

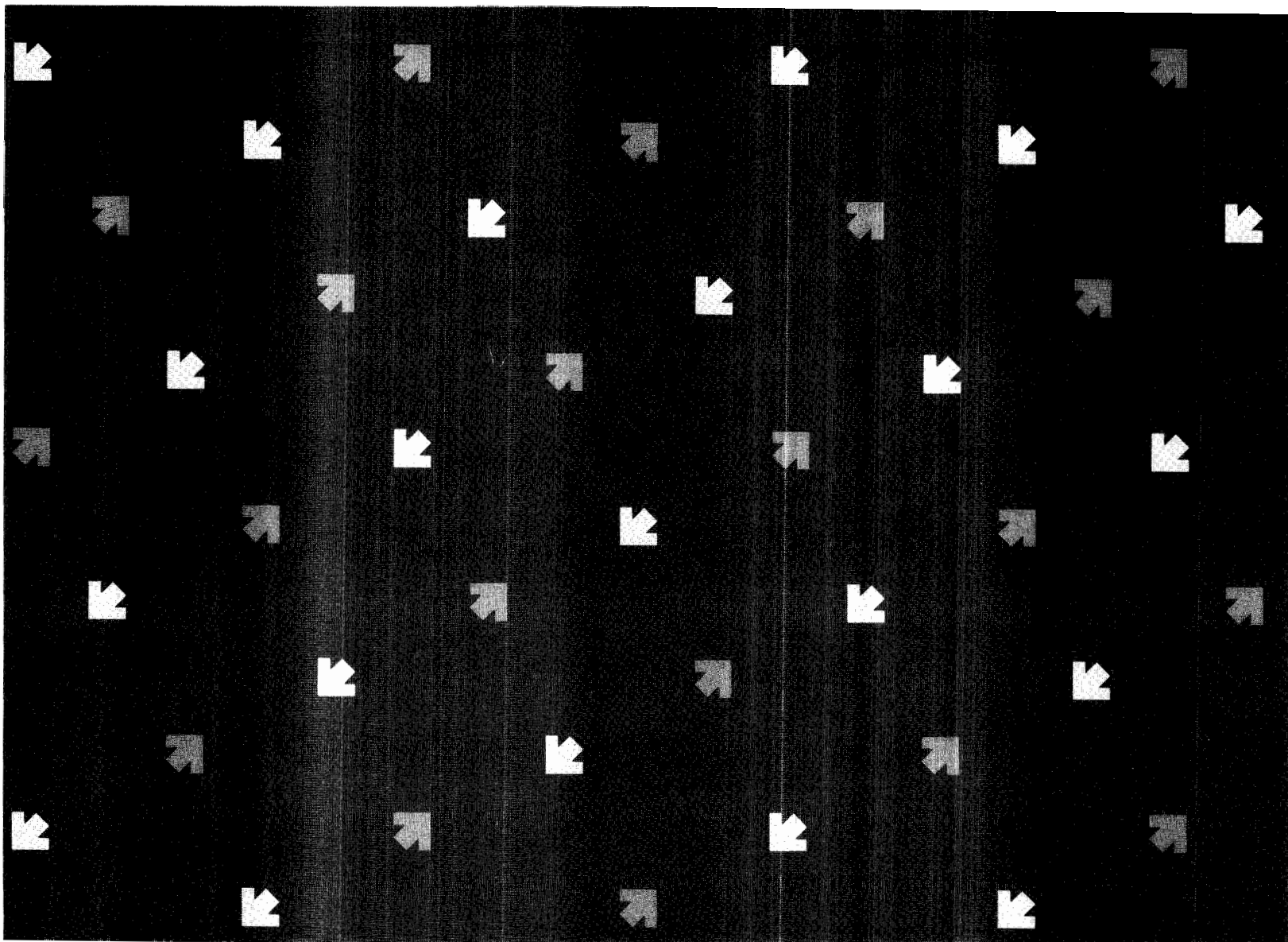
GET READY FOR A SUCCESSFUL TOUR

MODULE 7

Data Basics

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MODULE 7

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.

