VISIFILE™

FLEXIBLE, EASY TO USE ELECTRONIC FILING

VISICORP™

VISIFILE™

FLEXIBLE, EASY TO USE ELECTRONIC FILING

User's Guide
for the IBM® Personal Computer

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VISICORP™

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PREFACE

   This manual describes the use of the VisiFile™ program for the IBM®
Personal Computer.

   Chapter One is an introduction that describes the VisiFile program
and what it does. This chapter contains several short exercises that
introduce you to the general aspects of program use.

   Chapters Two through Twelve describe the program functions in
detail.

   Appendix A details the computer requirements needed to use the
program.

   Appendix B describes the care of disks for those users who have not
previously used floppy disks.

   Appendix C describes the IBM Personal Computer keyboard and the
function of special keys within the VisiFile program.

   Appendix D lists the printers that have been tested with the program.

   Appendix E lists the informational and error messages that the pro-
gram issues and offers help in recovering from the error conditions.

   Appendix F describes the VisiFile file formats.

   Appendix G lists the program specifications and limits.

   Appendix H shows the VisiFile menu structure.

VISIFILE USER'S GROUP

   The VisiFile User's Group distributes a bulletin containing useful
information for the VisiFile user. It is a means of finding out what other
users are doing and passing your ideas on to them. For more information,
contact:

   Creative Computer Applications
   Editor, IBM VisiFile User's Group
   P.O. Box 7074
   Nashua, NH 03061

INTRODUCTION

The VisiFile program is a powerful and flexible information manage-
ment system that dramatically improves your business and personal
record keeping. This program organizes, stores, and retrieves informa-
tion, much as you might do with a paper filing system. But the VisiFile
program does it more efficiently, more conveniently, more accurately,
and less expensively than your old paper files. Moreover, the program
lets you modify, index, do calculations, and create and print reports of
the information in your records. With paper files, these tasks often
require a clerical staff, a mountain of paper, expensive filing cabinets,
and much patience.

SETTING UP

If you are using your IBM Personal Computer for the first time, follow
the instructions on how to set it up in "Section 2. Setup" of the IBM *Guide
to Operations* manual.

If you have any trouble at any point in the computer set up, see your
dealer. Do not try to load the VisiFile program until your computer
is operational; a problem in the computer could damage the pro-
gram disks.

The VisiFile program comes on the numbered disks in the plastic
holder at the back of this manual. You always load the program from disk
Number 1. The program issues messages telling you when to insert the
other disks.

STORAGE CONCEPTS AND MEDIA

The VisiFile program creates and operates on stored information. To
understand the program you must understand how information is stored.
Figure 1-1 defines and shows the relationships between *field*, *record*,
file, and *disk*. Learning and using a data management program is much
easier when you understand these concepts. You will put your individual
pieces of information into fields which are parts of a record. Related
records comprise a file, which are the units stored on disks.

Field: A Basic Unit
          of Information

Zip Code	94303

Record: A Collection of
          Related Fields

Name	Richard Edwin
Address	820 Birchard
City	Palo Alto
State	CA
Zip Code	94303

File: A Collection of
          Records

Disk: A Physical Device
          For Storing Files
          as Magnetic Codes
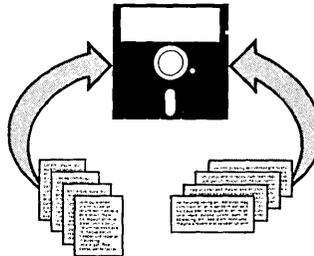
016-001

Figure 1-1. Fields, Records, Files, and Disks

GETTING STARTED

Within a short time, you can learn how to create and modify your own information files. You start all VisiFile functions from the Main menu. From this menu you define, maintain, and index information in your filing system. It is also the entry point to all the support functions such as printing reports, copying files, and transferring information to other programs.

Define	Maintain	Index	Print	Support Menus
Create Data Structure and Define Data Types	Enter, Examine, and Modify Data	Establish Sequences for Processing Data	Define Report Formats and Print Reports	Provides Misc. Support Functions
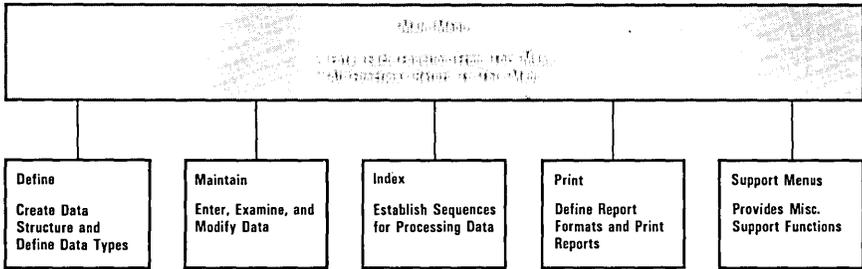
016-002

Figure 1-2. The Major Program Functions

Before you can enter and use data, you must define the structure of your information. With the DEFINE option, you name the data fields, specify their size, the kind of data they will contain, and a protection level.

After you define the structure, you can enter, change, and search for information with the MAINTAIN option. You can modify your information to meet changing conditions and search for records to retrieve specific information.

You can change the sequence in which your data is processed with the INDEX option. For example, you can list sales prospects by zip code, account code, or by any category you choose.

You can print customized reports, mailing labels, and form-letters with the PRINT option. You can format each to suit your needs.

Now that you have a brief overview of the Main menu, you can use some of the options. The following instructions show a few of the important VisiFile program capabilities of the MAINTAIN, INDEX, and PRINT options. You do not have to define a structure; the program supplies a structure for you. You learn how to define your own structure in Chapter 2. You are not going to learn all the details now. Here you see how quickly and easily you can get started using the program for your own purposes. The following chapters contain detailed explanations of these functions.

The following instructions direct you to press several of the special keys on your computer keyboard. Figure 1-3 shows where these keys are on the keyboard.
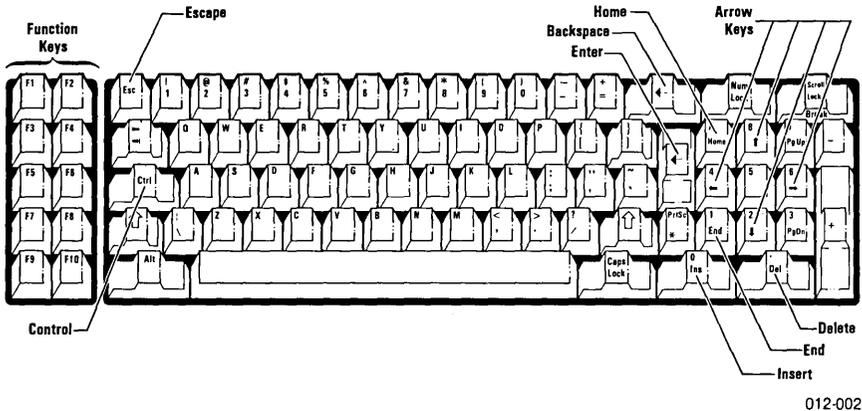
Figure 1-3. The IBM Personal Computer Keyboard

Before You Begin

The following exercises use sample data files on your VisiFile Program Disk #3. Before you get started with the exercises, you must copy these data files to a IBM DOS formatted disk.

1. Put your IBM DOS 1.1 (or higher) disk into Drive A (the left one) and turn on the power switch (on the right side of the computer). It may take more than one minute before the computer loads the program.

2. Enter today's date and the time in the form shown—use hyphens for the date and a colon for the time. Press the ↵ key after each. The computer tells you the IBM DOS program is loaded. The last line is the A>.

3. Put your blank disk into Drive B. Type **format b:** and press the ↵ key. When the disk is formatted, press the N key to return to DOS. This disk is your data disk.

4. Keep the data disk in Drive B. Remove the DOS disk from Drive A and replace it with Program Disk #3. Type **copy vf0*.* b:** and press ↵ to copy the sample data to your data disk.

You should make your VisiFile Program Disk #1 self-loading. This is an operation that you have to do only once. The following procedure makes the VisiFile program self-loading:

1. Put your IBM DOS 1.1 disk into Drive A.

2. Remove the file protect tab from VisiFile Program Disk #1 and insert the disk into Drive B.

1-4

3. Enter **sys b:** to copy the necessary parts of IBM DOS to the program disk.

4. Enter **copy command.com b:** to copy the DOS command file to the program disk.

5. Enter **copy basic.com b:** to copy the Basic program to the program disk. *Do not copy Basica.com, your VisiFile program will not operate with the Basica.com file.*

6. Remove Program Disk #1 from Drive B.

7. Remove the IBM DOS 1.1 disk from Drive A and put the VisiFile Program Disk #1 in that drive. Insert your data disk into Drive B. Replace the write-protect tab on the program disk when the program prompts you to do so. Continue with the next section.

To Load the Program

1. Put Program Disk #1 into Drive A, and turn on the power switch. If the computer is already turned on and the DOS prompt (>A) is displayed, type **autoexec** and press the ↵ key. It may take more than one minute before the computer loads the program.

2. Enter today's date and the time in the forms shown—use hyphens in the date and a colon in the time. Press the ↵ key after each. If the date and time are correct, just press the ↵ key twice. The program displays the VisiFile Main menu shown in Figure 1-4.
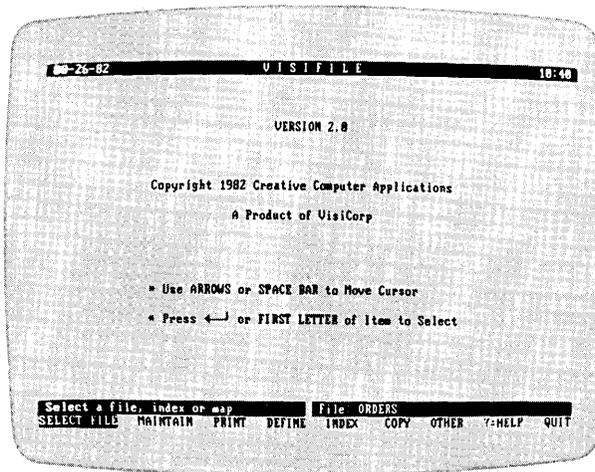
016-001/P

Figure 1-4. The VisiFile Main Menu

To Get Help

The VisiFile program contains a help option in the Main menu that lists the use of the special purpose keys. You can display this list anytime the Main menu is displayed.

With the arrow keys, move the cursor to ? = HELP, and press the ↵ key. The key list stays on the screen until you select another option.

To Use a Menu and Select an Option

A VisiFile menu is not unlike a restaurant menu. It lists what is available and you make a selection from it. The menu contains a cursor which is the reverse video area. You can move the cursor from menu option to menu option.

1. The → and ← keys move the cursor to the right and left in the menu. Move the cursor back and forth in the menu. Watch the long prompt as you move the cursor; it gives a longer description of each menu option. Move the cursor to SELECT-FILE, and press the ↵ key.

2. The SELECT-FILE option gives you four options. For now, only two of them are of interest: FILE selects a file for use and QUIT returns you to where you started, the Main menu. Move the cursor to FILE and press the ↵ key.

3. The program erases the screen and redraws it. During this sequence, the program selected the only data file on the data disk. If there were two or more data files on the disk, the program would have displayed a list of their names. You could then move the cursor to the name of the desired file and press the ↵ key. ORDERS, the name of the only file on the data disk, is now the current file. Until you change the current file, all work is done on or with this file.

   NOTE: When you delete any file, you may want to use SELECT-FILE again, because the program changes the current file to be the *first* file in the list of files.

   When a list is displayed, the ↑ and ↓ keys can move the cursor from name to name. The bottom name on the list is always [NONE]. Selecting [NONE] does not change the currently selected file.

4. Move the cursor to QUIT, and press the ↵ key. The program again displays the Main menu and waits for you to select another option.

   In this exercise you learned:

- How to move the cursor in a menu and select an option.
- How to move the cursor in a list and select an item.
- How to select a file.
- The [NONE] item, when present, selects nothing from a list.
- The QUIT option, when present, is the return route to the previous menu.

To Inspect a Data File

Among the more important things a data management system does is let you enter and change data. The MAINTAIN option in the Main menu lets you do these things (and more). Usually the first step in maintaining a data file is finding out what information you have stored.

1. Press the M (or m) key. The cursor moves to MAINTAIN and selects the option. The quick way to select a menu option is to type the first letter of the option name. This is equivalent to moving the cursor to the option name with the arrow keys and pressing the ↵ key. This method also works when you select an item from a list. If there are several list items that begin with the same letter, the program selects the first one encountered. If you want the second item, use the arrow and ↵ keys to select the item. This is only true in lists, all menu options begin with a different letter.

2. The program beeps and stops. In the lower-right corner, the message tells you to Insert Program Disk #2 in Drive A. After the red light on the drive goes out, remove Program Disk #1 from Drive A and replace it with Disk #2. Close the drive door and press the ↵ key.

3. The program displays the File Maintenance screen as shown in Figure 1-5.
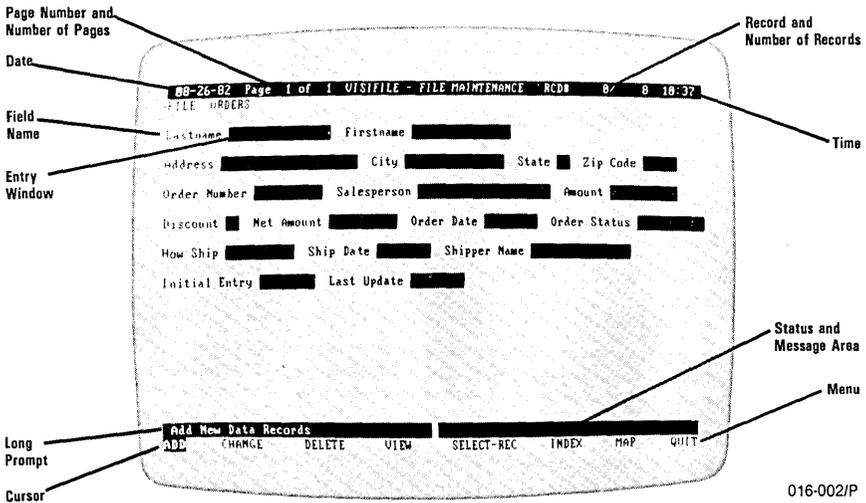
Figure 1-5. The File Maintenance Display

4. VIEW lets you display the contents of a record. The data is placed in the entry windows following each field name. Press the V key to select VIEW.

5. When the program asks you to Enter Record Number, type 1, and press the ↵ key. The records in the data file are numbered by the program, beginning with 1 and continuing sequentially through the number of records (which is listed near the upper-right corner on the screen). The program displays the contents of record number 1.

6. Select the VIEW option as often as you want, and inspect other records in the file.

In this exercise you learned:

- How the program issues messages to you. Where to look for the messages—in the lower-right corner of the screen, in the banner above the menu.

- How to recognize when to change disks. Screen messages will tell you when to change disks.

- How to save time by using the quick way to select an option or item.

- What the File Maintenance display looks like and what it contains.

To Add a Record

The VisiFile program adds records to the end of a file and gives each new record a record number one greater than the last record number.

1. Press the A key to select ADD. The program displays a screen with several blank entry windows. Some fields contain a zero and the last two contain a date. The menu at the bottom of the screen is replaced with six items in the form:

F4 = Accept

These items describe the purpose of the function keys. If the file extends beyond the screen (this one does not) the F1 and F2 keys let you switch between screens. F3 cancels the new record. F4 accepts it (stores it on the data disk). F5 and F6 are explained in the following chapters.

2. Type your last name in the field labeled Lastname. Fill in the remaining name and address fields.

Certain fields accept only certain kinds of data. A field with a zero in it is a numeric field. A numeric field can only hold numbers, a single decimal point, and a leading minus sign (−). A field with a decimal

point and two zeros is a special kind of numeric field, called a dollars-and-cents field, that automatically displays numbers with two decimal places. For example, if you enter 123 the program displays it as 123.00.

A date field can hold only dates in the form mm-dd-yy. Hyphens or slashes are required. It is not necessary to enter leading zeros; the program puts them in where they are needed. For example, if you enter 4/1/82 the program puts it into the field as 04/01/82. There are two types of date fields, one you have to put the date into and the other automatically inserts the current date (the date you typed when you loaded the program). The last two date fields in this file are the automatic type.

You can put any character into an alphanumeric field. All fields on the screen that do not have a date or a zero are alphanumeric fields.

3. You can change any of the information you have already entered by moving the cursor back to the field. Just press the ← key. With the cursor placed at the beginning of the desired field, type in the new information.

   If you press the space bar first, the content of the field is not erased. If you press any other key, the content of the field is erased and you can enter new information in the field. Once in the field, the ← and → keys move the cursor. The Ins (for insert) key lets you insert characters between existing characters. The Del (for delete) key lets you erase single characters. When you are finished entering new information, press the ↵ key.

   The Home key, the End key, and the four arrow keys all move the cursor. Try them with the cursor inside an entry window and outside the entry windows.

4. Press the F4 key to accept (store on disk) the new record, and return to the File Maintenance menu. Notice that the number-of-records count in the upper-right corner has increased by one. You could have pressed the F3 key to cancel the new record, but do not, because you will use this record later.

   In this exercise you learned:

- How to create a new record in the file.
- The use of the F1, F2, F3, and F4 function keys.
- The different types of data that can be put into different field types.
- How to change data that is already entered.
- How to accept a new record.
- How to cancel a new record.

To Change a Record

The VisiFile program lets you change most fields in a record. You can create protected fields that cannot be changed. The file you are working with contains only one of these protected fields, Initial Entry.

1. Press the C key to select CHANGE.

2. When the program asks you to Enter Record Number, **type 9,** the number of the record you entered (assuming no one else has added records to the ORDERS file).

3. After the program displays the record, you can move from field to field with the arrow, Home, End, or tab keys.

4. Change any field or fields you wish. Change the Lastname field but do not press ↵. Instead press the F3 key. The original name is returned. You can only cancel a change before you exit the field. Had you pressed the ↵ key and returned to the field, the F3 key would not have restored the original value.

5. Enter **100** into the Amount field and **5** into the Discount field. Do not put anything into the Net Amount field. The program is going to calculate that value using the Amount **and** Discount fields.

6. When you are done, press the **F4** key to save the changes. Notice that the program calculates the value for the Net Amount field. You can create calculated fields such as this when you create your own file definitions.

   In this exercise you learned:

• How to change a record.
• How to cancel a change and return the initial value.
• How the program performs calculations on fields within a record.

To Return to the Main Menu

You can easily return to the Main menu or the previous menu. It is always done in the same way. Press the Q key, or move the cursor to QUIT and press the ↵ key.

To Print a Report

A data management system also stores your data in an easily accessible place, such as a magnetic disk. After storing the data it can generate reports of that data. The sample disk contains a predefined report that you can display on the screen or print on your printer.

1. From the Main menu, press the P key to select the PRINT option.
2. The Print Functions menu replaces the Main menu. From here you can return to the Main menu or print any of the three document types: tabular reports (REPORT), mailing labels (LABELS), or form-letters (DOCUMENTS).

   Press the R key to select the REPORT option.
3. The program displays a list of reports defined for the ORDERS files. You have two options, a report named Samprpt and the Default Print Format. Press the P key to select PRINT. The cursor moves to the list.
4. Move the cursor to Samprpt, and press the ◁ key.
5. You now have several options. Most important, you can send the report to the PRINTER or DISPLAY it on the screen. If you have a printer, press the P key to print the report. If you do not have a printer, press the D key to display the report on the screen.

   NOTE: The program assumes that you have the parallel IBM printer (LPT1). If you have a different printer, check the "Printer Configuration" section in Chapter Twelve.
6. After the report has been printed (or displayed) select QUIT until you return to the Main menu.

   In this exercise you learned:

• That the program can store report formats.
• How to print (or display) a report from a stored format.

To Exit the Program and Return to DOS

When you are finished working with the VisiFile program you can return to IBM DOS 1.1 to load another program or do other work.

1. Press the Q key to select QUIT.
2. The program displays the Termination menu which has three options. QUIT exits the VisiFile program and leaves you in the IBM DOS environment. BOOT loads the program from whatever disk is in Drive A. RETURN returns to the Main menu. Press Q, follow the instructions to switch program diskettes, and press ◁ to go to the DOS environment.

How to Find Your Disk Serial Number

Your program disks cannot be copied. See the "User Support Plan" card for disk replacement and backup information. Be sure to fill out and send in the "Warranty Registration Card." You cannot order a backup disk or a replacement until you have registered your copy of the program. To register your copy, you must know its serial number. The serial number is recorded on the Number 1 program disk. Also write the number down in a place where you can find it.

To read the number:

1. You must be in the DOS environment to read the serial number. If you are not in DOS, exit the program as described in the preceding exercise.

2. When the computer displays the DOS prompt (A>), enter **dir** and press ◄┘ to list the contents of the disk in Drive A.

3. The program disk serial number is the name of the last file on the program disk. The name is xxxxxxxx SER where xxxxxxxx is the 8-digit serial number.

4. To reload the VisiFile program, enter **autoexec**, and press ◄┘. The computer loads the program.

SUMMARY

Before continuing to the next chapter, you should know how to:

• Insert and remove floppy disks. (If you do not, see Appendix B.)

• Load the VisiFile program into your computer. (If not, review "To Load the Program" in this chapter.)

• Move the cursor to a desired menu option. (If not, review "To Use a Menu and Select an Option.")

• Select an option from a menu. (If not, review "To Use a Menu and Select an Option.")

• Enter data. (If not, review "To Add a Record.")

• Change data. (If not, review "To Change a Record.")

• Print (or display) a report. (If not, review "To Print a Report.")

DATA FILES

This chapter shows you what a data file is and how to create one. It also teaches you how to select the files you need to do your work.

Data files are one of several types of files used by the VisiFile program. In addition to data files there are index, report-definition, label-definition, and screen-map files. Figure 2-1 lists these files and shows their use.

Data File: A File Containing Your Information

Index File: A File That Specifies the Sequence in Which a Data File is Processed

Report Label File: A File That Specifies the Format in Which Information is Printed or Displayed

Map File: A File That Specifies How the Data File Records are Displayed in the Maintain Function

016-003
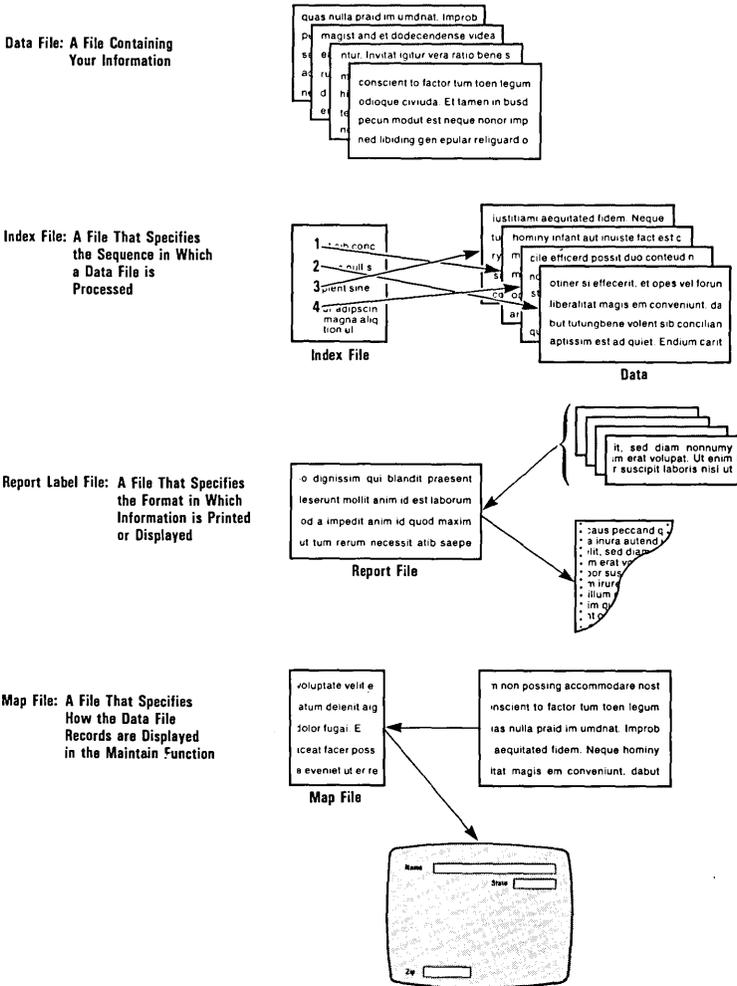
Figure 2-1. File Types

Data files are composed of records which, in turn, are composed of fields. Records and fields from a typical data file and their relationship are shown in Figure 2-2. The table is a data file, the columns are records, and each item within a column is a field. All records within a file contain the same fields.

	Record		**Field**		
Last Name	Manne Feeds	Flat Iron Supply	Hartford Assoc.	Levin	**Fields**
First Name				Ronald J.	**Occur**
Address	Front Street	2617 Arapahoe	444 Antonio Ave.	145 Post	**In Each**
City	Clyde	Boulder	Palo Alto	San Francisco	**Record**
State	OH	CO	CA	CA	
Zip	04221	80501	94303	94104	
Order Number	99231	33826	98347	23718	
Salesperson	Eshelman	Cuthbert	Benson	Benson	**Fields**
Amount	346.50	1002.10	4897.11	4800.25	**May Be**
Discount	5	6	8	8	**Blank**
Net Amount					
Order Date	7/30/81	8/20/81	6/12/81	8/24/81	
Order Status	Back Order	In Process	Back Order	In Process	
How Ship	Comm Carr	Comm Carr	UPS	Comm Carr	
Shipper Name	Jones	Route Six		Carlton	
Ship Date					

Field Names brackets the leftmost column.

