# A Bit of Background

Every book has to start somewhere. This chapter starts from square one by introducing you to the concept of a spreadsheet. Also included is a lot of interesting background information about Excel and Windows.

## What Is Excel?

Excel is a software product that falls into the general category of spreadsheets. Excel is one of several spreadsheet products that you can run on your PC. Others include 1-2-3 and Quattro Pro.

A *spreadsheet* (including Excel) is a highly interactive computer program that consists of a collection of rows and columns displayed onscreen in a scrollable window. The intersection of each row and column is called a *cell*, which can hold a number, a text string, or a formula that performs a calculation by using one or more other cells. Copying and moving cells and modifying formulas is easy with a spreadsheet.

A spreadsheet can be saved in a file for later use or discarded after it has served its intended purpose. The cells in a spreadsheet can be formatted in various ways and printed for hard-copy reference. In addition, groups of numerical cells can be used to generate charts and maps.

The most significant advantage of an electronic spreadsheet is that the formulas recalculate their results if you change any of the cells that they use. As a result, after you set up your spreadsheet by defining formulas, you can use this "model" to explore different possibilities, with very little additional effort. Excel is currently the best-selling Windows spreadsheet — and I hope to explain why in this book.
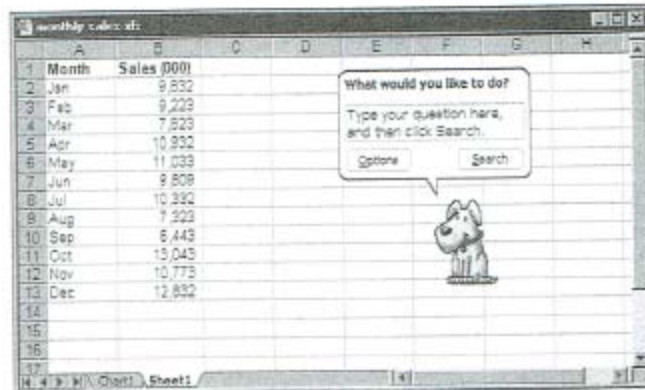
**Figure 1-2:** The Office Assistant pops up to provide help when needed.

## Built-in Functions

Excel includes an enormous collection of built-in functions that you can use in your formulas. In addition to common functions, such as SUM and AVERAGE, you can choose functions that perform sophisticated operations that otherwise are difficult or impossible to do. For example, the CORREL function calculates the correlation coefficient for two sets of data. You also can develop other functions by using the VBA macro language (it's not as difficult as you may think).

## Customizable Toolbars

Excel's *toolbars* — groups of buttons representing commands — are real time-savers, enabling you to perform common commands without using the menu. You can customize your toolbars by adding buttons for tasks that you do most often. To find out what a button does, drag the mouse over a toolbar button and pause for a second. Excel pops up a brief description of the button.

Beginning with Excel 97, the menu bar at the top of the screen is actually a toolbar. As such, you can easily customize it or even move it to a different location on the screen.

## Flexible Text Handling

Although Excel's forte is number crunching, it's not too shabby at handling text. You can format or orient text that you put in cells. You also can insert text boxes (which you can move and resize) anywhere on your worksheet.

## Rich Text Formatting

Excel is the only spreadsheet that enables you easily to format individual characters within a cell. For example, if a cell contains text, you can make one letter bold or a different color.

## Great Charts

Excel's charting features — among the best available in any spreadsheet — enable you to modify and augment a wide assortment of graph types. You can insert a chart anywhere in a worksheet or place it on a special chart sheet.

## Integrated Mapping

Excel's mapping feature lets you display your data in the form of a geographic map (see Figure 1-3). For example, you can easily create an attractive map that shows your company's sales volume by state.
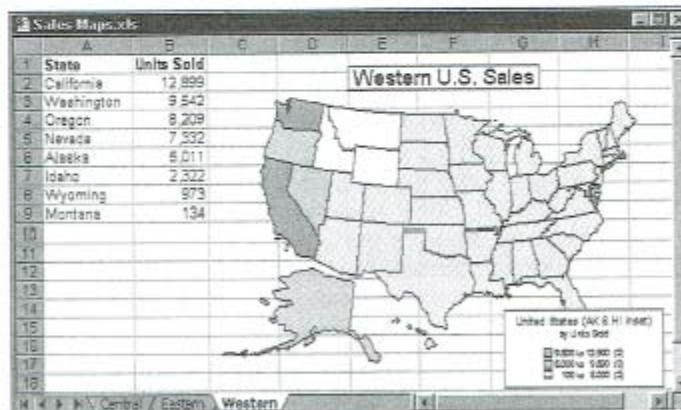


Figure 1-3: This map was generated with only a few mouse clicks.

## Drawing Tools

Excel includes an excellent set of drawing tools that enables you to create attractive diagrams and basic drawings directly on your worksheet or chart. For example, you can include a simple flow diagram along with your numerical analysis.

# Performing Spreadsheet What-If Analysis

**O**ne of the most appealing aspects of a spreadsheet program — including Excel — is that you can use formulas to create dynamic models that instantly recalculate when you change values in cells to which the formulas refer. When you change values in cells in a systematic manner and observe the effects on specific formula cells, you're performing a type of *what-if* analysis. What-if analysis is the process of asking questions such as, "What if the interest rate on the loan changes to 8.5 rather than 9.0 percent?" or "What if we raise the prices of our products by 5 percent?"

If you set up your spreadsheet properly, answering such questions is a matter of plugging in new values and observing the results of the recalculation. Excel provides useful tools to assist you in your what-if endeavors.

## A What-If Example

Figure 26-1 shows a spreadsheet that calculates information pertaining to a mortgage loan. The worksheet is divided into two sections: the input cells and the result cells. Column D shows the formulas stored in column C.

With this worksheet, you can easily answer the following what-if questions:

- What if I can negotiate a lower purchase price on the property?
- What if the lender requires a 20-percent down payment?
- What if I can get a 40-year mortgage?
- What if the interest rate decreases to 7.5 percent?

### Table 29-2
### Result of Using the Paste Special Command in Word (Paste Link Option)

| Paste Type | Result |
|---|---|
| Microsoft Excel Worksheet Object | A linked object that includes the Excel formatting. Double-click the object after pasting it to edit the source data in Excel. |
| Formatted Text (RTF) | A Word table that is formatted as the original Excel range. Changes in the source are reflected automatically. |
| Unformatted Text | Text (not a table) that corresponds to Word's Normal style. Formatting from Excel is not transferred. Changes in the source are reflected automatically. |
| Picture | A picture object that retains the formatting from Excel. Changes in the source are reflected automatically. This usually produces better results than the Bitmap option. Double-click the object after pasting it to edit the source data in Excel. |
| Bitmap | A bitmap object that retains the formatting from Excel. Changes in the source are reflected automatically. Double-click the object after pasting it to edit the source data in Excel. |
| HTML Format | A table that is formatted as the original Excel range. Use this format when you expect to publish the document as a Web page. |

# Embedding Objects

Using *Object Linking and Embedding* (OLE), you can also embed an object to share information between Windows applications. This technique enables you to insert an object from another program and use that program's editing tools to manipulate it. The OLE objects can be items such as those in the following list:

✦ Text documents from other products, such as word processors

✦ Drawings or pictures from other products

✦ Information from special OLE server applications, such as Microsoft Equation

✦ Sound files

✦ Video or animation files

Most of the major Windows applications support OLE. You can embed an object into your document in either of two ways: