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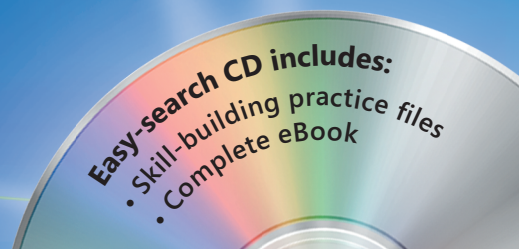
Microsoft CERTIFIED
Application Specialist

Step by Step

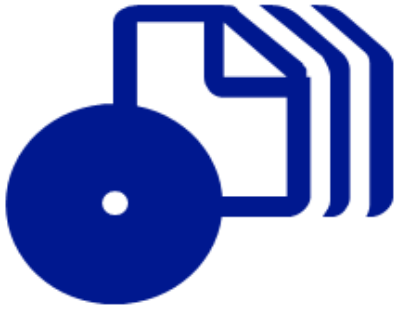
Microsoft® Office Excel® 2007

Build *exactly* the skills you need.
Learn at the pace *you* want.

Curtis D. Frye



How to access your CD files



The print edition of this book includes a CD. To access the CD files, go to http://aka.ms/623040/files, and look for the Downloads tab.

Note: Use a desktop web browser, as files may not be accessible from all ereader devices.

Questions? Please contact: mspinput@microsoft.com

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Curtis D. Frye

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www.microsoft.com/learning/booksurvey/

About the Author

Curtis Frye

Curt Frye is a freelance writer and Microsoft Most Valuable Professional for Microsoft Office Excel. He lives in Portland, Oregon, and is the author of eight books from Microsoft Press, including *Microsoft Office Excel 2007 Step by Step*, *Microsoft Office Access 2007 Plain & Simple*, *Microsoft Office Excel 2007 Plain & Simple*, and *Microsoft Office Small Business Accounting 2006 Step By Step*. He has also written numerous articles for the Microsoft Work Essentials web site.

Before beginning his writing career in June 1995, Curt spent four years with The MITRE Corporation as a defense trade analyst and one year as Director of Sales and Marketing for Digital Gateway Systems, an Internet service provider. Curt graduated from Syracuse University in 1990 with an honors degree in political science. When he's not writing, Curt is a professional improvisational comedian with ComedySportz Portland.

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Features and Conventions

You can save time when you use this book by understanding how the *Step by Step* series shows special instructions, keys to press, buttons to click, and so on.

Convention	Meaning
1 **2**	Numbered steps guide you through hands-on exercises in each topic.
	This icon at the beginning of a chapter indicates information about the practice files provided on the companion CD for use in the chapter.
USE	This paragraph preceding a step-by-step exercise indicates the practice files that you will use when working through the exercise.
BE SURE TO	This paragraph preceding a step-by-step exercise indicates any requirements you should attend to before beginning the exercise.
OPEN	This paragraph preceding a step-by-step exercise indicates files that you should open before beginning the exercise.
CLOSE	This paragraph following a step-by-step exercise provides instructions for closing open files or programs before moving on to another topic.
Tip	These paragraphs provide helpful hints or shortcuts that make working through a task easier.
Important	These paragraphs point out information that you need to know to complete a procedure.
Troubleshooting	These paragraphs explain how to fix common problems that might prevent you from continuing through an exercise.
See Also	These paragraphs direct you to more information in this book about a topic.
Enter	In step-by-step exercises, keys you must press appear as they do on the keyboard.
Alt + Tab	A plus sign (+) between two key names means that you must press those keys at the same time. For example, "Press Alt + Tab" means that you hold down the Alt key while you press the Tab key.

Convention	Meaning
Program elements	In steps, program elements such as buttons, commands, and dialog boxes are shown in black bold type.
Glossary terms	Terms that are explained in the glossary at the end of the book are shown in blue italic type.
User input	Text that you are supposed to type appears in blue bold type in the procedures.
Files, folders, URLs, and emphasis	Files, folder paths, URLs, and emphasized words appear in italic type.

Using the Companion CD

The companion CD included with this book contains practice files you can use as you work through the book's exercises. By using practice files, you won't waste time creating samples and typing spreadsheet data. Instead, you can jump right in and concentrate on learning how to use Microsoft Office Excel 2007.

CD Contents

The following table lists the practice files supplied on the companion CD.

Chapter	Folder\File
Chapter 1: What's New in Excel 2007	None
Chapter 2: Setting Up a Workbook	*Creating\Exception Summary.xlsx* *Creating\Route Volume.xlsx*
Chapter 3: Working with Data and Data Tables	*Data and Data Tables\2007Q1ShipmentsByCategory.xlsx* *Data and Data Tables\Average Deliveries.xlsx* *Data and Data Tables\Driver Sort Times.xlsx* *Data and Data Tables\Series.xlsx* *Data and Data Tables\Service Levels.xlsx*
Chapter 4: Performing Calculations on Data	*Formulas\ConveyerBid.xlsx* *Formulas\ITExpenses.xlsx* *Formulas\PackagingCosts.xlsx* *Formulas\VehicleMiles.xlsx*

Chapter	Folder\File
Chapter 5: Changing Document Appearance	*Appearance\acbluprt.jpg* *Appearance\callcenter.jpg* *Appearance\CallCenter.xlsx* *Appearance\Dashboard.xlsx* *Appearance\ExecutiveSearch.xlsx* *Appearance\HourlyExceptions.xlsx* *Appearance\HourlyTracking.xlsx* *Appearance\VehicleMileSummary.xlsx*
Chapter 6: Focusing on Specific Data Using Filters	*Focusing\Credit.xlsx* *Focusing\ForFollowUp.xlsx* *Focusing\PackageExceptions.xlsx*
Chapter 7: Reordering and Summarizing Data	*Sorting\GroupByQuarter.xlsx* *Sorting\ShipmentLog.xlsx* *Sorting\ShippingSummary.xlsx*
Chapter 8: Combining Data from Multiple Sources	*MultipleFiles\Consolidate.xlsx* *MultipleFiles\Daily Call Summary.xlsx* *MultipleFiles\February Calls.xlsx* *MultipleFiles\Fleeting Operating Costs.xlsx* *MultipleFiles\January Calls.xlsx* *MultipleFiles\Operating Expense Dashboard.xlsx*
Chapter 9: Analyzing Alternative Data Sets	*Alternatives\2DayScenario.xlsx* *Alternatives\Ad Buy.xlsx* *Alternatives\Driver Sort Times.xlsx* *Alternatives\Multiple Scenarios.xlsx* *Alternatives\Target Values.xlsx*
Chapter 10: Creating Dynamic Lists with PivotTables	*PivotTables\Creating.txt* *PivotTables\Creating.xlsx* *PivotTables\Editing.xlsx* *PivotTables\Focusing.xlsx* *PivotTables\Formatting.xlsx*
Chapter 11: Creating Charts and Graphics	*Charting\Future Volumes.xlsx* *Charting\Org Chart.xlsx* *Charting\Revenue Analysis.xlsx* *Charting\Volume by Center.xlsx* *Charting\Yearly Package Volume.xlsx*

Chapter	Folder\File
Chapter 12: Printing	*Printing\ConsolidatedMessenger.png* *Printing\Corporate Revenue.xlsx* *Printing\Hourly Pickups.xlsx* *Printing\Pickups by Hour.xlsx* *Printing\Revenue by Customer.xlsx* *Printing\Summary by Customer.xlsx*
Chapter 13: Automating Repetitive Tasks with Macros	*Macros\Performance Dashboard.xlsm* *Macros\RunOnOpen.xlsm* *Macros\VolumeHighlights.xlsm* *Macros\Yearly Sales Summary.xlsx*
Chapter 14: Working with Other Microsoft Office System Programs	*Other Programs\2007 Yearly Revenue Summary.pptx* *Other Programs\Hyperlink.xlsx* *Other Programs\Level Descriptions.xlsx* *Other Programs\Revenue Chart.xlsx* *Other Programs\Revenue Summary.pptx* *Other Programs\RevenueByServiceLevel.xlsx* *Other Programs\Summary Presentation.xlsx*
Chapter 15: Collaborating with Colleagues	*Sharing\Cost Projections.xlsx* *Sharing\Projection Change Tracking.xlsx* *Sharing\Projections for Comment.xlsx* *Sharing\Projections Signed.xlsx* *Sharing\SecureInfo.xlsx* *Sharing\Shipment Summary.xlsx*

Minimum System Requirements

To run Excel 2007, your computer needs to meet the following minimum hardware requirements:

- 500 megahertz (MHz)
- 256 megabytes (MB) RAM
- 1.5 gigabytes (GB) available space
- CD or DVD drive
- 1024 × 768 or higher resolution monitor

Installing the Practice Files

You need to install the practice files in the correct location on your hard disk before you can use them in the exercises. Follow the steps below:

> **Important** If for any reason you are unable to install the practice files from the CD, the files can also be downloaded from the Web at *http://wwww.microsoftpressstore.com/title/9780735623040*.

1. Remove the companion CD from the envelope at the back of the book, and insert it into the CD drive of your computer. If the **AutoPlay** window opens, click **Run startcd.exe**.

   The Microsoft Software License Terms appear. To use the practice files, you must accept the terms of the license agreement.
2. Click **I accept the agreement**, and then click **Next**.

   After you accept the license agreement, the CD interface appears.

> **Important** If the menu screen does not appear, click the Start button and then click Computer. Display the Folders list in the Navigation pane, click the icon for your CD drive, and then in the right pane, double-click the StartCD executable file.

3. Click **Practice Files**. If the **File Download** and/or **Internet Explorer Security** dialog boxes open, click **Yes** and/or **Run**.
4. On the **Welcome** page of the InstallShield Wizard, click **Next**. On the **License Agreement** page, click **I accept the terms in the license agreement**, and then click **Next**.
5. If you want to install the practice files to a location other than the default folder (*Documents\Microsoft Press\Excel2007SBS*), click the **Browse** button, select the new drive and path, and then click **OK**.

> **Important** If you are using Windows XP or earlier, the default folder will be *My Documents\Microsoft Press\Excel2007SBS*.

6. On the **Custom Setup** page, click **Next**, and then on the **Ready to Install the Program** screen, click **Install**.
7. After the practice files have been installed, click **Finish**.
8. Close the **Step by Step Companion CD** window.
9. Remove the companion CD from the CD drive, and return it to the envelope at the back of the book.

Using the Practice Files

When you install the practice files from the companion CD that accompanies this book, the files are stored on your hard disk in chapter-specific subfolders under *Documents\Microsoft Press\Excel2007SBS*. Each exercise is preceded by a paragraph that lists the files needed for that exercise and explains any preparations needed before you start working through the exercise. Here are examples:

USE the *ForFollowUp* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\Focusing* folder.

BE SURE TO start Excel 2007 before beginning this exercise.

OPEN the *ForFollowUp* workbook.

You can browse to the practice files in Windows Explorer by following these steps:

1. On the **Windows taskbar**, click the **Start** button, and then click **Documents**.

   Or

   If you are using Windows XP or earlier, click **My Documents** instead.

2. In the *Documents* or *My Documents* folder, double-click *Microsoft Press*, double-click *Excel2007SBS*, and then double-click a specific chapter folder.

You can browse to the practice files from a dialog box by following these steps:

1. In the **Favorite Links** pane in the dialog box, click *Documents*.

   Or

   If you are using Windows XP or earlier, click *My Documents* on the **Places bar** instead.

2. In the *Documents* or *My Documents* folder, double-click *Microsoft Press*, double-click *Excel2007SBS,* and then double-click a specific chapter folder.

Tip You can also view the practice files by selecting Browse on the CD menu.

Uninstalling the Practice Files

You can free up hard disk space by uninstalling the practice files that were installed from the companion CD. The uninstall process also deletes any files that you created in the *Microsoft Press\Excel2007SBS* chapter-specific folders while working through the exercises. Follow these steps:

1. On the **Windows taskbar**, click the **Start** button, and then click **Control Panel**.
2. In **Control Panel**, under **Programs**, click the **Uninstall a program** task.

   Or

   In **Control Panel**, click **Add or Remove Programs**.
3. If you are using Windows Vista, in the **Programs and Features** window, click **Microsoft Office Excel 2007 Step by Step**, and then on the toolbar at the top of the window, click the **Uninstall** button.

   Or

   In the **Add or Remove Programs** window, click **Microsoft Office Excel 2007 Step by Step,** and then click **Remove**.
4. If a message box asks you to confirm the deletion, click **Yes**.

See Also If you need additional help installing or uninstalling the practice files, see "Getting Help" later in this book.

Important Microsoft Product Support Services does not provide support for this book or its companion CD.

Getting Help

Every effort has been made to ensure the accuracy of this book and the contents of its companion CD. If you do run into problems, please contact the sources listed below for assistance.

Errata & Book Support

If you find an error, please report it on our Microsoft Press site:

1. Go to www.microsoftpressstore.com.
2. In the Search box, enter the book's ISBN or title.
3. Select your book from the search results.
4. On your book's catalog page, find the Errata & Updates tab.
5. Click View/Submit Errata.

You'll find additional information and services for your book on its catalog page. If you need additional support, please e-mail Microsoft Press Book Support at *mspinput@microsoft.com*.

If for any reason you are unable to install the practice files from the CD, the files can also be downloaded from the Web here:

http://www.microsoftpressstore.com/title/9780735623040

Please note that product support for Microsoft software is not offered through the addresses above.

Getting Help with Excel 2007

If your question is about Microsoft Office Excel 2007, and not about the content of this Microsoft Press book, please search the Office 2007 Solution Center or the Microsoft Knowledge Base at:

support.microsoft.com

In the United States, Microsoft software product support issues not covered by the Microsoft Knowledge Base are addressed by Microsoft Product Support Services. Location-specific software support options are available from:

support.microsoft.com/gp/selfoverview/

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http://www.microsoft.com/learning/booksurvey

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Let's keep the conversation going! We're on Twitter: *http://twitter.com/MicrosoftPress*

The Microsoft Business Certification Program

Desktop computing proficiency is becoming increasingly important in today's business world. As a result, when screening, hiring, and training employees, more employers are relying on the objectivity and consistency of technology certification to ensure the competence of their workforce. As an employee or job seeker, you can use technology certification to prove that you already have the skills you need to succeed, saving current and future employers the trouble and expense of training you.

The Microsoft Business Certification program is designed to assist employees in validating their Windows Vista skills and 2007 Microsoft Office program skills. The following certification paths are available:

- A Microsoft Certified Application Specialist (MCAS) is an individual who has demonstrated proficiency in Windows Vista or in a 2007 Office program by passing a certification exam in Windows Vista or in one or more of the 2007 Office programs, including Microsoft Office Word 2007, Microsoft Office Excel 2007, Microsoft Office PowerPoint 2007, Microsoft Office Outlook 2007, and Microsoft Office Access 2007.
- A Microsoft Certified Application Professional (MCAP) is an individual who has taken his or her knowledge of the 2007 Office system and of Microsoft SharePoint Products and Technologies to the next level and has demonstrated by passing a certification exam that he or she can use the collaborative power of the Office system to accomplish job functions such as *Budget Analysis and Forecasting*, or *Content Management and Collaboration*.

Selecting a Certification Path

When selecting a Microsoft Business Certification path that you would like to pursue, you should assess the following:

- The program and program version(s) with which you are familiar
- The length of time you have used the program
- Whether you have had formal or informal training in the use of that program

Candidates for MCAS-level certification are expected to successfully complete a wide range of standard business tasks, such as formatting a document or worksheet. Successful candidates generally have six or more months of experience with Windows Vista or the specific Office program, including either formal, instructor-led training or self study using MCAS-approved books, guides, or interactive computer-based materials.

Candidates for MCAP-level certification are expected to successfully complete more complex, business-oriented tasks that involve using the advanced functionality of the combined 2007 Office suite of products, as well as SharePoint. Successful candidates generally have at least six months and may have several years of experience with the programs, including formal, instructor-led training or self study using MCAP-approved materials.

Becoming a Microsoft Certified Application Specialist—Microsoft 2007 Office System

Every MCAS and MCAP certification exam is developed from a set of exam skill standards that are derived from studies of how the 2007 Office programs are used in the workplace. Because these skill standards dictate the scope of each exam, they provide critical information about how to prepare for certification.

To become a Microsoft Certified Application Specialist in one of the 2007 Office programs, you must demonstrate the proficiency in these areas:

Exam	Skill sets
77-601: Using Microsoft Office Word 2007	Creating and Customizing Documents Formatting Content Working with Visual Content Organizing Content Reviewing Documents Sharing and Securing Content
77-602: Using Microsoft Office Excel 2007	Creating and Manipulating Data Formatting Data and Content Creating and Modifying Formulas Presenting Data Visually Collaborating and Securing Data
77-603: Using Microsoft Office PowerPoint 2007	Creating and Manipulating Data Formatting Data and Content Creating and Modifying Formulas Presenting Data Visually Collaborating and Securing Data
77-604: Using Microsoft Office Outlook 2007	Managing Messaging Managing Scheduling Managing Tasks Managing Contacts and Personal Contact Information Organizing Information
77-605: Using Microsoft Office Access 2007	Structuring a Database Creating and Formatting Database Elements Entering and Modifying Data Creating and Modifying Queries Presenting and Sharing Managing and Maintaining Databases

Taking a Microsoft Business Certification Exam

The MCAS and MCAP certification exams for Windows Vista and the 2007 Office programs are performance-based and require you to complete business-related tasks using interactive simulation (a digital model) of the Windows Vista operating system or one or more programs in the Office suite.

Test Taking Tips

- Follow all instructions provided in each question completely and accurately.
- Enter requested information as it appears in the instructions, but without duplicating the formatting unless you are specifically instructed to do otherwise.
- Close all dialog boxes before proceeding to the next exam questions unless you are specifically instructed to do otherwise.
- Don't close task panes proceeding to the next exam questions unless you are specifically instructed to do otherwise.
- If you are asked to print a document, spreadsheet, chart, report, or slide, perform the task, but be aware that nothing will actually be printed.
- Don't worry about extra keystrokes or mouse clicks. Your work is scored based on its result, not on the method you use to achieve that result, and not on the time you take to complete the question.
- If your computer becomes unstable during the exam or if a power outage occurs, contact a testing center administrator immediately. The administrator will restart the computer and return the exam to the point where the interruption occurred with your score intact.

Certification Benefits

At the conclusion of the exam, you will receive a score report, which you can print with the assistance of the testing center administrator. If your score meets or exceeds the passing standard (the minimum required score), you will be contacted by e-mail by the Microsoft Certification Program team and mailed a printed certificate within approximately 14 days. The e-mail message you receive will include your Microsoft Certification ID and links to online resources, including the Microsoft Certified Professional site. On this site, you can order a welcome kit and ID card, view and send your certification transcript, build a personalized certification logo, and access other useful and interesting resources, including special offers from Microsoft and affiliated companies.

Using the Logo Builder, you can create a personalized certification logo that includes the MCAS logo and the specific programs in which you have achieved certification. If you achieve MCAS certification in multiple programs, you can include all of them in one logo, like this:

You can include your personalized logo on business cards and other personal promotional materials. This logo attests to the fact that you are proficient in the applications or cross-application skills necessary to achieve the certification.

For More Information

To learn more about the Microsoft Certified Application Specialist exams, the Microsoft Certified Application Professional exams, and related courseware, visit

www.microsoft.com/learning/mcp/msbc

Quick Reference

2 Setting Up a Workbook

To open a workbook

1. Click the **Microsoft Office Button**, and then click **Open**.
2. Navigate to the folder that contains the workbook you want to open.
3. Click the workbook, and then click **Open**.

To create a new workbook

1. Click the **Microsoft Office Button**, and then click **New**.
2. In the **New Workbook** window, click **Blank Workbook**.
3. Click **Create**.

To save a workbook

1. On the **Quick Access Toolbar**, click the **Save** button.
2. Type a name for the file.
3. Click **Save**.

To set file properties

1. Click the **Microsoft Office Button**, point to **Prepare**, and then click **Properties**.
2. In the **Document Information Panel**, click the type of properties you want to set in the **Property Views and Options** list.
3. Add information describing your file, and then close the **Document Information Panel**.

To define custom properties

1. Click the **Microsoft Office Button**, point to **Prepare**, and then click **Properties**.
2. In the **Property Views and Options** list, click **Advanced Properties**.
3. In the **Properties** dialog box, click the **Custom** tab.
4. In the **Name** box, type a property name, select the type of data contained in the property, and then type a value for the property.
5. Click **Add**, and then click **OK**.

To display a worksheet

➜ Click the sheet tab of the worksheet you want to display.

To create a new worksheet

1. Right-click the sheet tab of the worksheet that follows the location where you want to insert a worksheet, and then click **Insert**.
2. In the **Insert** dialog box, double-click **Worksheet**.

To rename a worksheet

1. Double-click the sheet tab of the worksheet you want to rename.
2. Type the new name of the worksheet, and then press Enter.

To copy a worksheet to another workbook

1. Open the workbook that will receive the new worksheets.
2. Switch to the workbook that contains the worksheets you want to copy, hold down the Ctrl key, and click the sheet tabs of the worksheets you want to copy.
3. Right-click the selection, and then click **Move Or Copy**.
4. Select the **Create A Copy** check box.
5. In the **To Book** list, click the workbook to which you want the worksheet(s) copied.
6. Click **OK**.

To change the order of worksheets in a workbook

➜ Drag the sheet tab of the worksheet you want to move.

