

Hundreds of tasks including:

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Just the Steps[™]
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by Diane Koers



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Diane and her husband enjoy spending their free time fishing, traveling, and playing with their four grandsons and their Yorkshire Terrier.

Dedication

To Sunshine: You are pup-a-licious!

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Welcome to the world of *Microsoft Excel*, the most popular and powerful spreadsheet program in the world. You may ask: “What is a spreadsheet program?” A *spreadsheet program* is a computer program that features a huge grid designed to display data in rows and columns. You can use it to perform mathematical, logical, and other types of operations on the data you enter. You can sort the data, enhance it, and manipulate it in a plethora of ways — including creating powerful charts and graphs from it. Whether you need a list of names and addresses or a document to calculate next year’s sales projections based on prior year’s performance, Excel is the application you want to use.

About This Book

This book provides the tools you need to successfully tackle the potentially overwhelming challenge of figuring out how to use Microsoft Excel. In this book, you discover how to create spreadsheets; however, what you do with them is totally up to you. Your imagination is the only limit!

Why You Need This Book

Time is of the essence, and you probably don’t have the time to read a lot. You just need to complete a task effectively and efficiently. This book is full of concise, easy-to-understand steps designed to get you quickly up and running with Excel. I take you directly to the steps for a desired task without all the jibber-jabber that’s often included in other books.

Even if you’ve used Excel in the past, Excel 2010 brings many new features and major changes to existing features. This book helps ease the transition from earlier Excel versions.

Introduction

Conventions used in this book

- When you need to type something, I put it in **bold** typeface.
- For Ribbon commands, I use the ⇔ symbol to separate menu options. For example, “Choose Insert⇔Picture in the Illustrations group” says, “Click the Insert tab and then from the Illustrations group, click the Picture button.”
- In some figures, you see circled items. This is done to help you locate items mentioned or referred to in the text.



This icon points out tips and helpful suggestions related to the current task.

How This Book Is Organized

This book is divided into 24 chapters broken into 6 convenient parts:

Part I: Putting Excel to Work

In Chapter 1, you uncover the basics of working with Excel files, such as opening, closing, and saving files. In Chapter 2, you work with entering the different types of data into Excel worksheets, and in Chapters 3 and 4, you create various types of formulas and functions to perform worksheet calculations. Chapter 5 shows you how to protect your work with Excel's security features.

Part II: Sprucing Up Your Spreadsheets

Chapters 6 and 7 show you how to dress up the data you enter into a worksheet using data alignment, formatting values, changing fonts or colors, and adding cell borders. In Chapter 8, you work with graphics, such as arrows and Clip Art. In Chapter 9, you use workbooks consisting of multiple worksheets, hyperlinks, and cross-references.

Part III: Viewing Data in Different Ways

This part shows how you can modify the way Excel displays certain workbook options on your screen. Chapter 10 illustrates changing the worksheet views. In Chapter 11, you sort your data to make it easier to locate particular pieces of information. Chapter 12 enables you to create charts to display your data in a superb graphic manner. In Chapter 13, you work with the different output methods, including printing and e-mailing your worksheets. The last chapter in this part, Chapter 14, shows you several timesaving tools included with Excel.

Part IV: Analyzing Data with Excel

Use these chapters to effectively analyze all the data you input into a worksheet. In Chapters 15, 16, and 17, you work with Excel outlines, filters, and PivotTables, respectively. Chapter 18 shows you how you can create macros to save data entry and formatting time.

Part V: Utilizing Excel with Other People and Applications

Chapters 19–22 are all about sharing: sharing Excel with others by using Excel's collaboration features or sharing Excel with Microsoft Office applications such as Word, PowerPoint, and Access.

Part VI: Practical Applications for Excel

Go to these chapters to save yourself time with a Commission Calculator worksheet (Chapter 23), or a medical-expense tracking worksheet (Chapter 24).

Back Cover: Using Excel Shortcut Keys

This helpful list shows you many shortcut keys that make access to Excel functions faster and easier.

Get Ready To . . .

To get started creating formulas, sorting data, adding a chart, or building macros, just flip through this book, pick a task, and dive in. The tasks in this book help you quickly master Excel.

Part I

Putting Excel to Work

The 5th Wave

By Rich Tennant



"I hate when you bring 'Office' with you on camping trips."

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Working with Excel Files

Excel is like a giant accountant ledger sheet composed of a grid made up of columns and rows. At each row and column intersection is a *cell*. A single worksheet contains 16,374 columns across the top (stretching from column A to column XFD) and 1,048,576 rows down the side. That's over 17 billion cells in a single worksheet. A *cell address* is the description of the intersection of a column and a row, such as D23 (in this example, D is the column name and 23 is the row).

The Excel interface provides you with the right tools at the right time. In most Windows programs, you see menus and toolbars to select your options from. Instead of the traditional look, Excel provides icon- and button-laden tabs on the Ribbon containing most Excel features.

Throughout the course of this book, you discover methods to use Excel as a spreadsheet, of course; but you also discover how to use it as a database, a calculator, a planner, and even a graphic illustrator. I start with the basics and work into the more advanced Excel actions.

In this chapter, you discover how to

- ➔ Open and close the Excel program.
- ➔ Work in the new Backstage View.
- ➔ Select commands with your keyboard.
- ➔ Change information on your status bar.
- ➔ Create, open, and save Excel workbooks.
- ➔ Convert earlier files to Excel 2010.
- ➔ Delete and rename workbook files.
- ➔ Use workbook properties to better manage your files.

Chapter

1

Get ready to . . .

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Open and Explore Excel

1. Choose Start→All Programs→Microsoft Office→Microsoft Excel 2010. The Microsoft Excel program begins with a new, blank workbook displayed ready for you to enter data. Figure 1-1 illustrates some of the common workbook components.
2. Click any *tabs*, or task-oriented portions, of the Ribbon. The first tab, which is displayed in a color different from the other tabs, is called File. Clicking File displays the Excel Backstage View, which you find more about in the next section. The remainder of the tabs is broken down into subsections, or *groups*. For instance, the Home tab includes the Clipboard, Font, Alignment, Number, Styles, Cells, and Editing groups. Point your mouse over any button, and a description of the tab's features appear.
3. Click the Insert tab. The Ribbon changes to reflect options pertaining to Tables, Illustrations, Charts, Links, and Text groups.

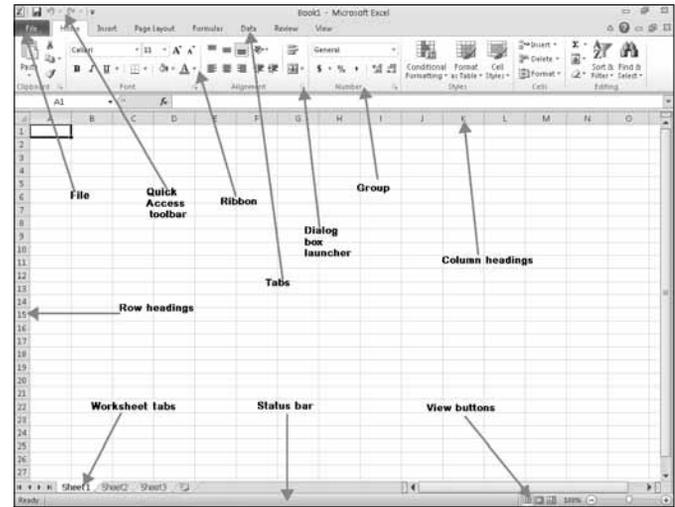


Figure 1-1



Additional tabs appear when they're useful for the current task.

4. On the Home tab, click the down arrow next to the Format as Table button. A gallery of table styles appears. (Click the arrow again to close the gallery.)
5. On the Home tab, click the dialog box launcher on the bottom-right of the Font group to open a related dialog box (see Figure 1-2). In this example, the Format Cells dialog box opens.



Click the Cancel button to close a dialog box without making any changes.

6. Pause your mouse over any of the three icons above File. By default, the Quick Access toolbar functions include Save, Undo, and Redo.

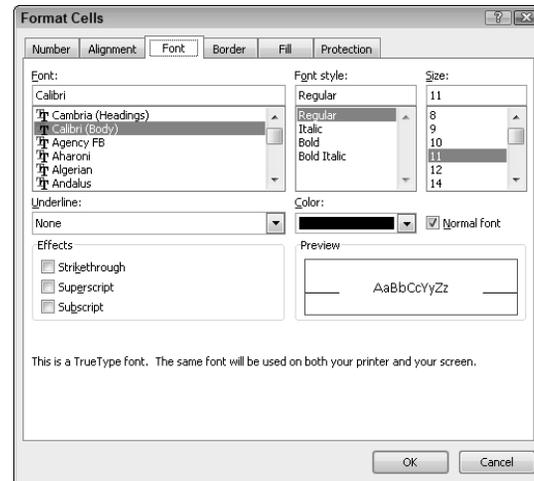


Figure 1-2

Explore Backstage View

1. Click File. Excel Backstage View opens with three columns. The left column represents actions you can select.
2. Choose Print from the left column. The middle column changes to show tasks relative to printing (see Figure 1-3). See Chapter 13 for more information about printing.
3. Choose Recent in the left column. A list of workbooks you worked on recently displays. You can click any workbook to open it. See the steps in the section, “Open an Existing Excel File,” later in this chapter.
4. Choose Info in the left column. The middle column represents a second level of tasks related to your current workbook, and the right column displays the workbook properties. See the section, “Specify Workbook Properties,” later in this chapter.
5. Click File again. Backstage View closes, and you return to your current workbook.

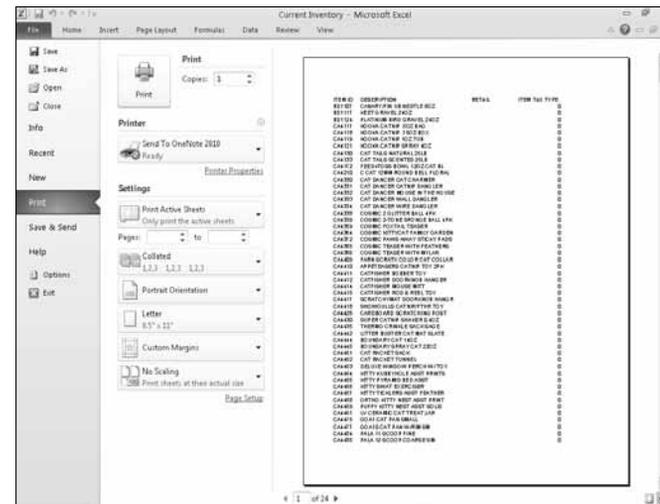


Figure 1-3

Close Excel

1. Click File, and from Backstage View that appears, choose Exit, as shown in Figure 1-4.



Alternatively, click the Close button (X) in the upper-right corner.

2. Click Save or Don't Save if prompted to save your workbook. (See the section, “Save a Workbook,” later in this chapter.)



(Optional) Choose File→Close. The current workbook closes, but the Excel program remains open.



Figure 1-4

Select Commands with the Keyboard

1. Click any cell on the worksheet.
2. Press the Alt key on the keyboard. Shortcut letters appear on the Ribbon, and numbers appear on the Quick Access toolbar (see Figure 1-5).



Numbers control commands on the Quick Access toolbar.

3. Press a letter on your keyboard to select a tab on the Ribbon; for example, press the P key to display the Page Layout tab. Shortcut letters then appear for each command on that tab.
4. Press a letter on your keyboard to select a command. Excel displays options for the command you selected.
5. Press a letter or use the arrow keys and then press Enter on the keyboard to select an option. Excel performs the command you selected, applying the option you chose.



Press the Esc key to step the KeyTips back one step.

Change Status Bar Indicators

1. Right-click anywhere along the status bar at the bottom of the window. Excel opens the Customize Status Bar menu.
2. Active features have a check mark next to them and inactive features do not. To activate an inactive feature, click it. This automatically adds a check mark. In Figure 1-6, the Caps Lock feature is off.
3. To deactivate any active feature, click it to remove the check mark.

4. Click anywhere in the Excel workbook to close the Customize Status Bar menu.

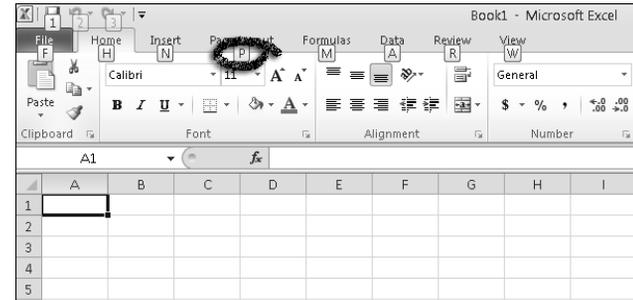


Figure 1-5

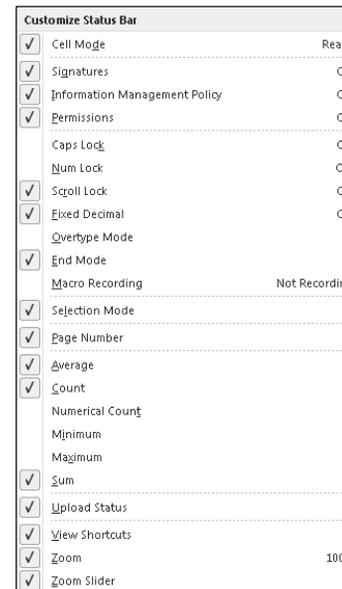


Figure 1-6

Create a New Excel File

1. Choose File⇒New. Backstage View shows templates you can choose from in the middle column (see Figure 1-7).
2. Select the Blank Workbook option and then click the Create button. Excel creates a blank workbook based on the default template.



See Chapter 10 for more information about Excel templates.



Press Ctrl+N to create a new workbook without opening the New Workbook dialog box.



Figure 1-7

Save a Workbook

1. Choose File⇒Save or click the Save button on the Quick Access toolbar. The Save As dialog box appears, as shown in Figure 1-8.



The Save As dialog box only appears the first time you save a file.

2. By default, Excel saves your files in the Libraries⇒Documents folder. If you want to save your file in a different folder, select that folder from the folder pane.
3. In the File Name text box, type a descriptive name for the file. Filenames can't contain an asterisk (*), a slash (/), a backslash (\), or a question mark (?) character.
4. Click the Save button. Excel saves the workbook in the location with the name you specified in Step 3.

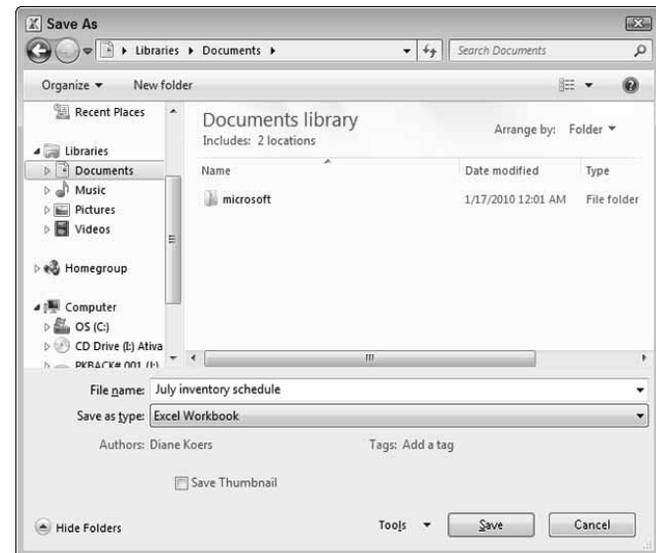


Figure 1-8

Save a Workbook in a Different Format

1. Click File and, from Backstage View that appears, choose Save As. The Save As dialog box appears.
2. In the File Name text box, type a descriptive name for the file.
3. Click the drop-down arrow on the Save as Type drop-down list to display a list of file formats.
4. Choose 1 of the 27 different file formats (see Figure 1-9). Files saved in Excel 2010 or Excel 2007 format have an `.xlsx` extension, whereas files created in earlier versions of Excel have an `.xls` extension.
5. Click the Save button. Depending on the format you choose, Excel may prompt you for additional information.

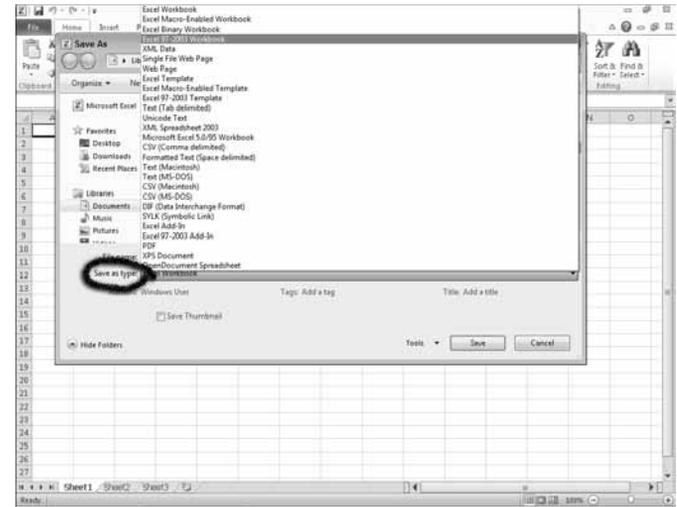


Figure 1-9

Open an Existing Excel File

1. Click File and from Backstage View that appears, choose Open. The Open dialog box, as shown in Figure 1-10, appears.



From File, click Recent and then Excel displays recently used files in the middle column of Backstage View. Click any listed filename to quickly open it.

2. If necessary, select the appropriate folder from the folder pane and then select the file you want to open.



Open the file type drop-down list to display files saved in other formats.

3. Click the Open button. The workbook appears in the Excel workspace, ready for you to edit.



If the file you open was created in Excel 2003 or an earlier version of Excel, Compatibility Mode appears on the title bar next to the document name. (See the following section for more information.)

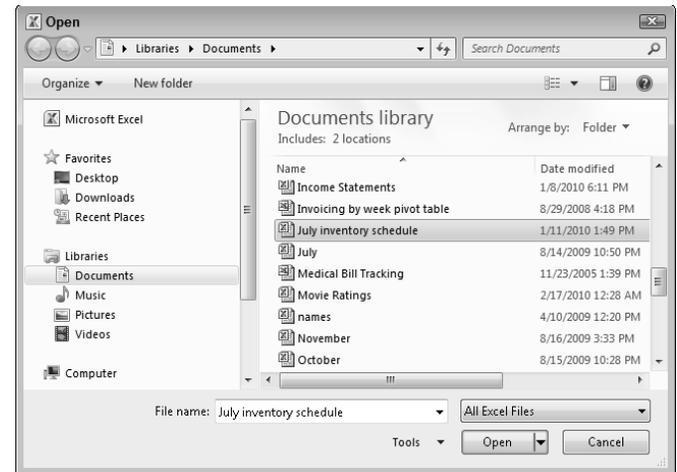


Figure 1-10

Convert a Prior Version File to Excel 2010

1. Open a workbook created in an earlier version of Excel; the title bar indicates that Excel opened the document in Compatibility Mode.
2. Click File and from Backstage View, choose Convert. Excel displays a message indicating you're about to convert the current workbook (see Figure 1-11).
3. Click OK and then another conversion message appears.
4. Click Yes and then Excel saves the file in the new format. Excel replaces the older version of the workbook, using the same name you used for the older version of the document. If the older version was an Excel 97–2003 or earlier document, Excel 2010 changes the extension to `.xlsx`.



Compatibility Mode disappears from the Excel title bar.

Delete a File

1. Open Excel but do not open the file you want to delete. Click File and choose Open or Save As. Either the Open or Save As dialog box appears.
2. If necessary, in the folder pane, navigate to the folder containing the file you want to delete.
3. Select the unwanted file and choose Organize → Delete (see Figure 1-12). A confirmation message appears.
4. Click the Yes button, and Excel deletes the file.
5. Click the Cancel button to close the Open or Save As dialog box.



Figure 1-11

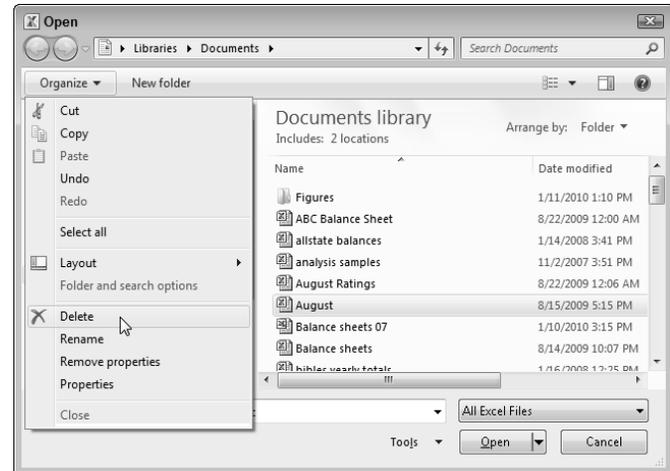


Figure 1-12

Rename a File

1. Open Excel but don't open the file you want to rename. Choose File→Open or Save As. The Open or Save As dialog box appears.
2. If necessary, in the folder pane, navigate to the folder containing the file you want to rename.
3. Select the file you want to rename and choose Organize→Rename. The original filename becomes highlighted. (See Figure 1-13.)
4. Type the new filename. Filenames can't contain an asterisk (*), slash (/), backslash (\), or question mark (?) character.
5. Press Enter when you're finished typing.
6. Click the Cancel button to close the Open or Save As dialog box.

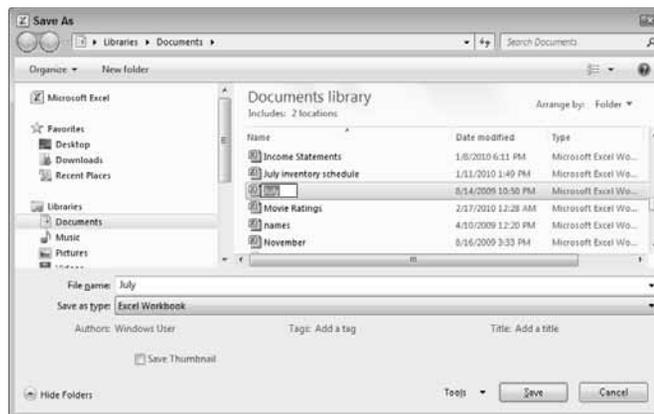


Figure 1-13

Specify Workbook Properties

1. From an open workbook, click File and from the Info panel on the right, choose Properties. A list of options appears.
2. Choose Show Document Panel. The workbook reappears, and the Document Information panel appears.
3. Enter identifying information such as the author's name, subject, or a list of keywords. See Figure 1-14.



Excel automatically adds statistical information, such as the workbook's original creation date, the last time the workbook was printed or modified, and the workbook size.

4. Click the Close (X) button to close the Document Information panel.

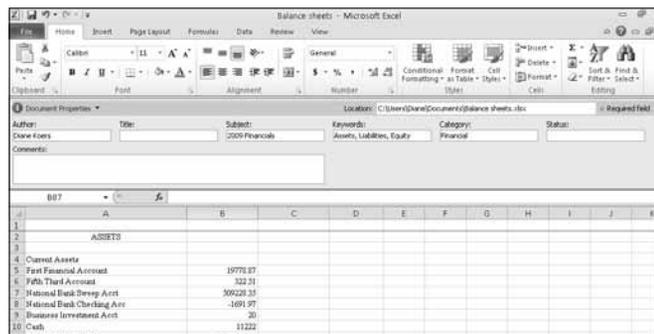


Figure 1-14

Entering Spreadsheet Data

Because each Excel worksheet is such a huge grid of columns and rows with over 17 billion cells, you have plenty of places you can enter data. But what kind of data do you enter?

You enter three types of data in the cells:

- ➔ **Labels** are traditionally descriptive pieces of information, such as names, months, or other identifying statistics, and they usually include alphabetic characters.
- ➔ **Values** are generally raw numbers or dates.
- ➔ **Formulas** are instructions for Excel to perform calculations.

In this chapter, I show you how to easily enter labels and values into your worksheet. But alas, you sometimes make mistakes or change your mind. So I also show you how to delete incorrect entries, duplicate data, or move data to another area of the worksheet.

In this chapter, you discover a great timesaving feature — *AutoFill* — that can replicate information or follow a pattern you create, with just a simple mouse click. Another feature, *Range Names*, can save you time and frustration by using easy-to-remember descriptive names for certain areas of your worksheet so you won't have to remember exact cell addresses.

You even discover an Excel feature that prevents worksheet cells from accepting incorrect data. If you're ready . . . time to get started.

Chapter

2

Get ready to . . .

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Change the Active Cell

1. Open an Excel workbook. The Formula bar displays the active cell location. Columns display the letters from A to XFD, and rows display numbers from 1 to 1,048,576. A *cell address* is the intersection of a column and a row, such as D23 (in which D is the column and 23 is the row).
2. Move the focus to an adjacent cell with one the following techniques:
 - **Down:** Press the Enter key or the down-arrow key.
 - **Up:** Press the up-arrow key.
 - **Right:** Press the right-arrow key.
 - **Left:** Press the left-arrow key.
3. To move to a cell farther away, use one of these techniques:
 - **Click any cell to move the active cell location to that cell.** You can use the scroll bars to see more of the worksheet. In Figure 2-1, the cell focus is in cell E9. Notice the border surrounding cell E9 and the name box that indicates the current cell.
 - **Choose Home→Find & Select→Go To in the Editing group.** The Go To dialog box displays, as shown in Figure 2-2. In the Reference box, enter the address of the cell you want to make active and then click OK.

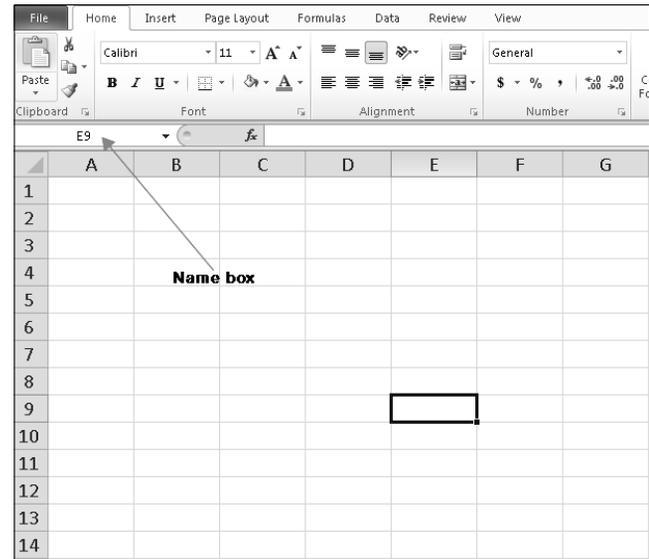


Figure 2-1



Figure 2-2



Press the F5 key to display the Go To dialog box.

- Press **Ctrl+Home**. Excel jumps to cell A1.
- Press **Ctrl+End**. Excel jumps to the lower-right cell of the worksheet.
- Press **Ctrl+PageDown** or **Ctrl+PageUp**. Excel moves to the next or preceding worksheet, respectively, in the workbook.

Select Multiple Cells

1. Click the first cell in the group you want to select.
2. Depending on the cells you want to select, perform one of the following actions:
 - To select **sequential cells**, select a cell, hold down the Shift key, and select the last cell you want included. All cells in the selected area are highlighted, with the exception of the first cell. (Don't worry, it's selected, too; it's just not highlighted.) Figure 2-3 shows a sequential area selected from cells B4:F15. Notice the black border surrounding the selected area.



Click any cell to clear the selection. Alternatively, click and drag the mouse over a group of cells to select a sequential area.

- To select **non-sequential cells**, select a cell, hold down the Ctrl key, and click each additional cell you want to select. Figure 2-4 shows the non-sequential cells A4, C7, and E4:E9, as well as all of row 2, selected.
- To select a **single entire column**, click a column heading.
- To select **multiple columns**, drag across multiple column headings.
- To select a **single entire row**, click the row number.
- To select **multiple rows**, drag across multiple row numbers.



When making non-sequential cell selections, you can include entire rows and entire columns along with individual cells or groups of cells.

- To select the **entire worksheet**, click the small gray box with a triangle located to the left of column A and above row 1. Alternatively, you can select all cells in a worksheet by pressing Ctrl+A.

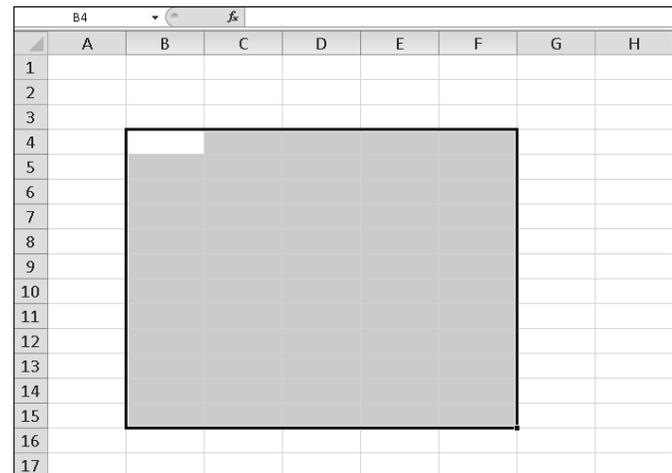


Figure 2-3

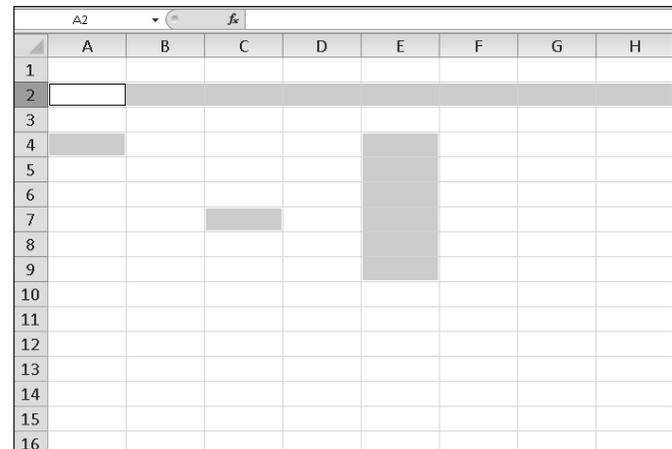


Figure 2-4

Enter Cell Data

1. Type the label or value in the desired cell.
2. Press Enter. The data is entered into the current cell, and Excel makes the next cell down active (see Figure 2-5). How Excel aligns the data depends on what it is:
 - **Label:** Excel aligns the data to the left side of the cell. If the descriptive information is too wide to fit, Excel extends that data past the cell width if the cell to the right is blank. If that cell isn't blank, Excel displays only enough text to fit the display width; however you can widen the column to display additional text.



To enter a value as a label, type an apostrophe before the value.

- **Whole value:** If the data is a whole value, such as 34 or 5763, Excel aligns the data to the right side of the cell.
- **Value with a decimal:** If the data is a decimal value, Excel aligns the data to the right side of the cell, including the decimal point, with the exception of a trailing 0. For example, in Figure 2-6, if you enter 246.75, 246.75 displays; however, if you enter 246.70, 246.7 displays. (See Chapter 6 to change the display appearance, column width, and alignment of your data.)



If a value displays as number signs, or scientific notation (such as 4.3E+09) as shown in Figure 2-6 in cell D8, the value is too long to fit into the cell. You need to widen the column width.

- **Date:** If you enter a date, such 1/11, Jan 11, or 11 Jan, Excel automatically returns 11-Jan in the cell, but the Formula bar displays 1/11/2010. Figure 2-4 also illustrates an example of a date entry. See Chapter 6 to change the date format.

	A	B	C	D
1				
2		Completed		
3				
4				
5				
6				
7				
8				

Figure 2-5

	A	B	C	D	E	F
1						
2		Average	Date			
3	David	356.6	11-Jan			
4	Mary	325.15				
5	Tom	290				
6	Sam	460.358				
7						
8	Scientific notation sample			1.23E+04		
9						
10						
11						
12						

Figure 2-6

Undo Data Entry

1. Enter text into a spreadsheet.
2. To undo any actions or correct any mistakes you make when entering data, perform one of the following:
 - Click the Undo button on the Quick Access toolbar.
 - Press Ctrl+Z.
3. Keep repeating your favorite undo method until you're back where you want to be.
4. To undo several steps at once, click the arrow on the Undo button and select the step from which you want to begin the Undo action (see Figure 2-7).



To repeat your last action, click the Redo button on the Quick Access toolbar or press Ctrl+Y. You can't repeat some actions, however.

Edit or Delete Cell Data

1. To delete the entire contents of a cell, use one of the following methods:
 - Choose Home→Clear in the Editing group; then select what you want to clear.
 - Press the Delete key.



If you clear the wrong cell, use the Undo command (see the preceding section).

2. To edit cell contents, use one of these methods:
 - Delete the contents and retype new cell information.

- Press the F2 key and edit the cell contents from the Formula bar.
- Double-click the cell contents and edit them from the cell. (See Figure 2-8.)

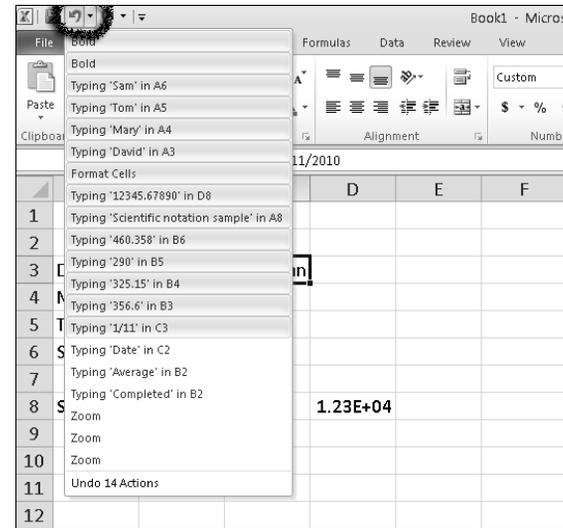


Figure 2-7

	A	B	C	D	E
1					
2		Average Sco	Test Date		
3	David	356.6	11-Jan		
4	Mary	325.15			
5	Tom	290			
6	Sam	460.358			
7					
8					
9					
10					
11					
12					

Figure 2-8

Copy and Paste Data

1. Select the data you want to copy.
2. Choose Home → Copy in the Clipboard group. A *marquee* (which looks like marching ants) surrounds the cells (see Figure 2-9).
3. Click the cell to which you want to paste the copied data.
4. Choose Home → Paste. The selected cells are pasted into the new location.
5. Paste the cells into another location or press the Esc key to cancel the marquee.



Alternatively, press Ctrl+C to copy the selected cells, Ctrl+X to cut the selected cells, or Ctrl+V to paste the selected cells.

	A	B	C	D	E	F
1						
2		Average Score	Test Date			
3	David	356.6	11-Jan			
4	Mary	325.15				
5	Tom	290				
6	Sam	460.358				
7						
8						
9						
10						
11						
12						

Figure 2-9

Move Data

1. Select the data you want to move.
2. Choose Home → Cut in the Clipboard group. A *marquee* (which looks like marching ants) surrounds the cells.
3. Click the first cell that you want to move the selected cells to.
4. Choose Home → Paste in the Clipboard group. The selected cells are pasted into the new location. The cells originally in B2:B6 are now located in cells C9:C13 (see Figure 2-10).

	A	B	C	D	E	F
1						
2			Test Date			
3	David		11-Jan			
4	Mary					
5	Tom					
6	Sam					
7						
8						
9			Average Score			
10			356.6			
11			325.15			
12			290			
13			460.358			
14						
15						

Figure 2-10

Drag and Drop Data

1. Select the data you want to move.
2. Position the mouse pointer around any portion of the selection area edge, but not in the lower-right corner. The mouse pointer shows four arrowheads.
3. Drag the borderline to the area you want the cells moved to. A border shows the new area. See Figure 2-11 in which cells C9:C13 are being moved to cell B2:B6.
4. Release the mouse button. The data moves to the new location.



Drag and drop works best if you're moving a small amount of cells to an area that isn't far from its original spot.

	A	B	C	D	E	F
1						
2			Test Date			
3	David		11-Jan			
4	Mary					
5	Tom					
6	Sam					
7						
8						
9			Average Score			
10			356.6			
11			325.15			
12			290			
13			460.358			
14						
15						

Figure 2-11

Transpose Data

1. Select the cells you want to transpose and then choose Home → Copy.



The Transpose feature doesn't work if you choose Cut instead of Copy.

2. Click the cell where you want the transposed cells to begin.
3. On the Home tab, click the down arrow on the Paste button to display a menu of options.
4. Choose Transpose. As shown in Figure 2-12, Excel copies the selected cells into the new area, transposing rows into columns or columns into rows.
5. Press Esc to cancel the marquee.

	B	C	D	E	F	G	H	I	J	K
3	David	Average Score	Test Date			David	Mary	Tom	Sam	
4	Mary	356.6	11-Jan							
5	Tom	325.15								
6	Sam	290								
7		460.358								
8										
9										
10										
11										
12										
13										
14										

Figure 2-12

Extend a Series with AutoFill

1. Type the first cell of data, such as a day or a month like Wednesday or September. AutoFill works with days of the week, months of the year, or yearly quarters such as Qtr 2. You can enter the entire word or you can enter the abbreviated form (such as *Wed* or *Sep*).
2. Press Enter.
3. Position the mouse pointer on the *fill handle* — the small black box at the lower-right corner of the data cell. Your mouse pointer turns into a small black cross. (See Figure 2-13.)



To AutoFill a series of numbers, enter two values in two adjacent cells, such as 1 and 2 or 5 and 10. Select both cells, and then use the AutoFill box to highlight cells. Excel continues the series as 3, 4, 5, or 5, 10, 15, and so forth.

4. Drag the small black box across the cells you want to fill. You can drag the fill handle across cells up, down, left, or right.
5. Release the mouse. Excel fills in the selected cells with a continuation of your data. Figure 2-14 shows how Excel fills in the cells with the rest of the weekdays. This figure also shows the different formats for the days of the week, months, and some numbers.



If you use AutoFill on a single value or a text word, Excel duplicates it. For example, if you use AutoFill on a cell with the word *Apple*, all filled cells contain *Apple*.



Chapter 11 includes instructions for creating your own customized list. AutoFill can enter lists you often use, such as sales rep names or product types.

	A	B	C	D	E	F
1						
2						
3	Monday					
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Figure 2-13

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2												
3	Monday	Jan		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	
4	Tuesday	Feb										
5	Wednesday	Mar		January	February	March	April	May	June	July	August	
6	Thursday	Apr										
7	Friday	May										
8	Saturday	Jun			1	2	3	4	5	6	7	
9	Sunday	Jul										
10	Monday	Aug			2	4	6	8	10	12	14	
11	Tuesday	Sep										
12	Wednesday	Oct				5						
13	Thursday	Nov				10						
14	Friday	Dec				15						
15	Saturday	Jan				20						
16	Sunday	Feb				25						
17	Monday	Mar				30						
18												
19												
20												
21												

Figure 2-14

Add Rows and Columns

1. Select the row numbers or column letters where you want the new rows or columns. Excel highlights the entire rows or columns, as shown in Figure 2-15.
2. Choose Home⇒Insert in the Cells group. Excel inserts the same number of rows or columns that you selected in Step 1. Data in the selected columns and columns to the right move to the right. Data in the selected rows and below move down.

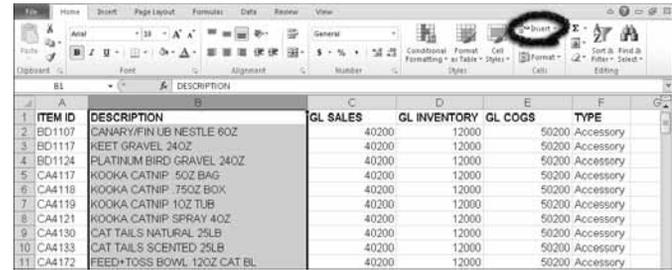


Figure 2-15

Insert Cells

1. Select the cell area where you want to insert blank cells. Be sure you select the same number of cells as you want to insert. Excel highlights the selected area.
2. Choose Home and in the Cells group, click the arrow on the Insert button. A menu of options appears.
3. Choose Insert Cells. The Insert dialog box, as shown in Figure 2-16, appears.
4. Make a selection:
 - **Shift Cells Right:** Select this if you want data in the cells in the same row moved to the right. Excel doesn't move the data in the cells to the left of the selection.
 - **Shift Cells Down:** Select this if you want data in the lower cells in the same column moved down. Excel doesn't move data in the cells above the selection.
 - **Entire Row:** Select this if you want to add a new row and move down lower data.
 - **Entire Column:** Select this if you want to add a new column and move data to the right.

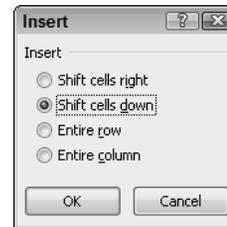


Figure 2-16

Remove Rows and Columns

1. Select the row numbers or column letters you want to remove. Excel highlights the entire rows or columns. (See Figure 2-17.)
2. Choose Home → Delete in the Cells group. Excel removes any data in the rows or columns and moves existing data up or left. This fills the void from the deleted rows or columns.



(Optional) Right-click the selected row numbers or column letters and choose Delete from the shortcut menu.

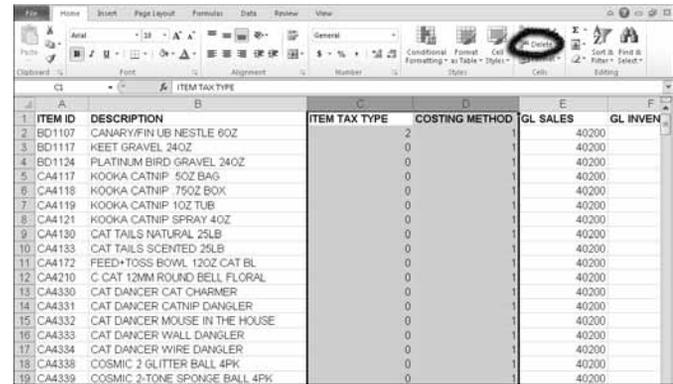


Figure 2-17

Delete Cells

1. Select the cells you want to remove.
2. Choose Home and in the Cells group, click the arrow on the Delete button. A menu of options appears.



Alternatively, right-click over the selected cells and choose Delete from the shortcut menu.

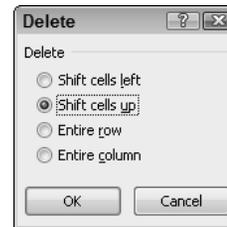


Figure 2-18

3. Choose Delete Cells. The Delete dialog box appears, as shown in Figure 2-18.
4. Select a deletion option:
 - **Shift Cells Left:** Select this if you want data in the cells in the same row moved to the left.
 - **Shift Cells Up:** Select this if you want data in the lower cells in the same column moved up.
 - **Entire Row:** Select this if you want remove a row and move lower data up.
 - **Entire Column:** Select this if you want to remove a column and move data to the left.

Name a Range of Cells

1. After selecting the cells you want to name, choose Formulas→Define Name in the Defined Names group. The New Name dialog box appears. (See Figure 2-19.)
2. In the Name text box, type up to a 255-character name for the range. Range names aren't case-sensitive; however, range names must follow these conventions:
 - The first character must be a letter, an underscore, or a backslash.
 - No spaces are allowed.
 - You can't use a name that's the same as a cell address. For example, you can't name a range AB32.
3. Click OK.



(Optional) Enter a range name into the Name box located at the left end of the Formula bar. You can jump quickly to a named range by clicking the down arrow in the Name box and selecting the range name.



You can include range names in formulas, such as =F6*PayRate in which a specific cell is named PayRate.

Use Named Ranges

1. Click the down arrow in the Name box to the left of the Formula bar. A list of named ranges appears. (See Figure 2-20.)
2. Select the range name you want to access. Excel highlights the named cells.



(Optional) Choose Home→Find & Select→Go To. Double-click the range name you want to access.

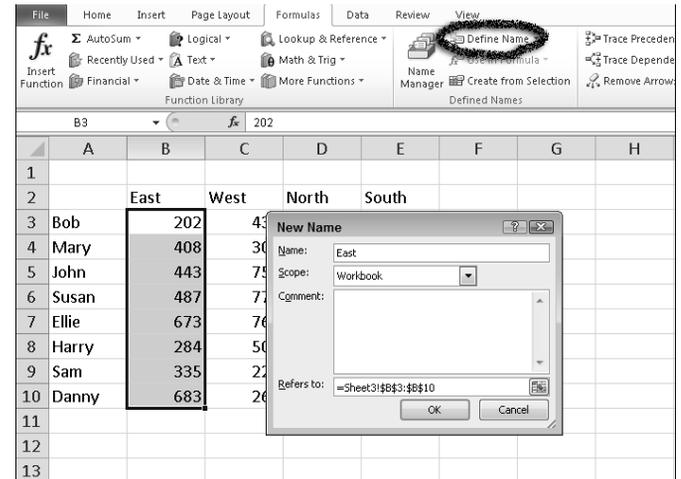


Figure 2-19

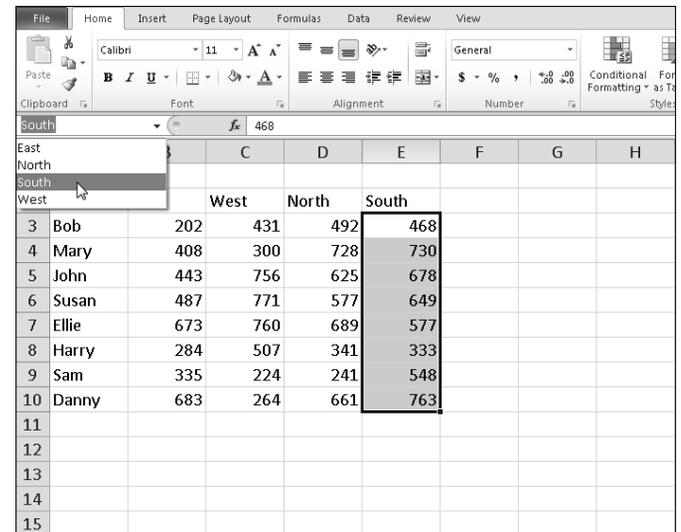


Figure 2-20

Manage Range Names

1. Choose Formulas→Name Manager in the Defined Names group. The Name Manager dialog box appears, as shown in Figure 2-21.



Excel automatically adds tables to the Name Manager. See Chapter 7 for more on working with tables.

2. Select one of the following options:
 - Click the New button, which displays the New Name dialog box where you can enter a range name and enter the cell locations it refers to.



Instead of typing the range cell locations, click the Collapse button, on the right side of the Refers To box, which moves aside the New Name dialog box. You can then use your mouse to select the desired cells. Press Enter or click the Expand button to return to the New Name dialog box.

- Click an existing range name and then click the Edit button, which displays the Edit Name dialog box, as shown in Figure 2-22. Use this dialog box to change the range name or the range cell location reference.
- Click an existing range name and then click the Delete button. A confirmation message appears making sure you want to delete the range name.



If you have a lot of range names, you can click the Filter button and elect to display only the items meeting selected criteria.

3. Click the Close button to close the Name Manager dialog box.

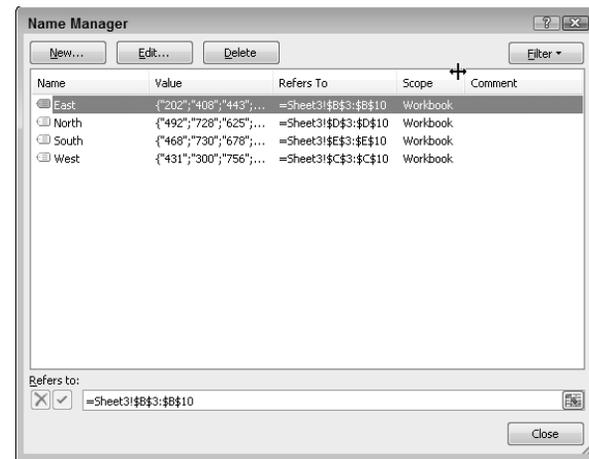


Figure 2-21

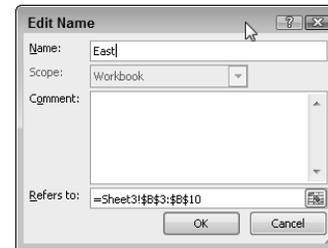


Figure 2-22

Validate Data Entry

1. Select the cell(s) you want Excel to validate and then choose Data>Data Validation in the Data Tools group. The Data Validation dialog box displays.
2. In the Settings tab, click the Allow drop-down list and choose the type of validation, such as
 - Values, such as Whole Number or Decimal, in which you specify the upper and lower limits of allowable data values. (See Figure 2-23.)
 - Lists, such as a list you define, a range of cells in the existing worksheet, or a named range.



When creating a list, if you want the available choices to appear when the cell is selected, make sure to select the In-Cell drop-down check box.

- Dates or Times in which you specify ranges or limitations, such as greater than or less than, or even a specific date.
 - Text Length in which the number of characters in the data must be within the limits that you specify.
3. (Optional) Display the Data drop-down list and select criteria such as Between, Greater Than, and so on.
 4. Select criteria, such as maximum and minimum values, or specify a data location. Enter values or cell addresses. Precede a value with an equal sign (=) to specify a range name.
 5. (Optional) On the Input Message tab, enter a comment to display whenever someone clicks the validated cell.
 6. On the Error Alert tab, choose from the Style drop-down list whether Excel warns you or completely stops you from entering an invalid entry. (See Figure 2-24.)
 7. Click OK.



On the Error Alert tab of the Data Validation dialog box, you can customize the error message Excel displays if an invalid entry is entered.

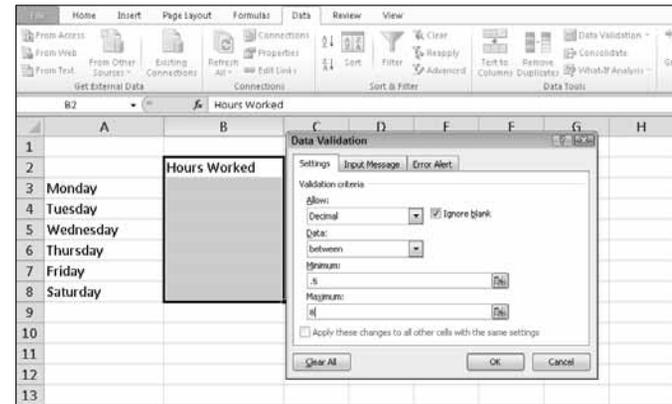


Figure 2-23

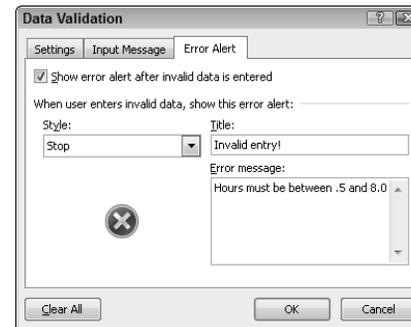


Figure 2-24

Enter Data in Validated Cells

1. Click a cell that has a validation requirement; then type data into the cell.
2. Press Enter. One of two things happens:
 - If the data meets the validation rules, Excel accepts the entry and moves to the next cell down.
 - If the data does not meet the validation rules, Excel displays an error message similar to the one you see in Figure 2-25.
3. Depending on the setting you selected on the Error Alert tab in the Data Validation dialog box (see the preceding section), choose an option:
 - **Stop:** Click Retry or Cancel.
 - **Warning:** Click Yes, No, or Cancel.
 - **Information:** Click OK or Cancel.

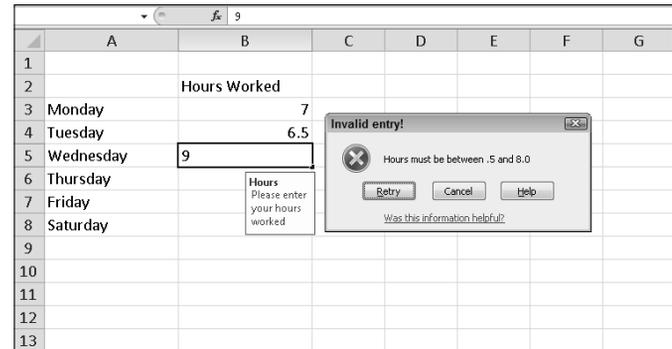


Figure 2-25

Locate Cells with Data Validation

1. To have Excel highlight all cells that have data validation, select one of the following methods, as shown in Figure 2-26:
 - Choose Home → Find & Select → Data Validation in the Editing group. (See Figure 2-26.)
 - Choose Home → Find & Select → Go to Special in the Editing group. Select the Data Validation option, choose All, and then click OK.
2. Click any cell to deselect the highlighted cells.

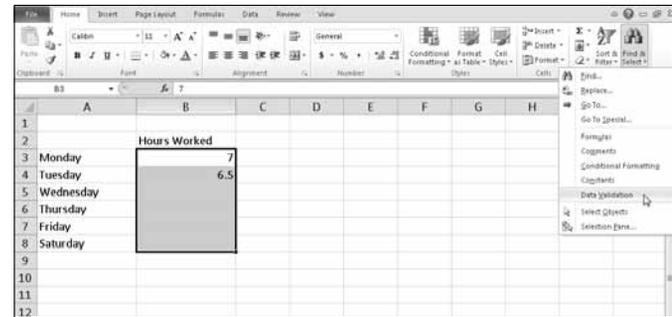


Figure 2-26



To remove data validation, choose Data → Data Validation in the Data Tools group. From the Data Validation dialog box, click the Clear All button and then click OK.

Building Formulas

This chapter is all about the math. With Excel, you can create formulas to perform calculations. The calculations can be simple, such as adding 2+3, or they can be extremely complex, such as those used to calculate depreciation. This chapter deals with the simpler ones.

Alas, sometimes you get errors after creating calculations. Occasionally, the error results from a simple typing mistake, and you can see the problem and easily fix it. Other times, the errors aren't easy to locate, so Excel provides tools to assist you in evaluating formula errors.

The primary tasks in this chapter include

- ➔ Creating simple and compound formulas by typing them into a cell.
- ➔ Adding or averaging a row or column of values.
- ➔ Summarizing an array.
- ➔ Creating cell ranges separated by colons for a sequential cell selection or by commas to list specific cell locations.
- ➔ Evaluating formula errors and locating a cell's precedents and dependents.

Chapter

3

Get ready to . . .

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Create Simple Formulas with Operators

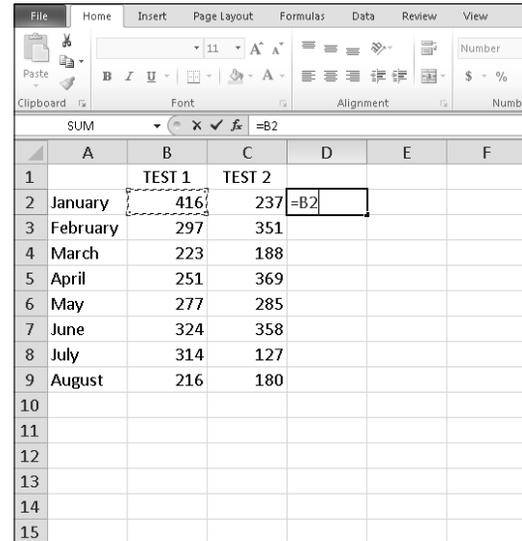
1. Enter values in two different cells; remember, however, that formulas don't need to reference cell addresses. They can contain actual numbers.
2. In the cell where you want to perform the calculation for the two values, type an equal sign (=). All Excel formulas begin with an equal sign.
3. Click or type the first cell address, or type the first value you want to include in the formula. In the example in Figure 3-1, I'm adding two cell references (B2 and C2).

 Excel displays a color border that surrounds the cell reference you enter.

4. Type an operator. Operators can include
 - The plus sign (+)
 - The minus sign (-)
 - The asterisk (*) to multiply
 - The slash (/) to divide
 - The percentage symbol (%)
 - The exponentiation symbol (^)
5. Click or type the second cell address or the second value you want to include in the formula.
6. Press Enter and then Excel displays the results of the calculation in the selected cell. (See Figure 3-2.)

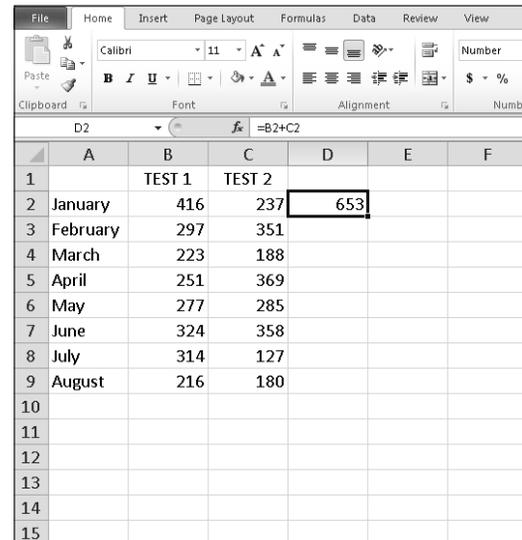
 The formula bar at the top displays the actual formula.

 Formulas can have multiple references. For example, =B5+B6+B7+B8 is a legitimate formula. Formulas with multiple operators are *compound formulas*.



	A	B	C	D	E	F
1		TEST 1	TEST 2			
2	January	416	237	=B2		
3	February	297	351			
4	March	223	188			
5	April	251	369			
6	May	277	285			
7	June	324	358			
8	July	314	127			
9	August	216	180			
10						
11						
12						
13						
14						
15						

Figure 3-1



	A	B	C	D	E	F
1		TEST 1	TEST 2			
2	January	416	237	653		
3	February	297	351			
4	March	223	188			
5	April	251	369			
6	May	277	285			
7	June	324	358			
8	July	314	127			
9	August	216	180			
10						
11						
12						
13						
14						
15						

Figure 3-2

Create Compound Formulas

1. Type values in three or more different cells; then select the cell where you want the formula.
2. Type the equal sign (=) and then type or click the first cell reference.
3. Type the first operator and then type or click the second cell reference.
4. Type the second operator and then type or click the third cell reference.



Compound formulas aren't limited to three references, and you can use cell references multiple times in a compound formula.

5. Press Enter. Excel displays the results of the calculation in the selected cell. The actual formula appears in the formula bar. (See Figure 3-3.)



If you paid attention in your high school algebra class, you might remember the Rule of Priorities, or the Order of Precedence. In a compound formula, Excel calculates multiplication and division before it calculates addition and subtraction. This means that you must include parentheses for any portion of a formula you want calculated first. As an example, in Figure 3-4, you see that the formula $3+5*2$ gives a result of 13, but $(3+5)*2$ gives a result of 16.



You can include range names in formulas, such as $=D23*CommissionRate$, in which a specific cell is named *CommissionRate*. (See Chapter 2 about using range names.)



Compound formulas can have multiple combinations in parentheses and can contain any combination of operators and references. A formula might read $(B5+C5)/2*SalesTax$. This formula adds cells B5 and C5, divides that result by 2, and then multiplies that result times the value in the *SalesTax* cell.

	A	B	C	D	E	F	G
1		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
2	January	416	237	653	447	206	
3	February	297	351	648	399		
4	March	223	188	411	313		
5	April	251	369	620	600		
6	May	277	285	562	347		
7	June	324	358	682	408		
8	July	314	127	441	426		
9	August	216	180	396	334		
10							
11							
12							
13							
14							
15							

Figure 3-3

	A	B	C	D
1	13	$3+5*2$		
2	16	$(3+5)*2$		
3				

Figure 3-4

Add Numbers with AutoSum

1. Click the cell beneath a sequential list of values.
2. Choose Formulas → AutoSum in the Function Library group. Excel places a *marquee* (which looks like marching ants) around the cells directly above the current cell. (See Figure 3-5.)



If the cells directly above the current cell have no values, Excel selects the cells directly to the left of the current cell. If you want to add a group of different cells, highlight them.

3. Press Enter to display the sum total of the selected cells.



The formula bar displays the formula beginning with the equal sign and the word SUM. The selected cells appear in parentheses, the first and last cells separated by a colon.

	A	B	C	D	E	F	G
1		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
2	January	416	237	653	447	206	
3	February	297	351	648	399		
4	March	223	188	411	313		
5	April	251	369	620	600		
6	May	277	285	562	347		
7	June	324	358	682	408		
8	July	314	127	441	426		
9	August	216	180	396	334		
10		=SUM(B2:B9)					
11							
12							
13							
14							
15							

Figure 3-5

Find an Average Value

1. Click the cell beneath a sequential list of values and then click the down arrow on the AutoSum button. Excel displays a list of calculation options (see Figure 3-6), including
 - **Average:** Calculated by adding a group of numbers and then dividing by the count of those numbers.
 - **Count Numbers:** Counts the number of cells in a specified range that contain numbers.
 - **Max:** Determines the highest value in a specified range.
 - **Min:** Determines the lowest value in a specified range.
2. Choose Average. A marquee appears around the group of cells. Highlight a different group of cells, if necessary.
3. Press Enter. The selected cell displays the average value of the cell group.

	C	D	E	F	G
1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
2	January	416	237	653	447
3	February	297	351	648	399
4	March	223	188	411	313
5	April	251	369	620	600
6	May	277	285	562	347
7	June	324	358	682	408
8	July	314	127	441	426
9	August	216	180	396	334
10		2318			
11	Average	=AVERAGE(B2:B10)			
12					
13					
14					
15					

Figure 3-6

Copy Formulas with AutoFill

1. Position the mouse pointer on the AutoFill box in the lower-right corner of a cell with a formula. Make sure the mouse pointer turns into a black cross.
2. Click and drag the AutoFill box to include the cells to which you want to copy the formula. (See Figure 3-7.) The AutoFill method of copying formulas is helpful if you're copying a formula to surrounding cells.



Copied formulas are slightly different than the originals because of the relative position change. For example, if the formula in cell D23 is B23+C23 and you copy the formula to the next cell below — cell D24 — Excel automatically changes the formula to B24+C24. If you don't want the copied formula to change, you must make the originating formula an *absolute reference* (see the "Define an Absolute Reference" section later in this chapter).

	A	B	C	D	E	F	G
1		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
2	January	416	237	653	447	206	
3	February	297	351	648	399		
4	March	223	188	411	313		
5	April	251	369	620	600		
6	May	277	285	562	347		
7	June	324	358	682	408		
8	July	314	127	441	426		
9	August	216	180	396	334		
10		2318					
11	Average	289.75					
12							
13							
14							
15							

Figure 3-7

Edit a Formula

1. Double-click the cell containing the formula you want to edit. The cell expands to show the formula instead of the result. (See Figure 3-8.) A blinking insertion point also appears.



(Optional) Press the F2 key to expand the formula so you can edit it.

2. Use the arrow keys to navigate to the character you want to change.
3. With the Backspace key, delete any unwanted characters and type any additional characters.
4. Press Enter.



Press the Delete key to delete the entire formula and start over.

	A	B	C	D	E	F	G	
1		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE		
2	January	416	237	653	447	206		
3	February	297	351	648	399	249		
4	March	223	188	411	313	98		
5	April	251	369	620	600	20		
6	May	277	285	562	347	215		
7	June	324	358	682	408	274		
8	July	314	127	441	426	15		
9	August	216	180	396	334	62		
10		2318						
11	Average	=AVERAGE(B2:B9)						
12								
13								
14								
15								

Figure 3-8

Define an Absolute Reference

- To prevent a formula from changing a cell reference while you copy it to a different location, lock in an absolute cell reference using one of these methods:
 - Lock in a cell location:** Type a dollar sign in front of both the column reference and the row reference (as in \$G\$1). If the original formula in cell E5 is =D5*\$G\$1 and you copy the formula to cell E6, the copied formula reads =D6*\$G\$1 instead of D6*G2, which is how it would read if it wasn't absolute. (See Figure 3-9.)
 - Lock in only the row or column location:** Type a dollar sign in front of the column reference (\$G1) or in front of the row reference (G\$1).
- Copy the formula, as needed, to other locations. Notice that the absolute cell reference in the original formula remains unchanged in the copied formulas.