016-005

Figure 2-2. Records and Fields

A data file is part of a data base. A VisiFile data base has two parts:

- The data file.
- The file definition.

The data file contains the information—the records. Fields are not identified or distinguished, but the file definition contains the field names and tells the program where to find each in the record. The file definition is like a template over each record so you can read the fields as shown in Figure 2-3.

2-2
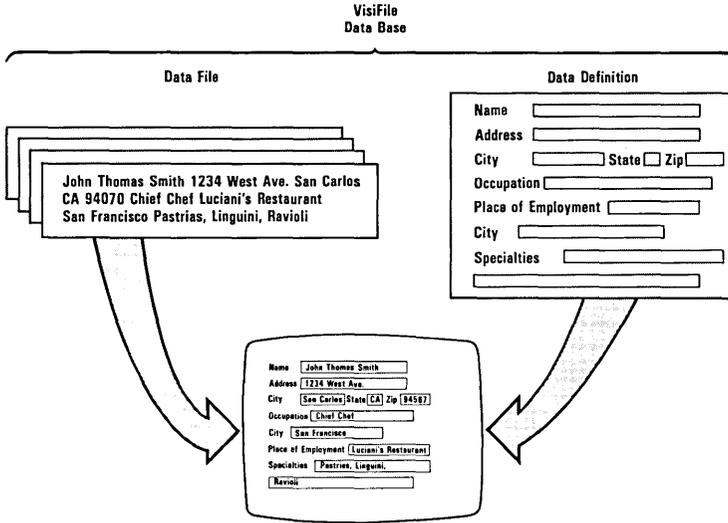
016-004

Figure 2-3. The Data File and File Definition

You create the data file and its file definition with the VisiFile program. The program organizes the information for you on the screen when you work with it.

Figure 2-4 shows a file definition.

```
                  FILE=ORDERS
       FIELD NAME       SIZE    TYPE    PROT   START
       --------------- ----    ----    ----   -----
       Lastname......... 15 ... A .... N ...    2
       Firstname........ 15 ... A .... N ...   17
       Address.......... 20 ... A .... N ...   32
       City............. 15 ... A .... N ...   52
       State............  2 ... A .... N ...   67
       Zip Code.........  5 ... A .... N ...   69
     A-Order Number..... 10 ... N .... N ...   74
       Salesperson...... 20 ... A .... N ...   84
     B-Amount........... 10 ... $ .... N ...  104
     C-Discount.........  2 ... N .... N ...  114
     D-Net Amount....... 10 ... $ .... N ...  116
       Order Date.......  8 ... D .... N ...  126
       Order Status..... 10 ... A .... N ...  134
       How Ship......... 10 ... A .... N ...  144
       Ship Date........  8 ... D .... N ...  154
       Shipper Name..... 15 ... A .... N ...  162
       Initial Entry....  8 ... S .... Y ...  177
       Last Update......  8 ... S .... N ...  185

          CALCULATED FIELD FORMULAS

     D=B-(B*(C/100)):                              016-007
```

Figure 2-4. File Definition

HOW AND WHY TO SELECT A FILE

When you begin using the program you will probably create several data definitions and files. You might have an inventory file, a personnel file, and a sales file. You must tell the program which you want to use.

Type S to select the SELECT-FILE option.

The File Selection menu, shown in Figure 2-5, lets you select a file or an index (an alternate record sequence) or custom map (an alternate display for the MAINTAIN option). When you select a file, it becomes the current file.
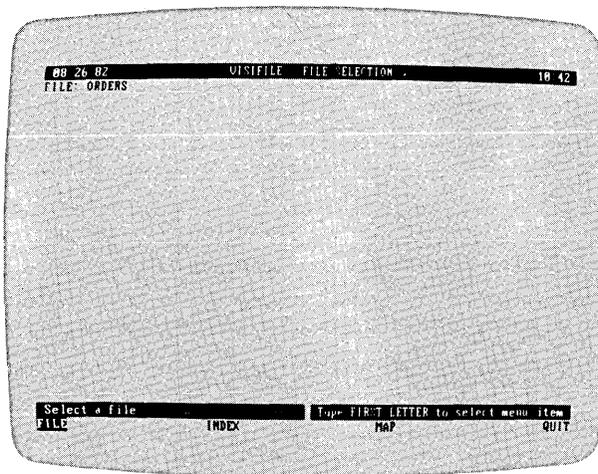
016-003/P

Figure 2-5. File Selection Menu

The program remembers the last file you selected from each data disk. The last-selected file is always the current file.

The Selecting a File menu in Figure 2-6 lists the data files on the disk. If only one data file is on the disk, the program selects it for you. The program displays the list only if there is more than one file.

To select a file, move the cursor to the desired file and press the ↵ key.

NOTE: When you delete any file, you may want to use SELECT-FILE again, because the program changes the current file to be the *first* file in the list of files.
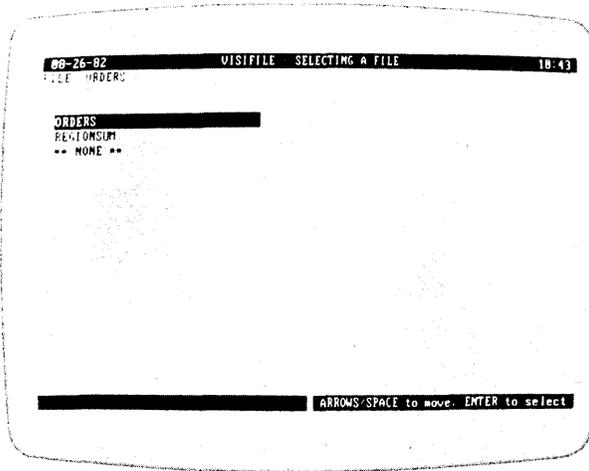
016-004/P

Figure 2-6. Selecting a File Menu

THE FILE DEFINITION

A file definition describes all the categories of information you want to store. It contains six parts:

- A file name.
- An optional password.
- A field name for each field.
- A size for each field.
- A data type for each field.
- An update protection for each field. A protected field cannot be changed after initial entry.

USING DEFINE

From the Main menu, press D to select the DEFINE option.

The File Definition menu, shown in Figure 2-7, replaces the Main menu.
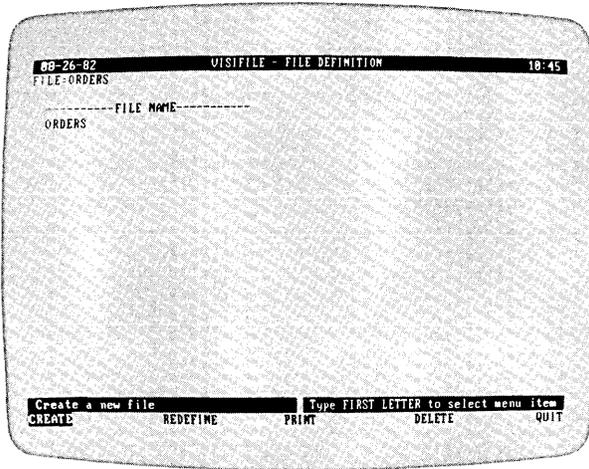
016-005/P

Figure 2-7. File Definition Menu

This menu lists all the file definitions currently stored on the data disk. If there are no file definitions on the data disk, the program goes directly to the file-definition display.

How to Create a New File Definition

Press C to select the CREATE option.

The file-definition display, shown in Figure 2-8, replaces the File Definition menu. This display allows you to name a new file definition, specify a screen format, specify a password, and name and describe each field in the new file.
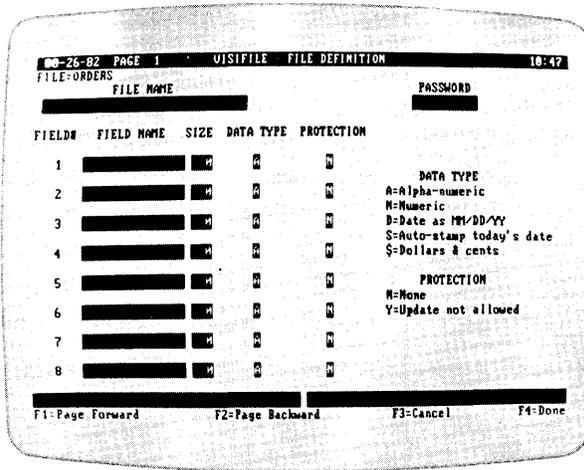
016-006/P

Figure 2-8. New File Definition Screen Display

You can move the entry cursor within this display with the arrow, ↵, Home, End, and tab keys. The function of these keys is described in Appendix C. Experiment with them to see what they do.

To enter a value or name into a field, move the cursor to the field, and type the value or name.

This screen lets you enter eight fields. You can then enter additional fields by pressing F1 (page forward) to see fields 9 through 16. You can return to the previous fields by pressing F2 (page backward) to return to fields 1 through 8.

You do not have to use all the fields shown on the screen. You can skip fields; the program removes any gaps. If you defined fields as FIELD# 2, 4, and 8, the program moves them to FIELD# 1, 2, and 3.

For each field, you must supply a name, the size, data type, and protection. If you do not enter a data type or protection, the program assumes alpha-numeric data (A) and no field protection (N).

ENTERING THE FILE NAME

You can name a file what you choose, but it must:

* be from 1 to 30 characters in length. If you exceed 30 characters, the computer beeps and ignores the additional characters.
* begin with any character except a space. The remaining characters can be alphabetic, numeric, or special characters except the quote (").

If you make a mistake, back up with the Backspace key to erase, then type in your corrections.

Duplicate file names are allowed; however, you must keep track of which is which.

ENTERING A PASSWORD

A password is a protection for the whole file. If you create a password, the program needs the password before the file can be read or modified. If you leave the field blank, anyone who knows the file name can read or modify the file.

The case of the password is not significant. The program accepts "clyde" or "CLYDE" for the password "Clyde."

You cannot change a password. You can, however, redefine the file (described later) and change or eliminate the password on the redefined file.

NOTE: If you enter a password, be sure you remember it; write it down. Without it you *CANNOT* use the file. Your initials, birthdate, child's name, or spouse's name are convenient passwords that are easily remembered. If you forget the password, there is no way to prevent the program from asking for it.

DEFINING THE FIELDS

Each field in the record must have a name. The FIELD NAME must:

* be from 1 to 15 characters in length.
* begin with any character except a space. The remaining characters can be alphabetic, numeric, or special characters.

Duplicate field names are allowed; however, you must keep track of which is which.

The SIZE tells the program how many characters the field can contain. The size is limited to three digits. You need not enter leading zeros; the program right-aligns the number for you.

The maximum field size depends on the type of field you are defining, see Table 2-1.

Table 2-1. Maximum Field Sizes

Field Type	Maximum Size	Minimum Size
Alphanumeric	255	1
Auto-stamp Date	8	8
Date	8	8
Dollar-and-cents	16*	4
Numeric	16*	1

* Numeric and Dollar-and-cents fields can be 16 digits plus decimal point and leading sign. Dollar-and-cents fields always have 2 digits to right of the decimal point.

The number of fields in a record and the maximum record size depends on the amount of memory in your computer. Table 2-2 lists the maximums for the different memory sizes.

Table 2-2. Record Size and Number of Fields

Memory Size	Maximum Record Size	Maximum Number of Fields
Less than 128K bytes	1000 bytes	40
128K bytes or greater	2048 bytes	104

As you define field sizes, the number of bytes remaining in the record is shown in the lower-right corner of the screen.

TIP: If you plan to use your data on more than one computer, create your file size definitions for your smallest memory computer. If you have a computer with less memory than 128K, do not create definitions larger than 1000 bytes.

Make sure your fields are large enough to handle any data they must hold, but for the best performance do not make them any longer than necessary.

DATA FILES

The DATA TYPE field identifies the kind of data a field is to hold. As the data type list shows, this field must contain an A for alphanumeric, an N for numeric, a D for date, an S for auto-stamp date, or a $ for dollar-and-cents. Your selection of a data type is important because:

- Numeric values are sorted in numeric order and alphanumeric values are sorted in alphabetic order. Dates in an alphanumeric field are sorted differently from dates in a date field.
- Only numeric and dollar-and-cents fields can be used in computed field formulas (described in Chapter Seven).
- Numeric fields are displayed and printed differently from alphanumeric fields. For example, a numeric field is adjusted to the right end of the field and leading zeros are omitted. An alphanumeric field is adjusted to the left end of the field, and all leading characters are displayed.

The data type determines what kind of information you can put into the field and how large the field can be:

- The numeric and dollar-and-cents fields can contain only the digits 0 to 9, a leading negative sign, and a decimal point (period). These types can be 16 digits plus the sign and decimal point.
- An alphanumeric field may contain any character—letter, number, and punctuation. An alphanumeric field can be 255 characters long.
- A date field must contain a date in the form mm/dd/yy or mm-dd-yy. A data field must be 8 characters long. If you specify more or less than 8 the program changes the size to 8.
- An auto-stamp date field must also be 8 characters long, but the program inserts the current date when the record is created or changed.

The PROTECTION field allows or prevents changes to the field after initial entry. An N in this field means no protection; the field can be changed. A Y means that after the initial entry of data, the field is protected and cannot be changed. Press ↵ or → to accept the default value of N—no protection, the field can always be modified.

> **TIP:** You can use the auto-stamp date and protection to create initial-entry and last-modification date fields. Both fields should be auto-stamp date type (S). The initial entry field should be protected (PROTECTION = Y), and the last modification should not be protected (PROTECTION = N). When you create a record, both fields contain the same date. If you later change the record, the unprotected date changes and the protected one remains the same.

The bottom lines of the screen show what you can do after the information is entered. You can save the file definition by pressing F4; you can cancel the definition by pressing F3.

After you press F4, the definition screen vanishes and the File Definition menu returns. If your definition included numeric data, the computed field formula screen (explained in Chapter Eight) is displayed. The new file definition is saved on the data disk. The list of file definition names now includes the newly defined file. The new definition is the current file.

How to Delete a File Definition

The DELETE option erases a selected file definition and all the files associated with the definition: the data file, the report and label files, the index files, and the custom map files.

After you select a file definition for deletion, the program displays the warning shown in Figure 2-9. If you select YES, you delete the file definition and associated files.

NOTE: When you delete any file, you may want to use SELECT-FILE again, because the program changes the current file to be the *first* file in the list of files.
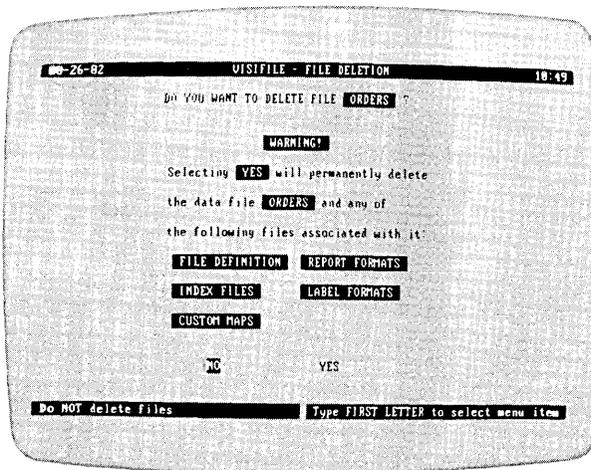
016-007/P

Figure 2-9. File Deletion Warning Display

How to Print a File Definition

The PRINT option prints a file definition on the printer. If you select this option and do not have a printer, press ↵, then Esc to return to the File Definition menu.

2-11

Figure 2-10 shows a sample file-definition report generated with the PRINT option.

```
                    FILE=ORDERS
        FIELD NAME       SIZE   TYPE    PROT   START
        --------------- ----   ----    ----   -----
        Lastname......... 15 ... A .... N ...    2
        Firstname........ 15 ... A .... N ...   17
        Address.......... 20 ... A .... N ...   32
        City............. 15 ... A .... N ...   52
        State............  2 ... A .... N ...   67
        Zip Code.........  5 ... A .... N ...   69
        A-Order Number... 10 ... N .... N ...   74
        Salesperson...... 20 ... A .... N ...   84
        B-Amount......... 10 ... $ .... N ...  104
        C-Discount.......  2 ... N .... N ...  114
        D-Net Amount..... 10 ... $ .... N ...  116
        Order Date.......  8 ... D .... N ...  126
        Order Status..... 10 ... A .... N ...  134
        How Ship......... 10 ... A .... N ...  144
        Ship Date........  8 ... D .... N ...  154
        Shipper Name..... 15 ... A .... N ...  162
        Initial Entry....  8 ... S .... Y ...  177
        Last Update......  8 ... S .... N ...  185

           CALCULATED FIELD FORMULAS

        D=B-(B*(C/100)):                            016-007
```

Figure 2-10. File Definition Report

The REDEFINE Option

The final option in this menu, REDEFINE, lets you modify a file definition and copy existing data into the modified definition. This option is described in Chapter Nine.

SUMMARY

In this chapter, you learned what a file definition is and how to create one. You can now create file definitions to meet your information needs. You can create a structure that contains the data you want in the order you want it.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Select a file	Main menu	1. SELECT/FILE 2. FILE 3. SELECT 4. Data file name
Select an index	Main menu	1. SELECT/FILE 2. INDEX 3. SELECT 4. Index file name
Select a map	Main menu	1. SELECT/FILE 2. MAP 3. SELECT 4. Map file name
Define a new file	Main menu	1. DEFINE 2. CREATE 3. Enter definition data
Print a file definition	Define menu	1. PRINT 2. Select file name
Delete a file definition	Define menu	1. DELETE 2. Select file name 3. YES
Exit a menu without doing anything	Any menu	1. QUIT

MAINTAINING A FILE

In the Introduction, you did a few file-maintenance operations. This chapter describes the use of all the file maintenance functions.

From the Main menu, type M to select the MAINTAIN option. The program displays the File Maintenance menu as shown in Figure 3-1.

This option lets you update and modify the current file, the one listed in the upper-left corner of the menu. If you enter the File Maintenance menu with the wrong file, press Q, return to the Main menu, select the right file, and return to the File Maintenance menu.

> **TIP:** Many users find it helpful to put a single data file on a data disk. Whenever you use the data disk, the data file is selected. This also leaves considerable room to add data. Data files have a tendency to get larger than anticipated. It is possible, as you will see later, to move the data file to a separate disk, giving you even more data space.

THE FILE MAINTENANCE MENU

Figure 3-1 is a photograph of the File Maintenance menu with the ORDERS file displayed. The menu parts are labeled.
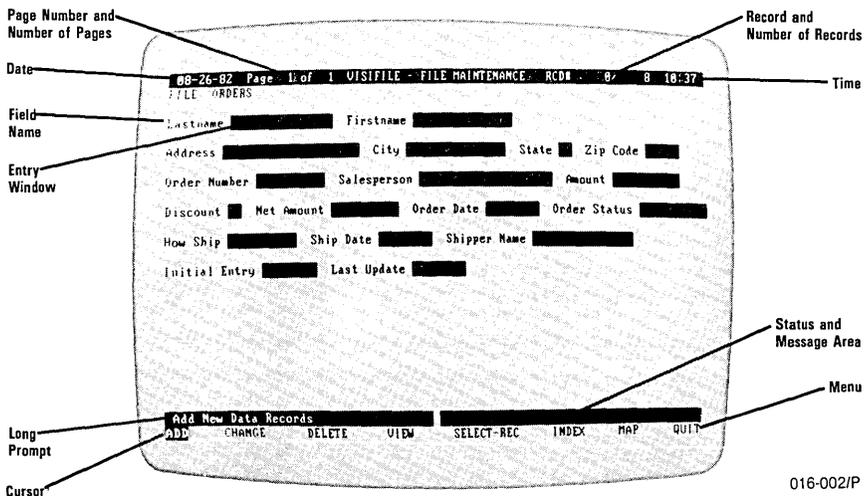
Figure 3-1. File Maintenance Menu

The *date* is the date you entered when you loaded the program.

The *page number* is meaningful only if the fields cannot be displayed on a single screen. This sample file fits on a single screen.

The *record number* is the sequential number the program assigns to a record when you enter it. Record number 0, as you see in the photograph, indicates that no data is displayed.

The *number of records* in the file is the highest record number.

The *time* is the time you entered when you loaded the program. The program updates the time each minute and keeps a 24 hour clock. If you did not set the time when you loaded, the time shows the elapsed time since you loaded the program.

The *file name* is the name of the current data file.

The *index name* is the name of the current index file. If an index name is shown, you process the data file in index order, and the program asks for a key value. If no index name is shown, you process in record-number sequence, and the program asks for a record number.

The *field names* are entered when the file is created with the DEFINE option.

The *field-entry windows* contain the value for the displayed record. If no record is displayed (record number 0) as in the photo, the windows are blank. If a record is displayed and a window is blank, no value has been defined for that field.

The *long prompt* explains the menu option at the cursor.

The *status area* displays error and information messages, it also displays the information you type in response to messages and prompts.

As in other menus, you select an option by pressing the first letter of the option or by moving the cursor to the option and pressing ↵.

THE FILE MAINTENANCE OPTIONS

The File Maintenance menu has eight options:

• ADD enters a new record at the end of the file.

• CHANGE modifies a record. You select the record by record number if an index is not selected, or by index-key value if an index is selected.

• DELETE marks a record as deleted. DELETE does not physically remove a record from the file. You recover a deleted record with the CHANGE option. You select the record to be deleted by record number if an index is not selected or by index-key value if an index is selected.

• INDEX selects an index file. It can also remove an index from use. The selected index-file name is displayed under the top banner. No index is selected if no name is displayed.

• MAP selects a custom screen display map file. It also removes a custom map from use and selects the AUTOMATIC map.

• QUIT returns to the Main menu. *Always exit the File Maintenance menu with this option. Do not exit by turning the computer off.*

• SELECT/REC specifies the criteria for record selection. With this option you specify values or value ranges for different fields. Only records that meet the criteria are displayed, changed, or deleted. This option is described in Chapter Four.

• VIEW displays the contents of a record. You select the record to be viewed by record number if an index is not selected, or by index-key value if an index is selected.

How to Inspect a Record

Press V to select the VIEW option.

The program prompts for a record number if an index is not selected. It asks for a key value if an index is selected.

If no index is selected, enter any number in the range of record numbers in the file. If you enter a value larger than largest record number shown on the right side of the upper banner, an error message appears above the menu area.

You can redisplay the record that was last processed by entering an asterisk (*). You can display the next record by entering a plus sign (+), or the previous record by entering a minus sign (−). You can enter a number following the plus or minus sign and jump that number of records. When you enter a plus or minus value, the program remembers it and uses it when you press ↵ in response to the record number prompt. The last plus or minus value is shown at the right end of the lower banner.

If an index is selected, enter a value for the program to search for in the primary key field. For example, if the selected index is sorted by zip code, enter a zip code value. You can also enter partial value if the field is defined as alphanumeric. If you enter "12," the program finds and displays the first record with a zip code that begins with "12." If no match is found, a message is displayed. You cannot enter a partial value for a numeric field.

Messages remain on the screen until you select another option.

A message appears if you specify the record number of a deleted record.

How to Inspect Records in Sequence

After you display a record, the cursor returns to VIEW. Press ↵. Again the record number or key value prompt appears. After inspecting one record, you can display the next record in sequence by simply pressing ↵.

You can move backward through the file by pressing the minus key (−), then ↵ when asked for a record number. The program displays the previous record.

You can view records by pressing ↵ once for each record, if you lock the option with the F6 key. Each time you press the ↵ key in the lock mode, the program repeats the current option. F6 locks the ADD, CHANGE, and DELETE options as well as VIEW.

When you press F6, the program displays the word LOCK below the center of the top banner. Pressing F6 again turns off the LOCK mode. Each time you press F6 the mode is switched. The program displays the next record each time you press the ↵ key.

How to Change a Record

In the Introduction you made simple changes to a record. In this section you see more of the change options. These are the same options as for entering a new record; you can edit your entry as you go.

Press the C key to select the CHANGE option. The program asks for a record number as it did with the VIEW option. Enter 1 and press ↵. Record 1 is displayed, and a list of the active function keys replaces the menu.

You do not have to enter data in every field of the record. You can leave any or all of them blank or, in the case of numeric fields, with a value of zero. The auto-stamp date fields are automatically filled in.

If the record format requires more than one screen, move back and forth between the screen displays by pressing F1 to go forward and F2 to go backward. The program automatically displays the next page after you press the ↵ key from the last field on a screen.

Table 3-1 describes how the various keys change or enter data. Try these keys to become familiar with them; you will use them often.

Table 3-1. Field-Editing Keys

Key	Use
→ ←	Moves the cursor to the right and left within the entry window. The cursor wraps around in both directions.
↵	Accepts the current contents of the window and the cursor exits to the right.
Backspace	Moves the cursor 1 space to the left and erases each character it encounters. It does not wrap around. An alarm sounds if you attempt to move to the left of the first space.
Del	Deletes the character indicated by the cursor and shifts the remaining characters to the left. Characters that are pushed out of the window (up to 80) in insert-mode can be retrieved by deleting characters in the window.
End	Moves the cursor to the right end of the current window. Pressing End a second time moves the cursor to the last window on the screen.
F1 F2 PgUp PgDn	Pages forward and backward in multiple-screen records.
F3 Esc	Cancels all entry and returns the window to its status before entry or modification began. The cursor exits the window to the left.
F5	Replaces the contents of the field with the contents of the field in the last record that was displayed. Exits the window to the right or down.
F6	Turns lock mode on and off.
F7-F10	Same as ←, →, ↑, ↓.

