition; the situation will be just the same as if the definition had been freshly made.

If you enter an incorrect reference name, ALADIN will prompt you with the message:

Input file cannot be opened. <SPACE BAR> to continue, ? for HELP

III.7.4. View

When ALADIN has an active grouping, you can use the View function to get a detailed listing of its exact description. This is helpful when you want to check for mistakes, or when you just plain don't remember the precise contents of a grouping that has been saved. Enter the View function from the Grouping Command Menu:

Group: Define, Save, Recall, View, Quit, ?

If no grouping has been defined, selecting View will have no effect.

III.7.5. Quit

When you have finished your work with grouping, you will want to be able to leave the Grouping Module. Select the Quit function from the Grouping Command Menu:

Group: Define, Save, Recall, View, Quit, ?

This selection will have no effect except to return you to the main ALADIN Executive Command Menu.

III.8. The Statistics Module

PURPOSE

The Statistics Module of ALADIN enables you to derive various statistical analyses from your data base.

OVERVIEW

With the Statistics Module you can obtain information on frequency distribution, mean, standard deviation, correlation, regression, and chi square. These results can be displayed in graphic, absolute and percentage terms. Degrees of freedom, levels of significance, and groupings are provided.

This information could be used to determine, for example, if there is a correlation between the price of a car and how fast it goes, or if there is a relationship between the number of males in one's computer sales territory and the number of sales.

The choices available to you in the Statistics Module are:

Define   : Define the statistical analyses you wish to perform.

Save   : Save a statistical definition.

Recall   : Recall a previous statistical definition.

View   : View a previous statistical definition.

Evaluate   : Generate a statistical analysis using your definition.

Quit   : Leave the Statistics Module.

INTEGRATION

Integration of the Statistics Module with Query and Word Proc has been described in Section II.6. Note that a personalized form letter, or a report generated with the Report Module, could contain both statistical information generated with the Stat Module and a spreadsheet produced with the Calc Module. In most cases the Statistics Module must be used in combination with the Grouping Module; if your data is pregrouped, you may not need to use the Grouping Module.

Enter the Statistics Module from the ALADIN Command Menu:

ALADIN: Data, Report, Query, Calc, Wordproc, Groups, Stat, Info, Exit, ?

The following command menu will be available: ›

Statistics: Define, Save, Recall, View, Evaluate, Quit, ?

Each of these functions is described in their respective sections following the usage section below.

III.8.1. Use of the Statistics Module

The basic strategy for ALADIN's statistical module is to first define a Statistical Evaluation using the Define command and then to actually perform the evaluation using the Evaluate command. When you evaluate your data, ALADIN will ask you for the reference name for a pre-defined group table (See the Grouping Module section). The difference between grouped and ungrouped data is described below. In general you will need to use a group table with your statistical evaluations. When the results of the statistical evaluations are displayed on your screen you can direct them to your printer or to a disk file using the [ESC] [8] output redirection facility.

Note that the results of the evaluation can only be displayed following an evaluation.

"GROUPED" VS. "UNGROUPED" DATA

ALADIN can perform these statistical evaluations either with or without grouping the data. This "grouping" process is described in detail in the Grouping Module section of this Manual. Briefly, it means that you can set up "categories" for your data, and then look at your statistics in terms of these categories.

For example, suppose you want to look at the prices of automobiles. If you want to produce, say, a histogram, it would make the most sense if the data were organized into groups that each cover a particular price range: say $1-5,000, $5,001-8,000, $8,001-$10,000, $10,001-$15,000, etc.

If, instead of actual prices, your data contains a "price code" that already specifies what price range the car falls into, you do not need to make a group table: your data has been grouped already.

When you define your statistical analysis, ALADIN allows you to specify whether or not you wish to use groups. Just remember that, before you can use groups, you must first define a grouping table using the Grouping Module.

FREQUENCY VS. SUMMATION

The usual "evaluation mode" for producing statistics is called "frequency analysis". This means that ALADIN evaluates the number of occurrences (frequency) of each distinct value within a field. Usually, a range of values or several distinct values are grouped together to make the results easier to interpret. The result could be, say, a histogram showing the number of automobiles in each of several categories.

However, ALADIN also offers the summation evaluation mode. In this mode, ALADIN will simply examine all the values in a particular field and report the total, the maximum and minimum values, and the mean value. For example, you would use summation analysis to find the total value of a number of invoices.

NOTE:

The summation mode should be used only with ungrouped data, otherwise the results will be difficult to interpret.

SINGLE- AND MULTI-DIMENSIONAL STATISTICS

With ALADIN it is possible to produce statistics based on either the evaluation of a single data field (a "single-dimensional" statistic) or the correlation of two or more fields (a "multi-dimensional" statistic).

NOTE:

These statistics are for use with ALADIN's "frequency analysis" evaluation mode, not with the "summation analysis" mode.

The single-dimensional evaluation will give you an analysis of how your data is distributed over the various categories (either with or without groups, as you prefer). In other words, ALADIN will show you "how many" of the records that were checked fall into each category. Graphically, this will produce a histogram.

ALADIN can also compare one field against another in a "two-dimensional" evaluation. In this case, ALADIN will show you the distribution of records according to two different sets of categories. For example, out of, say, 15 automobiles in the price category $5,000-8,000, we might find that 5 of them had less than 90 horsepower, 8 of them had 90 to 120 horsepower, and 2 of them were capable of more than 120 horsepower. Graphically, this would produce a table showing price category along one axis and horsepower category along the other axis.

But ALADIN is also capable of producing "n-dimensional" evaluations, where the distribution of records is evaluated between three or more sets of categories. While this is harder to visualize, it is simply a continuation of the idea of a "distribution table".

The various functions of the Statistics Module are described in more detail in their respective sections below.

III.8.2. Define

Enter the Define function from the Statistics Command Menu:

Statistics: Define, Save, Recall, View, Generate, Quit?

After you enter the Define function, the video display will contain the screen form for your current file. The cursor will be positioned at the first field. Now you can move the cursor, using the cursor-movement ("arrow") keys, to whatever field you need. If you have activated any Query selection criteria, ALADIN will ask whether or not you want them to be used while performing the statistical evaluation.

```
CAR.SPECS (Console:,Console:) (---)                    Statistics.Define
_____

                    Manufacturer:> _____
                    Model: _____

Horse Power in PS: _____      Volume of Engine in CM: S_____
Maximum Speed in MPH:S___         Acceleration time from 0 to 60: ___
Fuel Consumption City Highway HS:___ ___ ___     Gasoline Type: .
Five Gear Model Available: .    Automatic Transmission Available: .
Number of Doors: .                      Sun Roof Available: .
Colors__Available:   .... .... .... ....
                     .... .... .... ....
                     .... ....

                    List Price: _____



_____

(F,G) (2: $ 19.86 KB )
```

Figure 8.1

For a two-dimensional evaluation, press "H" for the field you want as your horizontal axis. Then, move to the field that will form the opposite . axis and press "V."

Remember that you can control whether or not the data is to be grouped by pressing G (for "grouped") or U (for "ungrouped") at any time.

If you want to do a summation analysis on a field, first move the cursor to that field and press "U" to ensure that the data will be ungrouped. Then press "A" ("A" stands for "Accumulate") to select the field for summation evaluation.

NOTE:

When a field is selected for summation evaluation, ALADIN will switch from the "frequency" to the "summation" evaluation mode. This is reflected in the symbols at the lower left of the screen where the "A" will now appear instead of the "F". (To return to frequency mode you must press "F").

If you want to produce multi-dimensional evaluations, there are a number of ways to do it. Basically, all you need to do is to combine several fields of one axis with one or more fields of the other axis. Of course, the notions of "horizontal" and "vertical" are no longer appropriate when we are speaking of three or more axes. Nevertheless, to display the resulting information graphically, it is necessary to consider some of these axes as being "horizontal" and some as "vertical".

For example, "HVVV" (on four different fields) will evaluate three fields "vertically" against one field "horizontally." Similarly, "HHHV" simply reverses the axes, while performing the same evaluation.

Another method is to first define several fields for a particular axis, followed by some number of fields for the other axis. For example, you could specify three different fields for the horizontal (by typing "HHH" as you move the cursor to the fields you want) and four different fields for the vertical (with "VVVV"). This would produce twelve separate analyses (3 "H" times 4 "V") in addition to a multi-dimensional correlation report. Vertical axis assignments always require at least one horizontal axis.

You may continue defining as many of these evaluations as you wish. When you have finished, leave the form at the "lower right" by using the cursor movement keys.

SAVE

III.8.3. Save

Once you have defined a statistical evaluation (as just describe⌐ ⌐ou can save it for later use with the Save function. Enter the Save fun. ion from the Statistics Command Menu.

Statistics: Define, Save, Recall, View, Evaluate, Quit ?

If no statistical evaluation has been defined, then selecting Save will have no effect.

After you enter the SAVE function, ALADIN will ask you for a "reference name", under which the statistical evaluation will be saved:

Statistics.Save: Please enter file reference name

Enter the name you want to use, followed by a RETURN . The name can be any sequence of up to six alphanumeric (numbers or letters or both, intermixed) characters. Do not, however, try to use any of these characters as part of the name you give:

$!   #   ?

ALADIN will then save your statistical evaluation under this name for future reference.

The full file name under which your statistical evaluation will be saved on disk includes more than just the reference name you use. The full name is a concatenation (putting-together) of three components:

1) the name of your relational system;

2) the letter "C" (designating a statistical evaluation); and,

3) the reference name you supplied.

For example, if you chose the reference name "TEST" for the statistical evaluation we just discussed, the disk file that would be created by saving it would be CAR.C. TEST.

If a statistical evaluation has already been saved under the reference name you supply, ALADIN will prompt:

File by that name exists. Remove it?: Yes, No

This gives you a chance to say whether or not you really want to get rid of the old statistical evaluation saved under this name. If you answer Yes, the old one will be discarded and the new one saved; if you answer No, you will be returned to the Statistics Menu, giving you a chance to save the new statistical evaluation under a different name (if you wish).

RECALL

III.8.4. Recall

Once you have saved a statistical evaluation, you can recall it for later examination or change with the Recall function. Enter the Recall function from the Statistics Command Menu:

Statistics: Define, Save, Recall, View, Evaluate, Quit ?

After you enter the Recall function, ALADIN will ask you for the "reference name" under which the statistical evaluation was saved:

Statistics.Recall: Please enter file reference name

Enter the statistical evaluation name you want, followed by a RETURN. If you decide you didn't really want to recall a statistical evaluation after all, instead of entering a name, just press RETURN; this will take you back to the Statistics Menu. If you find you can't remember the name of the statisical evaluation you want, leave the Statistics Module and use ALADIN's Info Module to list the names of all your currently saved statistical evaluations.

After you enter a valid reference name for a statistical evaluation (and press RETURN), ALADIN will recall the statistical evaluation.

If you entered an incorrect reference name, ALADIN will prompt you with the message:

Input file cannot be opened. → <SPACE BAR> to continue, ? for HELP.

III.8.5. View

When ALADIN has an active statistical evaluation, you can use the View function to get a detailed listing of its exact description. This is helpful when you want to check for mistakes, or when you just plain don't remember the precise contents of a statistical evaluation that has been saved. Enter the View function from the Statistics Command Menu:

Statistics: Define, Save, Recall, View, Evaluate, Quit ?

If no statistical evaluation has been defined, selecting View will have no effect.

III.8.6. Evaluate

When you have completed the definition of your Statistical Evaluation, the Evaluate function will perform the actual processing of your data and generate your reports. Activate Evaluate from the Statistics Command Menu:

Statistics: Define, Save, Recall, View, Evaluate, Quit ? >

Before the system evaluates your data it will ask for the name of a group table:

Group Table:

Enter the name under which you have saved the grouping table that you defined in the Grouping Module.

NOTE:

Your group table must match the data file that you are attempting to evaluate, otherwise ALADIN will not perform the evaluation.

Norr lly, all fields that you are evaluating must be defined in the group t le, whether the evaluations are grouped or not.

C   if all your evaluations are for numeric fields and are ungrouped, c: you get away without specifying a grouping table. In this case, simply pr ss RETURN when asked for a "Group Table".

A er you give the name of the group table, ALADIN will examine the rec ds in your data base and tabulate the data values according to whatever evaluations you defined. During this process, which can take some time if your data base is large, ALADIN will display at the bottom of the screen the names (primary key field values) of the records as they are examined.

When the evaluation of your data is completed, ALADIN will ask you to choose one of the display modes:

Table: Absolute, Percent, Graphics, Quit, ? >

You should select either "A", "P" or "G" to select one of those modes. Selecting "Q" will return you to the Statistics Command Menu and discard your evaluation.

In any of the display modes, ALADIN will pause after presenting a table or graph. At that point you can either switch to another display mode (by pressing "A", "P" or "G") or press SPACE BAR to continue with the next table.

The different display modes are as follows:

ABSOLUTE

Your Statistical Evaluation results are displayed in terms of numerical "absolutes": that is, the aggregate numbers of records that have fallen into the various categories. See Figure 8.2.

```
SPECS : ADI : 09/14/83


Horse Power (PS)          (1..6)
( 1 – > 0..60 !2 – > 61..90 !3 – > 91..150 !4 – > 151..200 !5 – >
201..350 !6 – > 351..999 )

125!    16     22     40     24     19     4




                                              Evaluate #1 >
```
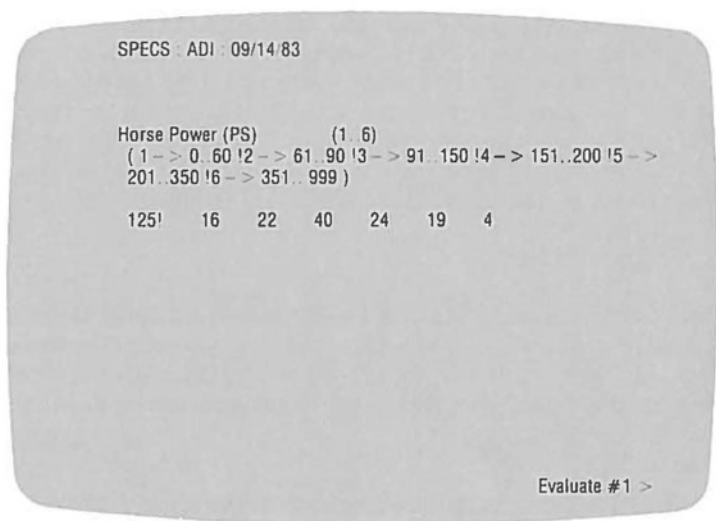
Figure 8.2

Percentage

The results are displayed as percentages of the "statistical universe"
(See Figure 8.3), that is, a percentage of the total number of records
evaluated. It is possible to change this base value through use of
the ESC 6 key.

```
SPECS : ADI : 09/14/83


Horse Power (PS)          (1..6)
( 1 – > 0..60 !2 – > 61..90 !3 – > 91..150 !4 – > 151..200 !5 – >
201..350 !6 – > 351..999 )


                 1      2      3      4      5      6
_____
100.0III.8.6    12.8   17.6   32.0   19.2   15.2   3.2




                                             .Evaluate #1 >
```
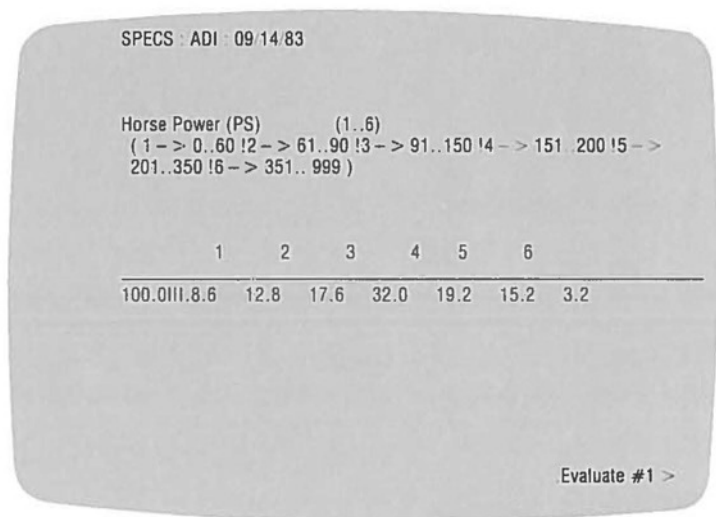
Figure 8.3

For example, suppose that there are 200 records in a data base, but only 117 of them were evaluated (the others either had no data in the relevant field, or were excluded by a query selection). ALADIN will use this 117 as the "statistical universe" or base when it computes the percentages that fall into each category. But you may wish to express the percentages in terms of your entire data base, that is, over the full 200 records. If so, you need only press ⎡ESC⎤ ⎡6⎤. ALADIN will respond:

Base 100 Percent >

The system is asking you to redefine the current statistical universe. You should now enter the number of records that you wish to use for the new base, or "200" in this case (followed by ⎡RETURN⎤). You can repeat this procedure to restore the original base value or to use yet another value.

NOTE:

You must enter some numeric quantity in response to this question. Simply pressing ⎡RETURN⎤ will not suffice.

GRAPHICS

Your results will be displayed in various graphic forms (see Figure 8.4). The particular graph used depends upon the nature of the evaluation. For example, a single-dimensional evaluation will produce a histogram, a two-dimensional evaluation will produce a scattergram and multidimensional evaluations will produce certain bar charts.
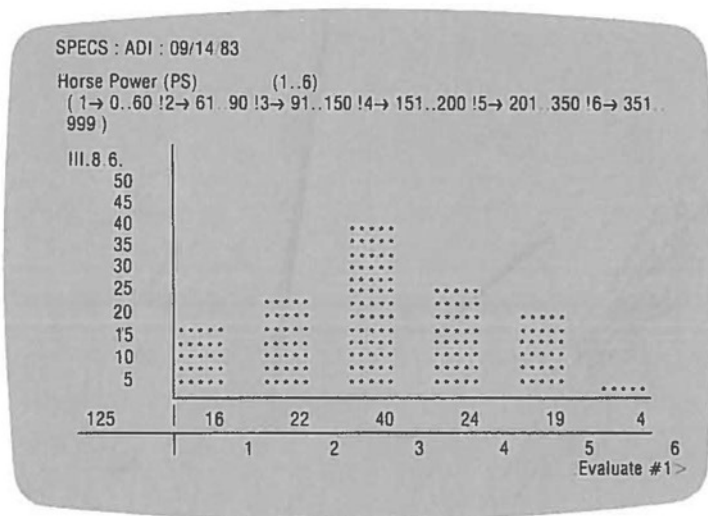
Figure 8.4

PRINTING YOUR STATISTICS

You can print your Statistical Evaluation (or direct it to a disk file) by redirecting ALADIN's output using the usual [ESC] [8] control function. If you do this, ALADIN will ask you:

Table Selection?: Yes, No, ? >

If you answer Yes, ALADIN will pause between tables and wait for you either to press [SPACE BAR], in which case ALADIN will print the next table, or to type the number of a particular table.

If you answer No all the tables will be printed at once.

III.8.7. Quit

When you have finished your work with Statistics, you will want to be able to leave the Statistics Module. Select the Quit function from the Statistics Command Menu:

Statistics: Define, Save, Recall, View, Evaluate, Quit, ?

This selection will have no effect except to return you to the main ALADIN Executive Command Menu.

INFO

III.9. The Info Module

PURPOSE

The Info Module of ALADIN gives you various details about your files
— the extent to which your relational system is filled, a listing of files
within your relational system, and more — and allows you to remove or
adjust files and definitions created within ALADIN.

OVERVIEW

The choices available in the Info Module are:

Info   : Provides information about the available storage left in
               relational system.

Map   : Displays the files in your relational system and all the key
               fields within the files. Listed beside each key field will be
               the files to which that field branches.

Files   : Gives you the opportunity to delete any files in your re-
               lational system (without having to go all the way out to
               the operating system).

Print Format: Provides formatting specifications for a printed page layout, including headers, footers, page numbers, various page margins, and other print setups. Within this option, you have the choices of Save, Recall, and View.

INTEGRATION

The Info Module provides information to you about the entire relational system when you choose it from the main ALADIN Command Menu.

Enter the Info Module from the ALADIN Executive Command Menu:

ALADIN: Data, Report, Query, Calc, WordProc, Group, Stat, Info, Exit

When Info is activated, the following Command Menu is then available:

Info: Info, Map, Files, PrnFormat, Quit, ?

These Info Module functions are described in the various sections that follow.

III.9.1. Info

Enter the Info function from the Info Command Menu:

Info: Info, Map, Files, PrnFormat, Quit, ?

The Info option provides information about the available storage left in your relational system. Information regarding the percentage of used space in your key and data files is displayed along with the percentage of total storage space available.

You may find that you have very little or no space available for your key file or data file. If this is the case, you may increase the size of these files by using the "Disk" option from ALADIN's Init program. Refer to the section on ALADIN Disk Utilization for information on how this can be done.

III.9.2. Map

The Map option will display the files in your relational system and all the key fields within each file. Listed beside each key field will be the files to which that field branches. The Map function may be selected from the Info Command Menu:

Info: Info, Map, Files, PrnFormat, Quit, ?

For each file, ALADIN will display the file name followed by the number of records in that file and the number of records declared to be in that file. For example, ALADIN may display:

.Data file SPECS (125:250).

SPECS is the name of a file within the relational system. The actual number of records currently in the SPECS file is 125. The maximum number of records defined for the SPECS file is 250.

NOTE:

You may find that the actual number of existing records exceeds the maximum number of records for a particular file. This possibility may occur because of the variable length storage technique that ALADIN uses. If there is extra room in your data file, then ALADIN is able to store more records for that file than you originally estimated.

FILES

III.9.3. Files

The Files option offers you the opportunity to remove any files associated with your relational system. You can select the Files option from the Info Command Menu:

Info: Info, Map, Files, Format, Quit, ?

ALADIN will list the files defined in each of the other modules. The Files menu line will list those modules which contain files generated by your relational system.

Files: Report, Query, Calc, Group, Stats, UserFiles, Exit, ?

When you choose any of the options above, ALADIN will ask you:

Do you want to remove some files?

If you answer Yes ALADIN will, for each file, ask if you want to remove that particular file. ALADIN will mark each file with a pointer (>) to indicate that you have choosen to remove that file. If you answer No the Files menu will return to the screen. If you answered Yes for any files then you will be asked:

Do you want to REMOVE those files marked?

If you answer No to this question, none of the marked files will be removed from your disk. A Yes answer will cause each of the marked files to be removed from the list and your data base. Either response will return the user to the Files Command Menu.

FORMAT

III.9.4. Print Format

The PrnFormat option provides formatting specifications for a printed page layout. Enter PrnFormat option from the Info Command Menu:

Info: Info, Map, Files, PrnFormat, Quit, ?

Within the PrnFormat option you are given four choices. You may Define a report format, Save that definition, Recall an old definition, View the current definition. Each of these selections is discussed below.

When you have a format definition currently active, you may use it to format any output to your printer. For example, you may generate a report for which your output will be going to the printer. ALADIN will ask:

Activate current format?

If you answer Yes to this question, your report will be printed according to the format you have specified in your format definition.

DEFINE A FORMAT

When you choose the Define option from the PrnFormat menu, ALADIN will display a screen similar to the one shown in Figure 9.1.

CAR (Console:.Console:)

Printer Initialization Image

Lines/Page> 66<   Columns/Line> 85<

Headlines > 3<   LeftMargin > 7<

TextLines > 60<   TextChars > 72<

Footlines > 3<   RightMargin > 6<

PageNumbers> No<

InitString>˜L<

Header ><

Footer ><
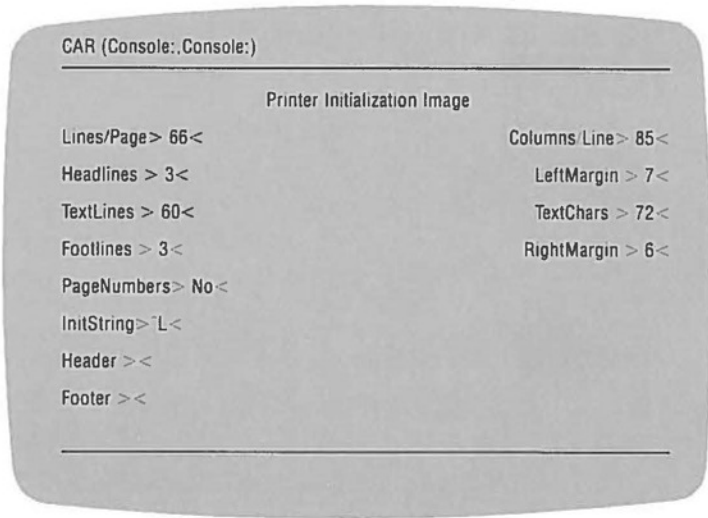
Figure 9.1

Following is a list of the various format specifications and their meanings. Each may be changed by positioning the cursor, and typing the desired value over the value as shown followed by [RETURN].

Lines/Page:

The "lines per page" specifies how many lines each printed page will consist of.

Headlines:

The "headlines" are how many lines are printed before the actual body of your text starts printing. Generally these will consist of a number of blank lines and the header line.

Textlines:

The value of "textlines" will be determined by the result of the headlines plus the footlines subtracted from the total lines per page. The user cannot change this value directly.

Footlines:

The "footlines" are how many blank lines are printed after the text on which the page is printed.

PageNumbers:

This option allows you to have your pages numbered if you wish. The number will be printed in the upper right corner of your report.

Initstring:

The "Initstring" is the string of initializing control characters sent to your printer before your text is printed. For example, you may want to send a "form-feed" control to the printer before printing a report. (See your printer manual to determine what characters you may need to accomplish your needs.)

Header:

The "header" is information you wish to have printed at the top of each page. The text you type in will not be automatically centered — it will appear exactly as you type it.

Footer:

The "footer" information will be printed at the bottom of each page. Footer text also will not be automatically centered.

Column/Line:

The "columns per line" defines the width of your report or printed page (full page width, not just the area to be printed in).

LeftMargin:

The "left margin" specifies how many spaces wide your left margin will be.

Textchars:

The "text characters" is determined by how many columns per line you have minus your left and right margins.

Right Margin: (as per Left Margin)

SAVE A FORMAT

When you choose to Save a format you have defined, ALADIN will prompt:

Format.Save· Enter file reference name>

Check your Start-Up Guide for the proper file-naming conventions. When you type in your file name and press RETURN , ALADIN will save your format description on disk for later use.

RECALL A FORMAT

When you choose to Recall a format definition, ALADIN will prompt:

Format.Recall: Enter file reference name>

Enter the name of the format file you wish to have activated. Using Recall will allow you to define which format file is currently active.

VIEW A FORMAT

When you choose View from the format menu, ALADIN will display the format description which is currently active.

EXIT

III.10. Leaving Your Relational System

Selecting EXIT from the ALADIN Command Menu tells ALADIN that
you are finished with the current Relational System. ALADIN will then
prompt you for the name of another Relational System as follows:

Enter Relational System Name <RETURN> quits

At this point you can enter the name of another Relational System or
simply type RETURN to 'return' to the ALADIN Control Program.

IV. The System Installation Modules

OVERVIEW

The ALADIN Init program is used to create and modify a data base which will be used by the ALADIN Executive program. The Init program consists of several modules. Each module will be discussed in detail in the chapters that follow. The different functions of each module are, in brief:

Install : The Install module creates a new relational system. This is where the user defines the files and fields for the new database, and creates the screen forms and security specifications for the system.

Change : The Change Module is used to make limited changes to an already existing relational system. Here files may be added, screen forms modified, and access rights expanded, or changed.

Screen Forms : The Screen Forms Module allows the user to arrange the fields of the files within the relational system on the screen of the computer.

Access : The Access Module provides security to the relational system and defines user identification access rights.

Disk Utilities : The Disk Utilities Module allows the user to change the storage size for the key file and data file, and provides the option of reorganizing your relational system.

IV.1. Installing a Relational System

PURPOSE

The Install Mode of ALADIN is used to create a new relational data base. This is where you define the files and fields for the data base, and create the screen forms and security specifications for the system.

OVERVIEW

The installation of a new relational system consists of several steps:

1. Define the new relational system using the interactive schema editor, including the specification of files in the system, estimated number of records per file, field names, lengths, types (character, numeric, date, money, decimal), protection, keys, and branches.

2. Allocate storage in the relational data base for keys and data.

3. Lay out the screen form in a suitable way using the "paint-brush" keys.

4. Save the relational system and screen form.

5. Specify appropriate security restrictions.

INTEGRATION

Unless you are using the ALADIN Demo data base (or someone else's) you need to set up a relational system before you can use any of the other modules. Once you have a data base, you can enter data with the Data Module, or you can use the Change Module to change your relational system. You could also change the screen form or access rights specification in those modules.

Once the name of your new relational system has been entered, the ALADIN-Init Command Menu appears. Choosing the Install option from this menu line begins the installation process.

The material covered in this chapter will be discussed in the order in which it appears as the ALADIN Init program is executing. Topics such as control functions are discussed at the end of this chapter.

After choosing the "Install" option from the Init Command Menu line, ALADIN will display one of two messages. If the name you choose for your relational system is a new name (i.e., no system by that name currently exists) ALADIN will prompt:

No Relational System with that name exists.

ALADIN is simply telling you that no relational system has been defined yet with that name. Pressing the ⌊SPACE BAR⌋ or the appropriate menu option will allow you to continue with the installation process.

If the name you choose to install your new system under is the name of a system which already exists (on your disk), then ALADIN will prompt the following question:

Use existing specification?

If you answer Yes to this question, ALADIN will use the system definition for that data base and re-install that system.

WARNING:

Re-installing an already existing system will destroy any data stored in that data base.

IV.1.1. The Schema Editor

ALADIN's interactive schema editor is a tool for creating schema descriptions for a relational system. It may also be used to change the schema for a relational system that already exists. The schema editor is an interactive program which contains prompts to help guide you through the installation process. The following discussion of the schema editor will illustrate these prompts and define their meanings.

Your first exposure to the schema editor will be a prompt to enter the name of a file. (See Figure 1.1)

```
Enter name of file (max 16 chars)
_____

 BASE DBNAME  =  ................:
```
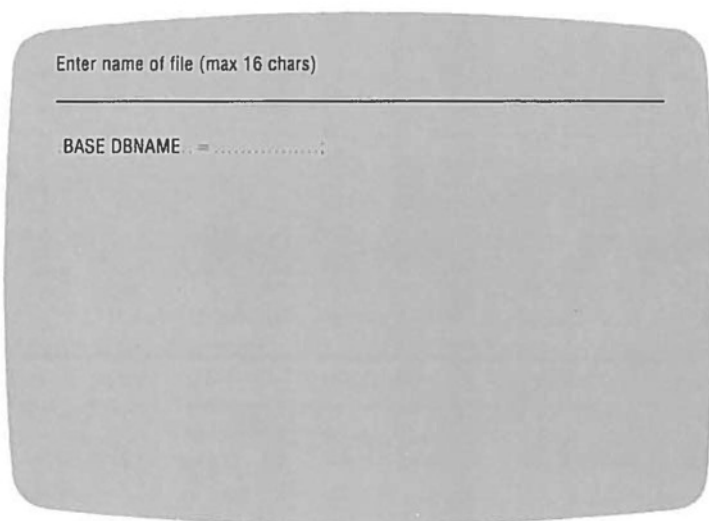
FIGURE 1.1
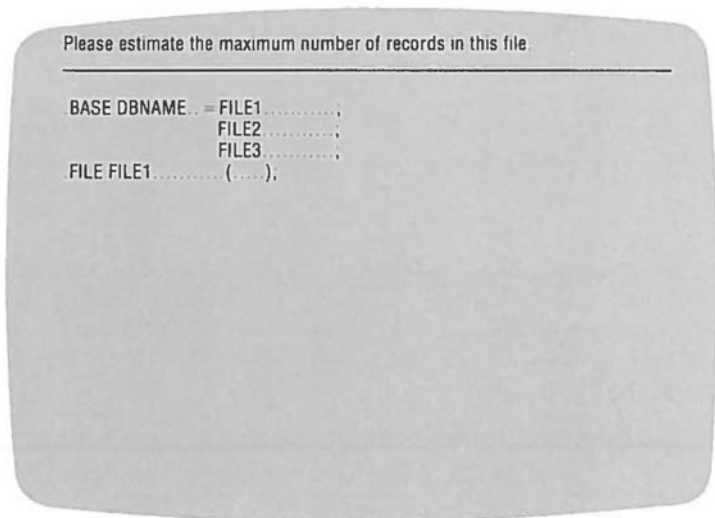
FILES:

The ALADIN relational system schema descriptions are designed to be simple and concise definitions of how your relational system should be built. Every schema definition begins with the word ".BASE" followed by the name of the relational system (e.g. CAR) and an equal sign (=). (See Figure 1.1.) Following the base name is a list of the various relational files that comprise the data base or relational system. The relational system name can be as long as six characters, and each file name can be up to 16 characters in length. The maximum number of files permitted within your relational system is 32. (Check your START-UP for specific systems requirements as they relate to your machine.) You must enter all the file names for your relational system before you can begin defining the fields within the files.

NOTE:

Good data base design should preclude the necessity for 32 files. If your data base contains that many files, re-organization should be considered.

After all the files for your relational system have been listed, you are asked to estimate the maximum number of records for each file. (See Figure 1.2.) Refer to the START-UP for the maximum number of records per file.

```
Please estimate the maximum number of records in this file

    BASE DBNAME.  = FILE1...........;
                    FILE2...........;
                    FILE3...........;
    FILE FILE1...........(.....);
```

FIGURE 1.2

The number that you use in this location of your schema description does not actually limit the maximum number of records that may be entered into the file. This number is used by ALADIN to estimate the maximum amount of storage on disk that your relational system will require. After you have entered the record estimate, the schema editor will present you with a blank line for a field name as shown in Figure 1.3.

```
Enter name of field (max 32 chars)
───────────────────────────────────────────────────

 BASE DBNAME.. = FILE1..........;
                 FILE2..........;
                 FILE3..........;
 FILE FILE1..........(32000);
               ........................(1 ) = .........;
```

FIGURE 1.3

FIELDS:

The maximum length of a field name is 32 characters. Field names may contain blank characters. You may also create a field with no name by pressing the `SPACE BAR` bar twice instead of typing in a name. The following is a discussion of each of the field descriptors:

REPEAT COUNT

The repeat count allows you to create a field that consists of multiple parts, up to 31 of them. For example, suppose you define a field of 20 characters and give it a repeat count of 5. This will result in a single field that consists of five lines of 20 characters each. Typically, you will only have one copy of each field. Pressing `RETURN` will automatically default the repeat count to 1. The prompt for the repeat count is illustrated in Figure 1.4. The cursor rests between the parentheses on the field descriptor line.

Enter number of times to repeat this item (max 31, default is one)

```
BASE DBNAME.. = FILE1..........;
                FILE2..........:
                FILE3..........;
FILE FILE1..........(32000);
      FIELD 1.........................(1.) = . .... . .;
```

FIGURE 1.4

DATA TYPE

The data type is specified by a single character chosen from the list in Table 1.1. The maximum size for each data type is also listed. (NOTE: The maximum size may vary according to which computer you have. Please check the START-UP section of your Manual.)

TABLE 1.1

Character	Data Type	Maximum Length
N =	NUMBER(integer)	12
C =	CHARACTER	78
T =	TERM or DATE	8
M =	MONEY	15
D =	DECIMAL	157

The ALADIN schema editor displays the prompt in Figure 1.5 when entering the data type for your field.

```
Enter data type: Number(integer),Character,Term(date),Money,Decimal
─────────────────────────────────────────────────────────────────────

  BASE DBNAME  = FILE1..........;
                 FILE2..........;
                 FILE3..........;
  FILE FILE1 .........(32000);
           FIELD 1......................(1.) = . . . . . .;
```

FIGURE 1.5

FIELD LENGTH

Immediately following the data type in your field description is the number indicating the length of that field. (See Table 1.1 for the maximum length of each data type.) The purpose of the field-length descriptor is to define the number of character positions on your screen that will be available to display a piece of data in that field. For example, if you have a number which you wish to display and you define the field as being N5, then you have 5 digits in which to display the integer. This will accommodate integers from 0 to 99,999. In the case of a date or term, a field length of 8 should always be used in order to allow for two separator characters. For example, 12/22/56 requires eight characters to represent the date of December 22, 1956. The money data type field allows for a maximum of 15 characters. The largest sum of money you can have in the money field is $999,999,999.99. (NOTE: The commas and decimal are counted, and must be keyed in when entering data into a money field.)

The decimal data type actually has a field size specification composed of two parts separated by a point as in D15.7. The first number following the D is the full field size, and the second number specifies where the decimal point will be positioned. For example: if we use D8.3, that will give us a field that is eight characters wide with four characters before the decimal point, the decimal point itself, and three characters to the right of the decimal point. The largest number that could be represented by the description D8.3 is 9999.999.