To hide a worksheet

1. Hold down the Ctrl key and click the sheet tabs of the worksheets you want to hide.
2. Right-click any selected worksheet tab, and then click **Hide**.

To unhide a worksheet

1. Right-click any worksheet tab, and then click **Unhide**.
2. Click the worksheet you want to unhide, and then click **OK**.

To delete a worksheet

1. Hold down the Ctrl key and click the sheet tabs of the worksheets you want to delete.
2. Right-click the selection, and then click **Delete**.

To change a row's height or column's width

1. Select the rows and columns you want to resize.
2. Drag a row or column border until it is the desired size.

To insert a column or row

➜ Right-click the column header to the right of, or the row header below, where you want the new column or row to appear, and then click **Insert**.

To delete columns or rows

1. Select the rows or columns you want to delete.
2. Right-click the selection, and then click **Delete**.

To hide columns or rows

1. Select the rows or columns you want to hide.
2. Right-click a row or column header in the selection, and then click **Hide**.

To unhide columns or rows

1. Click the row or column header of the row above or the column to the left of the rows or columns you want to unhide.
2. Hold down the Shift key and click the row or column header of the row or column below or to the right of the rows or columns you want to unhide.
3. Right-click the selection, and then click **Unhide**.

To insert a cell

1. Select the cells in the location where you want to insert new cells.
2. Display the **Home** tab.
3. In the **Cells** group, in the **Insert** list, click **Insert Cells**.
4. Select the option representing how you want to move the existing cells to make room for the inserted cells. Then click **OK**.

To delete cells

1. Select the cells you want to delete.
2. Display the **Home** tab.
3. In the **Cells** group, in the **Delete** list, click **Delete Cells**.
4. Select the option representing how you want the remaining cells to fill in the deleted space.
5. Click **OK**.

To move a group of cells to a new location

1. Select the cells you want to move.
2. Point to the outline of the selected cells.
3. Drag the cells to the desired location.

To zoom in or out on a worksheet

- Click the **Zoom In** control to make your window's contents 10 percent larger.
- Click the **Zoom Out** control to make your window's contents 10 percent smaller.
- Drag the **Zoom** slider control to the left to zoom out, or to the right to zoom in.

To zoom in or out to a specific zoom level

1. On the **View** tab, in the **Zoom** group, click **Zoom**.
2. Select the **Custom** option.
3. Type a new zoom level in the **Custom** field.
4. Click **OK**.

To change to another open workbook

1. On the **View** tab, in the **Window** group, click **Switch Windows**.
2. Click the name of the workbook you want to display.

To arrange all open workbooks in the program window

1. On the **View** tab, in the **Window** group, click **Arrange All**.
2. Select the desired arrangement.
3. Click **OK**.

To add a button to the Quick Access Toolbar

1. Click the **Customize Quick Access Toolbar** button, and then click **More Commands**.
2. In the **Choose Commands From** list, click the category from which you want to choose the command.
3. Click the command you want to add, and then click the **Add** button.
4. After you finish adding commands, click **OK**.

To move a button on the Quick Access Toolbar

1. Click the **Customize Quick Access Toolbar** button, and then click **More Commands**.
2. In the active command list, click the command you want to move.
3. Click the **Move Up** button or the **Move Down** button.

To remove a button from the Quick Access Toolbar

1. Right-click the button you want to remove.
2. Click **Remove from Quick Access Toolbar**.

To hide and display the Ribbon

- To hide the Ribbon, double-click the active tab label.
- To temporarily redisplay the Ribbon, click the tab label you want. Then click any button on the tab, or click away from the tab, to rehide it.
- To permanently redisplay the Ribbon, double-click any tab label.

To hide the formula bar

➜ On the **View** tab, in the **Show/Hide** group, clear the **Formula Bar** check box.

To hide column and row headings

➜ On the **View** tab, in the **Show/Hide** group, clear the **Headings** check box.

3 Working with Data and Data Tables

To enter a data series using AutoFill

1. Type the first label or value for your list.
2. Drag the fill handle to the cell containing the last label or value in the series.

To change how dragging the fill handle extends a series

1. Type the first label or value for your list.
2. Hold down the Ctrl key, and drag the fill handle to the cell containing the last label or value in the series.

To enter data by using AutoComplete

1. Type the beginning of an entry.
2. Press Tab to accept the AutoComplete value.

To enter data by picking from a list

1. Right-click a cell in a column with existing values, and then click **Pick from Drop-down List**.
2. Click the item in the list you want to enter.

To copy and paste cells

1. Select the cells you want to copy.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. Click the cells into which you want to paste the values.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**.

To transpose data when pasting

1. Copy the cells you want to transpose.
2. Click the cell in which you want to paste the contents of the top or left copied cell.
3. In the **Paste** list, click **Transpose.**

To copy and paste a row or column

1. Select the row or column you want to copy.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. Click the header of the row or column into which you want to paste the values.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**.

To find data within a worksheet

1. On the **Home** tab, in the **Editing** group, click **Find & Select**, and then, in the list, click **Find**.
2. Type the text you want to find, and then click **Find Next**.

To replace a value with another value within a worksheet

1. In the **Editing** group, click **Find & Select**, and then, in the list, click **Replace**.
2. Type the text you want to replace.
3. Type the text you want to take the place of the existing text, and then click **Find Next**.
4. For each search term located, click **Find Next**, follow any of these steps, and then repeat:
   - Click **Replace** to replace the text.
   - Click **Find Next** to skip this instance of the text and move to the next time it occurs.
   - Click **Replace All** to replace every instance of the text.

To edit a cell's contents by hand

1. Click the cell you want to edit.
2. In the formula bar, select the text you want to edit.
3. Type the new text, and then press Enter.

To check spelling

1. On the **Review** tab, in the **Proofing** group, click **Spelling**. If you are asked whether you want to save your work, do so.
2. Follow any of these steps:
   - Click **Ignore Once** to ignore the current misspelling.
   - Click **Ignore All** to ignore all instances of the misspelled word.
   - Click **Add to Dictionary** to add the current word to the dictionary.
   - Click the correct spelling, and then click **Change** to replace the current misspelling with the correct word.
   - Click the correct spelling, and then click **Change All** to replace all instances of the current misspelling with the correct word.
   - Click **Cancel** to stop checking spelling.
3. Click **OK** to clear the dialog box that appears after the spelling check is complete.

To look up a word in the Thesaurus

1. Select the word you want to look up.
2. On the **Review** tab, in the **Proofing** group, click **Thesaurus**.

To translate a word to another language

1. Select the word you want to look up.
2. On the **Review** tab, in the **Proofing** group, click **Translate**.

To create a data table

1. Type your table headers in a single row.
2. Type your first data row directly below the header row.
3. Click any cell in the range from which you want to create a table.
4. On the **Home** tab, in the **Styles** group, click **Format as Table**.
5. Click the desired table style.
6. Verify that Excel identified the data range correctly.
7. If your table has headers, select the **My table has headers** check box.
8. Click **OK**.

To add rows to a data table

- ➜ Click the cell at the bottom right corner of the data table and press Tab to create a new table row.
- ➜ Type data into the cell below the bottom left corner of the data table and press Tab. Excel will make the new row part of the data table.

To resize a table

1. Click any cell in the table.
2. Drag the resize handle to expand or contract the table.

To add a Total row to a column

1. Click any cell in the table.
2. On the **Design** tab, in the **Table Style Options** group, click **Total Row**.

To change the Total row summary function

1. Click any cell in the table's **Total** row.
2. Click the down arrow that appears.
3. Click the desired summary function.

To rename a table

1. Click any cell in the table.
2. On the **Design** tab, in the **Properties** group, type a new value in the **Table Name** box.

4 Performing Calculations on Data

To create a named range

1. Select the cells you want to name.
2. On the formula bar, click the **Name Box**.
3. Type the name you want for the range.
4. Press Enter.

To create a named range from a selection

1. Select the cells you want to name as a range. Be sure either the first or last cell contains the name for the range.
2. On the **Formulas** tab, in the **Defined Names** group, click **Create from Selection**.
3. Select the check box that represents the cell that contains the range's desired name.
4. Click **OK**.

To display the Name Manager

→ On the **Formulas** tab, in the **Defined Names** group, click **Name Manager**.

To edit a named range

1. On the **Formulas** tab, in the **Defined Names** group, click **Name Manager**.
2. Click the named range you want to edit, and then click the **Edit** button.
3. Click the **Collapse Dialog** button.
4. Select the cells you want the range to include, and then click **Close**.

To delete a named range

➜ In the **Edit Name** dialog box, click the range you want to delete, and then click the **Delete** button.

To create a formula

1. Click the cell into which you want to enter a formula.
2. Type =.
3. Type the expression representing the calculation you want to perform.
4. Press Enter.

To create a formula using the Insert Function dialog box

1. On the **Formulas** tab, in the **Function Library** group, click **Insert Function**.
2. Select the function you want to use, and click **OK**.
3. Fill in the **Function Arguments** dialog box, and click **OK**.

To use a named range in a formula

1. Begin typing the formula.
2. Type the name of the named range as a function's argument.

To refer to a table column or row in a formula

1. Click the cell in which you want to create the formula.
2. Type =, followed by the function to include in the formula and a left parenthesis; for example, =SUM(would be a valid way to start.
3. Point to the header of the table column you want to use in the formula. When the mouse pointer changes to a black, downward-pointing arrow, click the column header.
4. Type a right parenthesis and press Enter.

To create a formula using Formula AutoComplete

1. Begin typing the formula.
2. Click the desired function from the list that appears.

To create a formula that doesn't change when copied between cells

1. Begin typing the formula.
2. Precede all column and row references with a dollar sign (for example, $C$4).

To create a formula that does change when copied between cells

1. Begin typing the formula.
2. Type all column and row references without a dollar sign (for example, C4).

To create a conditional formula

1. Click the cell in which you want to enter an *IF* function.
2. On the **Formulas** tab, in the **Function Library** group, click **Logical**, and then click **IF**.
3. Type a conditional statement that evaluates to true or false.
4. Type the text you want to appear if the condition is true.
5. Type the text you want to appear if the condition is false.
6. Click **OK**.

To display cells that provide values for a formula

1. Click the cell you want to track.
2. On the **Formulas** tab, in the **Formula Auditing** group, click the **Trace Precedents** button.

To display formulas that use a cell's contents

1. Click the cell you want to track.
2. On the **Formulas** tab, in the **Formula Auditing** group, click the **Trace Dependents** button.

To remove tracer arrows

1. Click the cell you want to track.
2. On the **Formulas** tab, in the **Formula Auditing** group, click the **Remove Arrows** button.

To locate errors in a worksheet

1. On the **Formulas** tab, in the **Formula Auditing** group, click the **Error Checking** button.
2. Click the **Edit in Formula Bar** button.
3. Edit the formula.
4. Click the **Next** button to view the next error.

To step through a formula to locate an error

1. Click the cell with the formula you want to evaluate.
2. On the **Formulas** tab, in the **Formula Auditing** group, click **Evaluate Formula**.
3. Click **Evaluate** (one or more times) to move through the formula's elements.
4. Click **Close**.

To watch a value in a cell

1. On the **Formulas** tab, in the **Formula Auditing** group, click **Watch Window**.
2. Click **Add Watch**.
3. Select the cells you want to watch.
4. Click **Add**.
5. Click **Watch Window**.

To delete a watch

1. On the **Formulas** tab, in the **Formula Auditing** group, click **Watch Window**.
2. Click the watch you want to delete.
3. Click **Delete Watch**.
4. Click the **Close** button.

5 Changing Workbook Appearance

To change a cell's font, font style, font color, or background color

1. Select the cells you want to change.
2. On the **Home** tab, use the controls in the **Font** group to format the cells.

To add a border to a cell

1. Select the cells around which you want to draw a border.
2. On the **Home** tab, in the **Font** group, click the **Border** arrow, and then, in the list, click the type of border you want to apply.

To apply a style to a cell

1. Select the cells you want to change.
2. On the **Home** tab, in the **Styles** group, click **Cell Styles**.
3. Click a style.

To create a new style

1. On the **Home** tab, in the **Styles** group, click **Cell Styles**.
2. Click **New Cell Style**.
3. Type a new style name.
4. Click **Format**.
5. Specify the formatting you want this style to contain.
6. Click **OK** twice.

To delete a style

1. On the **Home** tab, in the **Styles** group, click **Cell Styles**.
2. Right-click the style you want to delete.
3. Click **Delete**.

To copy a cell's formatting onto another cell

1. Click the cell that contains the format you want to apply to another cell.
2. On the **Home** tab, in the **Clipboard** group, click the **Format Painter** button.
3. Select the cells to which you want to apply the formatting.

To apply a workbook theme

1. On the **Page Layout** tab, in the **Themes** group, click **Themes**.
2. Click the theme you want to apply.

To change theme fonts, colors, and graphic effects

➜ Using the **Controls** on the **Page Layout** tab, in the **Themes** group, follow one of these steps:

- ❍ Click the **Fonts** button and select a new font.
- ❍ Click the **Colors** button and select a new color set.
- ❍ Click the **Effects** button and select a new default effect.

To save a workbook's format as a new theme

1. Format your worksheet using the colors, fonts, and effects you want to include in your theme.
2. On the **Page Layout** tab, in the **Themes** group, click **Themes**.
3. Click **Save Current Theme**.

4. Type a name for your theme.
5. Click **Save**.

To create a new table style

1. On the **Home** tab, in the **Styles** group, click **Format as Table**, and then click **New Table Style**.
2. In the **Name** field, type a name for the table style.
3. In the **Table Element** list, click the element you want to format.
4. Click **Format**, and use the controls in the **Format** dialog box to format the table element.
5. Click **OK**.
6. Repeat as desired to format other elements, and then click **OK**.

To format a cell value as a phone number

1. On the **Home** tab, click the **Number** dialog box launcher.
2. Click **Special**.
3. Click **Phone Number**.
4. Click **OK**.

To format cell data as a currency value

➜ On the **Home** tab, in the **Number** group, click the **Accounting Number Format** button.

To select a foreign currency symbol

➜ On the **Home** tab, in the **Number** group, click the **Accounting Number Format** arrow, and then, in the list, click the currency symbol you want to apply.

To add words to a cell's value

1. On the **Home** tab, click the **Number** dialog box launcher.
2. Click **Custom**.
3. Click the format to serve as the base for your custom format.
4. Type the text to appear in the cell, enclosed in quotes (for example, "cases").
5. Click **OK**.

To apply a conditional format to a cell

1. Select the cells you want to change.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**.
3. Click **New Rule**.
4. Click **Format Only Cells That Contain**.
5. In the **Comparison Phrase** list, click the comparison phrase you want.
6. Type the constant values or formulas you want evaluated.
7. Click **Format**.
8. Specify the formatting you want and click **OK** twice.

To edit a conditional formatting rule

1. Select the cells that contain the rule you want to edit.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**.
3. Click **Manage Rules**.
4. Click the rule you want to change.
5. Click **Edit Rule**.
6. Use the controls to make your changes.
7. Click **OK** twice to save your changes.

To delete a conditional formatting rule

1. Select the cells that contain the rule you want to edit.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**.
3. Click **Manage Rules**.
4. Click the rule you want to delete.
5. Click **Delete Rule**.
6. Click **OK**.

To display data bars in one or more cells

1. Select the cells that contain your data.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**.
3. Point to **Data Bars**.
4. Click the data bar option you want to apply.

To display a color scale in one or more cells

1. Select the cells that contain your data.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**.
3. Point to **Color Scales**.
4. Click the color scale pattern you want to apply.

To display icon sets in one or more cells

1. Select the cells that contain your data.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**.
3. Point to **Icon Sets**.
4. Click the icon set you want to apply.

To add a picture to a worksheet

1. On the **Insert** tab, in the **Illustrations** group, click **Picture**.
2. Double-click the picture you want to insert.

To change a picture's characteristics

1. Click the picture.
2. Use the controls on the **Format** tab to edit the picture.

6 Focusing on Specific Data by Using Filters

To apply a filter to a worksheet

1. Click any cell in the range you want to filter.
2. On the **Data** tab, in the **Sort & Filter** group, click **Filter**.
3. Click the filter arrow for the column by which you want to filter your worksheet.
4. Select the check boxes next to the values by which you want to filter the list.
5. Click **OK**.

To clear a filter

1. Click any cell in the filtered range.
2. On the **Data** tab, in the **Sort & Filter** group, click **Clear**.

To display the top or bottom values in a column

1. Click the filter arrow at the top of the column by which you want to filter the list.
2. Click **Number Filters**.
3. Click **Top 10**.
4. Select whether to display the top or bottom values.
5. Select how many values to display.
6. Select whether the value in the middle box represents the number of items to display, or the percentage of items to display.

To create a custom filter

1. Click any cell in the list you want to filter.
2. If necessary, on the **Data** tab, in the **Sort & Filter** group, click **Filter** to display the filter arrows.
3. Click the filter arrow of the column for which you want to create a custom filter.
4. Point to **Text Filters**.
5. Click **Custom Filter**.
6. In the **Comparison Operator** list, click the comparison you want to use.
7. Type the value by which you want to compare the values in the selected column.
8. Click **OK**.

To generate a random value

➜ Type the formula =RAND().

To generate a random value between two other values

➜ Type the formula =RANDBETWEEN(low, high), replacing low and high with the lower and upper bound of values you want to generate.

To summarize data quickly using AutoCalculate

1. Select the cells you want to summarize.
2. View the summary on the status bar, at the bottom right of the Excel program window.

To summarize filtered data using a SUBTOTAL formula

➜ Type the formula =SUBTOTAL(function, ref), replacing function with the desired summary function, and ref with the cell range you want so summarize.

To find list rows that contain unique values

1. Select the cells in which you want to find unique values.
2. On the **Data** tab, in the **Sort & Filter** group, click **Advanced**.
3. Select the **Unique Records Only** check box.
4. Click **OK**.

To create a validation rule

1. Select the cells you want to validate.
2. On the **Data** tab, in the **Data Tools** group, click the **Data Validation**, and then, in the list, click **Data Validation**.
3. In the **Allow** list, click the type of data you want to allow.
4. In the **Data** list, click the condition for which you want to validate.
5. Type the appropriate values in the boxes.
6. Click the **Input Message** tab.
7. Select the **Show input message when cell is selected** check box.
8. Type the message you want to appear when the cell is clicked.
9. Click the **Error Alert** tab.
10. Select the **Show error alert after invalid data is entered** check box.
11. In the **Style** list, click the icon you want to appear next to your message.
12. Type a title for the error message box.
13. Type the error message you want.
14. Click **OK**.

To identify which cells contain invalid data

➜ In the **Data Validation** list, click **Circle Invalid Data**.

To turn off data validation in a cell

➜ In the **Data Validation** list, click **Clear Invalidation Circles**.

7 Reordering and Summarizing Data

To sort a data list

1. Click any cell in the column by which you want to sort your data.
2. On the **Data** tab, in the **Sort & Filter** group, click the **Sort Ascending** button or the **Sort Descending** button.

To sort a data list by values in multiple columns

1. Select a cell in the data list or table you want to sort.
2. On the **Data** tab, in the **Sort & Filter** group, click **Sort**.
3. In the **Sort By** list, click the first column by which you want to sort.
4. In the **Sort On** list, click the criteria by which you want to sort.
5. In the **Order** list, click **A to Z** or **Z to A** to indicate the order into which the column's values should be sorted.
6. Click **Add Level**.
7. If necessary, repeat steps 3–6 to set the columns and order for additional sorting rules.
8. Click **OK**.

To add a sorting level

1. Select a cell in the data list or table you want to sort.
2. On the **Data** tab, in the **Sort & Filter** group, click **Sort**.
3. Click **Add Level**, and define the sort using the tools in the dialog box.

To delete a sorting level

1. Select a cell in the sorted data list.
2. On the **Data** tab, in the **Sort & Filter** group, click **Sort**.
3. Click the level you want to delete.
4. Click **Delete Level**.

To create a custom list for sorting

1. Click the **Microsoft Office Button**.
2. Click **Excel Options**.
3. Click **Popular**.
4. Click **Edit Custom Lists**.
5. Click **New List**.
6. Type the custom list you want. Separate each entry by pressing Enter.
7. Click **Add**.
8. Click **OK** twice to close the **Custom Lists** dialog box and the **Excel Options** dialog box.

To sort worksheet data by a custom list of values

1. Click any cell in the list you want to sort.
2. On the **Data** tab, in the **Sort & Filter** group, click **Sort**.
3. In the **Sort By** list, click the column you want to sort by.
4. In the **Sort On** list, click the criteria you want to sort by.
5. In the **Order** list, click **Custom List**.
6. Click a custom list.
7. Click **OK** to close the **Custom Lists** dialog box.
8. Click **OK** to sort the data list.

To organize worksheet data into groups

1. Click any cell in the range you want to group.
2. On the **Data** tab, in the **Outline** group, click **Subtotal**.
3. In the **At Each Change In** list, click the value on which you want to base the subtotals.
4. In the **Use Function** list, click the subtotal function you want to use.
5. Select which columns should have subtotals calculated.
6. Click **OK**.

To show and hide levels of detail in a grouped data list

➜ Follow either of these steps:

- Click the **Show Detail** control on a hidden grouping level to display that level's contents.
- Click the **Hide Detail** control to hide rows that are currently displayed.

To remove grouping levels from a data list

1. Click any cell in the subtotaled range.
2. On the **Data** tab, in the **Outline** group, click **Subtotal**, and then click **Remove All**.