	B	C	D	E	F	G
1					Tax Rate	6.50%
2						
3						
4	Item	QTY	COST	SUBTOTAL	TAX	TOTAL
5	Red Widget	15	2.15	32.25	2.10	
6	Blue Widget	30	2.11	63.30	=D6*\$G\$1	
7	Green Widget	9	2.11	18.99	1.23	
8	Yellow Widget	42	2.25	94.50	6.14	
9						
10						
11						
12						
13						
14						
15						

Figure 3-9

Copy Values with Paste Special

- Select a cell (or group of cells) containing a formula and then choose Home → Copy in the Clipboard group. A marquee appears around the selected cell.
- Select the cell where you want the result to appear; then click the down arrow on the Paste button on the Home tab.
- Choose Paste Special. The Paste Special dialog box, as shown in Figure 3-10, appears.
- Select the Values option.
- Click OK and press Esc to cancel the marquee. Excel pastes the result of the formula, but not the actual formula. If the original formula changes, this value doesn't change.



Figure 3-10

Summarize an Array

1. Set up the array data you want to total.



An *array* is a group of cells. An *array formula* is a single formula that produces results in multiple cells.

2. Select the cells in which you want the array formula.



Be sure to select the exact number of cells. If you select too few cells, Excel doesn't display all your array values. If you select too many cells, Excel displays #N/A in the cells for which no array values exist.

3. Type the formula, or use the mouse to select cells, beginning with the equal sign, indicating the array ranges. For example, in Figure 3-11, I want to calculate the volume divided by the range, so the formula is C5:C40/D5:D40. Separate each array range with a colon.



You can also use Excel functions in array calculations. (See Chapter 4 for more information on Excel functions.)

4. Press Ctrl+Shift+Enter. Excel enters the formula in curly brackets, as shown in Figure 3-12. All the formula cells show the same formula.



If you press Enter instead of Ctrl+Shift+Enter, Excel enters the array formula in only the first selected cell.



Using an array calculation ensures you make the same calculation for all cells. When you change an array value, Excel updates all the cells in the formula.



You can't add or remove rows or columns from the array. To remove the array formulas, you must highlight all the cells containing the formula and then press Delete. Excel doesn't permit you to delete only one or some of the array formulas.

SUM						
=C5:C40/D5:D40						
	B	C	D	E	F	G
1	Project X					
2	January Testing Results					
3						
4		Volume	Range	Result		
5	Test 1	416	11.98	=C5:C40/D5:D40		
6	Test 2	297	3.84			
7	Test 3	223	5.66			
8	Test 4	251	9.15			
9	Test 5	277	6.44			
10	Test 6	324	8.22			
11	Test 7	314	3.83			
12	Test 8	216	13.03			
13	Test 9	300	8.83			
14	Test 10	255	13.75			
15	Test 11	208	5.34			

Figure 3-11

E6							
={C5:C40/D5:D40}							
	A	B	C	D	E	F	G
1	Project X						
2	January Testing Results						
3							
4		Volume	Range	Result			
5	Test 1	416	11.98	34.72			
6	Test 2	297	3.84	77.44			
7	Test 3	223	5.66	39.41			
8	Test 4	251	9.15	27.43			
9	Test 5	277	6.44	42.99			
10	Test 6	324	8.22	39.41			
11	Test 7	314	3.83	82.04			
12	Test 8	216	13.03	16.57			
13	Test 9	300	8.83	33.97			
14	Test 10	255	13.75	18.54			
15	Test 11	208	5.34	38.95			

Figure 3-12

Troubleshoot Formula Errors

1. Choose Formulas→Error Checking in the Formula Auditing group. If Excel finds *potential* formula errors in your worksheet, it jumps to the cell containing the error and displays the Error Checking dialog box. If the worksheet contains no errors, Excel displays a message box saying the error-checking is complete. Here are just a few of the error types Excel might locate:

- **Formula Omits Adjacent Cells:** This means a formula refers to a group of cells that have numbers adjacent to it. Study the formula to make sure you didn't forget to include additional cell references in the formula. (See Figure 3-13.)
- **#DIV/0!:** Divide by zero error. This error means the formula is trying to divide by either an empty cell or one with a value of zero. Make sure all cells referenced in the division have a value other than zero in them.
- **#VALUE!:** This means the formula references an invalid cell address. For example, text is in a cell where the formula expects to find a value. You might also see this error if you delete a value in a cell that was used in a formula. Locate and correct the invalid cell reference.
- **#NAME?:** This occurs when Excel doesn't recognize text in a formula, perhaps because of a misspelling of a range name. Make sure the name actually exists and is spelled correctly. Also verify the spelling of the function name.
- **Circular:** This means that the formula in a cell refers to itself. Excel immediately warns you if you enter a circular reference and offers assistance to correct the problem. Figure 3-14 shows a circular reference.
- **Number Stored as Text:** This means a cell contains what looks like a value, but the content is stored as text. Verify that you intend to store the value as a text entry.

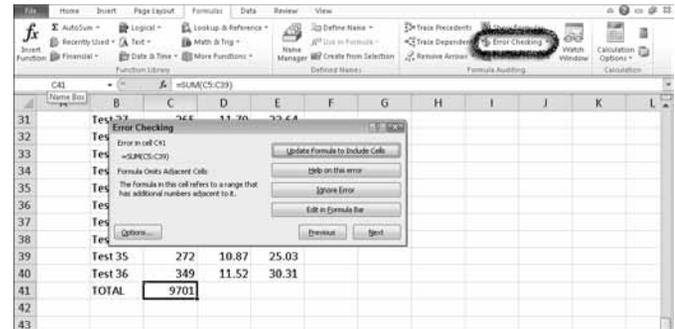


Figure 3-13

	SUM						
	A	B	C	D	E	F	G
37		Test 33	205	12.70	16.14		
38		Test 34	281	11.62	24.17		
39		Test 35	272	10.87	25.03		
40		Test 36	349	11.52	30.31		
41		TOTAL	10050	=C41+D41			
42							
43							
44							
45							
46							

Figure 3-14

- **#N/A:** This error occurs when Excel needs a value in a formula that isn't available.
- **#NULL!:** This error occurs when a formula attempts to use the intersection of two ranges that don't intersect. For example, if you type `=C5 C6` instead of `=C5+C6` (using a space in the formula instead of a plus sign), Excel returns the **#NULL!** answer. Replace the space in the formula with the correct character, in this example, a plus sign. (See Figure 3-15.)
- **#NUM!:** When you enter a formula and use an illogical argument, such as the square root of a negative number. For example, if you enter `=SQRT(81)`, Excel returns a value of 9, but if you enter `=SQRT(-81)`, Excel returns a value of **#NUM!**.
- **#REF!:** This error occurs whenever cell references become invalid. For example, if you enter a value in cell A1 and then in cell C2, you create a formula that references cell A1. That works fine, but if you attempt to copy the formula in cell C2 to the higher cell C1, you get the **#REF!** error because no cell is higher than cell A1. Figure 3-16 shows an example.

2. Perform one of the following steps, depending on the error type:

- Click in the cell and edit the formula as needed. Click the Resume button when you're finished.
- Click the Ignore Error button to jump to the next potential problem.
- Click an option, if available, to allow the Error Checking dialog box to assist you with repairing the problem.



To help you determine the nature or origin of the problem, some error messages have a Show Calculation Steps button to display the logic behind the formula.

3. Click Next to review the next problem area. When the error-check process is complete, Excel displays a message box. Click OK to close the message box.

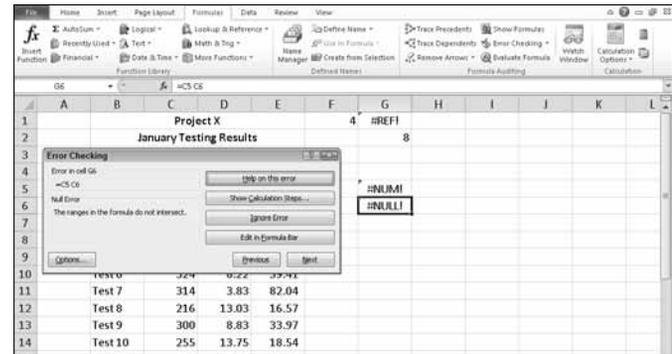


Figure 3-15

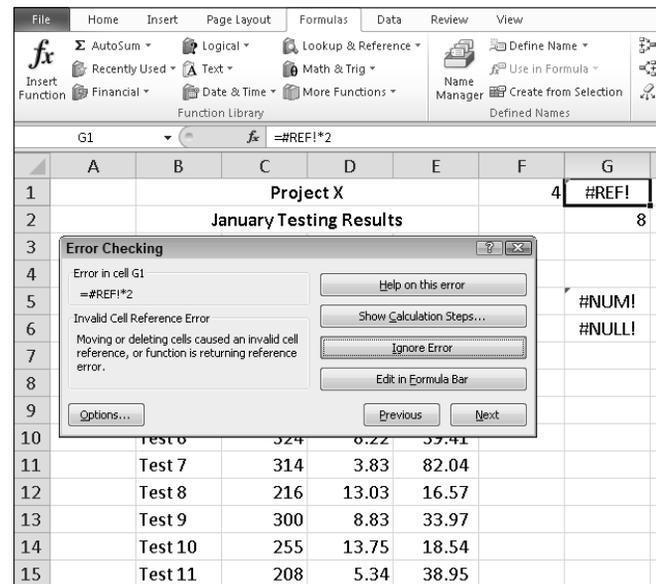


Figure 3-16

Display Formulas in the Cell

1. Choose Formulas → Show Formulas in the Formula Auditing group. Excel displays the actual formulas in the cells rather than the results. See Figure 3-17.



This is a great troubleshooting tool!

2. Choose Formulas → Show Formulas again to turn off the cell formula display and redisplay the results.

Identify Formula Precedents and Dependents

1. Select a cell that contains a formula or a cell that's referenced in one or more formulas.
2. Choose Formulas → Trace Precedents or Trace Dependents in the Formula Auditing group. Excel displays one or more blue arrows pointing out either precedents or, as shown in Figure 3-18, dependents.



Dependent cells are referred to by a formula in another cell. *Precedent* cells contain formulas referencing other cells.

3. Choose Formulas → Remove Arrows in the Formula Auditing group. The blue arrow(s) disappear.

	A	B	C	D	E	F
1		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE
2	January	416	237	=B2+C2	447	=B2+C2-E2
3	February	297	351	=B3+C3	399	=B3+C3-E3
4	March	223	188	=B4+C4	313	=B4+C4-E4
5	April	251	369	=B5+C5	600	=B5+C5-E5
6	May	277	285	=B6+C6	347	=B6+C6-E6
7	June	324	358	=B7+C7	408	=B7+C7-E7
8	July	314	127	=B8+C8	426	=B8+C8-E8
9	August	216	180	=B9+C9	334	=B9+C9-E9
10		=SUM(B2:B9)	=SUM(C2:C9)	=SUM(D2:D9)	=SUM(E2:E9)	=SUM(F2:F9)
11	Average	=AVERAGE(B2:B9)	=AVERAGE(C2:C9)	=AVERAGE(D2:D9)	=AVERAGE(E2:E9)	=AVERAGE(F2:F9)
12						
13						
14						
15						

Figure 3-17

	A	B	C	D	E	F	G	H	I	J	K	L
1		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE						
2	January	416	237	653	447	206						
3	February	297	351	648	399	249						
4	March	223	188	411	313	98						
5	April	251	369	620	600	20						
6	May	277	285	562	347	215						
7	June	324	358	682	408	274						
8	July	314	127	441	426	15						
9	August	216	180	396	334	62						
10		2318	2095	4413	3274	1139						
11	Average	289.75	261.875	551.625	409.25	142.375						
12												
13												
14												
15												

Figure 3-18

Using Excel Functions

Excel includes almost 400 built-in calculations — or *functions* — in 12 categories. Functions contain arguments, which appear in parentheses following the function's name. The *arguments* are the details you provide to Excel to indicate which numbers to calculate in the function. Some functions require several arguments to function correctly, but don't worry, Excel contains a Function Wizard to walk you through the entire process.

Excel separates functions into categories, including Financial, Date & Time, Math & Trig, Statistical, Lookup & Reference, Database, Text, Logical, Information, Engineering, Cube, and Compatibility categories. For example, the SUM function is in the Math & Trig category, whereas AVERAGE, COUNT, MAX, and MIN are Statistical functions. Functions that calculate a payment value are considered Financial functions. In this chapter, you discover how to

- ➔ Create a function with the Function Wizard.
- ➔ Manually type a function and its arguments.
- ➔ Analyze data with Excel's timesaving functions.



Chapter

4

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Build a Formula with the Function Wizard

1. Select the cell where you want to enter a function.
2. Choose Formulas > Insert Function in the Function Library group. The Insert Function dialog box appears.
3. Select a function category from the Or Select a Category drop-down list. (See Figure 4-1.)
4. Select a function name from the Select a Function list. A brief description of the function and its arguments appears under the list of function names.
5. Click OK. The Function Arguments dialog box displays. The contents of this dialog box depend on the function you've selected. Figure 4-2 shows the PMT function that calculates a loan payment based on constant payments and interest.



For more details on using the PMT function, see the section, "Calculate a Loan Payment," later in this chapter.

6. Type the first argument amount or cell reference, or click the cell in the worksheet. If you click the cell, Excel places a *marquee* (which looks like marching ants) around the selected cell.
7. Press Tab to move to the next argument and then type or select the second argument.
8. Repeat Step 7 for each necessary argument.
9. Click OK. Excel calculates and displays the result in the selected cell and displays the formula in the formula bar.



Arguments in bold type are required. Those in normal type are optional.

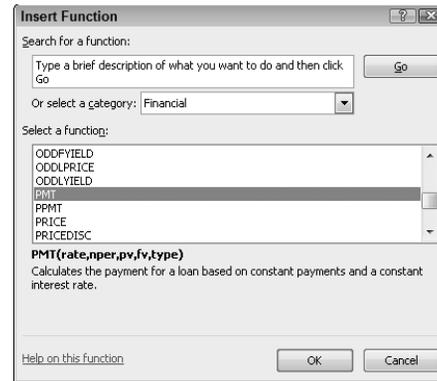


Figure 4-1

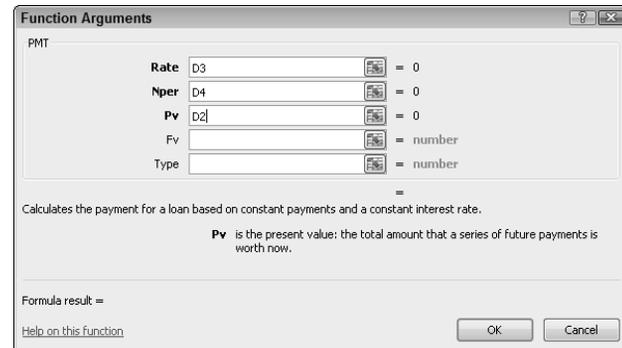


Figure 4-2

Manually Type an IF Function

1. Select a cell where you want to show the function result and then type the equal sign and then the word IF.



You could also use the Function Wizard to help you create an IF statement.



Excel considers an *IF statement* a logical function that contains three arguments. The first argument determines whether a specified condition is met. If the condition is met (or TRUE), the function returns the value specified in the second argument; but if the condition is not met (or FALSE), it returns the values specified in the third argument.

2. Type an open parenthesis (.
3. Begin the first argument by referencing the cell you want to check. For example, if you want to check whether cell B2 is greater than 100, type B2.
4. Type an operator, such as Equal To (=), Greater Than (>), or Less Than (<), and then type the value or cell reference you want to compare against.
5. Type a comma to begin the second argument.
6. Type what you want Excel to do if the first argument is TRUE. If you want Excel to display a value or cell value, type the value or cell reference; but if you want Excel to display text, enclose the text in quotation marks. (See Figure 4-3.)
7. Type a comma to begin the third and final argument.
8. Type what you want Excel to do if the first argument is FALSE. As earlier, type the value, cell reference, or text you want Excel to display.
9. Press Enter. Excel displays the results of the analysis in the selected cell. In Figure 4-4, you see the NO result in cell C2 because the score wasn't greater than 100. However, after copying the formula to other cells, you see that in cell C4 the answer is YES.



Arguments in an IF statement can also contain formulas.

	A	B	C	D	E
1	Name	Score	Bonus?		
2	Chris	98	=IF(B2>100,"YES")		
3	Trina	91	[IF(logical_test, [value_if_true], [value_if_false])]		
4	Tim	106			
5	Theresa	98			
6	Dan	94			
7	Spencer	88			
8	Andrew	102			
9	Alex	107			
10					
11					
12					
13					
14					
15					

Figure 4-3

	A	B	C	D
1	Name	Score	Bonus?	
2	Chris	98	NO	
3	Trina	91	NO	
4	Tim	106	YES	
5	Theresa	98	NO	
6	Dan	94	NO	
7	Spencer	88	NO	
8	Andrew	102	YES	
9	Alex	107	YES	
10	Keith	102	YES	
11	Cathy	95	NO	
12	Vicki	95	NO	
13	Greg	106	YES	
14	Rebecca	110	YES	
15	Kim	98	NO	

Figure 4-4

Create Text Functions

1. Select a cell where you want to show the function result; then choose Formulas>Text in the Function Library group and choose one of the following:
 - **LEFT**: Displays a specified number of characters from the beginning of a text string.
 - **RIGHT**: Calculates a specified number of characters from the end of a text string.
 - **MID**: Extracts a specified number of characters from a text string starting at a position you identify.
 - **LEN**: Determines the number of characters in a text cell.
2. Select the cell containing the text you want to evaluate.
3. Enter any remaining prompts in the Function Arguments dialog box and click OK. (Figure 4-5 shows the resulting examples.)

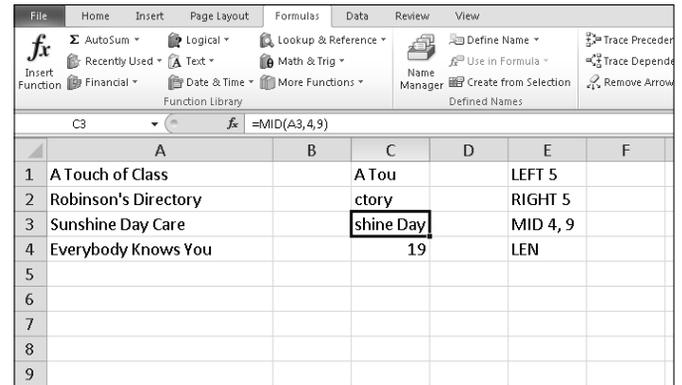


Figure 4-5

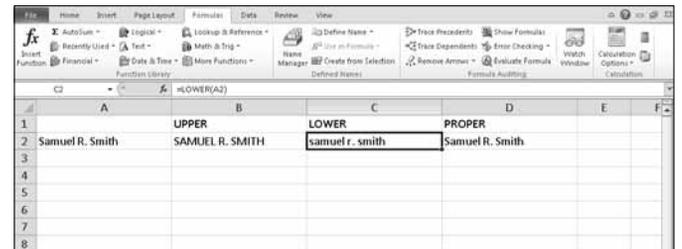


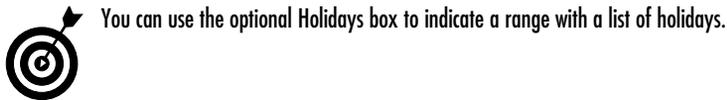
Figure 4-6

Change the Cell Text Case

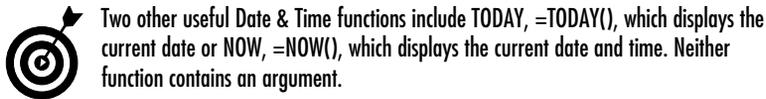
1. From the cell where you want the function result, choose Formulas>Text and then choose one of the following:
 - **UPPER**: Displays the referenced cell in all uppercase letters.
 - **LOWER**: Displays the referenced cell in all lowercase letters.
 - **PROPER**: Displays the referenced cell with the first letter of each word capitalized.
2. Select the cell you want to change and then click OK. (See Figure 4-6 for resulting examples.)

Use Functions to Calculate Time

1. From the cell where you want the function result, choose Formulas→Date & Time in the Function Library group.
2. Choose NETWORKDAYS, which calculates the number of whole workdays (excluding weekends) between two dates you specify. The Function Arguments dialog box appears.
3. From the Start_date text box, select the cell containing the beginning date you want to evaluate.
4. From the End_date text box, select the cell containing the ending date you want to evaluate. The End_date must be a date later than the Start_date; otherwise, the function returns a negative value.



5. Click OK. Excel calculates the number of working days between the two specified dates, as shown in Figure 4-7.



Convert a Text Date to a Date Value

1. From the cell where you want the function result, choose Formulas→Date & Time→DATEVALUE. The Function Arguments dialog box appears. Only one argument appears for this function.
2. Click the cell containing the date formatted as text.
3. Click OK. Excel displays the date as a Date value, as shown in Figure 4-8. Format the date as desired.

	A	B	C	D
1	Hire Date	Evaluation Date	# of Workdays	
2	Monday, July 20, 2009	Wednesday, March 10, 2010	168	
3				
4				
5				

Figure 4-7

	A	B	C	D
1				
2				
3		TEXT DATE	DATE VALUE	
4		7/20/2009	40014	
5				
6				
7				

Figure 4-8

Count the Number of Cells Containing Data

1. From the cell where you want the function result, choose Formulas > More Functions > Statistical > COUNTA in the Function Library group.



If you want to count numeric values, use the COUNT function instead of the COUNTA function. If you want to count blank cells only, use the COUNTBLANK function.

2. Select the data range you want to count and click OK. Excel counts the number of entries. See Figure 4-9, which displays that there are 372 entries in cells A3:A374.

SONGS OF THE 1960'S - 1980'S					
Song Title	Artist	Year		TOTAL SONGS	
A Horse With No Name	America	1975		372	
A Satisfied Mind	Bobby Hebb	1984			
A Sweet Woman Like You	Joe Tex	1984			
ABC	Jackson 5	1976			
Afternoon Delight	Starlight Vocal Band	1985			
Ain't It True	Andy Williams	1985			
Ain't No Mountain High Enough	Diana Ross	1983			

Figure 4-9

Round Values with Math Functions

1. From the cell where you want the function result, choose Formulas > Math & Trig in the Function Library group, and then choose one of the following:
 - **ROUND:** Rounds a value to a number of digits you specify.
 - **ROUNDUP:** Rounds a value up to a number of digits you specify.
 - **ROUNDDOWN:** Rounds a value down to a number of digits you specify.
2. From the Number text box of the Function Arguments dialog box, select or enter the cell you want to evaluate.
3. In the Num_digits text box, enter the number of decimal places you want the value rounded to. Enter zero if you want a whole number; if you want the number rounded to the left of the decimal point, enter the value as a negative number.
4. Click OK. The results appear in your worksheet. (See Figure 4-10.)

ORIGINAL	ROUND	ROUND UP	ROUND DOWN
13764.1544987	13764.154	13764.155	13764.154

Figure 4-10

Locate Data with Lookup Functions

1. Prepare your worksheet in a column list format. For example, maybe you have a list of song titles and artists and you want to look up the artist for a particular title. The song title would go in the first column, the artist in the second, and perhaps the year it was recorded as the third column. You can have as many columns in the array as you want.
2. Sort the data by the column you want to match; then click the cell where you want the function result.
3. Choose Formulas → Lookup & Reference → VLOOKUP in the Function Library group. The Function Arguments dialog box appears.

 To locate a value in a column, use the VLOOKUP function. To locate a value in a row, use the HLOOKUP function.

4. From the Lookup_value box, select the cell containing the value you want to search. (In this example, the cell is E3.)
5. From the Table_array box, select the range containing all the values. Don't include the heading rows.

 Create a range name for the data and use that name in the VLOOKUP function. (See Chapter 2.)

6. From the Col_index_num box, enter the column containing the value you want to find. The leftmost column is 1. (In this example, you want to find the artist, so you need to search by column 2. If you want to find the year, you'd search by column 3.) See Figure 4-11.
7. Click OK. Excel displays the formula result in the selected cell, and the actual formula appears in the formula bar. See Figure 4-12.

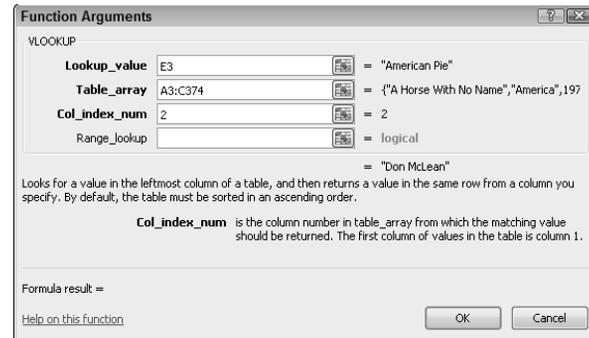


Figure 4-11

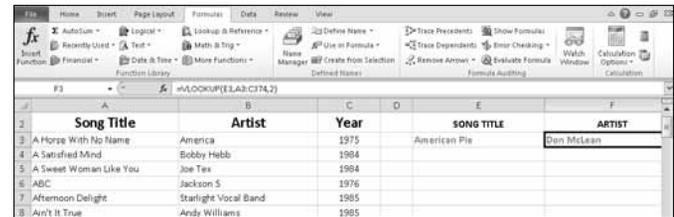


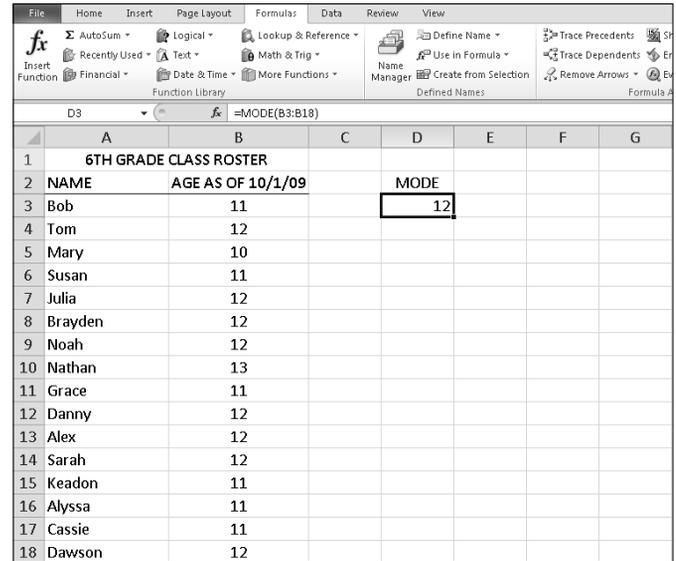
Figure 4-12

Use the MODE Function

 The MODE function displays the most frequently occurring value in a specified range.

1. Select the cell where you want the function result; then choose **Formulas** → **More Functions** → **Compatibility** → **MODE** in the Function Library group. The Function Arguments dialog box appears.
2. Select the worksheet range that you want to evaluate and then click OK. Excel displays the results. (In Figure 4-13, the result is 12, which is the most often used value in the data.)

 If you prefer, you can manually type the function. In the cell where you want the function result, type **=MODE(A1:A32)** replacing **A1:A32** with the area that you want to evaluate.



The screenshot shows the Excel interface with the **Formulas** tab selected. The formula bar displays **=MODE(B3:B18)**. The worksheet shows a table with the following data:

	A	B	C	D	E	F	G
1	6TH GRADE CLASS ROSTER						
2	NAME	AGE AS OF 10/1/09		MODE			
3	Bob	11		12			
4	Tom	12					
5	Mary	10					
6	Susan	11					
7	Julia	12					
8	Brayden	12					
9	Noah	12					
10	Nathan	13					
11	Grace	11					
12	Danny	12					
13	Alex	12					
14	Sarah	12					
15	Keadon	11					
16	Alyssa	11					
17	Cassie	11					
18	Dawson	12					

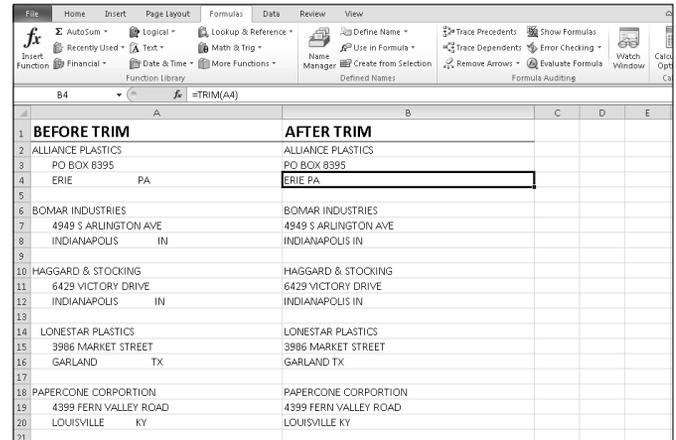
Figure 4-13

Remove Unwanted Spaces with the TRIM Function

 The TRIM function is often very useful when you work with data imported from other programs.

1. Select the cell where you want the function result and then choose **Formulas** → **Text** → **TRIM** in the Function Library group. The Function Arguments dialog box appears.
2. Select the cell containing the text you want to trim the spaces.
3. Click OK. Excel displays the result of the formula in the cell you selected in Step 1. (In Figure 4-14, you can see the data before the TRIM function and after it.)

 TRIM replaces any two (or more) spaces with a single space. If the text words contain a single space, TRIM doesn't delete that space.



The screenshot shows the Excel interface with the **Formulas** tab selected. The formula bar displays **=TRIM(A4)**. The worksheet shows a table with the following data:

	A	B	C	D	E
1	BEFORE TRIM	AFTER TRIM			
2	ALLIANCE PLASTICS	ALLIANCE PLASTICS			
3	PO BOX 8395	PO BOX 8395			
4	ERIE PA	ERIE PA			
5					
6	BOMAR INDUSTRIES	BOMAR INDUSTRIES			
7	4949 S ARLINGTON AVE	4949 S ARLINGTON AVE			
8	INDIANAPOLIS IN	INDIANAPOLIS IN			
9					
10	HAGGARD & STOCKING	HAGGARD & STOCKING			
11	6429 VICTORY DRIVE	6429 VICTORY DRIVE			
12	INDIANAPOLIS IN	INDIANAPOLIS IN			
13					
14	LONESTAR PLASTICS	LONESTAR PLASTICS			
15	3986 MARKET STREET	3986 MARKET STREET			
16	GARLAND TX	GARLAND TX			
17					
18	PAPERCONE CORPORATION	PAPERCONE CORPORATION			
19	4399 FERN VALLEY ROAD	4399 FERN VALLEY ROAD			
20	LOUISVILLE KY	LOUISVILLE KY			
21					

Figure 4-14

Estimate the Future Value of an Investment

- Set up your worksheet so that it shows data for three arguments, as shown in Figure 4-15:
 - The payment amount. (Enter as a negative number because you pay out the money to the investment.)
 - The interest rate.
 - The number of payment periods.



Express all amounts in the same time frame, such as monthly or annually.

- Select the cell in which you want to store the function result and then choose Formulas > Financial > FV in the Function Library group. The Function Arguments dialog box appears.
- From the Rate box, click the cell containing the interest rate.
- From the Nper box, select the cell containing the number of periods.
- In the Pmt box, click the cell containing the amount per period you plan to contribute.
- Click OK. Excel calculates the result, as shown in Figure 4-16, which illustrates that an annual investment of \$3,000 will be worth \$67,225.99 in 15 years at 5.5 percent interest.



If you prefer, you can manually type the function. In the cell where you want the function result, type **=FV(rate,nper,pmt)** replacing *rate* with the interest rate cell or amount, *nper* with the number of periods, and *pmt* with the amount per period you plan to contribute.

	A	B	C	D	E	F	G
1		FUTURE VALUE		HOW MUCH WILL MY 401K BE WORTH AT RETIREMENT?			
2			\$ (3,000.00)	Annual Contribution			
3			5.50%	Annual Interest			
4			15	Number of Years			
5							
6							
7							
8							
9							

Figure 4-15

	A	B	C	D	E	F	G
1		FUTURE VALUE		HOW MUCH WILL MY 401K BE WORTH AT RETIREMENT?			
2		\$67,225.99	\$ (3,000.00)	Annual Contribution			
3			5.50%	Annual Interest			
4			15	Number of Years			
5							
6							
7							
8							
9							

Figure 4-16

Calculate a Loan Payment



Use the PMT function to calculate the amount you can expect to pay each period for a loan, such as a house or a car.

1. Create a worksheet containing the principal amounts, the interest rates, and the number of payment periods.



Express all amounts in the same time frame, such as monthly or annually.

2. Select the cell in which you want to display the payment amount and then choose Formulas > Financial > PMT. The Function Arguments dialog box appears.
3. In the Rate box, select the cell containing the interest rate. If you entered the value in years and are looking for a monthly payment, enter /12 after the cell address.
4. In the Nper box, select the cell containing the number of payment periods. If you entered the value in years and are looking for a monthly payment, enter *12 after the cell address. (See Figure 4-17.)
5. In the Pv box, enter the amount of the loan.
6. Click OK. Excel calculates the payment amount. In Figure 4-18, you see that with a \$200,000 loan over 30 years at 5.5 percent interest, you can expect to make monthly payments of \$1,135.58.

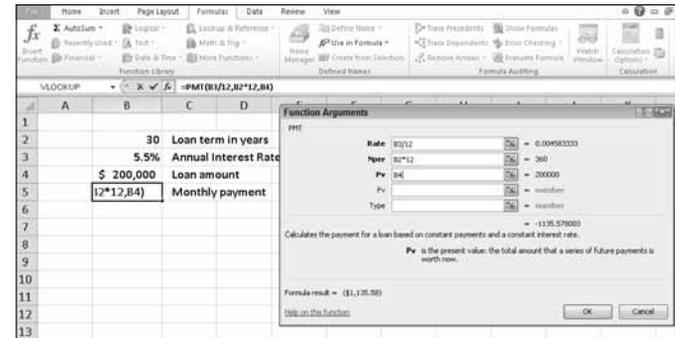


Figure 4-17

	A	B	C	D	E	F
1						
2		30	Loan term in years			
3		5.5%	Annual Interest Rate			
4		\$ 200,000	Loan amount			
5		(\$1,135.58)	Monthly payment			
6						
7						
8						
9						

Figure 4-18

Protecting Excel Data

Worksheets often contain numerical information that's confidential, such as financial or payroll data. In today's world of electronic snooping, it's up to you to protect your work against prying eyes. Fortunately, Excel provides a large number of security tools, such as using password protection, hiding sensitive worksheet areas, or locking data against unwanted changes.

This chapter is about the security concerns surrounding Excel workbooks. I show you many distinctive protection methods, including how to

- ➔ Hide all or selected areas of a workbook.
- ➔ Specify that users can view a file but not modify it.
- ➔ Restrict the access to designated worksheet ranges.
- ➔ Mark a file as final to protect it from changes.
- ➔ Assign passwords to open or modify a workbook.
- ➔ Remove private data from a workbook before sending it to others.

Chapter

5

Get ready to . . .

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Quickly Hide an Open Workbook

1. Choose View⇨Hide in the Window group. Excel hides the current workbook, leaving the Excel program open and visible. If you have another workbook open, you see that workbook, but not the hidden workbook.



Press the Windows key+M to quickly minimize all open items and to display the Windows desktop.

2. Choose View⇨Unhide in the Window group. Excel displays the Unhide dialog box listing all hidden workbooks, as shown in Figure 5-1.



If no workbooks are hidden, the Unhide button is unavailable.

3. Select the workbook you want to unhide and then click OK.

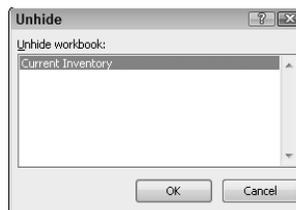


Figure 5-1

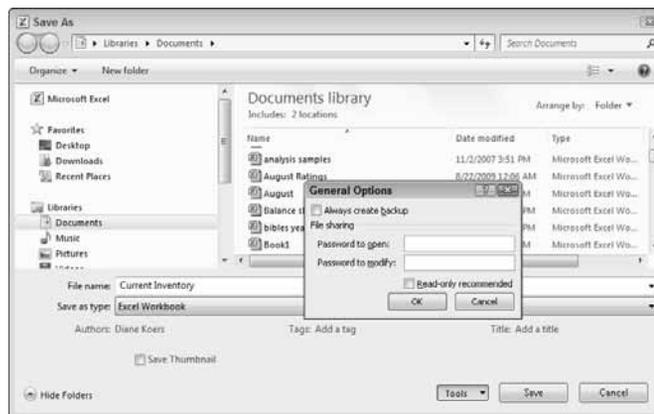


Figure 5-2

Make a File Read-Only

1. Choose File⇨Save As. The Save As dialog box opens.
2. (Optional) Select a file location from the Save-In drop-down list and enter a filename.
3. Click the Tools button. A drop-down list appears.
4. Choose General Options. The General Options dialog box, as shown in Figure 5-2, appears.
5. Click the Read-Only Recommended check box.
6. Click OK and then click the Save button.

Open a File as Read-Only

1. Choose File→Open. The Open dialog box appears.
2. Locate and select the previously saved as a read-only file you want and then click the Open button. A message box appears, as shown in Figure 5-3.
3. Click the Yes button and then the file opens.
4. To save any changes to the file, choose File→Save As and then specify a different filename.



Figure 5-3

Mark a Workbook as Final

1. Click File and from the Info category, under the Permissions section, click the Protect Workbook button and choose Mark as Final. A message appears.



The Mark as Final feature is designed to prevent accidental changes and isn't permanent.

2. Click OK. Another message appears.
3. Click OK again; then click File to return to the worksheet. The file appears as Read-Only and in Protected view, which displays a warning bar across the top, as shown in Figure 5-4. Most of the Ribbon features are unavailable.
4. If you intend to edit the file, click the Edit Anyway button. The file is no longer Read-Only, and you can make changes as desired.
5. If you want to remark the file as final, you must repeat Steps 1–3.

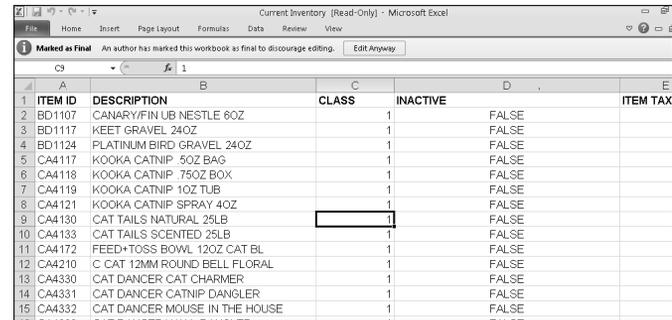


Figure 5-4

Hide Rows and Columns

1. Select the column or row headings you want to hide. Press the Ctrl key while selecting multiple rows or columns.
2. Choose Home⇒Format⇒Hide & Unhide in the Cells group. A menu of options appears.



You can't hide selected cells; only entire columns or rows.

3. Choose Hide Rows or Hide Columns. In Figure 5-5, notice that columns C, D, E, and F are hidden and seem to have disappeared.
4. To unhide rows or columns, select the rows or columns both before and after the hidden rows or columns.
5. Choose Home⇒Format⇒Hide & Unhide and then choose Unhide Rows or Unhide Columns.



You can also hide an entire worksheet. (See Chapter 9 for more information.)

Unlock Cells

1. Select the cells you want users to be able to modify.
2. Choose Home⇒Lock Cell in the Format group. (See Figure 5-6.) Because, by default, Excel locks all cells while in a protected worksheet, choosing this option turns off the Lock Cell option. The locked and unlocked function doesn't actually take effect until you protect and save the worksheet. See the following section.

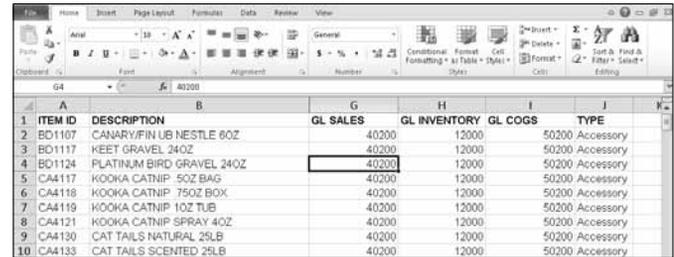


Figure 5-5

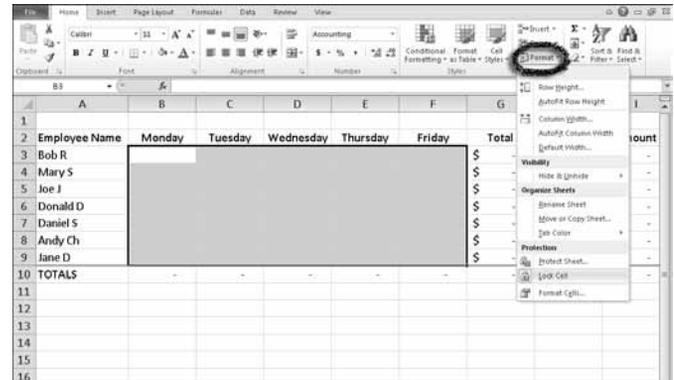


Figure 5-6

Protect Worksheets

1. Choose Review → Protect Sheet in the Changes group. The Protect Sheet dialog box appears, as shown in Figure 5-7.

 A good reason to protect a worksheet is to prevent accidental changes to formulas.

2. Make sure the Protect Worksheet and Contents of Locked Cells check box is selected.
3. (Optional) In the Password to Unprotect Sheet text box, type a password. For privacy reasons, only a series of dots appears. Passwords are case-sensitive.
4. From the Allow All Users of the Worksheet To box, select any options a user is allowed to change without unprotecting the worksheet.

 Deselecting the Select Locked Cells check box prevents unauthorized users from even clicking a locked cell. All cells are considered locked unless you unlock them, as I discuss in the preceding section.

5. Click OK.
6. If you generated a password, a Confirm Password dialog box appears. Retype the password and then click OK again.

 Notice the Protect Sheet option now displays as Unprotect Sheet.

7. In the protected worksheet, attempt to change the value in a locked cell. Excel displays an error message, as shown in Figure 5-8.
8. To unprotect the worksheet, choose Review → Unprotect Sheet in the Changes group.
9. Enter the password, if prompted.

 Excel also provides a Protect Workbook button, which protects not only the current worksheet but also all worksheets in the workbook.

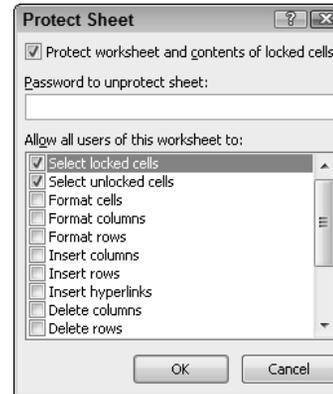


Figure 5-7

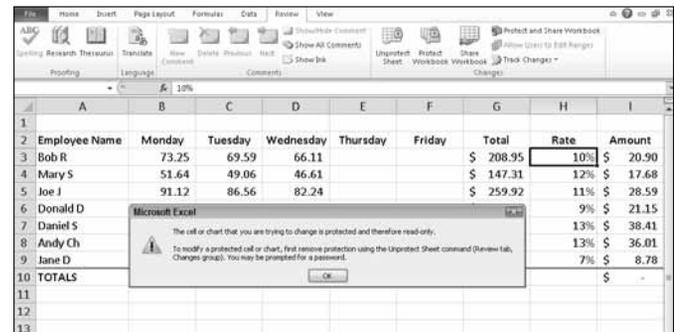


Figure 5-8

Restrict User Data Entry

1. In an unprotected worksheet, choose Review → Allow Users to Edit Ranges in the Changes group. The Allow Users to Edit Ranges dialog box appears.
2. Click the New button. The New Range dialog box, as shown in Figure 5-9, appears.
3. In the Title text box, type a short descriptive name, such as Qty Shipped or Price, for the data entry area.
4. In the Refers to Cells box, enter the range you want to allow users to edit. Begin the range with an equal (=) sign.



Alternatively, click the Collapse button, select the range in the worksheet, and then press Enter to return to the dialog box.

5. (Optional) Enter a password that the user must type to gain access to the cell range in the Range Password box. Without a password, any user can enter data into the range.
6. Click OK. The Confirm Password dialog box appears.
7. Retype the password and then click OK. The Allow Users to Edit Ranges dialog box appears with the newly created range. (See Figure 5-10.)



Select a range name and then click the Modify button to change the specifications, or click the Delete button to remove the input range access.

8. Choose one of the following:
 - Click the Protect Sheet button to launch the Protect Sheet dialog box. (See the “Protect Worksheets” section, earlier in this chapter.)
 - Click the Apply button and add another cell range.
 - Click OK to accept the changes and close the dialog box, but not protect the worksheet.



Excel doesn't enable the restrict data entry feature until you protect the worksheet.

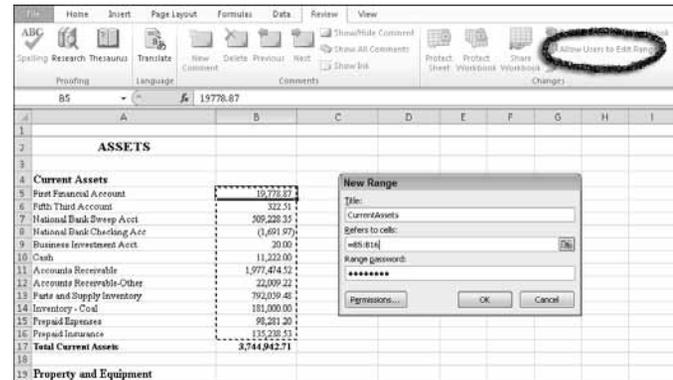


Figure 5-9



Figure 5-10

Enter Data in a Restricted Area

1. On a protected worksheet, in any cell with restricted access, begin typing data. The Unlock Range dialog box, as shown in Figure 5-11, appears.
2. Type the password. Passwords are case-sensitive.
3. Click OK. Excel allows access to the specific range.
4. Continue entering cell data as desired.

 If a user attempts to enter data in an unauthorized cell, Excel displays a message box.

 You can't undo some changes done with the Document Inspector.

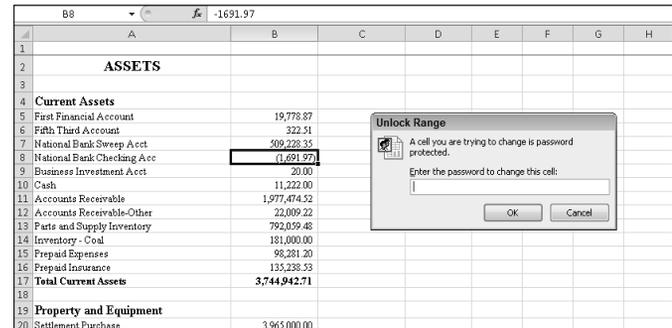


Figure 5-11

Inspect for Private Information

1. Save the workbook.
2. Click File and from the Info category, in the Prepare for Sharing section, click the Check for Issues button. A menu appears.
3. Click Inspect Document. The Document Inspector dialog box appears.

 You can't inspect a document on a workbook with protected worksheets.

4. Deselect any option you don't want to check and then click Inspect. Excel inspects the document for the selected information.
5. When the inspection is complete, the Document Inspector reappears with information, as shown in Figure 5-12.
6. Click the Remove All button next to any option you want removed. Excel removes the selected data. After removing the data, the Remove All button next to the option disappears.
7. Repeat Step 6 for any additional items you want to remove.
8. Click the Close button and save your file.

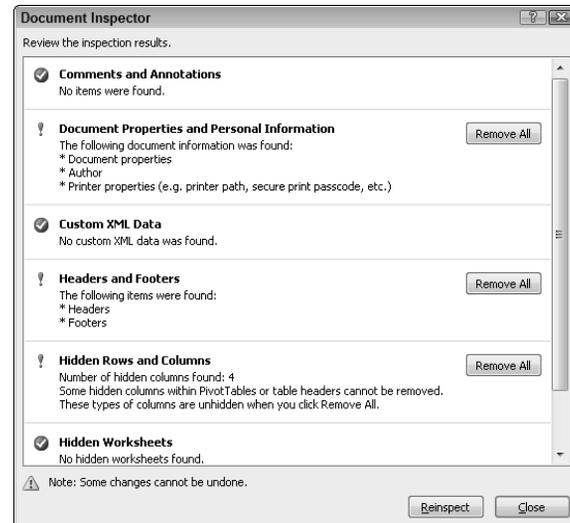


Figure 5-12

Hide Cell Formulas

1. Select the cells containing formulas or information you want to hide.
2. Choose Home → Format → Format Cells in the Cells group. The Format Cells dialog box appears.
3. Click the Protection tab, select the Hidden option, and click OK.
4. Protect the worksheet. (See the “Protect Worksheets” section, earlier in this chapter.) In Figure 5-13, although you see the results of the formula in cell G2, the formula bar doesn't display the actual formula.

	A	B	C	D	E	F	G
1							
2	Employee Name	Monday	Tuesday	Wednesday	Thursday	Friday	Total
3	Bob R						\$ -
4	Mary S						\$ -
5	Joe J						\$ -
6	Donald D						\$ -
7	Daniel S						\$ -
8	Andy Ch						\$ -
9	Jane D						\$ -
10	TOTALS	-	-	-	-	-	-
11							
12							
13							

Figure 5-13

Assign a File Password

1. Choose File → Save As. The Save As dialog box opens.
2. Click the down arrow on the Tools button and choose General Options. The General Options dialog box appears.
3. Type a password in the Password to Open text box if you want users to enter a password before they can open and view the workbook. (See Figure 5-14.)
4. (Optional) Type a password in the Password to Modify text box. Users must have the workbook open before they're prompted for the password to modify.
5. Click OK.
6. Retype the password to open; then click OK. Retype the password to modify; then click OK.
7. Click the Save button and then click the Yes button, if you're prompted to overwrite the file.

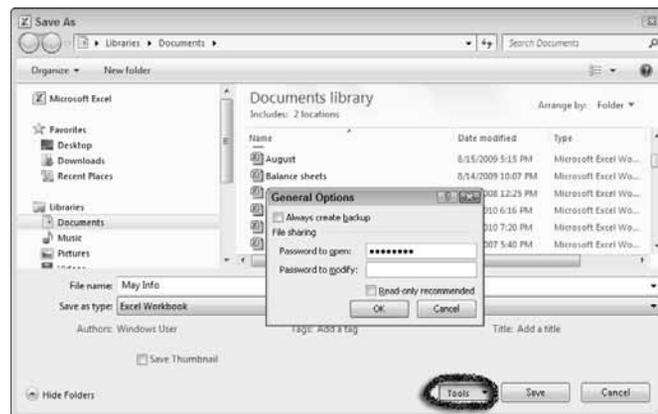


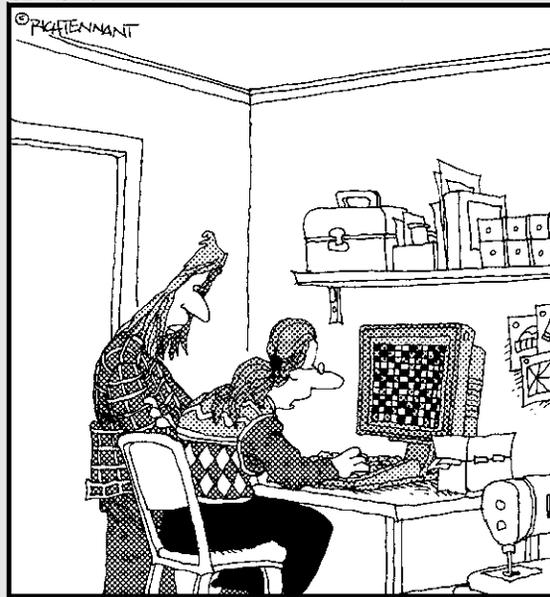
Figure 5-14

Part II

Sprucing Up Your Spreadsheets

The 5th Wave

By Rich Tennant



"I've used several spreadsheet programs, but this is the best one for designing quilt patterns."

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Formatting Cells

Whoever said, “Looks aren’t everything,” wasn’t staring at an unformatted Excel spreadsheet. Columns often aren’t wide enough, fonts are too small to read, dates display in an unusual manner, and when columns of data are stacked next to each other, sometimes the information overlaps.

Fortunately, Excel includes a plethora of features to make your data more presentable and easier to read. In fact, Excel has so many appearance-altering features, I had to break them up into two chapters! In this chapter, you master the following Excel formatting features:

- ➔ Change the font type, size, and style of text, values, or dates.
- ➔ Change the alignment of data in a cell from the standard left-aligned for text and right-aligned for values or dates.
- ➔ Turn values into currency or percentages.
- ➔ Create titles with the Merge and Center button.
- ➔ Change column width and row height.



Chapter

6

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Format Values

1. Select the cells you want to format. You can select a few cells, entire rows, entire columns, or the entire worksheet. (See Chapter 2 for information on selecting multiple cells.)
2. Choose Home → Number Format in the Number group. A list of options appears. (Figure 6-1 shows values formatted in various Excel styles. Notice the different dollar sign placement in the Accounting and Currency styles.)



The Number group on the Ribbon also displays three icons you can use to quickly format as Accounting, Percent, or Comma styles. The Accounting option has a drop-down list from which you can select different international currency symbols. The Comma option adds two decimal places and a comma between the thousands; it doesn't include a dollar sign. The Percent option adds a percent sign and no decimal places.

3. To remove digits to the right of the decimal point, choose Home → Decrease Decimal in the Number group. To add decimal digits, click the Increase Decimal button. Each click adds or removes a number to the far right of the decimal point and rounds the value in the cell. (See Figure 6-2.)



If you see a cell with values displaying #####, you need to widen the column width. (See the following section.)



Another method to select number formatting is clicking the Number dialog box launcher, which displays the Format Cells dialog box. Number format selections are on the Number tab.



Excel numbers can display up to 30 decimal places.

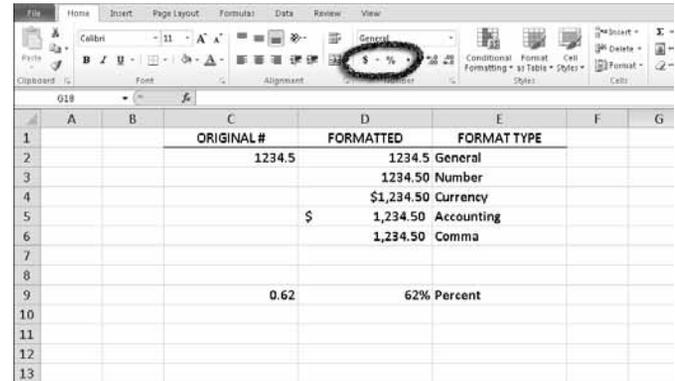


Figure 6-1

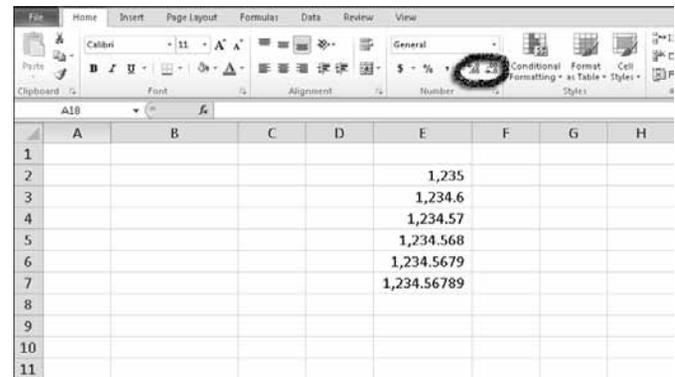


Figure 6-2

Adjust Column Width

1. To adjust the width of column headings, select the ones to be widened. If you want to adjust a single column, click any cell in that column.



If your worksheet contains many numbers, you can widen the columns to make the worksheet less cluttered. Columns that especially need widening are those containing cells with truncated text entries or numbers that Excel shows as #####.

2. Choose a method to adjust column width:
 - To manually change the width of columns, position the mouse pointer on the right boundary of the column heading until it turns into a double-ended arrow. Drag until the column is the width that you want. As you move the pointer, a balloon message displays the new width. In Figure 6-3, I'm expanding column A.



Excel displays cell width in characters and pixels instead of inches. The minimum column width is 0 characters, and the maximum is 255 characters.

- To set column width to a specific setting, choose Home→Format→Column Width in the Cells group. The Column Width dialog box, as shown in Figure 6-4, appears. Type the exact width you want; then click OK.
- To automatically change the column width so it fits the widest entry, double-click the boundary on the right side of the column heading or select the column and choose Home→Format→AutoFit Column Width in the Cells group. Excel sets the width slightly larger than the longest entry in the column.



The default column width is 8.43 based on the default 11-point Calibri font. If you change the default font type or size, Excel may also change the standard column width. You can manually set a default column width by choosing Home→Format→Default Width in the Cells group.

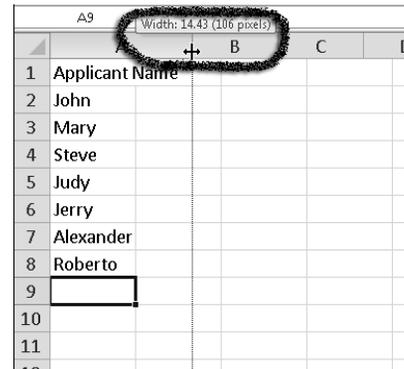


Figure 6-3



Figure 6-4

Change Row Height

1. Highlight the row headings whose height you want to adjust. If you want to adjust a single row, click any cell in that row.
2. Choose a method to adjust row height:
 - **To manually change the row height**, position the mouse pointer on the bottom boundary of the row heading until it turns into a double-ended arrow. Drag until the row is the height that you want. As you move the pointer, a balloon message displays the new height. In Figure 6-5, I'm increasing the height of rows 2–7.



Excel displays row height in characters and pixels instead of in inches.

- **To set row height to a specific setting**, choose Home⇨Format⇨Row Height in the Cells group. The Row Height dialog box, as shown in Figure 6-6, appears. Type the exact height you want; then click OK.
- **To automatically change the height of the row so it fits the tallest entry in the row**, double-click the boundary on the bottom of the row heading or choose Home⇨Format⇨AutoFit Row Height in the Cells group. Excel examines the row's contents and sets the height slightly larger than the tallest entry.



The default row height is 15 based on the default 11-point Calibri font. If you change the default font type or size, Excel may also change the standard row height. You can't manually set a default row height.

	A	B	C	D	E	F	G	H
1	Applicant Name							
2	Wally							
3	Steve							
4	Judy							
5	Jerry							
6	Alexander							
7	Roberto							
8								
9								

Figure 6-5



Figure 6-6

Align Data Horizontally and Vertically

1. Select the cells you want to align.
2. Choose Home and in the Alignment group, select one of these alignment buttons:
 - **Align Left:** Horizontally aligns the data along the left edge of the cell.
 - **Center:** Centers the data horizontally in the middle of the cell. If you modify the column width, the data remains centered to the new column width. Cells B4–F4 are center-aligned in Figure 6-7.
 - **Align Right:** Horizontally aligns the data along the right edge of the cell.



Values formatted as Accounting can display only as right-aligned. You can change alignment on all other formatting styles.

- **Top Align:** Aligns the data vertically along the top edge of the cell.
- **Middle Align:** Centers the data vertically in the cell.
- **Bottom Align:** This is the default option and aligns the data along the bottom edge of the cell. Notice the heading in Figure 6-8. Cell A1 shows the default bottom vertical alignment whereas cell A2 shows the top alignment.



(Optional) You can view additional alignment options and align both the horizontal and vertical alignment at the same time with the Format Cells dialog box. From the Home tab, click the Alignment group dialog box launcher. If necessary, click the Alignment tab and then set any desired alignment options; then click OK.

	A	B	C	D	E	F	G
1	2010 Testing Results						
2	January - June						
3							
4		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
5	January	416	237	653	447	206	
6	February	297	351	648	399	249	
7	March	223	188	411	313	98	
8	April	251	369	620	600	20	

Figure 6-7

	A	B	C	D	E	F	G
1	2010 Testing Results						
2	January - June						
3							
4		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
5	January	416	237	653	447	206	
6	February	297	351	648	399	249	
7	March	223	188	411	313	98	
8	April	251	369	620	600	20	

Figure 6-8

Create a Title by Merging Cells

1. Select the cell containing the data you want to merge and the cells you want to include in the merge. The data cell must be in the left cell of the selection and the other cells can't contain data. (See Figure 6-9.)
2. Choose Home → Merge and Center in the Alignment group. All the selected cells merge into one larger cell, and the data is centered horizontally.



If you select cells vertically and click the Merge and Center button, Excel merges the cells and vertically bottom aligns the data.



After clicking the Merge and Center button, you can change the alignment. Select the merged cell and click the Merge and Center button again to unmerge the cells.

Change Font Color

1. Select the cells you want to format.
2. Choose Home and in the Font group, click the Font Color drop-down arrow to select a color, as shown in Figure 6-10. Excel's Live Preview feature shows you the selected cells in the new font colors.



Choose More Colors to display the Colors dialog box from which you can select additional colors as well as create your own custom color.



Another method to select font color is through the Font dialog box launcher, which displays the Format Cells dialog box. Font color selection is on the Font tab.



If you choose a light font color, add background shading to make the font color show.

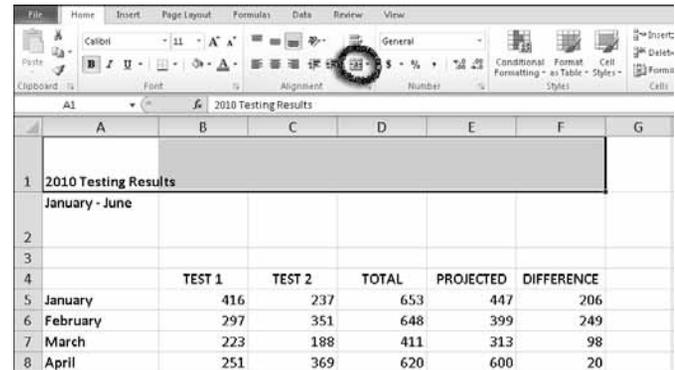


Figure 6-9

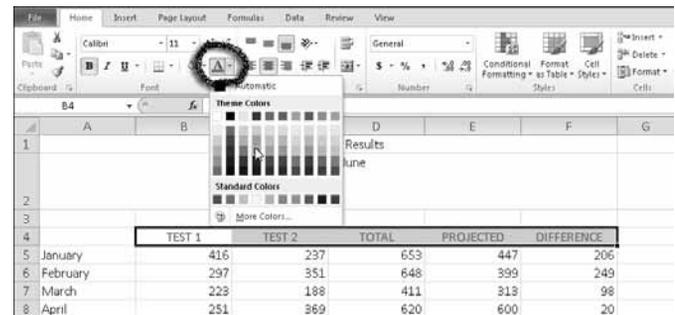


Figure 6-10

Select Font Attributes

1. Select the cells you want to format.
2. On the Home tab, open the Font drop-down list and choose a font. As you hover your mouse over a font face, Excel displays the selected cells in the different fonts.
3. From the Home and in the Font group, click the Font Size arrow and then choose a font size.



(Optional) Click the Increase Font Size or the Decrease Font Size buttons to increase or decrease the font size, respectively.

4. From the Home tab in the Font group, click a button such as Bold, Italics, or Underline. (See Figure 6-11.)



The Bold, Italics, and Underline buttons are *toggle* switches; one click turns them on, but if you click again, Excel turns them off. Shortcut keys for bold, italics, and underline are Ctrl+B, Ctrl+I, and Ctrl+U, respectively.



The default underline style is a single underline. Click the Underline button down arrow to choose Double Underline. Or, choose additional underline options through the Font dialog box launcher, which displays the Format Cells dialog box. Underline options appear on the Font tab.

Apply Cell Background Colors

1. Select the cells to which you want to add background color.
2. From the Home tab, in the Font group, click the down arrow next to the Fill Color button. A gallery of colors appears. (See Figure 6-12.)
3. Select the cell background color you want.



If you choose a dark background color, choose a light or white font color.



Choose No Fill to remove any cell background shading or choose More Colors to create your own shading color.

	A	B	C	D	E	F	G
1	2010 Testing Results						
2	January - Jang						
3							
4		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
5	January	416	237	653	447	206	
6	February	297	351	648	399	249	
7	March	223	188	411	313	98	
8	April	251	369	620	600	20	

Figure 6-11

	A	B	C	D	E	F	G
1	2010 Testing Results						
2	January - Jang						
3							
4		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
5	January	416	237	653	447	206	
6	February	297	351	648	399	249	
7	March	223	188	411	313	98	
8	April	251	369	620	600	20	

Figure 6-12

Wrap Text in a Cell

1. Select the cells you want to format.
2. Choose Home → Wrap Text in the Alignment group. As in Figure 6-13, if the selected cells contain more text than will fit the width of the cell, Excel displays it on multiple lines. Notice that Excel automatically increases the row height to accommodate the additional text lines.



Selecting the Shrink to Fit option on the Alignment tab of the Format Cells dialog box (instead of choosing the Wrap Text option) allows Excel to automatically change the font size in the selected cell. This forces the data to fit within the cell's current width.

Rotate Text

1. Select the cells you want to format.
2. Choose Home → Orientation in the Alignment group. A list of options appears:
 - **Angle Counterclockwise:** Angles the text in the cell from left bottom to right top.
 - **Angle Clockwise:** Angles the text in the cell from left top to right bottom.
 - **Vertical Text:** Centers the text and places one letter on top of the other, from top to bottom.
 - **Rotate Text Up:** Places the text on the lower-right side of the cell and runs it vertically up the cell.
 - **Rotate Text Down:** Places the text on the lower-left side of the cell and runs it vertically down the cell.



From the Alignment tab of the Format Cells dialog box, you can select a specific degree of rotation.

3. Choose an option. The selected cells take the rotation you choose. In Figure 6-14, you see the cells angled counterclockwise.

	A	B	C	D	E	F	G
1	2010 Testing Results						
2	January - Janz						
3							
4	Report date: August 16, 2010						
4		TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
5	January	416	237	653	447	206	
6	February	297	351	648	399	249	
7	March	223	188	411	313	98	
8	April	251	369	620	600	20	

Figure 6-13

	A	B	C	D	E	F	G
1	2010 Testing Results						
2	January - Janz						
3							
4	Report date: August 16, 2010	TEST 1	TEST 2	TOTAL	PROJECTED	DIFFERENCE	
5	January	416	237	653	447	206	
6	February	297	351	648	399	249	
7	March	223	188	411	313	98	
8	April	251	369	620	600	20	

Figure 6-14

Applying Additional Formatting Options

In Chapter 6, I discuss many of the Excel features designed to change the cell data appearance. In this chapter, you discover a few more of the exciting Excel formatting features created especially to make your worksheet more interesting and easier to read, such as

- ➔ Save time with the mini toolbar and the context-sensitive menu.
- ➔ Liven up the worksheet with effective use of borders and lines.
- ➔ Format cells containing dates and discover ways to use dates in calculations.
- ➔ Reduce redundancy with the Format Painter.
- ➔ Effectively use predefined styles and themes that carry a single design through all Office products.
- ➔ Specify conditional formatting to designate cell appearance if the cell value conditions are met.
- ➔ Add data visualizations to help you more easily determine the top or bottom values.

Chapter

7

Get ready to . . .

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Use the Mini Toolbar

1. Right-click a cell or a group of cells. As shown in Figure 7-1, the mini toolbar and a shortcut menu appear.



The mini toolbar contains many of the formatting commands available on the Home tab, making it unnecessary for you to actually click the Home tab.

2. Choose the formatting attribute you want to apply. The cells take the selected attributes, and the mini toolbar remains open for you to make additional selections.
3. Click any cell to close the mini toolbar.

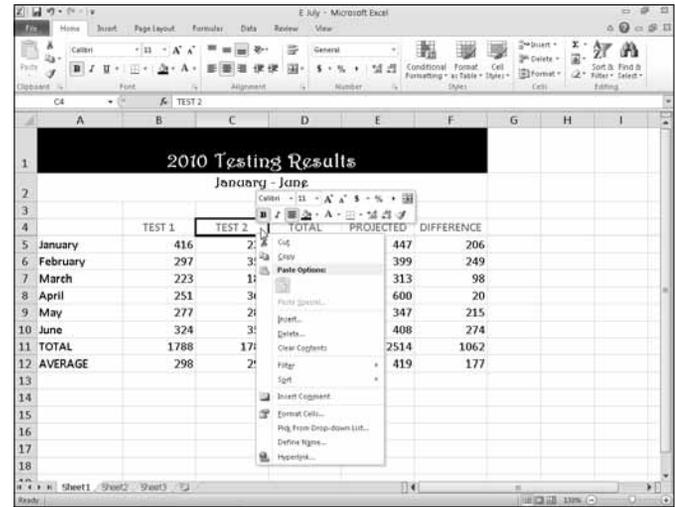


Figure 7-1

Change the Default Font

1. Click File and then click Options. The Excel Options dialog box appears.
2. If General isn't already selected, click it; then click the Use This Font drop-down list. (See Figure 7-2.)
3. Select the font type face you want to use in all new workbooks.



The Excel 2010 default font is Calibri 11 point.

4. (Optional) Open the Font Size drop-down list and choose the font size you want to use in all new workbooks.
5. Click OK twice and then exit and restart Excel.



See Chapter 14 for more information on setting Excel options.

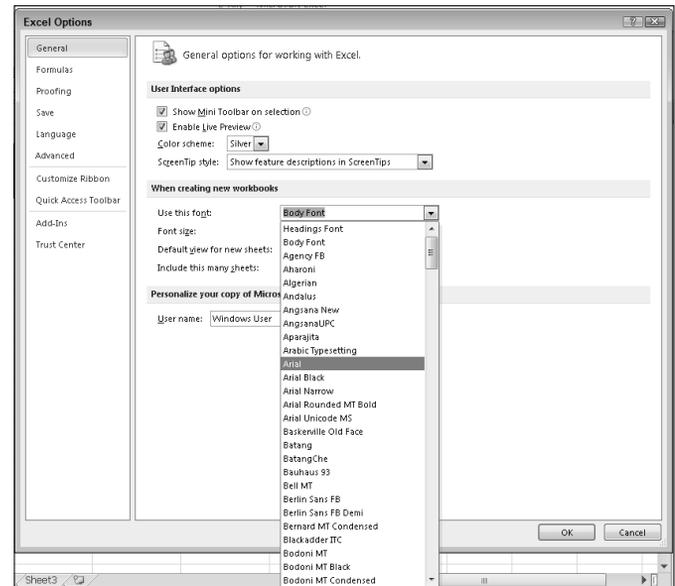


Figure 7-2

Place Borders around Cells

1. To add a border, select the appropriate cells.
2. Choose Home and in the Font group, click the arrow next to the Borders button. A variety of border options, as shown in Figure 7-3, appears.



The Borders ScreenTip may display Bottom Border, Top Border, or whatever border was last used.

3. Select the border you want. Excel applies the border to the selected cells.



For more border styles, colors, and options, choose More Borders to open the Format Cells dialog box.

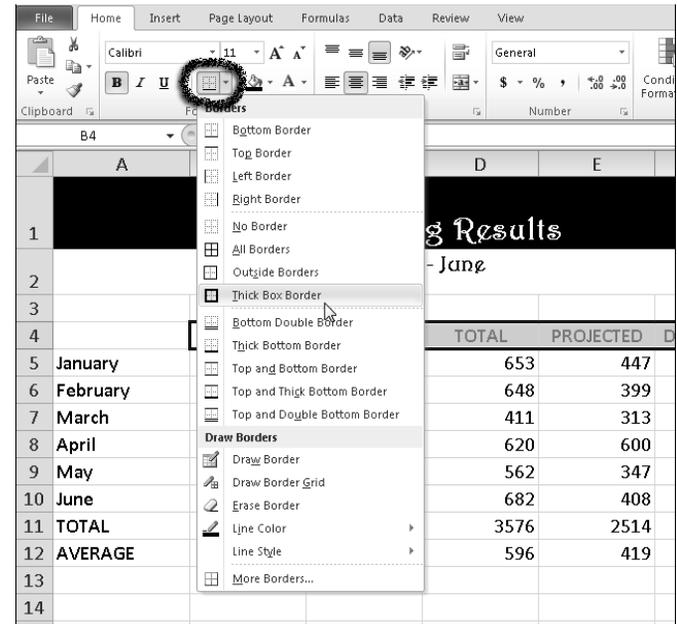


Figure 7-3

Work with Date Formats

1. Enter a date into a cell. Depending on what you type, Excel probably displays the date in a different format than you typed. Figure 7-4 shows some date examples.



Dates are actually numeric values, and you can use them in Excel calculations. (See the following section.)

2. From the Home tab, click the Number dialog box launcher, which displays the Format Cells dialog box.
3. Click the Date category. The right side of the screen displays a variety of different date formats, also shown in Figure 7-4.
4. Select a format for the selected cells and then click OK.



(Optional) Select Short Date or Long Date from the Number Format drop-down list in the Number group on the Home tab.

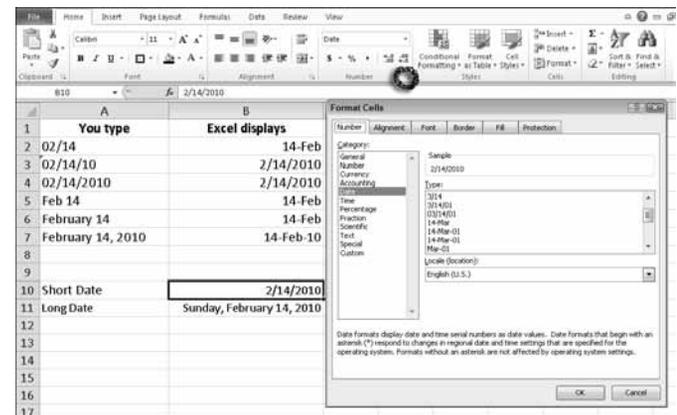


Figure 7-4

Use Dates in a Calculation

1. Enter a date into a cell. You can format the date any way you want.
2. Enter another date into another cell.



To have the cell dynamically display the current date, enter **=Today()**. To enter today's date as a static value, press Ctrl+; (semicolon) and press Enter. To enter the current time as a static value, press Ctrl+: (colon) and press Enter.

3. To find the difference between the two dates, create a formula that subtracts one date from another. For example, in Figure 7-5, I put the first date in cell B3 and the other date in cell B5; in cell C5, I entered the formula **=B5-\$B\$3** to find the difference between the dates.



Occasionally, Excel may display the formula result as a date instead of a value. If Excel does, choose Home and in the Number group from the Number Format list, choose Number.



To calculate the number of days between a specific date and the present time, enter the specific date in a cell, such as A1, and then in another cell, enter the formula **=NOW()-A1**.

Format Telephone, Zip Code, and Social Security Numbers

1. Select the cells you want to format.
2. Choose Home and then click the Number dialog box launcher. The Format Cells dialog box appears.
3. Click Special in the Category list. A list of special formatting options appears, as shown in Figure 7-6.
4. Choose the option you want and then click OK.

PLANT DATE	4/11/2010	
TYPE	GERMINATION DATE	DAYS TO GERMINATE
Sunflower	4/22/2010	11
Calendula	4/18/2010	7
Poppy	4/17/2010	6
Cornflower	4/23/2010	12
Marigold	4/22/2010	11
Zinnia	4/20/2010	9
Nasturtium	4/19/2010	8

Figure 7-5

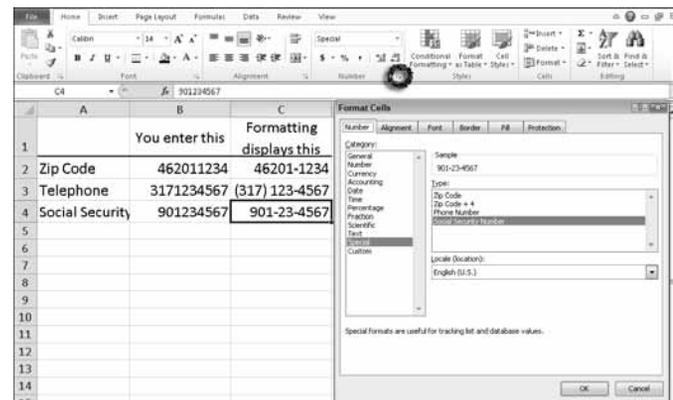


Figure 7-6

Copy Formatting

1. Click a cell containing formatting you want to copy.
2. Choose Home→Format Painter in the Clipboard group. The mouse pointer is a white plus sign along with a paint brush, as shown in Figure 7-7.
3. Click or drag across the cells you want to format. Excel immediately applies formats such as font, size, colors, borders, and alignment.



Double-click the Format Painter tool to lock it in so you can paint additional cells without having to reselect the tool. Click the Format Painter tool again to unlock it.



To quickly copy the width of one column to another column, select the heading of the first column, click the Format Painter tool, and then click the heading of the column where you want to apply the column width.

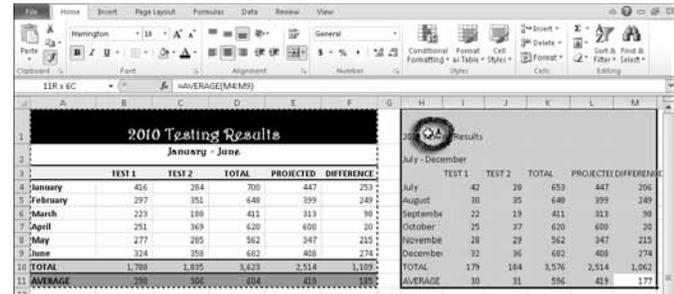


Figure 7-7

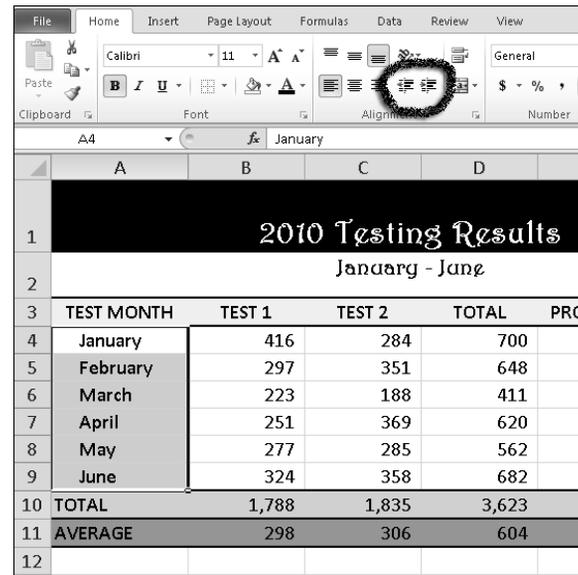


Figure 7-8

Indent Data in Cells

1. Select the cells you want to indent.
2. Choose Home→Increase Indent in the Alignment group. Each Increase Indent button click adds a small amount of space between the cell border and the data itself. (See Figure 7-8.) How Excel indents depends on how you format the cell:
 - If the data is left aligned, Excel indents from the left.
 - If the data is right aligned, Excel indents from the right.
 - If the data is centered, with the first click, Excel indents from the right; but subsequent clicks cause Excel to move the data from the left to the right.



Click the Decrease Indent button to remove indentation.

Use Cell Styles

1. Select the cells you want to format.
2. Choose Home→Cell Styles in the Styles group. In Figure 7-9, you see that Excel displays a gallery of predefined styles.



Excel styles include *Normal* (the default style for regular cell text), *Heading 1–Heading 4* (suitable for worksheet headings), and several accent styles.

3. Select the style you want to use.



Figure 7-9

Format Cells as a Table

1. Select the data you want to format as a table.



Typically, tables are used to manage related data by organizing it under column headers into multiple rows of similar data.

2. Choose Home→Format as Table in the Styles group. A gallery of Excel themed formats appears. (See Figure 7-10.)



Themes are predefined style sets that appear across the entire Office suite, providing consistency in your work appearance.

3. Select the table style and theme you want to use. The Format as Table dialog box appears.
4. Confirm that the selected cells contain the data you want to format.
5. If the top row of your selection contains the headers, make sure the My Table Has Headers option is selected.
6. Click OK. Excel formats the table and applies filter arrows to each header. (See Chapter 16 for information about filtering.) The Table Tools Design tab appears.

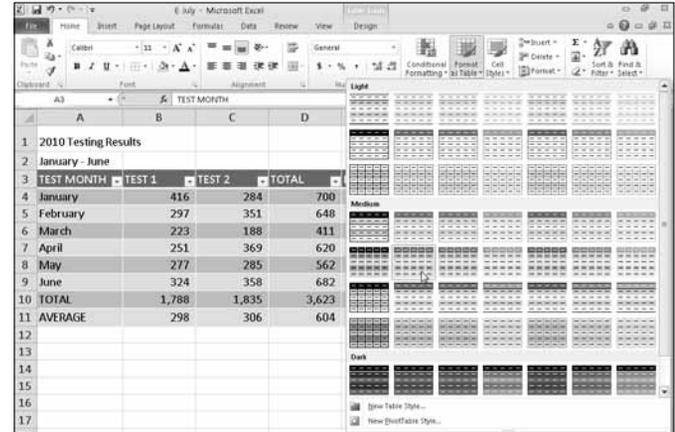


Figure 7-10

Specify Conditional Formatting

1. Select the cells to which you want to apply conditional formatting.



Reasons for using conditional formatting might include locating dates that meet a certain condition (such as falling on a Saturday or Sunday), specifying highest or lowest values in a range, or indicating values that fall under or over a specified amount.

2. Choose Home→Conditional Formatting→Highlight Cells Rules in the Styles group. A list of options appears.
3. Select the criteria you want to use. Criteria options include Greater Than, Less Than, Between, Equal To, Text That Contains, A Date Occurring, and Duplicate Values. A dialog box opens where you can specify the value. In Figure 7-11, in order to see which items went over budget, use the Less Than criteria.
4. Enter the values you want to reference in the text box. The number of boxes depends on the criteria you selected in Step 3. You can type a value here, such as 500 or 0, or you can reference a cell address, such as F13.
5. Click the drop-down arrow next to the format options so that you can specify the format options to employ if the condition you specified is TRUE. Live Preview shows you what your data will look like.



Click the Custom Format option where you can create your own format, selecting from font styles and color, numeric and other formats, borders, patterns, or background color.

6. Click OK. In Figure 7-12, you see formatting options applied to cells that meet the specified criteria of being less than 0 (meaning, in this example, items over budget).
7. Repeat Steps 2–6 to apply any additional conditions.



To clear conditional formats, go to the Home tab and in the Styles group, choose Conditional Formatting→Clear Rules→Clear Rules from Selected Cells.

	Actual	Budget	Variance
Cost of Sales			
FICA	42,913.26	30,018.97	(12,894.29)
Medicare	10,036.39	5,602.47	(4,433.92)
FUTA	2,413.92	2,269.33	(144.59)
SUI			(1,586.09)
Accrued Payroll Expense			(7,765.97)
Direct Labor Wages			(78,572.42)
Labor - Overtime			(35,066.49)
Workers Comp			(3,796.31)
Subcontractors	60,139.00		(60,139.00)
Job Materials	333,022.74	230,182.44	(102,840.30)
Job Equipment Rentals	14,252.55	34,289.25	20,036.70
Special Job Costs	-	317.50	317.50
Bonus for Job Evaluations	480.00	793.74	313.74
Vehicle/Job Expense	34,331.11	29,700.00	(4,631.11)
Total Cost of Sales	1,120,726.78	845,056.17	(275,670.61)

Figure 7-11

	Actual	Budget	Variance
Cost of Sales			
FICA	42,913.26	30,018.97	(12,894.29)
Medicare	10,036.39	5,602.47	(4,433.92)
FUTA	2,413.92	2,269.33	(144.59)
SUI	16,896.74	15,310.65	(1,586.09)
Accrued Payroll Expense	(7,765.97)	-	7,765.97
Direct Labor Wages	515,125.31	436,552.89	(78,572.42)
Labor - Overtime	82,690.49	47,624.00	(35,066.49)
Workers Comp	16,191.24	12,394.93	(3,796.31)
Subcontractors	60,139.00	-	(60,139.00)
Job Materials	333,022.74	230,182.44	(102,840.30)
Job Equipment Rentals	14,252.55	34,289.25	20,036.70
Special Job Costs	-	317.50	317.50
Bonus for Job Evaluations	480.00	793.74	313.74
Vehicle/Job Expense	34,331.11	29,700.00	(4,631.11)
Total Cost of Sales	1,120,726.78	845,056.17	(275,670.61)

Figure 7-12

Add Data Visualizations

1. Select the cells to which you want to apply formatting.
2. Choose Home→Conditional Formatting.
3. Select from the following options, as shown in Figure 7-13:
 - **Data Bars:** A gradient-style bar helps you see the value of a cell relative to other cells. The length of the data bar represents the value in the cell, so a longer bar represents a higher value and a shorter bar represents a lower value. The data bars have six color options designed to match Excel themes.
 - **Color Scales:** Designed to visually help you understand your data, color scales compare a range of cells by using two colors representing higher or lower values or three colors representing higher, middle, or lower values. The color scale bars come in six color themes, including red, yellow, and green. You can also create your own scheme by choosing More Rules under the Color Scales options.
 - **Icon Sets:** Icon sets help you classify data into three, four, or five categories with each icon representing a range of values such as higher, middle, and lower. As shown in Figure 7-14, icon sets include arrows, traffic lights, clocks, and even smiley faces.



The icon size you see depends on the cell font size. You may need to adjust the column width to accommodate the icon.



To clear data visualization formatting, select the formatted cells and then choose Home→Conditional Formatting→Clear Rules→Clear Rules from Selected Cells in the Styles group.

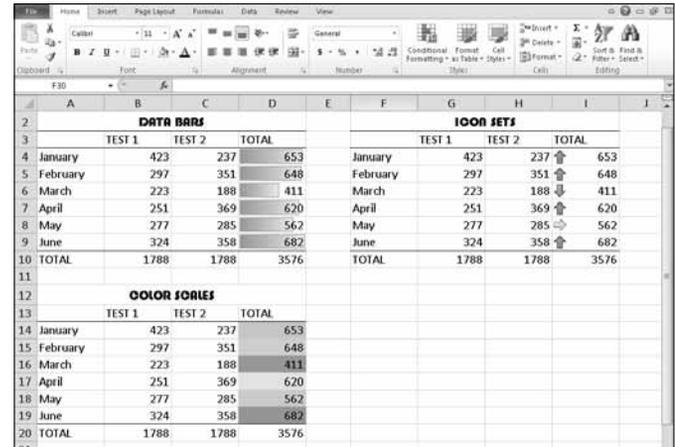


Figure 7-13

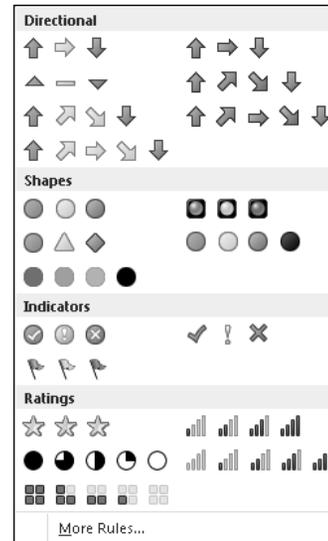


Figure 7-14

Designing with Graphics

Sometimes, even after adding font and style attributes to cell data, you still want to call extra attention to specific areas. Maybe you want to add an arrow to point to a problem area. What? You can't draw a straight line? That's okay because with Excel, you don't have to be a gifted artist to draw.

Whether you want to draw circles, squares, lines, or arrows, Excel provides tools to assist you, making the drawing process fun and easy.

In this chapter, you discover how to

- ➔ Draw arrows, shapes, and annotation boxes, plus add depth to your art using shading and dimension.
- ➔ Insert *Clip Art*, which is a collection of ready-made, computerized graphic illustrations.
- ➔ Insert a photograph or your company logo, making your viewers sit up and take notice of your worksheet.
- ➔ Use *WordArt*, stylized text objects, which add pizzazz to your worksheet.
- ➔ Manipulate and manage all the earlier mentioned graphic objects — by moving, resizing, cropping, rotating, recoloring, and using many other options.



Chapter

8

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Illustrate with Arrows

1. Choose Insert⇒Shapes in the Illustrations group. The Shapes gallery, as shown in Figure 8-1, appears.
2. From the Lines category, select a line style. For this example, I select an arrow. The mouse pointer turns into a plus sign.
3. Click and drag the mouse in any direction. Begin wherever you want the back end of the arrow to appear.
4. Release the mouse where you want the arrow head to appear. A small thin arrow appears on the worksheet with a circle at each end indicating the arrow is selected.
5. Choose Drawing Tools Format⇒Shape Outline in the Shape Styles group. A list of options appears:
 - **Theme or Standard Colors** changes the arrow line color.
 - **Weight** displays a submenu where you can select a different line thickness.
 - **Dashes** displays a submenu where can change the line style from a solid line to a dotted, dashed, or other style line.
 - **Arrows** displays a submenu where you can select different arrow head styles and sizes.



As you hover the mouse pointer over any option, Excel's Live Preview feature shows you the option as it applies to your arrow.

6. After making your selections, click anywhere in the worksheet to deselect the arrow. Click the arrow again to reselect it.



Press the Delete key to delete the selected arrow.

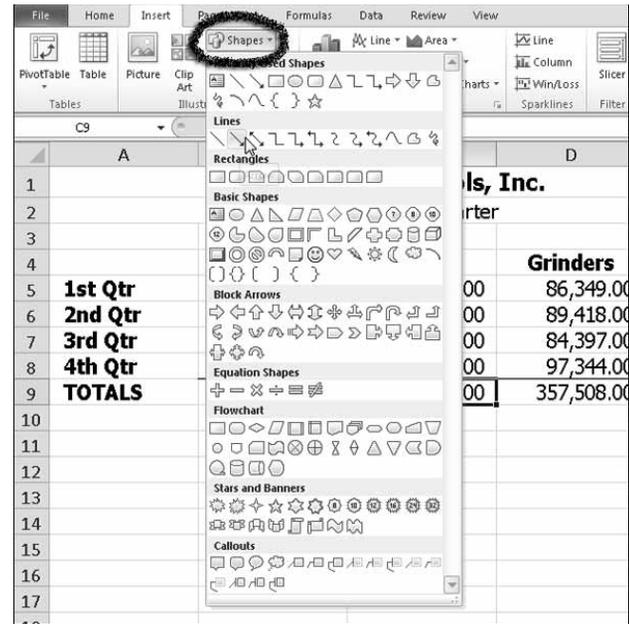


Figure 8-1

	A	B	C	D	E
1	I Love My Tools, Inc.				
2	Sales by Quarter				
3					
4		Drills	Saws	Grinders	TOTALS
5	1st Qtr	145,632.00	259,246.00	86,349.00	491,227.00
6	2nd Qtr	184,377.00	285,170.00	89,418.00	558,965.00
7	3rd Qtr	179,549.00	285,170.00	84,397.00	549,116.00
8	4th Qtr	235,679.00	462,394.00	97,344.00	795,417.00
9	TOTALS	745,237.00	1,291,980.00	357,508.00	2,394,725.00
10					
11					
12					
13					
14					

Figure 8-2

Draw with Shapes

1. Choose Insert → Shapes in the Illustrations group. The Shapes gallery appears. Select a shape.
2. Click and drag the mouse in any direction. Release the mouse. The shape appears onscreen with eight selection handles around it, along with a rotation handle.



To constrain the shape, hold down the Shift key while clicking and dragging the shape.

3. (Optional) If you want the shape to contain text, with the shape still selected, begin typing the desired text.
4. Choose Drawing Tools Format → Shape Fill. A list of options appears:
 - **Theme or Standard Colors:** Changes the fill color.
 - **No Fill:** Becomes an outline without fill color.
 - **Picture:** Opens the Insert Picture dialog box where you can select an image to display inside the shape.
 - **Gradient:** Displays a gallery of gradient fills.
 - **Textures:** Shows a gallery of texture fills (see Figure 8-3).

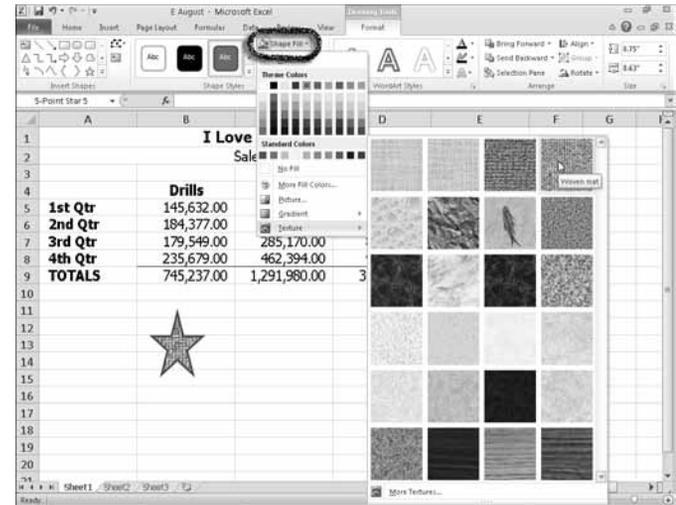


Figure 8-3

Insert Saved Images

1. Choose Insert → Picture in the Illustrations group. The Insert Picture dialog box opens.
2. Locate and select the picture you want to place in the worksheet.
3. Click the Insert button. Excel places the picture on the worksheet with selection handles surrounding the image. (See Figure 8-4.)



Figure 8-4

Add Artistic Effects

1. Select the image you want modified.
2. Choose Picture Tools Format → Artistic Effects in the Adjust group. A gallery of photo special effects appears. As you hover your mouse pointer over any effect, a preview of it on your image appears. In Figure 8-5, I put two identical pictures side by side so you can see the original on the right as well as the one with the special effect, which in this example, is Glow Edges.
3. Choose the effect you want.



Don't like what you've done to an image? Choose Picture Tools Format → Reset Picture. All cropping, resizing, color adjustment, special effect, or any other changes to the image disappear!

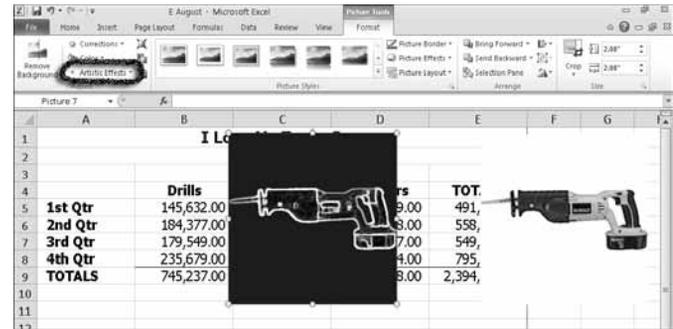


Figure 8-5

Use Picture Styles

1. Select the picture you want to manage. Handles appear around the selected picture.
2. Choose Picture Tools Format and find the Picture Styles group.
3. Click the More button, located directly under the Picture Styles scroll buttons, to see the complete gallery of options, as shown in Figure 8-6. As you hover your mouse pointer over an option, you see your picture with a preview of the style.
4. Select one of the preformatted shapes or three-dimensional effects.



Pick additional picture enhancements by choosing Picture Tools Format, locating the Picture Styles group, and then choosing Picture Shape, Picture Border, or Picture Effects.

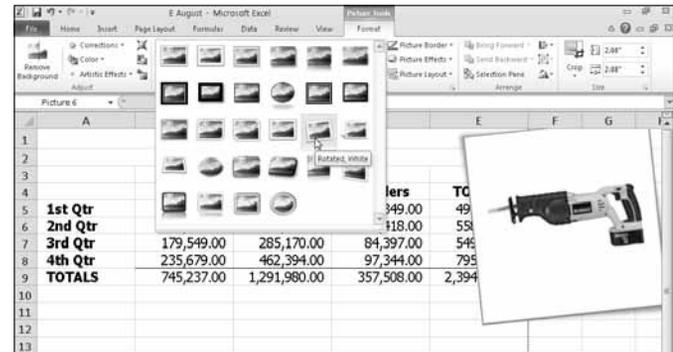


Figure 8-6

Select a Transparent Color

1. Select the image you want modified and then choose Picture Tools Format → Color in the Adjust group. A gallery of color adjustments appears.
2. Choose Set Transparent Color. The mouse pointer turns into a pointer with an arrow on the end of it.
3. On the image, click the image color you want transparent. In Figure 8-7, you see the original image on the right and the one with the transparency on the left. On the left image, I clicked the white background, so anything white in the image became transparent. You can now see data and cell gridlines through the image background.



You can also select color changes. For example, you may want to change both the tone and the saturation levels. Choose Picture Tools Format → Color and then make a selection. For additional color options, from the Color Adjustment gallery, choose More Variations.

Change a Picture

1. Select the image you want to replace.
2. Choose Picture Tools Format → Change Picture in the Adjust group. The Insert Picture dialog box appears, as shown in Figure 8-8.
3. Locate the picture you want and click the Insert button. Excel replaces the existing photo with the new image, retaining the picture style you've selected already.



The new image does *not* pick up the artistic effects, transparency, cropping, or coloring modifications from the previous image.

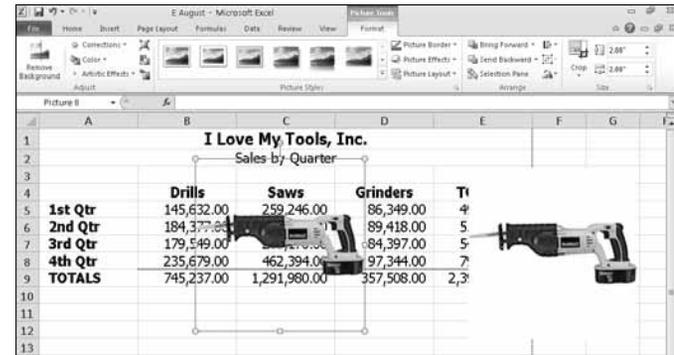


Figure 8-7

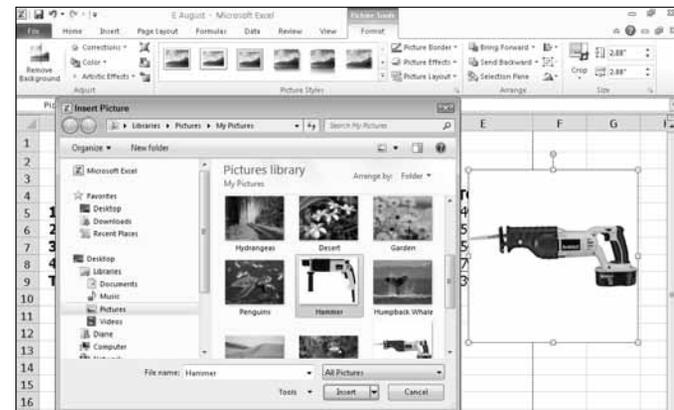


Figure 8-8

Annotate with Text Boxes

1. Choose Insert → Text Box in the Text group. The mouse pointer looks like an upside-down cross.
2. Click and drag diagonally on the worksheet to draw the box the approximate size you want. You can resize or move it later if necessary. You see a text box like the one shown in Figure 8-9. A blinking cursor appears inside the text box.
3. Type the desired text and then click outside the text box to deselect it.



Depending on the text box size and location, the text box may cover worksheet cells. See the “Manipulate Graphics” section, later in this chapter, to see how to move the text box out of the way.

4. Right-click the text box and choose Format Shape. The Format Shape dialog box (as shown in Figure 8-10) opens. In this dialog box, choose from any of these formatting options or the other options in the dialog box:
 - To add a background fill to the text box, click Fill and select an option from the right side of the dialog box.
 - To change the border color that surrounds the text box, click Line Color and choose a line color option.
 - To change the style of line surrounding the text box, click Line Style and choose any desired options.
 - To add a shadow around the text box, click Shadow and then choose an option from the Presets drop-down list.
 - Make the text box three-dimensional with choices in the 3-D Format and 3-D Rotation tabs.
5. From the Text Box tab, select Resize Shape to fit text. As you add or remove text from the text box, the box expands or contracts to fit around the text.
6. Click the Close button when you finish making your selections.



Figure 8-9

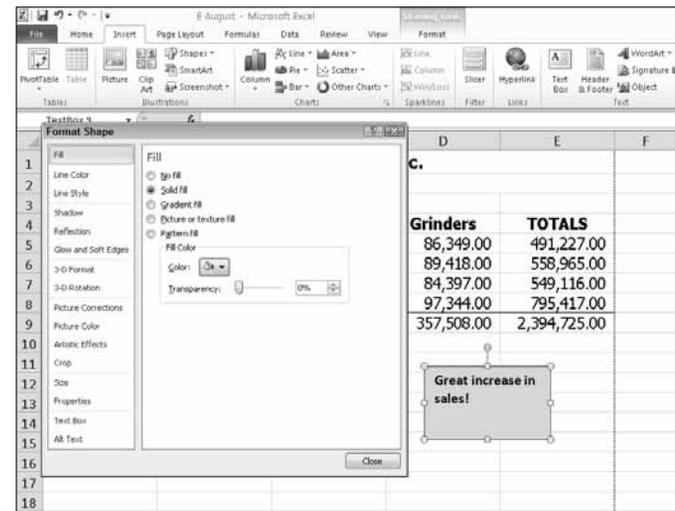


Figure 8-10

Add Clip Art

1. Choose Insert→ClipArt in the Illustrations group. The Clip Art task pane appears, as shown in Figure 8-11.
2. In the Search For box, type a brief description of the image type you want, such as food, buildings, animals, or people.
3. If you want to include Office.com in your search, select the Include Office.com Content check box.
4. Choose the type of image you want from the Results Should Be drop-down list. Excel can locate Clip Art, photographs, movies, or sound files.
5. Click the Go button. Excel displays a number of images representing the art you specified.
6. Select the desired image. Excel places the image onto your worksheet, as shown in Figure 8-12.
7. Click the Close (X) button to close the Clip Art task pane.

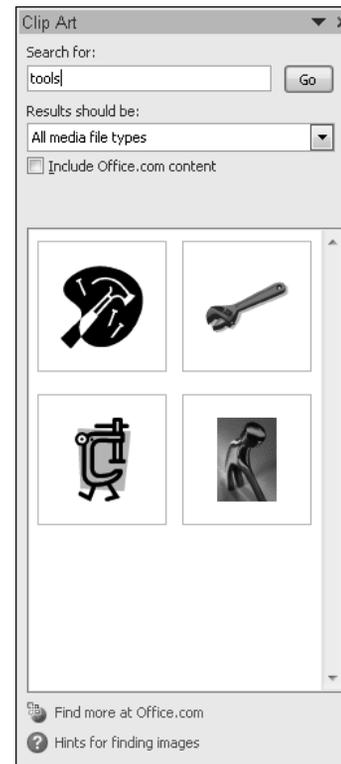


Figure 8-11

	A	B	C	D	E	F	G
1	I Love My Tools, Inc.						
2	Sales by Quarter						
3							
4		Drills	Saws	Grinders	TOTALS		
5	1st Qtr	145,632.00	259,246.00	86,349.00	491,227.00		
6	2nd Qtr	184,377.00	285,170.00	89,418.00	558,965.00		
7	3rd Qtr	179,549.00	285,170.00	84,397.00	549,116.00		
8	4th Qtr	235,679.00	462,394.00	97,344.00	795,417.00		
9	TOTALS	745,237.00	1,291,980.00	357,508.00	2,394,725.00		
10							
11							
12							
13							
14							
15							
16							

Figure 8-12

Create WordArt

1. Choose Insert⇒WordArt in the Text group. A gallery of options appears.
2. Select a style. A box appears on the worksheet. See Figure 8-13.
3. Type the text you want. The text shrinks to fit into the existing box, but you can resize it later.
4. With the object selected, click the Drawing Tools Format tab.
5. Use the buttons in the WordArt Styles group to modify the WordArt text characteristics. All options include Live Preview, so while you hover your mouse pointer over any option, you see its effect on your WordArt object:

- **Text Fill** changes the text color, gradient, or pattern.
- **Text Outline** modifies the outer edges of the text.
- **Text Effects** applies special effects, such as shadow, reflection, 3-D rotation, and bevel. See Figure 8-14.



To wrap a longer line of text into a circle or a wave-shaped object, choose a Transformation from the Text Effects drop-down list.

6. To apply a background to the WordArt object, choose Drawing Tools Format and in the Shape Styles group, click the More button, located directly under the Shape Styles scroll buttons. A gallery of themed styles appears.
7. Select a background option or click the Other Theme Fills arrow to select from several gradient options.



To change multiple object characteristics, choose Drawing Tools Format in the Shape Styles group, click the dialog box launcher. The Format Shape dialog box opens.



Figure 8-13

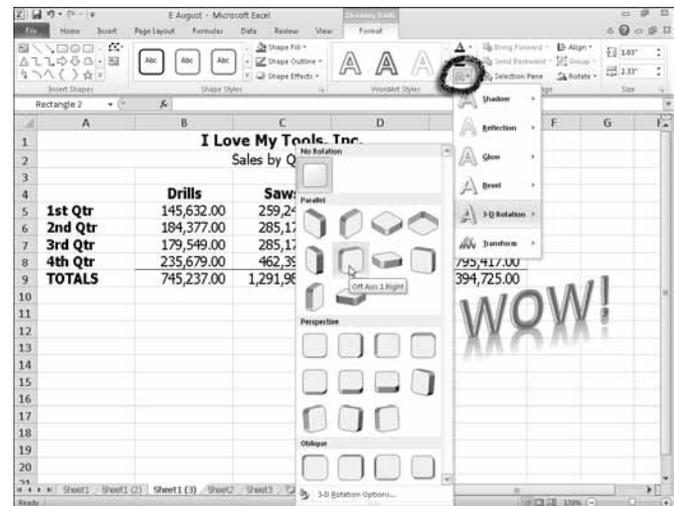


Figure 8-14

Manipulate Graphics

1. Select the object you want to modify. Selection handles appear around the object.
2. Perform any of the following actions:
 - **Delete:** Press the Delete key on the keyboard.
 - **Move:** Position the mouse pointer over the object, but not on the handles. Click and drag the object to the desired location.



(Optional) Nudge a selected object by using the up, down, left, or right arrow keys.

- **Resize:** To resize an object, position the mouse pointer over one of the white selection circles and drag the circle until the object reaches the desired size. Use the top or bottom middle handle to resize the object height. Use the middle left or right handle to resize the object width. Use a corner handle to resize both the height and width. See Figure 8-15.



If you want to constrain the sizing when resizing an object, hold down the Shift key.

- **Rotate Shape:** Position the mouse pointer over the green rotation handle until the pointer turns into a circle. Then, drag the green rotation handle until the object rotates to the desired angle. See Figure 8-16. This doesn't apply to arrows.
- **Rotate Arrow:** Drag the white selection handles in the direction you want to rotate.



To constrain rotation to 15-degree angles, press and hold the Shift key while rotating the object.



Figure 8-15

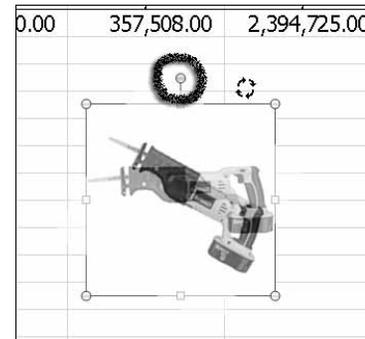


Figure 8-16

Crop an Image

1. Select the image you want to modify and then choose Picture Tools Format → Crop in the Size group.
2. Position the pointer over one of the crop handles. Crop handles appear at each corner, in the middle of each side, top, and bottom, as shown in Figure 8-17.
3. Click and drag a crop handle inward to crop an area of the image. In the image on the right, I'm cropping the background away from the bird.
4. Release the mouse button.
5. Continue cropping other edges of the image, as needed, and then click the Crop button again to turn off the Crop tool. Excel crops the image.

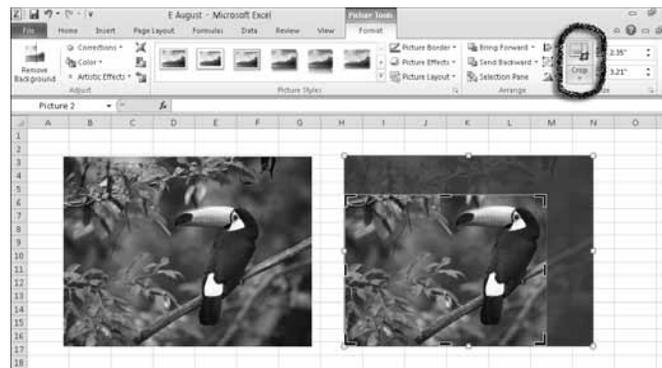


Figure 8-17

Flip an Object

1. Select the object you want to flip.
2. Choose Picture Tools Format → Rotate in the Arrange group. A menu of choices appears. While you hover your mouse pointer over a menu option, Excel previews the effect on the picture. In Figure 8-18, in the image on the left, the bird faces left, and after flipping the image on the right, the bird faces right.
3. Select from the following options:
 - Rotate Right 90°
 - Rotate Left 90°
 - Flip Vertical
 - Flip Horizontal

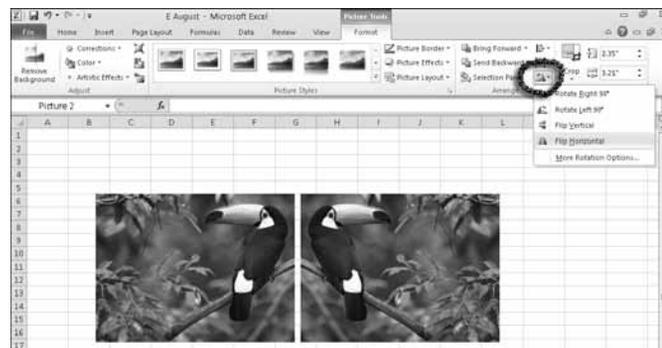


Figure 8-18



Choose More Rotation Options to display the Format Picture dialog box where you can set many options precisely including size, rotation, and cropping.

Align Multiple Graphics

1. Select the first object, and then hold down the Ctrl key and select one or more subsequent objects.



For assistance in selecting multiple objects, select one object and then choose Drawing Tools Format → Selection Pane.

2. Choose Drawing Tools Format → Align in the Arrange group. A list of options appears. (See Figure 8-19.) Here are some of the options:

- **Align Left:** Aligns two or more objects so their left edges are the same as the leftmost selected object.
- **Align Right:** Aligns two or more objects so their right edges are the same as the rightmost selected object.
- **Align Top:** Aligns two or more objects so their top edges are the same as the highest selected object.
- **Align Bottom:** Aligns two or more objects so their bottom edges are the same as the lowest selected object.
- **Distribute Horizontally:** Aligns the objects left and right so they're an equal distance horizontally from each other. You must have at least three selected objects to use this feature.
- **Distribute Vertically:** Aligns the objects up and down so they're an equal distance vertically from each other. You must have at least three selected objects to use this feature.

3. Choose a menu option. Figure 8-20 shows three arrows aligned along the bottom edges and with the space between them horizontally evenly distributed.

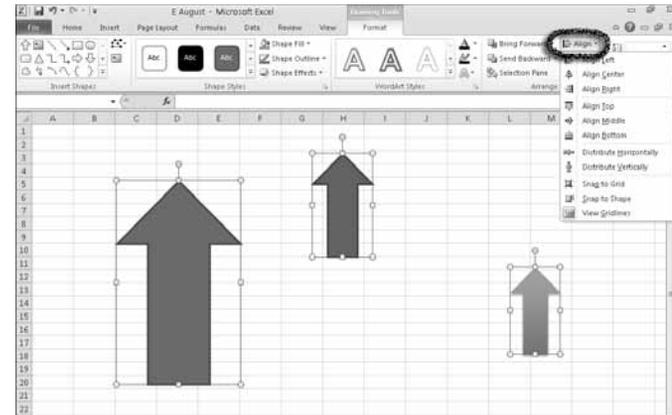


Figure 8-19

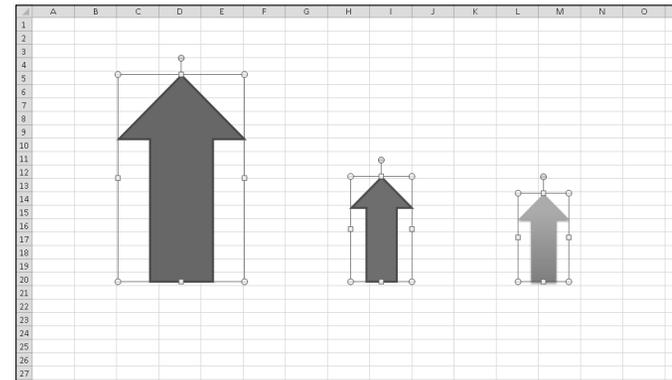


Figure 8-20

Control Object Order

1. Select the object you want to move and then choose Drawing Tools Format→Bring Forward in the Arrange group. A menu of options appears.

 (Optional) Choose Send Backward to move a selected object behind another one.

2. Choose Bring Forward or Bring to Front. The selected object moves on top of the other object(s). See Figure 8-21 where, on the left, you see the original arrangement of the smallest arrow hidden by the larger one. On the right, you see that by moving the larger arrow backward, the smaller arrow becomes visible.

 You can ungroup a group of objects at any time and then regroup them later. To ungroup the object, choose Drawing Tools Format→Group→Ungroup in the Arrange group.

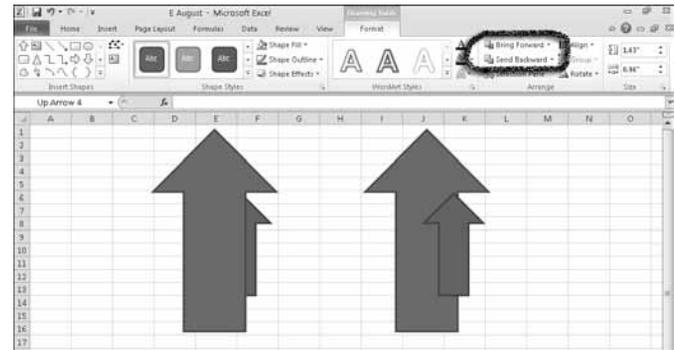


Figure 8-21

Group Objects

1. Select two or more objects.

 Alternatively, choose Home→Find and Select→Select Objects in the Editing group. Next, use the mouse to draw an imaginary box around the objects you want to select. Click the Select Objects option again to turn off the feature.

2. Choose Drawing Tools Format→Group→Group in the Arrange group. The selected objects become one object with a single boundary box around it. In Figure 8-22, you see three separate objects on the left, and on the right, you see the rectangle, circle, and triangle grouped as one.

 When you group objects, you combine them; therefore, any changes you make affect the entire object. Changes include move, resize, flip, rotate, crop, and any style, shadow, or color changes. You can also create groups within groups to help you build complex drawings.

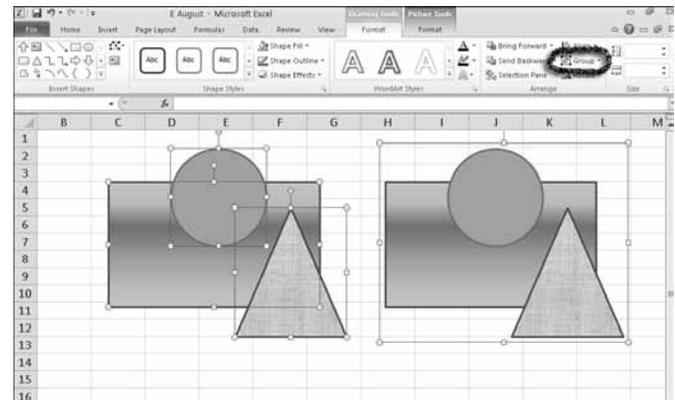


Figure 8-22

Managing Workbooks

I want to begin by clearing up a couple terms. A *worksheet*, sometimes called a *spreadsheet*, is a collection of cells that can have more than 1 million rows down and over 16,000 columns across. Each cell of each sheet can contain over 32,000 characters.

Secondly, a *workbook* is a collection of worksheets. By default, each time you create a new Excel workbook, it contains three worksheets. Each workbook, however, can have an almost unlimited number of worksheets, limited only by your computer memory. The resulting possible number of cells in a single workbook is too huge to even dream about, but the fact remains you *could* create a single huge workbook of all your work in Excel. Realistically, however, you'll probably have a number of different workbooks each with a number of worksheets.

Excel makes working with multiple worksheets easy. You can maneuver between the sheets by clicking a sheet tab. Excel even provides navigation buttons for situations when you have a lot of tabs. This chapter is primarily about working with multiple sheets. You discover how to insert, delete, move, and copy worksheets, rename the tabs that reference them, and create formulas that reference other worksheets or workbooks. Finally, you discover how to create hyperlinks to jump to Web sites, other cells, or workbooks and how to create an instant e-mail.

Chapter

9

Get ready to . . .

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Insert Additional Worksheets

1. Choose Home → Insert → Insert Sheet in the Cells group. Excel automatically inserts a new, blank worksheet on top of the currently selected sheet. (See Figure 9-1.) Excel automatically assigns the next number — such as Sheet4.

 Optionally, just click the Insert Worksheet tab; it's located after the last worksheet tab.

2. Click a different worksheet tab. That worksheet becomes the current sheet.

 Alternatively, press Ctrl+PageUp to move to the previous worksheet or press Ctrl+PageDown to move to the next worksheet.

 Another way to insert a worksheet is to right-click a worksheet tab and choose Insert from the resulting shortcut menu. The Insert dialog box opens. Choose Worksheet and then click OK.

3. If your workbook has more worksheets than you can see at the bottom, click the First, Previous, Next, or Last navigation buttons in the bottom-left corner of the workbook.

Delete Worksheets

1. Choose Home → Delete → Delete Sheet in the Cells group. If any cells in the selected sheet have data in them, a warning message appears, as shown in Figure 9-2.

 A worksheet with no data in it doesn't display the warning message.

2. Click the Delete button.

 Use caution when deleting worksheets. The Undo feature doesn't work with the Delete Sheet function.

 Another way to delete a worksheet is to right-click the worksheet tab and choose Delete from the resulting shortcut menu.

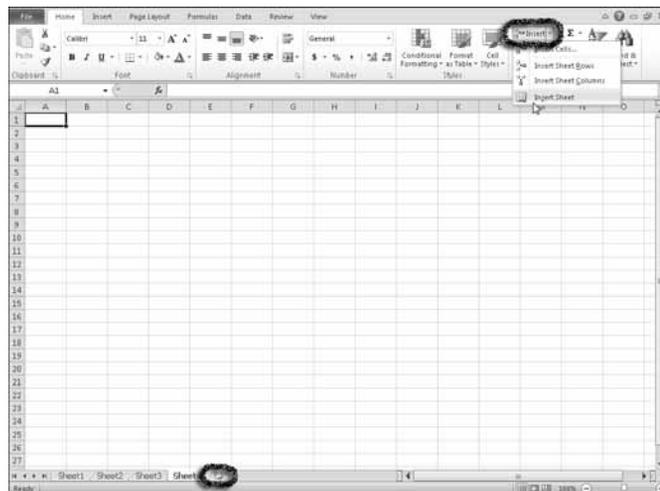


Figure 9-1

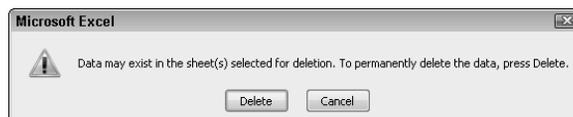


Figure 9-2

Rename Worksheets

1. Click anywhere on the sheet you want to rename.
2. Choose Home→Format→Rename Sheet in the Cells group (see Figure 9-3). The worksheet tab becomes highlighted; leave it highlighted so that you can replace it with a new name.

 Alternatively, right-click the worksheet tab and choose Rename.

3. Type a unique name for the worksheet. Remember that two worksheets in a single workbook can't have the same exact name. Press Enter to accept the change.

 Be descriptive, but keep the name short. When you have lots of worksheets with long names, it can be more difficult to maneuver from one to the next.

Copy Worksheets

1. Click anywhere on the worksheet you want to duplicate.
2. Choose Home→Format→Move or Copy Sheet. The Move or Copy dialog box appears.

 Alternatively, right-click the worksheet tab and choose Move or Copy.

3. Select the Create a Copy check box. (See Figure 9-4.)
4. In the Before Sheet list box, select where in the order of the worksheets you want the duplicate sheet placed.
5. Click OK. Excel duplicates the sheet and gives it the same name as the copied sheet plus numbers it sequentially.

 To change the worksheet tab order, drag the worksheet tabs left or right.

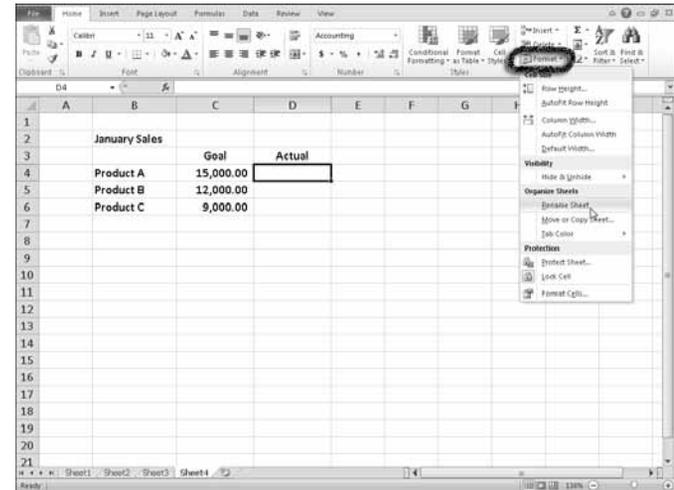


Figure 9-3

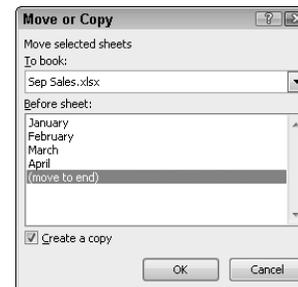


Figure 9-4

Move or Copy Worksheets to a Different Workbook

1. Open the workbook to which you will move the worksheet and then open the workbook that contains the worksheets you want to move.
2. Click anywhere on the worksheet you want to move. If you don't see the sheet you want, click the tab navigation buttons until you see it, and click the sheet tab.

 If you want to move or copy multiple worksheets, hold down the Ctrl key and click additional tabs. If you want to move or copy all the existing worksheets to another workbook, right-click a sheet tab and choose Select All Sheets.

3. Choose Home → Format → Move or Copy Sheet. The Move or Copy dialog box opens.

 Alternatively, right-click a selected tab and choose Move or Copy.

4. Click the To Book drop-down list, as shown in Figure 9-5, and select the workbook to which you want to move or copy the sheets.
5. If you want to duplicate the sheets to the other workbook, select the Create a Copy check box.
6. In the Before Sheet list box, select where in the order of the existing worksheets you want the sheet placed.
7. Click OK. Excel moves or copies the worksheets to the other workbook. In Figure 9-6, the Customer List sheet was moved from the Customer Table workbook to the Names and Address workbook.



If you chose to copy a sheet to another workbook in which a sheet has the same name, Excel keeps the same name but adds a sequential number to the end.



You can't copy or move a worksheet created in an Excel 2010 or 2007 workbook to one created in an earlier version of Excel.

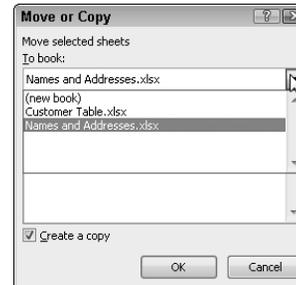


Figure 9-5

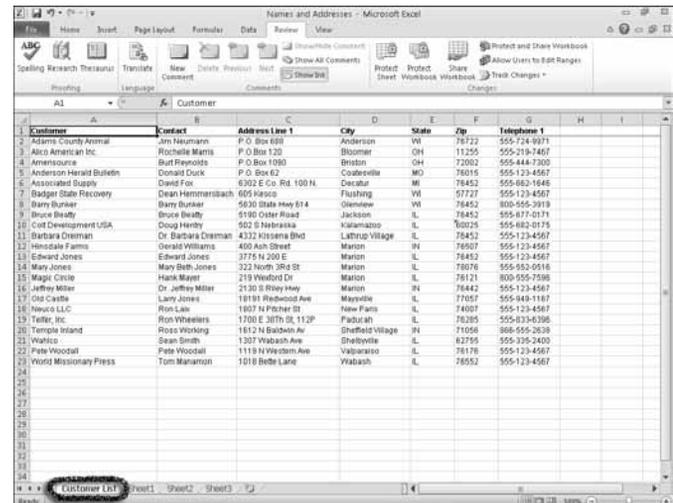


Figure 9-6

Hide and Unhide Worksheets

1. Click anywhere on the worksheet that you want to hide.
2. Choose Home→Format→Hide & Unhide→Hide Sheet. Excel hides the worksheet from view. All formula references to a hidden worksheet are still valid even when a worksheet is hidden.

 Alternatively, right-click a worksheet tab and choose Hide (or Unhide).

3. To unhide the worksheet, choose Home→Format→Hide & Unhide→Unhide Sheet. A dialog box, as shown in Figure 9-7, appears listing all currently hidden worksheets in the active workbook.
4. Select the worksheet you want to unhide and click OK.

 When a worksheet with a colored tab is the current worksheet, Excel doesn't display the tab color in full. Excel displays only a colored line under the tab name. The tab becomes full color when the worksheet isn't the active one.

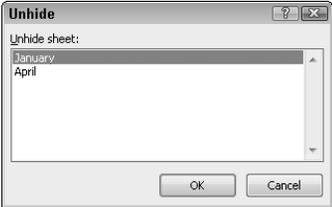


Figure 9-7

Change Worksheet Tab Colors

1. To recolor the tab of a worksheet, click anywhere in that worksheet.
2. Choose Home→Format→Tab Color. The Tab Color gallery, as shown in Figure 9-8, appears.

 Alternatively, right-click a worksheet tab and choose Tab Color.

3. Select a color.

 Choose No Color to remove a tab color.

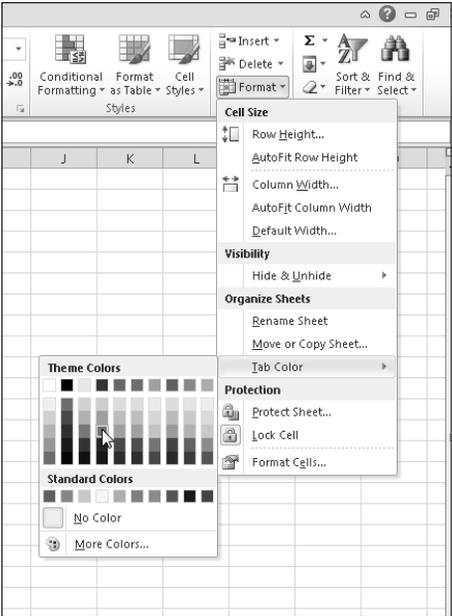


Figure 9-8

Generate References to Other Worksheets

1. Select the cell into which you want to enter a reference.
2. Perform one of the following actions:
 - To display a value located in another cell on the same worksheet, type the equal sign and then the cell address. For example, type =B45 and press Enter. If the value in B45 changes, the cell with the reference to B45 also changes.
 - To display a value located in a cell on a different worksheet but in the same workbook, type the equal sign. Next, click the worksheet tab containing the cell you want to reference and then click the actual cell you want to reference. Press Enter. Excel displays the equal sign, the worksheet name, an exclamation point, and the cell reference. (See Figure 9-9.)
 - To include a cell located on a different worksheet, but in the same workbook, in a formula, begin to type the formula. In the place where you want to position the distant cell reference, click the worksheet containing the cell and then click the actual cell. Follow this with the remainder of the formula. Figure 9-10 illustrates an example of a formula using a reference to a different worksheet.



Formulas referencing other worksheets or other workbooks can also be compound formulas or used in a function.

The screenshot shows a spreadsheet with columns A through D and rows 1 through 14. The formula bar at the top displays '=January!D7'. The cell B1 contains the formula '=January!D7'. The cell D7 contains the value '7'.

	A	B	C	D
1	January	=January!D7		
2	February			
3	March			
4	April			
5	May			
6	June			
7	July			7
8	August			
9	September			
10	October			
11	November			
12	December			
13				
14				

Figure 9-9

The screenshot shows a spreadsheet with columns A through E and rows 1 through 21. The formula bar at the top displays '=January!D7*Tax Rates!A1'. The cell C1 contains the formula '=January!D7*Tax Rates!A1'. The cell B1 contains the text 'SALES', cell C1 contains 'SALES W/TAX', cell B2 contains '27,023.00', and cell B3 contains '14,693.00'. The worksheet tabs at the bottom are 'January', 'February', 'March', 'April', 'Totals', and 'Tax Rates'.

	A	B	C	D	E
1		SALES	SALES W/TAX		
2	January	27,023.00	=January!D7*Tax Rates!A1		
3	February	14,693.00			
4	March				
5	April				
6	May				
7	June				
8	July				
9	August				
10	September				
11	October				
12	November				
13	December				
14					
15					
16					
17					
18					
19					
20					
21					

Figure 9-10

Cross-Reference Other Workbooks

1. Open the workbook to which you will refer. For simplicity sake, I call this *Workbook2*.
2. Click the desired cell in the workbook where you want to create a reference. Call this *Workbook1*.
3. In *Workbook1*, begin the formula or reference with an equal sign.
4. If using a function or formula, enter any portion that you want to precede the cross-reference.
5. Click the cell that you want to reference from *Workbook2*.
6. Finish the remainder of the formula or press Enter. Excel displays the equal sign, an apostrophe, and then the *Workbook2* filename in brackets followed by the worksheet name, a closing apostrophe, an exclamation point, and the absolute cell reference. For example, `='[Monthly Sales by Product.xlsx] January'!E4` refers to the value in cell E4 of the sheet January in the Excel file named Monthly Sales by Product. See Figure 9-11 for an example of a cross-reference.



Excel uses absolute references (with dollar signs) when referring to other workbooks.

When you open a workbook containing a cross-reference, Excel displays a message, such as the one shown in Figure 9-12, prompting you with a security alert so it can determine whether to update the cross-referenced cell. Click the Enable Content button if you want Excel to check the originating workbook for changes to the referenced cell. You may see another confirmation message.

	A	B	C	D	E
1	WIDGET COLOR	January	February	March	
2	Green	193,402.09			
3	Blue				
4	Yellow				
5					
6					
7					
8					

Figure 9-11

	A	B	C	D	E	F	G	H
1	WIDGET COLOR	January	February	March				
2	Green	193,402.09	199,977.76	149,273.66				
3	Blue	195,978.21	205,977.09	197,041.23				
4	Yellow	201,857.55	171,578.92	215,878.37				
5								
6								
7								
8								
9								
10								

Figure 9-12

Insert a Hyperlink

1. Select a cell or graphic object and then choose Insert > Hyperlink in the Links group. The Insert Hyperlink dialog box appears, as shown in Figure 9-13.



If you type a Web address into a cell, Excel automatically creates a hyperlink.

2. If you clicked a blank cell in Step 1, in the Text to Display box, you can type the text you want the cell to display. If you started with a cell already containing data or an object, you can change the displayed text.



Click the ScreenTip button to enter text you want displayed, such as a prompt or hint that appears whenever the user hovers the mouse pointer over the link.

3. Select an option:
 - If you want to link to a different file, locate and select the filename. When the user clicks the link, the referenced file opens.
 - If you want to link to a Web site, enter the Web address in the Address text box. When the user clicks the link, the Web browser opens to the referenced Web page.
 - If you want to link to a different cell in the current workbook, click the Place in This Document button, and then specify which worksheet and cell location you want to reference. When the user clicks this link, he's redirected to the specified cell address.
 - If you want to send an e-mail when the link is selected, click the E-mail Address button, and then enter the recipients e-mail address and a subject. (See Figure 9-14.) When the user clicks the link, the user's e-mail program starts with the saved e-mail address in the To line.

4. Click OK.



To remove a hyperlink, right-click the link and choose Remove Hyperlink.

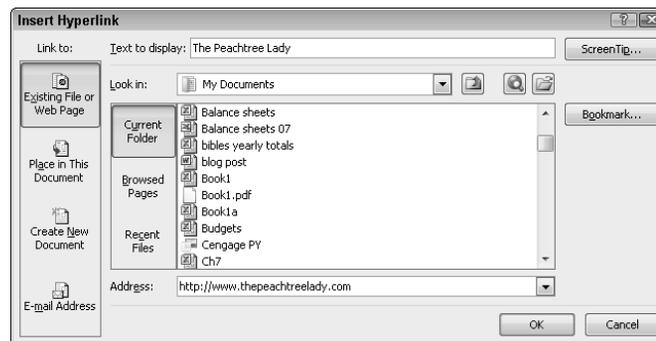


Figure 9-13

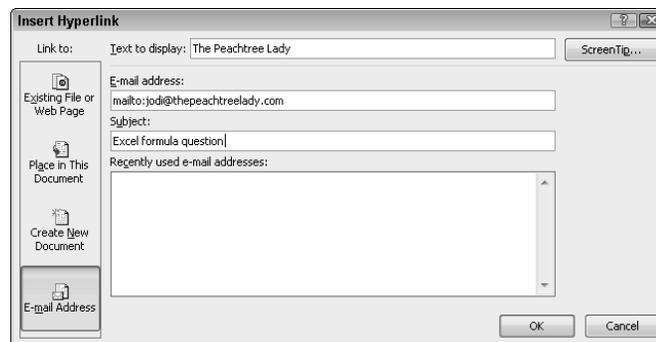


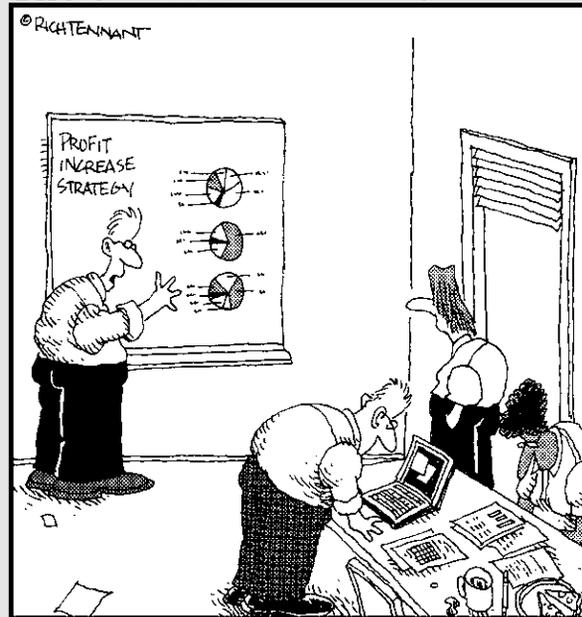
Figure 9-14

Part III

Viewing Data in Different Ways

The 5th Wave

By Rich Tennant



"Look-what if we just increase the size of
the charts?"

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Changing Worksheet Views

Someone once wrote about the importance of seeing and being seen. Although I'm sure that quote referred to people, it also can apply to your Excel worksheets. You need to see them in many contexts. That's what this chapter is about — seeing your workbook from different perspectives by using the following techniques:

- ➔ Viewing alternatives such as zooming in or out, displaying page breaks, or seeing the worksheet without the Ribbon and other screen elements.
- ➔ Splitting the screen to see multiple sections of a worksheet at the same time or viewing multiple worksheets together.
- ➔ Freezing portions of a worksheet so you can see category or row headings.
- ➔ Comparing two spreadsheets onscreen.
- ➔ Creating templates that can bring consistency, such as the company standards or personal preferences, to your workbooks.
- ➔ Monitoring specific cells for changes.

Go ahead, take a look!

Chapter

10

Get ready to . . .

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Zoom In or Out

1. Choose View → Zoom in the Zoom group. The Zoom dialog box appears.



(Optional) Click the magnification box next to the Zoom controls. The magnification box and the Zoom controls are located on the status bar.

2. Select a magnification percentage from the Zoom dialog box, as shown in Figure 10-1. A higher zoom setting makes the text appear larger, so you see less on the screen; a lower setting shows more onscreen, but the data appears smaller. Zooming doesn't affect the printed data size. Click OK.



Select the Custom option and enter your own setting from 10% to 400%.



(Optional) To zoom in on a particular worksheet area, select the area and choose View → Zoom to Selection.

Use the Zoom Controls

1. Click the Zoom In button on the Zoom control on the right side of the status bar. Excel increases the magnification percentage by 10 percent for each click of the Zoom In button. (See Figure 10-2.)



The Zoom percentage displays on the status bar.

2. Click the Zoom Out button on the Zoom control. Excel decreases the magnification percentage by 10 percent for each click of the Zoom Out button.

3. Click and drag the Zoom slider bar to the right. Excel increases magnification.
4. Click and drag the Zoom slider bar to the left. Excel decreases magnification.

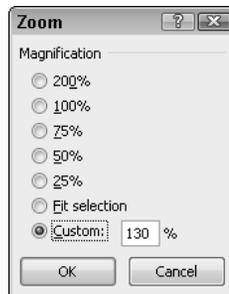


Figure 10-1

Marion	NY	89987	
Marion	NY	87232	
Marion	FL	87553	
Maysville	NY	88968	
New Paris	NY	85998	
Paducah	NY	87396	
Sheffield Village	FL	82967	

Figure 10-2

Change Worksheet Views

1. Choose View⇨Page Layout in the Worksheet Views group. As shown in Figure 10-3, the Page Layout view displays your worksheets on individual pages that correspond to printed pages. A ruler appears on the top and on the left side of the worksheet. (See Chapter 13 for more on headers and footers.)



Use the Zoom controls to increase or decrease magnification.

2. Choose View⇨Normal in the Worksheet Views group. Excel returns to the default Normal view, which shows one continuous page of columns and rows.
3. Choose View⇨Page Break Preview in the Worksheet Views group. A Welcome to Page Break Preview dialog box appears.



If you don't want to see this dialog box when you enter Page Break Preview, click Do Not Show This Dialog again.

4. Click OK. The Excel view changes to Page Break Preview, where Excel indicates page breaks with dotted lines. (See Figure 10-4.) You can click and drag these lines to modify where the pages break. (See Chapter 13 for more on using page breaks.)
5. Choose View⇨Full Screen in the Worksheet Views group. You see only the worksheet itself with its row and column headings, worksheet tabs, and the title bar. The Ribbon, Quick Access toolbar, and the status bar are hidden.
6. Press the Esc key. Excel returns to Normal view.



On the status bar, next to the Zoom controls, you find three icons you can use to quickly switch among the Normal, Page Layout, and Page Break Preview views.

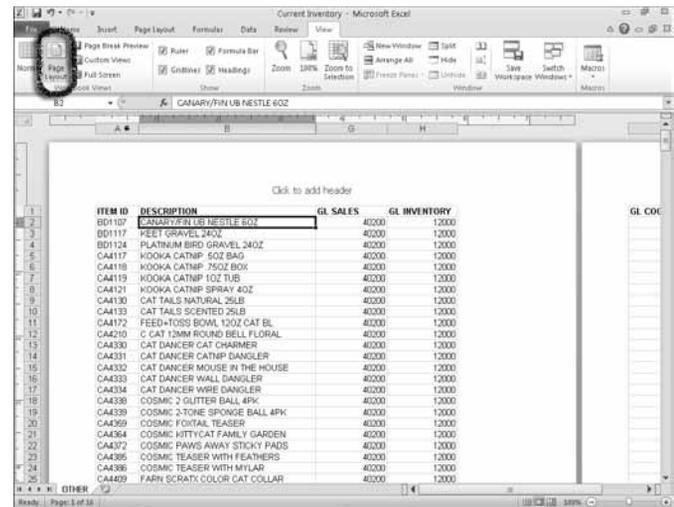


Figure 10-3

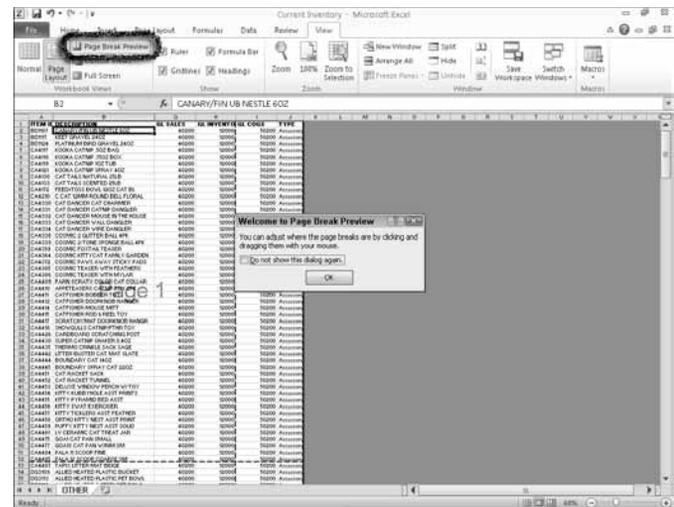


Figure 10-4

Freeze Worksheet Titles

1. Choose what you want to freeze:

- **Columns:** Select the column to the right of the columns you want to freeze. For example, click cell B1 to freeze only column A.
- **Rows:** Select the row below the rows you want to freeze. For example, click cell A4 to freeze rows 1, 2, and 3.
- **Columns and rows:** Click the cell below the rows and to the right of the columns you want to freeze. For example, click cell B2 to freeze both column A and row 1, as shown in Figure 10-5.



Freezing panes affects only the current worksheet. If you want to freeze other worksheets, you must select them individually and freeze them.

2. Choose View → Freeze Panes → Freeze Panes in the Window group. A thin black line appears to separate the sections. As shown in Figure 10-6, as you scroll down and to the right, row 1 and column A remain visible even though you see rows 77–95 in the bottom section and columns D–I on the right.



Normally when you press Ctrl+Home, Excel takes you to cell A1. However, when Freeze Panes is active, pressing Ctrl+Home takes you to the cell just below and to the right of the column headings. However, you can still use your arrow keys or click your mouse to access any cell.

3. Choose View → Freeze Panes → Unfreeze Panes to remove the freeze setting from row and column headings.

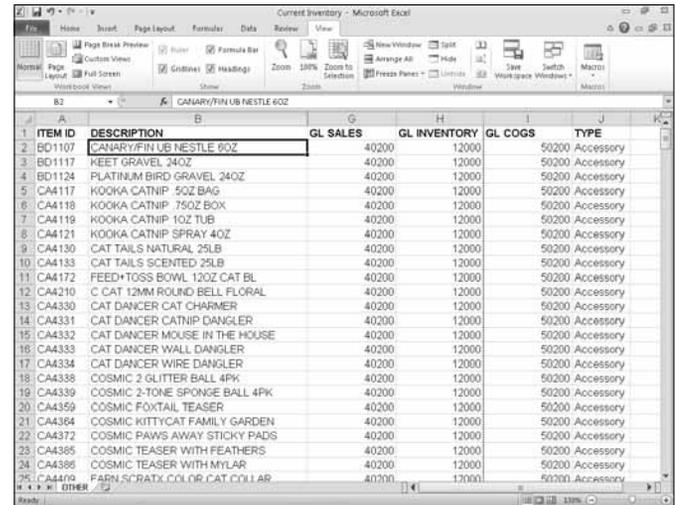


Figure 10-5

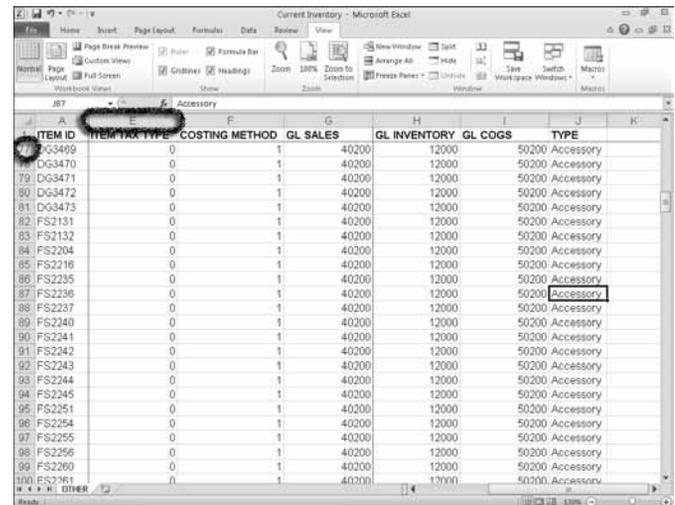


Figure 10-6

Split the Excel Screen

1. Click anywhere in a row and column where you want to split your screen. This is usually somewhere around the middle of the screen.
2. Choose View⇒Split in the Window group. Excel splits the window into two or four panes each separated from other panes by bars. Each pane has its own set of scroll bars (see Figure 10-7).
3. Drag the horizontal split bar up or down or the vertical split bar left or right to resize the window sections.



(Optional) Double-click any part of the bars that divide the panes to remove that particular split.

4. Choose View⇒Split again to remove the split.

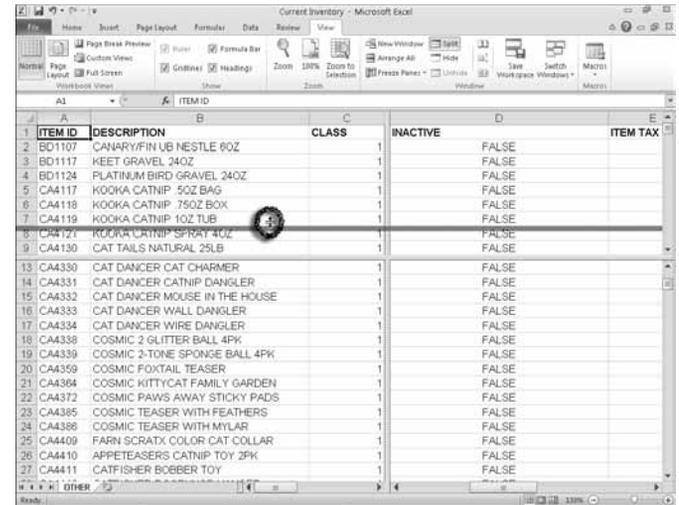


Figure 10-7

Arrange Windows

1. With two or more workbooks open, choose View⇒Arrange All in the Window group. The Arrange Windows dialog box, as shown in Figure 10-8, appears.
2. Make a selection:
 - Tiled arranges the open workbook windows so they don't overlap each other.
 - Horizontal places the open workbook windows horizontally on top of each other.
 - Vertical lays the open workbook windows side by side.
 - Cascade arranges the windows so that they overlap each other, keeping the title bar visible.
3. Click OK.

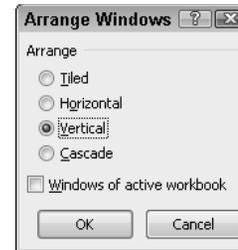


Figure 10-8

Compare Spreadsheets

1. Open two workbooks.
2. Choose View → View Side by Side in the Window group. The two workbooks are split horizontally on the screen, as shown in Figure 10-9.



If you have more than two workbooks open, you see a dialog box enabling you to choose which workbook you want to compare.

3. Scroll down or across a worksheet. Notice the other worksheet scrolls simultaneously.
4. Choose View → Synchronous Scrolling in the Window group to turn off the option to scroll the worksheets independently.
5. Choose View → Reset Window Position in the Window group, to reset the workbook windows to the positions they were in when you first started comparing workbooks.
6. Choose View → View Side by Side in the Window group to return the windows to Normal view.

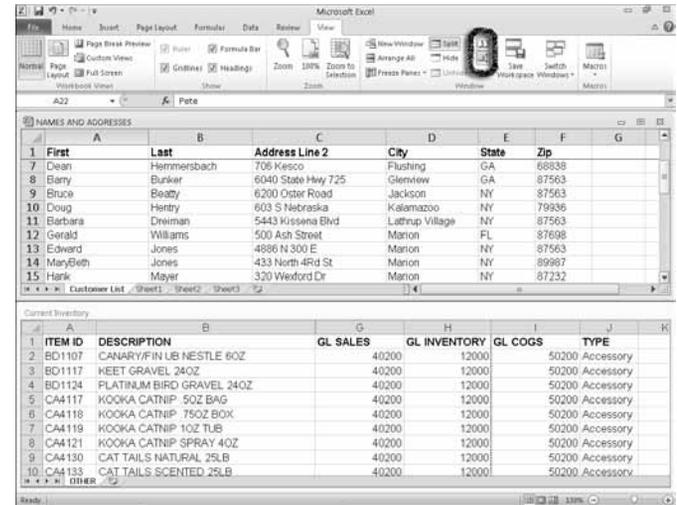


Figure 10-9

Save as a Template

1. Create an Excel workbook. Templates can store formatting, worksheet layouts, data, formulas, and much more.
2. Click File and choose Save As. The Save As dialog box appears.
3. Type a name for the template in the File Name text box.
4. Choose Excel Template from the Save as Type drop-down list. Excel automatically saves the template in the default template location (see Figure 10-10).
5. Click the Save button and close the workbook.

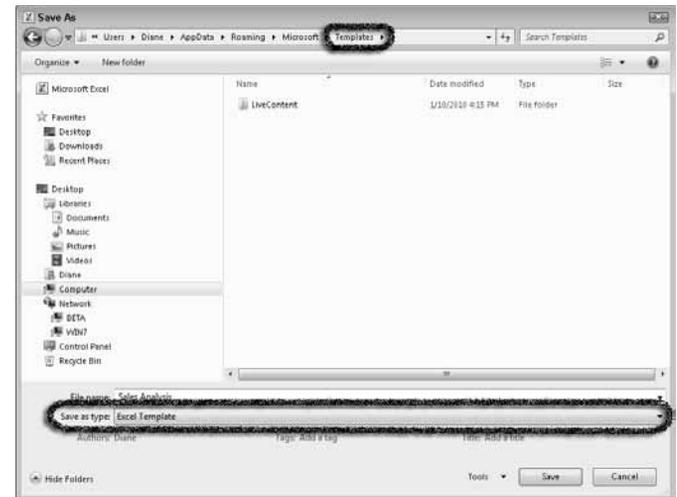


Figure 10-10

Open a Template

1. Click File and choose New. The Available Templates Backstage View appears.



The Ctrl+N shortcut doesn't work here. That shortcut automatically creates a new standard, blank workbook, not one from a specially saved template.



Click any category in the Office.com Templates area to view a great collection of templates, most of which are free.

2. Click My Templates. The New dialog box displaying your customized templates appears. See Figure 10-11.
3. Select the template you want to use and then click OK.



Figure 10-11

Create a Workbook from an Existing File

1. Click File and choose New. The Available Templates Backstage view appears.
2. Click the New from Existing button. The New from Existing Workbook dialog box, as shown in Figure 10-12, appears.
3. Locate and click the workbook you want to open.
4. Click the Create New button. Excel opens a copy of the workbook. The filename in the title bar shows the same name as the original with a number after it.



When you choose to save the workbook, the Save As dialog box automatically opens, prompting you for a filename.



Figure 10-12

Monitor Cells in the Watch Window

1. Choose Formulas→Watch Window in the Formula Auditing group. The Watch Window opens.



Use a Watch Window to keep track of data in a particular cell or range of cells even when the cells are no longer in view.

2. Click Add Watch. The Add Watch dialog box, as shown in Figure 10-13, appears.
3. Select the cell(s) you want to watch or manually type the cell reference address.
4. Click the Add button. Excel adds the cells to the Watch Window, including any values or formulas within the cells. If you scroll away from the original cells, the Watch Window always displays the cell contents. (See Figure 10-14.)
5. Repeat Steps 2–4 to add another watch area to the Watch Window. You can add watches with cells on the same worksheet, a different worksheet, or a different open workbook.



To return to the original cell, double-click the cell name or address in the Watch Window.

6. As necessary, perform the following actions:
 - To remove a cell from the Watch Window, click the cell name and then click the Delete Watch button. Excel immediately removes the cell from the window.
 - To move the Watch Window, click and drag the window's title bar anywhere onscreen.
 - To resize the columns within the Watch Window, position the mouse pointer between columns in the Watch Window and drag to resize the left column.
7. When finished, click the Watch Window's Close (X) button.

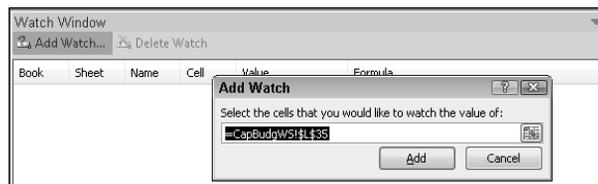


Figure 10-13

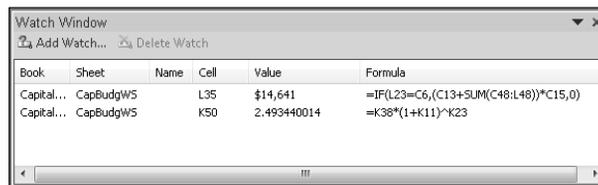


Figure 10-14

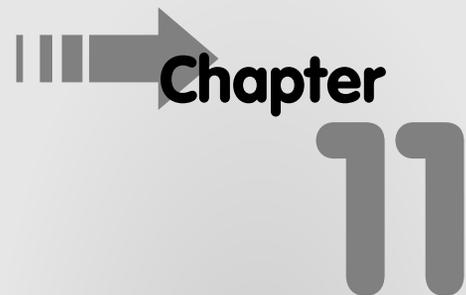
Sorting Data

Sometimes worksheets become quite large, making locating particular pieces of information time-consuming and difficult. If your data is in an array, you may find the data easier to view if it's sorted in a particular manner.

Perhaps you have multiple worksheets and want to locate every occurrence of a specific value. Or, maybe you're just a neat freak and want everything to be in a particular order. Excel contains features to help you arrange your worksheets in an easy-to-manage sequence.

In this chapter, you discover how to

- ➔ Sort your data in ascending or descending order with either the Ribbon or the Sort dialog box.
- ➔ Perform a secondary sort if the primary sort has multiple matches.
- ➔ Sort data containing days of the week or month names.
- ➔ Create a customized list of frequently used names or terms.
- ➔ Locate cells containing data you specify, whether the data is part of a formula or a resulting cell value.
- ➔ Quickly replace data containing certain information with another specified set of data.
- ➔ Locate all cells with a particular style of formatting and easily replace them with a different format.



Chapter 11

Get ready to . . .

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Use the Ribbon to Sort

1. For the easiest sorting, create a contiguous list with headings specifying the contents of each column. Figure 11-1 illustrates an ideal data array.
2. In the column you want to sort by, click any cell containing data.



If the data is in a connected list, you don't have to select the list first; if it isn't, you must first select the entire list. If Excel finds unselected data in columns next to the selected data, it may prompt you for more information.

3. Choose Data⇒Sort A to Z in the Sort & Filter group. (If the current cell contains a value, the button says Sort Smallest to Largest.) Excel sorts the entire list in ascending order. Figure 11-2 shows the Company column sorted in descending order (from A to Z).



Sorting text data in ascending order sorts text A–Z; sorting numeric information in ascending order sorts low to high (0–9); and sorting dates in ascending order places the earliest date first.



Excel sorts in the following pattern: numbers, spaces, special characters (! " # \$ % & () * , . / : ; ? @ [\] ^ _ ` { | } ~ + = >), and, finally, alphabetic letters.

4. Choose Data⇒Sort Z to A (or Sort Largest to Smallest) in the Sort & Filter group. Excel sorts the entire list by descending order.



If Excel incorrectly sorts a cell that contains a value, make sure the cell is formatted as a number and not as text.



Sorting text data in descending order sorts text Z–A; sorting numeric information in descending order sorts high to low (9–0); and sorting dates in descending order places the newest date first.

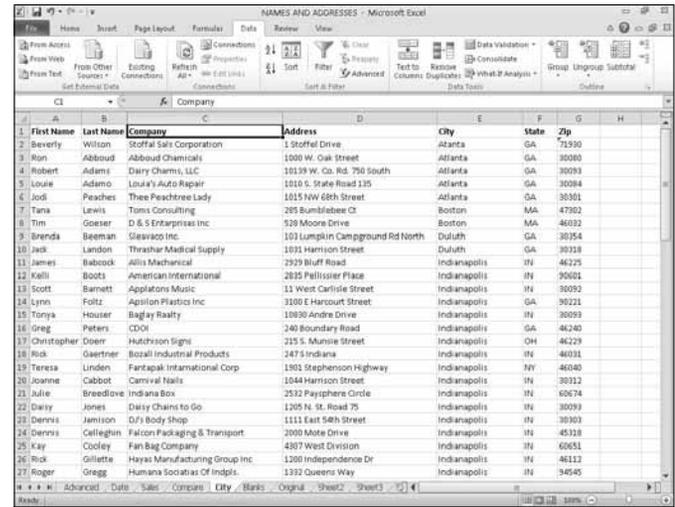


Figure 11-1



Figure 11-2

Work with the Sort Command

1. Select or click in the list of data you want to sort.



Select only a single column of data if you want to sort that column independently of the rest of the data.

2. Choose Data → Sort in the Sort & Filter group. The Sort dialog box opens. (See Figure 11-3.)
3. If your data includes column headings, make sure the My Data Has Headers check box is selected. If the data doesn't include column headings, deselect this check box.



Excel doesn't include header rows in the sort process.

4. From the Sort By drop-down list, choose the column by which you want to sort. (See Figure 11-4.)



If you don't have header rows, Excel displays Column A, Column B, and so forth.

5. From the Sort On drop-down list, choose Values. (I discuss the other options later in this chapter.)
6. From the Order drop-down list, choose how you want to sort the data:
 - Choose A to Z or Z to A to sort text values.
 - Choose Smallest to Largest or Largest to Smallest to sort numeric data.
 - Choose Oldest to Newest or Newest to Oldest to sort by dates.
7. Click OK. Excel sorts data in the following order: numbers, spaces, special characters, and finally, alphabetic characters. Blanks are always placed last.

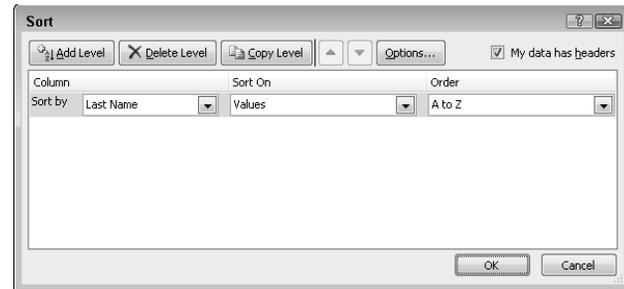


Figure 11-3

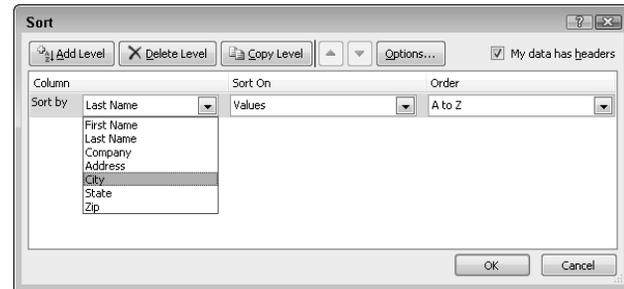


Figure 11-4

Sort by Multiple Criteria

1. Select or click in the list of data you want to sort; then choose Data⇒Sort in the Sort & Filter group. The Sort dialog box opens.
2. If your data includes column headings, make sure the My Data Has Headers check box is selected. If the data doesn't include column headings, deselect this check box.

 Although the most common sort is by rows (top to bottom), you can also sort by columns (left to right). In the Sort dialog box, click the Options button and then in the Orientation section, choose Sort left to right. Finally, click OK.

3. Set up the primary sort criteria, as described in the preceding section.

 Excel sorts dates formatted with slashes, such as 11/22/68, as numeric data. Dates with the day or month spelled must be sorted differently. See the section, "Sort by Day, Month, or Custom List," later in this chapter.

4. Click the Add Level button.
5. In the Then By section, select the secondary column you want to sort by if two or more items are identical in the first Sort By option.
6. Select how you want to sort the second data criteria. Repeat as needed. See Figure 11-5.

 To delete an entry, select the sort entry and choose Delete Level. You must keep at least one sort entry in the list.

7. Click OK. Excel performs the sort. Figure 11-6 illustrates data rows sorted first by State and then by City and then by Company.

 During an Excel sort, apostrophes (') and hyphens (–) are ignored, unless two text strings are the same except for a hyphen. In that situation, the text with the apostrophe is sorted first in ascending order.



Figure 11-5

	A	B	C	D	E	F
1	First Name	Last Name	Company	Address	City	State
2	Sam	Smith	Adco Of Ohio	510 Wayne Ave	Lino Lakes	CA
3	Mark	Boylens	Sherr Paper Products Inc.	P.O.Box 6800	Valdosta	DE
4	Jim	Kovis	Mayer Material Handling Prod.	P.O. Box 47366	Sarasota	FL
5	Beverly	Wilson	Stoffal Sals Corporation	1 Stoffal Drive	Atlanta	GA
6	Ron	Abboud	Abboud Chemicals	1000 W. Oak Street	Atlanta	GA
7	Robert	Adams	Dairy Charms, LLC	10139 W. Co. Rd. 750 South	Atlanta	GA
8	Louie	Adamo	Louie's Auto Repair	1010 S. State Road 135	Atlanta	GA
9	Jodi	Peaches	Thee Peachtree Lady	1015 NW 68th Street	Atlanta	GA
10	Brenda	Beeman	Sleavaco Inc.	103 Lumpkin Campground Rd North	DuLuth	GA
11	Jack	Landon	Thrasher Medical Supply	1031 Harrison Street	DuLuth	GA
12	Lynn	Foltz	Apsilon Plastics Inc.	3100 E Harcourt Street	Indianapolis	GA
13	Greg	Peters	CDOL	240 Boundary Road	Indianapolis	GA
14	Jim	Mercier	Midpack/Division Of Midwest Canvas	4635 West Lake Street	Lafayette	GA
15	Tom	Daley	Stata Farm Insurance	7230 N. Shadeland Ave	Newport	GA
16	Stanley	Chen	Alliad Box Co.	8092 Woodland Drive	Norcross	GA
17	Mike	Davis	Bloomfield Nationwide Inc	8402 N Magnolia Ave	Norcross	GA
18	Ben	Friedman	Wayarhaausar Inc	7591 Collections Center Drive	Norcross	GA
19	Rick	Pistons	Sun Packaging	P.O.Box 1937	Smyrna	GA
20	Joe	Powers	Flax-Pac Inc.	P.O.Box 660212	Tacoma	GA
21	Jeff	Speed	H.J. Spiar Co Inc	5750 Castle Creek Plkwy.	Modesto	IL
22	Greg	Meyer	Bunzl Oil	5772 Collections Center Drive	Mundie	IL
23	Jim	Miller	Southwastarn Paackaging Corp.	6960 Ardmore	New City	IL

Figure 11-6

Create a Customized List

1. Choose File⇒Options. The Excel Options dialog box appears.
2. Click the Advanced section and scroll down to the General category. (See Figure 11-7.)
3. Click the Edit Custom Lists button. The Custom Lists dialog box opens. Excel provides two ways to create a custom list:



A custom list can contain text or text mixed with numbers. Use custom lists to speed up data entry for commonly used terms, such as sales people, regions, or products.

- To create a list from items you've entered already into the worksheet, click the Collapse button next to the Import button. The Custom Lists dialog box collapses. Highlight the worksheet cells containing your list and then press Enter. The Custom Lists dialog box reappears. Click the Import button. The data you selected appears in both the List Entries box and the Custom Lists box.
 - To type your own list without entering it into the worksheet first, click New List from the Custom Lists section. Type your list in the List Entries text box, as shown in Figure 11-8, and then click the Add button.
4. Click OK twice.



You can now use the AutoFill feature with the custom list by typing one list entry and using AutoFill to enter the other list entries. (See Chapter 2.)



To edit a custom list, from the Custom Lists dialog box, select the list that you want to edit. Make any changes in the List Entries box and then click the Add button. To delete a customized list, select the list and then click the Delete button. You can't edit or delete the Excel-provided fill series, such as months and days.

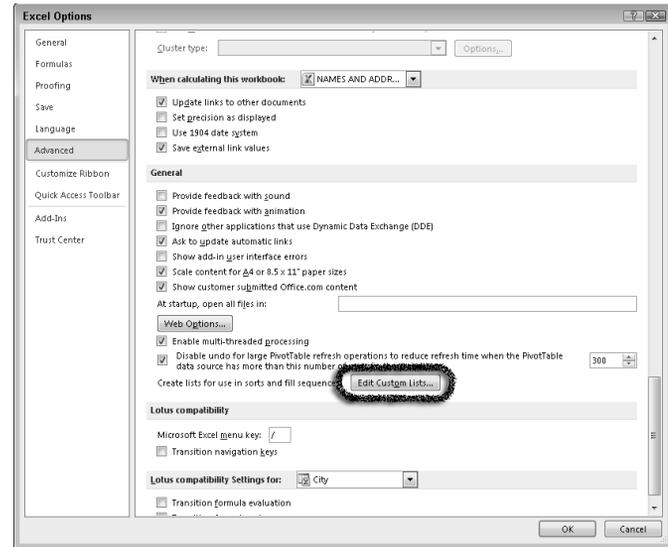


Figure 11-7

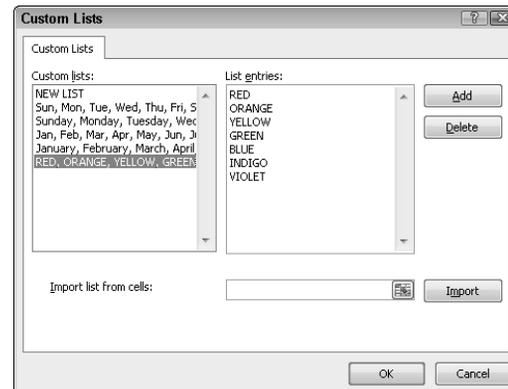


Figure 11-8

Sort by Day, Month, or Custom List

1. Select or click in the list of data you want to sort.
2. Choose Data⇒Sort in the Sort & Filter group. The Sort dialog box opens.
3. If your data includes column headings, make sure the My Data Has Headers check box is selected. If the data doesn't include column headings, deselect this check box.
4. Select your first sort criteria field.



By default, Excel sorts days and months alphabetically, not by date.

5. From the Order drop-down list, choose Custom List. The Custom Lists dialog box appears.
6. Select the custom list (see Figure 11-9) you want to sort by and then click OK. The Sort dialog box reappears.
7. Set up any secondary or additional sort criteria; then click OK to perform the sort.

Remove Duplicate Records

1. Select or click in the list of data you want to work with.
2. Choose Data⇒Remove Duplicates in the Data Tools group. The Remove Duplicates dialog box appears. (See Figure 11-10.)
3. Select or deselect the columns you want Excel to examine; then click OK. Excel looks for and removes duplicates. A message tells you how many duplicates were removed (if any) and how many unique values remain.
4. Click OK.

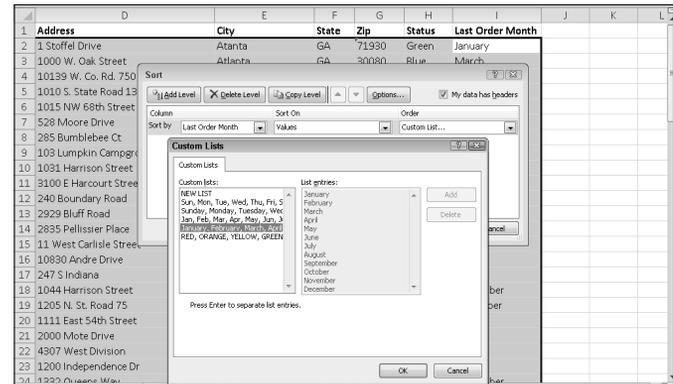


Figure 11-9

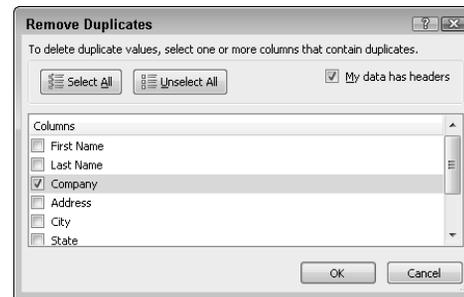


Figure 11-10

Sort by Cell Format

1. Select or click in the list of data you want to sort.



Sorting by cell format is helpful when you have specified conditional formatting conditions; it can sort all items meeting your conditions to the top or bottom of the data table.

2. Choose Data⇒Sort in the Sort & Filter group. The Sort dialog box opens.
3. If your data includes column headings, make sure the My Data Has Headers check box is selected. If the data doesn't include column headings, deselect this check box.
4. Select your first sort criteria field and then in the Sort On drop-down list, select one of the following:
 - **Cell Color:** Choosing this option sorts the cells based on the cell background formatting.
 - **Font Color:** Choosing this option sorts the cells based on the font color of the cell contents regardless of background formatting.
5. Click the Order drop-down list. Several options, including Automatic and each color you used in your selected field, appear.
6. Select the cell color or font color you want to sort by. See Figure 11-11.
7. Choose whether you want the formatted cells to appear at the top of the data range or at the bottom of the data range.
8. Add any additional sort criteria and then click OK. In Figure 11-12, the data is sorted with the formatted cells at the top.

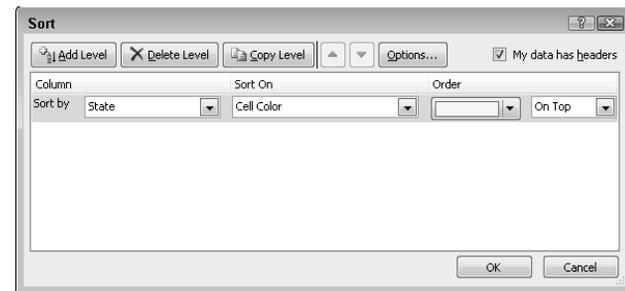


Figure 11-11

City	State	Zip	Status	Last O
Modesto	IL	46278	Indigo	Januar
Muncie	IL	77054	Violet	March
New City	IL	46241	Red	Novem
Palatine	IL	46206	Orange	March
Pembroke	IL	46266	Yellow	May
Plainfield	IL	60693	Green	Septen
South Canaan	IL	19804	Blue	Novem
Tallapoosa	IL	31601	Indigo	July
Indianapolis	OH	46229	Violet	Novem
Largo	OH	02343	Red	July
Neenah	OH	46278	Orange	Septen
Santee	OH	46226	Yellow	March
Whitestown	OH	46140	Green	March
Lebanon	TN	22660	Violet	Novem
Nashville	TN	46075	Red	May
Nashville	TN	46237	Orange	July
Lino Lakes	CA	46250	Red	Januar
Valdosta	DE	60598	Orange	Septen
Sarasota	FL	28329	Yellow	May
Atlanta	GA	71930	Green	Januar
Atlanta	GA	30080	Blue	March

Figure 11-12

Search for Data

1. Choose Home → Find & Select → Find in the Editing group. The Find and Replace dialog box appears.

 Alternatively, press Ctrl+F to open the Find and Replace dialog box.

2. In the Find What box, enter the value or word you want to locate.
3. Click the Options button and specify any desired options, as shown in Figure 11-13:

- **Within:** Search just the current worksheet or the entire workbook.
- **Search:** Select whether to search first across the rows or down the columns.
- **Look In:** Select whether you want to search through the values or formula results, through the actual formulas, or if you want to look in the comments.

 Choose Formulas in the Look In drop-down list when you're looking for a formula that references a specific cell address.

- **Match Case:** Select this check box if you want your search to be case-specific (for example, *BOBCAT* instead of *BobCat* or *Bobcat*).
- **Match Entire Cell Contents:** Select this check box if you want your search results to list only the items that exactly match your search criteria.

4. Click the Find Next button. Excel jumps to the first occurrence of the match (see Figure 11-14). If this isn't the entry you're looking for, click the Find Next button again. Excel advises you if it doesn't locate the data you are searching for.

5. Click the Close button when you've located the entry you want.

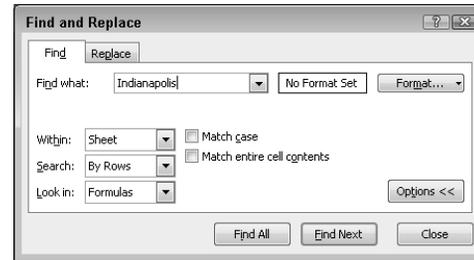


Figure 11-13

	C	D	E	F	G	H
1	Company	Address	City	State	Zip	Status
2	Abbond Chemicals	1000 W. Oak Street	Atlanta	GA	30080	Blue
3	Adco C		Lino Lakes	CA	46250	Red
4	Alma A		Newark	NJ	46227	Yellow
5	Allied B		Norcross	GA	46278	Red
6	Allis M		Indianapolis	IN	46225	Violet
7	Amerid		Indianapolis	IN	90601	Red
8	Anthan		Valparaiso	MA	60616	Indigo
9	Applat		Indianapolis	IN	30092	Orange
10	Appilon		Indianapolis	GA	90221	Green
11	Arrow		Marietta	WI	46176	Yellow
12	Baglay		Indianapolis	IN	30093	Yellow
13	Bloom		Norcross	GA	92071	Orange
14	Bozell Industrial Products	247 S Indiana	Indianapolis	IN	46031	Green
15	Bunzl Oil	5772 Collections Center Drive	Mundie	IL	77054	Violet
16	Carnival Nails	1044 Harrison Street	Indianapolis	IN	30312	Blue
17	CDI	240 Boundary Road	Indianapolis	GA	46240	Blue
18	Covalanca Adhesives	P.O.Box 10450	Shelbyville	IN	60055	Red
19	Crowall Corporation	P.O.Box 3227	South Canaan	IL	19804	Blue
20	Custom Cara Landscaping Inc.	P.O.Box 63	St Louis	MO	60644	Orange
21	D & S Enterprises Inc.	528 Moore Drive	Boston	MA	46032	Green
22	Dairy Charms, LLC	10139 W. Co. Rd. 750 South	Atlanta	GA	30093	Indigo
23	Daisy Chains to Go	1205 N. St. Road 75	Indianapolis	IN	30093	Indigo
24	De... ..	5545 W.

Figure 11-14

Find All Data Occurrences

1. Choose Home⇒Find & Select⇒Find in the Editing group. The Find and Replace dialog box appears.
2. In the Find What box, enter the value or word you want to locate.
3. Click the Options button and specify any desired options, as I discuss in the preceding section.
4. Click the Find All button. The Find and Replace dialog box expands showing a list of each cell entry that contains your data (see Figure 11-15).
5. Click any entry. The specified cell is selected. When finished, click the Close button.

Locate Cells Based on Format

1. Choose Home⇒Find & Select⇒Find in the Editing group. The Find and Replace dialog box appears.
2. Click the Format button. The Find Format dialog box appears.



To select formatting from an existing cell, from the Find and Replace dialog box, click the arrow on the Format button and choose Choose Format from Cell. Click the desired cell and then continue with the Find and Replace options.

3. From the various tabs, select the formatting options you're searching for. See Figure 11-16.
4. Click OK. The Find Format dialog box closes, and the Find and Replace dialog box displays a sample of the format you selected.
5. Click the Find Next button or the Find All button. Excel finds the formatting occurrence.
6. Click the Close button to close the Find and Replace dialog box.



To remove formatting search options, from the Find and Replace box, click the arrow on the Format button and choose Clear Find Format.

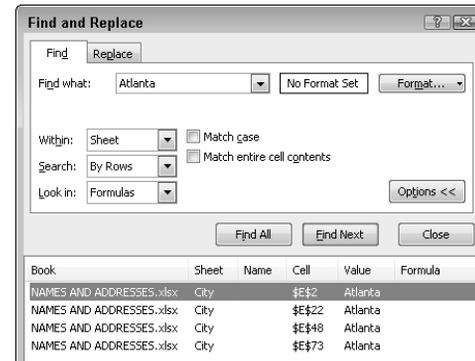


Figure 11-15

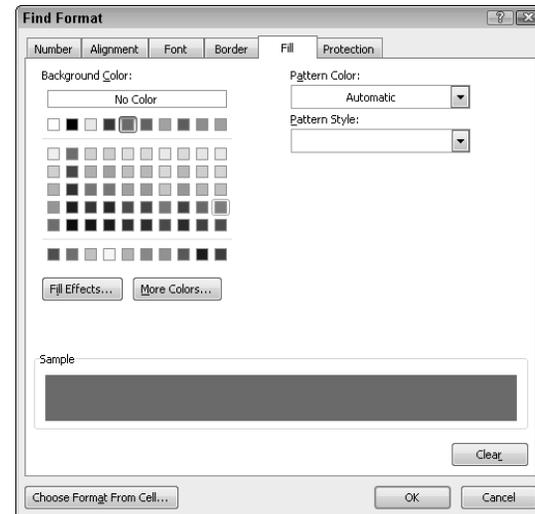


Figure 11-16

Use the Replace Command

1. Choose Home⇨Find & Select⇨Replace in the Editing group. The Find and Replace dialog box appears with the Replace tab on top.



If you want to replace data in only certain cells, rows, or columns, select the desired area before you open the Find and Replace dialog box.



Alternatively, press Ctrl+H to open the Find and Replace dialog box.

2. In the Find What box, enter the data you want to locate.



Click the Options button to display and select additional search preferences, including formatting.



If you want to look for data that also has specific formatting, click the Format button and match the formatting you're searching for.

3. In the Replace With box, enter the data with which you want to replace the found data. (See Figure 11-17.)



Just as with the Find data, you can specify that the Replace data must have specific formatting.

4. Click the Find Next button to locate the first found occasion or click the Find All button to display a list of all occurrences.



You can sort the results of a Find All search by clicking a column heading.

5. If you want to use the replacement data, click the Replace button. Excel performs the replacement and locates the next occurrence.
6. If you want to replace all occurrences at the same time, click the Replace All button. Excel displays an information box, as shown in Figure 11-18, indicating the number of replacements made.
7. Click OK.



Click the Close button to close the Find and Replace dialog box.

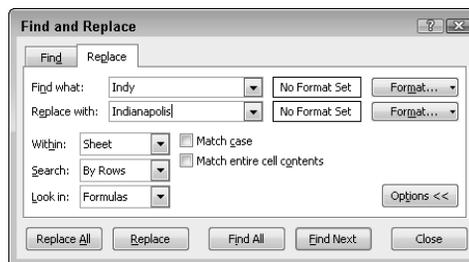


Figure 11-17

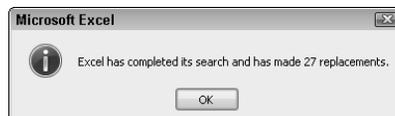


Figure 11-18

Creating Charts

Whoever said a picture is worth a thousand words is most certainly referring to a chart. Let's face it . . . we *like* looking at pictures more than we like looking at sheets of data. Charts, or *graphs*, provide an effective way to illustrate your worksheet data by making the relationships among numbers easier to see. The chart turns numbers into shapes and enables you to compare the shapes to each other.

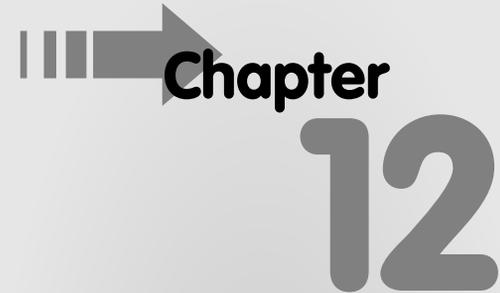
If you've ever spent hours drawing a chart on graph paper, you'll really appreciate the ease with which you can create dozens of different chart styles with your Excel data. And you don't really have to draw a thing! With just a few decisions on your part and a few clicks of the mouse, you have a two- or three-dimensional illustration of your data.

Charts let you get your thoughts across with simplicity and strength and because different charts may cause you to draw varied conclusions, they also prod you to ask questions about what you're seeing. Whatever the idea you're trying to convey, charts make it easier.

New to Excel 2010 are *Sparklines*, which are miniature charts that fit in a single cell next to your data and provide visual trends. You can create line, column, or win/loss Sparkline charts.

In this chapter, discover how to

- ➔ Work with Sparklines
- ➔ Quickly and easily create a chart
- ➔ Modify a chart whether in appearance or content
- ➔ Work with a three-dimensional chart



Chapter 12

Get ready to . . .

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- ➔ Display a Chart Title 121
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Add Sparklines

1. Select the cell where you want the Sparkline. Typically, this is next to the data.
2. Choose Insert and in the Sparklines group, choose a Sparkline type: Line, Column, or Win/Loss. The Create Sparklines dialog box appears.
3. In the Data Range box, enter (or drag across the cells with your mouse) the cells containing the data you want to plot. (See Figure 12-1.)
4. Change, if necessary, in the Location Range box, the cell in which you want the Sparkline.
5. Click OK. Excel creates a Sparkline chart in the selected cell.

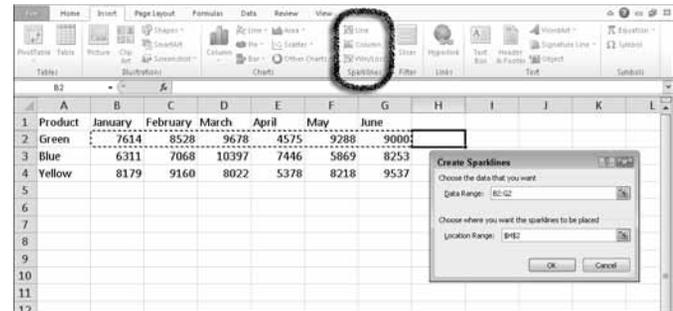


Figure 12-1



To delete a Sparkline, click the Sparkline cell and choose Sparkline Tools Design → Clear in the Group group.



To save time when creating multiple Sparklines in a data array, such as in the Figure 12-1 example, use the AutoFill handle to copy the Sparkline settings. This creates a Sparkline group and changes you make to one Sparkline affect all the Sparklines in the group.

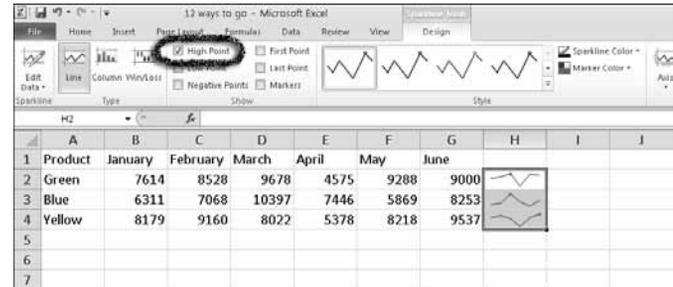


Figure 12-2

Add Sparkline Markers

1. Select the Sparkline cells on which you want to add markers.
2. Choose Sparkline Tools Design and in the Show/Hide group, select the markers you want displayed. In Figure 12-2, the High Point check box is selected so you see only high point markers.



To change the Sparkline type, with the Sparkline cells selected, choose Sparkline Tools Design and then choose a different type in the Type group.

Change Sparkline Styles

1. Select the Sparkline cells on which you want to change the style.



If the Sparklines are in a group, and you only want to change one of the Sparklines, choose Sparkline Tools Design → Ungroup.

2. Choose Sparkline Tools Design and in the Style group, click the More button, which is located directly under the Style scroll buttons. A gallery of Sparkline styles appear, as shown in Figure 12-3.
3. Select the Sparkline style you want. All selected Sparklines change to the selected style.

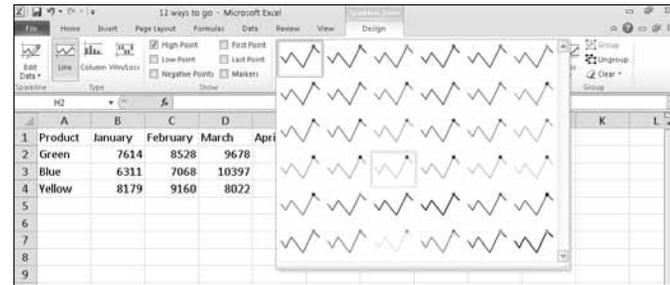


Figure 12-3

Edit Sparkline Data

1. Select the Sparkline cells on which you want to change the data.
2. Choose Sparkline Tools Design → Edit Data in the Sparkline group. A menu appears.
3. Choose Edit Group Location & Data if you're working with a group of Sparklines. The Edit Sparklines dialog box appears, as shown in Figure 12-4.



If you want to change only one of the Sparkline data locations choose Edit Single Sparklines Data.

4. In the Data Range box, if necessary, enter the new data area you want to include in the Sparklines.
5. In the Location Range box, if necessary, enter or select a new Sparkline location.
6. Click OK.

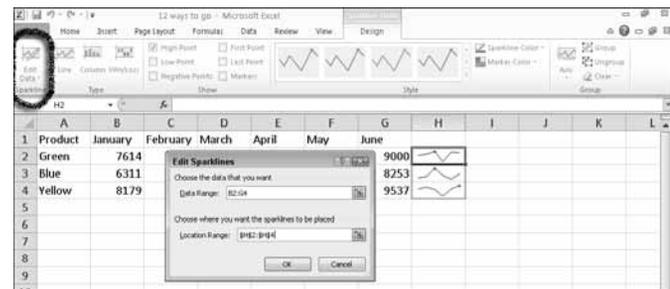


Figure 12-4

Create a Basic Chart

1. Select the data (sequential or non-sequential) you want to plot in the chart. See Figure 12-5 for an example of sequential data selected for a chart.
2. Press the F11 key. Excel immediately adds a new sheet — *Chart1* — to your workbook with the data plotted into a column chart. Each subsequent chart page is numbered sequentially, such as *Chart2*, *Chart3*, and so forth. Figure 12-6 shows you the various elements that can make up a chart:



Some newer keyboards use a different function for the F11 key. If your F11 key doesn't produce a chart, use the Insert tab, as I explain in the following section.



Throughout this chapter, you discover how to edit the look and style of a chart.

- **Chart title:** A descriptive name for the overall chart. By default, titles aren't added in a basic chart, but you can add them later manually or by using a chart layout.
- **Category (x) axis:** Column or row headings from your selected data, which Excel uses for category axis names. In a column chart, the categories display along the bottom. In other charts (such as a bar chart), the category axis displays along the left side.
- **Category axis title:** A descriptive name for the category axis. By default, a category label isn't added in a basic chart, but you can add one later manually or with a chart layout.
- **Data labels:** Usually, numbers that identify the actual data values, but they can also be category names or other associated information.

	A	B	C	D	E	F	G
1		January	February	March	TOTALS		
2	Mary	256	269	298	823		
3	Stephen	236	289	176	701		
4	John	248	167	170	585		
5	Bob	255	153	245	653		
6	Susan	119	149	206	474		
7	TOTALS	1,114	1,027	1,095	3,236		
8							
9							
10							
11							

Figure 12-5

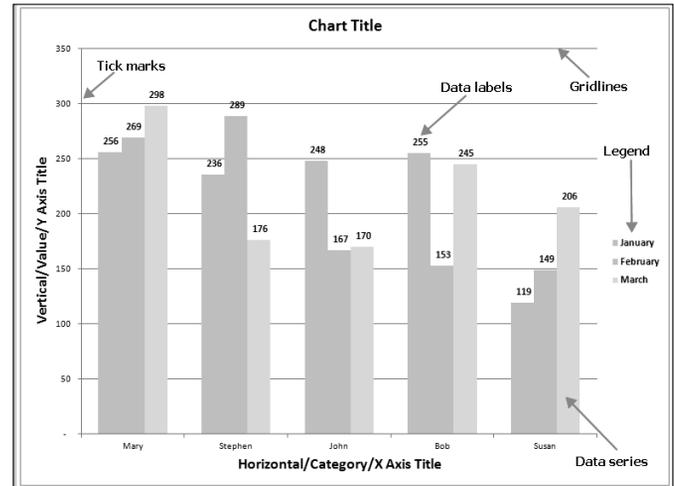


Figure 12-6

- **Value (y) axis:** A scale representing the zero or the lowest and highest numbers in the plotted data. The value axis is usually located on the left side on a column chart or on the bottom on a bar chart.
- **Value axis title:** A descriptive name for the values. By default, a value label isn't added in a basic chart, but you can add one later manually or by using a chart layout.
- **Legend:** The box, usually located on the right, identifies the patterns or colors that are assigned to the chart data series. In Figure 12-7, the legend shows the colors used to represent January, February, and March.
- **Tick marks:** The small extensions of lines that appear outside the gray area and represent divisions of the value or category axis.
- **Gridlines:** These lines extend from the tick marks across the chart area to allow you to easily view and evaluate data.
- **Series:** Excel uses the worksheet cell values to generate the series. Each element, or *data point* or *data marker*, represents a single worksheet cell value. Related data markers make up a data series and have the same pattern or color. In Figure 12-8, you can see the comparison of the data values to the y axis and the series values.
- **Plot area:** The background that represents the entire plotted chart area.

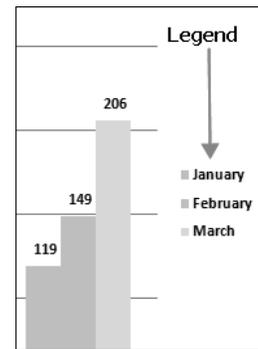


Figure 12-7

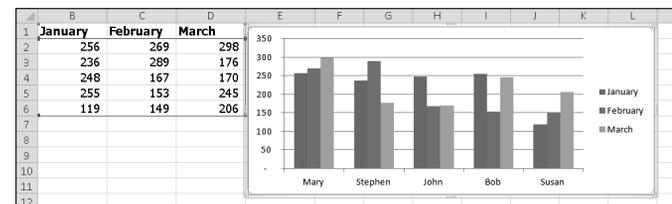


Figure 12-8



To delete a chart sheet, right-click the Chart tab at the bottom of the window, and choose Delete. When Excel asks for confirmation, click Delete again.

Insert a Chart

1. Select the data you want to plot in the chart.



Typically, if you're selecting values, such as monthly figures, you don't want to include totals in your chart.

2. Choose Insert and in the Charts group, click the arrow near the chart style you want. Excel can create many different chart types; each compares data in a different manner. (See Figure 12-9.) Some of the most commonly used chart types include the following:



Click a chart type to see a sample and an explanation of the chart.

- **Column:** Column charts compare values to categories using a series of vertical columns to illustrate the series.
- **Bar:** Bar charts, like column charts, compare values to categories, but use a series of horizontal bars to illustrate the series.
- **Line:** Line charts are similar to bar charts but use dots to represent the data points and lines to connect the data points.
- **Pie:** This chart compares parts to a whole. Usually a pie chart has only one data series. Figure 12-10 illustrates data appropriate for a pie chart.
- **Area:** Area charts display the trend of each value, usually over a specified period of time.
- **X-Y scatter:** These charts include two value axes, one showing a set of numerical data along the x axis and the other showing numerical data along the y axis.



Figure 12-9

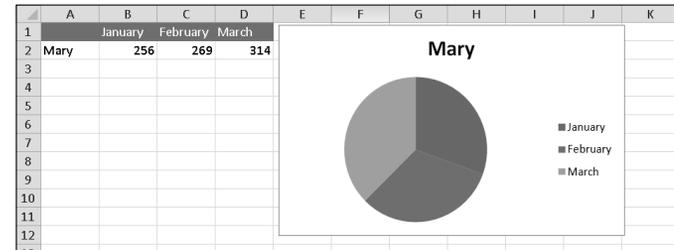


Figure 12-10

- **Surface:** Shows trends in values in a continuous curve.
 - **Doughnut:** Displays data similarly to a pie chart; it compares parts to a whole, but contains multiple series.
 - **Stock:** Stock charts are usually (but not exclusively) used to illustrate the fluctuation of stock prices. In a stock chart, the data order is very important and usually the row headings are High, Low, and Close; or Open, High, Low, and Close. See Figure 12-11 for an example of a stock chart and related data.
 - **Radar:** Displays changes in values relative to a center point by comparing the cumulative values of multiple data series.
 - **Bubble:** These charts are similar to scatter charts, but compare three sets of values by displaying a series of circles.
 - **Cylinder, cone, and pyramid:** Excel uses these three chart types to create a column or bar chart using three-dimensional cylindrical, conical, or pyramid shapes.
3. Choose a chart subtype. Depending on the chart type, some chart subtypes show the data series next to each other; others show the data elements stacked on top of each other. Some charts are two-dimensional, and others are three-dimensional. As shown in Figure 12-12, Excel creates the chart on the worksheet where your data resides.

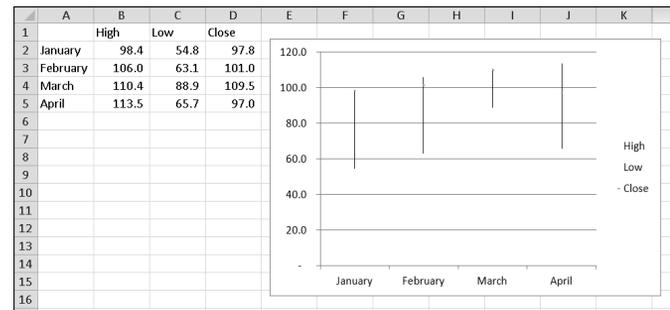


Figure 12-11

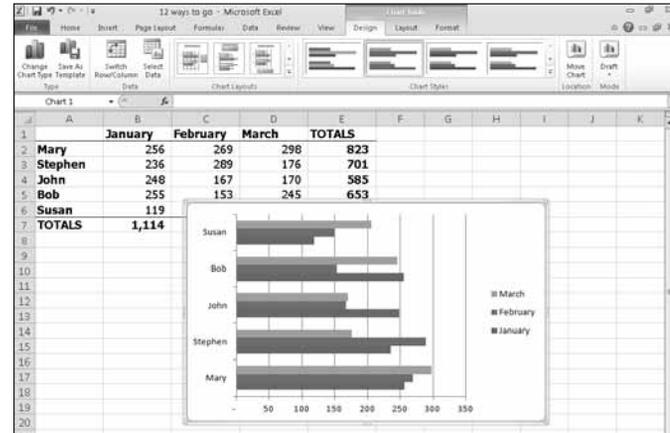


Figure 12-12



You'll soon discover how you can change the chart location to its own sheet. But just in case you don't like your changes, make sure to save your worksheet, which also saves your chart, before modifying chart attributes.



The chart is a graphic object. You can resize or delete it as you would any graphic object.

Change the Chart Type

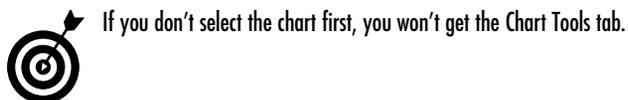
1. Click the chart to select it whether it appears on its own sheet or on a data worksheet. A Chart Tools tab with three subtabs appears.



2. Choose Chart Tools Design > Change Chart Type in the Type group. The Change Chart Type dialog box appears.
3. Select the different chart type and subtype you want. (See Figure 12-13.)
4. Click OK. Excel modifies the existing chart.

Adjust the Chart Location

1. Click anywhere on the chart that you want to move.



2. On the Chart Tools Design tab, in the Location group, click the Move Chart button. The Move Chart dialog box appears. (See Figure 12-14.)
3. Select a location:
 - **New Sheet:** Creates a new worksheet and places the chart on the sheet.
 - **Object In:** Moves the chart to an existing sheet in the workbook. Click the drop-down arrow to select the worksheet to which you want to move the chart.
4. Click OK. Your chart is moved to the location you've specified.



To move the chart to a different location on the current worksheet, position the mouse over the edge of the chart and drag it to a new location.

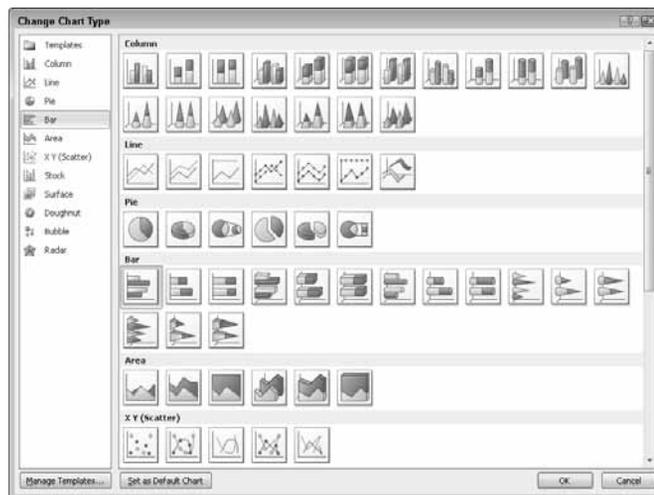


Figure 12-13

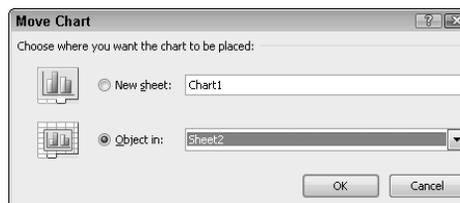


Figure 12-14

Display a Chart Title

1. Click anywhere on the chart you want to modify.
2. Choose Chart Tools Layout and in the Labels group, click Chart Title. A list of options appears:
 - **None:** The default choice; it means you don't want to display a title. Also use this option to remove a chart title you don't want.
 - **Centered Overlay Title:** Centers the title over the chart but retains the existing size of the chart.
 - **Above Chart:** Centers the title over the chart but adds room at the top so the title doesn't interfere with the chart itself.
3. Make a selection. A box with the words *Chart Title* (as shown in Figure 12-15) appears on the chart.
4. Begin typing the desired title. The chart title appears in the formula bar.
5. Press Enter. The text you type replaces the words *Chart Title*.
6. Click anywhere outside the chart title to deselect it.
7. (Optional) choose Chart Tools Layout⇨Chart Title⇨More Title Options in the Labels group. The Format Chart Title dialog box appears, as shown in Figure 12-16.
8. Click the Fill tab and then choose any desired background options for the chart title.
9. Select Border Color, Border Styles, and other title options including Shadow, 3-D Format, and much more.



You can't apply 3-D formatting or select a shadow if your title doesn't have a border line around it.

10. Click the Close button.



Figure 12-15

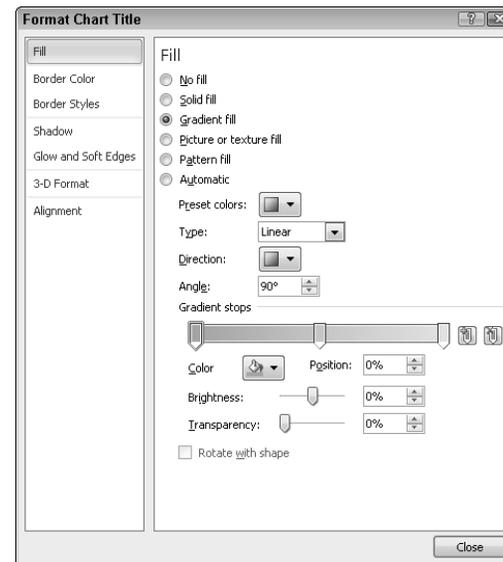


Figure 12-16

Customize the Chart Legend

1. Click anywhere on the chart you want to modify and then choose Chart Tools Layout→Legend in the Labels group.
2. From the drop-down list that appears, choose a placement for the legend or choose None to turn off the chart legend. (See Figure 12-17.)
3. Choose Chart Tools Layout→Legend→More Legend Options.
4. The Format Legend dialog box appears, offering the same type of formatting options as the Format Chart Title dialog box referenced in the previous section. Choose any desired options.
5. Click the Close button.



Figure 12-17

Add a Data Table

1. Click anywhere on the chart you want to modify.



Data tables can be added to charts on a regular worksheet, but it isn't a common practice because the worksheet itself already displays the data.

2. Choose Chart Tools Layout→Data Table in the Labels group. Options that appear include a choice not to show a data table, show a data table but not show a chart legend, or to show a data table and include the chart legend.



Data tables display the chart values in a grid beneath the chart. They are very helpful if a reader needs to see exact values along with a graphical display, such as when using a 3-D chart.

3. Choose the data table option you want. A data table, as shown in Figure 12-18, displays at the bottom of the chart.



For more control over the data table appearance, click Chart Tools Layout→Data Table→More Data Table Options in the Labels group. Make any choices from the Format Data Table dialog box and click Close.

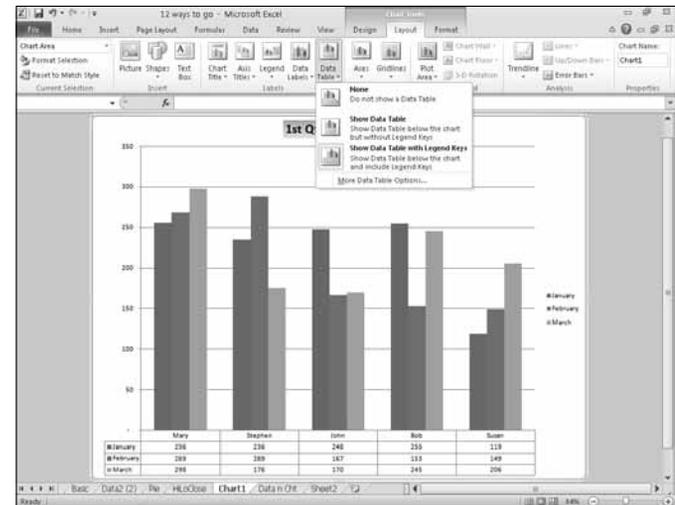


Figure 12-18

Show Data Labels

1. Click anywhere on the chart that you want to modify.
2. Choose Chart Tools Layout→Data Labels. A menu of data label placement options appears.



You can use data labels to help identify the data series values, which are sometimes difficult to read on the y-axis scale.

3. Select a placement option. Figure 12-19 shows the data labels with a placement of Outside End.
4. Choose Chart Tools Layout→Data Labels→More Data Label Options. The Format Data Labels dialog box appears.
5. If you don't want the data label to be the series value, choose a different option from the Label Options area (such as the series or category names).
6. In the Number option, select a number style for the data labels.
7. Select any additional options and then click the Close button.



Figure 12-19

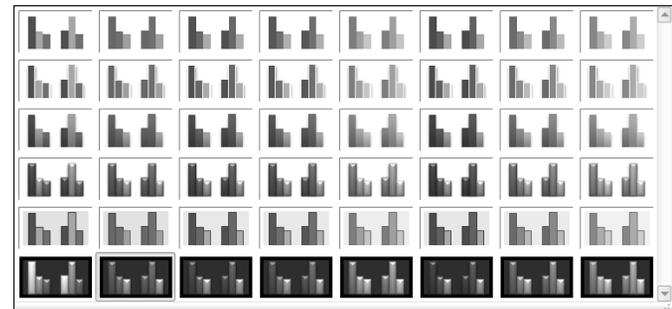


Figure 12-20

Select a Chart Color Style

1. Click anywhere on the chart you want to modify.
2. Choose Chart Tools Design and in the Chart Styles group, click the More button, which displays the Chart Styles gallery (see Figure 12-20).
3. Select a chart style. Scroll down . . . you find more at the bottom.

Change Axis Options

1. Click anywhere on the chart that you want to modify.
2. Choose Chart Tools Layout→Axis Titles in the Labels group.
3. Choose Primary Horizontal Axis Title or Primary Vertical Axis Title from the drop-down list that appears.
4. Choose an axis title location. For the horizontal axis, your choice is Title Below Axis (or None). For the vertical axis, you can rotate the title, run it vertically along the axis, or run it horizontally. I don't recommend the horizontal option because it takes up a great amount of chart space. In Figure 12-21, you see both vertical and horizontal axis titles.
5. Highlight the axis text and replace it with your desired text.
6. (Optional) Choose Chart Tools Layout and in the Labels group, click Axis Titles and from either the Horizontal or Vertical Axis Title, choose More Options to set the line style, background color, and other appearance choices. Click the Close button.
7. Choose Chart Tools Layout and find the Axes group. Two options are available:
 - **Axes:** Choose this option to change the way Excel displays either the horizontal or vertical axis. You can choose not to display an axis or you can change the value representation along the vertical axis. Click the axis you want to change and choose the More options to change choices, such as axis-number formatting. (See Figure 12-22.)
 - **Gridlines:** Choose this option to change the way the gridlines display along the chart background. You can add, change, or remove horizontal or vertical gridlines. Choose the gridline you want modified and click More Options to modify the gridline color.

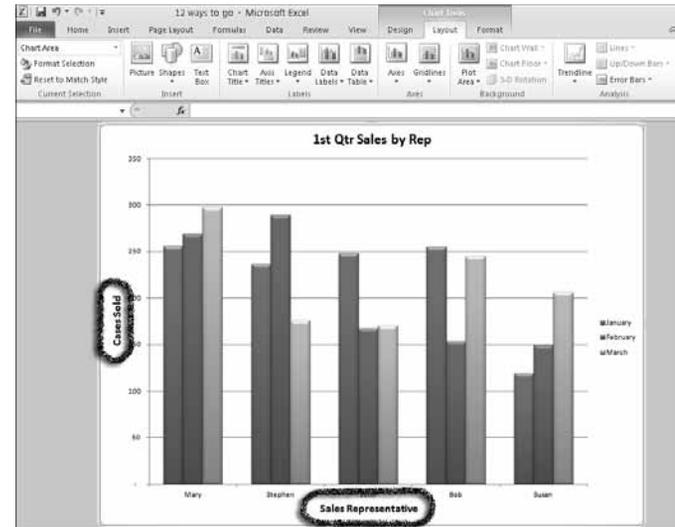


Figure 12-21

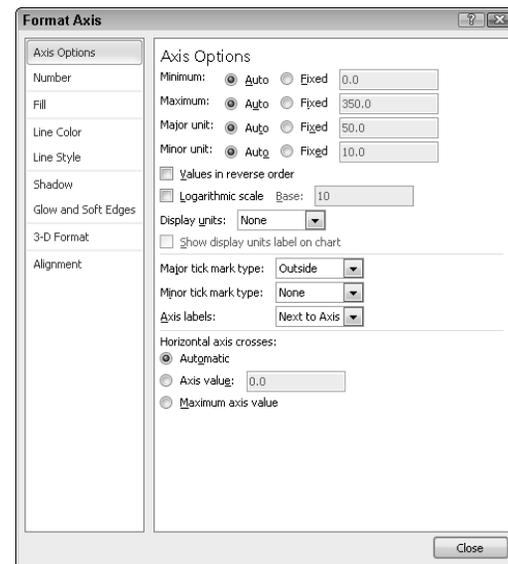


Figure 12-22

Enhance a 3-D Chart

1. Click anywhere on the 3-D chart you want to modify.
2. Choose Chart Tools Layout→3-D Rotation in the Background group. The Format Chart Area dialog box, as shown in Figure 12-23, appears. The options you see depend on the chart type.
3. From the 3-D Rotation tab:
 - Click the X left or right arrows or enter the degree of left/right rotation (between 0 and 360) you want for the chart in the Rotation section. This rotates the x-axis or pie slices left or right.
 - Click the Y up or down arrows, or enter the degree of up/down rotation.
 - Click the Perspective up or down arrows to change the *camera* view, or the view from the top. (Optional) Type the elevation angle (between 0.1 and 120) in the Perspective text box.
4. From the 3-D Format tab choose a Bevel option to select a bevel style for the top or bottom of the chart border.
5. Click the Close button. The chart appears onscreen, rotated to the angles you selected. Figure 12-24 shows a 3-D pie chart before and after changing the perspective and rotation.

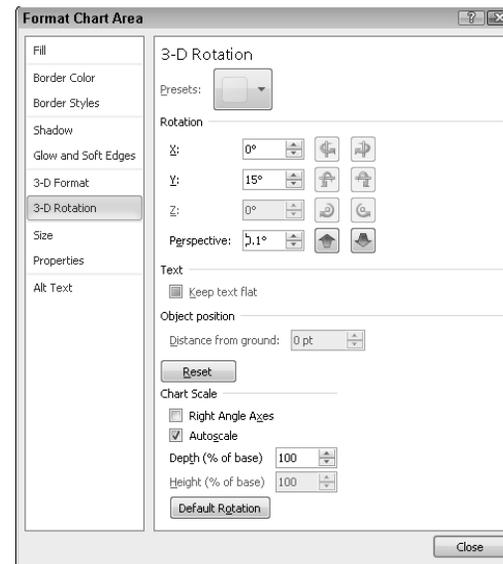


Figure 12-23

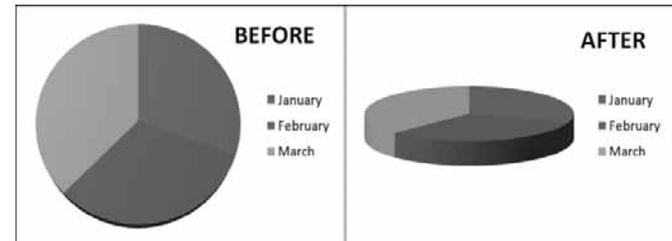


Figure 12-24

Place a Picture in a Data Series

1. Right-click the series or data point you want to modify. A shortcut menu appears.
2. Choose Format Data Series. The Format Data Series dialog box appears.
3. Click the Fill option. Fill options appear on the right side.
4. Select Picture or Texture Fill and then click File. The Insert Picture dialog box appears.
5. Locate and select the picture you want to use; then click Insert. The Format Data Series dialog box reappears.
6. Click the Close button. Figure 12-25 illustrates a pie chart with one series as a texture, one as a pattern, and one as a picture.

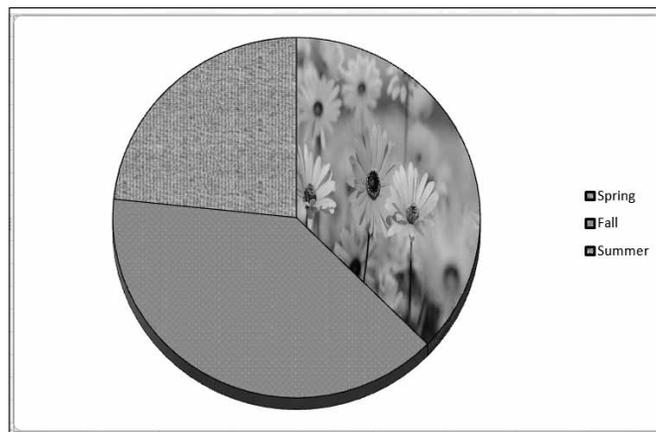


Figure 12-25

Adjust Chart Data

1. Click anywhere on the chart that you want to modify.
2. Choose Chart Tools Design→Select Data in the Data group. The Select Data Source dialog box opens with the current chart data selected in the worksheet (see Figure 12-26).
3. Click and drag in the worksheet to select the new data range. The Select Data Source dialog box collapses so you can easily see your data.
4. Release the mouse button. The Select Data Source box reappears, and the new data range appears in the Chart Data Range box.
5. Click OK. The Select Data Source dialog box closes.

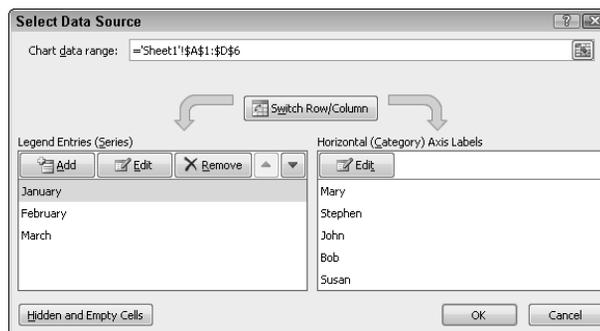


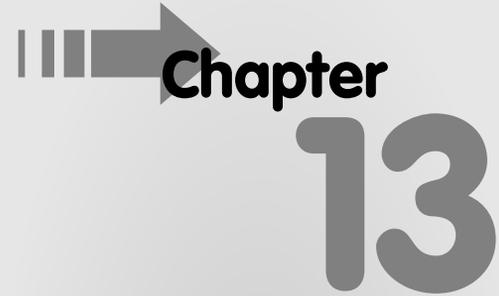
Figure 12-26

Printing Workbooks

When you finish compiling your worksheet, you'll probably want to print a hard copy or e-mail a copy to someone else. This chapter shows you a number of Excel tools you can use to improve your document layout, including headers, footers, page orientation, and margins.

When you're printing, Excel assumes you want to print the entire worksheet area unless you specify otherwise. You discover in this chapter how to tell Excel exactly what you want to print. This chapter also includes these topics:

- ➔ Working with page breaks
- ➔ Adjusting the paper size
- ➔ Making a worksheet fit when you must get a few last rows or columns on a single page
- ➔ Printing gridlines or row and column headings on the page, as well as other options for printing your worksheet or chart



Chapter 13

Get ready to . . .

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Add a Manual Page Break

1. Click a cell in the row where you want the new page to begin.
2. Choose Page Layout → Breaks → Insert Page Break in the Page Setup group. Dotted page break lines appear, similar to the ones shown in Figure 13-1.



To remove the manual page break, click a cell in the row just below the page break and choose Page Layout → Breaks → Remove Page Break in the Page Setup group.

	A	B	C	D	E	F	G	H
28	JEREMY JOHNSON	11,221.00	(919.37)	(695.72)	(162.72)	(381.49)	(75.00)	8,986.70
29	JESSICA JOHNSON	15,081.63	(1,495.84)	(935.05)	(218.66)	(512.92)		11,919.26
30	JIM HENSLEY	19,560.00	(1,208.46)	(1,212.80)	(283.61)	(665.13)		16,190.00
31	JOE HEAGY	19,742.30	(2,190.36)	(1,224.04)	(286.35)	(671.22)	(100.00)	15,270.33
32	JUDITH HALL	25,650.00	(3,264.62)	(1,590.30)	(372.05)	(896.12)		19,586.91
33	KALYN HALEY	3,992.91	(270.84)	(247.60)	(57.94)	(135.78)		3,280.75
34	KAREN GOWAN	28,340.00	(3,213.32)	(1,757.08)	(410.80)	(963.56)		21,995.24
35	KARISA GRAMER	13,530.25	(1,279.66)	(828.31)	(396.05)	(453.70)	(100.00)	10,546.53
36	KIMBERLY GALBRETH	5,082.75	(341.92)	(315.16)	(73.69)	(172.85)	(100.00)	4,079.13
37	LAURA GAFFNEY	31,200.00	(2,202.72)	(1,994.40)	(452.40)	(1,027.00)	(100.00)	25,483.48
38	LORETTA FORD	18,261.00	(2,747.83)	(1,132.19)	(264.80)	(620.88)	(100.00)	13,395.30
39	LUCY EVELAND	1,256.25		(77.89)	(18.21)	(26.35)	(50.00)	1,083.80
40	MARGARET DODD	37.50		(2.33)	(0.54)	(1.28)		33.35
41	MARY COMBS	11,985.75	(426.69)	(743.12)	(173.80)	(407.51)	(75.00)	10,159.63
42	MEGAN CLOUD	292.50	(13.95)	(18.14)	(4.24)	(9.95)	(100.00)	146.22
43	RICHARD CLARK	5,715.00	(300.24)	(354.36)	(82.87)	(178.02)		4,799.51
44	LAKIESHA CLARK	2,947.51	(111.42)	(182.75)	(42.75)	(100.24)		2,510.35
45	ROBERT CEOL	19,930.00	(1,361.58)	(863.61)	(201.94)	(473.59)		11,029.28
46	ROSA BUTLER	11,529.38	(981.85)	(714.87)	(167.21)	(392.03)	(100.00)	9,173.42
47	SARAH BUTLICH	1,275.02	(39.24)	(79.06)	(18.50)	(43.36)		1,094.86
48	SHARLENE BROWN	14,058.00	(1,356.13)	(871.56)	(203.80)	(477.98)		11,148.53
49	SHARON BROWN	1,314.38	(69.54)	(81.50)	(19.06)	(44.70)	(75.00)	1,024.58

Figure 13-1

Set a Specific Area to Print

1. Highlight the area you want to print.



Unless you specify a specific print area when you print, Excel prints the entire worksheet.

2. Choose Page Layout → Print Area → Set Print Area in the Page Setup group. See Figure 13-2. Dotted lines appear around the print area. When you print the worksheet, only the area contained within the dotted lines prints. See the section, “Print Worksheets and Charts,” later in this chapter.



To reset Excel to print the entire worksheet, choose Page Layout → Print Area → Clear Print Area.

	A	B	C	D	E	F	G	H
1	NAME	GROSS PAY	FEDERAL	FICA	MEDICARE	STATE	INSURANCE	NI
2	ALLISON WOOD	6,001.90	(114.63)	(372.12)	(87.03)	(166.48)	(100.00)	
3	AMY WAIN	1,443.75	(124.57)	(89.53)	(20.94)	(49.10)	(75.00)	
4	ANGELA TERRY	2,128.13	(185.17)	(131.95)	(30.86)	(72.35)	(75.00)	
5	ANNA TAYLOR	7,912.51	(671.64)	(480.61)	(114.74)	(269.08)	(50.00)	
6	ANTHONY STRAIGHT	5,829.07	(409.33)	(361.39)	(84.50)	(198.17)		
7	BARBARA SMITH	8,468.06	(686.30)	(525.03)	(122.77)	(287.94)	(100.00)	
8	BARBARA WALTERS	5,531.81	(362.64)	(342.97)	(80.19)	(188.09)	(100.00)	
9	BRENDA SORTAGE	3,781.89	(288.09)	(234.50)	(54.83)	(128.61)		
10	BRENT SMITH	840.01		(52.09)	(12.18)	(23.99)	(75.00)	
11	BRIAN SINCLAIR	10,515.14	(899.56)	(651.96)	(152.48)	(357.52)	(100.00)	
12	BRIANNA ROBINSON	5,665.40	(328.46)	(351.27)	(82.17)	(192.65)		
13	CAMERON RHEAL	1,281.00	(62.00)	(79.43)	(18.60)	(43.58)		
14	CHARLES RATTS	88.82		(5.50)	(1.29)	(1.10)		
15	CHERYL PATE	1,123.50	(60.03)	(69.65)	(16.30)	(38.20)	(100.00)	
16	CHERYL MUSTERS	5,451.23	(282.89)	(337.92)	(79.04)	(185.35)	(75.00)	
17	CLAUDIA MORRIS	14,279.13	(1,376.59)	(885.34)	(207.14)	(485.51)	(100.00)	1
18	DARREN MORRIS	19,458.00	(1,689.40)	(1,206.26)	(282.18)	(623.12)		1
19	DAWN MORGAN	1,723.71	(142.71)	(106.88)	(24.99)	(58.62)	(75.00)	
20	DEBORAH MILTON	6,131.83	(364.22)	(380.12)	(88.75)	(208.60)	(75.00)	

Figure 13-2

Adjust the Paper Orientation and Size

1. Choose Page Layout → Orientation in the Page Setup group and then choose whether you want a Portrait or Landscape orientation.



Portrait orientation prints the top of the document along the short edge of the paper, and Landscape prints it along the long edge of the paper.

2. Choose Page Layout → Size in the Page Setup group. A drop-down list of paper sizes appears.
3. Choose a paper size. The paper size choices you see depend on the printer you use. The two most common U.S. choices are Letter, which is 8.5 x 11 inches and Legal, which is 8.5 x 14 inches. (See Figure 13-3.)



Choose More Paper Sizes to open the Page Setup dialog box. From there you can select additional paper sizes.

Make Worksheets Fit Better on a Page

1. Choose Page Layout and then click the Scale to Fit dialog box launcher (the arrow in the bottom-right corner of the Scale to Fit group). The Page Setup dialog box opens.
2. From the Scaling area on the Page tab, make a selection from the options, as shown in Figure 13-4:
 - **Adjust To:** Enlarge or shrink the printed font size by setting a percentage option between 10 and 400.
 - **Fit To:** Force Excel to a specified number of pages wide and high.



Don't try to shrink the document too much. Because Excel shrinks the font, trying to fit too much on a page can make the document typeface too small to read.

3. Click OK.



Alternatively, instead of opening the Page Setup dialog box, select Width, Height, and Scale options from the Scale to Fit group on the Page Layout tab.



Figure 13-3

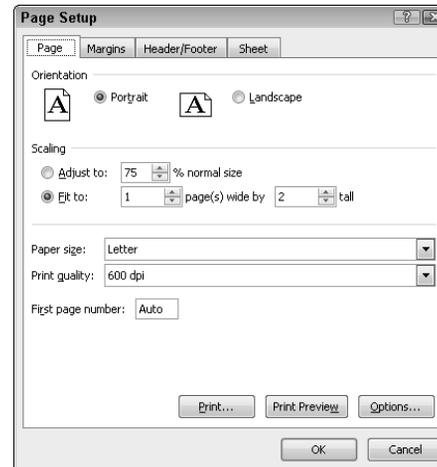


Figure 13-4

Set Page Margins

1. Choose Page Layout → Margins in the Page Setup group. A list of margins appears (see Figure 13-5).
2. Choose from the margins options shown or choose Custom Margins to open the Page Setup dialog box that enables you to set your own margin options.



From the Page Setup dialog box, click the Horizontally option and/or the Vertically option in the Center on Page section to center the worksheet on the page, regardless of the margins.

3. Click OK.

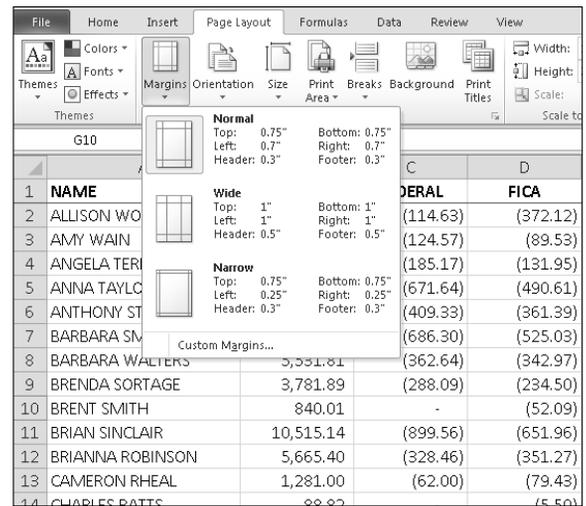


Figure 13-5

Specify Repeating Rows and Columns

1. Choose Page Layout → Print Titles in the Page Setup group. The Page Setup dialog box opens.
2. On the Sheet tab, type a dollar sign (\$) followed by the row numbers or column letters you want to print as titles in the Print Titles section. Entering \$1:\$1, as shown in Figure 13-6, repeats row 1 at the beginning of each page.



Click the Collapse button on the right to collapse the Page Setup dialog box so you can select the rows or columns you want to include. Click the Expand button to return to the Page Setup dialog box.

3. Click OK.

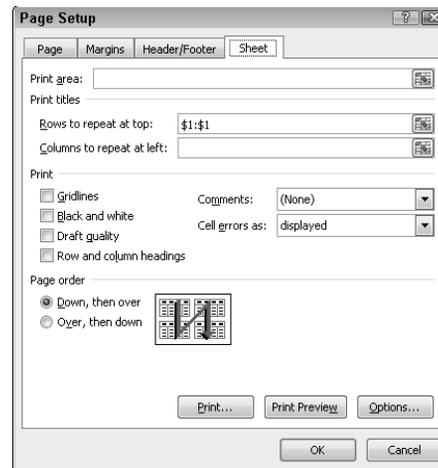


Figure 13-6

Print Gridlines and Row and Column Headings

1. Choose Page Layout and in the Sheet Options group, choose from the following options:

- **Gridlines** ⇨ **Print**: Select the Print option to print the gridlines surrounding each cell in the worksheet.



By default, the Gridlines View check box is selected. If you don't want to see the gridlines while you're working on the worksheet, deselect this check box.

- **Headings** ⇨ **Print**: Select the Print option to print the row numbers or column letters around the worksheet. Figure 13-7 illustrates a worksheet printed with gridlines as well as row and column headings.



By default, gridlines are a lighter shade of gray. You can change the gridline color by choosing File ⇨ Options and selecting a different gridline color from the Advanced section.

Preview before Printing

1. Click File. From the Backstage View that appears, click Print. A Print Settings section appears on the left, and a preview of the worksheet appears on the right.
2. From the preview area (as shown in Figure 13-8), select from the following options:

- If you have multiple pages, click the Page buttons (in the bottom center) to view additional pages.
- Click the Zoom icon in the lower-right corner to enlarge the view. Click it again to reduce the view.
- Select the Show Margins icon to display the page margins; then drag any margin line to manually set margin sizes.

Then click the Show Margins icon again to turn off the margin lines.



See the upcoming task, "Print Worksheets and Charts," in this chapter, to review the Print Settings options.

3. Click File to return to Normal view.

	A	B	C	D	E
1	NAME	GROSS PAY	FEDERAL	FICA	MEDICARE
2	ALLISON WOOD	6,001.90	(114.63)	(372.12)	(87.03)
3	AMY WAIN	1,443.75	(124.57)	(89.53)	(20.94)
4	ANGELA TERRY	2,128.13	(185.17)	(131.95)	(30.86)
5	ANNA TAYLOR	7,912.51	(671.64)	(490.61)	(114.74)
6	ANTHONY STRAIGHT	5,829.07	(409.33)	(361.39)	(84.50)
7	BARBARA SMITH	8,468.06	(686.30)	(525.03)	(122.77)
8	BARBARA WALTERS	5,531.81	(362.64)	(342.97)	(80.19)
9	BRENDA SORTAGE	3,781.89	(288.09)	(234.50)	(54.83)
10	BRENT SMITH	840.01	-	(52.09)	(12.18)
11	BRIAN SINCLAIR	10,515.14	(899.56)	(651.96)	(152.48)
12	BRIANNA ROBINSON	5,665.40	(328.46)	(351.27)	(82.17)

Figure 13-7

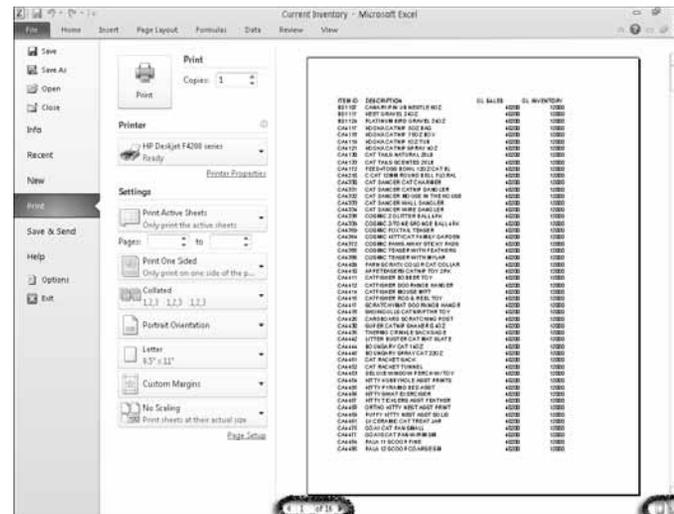


Figure 13-8

Add a Standard Header or Footer

1. Choose View⇨Page Layout in the Workbook Views group. You see the header area of your worksheet. Headers and footers are divided into three sections: Left, Center, and Right. *Headers* appear at the top of each printed page, and *footers* appear at the bottom of each printed page.
2. Click in the header (or footer area) where you want data. Additional tabs appear on the Ribbon.
3. Choose Header & Footer Tools Design⇨Header (or Footer) in the Header & Footer group. A list of predefined headers (or footers) appears, as shown in Figure 13-9.
4. Select the header (or footer) you want to use.

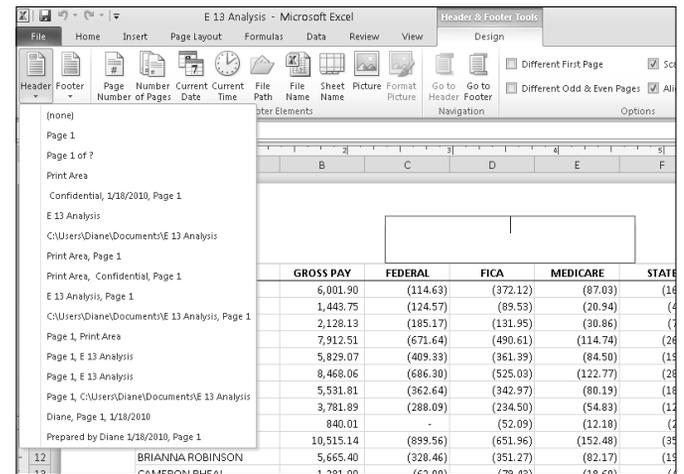


Figure 13-9

View Other Header and Footer Options

1. Choose View⇨Workbook Views⇨Page Layout and click anywhere in the header or footer area.
2. Choose Header & Footer Tools Design and from the Options group, select any of the options shown in Figure 13-10:
 - **Different First Page:** If you choose this option, Excel doesn't print the header or footer on the first page.
 - **Different Odd & Even Pages:** Choose this option if you want a header or footer for the odd-numbered pages of the document different from the one that prints on the even-numbered pages.
 - **Scale with Document:** This option is selected by default and tells Excel to use the same font size and scaling as the worksheet. If you want the header and footer font size and scaling independent of the worksheet scaling, deselect this check box.
 - **Align with Page Margins:** Choose this option to align the header and footer with the left and right margins of the worksheet.



Figure 13-10

Create a Custom Header or Footer

1. Choose View⇒Page Layout in the Workbook Views group.



Click the Go to Footer button on the Header & Footer Tools Design tab to jump to the footer area.

2. In the desired Header or Footer section, type the text you want for the header (or footer). As shown in Figure 13-11, you can format the header and footer text just as you would any cell data.
3. Click any buttons from the Header & Footer Elements group:
 - **Page Number:** Insert a code `&[Page]` that indicates the page number.
 - **Number of Pages:** Insert a code `&[Pages]` that indicates the total number of pages.



Add text to the page text. For example: Page `&[Page]` of `&[Pages]` prints Page 3 of 5 or Page 1 of 2.

- **Current Date or Current Time:** Insert the print date or time of day. See Figure 13-12.
- **File Path, File Name, or Sheet Name:** Include file information.
- **Picture:** Insert a graphic image, such as a company logo.
- **Format Picture:** Resize, rotate, or crop a header or footer graphic image.

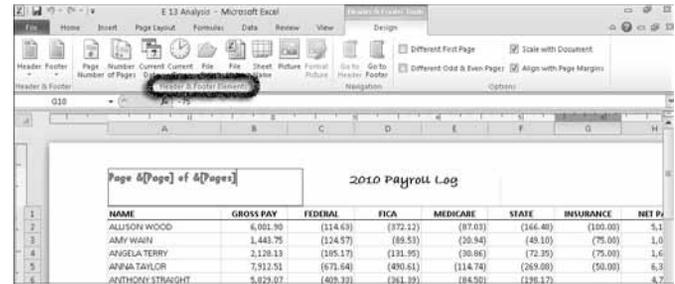


Figure 13-11

Page 1 of 2		2010 Payroll Log						1/18/2010	
NAME	GROSS PAY	FEDERAL	FICA	MEDICARE	STATE	INSURANCE	NET PAY		
ALLISON WOOD	6,001.90	(114.63)	(372.12)	(87.03)	(166.40)	(100.00)	5,161.64		
AMY WAIN	1,443.75	(124.57)	(89.53)	(20.94)	(49.10)	(75.00)	1,084.61		
ANGELA TERRY	2,120.13	(185.17)	(131.95)	(30.86)	(72.35)	(75.00)	1,632.80		

Figure 13-12

Print Worksheets and Charts

1. Click File and choose Print. A Print Settings section appears on the left, and a preview of the worksheet appears on the right.
2. From the Print Settings area, as shown in Figure 13-13, choose from the following options:
 - **Copies:** Select the number of copies you want to print.
 - **Printer:** Select the printer to which you want to print.
 - **Settings:** Choose whether to print the current worksheet, a preselected area, or the entire workbook. You can also specify to print only certain pages. Other settings, such as whether to print double-sided (if your printer has the capability), print collation order, orientation, paper size, and margins are also available.
3. Click the Print button to print the worksheet with the settings you selected.



Figure 13-13

E-Mail a Workbook

1. Click File, and from the Backstage View, choose Save & Send → Send using E-Mail and then click the Send as Attachment button. As shown in Figure 13-14, your e-mail program launches with the worksheet as an attachment.



Recipients must have Excel installed on their computers to open the workbook file.

2. Enter the recipient e-mail information and any additional text in the body of the message.



Alternatively, instead of sending as an Excel attachment, which is an editable file, you can send the workbook as a PDF or XPS attachment.

3. Click the Send button.

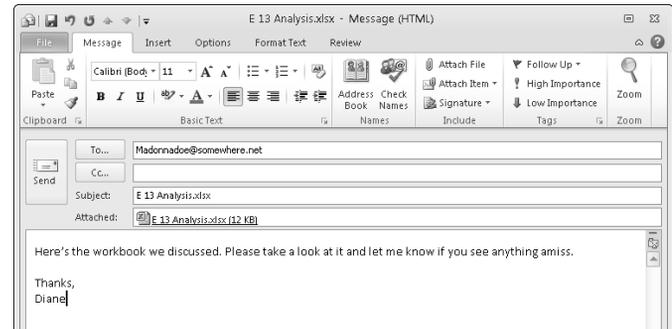


Figure 13-14

Saving Time with Excel Tools

This chapter is about stuff . . . Excel stuff. In the earlier chapters, I show how Excel has lots of power to make your computing life a little easier. This chapter contains a diverse group of Excel tools designed to speed up data entry and improve spreadsheet quality.

In this chapter, you discover how to

- ➔ Set and manage Excel options including choosing a default location in which to store your files.
- ➔ Customize the Ribbon and Quick Access toolbar.
- ➔ Manage Excel's AutoCorrect feature to automatically correct many common misspelling or formatting issues.
- ➔ Add special characters such as the copyright symbol, the registered trademark, foreign characters, or smiley faces.
- ➔ Check the workbook for spelling errors. Excel includes a built-in dictionary you can use to check your workbooks for misspellings; however, it can't read your mind. But combine the spell check with careful proofreading, and it becomes a very helpful tool.
- ➔ Work with what I call *Assistance Tags*, those funny little icons that often appear when you perform certain functions, such as paste data or enter a formula that may contain an error. Assistance Tags offer you options right at the tip of your mouse pointer.
- ➔ Split data into multiple columns where you can break up data containing multiple words such as a first name and last name, or city, state, and zip code, into separate columns.
- ➔ Merge columns by using the CONCATENATE function to combine data.

Chapter

14

Get ready to . . .

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Set Excel General Options

1. Choose File→Options. The Excel Options dialog box appears with categories on the left.
2. On the left side, click General (see Figure 14-1) and as desired, change any of the following options:
 - **Show Mini Toolbar on Selection:** Controls whether the mini toolbar appears. (See Chapter 7.)
 - **Enable Live Preview:** Controls whether you see how formatting options, such as fonts and Quick Styles, will look before you commit to them.
 - **Color Scheme:** Controls the color of the Ribbon and other Office elements.
 - **ScreenTip Style:** Controls how ScreenTips appear when you rest the pointer on a command or control. Figure 14-2 illustrates a ScreenTip.
 - **Use This Font:** Controls the font when you create a new workbook. Body Font allows Excel to use the font assigned by the current theme. (See Chapter 7.)
 - **Font Size:** Controls what font size you want as the default when you create a new workbook. (See Chapter 6.)
 - **Default View for New Sheets:** Controls what view you see when creating a new workbook. (See Chapter 10.)
 - **Include This Many Sheets:** Controls the default number of worksheets in a new workbook. (See Chapter 9.)
 - **User Name:** Controls what appears when you add comments or revision marks. (See Chapter 19.)
3. Click OK when you're finished.

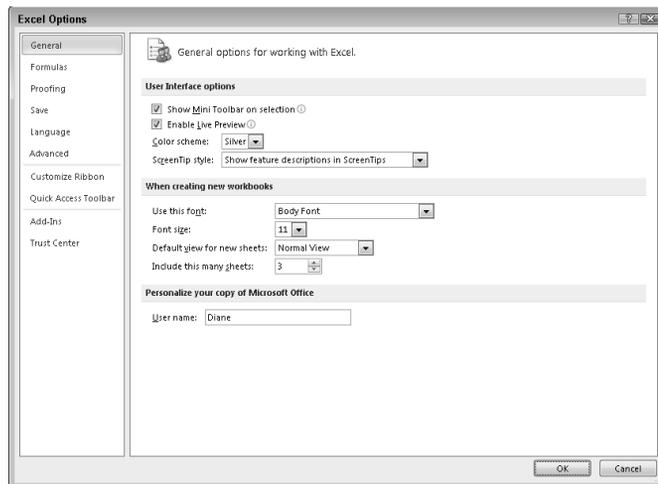


Figure 14-1

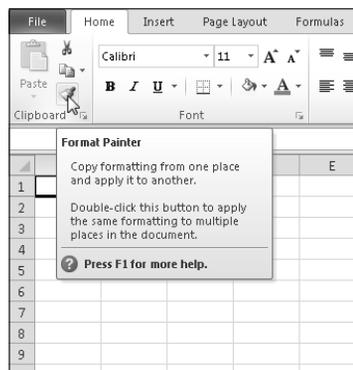


Figure 14-2

Set the Default File Location

1. Choose File⇒Options and click the Save category. You see the options, as shown in Figure 14-3.
2. In the Default File Location text box, enter the data path to the place where you want to save most of your files. By default, Excel saves your files in the Documents folder stored on your local hard drive, but your company may have another location where it wants you to keep most of your Excel files. An example might be G:\COMPANY_DOCUMENTS\DIANE.



To override the default file location, when saving or opening a file, you can click the Favorites list and choose a location different from the default location.

3. Click OK.

Manage AutoCorrect

1. Choose File⇒Options and then from the Proofing category, choose AutoCorrect Options. The AutoCorrect dialog box opens.
2. Deselect any check box from any option you don't want Excel to correct automatically.
3. In the Replace box, type a common typing mistake.
4. In the With text box, type the correct word, as shown in Figure 14-4, and then click the Add button.



To remove any unwanted entry, select the entry and click the Delete button.

5. Click the AutoFormat as You Type tab and deselect the check box from any action you don't want Excel to perform automatically.
6. Click OK twice.

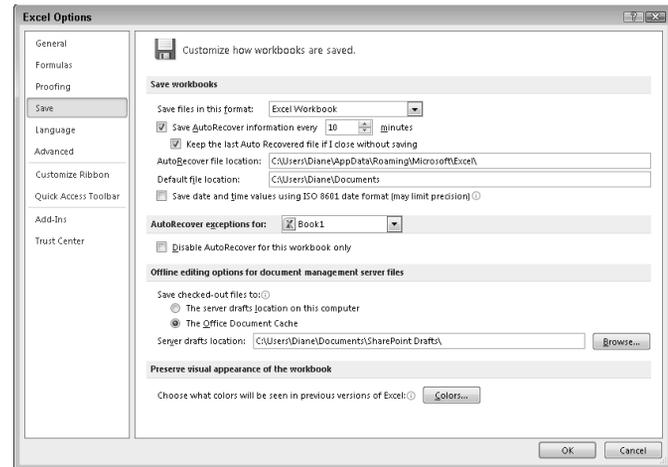


Figure 14-3

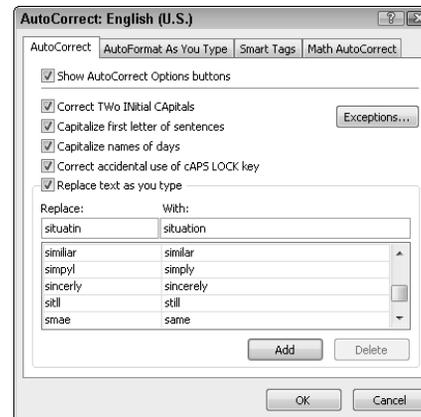


Figure 14-4

Examine Advanced Editing Options

1. Choose File⇒Options and then click Advanced. (See Figure 14-5.) The top section in the Advanced category includes Editing Options.
2. Here are a few of the more commonly used editing options. Select or deselect the following as desired:
 - **After Pressing Enter, Move Selection:** Change the direction of the next selected cell after pressing the Enter key. If deselected, the selection cell remains the current cell.
 - **Automatically Insert a Decimal Point:** When selected and you type a value such as 105, Excel enters it as 1.05 instead of the whole number 105. You can also set the number of decimal places you want displayed.
 - **Enable Fill Handle and Cell Drag-and-Drop:** When selected, you can copy and move data by dragging the cells to a new location. (See Chapter 2.)
 - **Allow Editing Directly in Cells:** This option controls whether you can edit a cell by double-clicking the cell. If deselected, you can edit cell contents only in the Formula bar.
 - **Extend Data Range Formats and Formulas:** When selected, Excel automatically formats new items you add to the end of a list to match the format of the rest of the list.
 - **Enable AutoComplete for Cell Values:** This controls whether Excel completes text entries, as shown in Figure 14-6, when in the same column, the first few letters match an existing entry in the column.
3. Click OK when you're finished.

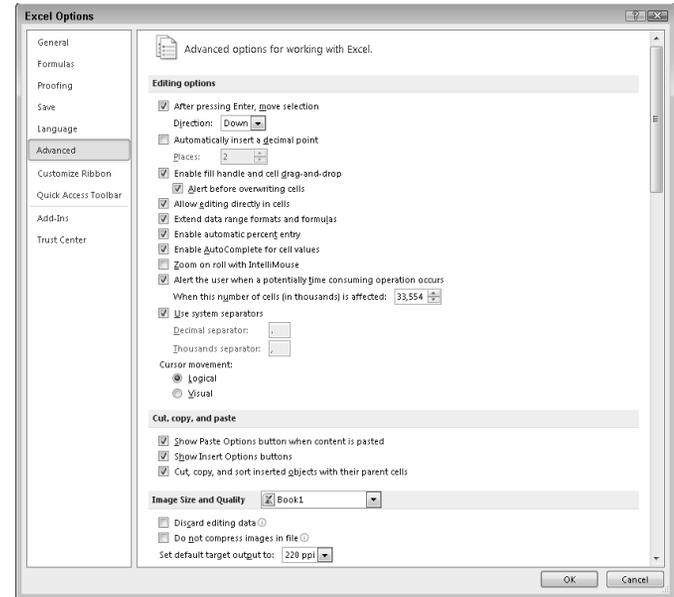


Figure 14-5

B	C	D	E
	American		
	English		
	Spanish		
	Italian		
	American		

Figure 14-6

Customize the Quick Access Toolbar

1. Choose File⇒Options. The Excel Options dialog box appears.
2. Click Quick Access Toolbar. Options for customizing the Quick Access toolbar appear.
3. Click the down arrow next to the Choose Commands From drop-down list and choose All Commands. All Excel commands appear in the list on the left side.
4. Choose the command you want to add to the Quick Access toolbar and then click the Add button. See Figure 14-7 in which I add the Quick Print button.

 In the right column, click any command and then click the up or down arrow to change the icon arrangement. Click the Reset button to reset the Quick Access toolbar to the default toolbar.

5. Click OK when you're finished.



Click the up or down arrow to reorder the buttons. Rename the new custom group (or tab) by clicking the new group and then clicking the Rename button. Remove a tool, custom group, or custom tab by clicking it and then clicking the Remove button.

4. Click OK when you're finished.

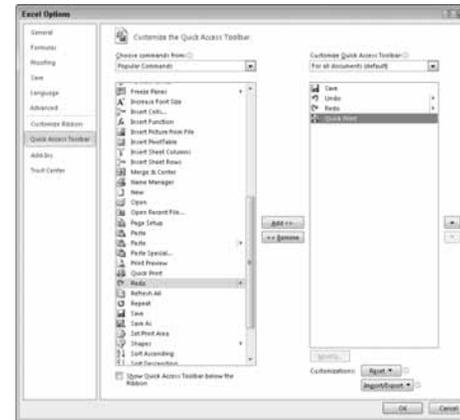


Figure 14-7

Customize the Ribbon

1. Choose File⇒Options and then click Customize Ribbon.
2. From the right side column, click the Ribbon tab name to which you want to add the tool and then click the New Group button. A New Group appears at the bottom of the selected Ribbon tab list. You can't modify the existing groups, but you can add new ones.

 If you want to create a new custom Ribbon tab, instead of clicking the New Group button, click the New Tab button.

3. With New Group (Custom) selected, from the left side column, click the tool you want to add and then click the Add button. The tool appears under the new group. See Figure 14-8 in which I add the New, Open, Quick Print and E-Mail buttons to a new group.



Figure 14-8

Add Special Characters

1. Click the location where you want the symbol. Special characters can be in their own cells or amid other text or values.
2. Choose Insert⇨Symbol in the Symbols group. The Symbol dialog box appears (see Figure 14-9).
3. From the Symbols tab, click the symbol you want to use.



Different fonts display different symbols. If you don't see the symbol you want, choose a different font from the Font drop-down list. For a large variety of unusual characters, look at the Wingdings fonts. Additional special characters are available on the Special Characters tab.

4. Click the Insert button. Excel inserts the symbol into the current cell. Click the Close (X) button.

Find the Right Word with the Thesaurus

1. Click anywhere in the word you want replaced.
2. Choose Review⇨Thesaurus in the Proofing group. A Research pane, as shown in Figure 14-10, appears on the right side of the screen and displays various meanings of the current word and possible replacements.



Alternatively, press Shift+F7 to launch the Thesaurus.

3. If you don't see the exact word you want, click a similar word, which displays its synonyms. Click the Back button to return to the previous word.
4. When you locate the word that best fits your document, click the arrow next to it and choose Insert. Excel replaces the current word with your selection.

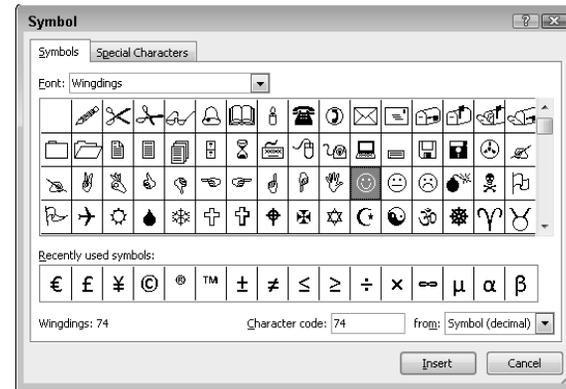


Figure 14-9

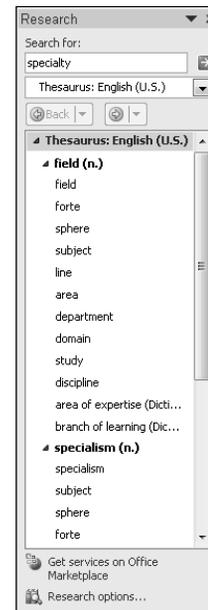


Figure 14-10

Check Your Spelling

1. Choose Review ⇨ Spelling in the Proofing group. The Spelling dialog box opens with the first potential error, as shown in Figure 14-11.



Spell checker reviews all cell values, comments, embedded charts, text boxes, buttons, and headers and footers, but it doesn't check protected worksheets, formulas, or text that results from a formula.

2. Click one of the following buttons:
 - **Change** or **Change All**: Choose one of the suggestions; then click the Change button to change just this spelling mistake or click the Change All button if you think you made the mistake more than once.
 - **AutoCorrect**: Have Excel, in future workbooks, automatically correct the mistake with the selected replacement.
 - **Ignore Once**: Click this button if you don't want to change the spelling of the highlighted instance.
 - **Ignore All**: Click this button if you don't want to change the spelling of any identical instances.
 - **Add to Dictionary**: Add a word, such as a proper name or medical or legal term, to Excel's built-in dictionary so that Excel won't flag it as a potential error in the future.
3. After you click one of these buttons, Excel proceeds to the next error. When all potential mistakes are identified, the message box shown in Figure 14-12 appears. Click OK.



Figure 14-11

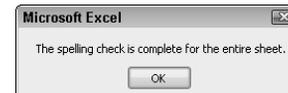


Figure 14-12

Work with Assistance Tags

1. From the worksheet, click an Assistance Tag icon. Each Assistance Tag type appears with a different icon appearance and options including:
 - **Paste Options:** This icon appears over pasted data (as shown in Figure 14-13), offering choices for pasting, such as whether to include formatting, values, or both.
 - **AutoFill Options:** This icon appears after you enter data in a worksheet, offering tips on how to fill in the text or data.
 - **Insert Options:** This icon appears next to inserted cells, rows, or columns, offering a list of formatting options. (See Figure 14-14.)
 - **Error Checking:** This icon appears over potential formula errors in the same way as the Error-Checking feature. These errors are indicated by a small green triangle in the upper-left corner of a worksheet cell.
2. Choose the option you want.

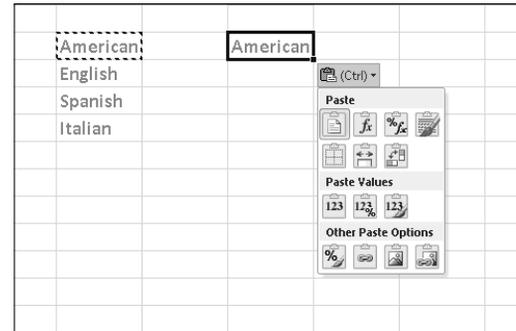


Figure 14-13

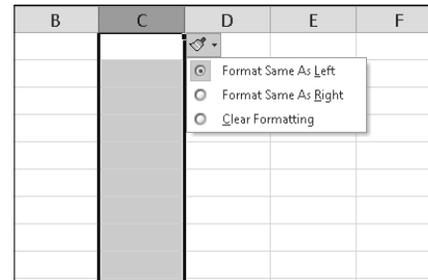


Figure 14-14

Split Data into Multiple Columns

1. If necessary, insert blank columns to the right of the cells you want to convert into multiple columns. If you want your data in three columns, you must have two blank columns.
2. Select the cells you want to convert.

 You can't split empty cells, and you can't split merged cells. You must first unmerge the cells. (See Chapter 6 for information about merged cells.)

3. Choose Data > Text to Columns in the Data Tools group. The Convert Text to Columns Wizard appears.
4. Select the Original Data type that best suits your existing data. For example, if you're separating text that's variable in length, such as a first name and last name, select Delimited. The Delimited data type works best if your data has a similar format. If all cells contain a specific number of characters, choose Fixed Width.

 If your data type is Delimited, be sure each section is separated by a common character such as a comma, space, period, apostrophe, or tab.

5. Click the Next button. The option you see next depends on which data type you selected in Step 4.
6. If you selected Fixed Width, click the ruler bar where you want the data to split. If you selected Delimited, enter the character you use to separate your text. In Figure 14-15, the text is separated by a space.

 (Optional) Click the Next button and select a format type for each data column.

7. Click the Finish button. Excel separates the selected cells into multiple columns. (See Figure 14-16.)

 To split data into two lines in the same cell, press Alt+Enter where you want to break the line.

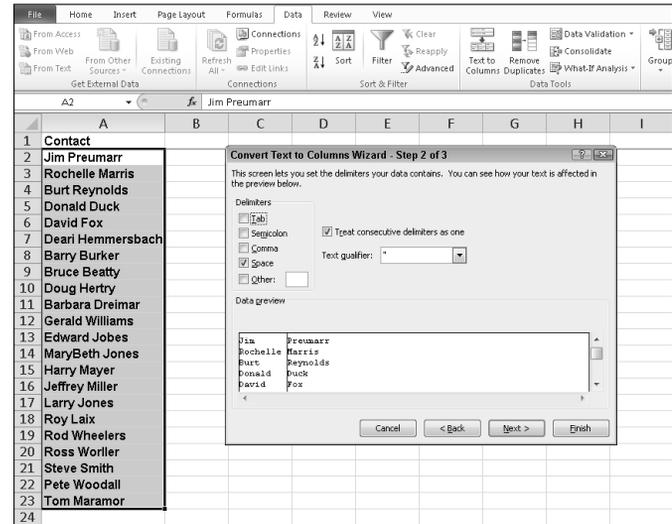


Figure 14-15

	A	B	C	D
1	Contact			
2	Jim	Preumarr		
3	Rochelle	Marris		
4	Burt	Reynolds		
5	Donald	Duck		
6	David	Fox		
7	Dearl	Hemmersbach		
8	Barry	Burker		
9	Bruce	Beatty		
10	Doug	Hertry		
11	Barbara	Dreimar		
12	Gerald	Williams		
13	Edward	Jobses		
14	MaryBeth	Jones		
15	Harry	Mayer		
16	Jeffrey	Miller		
17	Larry	Jones		
18	Roy	Laix		
19	Rod	Whealers		
20	Ross	Worlier		
21	Steve	Smith		
22	Pete	Woodall		
23	Tom	Maramor		
24				

Figure 14-16

Merge Columns

1. Click in the cell where you want to put the merged data.
2. Choose Formulas→Text→Concatenate in the Function Library group. The Function Arguments dialog box appears. (See Figure 14-17.)
3. Type the first cell address or click the cell you want to add to the combination. Excel enters the cell address in the Text1 box.



(Optional) If you want to add specific text that isn't in a cell address, type the text or punctuation (including any spaces) on any line. Excel places any spaces, punctuation, or text in quotation marks.

4. In the Text2 box, click the cell or type the text you want next. Each element must go on its own text-box line.
5. Repeat Step 4 for each item you want to add. Figure 14-18 shows an example in which I want to add a comma and a space between the first cell (City) and the second cell (State). I'm also adding two spaces between the State cell and the Zip cell. You can see the result in the bottom of the Function Arguments dialog box.
6. Click OK.



To convert the merged cells into plain text instead of formulas, select the merged cells, choose Home→Copy; next, choose Home→Paste→Paste Special; and finally, select Values from the Paste Special dialog box and click OK.



(Optional) Use the ampersand (&) between cell addresses to join text items. For example, =A1&B1 returns the same value as =CONCATENATE(A1,B1). However, the cells you connect with the ampersand can't be blank.



You can also use the CONCATENATE command along with a couple other functions, to display only certain digits — for example, the last four digits of a cell containing a credit card number. If cell C5 contains the credit card number and you want cell D5 to display ****-****-1234, enter the following formula in cell D5. =CONCATENATE(REPT("****-",3), RIGHT(C5,4)). The REPT function repeats the "****-" text three times and combines that with the last four digits of the credit card number, which are derived from the RIGHT function.

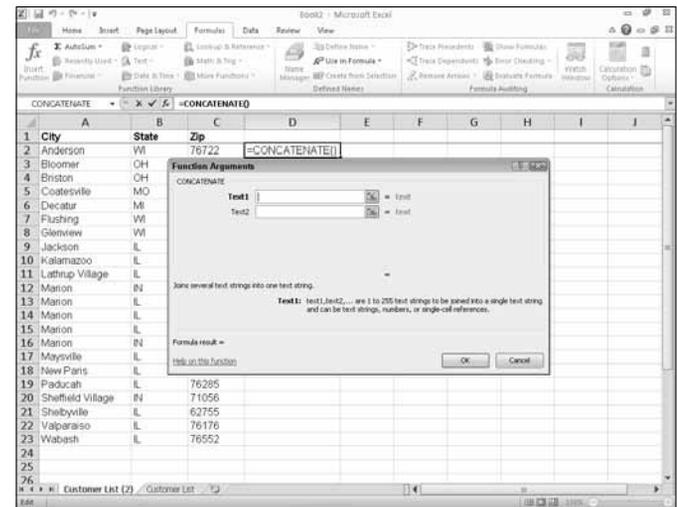


Figure 14-17

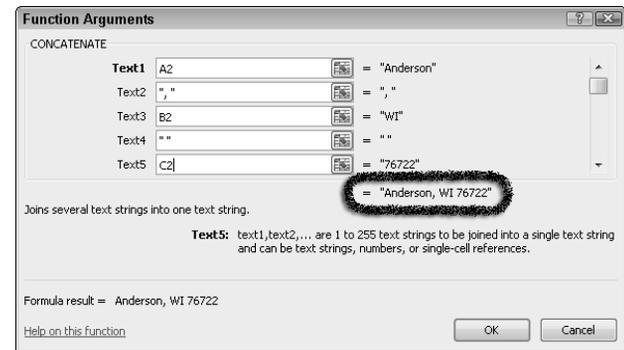


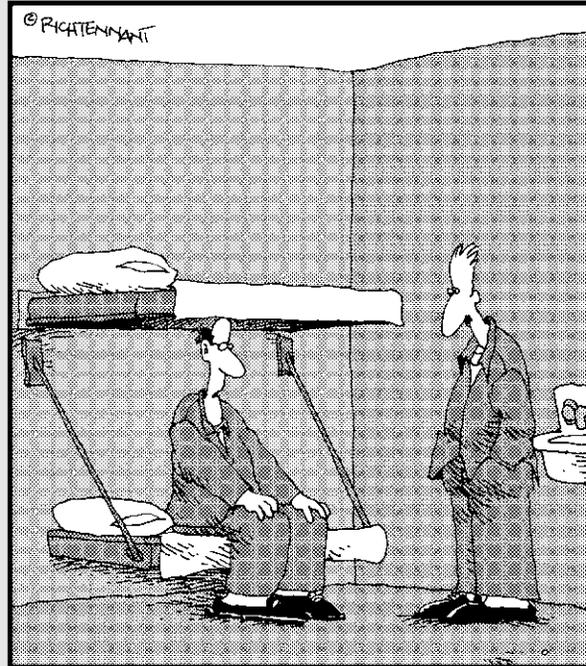
Figure 14-18

Part IV

Analyzing Data with Excel

The 5th Wave

By Rich Tennant



"I started running 'what if' scenarios on my spreadsheet, like, 'What if I were sick of this dirtwad job and funneled some of the company's money into an off-shore account?'"

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Working with Outlines

When you're working with a large worksheet, it's sometimes difficult to look at the big picture your data presents to you. You can use Excel to automatically calculate subtotal and grand total values from rows containing related data (sometimes called a *database*). When you create subtotals, Excel outlines the list so that you can display or hide the detail rows for each subtotal.

