

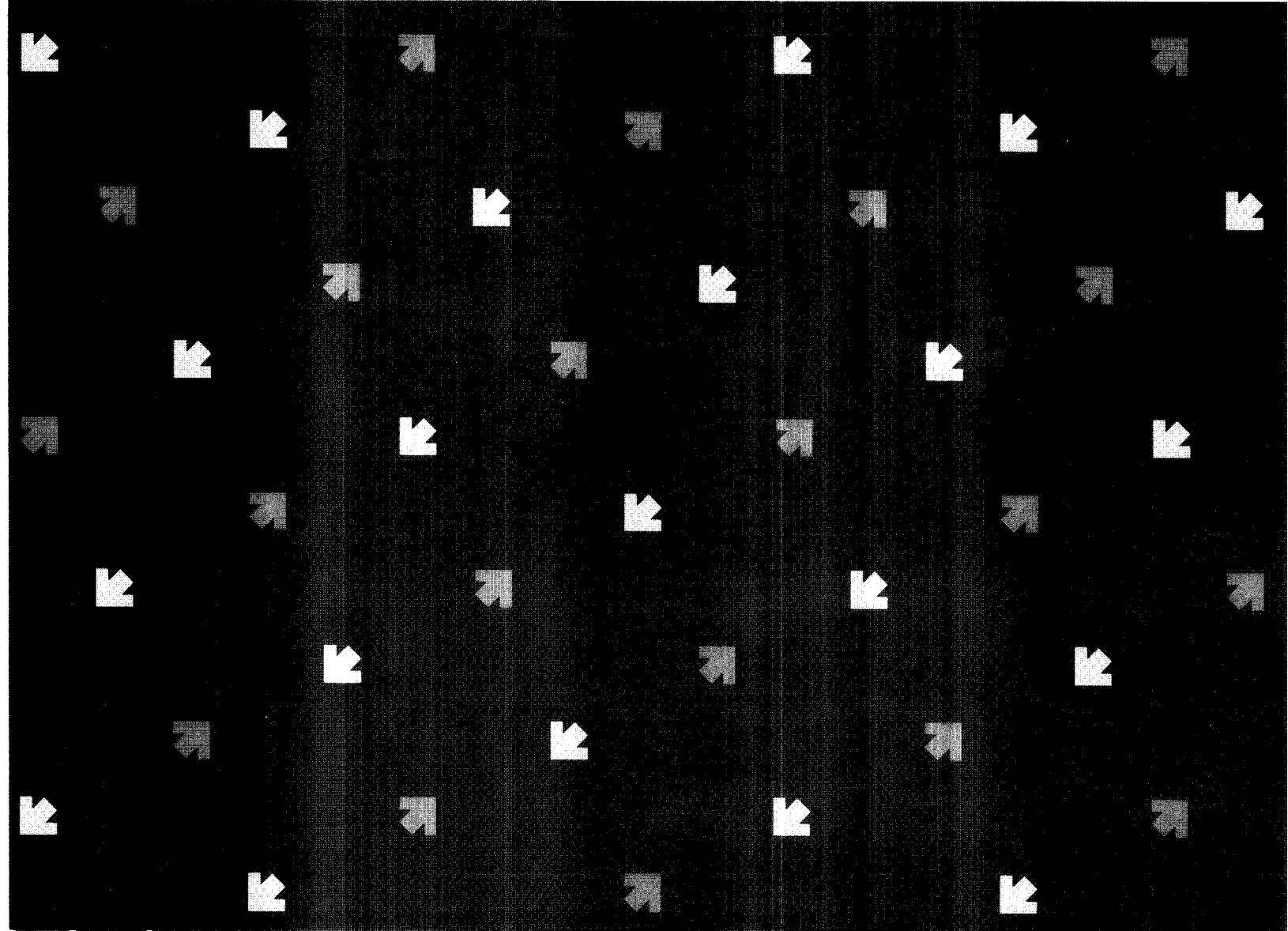
RESEARCH AND TOUR

MODULE 3

Understanding Files

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MODULE 3

Before You Begin...



Have you completed Module 1? If not, do so before you try this or any other module of the Guided Tour.

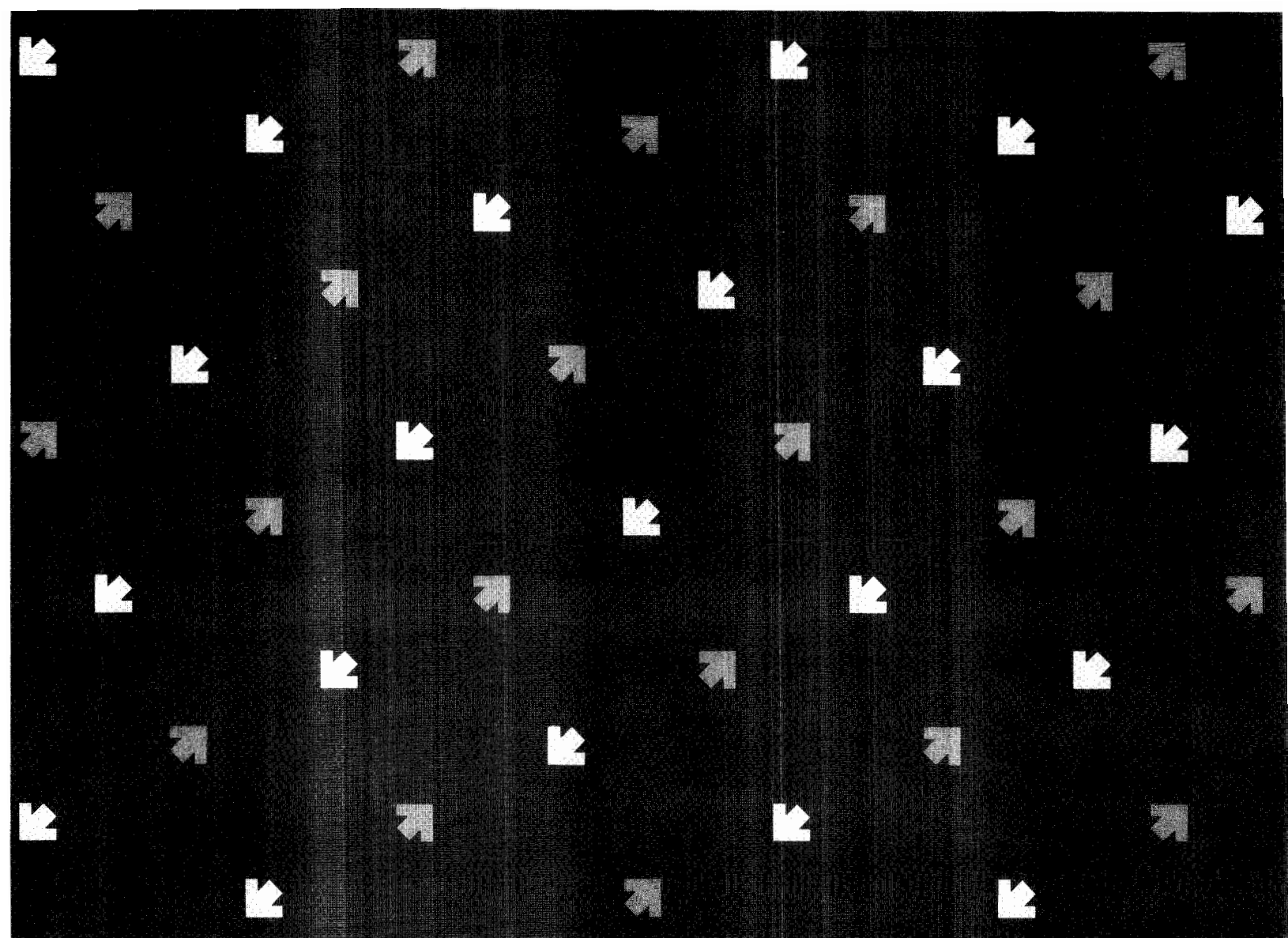
If you have completed Module 1, you're ready to continue with this module.