To look up data in a data list

1. Create a sorted data list or data table that has column headers.
2. Create a VLOOKUP formula of the form *=VLOOKUP(lookup_value, table_array, col_index_num, range_lookup)*.
3. Type a value in the cell referred to by the *lookup_value* argument.

8 Combining Data from Multiple Sources

To create a workbook template

1. Click the **Microsoft Office Button**, and click **Save As**.
2. In the **Save As Type** list, click **Excel Template**.
3. Type the name you want for the template.
4. Click **Save**.

To create a new workbook that is based on a template

1. Click the **Microsoft Office Button**, and click **New**.
2. Click **Installed Templates**, and double-click the template you want to use to create your workbook.
3. Click the **Microsoft Office Button**, and click **Save As**.
4. Type a name for the file.
5. In the **Save As Type** list, click **Excel Workbook**.
6. Click **Save**.

To create a worksheet template

1. Remove all but one worksheet from a workbook, and format the worksheet as you want the template to appear.
2. Click the **Microsoft Office Button**, and click **Save As**.
3. In the **Save As Type** list, click **Excel Template**.
4. Type the name you want for the template.
5. Click **Save**.

To add a template-based worksheet to a workbook

1. Right-click a sheet tab, and then click **Insert**.
2. On the **Spreadsheet Solutions** tab, click the template you want to use.
3. Click **OK**.

To create a link between two cells

1. In the cell you want to be target of the link, type =, but do not press Enter.
2. On the **View** tab, in the **Window** group, click **Switch Windows**, and then click the workbook that contains the data for your target cell.
3. Click the cell that contains the data, and press Enter.

To open multiple workbooks simultaneously

1. Open the workbooks you want to open simultaneously.
2. On the **View** tab, in the **Window** group, click **Save Workspace**.
3. Type a name for the workspace.
4. Click **Save**.

9 Analyzing Alternative Data Sets

Define an alternative data set

1. On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Scenario Manager**.
2. Click **Add**.
3. In the **Scenario Name** field, type a name for the scenario.
4. At the right edge of the **Changing cells** field, click the **Contract Dialog** button.
5. Select the cells to change, and then click the **Expand Dialog** button.

6. Click **OK**.
7. Type new values for the cells, and then click **OK**.
8. Click **Close**.

To change a worksheet's values using a scenario

1. On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Scenario Manager**.
2. Click the scenario you want to display.
3. Click **Show**.

To summarize the values in multiple scenarios

1. On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Scenario Manager**.
2. Click **Summary**.
3. Verify that the **Scenario summary** option is selected and that the correct cells appear in the **Result cells** field.
4. Click **OK**.

To determine the required inputs for a formula to generate a specific result

1. On the **Data** tab, in the **Data Tools** group, click **What-If Analysis**, and then click **Goal Seek**.
2. In the **Set cell** field, type the address of the cell that contains the formula you want to generate a target value.
3. In the **To value** field, type the target value.
4. In the **By changing cell** field, type the cell that contains the value you want to vary.
5. Click **OK**.
6. Click **Cancel** to close the **Goal Seek** dialog box without saving your changes.

To analyze data by using Descriptive Statistics

1. On the **Data** tab, in the **Analysis** group, click **Data Analysis**.
2. Click **Descriptive Statistics**, and then click **OK**.
3. Click in the **Input Range** field, and then select the cells you want to summarize.
4. Select the **Summary Statistics** check box.
5. Click **OK**.

10 Creating Dynamic Lists by Using PivotTables

To create a PivotTable from a data list

1. Click any cell in the data table.
2. On the **Insert** tab, in the **Tables** group, click **PivotTable**.
3. Verify that the proper table name or cell range appears in the **Table/Range** field and that the **New Worksheet** option is selected.
4. Click **OK**.
5. In the **PivotTable Field List** task pane, drag the available fields to the desired spots in the PivotTable.

To pivot a PivotTable

➜ In the **PivotTable Field List** task pane, drag a field header to a new position.

To filter a PivotTable

1. On the PivotTable worksheet, click any cell in the PivotTable.
2. In the **PivotTable Field List** task pane's **Choose fields to add to report** section, click the target field header. Then click the down arrow next to the field header and clear the **(Select All)** check box.
3. Select the check boxes of the values you do want to show, and then click **OK**.

To show or hide the PivotTable Field List task pane

1. Click any cell in the PivotTable.
2. On the **Options** tab, in the **Show/Hide** group, click the **Field List** button.

To show or hide levels of detail within a PivotTable

➜ In the body of the PivotTable, follow either of these steps:

- ❍ Click the **Show Detail** control to display hidden rows.
- ❍ Click the **Hide Detail** control to hide rows displayed in the PivotTable.

To rename a PivotTable

1. On the PivotTable worksheet, click any cell in the PivotTable.
2. On the **Options** contextual tab, in the **PivotTable** group, in the **PivotTable Name** field, type a new name for the PivotTable.

To control how and where subtotals and grand totals appear in your PivotTable

1. On the PivotTable worksheet, click any cell in the PivotTable.
2. On the **Design** contextual tab, in the **Layout** group, click **Subtotals**, and then click the option representing how you want subtotals to appear in your PivotTable.
3. On the **Design** contextual tab, in the **Layout** group, click **Grand Totals**, and then click the option representing how you want grand totals to appear in your PivotTable.

To change the PivotTable summary function

➜ Right-click any data cell in the PivotTable, point to **Summarize Data By**, and then click the desired summary function.

To apply a number format to a PivotTable

1. On the PivotTable worksheet, right-click any data cell, and then click **Number Format**.
2. In the **Category** list, click **Number**.
3. Use the controls on the **Number** tab to create your format.
4. Click **OK**.

To apply a conditional format to a PivotTable

1. Select the cell ranges you want to format.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, point to the type of conditional format you want to use, and then click the specific format you want to apply.

To apply a PivotTable Style to a PivotTable

1. Click any cell in the PivotTable.
2. On the **Design** tab, in the **PivotTable Styles** gallery, click the style you want to apply to the PivotTable.

To create a new PivotTable style

1. Click any cell in the PivotTable.
2. On the **Design** contextual tab, in the **PivotTable Styles** group, click the **More** button at the bottom-right corner of the style gallery.
3. Click **New PivotTable Style**.

4. In the **Name** field, type a name for the style.
5. In the **Table Element** list, click the element you want to change, and then click **Format**.
6. Use the controls in the **Format Cells** dialog box to format the element.
7. If desired, repeat step 6 for other elements.
8. Click **OK** twice.

To import data from an external source

1. On the **Data** tab, in the **Get External Data** group, click **From Text**.
2. Navigate to the folder that contains the source file, and double-click the file.
3. Verify that the **Delimited** option is selected, and then click **Next**.
4. In the **Delimiters** section, verify that the correct check box is selected, and also verify that the data displayed in the **Data preview** area reflects the structure you expect.
5. Click **Finish**.

11 Creating Charts and Graphics

To create a chart

1. Click any cell in the data table.
2. On the **Insert** tab, in the **Charts** group, click the desired chart type, and then click the desired chart subtype.

To change how Excel plots your data

1. On the **Design** tab, in the **Data** group, click **Select Data**.
2. In the **Legend Entries (Series)** area, click the data series you want to change.
3. Click **Remove**.
4. In the **Horizontal (Categories) Axis Labels** area, click **Edit**.
5. Select the cells you want to plot on this axis, and then click **OK**.

To remove a series from an axis

1. On the **Design** tab, in the **Data** group, click **Select Data**.
2. In the **Legend Entries (Series)** area, click the data series you want to remove from the chart.
3. Click **Remove**.

To add a series to an axis

1. On the **Design** tab, in the **Data** group, click **Select Data**.
2. In the **Legend Entries (Series)** area, click **Add**.
3. In the **Series name** box, type a name for the series.
4. Click in the **Series values** box, and select the cells to provide values for the series.
5. Click **OK**.

To move a chart to its own worksheet

1. Click the chart.
2. On the **Design** tab, in the **Location** group, click **Move Chart**.
3. Select the target sheet for the chart, and click **OK**.

To apply a Chart Style to a chart

1. Click the chart.
2. On the **Design** tab, in the **Chart Styles** gallery, click the style you want to apply.

To apply a different layout to a chart

1. Click the chart.
2. On the **Design** tab, in the **Chart Layouts** gallery, click the layout you want to apply.

To change the appearance of a chart's gridlines

1. Click the chart.
2. On the **Layout** tab, in the **Axes** group, click **Gridlines**, and then click the gridline settings you want.

To select a chart element for formatting

1. Click the chart.
2. On the **Layout** tab, in the **Current Selection** group, click the **Chart Elements** arrow and then, in the list, click the element you want to select.

To select a data point in a series

1. Click the chart.
2. Click any point in the data series.
3. Click the specific data point you want to select.

To format a chart element

1. Select the chart element you want to format.
2. On the **Layout** tab, in the **Current Selection** group, click **Format Selection**.
3. Use the controls in the **Format** dialog box to format the chart element.

To save a chart as a chart template

1. Click the chart.
2. On the **Design** tab, in the **Type** group, click **Save As Template**.
3. Type a name for the template.
4. Click **Save**.

To add a trendline to a chart

1. Select the chart.
2. On the **Layout** contextual tab, in the **Analysis** group, click **Trendline**, and then click **More Trendline Options**.
3. In the **Trend/Regression Type** area, click **Linear**.
4. In the **Forecast** area, in the **Forward** field, type the number of periods you want to project.
5. Click **Close**.

To create a PivotChart

1. On the data worksheet, click any cell in the data table.
2. On the **Insert** tab, in the **Tables** group, click the **PivotTable** arrow and then, in the list, click **PivotChart**.
3. Verify that the correct data source appears in the **Table/Range** field and that the **New Worksheet** option is selected.
4. Click **OK**.

To change the chart type of a chart or PivotChart

1. Click the chart.
2. On the **Design** contextual tab, in the **Type** group, click **Change Chart Type**.
3. Click the desired chart type and subtype.
4. Click **OK**.

To create a SmartArt diagram

1. On the **Insert** tab, in the **Illustrations** group, click **SmartArt**.
2. Click the desired graphic type.
3. Click the desired subtype, and then click **OK**.

To add text to a diagram shape

➜ Click the shape, and type the text.

To add a shape to a diagram

1. Click the shape above or to the right of where you want the new shape to appears.
2. On the **Design** contextual tab, in the **Create Graphic** group, click the **Add Shape** arrow and then, in the list, click the option representing where you want the shape to appear.

To change the format of a diagram shape

1. Right-click the shape, and then click **Format Shape**.
2. Use the controls in the **Format Shape** dialog box to change the shape's appearance.

12 Printing

To display a worksheet in Page Layout View

➜ On the **View** tab, in the **Workbook Views** group, click **Page Layout**.

To add a header or footer to a worksheet

1. On the **View** tab, in the **Workbook Views** group, click **Page Layout**.
2. Follow either of these steps:
   - ❍ At the top of the worksheet, click the target header section.
   - ❍ At the bottom of the worksheet, click the target footer section.
3. In the active header or footer section, type the text that you want to have appear, and press Enter.

To create an AutoHeader

1. On the **View** tab, in the **Workbook Views** group, click **Page Layout**.
2. At the top of the worksheet, click **Click to add header**.
3. Click in the target header section.
4. On the **Design** contextual tab, in the **Header & Footer Elements** group, click the auto text you want to add.

To add an image to a header or footer

1. On the **View** tab, in the **Workbook Views** group, click **Page Layout**.
2. Click the desired header or footer section.
3. On the **Design** contextual tab, in the **Header & Footer Elements** group, click **Picture**.
4. Double-click the picture you want to add to the header or footer.

To format an image in a header or footer

1. Click the image in the footer and then, on the **Design** contextual tab, click **Format Picture**.
2. Use the controls in the **Format Picture** dialog box to change the picture's appearance.
3. Click **OK**.

To change a worksheet's margins

➜ On the **Page Layout** tab, in the **Page Setup** group, click **Margins**, and then click the desired margins, or click **Custom Margins** to enter the margins manually.

To change a worksheet's page orientation

➜ On the **Page Layout** tab, in the **Page Setup** group, click **Orientation**, and then click the desired orientation.

To print a worksheet on a specific number of pages

1. On the **Page Layout** tab, in the **Scale to Fit** group, click the **Width** arrow and then, in the list, click the desired number of pages.
2. On the **Page Layout** tab, in the **Scale to Fit** group, click the **Height** arrow and then, in the list, click the desired number of pages.

To preview a worksheet before printing

➜ While displaying the worksheet you want to preview, click the **Microsoft Office Button**, point to **Print**, and then click **Print Preview**.

To add a page break to a worksheet

1. Click the row or header below or to the right of where you want the page break to appear.
2. On the **Page Layout** tab, in the **Page Setup** group, click **Breaks**, and then click **Insert Page Break**.

To remove a page break from a worksheet

1. Click the row or header below or to the right of the page break.
2. On the **Page Layout** tab, in the **Page Setup** group, click **Breaks**, and then click **Remove Page Break**.

To change the order in which worksheets print

1. On the **Page Layout** tab, click the **Page Setup** dialog box launcher.
2. If necessary, click the **Sheet** tab.
3. In the **Page order** section, click the desired option.
4. Click **OK**.

To print a worksheet

➜ Click the **Microsoft Office Button**, and then click **Print**.

To print part of a worksheet

1. On the **Page Layout** tab, in the **Page Setup** group, click **Print Titles**.
2. At the right edge of the **Columns to repeat at left** field, click **Collapse Dialog**.
3. Select the column header of the columns you want to repeat.
4. At the right edge of the **Columns to repeat at left** field, click the **Expand Dialog** button.

To center material on the printed page

1. On the **Page Layout** tab, click the **Page Setup** dialog box launcher.
2. On the **Margins** page of the dialog box, select the **Horizontally** and **Vertically** check boxes.
3. Click **OK**.

To print a chart

1. Select the chart.
2. Click the **Microsoft Office Button**, and then click **Print**.
3. Verify that the **Selected Chart** option is selected, and then click **OK** (or click **Cancel** if you don't want to print the chart).

13 Automating Repetitive Tasks by Using Macros

To save a workbook as a macro-enabled workbook

1. Click the **Microsoft Office Button**, and then click **Save As**.
2. In the **Save as type** list, click **Excel Macro-Enabled Workbook (*.xlsm)**.
3. Click **Save**.

To enable macros to run in a workbook

1. On the **Message Bar**, click **Options**.
2. Click **Enable this content**.
3. Click **OK**.

To view a macro

1. On the **View** tab, in the **Macros** group, click the **Macros** arrow and then, in the list, click **View Macros**.
2. Click the macro you want to view, and then click **Edit**.

To step through a macro

1. In the **Macros** list, click **View Macros**.
2. Click the macro you want to view, and then click **Step Into**.
3. Press F8 to execute the first macro step.

To run a macro

1. In the **Macros** list, click **View Macros**.
2. Click the desired macro, and then click **Run**.

To record a macro

1. In the **Macros** list, click **Record Macro**.
2. In the **Record Macro** dialog box, delete the existing name from the **Macro name** box, and then type a new name for the macro.
3. Click **OK**.
4. Perform the actions you want to record.
5. In the **Macros** list, click **Stop Recording**.

To edit a macro

1. In the **Macros** list, click **View Macros**.
2. Click the macro you want to view, and then click **Edit**.
3. Make any desired changes.
4. Click the Visual Basic Editor **Close** button.

To run a macro when a Quick Access Toolbar button is clicked

1. On the **Quick Access Toolbar**, click the **Customize Quick Access Toolbar** button, and then click **More Commands**.
2. If necessary, in the **Choose commands from** list, click the desired category.
3. In the **Commands** panel, click the desired command.
4. Click **Add**.
5. In the **Choose commands from** list, click **Macros**.
6. In the **Commands** panel, click the macro you want to run.
7. Click **Add**, and then cick **OK**.

To change the appearance of a Quick Access Toolbar button

1. On the **Quick Access Toolbar**, click the **Customize Quick Access Toolbar** button, and then click **More Commands**.
2. In the **Customize Quick Access Toolbar** command panel, click the command you want to change.
3. Click **Modify**.
4. Click the desired button design.
5. Click **OK** twice to close the **Modify Button** dialog box and the **Excel Options** dialog box.

To run a macro when a shape is clicked

1. Right-click the shape, and then click **Assign Macro**.
2. Click the macro you want to assign to the shape, and then click **OK**.

To run a macro when a workbook is opened

➜ Name the macro *Auto_Open*.

14 Working with Other Microsoft Office System Programs

To link to another Microsoft Office system document

1. On the **Insert** tab, in the **Text** group, click the **Insert Object** button.
2. On the **Create from File** tab of the **Object** dialog box, click **Browse**.
3. Click the file to which you want to link, and then click **Insert**.
4. Select the **Link to file** check box, and then click **OK**.

To embed another document in a workbook

1. On the **Insert** tab, in the **Text** group, click **Object**.
2. On the **Create from File** tab of the **Object** dialog box, click **Browse**.
3. Click the file to which you want to link, and then click **Insert**.
4. Click **OK**.

To view a linked or embedded document

➜ Double-click the document.

To create a hyperlink

1. On the **Insert** tab, in the **Links** group, click **Hyperlink**.
2. Click the type of hyperlink you want to create.
3. If necessary, use the controls in the **Look in** box to locate the file or location to which you want to link.
4. In the file list, click the hyperlink's target.
5. In the **Text to display** box, type the text you want displayed.
6. Click **OK**.

To edit a hyperlink

1. Right-click the cell that contains the hyperlink, and then click **Edit Hyperlink**.
2. Edit the values in the **Hyperlink** dialog box.
3. Click **OK**.

To delete a hyperlink

➜ Right-click the cell that contains the hyperlink, and then click **Delete Hyperlink**.

To paste a chart into another document

1. Right-click the chart, and then click **Copy**.
2. Open the destination document.
3. Right-click the place you want to paste the chart, and then click **Paste**.
4. In the **Paste Options** list, click the desired option.

15 Collaborating with Colleagues

To turn on workbook sharing

1. On the **Review** tab, in the **Changes** group, click **Share Workbook**.
2. Select the **Allow changes by more than one use at the same time** check box.
3. Click **OK**.

To add a comment to a cell

1. Click the cell where you want the comment to appear.
2. On the **Review** tab, in the **Comments** group, click **New Comment**.
3. Type the comment text, and then click outside the body of the comment.

To edit a comment

1. Click the cell that contains the comment.
2. On the **Review** tab, in the **Comments** group, click **Edit Comment**.
3. Type the new comment text, and then click outside the body of the comment.

To delete a comment

1. Click the cell that contains the comment.
2. On the **Review** tab, in the **Comments** group, click **Delete Comment**.

To track changes made to a workbook

1. On the **Review** tab, in the **Changes** group, click **Track Changes**, and then in the list click **Highlight Changes**.
2. Select the **Track changes while editing. This also shares your workbook** check box.
3. Click **OK**.

To accept and reject changes

1. In the **Track Changes** list, click **Accept/Reject Changes**.
2. Click **OK**.
3. For each change, click **Accept** to accept the change, or click **Reject** to reject the change. You can also click **Accept All** or **Reject All**.

To record workbook changes on a History worksheet

1. In the **Track Changes** list, click **Highlight Changes**.
2. Select the **List changes on a new sheet** check box, and click **OK**.

To require a password to open a workbook

1. Click the **Microsoft Office Button**, and then click **Save As**.
2. Click the **Tools** button, and then click **General Options**.
3. Type a password in the **Password to open** box.
4. Type a different password in the **Password to modify** box.
5. In the **General Options** dialog box, click **OK**.
6. In the **Reenter password to proceed** box, type the first password, and then click **OK**.
7. In the **Reenter password to modify** box, type the second password, and then click **OK**.

To password protect a worksheet

1. On the **Review** tab, in the **Changes** group, click **Protect Sheet**.
2. In the **Password to unprotect sheet** box, type a password.
3. Clear the **Select locked cells** and **Select unlocked cells** check boxes, and then click **OK**.
4. In the **Reenter password to proceed** box, type the password you entered before, and then click **OK**.

To password protect a cell range

1. On the **Review** tab, in the **Changes** group, click **Allow Users to Edit Ranges**.
2. In the **Allow users to edit ranges** dialog box, click **New**.
3. In the **Title** box, type a title for the range.
4. In the **Range password** box, type a password, and then click **OK**.

