

QUICKSTART

4th DIMENSION[®]



4th DIMENSION QUICK START

4th DIMENSION by Laurent Ribardière

4th DIMENSION QUICK START

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QUICK START

PREFACE

WELCOME TO 4th DIMENSION

WELCOME TO 4th DIMENSION

This *Quick Start* booklet introduces you to 4th DIMENSION. The six chapters are tutorials—step-by-step explanations—that show you how to use 4th DIMENSION to create useful databases. As you work through the tutorials, you will get a feel for the major parts of the application and how to move between them.

1½ hours

It should take you no more than an hour and a half to work through all the chapters. When you have finished *Quick Start*, you can start building your own 4th DIMENSION databases, or you can move immediately to the more advanced tutorials in the *4th DIMENSION Tutorials*.

About the Quick Start Tutorials

These tutorials teach you how to create a 4th DIMENSION database, and enter and modify records. Then you will learn to use some of the special features of 4th DIMENSION—graphs, quick reports, and labels—to produce printed output.

You should work through the tutorials in order. The work you do in each chapter prepares the database for the work you will do in the next chapter. Each chapter begins with an estimate of how long it will take you to complete the work in that chapter. You can feel free to stop at the end of any chapter, take a break, and begin the next chapter by opening the database you have been working on.

Every step is explained in careful detail. The tutorials are designed to be practical, so that you can learn 4th DIMENSION concepts while you are actually using the program. You will create a database that keeps personnel records for the employees of a (fictional) company.

The tutorials provide specific steps for you to follow as well as general information that explains 4th DIMENSION. The steps are usually followed by a short comment or explanation. The format for steps and explanations looks like this:

1. The numbered step tells you exactly what to do. The characters you type at your computer keyboard appear in **bold type like this**.

Following the numbered step is a separate paragraph that offers a pertinent explanation or comment.

Another formatting element you will see is this note:



Comment: This format is used for comments about the operation of some of 4th DIMENSION's features. Such comments may provide a caution, point out a useful additional feature, or provide other information.

The tutorials in this book assume that you are familiar with basic Macintosh operations such as selecting objects, choosing menu items, clicking, dragging, and so on. A few of the most important operations are reviewed at the end of this preface. For complete information and instructions, see the user guide that came with your Macintosh.

Introducing Databases

This section introduces a few concepts you will become very familiar with as you learn to use 4th DIMENSION.

People use *databases* constantly in their homes and businesses. Recipe collections, dictionaries, parts lists, indexes, checkbooks, and other sources of organized information—all are databases. A telephone book is another example of a familiar database. Its alphabetical organization allows you to find the information you need quickly.

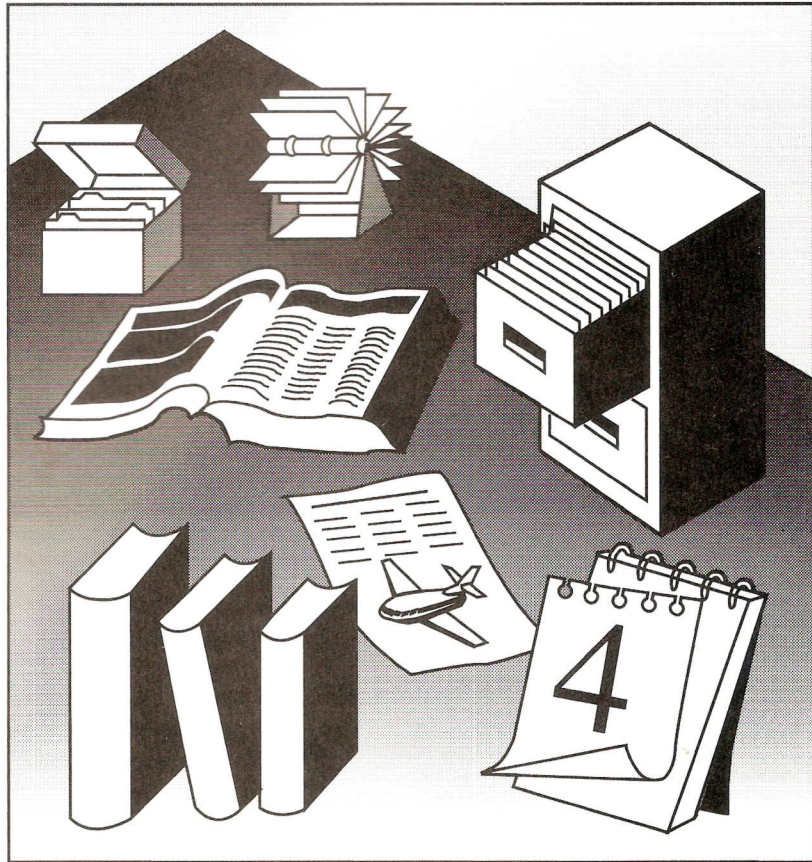


Figure P-1
Databases of many kinds

The information in the telephone book or in your address card file consists of names, addresses, and phone numbers. Each piece of information, such as a name, is placed in a location called a *field*. All the information for one person makes up one *record*. And all the records are stored in a *file*.

Fields					
	First Name	Last Name	Start Date	Salary	Title
Records	Tom	Johnson	1/5/87	31000	Engineer
	Alice	Bentley	3/6/87	31000	Engineer
	Biff	Davis	1/2/80	43780	Salesperson
	Shirley	Ransome	1/11/80	36040	Supervisor
	Lance	Wolfram	1/14/80	27300	Technician
	Dennis	Hanson	1/14/80	40520	Manager
	Lydia	Vernon	1/15/80	36870	Supervisor
	Andy	Venable	1/15/80	43520	Engineer
	Bryan	Pfaff	1/22/80	26440	Secretary
	Jim	Borrell	1/22/80	36540	Salesperson
	Nancy	Heizer	1/23/80	26270	Clerk
	Kathy	Forbes	1/28/80	19840	Secretary
	Garth	Hammons	2/6/80	50100	Salesperson
	Mary	Smith	2/7/80	55000	Engineer

Figure P-2
Fields and records make up a file

A record and its fields can be visually represented in several ways. The telephone book shows each record as one line in a list; the card file shows each record as a separate card. Figure P-3 shows how fields and records can be displayed in two ways.

Employees				
Last Name	Borrell			
First Name	Jim			
Start Date	1/22/80			
Salary	36540			
Title	Salesperson			

First Name	Last Name	Start Date	Salary	Title
Tom	Johnson	1/5/87	31000	Engineer
Alice	Bentley	3/6/87	31000	Engineer
Biff	Davis	1/2/80	43780	Salesperson
Shirley	Ransome	1/11/80	36040	Supervisor
Lance	Wolfram	1/14/80	27300	Technician
Dennis	Hanson	1/14/80	40520	Manager
Lydia	Vernon	1/15/80	36870	Supervisor
Andy	Venable	1/15/80	43520	Engineer
Bryan	Pfaff	1/22/80	26440	Secretary
Jim	Borrell	1/22/80	36540	Salesperson
Nancy	Heizer	1/23/80	26270	Clerk
Kathy	Forbes	1/28/80	18840	Secretary
Garth	Hammons	2/6/80	50100	Salesperson
Mary	Smith	2/7/80	55000	Engineer

Figure P-3
Two ways of representing one record

The field label identifies the kind of information the field contains. As you can see in Figure P-3, each record has the same fields no matter how it is displayed.

In 4th DIMENSION, you can vary the arrangement of fields on different *layouts*. Figure P-4 shows three layouts that contain fields from the same database.

Anderson, Willy

(415) 555-1232

1542 South Henderson
Oakland CA 94709

Lest Name	First Name	Phone Number
Anderson	Willy	(415) 555-1232
Osborne	Andrew	(212) 345-8885
Frashnar	Pendgib	(212) 555-1298
Johnson	Samuel	(714) 523-1284
Richardson	Emily	(332) 765-2143
Northgate	Oliver	(605) 667-2310

Anderson, Willy	(415) 555-1232
1542 South Henderson Oakland CA 94709	
Osborne, Andrew	(212) 345-8885
7862 San Pablo Blvd. Sarandor NJ 10907	
Frashnar, Pendgib	(212) 555-1298
6783 42nd St New York NY 18976	
Johnson, Samuel	(714) 523-1284
62 Maidenbrook Ln. Marshall PA 20786	
Richardson, Emily	(332) 765-2143
584 Harding Ave. Bismark ND 60874	
Northgate, Oliver	(605) 667-2310
8873 Falutin Hwy. Scranton PA 20887	

Figure P-4
Several layouts for the same database

The telephone book and card file are examples of simple database files, in which all the records store the same kind of information. More complex databases are made up of several files. Each file contains a different kind of information. The information in one file can be related to information in another. At the telephone company, for example, one file stores names, addresses, and telephone numbers, and another file keeps track of the telephone calls that are made from each telephone number. At the end of the month, invoices are created from the records in both files to produce telephone bills.

The concepts introduced in this section are basic to any database, including the large-capacity databases that keep track of credit card transactions, telephone billings, invoices, financial accounts for large corporations, publicly traded stocks and bonds, sales information, inventory lists, and data for scientific projects.

You will learn more about these ideas as you work with the tutorials in your 4th DIMENSION package.

Basic Operations for Macintosh Computer

The tutorials in this book assume that you know how to use a Macintosh computer. Here is a quick review of some basic terms. For complete information and instructions, see the user guide that came with your computer.

Desktop: The Macintosh screen represents a desktop, on which you can arrange the various items you want to use during a session.

Icons: Disks, documents, folders, and applications are represented on the desktop by icons, pictorial representations of the items. Icons also represent actions and tools. You click an icon to activate the function.

Mouse: To perform some functions on the Macintosh you move the mouse and press the mouse button. The pointer on the screen follows every move you make with the mouse on your work surface.

Pointer: The mouse pointer is usually shaped like an arrow, but it can change shape to give you certain kinds of information. It can be an I-beam when you are ready to edit text, or a wristwatch when the Macintosh is performing an operation you must wait for.

Clicking: You click on-screen elements such as icons, check boxes, and buttons to select or activate them. You click by positioning the pointer on the item and then pressing and releasing the mouse button.

Selecting: You select something on the screen—an icon, a file, a piece of information—by clicking it. When something is selected, it is highlighted (that is, inverted—black becomes white, white becomes black) to show that it is selected. You always select whatever you want to work on next.

Double-clicking: Very often you can select an item and immediately perform an operation by double-clicking. This means rapidly clicking an item twice. Your Macintosh performs the expected operation, based on the situation at the time. For example, if you double-click the 4th DIMENSION application icon, the Macintosh opens the application. Double-clicking in this case is a shortcut for selecting the icon and then choosing Open from the File menu.

Dragging: You often can drag something on the screen to change its location. To drag, you position the pointer on the item you want to move, then press and hold the mouse button while you move the mouse. When you release the mouse button, the item remains in its new location.

Choosing menu commands: You choose a menu command to tell the Macintosh what you want to do with a selected item. To choose a menu command, you pull down the menu by pressing and holding on the menu title. Then you drag the pointer down the list of menu commands until you highlight the one you want. When you release the mouse button, the command is performed.



Figure P-5
Choosing a menu command

Dialog boxes: Your Macintosh displays a dialog box whenever it needs information from you to carry out a task, such as saving a document. The dialog box has action buttons to click, such as OK, Cancel, or Save, and it sometimes has a place for you to type information, such as the filename you want to use for a document.

Before You Begin

Before you can start 4th DIMENSION, you must install it on your hard disk. For complete directions, see the *Read This First* booklet included with your package.

You must also install the sample databases from the 4th DIMENSION Tutorials disk to your hard disk. You will use the sample databases as you work with the tutorials. The instructions assume that the sample databases are in the same folder as the 4th DIMENSION application.

CHAPTER 1

CREATING FILES AND FIELDS

CREATING FILES AND FIELDS

Estimated time to complete: 15 minutes

This chapter takes you through the first basic steps in creating a database.

When you create a new 4th DIMENSION database, the program automatically creates a database *file*. The file image appears on your screen. You will soon create *fields* for this file. In 4th DIMENSION, the file and its fields are the basis of the *structure* of your database.

Because 4th DIMENSION automatically creates the first file for you, your job is simply to rename the file and create fields within the file. 4th DIMENSION then uses this file to store and retrieve the records you create.

When you have finished this chapter you will know how to

- create a database
- rename a file
- create fields
- set field types and field attributes



Creating a 4th DIMENSION Database

In this section, you will create the database you will be using with all the tutorials in this booklet.

1. Open 4th DIMENSION.

You can either select the 4th DIMENSION program icon and then choose Open from the File menu, or you can double-click the icon.

For complete information about installing and starting 4th DIMENSION, see *Read This First*.

4th DIMENSION displays the Welcome screen.