FIELD PROTECTION

ALADIN's interactive schema editor allows you to restrict user access to certain fields. For example, if your data base includes a field which contains the salary for each employee in the company, this may not be information you want every user to have access to. By typing a "P" in the field protection descriptor, you can later deny certain users access to that field. Access rights are described in detail in a preceding chapter. For every field, ALADIN's schema editor will ask you if you want to be able to restrict access into that field. Pressing `SPACE BAR` will cause the field to be unprotected. Pressing "P" will allow selective protection of the field.

KEY FIELDS

A particular record within a file can be found by "looking it up" according to a key field. Key fields can also be used to create relations between separate files. In other words, a key field within a file can "branch" to other files with the same key field. However, these files must be defined as part of the same relational system. For each field, the schema editor will ask you if you want it to be a key field.

NOTE:

The first field in every file must be a key field.

BRANCHING FIELD

When more than one file has been defined within your relational system, for each field, the schema editor will ask if you want that particular field to be a branching field. A branching field is one which forms part of a relationship with other files.

If you declare a field as branching, a new line will appear underneath the field description and you will be asked to enter the name of the file to which you want this field to branch. At this time you must type in one of the other file names in your relational system. At the bottom of the screen you will see a message asking you whether you want the current field to be added to the file to which you are branching. If you say Yes, a copy of the current field description will be added to the file to which you are branching. If you say No, it won't be added. This is important because a branching relationship between files can only occur between identical fields within two files. It is a good idea to go ahead and let ALADIN automatically insert a copy of your branching field into the other branching file.

Note that when entering the name of a file to branch to, if you enter an incorrect file name, the schema editor will ignore this entry and give you a chance to re-enter that file name. This helps to protect you from typographical errors. After specifying a branching file for a branching field, you will be given the opportunity to specify another branching file, if there are any more files within your schema. You may continue to specify branching files in this manner for as many files as you wish, as long as they have already been declared at the top of your schema description. When you are finished entering the names of branching files, pressing RETURN will take you to the next field description.

It is also possible to branch to another field within the same file; however, the two fields involved must be identical in type and size and must both be key fields. For example, if you have two fields, order date and shipping date, and they are both located in the same file, they must both be declared as T8 and as key fields. You could then use the "Jump" control function to branch from order date to shipping date within the same file. Perhaps you want to locate another record in this file that has the same shipping date as the order date of the record you are currently viewing. When you use the "Jump" control function in this manner, ALADIN will list all the possible fields from which you can choose to jump to. Simply press the number associated with the field you want to jump into and the new record will appear.

IV.1.2. Finishing Your Installation

When you leave the schema editor ALADIN will pause for a few seconds while it checks your description for correctness. Displayed on your screen you will see a list of all the files that you have defined within your relational system and an estimate of the required disk storage space for each. The information is presented in five columns for each file. The first column gives the name of the file; the second column gives the number of records that you estimated would be in that file; the third column gives the number of bytes of data required for one record in that file; the fourth column specifies the maximum number of disk blocks that would be required for that file if all the records that you specified were 100 percent full; and finally, the fifth column shows the number of blocks that you have specified as keys within this file. At the bottom of the table, totals are printed for the data and tree file sizes.

NOTE:

Those totals are simply estimates based upon your own guess as to how many records may be in each file and the assumption that each record will be 100 percent full. Since ALADIN uses "variable length" record storage and since a record within a typical data base may only be 50 percent full, you will find that these figures are quite conservative. That is, you can usually get by with less disk storage space than called for here.

When ALADIN is finished listing the table it will ask you:

Number of disk blocks for data (74).

ALADIN is asking you to specify exactly how many blocks you really do want to reserve for your data file. The number in parentheses is a default value that ALADIN provides for your convenience. You may select the default value by pressing RETURN or you may enter the number that you want to use followed by RETURN. Reserving at least 20 blocks for the data file is good practice. ALADIN will then ask:

Number of disk blocks for keys (126).

ALADIN is asking you to specify the size of your key or tree file. The number in the parentheses is a default value which you may select by pressing RETURN or you may enter your own value.

NOTE:

Be sure that there are at least 10 blocks reserved for the key file.

After you have specified the sizes for these files, ALADIN will ask you:

Create a document (textfile)?

A Yes answer to this question will cause ALADIN to create a textfile which contains the definition of your new relational system.

The next question ALADIN will ask you is:

Create Pascal interface program?

ALADIN is asking if you will be using this data base with the optional Program Genie programmers tool kit. If so, you should respond Yes to this question; otherwise, answer No.

IV.1.3. Screen Forms

The next step for installing your new relational system is to create the screen forms "or masks" for each file in your system. The screen form is the means by which you can view your data base. A detailed description of the screen forms editor and how it is used can be found in the chapter on Screen Forms.

ALADIN will ask:

Generate screen forms?

IMPORTANT: If you answer No to this question, your relational system will not be saved. Answering Yes will take you into the screen forms editor to create your screen forms.

When you are finished creating your screen forms ALADIN will ask:

Do you want to save your relational system?

If you answer No, you will immediately see the ALADIN-Init menu appear and your relational system description will not be saved. If you answer Yes, ALADIN will save your data base description and create the empty data and tree files on your disk.

IV.1.4. Access Rights

ALADIN offers you the opportunity to protect your data base by limiting the access rights of certain users. Defining the access rights is part of installing your new system.

After your screen forms have been described and saved, ALADIN will ask you the following:

Userid>

ALADIN is asking you to enter a name that you wish to use as the name of your data base manager or administrator (in other words, the person authorized to make the highest level changes to your relational system). Defining the access rights for your system is described in detail in the chapter on access rights.

CHANGE

IV.2. Changing a Relational System

PURPOSE

The Change Module of ALADIN is used to make limited changes to an already existing relational system. Here files may be added, file names changed, fields added, field names changed, protection, keys, and branching changed, screen forms modified, and access rights expanded or changed.

OVERVIEW

Once you have installed a relational system, there are two ways in which you can change it. You can change your relational system by reinstalling it using the Install Module, or you can use the Change Module of the ALADIN Init program. The following discussion will consist of two parts. The first part will discuss how to change your system by re-installing it using the Install Module. The second part will discuss how to change your system using the Change Module.

IV.2.1. Using "Install" to Change Your Relational System

When ALADIN asks you for the name of your relational system, you will type in the name of the relational system that you wish to change. You can reinstall it with the new changes that you wish to make. **THIS RE-INSTALLATION WILL DESTROY ANY DATA THAT WAS ALREADY PRESENT IN THE EXISTING RELATIONAL DATA BASE.** In order to delete fields, or change the data type or size of a field, you **must** reinstall your relational system.

When you begin the reinstallation, ALADIN will ask:

Use existing specification?

If you answer Yes, ALADIN will use the schema that you have already defined for this data base. You can now make changes to it using the schema editor. If you answer No, you will be starting from scratch. You should answer Yes to this question if you wish to make changes to an existing data base that requires reinstallation.

Whether you answer Yes or No, you will enter the schema editor from which you can create or modify your current schema definition. When you have finished editing your schema, proceed as described earlier for installing a new relational system.

IV.2.2. Using "Change" to Change Your Relational System

For less drastic changes to your relational system, choose the Change Module from the ALADIN Init menu. You will go immediately into the schema editor with the existing schema for your data base showing on the screen. On the right side of the screen will be a number of asterisks (*). These asterisks show you which fields **cannot** be changed significantly. Significant changes are: deleting fields, changing the number of repetitions within a field, changing the data type or data size of a field, or deleting a file or field.

The types of changes that are permitted within the Change Module are as follows:

1) Change the name of a file
2) Change the name of a field
3) Change whether or not a field is a key field
4) Change whether or not a field is a branching field
5) Change the files that a field branches to
6) Change whether or not a field is protected
7) Insert new files
8) Insert new fields

Within these constraints, you may make the changes while using the schema editor. To change the name of a field or file, type over the existing name. To change a protected key or branching field to a non-protected key or non-branching field, position the cursor on the "P," "K" or "B" and press SPACE BAR . To insert new files or fields into your relational system, choose the "Insert Line" control function to enter a new line for a file or field. You may also use the "Delete Line" control function to remove a file that a field branches to.

When you have left the schema editor, the remainder of the change process is very similar to what happens when you install a new system. ALADIN will display a table of the mass storage requirements for your revised schema description but will not ask you to specify the sizes of the data or tree files (since they have already been created).

You will be asked if you want to change your screen forms. If you answer No, ALADIN will use your existing screen form. If you answer Yes, you will find yourself within the screen forms editor and you will have the opportunity to redesign your screen forms. Answer Yes to the prompt about saving your relational system if you want any changes to be saved.

NOTE:

If you have changed your schema description in such a way as to render your screen forms obsolete (if you have added files or fields), instead of being asked whether you want to "change" your screen forms, you will be asked if you want to "generate" your screen forms. If you answer No, your changes will **not** be incorporated, because you **must** generate new screen forms to go with the new schema description. If you answer Yes, you will be in the screen forms editor, ready to create the new screen forms that you need.

IV.2.3. Changing Your Screen Forms Only

If you wish to adjust the screen forms within your relational system without actually changing the schema, it is only necessary to choose the Screen Forms option from the ALADIN Init menu.

IV.2.4. Changing the Access Rights Only

If you wish to change only the access rights for your relational system, you can use the "Access" option from the ALADIN Init menu.

FORMS

IV.3. Using The Screen Forms Editor

PURPOSE

The Screen Forms Module of ALADIN allows you to arrange the fields of files within your Relational System on the screen of the computer and create a form which will display your data records in a visually appealing and understandable way.

OVERVIEW

The Screen Forms Editor allows you to arrange the fields of files in your Relational System in any layout you desire. ALADIN will lay out the fields for you if you press SPACE BAR continuously until all fields are visible, but it is usually easier to position the first field where you want it to be on the form, then press SPACE BAR to bring up the next field, position it appropriately, and so on, until the entire form has been laid out as you wish.

You use the "paint-brush" keys to move the fields around the screen and lay out the screen form. (These keys are explained in detail in the Reference Guide section immediately following.)

INTEGRATION

The Screen Forms Module is accessible from the main Command Menu of the Init program. It is also entered from the Install and Change Modules, as described below.

ALADIN's Screen Forms Editor allows you to arrange the fields of the files within your relational system on the screen in any manner you wish. The Screen Forms module is accessible through the main Command Menu line of the ALADIN Init program, the Install Module, and the Change Module. The screen forms you create when you install your relational system are not fixed. They can always be changed by using the Screen Forms Editor.

The following discussion of the Screen Forms Editor will be described in terms of how it works in the three separate modes — Install, Screen Forms, and Change.

IV.3.1. Screen Forms Using the Install Module

Entering the Screen Forms Editor

When you enter the Screen Forms Editor, your screen should look like Figure 3.1.


```
DBNAME FILE1 (CONSOLE:, CONSOLE:)
_____

Field #1: _____




_____
1: 4 ' 1(1,2)
```
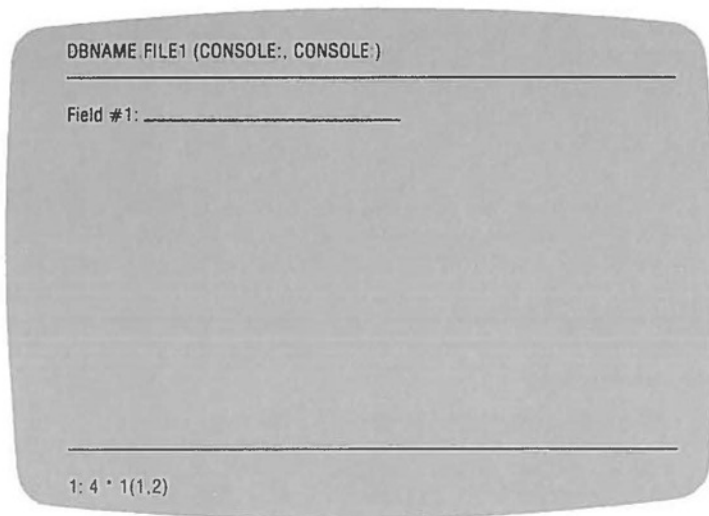
FIGURE 3.1

Across the top of your screen you will see first the name of your relational system, then the name of the file, with the name of your input and output files in parentheses. On the bottom of the screen you will see a group of numbers. The first number tells you that you are at field #1 within your relational system. Note that as you go through your different files, every field has a unique field number. After the field number is a colon (:) followed by a number which indicates the last field in this file. In other words, for your first file, if there are four fields when you start the Screen Forms Editor you will see "1:4". If you then go to a second file which also has four fields, you will see "5:8", meaning that the cursor starts on field #5 and that this file goes up through field #8. In this way, as you work with the Screen Forms Editor, you can tell when you have reached the last field for a file.

Following the "highest field number", you will see an asterisk "*" followed by a number which indicates the screen form that you are in. The fields of a particular file can be positioned on different "pages" or screens if desired. After the screen number, within the parentheses, there are two numbers. The first number represents your column position on the screen with column 1 being the leftmost position, and the count increasing by one for each column you move to the right. The second number gives you your line number with line 2 being the topmost line and increasing by one for each line you move down the screen.

PLACING YOUR FIELDS ON THE SCREEN

When you enter the Screen Forms Editor you will see your cursor on the first field. (See Figure 3.1.) No other fields will be visible on the screen. The procedure for placing each field where you want it on the screen is simple. First, use the move commands discussed in section (IV 3.3) to position your field where you want it. Pressing $\boxed{\text{SPACE BAR}}$ will display the next field in your file. Place the next field where you want it, and then repeat the procedure until you come to the last field. After you have positioned the last field in your file and pressed the $\boxed{\text{SPACE BAR}}$, ALADIN will ask the following question:

Have you finished with this screen form?

If you have not completed arranging the screen, answer No to this question and you will be able to continue rearranging your fields on the screen. If you answer Yes, ALADIN will then allow you to create the screen forms for the next file in your system. After you have finished all the screen forms for each file in your system, ALADIN will ask:

Do you want to save your relational system?

You must answer Yes to this question or your system will not be installed. This is the end of the session with the Screen Forms Editor when you are installing your relational system. The following section will discuss the Screen Forms Editor as it is used within the Change Module and the Screen Forms Module.

IV.3.2. Screen Forms Using the Change or Screen Forms Module

Once you have entered the Screen Forms Editor, either by choosing Screen Forms from the Init Command Menu or by working through the Change Module, ALADIN will present you with the question:

Change screen forms?

If you answer Yes to this question, ALADIN will ask for each file whether or not you wish to change the screen forms for that particular file. Answering Yes for any particular file will cause ALADIN to display the first screen form for that file. This screen form will be displayed exactly as you had previously defined it. You may now make changes to this screen form by using the move commands discussed in the following section.

If you are working in the Change Module, when you have finished rearranging your screen forms, ALADIN will ask you if you want to save your relational system. If you are working in the Screen Forms Module, ALADIN will ask you:

Save screen forms?

By answering Yes to this question, ALADIN will save your new screen form definition, otherwise your changes will not be saved and your old screen forms will remain. The next question ALADIN will ask is:

Display screen forms?

Answering No to this question will take you back to the ALADIN Init Command Menu line. When you answer Yes to this question, ALADIN will ask:

Number the Field Items to use with the Program Genie?

If you are not using the Program Genie programmer's tool kit you would answer No to this question. However, if you are interested in having your field items numbered for use with a Program Genie application, you should answer Yes to this question. Your screen forms are then displayed with numbers for each of the field items.

After ALADIN displays your screen forms you are returned to the ALADIN Init Command Menu line.

NOTE:

If you have made significant changes to your relational system in the "Change" module (e.g., inserted new fields), ALADIN will ask if you want to "generate" screen forms. You must answer Yes to this question in order to save your relational system.

IV.3.3. Moving Fields on Your Screen Form

In order to move any field on your screen, you must first have the cursor positioned on that particular field. Several commands are available for moving fields on your screen. These commands are listed in Table 3.1.

TABLE 3.1

Command	Action
L	Moves field to Left one space
R	Moves field to Right one space
U	Moves field Up one line
D	Moves field Down one line
N	Moves field to new line
P	Moves field to new Page
H	Formats field horizontally
V	Formats field vertically

If you are going to move several steps in any direction, you can use what is called a "repeat count." A repeat count allows you to move more than one space or line at a time. For example, you may enter the number "5" followed by the key for the direction you wish to move (e.g.,"D" for down) and your field will be moved down five lines. You may not move a field beyond the boundaries of your screen. The repeat count can be used with the following screen form movement commands: L, R, U, D, and N.

The "page" command will position your field on a new page or screen form. The maximum number of screen "pages" allowed per file is 12.

For you to understand the use of the "horizontal" and "vertical" commands, you must understand that a field has several parts. If you will recall the field description format within the schema editor, you will remember that after the field name there is a component of the description which specifies the repeat count for that particular field. For example, if you have a field called "comments" which is a type C20, and the repeat count is 5, that will give you 5 lines of 20, instead of just 1 line of 20. How those lines will be arranged on the screen is determined by the "H" and "V" commands. When you are adjusting that field within the Screen Forms Editor, you may type "H" and the editor will arrange all the parts of that field horizontally if possible. If they exceed the amount of space available on one line, it will be broken into several lines. If you specify "V", then all the pieces of the field will appear vertically, one on top of the other beneath the name of the field, giving the appearance of a list. Horizontal and Vertical can also be used when the repeat count is only one.

There is one more command used in the Screen Forms Editor: the "S" or "setup" command. The setup command is used to control some of the parameters of your forms editing session. Table 3.2 shows the parameters used in the Screen Forms Editor.

TABLE 3.2

Parameter	Definition
XMAX = 79:	There are 80 columns across the screen.
YMAX = 23:	There are 23 rows on the screen editor.
XREL = 5:	Spacing between fields horizontally.
YREL = 2:	Spacing between fields vertically.
DIST = 2:	Space between name of field and field itself.

When you press "S" for setup, on the bottom of your screen you will see the first parameter: "XMAX = 79:". This parameter tells you that the Screen Forms Editor currently is setup to assume a maximum of 79 columns across (in the X dimension). You may change this parameter by typing in a new number. The maximum number for XMAX is the width of your computer's screen less 1. To leave the value unchanged, press SPACE BAR without entering a number. To change the parameter, simply type in the value you wish. Follow this number with a SPACE BAR or RETURN and the next parameter will appear on the screen. The parameter "YMAX" specifies the number of rows available on the screen. The maximum value for YMAX is 23.