A couple other database terms you need to become familiar with are fields and records. *Fields* break down your database list into manageable pieces by using Excel columns. For example, an address database might include fields such as name, address, and phone number. *Records* are the rows containing the individual pieces of information you enter. In an address database, for example, a single row contains all the information about a specific person.

Before you use the subtotal feature, you must first sort your list so that the rows you want to subtotal are grouped together. You can then calculate subtotals and perform other mathematical calculations for any columns that contain numbers. You can also count the number of items in a selected field.

If your data isn't in a database format, you can still group sections to create a quick way to display or hide them as necessary. Similarly to the way Excel does subtotals, it displays groups in an outline format. In this chapter, I take a look at the extensive subtotaling, grouping, and outlining features contained in Excel. I also show you how to create a data entry form screen for faster data entry. By default, Excel 2010 doesn't include the Form command you need for this, but you can easily add it to the Quick Access toolbar.

Chapter

15

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Add the Form Button

1. Choose File⇒Options. The Excel Options dialog box appears.
2. Click the Quick Access Toolbar section and from the Choose Commands From drop-down list, choose Commands Not in the Ribbon.
3. Click the Form button and then click the Add button. Excel places the Form command in the right column. (See Figure 15-1.)
4. Click OK. Excel places the Form command in the Quick Access toolbar.



Using a data form for data entry is easier than typing across the columns when you have more columns than fit on the screen at one time.

Create a Data Entry Screen

1. In row 1 of your worksheet, enter the column headings for your database. When you create the data entry screen, the column headings appear as field names. Each database table should have a specific topic, such as inventory items or vendor addresses, and should have two or more fields. No two field names can be exactly alike.



For faster data entry, format any numerical columns with the correct number format. Then when you use the data entry screen, you enter only the raw numbers without commas or dollar signs.

2. Click in any table heading cell and then click the Form button from the Quick Access toolbar.
3. Click OK if a message box appears. If you already have records entered into the database, Excel doesn't display the message box. Instead, Excel displays a data form dialog box with the headings shown as field names. See Figure 15-2.

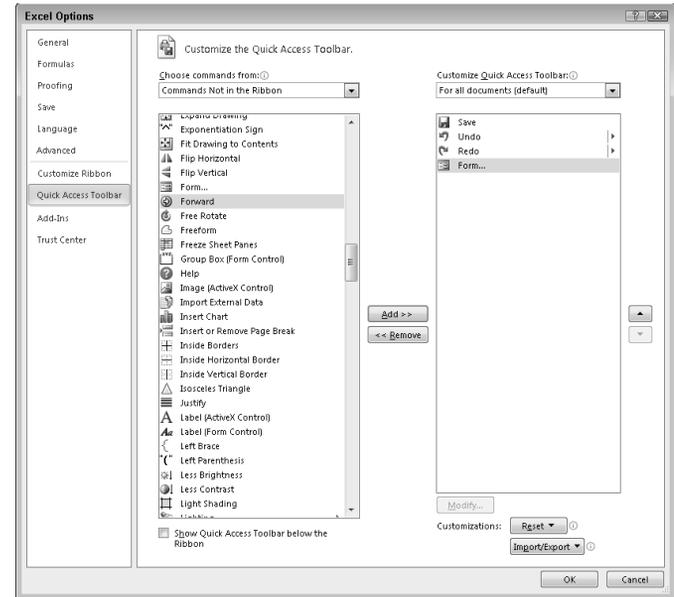


Figure 15-1

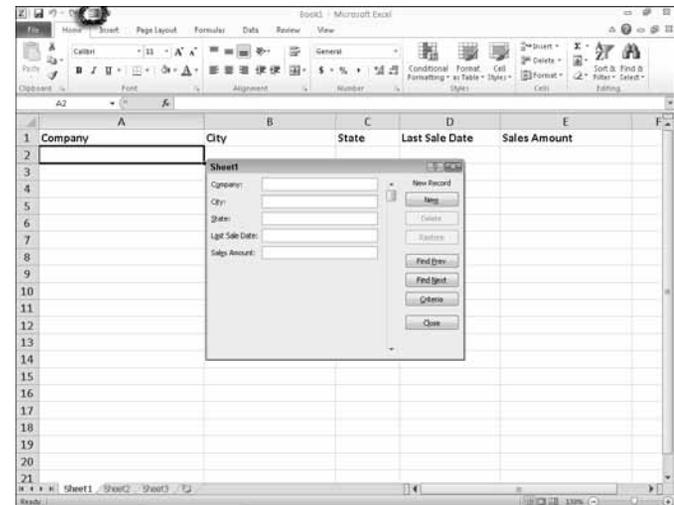


Figure 15-2



Each label has a field beside it for you to enter the field data.



Widen the data entry fields by widening the columns in the spreadsheet. (See Chapter 6.)

4. In the data form dialog box, enter the information for the first record and press the Tab key to move from field to field (see Figure 15-3).



Press Shift+Tab to move back to the previous field.

5. Click the New button. Excel adds the record to the database and displays another blank screen ready for the next record.
6. Click the Close button when you finish entering data.



You can reopen the database form at any time by clicking the Form button on the Quick Access toolbar.

Manage Records through the Form Screen

1. Click the Form button from the Quick Access toolbar. The Form window opens.



The active cell must be somewhere within the database headings or data.

2. Click the Find Next button. The form displays the next record in your database.
3. Click the Find Prev button. The previous record in your database appears.

4. If you want to delete the current displayed record, click the Delete button. The warning message shown in Figure 15-4 appears.
5. Click OK if you want to delete the record. Use caution. This action can't be undone!



Click the New button to display a blank form where you can enter a new record.

Figure 15-3

Figure 15-4

Generate a Subtotal

- Sort the field to use for generating subtotals. For example, if you want to know the total sales by state, you sort by the State field. (See Chapter 11 for sorting instructions.)



The subtotal data must have no blank rows or columns, and each column in the database must have a label in the first row.

- Choose Data⇒Subtotal in the Outline group. The Subtotal dialog box appears.
- Select the field you want to subtotal from the At Each Change In drop-down list.
- Select a function from the Use Function drop-down list. Choices include *SUM*, which totals the values in a field; *COUNT*, which returns the quantity of items in a field; *COUNT NUMBERS*, which returns the quantity of numerical items in a field; *AVERAGE*, which determines the average value of a field; *MAX* and *MIN*, which display the highest and lowest value in a field; and *PRODUCT*, which returns the value of all the numbers in a field multiplied together. The options also include four statistical functions: *STDDEV*, *STDDEV.P*, *VAR*, or *VAR.P*.
- Select the fields you want to subtotal from the Add Subtotal To list. (See Figure 15-5.) You can select more than one field to subtotal.
- Select the Replace Current Subtotals check box if you already have previous subtotal calculations. Excel replaces the previous subtotals with the new ones.
- Select the Page Break between Groups check box if you want Excel to begin each subtotaled group on a new page.
- Click OK. Excel performs the subtotal. Figure 15-6 shows sales subtotaled by state.

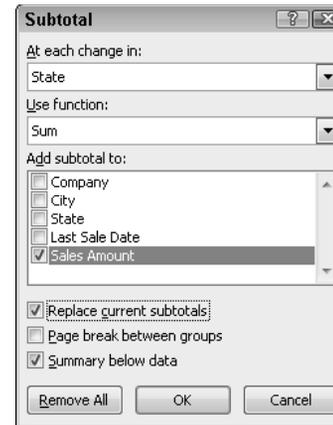


Figure 15-5

	Company	City	State	Last Sale Date	Sales Amount
1	Development Products	Kingman	AZ	5/19/2005	2,351
2			AZ Total		2,351
3	Bill Smith Enterprises	Jasper	CA	2/6/2010	1,880
4	Canal Development	Arlington	CA	8/1/2009	5,344
5	Happy Cows Inc	Glenview	CA	2/6/2010	3,311
6	State Collections	Flushing	CA	1/14/2010	4,641
7	State Recovery	Flushing	CA	1/14/2010	1,356
8	Hillcrest Shopping	Flushing	CA	1/14/2010	3,981
9	Steve's Animal Care	Anderson	CA	8/1/2009	3,688
10			CA Total		24,201
11	American Source Supply	Bnston	DE	4/22/2006	2,115
12			DE Total		2,115
13	Enterprise Solutions	Glenview	GA	2/6/2010	6,483
14	Bruce Beatty Development	Jackson	GA	8/3/2009	2,541
15	Vern's Telephone Repair	Jackson	GA	8/3/2009	5,849
16			GA Total		14,873
17	Associated Cargo	Decatur	IL	9/16/2008	5,254
18	Colt Development USA	Kalamazoo	IL	5/19/2005	4,286
19	Drag and Tote	Lattinup Village	IL	10/4/2009	4,964
20	Teddy's Drive In	Marion	IL	12/21/2009	4,299

Figure 15-6

Collapse Subtotal Headings

1. Create subtotals of your data (see the “Generate a Subtotal” section, earlier in this chapter).



With subtotals, Excel defines groups in the form of an outline and bases the groups on the rows used to calculate the subtotals.

2. Hide and show data using the following methods:
 - See only the grand total: Click the 1 on the subtotal headings (the column on the left side of the worksheet).
 - See the subtotal categories and amounts (the detail is hidden): Click the 2 on the subtotal headings. (See Figure 15-7.)



Excel uses its SUBTOTAL function to create the subtotals.

- Show all the detail and subtotals: Click the 3 on the subtotal headings. Excel displays the individual worksheet rows.

Control Individual Subtotals

1. Create subtotals for your data (see the “Generate a Subtotal” section, earlier in this chapter).
2. Click the Show Detail (plus sign) button next to any subtotal row. As shown in Figure 15-8, the selected subtotal detail expands. You see the detail data for Illinois, but the other states are still hidden.
3. Click the Hide Detail (minus sign) button next to any subtotal row. The detail data for the selected row is hidden.



Alternatively, choose Data and then in the Outline group, click the Show Detail or Hide Detail buttons.

	A	B	C	D	E	F
1	Company	City	State	Last Sale Date	Sales Amount	
3			AZ Total		2,351	
11			CA Total		24,201	
13			DE Total		2,115	
17			GA Total		14,873	
31			IL Total		52,757	
39			IN Total		25,397	
41			MI Total		5,939	
43			MO Total		1,865	
66			NJ Total		94,343	
72			OH Total		15,450	
76			WA Total		10,134	
82			WI Total		20,536	
83			Grand Total		269,961	

Figure 15-7

	A	B	C	D	E	F
11			CA Total		24,201	
13			DE Total		2,115	
17			GA Total		14,873	
18	Associated Cargo	Decatur	IL	9/16/2008	5,254	
19	Colt Development USA	Kalamazoo	IL	5/19/2005	4,286	
20	Drag and Tote	Lathrup Village	IL	10/4/2009	4,964	
21	Teddy's Drive In	Marion	IL	12/21/2009	4,299	
22	Magic Circle Massage	Marion	IL	7/15/2006	3,527	
23	Mary Jones DDS	Marion	IL	8/12/2009	3,312	
24	Missionary Press	Wabash	IL	7/13/2009	6,235	
25	Neuco LLC	New Paris	IL	1/30/2010	969	
26	New Castle	Maysville	IL	10/18/2008	6,711	
27	Pete Wood Farms	Vatparaiso	IL	2/13/2010	2,014	
28	Telfer, Inc.	Paducah	IL	2/19/2010	3,158	
29	Wahico	Shelbyville	IL	6/11/2005	1,643	
30	Daily Herald	Coober	IL	7/11/2007	6,385	
31			IL Total		52,757	
39			IN Total		25,397	
41			MI Total		5,939	
43			MO Total		1,865	
66			NJ Total		94,343	

Figure 15-8

Create Multiple Subtotals

- From the Sort dialog box (choose Data→Sort in the Sort & Filter group), first select the column to use for generating primary subtotals and then the column for generating secondary subtotals. For example, if you want to subtotal sales by state and then by city, you first sort by state and then by city. See the example in Figure 15-9.
- Choose Data→Subtotal to display the Subtotal dialog box.
- Select the primary field you want to subtotal from the At Each Change In drop-down list.
- Select a function from the Use Function drop-down list. For example, use Count if you want to know how many values are in the field, or use Sum if you want a total of a field.
- Select one or more fields you want to subtotal from the Add Subtotal To list.
- Click OK. Excel summarizes the data by the first selected field.
- Choose Data→Subtotal. Excel again displays the Subtotal dialog box.
- Select the secondary field you want to subtotal, the type of function, and the fields you want to subtotal. In this example, after a subtotal by sales State I want a subtotal of sales by City.
- Deselect the Replace Current Subtotals check box and click OK. Figure 15-10 illustrates the list subtotaled first by state and then by city.

	A	B	C	D	E	F	G
1	Company	City	State	Last Sale Date	Sales Amount		
2	Development Products	Kingman	AZ	5/19/2005	2,351		
3	Steve's Animal Care	Anderson	CA	8/1/2009	3,688		
4	Canal Development	Arlington	CA	8/1/2009	5,344		
5	State Recovery	Flushing	CA	1/14/2010	1,356		
6	Hillcrest Shopping	Flushing	CA	1/14/2010	3,981		
7	State Collections	Flushing	CA	1/14/2010	4,641		
8	Happy Cows Inc	Glenview	CA	2/6/2010	3,311		
9	Bill Smith Enterprises	Jasper	CA	2/6/2010	1,880		
10	American Source Supply	Briston	DE	4/22/2006	2,115		
11	Enterprise Solutions	Glenview	GA	2/6/2010	6,483		
12	Bruce Beatty Development	Jackson	GA	8/3/2009	2,541		
13	Vern's Telephone Repair	Jackson	GA	8/3/2009	5,849		
14	Daily Herald	Cooter	IL	7/11/2007	6,385		
15	Associated Cargo	Decatur	IL	9/16/2008	5,254		
16	Colt Development USA	Kalamazoo	IL	5/19/2005	4,286		
17	Drag and Tote	Lathrup Village	IL	10/4/2009	4,964		
18	Mary Jones DDS	Marion	IL	8/12/2009	3,312		
19	Magic Circle Massage	Marion	IL	7/15/2006	3,527		
20	Teddy's Drive In	Marion	IL	12/21/2009	4,299		
21	New Castle	Marysville	IL	10/18/2008	6,711		

Figure 15-9

	A	B	C	D	E	F	G
1	Company	City	State	Last Sale Date	Sales Amount		
2	Development Products	Kingman	AZ	5/19/2005	2,351		
3		Kingman Total			2,351		
4			AZ Total		2,351		
5	Steve's Animal Care	Anderson	CA	8/1/2009	3,688		
6	Canal Development	Anderson	CA	8/1/2009	5,344		
7		Anderson Total			9,032		
8	State Recovery	Flushing	CA	1/14/2010	1,356		
9	Hillcrest Shopping	Flushing	CA	1/14/2010	3,981		
10	State Collections	Flushing	CA	1/14/2010	4,641		
11		Flushing Total			9,978		
12	Happy Cows Inc	Glenview	CA	2/6/2010	3,311		
13		Glenview Total			3,311		
14	Bill Smith Enterprises	Jasper	CA	2/6/2010	1,880		
15		Jasper Total			1,880		
16			CA Total		24,201		
17	American Source Supply	Briston	DE	4/22/2006	2,115		
18		Briston Total			2,115		
19			DE Total		2,115		
20	Enterprise Solutions	Glenview	GA	2/6/2010	6,483		
21		Glenview Total			6,483		

Figure 15-10



As you perform additional subtotaling, Excel adds additional levels. In Figure 15-10, four heading levels are displayed. Level 1 displays only the grand totals, level 2 displays the count by state, level 3 shows the count by city, and level 4 displays the details.

Copy Subtotals

1. Hide any unwanted Detail buttons by clicking the Expand or Collapse buttons.
2. Select the data you want to copy.
3. Choose Home → Find & Select → Go to Special in the Editing group. The Go to Special dialog box opens (see Figure 15-11).
4. Select the Visible Cells Only option.



You can also use the Go to Special dialog box if you want to select only cells with constant values or only those containing formulas.

5. Click OK. White lines appear around the selected cells.
6. Choose Home → Copy in the Clipboard group. A marquee appears around the selected cells.
7. Select the first cell of the group in which you want to place the copied data.
8. Choose Home → Paste in the Clipboard group. Excel duplicates only the subtotaled values, not the formulas or hidden cells.



The copy subtotal process also works if you have your data in outline format. (See more about outlining later in this chapter.)

Remove Subtotals

1. Select any cell in the range that contains the subtotals; then choose Data → Subtotal. The Subtotal dialog box appears. (See Figure 15-12.)
2. Click the Remove All button. Excel removes all subtotal information from the database, including the Expand and Collapse icons from the left side of the worksheet. Your data remains in the order you last sorted it.

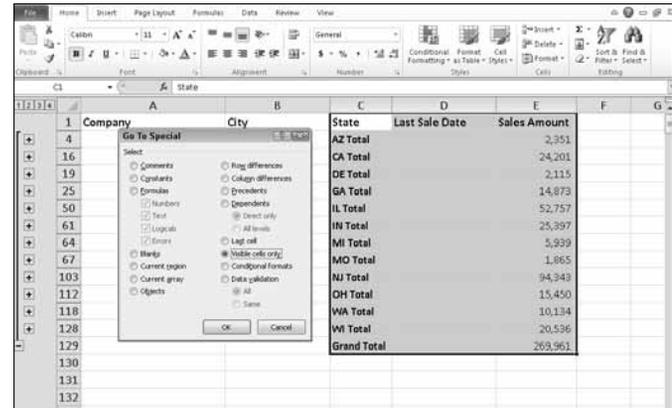


Figure 15-11

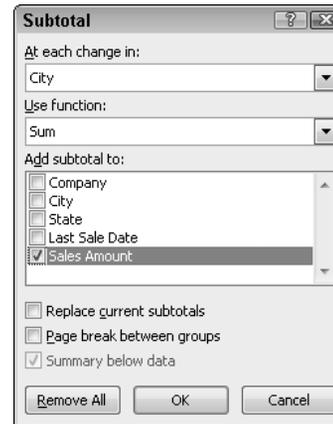


Figure 15-12

Use AutoOutline

1. Choose Data and in the Outline group, click the Group arrow and choose AutoOutline. Figure 15-13 illustrates a worksheet with outline headings for both rows and columns. Row outline symbols are on the left, and column outline symbols are at the top of the worksheet.



AutoOutline works by evaluating summary formulas that reference cells in the detail cells. The summary formulas must be adjacent to the detail. Based on the information in the summary functions, Excel creates all the possible outlines pertaining to the layout of your data.



You can create and apply formatting to an outline before or after you create it. (See Chapter 6.)

2. To expand the outline, click the Show Detail buttons to the left of the rows or above the column headings or choose Data>Show Detail in the Outline group.
3. To collapse the outline, click the Hide Detail buttons to the left of the rows or above the column headings or choose DataHide Detail in the Outline group. (See Figure 15-14.)



When you print an outlined worksheet, Excel prints the worksheet as it's shown onscreen. Hidden detail doesn't print.

4. To remove the AutoOutline, choose Data and in the Outline group, click the Ungroup arrow and choose Clear Outline.



To hide an outline without removing it, display all the data by clicking the highest number in the outline symbols and then choose FileOptions. The Excel Options dialog box appears. From the Advanced tab, deselect the Show Outline Symbols check box if an outline is applied.



Excel doesn't delete any data when you clear an outline; it clears only the outlining symbols.

	January	February	March	April	May	June	TOTALS
Salesperson							
Bob							
East	87	69	56	84	44	53	393
West	75	88	61	48	78	36	386
North	34	81	56	47	57	83	358
South	60	94	48	34	88	42	366
Totals Bob	256	332	221	213	267	214	1503
Sarah							
East	86	97	96	83	57	78	497
West	62	71	79	37	90	40	379
North	84	56	93	50	36	96	415
South	88	38	43	65	84	64	382
Totals Sarah	320	262	311	235	267	278	1673
Mary							
East	83	85	80	68	73	68	457
West	82	51	36	39	48	39	295
North	63	35	87	97	81	91	454
South	67	35	33	35	69	45	284
Totals Mary	295	206	236	239	271	243	1490

Figure 15-13

	January	February	March	April	May	June	TOTALS
Salesperson							
Bob							
East	87	69	56	84	44	53	393
West	75	88	61	48	78	36	386
North	34	81	56	47	57	83	358
South	60	94	48	34	88	42	366
Totals Bob	256	332	221	213	267	214	1503
Sarah							
Totals Sarah	320	262	311	235	267	278	1673
Mary							
East	83	85	80	68	73	68	457
West	82	51	36	39	48	39	295
North	63	35	87	97	81	91	454
South	67	35	33	35	69	45	284
Totals Mary	295	206	236	239	271	243	1490

Figure 15-14

Form an Outline Group

1. Highlight the rows that you want to group.
2. Choose Data⇨Group in the Outline group. In Figure 15-15, you see all the North category sales grouped.

 Alternatively, to create a group, select the rows or columns and then press Alt+Shift+right-arrow key.

 Use the Hide Detail or Show Detail buttons to hide or display the group detail.

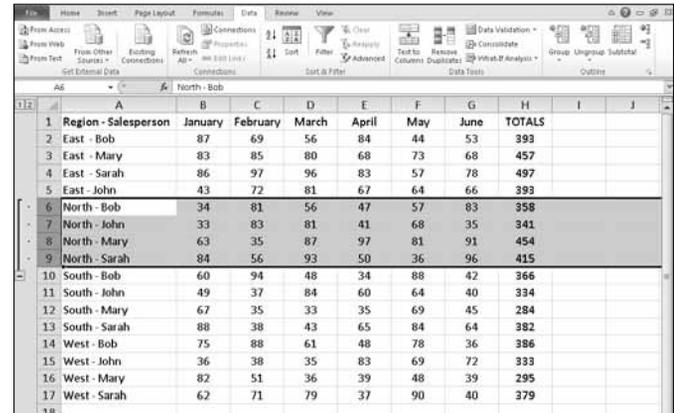
3. Repeat Steps 1 and 2 until you've created all the levels you want in the outline. A worksheet can have up to eight outline levels.

 Grouped areas can't be immediately adjacent to other grouped areas. If you create a group and then create another group directly next to it, Excel doesn't create two groups; it creates one larger group.

Remove Items from a Group

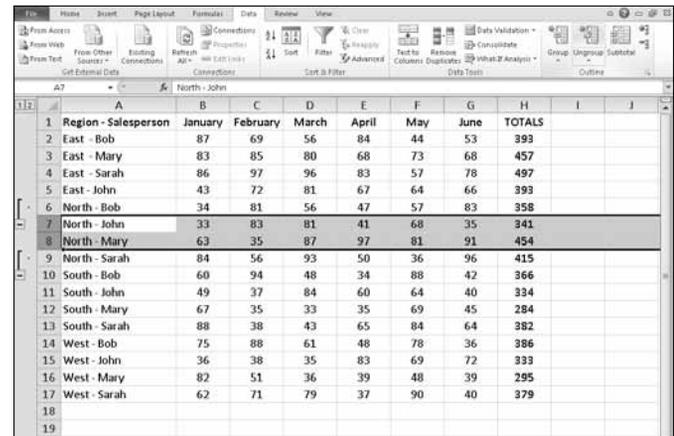
1. Select the rows or columns you want to remove from the group. If you want to remove an entire group, select all the rows or columns in the group.
2. Choose Data⇨Ungroup in the Outline group. The Ungroup dialog box appears.
3. Choose Rows or Columns; then click OK. Excel removes the rows or columns from the group, and if the rows or columns you delete are in the middle of a group, Excel breaks the group into two smaller groups. See Figure 15-16 where rows 7 and 8 are removed from the group and the rest of the North sales are broken from one group into two smaller groups.

 You can also clear a group by selecting the rows or columns and then pressing Alt+Shift+left-arrow key.



Region - Salesperson	January	February	March	April	May	June	TOTALS
East - Bob	87	69	56	84	44	53	393
East - Mary	83	85	80	68	73	68	457
East - Sarah	86	97	96	83	57	78	497
East - John	43	72	81	67	64	66	393
North - Bob	34	81	56	47	57	83	358
North - John	33	83	81	41	68	35	341
North - Mary	63	35	87	97	81	91	454
North - Sarah	84	56	93	50	36	96	415
South - Bob	60	94	48	34	88	42	366
South - John	49	37	84	60	64	40	334
South - Mary	67	35	33	35	69	45	284
South - Sarah	88	38	43	65	84	64	382
West - Bob	75	88	61	48	78	36	386
West - John	36	38	35	83	69	72	333
West - Mary	82	51	36	39	48	39	295
West - Sarah	62	71	79	37	90	40	379

Figure 15-15



Region - Salesperson	January	February	March	April	May	June	TOTALS
East - Bob	87	69	56	84	44	53	393
East - Mary	83	85	80	68	73	68	457
East - Sarah	86	97	96	83	57	78	497
East - John	43	72	81	67	64	66	393
North - Bob	34	81	56	47	57	83	358
North - John	33	83	81	41	68	35	341
North - Mary	63	35	87	97	81	91	454
North - Sarah	84	56	93	50	36	96	415
South - Bob	60	94	48	34	88	42	366
South - John	49	37	84	60	64	40	334
South - Mary	67	35	33	35	69	45	284
South - Sarah	88	38	43	65	84	64	382
West - Bob	75	88	61	48	78	36	386
West - John	36	38	35	83	69	72	333
West - Mary	82	51	36	39	48	39	295
West - Sarah	62	71	79	37	90	40	379

Figure 15-16

Consolidate Data by Category

1. Set up the data for consolidation. The data ranges can be on a single sheet, on multiple worksheets in the same workbook, or on multiple workbooks.
2. Click the upper-left cell where you want the consolidated data. Linked consolidated data must be on its own worksheet.

 If other information is on the consolidation worksheet, be sure you leave enough cells to the right and below this cell for the consolidated data.

3. Choose Data → Consolidate in the Data Tools group. The Consolidate dialog box appears.
4. In the Function drop-down list, choose the summary function (SUM, COUNT, AVERAGE, and so forth) that determines how you want the data consolidated.
5. In the Reference box, type or click the Collapse button to choose the first range you want to consolidate; then click the Add button.

 If you want to reference a worksheet from another workbook, click the Browse button and locate the workbook.

6. Repeat this step for each range. In Figure 15-17, you see four ranges.

 For easier reference, use range names.

7. If you want the consolidated values to change when the original values change, select the Create Links to Source Data check box. If deselected, the consolidated values are static in that if the original data values change, the consolidated values do not. You must reconsolidate.

8. Click OK. Excel consolidates the data, as shown in Figure 15-18.



If you created a link to the source data, Excel displays the data in an outline. Choose Data → Show Detail to see the links.

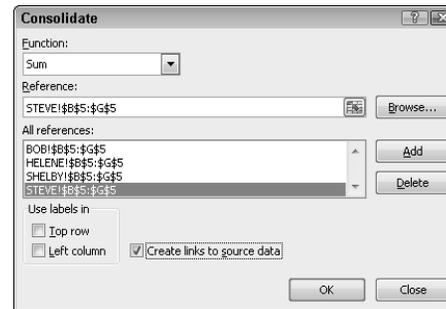


Figure 15-17

Sales by Color						
Totals						
	January	February	March	April	May	June
9 Red	19,663	15,013	13,889	21,297	12,156	18,740
14 Blue	19,276	14,655	8,796	9,510	14,315	15,775
19 Green	13,210	15,867	14,377	21,389	13,339	14,894
24 Purple	16,175	18,140	13,758	15,998	16,403	16,664
29 Yellow	14,932	19,946	14,409	19,059	13,381	11,541

Figure 15-18

Filtering Data

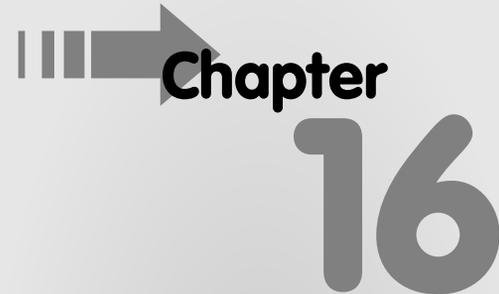
After you create an Excel database and assemble a large amount of data, you probably want to analyze it. You may want to ask yourself questions about your data, such as: Who are my best customers? Which inventory items are provided by a specific supplier and cost less than a certain amount? Which employees work the least amount of hours? Excel includes several tools you can use to answer these questions and study your data so you can make better decisions.

Filtering means that Excel can pull out specific records for review. This provides you with an easy way to break down your data into smaller, more manageable chunks. Filtering doesn't rearrange your data; it simply temporarily hides records you don't want to review so you can clearly examine those you do.

You can create your filtered database just by typing in the Excel screen. You can also use an Excel data entry screen, but it isn't required.

I devote this chapter to the different ways you can filter your data, including

- ➔ Using AutoFilter, which allows you to select key pieces of data.
- ➔ Selecting records by using more than one condition.
- ➔ Displaying only the top *x* number of records.
- ➔ Using multiple filtering to locate records that either match all criteria or meet one or the other criterion.



Chapter 16

Get ready to . . .

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- ➔ Use a Comparison Filter for Numbers 162
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Create an AutoFilter

1. After clicking anywhere in your database, choose Data⇨Filter in the Sort & Filter group. Excel displays a filter arrow in each database heading column.

Alternatively, choose Home⇨Sort & Filter⇨Filter in the Editing group.



If you read Chapter 7, you discovered that you could choose Home⇨Format as Table in the Styles group. After you select a style, your table automatically appears with filter arrows.



AutoFilter is unavailable for protected worksheets.



2. Click the arrow in the column heading from which you want to find a common value. Excel displays a drop-down list, which includes one of each unique entry (up to 10,000 entries) in the selected column (as shown in Figure 16-1).
3. Deselect the Select All check box. All items become deselected.
4. Click the entry you want to filter and then click OK. Excel displays only the records that match your choice. In Figure 16-2, for example, you see only the customers from Indiana.



The filter arrows on filtered columns take on a different appearance to indicate that a filter is in use.



To sort any column, click the column filter arrow and choose a sort option.



To make the AutoFilter menu wider or longer, click and drag the grip handle at the bottom-right corner.

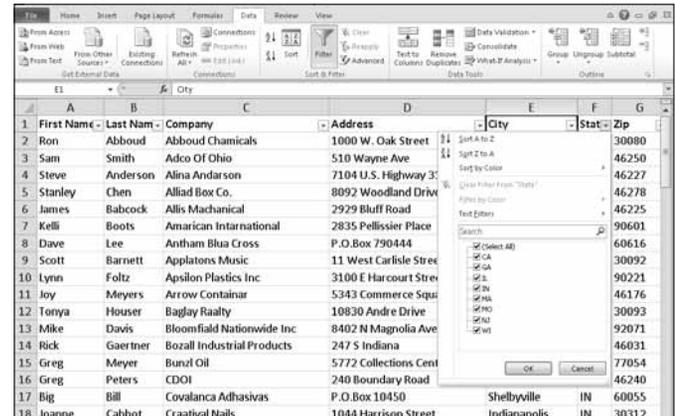


Figure 16-1

1	A	B	C	D	E	F	G
1	First Nam	Last Nam	Company	Address	City	Stat	Zip
6	James	Babcock	Allis Mechanical	2929 Bluff Road	Indianapolis	IN	46225
7	Kelli	Boots	American International	2835 Pellissier Place	Indianapolis	IN	96061
9	Scott	Barnett	Applatons Music	11 West Carlisle Street	Indianapolis	IN	30092
10	Lynn	Foltz	Apsilon Plastics Inc	3100 E Harcourt Street	Indianapolis	IN	90221
12	Tonya	Houser	Baglay Realty	10830 Andre Drive	Indianapolis	IN	30093
14	Rick	Gaertner	Bozall Industrial Products	247 S Indiana	Indianapolis	IN	46031
16	Greg	Peters	CDOI	240 Boundary Road	Indianapolis	IN	46240
17	Big	Bill	Covalanca Adhasivas	P.O.Box 10450	Shelbyville	IN	60055
18	Joanne	Cabbot	Craatival Nails	1044 Harrison Street	Indianapolis	IN	30312
21							
22							

Figure 16-2

Remove Filtering

1. From the column containing filtering, click the filter arrow and choose Clear Filter from “field name” (see Figure 16-3).

 (Optional) deselect the Select All option.

2. Click OK. The filtering is removed from the selected field.
3. When you finish filtering your data, choose Data⇄Filter in the Sort & Filter group to turn off the AutoFilter.

 You can turn AutoFilter on and off as often as you need to.

Search for Blank or Non-Blank Cells

1. Make sure the AutoFilter option is on (choose Data⇄Filter in the Sort & Filter group) and your database columns contain filter arrows.
2. Click the arrow in the column heading where you want to find a blank cell.
3. Deselect the Select All check box. All items become deselected.
4. Scroll to the bottom of the list and select the (Blanks) entry. That entry is the only one selected.

 The Blanks option appears only if blank cells are in that column.

5. Click OK. Excel displays only the records with blank cells in the column you selected (as shown in Figure 16-4 in which I filtered the records with a blank entry in the Zip field).

 To filter for non-blank values, make sure Select All is chosen in the AutoFilter menu at the top of the list of values. Then, at the bottom of the list, deselect the (Blanks) check box.

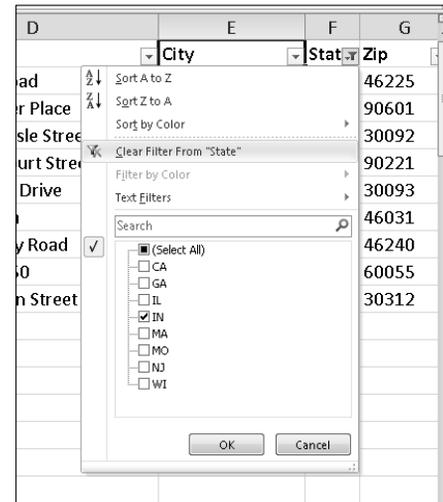


Figure 16-3

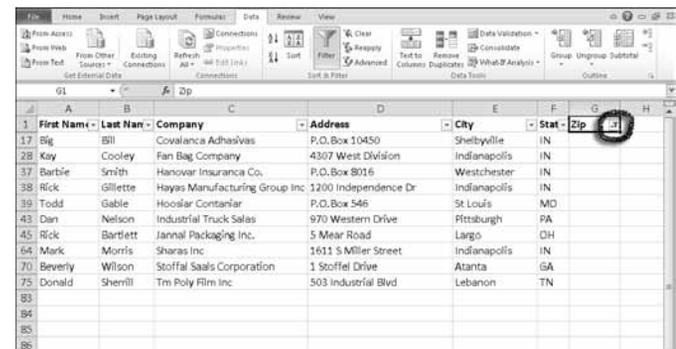


Figure 16-4

Perform a Secondary Filter Selection

1. Make sure the AutoFilter option is on (choose Data⇨Filter in the Sort & Filter group) and your database columns contain filter arrows.
2. Click the column arrow by which you want to filter data first.
3. Choose the data you want to filter. In Figure 16-5, you see selections that display only *Indianapolis* in the City column. Note, however, that there is an Indianapolis in GA, OH, IN, and NY.
4. To further isolate specific items, click the filter arrow at the top of another column.



Each additional filter is based on the current filter and further reduces the subset of data.

5. Select the field by which you want to perform the second filter. In Figure 16-6, the primary option was to filter by the city of Indianapolis. I now apply the state of NY as the secondary filter (because, in Step 3, four states had a city named Indianapolis). Only two records match that criterion.
6. Repeat Steps 4 and 5 to further filter by as many fields as necessary.
7. When you're finished working with your filtered data, choose one of these options:
 - **Return to the first filter:** Click the second filter column arrow and choose a different second filter.
 - **Return to the first filter only:** Click the second filter column arrow and choose Clear Filter from "field name."
 - **Return to viewing all records:** Choose Data⇨Clear in the Sort & Filter group.



When working with filters, it's best not to mix text, number, and date formats in the same column because only one type of filter command is available for each column. If a mix of formats occurs, the command that's displayed has the format that's used most frequently.

	A	B	C	D	E	F	G	H
1	First Name	Last Name	Company	Address	City	State	Zip	
6	James	Babcock	Allis Mechanical	2929 Bluff Road	Indianapolis	IN	46225	
7	Kelli	Boots	American International	2835 Pellissier Place	Indianapolis	NY	90601	
9	Scott	Barnett	Appalton Music	11 West Carlisle Street	Indianapolis	IN	30092	
10	Lynn	Foltz	Apsilon Plastics Inc	3100 E Harcourt Street	Indianapolis	IN	90221	
12	Tonya	Houser	Bagley Realty	10830 Andre Drive	Indianapolis	GA	30093	
14	Rick	Gaertner	Bozall Industrial Products	247 S Indiana	Indianapolis	IN	46031	
16	Greg	Peters	CDO	240 Boundary Road	Indianapolis	IN	46240	
18	Joanne	Cabbot	Craodval Nails	1044 Harrison Street	Indianapolis	IN	30312	
23	Dalay	Jones	Dalay Chains to Go	1205 N. St. Road 75	Indianapolis	OH	30093	
25	Dennis	Jamison	DI's Body Shop	1111 East 54th Street	Indianapolis	IN	30303	
27	Dennis	Celleghin	Falcon Packaging & Transport	2000 Mote Drive	Indianapolis	IN	45318	
28	Kay	Cooley	Fan Bag Company	4307 West Division	Indianapolis	NY	60651	
29	Teresa	Linden	Fantapak International Corp	1901 Stephenson Highway	Indianapolis	IN	46040	

Figure 16-5

	A	B	C	D	E	F	G	H
1	First Name	Last Name	Company	Address	City	State	Zip	
7	Kelli	Boots	American International	2835 Pellissier Place	Indianapolis	NY	90601	
28	Kay	Cooley	Fan Bag Company	4307 West Division	Indianapolis	NY	60651	

Figure 16-6

Use a Comparison Filter for Text

1. Make sure the AutoFilter option is on (choose Data→Filter in the Sort & Filter group) and click the filter arrow for the text column by which you want to filter data.
2. Choose Text Filters. A submenu of comparison filters like the one in Figure 16-7 appears:
 - **Equals or Does Not Equal:** Equals locates all records in which the selected field cells exactly match or Does Not Equal locates all records in which the selected field cells don't match the text you specify. For example, if you look for records matching *Boston* only the records with Boston appear. Records containing New Boston, Boston Hill, Indianapolis, Bostonia, Atlanta, or Chicago don't appear. If you choose Does Not Equal, you might see New Boston, Boston Hill, Indianapolis, Bostonia, Atlanta, and Chicago, but not Boston.
 - **Begins With or Ends With:** Locates all records in which the selected field cells begin or end with the text you specify. If you choose Begins With, Boston Hill, Bostonia, and Boston display, but not New Boston, Indianapolis, Atlanta, or Chicago. If you choose Ends with, you'd see the records for Boston and New Boston but not Boston Hill, Bostonia, Indianapolis, Atlanta, or Chicago.
 - **Contains or Does Not Contain:** Locates all records in which the selected field text contains or doesn't contain the text you specify. The text could be at the beginning, the middle, or the end of the field cell value.
3. Make a selection. The Custom AutoFilter dialog box, as shown in Figure 16-8, appears.
4. In the first list box on the right, type the data you want to filter.
5. Click OK to display the filtered records.

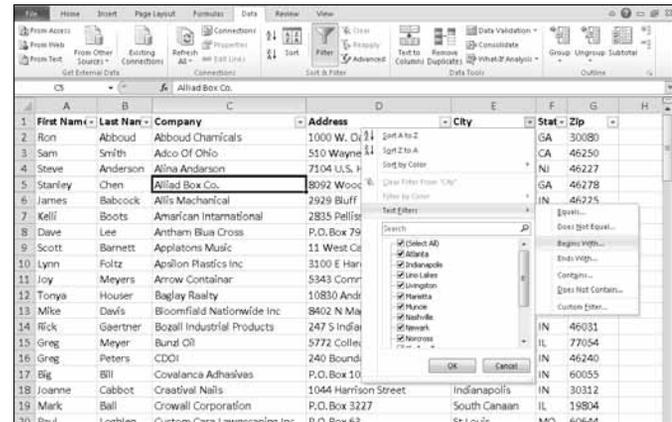


Figure 16-7

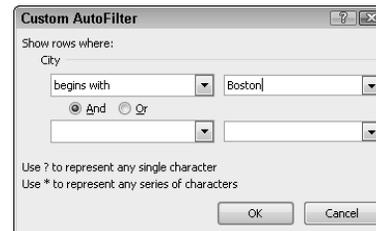


Figure 16-8

Choose Additional Comparison Criteria

1. Follow Steps 1–4 from the preceding section, “Use a Comparison Filter for Text.”
2. Select the And or the Or option. Choosing *And* means that both criteria must be met, and choosing *Or* means that either criterion can be met.
3. From the drop-down list, choose a second comparison filter.
4. Enter the second comparison filter value. Figure 16-9 shows an example.



If you need to locate cells that share some of the characters you entered but not others, you can use a question mark (?) wildcard character.

5. Click OK to display the filtered records.

Use a Comparison Filter for Numbers

1. Make sure the AutoFilter option is on (choose Data⇨Filter in the Sort & Filter group) and then click the filter arrow for the numeric column by which you want to filter data.
2. Choose Number Filters. A submenu of comparison filters, as shown in Figure 16-10, appears. Some of the choices included are: Equals, Does Not Equal, Greater Than, Greater Than or Equal To, Less Than, Less Than or Equal To, and Between.
3. Choose a comparison filter to display the Custom AutoFilter dialog box.
4. Enter your filter criteria and then click OK.

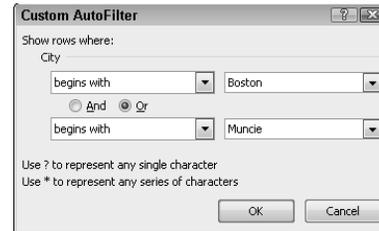


Figure 16-9

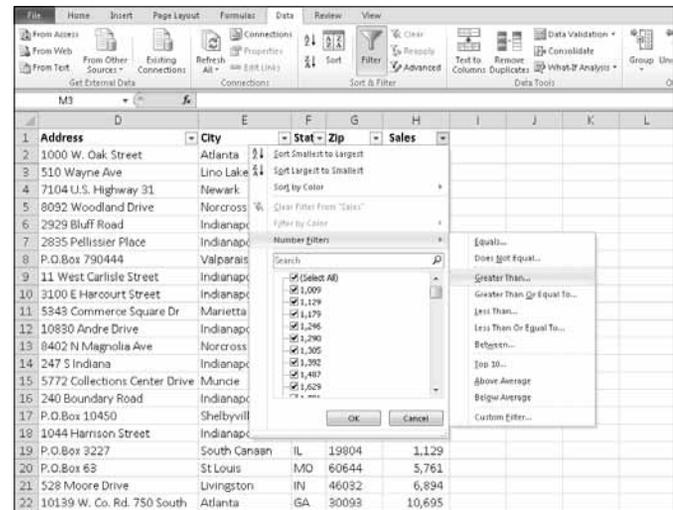


Figure 16-10

Filter for the Top or Bottom Numbers

1. Make sure the AutoFilter option is on (choose Data⇨Filter in the Sort & Filter group) and click the filter arrow for the numeric column by which you want to filter data.
2. Choose Number Filters⇨Top 10. In Figure 16-11, you see the Top 10 AutoFilter dialog box that appears.
3. From the first option, select whether you want the Top (highest) or Bottom (lowest) values.
4. In the second option, select the number of items you want to see (from 1 to 500).
5. In the third option, select whether you want to filter the items by their names or by their percentiles. For example, choose to list the top 10 customers per their sales dollars, or list the top 10 percent of your customer base.
6. Click OK. Excel displays the records that match your criteria.



Top and Bottom values are based on the original range of cells and not on any filtered data subset.



Excel calculates the averages by taking the *total* of all the cells in the field and averaging them — not by using any filtered data subset.



Figure 16-11

	C	D	E	F	G	H	I	J	K
1	Company	Address	City	Stat	Zip	Sales			
6	Allis Mechanical	2929 Bluff Road	Indianapolis	IN	46225	3,677			
7	American International	2835 Pellissier Place	Indianapolis	IN	90601	4,252			
8	Artham Blue Cross	P.O.Box 790444	Valparaiso	MA	60616	2,414			
9	Applatoys Music	11 West Carlisle Street	Indianapolis	IN	30092	5,704			
12	Bagley Realty	10930 Andre Drive	Indianapolis	GA	30093	2,242			
13	Bloomfield Nationwide Inc	8402 N Magnolia Ave	Norcross	GA	92071	4,843			
14	Bozall Industrial Products	247 S Indiana	Indianapolis	IN	46091	4,269			
15	Bundl Oil	5772 Collections Center Drive	Muncie	IL	77054	3,761			
16	CDOil	240 Boundary Road	Indianapolis	IN	46240	4,759			
17	Covalanca Adhesives	P.O.Box 10450	Shelbyville	IN	60055	2,738			
18	Carnival Nails	1044 Harrison Street	Indianapolis	IN	90312	1,290			
19	Crowell Corporation	P.O.Box 3227	South Canaan	IL	19884	1,129			
20	Custom Cara Lawnsewing Inc.	P.O.Box 63	St Louis	MO	60644	5,761			
26	Dubosa Strapping Inc.	P.O.Box 819	Whitestown	CH	46140	3,759			
27	Falcon Packaging & Transport	2000 Motre Drive	Indianapolis	IN	45318	3,209			
31	Fantapak International Corp	1901 Stephenson Highway	Indianapolis	IN	46040	3,250			
31	First Choices Courier	P.O.Box 66726	Tallapoosa	IL	31601	1,392			
32	First National Bank & Trust	P.O.Box 9012	Whittier	IN	55014	4,395			
33	Flax-Pac Inc.	P.O.Box 660212	Tacoma	GA	46904	1,629			
34	Grandfield Motor Sports	4606 S 100 East	Kokomo	IN	54957	3,054			
35	H.J. Spiar Co Inc	5750 Castle Creek Pkwy.	Modesto	IL	46278	1,246			
40	Humana Societies Of Indpls.	1332 Queens Way	Indianapolis	IN	94545	5,062			
41									
42									

Figure 16-12

Filter for the Above or Below Average Values

1. Make sure the AutoFilter option is on (choose Data⇨Filter in the Sort & Filter group) and click the filter arrow for the numeric column by which you want to filter data.
2. Choose Number Filters⇨Above Average or Below Average to filter by numbers that meet either condition. In Figure 16-12, only the records with values below the total average appear (in this example, 6,285).

Filter by Date or Time

1. Make sure the AutoFilter option is on (choose Data⇨Filter in the Sort & Filter group) and click the filter arrow for the date column by which you want to filter data.



By default, dates in the database are grouped by years, months, and days in that order.

2. Choose Date Filters. You see an extensive list of date filters like the ones shown in Figure 16-13.



Excel includes two types of date filters: common and dynamic. *Common* filters are based on a comparison operator, such as Equal To, Greater Than, Less Than, or Between. *Dynamic* filters are those for which the criteria can change when you reapply the filter. They include Today, Tomorrow, Next Month, Last Year, and Year to Date.

3. Choose a date filter. If you choose a common filter, you see the Custom AutoFilter dialog box. If you choose a dynamic filter, Excel immediately applies the filter.
4. If you chose a Common filter, in the box on the right, enter a date or time or click the Calendar button to select a date.
5. Click OK.



Years and quarters always start in January of the calendar year.

Filter by Color

1. Make sure the AutoFilter option is on (choose Data⇨Filter in the Sort & Filter group) and click the filter arrow for the column by which you want to filter data.
2. Choose Filter by Color. A submenu of color options, as shown in Figure 16-14, appears. You can filter by cell (background) color or by font color. The submenu you see depends on the color choices in your data.

3. Select an option. Excel displays the database using the filter you request.



Figure 16-13

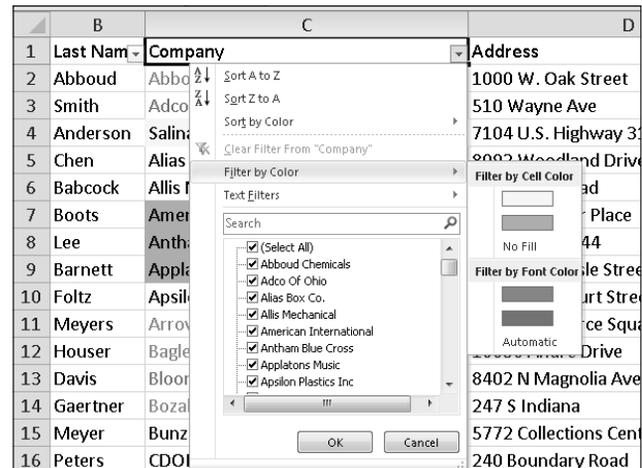


Figure 16-14

Creating PivotTables

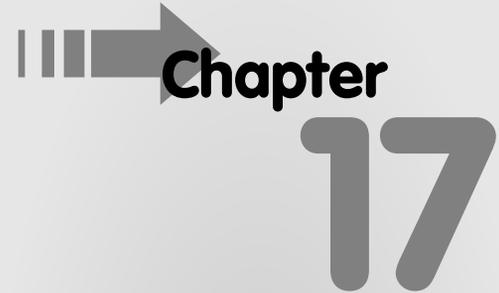
Worksheets contain lots of data, but it's often difficult to know what the numbers mean. PivotTables can help to analyze the numerical data and answer questions about it.

Many people don't use PivotTables because they find them overwhelming. Yet, this powerful Excel tool enables you, in an instant, to see your spreadsheet data in a variety of ways. PivotTable reports allow you to group information, along with varying levels of detail, by different criteria such as date or category. These reports also automatically subtotal the data on a separate worksheet, leaving your raw data untouched.

Furthermore, PivotTable calculations aren't limited to adding the numbers. You can use Count, Average, Maximum, Minimum, and a number of other statistical functions to help you view the overall picture of your data.

You can fill any of the four main PivotTable areas with data by a drag of the mouse, and you can display the data in a table format or in one of Excel's many chart formats.

In this chapter, you find out how you can, within a matter of seconds, generate and extract meaningful information from a large amount of data, thereby saving potentially dozens of hours of manual calculations.



Chapter 17

Get ready to . . .

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Create a PivotTable

1. Organize your data in a list, while keeping these points in mind:

- Each column should contain only one type of data; for example, put dates in one column and values in another. When you create a PivotTable report, each column of your source data becomes a field that you can use in the report.
- Make sure each column in the list has a heading label directly above the data. (See Figure 17-1 for an example.) PivotTables use the column headings as PivotTable fields.
- Do not leave any blank rows between the data and the row headings and no blank columns within the data.
- Avoid blank cells within the data.
- If you have more than one list on the same worksheet, make sure at least one blank column and one blank row separate them. Figure 17-2 illustrates a worksheet with multiple data tables. Although you can create multiple PivotTables in a workbook, you can work with only one table at a time when creating a PivotTable.
- Remove any Excel-generated subtotals or grand totals in the data by choosing Data → Subtotal → Remove All in the Outline group.
- Plan the questions that determine how you want your data analyzed. For example, if your data is sales information, perhaps you want to know your sales totals by region or a specific salesperson, or even deeper such as by both salesperson and by quarter. If your data is information about your video collection, perhaps your questions concern how many of your DVDs feature a certain actor, or how much you paid for all the PG-13-rated movies.

2. Click any cell in the data table you want to analyze.

Entry No.	Item No.	Sales Rep	Location Code	Quantity	Document Date
1	M14875	SDF	SR21	22	12/3/2009
2	G62409	VFK	SR21	21	12/3/2009
3	M14875	DML	SR34	26	12/1/2009
4	G62409	TMH	SR34	9	12/1/2009
5	M14887	TSK	SR34	22	12/4/2009
6	G62409	TSK	SR34	17	12/4/2009
7	G62409	TMB	SR34	30	12/4/2009
8	G62409	DMR	SR34	34	12/4/2009
9	G62409	IOM	SR34	17	12/4/2009
10	G62409	TMH	SR21	17	12/4/2009
11	M14887	VFK	SR21	29	12/4/2009
12	G62409	TSK	SR21	15	12/4/2009
13	M14887	TMH	SR21	16	12/4/2009
14	M14887	TSK	SR21	11	12/4/2009
15	G62409	TMB	SR21	24	12/4/2009
16	G62409	DMR	SR21	19	12/4/2009
17	M14887	TMB	SR21	26	12/4/2009
18	G62409	IOM	SR21	8	12/4/2009
19	M14887	DMR	SR21	18	12/4/2009
20	G62409	MJB	SR34	16	12/3/2009

Figure 17-1

3767	9214	M14887	SDF	SR34	27	10/1/2010	
3768	9215	G62409	MJB	SR34	24	10/1/2010	
3769	9217	M14887	SDF	SR34	22	10/1/2010	
3770	9219	M14887	DML	SR34	12	10/1/2010	
3771	9220	G62409	VFK	SR34	23	10/1/2010	
3772	9221	M14887	DML	SR34	17	10/1/2010	
3773							
3774							
3775							
3776		PRODUCT INQUIRIES					
3777	P/N	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	TOTALS	
3778	62409	6,158	3,189	2,484	1,572	75,812	
3779	14875	5,137	8,185	7,873	9,318	45,388	
3780	14887	4,124	5,492	4,417	2,174	31,094	
3781	TOTALS	15,419	16,866	14,774	13,064	152,294	
3782							
3783							
3784							
3785							
3786							
3787							

Figure 17-2

3. Choose **Insert** → **PivotTable** in the **Tables** group. The **Create PivotTable** dialog box appears.
4. Make a selection. Excel needs to know where your data will come from:
 - **Select a table or range:** This choice creates the PivotTable from organized data in a Microsoft Excel worksheet.
 - **Use an external data source:** This choice creates a PivotTable from data stored in a non-Excel database.
5. Verify that Excel correctly identified your data range, including the headings. If not, specify the correct area in the **Table/Range** box, as shown in Figure 17-3.

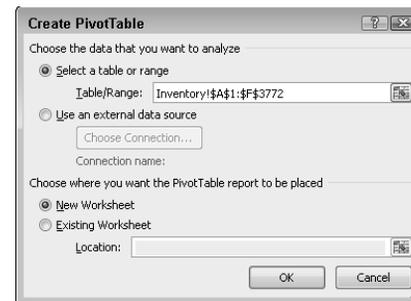


Figure 17-3

 If the data is in another worksheet in the same workbook or a different saved workbook, type the workbook and worksheet name like this: **[workbookname]sheetname!range**.

6. Choose whether to add the PivotTable to a new worksheet in your workbook or to another existing worksheet. If you choose to add it to an existing worksheet, you must specify a cell location.
7. Click **OK**. Excel creates a new worksheet with a blank PivotTable along with the **PivotTable Field List**, which contains each field from your data range (see Figure 17-4). Excel also places two new **PivotTable Tools** tabs on the **Ribbon**. PivotTables contain three primary elements:
 - **Rows:** The rows area displays your data vertically, with one item per row.
 - **Columns:** The columns area displays the data horizontally, with one item per column.
 - **Values:** Data fields summarize numerical data.

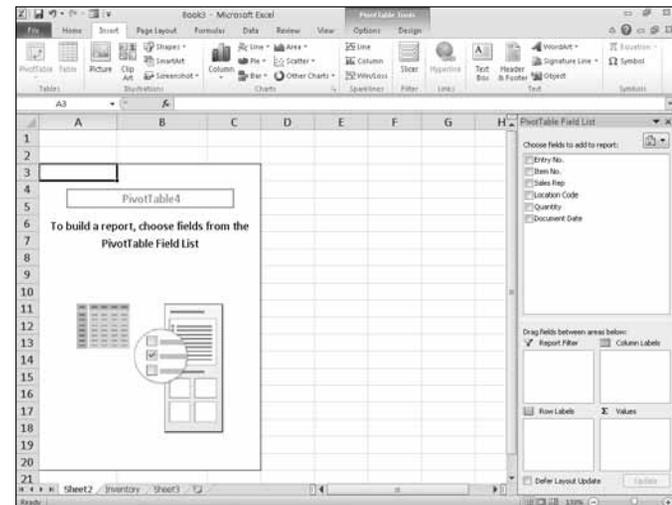


Figure 17-4

 To quickly restart a PivotTable, click anywhere in the PivotTable and choose **PivotTable Tools Options** → **Clear** → **Clear All** in the **Actions** group. (Optional) You can delete a PivotTable by deleting the sheet it appears on.

8. From the PivotTable Field List pane, select the check box next to the field you want categorized. For example, if you want to determine how much each salesperson sold, select the Sales Rep check box. Excel automatically places each unique item into the PivotTable rows and displays the name in the Row Labels box in the section located beneath the field name list. In Figure 17-5, Excel displays the name of each representative.



If you want the categorized field displayed horizontally instead of vertically, drag the field to the Column Labels box of the areas section.

9. From the PivotTable Field List pane, select the field, such as Quantity, you want summarized and perform one of the following actions. Excel instantly takes the data and adds the totals to create the summary PivotTable (see Figure 17-6).

- Select the check box next to the field.



The PivotTable Field List indicates fields used in the PivotTable with bold lettering. You don't have to use all the fields in the PivotTable, and you don't have to place fields in every area of the PivotTable.

- Drag the field to the Values box in the areas section.



If you drag a field to an incorrect area, deselect the field name check box or drag the field name out of the section located beneath the field name list onto the Excel worksheet or into the correct field box.



To delete a PivotTable, choose PivotTable Tools Options > Select > Entire PivotTable in the Actions group. Press the Delete key. (Optional) Delete the entire worksheet.



To move a PivotTable to a different location, choose PivotTable Tools Options > Move PivotTable. In the resulting dialog box, specify or point to a new location for the current PivotTable.

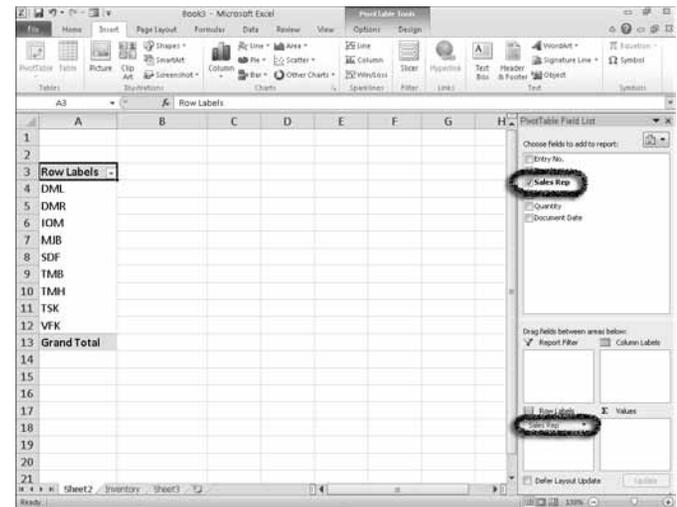


Figure 17-5

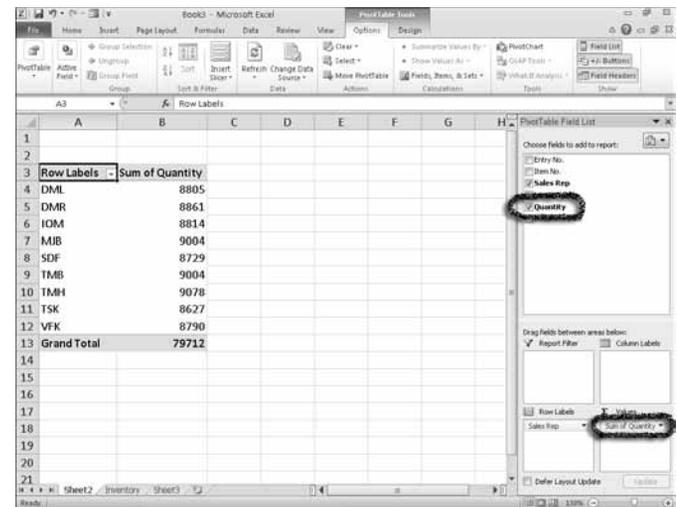


Figure 17-6

Filter PivotTable Data

1. On the PivotTable, click the down arrow in the Row Labels heading section. A list of individual items, such as sales rep names, appears. The items that appear depend on the values you used in your data.
2. From the Row Labels list, remove the check mark next to any item you don't want included in the PivotTable. In Figure 17-7, only data for two specifically selected sales reps appears in the PivotTable.



To clear the filter, click the Row Labels heading arrow and choose Clear Filter or Select All.

Refresh PivotTable Data

1. Use any of the following methods to update the PivotTable with making any changes to the original data:
 - Choose PivotTable Tools Options → Refresh in the Data group.
 - Right-click anywhere on the PivotTable and choose Refresh from the shortcut menu.
 - Make the PivotTable refresh automatically whenever you reopen the file by choosing PivotTable Tools Options → PivotTable → Options. From the Data tab of the PivotTable Options dialog box, select Refresh Data When Opening the File, and then click OK.
2. (Optional) Double-click any data value to display the specific details that comprise the data. In Figure 17-8, you see the detail for Sales Rep DML displayed on a separate worksheet. When finished reviewing the detail data, you can safely delete the separate individual worksheet without affecting the PivotTable.



(Optional) Click the down arrow in the Row Labels heading section and choose Label Filters or Value Filters to further filter your data with a variety of options including Greater Than, Less Than, or Between. (See Chapter 16.)

	A	B	C	D
1				
2				
3	Row Labels	Sum of Quantity		
4	DML	8805		
5	SDF	8729		
6	Grand Total	17534		
7				
8				
9				

Figure 17-7

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Entry No.	Item No.	Sales Rep	Location Code	Quantity	Document Date							
2	9221	M14887	DML	SR34	17	10/1/2010							
3	9219	M14887	DML	SR34	12	10/1/2010							
4	3	M14875	DML	SR34	26	12/1/2009							
5	9213	G62409	DML	SR34	22	10/1/2010							
6	9194	M14875	DML	SR21	28	9/28/2010							
7	9184	G62409	DML	SR21	15	9/28/2010							
8	9180	M14887	DML	SR21	34	9/28/2010							
9	9161	M14875	DML	SR21	20	9/28/2010							
10	9147	M14887	DML	SR34	20	9/28/2010							
11	9142	G62409	DML	SR34	12	9/28/2010							
12	9132	M14887	DML	SR21	24	9/28/2010							
13	9110	M14875	DML	SR21	22	9/28/2010							
14	9104	M14887	DML	SR21	14	9/28/2010							
15	9076	M14887	DML	SR34	12	9/27/2010							
16	9070	M14887	DML	SR34	18	9/27/2010							
17	9060	M14875	DML	SR21	31	9/27/2010							
18	9044	M14887	DML	SR21	26	9/27/2010							
19	9027	M14875	DML	SR34	21	9/26/2010							
20	9025	G62409	DML	SR34	17	9/26/2010							
21	9001	M14887	DML	SR21	25	9/26/2010							
22	8997	M14887	DML	SR21	31	9/25/2010							
23	8975	G62409	DML	SR21	33	9/26/2010							
24	8967	M14875	DML	SR34	16	9/25/2010							
25	30	G62409	DML	SR21	32	12/3/2009							
26	8957	M14887	DML	SR21	29	9/24/2010							
27	8933	M14875	DML	SR21	20	9/24/2010							

Figure 17-8

Sort PivotTable Data

1. In the PivotTable, click anywhere in the field you want to sort.
2. Choose PivotTable Tools Options and in the Sort & Filter group, click a Sort button. The PivotTable data sorts according to your choice. In Figure 17-9, the data is sorted by the Sum of Quantity, from smallest to largest.

 Depending on the data type, the option may say Sort Smallest to Largest or Sort A to Z.

 Click the Sort button to display the Sort By dialog box.

Change the Calculation Type

1. In the PivotTable, click anywhere in the subtotaled data field.
2. Choose PivotTable Tools Options⇨Active Field⇨Field Settings. The Value Field Settings dialog box appears, as shown in Figure 17-10.

 Alternatively, right-click the subtotaled data field and choose Value Field Settings.

3. From the Summarize Value Field By list, select the function you want to use. Choices include SUM, COUNT, AVERAGE, MAX, MIN, PRODUCT, COUNT NUMBERS, STDDEV, STDEV, VAR, and VARP.
4. Click OK. Excel re-summarizes the field based on the function you selected. The field title also changes to reflect the selected function.

 (Optional) Click the Number Format button and select a format for the summary field.

 If you don't want to display grand totals at the bottom, choose PivotTable Tools Design⇨Grand Totals⇨On for Rows Only in the Layout group.