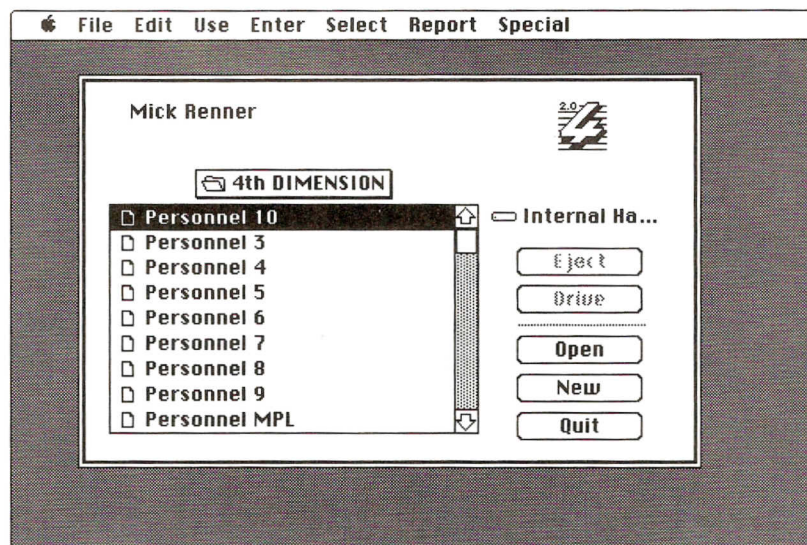


Figure 1-1
4th DIMENSION Welcome screen

The names of the 4th DIMENSION sample databases you copied to your hard disk appear in the file area, as shown in Figure 1-1. If there are no 4th DIMENSION databases in the folder, the file area is blank and the Open button is gray.



2. To create a new database, click New.

4th DIMENSION displays a dialog box for you to enter the name of the new database.

3. Type **Personnel**.

This is the name 4th DIMENSION will use to save your database.



Note: Database names can be any valid Macintosh filename. The Macintosh allows you to use any characters on the keyboard except the colon (:). Also, don't start a filename with a period (.). You can use up to 25 characters.

Save

4. Click Save.

4th DIMENSION displays the Structure window, which contains a single empty file, named [File1].



Note: Throughout this book and other 4th DIMENSION documents, filenames are shown in brackets. This helps distinguish filenames from field names, layout names, and other names you use for items in the application.

When you create a new database, as you have done here, 4th DIMENSION starts in the Design *environment*. This is one of three 4th DIMENSION environments that you will become familiar with.

The Design environment is where you create the structure of a database.

Renaming a File

When you start 4th DIMENSION, you see the first file image in the Structure window. This window shows the file structure of the database (the files and their relationships). Since this is a new database, there is only one file.

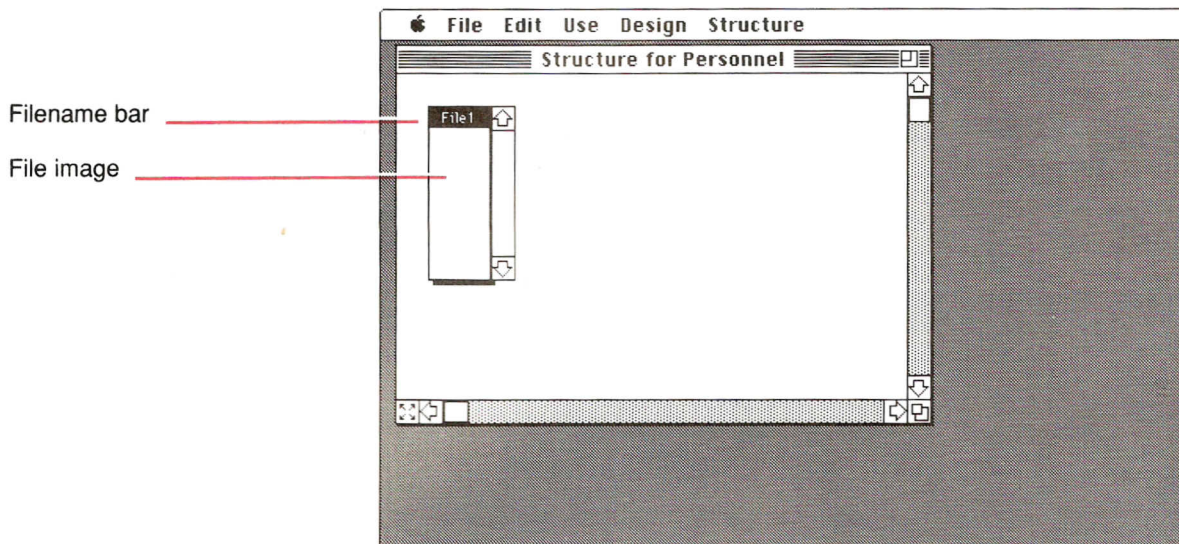


Figure 1-2
The Structure window

For this tutorial, assume that you have analyzed the information needs of the personnel department for your company. In this first file you will keep employee information.

The first 4th DIMENSION file is automatically named [File1]. Since the filename is highlighted, you can tell that it is already selected. (If the filename is not highlighted, click it to select it.) You will change the filename to one that is more descriptive. Since you are going to keep track of your employees in this file, you decide to name it Employees.

 **Note:** 4th DIMENSION often provides preset, or default, names for things, such as [File1] and Field1. You will usually want to change these names to something more meaningful to you.

Structure	
New File...	⌘N
Rename File...	⌘R
New Field...	⌘F
Change Field...	

1. Choose Rename File from the Structure menu.

4th DIMENSION displays the File Attributes dialog box for you to enter the new filename.

Access system
boxes



Figure 1-3
The File Attributes dialog box



Note: The boxes below the Filename box allow you to set password access privileges to this file. You can control who has access to the file and for what purpose. You will find an introduction to using the 4th DIMENSION Password Access System in the *4th DIMENSION Tutorials*.

The filename box is already selected, ready for you to enter the new filename.

2. Type **Employees** and then click OK.

The Structure window displays the renamed file. You are now ready to create the fields for this file.

Creating Fields

You want to keep track of each employee's last name, first name, start date, salary, and title. Each of these pieces of information is stored in a separate field. Your next task is to create these fields.

4th DIMENSION highlights the filename to show that it is the current file.



1. Choose New Field from the Structure menu.

4th DIMENSION displays the Field dialog box. The Name box is highlighted, ready for you to replace Field1 with an appropriate field name.

2. Type **Last Name**.

Be sure to type the words Last Name, not your own name. You are naming the field that will later store the last names of the employees.

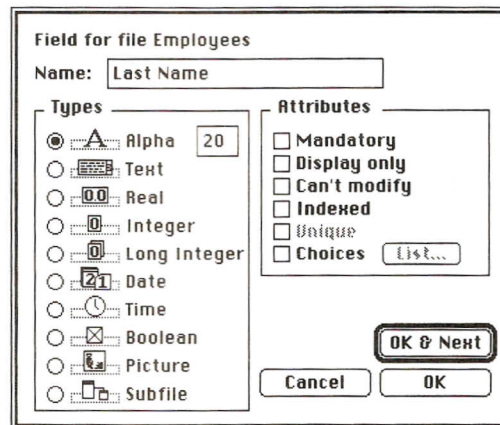


Figure 1-4
The Field dialog box

As you can see from Figure 1-4, each field can be one of ten field types and can have one or more field attributes. The field type determines the kind of information you can enter into the field. The attributes determine how each field will be handled during data entry and display.

For this tutorial you will use three of the field types:

Alpha: For letters, numbers, and special characters—often called *alphanumeric* information. You can specify the maximum number of characters in an Alpha field, from 2 to 80 characters.

Real: For numbers that include decimals (*real* is short for real number).

Date: For dates.

And you will use one field attribute:

Indexed: When a field is *indexed* 4th DIMENSION creates a special internal file that allows you to search and sort records very quickly. Each index takes some disk space, so you won't index every field, just the ones that you are likely to use often for searching and sorting.

For more information about field types and attributes, see the *4th DIMENSION Design Reference*.

The field type for the Last Name field, Alpha, is already selected. However, you should change the 20 to 15. The 15 means that you can enter up to 15 characters into this field.

☒ Alpha 15

☒ Indexed

OK & Next

3. Select the box next to Alpha, either by pressing the Tab key or by clicking.
4. Type **15** in the box to the right of Alpha.
5. Select the Indexed field attribute.

You will often use Last Name to locate specific records and to sort them. The Indexed attribute makes these tasks quick.

6. Click OK & Next.

4th DIMENSION displays another Field dialog box for the second field.

7. Type **First Name**, make the field type Alpha 15, and select the Indexed field attribute.

You will often use First Name together with Last Name to search and sort records.

8. Click OK & Next, or just press Return (the shortcut for OK & Next).

4th DIMENSION displays a third Field dialog box.

As you can see, you create fields by typing the field name in the Name box and choosing the type and attributes. OK & Next accepts the field name, type, and attributes and displays the next Field dialog box. From now on, these step-by-step instructions assume that you know how to create a field.

●  **Date**

9. Create a field named **Start Date**, and make the field type Date.

The Date field type allows you to enter dates into this field and to perform calculations based on dates. For example, you can calculate how long an employee has been with the company by calculating the difference between the start date and today's date.

10. Click OK & Next or press Return.

●  **Real**

11. Create a field named **Salary**, and make the field type Real.

The Real field type allows you to enter numbers with decimal points (such as dollars and cents) into the field and to perform calculations on the values you enter. For example, if you enter annual salary figures in the Salary field, you can calculate the monthly salaries based on the annual figure.

12. Click OK & Next or press Return.

13. Create a field named **Title**, and make the field type Alpha 12.

14. This time, click OK (not OK & Next) to return to the Structure window.

If you accidentally click OK & Next, click Cancel to avoid creating an unnecessary field.

OK

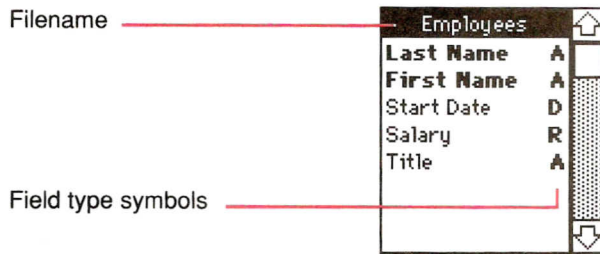


Figure 1-5
The Employees file with the field names

You have now created the fields you need for this file. The field names are displayed in the file image. The field type symbol (A for Alpha, R for Real, and D for Date) is displayed next to each field name. The indexed fields (Last Name and First Name) are displayed in bold type.

You can change any field at any time. You can edit the field name, change the attributes, and even change the field type. You can add a field whenever you need to; each file can have up to 511 fields.

The Next Step

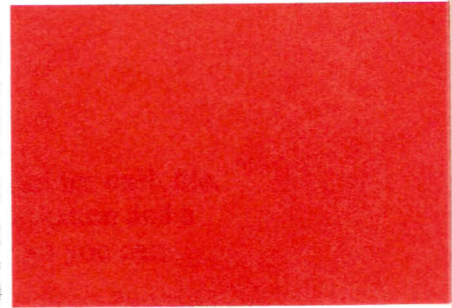
Now that your file has fields, you are ready to create layouts. In the next chapter you will create an input layout to use when you enter the records, and an output layout to list the records on the screen of your Macintosh.

If you want to stop working with 4th DIMENSION for a while, you can do so now. You do not need to make any special effort to save your work. While you are creating a database, 4th DIMENSION automatically saves your work. When you enter information into the records, the information is saved automatically at regular intervals.

You can quit 4th DIMENSION at any time by choosing Quit from the File menu. All the work you have done is saved automatically. You can open any database again by starting 4th DIMENSION and choosing the database from the Welcome screen.

CREATING LAYOUTS

CHAPTER 2



CREATING LAYOUTS

Estimated time to complete: 10 minutes

Layouts are the forms you use when you enter, view, and print information. Essentially, the layouts determine how you see the fields when you are creating records and printing reports.

Single-record format shows one record at a time

Employees	
Last Name	Johnson
First Name	Tom
Start Date	1/5/87
Salary	28500
Title	Engineer

Multi-line format shows many records in a list

First Name	Last Name	Start Date	Salary	Title
Mike	Krause	3/18/80	33340	Designer
John	Johnson	3/19/80	18250	Clerk
Calvin	Margolis	3/20/80	52000	Salesperson
Andy	Tompkins	3/28/80	19770	Technician
Laurence	Nanneman	4/1/80	55900	Salesperson
Michael	Sleeter	4/10/80	25650	Technician
Rick	Reed	4/15/80	18150	Clerk
Mike	Ross	4/17/80	58910	Director
Daniel	Maloy	4/24/80	42910	Manager
Chris	Nash	4/28/80	34980	Designer

Figure 2-1
4th DIMENSION layouts

You can have as many layouts as you want for each file. You can use one layout for entering information and a different layout to display it. On any layout you can

- use all of the fields, some of the fields, or no fields at all
- use different type styles, backgrounds, and other graphic elements that you draw or paste in from the Clipboard
- add descriptive text, such as directions for the person who will be entering the information
- create an effective color scheme for your layouts on a color monitor
- add custom buttons

You can find complete information about how to add these features to a layout in the *4th DIMENSION Tutorials* and the *4th DIMENSION Design Reference*.