The last three parameters deal with how ALADIN will automatically arrange your fields on your screen form. It works as follows. When you enter the Screen Forms Editor, it will automatically have placed your first field at the upper left corner of your screen. You will note immediately that there are two spaces between the name of the field and the field itself. This amount of space is determined by the value of DIST. Increasing the value of DIST will increase the space between the name of the field and the representation of the field itself on your screen. When you move to the next field by pressing the SPACE BAR, it will be separated from the first field by the value of XREL or YREL, depending upon whether it is next to or below the first field. In other words, if the second field is on the same line as the first field, it will be "XREL" spaces away from the end of the first field. If it is below the first field, it will be "YREL" lines below the last line of the first field.

IV.3.4. Common Errors

After you have finished arranging your fields on the screen, you may try to exit the Screen Forms Editor. ALADIN might then display the following error message:

Fix your screen layout: Fields interfere or Margins exceeded.

Pressing the SPACE BAR will position the cursor on the field which is causing this error. The meaning of this message is that you have positioned a field beyond the boundary of your screen or your fields are overlapping one another. A typical example of how this may occur is as follows. Suppose you have a field declared as C78, and the repeat count for the field is 5. This means that you will have 5 lines that are 78 characters long. The error message above will occur if you have this field arranged in a horizontal format on your screen. The way to solve this problem is to use the vertical format for this particular field. (See figure 3.2)

DBNAME.FILE1 (CONSOLE:, CONSOLE:)

CHARACTER 78 FIELD:
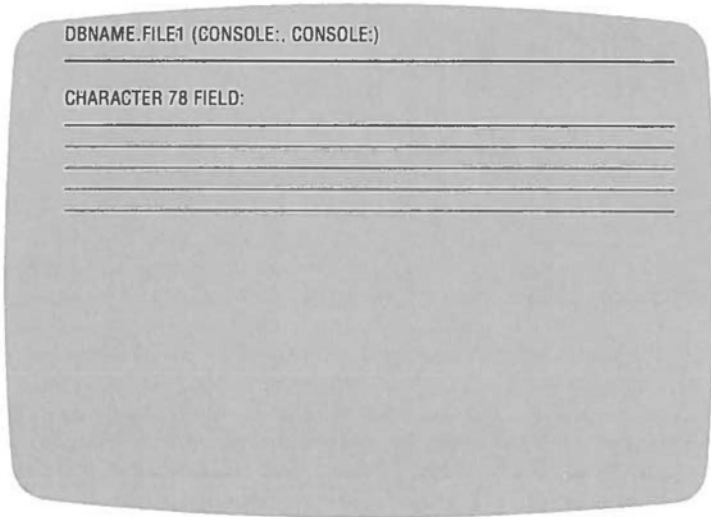
FIGURE 3.2

Another error message that may occur is the following:

Your disk seems to be too full.

This message may occur while you are trying to make changes to your system. If you make changes to the screen forms, and you have added extra files or fields to your system, your disk may not have enough room to store this new information. Your change procedure will be interrupted and you will not be able to store your changes. A solution to this problem would be to copy the system you are changing onto another disk that has more space available on it. You will then be able to extend the definition of your relational system.

IV.4. Defining User Access Rights

PURPOSE

The Access Module provides security to the relational system and defines user-identification access rights.

OVERVIEW

You may restrict access rights for any particular user of ALADIN'S Executive Modules. Normally the only person who has access to ALADIN's Init program is the Data Processing Manager. When the Init program is first used, ALADIN asks for the name of your relational system. If you are installing a new data base, ALADIN will not prompt you for Userid and Password. If you type in the name of an already existing relational system, you are prompted for Userid and Password. The DP Manager enters his or her Userid and Password specified during the installation of the relational system. The DP Manager may enter the Access Module to define new user access rights and to destroy old user access rights. Various users can be restricted to only use certain functions. The procedures for doing this are described below.

INTEGRATION

User access rights may be defined through the Access Rights, Install, and Change Modules of ALADIN's Init program.

SAVING USER ACCESS RIGHTS

For each user of the system, ALADIN will ask the DP Manager if he or she wants to save that user's access rights. For example, ALADIN will prompt:

Userid : Thomas , Passwd : Pumkin Save?: Yes, No >

If Thomas has left the company or will no longer be using ALADIN, the DP manager can type "N" for No and Thomas' access rights will be removed from the system.

NEW USERS

When ALADIN is finished asking the DP Manager about saving user access rights, it will begin to ask for new users by prompting:

Userid>.

If the DP Manager uses the Change option in ALADIN's Init program, user access rights for each ALADIN user will need to be respecified. The first access rights definition, again, will be for the DP Manager. If there were 25 users prior to entering the Change Module, then user access rights will have to be redefined for all 25 of these users.

IV.4.1. How to Define User Access Rights

The procedure for defining the access rights is the same for any user. ALADIN first asks you:

Userid>.

The user identification name can be a maximum of 24 characters long, but only the first six matter. Make sure that the first six characters of the user ID are unique from any other User ID and password. ALADIN only "reads" the first six characters of your user identification and user password.

After you have typed in your user identification name and pressed the [RETURN] key, ALADIN will ask you:

Passwd>.

The user password also has a maximum length of 24 characters, again with only the first six being read.

Once you have entered the ID/Password combination for a user, ALADIN will allow you to specify the access rights for this user. Access rights may be specified differently for each file within your relational system. ALADIN will display the message "access rights:" followed by the name of the first of your relational files. ALADIN will then proceed to ask you a series of questions. (See Figure 4.1)

```
— Input Source: Keyboard, File, Script, ? >
— Output Destination: Monitor, File, Script, Printer, ? >
— ALADIN: Data, Report, Query, Calc, WordProc, Group, Stats, Info, Exit,?
— Data: Enter, Change, Remove, View, Quit, ? >
— Query: Define, Save, Recall, View, Quit, ? >
— Vars: 10Q?, 2IQ?, 3DK?, 4DIR?, 5AP?, 6GL?, 7NOT?, 8SV?, 9INFO?,
   0CAL? >
— Escape Keys: Input, Output, XOver, Calculate, Vars, What, Print,
   <ESC> >
— Field 1: Read, Write, Update >
```

FIGURE 4.1

In each question, the program will display various command options from the ALADIN Executive program. To restrict access to any option(s), all you need to do is type the first letter(s) of that option. By doing this, you will prevent the user from activating that option within this file. For example, suppose you do not want a user to be able to use the Change option in the Data Module for File 1. When the access program asks:

Data: Enter, Change, Remove, View, Quit, ? >

you would type "C" followed by a RETURN. When this particular user tries to access the Change option in the Data Module, he or she will receive a message saying that this option is not available. To leave the access rights unrestricted, you press RETURN.

The same series of questions will be asked for each file that exists within your relational system. When you have finished defining the access rights for a user, you will be asked to enter another user ID. You may enter as many new users as you wish. When you do not wish to enter any more users, press RETURN instead of a user ID. You should then return to the ALADIN Init Command Menu.

IV.4.2. Protected Fields

You may recall from our discussion of the ALADIN schema editor that it is possible to protect various fields within a file. This was done by pressing "P" within the field description. If you have any protected fields within your relational system, ALADIN gives you the option to restrict access rights for those particular fields. (See Figure 4.1 above.)

You have the option to prevent a user from "reading" or viewing a field. If you press "R" to restrict reading a field, this will also have the effect of preventing the user from entering data or updating data in that field. By restricting the user from updating a field, the user will not be able to make changes to that particular field.

NOTE:

The option to restrict access to Quit is available for several of the modules, yet it's not something you would typically want to do. Restricting access to Quit will cause the user to remain caught within a module with no escape. Another option you will not want to try to restrict access to is directing output to the "monitor" or terminal screen. No access restrictions will occur if you choose "M" for monitor. ALADIN will display output on the screen regardless.

DISK

IV.5. Disk Utilization

PURPOSE

The Disk Utilities Module allows you to change the storage size for the key and data files, and provides the option of reorganizing your relational system.

OVERVIEW

When you first enter the Disk Utilities Module from the main Command Menu of the Init program, ALADIN will list the number of blocks reserved for your key file and data file. Also shown is how many of those blocks are actually in use. The procedures for changing storage allocations are described below.

Occasionally ALADIN will tell you that your system needs reorganizing. There are two ways ALADIN reorganizes your relational system. It can reorganize the system by compressing your data file and rebuilding your tree file, or it can simply rebuild the tree file. Both options are explained below.

```
DBNAME (CONSOLE:, CONSOLE:)


          Keyfile                 75 blocks on disk
                        0:        0 blocks in use


          Datafile                75 blocks on disk
                        0:        0 blocks in use






                    Change storage allocation for keys?
```
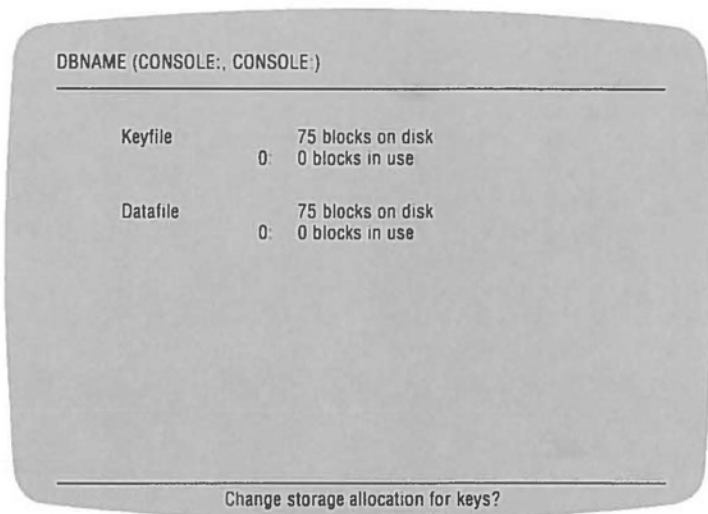
FIGURE 5.1

At the bottom of the screen, ALADIN will ask you:

Change storage allocation for keys?

In most cases you will answer No to this question unless you wish to
enlarge or shrink the size of your key file. If you answer Yes, ALADIN
will prompt:

Number of disk blocks for keys>.

You can now enter the new size you wish your key file to be. Follow
this value with the RETURN key. If you are shrinking your files there
should be no problem (although you should never make your key file
smaller than about 10 blocks). However, if you are enlarging your files,
there may be some complications. You may receive the message:

Not enough free disk space.

This message means that on your disk there is no room that is immedi-
ately contiguous with the end of your key file. In other words, there is
another file on the disk which is located right after the key file, and
ALADIN has no room to expand the key file. The key file is represented
on your disk by a file with the suffix ".TREE" (".INX" for MS-DOS
systems).

NOTE:

In MS-DOS systems, file allocation is non-contiguous. Hence, if you receive the message "Not enough free disk space," there actually is not enough space available.

ALADIN will also ask you if you would like to change the storage allocation for your data file. The same principles apply; there must be free disk space available after the data file in order to enlarge this file. Your data file is represented on your disk by a file with the suffix ".DATA".

Occasionally, ALADIN will tell you that your system needs reorganizing. If you should receive this message, you **must** answer Yes to the following question:

Do you want to reorganize your Relational System?

There are two ways in which ALADIN reorganizes your relational system. ALADIN can reorganize your relational system by compressing your data file and rebuilding your tree file, or ALADIN can reorganize your system by simply rebuilding your tree file.

After you have answered Yes to the question regarding reorganization of your system, ALADIN will ask:

Do you want to compress your Data file?

If you answer No, ALADIN will ask:

Do you want to rebuild your Tree file?

You must answer Yes to this question for reorganization to occur. If you answer Yes to the question regarding compression of your data file, you will return to the ALADIN Init menu. What has happened here is that ALADIN has set a "flag". Now, when you enter the ALADIN Executive program, you will be given the message:

Your keys need reorganizing:(See Reference Guide.) (255) →

If you press the ⌷SPACE BAR⌷ when you see this prompt, ALADIN will ask:

Reorganization?

Answer Yes to this question and reorganization of your relational system will now occur. This process may take some time depending on the size and complexity of your relational system. After ALADIN has reorganized your relational system, you can continue with your use of the ALADIN Executive program.

V. Advanced Techniques

V.1. Introduction

A system is more than a mere collection of parts. The power and utility of any system lies in how its individual parts are used in conjunction with each other. The ALADIN Relational System relies heavily upon this principle. The full power of ALADIN can only be attained by combining its separate modules so that they work together.

As you become more familiar with ALADIN, you will notice that it can be used to handle tasks other than those for which you bought it. This section is an aid to expanding your use of ALADIN. In particular, it will suggest techniques with ALADIN that were not covered in the previous description of the individual modules.

This section is presented quite differently from previous ones. In the Table of Contents you will notice that the previous sections of this Reference Guide are in accordance with the way ALADIN is structured, module by module. This section is laid out with no order of primacy other than that the last section contains a discussion of Batch/Script Files. Since the Script Files are a method of packaging your ALADIN sessions, reason dictates that all discussion of the contents of a package precede any discussion of how to tie the final knot. The following material was written with the understanding that the reader has read all of the previous portions of this Manual, including the Tutorial and Reference Guide.

V.2. Module Integration

Module integration is the technique where different command modules of ALADIN can be used together. The first step is to plan completely that which you wish to do. Write out beforehand each query, calculation, statistic and report. Determine which calculations and which queries will be used in your report or data procedures. Remember queries can be used to select records for data entry, change, removal or view. Calculations can also be made in most of these modules. In any event, the next step required for module integration is defining the modules. You must go into the Define modes of each module and specify the appropriate actions to be taken. After each definition is constructed, it must then be saved so that you can recall it for later use. Keep in mind that the most recent definition within each module is maintained by ALADIN as the current one for your present session. As you enter the Report Module or the Data Module you will be prompted as to whether you want to use this current definition. If you answer Yes to these prompts your calculation or query definition will be automatically activated in your present procedure.

For example, suppose you wish to add $10 to the price of every item in your inventory that weighs more than 2 lbs. and generate a report listing of these items and their new prices. You would first define the appropriate query and calculation. Then when you entered the Data Module you would answer Yes to both prompts (for use of present query or calculation) before selecting the change option. After selecting change, ALADIN would automatically select the records that fit the query definition and make the $10 addition.

The last step of module integration is to choose the action for which the definitions were made. In the previous example this was the Change option in the Data Module. As will be seen in the following sections module integration is applicable at the definition building level within Query and Calculate.

V.2.1. Definition Building

The most useful queries and calculations will involve complicated descriptions using more than just a few variables and operations. It is advised that complicated definitions be built from small simple definitions. This technique could be referred to as modular construction. Each module will be the definition of a simple expression. These modules (or files) can then be combined into larger modules that describe complex expressions. ALADIN allows you to maintain each simple expression and/or the expression formed by "stringing" all the smaller modules together as independent files. In effect you may have 20 or 30 calculations per record, but you have the option of performing all of them or just a few of them at a time. These files are independent of each other in that changing one file will have no effect upon the others. If you combine eight smaller files and save them in a ninth file, the eight smaller files will still exist as they were originally defined. Each file can be brought into memory by using Recall from the Calculate Command Menu.

Assuming that you know how you are going to break up your calculation, you would use the following steps to store each simple expression into a file.

1) Select the Define command from the Calculate Command Menu.

2) Define the calculation expression.

3) Move off the screen form with the right arrow key.

4) Answer Yes to the prompt "Are you finished with this definition?"

5) Select the Save option from the Calculate Command Menu.

6) Enter the name under which you wish to save this expression.

7) Again select the Define command from the Calculate Command Menu.

8) Answer Yes to the prompt ".Discard old definition."

Continue with steps 2-8 until every simple expression has been saved as a separate file.

Testing each separate module can be done in the View option of the Data Command Menu. To do this, recall the calculation with the Recall option in the Calculate Module. Then while in View of the Data Module, choose the Calc option of the control function. The calculation will be activated and the results will be displayed in the chosen fields on the screen form. The actual values in the fields as they are stored in the record are not changed in any way. In this way you can see the effects of your calculation without altering your stored data.

After you are sure each module is correct, you can combine them into one or more different larger expressions. The first step in this process is to recall the beginning simple expression (file). Then you would recall each module you wished to append to it, answering Yes to the "Extend definition?" prompt until you have finished the entire complex expression. At this point you can save this expression as a new file or you may replace one of your previously defined expressions by giving this one the same file name.

Query definitions can be made using the same "modular construction." There is one additional operation required for query definitions. When you decide to extend the definition of a module, you will need to specify a connector between the different definitions. Shortly after you answer Yes to the "Extend definition" prompt you will be prompted to select a logical operator. The logical operator ALADIN expects is the one connecting the two expressions (files). Each file would still exist as originally defined with the current definition being a logical combination of the two smaller files. When your query is completely defined, you have the same Save options as were present in the Calculate Module.

Removal of the files that contain query, calculation, statistics or report definitions is handled through the files option in the Info Module. The user will be prompted for the module from which he or she wishes to remove a file. After the correct module is selected, a list of the files defined for that module will be listed on the screen. Along with this list of files will appear a prompt asking if a file is to be removed. Upon your answering Yes, ALADIN will request the name of the file to be removed. Once the name of the file is entered, the file will be removed.

The full versatility of ALADIN depends on a user's being able to integrate the different modules. In order to expand the use of ALADIN into new applications, complete familiarity with the different modules and how they work together is essential. The user is encouraged to experiment with these techniques.

V.3. Building a Relational System

In order to use ALADIN most effectively, several factors are important to data base design. Prior to installing a system with ALADIN, the entire data base should be laid out with paper and pencil. Consideration should be given to such features as field names, field types, field sizes, file names, number of files, field protection, branching fields, key fields and screen format. Proper planning will prevent unnecessary actions such as moving the 300th field from the 10th page of the screen form to the first page only to find out that it will not fit on that page. Understanding the need for and usage of each field in a file may save both storage space and processing time by eliminating duplicate information.

Although ALADIN allows you to move fields from page to page during screen forms generation, this can become cumbersome with a file containing a large number of fields. It is suggested that the fields be defined in the schema editor in the same order as they will appear on the screen forms (top to bottom, left to right on the screen form). In that way, screen form descriptions can be made quickly and easily.

Careful consideration of the data contained in each file could allow a significant saving of storage space. Files with nearly identical data fields can be replaced with one file and multiple access definitions. The same file with differing access definitions would appear different to each user. Fields that are protected from viewing by a particular user will not even appear on the screen form. In this way a user could be completely unaware of the fact that other fields exist in the same file with which he or she is working. Of course, access can be specified in such a way that other users may view certain fields without being able to enter or change the values in those fields. If a field is protected from viewing it is automatically protected from update, change or enter. Any attempt, intentional or otherwise, to enter information into protected fields will end that session in ALADIN. This includes those fields that are present on the screen form **and** those that are protected from viewing.