Table 3-1. Field Editing Keys (Continued)

Home	Moves the cursor to the left end of the entry window. Pressing Home a second time moves the cursor to the first entry window at the upper-left corner of the screen.
Ins	Turns the character-insert mode on or off. In character-insert mode the cursor changes from a blinking underscore character to a small blinking square. Characters you type in this mode are inserted to the left of the cursor. Up to 80 characters that are pushed out of the entry window can be retrieved with the Del function.
Tab and Backtab	Moves the cursor eight spaces to the right and left. The cursor wraps around in both directions.

You can return to a field and change it again. You can continue to change the data in the record until you accept it by pressing F4.

If you change your mind about the changes and want to cancel them, press F3. F3 cancels the changes you have made and returns the record to its original contents.

How to Add and Change Multiple Records

The lock mode (F6) is very useful during multiple ADD and CHANGE operations. To use lock mode, select ADD or CHANGE, and then press F6. Each time you accept a newly added or changed record a fresh blank format screen or the next sequential record is displayed. The program continues in this manner until you press F6 again to cancel the lock mode.

The repeat key (F5) is useful during multiple entry and change operations for repeating the same information in many records. Move the cursor to the field to be repeated and press F5. The program puts the previously displayed information in that field.

How to Delete a Record

The DELETE option appears to remove a record from the file. It does not actually remove it. The record remains in the file but is inactive. You can process the active records in the file without processing the deleted ones. You can also process the deleted records and ignore the active ones.

If you try to CHANGE or VIEW a deleted record, the program displays the record but also displays Record n is a DELETED Record in the status area in the bottom banner.

Because the record is only marked as deleted, you can recover it at any time using the CHANGE option.

Press the D key to select DELETE. The program prompts for a record number as it does with the VIEW and CHANGE options. Enter the record number and press ↵.

The program displays the record and tells you to press F4 to delete the record or F3 to cancel the deletion.

NOTE: To physically remove deleted records from a file use the COPY function which is described in Chapter Five.

How to Restore a Deleted Record

To restore a deleted record, use the following sequence:

1. Press C.
2. Enter the record number, and press ↵.
3. When the program displays the record, press ↵ to acknowledge the message, and then press F4 to accept the record. The record is active again.

USING AN INDEX IN FILE MAINTENANCE

In the preceding sections, you used the records in the order in which they were entered into the file. However, you normally work with a file in an order defined by an index.

An index is nothing more than a file that lists the record numbers in an order according to a field in the record. For example, to work with a file in alphabetic order by customer name, you need an index in which the record numbers are sorted by customer name. The index is based on a field called the *key field*. The key field can be any field in the record.

When you use an index, the program asks for a *key value*, instead of a record number. Figure 3-2 shows the two prompts. A key value is the value in a key field.
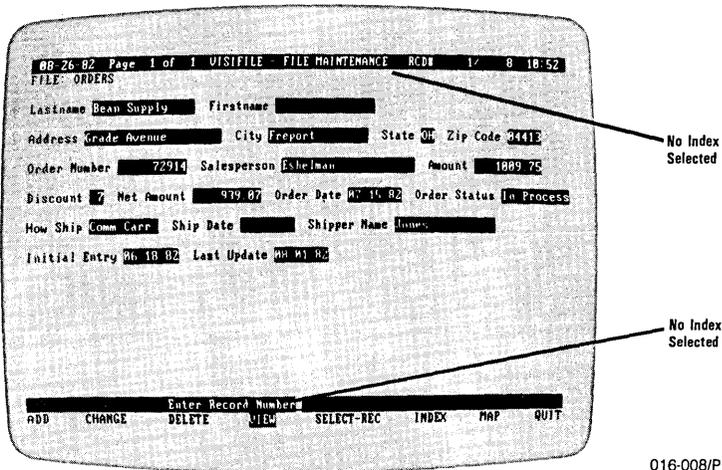
016-008/P
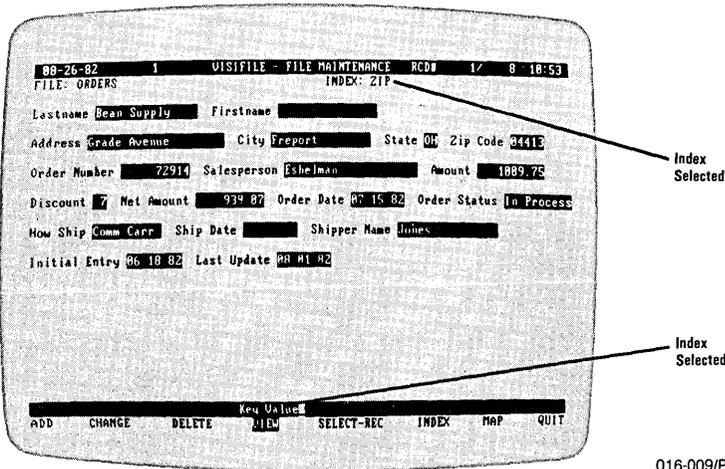
016-009/P

Figure 3-2. Record Selection With and Without an Index

To use a file in index order, you must select an index.

How to Select an Index

The INDEX option lets you select an index or cancel the selection of an index.

Press I to select the INDEX option.

The program lists the indexes for the current file. The Index menu is shown in Figure 3-3.
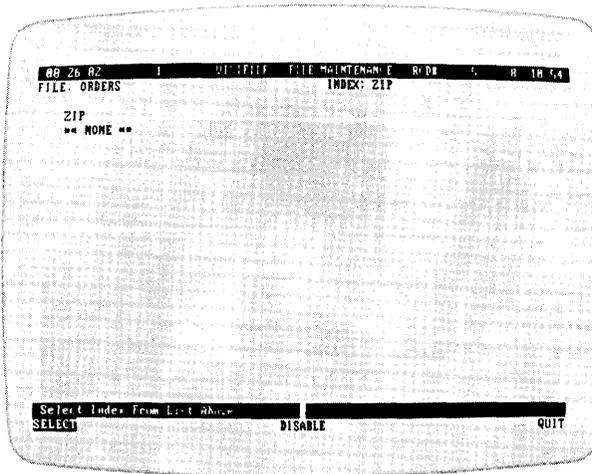
016-010/P.

Figure 3-3. Index Menu

The options in this menu are:

- The SELECT option moves the cursor to the list so you can select an index. When you select an index, you replace the previously selected index. Selecting **NONE** retains the current index.
- The DISABLE option removes the current index. With no index selected, you work with the file in entry order rather than index order.
- The QUIT option returns you to the File Maintenance menu.

Press S to select the SELECT option. The cursor moves to the index file list. Move the cursor to desired index, and press ↵.

The program returns to the Index menu.

How to Use an Index

You can use an index to select records for viewing, changing, or deleting. The program prompts for a key value. The program displays the first record, in the index sequence, with that key value.

You can continue on in index sequence by pressing the ↵ key in response to the Key Value prompt. You can also scan the file from the record with the key value in the opposite direction by entering a minus (−) when asked for a key value.

You scan forward or backward by multiple record steps by entering a number preceded by a minus (−) or plus (+) sign. For example, enter **+4** to see every fourth record.

You do not have to enter the entire field value; you can enter a portion of it. For example, if the index is based on the zip code, you can see the records for California (where zip codes begin with 9) by entering 9 as a key value. The program finds and displays the first record with a zip code beginning with 9.

If the program does not find a record that matches the value, it displays the message Key Not Found.

Selecting a record with an index is identical in the CHANGE and DELETE options.

How to Update an Index

When you select MAINTAIN, you may get a message that an index is obsolete or invalid. If you get this message, press ↵ to continue. An index can not be used if:

- You add new records to the file. The addition of new records makes all except the current index obsolete.
- You change the field value on which an index is sorted. Changing a primary key field makes an index invalid. Changes to fields that are not used as keys have no effect on indexes. For example, if a mailing list index is sorted on the zip code and the customer moves into a different zip code area, that index is no longer valid. The program issues a warning message when changing a field will render an index invalid.

When new records are added, the new record numbers are automatically added to the current index. Likewise, the new records are automatically added to other indexes when you select them with the

INDEX option. On machines with more than 128K of memory, the selected index is updated as needed. On smaller memory machines, the indexes are updated when you exit the File Maintenance function.

NOTE: When new records are added, the indexes are updated only by the primary key values, not by secondary keys. For example, if you have an index that is sorted by last name and first name, only the last name is used to update the index. Entries with identical last names are not sorted according to the first name. To do a complete sort, you must return to the Main menu INDEX option and UPDATE the indexes.

When the key field content is changed, you must use the SORT or UPDATE options in the Main menu INDEX function to recreate the invalid indexes.

HOW TO SELECT A CUSTOM MAP

You can display information on the screen in formats that meet your needs. You do not have to use the automatic map, you can create your own. Creating a custom map is described in detail in Chapter Ten, but selecting a custom map is easy.

The MAP option in the File Maintenance menu displays a list of any custom maps that you have created and the **AUTOMATIC** map for the current file. When you select SELECT, the cursor moves to the map list. You then move the cursor to the desired map, and press ↵.

FINISHING FILE MAINTENANCE

When you are done working with the file, press Q. The program returns to the Main menu.

NOTE: *Always use the* QUIT *option to exit the Maintenance function.* Do not exit the function by turning the computer power off. If you turn off the computer, you can lose your changes or additions.

SUMMARY

The MAINTAIN option allows you to inspect the records in a file, search for a record with a specific value, add a record, change a record, delete a record, and restore a record. You can search for a record in an index sequence or in the record-number sequence.

The lock mode, which is set with **F6**, lets you repeat a file maintenance option without reselecting the option for each record. Pressing **F6** a second time turns the lock mode off.

Deleting a record does not lose the file data in the VisiFile program. Deletion lets you process records without processing the deleted ones. Deleted records are only marked as deleted; you can still inspect them, process them, and restore them to the file.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Update a file	Main menu	1. MAINTAIN
Select an index	Maintain menu	1. INDEX 2. SELECT 3. Index file name
Disable an index	Maintain menu	1. INDEX 2. DISABLE
Select a map	Maintain menu	1. MAP 2. SELECT 3. Map file name
Add a record	Maintain menu	1. ADD 2. Enter data 3. F4 (accept) or F3 (cancel)

Change a record	Maintain menu	1. CHANGE
		2. Record number (no index)
		    or Key value (index order)
		3. Enter change
		4. F4 (accept) or
		    F3 (cancel)

Delete a record	Maintain menu	1. DELETE
		2. Record number (no index)
		    or Key value (index order)
		3. F3 (delete) or
		    F4 (keep)

Return to Main menu	Maintain menu	1. QUIT

SELECTION CRITERIA

The VisiFile program lets you establish a record-selection criteria in the Maintenance, Copy, and Print functions. With this capability you display, copy, or print records that satisfy certain needs. For example, you process only those records with zip codes in a certain range or those records with a backorder status. You can specify any selection criteria from the simple to the complex.

Record selection is available by:

- Selecting the SELECT-REC option in the File Maintenance menu.
- Responding Y (yes) to the Copy SELECTED Records? option in the Copy Functions menu.
- Selecting the SELECTION option in the Report Routing menu.

HOW TO CREATE A SELECTION CRITERIA

There are three steps to creating a selection criteria:

1. Select the field to be tested.
2. Select the test to be performed and enter the data that the field is to be tested against.
3. Select the logical connection with subsequent selection criteria. You can set up several criteria and use them in an AND/OR relationship. If you are not familiar with AND/OR logic, an explanation is in the section "Selecting the Logical Connection." However, effective use of the program does not require an understanding of logic.

Selecting the Field to be Tested

All the means of choosing to use record selection lead to the Selection Criteria screen shown in Figure 4-1.

016-011/P

Figure 4-1. Selection Criteria Screen

Except for the top two lines, this screen is the same whether you are using MAINTAIN, COPY, or PRINT. The top line indicates the menu from which you selected it. The screen in Figure 4-1 shows that the function was selected from File Maintenance.

The right side of the screen contains a list of the fields in the subject file definition. If the file contains more than 18 fields, the F1 (page forward) key displays the next part of the list. The F2 (page backward) key returns to the preceding part of the list.

To select a field, move the cursor to the name with the ↑ or ↓ key and press ↵.

To exit the function, press the F3 (cancel) key.

Selecting the Test

When you select a field to test, the program displays the selected field name and its type as shown in Figure 4-2.
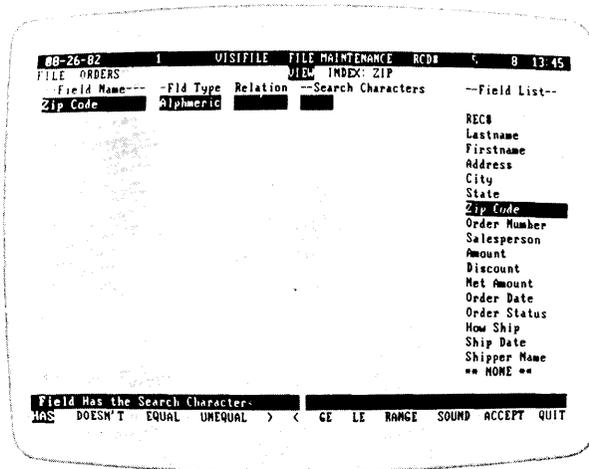
016-012/P

Figure 4-2. Selecting the Test Criteria

The test-criteria relationship menu appears at the bottom of the screen. The options in this menu are:

HAS
: Selects records that contain the search characters in the test field. This relationship should be used only with alphanumeric fields. If used with numeric type fields, no records are selected.

DOESN'T
: Selects records that do not contain the search characters in the test field. This relationship should be used only with alphanumeric fields. If used with numeric type fields, no records are selected.

EQUAL
: Selects records with a search field exactly equal to the test field. This relationship can be used with all field types.

UNEQUAL
: Selects records with a search field that is not equal to the test field. This relationship can be used with all field types.

>
: Selects records with a search field that is greater than the test field. This relationship can be used with all field types.

<	Selects records with a search field that is less than the test field. This relationship can be used with all field types.
GE	Selects records with a search field that is greater than or equal to the test field. This relationship can be used with all field types.
LE	Selects records with a search field that is less than or equal to the test field. This relationship can be used with all field types.
RANGE	Selects records that fall within the range specified by the search field. This relationship can be used with all field types.
SOUND	Selects records with a test field that sounds like the search field. This relationship can only be used with alphanumeric fields. See the section titled "Using the Sounds-Like Function" for more information on this option.
ACCEPT	Exits this menu, accepting previously set criteria. Use this option if you returned to this menu by mistake.
QUIT	Cancels this selection criteria and returns to the File Maintenance menu.

After you select a test condition, you must enter the Search Characters against which the selected field is tested. The program displays the field name, type, and the relationship you selected as shown in Figure 4-3. The program asks for the search characters. The entry window for the search characters is the length of the selected field. For example, if you selected the field Zip Code and the test GE (greater than or equal), you would enter **90000** to search for records that have a Zip Code equal to or greater than 90000.
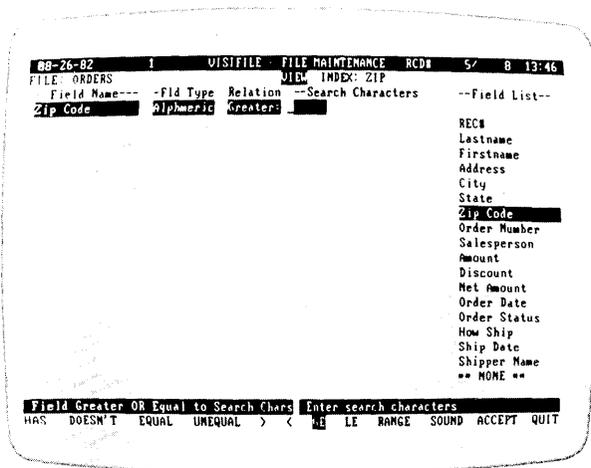
016-013/P

Figure 4-3. Search Character Entry Screen

The search characters you enter must match the field type. For instance, you would not enter a search field of "ABCD" for a numeric field or date field.

Selecting the Logical Connection

After you enter the search field, the program displays the menu shown in Figure 4-4. This menu lets you:

- ACCEPT the selection criteria in its current state and continue with the current function (File Maintenance, Print, or Copy).
- QUIT the current selection and return to the field-selection screen to select again or cancel the selection.
- Add an AND criteria to the current criteria.
- Add an OR criteria to the current criteria.
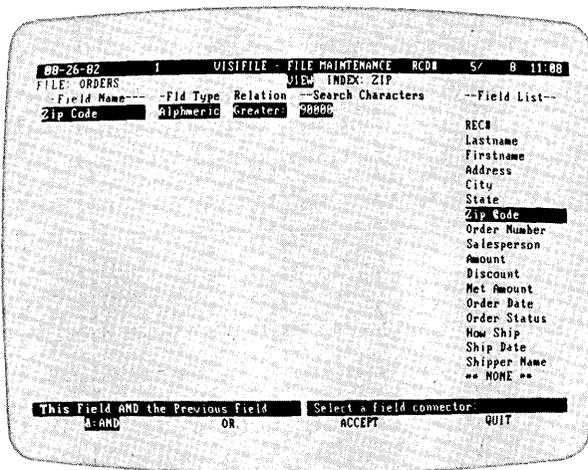
016-014/F

Figure 4-4. Extending or Finishing the Selection Criteria

You can enter up to 10 selection criteria and mix AND and OR logic.

A SHORT COURSE IN AND/OR LOGIC

Using AND/OR logic gives you the ability to link different criteria to select very specific records. You can enter multiple-selection criteria and associate them in AND and OR conditions.

AND means that the conditions connected with AND must all be met before a selection is made. For example, you can specify that records where the zip code is greater than 90000 AND the sale amount is less than $1000. These criteria result in the selection of records in which both conditions are met. That is, the selected records have a zip code greater than 90000 and a sale amount less than $1000.

OR means that a record is selected when either of the conditions are met. Using the figures in the preceding example, the selected records either have a zip code greater than 90000 or a sale amount less than $1000, or both. Figure 4-5 shows the difference between the two type of criteria linking.

REC No.	Zip Code	Sale Amount	Zip Code > 90000 AND Sale Amount < $1000	Zip Code > 90000 OR Sale Amount < $1000
1	91234	$1500		selected
2	87543	$ 900		selected
3	98657	$ 850	selected	selected
4	95444	$ 325	selected	selected
5	04733	$2500		
6	94303	$ 167	selected	selected

Figure 4-5. AND/OR Logic

The example shows two conditions. You can use up to ten conditions. Use mixtures of AND and OR logic carefully. It is easy to create conditions you think to be highly selective that, in fact, select everything. On the other hand, it is equally easy to create conditions you think will filter out only a few records and find that no records are selected.

If you mix logic conditions, look at the entire list of conditions and, before printing your report or copying a data file, test the conditions against records you know should be selected and records that should be rejected.

Mixing logic can be tricky. The VisiFile program evaluates multiple criteria from top to bottom and looks ahead one condition before making a decision. In the example:

    zip code > 90000
    OR
    zip code < 10000
    AND
    sales > $500
    OR
    order date before 04-29-82

the program first tests the top OR condition. If the record does not meet either condition:

• the record is rejected if the next test is an AND.

• the next condition is evaluated if the next test is an OR.

If the record meets either of the top OR conditions:

- the record is selected if the next test is an **OR**.
- the next condition is evaluated if the next test is an **AND**.

In those cases where the second test, the **AND**, is made and the record does not meet the third condition:

- the record is rejected if the next test is an **AND**.
- the next condition is evaluated if the next test is an **OR**.

If the record meets the third condition:

- the record is selected if the next test is an **OR**.
- the next condition is evaluated if the next test is an **AND**.

You can see how complex things get when you mix **AND** and **OR** logic. The VisiFile program offers both logics to give you the maximum flexibility. You should, however, avoid mixing **AND** and **OR** logic unless you are certain you fully understand the test you have devised.

Using the Sounds-Like Function

The SOUND function in the selection criteria selects fields that "sound like" the search characters. This function is useful when you are not sure of the spelling of a name or of how a field is entered into the data file. You can use this function only with alphanumeric fields.

The following will be helpful when using the SOUND function:

- The function only examines the first word of multi-word fields. For example, it will not find the last name if the name field contains both first and second names, in that sequence.
- The function is more sensitive to consonants.
- The first letter must match. For example, the search field "farmacist" will not find "pharmacist."
- The function is insensitive to case. For example, the search field "smith" will find "Smith," "smith," and "SMITH." The EQUAL function is case sensitive. You should use SOUND when you are not sure how a word is capitalized.

Selecting Dates

When searching date fields, you have the option of entering the year, the month and year, the day, month, and year. You can also search for the current date with the keyword "today." When searching for a full or partial date, use the EQUAL function.

You can enter 2, 5, or 8 characters for a date:

* 2 characters are assumed to be a year. A leading zero must be entered. For example, you must enter 02, not 2, for the year 1902.
* 5 characters are assumed to be a month and year, in that order. The month must be first, month and year must be separated with a hyphen (-), and leading zeros must be entered. For example, May 1902 must be entered as 05-02, not 5-2.
* 8 characters are assumed to be month, day, and year, in that order. The month must be first, the day second, and the year last. They must be separated with hyphens (-) and leading zeros must be entered. For example, May 8, 1902 must be entered as 05-08-02, not 5-8-2.

To search for today's date (the date you entered when you loaded the program) enter **today** as the search characters and use the EQUAL function.

How to Repeat a Selection Criteria

When printing or displaying reports or labels, you can repeat the last selection criteria you established for a file with this procedure:

1. Select the report or label format.
2. Select SELECTION.
3. When the selection criteria screen is displayed, select ** NONE **.
4. Press **Y** (yes) in response to the message No selection specified— ok? (y/n).

USING THE FILE MAINTENANCE SELECT-REC OPTION

The SELECT-REC option in the File Maintenance menu displays the five-option menu shown in Figure 4-6.

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Figure 4-6. File Maintenance Record Selection Menu

From this menu you can choose to:

* VIEW the records that meet the selection criteria. Each record that meets the criteria is displayed on the screen for your inspection. You have the option of continuing or quitting the inspection with each screen. This option is equivalent to the File Maintenance VIEW option.

* CHANGE any field in the selected records. Each record that meets the criteria is displayed on the screen. You have the option of changing the record, skipping the record, or quitting with each screen. The AUTOMATIC option automatically changes each record without selecting CONTINUE. This option is equivalent to the File Maintenance CHANGE option.

* DELETE the selected records. Each record that meets the criteria is displayed on the screen. You have the option of deleting the record, keeping the record, or quitting the deletion with each screen. The AUTOMATIC option automatically deletes all records that meet the criteria. This option is equivalent to the File Maintenance DELETE option.

- REPLACE fields in the selected records with predefined values. Each record that meets the criteria is displayed on the screen. You have the option of replacing the fields, skipping the record, or quitting with each screen. The AUTOMATIC option automatically makes the replacements without selecting CONTINUE. Before the search begins, you must specify which fields are to be replaced and enter the new value for these fields.

- QUIT returns to the File Maintenance menu.

After you establish the selection criteria, you must enter the record number you want to begin the search. If you press ↵ without a record number, the search begins at the last selected or used record number. If an index is currently selected, it asks for the key value at which the search is to begin. You can press ↵ with no key value and the program searches the entire file. You can use a starting key value to shorten the search.

If an index is currently selected, the search is in index sequence. If no index is selected, the search is in record order sequence.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Invoke record selection	Print menu	1. SELECTION 2. Selection criteria
Invoke record selection	Copy menu	1. Y to Copy Selected Records? 2. Selection criteria
Invoke record selection	Maintain menu	1. SELECT-REC 2. VIEW/CHANGE/ DELETE/REPLACE 3. Selection criteria

BACKING UP
AND COPYING DATA FILES

Paper files are fragile. You can misplace records, spill them on the floor, or accidently toss them away. Disk files, while subject to different hazards, are also fragile. Anything from a computer malfunction to a cigarette ash to a fingerprint can destroy a file or an entire disk.

Protect yourself by making copies of files and disks. Copies not only protect your information in the event anything goes wrong with the original, but they let you create derived files that are similar, but not identical, to the original.

This chapter shows you how to make backup disks and copy files. Both functions make copies of your data. Creating a backup duplicates an entire data disk. No file or record selection is allowed. Copying is a selective function. You select the files to be copied, the records within the files to be copied, and the order in which they are copied.

HOW TO MAKE A BACKUP DISK

You should always keep a backup copy of your disks. The basic rule of thumb is: *never get caught without a backup copy of any information you could not, or would not want to, reenter if it were lost.* Many computer users make it a point to backup a data disk each day that they make changes to it. If the data on the disk is very sensitive, you may want to do it more often. Disks are less expensive than your data and time!

Some people keep two backup copies of their data disks and alternate between the backups. This technique protects you even in the remote circumstance where a malfunction causes a data loss during the backup operation.

You must exit the VisiFile program, have a blank disk to copy to, and use the DOS DISKCOPY command to make a backup copy of a data disk. If the copy-to disk is not formatted, DISKCOPY will format it.

1. From the Main menu press Q to select the QUIT option. The Termination menu replaces the Main menu.

2. Press Q again. You are now in the DOS environment.

3. Remove the VisiFile program disk from Drive A, and replace it with the IBM DOS disk.

4. Type **diskcopy a: b:**.

5. Remove the IBM DOS disk from Drive A, and replace it with VisiFile data disk you wish to backup. Place the copy-to disk in Drive B. The disk in Drive A is copied to the disk in Drive B. Press ↵ to begin the copy.