In this chapter you will create one layout for entering information, called an *input layout*. Then you will create a layout for listing information, an *output layout*.

Creating an Input Layout

You have created the file and the fields; now you will create a layout to use for entering records.

1. Choose Layout from the Design menu.

4th DIMENSION displays the Layout dialog box.

You use this dialog box to open any layout you create.



Filename

Layout name
panel

Layout display
panel

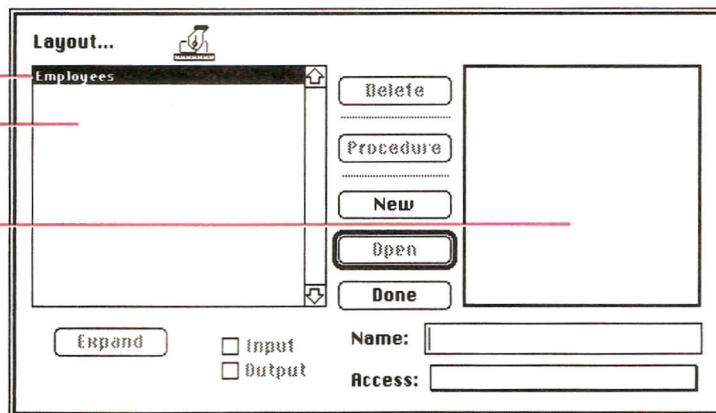


Figure 2-2
The Layout dialog box

The Layout name panel is on the left. After you create a layout, the layout name will be displayed beneath the filename.

The Employee filename is highlighted. (If it is not highlighted, select it.) Now you are ready to create a layout for this file.



2. Click New.

4th DIMENSION displays the New Layout dialog box.

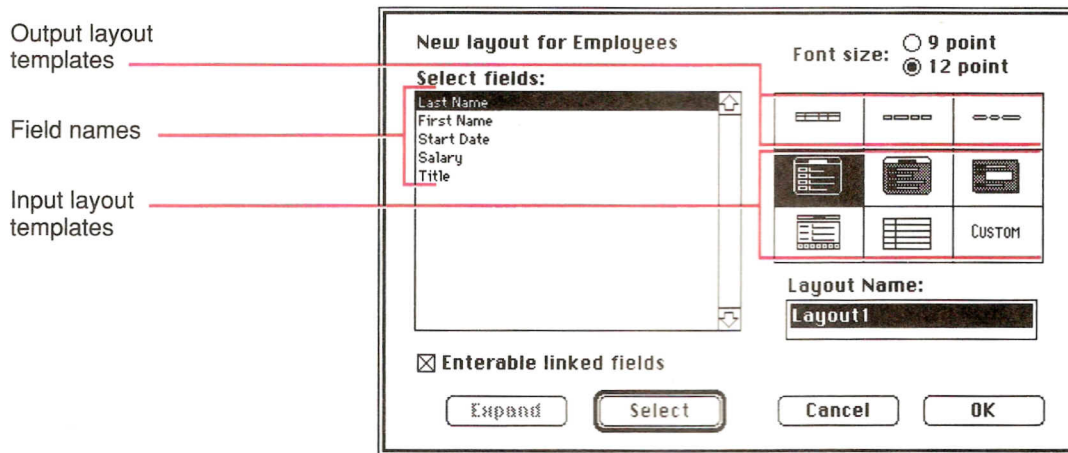


Figure 2-3
The New Layout dialog box

The New Layout dialog box is where you name the layout and choose the fields you want to include, the font size, and the standard layout template you want to use. A layout template is a pattern 4th DIMENSION uses to create a layout.

The layout templates have been designed to display information effectively. 4th DIMENSION provides three templates for listing information in a row-and-column format and five templates that display one record at a time. You will usually start with one of these templates for your layout, and then modify the layout itself to suit your needs exactly. If you wanted to design an original layout yourself, you would choose Custom from the group of templates.

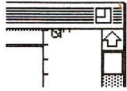
4th DIMENSION automatically places all the fields in the layout, unless you select specific fields you want to use. Since you will use all the fields for your employee input layout, you do not need to select any. You will use the layout template that is already selected.

3. Type **Employee Input** to name the input layout you are creating.

The Layout Name box is already selected when the dialog box opens, so you can type the layout name immediately.

4. Click OK.

4th DIMENSION creates the layout and displays it in the Layout editor. The Layout editor allows you to modify any layout, either immediately after you create it (as you have just done) or later if you discover a need to change the layout. Your layout includes all the fields displayed in the order they were created.



5. Click the zoom box so that the Layout window fills the entire screen.

The zoom box is in the upper right corner of the window.

Expanding the Layout window lets you see the layout as it will appear during data entry.

Fields placed
next to field
labels

Figure 2-4
Your first layout

You will use this layout to enter the information in the fields. The field labels identify each field. The field names that appear within the fields on this layout will not appear on the layout when you use it for data entry.

This type of layout is a common one for data entry. Records appear on the screen one at a time. When you have entered the information in the fields for one record, you go on to the next record.

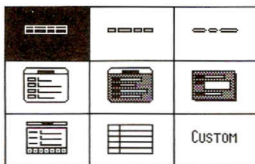
Your input layout is ideally suited to enter information. In the next section you will create a standard output layout that displays several records at a time in a list format.

Creating an Output Layout

To view as much information at one time as possible, you need a display that lists records in rows and columns. A list layout lets you display and print many records.

To create a second layout, you use the Layout dialog box and the New Layout dialog box again. Because you are familiar with the steps for creating a layout, the following instructions are somewhat shorter than the earlier instructions.

1. Choose Layout from the Design menu.
4th DIMENSION displays the Layout dialog box. The [Employees] filename is highlighted.
2. Click New in the Layout dialog box.
4th DIMENSION displays the New Layout dialog box.
3. Enter **Employee List** as the layout name in the New Layout dialog box.



4. Select the first layout template (in the upper left corner of the template choices), and make the font size 9-point.

The first three standard layout templates are for output layouts. They display the records in rows and columns. The first template, the one you have chosen, shows the field names at the top of the columns.

For your output layout, you want the employees' first names to appear in the first column, so you need to select the fields manually to place them in a different order on the layout.



5. Select First Name in the fields list, then click the Select button.
4th DIMENSION places a number 1 next to First Name. The number indicates the selection order for the field.

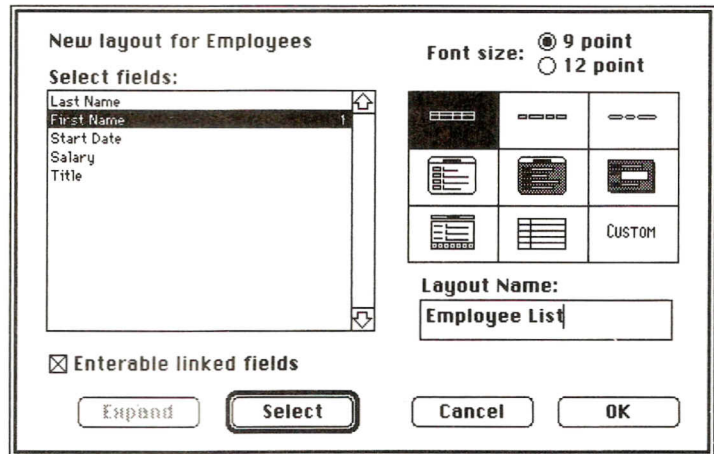


Figure 2-5
The New Layout dialog box for your second layout

6. Select Last Name, then click the Select button.
4th DIMENSION places a number 2 next to Last Name.
4th DIMENSION provides a shortcut for selecting fields:

7. Double-click Start Date.
Double-clicking a field selects it for the layout.

8. Select Salary and Title in the same way.

You can use either the Select button, or double-click the field names.

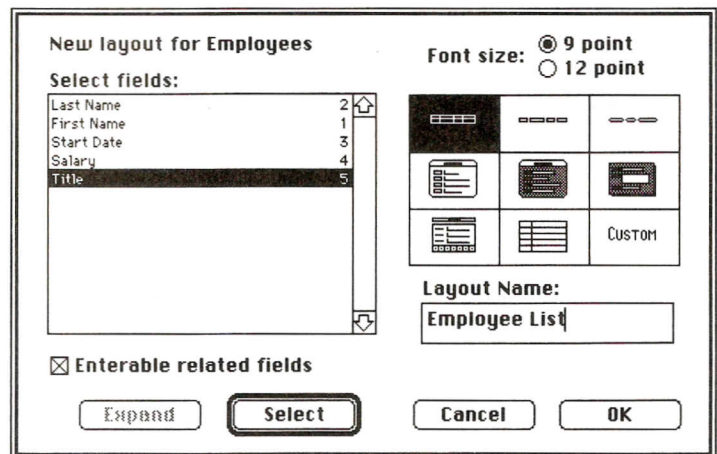


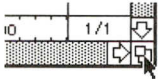
Figure 2-6
Title field selected

9. Click OK.

4th DIMENSION creates the output layout for you.

10. Drag the size box to expand the window so that you can see how the layout is designed.

Using the size box to expand the window is an alternative to using the zoom box.



Field labels

Fields

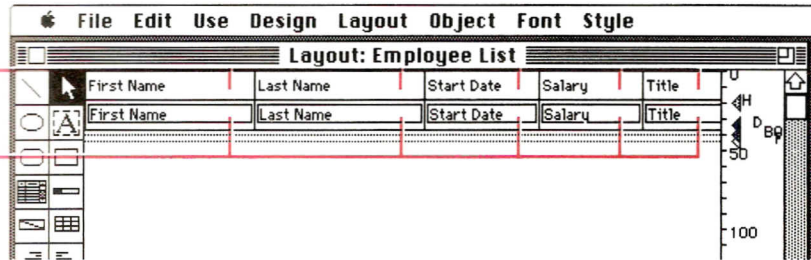


Figure 2-7
Your output layout

This layout also shows all the fields for a single record. The fields are placed below the field labels. When this layout is used, it will automatically generate a row-and-column listing of records with a field label at the top of each column.

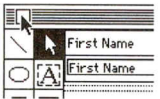
11. Close the layout windows by clicking their close boxes in the upper left corners of the windows.

4th DIMENSION returns to the Structure window.

4th DIMENSION automatically saves the layouts you have created when you close their windows.

4th DIMENSION lets you create many different layouts. When you are entering and managing information, you will always use one input layout and one output layout.

4th DIMENSION uses the input layout when you enter or modify information. It uses the output layout to display the records as a list.



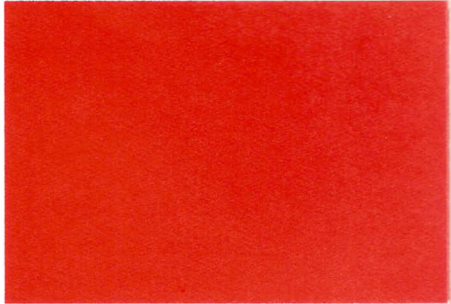
The Next Step

You have completed the basic steps necessary to start using 4th DIMENSION to enter and manage employee records. You have created the database structure: the file with its fields. And you have created layouts that you can use to enter and display data. Now you are ready to begin entering information and using it for practical purposes.

If you want to take a break, feel free to do so. 4th DIMENSION automatically saves everything you have worked on when you quit. You can open the Personnel database you have created when you start again.

ENTERING, IMPORTING, AND MODIFYING DATA

CHAPTER 3



ENTERING, IMPORTING, AND MODIFYING RECORDS

Estimated time to complete: 15 minutes

You have used the Design environment to create the database structure and layouts. You will now work in the User environment to enter information in the fields. In addition, you will import data from another application.

The User environment allows you to manage data. You can search for records, you can sort the records, you can print reports and labels, and you can even graph the information. The User environment gives you all the capabilities you need to work with your data productively.

In this chapter you will learn how to

- enter records
- import records from another application
- view records
- modify records

Entering Records

You are going to enter a few records into the database you have just created. You created your database structure in the Design environment. To enter records, you simply change to the User environment.

If you are returning from a break, start 4th DIMENSION and open the Personnel database you created in the first chapters.

1. Choose User from the Use menu.

4th DIMENSION displays the message "There are no records for: Employees." If there were records, they would be displayed on the screen using the output layout you created.