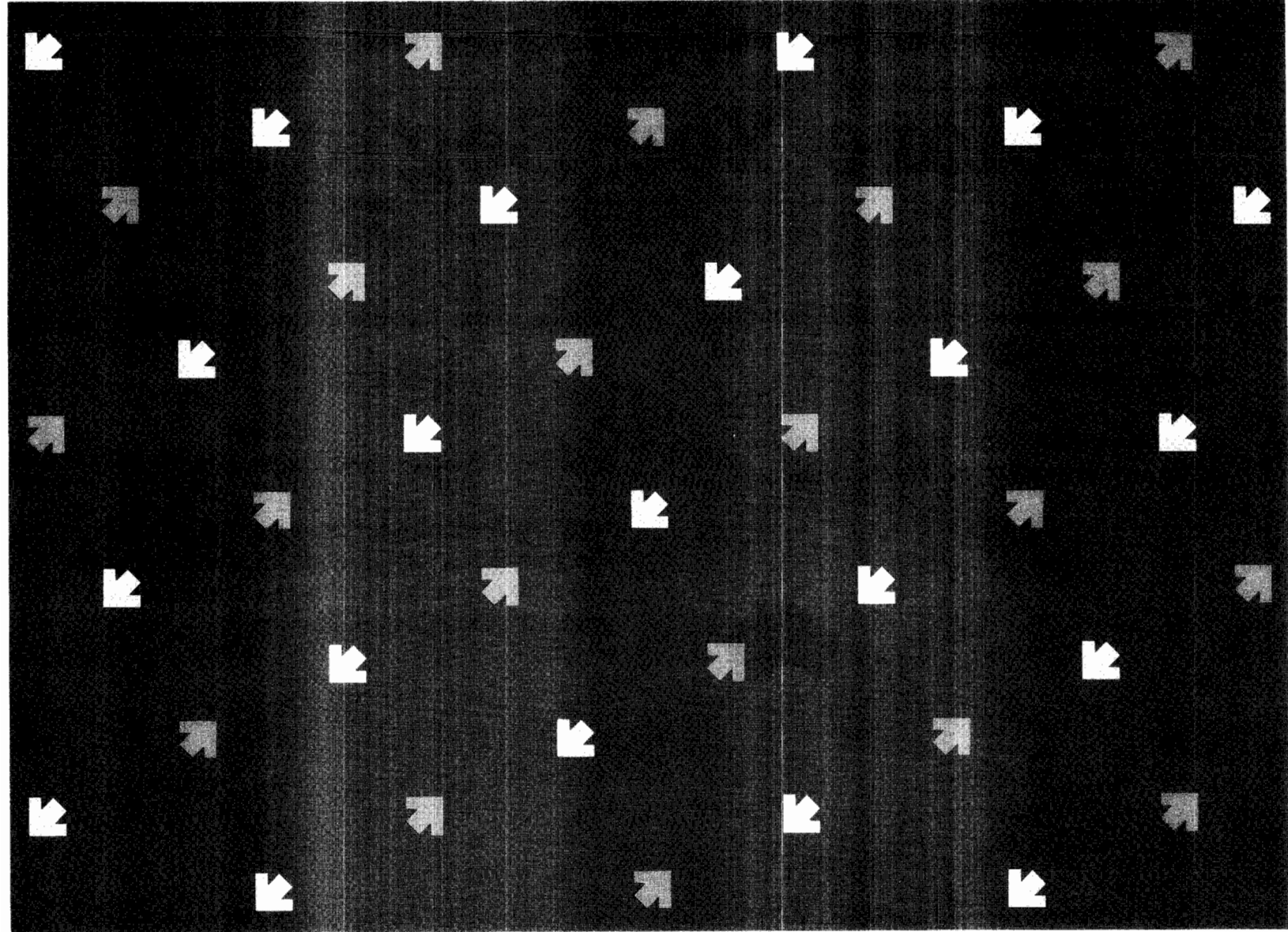


Log on to the TOUR account by typing

: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.