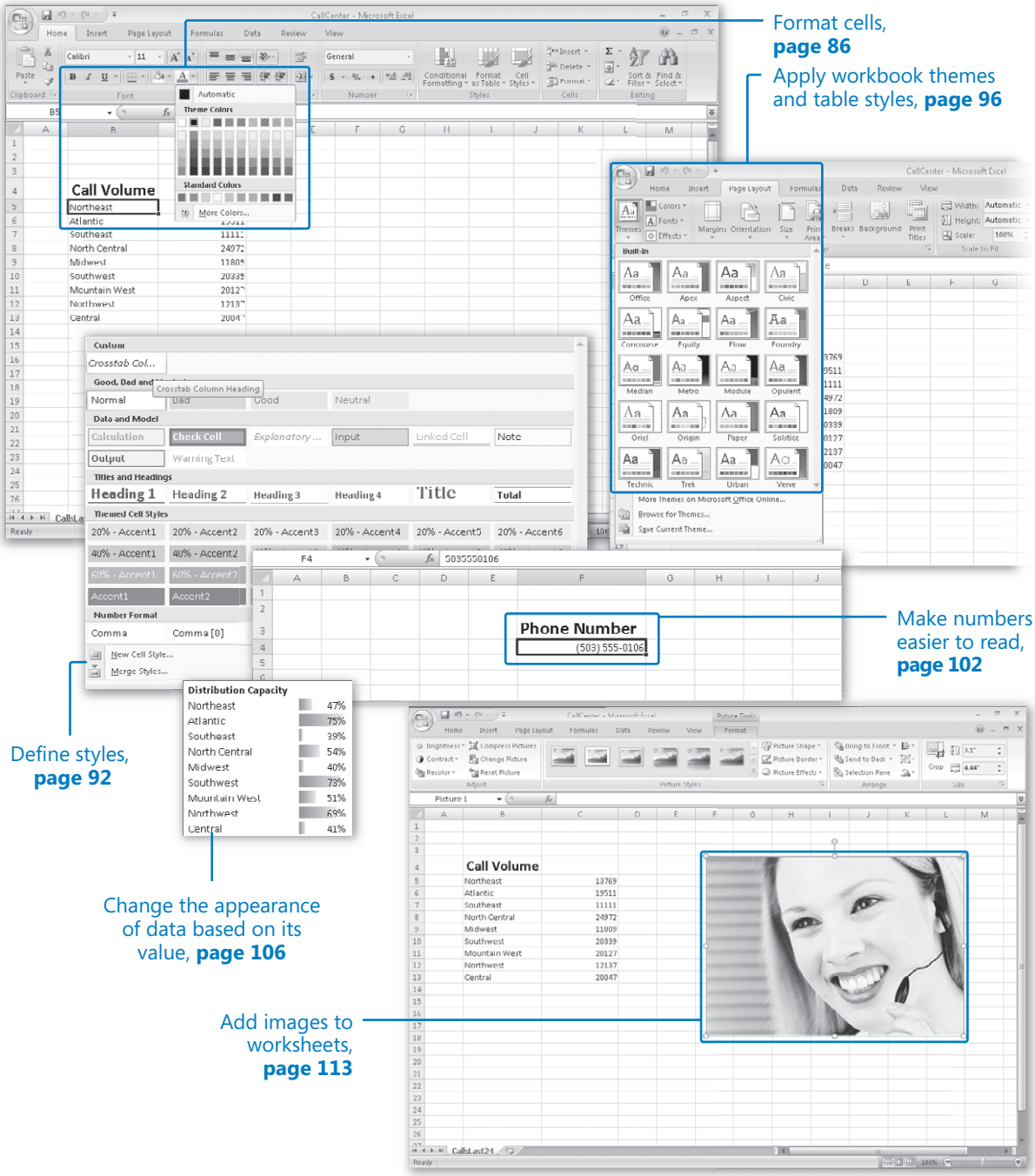
To sign a workbook using a digital signature

1. Click the **Microsoft Office Button**, click **Prepare**, and then click **Add a Digital Signature**.
2. Click **OK** to clear the dialog box that appears.
3. In the **Purpose for signing this document** box, type a reason.
4. Verify that your certificate appears in the **Signing as** area of the dialog box, and then click **Sign**.
5. Click **OK**.

To publish a workbook to the Web

1. Click the **Microsoft Office Button**, and then click **Save As**.
2. In the **File name** box, type a name for the file.
3. In the **Save as type** list, click **Web Page**.
4. Click **Save**.
5. Click **Yes** to save the workbook as a Web file.

Chapter at a Glance



5 Changing Workbook Appearance

In this chapter, you will learn to:

- ✔ Format cells.
- ✔ Define styles.
- ✔ Apply workbook themes and table styles.
- ✔ Make numbers easier to read.
- ✔ Change the appearance of data based on its value.
- ✔ Add images to worksheets.

Entering data into a workbook efficiently saves you time, but you must also ensure that your data is easy to read. Microsoft Office Excel 2007 gives you a wide variety of ways to make your data easier to understand; for example, you can change the font, character size, or color used to present a cell's contents. Changing how data appears on a worksheet helps set the contents of a cell apart from the contents of surrounding cells. The simplest example of that concept is a data label. If a column on your worksheet has a list of days, you can set a label (for example, Day) apart easily by presenting it in bold type that's noticeably larger than the type used to present the data to which it refers. To save time, you can define a number of custom formats and then apply them quickly to the desired cells.

You might also want to specially format a cell's contents to reflect the value in that cell. For instance, Jenny Lysaker, the chief operating officer of Consolidated Messenger, might want to create a worksheet that displays the percentage of improperly delivered packages from each regional distribution center. If that percentage exceeds a threshold, she could have Excel 2007 display a red traffic light icon, indicating that the center's performance is out of tolerance and requires attention.

In addition to changing how data appears in the cells of your worksheet, you can also use headers and footers to add page numbers, current data, or graphics to the top and bottom of every printed page.

In this chapter, you'll learn how to change the appearance of data, apply existing formats to data, make numbers easier to read, change data's appearance based on its value, make printouts easier to follow, and position your data on the printed page.

See Also Do you need only a quick refresher on the topics in this chapter? See the Quick Reference section at the beginning of this book.

Important Before you can use the practice files in this chapter, you need to install them from the book's companion CD to their default location. See "Using the Companion CD" at the beginning of this book for more information.

Formatting Cells

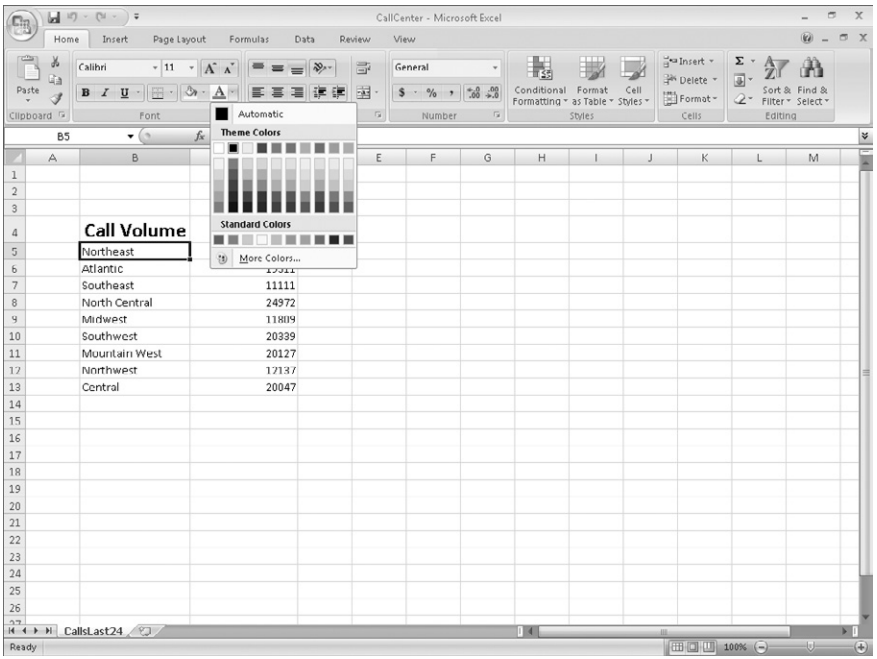
Excel 2007 spreadsheets can hold and process lots of data, but when you manage numerous spreadsheets it can be hard to remember from a worksheet's title exactly what data is kept in that worksheet. Data labels give you and your colleagues information about data in a worksheet, but it's important to format the labels so that they stand out visually. To make your data labels or any other data stand out, you can change the format of the cells in which the data is stored.

	A	B	C	D	E
1					
2					
3					
4		**Call Volume**			
5		Northeast	13769		
6		Atlantic	19511		
7		Southeast	11111		
8		North Central	24972		
9		Midwest	11809		
10		Southwest	20339		
11		Mountain West	20127		
12		Northwest	12137		
13		Central	20047		

Most of the tools you need to change a cell's format can be found on the Home tab. You can apply the formatting represented on a button by selecting the cells you want to apply the style to and then clicking the appropriate button. If you want to set your data labels apart by making them appear bold, click the Bold button. If you have already made a cell's contents bold, selecting the cell and clicking the Bold button will remove the formatting.

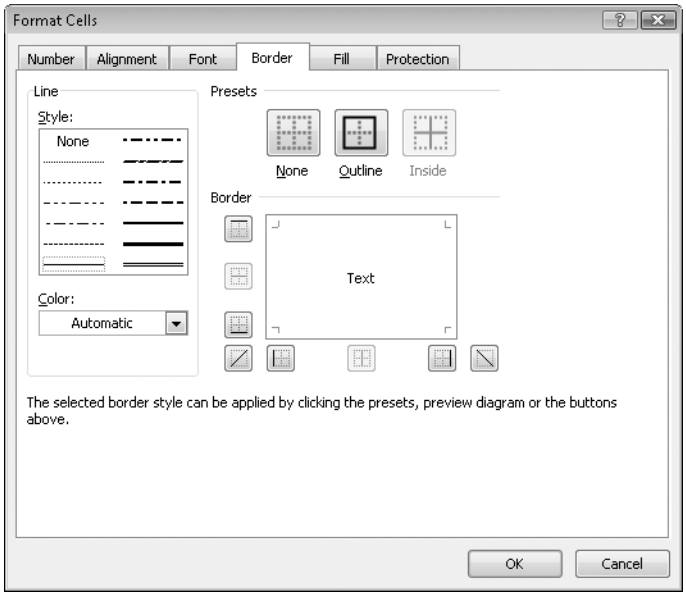
> **Tip** Deleting a cell's contents doesn't delete the cell's formatting. To delete a selected cell's formatting, on the **Home** tab, in the **Editing** group, click the **Clear** button, and then click **Clear Formats**.

Buttons in the Home tab's Font group that give you choices, such as the Font Color control, have an arrow at the right edge of the button. Clicking the arrow displays a list of options accessible for that control, such as the fonts available on your system or the colors you can assign to a cell.



Another way you can make a cell stand apart from its neighbors is to add a border around the cell. To place a border around one or more cells, select the cells, and then choose the border type you want by selecting the type of border to apply from the Border list in the Font group. Excel 2007 does provide more options—to display the full

range of border types and styles, in the Border list, click More Borders. The Border tab of the Format Cells dialog box contains the full range of tools you can use to define your cells' borders.



Another way you can make a group of cells stand apart from its neighbors is to change its shading, or the color that fills the cells. On a worksheet that tracks total package volume for the past month, Jenny Lysaker could change the fill color of the cells holding her data labels to make the labels stand out even more than by changing the formatting of the text used to display the labels.

Tip You can display the most commonly used formatting controls by right-clicking a selected range. When you do, a Mini toolbar containing a subset of the Home tab formatting tools appears above the shortcut menu.

If you want to change the attributes of every cell in a row or column, you can click the header of the row or column you want to format and then select your desired format.

One task you can't perform using the tools on the Home tab is to change the standard font for a workbook, which is used in the Name box and on the formula bar. The standard font when you install Excel 2007 is Calibri, a simple font that is easy to read on a computer screen and on the printed page. If you want to choose another font, click the Microsoft Office Button, and then click Excel Options. On the Popular page of the Excel Options dialog box, set the values in the Use This Font and Font Size list boxes to pick your new display font.

Important The new standard font doesn't take effect until you exit Excel 2007 and restart the program.

In this exercise, you will emphasize a worksheet's title by changing the format of cell data, adding a border to a cell range, and then changing a cell range's fill color. After those tasks are complete, you will change the default font for the workbook.

USE the *VehicleMileSummary* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder.

BE SURE TO start Excel 2007 before beginning this exercise.

OPEN the *VehicleMileSummary* workbook.

1. Click cell D2.

Bold

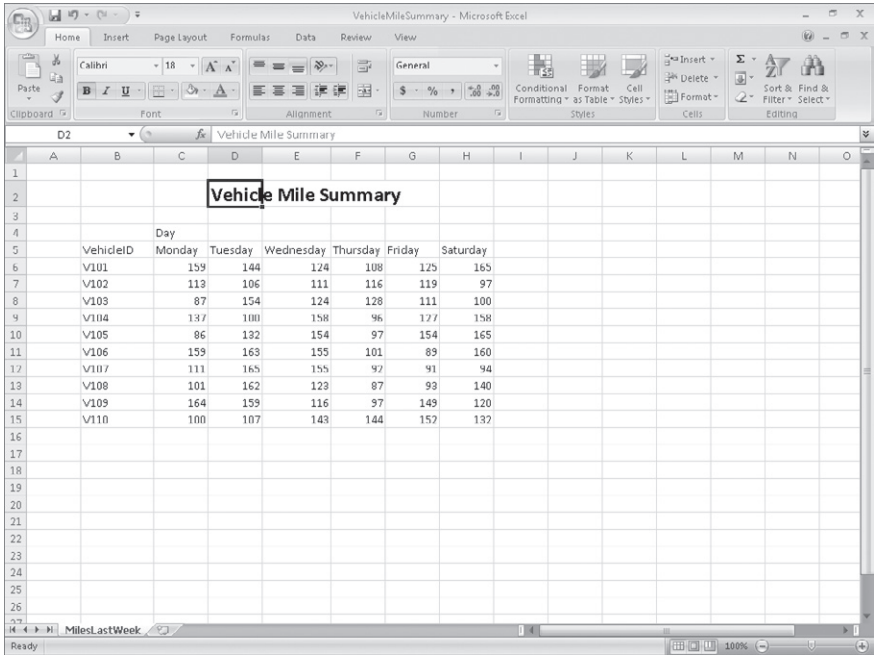
2. On the **Home** tab, in the **Font** group, click the **Bold** button.

   Excel 2007 displays the cell's contents in bold type.

Font Size

3. In the **Font** group, click the **Font Size** arrow, and then in the list, click **18**.

   Excel 2007 increases the size of the text in cell D2.



4. Select cells B5 and C4.
5. On the **Home** tab, in the **Font** group, click the **Bold** button.

   Excel 2007 displays the cells' contents in bold type.
6. Select the cell ranges B6:B15 and C5:H5.
7. In the **Font** group, click the **Italic** button.

Italic

   Excel 2007 displays the cells' contents in italic type.

	A	B	C	D	E	F	G	H	I
1									
2					Vehicle Mile Summary				
3									
4			Day						
5		VehicleID	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
6		V101	159	144	124	108	125	165	
7		V102	113	106	111	116	119	97	
8		V103	87	154	124	128	111	100	
9		V104	137	100	158	96	127	158	
10		V105	86	132	154	97	154	165	
11		V106	159	163	155	101	89	160	
12		V107	111	165	155	92	91	94	
13		V108	101	162	123	87	93	140	
14		V109	164	159	116	97	149	120	
15		V110	100	107	143	144	152	132	
16									

8. Select the cell range C6:H15.
9. In the **Font** group, click the **Border** arrow, and then in the list, click **Outside Borders**.

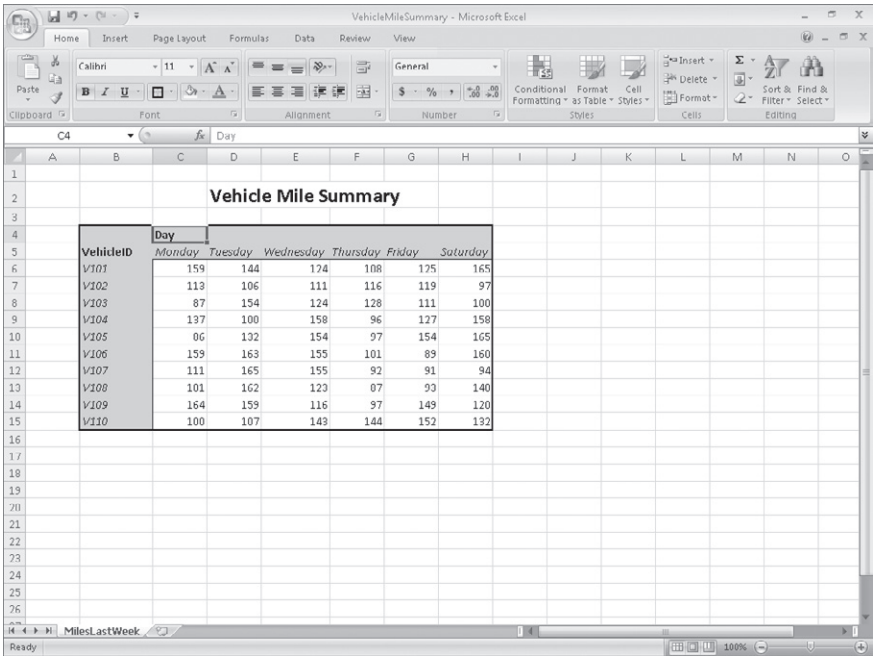
Border

   Excel 2007 places a border around the outside edge of the selected cells.
10. Select the cell range B4:H15.
11. In the **Border** list, click **Thick Box Border**.

    Excel 2007 places a thick border around the outside edge of the selected cells.
12. Select the cell ranges B4:B15 and C4:H5.
13. In the **Font** group, click the **Fill Color** arrow, and then in the **Standard Colors** section of the color palette, click the yellow button.

Fill Color

Excel 2007 changes the selected cells' background color to yellow.



Microsoft Office Button

14. Click the **Microsoft Office Button**, and then click **Excel Options**.

The Excel Options dialog box opens.

15. If necessary, click **Popular** to display the **Popular** tab.

16. In the **When creating new workbooks** section, in the **Use this font** list, click **Verdana**.

Verdana appears in the Use This Font field.

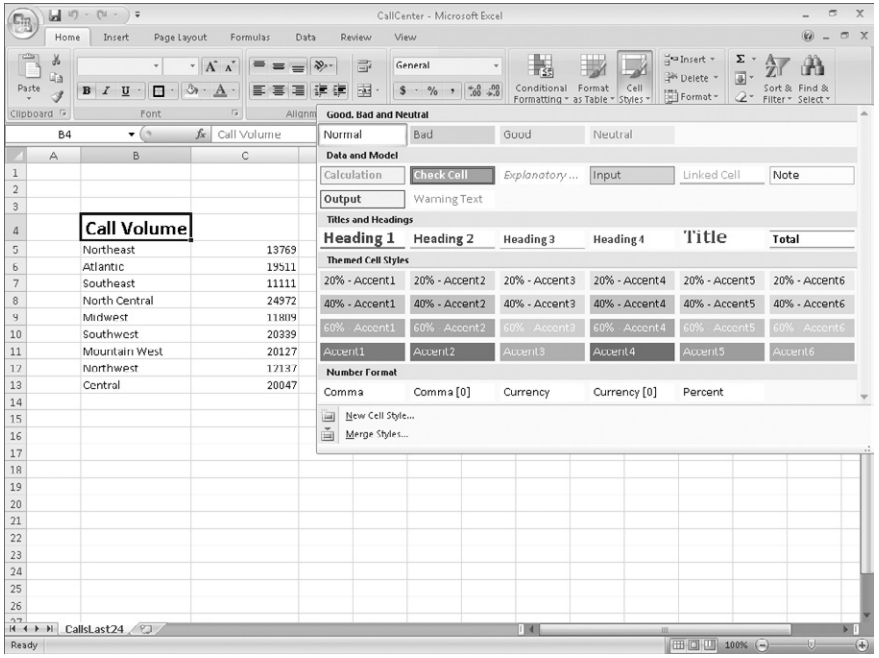
17. Click **Cancel**.

The Excel Options dialog box closes without saving your change.

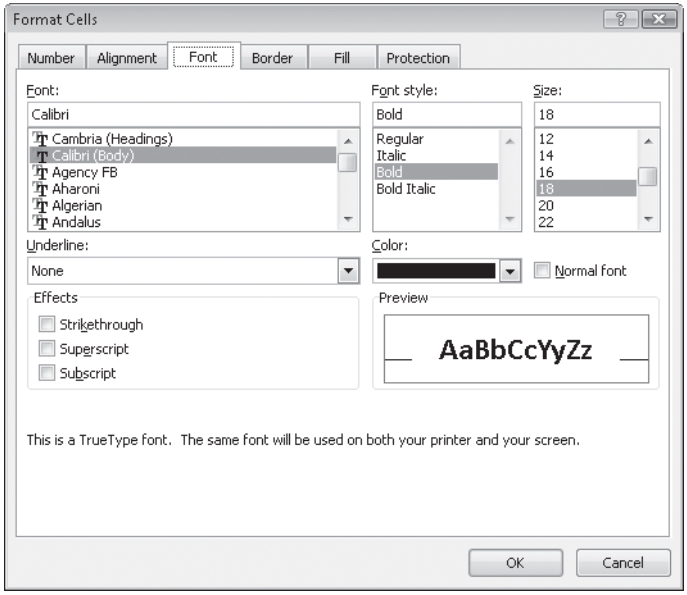
CLOSE the *VehicleMileSummary* workbook.

Defining Styles

As you work with Excel 2007, you will probably develop preferred formats for data labels, titles, and other worksheet elements. Instead of adding the format's characteristics one element at a time to the target cells, you can have Excel 2007 store the format and recall it as needed. You can find the predefined formats available to you by displaying the Home tab, and then in the Styles group, clicking Cell Styles.



Clicking a style from the Cell Styles gallery applies the style to the selected cells, but Excel 2007 goes a step beyond previous versions of the program by displaying a live preview of a format when you point to it. If none of the existing styles is what you want, you can create your own style by displaying the Cell Styles gallery and, at the bottom of the gallery, clicking New Cell Style to display the Style dialog box. In the Style dialog box, type the name of your new style in the Style Name field, and then click Format. The Format Cells dialog box opens.