2. Choose New Record from the Enter menu.

4th DIMENSION displays your input layout. Here in the User environment, you can select the fields to enter or modify your data. Unlike the Design environment, you cannot select or modify the other layout elements (the field labels, border, and so on), only the contents of the fields themselves.



Control panel

Employees	
Last Name	
First Name	
Start Date	00/00/00
Salary	0
Title	

Figure 3-1
The data entry screen ready to accept information

As you can see, the control panel on the left side of this screen has several buttons. The control panel lets you enter or delete records and move from record to record.

The blinking insertion point is already in the Last Name field, ready for your first field entry.

3. Type **Johnson** and press Tab.

You use the Tab key to move from field to field. To move in reverse order, you use Shift-Tab. You can also use the mouse to point to and select any field.

4. Type **Tom** and press Tab.

From now on, this kind of instruction will be given simply as "Enter **Tom**."

5. In the Start Date field, enter 1/5/87.

You can also use hyphens, commas, periods, or spaces instead of slashes to separate the numerals in the date (mm-dd-yy, for example). You always use numerals to enter the date. The mm/dd/yy format is called the *date entry format*.

You can later change the way the date is displayed so that the month is spelled out in full or abbreviated (5 Jan 1979 or January 5, 1979, for example). You will change the date display format in the *4th DIMENSION Tutorials*.

4th DIMENSION accepts the entry and moves the insertion point to the next field.

6. For Tom Johnson's salary, enter **28500**.

Do not enter dollar signs or commas. When entering a "real" number you use numerals and a decimal point (and a minus sign for negative numbers). 4th DIMENSION accepts the entry and displays it just as you entered it.

You can change the display format for this field also, so that dollar signs and commas are displayed. You will change the number display format in the *4th DIMENSION Tutorials*.

7. For the title, enter **Engineer**.

All the fields are complete.

dd.mm.yy
Books printed for
American Market

14 June 1988

European Format

Displayed
enter

5/1/87
day month year

Click Enter
to save the
record

Figure 3-2
Your first record ready to be saved

8. Click Enter or press the Enter key.

4th DIMENSION accepts the record and displays a blank record.

When 4th DIMENSION accepts a record, it stores it in the database. You can display the record again to view the information or change it if necessary. The blank layout you now see on the screen is not yet a record; it will become one when you accept the record by clicking Enter (or by pressing the Enter key).

9. Enter the information for the second record.

Last Name: **Bentley**

First Name: **Alice**

Start Date: **3/6/87**

Salary: **29500**

Title: **Engineer**

Day Month Year
Displayed as 6/3/87
Enter

10. This time, after you click Enter, click Cancel when the blank record appears.

4th DIMENSION displays both of the records you have entered. As you can see, your output layout displays the same data you entered, but it uses a multi-line format to display the records in a list.

Note

First Name	Last Name	Start Date	Salary	Title
Tom	Johnson	1/5/87	28500	Engineer
Alice	Bentley	3/6/87	29500	Engineer

Figure 3-3
Records displayed as a list

Importing Records from Another Application

You have entered two records into your database. To save you the time of entering a series of records, we have prepared a sample text file of practice records.

Suppose you have been keeping your personnel records in a spreadsheet. You can export your data as text from the spreadsheet, and import the text file into 4th DIMENSION. Here is how the text file looks when displayed by a text editor:

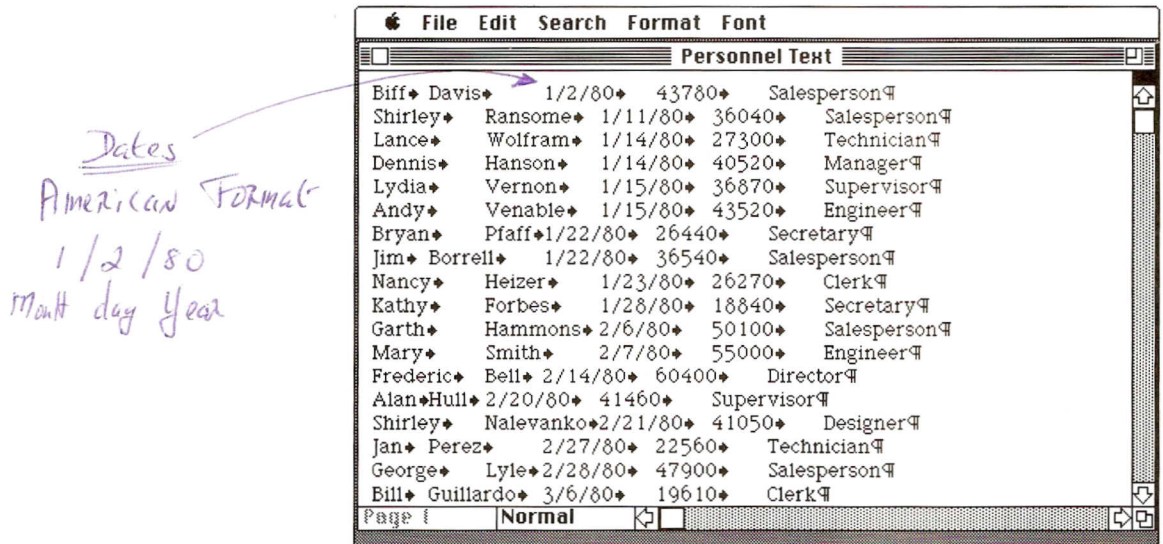


Figure 3-4
A text file of data

The text file contains one record for each employee. Within each record, the fields are separated by tabs, and the end of the record is indicated by a carriage return. You can import such text files directly into 4th DIMENSION.



1. Choose Import Data from the File menu.

4th DIMENSION displays the Import Data dialog box.

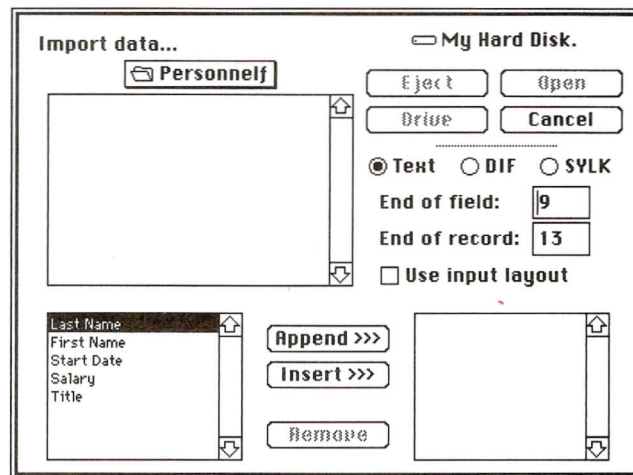


Figure 3-5
The Import Data dialog box

The Import Data dialog box gives you a choice of file types from which to import data. The Text file choice is already selected. The ASCII code for Tab is entered in the “End of field” box, and the ASCII code for carriage return is entered in the “End of record” box. If your text file used different characters to indicate the end of a field or the end of a record, you would need to change these values. (For complete information, see the *4th DIMENSION User Reference*. ASCII codes are used to represent keystrokes to a computer.)

You need to select the fields you want to import into 4th DIMENSION, using the order they appear in the text file. The Import Data dialog box provides a list of fields so that you can select the import order.



Figure 3-6
Field list for importing data

The text file you are using puts the First Name field before the Last Name field, and your Personnel database places them the other way around. The order of fields you specify in this dialog box must reflect this difference (otherwise all employee first names would appear in the Last Name field).

If the fields were in the same order in the text file as they are in the database, you wouldn't have to create a special order of fields.

2. Select First Name in the list of fields on the left.

3. Click Append.

4th DIMENSION places First Name in the list of fields on the right.

4. Select the second item, Last Name, in the list of fields on the left, then click Append.

4th DIMENSION places Last Name in the list of fields on the right. You can see how you use Append to create a list of fields on the right that matches the order of fields in the text file you are importing.

5. Use Append to add the remaining fields to the list on the right.

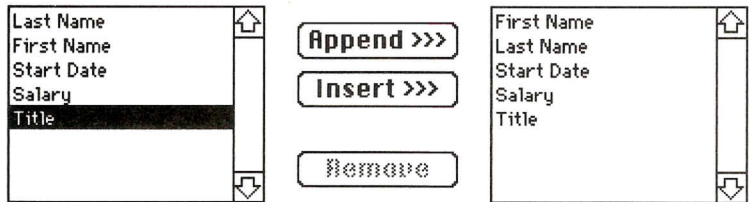


Figure 3-7
The final import order

If you make a mistake, you can use the Remove button to delete any field from the list on the right. And you can use the Insert button to place a field within the list of fields. Be sure the order of fields on your screen matches the order as shown in Figure 3-7.

This dialog box also lists the files in the 4th DIMENSION folder. You have already copied the files on the Tutorials disk into the 4th DIMENSION folder, so they are available for this tutorial.

6. Select the Tutorial folder, and then click Open.

4th DIMENSION displays the tutorial files.

7. Select Personnel Text. *TEXTfile* *Personnel Text "European"*

This is the text file created from a spreadsheet.

8. Click Open.

4th DIMENSION quickly imports the data from the spreadsheet file. The records are added to the two records you have already entered.

Feel free to examine the records, using the scroll bar on the right side of the window to move through the file.

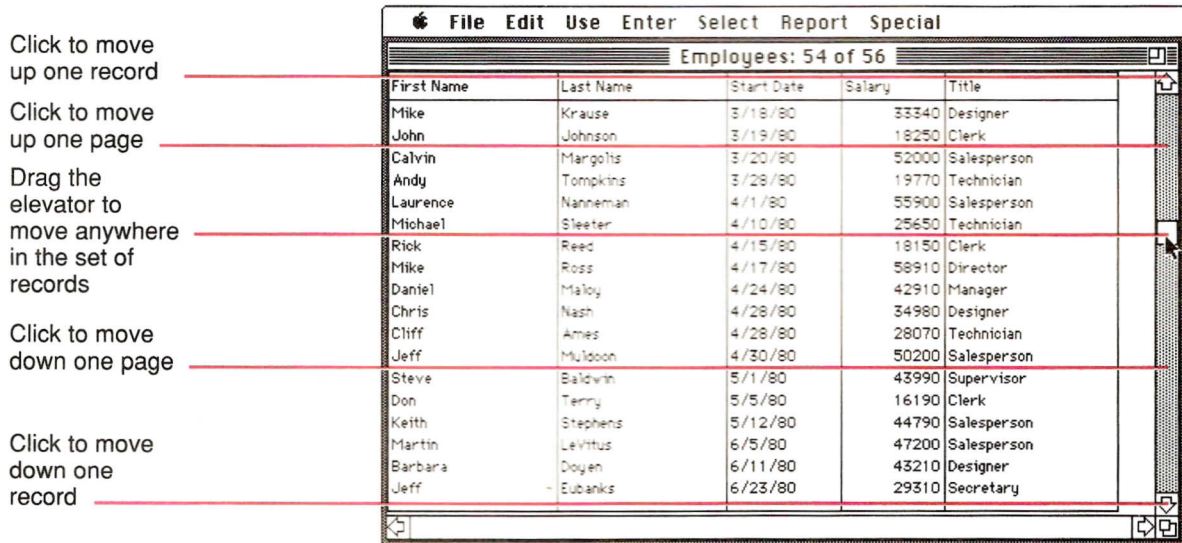


Figure 3-8

Using the scroll bar to move through the records

In the next section you will see how to modify records.

Caution with Text File "Start Date". Date read as text so 3/18/80 becomes 3/6/80 { 18-12=6 }
 March 18/80 June 3/80
 Use { Personnel Text "European" }
 12 is Number of Months in year

Modifying Records

The records in your database will often need modification. People change their names; their job titles and salaries change. People leave the company. In each case, the records need to be modified.

Suppose that Tom Johnson's and Alice Bentley's salaries have increased. You need to modify their records. The records that you have imported are now the only records displayed. Your first step is to display all the records.

Select
Show All ⌘G
Show Subset ⌘H
Search Editor... ⌘S
Search by Layout... ⌘L
Search and Modify...
Search by Formula...
Sort Selection... ⌘T
Sort File...

1. Choose Show All from the Select menu.

This command shows all the records in the database.

2. Scroll to the top of the list.
3. Click anywhere in Tom Johnson's record to select it.

You always select a record when you want to work on it. You can select any record simply by clicking it.

File	Edit	Use	Enter	Select	Report	Special
Employees: 56 of 56						
First Name	Last Name	Start Date	Salary	Title		
Tom	Johnson	1/5/87	28500	Engineer		
Alice	Bentley	3/6/87	29500	Engineer		
Biff	Davis	1/2/80	43780	Salesperson		
Shirley	Ransome	1/11/80	36040	Salesperson		

Figure 3-9
Tom Johnson's record selected

Enter
New Record ⌘N
Modify Record ⌘M
Apply Formula...
Enter in List ⌘,

4. Choose Modify Record from the Enter menu.

4th DIMENSION displays Tom Johnson's record, ready for you to modify the information.

5. Select the Salary field.

You can use the Tab key to move from field to field, or you can click the Salary field with the mouse. If you click the field with the mouse, the insertion point is placed where you click. To select all the characters in the field, either drag across the characters or double-click in the field.

6. Enter **31000**.
7. Since you have another record to modify, click the left arrow in the control panel to move to the next record.

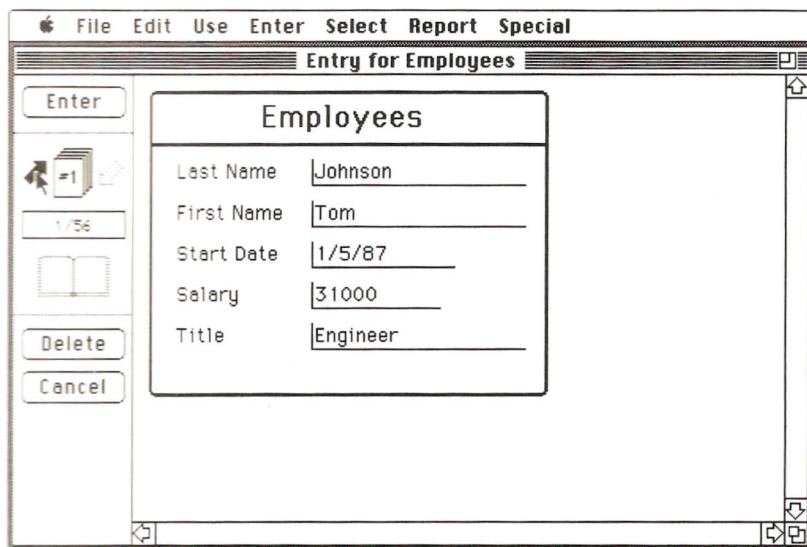


Figure 3-10
Using the control panel to go to the next record

4th DIMENSION displays the next record. When you move to the next record, 4th DIMENSION accepts the changes you have made just as if you had clicked Enter. Notice that you can use the control panel to move from record to record when you are modifying records.

Click here to move
to the next record

Click here to move
to the first record

Click here to move
to the previous
record

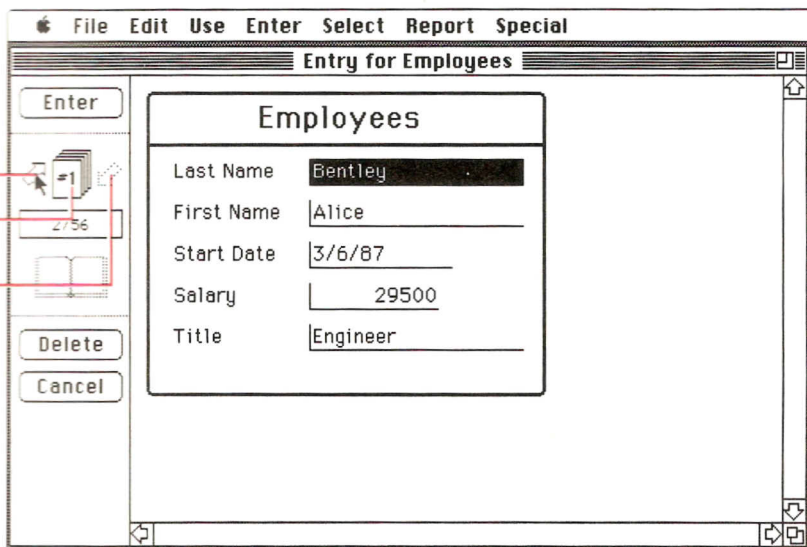


Figure 3-11
Using the control panel to move from record to record

8. Change Alice Bentley's salary to **31000**.

You may want to practice using the control panel to move from record to record. You can see every record in the database in this manner.

9. When you have finished, click Enter.

4th DIMENSION displays the records in the output layout.

Modifying Records in the List

You have entered and modified records using the input layout. You can also enter and modify records directly in the output layout. This is called modifying records in the list. Suppose you need to change the title for Shirley Ransome, who has received a promotion to Supervisor. Her record is the fourth from the top.



1. Choose Enter in List from the Enter menu.
2. Click any field in Shirley Ransome's record.

Clicking once places an insertion point in the field, ready for you to modify the entry. Double-clicking selects a word in the field. You can also drag over all or part of a field entry to select the entire entry or part of the entry.

3. Press Tab until you have selected the Title field. The records scroll to the left if necessary to bring hidden fields into view.
4. Type **Supervisor** in place of the previous title.
5. Press Tab to move to the next record.

Moving to another record causes 4th DIMENSION to accept the changed information in Shirley Ransome's record.

You can modify any record from the list, or enter a new record, as long as the Enter in List command is in effect.

6. When you have finished making the changes you want, choose Enter in List again.

4th DIMENSION turns off the "Enter in List" mode. You can now only view the list of records; you can't modify them.

The Next Step

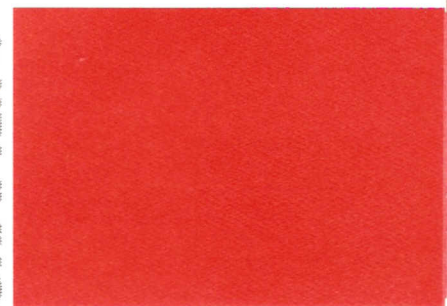
In this chapter you have seen how quickly you can enter and modify records in a 4th DIMENSION database, using either the input layout or the output layout. You have imported records from a text file. You have also seen how to move from record to record with either layout.

The next chapters show you how you can search for single records or groups of records, sort records into various sequences for different purposes, graph the information, and print lists and quick reports.

If you want to take a break at this time, go ahead and quit 4th DIMENSION. You can open this database again when you start working on the next chapter.

SELECTING, SEARCHING, AND SORTING

CHAPTER 4



SELECTING, SEARCHING, AND SORTING

Estimated time to complete: 12 minutes

Now that your records exist, you can manipulate them in useful ways. Three of these ways involve the basic database operations *selecting*, *searching*, and *sorting*.

You select a record in order to work with it. You have already selected a record and modified it. 4th DIMENSION allows you to select a group of records, so that you can work on all of them.

Searching allows you to find a specific record or a group of records among all the records in a file. You may want to view the information on a particular record. You may need to update the information on several records. Or you may want to isolate a group of records to perform a calculation on them or to print them.

You can sort the records into different sequences, depending on your current needs. If you need to print an employee list, for example, you'll probably want the records to be in alphabetical order by last name and first name, as in the telephone book. However, if you want to compare salaries within job classifications, you'll probably want the records arranged by job title.

In this chapter you will learn to

- select groups of records
- search for a specific record
- sort the records

Selecting Records

The simplest method of looking for a record is browsing: scrolling through the records, looking for the ones you want.

4th DIMENSION allows you to select a group of records by clicking. Then you can isolate the records you have selected. The records you select do not have to be in any particular sequence; 4th DIMENSION allows you to create a group based on selecting any records.

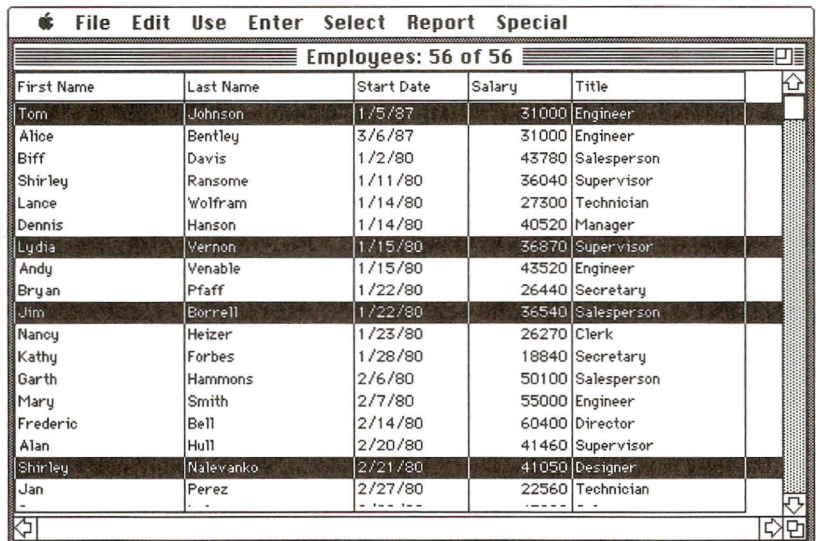
1. Select the first record.

Now in order to select additional records, you will hold down the command key as you click them.

The command key has the $\mathbb{H}$ symbol on it.

2. Use Command-click to select three or four additional records anywhere in the list.

4th DIMENSION highlights the records you click.



First Name	Last Name	Start Date	Salary	Title
Tom	Johnson	1/5/87	31000	Engineer
Alice	Bentley	3/6/87	31000	Engineer
Biff	Davis	1/2/80	43780	Salesperson
Shirley	Ransome	1/11/80	36040	Supervisor
Lance	Wolfram	1/14/80	27300	Technician
Dennis	Hanson	1/14/80	40520	Manager
Lydia	Vernon	1/15/80	36870	Supervisor
Andy	Venable	1/15/80	43520	Engineer
Bryan	Pfaff	1/22/80	26440	Secretary
Jim	Borrell	1/22/80	36540	Salesperson
Nancy	Heizer	1/23/80	26270	Clerk
Kathy	Forbes	1/28/80	18840	Secretary
Garth	Hammons	2/6/80	50100	Salesperson
Mary	Smith	2/7/80	55000	Engineer
Frederic	Bell	2/14/80	60400	Director
Alan	Hull	2/20/80	41460	Supervisor
Shirley	Nalevanko	2/21/80	41050	Designer
Jan	Perez	2/27/80	22560	Technician
-	-	- - - -	- - - -	- -

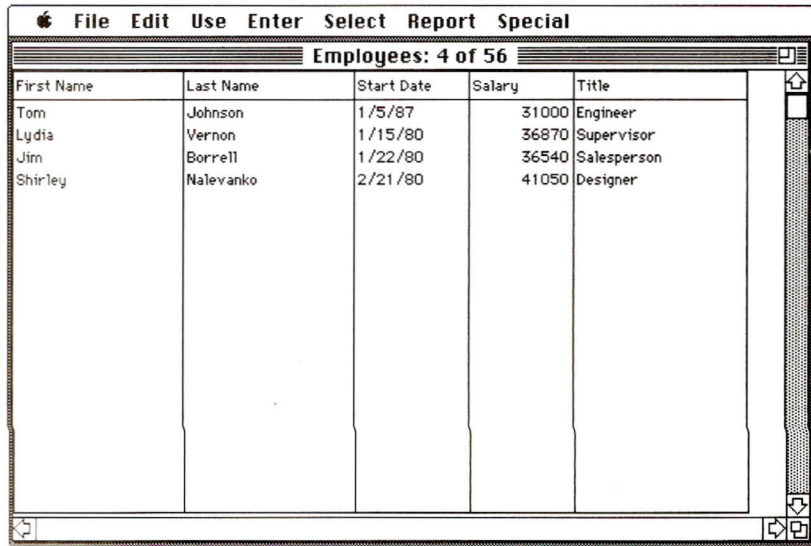
Figure 4-1
Records selected at random

3. Choose Show Subset from the Select menu.

4th DIMENSION isolates the records you have selected. This group is called a *selection*.

Select	
Show All	⌘G
Show Subset	⌘H

Search Editor...	⌘S
Search by Layout...	⌘L



First Name	Last Name	Start Date	Salary	Title
Tom	Johnson	1/5/87	31000	Engineer
Lydia	Vernon	1/15/80	36870	Supervisor
Jim	Borrell	1/22/80	36540	Salesperson
Shirley	Nalevanko	2/21/80	41050	Designer

Figure 4-2
A selection of records

The idea of a selection of records is a particularly important concept in using 4th DIMENSION. For now, you need to know only that whatever you do to the records applies only to the records in the current selection. For example, if you were to choose Print, only these few records would be printed.

4. To show all the records again, choose Show All from the Select menu.

4th DIMENSION also allows you to select a range of records. A range of records includes all the records in a sequence.

5. Click once near the top of the list to select one record.
6. Hold down the Shift key while you click a record farther down the screen.

4th DIMENSION selects all the records between the two clicks.