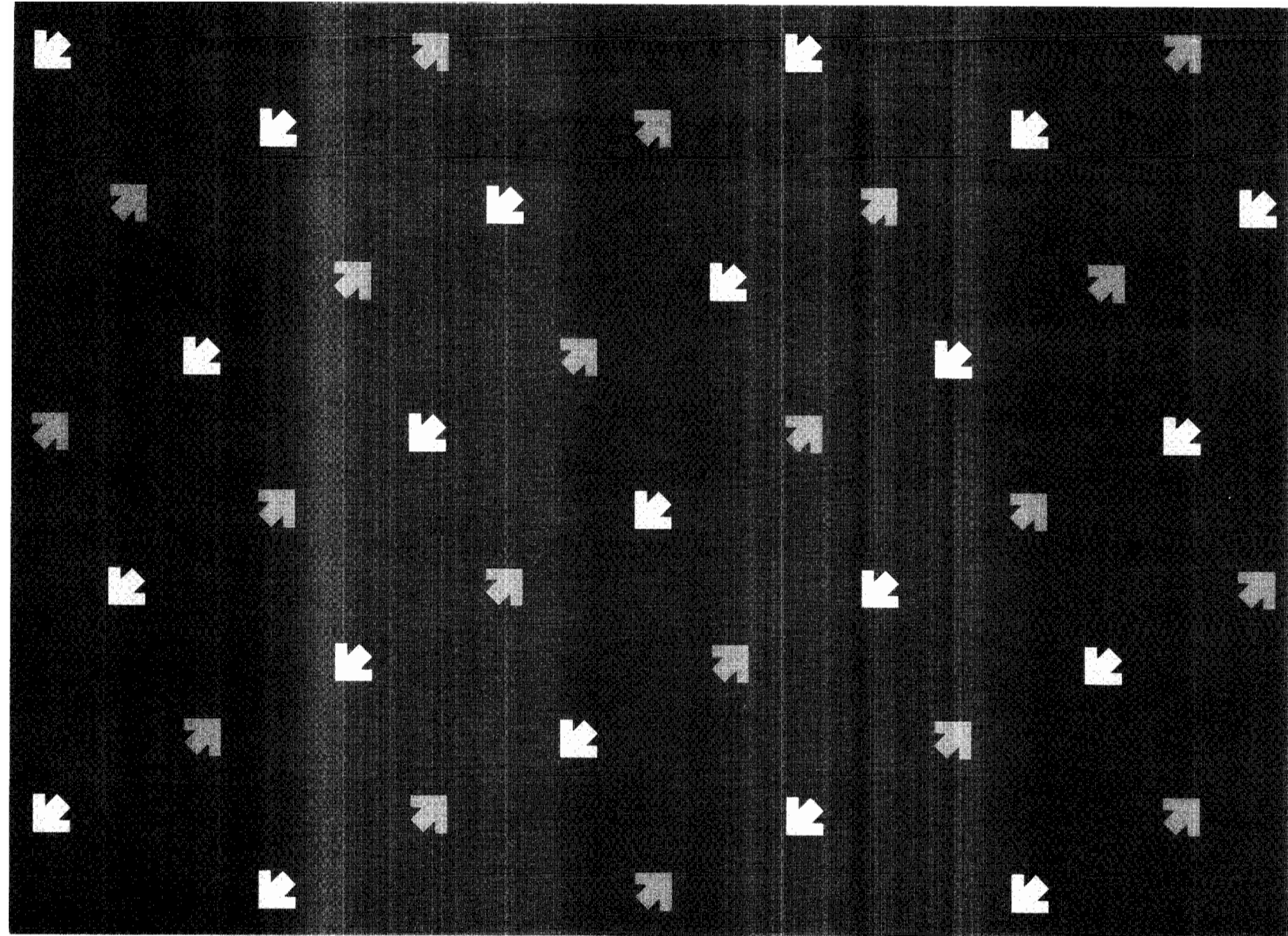


MODULE 7

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MODULE 7

Data Basics

Perhaps you have wondered where all this data you've been entering is going. Well, in this module we're going to talk about just that. Specifically, we are going to explore the concept of data bases.