You can now use either the backup disk or your original as your data disk. Some users prefer to use the backup as their working copy, reasoning that, in the rare case in which the copy operation is inaccurate, they can count on the original.

Remember that when you change a file on either disk, the one you have not changed is out of date.

USING THE COPY OPTION

The COPY functions operate with one data file rather than the entire disk.

Press C to select the COPY option.

The program displays the Copy Functions menu as shown in Figure 5-1. From this menu you can copy a file, move the data portion of a file to a separate disk (to make more room for data), and transfer files to other VisiCorp programs. The transfer functions require a special format (called the Data Interchange Format or DIF™) and are described in Chapter Eleven.
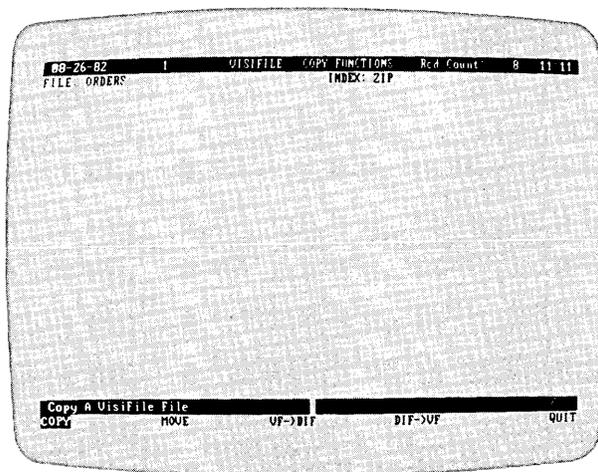
016-016/P

Figure 5-1. Copy a File Menu

How to Copy a File

The COPY option copies a data file and its file definition. Index, report, label, and custom map files are also copied. However, the copied indexes are invalid unless the data file is copied as is; every record is copied and the sequence is not changed. The function is extremely flexible:

- Copy a file under a new name or under its old name.
- Copy the entire file, active records, deleted records, or records that meet certain criteria.
- Copy a file in an indexed sequence or in the same sequence as the original.
- Copy a file to the same disk or to a different disk.

From the Copy Functions menu, press C for COPY.

You can copy to an existing file. If the file name exists, the current contents are erased and replaced with the data from the copy-from file. If the file does not exist, the VisiFile program creates it.

TIP: The COPY function does not add records to the end of an existing file. You can use the DIF functions to add records. The two files must have identical definitions.

The current file is the copy-from file. The program assumes that the copy-to file has the same name. Both names can be changed.

To make a copy, enter the copy options with a single letter. If you enter an invalid letter the program asks for a correct response when you attempt to accept the options. As you can see from your display, the program makes certain assumptions; you can change any of them.

When all choices are correct, press F4. Pressing F3 cancels the copy operation.

CHANGE COPY FROM FILE?

An N (no) response uses the file listed in the Copy From window. A Y (yes) response causes the program to prompt you for a new name later.

CHANGE COPY TO FILE?

An N (no) response copies the file to a file with the same name as the copy-from file. If Copy to ANOTHER Diskette is N, the current file is replaced according to the selected copy options. These options let you remove deleted records, unwanted records, or sort the file. A Y (yes) response causes the program to prompt you for a new name later.

COPY WHICH RECORDS OF THE FILE?

An A (active records) response copies the active records, not the deleted records. A D (deleted records) response copies the deleted records, not the active records. An E (every record) response copies both the active and deleted records. You can further limit each of these options by using the selection criteria.

COPY SELECTED RECORDS?

A Y (yes) response copies the records that meet the selection criteria. Before the copy is started, the program displays the selection criteria menu. See Chapter Four for a description of establishing selection criteria.

COPY IN INDEX SEQUENCE?

A Y (yes) response copies the records in the order specified by the currently selected index. If there is no current index, this option is ignored. An N (no) response copies the records in their current sequence.

COPY TO ANOTHER DISKETTE?

An N (no) response copies the file to the same disk. If the copy-to name is [Same], the file replaces itself. A Y (yes) response asks that the copy-to disk be put into Drive A.

HOW TO CREATE A TWO-DISK DATA FILE

The VisiFile program creates file definitions and data, report, label, index, and custom map files on the same disk. All of these files take up disk space and, thus, limit the amount of space available for data.

The MOVE option splits these files between two disks: the data disk which contains the data file and the control disk which contains all other files. Figure 5-2 shows the disk organizations before and after the MOVE option is executed.

File Definition   Control Disk   Data Disk
Data File   File Definition   Data File
Report Definitions   Report Definitions
Label Definitions   Label Definitions
Indexes   Indexes
Custom Maps   Custom Maps

File X   File X   File A
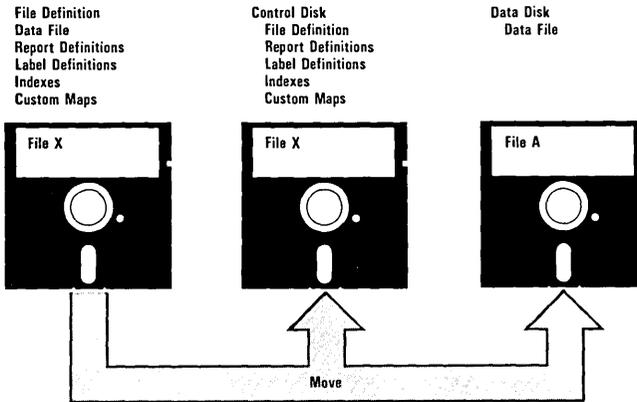
Move

016-005

Figure 5-2. The MOVE Option

When using a *moved file*, the control disk must be loaded in Drive B. The program asks you to switch the program disk and the data disk in Drive A when they are needed.

To create a two-disk file from the Copy Functions menu, press **M** to select the MOVE option.

The program displays the move option menu. Fill in the menu as is appropriate for your needs. When the menu is correct, press the F4 key. The program asks that the new data disk be put in Drive A. This must be a blank formatted disk.

      TIP: Use the MOVE option to take full advantage of the space your single or double sided disks.

CHANGE COPY FROM FILE?

An N (no) response uses the file listed in the Copy From window. A Y (yes) response causes the program to prompt you for a new name later.

CHANGE COPY TO FILE?

This option is ignored in a MOVE operation. You cannot change the name.

COPY WHICH RECORDS OF THE FILE?

An A (active records) response copies the active records, not the deleted records. A D (deleted records) response copies the deleted records, not the active records. An E (every record) response copies both the active and deleted records. You can further limit each of these options by using the selection criteria.

COPY SELECTED RECORDS?

A Y (yes) response copies the records that meet the selection criteria. Before the copy is started, the program displays the selection criteria menu. See Chapter Four for a description of establishing selection criteria.

COPY IN INDEX SEQUENCE?

A Y (yes) response copies the records in the order specified by the currently selected index. If there is no current index, this option is ignored. An N (no) response copies the records in their current sequence.

COPY TO ANOTHER DISKETTE?

This option must be answered Y (yes).

SUMMARY

In this chapter you learned how to back up your disks and copy files to protect yourself from accidents or malfunctions. Backup duplicates an entire disk. Copying is a selective process wherein you select a file to be copied, decide what records are copied, and in what order. Creating a two-disk file increases the space available for data.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Back up a disk	Main menu	1. QUIT (twice) 2. Insert IBM DOS disk 3. Load DISKCOPY program 4. Make copy 5. Reload VisiFile program
Copy a file	Main menu	1. COPY 2. COPY 3. Enter copy options 4. Press F4 5. Accept (or correct) options 6. Enter new name(s) if applicable 7. Insert disks as directed
Create a two disk file	Main menu	1. COPY 2. MOVE 3. Enter move options 4. Press F4 5. Accept (or correct) options 6. Enter new name(s) if applicable 7. Insert disks as directed

PRINTING

Printing is one of the most important features of a data management system. This lesson describes how to create formats for printing reports, labels, and form-letters. Figure 6-1 shows examples of these formats. You can print these formats on paper or display them on the screen.
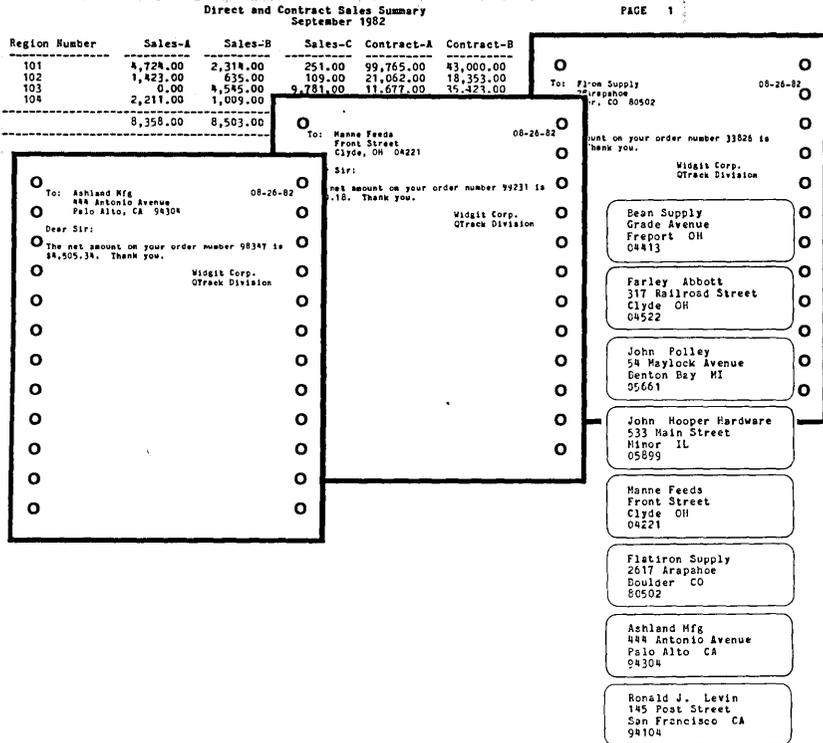
016-008

Figure 6-1. Printed Outputs

From the Main menu, press P to select the PRINT option.

The options on the Print Functions menu correspond to the types of output shown in the figure. Each option, except DOCUMENTS, displays a list of formats available for printing and lets you print a predefined format, create a new format, modify an existing format, or delete a format. DOCUMENTS, the form-letter option, operates on externally created text files and is described at the end of this lesson.

PRINTING A PREDEFINED FORMAT

You printed a predefined report in the Introduction under "To Print a Report." The procedure is the same for LABELS. Starting from the Main menu, select:

To print a report	To print labels
1. PRINT	PRINT
2. REPORT	LABELS
3. PRINT	PRINT
4. Report name	Label name
5. PRINTER, DISPLAY, or SELECTION	
6. CONTINUOUS, PAGE, SAMPLE (if PRINTER selected in step 5)	

If you select PRINTER, your next selections are:

- CONTINUOUS for no page pauses.
- PAGE for page pauses.
- SAMPLE to check the top of page position.

If you select DISPLAY in step 5, the output is sent to your screen.

If you select SELECTION in step 5, the program displays the Selection Criteria menu, which is described in Lesson Three, before the report is printed. After you establish selection criteria, the program returns you to step 5 where you can select PRINTER or DISPLAY.

CREATING NEW FORMATS

The program lets you create report and label formats and store them on disk. When you need to print a report or set of labels, select the correct option from the Print Functions menu, the desired format, then print it.

Formats are associated with a data file. You cannot use them on different files; you must create them for each file.

016-017/P

016-018/P

016-009

Figure 6-2. Creating a Report Format

How to Create a Report Format

From the Print Functions menu, press R to select the REPORT option.

Press C to select the CREATE option.

The next two (or more) displays let you define a report format. Figure 6-2 shows the displays and how the options in them are turned into a printed report. Each option is described in the text following Figure 6-2. The number in parentheses following the name of each option refers to the number key in the figure.

When you have entered the correct information in the first display, press the F4 key to continue to the second display. The second display can have several screens. Use the F1 and F2 keys to page forward and backward.

REPORT FORMAT NAME

The report format name is the name by which the format is listed. The name can be from 1 to 30 characters long. It can include blanks and punctuation.

TITLE LINES (1)

Each report can have 3 title lines. The title lines are printed at the top of each page. Each line can be 80 characters. The top title line is 70 characters if you choose to print the date or page numbers and 62 characters if you choose to print both. The title lines are centered. Only title lines with text are printed.

FOOTING LINES (2)

Each report can have 2 footing lines. The footing lines are printed centered at the bottom of each page. Each line can be 80 characters. Only footing lines with text are printed.

LINES/PAGE (3)

This option specifies the number of lines on the page, not the number of lines of text on the page. The program assumes 66, which is the number of lines a typical printer prints on an eleven inch sheet.

PRINT FIELD NAMES? (4)

A Y (yes) response prints the field names (or descriptive names) as column heads. An N (no) response does not print them. If a name exceeds the field size, the name is truncated. However, you can increase the size.

PRINT PAGE NUMBERS? (5)

A Y (yes) response prints the report page numbers at the right end of the top title line. An N (no) response does not print it. If you have no title lines and enter Y, the program creates a title line for the page number.

PRINT TODAY'S DATE? (6)

A Y (yes) response prints the date, you entered when you loaded the program, at the left end of the top title line. An N (no) does not print it. If you have no title lines and enter Y, the program creates a title line for the date.

PRINT DELETED RECORDS?

A Y (yes) response prints the deleted and the active records in the file. An N (no) response prints only the active records.

PRINT BREAK FIELD ONLY ONCE?

A Y (yes) in this field prints the contents of a break field only when the value changes, that is, once for each different value. An N (no) prints the value for each record.

A break field is a field you specify to be tested for each line in the report. If the value in the break field changes, an extra line is inserted. A typical use of a break field is to print a report in salesperson-order (use an index sorted by salesperson) and insert a break in the report when the salesperson name changes. You are asked if you want to specify a break field at the end of the report definition process.

PRINT IN INDEX ORDER?

A Y (yes) response prints the report in the index order. If there is no current index, the records are printed in record-number order. An N (no) response prints the records in record-number order.

PRINT SUBTOTALS AND TOTALS ONLY?

A Y (yes) response prints only the requested totals and subtotals, but not the records. An N (no) response prints the records, the totals, and subtotals.

FIELD NAME (7)

The field name is assigned when the file is defined. If you specify that field names be printed (Print Field Names?), the name in this location is used. If the name is longer than the size, the name is truncated.

You can enter a different name in the entry window under the field name. The new name is used in place of the field name as a column header in the report. The name can be from 1 to 15 characters long.

LINE# (8)

The line number and the item number must be entered to include a field in the report.

Each record in the file can be from 1 to 25 (1 to 15 on computers with less than 128K of memory) lines on the report. Figure 6-3 shows samples of reports with 1 line per record and 2 lines per record. Most reports contain 1 line per record.

```
08-26-82                          Quarterly Order Report                    PAGE   1
                                  Q3--Year to Date

Customer          Order Number   Salesperson            Amount   Net Amount  Order Da
----------------  -------------  ---------------------  --------  ----------  --------
Bean Supply          72914       Eshelman             1,009.75      939.07   07-15-82
Abbott               24485       Eshelman             2,000.00    1,860.00   05-15-82
Polley               71175       Allot                2,319.88    2,157.49   06-20-82
Hooper Hardware      38131       Daily                3,890.00    3,578.80   02-10-82
Manne Feeds          99231       Eshelman               346.50      329.18   07-30-82
Flatiron Supply      33826       Cuthbert             1,002.10      941.97   08-20-82
Ashland Mfg          98347       Benston              4,897.11    4,505.34   06-12-82
Levin                23718       Benston              4,800.25    4,416.23   08-24-82
-----------------------------------------------------------------------------------
                                                     20,265.59   18,728.08
-----------------------------------------------------------------------------------

                                  QTrack Division                              016-009
```

```
08-26-82                                     ORDERS                                    PAGE   1
RECf  Lastname         Firstname      Address         City        St Zip C  Order Numb  Salesperson
               Amount  Di       Net Amount  Order Da  Order Stat  How Ship    Ship Dat  Shipper Name    Initial   Last Upd
---------------------------------------------------------------------------------------------------------------------------
  1  Bean Supply                     Grade Avenue       Freport        OH 04413      72914  Eshelman
           1,009.75    7           939.07  07-15-82  In Process  Comm Carr           Jones             06-18-82  08-01-82

  2  Abbott          Farley         317 Railroad Street  Clyde         OH 04522      24465  Eshelman
           2,000.00    7         1,860.00  05-15-82  Complete    Comm Carr  07-01-82  Green Dall        06-18-82  08-01-82

  3  Polley          John            54 Maylock Avenue  Benton Bay     MI 05661      71175  Allot
           2,319.88    7         2,157.49  06-20-82  Complete    Comm Carr           Jones             06-18-82  08-01-82

  4  Hooper Hardware John            533 Main Street    Minor          IL 05899      38131  Daily
           3,890.00    8         3,578.80  02-10-82  Complete    Comm Carr  03-05-82  CVV               06-18-82  08-01-82

  5  Manne Feeds                     Front Street       Clyde          OH 04221      99231  Eshelman
             346.50    5           329.18  07-30-82  Back Order  Comm Carr           Jones             06-18-82  08-01-82

  6  Flatiron Supply                 2617 Arapahoe      Boulder        CO 80502      33826  Cuthbert
           1,002.10    6           941.97  08-20-82  In Process  Comm Carr           Route Six         06-18-82  08-01-82

  7  Ashland Mfg                     444 Antonio Avenue Palo Alto      CA 94304      98347  Benston
           4,897.11    8         4,505.34  06-12-82  Back Order  Comm Carr           UPS               06-18-82  08-01-82

  8  Levin           Ronald J.       145 Post Street    San Francisco  CA 94104      23718  Benston
           4,800.25    8         4,416.23  08-24-82  In Process  Comm Carr           Carlton           06-18-82  08-01-82
---------------------------------------------------------------------------------------------------------------------------
****8
          20,265.59             18,728.08
---------------------------------------------------------------------------------------------------------------------------

                                                                                      016-010
```
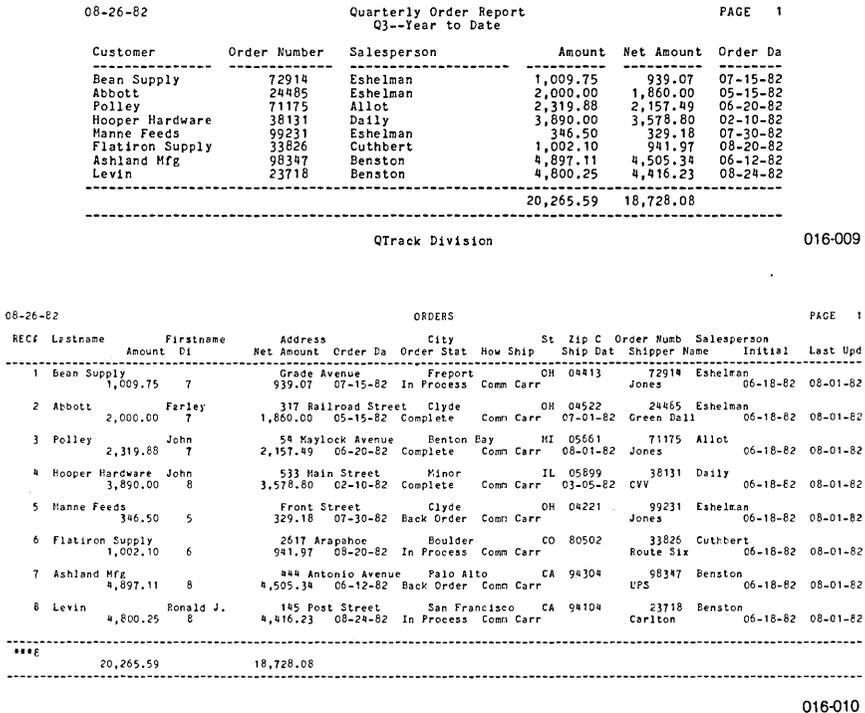
Figure 6-3. Single-Line and Multiple-Line Reports

ITEM# (9)

The item number and the line number must be entered to include a field in the report.

The item number specifies the relative position of items on the report line. Item 1 is to the left of item 2. The items are numbered across the line from left to right.

Enter the item number. You can skip numbers; the program uses the relative values not the actual values. If you specified items 1, 4, and 9 for line 1, the program does not leave space for items 2, 3, and 5 through 8.

SIZE (10)

Size is the field length specified when the file was defined. You can increase or decrease the field size for printing the report. Changing the size only affects how the data is printed; it does not affect the data file or data definition. If you decrease the size, numeric values that are larger than the field size are preceded by a percent sign (%) when printed. The program supplies a default printing size for numeric and dollar-and-cents fields that is large enough to accommodate any commas as necessary.

Alphanumeric fields are truncated from the right to fit into a shortened size. If a numeric field is defined with an A in the DECIMALS column, that numeric field is also truncated from the right like an alphanumeric field when printed.

TAB (11)

The tab value specifies either:

*   The number of blank spaces between the current field and previous field on the line (*relative* tab). To indicate a relative tab, precede the value with a plus sign (+). A tab of + 5 leaves 5 blank spaces to the left of this field.
*   The absolute position on the print line (*absolute* tab). To indicate an absolute tab, enter the value without a plus sign. A tab of 36 begins this field at print position 36, regardless of where the previous field was located.

If you do not specify a tab value, fields are located 2 spaces apart. When you modify a report format, the tabs are cleared and the default (2 spaces) is used. If you wish tabs other than the default, you must re-enter them.

DECIMALS (12)

The decimals value specifies how numeric fields are printed. The possibilities are:

- A specifies that numeric values are to be printed as they were entered, for example: 1, 2.765, and .98745. Such fields will also be truncated from the right like an alphanumeric field, if the field size is smaller than the actual value.

- 0, 1, 2, 3, 4, or 5 specify how many places are to be included to the right of the decimal point. If you specify 3, every numeric value has 3 decimal places: 1.000, 2.765, and 0.987.

Alphanumeric and date fields must have an A in this column, as automatically displayed by the program. Dollar-and-cents fields are not affected by this option. The program automatically prints dollar-and-cents fields with 2 decimal places, regardless of any other value you specify.

TOTAL (13)

A Y (yes) response causes this field to be totaled at the end of the report and subtotaled at each break, if a break field is specified. An N (no) response specifies that totals and subtotals not be printed.

When using totals, be sure the field is large enough to hold the total. You can increase the field size with the SIZE option.

The Total option is ignored if the field is not a numeric or dollar-and-cents field.

CROSS-TOTAL (14)

N (no) specifies that cross-totals not be printed.

1, 2, or 3 specifies that the values in all fields with a 1 are totaled in the Horizontal Tot#1 field; the values in all fields with a 2 are totaled in the Horizontal Tot#2 field; the values of all fields with a 3 are totaled in the Horizontal Tot#3 field. Figure 6-4 shows the use of the Cross-total option and the horizontal total fields.

```
              Cross-Total 1              Cross-Total 2            Horizontal Totals

              \      \      \       \        \           \   1       \  2
Region Number  Sales-A    Sales-B    Sales-C  Contract-A  Contract-B    Direct        Contract
-------------- --------- ---------  --------- ----------  ----------  ---------  ----------------
     101        4,724.00   2,314.00    251.00   99,765.00   43,000.00   7,289.00       142,765.00
     102        1,423.00     635.00    109.00   21,062.00   18,353.00   2,167.00        39,415.00
     103            0.00   4,545.00  9,781.00   11,677.00   35,123.00  14,326.00        46,800.00
     104        2,211.00   1,009.00    389.00    9,000.00   27,000.00   3,609.00        36,000.00
              ---------  ---------  --------- ----------  ----------  ---------  ----------------
                8,358.00   8,503.00 10,530.00 $141,504.00 $123,476.00 27,391.00       264,980.00
              ---------- ---------- ---------- ----------- ----------- ---------- ----------------
```

016-011

Figure 6-4. Cross-Total and Horizontal Total Usage

HORIZONTAL TOTAL (15)

The three horizontal total fields are used with the Cross-total option, as shown in Figure 6-4. The total of the numeric fields specified by cross-total is put into the appropriate horizontal total field (1, 2, or 3). The Decimals field must contain a 0 through 5 value for a field to be Cross-totaled; an error message is issued if Decimals contain an A.

IS A BREAK DESIRED?

The program asks if you want a break field defined for this report at the end of the report definition. An N (no) response finishes the report definition and returns to the Select Print Items menu. A Y (yes) response displays the Break Specification menu.

The Break Specification menu lets you select one field as the break field. Select the field by entering an **X** in the SELECT column for the desired field. The menu also shows the size of each field. You can break on a change of whole field or a portion of it. For example, you can specify a size of 1 for an alphanumeric field and cause a break only when the first letter of the break field changes.
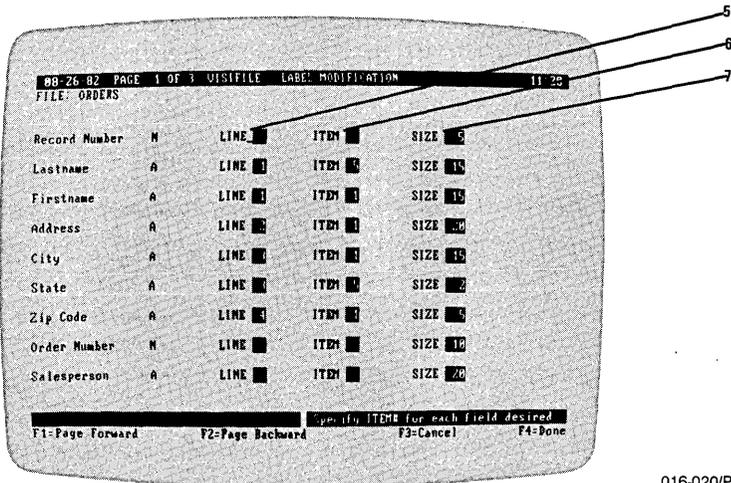
How to Create a Label Format

You can create label formats for printing mailing labels, directories, or customer lists.