Additional storage can be saved with respect to those fields whose values are generated as a result of the ALADIN Calculate Module. Since the data for these fields can be generated during the run time of ALADIN, there is no reason to store this data on disk. Calculations can be performed in both "Data.View" or "Report. Generate". This means that access to this data is always available without the need to use up storage.

Once a schema description is defined and saved, it is available as input to other relational systems. ALADIN allows you to establish a textfile at the time you are defining your data base. This textfile can then be used as an input file (by use of input redirection) to the ALADIN Install Module. Keeping a textfile of your schema description is an excellent way to back up your data base description. The naming convention for this textfile is:

<relational system name>.text.

Incorporating these ALADIN features and using good data base design principles will enable you to realize the full power of your ALADIN Relational System.

V.4. Merging Data Files

It is often the case, when working with a data base management system such as ALADIN, that you wish to incorporate data from another source into your data base. Or, sometimes you may wish to merge the contents of two data bases. If the data bases are not identical, then you may only want to merge certain information. Or, you may wish to update your data base with information from another source. Still another possibility would be to create a new data base which requires features from an old data base. In this case you would like to copy some or all of the data from the old data base into the new one. All these things are possible with ALADIN through use of the " input redirection facility."

ALADIN can take its input either from your keyboard or from a file that is saved on your disk. Remember that the ESC 7 function will give you the menu:

Input source: keyboard, file, script,?

Normally your input source is the keyboard of your console. We have seen in a different section how it is possible for the input source to be a script file. Now we are going to describe a different kind of input source, namely the File option. When you select File in answer to the "input source" prompt, ALADIN will ask you:

Input source.file : enter file reference name

The name that you type should correspond to a file that has been saved on your "user disk." As with other user files within the ALADIN system, there is an implied "X." on the front of the file name so that if you type "OldDB", ALADIN will attempt to open a file called "X.OldDB" on your user disk.

If the file is found, then you will observe that the status line is changed. The first of the two names within the parentheses, which usually reads "CONSOLE:", now becomes the name of the input file, in this case "OldDB". If you entered the reference name of a file that could not be found on the user disk, ALADIN would respond with the message:

Input file cannot be opened. → <SPACE BAR> to continue, "?" for HELP

This means that the file couldn't be found, so press SPACE BAR. You will return to whatever menu you were in when you pressed ESC 7.

Setting the input source to a file, however, is only a small part of the procedure for merging files. The two other things we must cover are the format of the file itself and what you can do with it once you have made it your input source. Leaving the format consideration for last, let us consider what you can do with a file as your input source.

The first thing to point out is that changing the input source to a file is not at all the same as setting the input source to a batch script. WHILE BATCH SCRIPTS TAKE THE PLACE OF KEYBOARD COMMANDS, INPUT FILES TAKE THE PLACE OF DATA THAT MIGHT BE ENTERED FROM THE TERMINAL. In other words, when you have input set to a file, you still enter all commands from the terminal; only the **data** comes from the file.

If you want to enter new records from an input file, first change the input source to the proper source, then select Enter from the Data Menu. ALADIN will display the message:

DATA.ENTER: keyboard, file, ?

ALADIN is asking if, as you enter this data, you want to enter it from the keyboard in the usual way by selecting Keyboard or if you want to use your input file by selecting File. If you select Keyboard, the Data Enter Module will behave as it usually does.

After selecting an entry from a file (the one that contains the data values) you will see that the screen form for that file is displayed on your screen. The Street Sign at the upper right corner of your screen will say "DATA.ENTER.FILE". The cursor will be positioned at the first field of the screen form. You should now select those fields within this file which are represented within the input source file. In other words, suppose you are entering some cars into the data base and you have in the file "OldDB" a list of manufacturers and models. You ought to enter these manufacturer-model pairs into the CAR.SPECS file within the CAR data base. But how will ALADIN know that you want the data from the input file to go into those particular fields, especially since the CAR.SPECS file contains many more fields than those two?

This problem is resolved in the following manner. When ALADIN displays the screen form for CAR.SPECS, it is asking you to specify which fields are represented within the input source file and in what order. So, if the input source file contains manufacturer followed by model, you will choose the two fields, manufacturer and model, from the screen form in that order. You choose fields by pressing the caret "^" key. The order in which you select the fields is quite important. It must correspond to the order in which the fields appear within your input source file, so that if the input file contains model followed by manufacturer you would have to select first model and then manufacturer. It is very important that the fields you select match exactly the fields within the input source file. This is the only way ALADIN can tell where to put the information from the file. It is also important that you do something with all the information in the field. In other words, it is not possible to have fields within the input source file that do not correspond, by size and type, to a field within the screen form. There is one exception to this. A field in the input source file can be smaller than the field in the new file if the field was blank filled in the report module when the input file was created. For example, if you would like to input a C5 field into a C8 field you would have to type 3 spaces in the report line after selecting that field. This is because ALADIN would then have no way of knowing what and how much information to skip when it reads the input source file.

As you specify the fields to match the input source file, you will notice at the lower left corner of your screen some numbers within parentheses. The first number tells you how many fields you have selected, and the second number tells you the maximum number of fields it is possible for you to select.

When you have finished specifying the fields, you should leave the mask from the bottom in the usual way by pressing the down arrow key. ALADIN will then aşk:

Is your definition complete?: Yes, No

If you say No, ALADIN will go back to the screen form to select additional fields. If you say Yes, ALADIN will ask :

Enter the record in this way?: Yes, No

Now ALADIN is asking whether this is really what you want to do. If you say No, the Data Enter Module will terminate and you will be back to the Data Menu. If you answer Yes, the file entry process will begin. You will notice at the bottom of the screen something like this:

1 : SAAB

This is an indicator to you of the last record that ALADIN has processed for entry into the data base. The first number is a count telling you how many have been done. The word after the colon is the content of the first field that you have selected for data entry.

Normally the data entry process will continue until the data within your input source file is exhausted. However, you can interrupt the process at any time using two different methods. You can tempo rarily suspend it by pressing [SPACE BAR] and then resume processing by pressing [SPACE BAR] a second time. You can abort the entry process by pressing [ESC] [0]. In any case, when the data entry process is complete you will return to the Data Menu. Some of the errors that can occur during this process arise primarily from a mismatch between the way you have defined the fields in the screen form and the fields as they are actually represented within your input source file. When this occurs you are apt to get a message like:
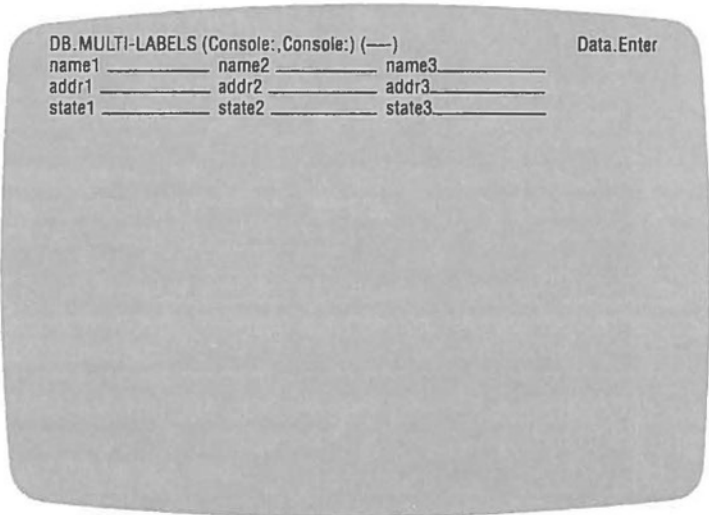
Invalid character: : SAAB → HON

This means that under the key "SAAB" the data "HON" is the wrong data type for the field for which it is to be inserted. In this case, this is exactly what would occur if, as in our example, the input source file contains manufacturers and models only. For our example we have specified the manufacturer, model and horsepower fields when defining how the data is to be inserted into the data base. The result is that the second manufacturer value, Honda, is applied to the three-digit horsepower field of the first car, SAAB. And since HON is not a numeric data type, ALADIN responds with the message "invalid character".

This will occur whenever there is a mismatch between the data in the input source file and the definition of how the data is to be entered.

MAILING LABELS

Mailing labels can be easily produced by defining and generating a report that includes the name and address information from each record. This procedure would list the label information one line after another with either the report definition or the format definition describing the breaks between the separate records. You may have the need to print mailing labels two or three across a page. In this case you would direct the output of the simple report described above into a file. You would then use that file as data input to an ALADIN data base file that is nothing more than collection of address information similar to the screen form in Figure 4.1.

```
DB.MULTI-LABELS (Console:,Console:) (—)                    Data.Enter
  name1 _____ name2 _____ name3_____
  addr1 _____ addr2 _____ addr3_____
  state1 _____ state2 _____ state3_____
```

FIGURE 4.1

A new report definition could then be used to cause this file to print more than one label per record. Since this file is only used to print labels, the data in it can be discarded after use and regenerated when required. Of course, you would want to store the file description and report definition for later use.

UPDATING A DATA BASE FROM AN EXTERNAL FILE

We have seen above how to enter data from an external file, but suppose you want to update records that are already within your data base. You can do this through Data Change. The procedure is similar to entering data from an external file. You first must redefine the input source to be a file. When you select Change, you will be asked:

Data.Change: keyboard, file, ?

As with Data Enter you must answer File if you wish to continue with the process of updating from a file. Now a screen form will appear and as above, you must choose the correct fields, in the correct order, to match the contents of your input source file. The remainder of the process is also the same as for Data Enter. The difference is that as Data Change reads your input source file, it will, instead of entering new records, use the first data field within the input source file (which must correspond to a key field) to look up a record within your data base. If there is no record matching the value of that field, a warning message will be displayed and the remainder of that record will be ignored. If there is a match, the data from the input file will be transferred into the specified fields of the matching record. Old data in those fields will be destroyed. The data in other fields of that record, that is, data fields that do not correspond to anything in the input source file, will be unchanged. In this way it is possible to update only a few fields if you wish.

REMOVING FILES

Just as it is possible to selectively change records through input from an external file, it is also possible to selectively remove records in the same way. In this situation, the external file contains the names (primary key values) of records which will be removed.

Take the case where you have an external file containing the manufacturer and model names for the CAR data base and that file is used as an input source file for a Remove. ALADIN will use the manufacturer name as the key by which to locate a record for removal. The sequence of steps to effect this type of removal is exactly the same as for a Change or Enter.

V.5. The "Control" Functions

At any given time during the execution of ALADIN, there is on the screen either a "menu", which shows you a list of keys that will invoke various functions, or a "prompt line" which asks you to type something into the computer. But ALADIN also has some "special" commands that are called control functions. We call them "control," not just because they help you to "control" your ALADIN session, but also because of how they work: Each control function is activated by pressing the [ESC] key followed by the appropriate numeric key. The numeric keys will be designated by <0...9>. The correct procedure for the escape sequence is to press [ESC], **release it**, then press the numeric key. DO NOT HOLD THE [ESC] KEY DOWN WHILE PRESSING THE NUMERIC KEY. For example, to enact the escape sequence for Cancel, you would press [ESC], **then** [0].

The control functions are:

[ESC] [0] —Cancel any present procedure. Return to the Module Command Menu.

[ESC] [1] —HELP — Provide help information concerning the most recent menu.

[ESC] [2] —Set any of ALADIN's "software switches." There are a number of these "switches" that can be turned ON or OFF. ALADIN will display them, along with their current values, in a menu line:

Switch: 1IQ−, 2IQ−, 3DK+, 4DIR+, 5AP−, 6GL−, 7NOT+, 8SV+, 9INFO+, 0CALC−

As the switches are shown, the character " + " means "on" and " − " means "off." To change the state of a switch, press the number key that corresponds to that switch.

[ESC] [3] —"Jump" to another data file. This can be used either from a menu line within the Data Module or from a key field within a screen form. Note that if more data files exist than can be printed in a single menu line, ALADIN will show as many as it can. You can view the additional files by pressing [SPACE BAR].

[ESC] [4] —Return from the last "cross-over" to another file ([ESC] [3]).

[ESC] [5] —"Print." Copies the screen form to the current output device.

ESC 6 —Redefine the "Statistical Universe" if you are in the Statistics Module. (Refer to the section on the Statistics Module for more details.)

ESC 7 —Select the ALADIN input device. In this case, ALADIN will offer the choices:

Input Source: Keyboard, File, Script>

The normal way of entering information into ALADIN is through your terminal's keyboard, but you may have information saved in a disk file or script that you wish to use.

ESC 8 —Redirect the ALADIN output device. ALADIN will offer the choices:

Output Destination: Monitor, File, Script, Printer, ? >

This function allows you to choose whether ALADIN's reports and certain other output will be shown on your screen, saved in a disk file, a script, or printed.

ESC 9 —Set the "Contrast" between the forms that ALADIN uses and the data within the forms. This function can only be used on variable intensity screens.

The following control functions only apply in specific cases:

1) ESC 6 Evaluate — activate a calculation if one has been defined. This will modify the data in the current screen form, provided that the calculation has been defined on the current file.

2) ESC 1 "What" — when used in conjunction with a screen form, will list on the bottom line of the screen the data type of the field at the current cursor position.

3) ESC 7 "Add" — insert a blank character at the current cursor position within a field. The character under the cursor and all following characters move to the right one space. Applies only within screen forms.

4) ESC 8 "Delete" — delete the character at the current cursor position within a field. The character to the right of the cursor and the characters following it will move to the left one space. Applies only within screen forms.

5) ⌈ESC⌉ ⌈0⌉ or ⌈ESC⌉ ⌈ESC⌉ "Escape" — cancel the current operation. This applies within screen forms and during data processing, such as reading or writing files, or printing reports. It has no meaning at an ALADIN menu.

ALADIN VARIABLES (SOFTWARE SWITCHES)

As described above, there are a number of "software switches" built into the ALADIN system that you can use to tailor ALADIN to your particular requirements at any time. These switches, or Variables, may be set by first pressing ⌈ESC⌉ ⌈2⌉, and then the number that appears with the switch in the menu line. The switches and their meanings are presented below:

Switch: 1OQ − , 2IQ − , 3DK + , 4DIR + , 5AP − , 6GL − , 7NOT + , 8SV + , 9INFO + , 0CALC −

1:OQ — Output Query

Determines whether or not a Query is active while ALADIN is producing output from your Relational System. If this switch is OFF, then even if you have defined a Query, it **will** not be used as ALADIN produces output from your data base.

2:IQ — Input Query

Determines whether or not a Query is active when you are entering data into your Relational System. If this switch is ON and you have defined a Query, then any data that is entered must meet the QUERY selection criteria.

3:DK — Duplicate Keys

Controls whether or not ALADIN will allow you to enter multiple records with the same key values. For some applications, it may be necessary to have several records with the same key, but in other applications, this may be undesirable. Turning this variable ON implies that multiple records with the same key value are acceptable. When DK is OFF, ALADIN will prevent you from entering duplicate keys.

4:DIR — Direction of Sorting

You can control whether ALADIN sorts your data records in ascending or descending order through use of this switch. If the switch is ON, the records will be sorted in ascending order (the normal mode). Turning it OFF will cause them to be sorted in descending order.

It is also possible to change the DIR switch while you are within a screen form in the Data Module by pressing [ESC] [2]. You will, in this case, observe that the small arrow at the cursor position will reverse its direction. Pressing [ESC] [2] will toggle the direction, so that if it was forward it will become backward and vice versa.

5:AP — Absolute Positioning

Absolute positioning or blank filling is a directive for the cursor. With "AP + " each field will be displayed in reports with the actual length of the data in the field. No spaces will be displayed. The cursor will be positioned immediately after the last character. With "AP − " each field will be displayed in its full length including spaces. The cursor will be positioned after the last blank entered. Fields are filled with blanks in the Report Module.

6:GL — Global Switch

The global switch controls the use of global operations within the Data Module, specifically Data Remove and Data Change. For details on its use, please refer to the section "Performing Global Operations."

7:NOT — Enable NOT operator

The "NOT" controls the availability of the NOT operator in the construction of Queries. If the switch is ON, then NOT is available for use; otherwise, the NOT operator cannot be used.

8:SV — Save Record Now

To ensure against data loss, ALADIN normally saves a new or changed record as soon as you are finished with it. However, to save time on computers that have very slow floppy disks, you can turn this switch OFF. When OFF, records will not be saved immediately. Records will be saved periodically as your computer's input buffer gets full.

9:INFO — Information Switch

This switch controls the display of various lists, choices, etc. that you may define. When it is ON, they are shown automatically. When it is OFF, they will only be shown if you request it. While this makes little difference normally, it can be useful when your output is being sent to a disk file or to the printer.

0:CAL — Calculation Switch

The calculator switch controls whether or not a calculation will be applied automatically to global data operation. When the switch is OFF, calculations can only be applied by pressing the [ESC] [6] function, which effectively limits their use to interactive data manipulations. When the calculator switch is ON, interactive data manipulations continue to require the use of [ESC] [6], but global operations will now be affected automatically by the calculator. This switch is only relevant when a calculation has been defined.

V.6. Performing Global Operations

It is often the case when manipulating your data base that you wish to operate upon a group of records in the same way. For example, you may wish to remove all the records that were entered at a certain time. Or, you may wish to change a certain field in a portion of your records. Suppose you wanted to change all the records in the SPECS file of the CAR data base so that for cars costing more than $50,000 their prices would increase by 20%. You have seen how the Calculate Module can be used to define a calculation that would increase prices by 20% on a given car. You have also seen in the Query Module how to define a query that would select only cars costing more than $50,000. The missing piece here is knowing how to do all the cars that fit the query with only one procedure.

The "GL" (for GLobal) switch allows you to perform an operation, while in the Data Module, on **all** the records within files. These records would usually be the object of a single query and/or calculation combination. Normally the "GL" switch is "off" and the data module operations apply to only one record at a time. For example, once you have activated the query and calculation, as described above for updating the CAR.SPECS file, and have entered the Data Change Module, you could update records individually. This would require a sequence of several keystrokes. You must first move the cursor to a key field, say Manufacturer and press RETURN. ALADIN will then go through the data base and find all the records that match your query and will display the first one in the screen form. ALADIN then asks "Use this record?" to which you must answer Yes. Finally, to complete the change you must move the cursor off the bottom of the screen by hitting the down arrow twice. ALADIN responds by asking whether or not you really want to "Change the record in this way ?" to which you should answer Yes. This sequence of five keystrokes would have to be performed for each record to be changed. If your data base is large, this can become very time-consuming.

The global switch allows you to perform the entire update operation automatically. To enter the global operation mode, you must first set the "GL" switch; press ESC 2 to enter the switch-setting module, then press "6" to set the global switch. Now use the SPACE BAR to return to the Data Menu. At this point, when you select Change, you will be greeted with the message:

Do you want to (globally) change ALL such records? : Yes, No,?