Before we get started, however, it is important for you to complete Module 6 before attempting the exercises in this module. If you haven't done the groundwork in Module 6, the results you get in this module will differ radically from the text.

What is a Data Base?

To state it simply, a data base is a collection of files which contain related data. These files contain more than just data, actually. They also contain information about how that data is structured, or how the various items of data are related to each other. This information about the relationships of data is very important in a data base because it tells us how to gain access to that data. Data items relationships are established when a data base is created.

We'll see how that's done in a few minutes, but right now there are a number of advan-

tags to using a data base instead of conventional files, which you should know about:

1. A data base saves time. Data needs to be input only once to the data base, instead of to each separate file.
2. A data base eliminates wasted space. Data that would have existed in many different files can be consolidated into a data base.
3. Several application programs can use the same data base; since the data is independent of the application programs it can be used again and again.

In Your Image

The HP 3000 has a special software tool called IMAGE which is used to design and create extremely efficient data bases. Most HP 3000 users use data bases that already exist. The design and creation of data bases are left to a select group of individuals known as system analysts. But just to round

out your experience at this point in the Guided Tour, we are going to discuss in general terms how a data base is made and accessed.

First the analyst determines what data is needed by all the applications that will share the data. Usually this means that the analyst collects information on the data processing needs of various departments in a company. For WALK-IN WIDGETS the data base needed to contain information about both employees and vendors, as well as a parts list and sales statistics. All this information is contained in a single data base.

Taking the data that has been collected, the analyst designs the data base by specifying its precise content and structure. This is done by defining two kinds of records within the data base — master data sets and detail data sets. A master data set is used for uniquely identifiable information, such as an employee. Detail data sets are used to record information about a master subject,

such as an employee's sales. The finished design is called a schema. The WALK-IN WIDGETS data base is illustrated in Figure 7-1.

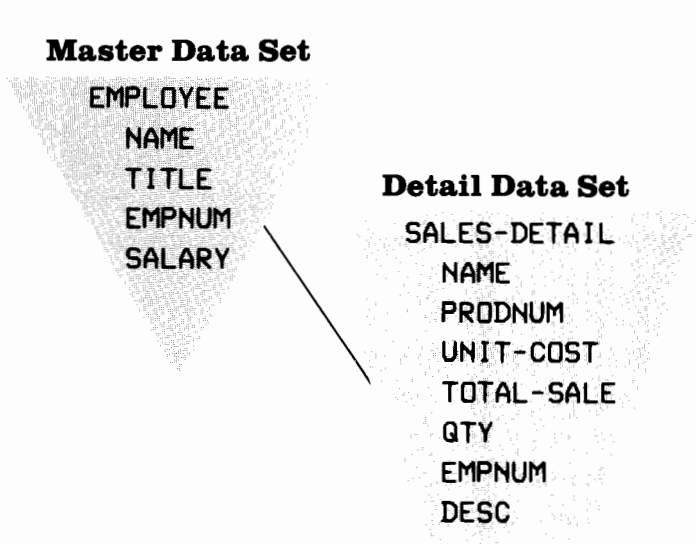


Figure 7-1. WALK-IN WIDGETS data base

With the content and structure defined, the analyst then generates the data base itself by using a special IMAGE program called the schema processor.

What happens next has to do with the entry and retrieval of data, in other words, the actual use of the data base. Here is where the normal system user enters the picture. Application programs designed to take information from the batch files created during data collection, add the data to the data base. The program GUIDEP which you used in the previous module of this tour, not only collected the data you entered, it also added that data to the WALK-IN WIDGETS data base. Other application programs are used to retrieve the data. And that, with the help of another HP software product called QUERY, is just what you are about to do.