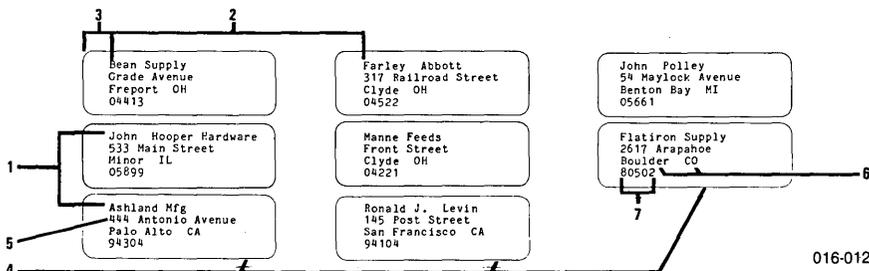From the Print Functions menu, press L to select the LABELS option.

Press C to select the CREATE option.
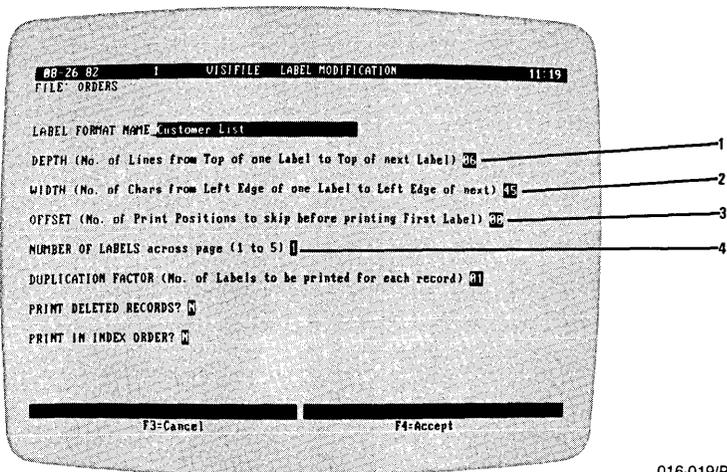
016-019/P

016-020/P

016-012

Figure 6-5. Creating a Label Format

The next two (or more) displays let you define a label format. Figure 6-5 shows the displays and how the options in them are turned into printed labels. Each option is described in the text following Figure 6-5. In the descriptions, the number in parentheses following the name refers to the number key in the figure.

When you have entered the correct data for the first display, press the F4 key to continue to the second display. The second display can have several screens. Use the F1 and F2 keys to page forward and backward.

LABEL FORMAT NAME

The label format name is the name by which the format is listed. The name can be from 1 to 30 characters long. It can include blanks and punctuation. The name should be descriptive so you can distinguish between your label formats.

DEPTH (1)

The depth is the number of print lines from the first line of one label to the first line of the next label, vertically. This value includes the space between labels and the lines on the label. If you do not change it, the program assumes a depth of 6 lines.

WIDTH (2)

The width is the number of characters from the left edge of one label to the left edge of the next label, horizontally. This value includes the space between labels and the character positions on the label. If you do not change it, the program assumes a width of 30 characters.

The width is used only if the number of labels across the page is greater than 1. It is ignored if you are using forms that are one label wide.

OFFSET (3)

The offset is the number of character positions to be skipped between the left margin and the first character. If you do not change it, the program assumes an offset of 0.

NUMBER OF LABELS (4)

This field specifies the number of labels across the page. This field can be 1, 2, 3, 4, or 5. If you do not change it, the program assumes a form that is 1 label wide.

DUPLICATION FACTOR

The duplication factor specifies the number of labels to be printed for each record in the file. If you do not change it, the program assumes a duplication factor of 1; only 1 label is printed for each record.

PRINT DELETED RECORDS

A Y (yes) response specifies that deleted and active records are to be printed. An N (no) response specifies that only active records be printed. If you do not change it, the program assumes that deleted records are not to be printed.

PRINT IN INDEX ORDER

A Y (yes) response specifies that labels be printed in index order. An N (no) response specifies that they be printed in record-number order. If there is no current index, the program assumes N; if there is a current index, it assumes Y.

LINE (5)

A label can contain from 1 to 99 lines. Specify the line number where the field is to appear. If you skip numbers, the program eliminates blank lines within labels. For example, if you specified line numbers 1 and 7 and nothing for lines 2 through 6, the labels are printed as if you entered line numbers 1 and 2.

ITEM (6)

The item number must be entered to include a field in the labels.

The item number specifies the relative position of items on the label line. Item 1 is to the left of item 2. The items are numbered across the line from left to right.

Enter the item number. You can skip numbers; the program uses the relative values not the actual values. If you specified items 1, 4, and 9 for line 1, the program does not leave space for items 2, 3, and 5 through 8.

SIZE (7)

Size is the field length specified when the file was defined. You can increase or decrease the field size for the labels. If you decrease the size, numeric values may not fit into the field. Alphanumeric fields are truncated from the right to fit into a shortened size.

HOW TO CREATE A FORM LETTER

You can print form letters with the VisiFile program. To use this feature, you must create an ASCII text file with a text-processing program or text editor such as the VisiCorp VisiWord and VisiDex programs or the EDLIN program that comes with your computer on the IBM DOS disk. This text file must reside on your data disk.

You can create the form letter skeleton with the text processing program or editor. You can include in the form letter the names of any fields in your VisiFile data file. You can also include the date, the time, the document name, and the data file name.

The form letter with the correct substitutions is printed for each record in the data file. You include field names from the data file in the form letter skeleton. Predefined fields, such as date and time, are supplied by the program. You can print the form letters in index order or in record-number order. You can also specify selection criteria and print only those records that meet the criteria.

How to Enter Fields into the Form Letter Skeleton

You enter data-file field names, predefined fields, or user substitution fields into the skeleton by enclosing them in less-than ($<$) and greater-than ($>$) symbols. Field names must be entered exactly as they are defined. Uppercase and lowercase letters are significant. Spaces in the name must be shown. For example, to use the field with the name "Firstname," you enter:

  Dear $<$Firstname$>$,

The program substitutes the contents of the field for each record in the file. For example, if "Firstname" in the first record contained "Harold," the form letter would begin:

  Dear Harold,

The program strips leading and trailing blanks. Blanks within a field are not stripped.

Predefined Form Letter Fields

The program supplies seven predefined fields that you can use in your form letters. These fields provide the date in three formats, the time in two formats, the skeleton document name, and the data file name.

The fields are:

< MMDDYY >	The current date in the form MM/DD/YY. For example: 06/15/82.
< FULL DATE >	The current date in the form DAYOFWEEK, MONTH DAY, YEAR. For example: Tuesday, June 15, 1982.
< MIL DATE >	The current date in the military form DD MM YY. For example: 15 06 82
< HHMM >	The current time in the form HH:MM xm based on a 12-hour clock. For example: 2:57 pm.
< MIL TIME >	The current time in the military form HH:MM based on a 24 hour clock. For example: 14:57.
< DOCUMENT NAME >	The name of the ASCII text file skeleton.
< FILE NAME >	The name of the VisiFile data file.

These fields can be entered anywhere in the document. They must be entered exactly as shown, with capital letters and spaces.

User Substitution Fields

You can enter field names that are not in the data file nor predefined by the program. When the program encounters such a name, printing stops and you must enter the data at the keyboard. The data you enter is printed and the form letter continues.

You can specify that the data you enter be put into the letter currently being printed or into all letters printed. The data applies to this letter if you end it by pressing the ↵ key. It applies to all letters if you end it by pressing Ctrl ↵ (hold the Ctrl key, and press the ↵ key). You can specify 32 global substitution fields in the form letter.

How to Insert a Page Break

When you print the form letter you can specify the number of lines per page. Sometimes you may want to start a new page before the end of the page. To do so, enter:

.NP

on a line by itself; the period must be the first character in the line. The next line will begin at the top of the next page.

How to Link Documents Together

The text of your form letter does not have to be in a single ASCII text file. From one file, you can include a second as shown in Figure 6-6. To include a file with the name "SUBDOC2," put this line into the calling document:

.IN SUBDOC2

This control must exist on a line by itself, and the period must be the first character in the line.

As many documents as you want can be linked in this manner. You can include documents from included documents. That is, from document A you can include document B and from document B you can include document C. The depth of included documents cannot exceed 10.
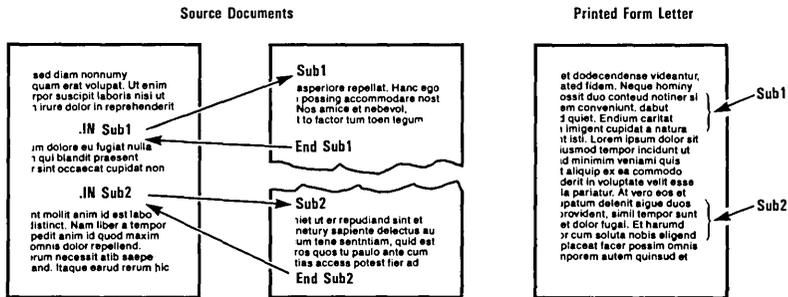
016-006

**Figure 6-6. Including Documents**

How to Print a Form Letter

To print a form letter, you must first create the data file and the document skeleton.

From the Main menu, press P to select the PRINT option. Then press D to select the DOCUMENTS option. Then press P to select PRINT.

The program displays the Document printer menu shown in Figure 6-7. This figure relates the menu items to the printed form letter. The menu items are described in the text following the figure.

Fill in the menu with the appropriate values and answers. When the menu is correct, press the F4 key. You can cancel the operation at any time by pressing the F3 key.
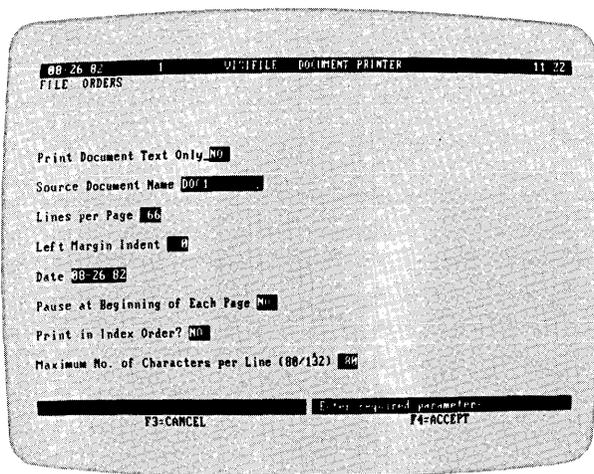
016-021/P

Figure 6-7. The Document Printer Menu

PRINT DOCUMENT TEXT ONLY

A Y (yes) response prints the skeleton text only. Substitutions are not made. An N (no) response prints the form letter, with substitutions, for each record in the file or selected record.

SOURCE DOCUMENT NAME

Enter the name of the ASCII text-file skeleton document.

LINES PER PAGE

Enter the number of print lines on the printed page. An 11 inch page on a 6 lines-per-inch printer is 66 lines-per-page. If you do not enter a value, the program uses 66.

LEFT MARGIN INDENT

Enter the number of character spaces you want the left margin indented from the edge of the paper. If you do not enter a value, the program uses 0.

DATE

This field contains the date that is printed if the <MMDDYY>, <FULL DATE>, or <MIL DATE> field is entered into the skeleton. The program uses the current system date unless you enter a different date into this field.

PAUSE AT BEGINNING OF EACH PAGE

A Y (yes) response causes the printer to stop at the top of each page for paper alignment or insertion of single sheets. An N (no) response causes continuous printing of the letters.

PRINT IN INDEX ORDER

A Y (yes) response causes the form letters to be printed in the order determined by the current index. If no index is selected, this field is ignored. An N (no) response causes the letters to be printed in the record-number order.

MAXIMUM NO. OF CHARACTERS PER LINE

Enter the maximum line width in characters. This value can be 80 to 132. If you do not change it, the program uses 80. This field is only applicable to parallel printers of the IBM 80 cps or the Epson MX-80. If you use a serial printer, this field is not displayed.

SUMMARY

The program's capacity to print reports, labels, and form letters is powerful and flexible. You have learned how to select existing report and label formats, and how to create your own. You have learned how to define a report or label, how to select fields, and how to arrange them on the report page or label form. You have also learned how to create and generate form letters.

FUNCTIONAL SUMMARY

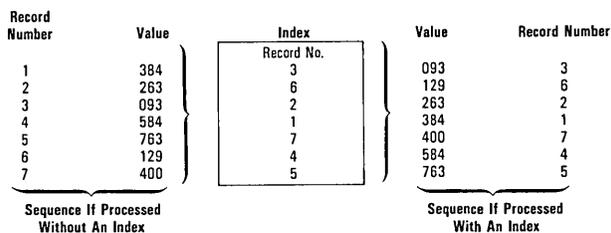| To	From	Select/Enter
Print a defined report	Main menu	1. PRINT 2. REPORT 3. PRINT 4. Select report format 5. PRINTER, DISPLAY, SAMPLE, or SELECTION as appropriate 6. CONTINUOUS, PAGE, or SAMPLE as appropriate 7. Ready printer
Print defined labels	Main menu	1. PRINT 2. LABELS 3. PRINT 4. Select label format 5. PRINTER, DISPLAY, SAMPLE, or SELECTION as appropriate 6. CONTINUOUS, PAGE, or SAMPLE as appropriate 7. Ready printer
Create a report format	Main menu	1. PRINT 2. REPORT 3. CREATE 4. Fill in report definition options
Create a label format	Main menu	1. PRINT 2. LABELS 3. CREATE 4. Fill in label definition options
Modify a report format	Main menu	1. PRINT 2. REPORT 3. MODIFY 4. Change report definition options
Modify a label format	Main menu	1. PRINT 2. LABELS 3. MODIFY 4. Change label definition options

(Continued)

To	From	Select/Enter
Delete a report format	Main menu	1. PRINT 2. REPORT 3. DELETE 4. Change report definition options
Delete a label format	Main menu	1. PRINT 2. LABELS 3. DELETE 4. Change label definition options

USING AN INDEX

The records in your data files are stored in the sequence you entered them. Rarely will you examine, copy, or print the data in this order, however. A customer list, for example, is developed as you recruit new customers. Depending on your needs, you will work with it in alphabetic sequence by name or by number.

You can use the file in the original chronological entry sequence or in any alphabetic or numeric sequence you desire. You can create 18 indexes for a data file on a computer with 128K or more of memory. On smaller memory computers, you can create 9 indexes.

A VisiFile index is a file that provides a sequence in which data-file records are processed. The data file remains intact; the records are in the sequence 1 through the total number of records. The INDEX option places the record numbers in a file in an order based on specified fields. For example, an index might contain the record numbers in numeric order according to the zip code. This means that the records are processed in zip code order. Figure 7-1 shows how an index file changes the processing sequence of a data file.

Record Number	Value	Index Record No.	Value	Record Number
1	384	3	093	3
2	263	6	129	6
3	093	2	263	2
4	584	1	384	1
5	763	7	400	7
6	129	4	584	4
7	400	5	763	5

Sequence If Processed Without An Index   Sequence If Processed With An Index

006-010

Figure 7-1. Using an Index File

Depending on the size of the file you are indexing and the space available on your data disk, the INDEX function might require a work disk. A work disk is an IBM DOS formatted disk. A work disk should not contain any files. When the function needs a work disk, it tells you into which drive to insert it. Always have a formatted disk available when creating or recreating an index. If you do not, you may have to cancel the function and format a disk before you can proceed.

THE PARTS OF AN INDEX

All indexes have *keys*. A key is the field that determines how records are sorted. For example, if the index key is the Zip Code field, the records in the file are sorted by the zip code.

An index can have ten keys, one *primary key* and up to nine *secondary keys*. Multiple key files are first sorted on the primary key. Then all records that have identical primary keys are sorted on a secondary key. For example, if the primary key is the Zip Code field and the secondary key is the Lastname field, the index order is zip code order. All records with identical zip codes are processed in Lastname order. Figure 7-2 shows the effect of primary and secondary keys.

Primary Key Only			Primary and Secondary Keys		
Zip Code	Lastname		Zip Code	Lastname	
04713	Smith		04713	Smith	
05862	Bennent		05862	Bennent	
06044	Rodgers	⎫ entry	06044	Abbott	⎫ secondary
06044	Gardner	⎬ order	06044	Gardner	⎬ key order
06044	Smyth	⎪ (random)	06044	Rodgers	⎪ (alpha-
06044	Abbott	⎭	06044	Smyth	⎭ betical)
10034	Harold		10034	Harold	
10050	Power		10050	Power	

Figure 7-2. Primary and Secondary Keys

How to Select an Index

The selected index can be used to maintain files, copy records, and print records. You can select an index with the SELECT-FILE option in the Main menu or with the INDEX option in the File Maintenance menu.

From the Main menu, press S to select the SELECT-FILE option. Then press I for INDEX, and press S for SELECT. Move the cursor to the desired index, and press the ↵ key.

From the File Maintenance menu, press I for INDEX, and press S for SELECT. Move the cursor to the desired index, and press the ↵ key. You can stop using an index by selecting DISABLE instead of SELECT.

The selected index remains current until you select another index, disable the index, delete the index, or create a new index. A newly created index becomes the current index.

How to Delete an Index

You can delete an index from the Main menu using either the SELECT-FILE or INDEX options.

To delete an index using the SELECT-FILE option, press S for SELECT-FILE, I for INDEX, and D for DELETE. Move the cursor to the name of the index you wish to delete, and press the ↵ key.

To delete an index using the INDEX option, press I for INDEX and press D for DELETE. Move the cursor to the name of the index you wish to delete, and press the ↵ key.

How to Create an Index

From the Main menu, press I to select the INDEX option, and press C for CREATE.

Enter a 1- to 30-character name for the new index, and press the ↵ key. The program displays this index name when you wish to select the index. Use a name that describes the index's purpose; for example, use ZIP for an index sorted by zip code.

Select the primary key field from the field list on the right side of the screen. The program displays the key field as shown in Figure 7-3.
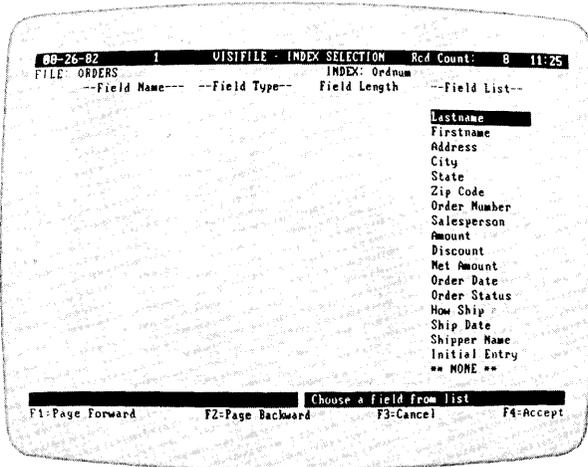
016-022/P

Figure 7-3. Index Selection Display

You can change the sort order and the field length. If you do not specify an order, the program uses ascending order. The program sorts on the full field length unless you shorten the length.

TIP: When you have very long fields, sorting over the whole field length can take a long time. Sorting by the first 10 characters may give the same results in a much shorter time. Keep your primary key fields as small as possible to keep your index files as small as possible.

The maximum sort field length is 98 characters; the total length of all sort fields cannot exceed 250 characters. If you specify a sort length greater than the field length, the program uses the field length or 98, whichever is smaller. You cannot shorten a numeric key.

Accept the key field by pressing the F4 key.

After accepting a key you can:

- Select CONTINUE, and select a (or another) secondary key field.
- Select SORT, and generate the index as currently defined.
- Select RE-SELECT, and start over by selecting the primary key.
- Select QUIT to accept the index as defined for later sort and return to the previous menu.

How to Examine an Index Definition

From the Index Selection menu press V for the VIEW option. Select the index you want to examine from the list.

The program displays the primary and secondary key fields. To the right is the approximate time required to resort this index. Figure 7-4 is a typical VIEW option display.
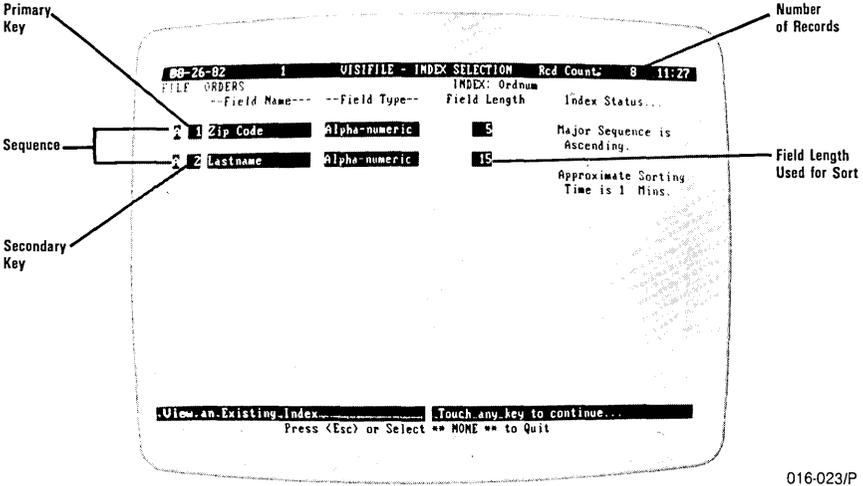
Figure 7-4. Typical Index VIEW screen

How to Keep Your Indexes Current

When you create an index, it accurately references all the records in your file. But when you change a record or a field value in the file, the index may no longer be accurate.

The VisiFile program automatically updates the current index for all record additions on computers with 128K of memory. On smaller memory computers, the update is done when you exit the File Maintenance function. However, the index is updated only on the primary key. A new record with a primary key the same as an existing primary key is placed at the end of a list of identical primary keys. When you select a different index, it is also automatically updated for record additions. You can update all primary indexes with the UPDATE option in the Index Selection menu.

The program cannot automatically update indexes invalidated by a change in the value of a primary key. These indexes must be resorted with the UPDATE or the SORT options in the Index Selection menu.

How to Re-sort All Obsolete Indexes

From the Index Selection menu, press U to select the UPDATE option. The program lists all obsolete indexes, the approximate time to re-sort them, and gives you the option of continuing or canceling the UPDATE.

The UPDATE option re-sorts only those indexes that are obsolete because of a primary key change or addition. If the primary keys are sorted correctly, the option does not re-sort. The obsolete status is not detected when a secondary index is changed. In this case, use the SORT option to re-sort the index.

How to Re-sort One Index

From the Index Selection menu, press S to select the SORT option. This option sorts the index whether or not the index is obsolete.

SUMMARY

Sorting a file lets you control the order in which the records in the file are processed, retrieved, copied, or reported. You can sort a VisiFile data file by creating index files that reference the records according to sort fields. You can sort a file on as many as 10 fields at once and create up to 18 separate indexes for each data file (9 on smaller memory computers).

In this chapter you have learned how to select, create, re-sort, and delete index files. With the VisiFile program, this process is simple and straightforward.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Select an index	Main menu	1. SELECT-FILE 2. INDEX 3. SELECT 4. Index file name
Select an index	File Maintenance menu	1. INDEX 2. SELECT 3. Index file name
Create an index	Main menu	1. INDEX 2. CREATE 3. New index name 4. Primary field name 5. Modify sequence and length if necessary 6. – CONTINUE to select a secondary field – SORT to generate new index – RE-SELECT to change primary field – QUIT to define another index
Delete an index	Main menu	1. INDEX 2. DELETE 3. Index file name
Examine an index definition	Main menu	1. INDEX 2. VIEW 3. Index file name
Re-sort one index	Main menu	1. INDEX 2. SORT 3. Index file name
Re-sort all obsolete indexes	Main menu	1. INDEX 2. UPDATE

HOW TO CREATE
COMPUTED-FIELD FORMULAS

The computed-field capability lets you do arithmetic calculations using the contents of numeric and dollar-and-cents fields and insert the result into another field. The calculations are done when a record is entered and changed. No special operations are needed; the calculations are automatic.

Only numeric, dollar-and-cents, and record-number fields can be calculated; alphanumeric and date fields cannot be used. Remember, the distinction between numeric and alphanumeric fields is in their definition, not the values they contain. An alphanumeric field may contain numbers, but is still defined as an alphanumeric field and, as such, cannot be used in computed field formulas.

With computed-field formulas:

• You can enter a up to 30 formulas.

• You can only use the first 47 fields plus the record number in the formulas. Numeric or dollar-and-cents fields beginning with field number 48 can be defined but cannot be used in calculated field formulas.

• You can use up to 253 bytes of space. The space required by a formula depends on the size of the formula and the size of the constants in it. The remaining space is displayed above the menu.

Computed-field formulas are entered as part of the file definition process after the fields are defined.

From the Main menu, press D to select the DEFINE option. Press C to select the CREATE option. The program displays the file definition screen. Enter your data definition.

If the definition contains numeric or dollar-and-cents fields, the program displays the Computed Field Formulas display as shown in Figure 8-1.

HOW TO CREATE COMPUTED FIELD FORMULAS

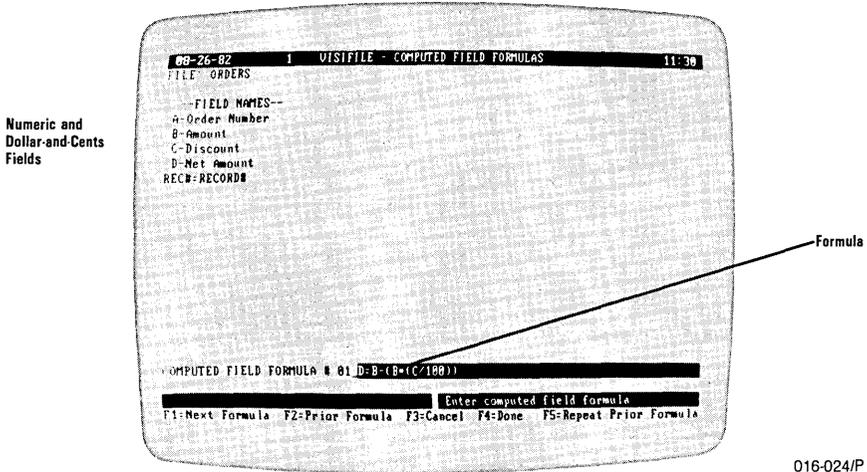**Numeric and Dollar-and-Cents Fields**

016-024/P

Figure 8-1. Computed Field Formulas Display

The display contains a list of all numeric and dollar-and-cents fields in the data definition. The list also contains REC# for record number. Each field name is assigned a letter. When writing a formula, the letter is used, not the name of the field. The last item in the list is the record number which is not assigned a letter but is abbreviated. You can use the record number in your calculations if it is meaningful to your application.

The formulas can contain:

- The letters representing a numeric or dollar-and-cents field or REC#. The letters can be used on either side of the equal sign. REC# can only be used to the right of the equal sign; it cannot receive a value.

- Constants such as 100, 4.35, etc.

- The arithmetic operators: + (add), − (subtract), * (multiply), / (divide), and ∧ (exponentiation).

- Ten levels of parentheses to control the order of execution. Execution is normally from left to right. The parts of a formula within parentheses are executed first, then the whole formula is evaluated from left to right with values replacing the parts within the parentheses.

Some typical formulas are:

$E = B*C$

The values in fields B and C are multiplied and the result is placed in field E.

$C = H \wedge 3 + (A/100)$

The value in field H is cubed then added to the value in field A after A is divided by 100. The result is placed in field C.

NOTE: You can calculate a value in a field and put the result back in the same field. The formula:

$C = C/100$

divides the value you put in field C by 100. If you enter 25, it is changed to .25. This calculation is also done each time you change *any* field in the record. The first time the record is changed, .25 becomes .0025. Be careful entering such formulas.

Enter a single formula at a time. End each one with the ↵ key.

SUMMARY

Computed fields put the mathematical power of your computer to work on your data base. With computed-fields, you can calculate numerical information, store, and retrieve it. This brings an added dimension to your data management, making it easy to add scores, compute averages, calculate discounts, figure taxes, determine balances — in short, to work with your data in almost any way you wish.

To define VisiFile computed fields simply enter the desired formulas to do the necessary computations.

HOW TO REORGANIZE A DATA FILE

Business growth and unforeseen changes can reduce the effectiveness of your data files. For example, you may have to expand part numbers from 4 to 6 digits, or the postal service may expand zip codes from 5 to 10 characters. In either case, you have to change your data definition to hold the larger zip code.

The VisiFile program anticipates such needs. With the VisiFile program, you reorganize a file by defining a new file to fit your new requirements. The reorganize function copies the data from your old file to the new file. When you change a field, the program alters the data, if necessary, to fit the new definition. If you expand a field, the program pads the existing values with blanks to fill the new field. If you shorten a field, the program shortens alphanumeric values and displays an error message when numeric data does not fit.

After reorganizing, you may have to use the file maintenance option to correct or enter fields that the program could not change, for example, if you add a subassembly number to an inventory file you will have to enter the subassembly number for each record. Though maintenance and updating take some time, they are far less work than reentering the whole data file.

THE REORGANIZATION PROCESS

A file must contain records to be reorganized. If you must change a file before adding records to it, simply create a new file definition.

To reorganize a data file:

1. Create a new file definition with the REDEFINE option in the File Definition menu.
2. Transfer data from the old file to the new file.

The reorganization process does not copy any files except the data file. You must create index, printing-format, and custom-map files.

How to Create the New File Definition

The file definition for a reorganized data file is a modification of an existing VisiFile definition. To begin the reorganization, press D to select the DEFINE option from the Main menu. Then, press R to select the REDEFINE option.

Select the file you wish to reorganize from the list.

The program displays the selected file definition.

WHAT YOU MUST DO

You must change the name of the file definition. This changed definition does not replace the old definition. You cannot have duplicate data-definition names on a disk.

WHAT YOU CAN DO

You have several other options in addition to changing the name of the file definition. You can:

- Change the field names.
- Delete fields.
- Change the password or add a password.
- Change the field size except for date fields. If you increase a field, it is padded to the right (alphanumeric) or to the left (numeric and dollar-and-cents) with blanks. If you decrease an alphanumeric field, the data is truncated from the right. If you decrease a numeric or dollar-and-cents field, you get an error if the new field cannot hold the old data.
- Change the calculated field formulas.
- Change the protection.
- Change the data type. You get an error if the old data is not compatible with the data type. Table 9-1 lists the acceptable conversions.
- Add fields to the end of the data definition.

Table 9-1. Data Conversions

From To:	Alpha	Numeric	Date	Auto-Date	$-and-Cents
Alpha	x	yes (1)	yes (2)	yes (2)	yes (1)
Numeric	yes	x	yes (2)	yes (2)	yes
DATE	yes	no	x	yes	no
AUTO-DATE	yes	no	yes	x	no
$-and-Cents	yes	yes	no	no	x

(1) If the alphanumeric field contains only numeric type data, i.e., digits and one decimal point.

(2) If the alphanumeric field contains a date in the correct format.

WHAT YOU SHOULD BE CAREFUL DOING

The program transfers field data directly across from the old definition to the new. The data from the first field of the old record goes into the first field of the new record, as shown in Figure 9-1.

Old Record	New Record
field 1	(deleted)
field 2	new field 1
field 3	(deleted)
field 4	new field 2

Figure 9-1. Record Deletion During Reorganization

Because data is copied field-by-field, regardless of size and type, you should only add fields to the end of the definition. To delete fields from the definition you only need to blank the field names using the space bar.

If you want them displayed differently in the File Maintenance function, create a custom screen map with the MAPPING option in the Other Functions menu. Refer to Chapter 10.

Transferring Data Between Old and New Files

After you modify the data definition and, if applicable, the computed field formulas, the program displays or prints a table of the old and new definitions as shown in Figure 9-2.

```
            Old definition              |             New definition
   Field name   | Field type  | Len | Field name    | Field type   | Len
------------------+-------------+-----+---------------+--------------+-----
   Lastname      | alpha-numeric | 015 | Lastname      | alpha-numeric | 015
   Firstname     | alpha-numeric | 015 | Address       | alpha-numeric | 020
   Address       | alpha-numeric | 020 | City          | alpha-numeric | 015
   City          | alpha-numeric | 015 | State         | alpha-numeric | 002
   State         | alpha-numeric | 002 | Zip Code      | alpha-numeric | 009
   Zip Code      | alpha-numeric | 005 | Order Number  | numeric       | 005
   Order Number  | numeric       | 010 | Salesperson   | alpha-numeric | 020
   Salesperson   | alpha-numeric | 020 | Amount        | dollars&cents | 010
   Amount        | dollars&cents | 010 | Discount      | numeric       | 003
   Discount      | numeric       | 002 | Net Amount    | dollars&cents | 010
   Net Amount    | dollars&cents | 010 | Order Date    | date          | 008
   Order Date    | date          | 008 | Order Status  | alpha-numeric | 015
   Order Status  | alpha-numeric | 010 | How Ship      | alpha-numeric | 010
   How Ship      | alpha-numeric | 010 | Ship Date     | date          | 008
   Ship Date     | date          | 008 | Shipper Name  | alpha-numeric | 015
   Shipper Name  | alpha-numeric | 015 | Initial Entry | auto-stamp    | 008
   Initial Entry | auto-stamp    | 008 | Last Update   | auto-stamp    | 008
                                                                    016-013
```

Figure 9-2. Reorganization Listing

This table shows how the old data is mapped into the new definition. Examine this table before proceeding. You might find problems you did not expect. You might find data being mapped into the wrong type or size of field.

HOW TO REORGANIZE A DATA FILE

The reorganization does not continue until you have examined the table and choose to go on.

You have the choice of displaying conversion problems on the screen or printing them on the printer.

When the reorganization is complete, both the old and new files contain the same basic data. If you deleted fields, the new file has fewer fields. To bring the new file up to date, you must:

- Enter the appropriate data to the added fields using the CHANGE option.
- Create the desired Report, Label, Index, and Custom Map files.

SUMMARY

When you create a file definition, it is not always possible to anticipate your information management needs over time. The VisiFile program can meet your changing data requirements with the file reorganization function which allows you to modify a file definition. This feature makes it easy to keep your files functional and up to date.

VisiFile reorganization is a simple process. You modify an existing data definition to meet your new needs, then transfer your data from the old file to the new file. Remember that the reorganization function operates only on data files. If you have index, report, label, or custom map files, you must recreate them for the reorganized file.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Reorganize a file	Main menu	1. DEFINE
		2. REDEFINE
		3. Select file
		4. Modify file definition
		5. Modify computed field formulas
		6. Examine reorganization table
		7. Transfer data
		8. Modify data file with File Maintenance
		9. Create needed auxiliary files

CUSTOM MAPS

In the VisiFile program, a map is a file that describes how a data definition is displayed on the screen in the Maintenance function. A custom map is not required for a definition; the program provides a default map called the AUTOMATIC map.

The AUTOMATIC map displays each field in order, beginning at the upper-left corner of the screen and proceeding across and down. The first field is put in the upper-left corner. The second field follows it on the same line if space is available for the field name and entry window. If space is not available, the field is placed at the left side of the next line. If a field name and entry window exceed the screen width, the entry window is continued on the following line. If the next field does not fit on the screen, the field is put at the upper-left corner of the next page.

When the AUTOMATIC map does not meet your needs, you can create a custom map. With the custom map, you can place fields anywhere on any screen. You can add comments to the display to aid the person doing data entry. You can display only those fields you want the data-entry person to see or change. For example, a clerk can update personnel data but not see salary data.

HOW TO USE THE MAPPING OPTION

From the Main menu, press O to select the OTHER option.

From the Other Functions menu, press M to select MAPPING.

The Custom Mapping menu offers two custom map making options:

* The CREATE option displays each field from the file definition, one at a time, and gives you the choice of including each field in the custom map. If you include it, you can locate it anywhere on any screen.
* The REVISE option lets you change an existing custom map or the AUTOMATIC map. The program displays the whole map; you can select individual fields and move them or delete them. The REVISE option does not let you add fields to an existing custom map.

How to CREATE a Custom Map

From the Custom Mapping menu, press C to select CREATE. The program displays the first field in the file definition in the upper-left corner of the screen. You can:

• Press the F4 key to accept this field or to accept the desired field when it is displayed.

   NOTE: The F3 key does not reject the field, it cancels the CREATE option.

• Press the → or ← key to display the next or previous field. Press the End or Home key to display the first or last field in the definition.

• Press the Del key to delete the field from the custom map.

After accepting a field, you can move it anywhere on the screen, change the margins of the entry window, make a copy of it, add comments to the screen, move to the next field, or exit the CREATE option. The following sections describe these options.

THE GRAB OPTION

The GRAB option lets you "grab" the accepted field and move it anywhere on the screen or to a different screen page. The arrow and tab keys move the grabbed field. The F1 and F2 keys page forward and backward. The F4 key locks the field in place and returns to the menu. The F3 key cancels the GRAB option.

You can put a grabbed field on any page. If you leave blank pages, the program removes them. For example, if you put the fields page 1 and page 3, the program removes the blank page 2, and the final map contains pages 1 and 2, not 1 and 3.

THE MARGIN OPTION

The MARGIN option lets you change the right and left margins of the currently accepted field-entry window. When you select the option, the cursor is at the right end of the entry window. The ← key moves the right margin. As the margin moves to the left, the end of the window wraps to the beginning of the next line. You can put 0, 1, or 2 spaces between the original window and the extension with the ↑ and ↓ keys. When the right margin is set, press the ↵ key. The cursor moves to the left margin in the window. The → key moves this margin to the right.

THE REPLICATE OPTION

The REPLICATE option lets you duplicate a field and locate it on the same or multiple pages of the custom map. Select this option, then move to the desired screen page with the F1 and F2 keys. When you have reached the desired page, press the F4 key to put the field on the page. The F3 key cancels the option.

Once a replicated field is on a screen page, you can GRAB and locate it on that page.

THE COMMENT OPTION

The COMMENT option lets you add text, such as entry directions or explanation, to the custom map screen display. You can add text anywhere except in a field name or entry window. The arrow keys let you move to any acceptable location on the screen.

THE NEXT FIELD OPTION

The NEXT FIELD option displays the next sequential field on the screen. You can accept the field by pressing the F4 key or display a different field by pressing the arrow, End, or Home keys.

THE QUIT OPTION

The QUIT option exits the CREATE or REVISE function. If you have not grabbed and accepted any fields, you return to the Custom Mapping menu. If you have grabbed and accepted fields, you are prompted to enter a name for the custom map.

How to Revise a Map

Map revision with the REVISE option is like map creation with the CREATE option. The only difference is that the selected custom map or the AUTOMATIC map is displayed on the screen instead of a single field at a time. To select a field to work with, move the cursor to the beginning of that field.

TIP: Custom maps are useful in displaying entry fields in the order in which they are usually entered. They are also useful in hiding fields that you do not want the entry person to see, such as payroll information.

HOW TO SELECT A MAP

You can select a map from the Main menu or from the File Maintenance menu. A selected map remains the current map until another map is selected.

To select a map from the Main menu, press S for SELECT-FILE, M for MAP, and S for SELECT. Move the cursor to desired map file name and press the ↵ key.

To select a map from the File Maintenance menu, press M for MAP and S for SELECT. Move the cursor to the desired map file name, and press the ↵ key.

TIP: Maps are useful as information gathering forms. Display a map on the screen and press the PrtSc key to print the map on your printer. You can duplicate the form and supply entry data to the entry person in the exact form in which they must enter it.

SUMMARY

In this chapter you learned how to create and revise custom screen maps. Custom maps are useful to restrict confidential information from key entry personnel. Custom maps make the key entry job easier by presenting only the fields that should be entered or changed in the order they should be entered or changed.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Select a map	Main menu	1. SELECT/FILE 2. MAP 3. SELECT 4. Map file name
Select a map	Maintain menu	1. MAP 2. SELECT 3. Map file name
Create a map	Main menu	1. OTHER 2. MAPPING 3. DEFINE A NEW FORMAT 4. CREATE or REVISE 5. New map name 6. Select and locate fields as needed. Add comments.
Revise a map	Main menu	1. OTHER 2. MAPPING 3. DEFINE A NEW FORMAT 4. REVISE 5. Map name 6. Change name (if required) 7. Select and locate fields as needed. Add comments.

TRANSFERRING DATA
TO AND FROM OTHER PROGRAMS

Part of the power of the VisiFile program is its ability to share data through the DIF™ data format. The DIF format is a scheme for storing data on disk. The use of this format lets you transfer data from the VisiFile program to the VisiCalc program for inclusion in a planning worksheet, to the VisiTrend/Plot program to be plotted as a line, bar, area, high-low-close, XY, or pie chart, or analysis or forecasting.

You can also transfer data from other VisiCorp programs to the VisiFile program. For example, you may want to use the VisiFile program to print out certain entries from your VisiCalc accounts receivable file, to store and retrieve data created and analyzed with the VisiTrend/Plot program, or use cost and manpower data created with the VisiSchedule program.

Transferring data is a two step process:

1. The program that originates the data writes it onto a disk in the DIF format.
2. The program to which the data is to be transferred reads the data from the disk.

The DIF format is only used for transfer because it takes more disk space and time to read and write. These differences result from having to meet the data criteria of many different programs.

To use the transfer function, move the cursor to COPY in the Main menu and press ↵. Then select VF->DIF to write a VisiFile data file to a DIF file or DIF->VF to read a DIF file into a VisiFile data file. The program displays the Copy Functions menu as shown in Figure 11-1.
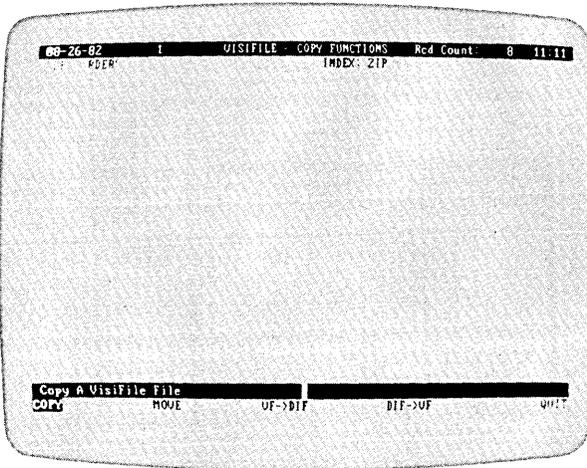
016-016/P

Figure 11-1. Copy Functions Menu

On this menu, you can enter the name of the DIF file. When transferring from a VisiFile data file to the DIF format, the DIF file is normally a new file which the program creates. If the file exists, the program replaces its contents with the data being transferred. If you are transferring from a DIF file to a VisiFile data file, both files must exist, the DIF file with the data to be transferred, and the VisiFile file with a file definition that describes the data to be transferred. In either case, the program assumes that the currently selected file is the VisiFile file. You may change the currently selected file if you wish. You must always enter the DIF filename.

How to Transfer a Data File to a DIF File

The function is extremely flexible. You can:

- Transfer the entire file, only active records, only deleted records, or only records that meet certain criteria.
- Transfer a file in an indexed sequence or in the same sequence as the original.
- Transfer a file to the same disk or to a different disk.

From the Copy Functions menu press V for VF-> DIF (VisiFile to DIF).

You can transfer to an existing file. If the file exists, the records replace the existing data.

The current file is assumed to be the copy-from file, but you can change it. The program cannot make any assumptions about the DIF file name. You must enter the filename.

Answer the questions in the display, when all choices are correct, press F4. Pressing F3 cancels the transfer operation.

CHANGE COPY FROM FILE?

An N (no) response uses the file listed in the Copy From window. A Y (yes) response causes the program to prompt you for a new name later.

CHANGE COPY TO FILE?

This option is ignored in this function. You can change the copy-to name by moving the cursor to that field.

COPY WHICH RECORDS OF THE FILE?

An A (active) response transfers only the active records. A D (deleted) response transfers only the deleted records. An E (every) response transfers every record from the file.

COPY SELECTED RECORDS?

A Y (yes) response transfers the records that meet the selection criteria. Before the transfer is started, the program displays the selection criteria menu. See Chapter Four for a description of establishing selection criteria.

COPY IN INDEX SEQUENCE?

A Y (yes) response transfers the records in the order specified by the currently selected index. If there is no current index, this option is ignored. An N (no) response transfers the records in their current sequence.

COPY TO ANOTHER DISK?

An N (no) response transfers the file to the same disk. A Y (yes) response asks that the copy-to disk be put into Drive A.

How to Transfer From a DIF File to a Data File

From the Copy Functions menu press D for DIF->VF (DIF to VisiFile).

You must transfer to an existing file. If the copy-to file does not exist, the transfer is canceled. The data definition for the copy-to file must identically match the data being transferred. If the data and data definition do not match, the transfer is aborted.

The current file is assumed to be the copy-to file, but you can change it. The program cannot make any assumptions about the DIF file name. You must enter the filename.

Answer the questions in the display, when all choices are correct, press F4. Pressing F3 cancels the transfer operation.

CHANGE COPY FROM FILE?

This option is ignored in this function. You can change the copy-from name by moving the cursor to that field.

CHANGE COPY TO FILE?

An N (no) response uses the file listed in the Copy to window. A Y (yes) response causes the program to prompt you for a new name later.

COPY WHICH RECORDS OF THE FILE?

This option is ignored in this function.

COPY SELECTED RECORDS?

A Y (yes) response copies the records that meet the selection criteria. Before the copy is started, the program displays the selection criteria menu. See Chapter Four for a description of establishing selection criteria.

COPY IN INDEX SEQUENCE?

This option is ignored in this function.

COPY TO ANOTHER DISK?

An N (no) response transfers the file to the same disk. A Y (yes) response asks that the copy-from disk be put into Drive A.

Transferring To and From the VisiCalc Program

There must be a VisiFile file definition that exactly matches the VisiCalc data being transferred. It is especially important that numeric fields in the VisiFile definition are at least as large as the column size in

the spread sheet. For example, if the VisiCalc column is 9 digits wide, the VisiFile numeric field must have a size of 9 or more. It is a common mistake to define a numeric field that is equal to the largest number in the column instead of the column size.

To read VisiFile data into the VisiCalc program, follow these steps:

1. If your VisiCalc disk contains DOS 1.0, you may have problems with transfers. You should load DOS 1.1 and, with the VisiCalc program disk in Drive B, enter: **sys b:** and **copy a: command.com b:.**

2. Load the VisiCalc program and insert the disk containing the VisiFile data in the DIF format.

3. Type /S#L then enter the file name and press the ↵ key.

4. Type C if you want the data to be read in columns or type R or press ↵ if you want the data to be read in rows.

You can read VisiFile data into a VisiCalc work-sheet by columns or rows. If you specify rows (R), each VisiFile record becomes a row. If you specify columns (C), each record becomes a column. Use whichever option is most convenient.

Fields that exceed the VisiCalc default 9 character column width are truncated on the screen but the data is not lost. You can widen the columns with the /G command.

When you transfer a VisiCalc spread-sheet to the VisiFile program, you will usually write it out in columns; a spread-sheet column generally corresponds to a VisiFile record.

The VisiCalc labels, which are usually in column A, should not be transferred to the VisiFile program. These labels correspond to the field names you have already defined with the VisiFile DEFINE function. If labels must be transferred, the VisiFile program converts those labels that must go into numeric type fields as 0.

Transferring To and From the VisiTrend/Plot Program

When a VisiFile data file is transferred to the VisiTrend/Plot program the fields become series. The field name becomes the series name.

To load data into the VisiTrend/Plot programs, insert the disk containing the DIF data into the data drive, select the LOAD option from the Main menu, and select the file from the list the program displays.

To transfer VisiTrend/Plot series data into the VisiFile program, there must be a VisiFile file definition that exactly matches the VisiTrend/Plot data being transferred. It is especially important that numeric fields in the VisiFile definition are at least as large as the largest number in the series. For example, if the largest number is 9 digits, the VisiFile numeric field must have a size of 9 or more.

The DIF Format and Computed Fields

If your read DIF data into a file that contains computed fields, you will find that the computations are not done when you inspect the file. To execute the computations you must access each record from the File Maintenance menu.

TIP: Use the SELECT-REC REPLACE option in the File Maintenance menu to execute the computed-field formulas without individually accessing each record. Select every record that has a record number equal to or greater than (GE) 1, and replace any computed field with 0. When the program finds the first record, select AUTOMATIC and all records are re-computed.

The DIF Format and Numbers

The VisiFile program handles 16 significant digits in numeric fields. All numbers exceeding 16 digits are rounded at the 16th digit.

The program does not support scientific notation. The numbers from programs that use scientific notation are handled in standard notation.

You should not try to put alphanumeric data into VisiFile numeric fields. However, if you do put alphanumeric data into a numeric field, the VisiFile program accepts it. The field is treated as a zero.

FUNCTIONAL SUMMARY

To	From	Select/Enter
Transfer data to a DIF file	Copy menu	1. VF → DIF 2. Transfer options 3. Press F4
Transfer data from a DIF file	Copy menu	1. DIF → VF 2. Transfer options 3. Press F4

THE VISIFILE UTILITIES

The program contains an alarm clock function and printer configuration. Both are reached through the Other Functions menu. The ALARM function sets an alarm to remind you of a time of day or of an elapsed amount of time. The CONFIGURATION function displays and, optionally, modifies the printer configuration.

THE ALARM CLOCK

The ALARM function uses the IBM Personal Computer time-of-day clock. The clock operates from the time you set when you loaded the program.

You can set the alarm to go off at a time of the day or at an elapsed time from when you set the alarm. The alarm will sound an audible alarm or blink the time of day in the upper screen banner. The audible alarm sounds ten times (for ten seconds) and the time blinks. The time continues to blink until you turn off the alarm or exit the program.

How to Set the Alarm

From the Main menu, press O to select OTHER and then press A to select ALARM

The program displays the Alarm screen which is shown in Figure 12-1.
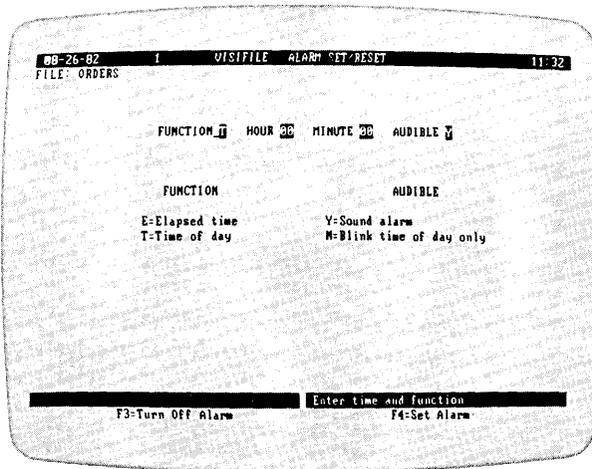
016-025/P

Figure 12-1. The Alarm Clock Screen

Enter the alarm FUNCTION: **E** for elapsed time or **T** for time of day.