	A	B	C	D	E	F	G	H
1								
2								
3	Row Labels	Sum of Quantity						
4	TSK	8627						
5	SDF	8729						
6	VFK	8790						
7	DML	8805						
8	IOM	8814						
9	DMR	8861						
10	TMB	9004						
11	MJB	9004						
12	TMH	9078						
13	Grand Total	79712						
14								
15								
16								
17								
18								
19								
20								
21								

Figure 17-9

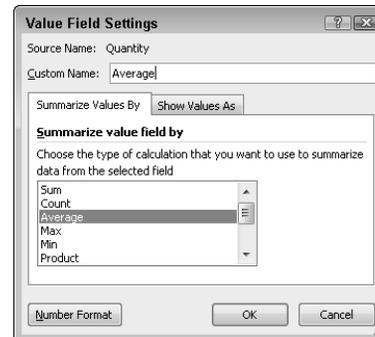


Figure 17-10

Rename a PivotTable Field

1. In the PivotTable, click anywhere in the field data you want to rename.
2. Choose PivotTable Tools Options → Active Field → Field Settings. The Value Field Settings dialog box opens.

 Alternatively, click the field name in the PivotTable and begin typing a new name. Press Enter when you're finished.

3. In the Custom Name box, type the new field name. See Figure 17-11 where I changed the name from *Average* to *Average Order Amount*.
4. Click OK. Both the PivotTable field and the Field List names change.

 You can't rename a field the same as the original field name. For example, you can't change *Sum of Quantity* to just *Quantity*. You can, however, add a space at the end of *Quantity*, which gives it a unique name.

Format PivotTable Values

1. Highlight the PivotTable cells you want to modify; choose PivotTable Tools Options → Active Field → Field Settings.
2. From the Value Field Settings dialog box, click the Number Format button.
3. From the Format Cells dialog box that appears (see Figure 17-12), select the number format you want.
4. If applicable, select the number of decimal places you want.
5. Click OK twice.

 To change the format of PivotTable text, select any text cells and format them from the Home tab. (See Chapters 6 and 7.)

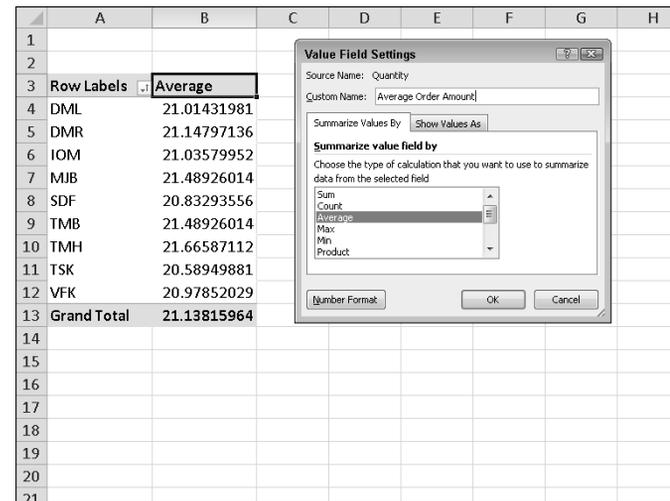


Figure 17-11

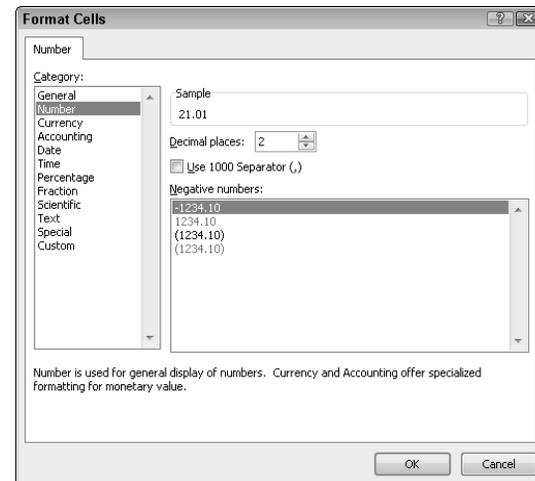


Figure 17-12

Generate Multilevel Totals

1. Create a PivotTable (see the “Create a PivotTable” section, earlier in this chapter).
2. To create a second summary level, drag the next field you want to subtotal from the PivotTable Field List onto the desired PivotTable area, keeping these pointers in mind:
 - If you want to create a second category, such as by country and then by salesperson, drag the field into the Row Labels area located below the PivotTable Field List. Figure 17-13 shows a PivotTable with two categories. The field closest to the data is the *inner row* (in this example, Document Date). The other field is an *outer row* (in this example, Sales Rep). Excel displays data in the inner row under each of the outer row fields.
 - If you want to change the order of the inner and outer row fields, from the appropriate box in the section below the Field List, drag the field you want as the outer row to the top of the box.
 - If you want to total additional fields, drag the field into the Values area located below the PivotTable Field List.



You can add even more data fields to your PivotTable. PivotTable data fields are limited only by the amount of memory in your computer.

- If you want to sum different fields or if you want to create two different total types (such as Count and Sum, or Max and Min), select a field you’ve used already. Currently used fields are listed in bold type. In Figure 17-14, the order quantities are both averaged and counted by date.
- Click the minus sign to collapse a row heading, such as a particular salesperson’s name. Click the plus sign to expand the row again to see all the data.



To change the data source location for the PivotTable, choose PivotTable Tools Options → Change Data Source in the Data group. In the dialog box that appears, enter the new data location.

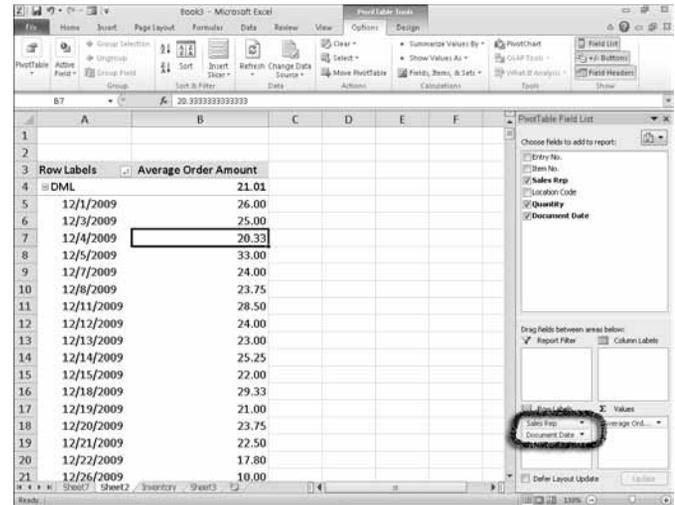


Figure 17-13

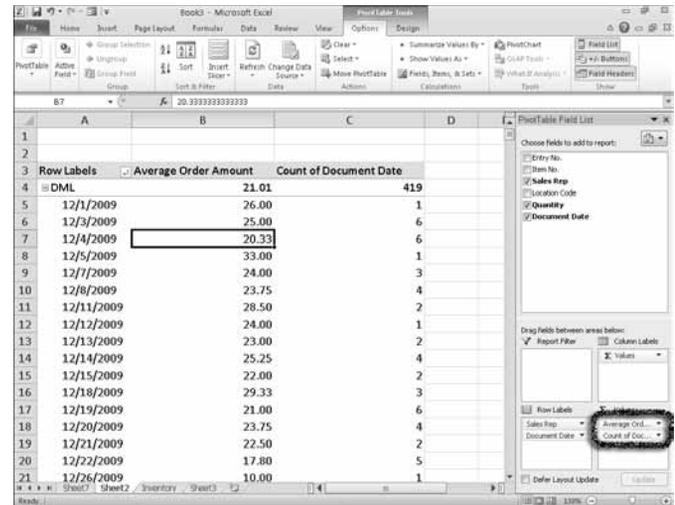


Figure 17-14

AutoFormat PivotTables

1. Choose PivotTable Tools Design and find the PivotTable Styles group.

 PivotTables can also include conditional formatting.

2. Click the More arrow. A gallery of PivotTable styles appears, as shown in Figure 17-15.
3. Select a format. Excel provides 85 predefined PivotTable formats, or you can create your own format.

 To remove the formatting, choose PivotTable Tools Design → More → Clear in the PivotTable Styles group.

 To apply a default style for all new PivotTables, choose PivotTable Tools Design, right-click the style that you want to set as the default, and choose Set as Default.

 To ungroup categories and redisplay the entire list, choose PivotTable Options → Ungroup in the Group group.

 If you need to change the PivotTable data source, choose PivotTable Tools Options → Change Data Source in the Data group and then specify different cells.

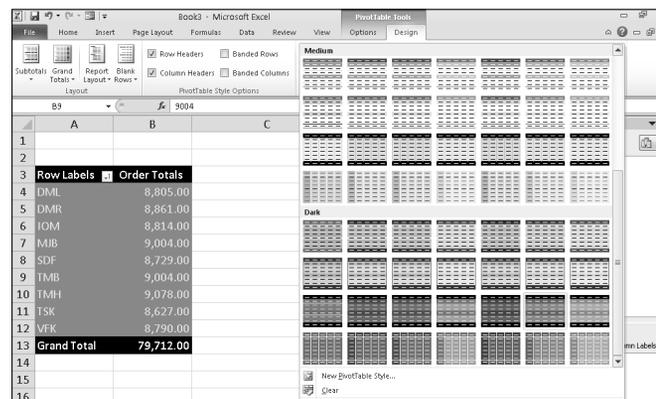


Figure 17-15

Group Data

1. Create a PivotTable (see the “Create a PivotTable” section, earlier in this chapter).
2. Click in any cell of the field you want to group. A popular field to group is a date field.
3. Choose PivotTable Tools Options → Group Selection in the Group group.
4. From the Grouping dialog box that appears, select the grouping option you want to use. The options that appear depend on the type of data you’re grouping.
5. Click OK. Figure 17-16 illustrates the PivotTable with the dates per rep grouped by month.

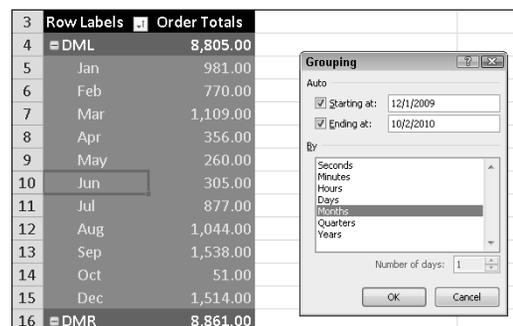


Figure 17-16

Calculate a Percent of Totals

1. Add a second totals field and display the two fields side by side. (See the earlier section, “Generate Multilevel Totals.”)
2. Click anywhere in the second totals field and choose PivotTable Tools Options → Show Values As → % of Column Total in the Calculations group (see Figure 17-17).

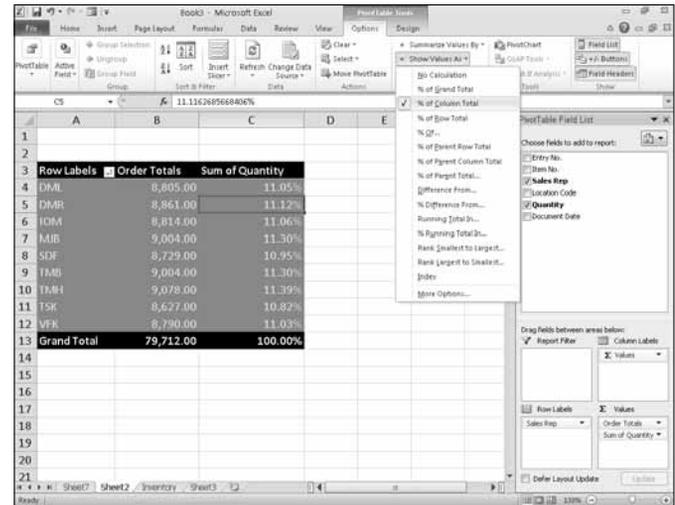


Figure 17-17

Add Your Own Calculations

1. Choose PivotTable Tools Options → Fields, Items, & Sets → Calculated Field in the Calculations group. The Insert Calculated Field dialog box appears.
2. In the Name text box, type a name for the formula, such as **CommAmt** or **ReserveAmt**. Calculated field names can't include spaces and special characters.
3. In the Formula box, delete the $=0$ and create your own formula, following these tips:
 - Like other Excel formulas, the calculation begins with an equal sign, but you use field names instead of cell references. You can't use cell references in a formula, but you can use static values.
 - Double-click any field name in the Fields box to add it to the formula.
 - Use the standard formula operators, such as plus, minus, multiply, and divide (+, -, *, and /, respectively).
4. Click OK. Excel creates a new data column with the calculated value. Figure 17-18 shows a PivotTable with a calculated field next to the data field. I've also redisplayed the Insert Calculated Field dialog box so you can see the formula.

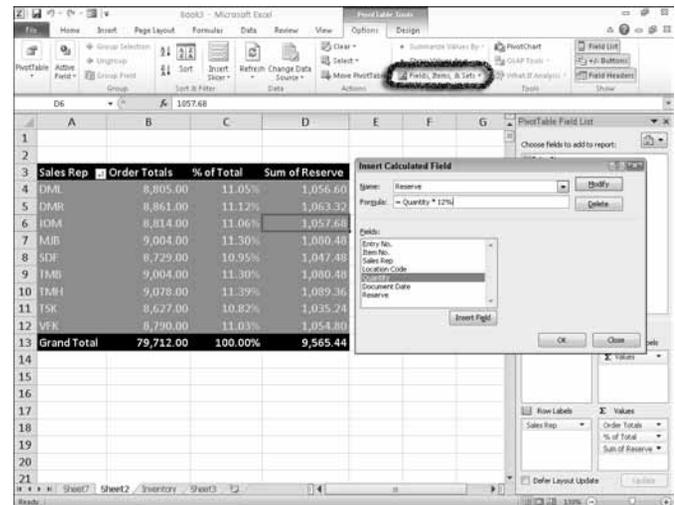


Figure 17-18



If you no longer want the calculated field on your PivotTable, drag the calculated field heading out of the Values box located below the PivotTable Field List.

Change PivotTable Display Options

1. Click anywhere in the PivotTable and choose PivotTable Tools Options and find the Show/Hide group.
2. Click any of the following buttons:
 - Field List to hide the Field List.



Drag the Field List title bar to undock it and move it anywhere on your screen. While undocked, you can also resize the Field List by dragging the outer border. Double-click the Field List title bar to restore it to a docked position.

- +/- Buttons to hide the summary plus and minus keys that appear when you have nested rows, such as in the section “Generate Multilevel Totals,” earlier in this chapter.
- Field Headers to hide the default Row Labels and Column Labels headers. Figure 17-19 shows both the field headers and Field List hidden.



Click the options again to redisplay the tools.

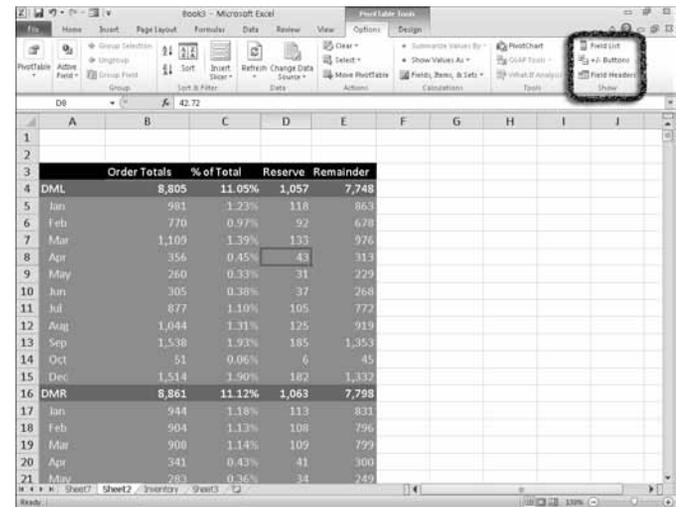


Figure 17-19

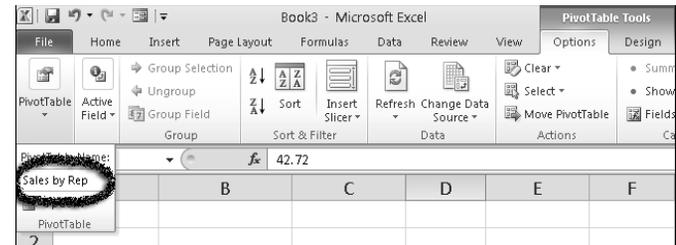


Figure 17-20

Rename a PivotTable

1. Choose one of the following options:
 - Choose PivotTable Tools Options⇨PivotTable⇨PivotTable Name and type a name in the text box. (See Figure 17-20.)
 - Choose PivotTable Tools Options⇨PivotTable⇨Options. The PivotTable Options dialog box appears. In the Name text box, type a descriptive name for the PivotTable and click OK.



To move a PivotTable to a new sheet, choose PivotTable Tools Options⇨Move PivotTable in the Actions group. From the Move PivotTable dialog box that appears, specify where you want to move the PivotTable.

Create a PivotTable Formula List

1. Click anywhere in the PivotTable.
2. Choose PivotTable Tools Options⇨Fields, Items, & Sets⇨List Formulas in the Calculations group. Excel adds a new worksheet to the workbook, as shown in Figure 17-21, displaying all the calculated fields.



You'll find this helpful if you've used calculated items and calculated fields in your PivotTable.

1	Calculated Field									
2	Solve Order	Field	Formula							
3		1 Reserve	=Quantity*12%							
4		2 Remainder	=Quantity-Reserve							
5										
6	Calculated Item									
7	Solve Order	Item	Formula							
8										
9										
10	Note:	When a cell is updated by more than one formula, the value is set by the formula with the last solve order.								
11										
12										
13		To change the solve order for multiple calculated items or fields, on the Options tab, in the Calculations group, click Fields, Items, & Sets, and then click Solve Order.								
14										
15										
16										
17										
18										
19										
20										
21										

Figure 17-21

Reorder PivotTable Fields

1. Make sure the PivotTable Field List pane appears on your screen (choose PivotTable Tools Options⇨Field List in the Show/Hide group).
2. From the Areas section of the PivotTable Field List pane, locate the section you want to rearrange and click the field you want to move. A menu appears, as shown in Figure 17-22.
3. Choose one of the following:
 - **Move Up:** Moves the selected field left one column.
 - **Move Down:** Moves the selected field right one column.
 - **Move to Beginning:** Moves the selected field to the top of the list making it the first field on the PivotTable.
 - **Move to End:** Moves the selected field to the bottom of the list making it the last field on the PivotTable.

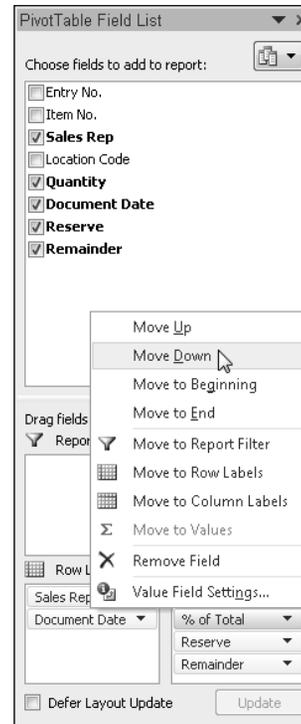


Figure 17-22

Add a PivotTable Slicer

1. Click anywhere in the PivotTable and choose PivotTable Tools Options>Insert Slicer in the Sort & Filter group. The Insert Slicers dialog box appears.
2. Choose the field you want to use and click OK. The slicer box appears with all available values for the field you selected. Figure 17-23 shows the slicer for the PivotTable field Location Code. This field has only three values; SR1, SR21, and SR34.



You can drag the slicer box anywhere on your screen.

3. Click a value or hold down the Ctrl key and select multiple values. Excel filters the PivotTable to reflect only the option you selected.



Click the filter icon at the top right of the slicer box to clear all filters.

4. Click the Slicer Tools Options tab. The tab displays many options for the slicer box including a name for the slicer and formatting style and size options.
5. In the Slicer group, choose Slicer Settings. The Slicer Settings dialog box appears, as shown in Figure 17-24.
6. Change any desired settings and click OK.



To delete a PivotTable slicer, right-click the PivotTable slicer and choose Remove.

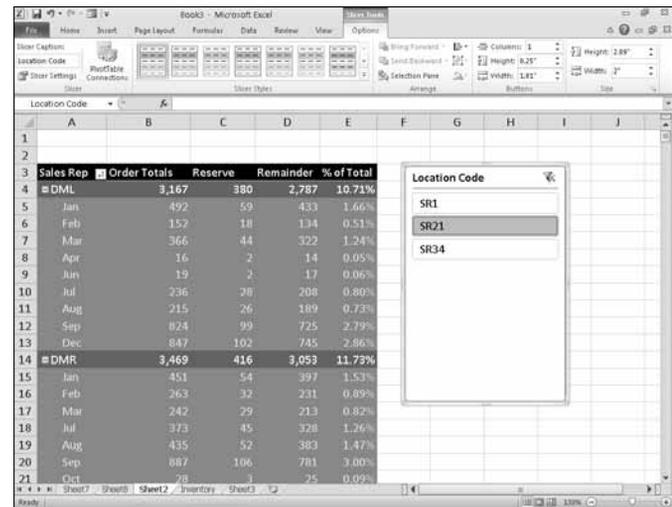


Figure 17-23

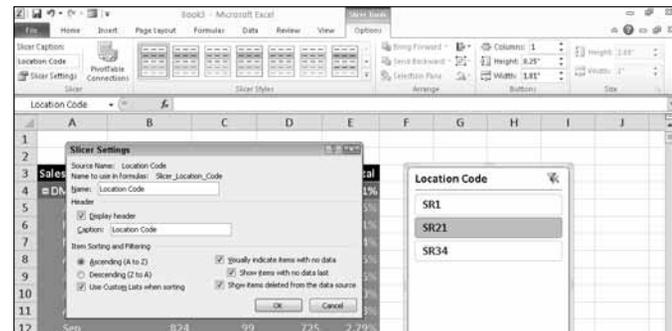


Figure 17-24

Create a PivotChart

1. Create a PivotTable (see the earlier section, “Create a PivotTable,” in this chapter).
2. Click anywhere in the PivotTable. Choose PivotTable Tools Options → PivotChart in the Tools group. The Insert Chart dialog box appears.
3. Select a chart type and click OK. As shown in Figure 17-25, Excel automatically creates a chart from your PivotTable. All PivotTable data, except for the totals and subtotals, appear in the PivotChart.



Changes to the PivotTable affect the PivotChart, and field changes to the PivotChart affect the PivotTable.

4. Format the chart (see Chapter 12) with the following exceptions:
 - You can't move or resize the plot area.
 - You can't add data to the PivotChart from outside the PivotTable.
 - PivotCharts can't be scatter, bubble, or stock types.
 - You can click the Axis Fields drop-down list to filter the row headings you want to use. See Figure 17-26.



To delete the PivotChart, select the chart boundaries and press the Delete key.



To convert the PivotTable to standard data that you can use to create a standard (non-PivotChart) chart, select the PivotTable report data that you want to use and choose Home and in the Clipboard group, choose Copy and then choose Paste → Paste Values to duplicate the data to a blank area of the workbook. You can then create a standard chart of your choosing.

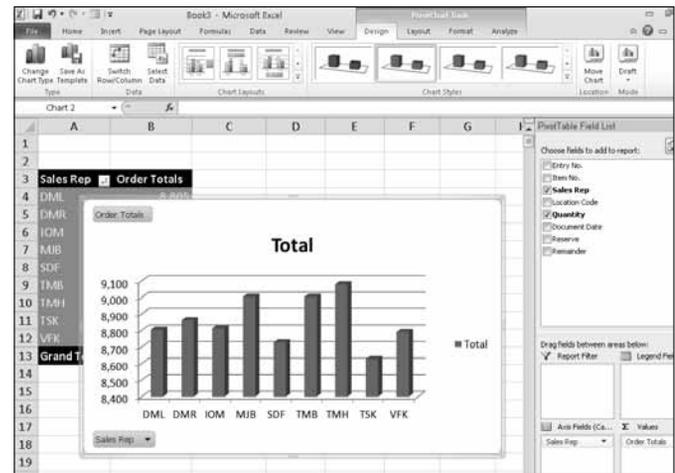


Figure 17-25



Figure 17-26

Building Simple Macros

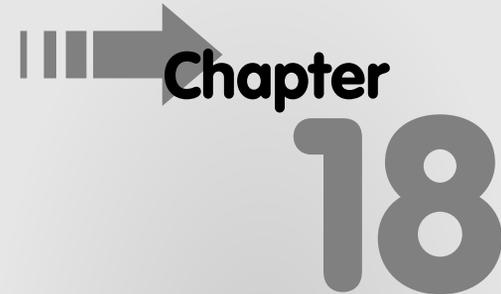
You can often save yourself time by automating tasks you perform frequently. The automation takes the form of an *Excel macro*, which is a series of commands and functions grouped as a single command. Macros are created in a special programming language — *Visual Basic* — and can be run whenever you need to perform the task.

Although you can write your own very complex macros in the Visual Basic programming language, the easiest method for creating many macros is to use the Excel Macro Recorder. When you record a macro, Excel stores information about each step you take as you perform a series of commands. You then run the macro to repeat, or *play back*, the commands.

The Macro Recorder is very literal and records every action you complete. Therefore, planning your macro before you begin the recording process is very important so you don't record unnecessary steps.

Security is an important issue when working with macros. If you open worksheets containing macros from outside sources, these macros can be harmful to your computer. By default, Excel protects you from running macros, but if you're creating your own macros, you'll probably change these protective security settings.

In this chapter, you find out how to record, run, and delete Excel macros as well as change your security settings.



Chapter 18

Get ready to . . .

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Record a Macro

1. Choose View→Macros→Record Macro. The Record Macro dialog box, as shown in Figure 18-1, appears.
2. Type a name for the macro. The first character of the macro name must be a letter, and the name can't contain spaces or cell references. Macro names aren't case-sensitive.
3. From the Store Macro In drop-down list, choose where you want to store the macro:
 - **This Workbook:** Save the macro in only the current workbook file.
 - **New Workbook:** Create macros that you can run in any new workbooks created during the current Excel session.
 - **Personal Macro Workbook:** Choose this option if you want the macro to be available whenever you use Excel, regardless of which workbook you're using.
4. (Optional) Type a description for the macro in the Description text box.
5. Click OK. The Record Macro option starts recording.
6. Perform the actions you want to record. Excel records your keystrokes as you type. Actions can include typing into cells, selecting, inserting, deleting, or even formatting cells. Macro actions can include almost anything you do in Excel.



Excel records your steps exactly — such as *select cell C3* — but you can also record the steps relative to any current cell — such as *go up one row and insert a blank line*. To do so, choose View→Macros→Use Relative References. You can turn the Relative References function on and off as often as you need to when recording the macro.

7. Choose View→Macros→Stop Recording. (See Figure 18-2.)



Alternatively, click the Stop Recording button on the left side of the status bar.

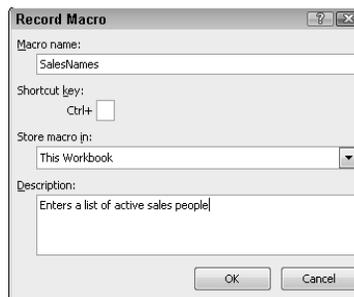


Figure 18-1

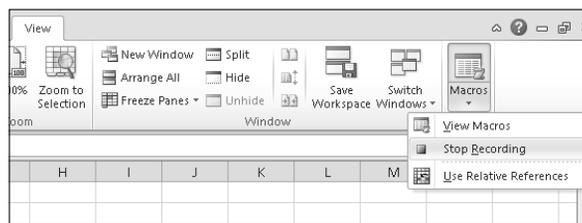


Figure 18-2

Assign a Macro Keystroke

1. Choose View⇒Macros⇒Record Macro. The Record Macro dialog box appears.
2. In the Macro Name text box, type a name for the macro.
3. From the Store Macro In drop-down list, choose where you want to store the macro.
4. (Optional) In the Description box, type a description of the macro.
5. Assign a keystroke combination (see Figure 18-3). If you select a shortcut key used already in Excel, the macro shortcut key overrides the Excel shortcut key while the workbook that contains the macro is open. Click OK.



If you enter a lowercase letter, Excel assigns it a Ctrl+*lowercase-letter* combination. If you type an uppercase letter, you must press Ctrl+Shift+*the letter* to run the macro. The shortcut key can't include a number or a special character.

6. Perform the actions you want to record.
7. Click the Stop Recording button on the status bar or choose View⇒Macros⇒Stop Recording.
8. To execute the macro, press the shortcut key you assigned or choose the macro from View⇒Macros.

Open a Macro-Enabled Workbook

1. Open a workbook containing a macro. The workbook opens as usual, but a Security Warning message appears below the ribbon. See Figure 18-4.
2. Click the Enable Content button. The Security Warning message closes.

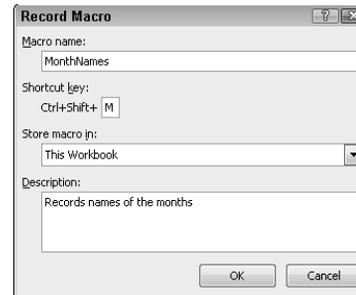


Figure 18-3

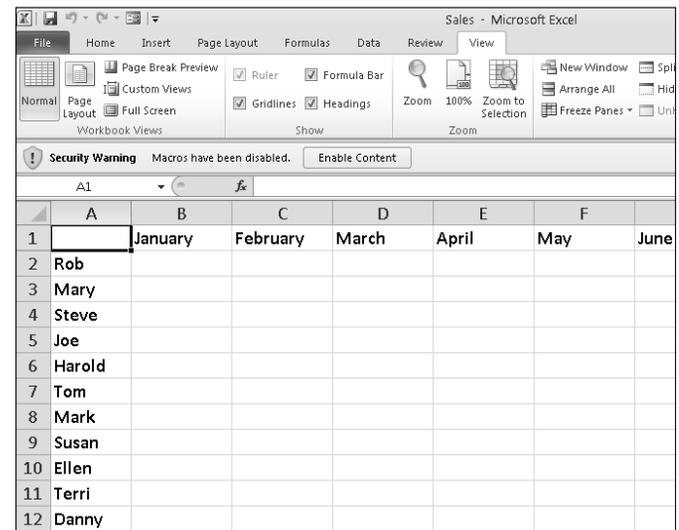


Figure 18-4

Save a Macro-Enabled Workbook

1. Create a workbook with a macro; then choose File⇨Save As. The Save As dialog box appears.
2. Enter a name for the workbook and select a location for it.
3. Click the Save as Type drop-down arrow. A list of file types appears.
4. Choose Excel Macro-Enabled Workbook. (See Figure 18-5.) Excel adds the .x1sm extension to the filename.
5. Click the Save button.



If you neglect to save the workbook as a macro-enabled workbook, you see the warning message telling you that the macro won't be retained.

Run a Macro

1. Choose View⇨Macros. The Macro dialog box, as shown in Figure 18-6, appears.



It's a good idea to save your file before running a newly created macro. Excel can't undo the steps taken by the macro.

2. Select the macro you want to run and then click the Run button. Excel executes the selected macro.



(Optional) Press the shortcut key combination you assigned to the macro.

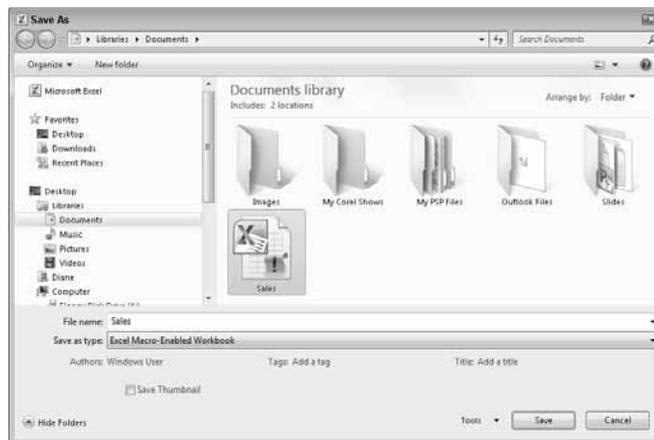


Figure 18-5



Figure 18-6

Check Macro Security Level

1. Click File and choose Options. The Excel Options dialog box appears.
 2. Click the Trust Center tab and then click Trust Center Settings button. The Trust Center dialog box appears, as shown in Figure 18-7.
 3. Click the Macro Settings tab on the left side and set a security level:
 - **Disable All Macros without Notification:** Allows you to run only macros that are stored in a trusted location. Click the Trusted Locations tab to manage these trusted locations. (See Figure 18-8.) Also, because the macros are disabled automatically, this option disables security alerts.
 - **Disable All Macros with Notification:** Displays a security alert when a workbook with macros opens. You can then decide whether to enable the macros associated with the workbook. This is the Excel default setting.
 - **Disable All Macros except Digitally Signed Macros:** You can run only those macros that are digitally signed.
-  A *digital signature* is an electronic, encrypted, secure stamp of authentication obtained from a commercial certification authority. Excel's Visual Basic programming language contains a self-certifying digital signature tool, but because it doesn't come from a third party, Excel still considers it unauthenticated and displays a warning box before running self-certified macros.
4. Click OK twice.

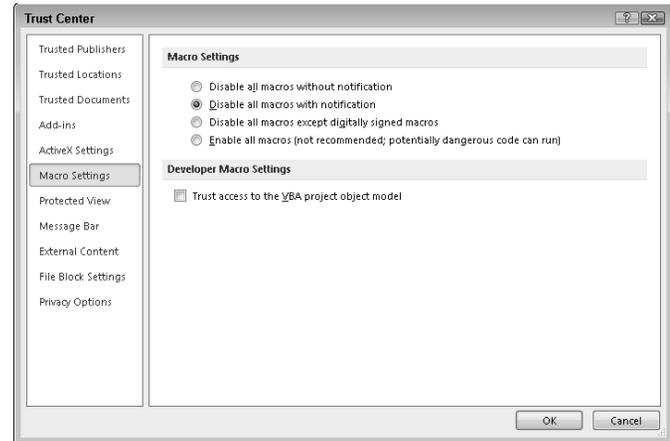


Figure 18-7

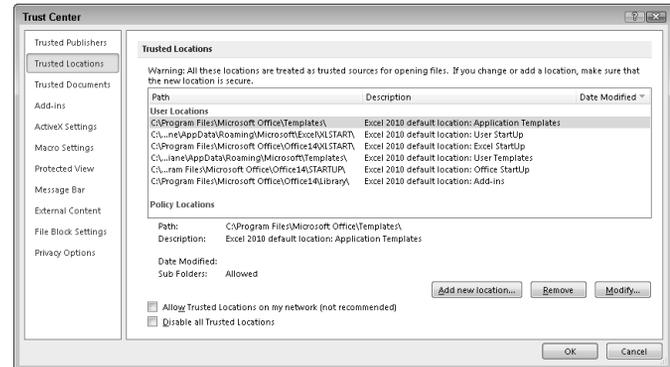


Figure 18-8

Add a Macro Button to the Quick Access Toolbar

1. Click File and choose Options. The Excel Options dialog box appears.
2. Click the Quick Access Toolbar tab and then from the Choose Commands From drop-down list, choose Macros. A list of available macros appears.
3. Select the macro you want displayed on the Quick Access toolbar and then click the Add button. An icon is added to the right list.
4. Click the newly added macro command and then click the Modify button. The Modify Button dialog box, as shown in Figure 18-9, appears.
5. Choose an icon to represent the macro and then click OK twice. Excel displays a macro button in the Quick Access toolbar.
6. To run the macro, click the button on the Quick Access toolbar.

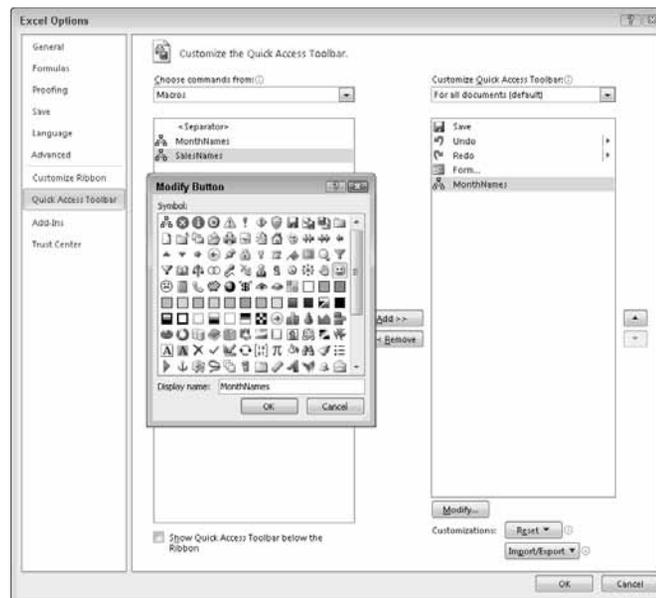


Figure 18-9

Delete a Macro

1. Open the workbook containing the macro you want to delete.
2. Choose View⇒Macros. The Macro dialog box appears.
3. From the Macro dialog box, select the name of the macro you want to delete and then click the Delete button. A confirmation box appears (see Figure 18-10).
4. Click the Yes button.



Deleting a macro doesn't remove the button you placed on the Quick Access toolbar. To delete a button from the Quick Access toolbar, right-click the macro icon and choose Remove from Quick Access Toolbar.

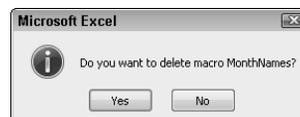


Figure 18-10

Part V

Utilizing Excel with Other People and Applications

The 5th Wave

By Rich Tennant



"No, that's not the icon for Excel, it's the icon for Excuse, the database of reasons why you haven't learned the other programs in Office."

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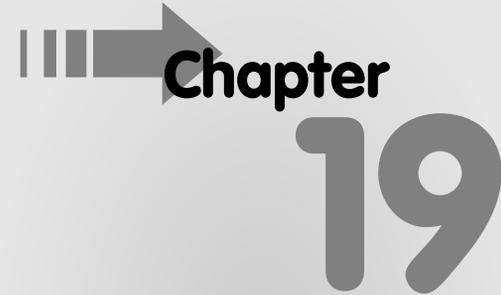
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Collaborating in Excel

Chances are that you have an Excel workbook that others need to access. You may copy the workbook to another disk and hand it to your coworkers, let them access it directly from your computer, or you may even e-mail or post the file on the Internet. Excel provides several features aimed at helping people collaborate on a workbook. All users can add their own comments, track revisions as multiple people edit the workbook, and merge multiple copies of the workbook.

Comments are notes that you attach to cells, separate from other cell content. Using comments allows you or others reviewing a workbook to provide instruction; for example, noting how a complex formula works, entering thoughts, questions, and even specifications about the type of information you want the end user to enter into the cells. Adding a comment doesn't change the overall appearance of the worksheet. You can think of comments as Post-it notes for an individual worksheet's cells.

When multiple people edit a workbook, it can be difficult to determine which person made which changes. Revision tracking helps you determine who added changes to the file and what the changes were — including formatting changes and data additions or deletions. The tracking feature changes the color for each person's edits, making it easy to see who changed what in the workbook. When you review the workbook, you can choose to accept or reject the changes.



Chapter 19

Get ready to . . .

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Add Comments

1. Click the cell on which you want to comment.
2. Choose Review → New Comment in the Comments group. A yellow comment box with your name and a blinking cursor appears.



With the comment box open, you can drag the lower-right corner of the comment box to make it larger.

3. Type your comment. Comments can be up to 32,767 characters in length.
4. Click a cell other than the commented cell. Excel accepts the comment and displays a triangle in the upper-right corner of the commented cell. See Figure 19-1.



Point at the comment triangle to display the actual comment text.



Each cell can have a comment, but only one comment per cell is permitted.

Edit Comments

1. Select the cell with the comment you want to edit.
2. Choose Review → Edit Comment in the Comments group. The comment box reopens for editing, as shown in Figure 19-2.



To delete a comment, choose Review → Delete Comment in the Comments group.

3. Make any desired changes and then click any other cell to close the comment box.



To manage how Excel prints comments, click the Page Layout tab and then click the Page Setup dialog box launcher. From the Page Setup dialog box, click the Sheet tab and choose an option from the Comments drop-down list. You can print comments as they're currently displayed on the sheet, or you can print all comments in a list on a separate page.

	Actual	Ratio	Budget	Variance
Revenues				
Sales	\$ 4,795.00	1.7%	\$ 0.00	4,795.00
Sales - Amenity	51,652.86	18.1%	51,000.00	652.86
Sales - Books	7,293.10	2.6%	7,800.00	(506.90)
Sales - Equipment	71,017.40	24.9%	89,700.00	(18,682.60)
Sales - Food/Fert	5,204.15	1.8%	7,700.00	(2,495.85)
Sales - Hand Tools	7,058.12	2.5%	8,750.00	(1,691.88)
Sales - Landscape Services	16,977.53	5.9%	18,500.00	(1,522.47)
Sales - Miscellaneous	45.00	0.0%	0.00	45.00

Figure 19-1

	Actual	Ratio	Budget	Variance
\$ 4,795.00	1.7%	\$ 0.00	4,795.00	
51,652.86	18.1%	51,000.00	652.86	
7,293.10	2.6%	7,800.00	(506.90)	
71,017.40	24.9%	89,700.00	(18,682.60)	
5,204.15	1.8%	7,700.00	(2,495.85)	
7,058.12	2.5%	8,750.00	(1,691.88)	
16,977.53	5.9%	18,500.00	(1,522.47)	
45.00	0.0%	0.00	45.00	

Figure 19-2

View Multiple Comments

1. Click a cell with a comment and pause your mouse pointer over the comment indicator. Excel displays the comment text; but as you move your mouse pointer away from the comment indicator, the comment text hides.
2. Try the following options:
 - Choose Review and in the Comments group, choose Next or Previous. Excel opens and displays another comment.
 - Choose Review→Show/Hide Comment in the Comments group. Excel keeps the current comment displayed onscreen until you select the cell and choose this option again.
 - Choose Review→Show All Comments in the Comments group. Excel displays all comment boxes on the current worksheet. (See Figure 19-3.) Click the Show All Comments button again to turn off the comment display.

	Actual	Ratio	Budget	Variance
Revenues				
Sales	\$ 4,795.00	1.7%		795.00
Sales - Amary	51,652.86	18.1%		652.86
Sales - Books	7,293.10	2.6%		66.90
Sales - Equipment	71,017.40	24.9%		82.60
Sales - Food/Fert	5,204.15	1.8%		95.85
Sales - Hand Tools	7,058.12	2.5%	8,750.00	(1,691.88)
Sales - Landscape Services	16,977.53	5.9%	18,900.00	(1,922.47)
Sales - Miscellaneous	45.00	0.0%	0.00	45.00
Sales - Nursery	67,467.21	23.6%	60,400.00	7,067.21
Sales - Pots	11,069.11	3.9%	8,300.00	2,769.11
Sales - Seeds	8,661.39	3.0%	6,800.00	1,861.39
Sales - Soil	9,082.55	3.2%	8,900.00	182.55
Other Income	25,500.00	8.9%	25,000.00	500.00
Sales Discounts	(135.93)	0.0%	0.00	(135.93)
Total Revenues	285,687.49	100.0%	292,850.00	(7,162.51)

Figure 19-3

Share a Workbook

1. Choose Review→Share Workbook in the Changes group. The Share Workbook dialog box appears.
2. From the Editing tab, as shown in Figure 19-4, click Allow Changes by More Than One User at the Same Time.
3. Click OK. The Share Workbook dialog box closes, and if any changes have been made to the workbook, Excel prompts you to save the file.
4. Click OK. Excel resaves the workbook. Excel denotes a shared workbook with [Shared] in the title bar.



Figure 19-4



Repeat the preceding steps and remove the check mark to unshare a workbook. Excel displays a confirmation box. Click the Yes button.

Track Changes

1. Choose Review → Track Changes → Highlight Changes in the Changes group. The Highlight Changes dialog box opens, as shown in Figure 19-5.
2. Select the Track Changes While Editing check box. This automatically creates a shared workbook file if you haven't already activated the Share Workbook feature.
3. Select any desired options:
 - **When:** Select the default of All or choose Since I Last Saved, Not Yet Reviewed, or specify a date.
 - **Who:** Choose from specific users currently using the workbook, Everyone, or Everyone But Me.
 - **Where:** Specify a range in the workbook to track. If this option is left blank, Excel tracks the entire workbook.
 - **Highlight Changes On Screen:** When selected, modified cells have a triangle in the upper-right cell corner. Hover the mouse pointer over the triangle to review the change and who made it.
 - **List Changes on a New Sheet:** When this is selected, Excel adds a special history worksheet in the workbook for viewing each edit including the detail, author, date, and time. See an example in Figure 19-6.



When you save the workbook, Excel deletes the history sheet.

4. Click OK. You may be prompted to save your workbook. If so, click OK again. Excel activates its tracking feature and highlights any changes in the worksheet with a colored triangle in the upper-left corner of edited cells along with a colored border around the cell.

5. Make a change in any cell. Modified cells display a border around the changed cell with a triangle in the upper left corner of the cell.



Each user that opens the workbook must activate revision tracking for his changes to be marked.



Figure 19-5

Action	Number	Date	Time	Who	Change	Sheet	Range	New Value	Old Value	Action Type	Losing Action
	1	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	B7	52,652.86	51,652.86		
	2	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	D10	7,800.00	7,700.00		
	3	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	B10	8,204.14	5,204.15		
	4	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	B15	13,069.11	11,069.11		
	5	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	D19	-500	0		
	6	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	D13	1,000.00	0		
	7	1/30/2010	2:40 PM	Diane	Cell Change	Income-Budget	D8	5,800.00	7,800.00		
The history ends with the changes saved on 1/30/2010 at 2:40 PM.											

Figure 19-6

Accept or Reject Changes

1. Save the workbook. If you don't save the workbook, Excel prompts you to save it when you proceed to Step 2.



Excel notes each user's revisions with a different color.

2. Choose Review → Track Changes → Accept/Reject Changes in the Changes group. The Select Changes to Accept or Reject dialog box appears.
3. Select which changes you want to review and then click OK. The Accept or Reject Changes dialog box, as shown in Figure 19-7, appears with the first change.
4. Click one of the following buttons:
 - **Accept:** Keeps the change and removes the revision marker. Excel then locates the next changed cell.
 - **Reject:** Returns the changed cell to its previous value and removes the revision marker. Excel then locates the next changed cell.
 - **Accept All:** Accepts all changes and removes the revision indicators.
 - **Reject All:** Returns all changed cells to their previous values and removes the revision indicators.
 - **Close:** Makes no changes and cancels the change review.
5. If a cell has conflicting changes from multiple users, Excel displays the dialog box shown in Figure 19-8. Excel displays the original cell value and the value added by each user. Select the change you want and then click the Accept button.

	A	B	C	D	E	F	G	H
1		ABC Landscapes						
2		Income Budget						
3		1st Quarter						
4			Actual					
5	Revenues							
6	Sales	\$ 4,795.00						
7	Sales - Avariary	\$2,652.86						
8	Sales - Books	7,293.10						
9	Sales - Equipment	71,017.40	24.3%	89,700.00	(18,682.60)			
10	Sales - Food/Fert	8,204.14	2.8%	7,800.00	404.14			
11	Sales - Hand Tools	7,058.12	2.4%	8,750.00	(1,691.88)			
12	Sales - Landscape Services	16,977.53	5.8%	18,500.00	(1,522.47)			
13	Sales - Miscellaneous	45.00	0.0%	1,000.00	(955.00)			
14	Sales - Nursery	67,467.21	23.1%	60,400.00	7,067.21			
15	Sales - Pots	13,069.11	4.5%	8,300.00	4,769.11			
16	Sales - Seeds	8,661.39	3.0%	6,800.00	1,861.39			
17	Sales - Soil	9,082.55	3.1%	8,900.00	182.55			
18	Other Income	25,500.00	8.7%	25,000.00	500.00			
19	Sales Discounts	(135.93)	0.0%	(500.00)	364.07			
20								
21	Total Revenues	291,687.48	100.0%	291,450.00	237.48			
22								

Figure 19-7

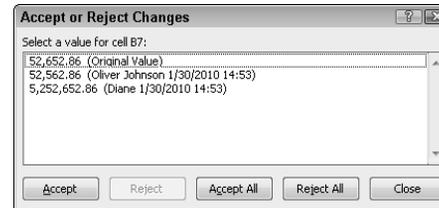


Figure 19-8

Merge Workbooks

1. From a shared workbook, choose File→Save As. Save a copy for each user.
2. Allow each user to make changes to their own workbook version.



Be sure each user saves her changes before you merge workbooks.

3. Open one of the workbook copies and make sure Track Changes is activated. (See the “Track Changes” section, earlier in this chapter.)
4. Add the Compare and Merge Workbooks command to the Quick Access toolbar. (Choose File→Options. The Excel Options dialog box appears. Click the Quick Access toolbar section. Locate and choose Compare and Merge Workbooks; click the Add button; then click OK.)



The Compare and Merge Workbooks command is listed under the category Commands Not on the Ribbon.

5. Click the Compare and Merge Workbooks button from the Quick Access Toolbar. Excel may prompt you to save the workbook.
6. The Select Files to Merge into Current Workbook dialog box opens, as shown in Figure 19-9.
7. Navigate to the folder containing the workbooks you want to merge and click the filenames you want to merge.



To click multiple files, press and hold the Ctrl key while clicking filenames.

8. Click OK. Excel merges all the workbooks into one. In Figure 19-10, Excel incorporates other users’ data into the workbook and marks changes with revision mark indicators.

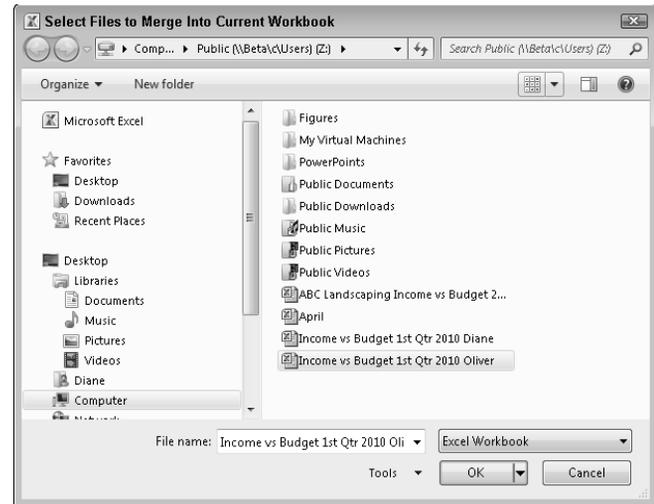


Figure 19-9

	Actual	Income Ratio	Budget	Budget Over (Under)
REVENUES				
Sales - Books	33,574.00	16.6%	48,000.00	<12,426.00>
Sales - Ceramics	11,452.94	5.7%	11,700.00	<247.06>
Sales - Equipment	72,469.77	38.2%	82,000.00	10,469.77
Sales - Furniture	18,575.42	9.3%	16,000.00	2,575.42
Sales - Hand Tools	7,825.00	3.9%	7,800.00	25.00
Sales - Landscape Services	38,059.53	19.0%	32,000.00	6,059.53
Sales - Nursery	18,199.98	9.1%	16,000.00	2,199.98
Interest Income	234.25	0.1%	500.00	<265.75>
Other Income	1,237.74	0.6%	1,100.00	137.74
Miscellaneous Income	320.00	0.2%	400.00	<80.00>
Sales Discounts	<1,742.95>	-0.9%	<3,000.00>	<1,257.05>
TOTAL REVENUES	200,205.68	100.0%	190,500.00	9,705.68
COST OF GOODS SOLD				
COGS - Books	11,909.21	5.9%	12,000.00	<90.79>
COGS - Ceramics	3,457.25	1.7%	3,500.00	<42.75>

Figure 19-10

Integrating Excel into Word

No single computer program does everything, and in reality, you don't want it to. You probably use multiple applications for different tasks, such as playing Solitaire, surfing the Internet, reading e-mail, and of course, working with Excel. If you use Excel, you probably use Microsoft Word to create memos, letters, and other such documents.

In this chapter, I show you how to integrate two major Microsoft Office applications: Word and Excel. You discover how you can create a worksheet in Excel and include it in the middle of a Word document.

If you create a table in Word and then conclude that you're better off working in Excel, you can copy the Word table into any Excel worksheet. You don't need to start completely over.

Take a look and see how easily these two powerful applications work together!



Chapter

20

Get ready to . . .

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Copy Excel Cells into Word

1. From the Excel worksheet, highlight the cells you want to copy into a Word document; then copy them. (See Chapter 2.)
2. Open or create the Word document in which you want to place the Excel cells. Make sure the blinking cursor is at the location where you want the cells; then paste the information. (See Chapter 2.) Excel pastes the cells into a Word table. Figure 20-1 shows both the Excel worksheet and the new Word table.



The Word table includes any Excel formatting such as column width, font, color, and border style; however, the Word table and the Excel worksheet aren't linked. Any changes made to one don't appear on the other.

3. Modify the Word table using any of the following:
 - **Replace any cell value:** Highlight any existing text in a cell and type the replacement text.
 - **Delete a column or row:** Click in a cell of the column or row you want to delete and then choose Table Tools Layout → Delete → Delete Columns (or Delete Rows) in the Rows & Columns group.
 - **Insert rows or columns:** Click in a table cell where you want to insert the new row or column, and then choose Table Tools Layout and in the Rows & Columns group, select Insert Above, Insert Below, Insert Left, or Insert Right button.
 - **Widen a column:** Click a cell in the column you want to widen and then choose Table Tools Layout and in the Cell Size group, change the width until the column is the width you want.
 - **Delete the table from the Word document:** Click anywhere in the table and choose Table Tools Layout → Delete → Delete Table in the Rows & Columns group. (See Figure 20-2.)

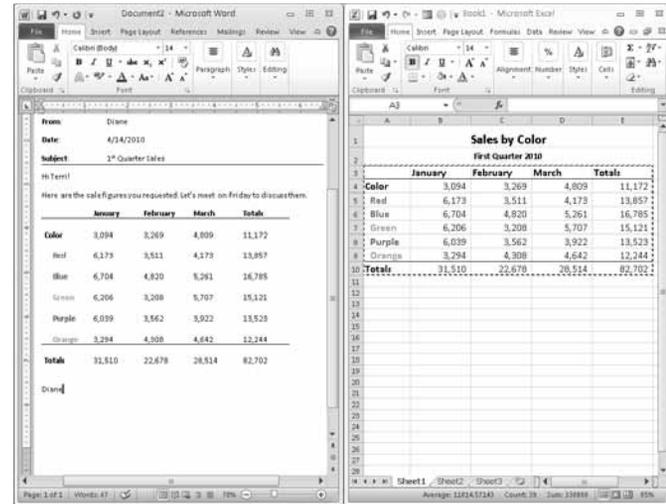


Figure 20-1

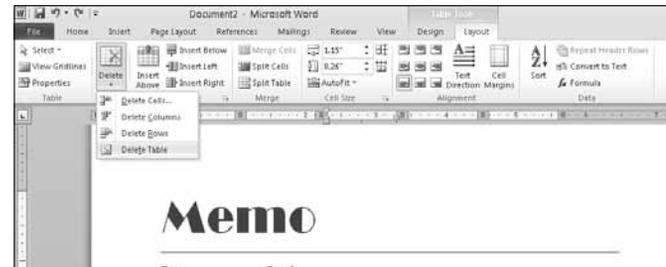


Figure 20-2

Insert a Saved Excel Worksheet into Word

1. In a Word document, position the insertion point where you want the worksheet to appear; then choose Insert→Object in the Text group. The Object dialog box opens.
2. From the Create from File tab, click the Browse button; then locate and click the Excel file you want to include in your Word document.
3. Click the Insert button. The Object dialog box reappears with the path and filename you selected in the File Name text box. (See Figure 20-3.)
4. Click OK. The Excel workbook appears as a Word table. The cells in the Word table contain the same formatting as the Excel workbook.



Even if your worksheet contains multiple sheets, only the top sheet with all the cells containing data appears. You can't specify a particular range of cells. If you want to insert an Excel chart, save the workbook with the chart sheet on top before inserting into Word.

Edit an Inserted Worksheet

1. Click once in the Word table and perform one of the following actions:
 - Press Delete to delete the table.
 - Drag one of the handles to resize the table.
 - Double-click the table to edit the actual values. The Excel Ribbon appears, along with column headings, row numbers, and any formulas you created in Excel. (See Figure 20-4.)



Any changes you make are saved in Word only, not in the original Excel workbook.

2. Click outside the table to deselect it.

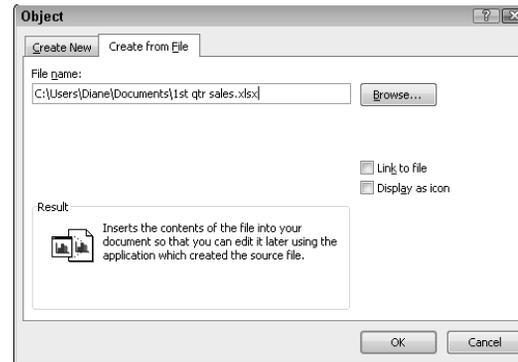


Figure 20-3

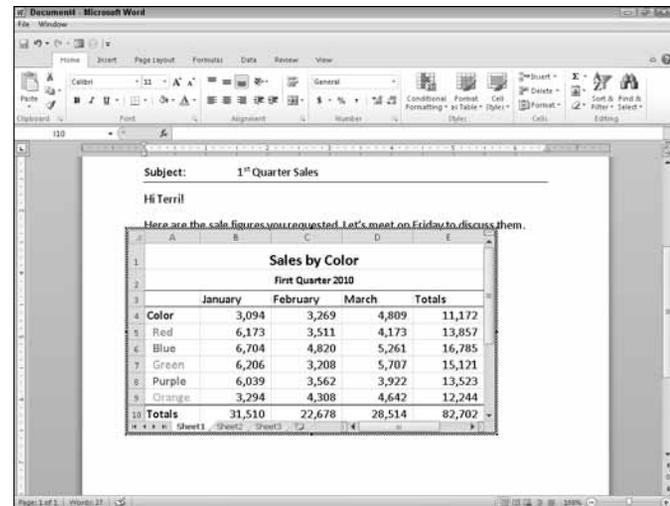


Figure 20-4

Link an Excel Worksheet into Word

1. Follow Steps 1–3 of the “Insert a Saved Excel Worksheet into Word” section, earlier in this chapter.
2. Select the Link to File check box, as shown in Figure 20-5. With this option selected, any changes you make to the original Excel workbook are reflected in the Word document each time you open it.



If you select the Display as Icon check box, Word inserts an Excel icon into the document instead of displaying the workbook as a table. Double-clicking the icon opens the workbook in Excel; however, the Excel program must be installed on the computer that's trying to open the workbook.

3. Click OK. The Excel workbook appears as a Word table.



To resize the Word table, click once on the table, which displays the eight sizing handles, and then drag any handle until the table reaches the size you want. To delete the table, click once on the table and press the Delete key.

4. The Word table is linked to the original Excel worksheet. You can ensure that any changes made in the Excel workbook are reflected in the Word document by using any of the following methods:
 - With the Word document already opened, right-click the Word table and choose Update Link.
 - Double-click the Word table, which launches the Excel program and opens the linked workbook. If you make any changes in Excel, the Word table updates automatically.
 - When you reopen the Word document, the dialog box shown in Figure 20-6 displays; it prompts you to update the Word document from the original Excel file. Click the Yes button.

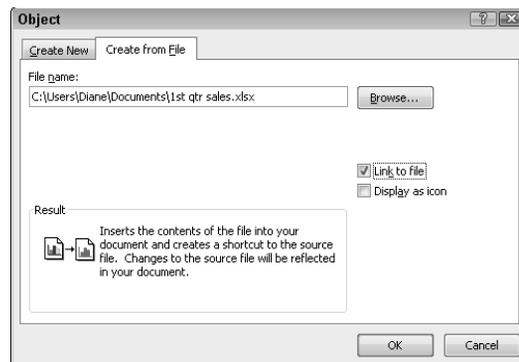


Figure 20-5

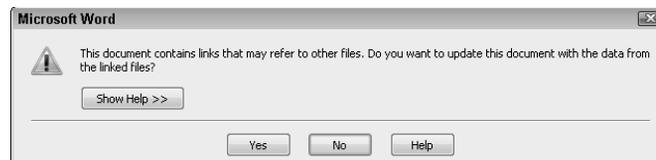


Figure 20-6

Copy a Word Table to Excel

1. In Microsoft Word, create a table by choosing Insert⇨Table in the Tables group and then enter data in the Word table.

 Press Tab to move from cell to cell, or click in any individual cell.

2. Drag across the table to highlight the cells you want to copy, as shown in Figure 20-7.
3. Choose Home⇨Copy in the Clipboard group or press Ctrl+C.

 To move, instead of copy, the Word table to Excel, choose Home⇨Cut in the Clipboard group, or press Ctrl+X.

4. Open or create the Excel workbook in which you want to place the Word table and then click the cell in which you want the table to begin.
5. Choose Home⇨Paste in the Clipboard group or press Ctrl+V. The Excel worksheet displays the Word table. As shown in Figure 20-8, each cell in the Word table occupies one cell in the Excel worksheet.

 If the Word table cells have a border around them, the Excel cells also have a border around them.

 The Word table and the Excel worksheet aren't linked. Any changes made to one don't change the other.

6. Format the cells as desired. (See Chapter 6.)

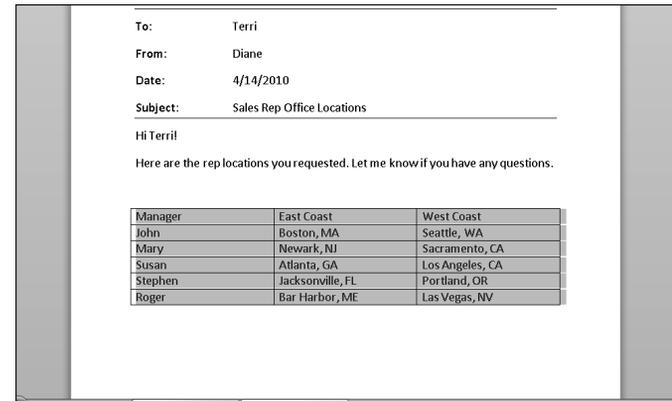


Figure 20-7

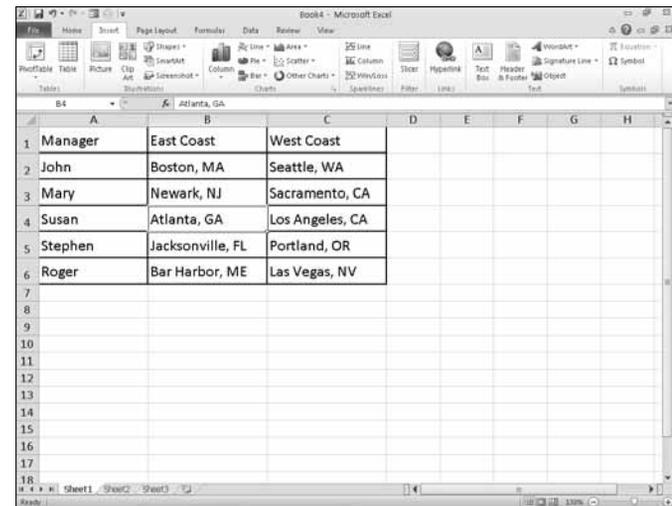


Figure 20-8

Create a Word Mail Merge Form Letter Using an Excel List

1. Create and save an Excel worksheet with the data you want to merge in an Excel list. The Excel worksheet doesn't need to be open.



The data will be easier for you to identify later if it has column headings. If you're merging names, you might want to list the first name and the last name in separate columns.

2. In Word, with a blank document onscreen, choose Mailings → Start Mail Merge → Step by Step Mail Merge Wizard. The Mail Merge task pane appears on the right side of your screen.
3. Select the Letters option (see Figure 20-9) and then click the Next: Starting Document link.
4. Choose whether to create the mail merge from the current Word document or from another existing Word document; then click the Next: Select Recipients link.
5. Select the Use an Existing List option and then click the Browse button. The Select Data Source dialog box appears.
6. Locate and double-click the Excel file containing your list. The Select Table dialog box opens, as shown in Figure 20-10.
7. Select the range name, sheet name, or area containing data.