After you set the characteristics of your new style, click OK to make your style available in the Cell Styles gallery. If you ever want to delete a style, display the Cell Styles gallery, right-click the style, and then click Delete.

The Style dialog box is quite versatile, but it's overkill if all you want to do is apply formatting changes you made to a cell to the contents of another cell. To do so, use the Format Painter button, found in the Home tab's Clipboard group. Just click the cell that has the format you want to copy, click the Format Painter button, and select the target cells to have Excel 2007 apply the copied format to the target range.

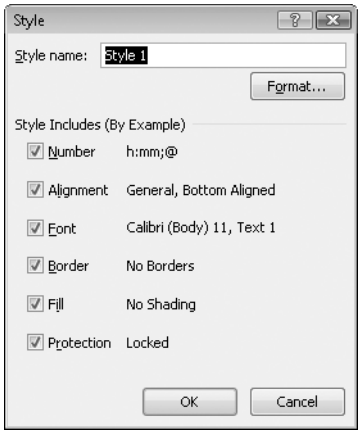
In this exercise, you will create a style, apply the new style to a data label, and then use the Format Painter to apply the style to the contents of another cell.

USE the *HourlyExceptions* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder.

OPEN the *HourlyExceptions* workbook.

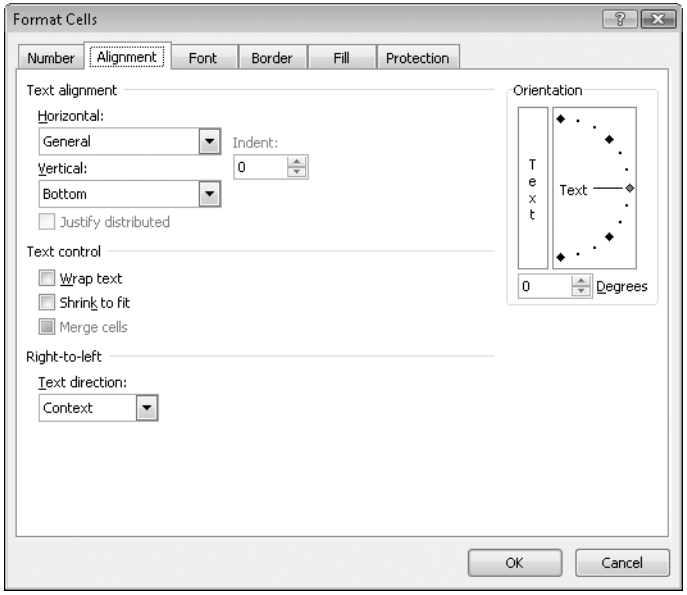
1. On the **Home** tab, in the **Styles** group, click **Cell Styles**, and then click **New Cell Style**.

The Style dialog box opens.



2. In the **Style name** field, type **Crosstab Column Heading**.
3. Click the **Format** button.

   The Format Cells dialog box opens.
4. Click the **Alignment** tab.



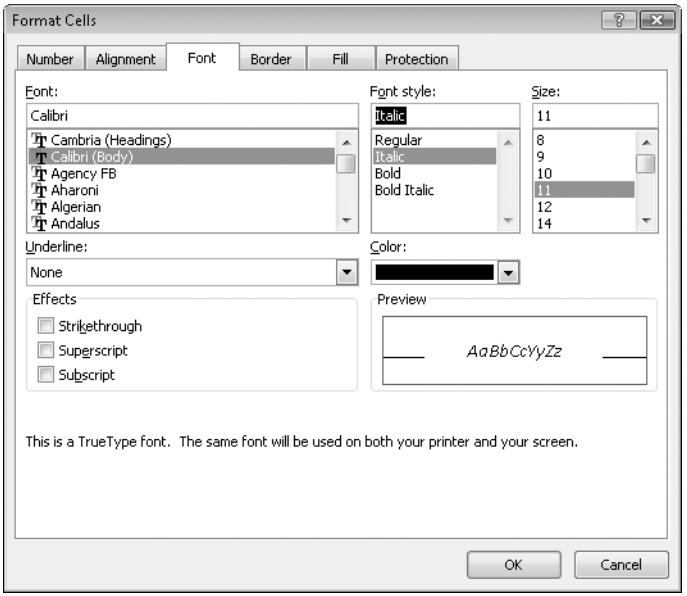
5. In the **Horizontal** list, click **Center**.

   Center appears in the Horizontal field.

6. Click the **Font** tab.

7. In the **Font style** list, click **Italic**.

   The text in the Preview pane appears in italicized text.



8. Click the **Number** tab.

   The Number tab of the Format Cells dialog box is displayed.

9. In the **Category** list, click **Time**.

   The available time formats appear.

10. In the **Type** pane, click **1:30 PM**.

11. Click **OK** to accept the default time format.

    The Format Cells dialog box closes, and your new style's definition appears in the Style dialog box.

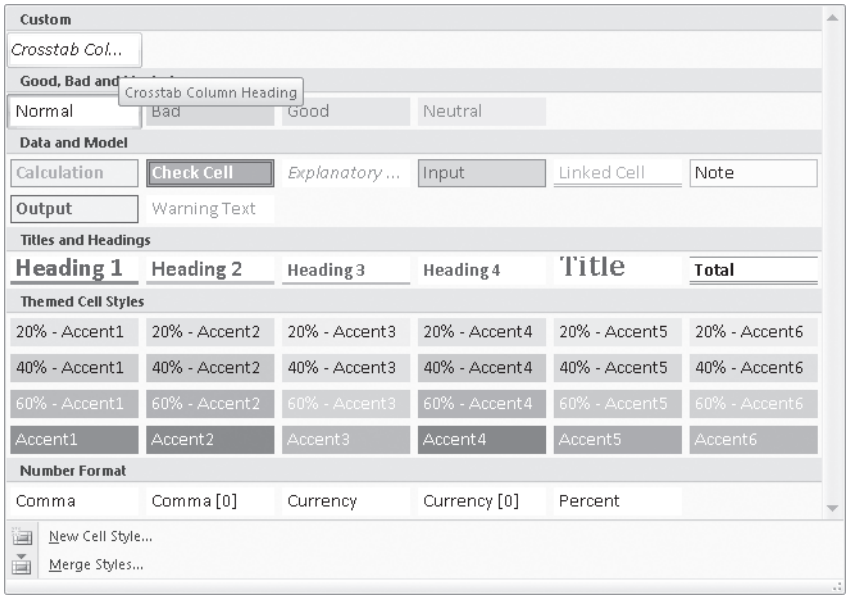
12. Click **OK**.

    The Style dialog box closes.

13. Select cells C4:N4.

14. On the **Home** tab, in the **Styles** group, click **Cell Styles**.

Your new style appears at the top of the gallery, in the Custom group.



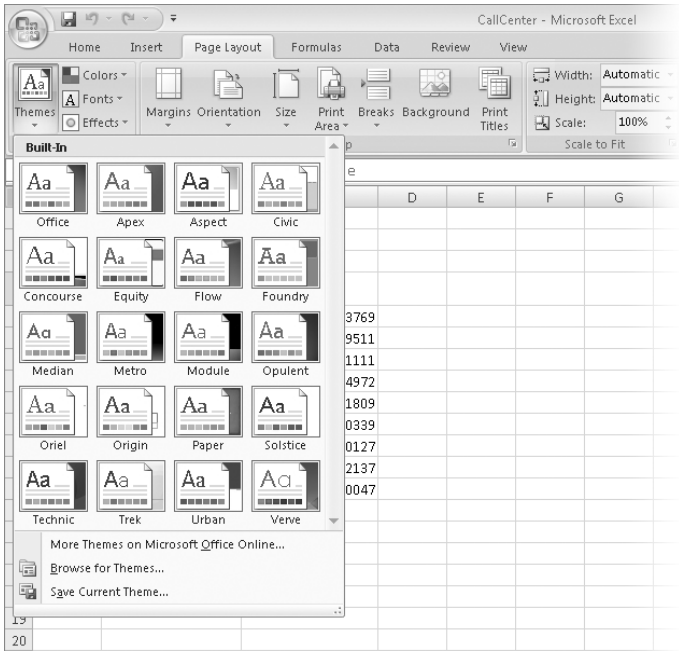
15. Click the **Crosstab Column Heading** style.

Excel 2007 applies your new style to the selected cells.

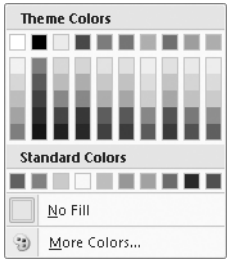
CLOSE the *HourlyExceptions* workbook.

Applying Workbook Themes and Table Styles

The 2007 Microsoft Office system includes powerful new design tools that enable you to create attractive, professional documents quickly. The Excel 2007 product team implemented the new design capabilities by defining workbook themes and table styles. A ***theme*** is a way to specify the fonts, colors, and graphic effects that appear in a workbook. Excel 2007 comes with many themes installed.



To apply an existing workbook theme, display the Page Layout tab. Then, in the Themes group, click Themes, and click the theme you want to apply to your workbook. By default, Excel 2007 applies the Office theme to your workbooks.

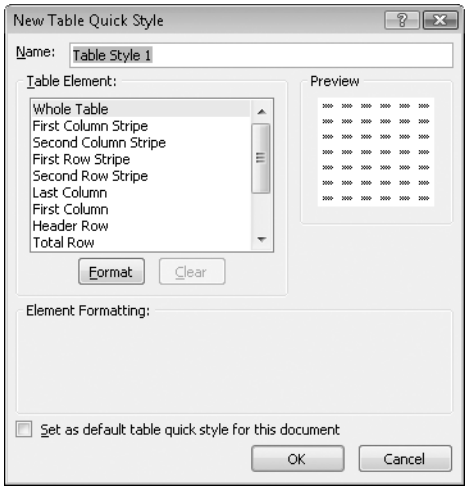


The theme colors appear in the top segment of the color palette—the standard colors and the More Colors link, which displays the Colors dialog box, appear at the bottom of the palette. If you format workbook elements using colors from the theme colors portion of the color palette, applying a different theme changes that object's colors.

You can change a theme's colors, fonts, and graphic effects by displaying the Page Layout tab, and in the Themes group, selecting new values from the Colors, Fonts, and Effects lists. To save your changes as a new theme, display the Page Layout tab, and in the Themes group, click Themes, and then click Save Current Theme. Use the controls in the dialog box that opens to record your theme for later use. Later, when you click the Themes button, your custom theme will appear at the top of the gallery.

Tip When you save a theme, you save it as an Office Theme file. You can apply the theme to Microsoft Office Word 2007 and Microsoft Office PowerPoint 2007 files as well.

Just as you can define and apply themes to entire workbooks, you can apply and define table styles. You select a table's initial style when you create it; to create a new style, display the Home tab, and in the Styles group, click Format As Table. In the Format As Table gallery, click New Table Style to display the New Table Quick Style dialog box.



Type a name for the new style, select the first table element you want to format, and then click Format to display the Format Cells dialog box. Define the element's formatting, and then click OK. When the New Table Quick Style dialog box reopens, its Preview pane displays the overall table style and the Element Formatting section displays the selected element's appearance. Also, in the Table Element list, Excel 2007 displays the element's name in bold to indicate it has been changed. To make the new style the default for new tables created in the current workbook, select the Set As Default Table Quick Style For This Document check box. When you click OK, Excel 2007 saves the new table style.

See Also For more information about creating Excel tables, see "Defining a Table" in Chapter 3, "Working with Data and Data Tables."

In this exercise, you will create a new workbook theme, change a workbook's theme, create a new table style, and apply the new style to a table.

USE the *HourlyTracking* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder.
OPEN the *HourlyTracking* workbook.

1. If necessary, click any cell in the table.
2. On the **Home** tab, in the **Styles** group, click **Format as Table**, and then click the style at the upper-left corner of the **Table Styles** gallery.

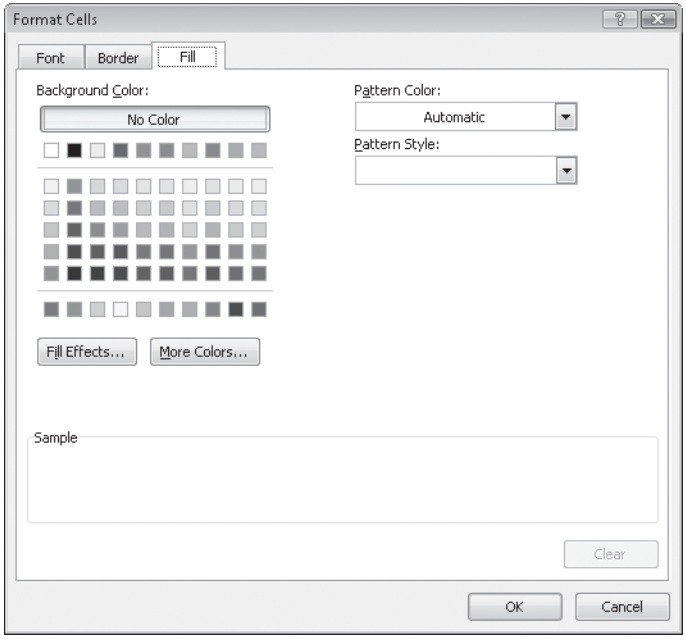
   Excel 2007 applies the style to the table.

3. On the **Home** tab, in the **Styles** group, click **Format as Table**, and then click **New Table Style**.

   The New Table Quick Style dialog box opens.
4. In the **Name** field, type **Exception Default**.
5. In the **Table Element** list, click **Header Row**.
6. Click **Format**.

   The Format Cells dialog box opens.
7. Click the **Fill** tab.

   The Fill tab appears.



8. In the first row of color squares, just below the **No Color** button, click the third square from the left.

   The new background color appears in the Sample pane of the dialog box.

9. Click **OK**.

   The Format Cells dialog box closes. When the New Table Quick Style dialog box reopens, the Header Row table element appears in bold, and the Preview pane's header row is shaded.

10. In the **Table Element** list, click **Second Row Stripe**, and then click **Format**.

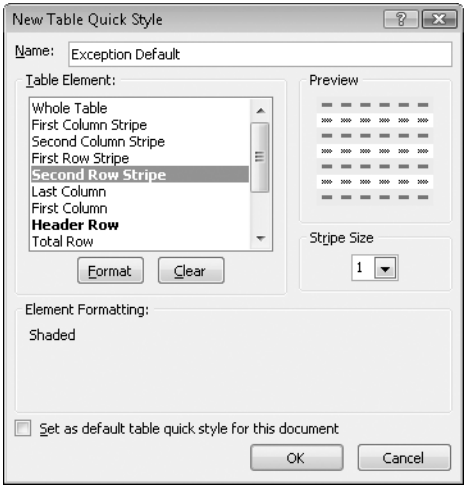
    The Format Cells dialog box opens.

11. Click the **No Color** button, and click the third square from the left again.

    The new background color appears in the Sample pane of the dialog box.

12. Click **OK**.

    The Format Cells dialog box closes. When the New Table Quick Style dialog box reopens, the Second Row Stripe table element appears in bold, and every second row is shaded in the Preview pane.



13. Click **OK**.

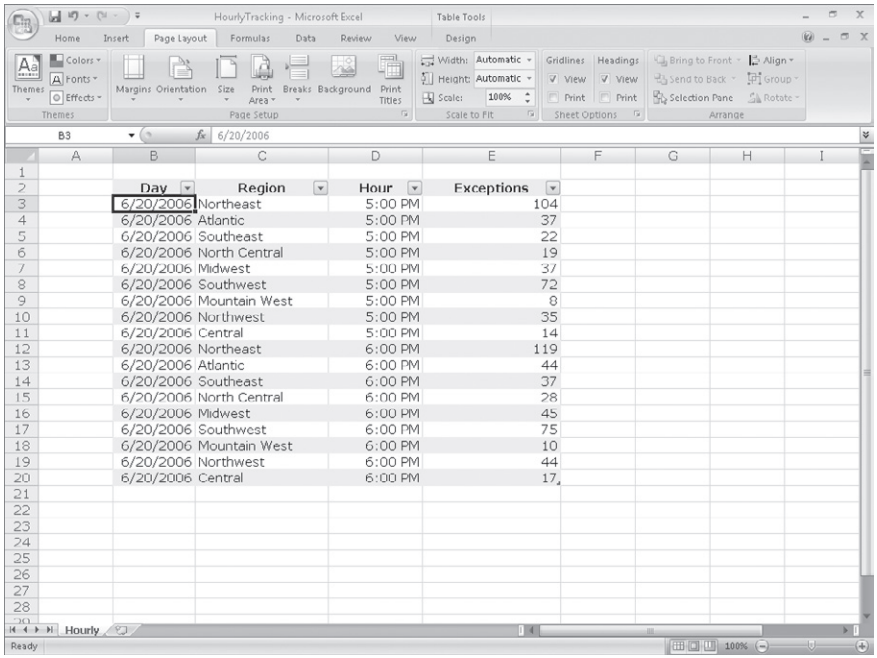
    The New Table Quick Style dialog box closes.

14. On the **Home** tab, in the **Styles** group, click **Format as Table**. In the gallery that appears, in the **Custom** section, click the new format.

    Excel 2007 applies the new format.

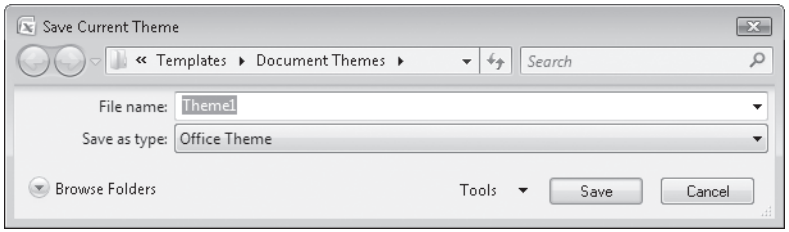
15. On the **Page Layout** tab, in the **Themes** group, click the **Theme Fonts** arrow, and then in the list, click **Verdana**.

Excel 2007 changes the theme's font to Verdana.



16. In the **Themes** group, click the **Themes** button, and then click **Save Current Theme**.

The Save Current Theme dialog box opens.



17. In the **File name** field, type Verdana Office, and then click **Save**.

Excel 2007 saves your theme.

18. In the **Themes** group, click the **Themes** button, and then click **Origin**.

Excel 2007 applies the new theme to your workbook.

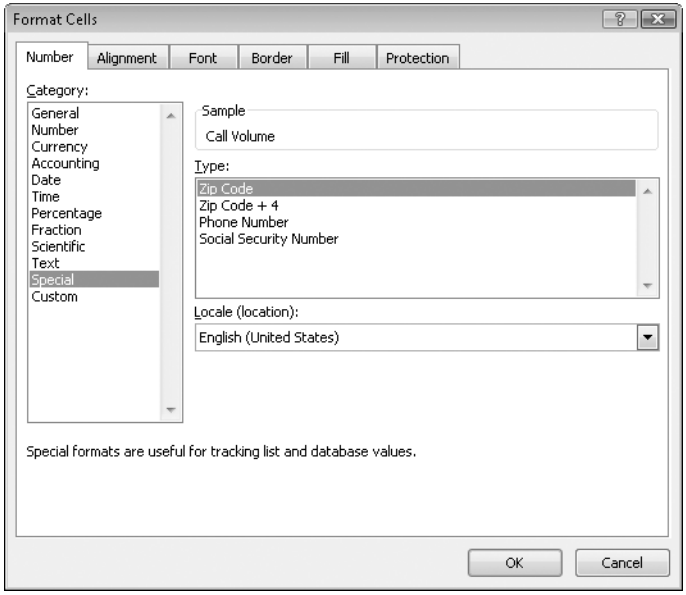
CLOSE the *HourlyTracking* workbook.

Making Numbers Easier to Read

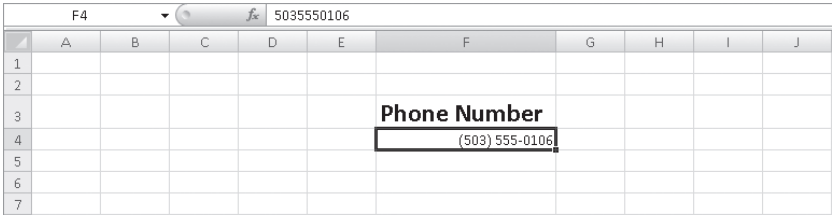
Changing the format of the cells in your worksheet can make your data much easier to read, both by setting data labels apart from the actual data and by adding borders to define the boundaries between labels and data even more clearly. Of course, using formatting options to change the font and appearance of a cell's contents doesn't help with idiosyncratic data types such as dates, phone numbers, or currency.

For example, consider U.S. phone numbers. These numbers are 10 digits long and have a 3-digit area code, a 3-digit exchange, and a 4-digit line number written in the form (###) ###-####. Although it's certainly possible to type a phone number with the expected formatting in a cell, it's much simpler to type a sequence of 10 digits and have Excel 2007 change the data's appearance.

You can tell Excel 2007 to expect a phone number in a cell by opening the Format Cells dialog box to the Number tab and displaying the formats available for the Special category.



Clicking Phone Number in the Type list tells Excel 2007 to format 10-digit numbers in the standard phone number format. As you can see by comparing the contents of the active cell and the contents of the formula box in the next graphic, the underlying data isn't changed, just its appearance in the cell.