Next enter the HOUR and MINUTE values. For the elapsed time function, this is the amount of time to pass before the alarm goes off. For the time of day function, this the exact time the alarm is to go off.

Finally, enter **Y** for yes or **N** for no in the AUDIBLE field.

Press the F4 key to set the alarm and return to the Other Functions menu.

How to Turn Off the Alarm

After the alarm goes off, the time in the upper banner continues to blink until you cancel the alarm from the Alarm Set/Reset menu.

From the Main menu, press O to select OTHER and then press A to select ALARM Press the F3 key to turn off the alarm and return to the Other Functions menu.

PRINTER CONFIGURATION

The VisiFile program operates with a variety of printers. Appendix D lists the printers and interface cards that were successfully tested with the program. The absence of a printer or interface card make and model in the appendix only means that time and availability of equipment did not allow testing of that printer and/or interface card.

The printer configuration identifies the type of printer interface (parallel or serial) and the baud rate (for serial interfaces), and supplies line feed and form feed information and printer control data, if required.

How to Modify the Printer Configuration

From the Main menu, press O to select OTHER and then press C to select CONFIGURATION.

The program displays the Printer Configuration screen as shown in Figure 12-2.
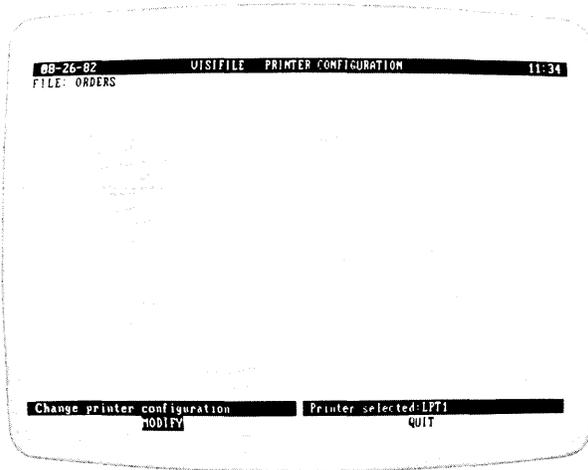
016-026/P

Figure 12-2. Printer Configuration Screen

This screen shows the selected printer. If it is a serial printer, the baud rate (the speed at which data is transferred between the computer and the printer) is included.

You have the options of modifying (MODIFY) the current configuration or returning (QUIT) to the Other Functions menu.

How to Change the Printer Configuration

From the Printer Configuration menu press M to select MODIFY.

As shown in Figure 12-3, the program lists the parallel and serial printer interface names for which there are interface cards in the computer. This includes printer interface cards and communication cards that can be used to drive a printer. Move the cursor to the appropriate printer interface name and select it.

12-3
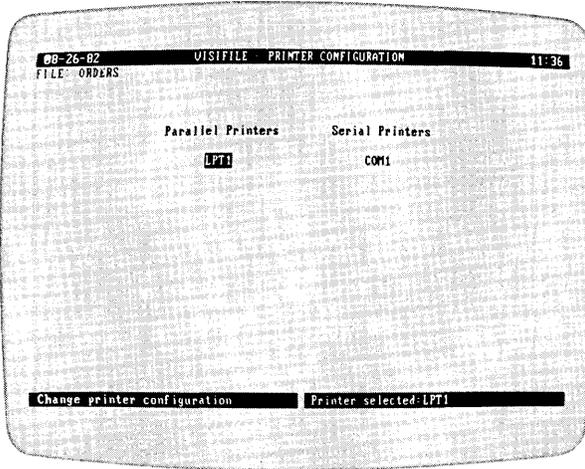
016-027/P

Figure 12-3. Printer Selection Screen

If you select a serial printer, the program displays a list of the baud rates, shown in Figure 12-4, that it can use to communicate with a printer.
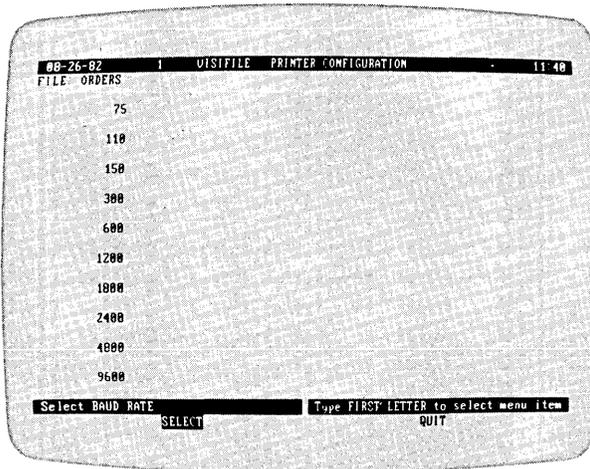
016-028/P

Figure 12-4. Baud Rate Display

The baud rate you should choose must match your printer and the interface card in the computer. If you do not know what baud rate to use, see the printer and interface card documentation.

Press S to select a baud rate. Move the cursor to the desired rate and press the ↵ key.

The selected rate is shown in the lower banner. Press Q to select QUIT and continue.

After you select a parallel printer or after you select a baud rate for a serial printer, the program displays the options shown in Figure 12-5.
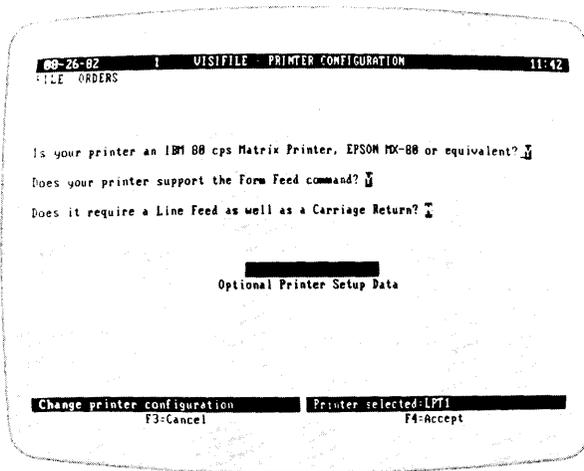
016-029/P

Figure 12-5. Printer Options and Control Data Entry

This screen asks for information about your printer that the computer cannot obtain from the print. You can obtain the information from the printer documentation.

Is your printer an IBM 80 cps Matrix Printer, EPSON MX-80, or equivalent? **A Y (yes) response identifies your printer to the program.**

Does your printer support the Form Feed command? **A Y (yes) response to this question causes the print program to use a form feed to eject to a new page. An N (no) response causes the program to use blank lines to reach the top of a new page. Print processing is much faster if the printer accepts a form feed.**

Does it require a Line Feed as well as a Carriage Return? **A Y (yes) response causes the program to issue a line feed with each carriage return; an N (no) response issues only a carriage return. If your reports overprint on a single line, change this option to Y. If your reports are double spaced, change this option to N.**

Optional Printer Control Data lets you enter a control string for your printer. See you printer documentation for the control string values, if any, that your printer supports.

You must turn your printer off and then back on to make the new printer configuration active.

How to Enter a Control String

Printer control strings can consist of alphanumeric characters and ASCII codes. Characters or codes that cannot be entered directly from the keyboard must ·be entered as the decimal equivalent of the character's ASCII code. The number must be in the range 0 through 255. Table 12-1 lists the decimal equivalents of the ASCII codes. Alphanumeric characters must be enclosed in quotes (" "). Fields within the control strings can be separated with a plus sign (+) or semi-colon (;). ASCII decimal codes must be separated from each other. For example, to enter a control string of Esc Esc (decimal equivalent 27) ABCD enter:

27 + 27 + "ABCD"

Table 12-1. ASCII Codes

Decimal	ASCII	Name
0	NUL	null
1	SOH	start heading
2	STX	start text
3	ETX	end text
4	EOT	end transmission
5	ENQ	enquire
6	ACK	acknowledge
7	BEL	bell
8	BS	backspace
9	HT	horizontal tab
10	LF	linefeed
11	VT	vertical tab
12	FF	form feed
13	CR	carriage return
14	SO	shift out
15	SI	shift in
16	DLE	data link escape
17	DC1	dev ctl 1
18	DC2	dev ctl 2
19	DC3	dev. ctl 3
20	DC4	dev ctl 4
21	NAK	negative acknowledge
22	SYN	synchronous idle
23	ETB	end transmission blocks

Table 12-1. ASCII Codes (Continued)

Decimal	ASCII	Name
24	CAN	cancel
25	EM	end medium
26	SS	special sequence
27	ESC	escape
28	FS	file separator
29	GS	group separator
30	RS	record separator
31	US	unit separator
32	SP	space
33	!	exclamation
34	"	double quote
35	#	number sign
36	$	dollar sign
37	%	percent sign
38	&	ampersand
39	'	apostrophe
40	(	open parenthesis
41	)	close parenthesis
42	*	asterisk
43	+	plus sign
44	,	comma
45	—	minus sign
46	.	period
47	/	slash
48	0	zero
49	1	one
50	2	two
51	3	three
52	4	four
53	5	five
54	6	six
55	7	seven
56	8	eight
57	9	nine
58	:	colon
59	;	semicolon
60	<	less than
61	=	equal
62	>	greater than
63	?	question mark
64	@	at sign
65	A	A
66	B	B

Table 12-1. ASCII Codes (Continued)

Decimal	ASCII	Name
67	C	C
68	D	D
69	E	E
70	F	F
71	G	G
72	H	H
73	I	I
74	J	J
75	K	K
76	L	L
77	M	M
78	N	N
79	O	O
80	P	P
81	Q	Q
82	R	R
83	S	S
84	T	T
85	U	U
86	V	V
87	W	W
88	X	X
89	Y	Y
90	Z	Z
91	[	open bracket
92	\	back slash
93	]	close bracket
94	∧	circumflex
95	—	underscore
96	`	grave accent
97	a	a
98	b	b
99	c	c
100	d	d
101	e	e
102	f	f
103	g	g
104	h	h
105	i	i
106	j	j
107	k	k
108	l	l
109	m	m

Table 12-1. ASCII Codes (Continued)

Decimal	ASCII	Name
110	n	n
111	o	o
112	p	p
113	q	q
114	r	r
115	s	s
116	t	t
117	u	u
118	v	v
119	w	w
120	x	x
121	y	y
122	z	z
123	{	open brace
124	|	vertical line
125	}	close brace
126	~	tilde
127	DEL	delete (rubout)

IBM PERSONAL COMPUTER REQUIREMENTS

To use the VisiFile program, your IBM Personal Computer must have:

› 64K bytes or more of RAM memory.

› A video monitor. The monitor can be black and white or color. However, the program does not produce color images.

› Two floppy disk drives. Two double-sided disk drives are preferable; however, if you have one of each, the double-sided drive should be in the Drive B position and the single-sided drive should be in the Drive A position. With only one double-sided disk drive, you will not be able to copy large files from the double-sided to the single-sided drive.

• A printer, while not required, is recommended to make full use of the VisiFile report capabilities.

• An IBM DOS 1.1 disk.

• The VisiFile program disks included with this manual.

• A floppy disk initialized with the DOS FORMAT command for storing your data.

USING FLOPPY DISKS

INSERTING AND REMOVING

To open your disk drive, pull outward and upward on the bottom edge of the door. Slip the disk into the slot with the label facing upward as shown in Figure B-1. The edge of the disk with the oval cutout should enter the drive first; the edge with the label should enter face up and last.

005-003
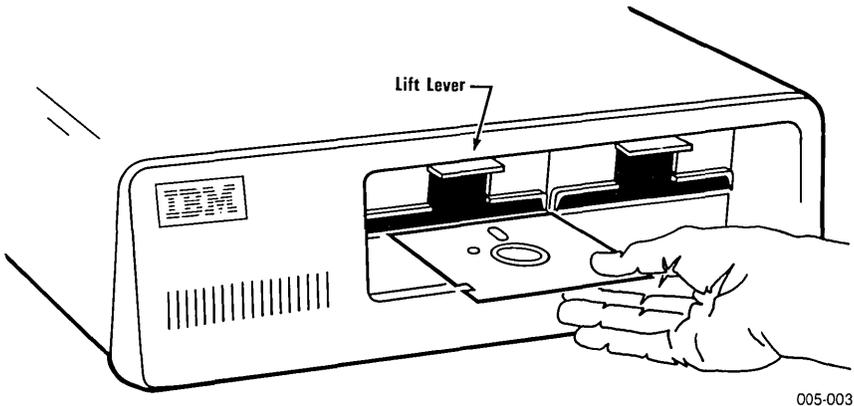
Figure B-1. Inserting a Disk

Push the disk gently into the drive; do not bend it. When it is completely inside in the drive, close the drive door.

To remove a disk, open the door and pull the disk straight out. Opening the drive door lifts the read/write head from the disk surface. If you leave a disk in a drive for long periods without use, it is a good idea to open the door so the read/write head does not rest on the disk.

Never remove a disk while the drive is operating. This can permanently damage the disk and is almost certain to destroy the information on it. You may be able to reuse such a disk but you will not be able to recover the lost data.

CARE OF FLOPPY DISKS

Floppy disks are small plastic disks coated with a brown or gray magnetic material on which information is recorded. The disks are permanently sealed in a square cover, which keeps it clean, yet allows it to spin freely. Never open this protective cover.

Never let anything touch the brown or gray disk surfaces showing through the holes in the cover. Always handle the disk by the cover. When not in use, keep the disk in the paper pocket. These pockets are treated to minimize static buildup which attracts dust. It is best to store your disks in a vertical position, in their box, in a disk holder, or in a notebook especially designed for them.

Disks hold a large amount of information. The information is stored as magnetic codes, each of which occupies a very small area of the disk. An invisible scratch on the surface of the disk—even a fingerprint—can destroy data. Do not put disks on dirty or greasy surfaces; do not let them collect dust.

When writing on a disk label, use a felt tip pen to minimize pressure. Do not press hard. Keep your disks away from magnets and magnetic fields such as found near electric motors and television sets. Disks are sensitive to temperature extremes. Keep them out of the sun and away from heat sources that can warp them and cause loss of data.

With reasonable care a disk will give you an average life of about 40 operational hours, which is a long time when you consider the short time it takes to load most programs. But be careful—just a little carelessness can destroy its usefulness.

THE KEYBOARD

Figure C-1 shows the IBM Personal Computer keyboard. Most of the keys are self-explanatory, but a few special keys need further explanation. You will use most of the keys with the VisiFile program. Certain keys that are used very often are pointed out in the figure. These keys are explained in the manual.

012-002
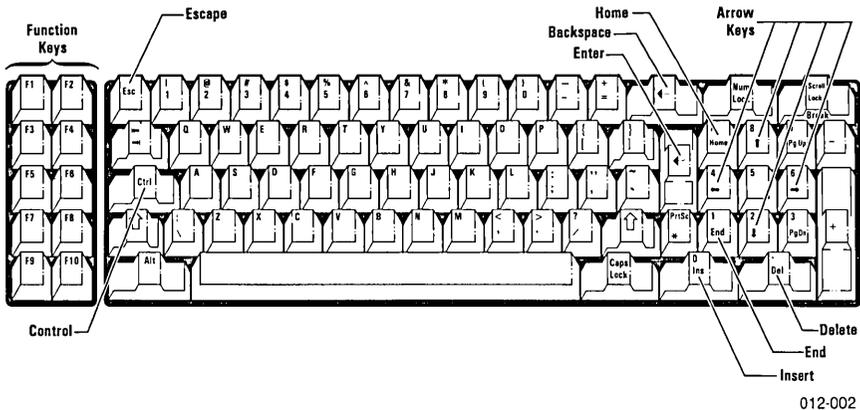
Figure C-1. The IBM Personal Computer Keyboard

SPECIAL KEYS

The function keys have special meanings to the VisiFile program. These keys are listed at the bottom of some screen displays with their function.

There are ten function keys, labeled F1 through F10, along the right side of the keyboard as shown in the figure. These keys are activated by the program when there is no menu on the screen and the cursor is in a displayed list or data format. When a key is active it is listed at the bottom of the screen in the form:

F4 = Accept

In this case, pressing the F4 function key accepts the information or data that is currently displayed on the screen. When the function keys are active, keys F7 through F10 function the same as the cursor keys as listed in Table C-1.

The functions performed by many keys depend on the environment at the time the keys are pressed. There are two basic environments:

- When the cursor is in a menu or a list of selections, it is a large reverse video area that highlights an option or selection.
- When the cursor is in a data entry screen, it is a blinking underscore character.

Table C-1 lists the keys and their use in the VisiFile program environments.

Table C-1. Key Usage

	Use	
Key	**Within Menus and Lists (reverse video cursor)**	**Within Screen Displays and Entry Windows (underscore cursor)**
→ ←	Moves the cursor to the right and left between menu options or entry windows. The cursor wraps around in both directions.	Moves the cursor to the right and left within the entry window. The cursor wraps around in both directions.
↑ ↓	Moves the cursor to the beginning of the first unprotected entry window on the previous or next line.	In multiple-line entry windows, moves the cursor to the previous or next line, same column.
↵	Accepts the menu or list indicated by the cursor.	Accepts the current contents of the window, and the cursor exits to the right.
Tab Backtab	Moves the cursor one entry window to right and the left. The cursor goes to the beginning of the next or previous line.	Moves the cursor eight spaces to the right and the left. The cursor goes around in both directions.
Backspace	Moves the cursor one entry window to the left. The cursor goes to the end of the previous line.	Moves the cursor to the left and erases each character it encounters. Does not wrap around. Sounds audible alarm if you attempt to move to the left of the first space.

Table C-1. Key Usage (Continued)

	Use	
Key	**Within Menus and Lists (reverse video cursor)**	**Within Screen Displays and Entry Windows (underscore cursor)**
Del	Not used.	Deletes the character indicated by the cursor and shifts the remaining characters to the left.
End	Moves the cursor to the last entry window on a screen display. Pressing End a second time moves the cursor to the first entry window of the last screen display for the subject file.	Moves the cursor to the right end of the current window. Pressing End a second time move the cursor to the last window on the screen.
Esc	Exits the Print and Sort functions when indicated on the screen.	
F1 F2 PgUp PgDn	Moves the cursor to the first entry window of the previous screen display or the next screen display.	Accepts the entry or modification and exits the window to left.
F3	Not used.	Cancels all entry, and returns the window to its status before entry or modification began. The cursor exits the window to the left.
F5	Not used.	Replaces the contents of the field with the contents of the field in the last record that was displayed. Exits the window to the right or down.
F6	Not used.	Turns lock mode on and off.
F7-F10	Not used.	Same as ←, →, ↑, ↓.

Table C-1. Key Usage (Continued)

Key	Within Menus and Lists (reverse video cursor)	Within Screen Displays and Entry Windows (underscore cursor)
	Use	
Home	Not used.	Moves the cursor to the left end of the entry window. Pressing Home a second time moves the cursor to the first entry window at the upper-left corner of the screen.
Ins	Not used.	Turns the character insert mode on or off. In character insert mode, the cursor changes from a blinking underscore character to a small blinking square. Characters are inserted to the left of the cursor.
PrtSc	Prints the contents of the current screen on the printer.	Prints the contents of the current screen on the printer.

SUPPORTED PRINTERS

The VisiFile program has been tested with the printers listed in this appendix. Other devices may or may not operate properly. The purpose of this appendix is tell you what has been tested, not to discourage you about the devices that have not been tested. The decisions on the devices that were tested were based on popularity and availability of hardware.

The following printers were tested and performed satisfactorily with the program.

Centronics 739—parallel

IDS Paper Tiger™ Prism—parallel

Epson MX-80 and MX-100—parallel

NEC Spinwriter™ 5520, 7715—serial (1200 baud)

NEC Spinwriter™ 3530, 5530, 7730—parallel

Okidata Microline 82A, 83A, 84—parallel

Qume Sprint 5/45, 9/55—serial (1200 baud)

Diablo 630 RO—serial (1200 baud)

The program, as shipped, is configured for parallel printers. The VisiFile program uses the BASIC Interpreter. The Interpreter needs more memory for serial printers that it needs for parallel printers. The program supports serial and parallel printers.

Use the following procedure to configure your VisiFile program for a serial printer:

1. Load IBM DOS 1.1.
2. Type **basic** to load the BASIC Interpreter.
3. Press F3 and type **b:serial**, and then press F2.
4. Respond y (yes) to the question asking if a serial printer is to be supported by the VisiFile program.
5. Insert your VisiFile disk as directed and press ⏎.

To use these program disks on a computer with less then 128K of memory, you must run the program and respond n (no) to the question about a serial printer to turn off serial printer support.

INFORMATION AND ERROR MESSAGES

The VisiFile program displays messages that explain briefly what has happened to cause the program to stop running. This section lists and describes those messages. They are listed in alphabetical order. If a message refers to an error, the entry explains the probable cause and suggests how you should proceed.

= is missing or improperly placed
You tried to enter a formula, but the = is missing or improperly placed. The = must follow the field identifier, for example, a = b + c. The arrow highlights the error. Press the space bar once, move the cursor to the error, and correct the entry.

Access denied. Re-enter the password
You entered an incorrect password. Enter the password again. Remember to enter it exactly as you did the first time you created the password.

ASCII control code isn't valid
During printer configuration, you entered an ASCII control string. It must be a decimal number from 0 to 255.

Bad exponent in the field
When the VisiFile program calculates your formula, it generates an exponent. Your formula has expressions or data that the program cannot evaluate.

If you continue to get this message every time you do this calculation, reorganize your files using the REDEFINE option on the File Definition menu. During the reorganization, correct the fields in the formula.

Cancel DIF extraction? (y/n)
A problem occurred in the VF->DIF function, but you will not lose data. For example, the DIF file may exceed the VisiCalc program's capacity. You may want to proceed anyway if you can:

• Run the VisiCalc program on a larger machine

• Use the DIF file in another VisiCorp product

Cancel sort? (y/n)

   You pressed the Esc key during the Sort function. If the VisiFile pro-
   gram was sorting more than one index, it preserves completed
   indexes and does not let other VisiFile functions use indexes it has not
   yet sorted or updated.

   Type one of the following: y to terminate the sort and return to the
   previous menu level, or n to continue sorting.

   Use the UPDATE option of the INDEX function to continue creating the
   index.

Can't add files to this disk

   You tried to copy a file to another name or the program's limit of 18
   files per disk (nine for 64K systems) was exceeded. Add the files to a
   new disk, or delete some of the old files.

Can't CROSS-TOTAL horiz total—fld #

   You were defining a report and specified a cross-total for a horizontal
   total. You cannot cross-total a horizontal total because a horizontal
   total is a cross-total. Move the cursor to the CROSS-TOTAL column,
   and correct the entry.

Can't CROSS-TOTAL non-numeric field #

   You were defining a report and specified a cross-total on a non-
   numeric field. You cannot total an alphanumeric or date field. Move
   the cursor to CROSS-TOTAL, and change the entry to N.

Can't delete the default format

   You tried to delete the default format for a report or a label. The
   VisiFile program will not let you delete or modify a default format.
   You can only print it.

Can't enter alpha chars in numeric fld

   You entered alphabetic characters in a numeric field. Enter numbers
   instead.

Can't load the screen map

   The program cannot find the screen map you requested. Rebuild the
   map with custom mapping.

Can't modify the default format

   You tried to modify the default format for a report or a label. The
   VisiFile program will not let you modify or delete a default format.
   You can only print it.

Can't open the data dictionary
You tried to reorganize a file using the REDEFINE option, and the program cannot open the data dictionary. You may be able to save your new file definition by copying your files onto a new disk. If not, insert your backup disk and create the new file definition again.

Can't open the index
You tried to reorganize a file using the REDEFINE option, and the program cannot open the index. You may be able to save your new file definition by copying your files onto a new disk. If not, insert your backup disk and create the file definition again.

Can't open the input file
You tried to reorganize a file using the REDEFINE option, and the program cannot open the input file. You may be able to save your new file definition by copying your files onto a new disk. If not, insert your backup disk and create the file definition again.

Can't open the output file
You tried to reorganize a file using the REDEFINE option, and the program cannot open the output file. You may have inserted the wrong disk or switched disks during the processing. Your new file definition is lost. Insert your backup disk and create the file definition again.

Can't put decimal in non-numeric field #XX
You were defining a report and specified decimal positions in a non-numeric field. Move the cursor to the field, and correct the entry.

Can't total non-numeric field #XX
You were defining a report and tried to total a non-numeric field. Move the cursor to the TOTAL column, and change the y to n.

Can't write the data dictionary
You tried to reorganize a file using the REDEFINE option, and the program cannot write the data dictionary. You may have inserted the wrong disk or switched disks during the processing. Your new file definition is lost. Insert your backup disk and create the file definition again.

Can't write the data file
You tried to reorganize a file using the REDEFINE option, and the program cannot write the data file. You may have inserted the wrong disk or switched disks during the processing. Your new file definition is lost. Insert your backup disk and create the file definition again.

Character in formula isn't valid
> You entered something other than: field identifier, numeric operator (+ , − , /, *, ∧), equal sign, or parentheses. The arrow highlights the error. Press the space bar once, move the cursor to the character, and correct it.

Combination isn't valid. Operator follows =
> You tried to enter a formula with an operator following the = , for example, a = + b. The arrow highlights the error. Press the space bar once, move the cursor to the error, and correct the entry.

CROSS-TOTAL must be N or 1-3 in fld #XX
> You were defining a report and entered a value other than N or 1, 2, or 3. Move the cursor to the CROSS-TOTAL column, and correct the entry.

Data type isn't valid in field #XX
> You were defining a file and entered a data type that is not valid. Move the cursor to the field, and enter one of the data types displayed on the screen.