If you answer No, then the change operation will behave as if the "GL" switch were not set. But if you answer Yes, ALADIN will automatically search through the data base and call up the first record that matches your query (i.e. the list price is greater than $50,000). The calculation will automatically be applied and you will be asked:

Change the record in this way ?: Yes, No

Whether you answer Yes or No, the process will continue until the data base is complete. Thus, you only have to press one key for each record changed, instead of five keys.

While this represents a considerable saving in time, you may not want to be prompted about whether or not to change each record. To suppress this prompting, you can change the Info switch. Press ESC 2 to enter the switch-setting module, then press "9" to change switch #9, the info switch. With info turned off and GL turned on you can select Change for Data Change. ALADIN, after asking

Do you want to (globally) change ALL such records?: Yes, No,?

will proceed with the process of changing your data base. For the first record found that matches your query, you will be asked

Change the record in this way?: Yes, No

If you answer Yes this first time, ALADIN will proceed with the operation and change all the records that match the query without asking again.

The global switch is thus a powerful tool for speeding up certain ALADIN operations. IT MUST BE USED WITH CAUTION, since, by using it, you can change a large number of records with a few keystrokes. So, you should be certain that the calculation is what you really want to do and that the query accurately selects the records you want changed.

While the global switch has no effect on the Data Enter or Data View Modules, it can be used in Data Remove in a manner very similar to that shown for Data Change. The only difference is that you would remove all records that matched your query (an even more sweeping move!).

V.7. Using Batch Scripts

ALADIN is designed to be an interactive system. This means that you "interact" with it as you use it. It asks you questions to which you respond. You give it commands to which it responds. And all of this interaction is shown on your computer screen step by step. This makes the system very easy to learn and use. There will be times, however, when you would like to preserve a sequence of ALADIN operations and run them as a "batch." That is, run them all at once without having to enter them one at a time. This is particularly true of routine activities that will be prepared by relatively unskilled operators.

ALADIN allows you to prepare in advance a "script" of operations which the ALADIN system can then perform all at once without inter-acting with an operator. The ability to prepare batch scripts puts you in the role of an author preparing a script which the players will act out.

Using ALADIN scripts can be considered to have two phases. In the first phase you prepare the batch script. In the second phase, ALADIN per-forms the script by following the instructions contained within it.

To prepare an ALADIN script, start at the ALADIN Command Menu and press ESC 8 to set the output destination. You will see on the bottom line of your screen:

Output destination: keyboard, file, script, printer, ?

To create a batch script, select Script. ALADIN will ask on the bottom line:

Output destination.script:enter file reference name

Enter the reference name followed with a RETURN by which you would like to refer to this script. For example, "JUNK" is a popular and easy reference name.

ALADIN will create a user file under the reference name that you give. As mentioned elsewhere in this manual, a user file is created by taking the reference name that you give, such as "JUNK" and putting an "X." in front of it. In this way "JUNK" will be saved on your disk as "X.JUNK". This allows ALADIN to recognize its own user files. If you want to create a script file that can later be read by a text editor or word processor then be sure to add the suffix ".TEXT" to the name. In our example, instead of typing "JUNK" you would type "JUNK.TEXT", and ALADIN would then create a file under the name "X.JUNK.TEXT".

If you specify a reference name that corresponds to an existing file, ALADIN will say:

File by that name exists. Remove it ?: Yes, No

ALADIN is telling you that a file has already been saved under that name and it wants to know whether you wish to remove this old file or not. If you say Yes, the old file will be removed. If you select No, the old file will be preserved and you will be back at the Command Menu again. This gives you a chance to try again with a new reference name.

When ALADIN has accepted your reference name you will see the symbol " − >" at the bottom of your screen. ALADIN is prompting you to begin entering your script. The ALADIN commands that you place within your script should follow the rules below:

1) Each command must be entered on a separate line.

2) Menu selections must be prefixed by a ".". For example, to enter the Report Module, your script file should contain the command ".R" or ".Report". Only the first letter of the selection is recognized as with ALADIN commands. The rest is ignored but is useful for remembering what you are typing.

3) Control functions can be entered by prefixing the letter with an exclamation mark ("!"). For example, "!7" means ESC 7 which allows you to change the input source.

4) When you enter a string such as a file reference name, enter it exactly as you normally would. Such strings require no prefix characters. For example, in this command script,

!7
.FILE
.JUNK

would mean the user file with the reference name JUNK.

Thus, there are really three different types of commands that can be part of your script: Menu selections, control functions and "strings."

5) Screen-oriented input cannot be entered from a batch file, since it would have little meaning. Therefore, you cannot enter the Data Module at all nor can you use Define within the other modules when ALADIN is running a batch script.

6) It is wise to always use the ALADIN Command Menu as a common starting and ending point for all your scripts. This is not required but it is very helpful to know that all scripts start and end at a certain point.

An example of a small batch script would be:

.Query

.Recall

Fast (this assumes you have saved a query under the name "Fast")

.Quit

.Report

.Yes (in answer to the question "activate Query?")

.Recall

List (this assumes you have a report saved under the the name "List")

.Generate

.Quit

This simple script will retrieve a query and generate a report using that query without operator intervention using files that have been saved on the disk. If such a report were to be generated regularly, it would be very convenient to set it up as a script in this way rather than perform a sequence of steps interactively each time the report is required.

When entering a batch script, you can tell ALADIN when you have finished by entering a blank line. In other words, instead of entering a command, if you press RETURN the output to a script file will cease.

To run this batch script, start at the ALADIN Command Menu and press ESC 7 to change the input source. ALADIN will ask:

Input source: keyboard,file, script, ?

If you select Script ALADIN will ask:

Input source.script: enter file reference name

Type the name under which you saved the batch script (e.g., "JUNK") followed by a RETURN. If the batch script file can be found, then ALADIN will immediately begin to execute the commands found in the script. The control will return to the interactive menus either when the script operation is completed or when an error occurs.

NOTE:

If an error occurs during script processing, be sure to switch the input source back to the keyboard using ESC 7 . This will ensure that there is no confusion.

VI. ALADIN Terminology & Concepts

In this section, we will present, with examples, some of the terminology and concepts fundamental to the ALADIN Relational Problem Solver.

Bootstrapping — The process of starting up the ALADIN software on your computer. This usually means inserting a disk and pressing a "reset" button.

Object — Something in the "real world" about which we wish to collect information. Objects can be cars, people, books, research experiments, etc.

Field — A single item of information that makes up part of what we want to know about an object. A field may be represented as a blank to be filled in on a form.

Form — A collection of information fields that describe an object. We create forms as a convenience to help standardize the kinds of information we collect about our objects. When a form has been filled out, we can say that we have a record for that object.

Record — A "filled-out" form. In other words, a number of data items that describe a particular object. A record differs from a form primarily in that a record is "filled-out" while a form is "empty."

File — A collection of similar records. This similarity is based on the records using the same form. Note that a file will typically consist of many different records, but only a single form. The records in a file should be ordered according to one or more of their fields, so that individual records are easy to retrieve. Fields that are used for this ordering are called key fields.

Key Field — An otherwise ordinary field within a form that is used for ordering the records that use that form. A particular record within a file can be found by "looking it up" according to a key field. ALADIN can perform this search automatically. Key fields can also be used to create relations between separate files.

Relation — A connection or "access path" between two or more separate files that share a key field. These files must be defined as part of the same relational system.

Relational System — A group of files that, together, can provide a solution to a real-world problem.

EXAMPLES:

In these examples, each line depicts a single record. The headers in the examples show you what the fields are. And an entire "box" represents a file.

Here is an example of a single file, showing multiple records, each of the same form:

Part-Nr	Part-Description	Supplier	Price	Stock	Order
F00123	Screws,SM, 0.5	ABC Tool	0.70	9000	30000
F12345	Nuts, 5-40	ABC Tool	0.23	5000	10000
X1220	Lag Bolts,1.00	Erf Mach	0.05	1000	2000
..	..	..	..	..	..
..	..	..	..	..	
				..	

The next examples depict the various kinds of relations or access paths that are possible between files within a Relational System.

1 : 1 - Relationship

1 : n - Relationship

n : 1 - Relationship

n : n - Relationship

"1 : 1" RELATIONSHIP

In this type of relationship between files, there is exactly one record in each of the files that has a particular key value. For most practical purposes, this is no different from having all the fields incorporated into a single record in a single file.

Part-Nr	Part-Desc	Supplier	...
F00123	Area X	XXXX	...
..	...	...	..

Part-NR	Mass	Unit	.....
F00123	7×3	Piece	.
..	...	...	...

"1 : n" RELATIONSHIP

A more useful case is the "1 to n" relationship. In this situation, a record having a unique key value in one file could lead to a number of records sharing that key value in another file. This could be used, say, to relate a particular article with all its distributors,

File: ARTICLE

Part-Nr	Part-Desc	...
F00224	resistor	...

File: SUPPLIER

Supplier	Address	Part-NR	...
ABC Elec	xxxxx	F00224	...
B	xxxxx	F00226	...
Chapin A	xxxxx	F00224	...
...			

"n : 1" RELATIONSHIP

The "n to 1" relationship describes the mirror-image of the "1 to n" case examined above. This time, there will be a number of records within a file that share a key value which leads to a single record in another file. An example would be an inventory file containing records of many articles, some of which come from the same supplier.

File: ARTICLE

Part-Nr	...	Supplier
F00123		XXX--+--+--
F00124	.	YYY
F00125	.	XXX --+--
F00126	.	XXX --+--
F00127	.	YYY

→

File: SUPPLIER

Supplier	Address	...
XXX	.	.
YYY	.	.
ZZZ	.	.
.		
.		

"n : n" RELATIONSHIP

In this most general case, we can see the "1 to n" and "n to 1" relationships combined. For example, in a real inventory system, each article could have several suppliers, and each supplier would be likely to supply many articles.

File: ARTICLE

Part-Nr	...	Supplier
12	.	X,Z
13	.	X,Y
14	.	Y,Z
15	.	X

File: SUPPLIER

Supplier	Part-Nr	...
X	12,13,15	.
Y	13,14	.
Z	12,14	.
.		
.		

Imagine the arrows tracing the connections between the two files.

VII. Errors

Oftentimes mistakes and disturbances will occur during the execution of your ALADIN program. The various types of mistakes are listed below.

1) Mistakes in operating the machine, for example:
   — trying to insert invalid data types.
   — trying to implement invalid operations.
   — incorrect or blank contents from definitions (defines) with the Query or Statistics Modules.

2) Mistakes in the logic of the data base definition, for example:
   — impractical interconnection of data files through key fields.
   — contradictory field definitions.

3) Incorrect system peripherals, for example:
   — wrong floppy disks.
   — printer not ready to receive.
   — disk data files not acceptable or not correctly named.
   — diskettes full.

4) Device and/or operating system disturbances.

5) Disturbances in the mass storage area (diskettes, disks, Bad-Blocks).

6) Errors in the program packet.

Device errors and computer operational system errors can be recognized this way — the system, after being turned on, doesn't perform in the same manner. Check to see if the correct diskettes are in place. If this is the case and the system still doesn't work, then use a substitute diskette for the operational system.

When error messages come from the computer's operational system, re-start the system.

A new start is also necessary when the system, after an input, isn't called up again and doesn't react when RETURN or SPACE BAR is pushed.

If the program, at the time of a system stop, is in the data insert routine, not all of the inserted data in the run is lost, because the system automatically transfers the data to the diskette. After restarting the system, check to see which input the system received.

Mistakes in operating the machine and mistaken data input are intercepted by ALADIN without an automatic system stop. In such cases the program brings a corresponding mistake call that first must be answered with [SPACE BAR]. After that, corrected input can be made.

EXECUTIVE PROGRAM ERROR MESSAGES

The following is a list of all the error messages, in alphabetical order, which can occur during execution of the ALADIN executive program. The very first response to any error should be to press [SPACE BAR]. Following the Executive program errors listing is a list of the errors that can occur in the Init program.

*** **Cannot find all the files for that relational system:** Be sure that your relational system is on the disk you have specified as your data and tree disk. See the opening pages of your Reference Guide for information regarding specifying data and tree disks. Press [SPACE BAR] to continue.

*** **Cannot find specified record:** ALADIN cannot find a data record that meets your specifications. Some possibilities and suggestions are: 1) The record you are looking for is not present. 2) You may be at the end of the data file. 3) If you have not tried using a wild-card or fragment search you may wish to try again using either or both. To continue, type [SPACE BAR].

*** **Data Base unusable: Implementation restriction:** You are working with a data base which is incompatible with the version of ALADIN that you are using. To correct this problem first type [SPACE BAR] to continue. Go to the ALADIN Init command menu and choose the Change option. Go through the Change Module **without** making any changes to your relational system. This process will correct the above problem.

*** **Fields Are Not Comparable:** You have tried to compare two fields which contain different data types. You have literally tried to compare apples with oranges. EXAMPLE: You can not compare Date Fields with Character Fields or Numeric Fields with Non-Numeric Fields. To continue, press [SPACE BAR].

*** **File Name is longer than 6 chars:** Six is maximum allowed. To continue, press [SPACE BAR].

*** **Finish up your definition, no more available memory:** You are trying to create a definition for a report, query, calculation, etc. and you have run out of available memory to save a definition of this size. The definition you have created is too large or too complicated.

*** **Input File cannot be opened:** ALADIN has been unable to open an input file for you. Please check the following possibilities: 1) The File is not on this disk or diskette. Make sure that you typed the correct name, and that you have the correct disk volume. (Use the "Info.files" Module to get a list of the files available.) 2) The File name contains invalid characters. Only the letters "A" — "Z", "0" — "9" and "." are allowed. 3) There is a problem reading the disk volume. To continue, type `SPACE BAR`.

*** **Input value out of bounds:** An Input Specification has been established using the Query Filter and the value you have entered is outside the allowable bounds. Suggestions: 1) Reenter the correct value. 2) Modify the input specification in the Query Module of ALADIN. 3) Turn OFF the Query Selection Filter software switch. Select option #2: Input Selection. Ensure that it is OFF (or " − ").

*** **Invalid Character:** 1) ALADIN recognizes assorted data types within data fields. The value you have typed into the system is not allowed. Only the following characters are valid.

Data Type	Valid Characters	Example
Numeric Fields	+ − 0..9	12, − 34
Dates	/ 0..9	1/1/82
Decimals	. + − 0..9	25.6
Sums	. , + − 0..9	1,200.34
Alpha-Numerics	'All Characters'	ab#2,9

2) You may also receive this error message if you try to insert data into a field at a time when only special characters are being requested: i.e. GROUPING, STATISTICS, etc.

RECOVERY: Type `SPACE BAR`

*** **Invalid Date:** You have tried to insert or update a Date field and the value you have typed is incorrect. The proper format for the date is: "Month/Day/Year." For example: "05/20/83" means "May 20, 1983."

*** **Invalid Decimal Number:** You have tried to insert or update a Decimal field and the value you have typed is incorrect. Ensure that you have not made any of the following errors: 1) More than one decimal point. 2) The sign is in the wrong place. 3) An incorrect number of spaces before or after the decimal point (i.e., 123.5676 when the value should be 12356.76 or 999.99 when the value should be 9.9999).

*** **Invalid "statistics" character:** While defining a Statistical Evaluation, you have the following characters available:

S: For single or one-dimensional evaluations position the cursor to the desired field and type "S".

H: For two or multidimensional evaluations position the cursor on the field to be used as the Horizontal axis and type "H", move to the next field to be used as the corresponding Vertical axis and type "V".

F: Evaluation of all further tables as frequency vector or matrix.

A: Calculation of sums, minimum, means, maximum and total mean for all further tables.

G: Group data in accordance with the Group Table.

U: Ungrouped: Do not use the Group Table.

Correct Input: S S S S H H H H V V V S S S H V H V H V V

Incorrect Input: S S V , S S H S V , S S X H V

*** **Invalid Sum or Money:**

You have made an insert or update in a Sum or Money field which is incorrect.

Ensure that you have not made any of these errors:

1. Misplaced Comma: i.e. 12,34,678.00

2. Misplaced Decimal: 123,467.878

3. Transpose Commas and Decimal Points: 123.456.456,00
   other errors:
   123.455,00   234,56   − 1000,00   − 1.000,00

CORRECT EXAMPLES:

→ 123.00   − 123.00   1,232.99   9,989,456.99

*** **Item not in current ALADIN file:** You have tried to use Fields in a form letter which are not available within the data base. Please check the following possibilities:

1) The Field Name is misspelled.

2) The Field does not exist within the data base.

3) You are currently in the wrong file within the data base.

*** **Multiple Data Records filed under this key:** The "DK" switch (or Duplicate Records software switch) is OFF (−) and you have tried to enter a record with the same key as an existing record. You must turn the "DK" switch ON (+) if you wish to do this.

*** **No blanks in numeric fields, please:** During the input or update of numeric fields or numeric dependent fields, you are not allowed to leave spaces between the numbers:

     EXAMPLE: 12 345 < − Not allowed   12345 < − Correct

*** **No change in active format (PRINTER active):** You have tried to create a format definition while output is directed to the printer. This cannot be done. Press SPACE BAR to continue.

*** **No Group Table:** You must provide ALADIN with the name of an active Group or Map Table prior to using the Tabulate Function.

*** **No memory for CONTROL Functions:** You have exceeded the available memory to continue: Press SPACE BAR to try this task again. Call the Control Function on the main menu line.

*** **No record has a key fitting your pattern:** You have searched for a record using "wild cards", and there is no record that fits the pattern you have specified.

*** **No Records meet Query criteria:** You have defined a Query selection for which there are no records to match.

*** **Not enough memory:** ALADIN has attempted to perform a task which requires more memory than your computer system has available. You may still be able to have ALADIN process the task by breaking it up into smaller segments. EXAMPLE: Run Selections or perform Statistical Evaluations in smaller groups. If your request must be this complex it will be necessary to increase the memory for your computer.

*** **Not enough memory for keys:** Your relational system requires more internal ("RAM") memory for key storage than is available on your computer. The system will not fail if this room is not available; however, a degradation in overall performance of the system may be noticed, and you may be unable to locate records within the database. You may be able to install more memory, otherwise you should re-configure your relational system with ALADIN-INIT. You should NOT enter more records into the system as this will only aggravate the problem.

*** **Not enough room left in Data file:** ALADIN cannot find enough free space within your Data file to store your records. You must enlarge the file using the ALADIN-INIT program.