Troubleshooting If you type a 9-digit number in a field that expects a phone number, you won't see an error message; instead, you'll see a 2-digit area code. For example, the number 425555012 would be displayed as (42) 555-5012. An 11-digit number would be displayed with a 4-digit area code.

Just as you can instruct Excel 2007 to expect a phone number in a cell, you can also have it expect a date or a currency amount. You can make those changes from the Format Cells dialog box by choosing either the Date category or the Currency category. The Date category enables you to pick the format for the date (and determine whether the date's appearance changes due to the Locale setting of the operating system on the computer viewing the workbook). In a similar vein, selecting the Currency category displays controls to set the number of places after the decimal point, the currency symbol to use, and the way in which Excel 2007 should display negative numbers.

Tip The new Excel 2007 user interface enables you to set the most common format changes by using the controls in the Home tab's Number group.

You can also create a custom numeric format to add a word or phrase to a number in a cell. For example, you can add the phrase per month to a cell with a formula that calculates average monthly sales for a year to ensure that you and your colleagues will recognize the figure as a monthly average. To create a custom number format, click the Home tab, and then click the Number dialog box launcher to display the Format Cells dialog box. Then, if necessary, click the Number tab.

In the Category list, click Custom to display the available custom number formats in the Type list. You can then click the base format you want and modify it in the Type box. For example, clicking the 0.00 format causes Excel 2007 to format any number in a cell with two digits to the right of the decimal point.

Tip The zeros in the format indicate that the position in the format can accept any number as a valid value.

To customize the format, click in the Type box and add any symbols or text you want to the format. For example, typing a dollar ($) sign to the left of the existing format and then typing *"per month"* to the right of the existing format causes the number 1500 to be displayed as *$1500.00 per month*.

Important You need to enclose any text in quotes so that Excel 2007 recognizes the text as a string to be displayed in the cell.

In this exercise, you will assign date, phone number, and currency formats to ranges of cells. After assigning the formats, you will test them by entering customer data.

USE the *ExecutiveSearch* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder.

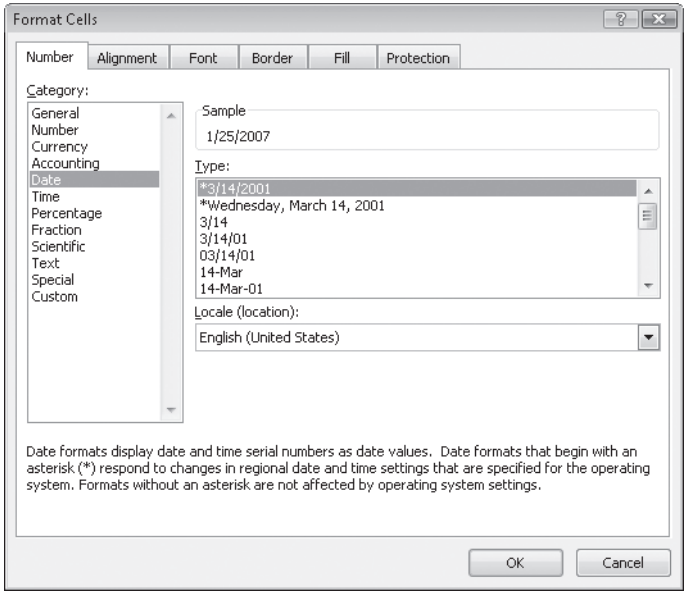
OPEN the *ExecutiveSearch* workbook.

1. Click cell A3.
2. On the **Home** tab, click the **Font** dialog box launcher.

   Dialog Box Launcher

   The Format Cells dialog box opens.
3. If necessary, click the **Number** tab.
4. In the **Category** list, click **Date**.

   The Type list appears with a list of date formats.



5. In the **Type** list, click **3/14/01**.

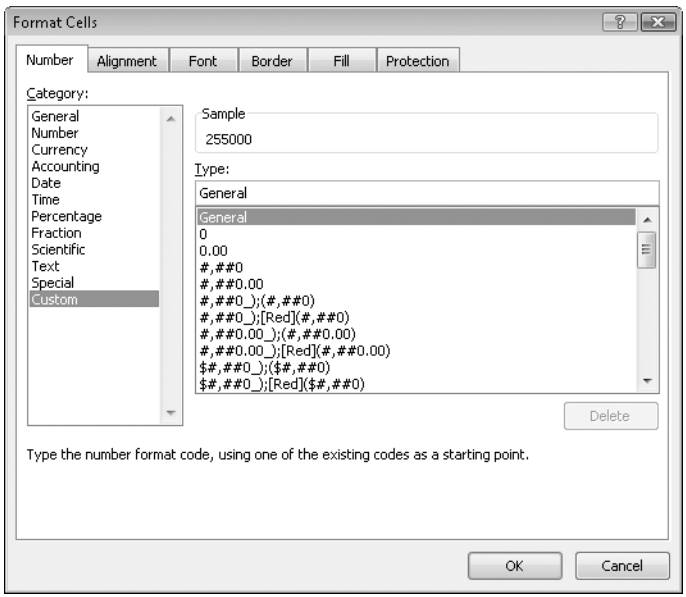
> **Important** Be sure to click the format without the asterisk (*) in front of the sample date.

6. Click **OK** to assign the chosen format to the cell.
7. Click cell G3.
8. On the **Home** tab, click the **Font** dialog box launcher.
9. If necessary, click the **Number** tab in the **Format Cells** dialog box.
10. In the **Category** list, click **Special**.

    The Type list appears with a list of special formats.
11. In the **Type** list, click **Phone Number**, and then click **OK**.

    The contents of the cell change to (425) 555-0102, matching the format you chose earlier, and the Format Cells dialog box closes.
12. Click cell H3.
13. Click the **Font** dialog box launcher.
14. If necessary, click the **Number** tab in the **Format Cells** dialog box.
15. In the **Category** list, click **Custom**.

    The contents of the Type list are updated to reflect your choice.

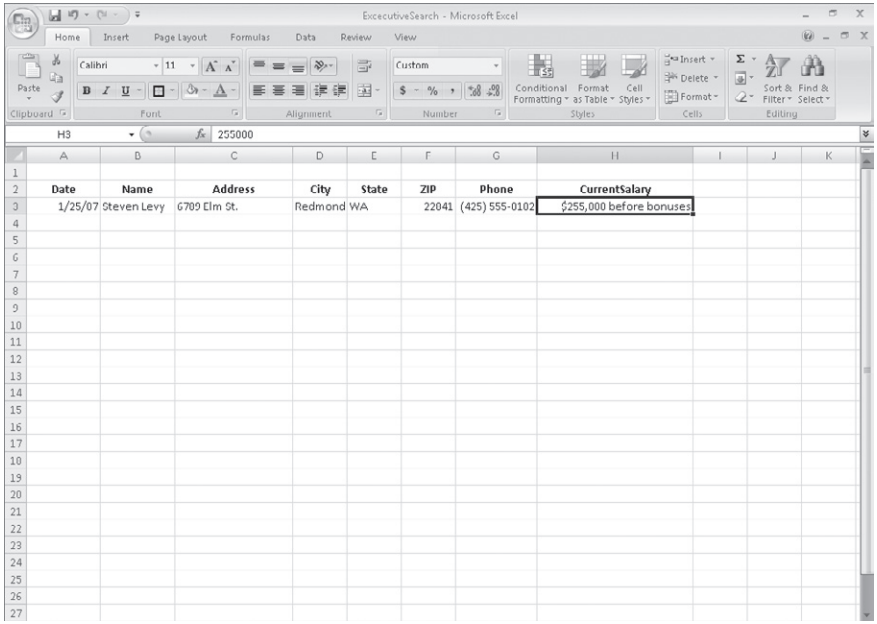


16. In the **Type** list, click the **#,##0** item.

    #,##0 appears in the Type box.

17. In the **Type** box, click to the left of the existing format, and type **$**. Then click to the right of the format, and type **"before bonuses"**.

18. Click **OK** to close the dialog box.



CLOSE the *ExecutiveSearch* workbook.

Changing the Appearance of Data Based on Its Value

Recording package volumes, vehicle miles, and other business data in a worksheet enables you to make important decisions about your operations. And as you saw earlier in this chapter, you can change the appearance of data labels and the worksheet itself to make interpreting your data easier.

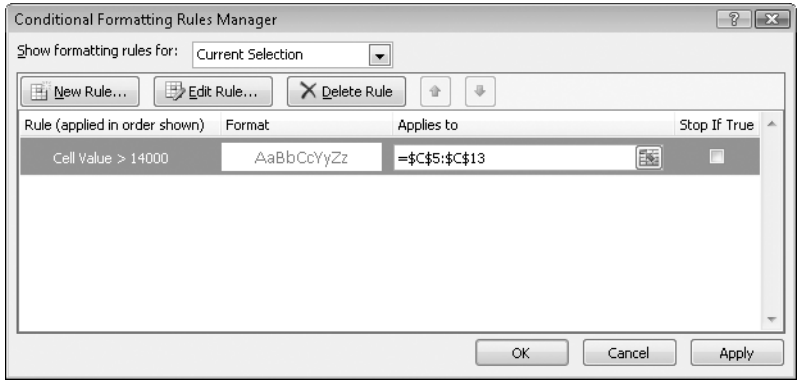
Another way you can make your data easier to interpret is to have Excel 2007 change the appearance of your data based on its value. These formats are called ***conditional formats*** because the data must meet certain conditions to have a format applied to it.

For instance, if chief operating officer Jenny Lysaker wanted to highlight any Thursdays with higher-than-average weekday package volumes, she could define a conditional format that tests the value in the cell recording total sales, and that will change the format of the cell's contents when the condition is met.

In previous versions of Excel, you could have a maximum of three conditional formats. There's no such limit in Excel 2007; you may have as many conditional formats as you like. The other major limitation of conditional formats in Excel 2003 and earlier versions was that Excel stopped evaluating conditional formats as soon as it found one that applied to a cell. In other words, you couldn't have multiple conditions be true for the same cell! In Excel 2007, you can control whether Excel 2007 stops or continues after it discovers that a specific condition applies to a cell.

To create a conditional format, you select the cells to which you want to apply the format, display the Home tab, and then in the Styles group, click Conditional Formatting to display a menu of possible conditional formats. Excel 2007 enables you to create all the conditional formats available in previous versions of the program and offers many more conditional formats than were previously available. Prior to Excel 2007, you could create conditional formats to highlight cells that contained values meeting a certain condition. For example, you could highlight all cells that contain a value over 100, contain a date before 1/28/2007, or contain an order amount between $100 and $500. In Excel 2007, you can define conditional formats that change how the program displays data in cells that contain values above or below the average values of the related cells, that contain values near the top or bottom of the value range, or that contain values duplicated elsewhere in the selected range.

When you select which kind of condition to create, Excel 2007 displays a dialog box that contains fields and controls you can use to define your rule. To display all your rules, display the Home tab, and then in the Styles group, click Conditional Formatting. From the menu that appears, click Manage Rules to display the Conditional Formatting Rules Manager.

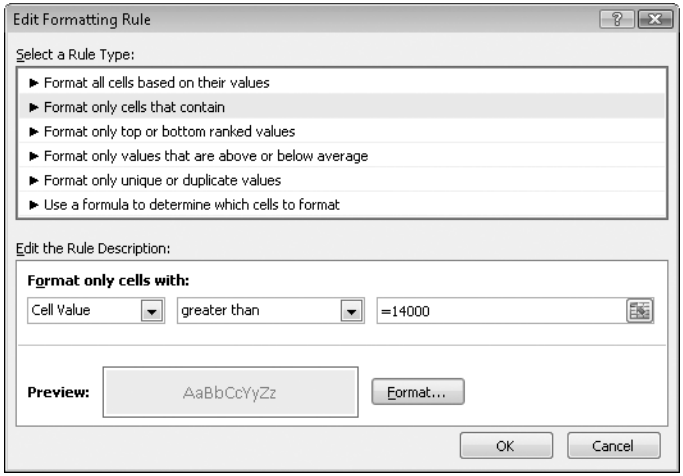


The Conditional Formatting Rules Manager, which is new in Excel 2007, enables you to control your conditional formats in the following ways:

- Create a new rule by clicking the **New Rule** button.
- Change a rule by clicking the rule and then clicking the **Edit Rule** button.
- Remove a rule by clicking the rule and then clicking the **Delete Rule** button.
- Move a rule up or down in the order by clicking the **Move Up** or **Move Down** button.
- Control whether Excel 2007 continues evaluating conditional formats after it finds a rule to apply by selecting or clearing a rule's **Stop If True** check box.
- Save any new rules and close the **Conditional Formatting Rules Manager** by clicking **OK.**
- Save any new rules without closing the **Conditional Formatting Rules Manager** by clicking **Apply.**
- Discard any unsaved changes by clicking **Cancel.**

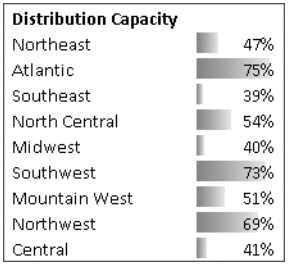
Tip Clicking the New Rule button in the Conditional Formatting Rules Manager opens the New Formatting Rule dialog box. The commands in the New Formatting Rule dialog box duplicate the options displayed when you click the Conditional Formatting button in the Styles group on the Home tab.

After you create a rule, you can change the format applied if the rule is true by clicking the rule and then clicking the Edit Rule button to display the Edit Formatting Rule dialog box. In that dialog box, click the Format button to display the Format Cells dialog box. After you define your format, click OK.

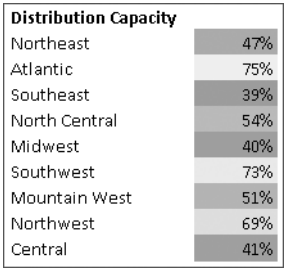


Important Excel 2007 doesn't check to make sure that your conditions are logically consistent, so you need to be sure that you enter your conditions correctly.

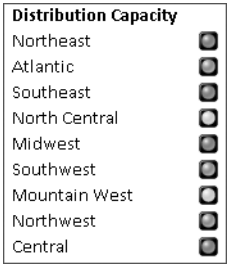
Excel 2007 also enables you to create three new types of conditional formats: data bars, color scales, and icon sets. Data bars summarize the relative magnitude of values in a cell range by extending a band of color across the cell.



Color scales compare the relative magnitude of values in a cell range by applying colors from a two-color or three-color set to your cells. The intensity of a cell's color reflects the value's tendency toward the top or bottom of the values in the range.



Icon sets are collections of three, four, or five images that Excel 2007 displays when certain rules are met.



When you click a color scale or icon set in the Conditional Formatting Rule Manager and then click the Edit Rule button, you can control when Excel 2007 applies a color or icon to your data.

Important Be sure to not include cells that contain summary formulas in your conditionally formatted ranges. The values, which could be much higher or lower than your regular cell data, could throw off your formatting comparisons.

In this exercise, you will create a series of conditional formats to change the appearance of data in worksheet cells displaying the package volume and delivery exception rates of a regional distribution center.

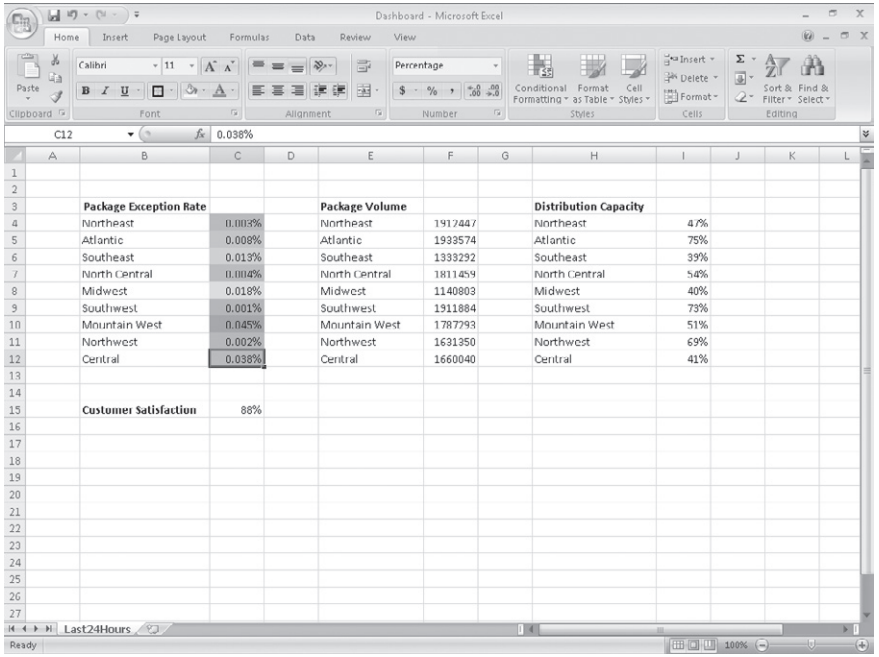
USE the *Dashboard* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder.

OPEN the *Dashboard* workbook.

1. Select cells C4:C12.

2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu that appears, point to **Color Scales**, and then in the top row of the palette that appears, click the second pattern from the left.

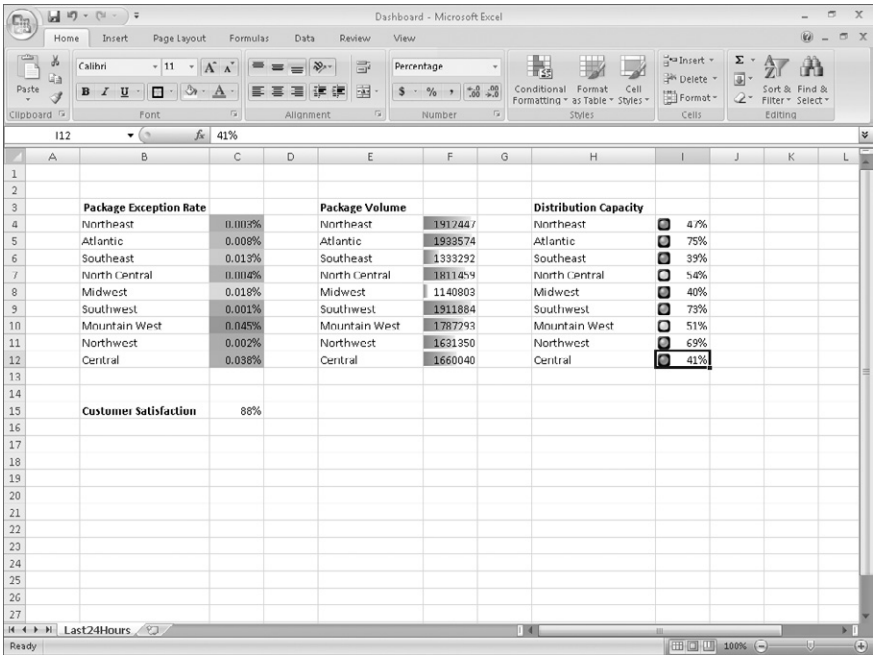
   Excel 2007 formats the selected range.



3. Select cells F4:F12.
4. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. From the menu that appears, point to **Data Bars**, and then click the light blue data bar format.

   Excel 2007 formats the selected range.
5. Select cells I4:I12.
6. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu that appears, point to **Icon Sets**, and then in the left-hand column of the list of formats that appears, click the three traffic lights.

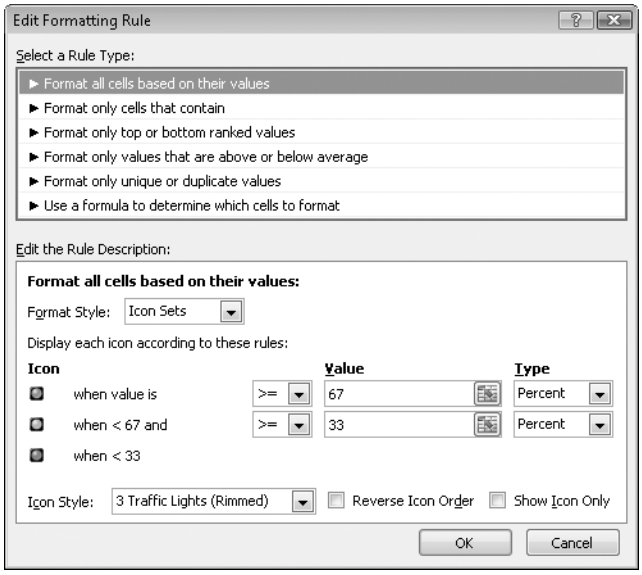
   Excel 2007 formats the selected cells.



7. With the range I4:I12 still selected, on the **Home** tab, in the **Styles** group, click **Conditional Formatting**, and then click **Manage Rules**.

   The Conditional Formatting Rules Manager opens.
8. Click the icon set rule, and then click **Edit Rule**.

The Edit Formatting Rule dialog box opens.



9. Select the **Reverse Icon Order** check box.

   Excel 2007 reconfigures the rules so the red light icon is at the top and the green light icon is at the bottom.

10. In the red light icon's row, in the **Type** list, click **Percent**.

11. In the red light icon's **Value** field, type 80.

12. In the yellow light icon's row, in the **Type** list, click **Percent**.

13. In the yellow light icon **Value** field, type 67.

14. Click **OK** twice to clear the **Edit Formatting Rule** dialog box and the **Conditional Formatting Rules Manager**.

    Excel 2007 formats the selected cell range.

15. Click cell C15.

16. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu that appears, point to **Highlight Cells Rules**, and then click **Less Than**.