Date isn't valid
> You entered the date in a format that is not valid. Enter it in the following format using hyphens (-) or slashes (/) as separators: mm-dd-yy or mm/dd/yy

Date isn't valid. Re-enter
> Review the date you entered in the search-argument field. Check the month or day for proper ranges. The year must be two characters; the month-day-year separators must be − or /.

Decimal needed for TOTAL in field #XX
> You were preparing a report and requested a total for the field. You must also specify decimal positions. Move the cursor to the DECIMALS column, and enter a number from 0 − 5.

Decimals must be N or 0-5 in field #XX
> You were preparing a report and entered a value for DECIMALS that is not valid. Move the cursor to DECIMALS, and enter N or a number from 0 − 5.

Depth must be from 1 to 99
> The depth value must be a number from 1 to 99 for a label definition, or from 6 to 99 for a report definition. Enter a valid value.

DIF data isn't valid. Can't continue
Something is wrong with the DIF data file. The DIF->VF function can-
not read it. Go back to the program that created the DIF file origin-
ally, and re-create the DIF file.

DIF file may exceed nnnnnn digits
The size of the DIF file may exceed the VisiCalc program's memory
capacity. You can cancel or proceed. Proceed if the VisiCalc pro-
gram is available on a machine with more memory, or you are extrac-
ting the DIF file for another VisiCorp Product.

DIF has xx Fields; VF has yy !!
The number of fields in the incoming DIF file differs from the number
of fields in the VisiFile data file. Because fields are transferred on a
1:1 basis, the DIF->VF function cannot continue.

DIF source NOT VisiFile data
This DIF input file was created by the VisiFile VF->DIF function, but
not from the current copy-to file.

Directory is full. Delete files
You need to delete some files from your directory. Return to the Main
Menu, and select the DEFINE option. When the File Definition menu
appears, select the DELETE option to delete one or more files.

DIF file may exceed nnnnnn digits
The size of the DIF file may exceed the VisiCalc program's memory
capacity. You can cancel or proceed. Proceed if the VisiCalc pro-
gram is available on a machine with more memory, or you are
extracting the DIF file for another VisiCorp product.

Disk drive error. Press ↵ to retry
One of the following problems can cause this message to appear:

- Drive door is open
- Disk is not properly inserted in the drive
- Disk is not in the drive
- Disk is bad
- Hardware fails

Disk drive X isn't valid. Type A or B
Only drives A or B are valid for IBM disk systems.

- Disk is not in the drive
- Disk is bad
- Hardware fails

Disk drive X isn't valid. Type A or B
Only drives A or B are valid for IBM disk systems.

Disk is full. Delete 1 or more files
You tried to add data to a file or create a new index or report, but the disk is full. Return to the Main Menu, and select DEFINE. When the File Definition menu appears select DELETE to:

- Delete any files you do not want
- Delete indexes or reports to clean up any auxiliary files you do not want

Disk isn't ready or hardware error
One of the following problems can cause this message to appear:

- Drive door is open
- Disk is not properly inserted in the drive
- Disk is not in the drive
- Disk is bad
- Hardware fails

Disk write protected
You tried to write to a disk that has a write-protect tab covering the notch. You may be trying to write to a program disk. Determine why the disk was write-protected before you remove the tab.

Division by zero in field xx
The calculation of a computed field resulted in a zero divisor. The program puts zero in the target field and continues. Check your values in the record.

Document file not found. Re-enter
You entered a text file name that is not on the disk in Drive B. Make sure the name you entered is correct. If it is, exit VisiFile, and transfer that text file to the disk currently in Drive B.

Duplicate file name
You tried to reorganize a file using a file name that already exists. You cannot have duplicate file names on a disk. Refer to the list of existing files displayed on the screen, and enter a unique name.

Duplicate file names aren't allowed
   The copy-to file name you entered already exists. Refer to the list of
   existing files displayed, and re-enter a unique name.

Duplicate LINE/ITEM number in field #XX
   You were defining a report format and entered a duplicate line/item
   number. Duplicate numbers are not allowed. Move the cursor to the
   LINE and ITEM columns, and correct the entries.

Duplicate LINE/ITEM number not allowed
   You were defining a label format and entered a duplicate line/item
   number. Move the cursor to the duplicate the LINE and ITEM columns,
   and correct the entries.

Duplicate map name. Re-enter
   You tried to create a custom map with a name that already exists.
   Refer to the list of existing maps displayed on the screen, and enter a
   unique name.

Duplication factor must be at least 1
   You were defining a label format and entered 0 or a negative num-
   ber for the DUPLICATION FACTOR. You must enter a number from
   1 to 99.

Enter DIF file name
   You requested the DIF->VF function or the VF->DIF function, but you
   did not specify a DIF file name. Enter the DIF file name.

Enter label format name
   You must enter a label format name to continue.

Enter line no. in <field name>
   You defined a label format and entered an item number, but not a line
   number. Move the cursor to the LINE column, and enter a number.

Enter password
   This file is password protected. The password is required to COPY the
   file.

Enter report format name
   You cannot continue until you enter a name for the report format.

Expression is empty
   You entered parentheses in your formula with nothing between them.
   The program highlights the error. Press the space bar once, press the
   right arrow key to move the cursor to the error, and correct the entry.

Expression is missing
    You tried to enter a formula with a missing expression. The arrow highlights the error. Press the space bar once, move the cursor to the error, and correct the formula.

Expression is too complex
    You have entered too many levels of parentheses in your formula. Reorganize your file using the REDEFINE option on the File Definition menu, and correct the formula.

Expression terminated improperly
    You left something dangling in the expression you entered. For example, you may have entered one parenthesis and not the other. The arrow highlights the error. Press the space bar once, move the cursor to the error, and correct it.

Field specified isn't valid
    You tried to enter a field identifier in your formula that does not exist. The arrow highlights the error. Press the space bar once, move the cursor to the error, and enter one of the displayed field identifiers.

Fields can't be replaced
    While you were doing file maintenance, you chose the REPLACE option of the SELECT-REC option, but all fields in this file are either protected or are auto-stamp date fields.

Fields overlap
    You are using custom mapping to move a field on the screen. That field is temporarily superimposed over another field on the screen. As soon as you move the field, the message disappears.

File name isn't valid. Type another
    The name you entered for the DIF file violates one or more rules of IBM DOS for disk files. Check to see if you entered special characters or the names COM1 or LPT1.

File or keys too large to sort
    The disk does not have enough space for the index file. Reduce the size of the sort keys, or delete some records from the file.

File requires at least 128K machine
    This file was created on a machine with 128K memory or more. You have a machine with less 128K. The program cannot do anything with this file unless you increase the memory.

<filename> is empty
> You tried to print this file, and it does not have any data to print. Get your backup disk and try again.

<filename> isn't found
> During the process of selecting a file, you may have inserted the wrong data disk or switched disks. Get your backup disk, and re-enter the file name.

First char in file name can't be blank
> You entered a file name that has a blank as the first character. File names must begin with a character. Re-enter the file name.

First char in label format name blank
> You entered a label format name that has a blank as the first character. Label format names must begin with a digit, letter, or special character (except a blank). Re-enter the name.

Formula not complete
> The arrow highlights the missing part of the formula. Press the space bar once, move the cursor to the error, and complete the formula.

High range isn't valid. Re-enter
> The high range you entered for selection criteria is lower than the low range.

Hour isn't valid. Re-enter
> You were setting an alarm, and the hour you entered is not valid. You must enter a number from 0 to 23.

Index isn't valid. Run index to rebuild
> This index is not valid because of changes in the key field. Use INDEX to rebuild the index.

Insert previous data disk in drive X
> You changed a disk without being prompted to do so. Replace the original disk before continuing, or press Esc to return to the Main Menu.

Item no. can't be negative— <field name>
> You were defining a label format and entered a negative number in ITEM. Move the cursor to ITEM, and correct the entry.

Key value must be entered
> During file maintenance you were trying to view, change, or delete a file that has an index. You must enter the key for that index.

Left margin can't be negative
You were trying to print a document, and you entered a negative number for the left margin. Move the cursor to Left Margin Indent, and correct the entry.

Line length exceeds 255 in field #XX
You were defining a report, and the line length exceeds 255 characters. Remove the field from the line, and reposition it to another line.

Line XX exceeds 255 characters
You were defining a label, and the line length exceeds 255 characters. Remove the field from the line, and reposition it to another line.

Line no. must be from 1 to 25 — <field name>
You were defining a label, and the value you entered for the line number is not correct. Move the cursor to the LINE column, and enter a number from 1 to 25.

Line no. must be from 1 to 25 in field #XX
You were defining a report, and the value you entered for the line number is not correct. Move the cursor to LINE#, and enter LINE column is not in the correct range. Correct the entry. number from 1 to 25.

Lines/page must be from 6 to 99
You were defining a report and entered a value that is not correct for the lines-per-page. The depth of the page must be from 6 to 99. Correct the lines-per-page entry.

Lines per page can't be negative
You tried to print a document and entered a negative number. Correct the lines-per-page entry.

Low range isn't valid. Re-enter
The range value you entered cannot be used in the context of this field. Enter another range value.

Map name is blank. Please enter
You must enter a map name to continue.

Maximum no. chars. 80 or 132
Specify the maximum number of characters for the printer you have.

Maximum no. chars. exceeded by XXXX
You were defining a file and exceeded the maximum number of characters. For a machine with memory less than 128K, the maximum is 1000, and for a machine with more memory, the maximum is 2048. Shorten or delete some of the fields.

Minute isn't valid. Re-enter
You were setting an alarm, and the minute you entered is not valid. Enter a number from 0 to 59.

No decimal for horiz. total in field #XX
You were preparing a report and entered N (no decimals). You must enter from 0 to 5 decimal positions. Move the cursor to the DECIMALS column, and correct the entry.

No fields defined
You were defining a file and did not enter a value in the first field in the file definition. The program will not let you continue until you define the field. Move the cursor to the FIELD NAME column, and enter a value.

No fields are selected
You were trying to establish selection criteria and pressed the F4 key. The only field on the screen has not had a relational operator chosen from the list at the bottom of the screen. Press ↵; then move the cursor to another item to choose a relational operator.

No. of labels must be from 1 to 5
You were defining a label format and entered a value that is not valid. Move the cursor to NUMBER OF LABELS, and correct the entry.

No records to copy
The COPY function cannot proceed because there is not any data to copy. You may have selected the wrong file. Return to the Main menu, and select another file.

No records to sort
The sort cannot continue because there are no records to sort. You may have selected the wrong index. Select another index.

Not enough disk for xxxxxxxx!
This disk will not hold the work or index field that resulted from sorting the index. If it is a work field, re-specify the work file. If it is an index field, delete some of the fields, or go to a 2-disk setup.

Not enough space for new format
You tried to enter a new format for a label or report. There is not enough space for it. You can specify nine label formats and nine report formats (total of 18) on a 64K machine. Use the DELETE option to delete an old format.

Not enough space for formulas
You have exceeded the space allowed for formulas. The program allows up to 252 characters. Change your formulas to be within the allowed 252 characters. While you enter the formulas, the program displays how much space is left.

Offset must be from 0 to 99
You were defining a label format and entered an offset value that is not valid. Move the cursor to OFFSET, and enter a number from 0 to 99.

Only one break field allowed
You were defining a report and requested more than one break. You can only request one level of subtotals.

Operator is missing
You tried to enter a formula with a missing operator. The arrow highlights the error. Press the space bar once, move the cursor to the error, and correct the formula.

Overflow in computed field xx
Field xx does not have enough characters to contain calculated results. If the additional field width is required, reorganize the file. Check the computed field formulas for unreasonable values, such as large exponents. The program does not use scientific notation to store results of calculations.

Overflow in numeric field
A DIF file contains numeric data field(s) that exceed the width of the VisiFile target field.

Please define a file
You tried to use a function that requires a file, and no files are defined on this disk. You may have the wrong data disk. Either define a file, or get the correct data disk.

Please enter document name
You must enter a document name to continue.

Please specify more characters
    The phrase you entered for the SOUND option does not have enough
    characters.

Please enter <field name>
    You were defining a file and entered SIZE, but not the field name.

Please enter file name
    You must enter a file name to continue.

Printer isn't available. Check config.
    You tried to direct output to a printer, but you do not have one
    configured. You can do one of the following:

- Display output on the screen using the DISPLAY option.

- Hook up the printer; then request your print again.

- Change your configuration to add a special printer. Return to the
    Printer Configuration Menu, and make the appropriate changes.

Printer isn't ready
    The printer may be out of paper or the power switch may be turned
    to OFF.

Printer wasn't found
    During the printer configuration, you specified a printer and the pro-
    gram did not find a parallel card in the system. Make sure the con-
    figuration file matches your computer.

Protection isn't valid in field #XX
    You were defining a file and entered a value that is not valid for pro-
    tection. Move the cursor to the PROTECTION column, and enter N
    (none) or Y (update not allowed).

Quotes in control data aren't equal
    You were trying to configure your printer and did not enter an equal
    number of quotes in the printer control data. Return to the Printer
    Configuration menu, and select the MODIFY option. Correct the
    printer control data.

REC NO. isn't a valid receiving field
    You tried to enter a formula by putting a value in REC#. You cannot
    put a value in REC#. It can be used on the right side of = but not on
    the left. The arrow highlights the error. Press the space bar once,
    press the right arrow to move the cursor to the error, and correct
    the entry.

Remove write protect tab in drive A
    You cannot change your configuration file until you remove the write-protect tab covering the notch in the disk. Remove the tab, replace the disk in the drive, and press ↵. After the configuration file is updated, you will be prompted to replace the tab.

Replace write protect tab in drive A
    After you change your configuration file, replace the write protect tab to cover the notch in the disk.

Replacement isn't valid. Re-enter
    This replacement value cannot be used in the context of the field it is intended for. You entered alphanumeric data in a numeric, date, or dollars field.

Report file not found
    You entered a report file name that the program did not find. You may have inserted the wrong disk or switched disks. Get your backup disk, and re-enter the file name.

Size must be from 1 to 255 in <field name>
    You were defining a label format and entered a value for size that is not valid. Move the cursor to the SIZE column, and enter a number from 1 to 255.

SIZE must be from 1 to 255 in field #XX
    You were defining a report format and entered a value for size that is not valid. Move the cursor to the SIZE column, and enter a number from 1 to 255.

Sort field length must be at least 1
    You were defining an index and entered a field length that is not valid. The field length must be at least 1.

Sort field xx chars too long
    The primary sort keys cannot exceed 98 characters.

Sort key(s) exceed 249 chars
    The sum of the sort key sizes exceeds 249. Either shorten or delete some of the keys.

Sounds like isn't valid for numeric fld
    The SOUND option can only be used in alphanumeric fields.

Sounds-like isn't valid for short fld
    This field is too short for the SOUND option.

Spaces not allowed
   You entered a formula with space(s). The arrow highlights the first
   space the program encounters. Press the space bar once; then press
   the right arrow key to move the cursor to the space, and delete it.

SUBTOTALS & TOTALS ONLY must be y or n
   You entered a value that is not valid. You must enter y or n.

Tab must be blank or numeric in field #XX
   You were defining a report and entered a value that was not valid.
   Move the cursor to the TAB column, and correct the entry.

The number of parentheses aren't equal
   You tried to enter a formula with a missing parenthesis. The arrow
   highlights the error. Press the space bar once, move the cursor to the
   error, and enter another parenthesis.

There are records in this VF file
   You requested the CREATE option of DIF->VF, but VisiFile data
   records exist. The program asks if you want to proceed anyway. You
   can do one of the following:

   • Proceed, and all incoming DIF data replaces the VisiFile records
   • Select the QUIT option to end the operation

There are VF files on drive A
   The disk in Drive A already contains VisiFile data files, not including
   DIF files. Therefore, you cannot use this disk as the copy-to disk in a
   COPY or MOVE function.

TOTAL must be n or y in field #XX
   You were defining a report and entered a value that is not valid. Move
   the cursor to the TOTAL column, and enter n or y.

Use 2, 5 or 8 chars to search date
   Enter the date in one of the following three formats: yy; mm-yy; or
   mm-dd-yy. You can use hyphens (-) or slashes (/) as separators.

Use 2, 5 or 8 chars to sort date
   Enter the date in one of the following three formats: yy; mm-yy; or
   mm-dd-yy. You can use hyphens (-) or slashes (/) as separators.

VF control file xxxxxxxx.Snn isn't found
   The VisiFile auxiliary file that contains the sort parameters for the
   index you want to create cannot be found. You may have switched
   disks. Delete the index, and re-specify it; then sort it.

VF data or control file wasn't found

You tried to sort a VisiFile data or control file. The sort setup did not detect any errors in locating the index control files, but the sort cannot locate the files. Delete all index files for this file, and re-specify them.

Width must be from 1 to 99

You were defining a label format and entered a value for width that is not valid. Move the cursor to the WIDTH column, and enter a number from 1 to 99.

Work file required. Type A or B

A work file is required. Type A or B to indicate which disk it is on.

Work file wasn't found. Re-sort.

You tried to sort a file, and the sort successfully wrote its intermediate results to the work file, but the merge phase that immediately follows cannot find it. The sort returns to the previous menu level. You may have inserted the wrong disk or switched disks during the sort.

FILE FORMATS

The VisiFile program generates several different DOS files for each user data file. The following sections describe these files and their usage by the program.

THUMB INDEX

There is one thumb index, named VF0.DCT, on each data disk. This file:

- Cross references the 30-character user data file names with the 8-character DOS file name with the 3-character suffix.
- Remembers which file is the current file.
- Contains the printer configuration data that is passed to each data disk from the master configuration file, named VF000000.FIG, on Program Disk #1.

The thumb index is a variable number of 40-character records. The index contains at least three records.

The first record contains the DOS and user names of the last selected data file. The second record contains the printer configuration data. The third through the last records contain the DOS and user names of the data files on the data disk.

The format of the first, third, and subsequent records is listed in Table F-1. Table F-2 lists the format of the second record.

Table F-1. Thumb Index Format (Records 1, 3 through n)

Bytes	Description
1-8	DOS file name in the form VF00xxxx where xxxx is a number beginning with 0030. This number is increased by 10 for each additional file. A "moved" file name contains a 1 in the units position. Only 1 moved file can exist on a disk, therefore, the thumb index contains only three records.
9-38	User file name. May contain any ASCII character that can be entered from the keyboard except leading blanks.
39	Not used.
40	Program routing code.

Table F-2. Thumb Index Format (Record 2)

Bytes	Description
1-4	Printer designation (LPT1, LPT2, COM1, etc.).
5-8	Baud rate (if serial printer).
9	"Y" if the printer supports form feed, otherwise, "N".
10	"Y" if the printer is an Epson MX-80 or equivalent, otherwise, "N".
11	"Y" if the printer requires a line feed following each carriage return, otherwise, "N".
12-31	Optional printer setup data.
32-38	Unused.
39-40	Number of records in the thumb index in binary form.

The number of records in a thumb index can grow but will never shrink. When a data file is deleted, the thumb index record is filled with blanks. The blank records are used when a new data file is created.

DATA DICTIONARY

Each data file has a data dictionary file containing the characteristics of the fields in the data file and information relating to all DOS files associated with the data file. A data dictionary file has the suffix ".DCT".

The data dictionary is a complex and dynamic file that varies in length from 3584 to 5120 bytes depending on the the number of fields in the data file. You should create or manipulate the data dictionary only with the VisiFile data dictionary access routines.

If you externally create a data file for use with the VisiFile program, you should define the file with the VisiFile DEFINE function which creates the data dictionary. You can then create the data file with the appropriate name in the form VF00xxxx.DAT, where xxxx is the program assigned number in the data dictionary name.

You must modify the data dictionary to post the record count of the externally supplied file. Table F-3 lists the format of the first data dictionary record. The data dictionary contains from fourteen to twenty 256 byte records.

Table F-3. Data Dictionary Record 1

Bytes	Description
1-2	Reserved.
3-32	User file name.
33-40	Date file was created.
41-48	Date file was last updated.
49-53	Number of records in file (ASCII with leading zeros).
54-73	Reserved.
74-81	DOS file name.
82-256	Reserved.

DATA FILE

The data file is a collection of fixed-length records. The record length is the sum of the individual field sizes. Physically, these records are treated as 256-byte DOS records. A single data file record can span physical records or a physical record can contain more than one data file record. The VisiFile program accesses these records randomly, using the data file record number and length to compute the relative number of the physical record that contains the first portion of the desired data record.

You can create and read these records by opening the file in random input/output mode and specifying a record length equal to the data file record length. Figure F-4 describes the data file record format.

Table F-4. Data File Record Format

Start	End	Size	Description
1	1	1	Delete flag. Blank for an active record, * for a deleted record.
2	xxx	yyy	Data fields with no separators. yyy is equal to the sum of the number of bytes in the fields. The maximum value of xxx is 255, and the maximum value of yyy is 256.

OTHER FILES

The program may create several other files related to a given data file. All of these files, except the index and mapping files, are text and can be printed. These files and their names are:

- VF00xxxx.M01 is the AUTOMATIC mapping file which is created when the file is defined. Custom mapping files are identified by the suffix "Mxx" where xx is a number other than 01.

- VF00xxxx.Ixx is a binary-tree index file which is created or recreated when an index is created, sorted, or updated. xx is a number between 02 and 70.

- VF00xxxx.L99 is the default label file which is created when the default label format is selected. User created label formats have the suffix "Lxx" where xx is a number other than 99.

- VF00xxxx.R99 is the default report file which is created when the default report format is selected. User created report formats have the suffix "Rxx" where xx is a number other than 99.

- VF00xxxx.Sxx is the sort parameter file. The index file (Ixx) created with this parameter file has the same numeric suffix.

- VF00xxxx.Xxx is the record selection parameter file. xx is a number between 02 and 70.

SPECIFICATIONS

FILE SPECIFICATIONS

	128K or more memory	Less than 128K memory
Maximum files per disk	18	9
Maximum disks per file	1	1
	(plus 1 control file for moved files)	
Maximum characters per file Single sided disks	160,000	160,000
Double sided disks	320,000	320,000
Maximum records per file*	32,000	32,000
Maximum characters per record	2048	1000
Maximum fields per record	104	40
Maximum characters per alphanumeric field	255	255
Maximum digits per numeric or dollars-and-cents field	16	16
	(18 including sign and decimal point)	
File name length (characters)	1-30	1-30
	(can contain any character except quote ("))	
Field name length (characters)	1-15	1-15
Computed field formulas: Maximum number of formulas	30	30
Maximum total formulas length	252	252
Maximum single formula length	50	50
Arithmetic operators	+ (addition) − (subtraction) / (division) * (multiplication) ∧ (exponentiation)	

*The following formula can be used to estimate a maximum number of records in one file on a data disk. This estimation is most accurate with the MOVE operation, which uses the full disk space for record storage. See Chapter 5.

Maximum characters per disk ÷ (record length + 1)

The resulting number should be rounded down to the nearest 10 records.

INDEX SPECIFICATIONS

	128K or more memory	Less than 128K memory
Type of index	Balanced Tree (B-tree)	
Maximum indexes per file	18	9
Maximum keys per index	10	10
Maximum characters per key	98	98
Maximum key characters per index (total)	250	250
Order of sort	ascending or descending	
Index name length (characters)	1-30	1-30
	(can contain any character except quote ("))	

CUSTOM MAP SPECIFICATIONS

	128K or more memory	Less than 128K memory
Maximum maps per file	18	9
Maximum fields per map Number in file plus	80	30
Maximum fields per page Number in file plus	20	10
Maximum comments per map	80	30
Map name length (characters)	1-30	1-30
	(can contain any character except quote ("))	
Maximum pages per map	20	10

RECORD SELECTION SPECIFICATIONS

	128K or more memory	Less than 128K memory
Logical operators	OR, AND	OR, AND
Maximum operators	9	9

MENU STRUCTURE

```
Main Menu
      │
      ├─ Select File ──▶  ⎰ File
      │                   ⎱ Index
      │                     Map
      │                     Quit
      │
      │                   ⎰ Select/Rec ──────▶  ⎰ View
      │                   ⎱ Delete                  Change
      │                     View                    Delete
      │                     Add                      Replace
      ├─ Maintain ──▶       Change                  Quit
      │                     Index ─────────────▶  ⎰ Select
      │                                              Disable
      │                                              Quit
      │                     Map ⎱ ───────────▶  ⎰ Select
      │                     Quit ⎰                  Quit
      │
      │                   ⎰ Report              ⎰ Print
      │                   ⎱ Labels                  Create
      ├─ Print ──▶          Forms ─────────────▶    Modify
      │                     Documents               Delete
      │                     Quit                    Quit
      │
      │                   ⎰ Create
      │                   ⎱ Redefine
      ├─ Define ──▶         Print
      │                     Delete
      │                     Quit
      │
      │                   ⎰ Sort
      │                   ⎱ Create
      │                     Delete
      ├─ Index ──▶          View
      │                     Update
      │                     Quit
      │
      │                   ⎰ Copy
      │                   ⎱ Move
      ├─ Copy ──▶           VF > DIF
      │                     DIF > VF
      │                     Quit
      │
      │                   ⎰ Alarm               ⎰ Modify
      │                   ⎱ Configuration ────▶    Quit
      ├─ Other ──▶                               ⎰ Create
      │                     Mapping ───────────▶    Revise
      │                                              Quit
      │                     Quit
      │
      ├─ ?Help
      │                   ⎰ Quit
      └─ Quit ──▶           Boot
                            Return
```

016-014

H-1

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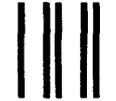
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