There and Back

The HP 3000 program QUERY enables you to access information in a data base. By access, here, we mean that you can add data to the data base, modify or delete data already in the data base, or simply look at the data. You can also use QUERY to generate a report from the data stored in the data base. In this exercise we will focus on the last two functions: looking at data and generating a report.

The best way to learn how all of this is done, is to log on (if you haven't already) and give QUERY a try.

The first step is to execute QUERY, like so

```
: RUN QUERY.PUB.SYS
```

The message that appears on the screen at this point is intended to verify to you that all went well and QUERY is ready for use.

Now that you've executed QUERY, you will receive a greater than sign as a prompt instead of the familiar colon. Check to see that the message and the greater than sign are on your screen, then tell QUERY that you want to define exactly which data base you wish to access by typing

```
> DEFINE
```

In response, QUERY sends you the first of a series of questions which help you specify the exact data base you want to access and which verify that you are permitted to access that data base. Here's some information that will help you answer QUERY's questions correctly.

The data base is named GUIDE (in honor of the Guided Tour) and the password you must use is MANAGER. Be sure to use upper case characters when you enter this information. If you use lower case, QUERY will tell you that the data is incorrect and you'll have to re-type it correctly before being

allowed to proceed. Oh yes, the MODE you want to use is simply the number 5. You type all this information in response to prompts, like this:

```
DATA BASE = >>GUIDE
PASSWORD = >>MANAGER
MODE = >> 5
```

It is not necessary to type any information in response to the remaining questions QUERY asks here. Just press the **RETURN** key until the single greater than sign prompt reappears. The data on your terminal screen will look like so

```
DATA-SETS = >>
PROC-FILE = >>
OUTPUT = TERM
OUTPUT =>>
>
```

Now, so other users can access the data base, type the following command at this point:

```
>ASSIGN LOCKOPTION = OFF
```

Next, let's employ QUERY to see some data in our data base. This is done by using the QUERY >FIND command and specifying the name of the data set and data item that we are interested in. To begin with, let's ask QUERY about the data set EMPLOYEE — specifically the data items EMPNUM stored in that data set. You do so by entering the following command:

```
>FIND ALL EMPLOYEE.EMPNUM
```

In response, QUERY comes back with the statement:

```
USING SERIAL READ
4 ENTRIES QUALIFIED
```

What that rather cryptic message means is that QUERY read the data base and found that there were four EMPNUMs stored in the EMPLOYEE data set. (You may have more depending on the number of entries made by current users of the Guided Tour.)

You can now ask QUERY to show you the qualifying items simply by typing

>REPORT ALL

And instantly the five items are printed on your screen. If the information looks familiar (and it should), it's because you entered that very information into the data base in Module 6.

Okay, a quick review on what's happening here. QUERY is enabling you to access data in a data base called GUIDE. The data is that which you entered in the previous module. The data base in which it is stored is a structure that was created with the HP 3000 subsystem called IMAGE. Each item of data that you access is found according to the data set to which it is related.

Turn back to Figure 7-1 for a moment. You can use QUERY to look at any of the data items listed there, by using the same >FIND command format you just used for EMPNUM.

Let's imagine you're the sales manager for WALK-IN WIDGETS. It's quarterly review time and you want a report on how you're doing. You want to review both your sales representatives and your product lines. Here's where QUERY can really help.

You begin with your sales reps. To track their progress you can use the >FIND command to tell you which sales reps have sales greater than \$25,000. To do so type

>FIND SALES-DETAIL.TOTAL-SALE GT
"25000"

The response tells you how many entries qualify, that is, sales reps with sales totaling more than \$25,000.

USING SERIAL READ
4 ENTRIES QUALIFIED

In the example four entries qualify. (You may have more depending on the information that has been added to the data set by current users of the Guided Tour.)

To find out the specific information type

➤REPORT ALL

QUERY responds with the specific sales greater than \$25,000. One example is Sue Clan. Here is the report that records her Widget Deluxe sales.