File Edit Use Enter Select Report Special				
Employees: 56 of 56				
First Name	Last Name	Start Date	Salary	Title
Tom	Johnson	1/5/87	31000	Engineer
Alice	Bentley	3/6/87	31000	Engineer
Biff	Davis	1/2/80	43780	Salesperson
Shirley	Ransome	1/11/80	36040	Supervisor
Lance	Wolfram	1/14/80	27300	Technician
Dennis	Hanson	1/14/80	40520	Manager
Lydia	Vernon	1/15/80	36870	Supervisor
Andy	Venable	1/15/80	43520	Engineer
Bryan	Pfaff	1/22/80	26440	Secretary
Jim	Borrell	1/22/80	36540	Salesperson
Nancy	Heizer	1/23/80	26270	Clerk
Kathy	Forbes	1/28/80	18840	Secretary
Garth	Hammons	2/6/80	50100	Salesperson
Mary	Smith	2/7/80	55000	Engineer
Frederic	Bell	2/14/80	60400	Director
Alan	Hull	2/20/80	41460	Supervisor
Shirley	Nalevanko	2/21/80	41050	Designer
Jan	Perez	2/27/80	22560	Technician

Figure 4-3
A range of records selected

If you wanted to make this group of records into a selection, you could isolate them as you did the first group, by choosing Show Subset.

7. You may want to practice selecting different groups of records and making them into a selection.

Be sure to show all the records before going on to the next section.

Searching for a Specific Record

4th DIMENSION provides automatic ways of searching. In this section you will learn how to search for a specific record.

Suppose you want to locate the record for Mary Smith to check her salary. To use the Search by Layout method, you fill out a layout like the current input layout. 4th DIMENSION can then match the record you want to see.

1. Choose Search by Layout from the Select menu.

4th DIMENSION displays the input layout. The control panel has been replaced by Search and Cancel buttons.

Select	
Show All	⌘G
Show Subset	⌘H
Search Editor...	⌘S
Search by Layout...	⌘L
Search and Modify...	
Search by Formula...	

Figure 4-4
Search by Layout screen

Search

2. Type **smith** in the Last Name field and **mary** in the First Name field. Then click Search.

You don't need to use an initial capital, because 4th DIMENSION ignores case when comparing values in an Alpha field. 4th DIMENSION searches for all records with a last name of Smith and a first name of Mary. Mary Smith's record appears on the screen.

First Name	Last Name	Start Date	Salary	Title
Mary	Smith	2/7/80	55000	Engineer

Figure 4-5
A record isolated by a search

3. To view all the records again, choose Show All from the Select menu.

Sorting the Records

4th DIMENSION can change the order in which records are displayed based on the content of the fields. If you sort the records based on the Last Name field, for example, the records are arranged alphabetically by last name. In this case the Last Name field is called the *sort field*, the field 4th DIMENSION uses to sort the records.

If two or more of the employees have the same last name, you will want to give 4th DIMENSION a second field to determine the order of the records. This is the way the telephone book is ordered. The records are ordered alphabetically by last name, and within the same last name the records are arranged alphabetically by first name. 4th DIMENSION can use up to 31 sort fields, so your records can be arranged exactly as you require.

No matter how many different sort fields you use, each one can be in either *ascending order* or *descending order*. Ascending order is alphabetical order from A to Z. Descending order goes from Z to A.

The information in the personnel database is currently displayed in the order the records were entered (from earliest to latest start date). Suppose you want to arrange the records in alphabetical order by last name.

Select	
Show All	⌘G
Show Subset	⌘H
Search Editor...	⌘S
Search by Layout...	⌘L
Search and Modify...	
Search by Formula...	
Sort Selection...	⌘T
Sort File...	

1. Choose Sort Selection from the Select menu.

4th DIMENSION displays the Sort dialog box, showing a list of field names and a set of blank boxes. You will select field names from the list to establish the sort order for the records.

2. Click Last Name.

4th DIMENSION enters Last Name in the first Sort field box. This step instructs 4th DIMENSION to display the records in alphabetical order, according to the entries in the Last Name field.

Notice that both Last Name and First Name are displayed in bold type in the list of fields. The bold type indicates that the fields are indexed. When you use one indexed field to sort the records, the process is almost instantaneous because 4th DIMENSION can order the records based on the index

table; it doesn't have to go through each record in sequence to determine the order.

The arrow on the far right of the Sort field box points up, indicating that the sort is in ascending order.

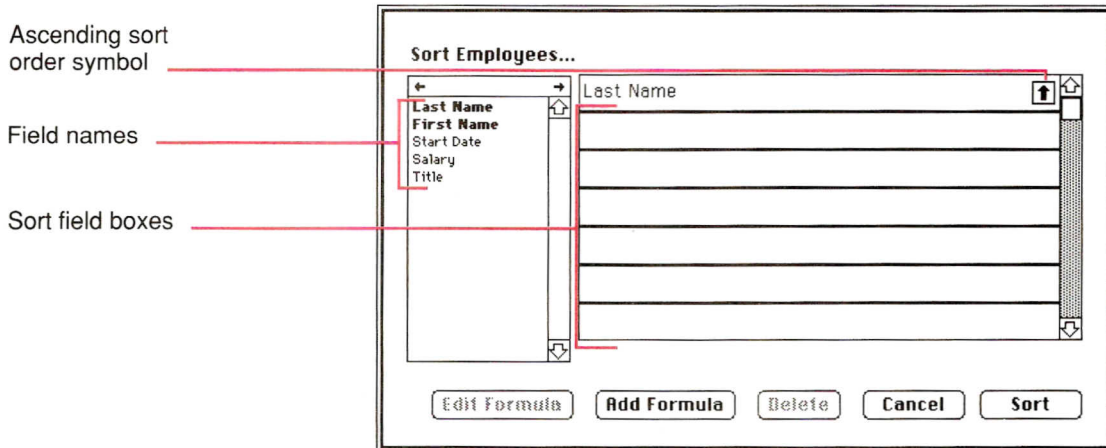


Figure 4-6
The Sort dialog box

Sort

3. Click Sort.

4th DIMENSION sorts the records and displays them in the new order.

Now suppose you want to see Mary Smith's record grouped with others containing the same job title so that you can compare her salary to theirs.

4. Choose Sort Selection from the Select menu.
5. Click Title to enter this field in the first Sort field box.
6. Click Salary to enter this field in the second Sort field box.
7. Click the arrow to the right of Salary in the Sort field box.

The arrow changes to point down to indicate that the sort is in descending order.

This means that the records will be sorted in ascending alphabetical order by Title (from A to Z), and within Title in descending order by Salary (from highest to lowest).



This time, when you sort, 4th DIMENSION sorts sequentially, going through the records building up the new order. Even though the sequential sort takes a short time, it takes noticeably longer than the indexed sort you performed before.

8. Click Sort.

4th DIMENSION sorts the records and displays them by title. Use the scroll bar to move to the engineers' records.

First Name	Last Name	Start Date	Salary	Title
Nanoy	Heizer	1/23/80	26270	Clerk
Bill	Guillardo	3/6/80	19610	Clerk
John	Johnson	3/19/80	18250	Clerk
Rick	Reed	4/15/80	18150	Clerk
Don	Terry	5/5/80	16190	Clerk
Barbara	Doyen	6/11/80	43210	Designer
Shirley	Nalevanko	2/21/80	41050	Designer
Susan	Grambo	7/1/80	36300	Designer
Chris	Nash	4/28/80	34980	Designer
Mike	Krause	3/18/80	33340	Designer
Frederic	Bell	2/14/80	60400	Director
Mike	Ross	4/17/80	58910	Director
Mary	Smith	2/7/80	55000	Engineer
Dick	Lockert	6/25/80	51772	Engineer
Andy	Venable	1/15/80	43520	Engineer
Mary	Scully	7/16/80	42610	Engineer
Bill	Horton	7/11/80	41895	Engineer
Bill	Johnson	7/22/80	38620	Engineer

Figure 4-7
Records sorted by title and salary

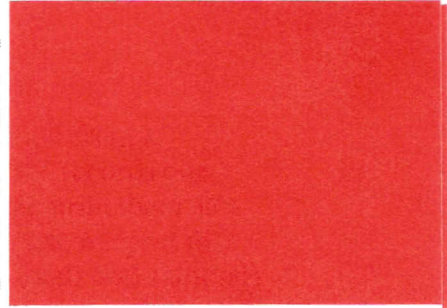
The records for each job title are grouped together. You can now see that Mary Smith's salary is significantly higher than the salaries of others with the same job.

The Next Step

Selecting, searching, and sorting are basic database operations that you can do easily with 4th DIMENSION. Chapter 11 in the *4th DIMENSION Tutorials* shows you how to use more complex search conditions.

Another basic database operation is printing reports of the records. In the next chapter you will see how printing works in 4th DIMENSION.

CHAPTER 5



REPORTS

REPORTS

Estimated time to complete: 15 minutes

There are many ways to print the information from a 4th DIMENSION database. You can print the records one at a time by using the input layout. You can print them as a list by using the output layout. You can create a report that prints a selection of records and provides totals and subtotals for numeric fields. The report you print can include graphs, pictures, and other graphic elements such as diagrams, borders, and different type fonts and styles.

In this chapter you will look at two methods for printing information in your database. You will learn how to

- print all the records using an output layout
- use the Quick Report editor to print a few fields from all the records
- create a report that calculates a total

Using a Layout to Print Records

In this section you will learn about printing records using an output layout.

Suppose you have decided to print all your employee records so that you will have a printed copy of all the information. In this section you will use your output layout for printing.

Start in the User environment, displaying all the records.

1. Sort the records by Last Name and First Name.

If you don't know how to sort the records, return to Chapter 4 to review the steps.

2. Choose Print from the File menu.

4th DIMENSION displays the Choose Print Layout dialog box. This dialog box allows you to choose any layout for printing. The current output layout, Employee List, is already selected, so you don't need to select a different one.

3. Click OK.

4th DIMENSION displays a Page Setup dialog box.

File	
New Database...	
Open Database...	
Import Data...	
Export Data...	
Choose File/Layout...	⌘F
Page Setup...	
Print...	⌘P
Quit	⌘Q

4. Click OK.

4th DIMENSION displays the Print dialog box. If you have a printer connected to your computer, you can print these records. However, since these are practice records, you probably want to preview the report on screen instead.

5. Click the "Preview on screen" check box, and then click OK.

4th DIMENSION displays on the screen what a printout would look like.

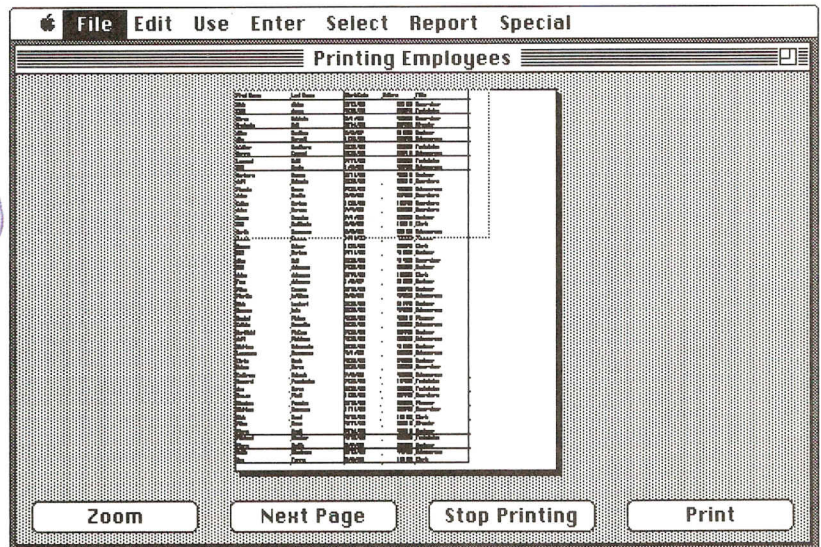


Figure 5-1
Previewing the printout of records

6. Click the Zoom button to see the report close up.

The closeup shows the list of records as it would appear if it were printed.

7. When you've finished, click anywhere on screen, and then click Stop Printing.

4th DIMENSION returns to the output display.

With this quick example, you can see that you can use any of your layouts for printing the information. If you wanted the records printed in the single-record format, you could print using your input layout.

☒ Preview on screen

check of Report Layout,
before Printing Report on
Printer.

The option of
"Printing to Screen"
Not available. (Preview)
Yes

Design Reference
'Screen Display'
Page 107

Zoom

Stop Printing

Using the Quick Report Editor

4th DIMENSION provides the Quick Report editor so that you can design and print reports quickly. Suppose you want a list of employees that includes only their names and job titles. This report will be a list similar to the one you just printed, except that you will omit some fields. You can quickly design this report.

Report
Quick...
Labels...
Graph...

1. Choose Quick from the Report menu.

4th DIMENSION displays the Quick Report editor.

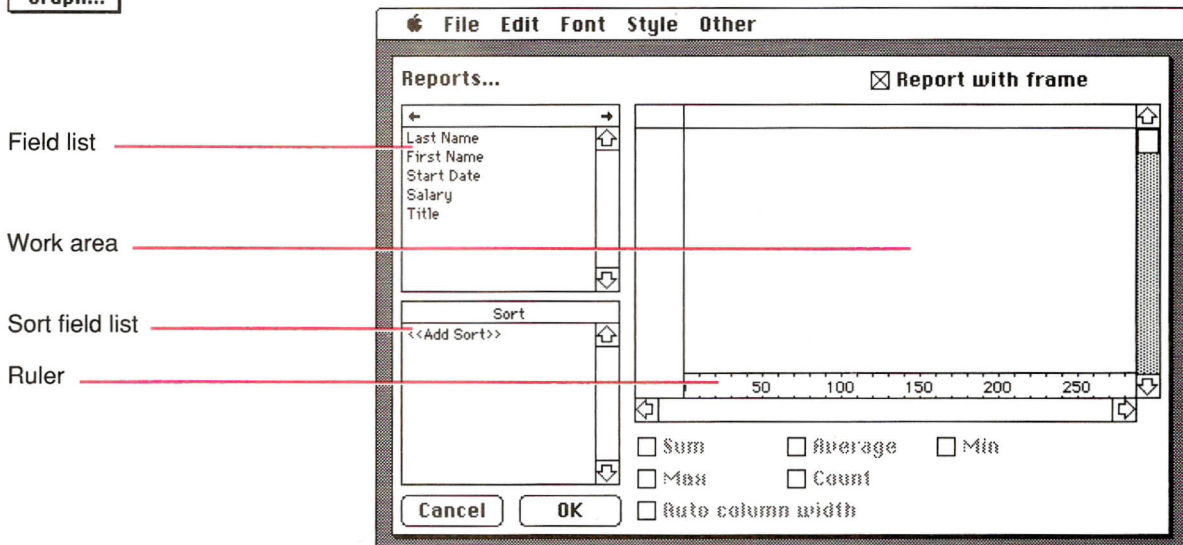


Figure 5-2
The Quick Report editor

In the next steps you will drag the fields you want to use from the field list into the work area. As you will see, 4th DIMENSION automatically creates columns for the information to be printed.

2. Drag the Last Name field from the field list into the work area.

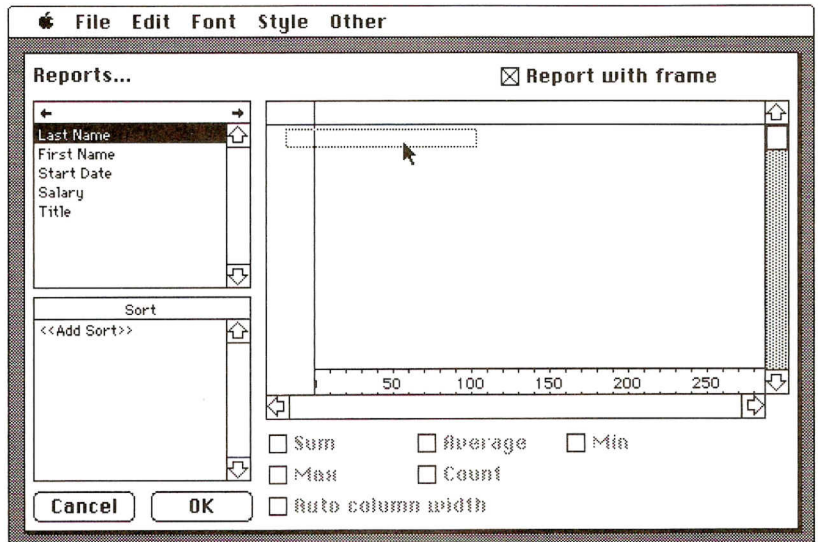


Figure 5-3
Dragging a field to create a column

When you release the mouse button, 4th DIMENSION creates a column for employee last names. It also adds rows for the header (H), detail (D), and totals (T). The Header row contains the field label that will be printed at the top of each column. The Detail row contains what will be printed once for each record. The Totals row will later contain a formula to calculate a value from all the records.

3. Drag the First Name field from the field list into the work area, to the right of the first column.

4th DIMENSION creates a second column, for employee first names.

4. Drag the Title field from the field list into the work area, to the right of the second column.

4th DIMENSION creates a new column for the Title field.

Column headers

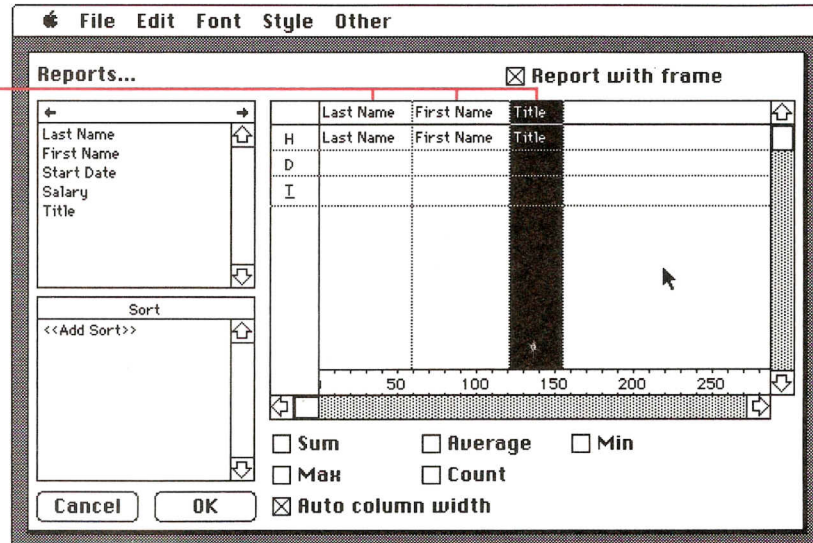


Figure 5-4
4th DIMENSION creates a column for each field

You can replace a field by dragging the new field into the column you want it to occupy. You can insert and delete columns with menu commands.

You now need to establish the sort order to determine the order in which the records will be printed. You are going to use two Sort fields, Last Name and First Name.

5. Drag the <<Add Sort>> phrase from the Sort field list to the Last Name column in the work area.

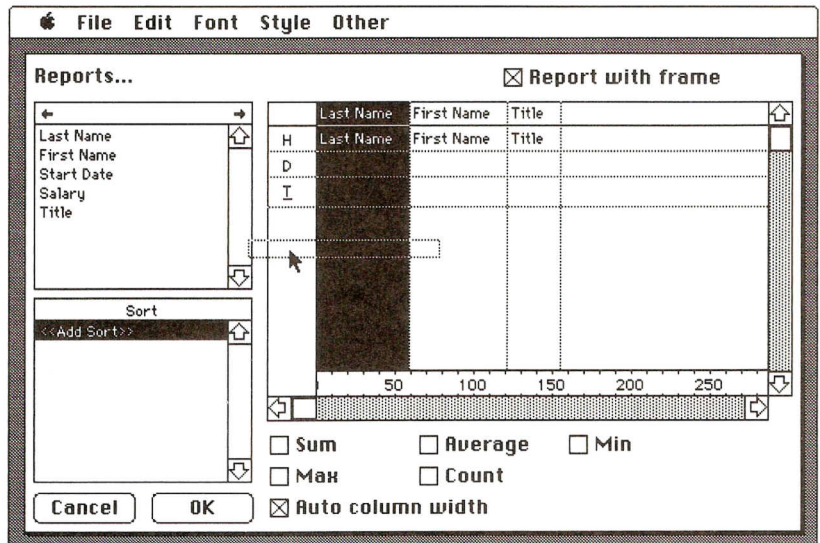


Figure 5-5
Dragging the <<Add Sort>> phrase to create a Sort field

When you release the mouse button, 4th DIMENSION adds Last Name to the Sort field list. This step establishes the sort order for the report.

If you make a mistake, you can remove a Sort field from the list by choosing Delete Last Sort from the Other menu.

6. Drag the <<Add Sort>> phrase from the Sort list onto the First Name column in the work area.

When you release the mouse button, 4th DIMENSION adds First Name to the Sort list. You have created a two-level sort. The primary sort field is Last Name, and the second sort field is First name. For employees with the same last name, the records will be sorted by first names.

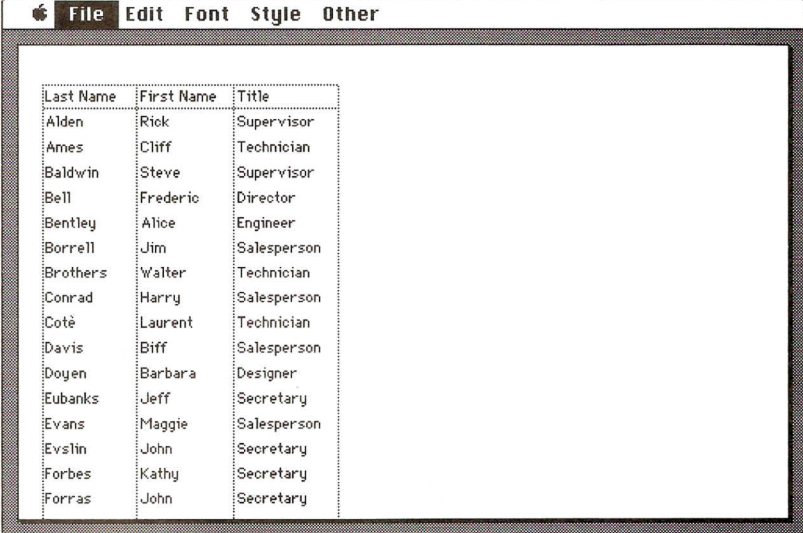
You are now ready to print your employee list.

File	
New	⌘N
Open...	⌘O
Save...	⌘S
Save as...	
Print to...	
Page Setup...	
Print...	⌘P
Close	⌘W

7. Choose Print from the File menu.
8. Check to make sure that "Preview on screen" is selected (unless you want to print the report on your printer), and then click OK.

4th DIMENSION prints the report.

9. Click the Zoom button to examine the report closely.



Last Name	First Name	Title
Alden	Rick	Supervisor
Ames	Cliff	Technician
Baldwin	Steve	Supervisor
Bell	Frederic	Director
Bentley	Alice	Engineer
Borrell	Jim	Salesperson
Brothers	Walter	Technician
Conrad	Harry	Salesperson
Coté	Laurent	Technician
Davis	Biff	Salesperson
Doyen	Barbara	Designer
Eubanks	Jeff	Secretary
Evans	Maggie	Salesperson
Evslin	John	Secretary
Forbes	Kathy	Secretary
Forras	John	Secretary

Figure 5-6
The report previewed on screen

You have created and printed a useful report in just a few minutes.

To prepare for the next section, you will now return to the Quick Report editor.

10. Click anywhere on the screen to return to the full-page view, and then click Stop Printing.

4th DIMENSION returns to the Quick Report editor.

If you wanted to print such a report each month or each quarter, you could save this report and use it again. When the time came to print, you would simply load the report design and print it again. The printed output would reflect any changes you had made to the database in the meantime.

Since this is a practice session, you do not need to save this design. You will modify it in the next section.

Calculating a Total on a Report

4th DIMENSION's Quick Report editor can calculate summary statistics, such as sum, average, maximum, minimum, and count. Suppose you want to have 4th DIMENSION calculate a total for salaries. Your first step is to add a Salary column to the report design that will print the salary figures for each record.

1. Drag the Salary field from the field list into the work area, to the right of the Title column.

4th DIMENSION creates a column for salaries.

2. In the Salary column, select the cell intersected by the Total row.

☒ **Sum**

3. Click the Sum check box below the work area.

4th DIMENSION adds a Sum symbol to the selected cell, instructing 4th DIMENSION to calculate the total of all the salaries when the report is printed. The total salaries for all the records in the current selection will be printed in the Salary column.

To describe the calculated total, you can now add some descriptive text. The text will be printed only once, when the total is calculated.