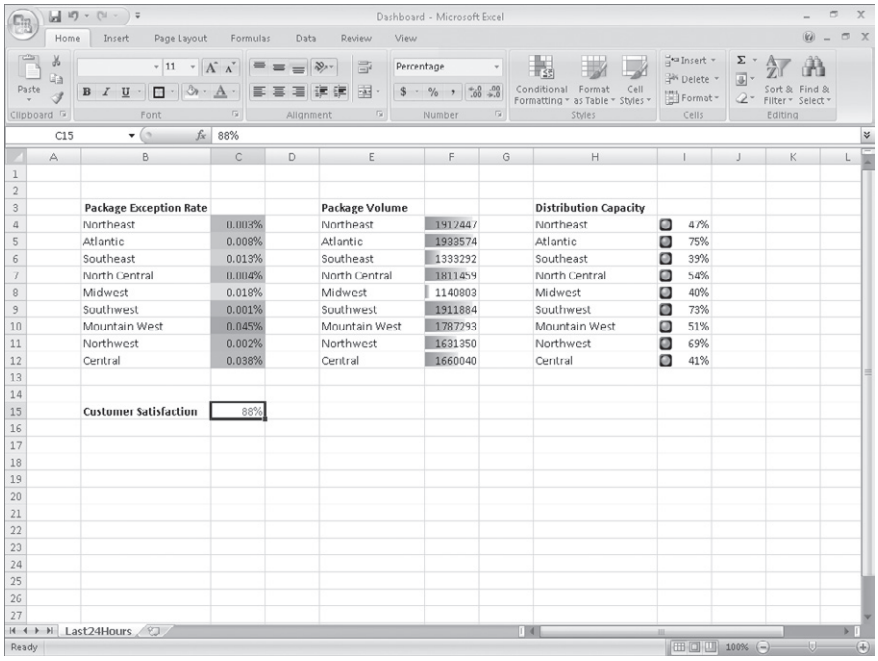
    The Less Than dialog box opens.

17. In the left field, type 96%.

18. In the **With** list, click **Red text**.

19. Click **OK**.

The Less Than dialog box closes, and Excel 2007 displays the text in cell C15 in red.



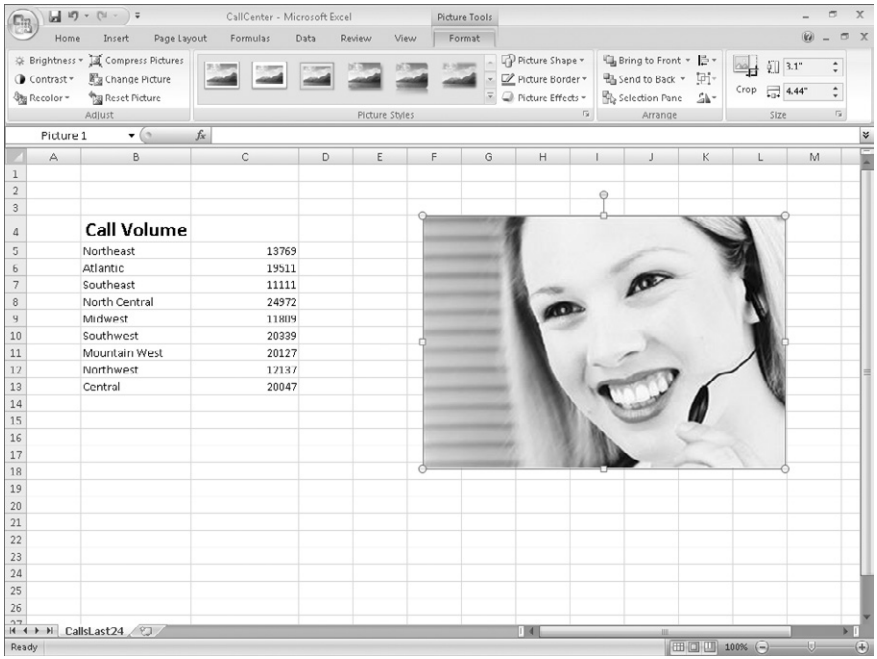
CLOSE the *Dashboard* workbook.

Adding Images to Worksheets

Establishing a strong corporate identity helps customers remember your organization and the products and services you offer. Setting aside the obvious need for sound management, two important physical attributes of a strong retail business are a well-conceived shop space and an eye-catching, easy-to-remember logo. After you or your graphic artist has created a logo, you should add the logo to all your documents, especially any that might be seen by your customers. Not only does the logo mark the documents as coming from your company but it also serves as an advertisement, encouraging anyone who sees your worksheets to call or visit your company.

One way to add a picture to a worksheet is to display the Insert tab, and then in the Illustrations group, click Picture. Clicking Picture displays the Insert Picture dialog box, which enables you to locate the picture you want to add from your hard disk. When you insert a picture, the Picture Tools Format contextual tab appears on the Ribbon. You can

use the tools on the Format contextual tab to change the picture's contrast, brightness, and so on. The controls in the Picture Styles group enable you to place a border around the picture, change the picture's shape, or change a picture's effects (such as shadow, reflection, or rotation in three dimensions). Other tools, found in the Arrange and Size groups, enable you to rotate, reposition, and resize the picture.



You can also resize a picture by clicking it and then dragging one of the handles that appear on the graphic. If you accidentally resize a graphic by dragging a handle, just click the Undo button to remove your change. If you want to generate a repeating image in the background of a worksheet, forming a tiled pattern behind your worksheet's data, you can display the Page Layout tab, and then in the Page Setup group, click Background. In the Sheet Background dialog box, click the image that you want to serve as the background pattern for your worksheet, and click OK.

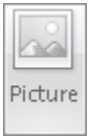
> **Tip** To remove a background image from a worksheet, display the Page Layout tab, and then in the Page Setup group, click Delete Background.

To achieve a watermark-type effect with words displayed behind the worksheet data, save the watermark information as an image, and then use the image as the sheet background; or insert the image in the header or footer, and then resize or scale it to position the watermark information where you want it.

In this exercise, you will add an image to an existing worksheet, change the graphic's location on the worksheet, reduce the size of the graphic, change the image's brightness and contrast, rotate and crop the image, delete the image, and then set the image as a repeating background for the worksheet.

USE the *CallCenter* workbook and the *callcenter* and *acbluprt* images. These practice files are located in the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder.

OPEN the *CallCenter* workbook.



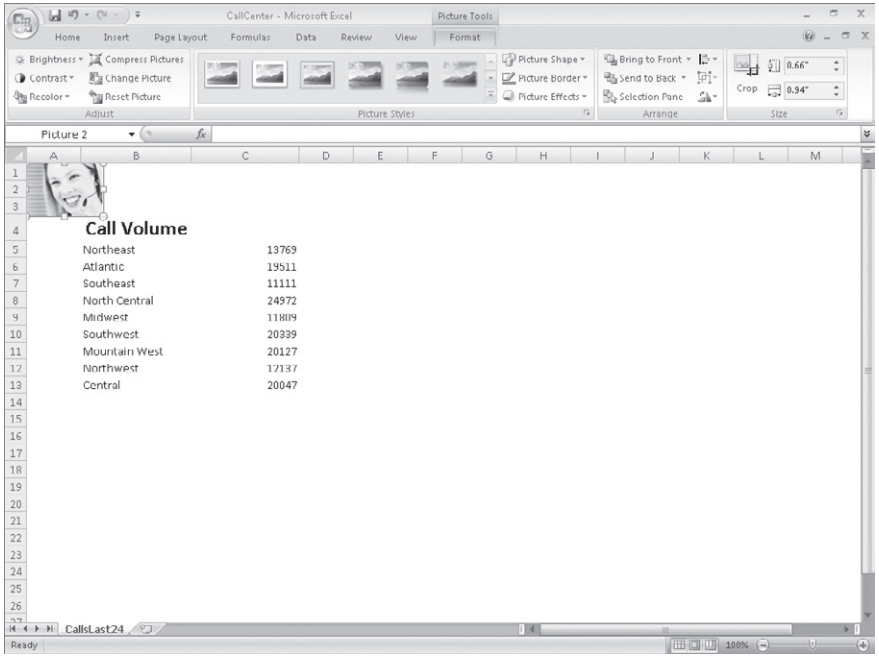
1. On the **Insert** tab, in the **Illustrations** group, click **Picture**.

   The Insert Picture dialog box opens.

2. Browse to the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder, and then double-click *callcenter.jpg*.

   The image appears on your worksheet.

3. Move the image to the upper-left corner of the worksheet, grab the handle at the lower-right corner of the image, and drag it up and to the left until it no longer obscures the Call Volume label.

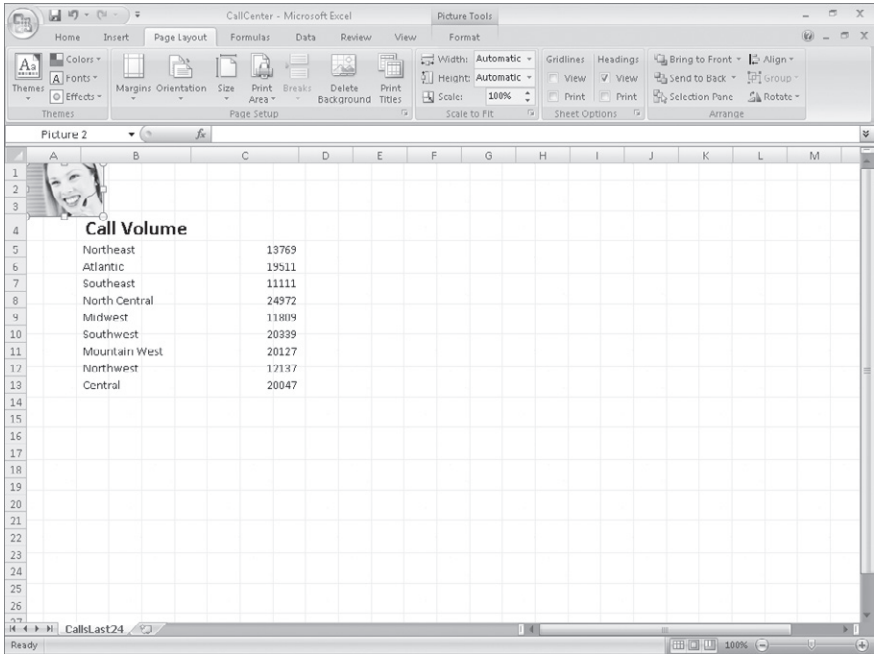


4. On the **Page Layout** tab, in the **Page Setup** group, click **Background**.

   The Sheet Background dialog box opens.

5. Browse to the *Documents\Microsoft Press\Excel2007SBS\Appearance* folder, and then double-click *acbluprt.jpg*.

   Excel 2007 repeats the image to form a background pattern.



6. On the **Page Layout** tab, in the **Page Setup** group, click **Delete Background**.

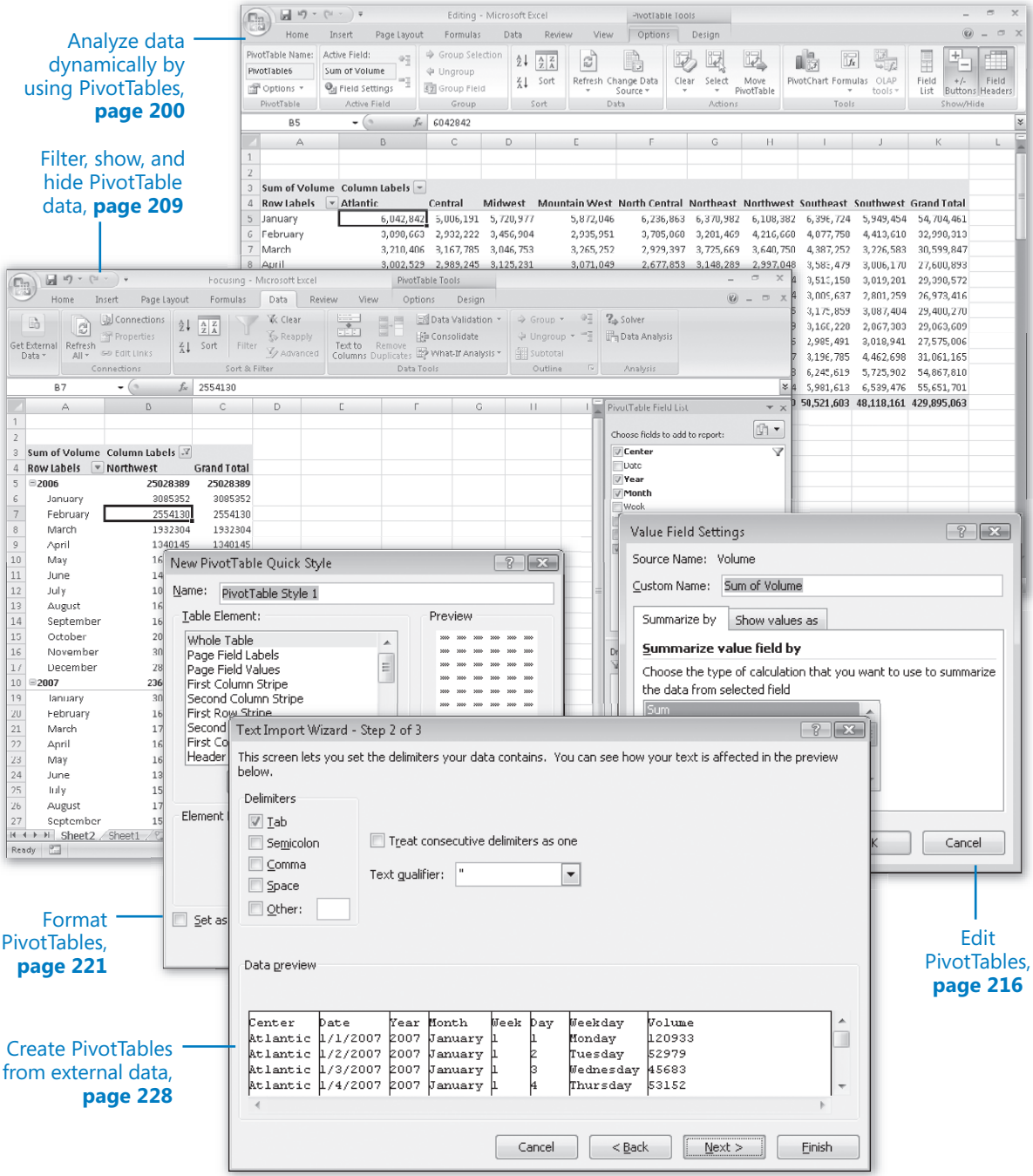
   Excel 2007 removes the background image.

CLOSE the *CallCenter* workbook. If you are not continuing directly to the next chapter, exit Excel.

Key Points

- If you don't like the default font in which Excel 2007 displays your data, you can change it.
- You can use cell formatting, including borders, alignment, and fill colors, to emphasize certain cells in your worksheets. This emphasis is particularly useful for making column and row labels stand out from the data.
- Excel 2007 comes with a number of existing styles that enable you to change the appearance of individual cells. You can also create new styles to make formatting your workbooks easier.
- If you want to apply the formatting from one cell to another cell, use the Format Painter to copy the format quickly.
- There are quite a few built-in document themes and table formats you can apply to groups of cells. If you see one you like, use it and save yourself lots of formatting time.
- Conditional formats enable you to set rules so that Excel 2007 changes the appearance of a cell's contents based on its value.
- Adding images can make your worksheets more visually appealing and make your data easier to understand.

Chapter at a Glance



Analyze data dynamically by using PivotTables, **page 200**

Filter, show, and hide PivotTable data, **page 209**

Format PivotTables, **page 221**

Create PivotTables from external data, **page 228**

Edit PivotTables, **page 216**

10 Creating Dynamic Lists by Using PivotTables

In this chapter, you will learn to:

- ✔ Analyze data dynamically by Using PivotTables.
- ✔ Filter, show, and hide PivotTable data.
- ✔ Edit PivotTables.
- ✔ Format PivotTables.
- ✔ Create PivotTables from external data.

When you create Microsoft Office Excel 2007 worksheets, you must consider how you want the data to appear when you show it to your colleagues. You can change the formatting of your data to emphasize the contents of specific cells, sort and filter your worksheets based on the contents of specific columns, or hide rows containing data that isn't relevant to the point you're trying to make.

One limitation of the standard Excel worksheet is that you can't change how the data is organized on the page. For example, in a worksheet in which each column represents an hour in the day, each row represents a day in a month, and the body of the worksheet contains the total sales for every hourly period of the month, you can't easily change the worksheet so that it displays only sales on Tuesdays during the afternoon.

An Excel 2007 tool enables you to create worksheets that can be sorted, filtered, and rearranged dynamically to emphasize different aspects of your data. That tool is the *PivotTable*.

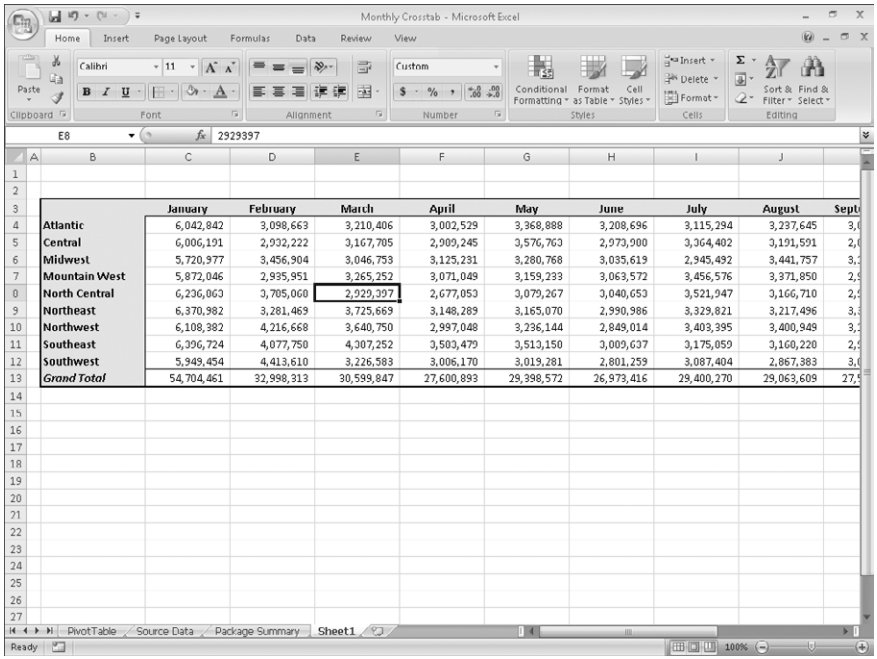
In this chapter, you'll learn how to create and edit PivotTables from an existing worksheet and how to create a PivotTable with data imported from a text file.

See Also Do you need only a quick refresher on the topics in this chapter? See the Quick Reference section at the beginning of this book.

Important Before you can use the practice files in this chapter, you need to install them from the book's companion CD to their default location. See "Using the Companion CD" at the beginning of this book for more information.

Analyzing Data Dynamically by Using PivotTables

Excel 2007 worksheets enable you to gather and present important data, but the standard worksheet can't be changed from its original configuration easily. As an example, consider the worksheet in the following graphic.

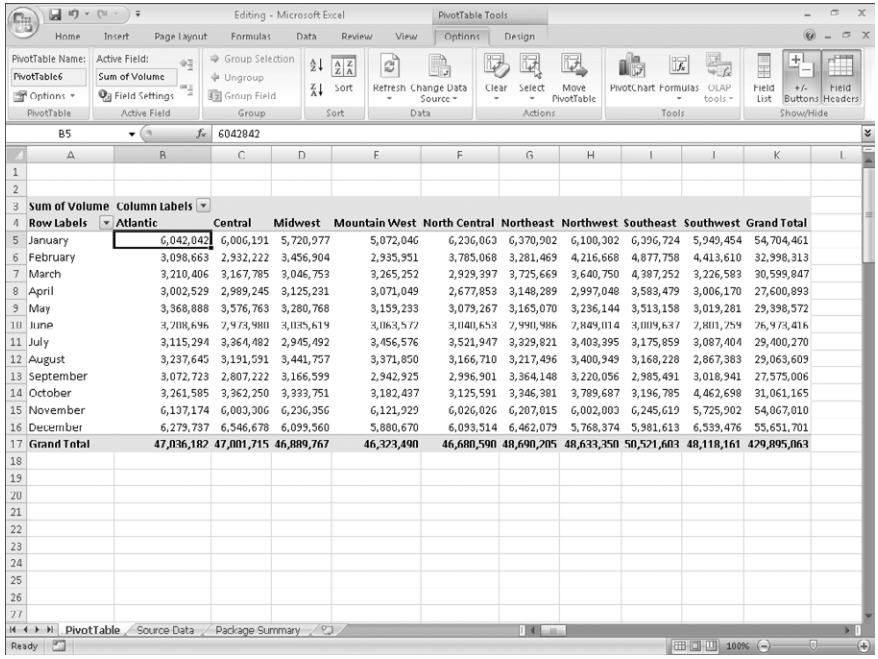


	January	February	March	April	May	June	July	August
Atlantic	6,042,842	3,098,663	3,210,406	3,002,529	3,368,888	3,208,696	3,115,294	3,237,645
Central	6,006,191	2,932,222	3,167,705	2,909,245	3,576,763	2,973,900	3,064,402	3,191,591
Midwest	5,720,977	3,456,904	3,046,753	3,125,231	3,280,768	3,035,619	2,945,492	3,441,757
Mountain West	5,872,046	2,935,951	3,265,252	3,071,049	3,159,233	3,063,572	3,456,576	3,371,850
North Central	6,236,063	3,705,060	2,929,397	2,677,053	3,079,267	3,040,653	3,521,947	3,166,710
Northeast	6,370,982	3,281,469	3,725,669	3,148,289	3,165,070	2,990,986	3,329,821	3,217,496
Northwest	6,108,382	4,216,668	3,640,750	2,997,048	3,236,144	2,849,014	3,403,395	3,400,949
Southeast	6,396,724	4,077,750	4,307,252	3,503,479	3,513,150	3,009,637	3,175,059	3,160,220
Southwest	5,949,454	4,413,610	3,226,583	3,006,170	3,019,281	2,801,259	3,087,404	2,867,383
Grand Total	54,704,461	32,998,313	30,599,847	27,600,893	29,398,572	26,973,416	29,400,270	29,063,609

This worksheet records monthly package volumes for each of nine distribution centers in the United States. The data in the worksheet is organized so that each row represents a distribution center, whereas the columns in the body of the worksheet represent a month of the year. When presented in this arrangement, the monthly totals for all centers and the yearly total for each distribution center are given equal billing: neither set of totals stands out.