Log on to the TOUR account by typing

:HELLO GUIDED.TOUR

Now turn the page and continue your tour.

Note: If the computer does not respond as the guidebook says it should, and as a result you cannot continue with the Tour, contact your HP 3000 System Manager.

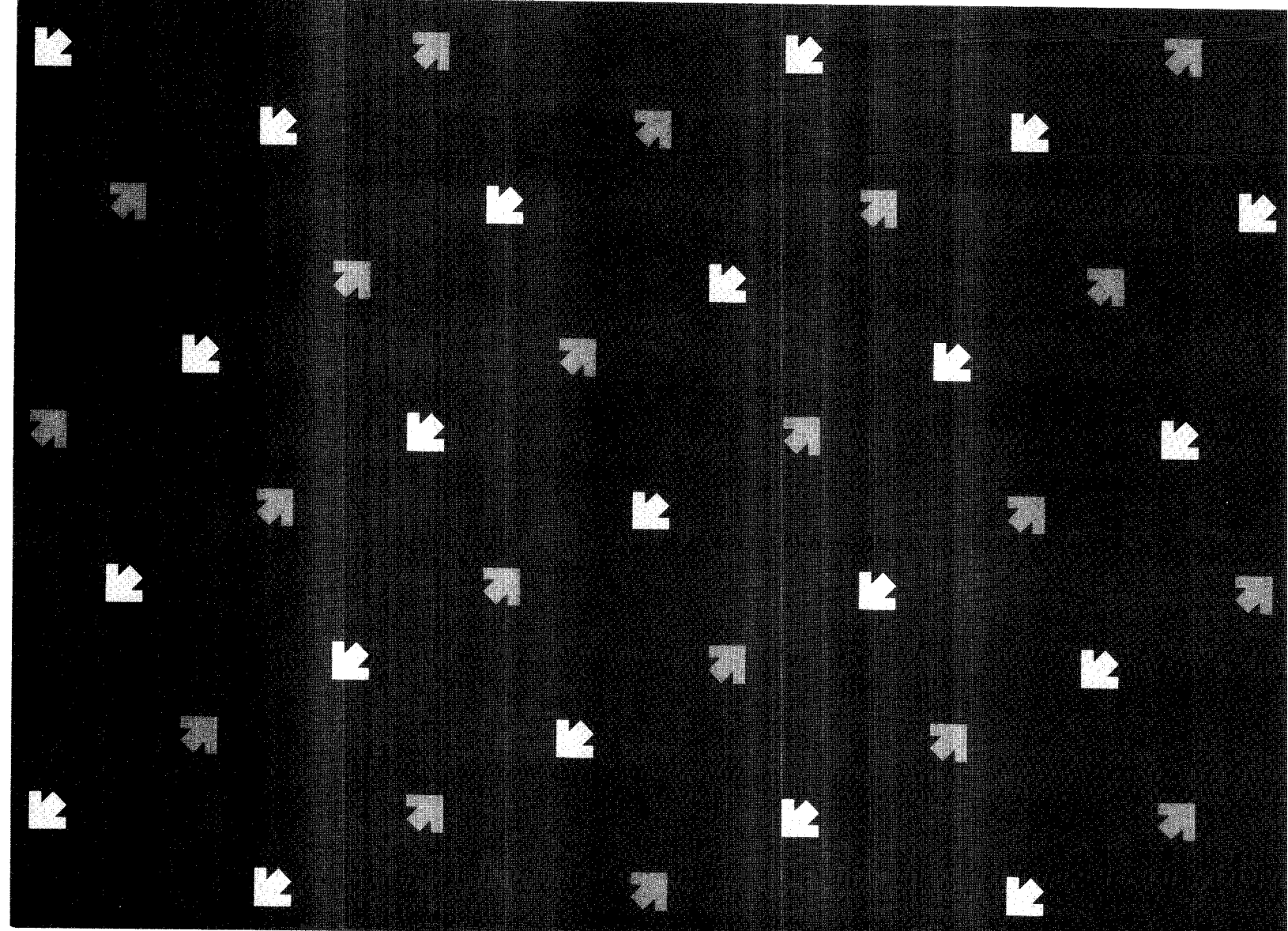


MODULE 3

Contents

Module 3: Understanding Files

The Forest and the Tree	1
Types of Files	2
Accessing Files	4
Listing Files	4
Building Files	5
Purging a File	7
Yet Another File Command	7



MODULE 3

Understanding Files

When using a computer, it often seems that everywhere you turn you find yourself dealing with files — system files, disc files, tape files, program files, data files, temporary files, device files — well, you get the idea. There is a plethora of files associated with the HP 3000.

In this module of the Guided Tour you will familiarize yourself with the basic concepts of what files are and how you use them. We'll start with a discussion of files and how to create and access them, then learn about the HP 3000's unique accounting and security structure (in Module 4).

The Forest and the Tree

As depicted in Figure 3-1, a computer file is not unlike an ordinary file folder in your desk. Both kinds of files have a name and a physical location, and both are used to hold information about a given subject.

In Figure 3-1 the file folder is labeled EMPLOYEES and is located in a desk drawer. The computer file is labeled EMPFILE and is located on a storage device known as a disc.

The file folder contains sheets of paper on which is written information about individual employees. The computer file contains

records which consist of the same kind of employee information. The information in both these files can be updated, deleted, and increased. And the files themselves can be relocated whenever necessary.

Well, that essentially is what a file is. Now, a word about all those different kinds of files.

Types of Files

We often find it more convenient when referring to files to add another word of description. This extra word specifies what type of file we are talking about. For example, we tend to say the disc file, or the program file — rather than just the file.

Files are described — or classified — according to where they are located, what they are used for, or how their content is formatted. As far as location goes, there are two basic file types:

- Disc files which are located on the disc, and
- Tape files which are stored on magnetic tape.

When it comes to file usage, we specify

- Program files which are in reality programs that can be executed by the computer, and
- Data files which contain information (like the one in Figure 3-1).

Terms like fixed-length, variable-length, ASCII and binary are also used to describe files and refer to the contents of the file. You do not really need to know that much about files in order to use them on the HP 3000, so we won't define these terms here. (If you want to know more about files, refer to: Using Files, A Guide for New Users of the HP 3000, part number 30000-90102.)

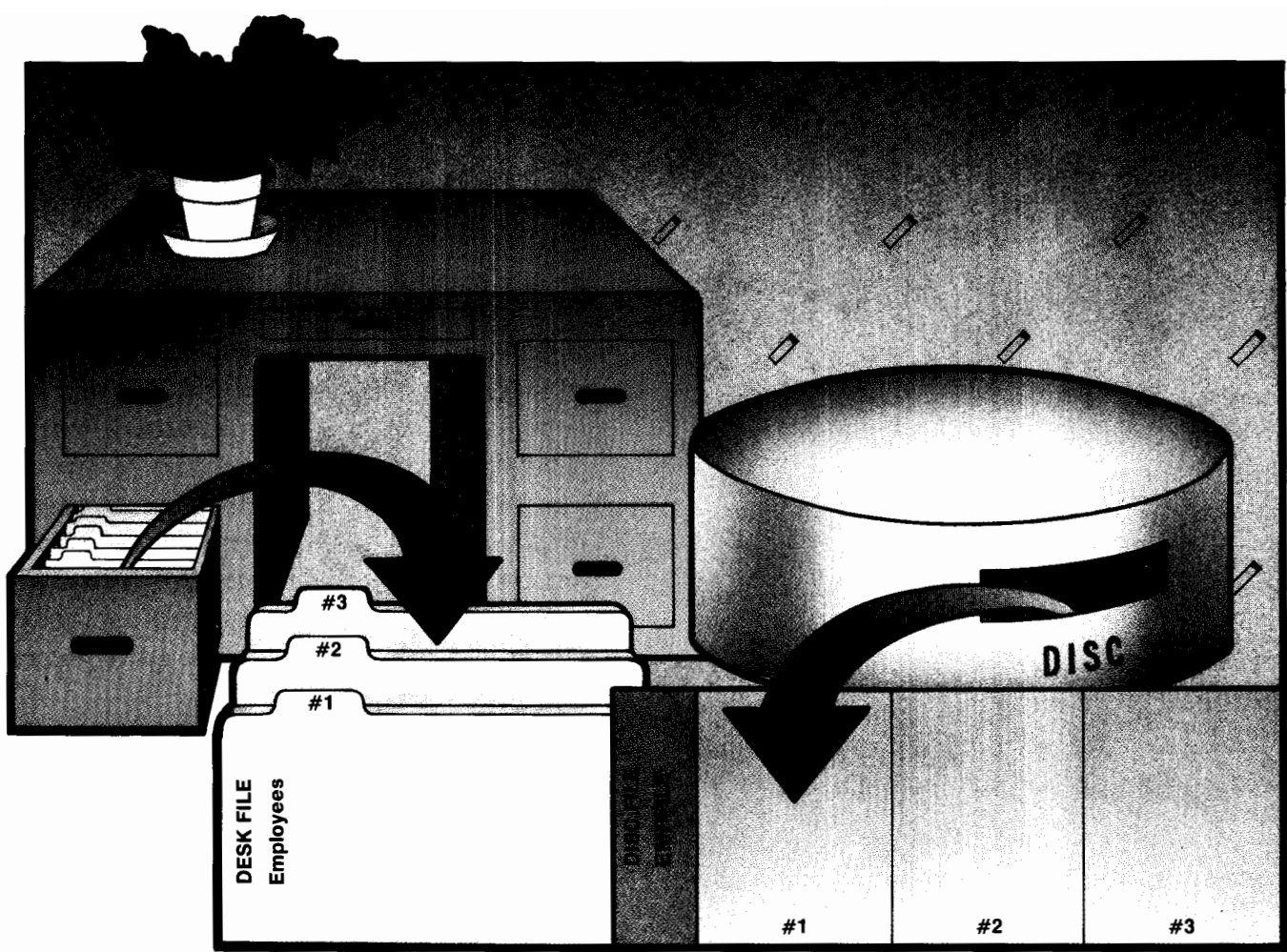


Figure 3-1. A File is a File

A lot of the mystique about using files is removed by the computer itself. A portion of the MPE operating system is designed expressly to deal with files. This portion is called, appropriately enough, the file system. And sometimes, when we refer to files, we call them simply system files.

One final type of file you should be aware of is the device file. The HP 3000 treats peripheral devices (like the line printer and the terminal) as if they were files too. This means that the computer can send and receive data to and from devices in the same way that it does from any other file. The device file concept makes the HP 3000 a lot easier to program and to use, as you will see in a few moments when we begin experimenting with files.

This is a good time to log on, if you haven't already. You will want to try the exercises which follow.

Accessing Files

Two things usually happen to a file during its span of existence:

1. Data is added to the file in a process known as writing, and
2. Data is retrieved from a file in a process known as reading.

Reading and writing are commonly referred to as file access methods. With the HP 3000 it is possible to limit access to individual files so that they can be read from but not written to or vice versa. File access methods are one means of providing security for the data stored in your files.

Listing Files

The :LISTF command enables you to tell the computer to display a list of all the files that are available to you. To see how this command works, enter

:LISTF

Each of the files listed belongs to the Guided Tour and as a user of the tour — to you.

Notice that the list provided is in alphabetic order. This makes it easy for you to find a specific file. For example, BEGIN is the name of the program you executed in Module 1. UDCFILE is the file you created in Module 2. Find these files in the list displayed on your terminal.

We will use the `:LISTF` command frequently in the Tour to gain information about specific files.

Building Files

Just as there are many different kinds of files, so too there are a variety of ways to create a file. The method we will discuss for the present involves the use of the command `:BUILD`.

Let's use the `:BUILD` command to create a permanent file called FILEA and then a tem-

porary file called FILET. The rule for file names is that each is unique, must begin with a letter, and not exceed eight characters in length. Our file names, FILEA and FILET, abide by the rule, so let's go ahead and create them by entering

```
:BUILD FILEA
:BUILD FILET;TEMP
```



Although no response appeared at the terminal to confirm it, the computer acted upon the commands and created these files, adding them to the other files which already existed as part of the Guided Tour. You can check this out by entering the command

```
:LISTF
```

FILEA is listed all right. But as you may have noticed, FILET is not. That's because FILET is a temporary file. FILET does exist, but the `:LISTF` command lists only permanent files.