If the first row of your list doesn't contain headers, deselect the First Row of Data Contains Column Headers check box.

8. Click OK. A Mail Merge Recipients list containing your data appears.
9. Remove the check mark next to any record that you don't want to include and then click OK.



(Optional) Click the Clear All button to clear all the check marks or click the Select All button to check all the records. Click the arrow next to any heading to sort the data.

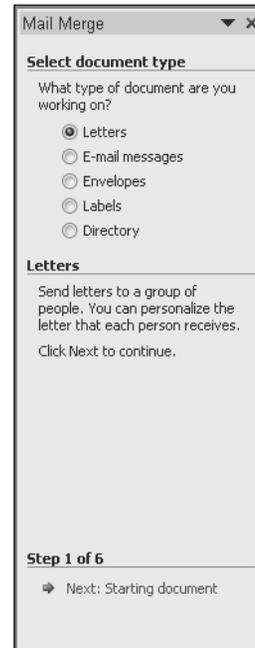


Figure 20-9

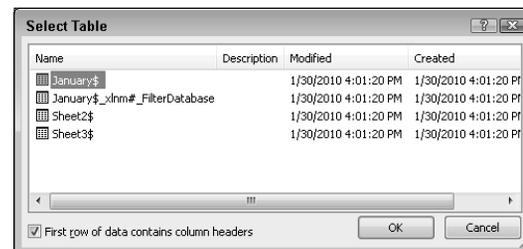


Figure 20-10

10. Click the Next: Write your letter link.
11. Type the form-letter document, leaving blanks where you want the variable (such as name, address, phone number, or product) information to appear. See Figure 20-11.
12. Click the insertion point at the first location where you want the variable information (such as the recipient name and address location).
13. From the task pane, select the desired option:
 - **Address Block:** Displays the Insert Address Block dialog box from which you can select an address layout. (See Figure 20-12.)
 - **Greeting Line:** Displays the Greeting Line dialog box, which inserts a greeting of your choice along with the recipient's first name (if you have such a field in your database) followed by a comma or colon.
 - **Electronic Postage:** Prints electronic postage on your envelopes if you subscribe to an electronic postage service, such as Stamps.com
 - **Postal Bar Code:** Prompts you for the zip code field from your Excel list and then inserts a bar code matching the zip code field.
 - **More Items:** Displays the Insert Merge Field dialog box, which displays each field listed in your Excel list. Click the field you want to insert into Word and then click the Insert button.
14. Click the Next: Preview Your Letters link. The document you created appears with the first data record from your Excel list.
15. Click the Next: Complete the Merge link. You can now print your form letters.

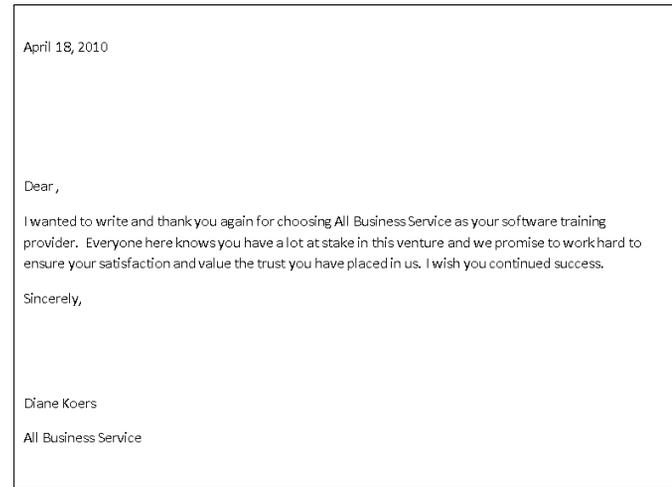


Figure 20-11

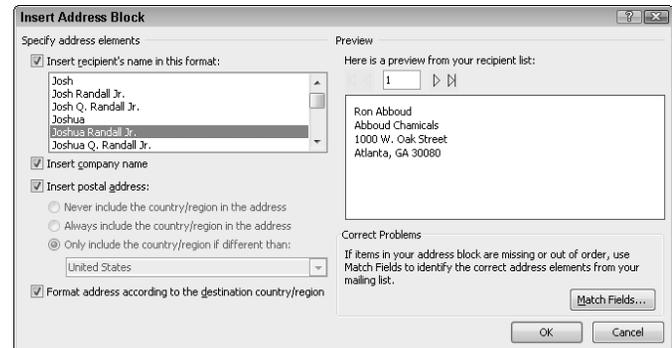


Figure 20-12



To edit a specific letter, click [Edit Individual Letters](#) link. To make a change to the master document, click the [Previous](#) button until you get to Step 4 and then make any desired changes. Click [Next](#) again until the merge is completed.

Make Mailing Labels with Word and Excel

1. Create and save an Excel worksheet with the data you want to merge in an Excel list. The Excel worksheet doesn't need to be open.
2. In Word, with a blank document onscreen, choose Mailings→Start Mail Merge→Labels. The Label Options dialog box appears, as shown in Figure 20-13.
3. Choose the label manufacturer and size you're using, and then click OK. You see a blank document onscreen.
4. Choose Table Tools Layout→View Gridlines in the Table group.
5. Choose Mailings→Select Recipients→Use Existing List in the Start Mail Merge group. The Select Data Source dialog box opens.
6. Locate and double-click the Excel file containing your list. The Select Table dialog box opens.
7. Select the range name, sheet name, or area containing data and click OK.
8. On the first label, choose Mailings→Address Block in the Write & Insert Fields group. The Insert Address Block dialog box appears.



(Optional) Choose Insert Merge Field and select the individual field you want to use.

9. Choose the address block format you want to use and click OK.
10. Choose Mailings→Update Labels in the Write & Insert Fields group. The fields you inserted appear on each label.
11. Choose Mailings→Preview Results in the Preview Results group. You see the labels as they'll print. See Figure 20-14.
12. Choose Mailings→Finish & Merge in the Finish group. You can then choose to edit the individual labels or to print them.

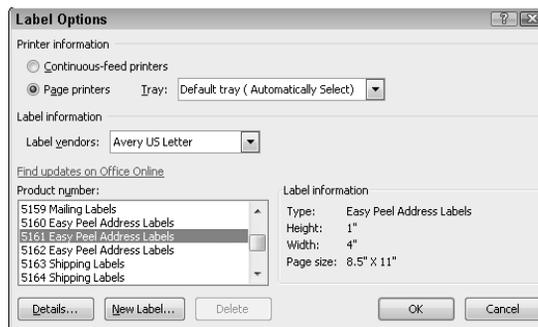


Figure 20-13

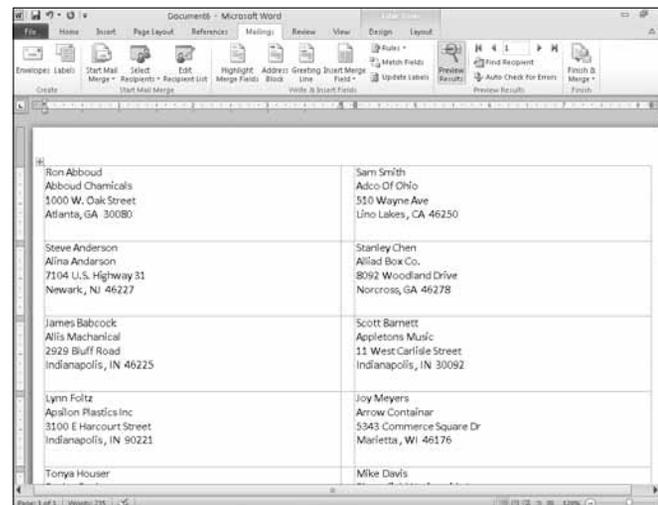


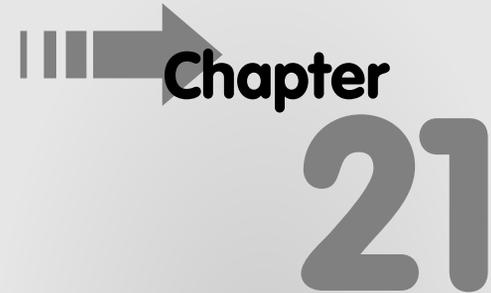
Figure 20-14

Blending Excel and PowerPoint

One of the most common ways to make others aware of your work is by giving a presentation. The Microsoft Office product PowerPoint is one of the most effective presentation products available in today's market. And because PowerPoint is part of the Microsoft Office suite, you can easily integrate information from other Office applications (in this example, Excel) into a PowerPoint presentation.

My mother always told me to do things right the first time. If you already spent the time and energy to create information in Excel, why should you have to recreate it in your PowerPoint presentation?

That's what this chapter is about. You discover how to take the powerful worksheet data or creative chart that you created in Excel and copy it to a PowerPoint slide. You can simply copy your data or chart once from Excel to PowerPoint, or you can create a link so that if the data in Excel changes, your PowerPoint presentation automatically reflects the changes. That's doing it right the first time . . .



Chapter 21

Get ready to . . .

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- ➔ Drag an Excel Table into a PowerPoint Slide 203
- ➔ Insert a Saved Excel Worksheet or Chart onto a PowerPoint Slide..... 204
- ➔ Link an Excel Worksheet into a PowerPoint Slide 205
- ➔ Add an Excel Chart to a PowerPoint Slide 206

Copy Excel Cells into a PowerPoint Slide

1. From the Excel worksheet, highlight the cells you want to copy into a PowerPoint slide and choose Home⇒Copy in the Clipboard group or press Ctrl+C. A marquee appears around the highlighted cells. (See Figure 21-1.)
2. Open or create a PowerPoint presentation. Make sure you display the slide on which you want to paste the cells.
3. Choose Home⇒Paste in the Clipboard group or press Ctrl+V. Excel pastes the cells into a PowerPoint table.



The PowerPoint table and the Excel worksheet aren't linked. Any changes made to one aren't reflected in the other.

4. Modify the PowerPoint table using any of the following methods:
 - **Replace any cell value:** Highlight any existing text in a cell and type the replacement text.
 - **Delete a row:** Click in the row you want to delete, right-click, and choose Delete Rows.



Alternatively, drag across the row to highlight it first, right-click, and choose Delete Rows.

- **Delete a column:** Highlight the column you want to delete, right-click, and choose Delete Columns.
- **Change a column width:** Position the mouse pointer at the boundary line (as shown in Figure 21-2) to the right of any column and drag to the left or right.
- **Resize the table:** Position the mouse pointer over a table handle and drag to the desired size.
- **Move the table:** Position the mouse pointer over an edge, but not a handle, of the table boundary box and drag to the desired location.

Driver	Total	Races
A.J. Foyt	72	409
Mario Andretti	52	422
Michael Andretti	40	263
Al Unser	38	321
Al Unser, Jr	31	278
Bobby Unser	29	263
Rick Mears	28	196
Rodger Ward	27	184
Ralph DePalma	25	116
Johnny Rutherford	25	332

Figure 21-1

Driver	Total	Races
A.J. Foyt	72	409
Mario Andretti	52	422
Michael Andretti	40	263
Al Unser	38	321
Al Unser, Jr	31	278
Bobby Unser	29	263
Rick Mears	28	196
Rodger Ward	27	184
Ralph DePalma	25	116
Johnny Rutherford	25	332

Figure 21-2

Drag an Excel Table into a PowerPoint Slide

1. Open both the PowerPoint presentation you want to use and the Excel workbook. Make sure to display the PowerPoint slide you want.
2. Resize and arrange the PowerPoint and Excel windows so that both are visible at the same time. Use either of the following methods:
 - Right-click a blank area of the Windows task bar and choose Show Windows Side by Side.
 - Click the Restore button in each window so they're no longer maximized and then drag the window borders to resize them. Drag the title bars to move them until both windows are the desired size and in the correct location.
3. Select the Excel data you want to copy.
4. Position the mouse pointer around the outside border of the selected Excel data and drag the data from the Excel window until it's on the PowerPoint slide. As you drag the mouse, the pointer changes to a small box, as shown in Figure 21-3.
5. Release the mouse button. The Excel data appears on the PowerPoint slide.
6. Maximize the PowerPoint window to restore it to full screen. You can then format, resize, or edit the data as desired. See Figure 21-4.

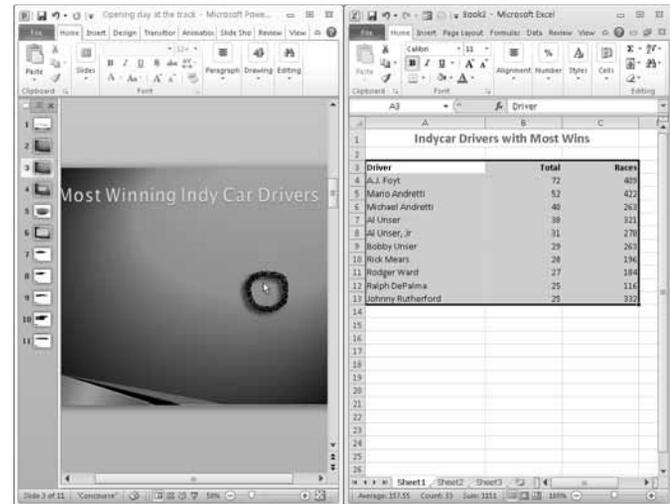


Figure 21-3



To delete the table from the slide, click once to select the table object (the table object boundary has gray boundary edges) and then press the Delete key.



Figure 21-4

Insert a Saved Excel Worksheet or Chart onto a PowerPoint Slide

1. In a PowerPoint presentation, display the slide where you want the worksheet or chart to appear.



Before proceeding, if you want to copy a chart onto the slide, make sure to save the Excel workbook with the chart sheet as the top sheet. If your workbook contains multiple worksheets, only the top sheet appears in the PowerPoint slide.

2. Choose Insert → Object in the Text group. The Insert Object dialog box opens.
3. Select the Create from File option and then click the Browse button. The Browse dialog box opens.
4. Locate and double-click the Excel file you want to include in your PowerPoint presentation. The Insert Object dialog box reappears and the path and filename you selected appears in the File text box. See Figure 21-5.
5. Click OK. As shown in Figure 21-6, the Excel workbook or chart appears on the current PowerPoint slide.
6. Modify the PowerPoint table or chart with any of the steps from the section, “Copy Excel Cells into a PowerPoint Slide,” earlier in this chapter, or by using any of the following:
 - Click once on the PowerPoint object. Eight selection handles appear around the table. Drag one of the handles to resize the object.
 - Double-click the table or chart to edit the actual values. The Excel Ribbon appears along with column letters and row numbers. The worksheet includes any formulas you created in Excel.
7. Click the slide background to return to PowerPoint and deselect the object.

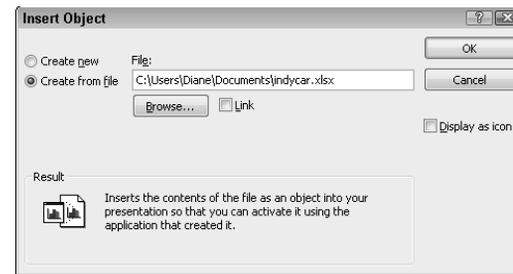


Figure 21-5



Figure 21-6

Link an Excel Worksheet into a PowerPoint Slide

1. Open the desired Excel file. When creating a link, the originating Excel file must be a previously saved file.
2. Select the portion of the worksheet you want to duplicate in PowerPoint and then choose Home→Copy in the Clipboard group or press Ctrl+C.
3. Display the PowerPoint slide on which you want to create the link and then choose Home and in the Clipboard group, click the Paste arrow and choose Paste Special, which displays the Paste Special dialog box, as shown in Figure 21-7.
4. Select the Paste Link option and then select Microsoft Excel Worksheet Object.



If you select the Display as Icon check box, instead of displaying the linked object as a table or chart, PowerPoint inserts an Excel icon onto the slide. Double-clicking the icon opens the workbook in Excel; however, the Excel program must be installed on the computer trying to open the workbook.

5. Click OK. The pasted and linked Excel data appears as an object on the PowerPoint slide.
6. The PowerPoint table is linked to the original Excel workbook. You can cause any changes made in the Excel workbook to be reflected in the PowerPoint presentation by using any of the following methods:
 - With the PowerPoint presentation already open, right-click the PowerPoint table and choose Update Link. (See Figure 21-8.)
 - Double-click the PowerPoint table to launch the Excel program and open the linked workbook. Make any changes in Excel, and the PowerPoint table updates automatically.
7. When you reopen the PowerPoint presentation, a Security Notice dialog box displays prompting you to update PowerPoint from the original Excel file. Click the Update Links button to update PowerPoint.



Figure 21-7

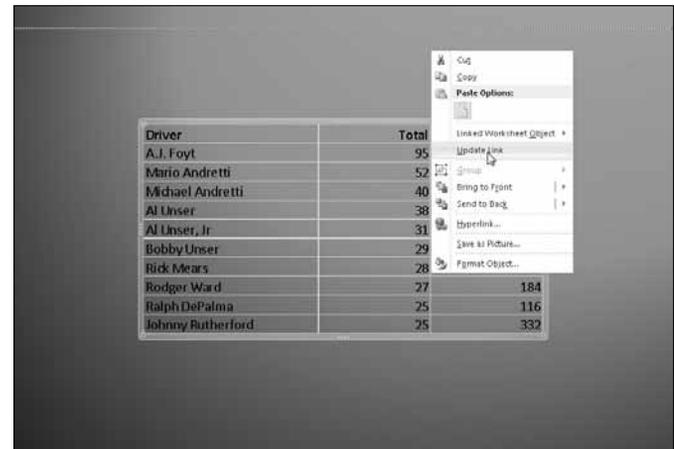


Figure 21-8

Add an Excel Chart to a PowerPoint Slide

1. Open the desired Excel file containing a chart; then select the chart you want to duplicate in PowerPoint.
2. Choose Home→Copy in the Clipboard group or press Ctrl+C.
3. Display the PowerPoint slide on which you want to create the link and then choose Home. In the Clipboard group, click the Paste arrow and choose Use Destination Theme & Link Data. Live Preview displays the chart on the slide. See Figure 21-9.
4. The PowerPoint chart object is linked to the original Excel chart. Update the PowerPoint slide chart by using any of the following methods:
 - With the PowerPoint presentation already open, choose Chart Tools Design→Refresh Data in the Data group.
 - Double-click the PowerPoint chart to launch the Excel program and open the linked workbook. Make any changes in the Excel data, which updates the Excel chart, and the PowerPoint chart updates automatically.
5. When you reopen the PowerPoint presentation, a Security Notice dialog box displays prompting you to update PowerPoint from the original Excel file. (See Figure 21-10.) Click the Update Links button to update PowerPoint.

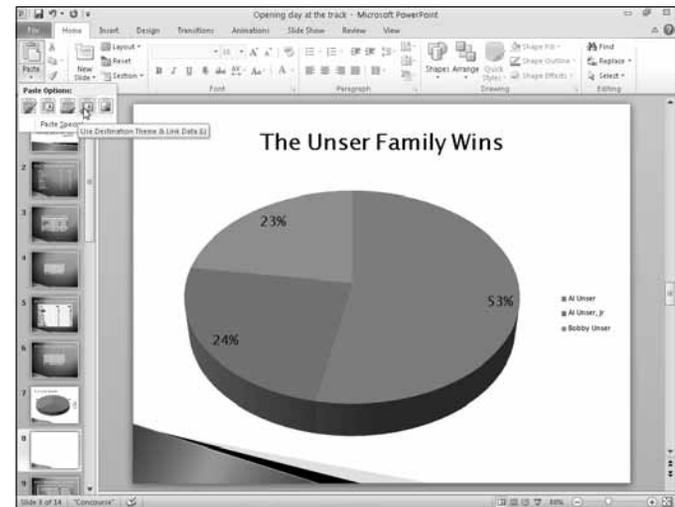


Figure 21-9



Figure 21-10

Using Excel with Access

You can share data between Access and Excel in many ways. You can copy data from an open worksheet and paste it into an Access datasheet, import a worksheet into an Access database, or simply load an Access datasheet into Excel by choosing External Data→Excel in the Export group.

This chapter shows you how you exchange data between Access and Excel through these processes:

- ➔ **Importing:** Creates a copy of an Excel spreadsheet in Access format.
- ➔ **Linking:** Connects an Access table to an Excel worksheet so that you can view and edit the data in both the original program and in the Access file. Linking is useful when Excel data must be shared between Excel and Access users.

Entire books are written about using Access, so this chapter assumes you already know about general database terms, such as records, fields, tables, queries, and primary keys. I also assume you know the basics of creating and using an Access database. (If you need help with Access, see *Access 2010 For Dummies*.)

Chapter 22

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Import Data from Excel to an Access Table

1. Prepare your Excel worksheet data before importing into Access:
 - If you don't want to import the entire worksheet, create a named range in the Excel workbook that contains the cells you want to import. (See Chapter 2.)
 - Make sure the cells are in a contiguous table format. If the worksheet contains merged cells, the contents of the cell are placed in the field that corresponds to the leftmost column, and the other fields are left blank.
 - If the Excel spreadsheet has a cell containing more than 255 characters, Access truncates the data to 255 characters.
2. If you don't already have an Access database created, in Access, choose File→New. If you already have an Access database, open the database and skip to Step 4.
3. Click the Blank Database button and then click the Create button. (See Figure 22-1.)
4. Choose External Data→Excel in the Import & Link group. The Get External Data – Excel Spreadsheet dialog box appears.
5. Click the Browse button to locate and select the Excel file from which you want to import data and then click Open. The file name appears in the File Name text box. (See Figure 22-2.)
6. Specify whether you want the data in an existing table or a new table. If you want it in an existing table, select the table name.



If you select an existing table, Access appends the data to the table. Make sure the number of columns in the worksheet or named range matches the number of fields in the table. The name, data type, and position of each column must also match those of the corresponding field in the Access table.

7. Click OK. The Import Spreadsheet Wizard appears.

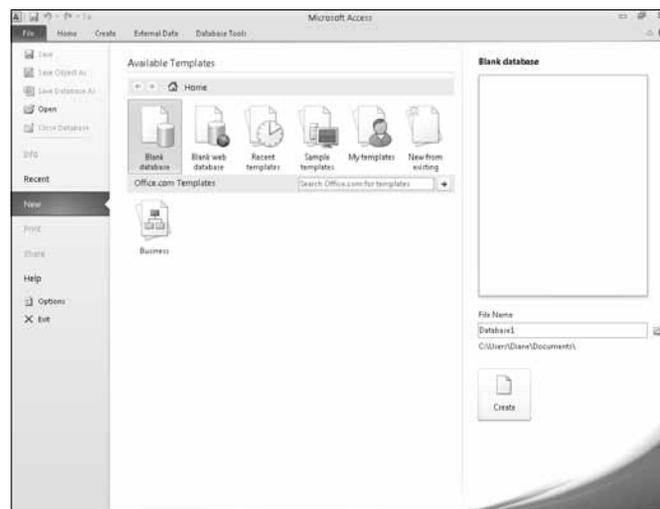


Figure 22-1

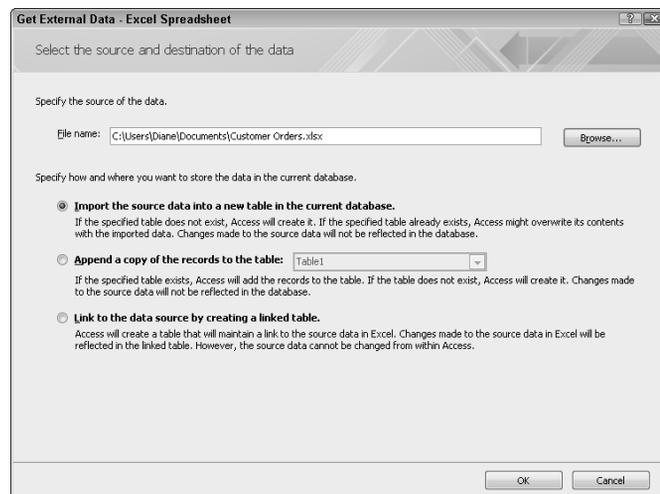


Figure 22-2

- Select the worksheet you want to import or a specific named range. If the workbook has no named ranges and only one worksheet, you don't see this screen.



You can import only one worksheet or named range at a time during an import operation.

- Click the Next button and then specify whether the first row of your worksheet contains column headings. Access creates field names from the column headings. (See Figure 22-3.)



If your worksheet has headings, you may not see some of the next several screens.

- Click the Next button and then if desired, assign alternative field names to each column by clicking the desired column and typing a name in the Field Name text box. (See Figure 22-4.)



If a column name violates the field naming rules in Access, Access assigns a valid name to the field.

- In the Data Type drop-down list, assign field data types to each column, if desired.
- In the Indexed drop-down list, choose Yes or No if you want (or don't want) the field indexed.



(Optional) Click a column you don't want to include and then select the Do Not Import Field (Skip) check box. You can skip columns during the import, but you can't skip rows.

- Click the Next button and then select an option regarding the primary index key. You can let Access create one for you, select your own primary key, or choose not have a primary key.
- Click the Next button.

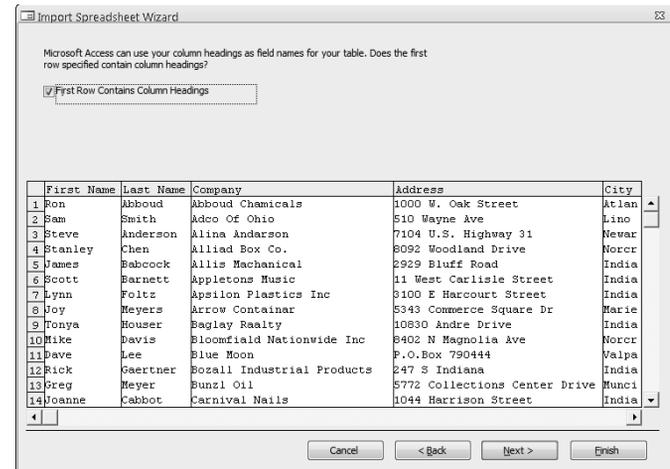


Figure 22-3

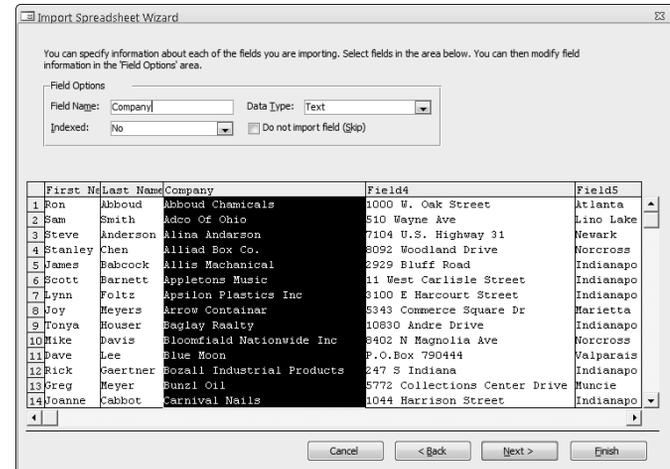


Figure 22-4

15. If you are creating a new table, enter a name.
16. Click the Finish button. Access imports the data and prompts you to save the import settings for future imports.



If any errors occur during the import, Access creates an error log table in the database and displays the name of the table in a message. Open the error log table and review the errors.

17. Click the Close button. A new table appears in Access, as shown in Figure 22-5.



To import multiple worksheets or named ranges, repeat the import process for each worksheet or range.

18. Double-click the Access table and review the imported data. (See Figure 22-6.) Keep in mind the following facts about imported data:
 - **Imported data:** Importing a worksheet into Access creates a duplicate copy of the data and doesn't make any changes to the source Excel file.
 - **Graphical elements:** Access doesn't import graphical elements, such as logos, charts, and pictures.
 - **Data type:** Access determines the data type based on the first 25 rows of data. If any values beyond the 25th row aren't compatible with the chosen data type, Access ignores those values and doesn't import them.
 - **Calculated values:** Access imports only the results of a calculated cell, not the formula itself. For example, if cell D13 contains the formula $=B13 * C13$, which results in a value of 100, only the value of 100 goes into Access, not the formula $=B13 * C13$. To update the formulas, you can link the Excel worksheet to Access. See the following section.
 - **Hyperlinks:** Access imports cells containing hyperlinks as text fields.

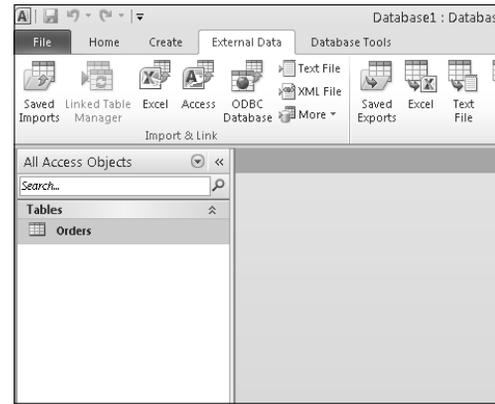


Figure 22-5

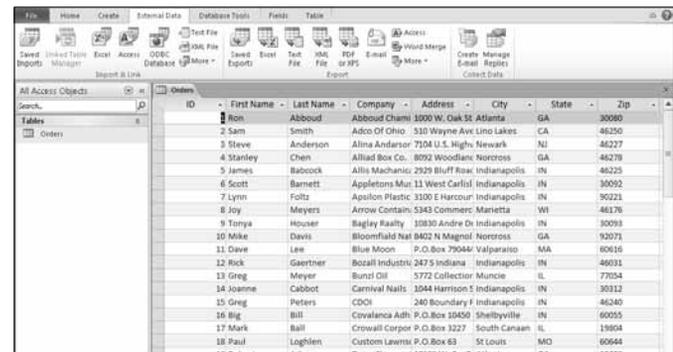


Figure 22-6

Link an Excel Worksheet to an Access Database

1. Refer to Steps 1–5 of the preceding section.
2. Select the Link to the Data Source by Creating a Linked Table option (see Figure 22-7) and click OK. The Link Spreadsheet Wizard opens.
3. Select which worksheet you want to import or a specific named range. If the workbook has no named ranges and only one worksheet, you don't see this screen.
4. Click the Next button.



You can link only one worksheet or named range at a time. To link multiple worksheets or named ranges, repeat the link operation.

5. Specify whether the first row of your worksheet contains column headings. If so, Access creates field names from the first row. If not, Access assumes the first row is a record.
6. Click the Next button and enter a name for the table.
7. Click the Finish button. A completion message box, as shown in Figure 22-8, appears.
8. Click OK.

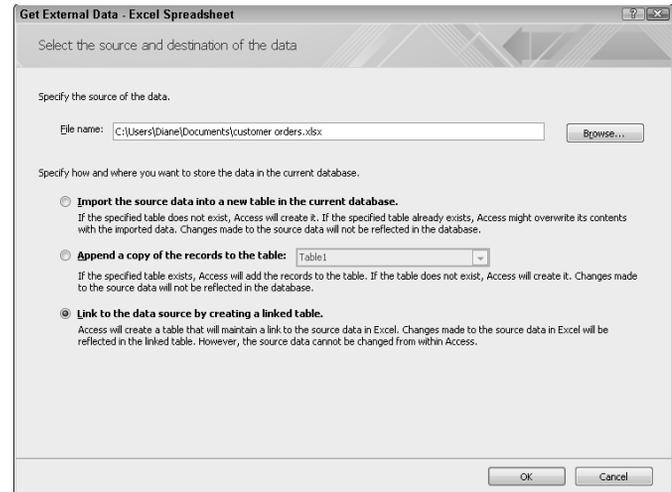


Figure 22-7

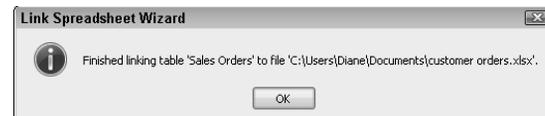


Figure 22-8

9. Double-click the Access table which, as shown in Figure 22-9, appears as an Excel icon with an arrow next to it, indicating that the table is an Excel link. Keep the following in mind when reviewing the data in Access:

- When you create a link, Access creates a new table but the data is actually stored in the source worksheet, not in the database table. Any changes you make to the data in the Excel source workbook updates the Access table. Any change you make in the Excel file, Access automatically reflects in the linked Access table.
- Graphics (such as logos, charts, or pictures) stored in the Excel worksheet aren't visible in Access.
- You can't change the field data type or size.
- The source cells that contain formulas display only as results in Access, and you can't modify the values in Access.
- Access stores Excel cells longer than 255 characters in a memo field that displays only the first 255 characters.



If you delete the table from Access, you're deleting only the link, not the actual Excel worksheet.

Update an Access-to-Excel Linked Table

1. Open the Access database you want to update. The Security Warning message shown in Figure 22-10 appears.
2. Click the Enable Content button.

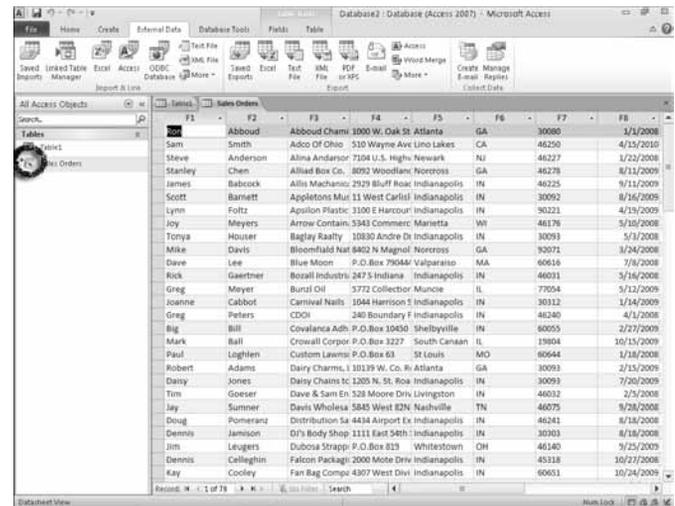


Figure 22-9

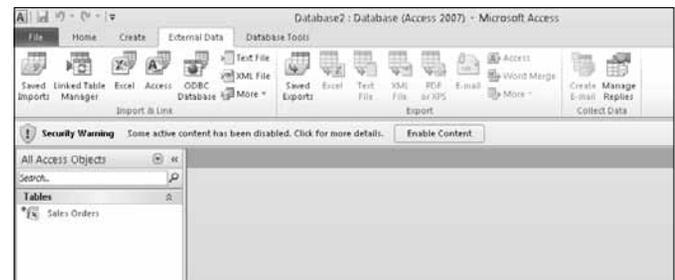


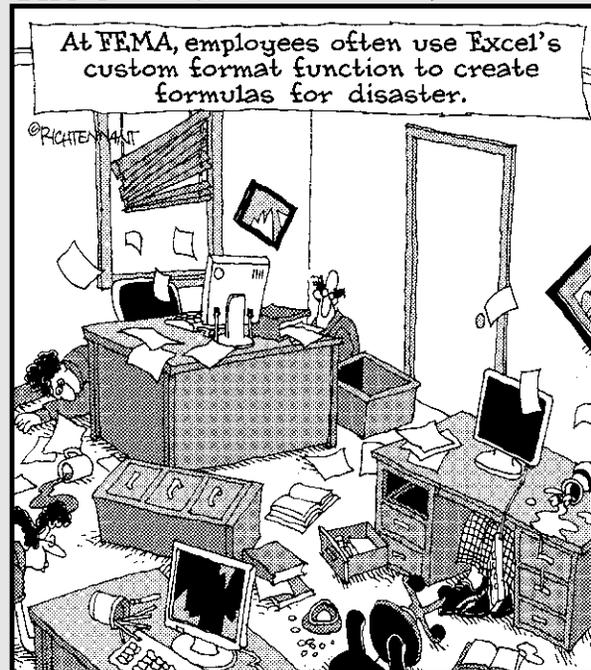
Figure 22-10

Part VI

Practical Applications for Excel

The 5th Wave

By Rich Tennant



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Creating a Commission Calculator

Suppose you're a business owner and you pay your salespeople a sliding commission rate based on their total sales for a specified period, such as a month. First, you need a sheet of paper to list each salesperson's sales. Then, at the end of the period, you have to subtotal each person's sales. Finally, you have to figure out which commission percentage to give each person based on that subtotal.

A Commission Calculator worksheet, designed using basic Excel features, along with several Excel functions (SUMIF, COUNTIF, and nested IF statements) can do everything for you except enter the individual sales. Excel saves you precious time and reduces the chance for human error. To set up this worksheet, perform the following tasks:

- ➡ Enter basic headings.
- ➡ Create a sliding commission rate table.
- ➡ Define the data input area where you track the individual sales.
- ➡ Design the calculation area where Excel calculates the totals and commission.
- ➡ Enhance the worksheet appearance so it's easier to read.
- ➡ Protect and save the worksheet as a template.

Chapter

23

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Enter Headings

1. In cell A1, type **Commission Calculator** and in cell A2, type **for the month of**.
2. In cells A3, B3, C3, and D3, type the following column headings: **Salesperson**, **# of Sales**, **Total Sales Amount**, and **Commission Amount**, respectively.
3. Beginning with cell A4 and moving down the column, type the names of your salespeople.
4. In column A, in the cell below your last salesperson name, type **Totals**.
5. Move down three more rows and type the following column headings across into cells A17:B17: **Sales Date**, **Transaction Number**, **Salesperson**, **Sale Amount**. Widen the columns as needed. Your worksheet looks like the one shown in Figure 23-1.

	A	B	C	D	E
1	Commission Calculator				
2	for the month of				
3	Sales Person	# of Sales	Total Sales Amount	Commission Amount	
4	Steve W				
5	Maria E				
6	Chris K				
7	Katrina B				
8	Daniel S				
9	Drew C				
10	Alex S				
11	Spence D				
12	Tim S				
13	Robert J				
14	Totals				
15					
16					
17	Sales Date	Transaction Number	Sales Person	Sale Amount	
18					
19					
20					
21					

Figure 23-1

Create the Commission Table

1. In an unused area of the worksheet, perhaps on another sheet in the workbook, enter your commission breakdown. Enter the sales dollar breakdown.
2. In the cells next to the sales dollar breakdown, enter the commission percentage.
3. Add any desired headings to further identify the table.
4. Format the sales dollar values as currency and format the commissions as percentages (see Figure 23-2). (See Chapter 6.)

	I	J	K	L	M
1		Commission Table			
2			Total	Rate	
3		UP TO	\$ 999.99	3%	
4		OVER	\$ 1,000.00	5%	
5		OVER	\$ 5,000.00	7%	
6		OVER	\$ 10,000.00	10%	
7					
8					

Figure 23-2

Define the Sales Data Input Area

1. At the bottom of the worksheet where you enter the individual sales, select the cells in the Salesperson column. In Figure 23-3, I selected cells C18:C117, which gives room for 100 sales entries.
2. Name the selected area with a range name of Sales_Person or something similar, and then click OK. (See Chapter 2.)



(Optional) Create a validation for the Sales_Person cells so the user chooses from a lookup list. (See Chapter 4.)

3. In the same worksheet section, in column D, select the cells to use for the sale amount. Be sure to include the same number of cells you included in Step 1. In this example, cells D18:D117.
4. Name the selected area with a range name of Sale_Amount or something similar, and then click OK.
5. To verify the formulas you create in the next several sections, enter some sample data in the sales data input area.

2. Copy and paste the formula in C4 to the end of your salesperson list (see Figure 23-4). (Chapter 3 shows how to copy formulas.)

	A	B	C	D	E
11	Spence D				
12	Tim S				
13	Robert J				
14	Totals				
15					
16					
17	Sales Date	Transaction Number	Sales Person	Sale Amount	
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Figure 23-3

	A	B	C	D
1	Commission Calculator			
2	for the month of			
3	Sales Person	# of Sales	Total Sales Amount	Commission Amount
4	Steve W		3355	
5	Maria E		1953	
6	Chris K		10702	
7	Katrina B		3715	
8	Daniel S		8270	
9	Drew C		5750	
10	Alex S		6929	
11	Spence D		1840	
12	Tim S		3191	
13	Robert J		357	
14	Totals			
15				
16				
17	Sales Date	Transaction Number	Sales Person	Sale Amount
18	3-Apr	17623	Tim S	\$ 2,026.00
19	3-Apr	17624	Katrina B	\$ 2,028.00
20	3-Apr	17625	Daniel S	\$ 1,639.00
21	4-Apr	17626	Maria E	\$ 1,953.00

Figure 23-4

Total Sales with the SUMIF Function

1. In cell C4, enter the following formula and then press Enter: `=SUMIF(Sales_Person,A4,Sale_Amount)`. If you entered sample data in the sales data input area, you see the total sales for the salesperson.



The Excel SUMIF function calculates the totals of numbers that meet specified criteria. The function first asks for the area you want to look at, then the cell it should look to match, and finally the amount you want the function to total. In the sales commission worksheet example, this equates to `=SUMIF(Sales_Person names from input area, salesrep name in heading area, total Sales_Amount for the matched Sales_Person)`.

Use the COUNTIF Function to Count Sales

1. In cell B4, enter the formula =COUNTIF(Sales_Person,A4) and then press Enter. If you entered sample data in the sales data input area, you see the total number of sales for the salesperson.
2. Select cell B4 and choose Home⇨Copy in the Clipboard group. A marquee appears around cell B4.
3. Highlight cells B5 through the end of your Sales Person list.
4. Choose Home⇨Paste in the Clipboard group. Excel duplicates the formulas to include all the salespeople. (See Figure 23-5.)

B4 =COUNTIF(Sales_Person,A4)					
	A	B	C	D	E
1	Commission Calculator				
2	for the month of				
3	Sales Person	# of Sales	Total Sales Amount	Commission Amount	
4	Steve W	2	3355		
5	Maria E	1	1953		
6	Chris K	6	10702		
7	Katrina B	2	3715		
8	Daniel S	5	8270		
9	Drew C	4	5750		
10	Alex S	5	6929		
11	Spence D	1	1840		
12	Tim S	2	3191		
13	Robert J	1	357		
14	Totals				
15					
16					
17	Sales Date	Transaction Number	Sales Person	Sale Amount	
18	3-Apr	17623	Tim S	\$ 2,026.00	
19	3-Apr	17624	Katrina B	\$ 2,028.00	
20	3-Apr	17625	Daniel S	\$ 1,639.00	
21	4-Apr	17626	Maria E	\$ 1,953.00	

Figure 23-5

Calculate Commission with a Nested IF Statement

1. In cell D4, enter the beginning function and the first parameter to check the total sales for the salesperson against the commission table. Type =IF(C4>=\$K\$6, (include the comma). The reference to K6 refers to the largest amount in your commission rate table.



Be sure to place the dollar signs in front of the cell references to make them an absolute reference to a specific cell.

2. Enter the first TRUE result. Type C4*\$L\$6, (include the comma).
3. Enter the first FALSE result that begins another IF statement. Type IF(C4>=\$K\$5, (include the comma). See Figure 23-6.

	C	D	E	F	G	H	I	J	K	L
1									Commission Table	
2									Total	Rate
3	Total Sales Amount	Commission Amount						UP TO	\$ 999.99	3%
4	\$ 3,355.00	=IF(C4>=\$K\$6,C4*\$L\$6,IF(C4>=\$K\$5,						OVER	\$ 1,000.00	5%
5	\$ 1,953.00							OVER	\$ 5,000.00	7%
6	\$ 10,702.00							OVER	\$ 10,000.00	10%
7	\$ 3,715.00									
8	\$ 8,270.00									
9	\$ 5,750.00									
10	\$ 6,929.00									
11	\$ 1,840.00									
12	\$ 3,191.00									
13	\$ 357.00									
14										
15										
16										
17	Sales Person	Sale Amount								
18	Tim S	\$ 2,026.00								
19	Katrina B	\$ 2,028.00								
20	Daniel S	\$ 1,639.00								
21	Maria E	\$ 1,953.00								

Figure 23-6

4. Enter the next TRUE result. Type `C4*L5`, (include the comma).
5. Enter the next FALSE result that again begins another IF statement. Type `IF(C4>=K4`, (include the comma).
6. Enter the third TRUE result, if applicable. Type `C4*L4`, (include the comma).
7. Enter the third FALSE result, which in my example is the last level to check. Type `C4*L3`.
8. Type three closing parentheses (or enough to match the number of opening parentheses) and press Enter. Figure 23-7 illustrates the final formula and its results. In the example, the total sales of \$3,335.00 falls in the 5 percent commission bracket, so the answer is \$167.75.
9. Copy the formula to the other rows.



The Excel IF function evaluates a condition you specify and returns one value if the statement is TRUE and another value if it evaluates to FALSE. In this example, if the sales are less than the first commission level, making the first condition TRUE, it calculates the sales multiplied by the first-level commission percentage. If the statement isn't TRUE, Excel checks whether the sales are less than a second commission level, and if so, it multiplies the sales times that commission level percentage. The nesting continues until Excel checks all commission levels, resulting in a commission amount.

Total Sales Amount		Commission Amount		Commission Table	
				Total	Rate
UP TO	\$ 999.99				3%
OVER	\$ 1,000.00				5%
OVER	\$ 5,000.00				7%
OVER	\$ 10,000.00				10%

Figure 23-7

Sales Person	# of Sales	Total Sales Amount	Commission Amount
Steve W	2	3355	167.75
Maria E	1	1953	97.65
Chris K	6	10702	1070.2
Katrina B	2	3715	185.75
Daniel S	5	8270	578.9
Drew C	4	5750	402.5
Alex S	5	6929	485.03
Spence D	1	1840	92
Tim S	2	3191	159.55
Robert J	1	357	10.71
Totals	29	46062	3250.04

Figure 23-8

Create Totals

1. In cell B14, or the cell below your last sales rep, create a SUM function to total the cells above it. In Figure 23-8, the formula `=SUM(B4:B13)` totals the number of sales orders.
2. Select the formula in cell B14. Choose Home → Copy in the Clipboard group or press Ctrl+C.
3. Select cells C14 and D14, and then choose Home → Paste in the Clipboard group or press Ctrl+V. Excel duplicates the formulas, which total the sales and commissions, respectively.

Make It Look Nicer

1. Apply currency number formatting to cells with currency. (See Chapter 6.)
2. Widen columns to allow all cell data to appear. (See Chapter 6.)
3. Enlarge the font size of the headings. (See Chapter 6.)
4. Merge and center cells A2, B2. (See Chapter 6.)
5. Merge and center cells C2 and D2.
6. Apply any other desired formatting such as a different font, bold, italics, and so forth. See Figure 23-9 for an example.

Commission Calculator			
for the month of:			
Sales Person	# of Sales	Total Sales Amount	Commission Amount
Steve W	2	\$ 3,355.00	\$ 167.75
Maria E	1	\$ 1,953.00	\$ 97.65
Chris K	6	\$ 10,702.00	\$ 1,070.20
Katrina B	2	\$ 3,715.00	\$ 185.75
Daniel S	5	\$ 8,270.00	\$ 578.90
Drew C	4	\$ 5,750.00	\$ 402.50
Alex S	5	\$ 6,929.00	\$ 485.03
Spence D	1	\$ 1,840.00	\$ 92.00
Tim S	2	\$ 3,191.00	\$ 159.55
Robert J	1	\$ 357.00	\$ 10.71
Totals	29	\$ 46,062.00	\$ 3,250.04

Figure 23-9

Protect Your Work

1. Remove the sample data you entered in cells A18:D117.
2. Select the cells in which you enter the entry month and the sales data. In my sample spreadsheet, cells A2 and A18:D117 are the only cells in which I want to enter variable data.
3. Choose Home → Format → Lock Cell in the Cells group which unlocks the selected cells. See Figure 23-10.
4. Choose Home → Format → Protect Sheet in the Cells group.

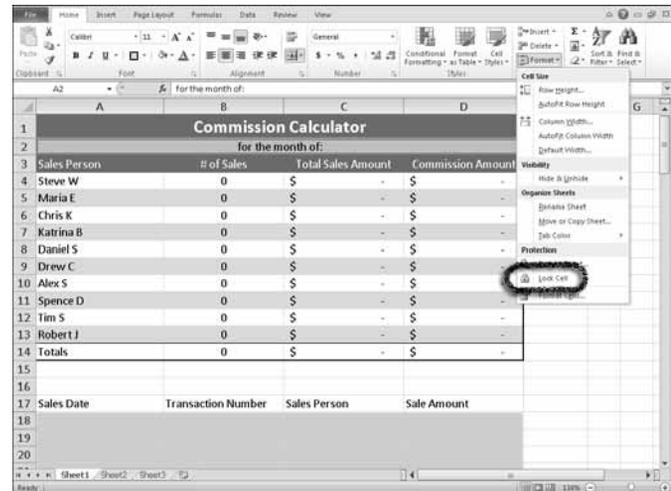


Figure 23-10



(Optional) Deselect the Select Locked Cells check box and/or assign a password to prevent other users from unprotecting the worksheet.

5. Click OK and save the workbook for future use.



Save the worksheet as a template to protect it from changes. (See Chapter 10.)

Tracking Medical Expenses

With today's high cost of medical care, few can afford to be without medical insurance. In fact, many have two insurance companies — perhaps Medicare and a supplemental insurance, or insurance through your employer and your spouse's employer.

Tracking medical costs is very important, especially when filing your annual tax return. In this project, you create an Excel spreadsheet that efficiently tracks your expenses, generating totals and even sorting prescriptions from the rest of the medical-expense totals. See at a glance the total of your medical expenses, how much is paid by your insurance companies, and — most important — how much you have to pay out-of-pocket.

To accomplish this task, you use a number of Excel features including data validation, duplication of worksheets, the creation of totals from other worksheets, and a few Excel mathematical functions.

I hope your health is good, and you won't need to use this worksheet a lot! But if you must . . . you'll be glad it's here.



Chapter

24

Get ready to . . .

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Enter Text Headings

1. In cell A1, enter a heading for the worksheet, such as **2010 Medical Bill Tracker**.
2. In cells B4 and B5, type **Billed** and **Paid by Insurance**, respectively, and in cells D4 and D5, type **Total Paid Out of Pocket** and **Total Due**, respectively.
3. In cell D7, type **Totals**.
4. In cells A8:K8, type the following: **Bill Date**, **Provider**, **Rx?**, **Description of Services**, **Total Amount Billed**, **Insurance #1 Amount Paid**, **Insurance #2 Amount Paid**, **Write Off**, **Paid Out of Pocket**, **Check Number**, and **Amount Due**, respectively. Your worksheet looks similar to the one shown in Figure 24-1.

1	2010 Medical Bill Tracker											
2												
3												
4		Billed		Total Paid Out of Pocket								
5		Paid by Insurance		Total Due								
6												
7				Totals								
8	Bill Date	Provider	Rx?	Description	Total Amou	Insurance	Insurance	Write Off	Paid Out o	Check Num	Amount Due	
9												
10												
11												
12												
13												

Figure 24-1

1	2010 Medical Bill Tracker											
2												
3												
4		Billed		Total Paid Out of Pocket								
5		Paid by Insurance		Total Due								
6												
7				Totals	0	0	0	0	0	0	0	
8	Bill Date	Provider	Rx?	Description	Total Amou	Insurance	Insurance	Write Off	Paid Out o	Check Num	Amount Due	
9												
10												
11												
12												
13												

Figure 24-2

Create Totaling Formulas

1. In cell E7, enter a formula to calculate the entire Total Amount Billed column, which begins at cell E9 and runs through at least row 100. Your formula should read `=SUM(E9:E100)`. You can make the formula longer or shorter depending on how many items you might list in a year.
2. Select cell E7 again, and then grab the AutoFill handle and drag across to cell K7. This duplicates the formula from F7 through K7. (See Figure 24-2.)
3. Delete the formula in cell J7.
4. In cell C4, which references the total amount billed as shown in cell E7, type `=E7` and in cell C5, type `=F7+G7`, which adds the insurance payments.
5. In cell E4, type `=I7` to reference the total out-of-pocket expenses and in cell E5, type `=K7` to reference the total still due.

Calculate the Amount Due

1. Create a formula in cell K9 by typing `=E9-SUM(F9:I9)`. This formula subtracts the total payments made from the total amount billed.



Notice in Step 1, the compound formula is created with a standard reference and an Excel function.

2. Copy the formula in cell K9 from cell K10 down through the end of the calculation area. Use the same number of rows as you did in Step 1 of the section “Create Totaling Formulas,” earlier in this chapter. Figure 24-3 shows a value of 0 in each pasted cell.

Specify Data Validation

1. In two adjacent worksheet cells, preferably in an unseen worksheet area, type **Yes** and **No**. I’m using cells P1 and P2.
2. Select cells C9:C100, or whichever row you use as your last worksheet row.
3. Choose **Data** → **Data Validation** → **Data Validation** in the **Data Tools** group. The **Data Validation** dialog box appears. (See Chapter 2 for more information on data validation.)
4. From the **Allow** drop-down list, choose **List** and then click the **Collapse** button in the **Source** box. The **Data Validation** dialog box temporarily collapses.
5. Highlight cells P1 and P2 (or whichever cells you used in Step 1) and then press **Enter**. The **Data Validation** dialog box reappears.
6. Click **OK**. When you click cell C9 or lower, notice that a drop-down arrow appears with **Yes** or **No** choices, as shown in Figure 24-4.

	A	B	C	D	E	F	G	H	I	J	K	L
1	2010 Medical Bill Tracker											
2												
3												
4		Billed		0 Total Paid	0							
5		Paid by Ins		0 Total Due	0							
6												
7				Totals	0	0	0	0	0	0	0	0
8	Bill Date	Provider	Rx?	Descriptor	Total Amou	Insurance	Insurance	Write Off	Paid Out o	Check Num	Amount Due	
9											0	
10											0	
11											0	
12											0	
13											0	

Figure 24-3

	A	B	C	D	E	F	G	H	I	J	K	L
1	2010 Medical Bill Tracker											
2												
3												
4		Billed		0 Total Paid	0							
5		Paid by Ins		0 Total Due	0							
6												
7				Totals	0	0	0	0	0	0	0	0
8	Bill Date	Provider	Rx?	Descriptor	Total Amou	Insurance	Insurance	Write Off	Paid Out o	Check Num	Amount Due	
9											0	
10											0	
11											0	
12											0	
13											0	

Figure 24-4

Format the Worksheet

1. Highlight the worksheet cells you want to format.
2. Apply any desired formatting, such as applying currency or number formatting, widening columns, bolding headings, and applying borders. (See Chapters 6 and 7.) Figure 24-5 illustrates a formatting example.

2010 Medical Bill Tracker									
For: Eugene Smith									
Billed	\$	-	Total Paid Out of Pocket	\$	-				
Paid by Insurance	\$	-	Total Due	\$	-				
Totals				\$	-	\$	-	\$	-
Date	Provider	Rx#	Description of Services	Billed	Amount Paid	Amount Paid	Write Off	Paid Out of Pocket	Check Number
								\$	
								\$	
								\$	

Figure 24-5

Determine Print Settings

1. Choose Page Layout → Orientation → Landscape in the Page Setup group.
2. Choose Page Layout → Margins → Narrow in the Page Setup group.
3. Choose Page Layout and in the Scale to Fit group, set the Width box to 1 Page and the Height box to 4 Pages, or enough to cover all the rows you think you'll use.
4. Highlight cells A1:K100 (or however many rows you anticipate using) and then choose Page Layout → Print Area → Set Print Area in the Page Setup group.
5. Choose Page Layout → Print Titles in the Page Setup group. In the Rows to Repeat at Top option, enter **\$8\$8** to represent row 8. Click OK.
6. Choose View → Page Layout; click in the header (or footer) and then choose Header & Footer Tools Design → Header (or Footer) → Page 1 of ? in the Header & Footer group. See Figure 24-6.
7. Click anywhere outside the header and choose View → Normal.

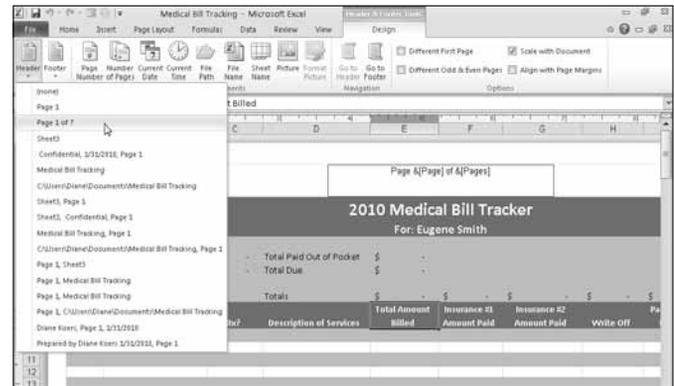


Figure 24-6

Create a Totals Worksheet

1. Rename the tab of Sheet2 (or any blank worksheet in the workbook) to *Totals*.
2. From one of the patient worksheets, copy cells A1 and A2 to cells A1 and A2 on the Totals worksheet.
3. From one of the patient worksheets, copy cells E8:I8 to cells E8:I8 on the Totals worksheet.
4. Widen the columns as needed to see the text.
5. In cell A2, type **Totals**; in cell C8, type **Patient Name**; and in cell D8, type **Service**. (See Figure 24-9.)
6. In cells C9 and C10, type the first patient's name.
7. In cell D9, type **Rx**; in cell D10, type **Other**; and in cell D11, type **Totals**. (See Figure 24-10.)
8. In cells E9:I11, type the formulas in the following table, substituting *Eugene* for the first patient worksheet tab name.



These formulas look at column C on the patient worksheet to determine whether the expense is a prescription; they then add the values.

Formulas in Cells E9:I11

In Cell	Type
E9	=SUMIF(Eugene!C:C,"Yes",Eugene!E:E)
E10	=SUMIF(Eugene!C:C,"No",Eugene!E:E)
E11	=SUM(E9:E10)
F9	=SUMIF(Eugene!C:C,"Yes",Eugene!F:F)
F10	=SUMIF(Eugene!C:C,"No",Eugene!F:F)
F11	=SUM(F9:F10)
G9	=SUMIF(Eugene!C:C,"Yes",Eugene!G:G)

In Cell	Type
G10	=SUMIF(Eugene!C:C,"No",Eugene!G:G)
G11	=SUM(G9:G10)
H9	=SUMIF(Eugene!C:C,"Yes",Eugene!H:H)
H10	=SUMIF(Eugene!C:C,"No",Eugene!H:H)
H11	=SUM(H9:H10)
I9	=SUMIF(Eugene!C:C,"Yes",Eugene!I:I)
I10	=SUMIF(Eugene!C:C,"No",Eugene!I:I)
I11	=SUM(I9:I10)

9. Repeat Steps 6–8 for each patient.
10. Protect the worksheet against accidental changes. (See Chapter 5.)

Figure 24-9

Figure 24-10



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Use General Windows Shortcut Keys

To Do This	Press
Open a menu	Alt+underlined letter
Switch to the next program.	Alt+Tab
Switch to the previous program.	Alt+Shift+Tab
Close the selected workbook window.	Ctrl+W or Ctrl+F4
Restore the window size of the selected workbook window.	Ctrl+F5
Copy a picture of the screen to the Clipboard.	Print Screen
Copy a picture of the selected window to the Clipboard.	Alt+Print Screen

Use Excel Window Shortcut Keys

To Do This	Press
Switch to the next pane in a split worksheet.	F6
Switch to the previous pane in a worksheet that's been split.	Shift+F6
When more than one workbook window is open, switch to the next workbook window.	Ctrl+F6
Switch to the previous workbook window.	Ctrl+Shift+F6
Minimize a workbook window to an icon.	Ctrl+F9
Maximize or restore the selected workbook window.	Ctrl+F10
Close Excel.	Alt+F4
Switch to the next tab in a dialog box.	Ctrl+Page Down
Switch to the previous tab in a dialog box.	Ctrl+Page Up
Open the selected drop-down list.	Alt+↓

Use Selection Shortcut Keys

To Do This	Press
Select the entire column.	Ctrl+spacebar
Select the entire row.	Shift+spacebar
Select the entire worksheet.	Ctrl+A
With multiple cells selected, select only the active cell.	Shift+Backspace
Select all cells that contain comments.	Ctrl+Shift+O

Use Data Entry Shortcut Keys

To Do This	Press
Display the Print Backstage view.	Ctrl+P
Insert a new worksheet.	Shift+F11
Display the Go To dialog box.	F5
Display the Find dialog box.	Shift+F5
Repeat the last Find action (or Find Next).	Shift+F4
Turn End mode on or off.	End
Start a new line in the same cell.	Alt+Enter
Repeat the last action.	F4
Create names.	Ctrl+Shift+F3
Fill down.	Ctrl+D
Fill to the right.	Ctrl+R
Display the Name Manager.	Ctrl+F3
Insert a hyperlink.	Ctrl+K
Enter the date.	Ctrl+; (semicolon)
Enter the time.	Ctrl+Shift+: (colon)
Undo the last action.	Ctrl+Z
Display the Insert Function dialog box.	Shift+F3
Paste a defined name into a formula.	F3
Insert an AutoSum formula with the SUM function.	Alt+=
Calculate all worksheets in all open workbooks.	F9
Calculate the active worksheet.	Shift+F9
Display the Spelling dialog box.	F7
Edit a cell comment.	Shift+F2
Copy the selected cells.	Ctrl+C
Cut the selected cells.	Ctrl+X
Paste copied cells.	Ctrl+V
Delete the selected cells.	Ctrl+- (hyphen)
Insert blank cells.	Ctrl+Shift+=
Hide the selected rows.	Ctrl+9
Unhide any hidden rows within the selection.	Ctrl+Shift+(
Hide the selected columns.	Ctrl+0 (zero)
Unhide any hidden columns within the selection.	Ctrl+Shift+)
Display the Macro dialog box.	Alt+F8

Use Formatting Shortcut Keys

To Do This	Press
Display the Style dialog box.	Alt+' (apostrophe)
Display the Format Cells dialog box.	Ctrl+1
Apply the general number format.	Ctrl+Shift+~
Apply the currency format with two decimal places.	Ctrl+Shift+\$
Apply the percentage format with no decimal places.	Ctrl+Shift+%
Apply the date format with the day, month, and year.	Ctrl+Shift+#
Apply the time format with the hour and minute, and a.m. or p.m.	Ctrl+Shift+@
Apply the number format with two decimal places, thousands separator, and minus sign – for negative values.	Ctrl+Shift+!
Apply or remove bold formatting.	Ctrl+B
Apply or remove italic formatting.	Ctrl+I
Apply or remove underlining.	Ctrl+U
Apply or remove strikethrough.	Ctrl+5
Apply the outline border to the selected cells.	Ctrl+Shift+&
Remove the outline border from the selected cells.	Ctrl+Shift+_

Use Workbook Movement Shortcut Keys

To Do This	Press
Move to the next sheet in the workbook.	Ctrl+Page Down
Move to the previous sheet in the workbook.	Ctrl+Page Up
Move one cell to the left.	Shift+Tab
Move to the beginning of the worksheet.	Ctrl+Home
Move to the last used cell on the worksheet.	Ctrl+End
Move down one screen.	Page Down
Move up one screen.	Page Up
Move one screen to the right.	Alt+Page Down
Move one screen to the left.	Alt+Page Up
Move from bottom to top within the selected range.	Shift+Enter
Move clockwise to the next corner of the selected range.	Ctrl+. (period)
Move by one block of data within a row or column.	End+arrow key
Move to the rightmost nonblank cell in the current row.	End+Enter

Easy steps for creating
spreadsheets, analyzing data,
and building charts



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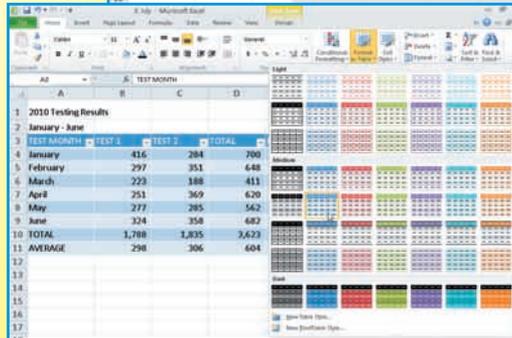
Use Cell Styles

1. Select the cells you want to format.
2. Choose Home⇒Cell Styles. In Figure 7-9, you see a gallery of predefined styles.

Format Cells as a Table

1. Select the data you want to format as a table.
2. Choose Home⇒Format as Table. A gallery of Excel themed formats appears. (See Figure 7-10.)

 **TIP** Themes are predefined style sets that appear across the entire Office suite, providing consistency in your work appearance.

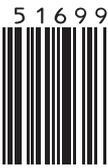


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