NAME	=SUE CLAN
PRODNUM	=A1-X
QTY	= 75
EMPNUM	=03
DESC	=WIDGET DELUXE
UNIT-COST	= 1000
TOTAL-SALE	=75000 <—Total sales are greater than \$25,000.
REC-TYPE	=02

Now that you've identified your top performers you may want to make a special note of their achievement. To do so you need some general employee information. Let's stay with Sue. To get more information about Sue type

➤FIND NAME IS "SUE CLAN"

QUERY responds by telling you that there is information about Sue Clan in both the EMPLOYEE and SALES-DETAIL data sets.

NAME IS A MEMBER OF THESE SETS
EMPLOYEE, SALES-DETAIL
WHICH SET DO YOU WISH TO USE?

Since you've already seen the SALES-DETAIL information, you type

➤➤EMPLOYEE

Again QUERY responds by telling you that one entry qualifies, that is to say, contains employee information about Sue Clan.

1 ENTRIES QUALIFIED

To look at this information type

➤REPORT ALL

»FIND SALES-DETAIL.DESC IS "WIDGET"

Now you want to track the success of your product line. You have three products, Widget, Widget Deluxe and Budget Widgets. Let's look at Widgets. Again, use the »FIND command and type

This same information is available for every employee in the data set.

NAME	=SUE CLAN
TITLE	=SALESREP
EMPNUM	=03
SALARY	=5000
REC-TYPE	=02

This report on Sue Clan should appear on your screen

»REPORT ALL

QUERY responds by reporting the entries for WIDGET sales. A partial listing follows.

sold enter:

Remember, you may have more entries that qualify depending on the data being entered by you and other current Guided Tour users. To look at how many WIDGETS have been

USING SERIAL READ
2 ENTRIES QUALIFIED

In our example two entries qualified, therefore QUERY responds

NAME =RALPH CLAN — sales rep
PRODNUM =B2-Y
QTY = 15
EMPNUM =02
DESC =WIDGET — product line
UNIT COST = 700
TOTAL-SALE =10500 — total sales
REC-TYPE =03

NAME =JOHN CLAN
PRODNUM =B2-Y
QTY = 100
EMPNUM =01
DESC =WIDGET
UNIT-COST = 700
TOTAL-SALE =70000
REC-TYPE =02

The same information can be looked at for Widget Deluxe and Budget Widgets. Try using the >FIND and >REPORT commands on your own to look at this sales and employee information.

A Report

You can also use QUERY to generate a report which contains information drawn from the data base and arranged according to the layout you prefer.

To generate a report using QUERY you must first design the report form, with column titles and headings and so forth. Next you specify the spacing you would like on the report by issuing formatting instructions. You may even specify that the report entries may be sorted, totals added, columns of numeric data counted, etc. All these things can be done without programming. But they do require a certain familiarity with using QUERY.

Rather than putting you through a rigorous learning course on QUERY at this point, we've elected to demonstrate the QUERY reporting capability by using a report that has already been designed.

The report lists the sales activity that was recorded for WALK-IN WIDGETS. Your sales which you entered in Module 6 will be included in the report, so be sure to see how much money you made for the company and compare it to the work of the other salesreps.

To see the report form we have designed, enter the command

>XEQ REPORT

The first information to appear on the screen is a list of the specifications used to create the report. Be patient for just a minute and then the report itself will appear on the screen.

There, see. Well, how did you do? Whether or not you ended up WALK-IN WIDGETS star salesrep, you are becoming a knowledgeable computer user. Why not relish that thought for a moment or two.

Making an End

Feel free to experiment with QUERY for as long as you like. Then, when you are ready to move on with the rest of the Tour, type

>EXIT

And you'll be out of the QUERY subsystem and back to the colon prompt the system itself uses to communicate with you.

One more thing. Help keep the data

base clean by running a program called DBCLEAN. This program clears the data

base of all the files you entered. To run this program type

:RUN DBCLEAN