*** **Not enough room left in Tree file:** ALADIN requires that there be at least 10 free blocks within your Tree file. You must enlarge the file using the ALADIN-INIT program.

*** **Number Too Large:** A maximum value for this numeric field has been fixed. This limit is checked during data input or updating. You have exceeded the established numeric limit. 1) Ensure that the input value is correct. 2) If a Query is active on input, and affects this field, you may need to turn off the IQ switch or modify the Query itself.

*** **Output File cannot be opened:** ALADIN has been unable to open an output file for you. Please check the following possibilities: 1) The File name contains invalid characters. Only the letters "A" — "Z", "0" — "9" and "." are allowed. 2) The File name contains too many characters. Enter a maximum of six (6) characters. 3) There is no more space in your disk volume. 4) There is a problem reading or writing your disk volume.

*** **Reference is for Wrong Data Type:** You can use a previously defined grouping on a field only if the two fields are of the same data type. For example: Group tables dealing with dates in one field can only be used for reference by fields which are also dates.

*** **Relational System Incompatibility:** You have tried to use a relational system from one computer system that is not compatible with the computer system you are now using.

*** The Database is full: There is no more room for records in this database. To enter more data you must increase the database capacity as described in the ALADIN Reference Guide.

*** The data record cannot be read: A data record cannot be accessed because it either does not exist or is already in use. Press `SPACE BAR` to continue.

*** The data record cannot be written: Your data file is full and you need to enlarge it before you can insert any new records. Press `SPACE BAR` to continue.

*** This field is not a key field: In order to be accessible through ALADIN's B Star Plus Trees, a field must have been defined as a Key Field. The field that you have selected is not such a field. NOTE: You may define a Query to assist you in finding the required record or records. This will take longer than using key fields, but it will work with **any** field or combination of fields.

*** This function is not allowed: The access rights to this function have been denied to this user. Press `SPACE BAR` to continue.

*** This function is not available: This function is not available for your particular implementation.

*** Too many Specifications: ALADIN has attempted to perform a task which requires more memory than your computer system has available. You may still be able to have ALADIN process the task by breaking it up into smaller segments: EXAMPLE: Run Selections or perform Statistical Evaluations in smaller groups. If your request must be this complex it will be necessary to increase the memory for your computer.

*** User Name/Password unrecognized: You have typed in a userid/ password combination which ALADIN cannot recognize. To continue, press `SPACE BAR`. Type in the correct ID and password.

*** Your keys need reorganizing: When you receive this error message, it means that your key file is beginning to get out of balance. Please refer to the Reference Guide for information on correcting this situation.

INIT PROGRAM ERROR MESSAGES

The following is a list all the error messages, in alphabetical order, which can occur during execution of ALADIN's Init program. When an error occurs, you always need to first press ⌷SPACE BAR⌷ to continue.

*** Files of these lengths exceed your free disk space: During the installation of your relational system, you have requested more disk space than is available on your disk. ALADIN will not be able to save your relational system if there is not enough free disk space.

*** Fix your screen layout: Fields interfere or Margins exceeded: This error occurs within the Screen Forms Editor if any of the fields are overlapping one another or if you have defined a character field to be 78 characters long and have not arranged it vertically on your screen. Fix your screen layout so that none of the fields overlap one another or are positioned beyond the screen boundary. Make sure that character fields with maximum length are positioned vertically on the screen.

*** Not enough disk blocks for this Relational System: You have tried to save a relational system for which there is not enough room on your disk. You should use another disk that contains more free disk space.

*** Not enough free disk space: You have tried to increase the size of your key or data files and there is not enough free disk space to do so.

*** No Relational System with that name exists: You have entered ALADIN's Init program and typed in a relational system name of a system that doesn't exist. You may continue by pressing ⌷SPACE BAR⌷.

*** Unauthorized User: You are not allowed to make changes: In order to make changes to your Relational System, you must be the data base administrator. The data base administrator's access rights to the system are the first to be defined when the system is installed.

*** Your disk seems to be full: You have defined the desired amount of disk space for your key and data files while installing your relational system but there is not enough free space on your disk to save these files.

Installation

<u>INIT</u>

DONE INSTAL CHANGE FORMS ACCESS FILE SRVICE

System

<u>MAIN MENU</u>

DONE DATA REPORT QUERY CALC GROUP STAT OTHERS SRVICE HELP

¶	¶	¶	¶	¶.	¶	¶
¶	¶	¶	¶	¶	¶	¶
.Aladin	.Aladin	.Aladin			.Aladin	¶
.Enter	.Define	.Define	same as		.Define	¶
.Change	.Save	.Save	for		.Save	¶
.Remove	.Recall	.Recall	Query		.Recall	¶
.View	.View	.View			.View	¶
.Srvice	.Generate	.Srvice			.Evaluate	¶
.HELP	.Srvice	.HELP			.Srvice	¶
	.HELP				.HELP	¶

WORD   INFO
              ¶
            .Aladin
            .Info
            .Map
            .Format
                    .Info
                    .Define
                    .Save
                    .Recall
                    .View
                    .HELP
            .Srvice
            .HELP

The Modular Structure of ALADIN

For more detailed information on commands, see the Quick
Reference Section of the ALADIN User Manual.

ENTER	CHANGE	REMOVE	VIEW	QUIT	?

PROMPTS	COMMENTS
1. Do you want to use your Query?:Yes,No	1. You may have the currently defined QUERY active while in the DATA Module.
2. Do you want to use Calculation?:Yes,No	2. You may have the currently defined CALCULATION active while in the DATA Module.
3. Data Enter:Keyboard,File,?	3. ALADIN can read in data from the keyboard or from a disk file.
4. Is your definition complete?:Yes,No	4. You may exit with the current definition or go back and change it.
5. Enter record in this way?:Yes,No	5. Is this how the record(s) are to be entered?
6. Data,Change:Keyboard,File,?	6. ALADIN can perform changes on existing records using data supplied from the keyboard or from a disk file.
7. Data.Remove:Keyboard,File,?	7. ALADIN can remove existing records using data supplied from the keyboard or from a disk file.
8. Remove record(s)?:Yes,No	8. Do you REALLY want to REMOVE this record?
9. Use this record?:Yes,No	9. Do you REALLY want to USE this record?
10. Do you want to (globally) change all such records?:Yes,No	10. ALADIN can perform this CHANGE on all records in this file if so desired.
11. Do you want to (globally) remove all such records?:Yes,No	11. ALADIN can REMOVE all of these records if so desired.
12. Change record in this way?:Yes,No	12. ALADIN will perform this CHANGE if so desired.

CANCEL	HELP	VARS	JUMP	BACK	PRINT	CALC
ESC 0	ESC 1	ESC 2	ESC 3	ESC 4	ESC 5	ESC 6

INPUT	OUTPUT	SORT
ESC 7	ESC 8	ESC 2

REPORT

DEFINE SAVE RECALL VIEW GENERATE FORMAT QUIT ?

PROMPTS	COMMENTS
1. Do you want to use your Query?:Yes,No	1. You may have the currently defined QUERY active while in the REPORT Module.
2. DoyouwanttouseyourCalculation?:Yes,No	2. You may have the currently defined CALCULATION active while in the REPORT Module.
3. Discard old definitions?:Yes,No	3. ALADIN will ignore the current REPORT definition if so desired.
4. Is your definition complete?:Yes,No	4. At this point, enter N)o if you would like to add more to your REPORT definition, OR enter Y)es to use the current definition.
5. Enter file reference name	5. Give the name with which ALADIN will store your REPORT definition.
6. File by that name exists.Remove it?: Yes,No	6. ALADIN has found a file which is named that already. You may destroy this old file or save it under a new name.
7. Activate current format?:Yes,No	7. You may choose to use the currently active PRINTER FORMAT when sending the report to the printer.

CANCEL	INFO	VARS	JUMP	BACK	INPUT	OUTPUT
ESC 0	ESC 1	ESC 2	ESC 3	ESC 4	ESC 7	ESC 8

SELECT
^

DEFINE	**SAVE**	**RECALL**

VIEW	**QUIT**	**?**
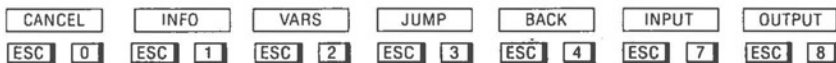
PROMPTS	COMMENTS
1. Discard old definition?:Yes.No	1. ALADIN will ignore the current QUERY definition if so desired.
2. Compare:1:Equal,2:Not Equal,3:Greater, 4:GtrorEql,5:Less,6:EqlOrLess	2. Choose the type of comparison to use with the current operand(s).
3. Compare:1:Equal,2:Not Equal,?	3. Choose the type of comparison to use with the current operand(s).
4. Connectors:1:And,2:Or,3:Xor,4:Not,?	4. Choose the type of connector to use between the current operand(s).
5. Connectors:1:And,2:Or,3:Xor,?	5. Choose the type of connector to use between the current operand(s).
6. Is your definition complete?:Yes,No,File	6. At this point, enter N)o if you would like to make additions to the definition, OR enter Y)es if you would like to use the current definition, OR enter F)ile to define a QUERY for another file.
7. Enter file reference name	7. Give the name with which ALADIN will store your QUERY definition.
8. File by that name exists.Remove it?: Yes,No	8. ALADIN has found a file which is named that already. You may destroy this old file or save it under a new name.
9. Extend definition?:Yes,No	9. ALADIN gives you the option of using a recalled QUERY definition as a completely new definition (discarding the current QUERY) OR of adding a recalled QUERY to the current definition.

CANCEL	HELP	VARS	JUMP	BACK	INPUT	OUTPUT
ESC 0	ESC 1	ESC 2	ESC 3	ESC 4	ESC 7	ESC 8

SELECT
^

CALC

DEFINE   SAVE   RECALL   VIEW   QUIT   ?

PROMPTS	COMMENTS
1. Discard old definition?:Yes,No	1. ALADIN will ignore the current CAL-CULATION if so desired.
2. Operation:1:Add,2:Subtract,3:Multiply, 4:Divide,<space>,?	2. Choose the operation to be performed on the current operand(s).
3. Operation:1:Add,2:Subtract,3:Multiply, 4:Divide,5:Store,<space>,?	3. Choose the operation to be performed on the current operand(s)
4. Is your definition complete?:Yes,No,File	4. At this point, enter N)o if you would like to make additions to the definition, OR enter Y)es if you would like to use the current definition, OR enter F)ile to define a CALCULATION for another file.
5. Enter file reference name	5. Give the name with which ALADIN will store your CALCULATION definition.
6. File by that name exists,Remove it?:Yes,No	6. ALADIN has found a file which is named that already. You may destroy this old file or save it under a new name.
7. Extend definition?:Yes,No	7. ALADIN gives you the option of using a recalled CALCULATION as a completely new definition (discarding the current CALCULATION) OR of adding a recalled CALCULATION to the current definition.

CANCEL	HELP	JUMP	BACK	OUTPUT	DEFER
ESC 0	ESC 1	ESC 3	ESC 4	ESC 8	SPACE
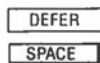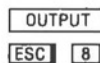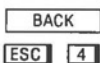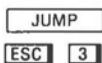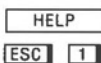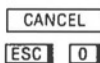
WORDPROC

PROMPT	COMMENTS
1. Do you want to use your Query?:Yes,No	1. You may have the currently defined QUERY active while in the WORD-PROC Module.
2. Do you want to use your Calculation?:Yes,No	2. You may have the currently defined CALCULATION active while in the WORDPROC Module.
3. Type space to continue:	3. Enter a <SPACE> to return to the main ALADIN Module.

CANCEL   PAUSE

ESC   0   SPACE

GROUP

DEFINE   SAVE   RECALL   VIEW   QUIT   ?

PROMPTS	COMMENTS
1. Discard old definition?:Yes,No	1. ALADIN will ignore the current GROUP definition if so desired.
2. Is your definition complete?:Yes,No	2. At this point, enter N)o if you would like to make additions to the definition, OR enter Y)es if you would like to use the current definition.
3. Enter file reference name.	3. Give the name with which ALADIN will store your GROUP definition.
4. File by that name exists.Remove it?:Yes,No	4. ALADIN has found a file which is named that already. You may destroy this old file or save it under a new name.
5. Save this new definition?:Yes,No	5. ALADIN is giving you the option of saving the GROUPTABLE which has just been defined, but not saved.

CANCEL	HELP	VARS	JUMP	BACK	INPUT	OUTPUT
ESC 0	ESC 1	ESC 2	ESC 3	ESC 4	ESC 7	ESC 8

SELECT
⌃

STAT

DEFINE | SAVE | RECALL | VIEW | EVALUATE | QUIT | ?

PROMPTS	COMMENTS
1. Do you want to use your Query?:Yes,No	1. You may have the currently defined QUERY active while in the STATISTICS Module.
2. Do you want to use your Calculation?:Yes,No	2. You may have the currently defined CALCULATION active while in the STATISTICS Module.
3. Discard old definition?:Yes,No	3. ALADIN will ignore the current STATISTICAL definition if so desired.
4. Is your definition complete?:Yes,No	4. At this point, enter N)o if you would like to make additions to your STATISTICAL definition, OR enter Y)es to use the current definition.
5. Enter file reference name	5. Give the name with which ALADIN will store your STATISTICAL definition.
6. File by that name exists.Remove it?:Yes,No	6. ALADIN has found a file which is named that already. You may destroy this old file or save it under a new name.
7. Grouptable:Enter file reference name	7. Enter the name of the GROUPTABLE to be used in the STATISTICAL EVALUATION.
8. Evaluate:Absolute,Percent,Graphics, Quit,?	8. ALADIN can represent the results of your STATISTICAL analysis(es) in three (3) forms: a table showing the frequency of items within each group; a table showing the actual percentage of items within each group; a histogram showing the percentage of items within each group.
9. Evaluate #>	9. This is the current STATISTICAL result being displayed.

10. Table Selection:Yes,No,? | 10. Enter Y)es to have ALADIN pause after each table is output, OR enter N)o to have them all done at once.

ACCUM	FREQ	GROUP	UGROUP	SINGLE	HORIZ	VERT
A	F	G	U	S	H	V

CANCEL	HELP	VARS	JUMP	BACK	UNIV	INPUT	OUTPUT
ESC 0	ESC 1	ESC 2	ESC 3	ESC 4	ESC 6	ESC 7	ESC 8

PROMPTS	COMMENTS
1. Files:Report,Query,Calc,Group, Stats,UserFiles,Format,Exit?	1. ALADIN will allow you to list all of the definitions and user files which have been created with this relational system. To do this enter the first letter of the corresponding item desired.
2. Do you want to remove some files?:Yes,No	2. ALADIN will allow you to delete any of these files listed if so desired.
3. Remove File —> <—?:Yes,No	3. Enter Y)es if you would like this file deleted, OR enter N)o if not.
4. Do you want to remove those files marked?:Yes,No	4. Enter Y)es if you would REALLY like to delete all of the files marked, OR enter N)o to cancel the operation.
5. Format:Define,Save,Recall,View	5. ALADIN allows you to Define, Save, etc. . . . different PRINTER FORMATS and make them currently active.
6. Is your definition complete?	6. At this point, enter N)o if you would like to change this PRINTER FORMAT, OR enter Y)es to use the definition.
7. Use this new FORMAT?:Yes,No	7. To make this new PRINTER FORMAT the currently active format, enter Y)es, OR enter N)o to keep the current format active.
8. Format.Save:Enter file reference name>	8. Give the name with which ALADIN will save your PRINTER FORMAT definition.
9. Format.Recall:Enter file reference name>	9. Give the name of the PRINTER FORMAT that you wish to recall.

CANCEL	HELP	VARS	INPUT	OUTPUT	PAUSE
ESC 0	ESC 1	ESC 2	ESC 7	ESC 8	SPACE

MISCELLANEOUS PROMPTS

COMMON PROMPTS	COMMENTS
1. Input source:Keyboard,File,Script?	1. ALADIN can receive data from three (3) sources: the keybaord, a disk file, or a SCRIPT file.
2. Output Destination:Screen,File,Script, Printer,?	2. ALADIN can send data to four (4) destinations: the screen, a disk file, a SCRIPT file, or the printer.
3. VARS 1:OQ?,2:IQ?,3:DK?,4:DIR?, 5:AP?,6:GL?,7:NOT?,8:SV?,9:INFO?, 0:CAL?	3. These are the current SOFTWARE SWITCH settings. To toggle a switch setting, just enter the corresponding number of the switch. Type <SPACE> to return to the command line.
4. Screen Forms:Bright,Normal,Dark?	4. If your terminal has different display intensities, then enter the intensity with which you wish to present all SCREEN FORMS.
5. Data:Bright,Normal,Dark,?	5. If your terminal has different display intensities, then enter the intensity with which you wish to present all DATA VALUES.
6. Help:Lastpage,Nextpage,Quit	6. While displaying HELP messages, you may enter L)astpage to see the previous HELP screen, N)extpage to see the following HELP screen, OR enter Q)uit to leave the HELP session.
7. Data1:File1,2:File2,3:File3...N:FileN	7. With the selected field, you may BRANCH to any of the files listed. Enter the corresponding number of the file for BRANCHING.
8. Field:1:<Field1>,2:<Field2>, 3:<Field3>...N:<FieldN>	8. With the selected field, you may BRANCH into this file using any of the fields listed as the KEY field. Enter the corresponding number of the field to be used.

INSTALL

| SCHEMA EDITOR | SCREEN FORMS | ACCESS RIGHTS |

PROMPTS	COMMENTS
1. No Relational System with that name exists	1. ALADIN cannot find an existing relational system with the specified name on the specified drive.
2. Enter name of file (max 16 chars)	2. ALADIN is prompting you for the names of the files which make up your relational system.
3. Please estimate the number of records in this file	3. This is the number of records that ALADIN will use in estimating the total storage required for this file.
4. Enter name of field (max 32 chars)	4. This is the title which will appear next to the actual field on the SCREEN FORM. Two (2) spaces = no title.
5. Enter number of times to repeat this item (max 31, default is once)	5. A field may be comprised of multiple data items of the same type and length.
6. Enter data type:Number (integer), Character, Term (date), Money, Decimal	6. A field must be declared as one (1) of these available types.
7. Enter length of field (max N12, C78,T8, M15,D157)	7. Each field must have a specified length. Caution: Certain field sizes are "permanent" and can be changed only by reinstallation.
8. Restrict access into this field?:P(rotected	8. Fields may be designated as "protected" so that you may define individual USER ACCESS RIGHTS to this field.
9. Do you want this to be a key field?:K(ey Field	9. Designate the field as a KEY field ONLY if you wish to sort, search, etc. . . . on this field.
10. Do you want this to be a "branching" field?:B(ranching field	10. Designate the field as a BRANCHING field if you wish to use the contents of this field as a key value to fetch a record from the same or another file in your system.
11. Enter the name of a file to which you want this field to branch.	11. You must specify all of the files to which this field will BRANCH.