There are a variety of attributes that can be specified for a file when it is created, like the size of the records in the file (in bytes or words), the kind of code used for the file (ASCII or binary), the kind of record length (fixed, variable, or undefined) and so forth. In fact, we specified one of these attributes for FILET by stating that it was to be a temporary file. That is what the ; TEMP part of the command meant. The other items were left to the computer to decide. Because we did not specify otherwise, the computer assigned default attributes to our files. It is recommended that you use the default capability when you create files, unless, of course, you intend to write programs which will require other file attributes. In that case, a manual entitled Using Files will tell you all about creating files.

Even if you don't intend to program, you may want to use certain security features available on the HP 3000 to protect your files. You can assign a secret word or "lockword" to your files to prevent anyone

who does not know the lockword from accessing them. Here's how to do that.

Enter the lockword just after the file name when you create the file. Use a lockword that you will remember but that no one else is likely to know — like your middle name, for instance. To create a file named FILEB with the lockword CHESTER, type

:BUILD FILEB/CHESTER

Now have the computer list the files again. Notice that FILEB has been added but there is no mention of the lockword. When it comes time to access that file, however, the system will remember the lockword assigned to it and will require the requestor, whether program or human, to remember it too.

FILEA and FILEB are permanent files and will remain in the computer from now on, until you decide to remove them. FILET, our temporary file, will be deleted as soon as you log off. That's the way it is with temporary

files, they last for the length of the session and then disappear. They are handy in that you do not build up a collection of unnecessary files when you use the temporary capability.

On the other hand, if you decide you really like a temporary file you have created and wish to save it for use in another session, you may. We could save FILET by entering

```
:SAVE FILET
```

But let's not. We don't really need this file. The point is that there is a command called :SAVE to use for such a purpose.

Purging a File

The time may come eventually when you want to delete from the system a file that has outlived its usefulness. It is easy to remove a file. Once again you have a command to assist you—the :PURGE command. Since we

will not be using either FILEA or FILEB, let's remove them. Enter

```
:PURGE FILEA  
:PURGE FILEB/CHESTER
```

Earlier in the tour you assigned the lockword CHESTER to FILEB. To purge FILEB, you must specify the same lockword. Tell the computer to list the files now and verify that these two are no longer required. DO NOT PURGE any of the other files, please. They are required for the successful completion of the tour.

Yet Another File Command

The HP 3000 provides you with yet another useful file-related command, the command :FILE. This command is frequently used to establish a relationship between files. This concept is a bit tricky to grasp at first, but it is a very helpful capability once you get the hang of it.

The proof that our example worked is at the line printer right now. What we did was to temporarily assign the file name PRINTER to the line printer (DEV=LP). Then we instructed the computer to list our files to the file named PRINTER (which is now really

```
: FILE PRINTER; DEV=LP
: LISTF; *PRINTER
```

Here's an example. Thus far when you entered :LISTF the computer responded by displaying a list of files on your terminal screen. To have the list printed at the line printer instead of the terminal, we just enter the following.

You may remember that a little earlier we learned that a device file is really a peripheral device (like a line printer) which the computer treats like a file. An easy way to use the line printer is to relate it to a file name such as PRINTER. Then whenever you want something printed, you merely access the file PRINTER.

Feel free to read through the material again, if you do not feel comfortable with the major concepts presented. Then, when you are ready, select another module and continue with the Guided Tour.

```
: LISTF
: BUILD
: SAVE
: PURGE
: FILE
```

Well, that's essentially all you need to know about what files are and how you create and access them. The commands we've discussed in this module are:

The line printer operating under an alias). The asterisk backreferences to the :FILE command.
The :FILE command allows you to specify all kinds of relationships and attributes for files. If you think you'd like to master its use, read more about it in the manual Using Files, part number 30000-90102.