4. Select the cell just to the left of the calculated cell you just created, then click again to create an insertion point.
5. Type **Total Salaries:**

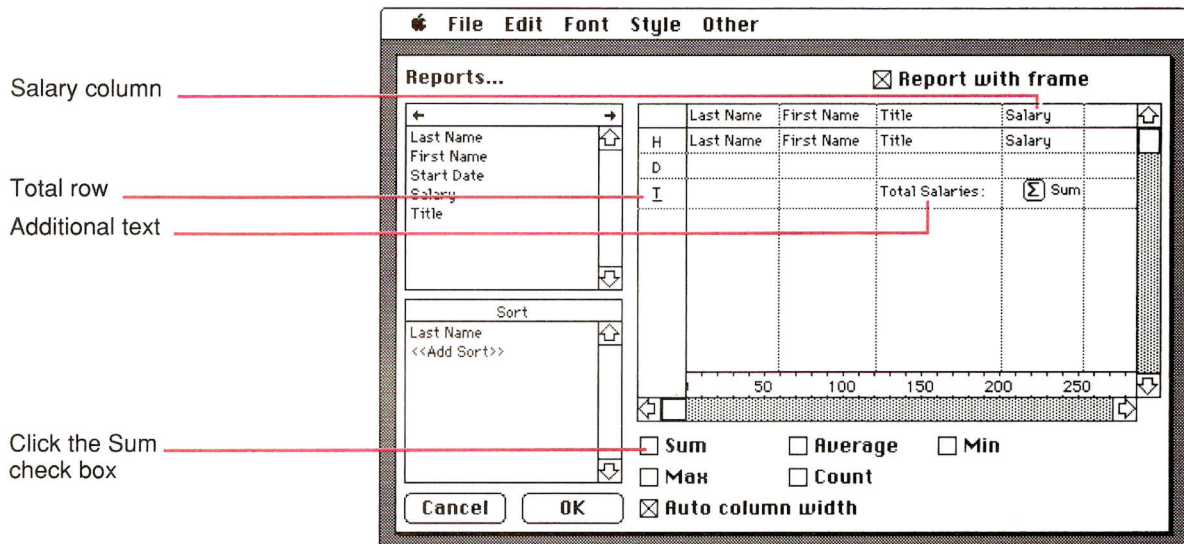


Figure 5-7
Instructing 4th DIMENSION to calculate a total

6. Now print this new report.
7. Click the Next Page button to display another page.
8. Click the Zoom button to see a close-up view of the page.

The total salaries figure appears on the last page.

Figure 5-8 shows a close-up view of the report as previewed on screen.

Last Name	First Name	Title	Salary
Preston	Stephen	Manager	39930
Ransome	Shirley	Supervisor	36040
Reed	Rick	Clerk	18150
Ross	Mike	Director	58910
Scull	Mary	Engineer	42610
Sleeter	Michael	Technician	25650
Smith	Mary	Engineer	55000
Stephens	Keith	Salesperson	44790
Terry	Don	Clerk	16190
Tompkins	Andy	Technician	19770
Venable	Andy	Engineer	43520
Vernon	Lydia	Supervisor	36870
Voltz	Scott	Technician	25150
Wolfram	Lance	Technician	27300
Total Salaries:			2039952

Figure 5-8
The report previewed on screen

9. Return to the Quick Report editor by clicking anywhere on the screen, then clicking the Stop Printing button.
10. Return to the output display by clicking either OK or Cancel in the Quick Report editor.

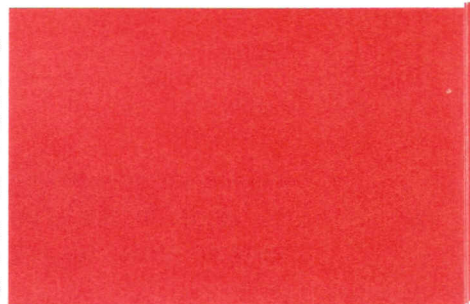
The Next Step

Printing reports is a basic way of communicating information in your records.

In the next chapter you will see how you can produce labels and graphs from the same records.

LABELS AND GRAPHS

CHAPTER 6



LABELS AND GRAPHS

Estimated time to complete: 10 minutes

The records in your database can be used for many purposes. You have seen how to print reports and calculate totals. 4th DIMENSION provides two more ways to print the information from the records. In this chapter you will learn how to

- create labels with the Label editor
- create a graph of the information

Using the Label Editor

4th DIMENSION's Label editor allows you to create labels of any size, so you can match the labels you are using on your printer.

For example, if you are using label forms that print three labels across a sheet, you can design the labels to fit this format. Or if you are using label forms that print one label at a time on a narrow strip, you can design the labels to fit that format.

You can print many types of labels. Suppose you want to print a label for each employee's file folder that includes only the employee's name and start date. The 4th DIMENSION Label editor will create a clear and consistent file folder label for each employee. File folders so labeled make it easy to keep track of the paperwork for each employee.

You can follow the steps in this tutorial even if you don't have label forms in your printer. As in the preceding tutorial, you can preview the labels on the screen instead of printing them if you choose.

You start in the User environment.

1. Choose Labels from the Report menu.

4th DIMENSION displays a Page Setup dialog box. The Label editor needs to know the orientation and paper type you are using in your printer. For purposes of this procedure, assume you are using a vertical orientation with standard paper.



2. Click OK.

4th DIMENSION displays the Label editor.

You need to do only three things to design your labels: set the number of labels on your page, choose the fields you want to print from, and, if necessary, set the margins. This tutorial assumes that your mailing label forms are spaced 3 across and 11 down on each page.

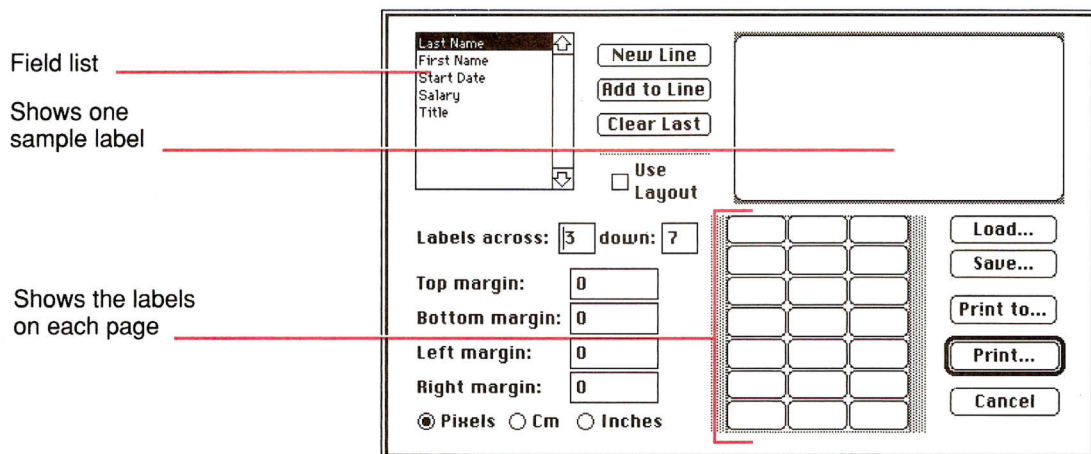


Figure 6-1
The Label editor

The Label editor starts with a 3 in the “Labels across” box, so you need to change only the down box.

3. Enter **11** in the “Labels down” box.

4th DIMENSION changes the full-page display to reflect the new values. The sample label changes to reflect the new size. The display lets you see exactly how labels will be printed on each page.

4. Select First Name in the field list.

You want a standard label with each employee’s first and last name on the first line. Selecting the First Name field is the first step toward placing it on the sample label.

New Line

5. Click the New Line button to the right of the fields list.

4th DIMENSION creates a line on the sample label and places the First Name field in it.

6. Select Last Name in the field list.

Add to Line

7. This time click the Add to Line button.

4th DIMENSION adds Last Name to the first line, next to the First Name field.

The New Line and Add to Line buttons are the primary buttons you use to design any label. The New Line button creates a line and places the selected field on it. The Add to Line button adds the selected field to the last line created.

8. Select the Start Date field, and then click New Line.

4th DIMENSION creates a second line and places the Start Date field on it.

Creates line and places field on it
Place field on same line

Figure 6-2
Effects of using the New Line and Add to Line buttons

You can now print your labels. You can also save this label design to use later. You won't have to create it again; simply load it and then print.

Print...

9. To print your labels, click Print.

4th DIMENSION displays a Print dialog box.

10. If you don't want to print the labels, be sure "Preview on screen" is selected before clicking OK.
11. After you have printed your labels, click Stop Printing to return to the output layout.

the option of
"Printing to Screen"
Not available.
Design Reference
'Screen Display'
Page 197

Graphing Information

So far you have concentrated on manipulating individual records. Your lists and labels essentially reproduced the information in your database in a different form. Only when you calculated a total for salaries did you begin to make use of 4th DIMENSION's ability to summarize the information in the records.

Now you will see how to quickly graph the information in your database to obtain a visual summary of the data. For example, suppose you decide to graph the total salaries for each job classification. This graph will give you a good picture of how your company allocates its resources.



1. Choose Graph from the Report menu.

4th DIMENSION displays the Graph dialog box.

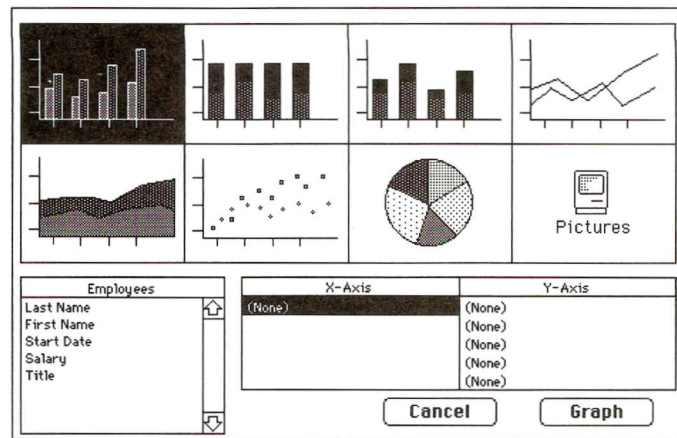


Figure 6-3
Graph dialog box

Field names are listed on the lower left of the screen. You will first select the field you want to serve as the x-axis value from the list. The x-axis value is the value that will be graphed along the horizontal coordinate. You want to see the job titles along the x-axis.

2. Click the Title field name.

4th DIMENSION enters Title as the x-axis value and highlights the first y-axis value. A y-axis value is a value that will be graphed along the vertical coordinate. You want to see salaries graphed vertically.

The Salary field name is the only option; the other field names are grayed out. Since Salary is the only field that contains numerical values, it is the only field that can be graphed on the y-axis.

3. Click the Salary field name, and then click Graph.

4th DIMENSION creates a bar graph showing the total salaries paid for each job title.

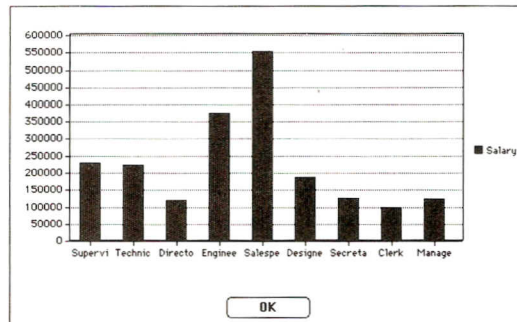


Figure 6-4
A bar graph

As you can see in the figure, of all the job titles, Salesperson uses the most salary money. You decide to display the graph in a different way, to get a better grasp of the relative salary expenditures for each job title.

4. Choose Pie from the Graph Type menu.

4th DIMENSION displays a percentage of the total salaries for each job title.

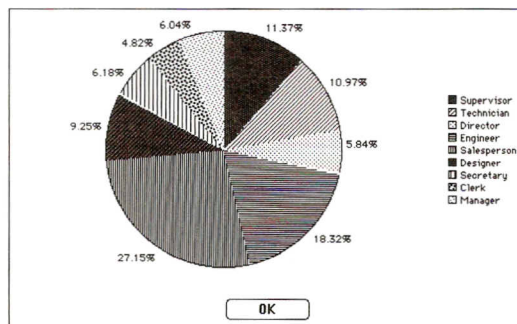
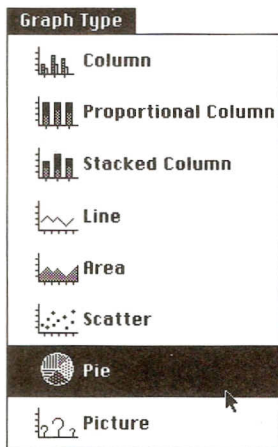


Figure 6-5
A pie chart

5. Click OK to return to the output layout.

The Next Step

Congratulations. You have created a completely functional database, and you have practiced several of the most important tasks involved in keeping track of information and analyzing it.

You have used the basic features of the Design and User environments. You have

- created a single-file database
- created two layouts
- entered and modified records
- selected, searched, and sorted the records
- printed reports from the information
- created file folder labels
- summarized the information in graphs

If you want to learn about additional features of 4th DIMENSION, turn to the other books provided with the application.

For more step-by-step introductions to 4th DIMENSION features, work through the *4th DIMENSION Tutorials*.

4th DIMENSION Design Reference provides complete information about all parts of the Design environment.

4th DIMENSION User Reference provides complete information about all parts of the User environment.

4th DIMENSION Language Reference provides complete information about the language you can use to control 4th DIMENSION databases.

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