12. Insert Item —> field <— in File —> Filename <—

12. You may have ALADIN insert this same field into the file being BRANCHED to.

13. Have you finished defining your ALADIN Relational System?

13. At this point, enter N)o if you would like to change part of your relational system definition, OR enter Y)es to continue to the next step of the installation process.

14. Number of disk blocks for data (##)>

14. ALADIN needs to know how large to make the DATA file.

15. Number of disk blocks for keys (##)>

15. ALADIN needs to know how large to make the TREE file.

NOTE:
Use much CAREFUL thought in allocating storage for the DATA and TREE files. Use the map displayed above for a "worst case" estimate of storage usage.

16. Create a document (textfile)?

16. ALADIN will create a text file containing a description of the relational system defined if so desired.

17. Create Pascal interface program?

17. If this relational system is to be used with the PROGRAM GENIE, then an interface must be created.

18. Generate Screen Forms?

18. You may continue on and define SCREEN FORMS and USER ACCESS RIGHTS, or just save the incomplete definition.

19. Do you want to save your Relational System?

19. You may now have ALADIN save your relational system definition.

CANCEL	SAVE	INSLIN	DELLIN	TOP	PROT	– HELP +
ESC 0	ESC 4	ESC 7	ESC 8	ESC 9	ESC 5	ESC 1

CONT
SPACE

CHANGE

| SCHEMA EDITOR | SCREEN FORMS | ACCESS RIGHTS |

PROMPTS	COMMENTS
1. Enter name of file (max 16 chars)	1. ALADIN is prompting you for the name of a new file in your relational system.
2. Please estimate the number of records in this file	2. This is the number of records that ALADIN will use in estimating the total storage required for this file.
3. Enter name of field (max 32 chars)	3. This is the title which will appear next to the actual field on the screen form. One (1) space = "Remove" this field from the screen form; two (2) spaces = no title.
4. Restrict access into this field?:P(rotected	4. Fields may be designated as "protected" so that you may define individual USER ACCESS RIGHTS to this field.
5. Do you want this to be a key field?:K(ey Field	5. Designate the field as a KEY field ONLY if you wish to sort, search, etc. . . . on this field.
6. Do you want this to be a "branching" field?:B(ranching field	6. Designate the field as a BRANCHING field if you wish to use the contents of this field as a key value to fetch a record from the same or another file in your system.
7. Enter the name of a file to which you want this field to branch.	7. You must specify all of the files to which this field will BRANCH.
8. Insert Item —> field <— in file —> filename <—	8. You may have ALADIN insert this same field into the file being BRANCHED to.
9. Have you finished defining your ALADIN Relational System?	9. At this point, enter N)o if you would like to change part of your relational system definition, OR enter Y)es to continue to the next step of the CHANGE process.
10. Create a document (text file)?	10. ALADIN will create a text file containing the description of the relational system defined if so desired.

11. Create Pascal interface program?

11. If the relational system is to be used with the PROGRAM GENIE, then an interface must be created.

12. Change screen forms?

12. You may continue on and change the SCREEN FORMS and USER ACCESS RIGHTS, or just save the incomplete definition.

13. Do you want to save your Relational System?

13. You may now have ALADIN save your relational system definition.

CANCEL	SAVE	INSLIN	DELLIN	TOP	PROT	– HELP +
ESC 0	ESC 4	ESC 7	ESC 8	ESC 9	ESC 5	ESC 1

FORMS

PROMPTS	COMMENTS
1. Change screen forms?	1. You may continue on and actually edit each SCREEN FORM if so desired.
2. Filename:Change screen forms?: Yes,No>	2. If you wish, you may edit the currently existing SCREEN FORM for this file.
3. Have you finished with this screen form?	3. At this point, enter N)o if you wish to make more changes to this SCREEN FORM, OR enter Y)es to use the current definition.
4. Save screen forms?	4. You may now save all of the changes to the SCREEN FORMS if so desired.
5. Display screen forms?	5. ALADIN can display each of the SCREEN FORMS as currently defined.
6. Number the Field Items to use with the Program Genie?	6. ALADIN can display the item number next to each field for ease of use with the PROGRAM GENIE.

CANCEL	LEFT	RIGHT	UP	DOWN	LINE	SETUP
ESC 0	L	R	U	D	RETURN	S
	PAGE	NEWLIN	HORIZ	VERT	SCREEN	
	P	N	H	V	ESC 9	

ACCESS

PROMPTS	COMMENTS
1. Userid>	1. Enter the name of the USER to be defined.
2. Passwd>	2. Enter the password for this USER.
3. Userid: ADI, Passwd:ADI Save?: Yes,No>	3. Would you like to save this USER?
4. Access Rights:filename	4. This is the file to which ACCESS RIGHTS are being established.
5. Input Source:Keyboard,File,Script?>	5–12. In the prompts following, type the first letter of the item to **restrict** access to that module or option while using this file. Press <RETURN> to grant **full access** to each item.
6. OutputDestination:Monitor,File,Script, Printer,?>	
7. ALADIN:Data,Report,Query,Calc,Word-Proc,Group,Stats,Info,Exit,?	
8. DATA:Enter,Change,Remove,View, Quit,?>	
9. Query:Define,Save,Recall,View,Quit,?>	
10. VARS:1:OQ?,2:IQ?,3:DK?,4:DIR?, 5:AP?,6:GL?,7:NOT?,8:SV?,9:INFO?, 0:CAL?>	
11. .CTRL Keys:Input,Output,Xover,Tabu-late,Vars,What,Print,<esc> >	
12. Fieldname:Read,Write,Update>	

DISK

PROMPTS	COMMENTS
1. Change storage allocation for keys?	1. ALADIN will allow you to change the current storage allocation for the TREE file.
2. Number of disk blocks for keys>	2. Enter the new size (in 512-byte blocks) of the TREE file.
3. Change storage allocation for data?	3. ALADIN will allow you to change the current storage allocation for the DATA file.
4. Number of disk blocks for data>	4. Enter the new size (in 512-byte blocks) of the DATA file.
5. Do you want to reorganize your Relational System?	5. You may tell ALADIN to "rebuild" the data structures in your relational system next time that it is used. This is necessary ONLY if you know that the relational system has been corrupted (due to power failure, hardware failure, etc. . . .).
6. Do you want to compress your Data File?	6. One option in reorganization is to compress the DATA file. This means to check each data record for validity and deleting all invalid records, and to eliminate all unused "holes" in the DATA file. After compression, the TREE file is always rebuilt.
7. Do you want to rebuild your Tree File?	7. Another option in reorganization is to just reconstruct the TREE file. ALADIN will rebuild each tree for every key in your relational system using all valid records read from the DATA file.

| CONT | HELP |
| SPACE | ESC   1 |

QUICK REFERENCE

The commands below are arranged in hierarchical form. In order to complete most **ALADIN** processes, a combination of steps must be followed. The processes and keystrokes are arranged according to the modules in which they appear.

FORMAT NOTATION:

Boldface and CAPS	a keystroke or soft key
{sequence}	a process from another module
\<variable\>	a name or value

SYSTEM MODULES

Module Name and Features	Keystrokes
DATA	
ENTER:	
Cursor control	**\<-- --\> HOME END**
Enter a field	\<value\> or \<chars\> and/or \<wildcards\>
Redirect input	refer DATA.SERVICE
Use a predefined query	{**QUERY RECALL** \<filename\> **ALADIN**}
Use a predefined calculation	{**CALC RECALL** \<filename\> **ALADIN**}
Turn calculation on/off	refer DATA.SERVICE
Perform a calculation	**CALC**
Delete a character	**DEL UP-ARROW** {ESC 8}
Insert a character	**INS DOWN-ARROW** {ESC 7}
Recall a predefined record	\ **RETURN**
Activate a global operation	refer DATA.SERVICE
Duplicate Keys on/off	refer DATA.SERVICE
Save Records Now on/off	refer DATA.SERVICE
Print the screen	**PRINT**
CHANGE:	
Cursor control	**\<-- --\> HOME END**
Change or update a field	\<value\> or \<chars\> and/or \<wildcards\>
Use a predefined query	{**QUERY RECALL** \<filename\> **ALADIN**}
Use a predefined calculation	{**CALC RECALL** \<filename\> **ALADIN**}
Turn calculation on/off	refer DATA.SERVICE
Perform a calculation	**CALC**
Delete a character	**DEL UP-ARROW** {ESC 8}
Insert a character	**INS DOWN-ARROW** {ESC 7}
Activate a global operation	refer DATA.SERVICE

REMOVE:

Cursor control	<-- --> **HOME END**
Select a record for deletion	\<keyvalue\> and/or \<wildcards\>
Use a predefined query	{**QUERY RECALL** \<filename\> **ALADIN**}
Activate a global operation	refer DATA.SERVICE

VIEW:

Cursor control	<-- --> **HOME END**
Select a record for viewing	\<value\> or \<chars\> and/or \<wildcards\>
Change Sort Direction	refer DATA.SERVICE

SERVICE:

Redirect input to console	**INPUT CON**
Redirect input to disk	**INPUT FILE** \<filename\>
Redirect output to console	**OUTPUT CON**
Redirect output to disk	**OUTPUT FILE** \<filename\>
Redirect output to printer	**OUTPUT PRN**

Software Switches: (**VARS**)	
Output query on/off	**1 OQ**
Input query on/off	**2 IQ**
Duplicate keys on/off	**3 DK**
Sort Direction:	
ascending order	**4 DIR+**
descending order	**4 DIR−**
Absolute position on/off	**5 AP**
Perform global operation	**6 GL+ 9 INFO−**
NOT connector on/off	**7 NOT**
Immediate save on/off	**8 SV**
Data entry prompts on/off	**9 INFO**
Calculation on/off	**0 CAL**
Leave switch line	**SPACE BAR**

QUIT:

Leave Data Module	**ALADIN**

REPORT

DEFINE:

Cursor control	<-- --> **HOME END**
Field information	**FIELD**
Select a report item	**SELECT**
Specify the sort key	**SORT**
Specify totalling	**SUM**

Specify sub-total level	**SORT SPACE BAR**
Turn on absolute positioning	refer DATA.SERVICE
Access the next report line	**RETURN**
Specify double spacing	**RETURN RETURN** between each line
Jump (on key field)	**JUMP**
Define printer specifications	{**INFO FORMAT**}

SAVE:

Save a report definition	**SAVE** <filename>

RECALL:

Recall a previously saved report	**RECALL** <filename>

VIEW:

Display current report definition	**VIEW**

GENERATE:

Produce the defined report	**GENER**
Use a predefined query	{**QUERY RECALL** <filename> **ALADIN**}
Use a predefined calculation	{**CALC RECALL** <filename> **ALADIN**}
Redirect output	refer DATA.SERVICE

SERVICE: refer DATA.SERVICE

QUIT:

Leave Report Module	**ALADIN**

QUERY

DEFINE:

Cursor control	<-- --> **HOME END**
Enter query values	<value> or <chars> and/or <wildcards>
Comparison options	= <> > >= < <=
Logical operators	*OR AND NOT XOR*
Jump (on key field)	refer DATA.SERVICE
Turn NOT connector on/off	refer DATA.SERVICE
Select fields for comparison	**SELECT**

SAVE:

Save a query definition	**SAVE** <filename>

RECALL:

Recall a saved query	**RECALL** \<filename\>
Combine query definitions	**RECALL EXTEND** \<filename\>

VIEW:

Display the current query	**VIEW**

QUIT:

Leave Query Module	**ALADIN**
SERVICE	refer DATA.SERVICE

CALC

DEFINE:

Cursor control	\<-- --\> **HOME END**
Selects a field	**SELECT**
Enter a value	\<value\> or \<chars\>
Calculate options	**DEFER ADD SUBT MULT DIVIDE**

SAVE:

Save a calc definition	**SAVE** \<filename\>

RECALL:

Recall a saved calc	**RECALL** \<filename\>
Combine calc definitions	**RECALL EXTEND** \<filename\>

VIEW:

Display the current calc	**VIEW**
SERVICE:	refer DATA.SERVICE

QUIT:

Leave Calc Module	**ALADIN**

WORDPROC

Select a word processing file	\<filename\>
Use a predefined query	{**QUERY RECALL** \<filename\> **ALADIN**}
Use a predefined calculation	{**CALC RECALL** \<filename\> **ALADIN**}
Redirect output	refer DATA.SERVICE

QR32

W/P FILE ATTRIBUTES

Accesses a data item	@field_name@
Specify the sort key	@!field_name@
Allows entry from keyboard	@?reference_name@
Stops process between forms	! (on separate line, column 1)

GROUP

DEFINE:

Cursor control	<-- --> **HOME END**
Selects a field for grouping	**SELECT**
Enter group values	<value> or <chars>
End a group level	<--
End a grouping	<--
Share a prior grouping	**SETREF**
Reference a prior grouping	**REFER**
Display field grouping	**VIEW**

SAVE:

Save a group definition   **SAVE** <filename>

RECALL:

Recall a saved group	**RECALL** <filename>
Combine group definitions	**RECALL EXTEND** <filename>

VIEW:

Display the current group   **VIEW**

SERVICE: refer DATA.SERVICE

QUIT:

Leave Group Module   **ALADIN**

STATS

DEFINE:

Cursor control	<-- --> **HOME END**
Field information	**FIELD**
Define a vector analysis	**SINGLE**
Define a matrix analysis	
Horizontal (Y-axis)	**HORIZ**
Vertical (X-axis)	**VERT**

Analysis specifications:

Grouped	**GROUP**
Ungrouped	**UGROUP**
Accumulation	**ACCUM**
Frequency	**FREQU**

SAVE:

Save a Stat definition	**SAVE** <filename>

RECALL:

Recall a Stat definition	**RECALL** <filename>

VIEW:

Display the current Stat	**VIEW** (Use before **EVAL**)

EVALUATE:

Reference a group definition	<filename>
Analysis display options:	
Absolute	**ABS**
Percentage	**PRCENT**
Graph	**GRAPH**
Next evaluation	**NEXT**
Previous evaluation	**PREV**
Redirect output	refer DATA.SERVICE
Redefine the stat universe	**UNIV**

SERVICE:	refer DATA.SERVICE

QUIT:

Leave Statistics Module	**ALADIN**

INFO

INFO:

Display storage alloc. info	**INFO**

MAP:

List file, key, branch info	**MAP**

PRINTER FORMAT:

Access printer formats	**FORMAT**
Define a format definition	**DEFINE**

Save a format definition	**SAVE**
Recall a format definition	**RECALL**
View a format definition	**VIEW**
Exit Printer Format Module	**INFO**

SERVICE: refer DATA.SERVICE

QUIT:

Leave Info Module   **ALADIN**

INSTALLATION MODULES

Module Name and Features	Keystrokes

INSTALL

Help on/off	**HELP**
Cursor control	**<-- --> HOME END**
Specify a DB name	\<max 6 chars>
Specify an ALADIN file name	\<max 16 chars>
Specify records per file	\<max 32,759 records/file>
Specify a field name	\<max 32 chars>
Choose field occurrence	\<max 31 repetitions>
Choose field type:	
Numeric	**N**
Integer	**I**
Long interger	**L**
Character	**C**
Term (date)	**T**
Money	**M**
Decimal	**D**
Choose field length:	
Numeric, Integer	\<max 4>
Long integer	\<max 12>
Character	\<max 78>
Term	\<max 8>
Money	\<max 15>
Decimal (totlength,decplaces)	\<max 15, max 7>
Specify a protected field	**P**
Specify a key field	**K**
Specify a branching field	**B**
Specify a file for branching	\<filename>
Specify Data storage allocation	\<# of blocks>
Specify Key storage allocation	\<# of blocks>
Screen Forms generation	refer SCREEN FORMS
Security Restrictions	refer ACCESS

CHANGE

Add a new file	\<file name max 16 chars>
Add a new field	\<field name max 32 chars>
Change a field name	\<field name max 32 chars>
Access field modifiers	**P or K or B**
Change screen forms	refer SCREEN FORMS
Add a field	**INSLIN**
Delete a field just added	**DELLIN**

SCREEN FORMS

Field movement:	
Up	\<optional # prefix> **U** or **UP**
Down	\<optional # prefix> **D** or **DOWN**
Right	\<optional # prefix> **R** or **RIGHT**
Left	\<optional # prefix> **L** or **LEFT**
Repaint screen	**SCREEN** or **RETURN** twice
Title/field relationship:	
Horizontal	**H** or **HORIZ**
Vertical	**V** or **VERT**
Screen set-up access	**S** or **SETUP**
Screen parameters:	
Y-max	\<total screen cols> or **SPACE BAR**
X-max	\<total screen rows> or **SPACE BAR**
Y-rel	\<cols between fields> or **SPACE BAR**
X-rel	\<rows between fields> or **SPACE BAR**
Dist	\<distance between title and field> or **SPACE BAR**
Access next screen page	**P** or **PAGE**
Select a new line	**N** or **LINE**

ACCESS

Enter a UserID	\<max 6 chars>
Enter a User Password	\<max 6 chars>
Grant access	**RETURN**
Deny access	\<selection>

FILE

Change Data storage allocation	\<# of blocks>
Change Key storage allocation	\<# of blocks>
Access reorganization utility	**Y** or **N**
Access data compression utility	**Y** or **N**

SERVICE

Redirect input to console	**INPUT CON**
Redirect input to disk	**INPUT FILE** \<filename\>
Redirect output to console	**OUTPUT CON**
Redirect output to disk	**OUTPUT FILE** \<filename\>
Redirect output to printer	**OUTPUT PRN**

CONTROL FUNCTIONS

(ESC Sequences can be used instead of function keys)

ESC 1   Provides useful field or system information.
ESC 2   Change software switches.
ESC 3   Jump or cross over to another file.
ESC 4   Jump back to previous data file before crossover.
ESC 5   Copy screen to output device.
ESC 6   Activate a calculation. In statistics module, redefines the statistical
            universe.
ESC 7   Redefine input source.
ESC 8   Redirect output to device or file.
ESC 9   Control screen contrast between forms and data.

In addition, the following commands can be used within the **CHANGE** module:
ESC 7   Add a field.
ESC 8   Delete a field just added.
ESC 0   Cancel current operation.

Within a screen mask, the following commands may be used:
ESC 7   Add or insert a character within a field.
ESC 8   Delete a character.
ESC 0   Cancel current operation.

INDEX

ITEM