Such a neutral presentation of your data is versatile, but it has limitations. First, although you can use sorting and filtering to restrict the rows or columns shown, it's difficult to change the worksheet's organization. For example, in a standard worksheet you can't reorganize the contents of your worksheet so that the hours are assigned to the rows and the distribution centers are assigned to the columns.

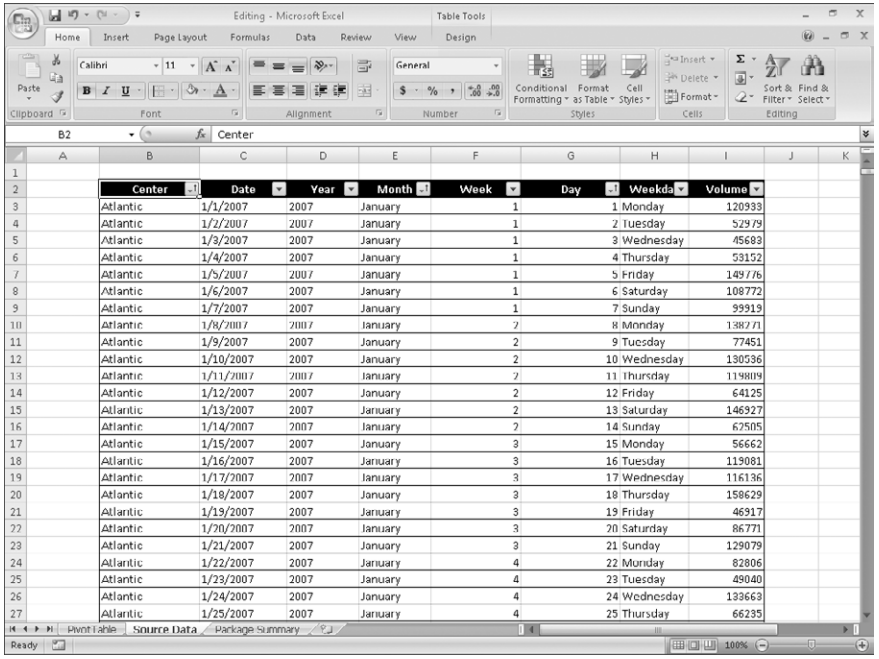
The Excel 2007 tool to reorganize and redisplay your data dynamically is the PivotTable. You can create a PivotTable, or dynamic worksheet, that enables you to reorganize and filter your data on the fly. For instance, you can create a PivotTable with the same layout as the worksheet shown previously, which emphasizes totals by month, and then change the PivotTable layout to have the rows represent the months of the year and the columns represent a distribution center. The new layout emphasizes the totals by regional distribution center, as shown in the following graphic.



Sum of Volume	Column Labels									
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
January	6,042,042	6,006,191	5,720,977	5,072,046	6,236,063	6,370,902	6,100,302	6,396,724	5,949,454	54,704,461
February	3,098,663	2,932,222	3,456,904	2,935,951	3,785,068	3,281,469	4,216,668	4,877,758	4,413,610	32,998,313
March	3,210,406	3,167,785	3,046,753	3,265,252	2,929,397	3,725,669	3,640,750	4,387,252	3,226,583	30,599,847
April	3,002,529	2,989,245	3,125,231	3,071,049	2,677,853	3,148,289	2,997,048	3,583,479	3,006,170	27,600,893
May	3,368,888	3,576,763	3,280,768	3,159,233	3,079,267	3,165,070	3,236,144	3,513,158	3,019,281	29,398,572
June	3,208,696	2,973,980	3,035,619	3,063,572	3,040,653	2,990,986	2,849,014	3,009,637	2,811,259	26,973,416
July	3,115,294	3,364,482	2,945,492	3,456,576	3,521,947	3,329,821	3,403,395	3,175,859	3,087,404	29,400,270
August	3,237,645	3,191,591	3,441,757	3,371,850	3,166,710	3,217,496	3,400,949	3,168,228	2,867,383	29,063,609
September	3,072,723	2,807,222	3,166,599	2,942,925	2,996,901	3,364,148	3,220,056	2,985,491	3,018,941	27,575,006
October	3,261,585	3,362,250	3,333,751	3,182,437	3,125,591	3,346,381	3,789,687	3,196,785	4,462,698	31,061,165
November	6,137,174	6,003,306	6,236,356	6,121,929	6,026,026	6,207,015	6,002,003	6,245,619	5,725,902	54,067,010
December	6,279,737	6,546,678	6,099,560	5,880,670	6,093,514	6,462,079	5,768,374	5,981,613	6,539,476	55,651,701
Grand Total	47,036,182	47,001,715	46,889,767	46,323,490	46,680,590	48,690,205	48,633,350	50,521,603	48,118,161	429,895,063

To create a PivotTable, you must have your data collected in a list. The new Excel 2007 data tables mesh perfectly with PivotTable dynamic views; not only do the data tables have a well-defined column and row structure but the ability to refer to a data table by its name also greatly simplifies PivotTable creation and management.

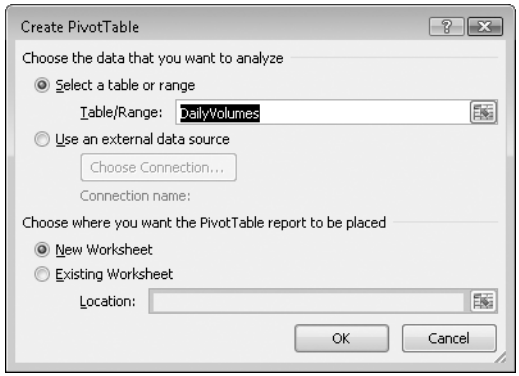
The following graphic shows the first few lines of the data table used to create the PivotTable just shown.



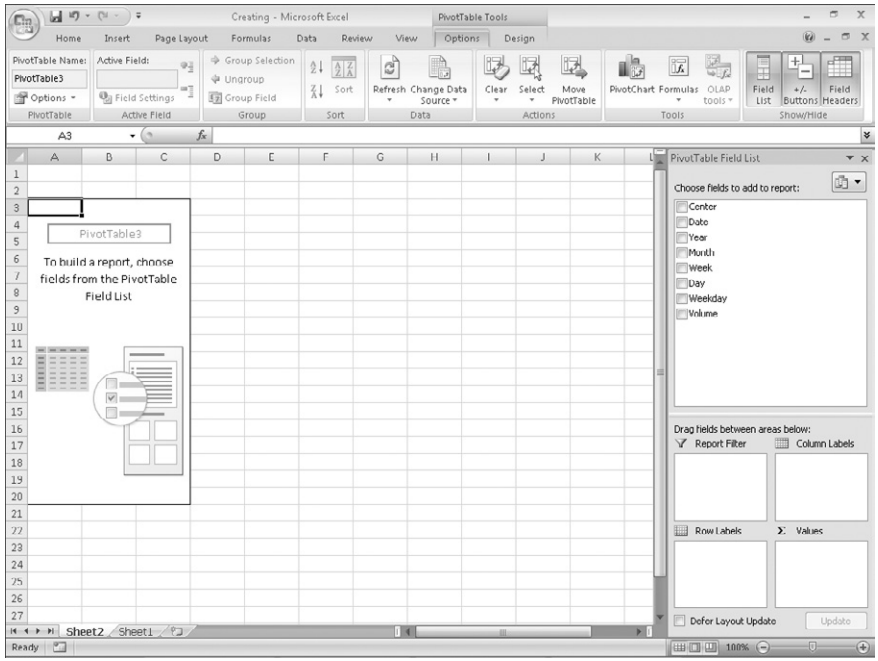
Center	Date	Year	Month	Week	Day	Weekday	Volume
Atlantic	1/1/2007	2007	January	1	1	Monday	120933
Atlantic	1/2/2007	2007	January	1	2	Tuesday	52979
Atlantic	1/3/2007	2007	January	1	3	Wednesday	45683
Atlantic	1/4/2007	2007	January	1	4	Thursday	53152
Atlantic	1/5/2007	2007	January	1	5	Friday	149776
Atlantic	1/6/2007	2007	January	1	6	Saturday	108772
Atlantic	1/7/2007	2007	January	1	7	Sunday	99919
Atlantic	1/8/2007	2007	January	2	8	Monday	138771
Atlantic	1/9/2007	2007	January	2	9	Tuesday	77451
Atlantic	1/10/2007	2007	January	2	10	Wednesday	130536
Atlantic	1/11/2007	2007	January	2	11	Thursday	119809
Atlantic	1/12/2007	2007	January	2	12	Friday	64125
Atlantic	1/13/2007	2007	January	2	13	Saturday	146927
Atlantic	1/14/2007	2007	January	2	14	Sunday	62505
Atlantic	1/15/2007	2007	January	3	15	Monday	56662
Atlantic	1/16/2007	2007	January	3	16	Tuesday	119081
Atlantic	1/17/2007	2007	January	3	17	Wednesday	116136
Atlantic	1/18/2007	2007	January	3	18	Thursday	150629
Atlantic	1/19/2007	2007	January	3	19	Friday	46917
Atlantic	1/20/2007	2007	January	3	20	Saturday	86771
Atlantic	1/21/2007	2007	January	3	21	Sunday	129079
Atlantic	1/22/2007	2007	January	4	22	Monday	82806
Atlantic	1/23/2007	2007	January	4	23	Tuesday	49040
Atlantic	1/24/2007	2007	January	4	24	Wednesday	133663
Atlantic	1/25/2007	2007	January	4	25	Thursday	66235

Notice that each line of the table contains a value representing the Distribution Center, Date, Month, Week, Weekday, Day, and Volume for every day of the years 2006 and 2007. Excel 2007 needs that data when it creates the PivotTable so that it can maintain relationships among the data. If you want to filter your PivotTable so that it shows all package volumes on Thursdays in January, for example, Excel 2007 must be able to identify January 11 as a Thursday.

After you create a data table, you can click any cell in that list, display the Insert tab and then, in the Tables group, click PivotTable to display the Create PivotTable dialog box.

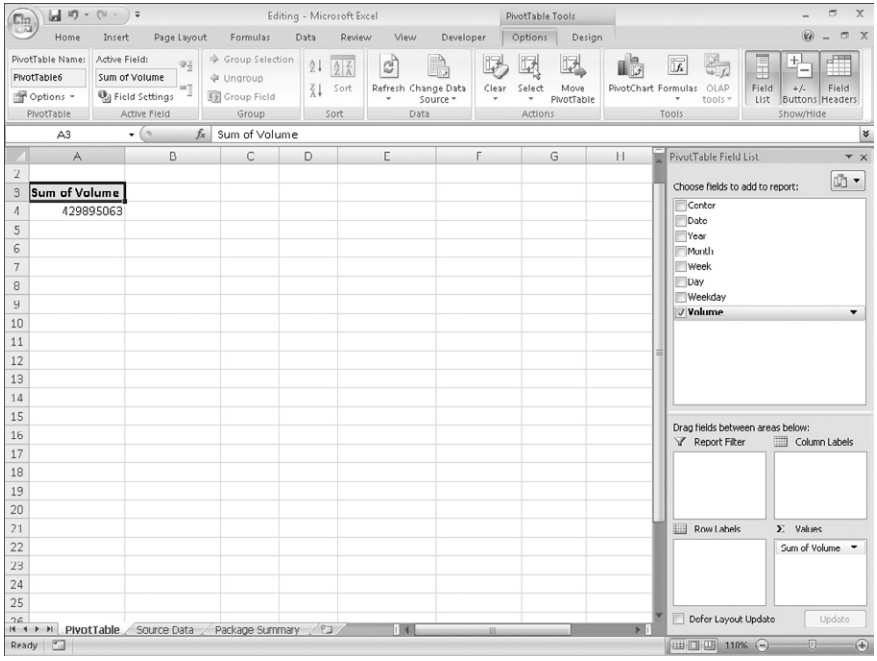


In this dialog box, you verify the data source for your PivotTable and whether you want to create a PivotTable on a new worksheet. After you click OK, Excel 2007 creates a new worksheet and displays the PivotTable Field List task pane.



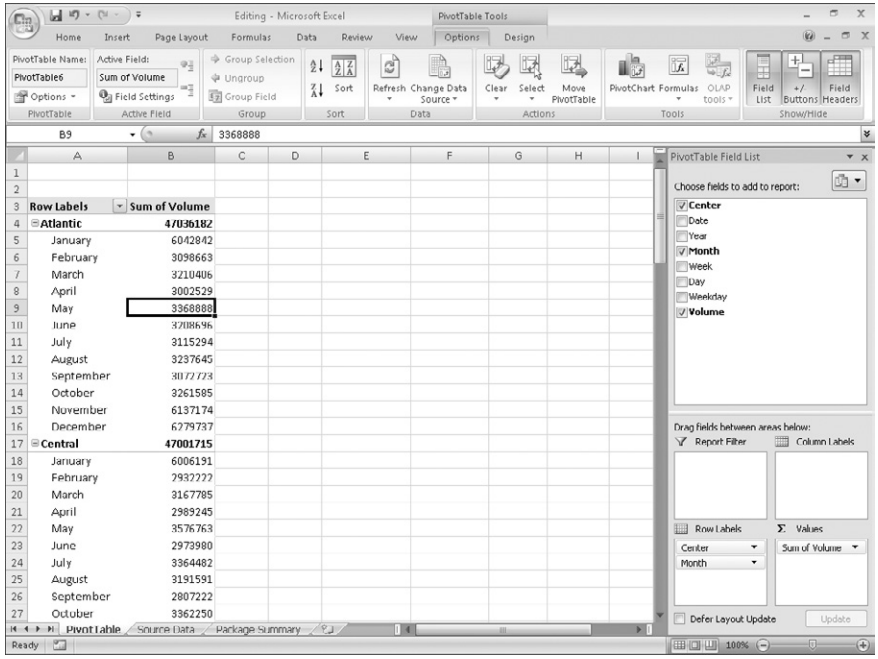
Tip You should always place your PivotTable on its own worksheet to avoid unwanted edits and reduce the number of cells Excel 2007 must track when you rearrange your data. You might not notice a difference with a small data set, but it's noticeable when your table runs more than a few hundred rows.

To assign a *field*, or column in a data list, to an area of the PivotTable, drag the field head from the Choose Fields To Add To Report area at the top of the PivotTable Field List task pane to the Drag Fields Between Areas Below area at the bottom of the task pane. For example, if you drag the Volume field header to the Values area, the PivotTable displays the total of all entries in the Volume column.

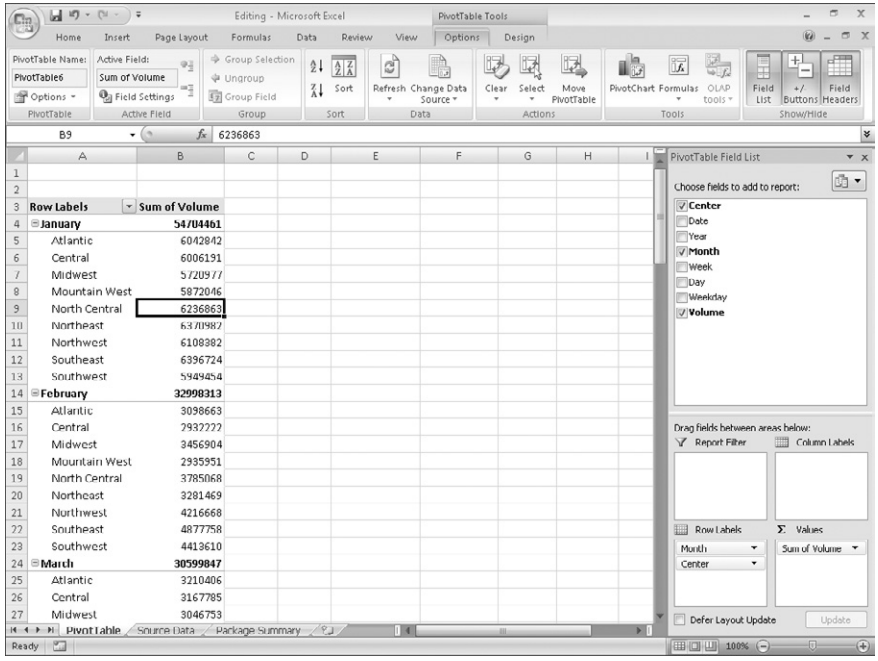


If the PivotTable Field List task pane isn't visible, click any cell in the PivotTable to display it. If you accidentally click the Close button at the upper-right corner of the PivotTable Field List task pane, you can redisplay the task pane by clicking any cell in the PivotTable to display the PivotTable Tools contextual tabs. On the Options contextual tab, in the Show/Hide group, click Field List.

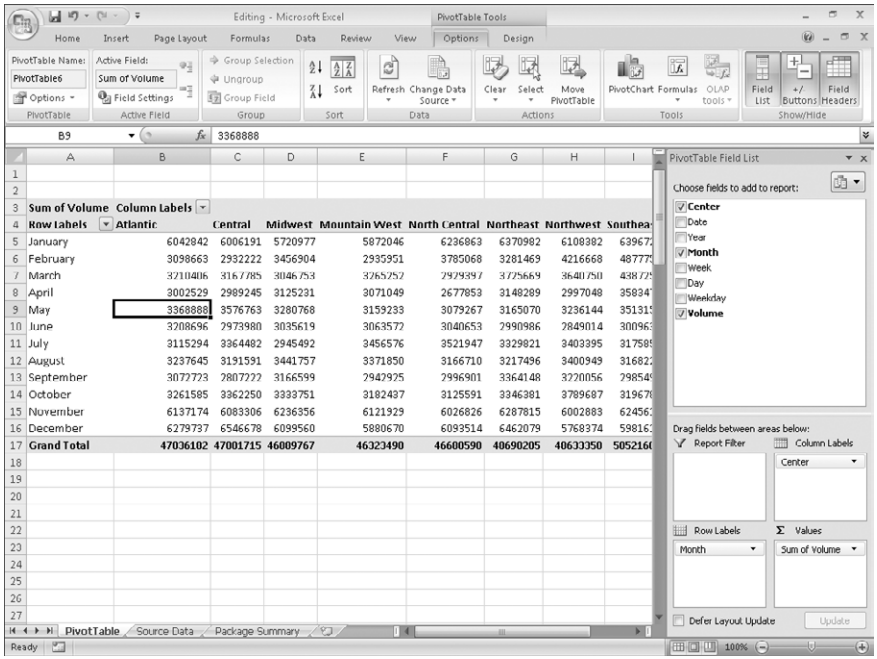
It's important to note that the order in which you enter the fields in the Row Labels and Column Labels areas affects how Excel 2007 organizes the data in your PivotTable. As an example, the following graphic shows a PivotTable that groups the PivotTable rows by distribution center and then by month.



And here is the same PivotTable data, but this time it's organized by month and then by distribution center.



In the preceding examples, all the field headers are in the Row Labels area. If you drag the Center header from the Row Labels area to the Column Labels area, the PivotTable reorganizes (pivots) its data to form this configuration.



To pivot a PivotTable, you drag a field header to a new position in the PivotTable Field List task pane. As you drag the task pane, Excel 2007 displays a blue line in the interior of the target area so you know where the field will appear when you release the left mouse button. If your data set is large or if you based your PivotTable on a data collection on another computer, it might take some time for Excel 2007 to reorganize the PivotTable after a pivot. You can have Excel 2007 delay redrawing the PivotTable by selecting the Defer Layout Update button in the lower-left corner of the PivotTable Field List task pane. When you're ready for Excel 2007 to display the reorganized PivotTable, click Update.

If you expect your PivotTable source data to change, such as when you link to an external database that records shipments or labor hours, ensure that your PivotTable summarizes all the available data. To do that, you can refresh the PivotTable connection to its data source. If Excel 2007 detects new data in the source table, it updates the PivotTable contents accordingly. To refresh your PivotTable, click any cell in the PivotTable and then, on the Options contextual tab, in the Data group, click Refresh.

In this exercise, you will create a PivotTable using data from a table, add fields to the PivotTable, and then pivot the PivotTable.

USE the *Creating* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\PivotTables* folder.

BE SURE TO start Excel 2007 before beginning this exercise.

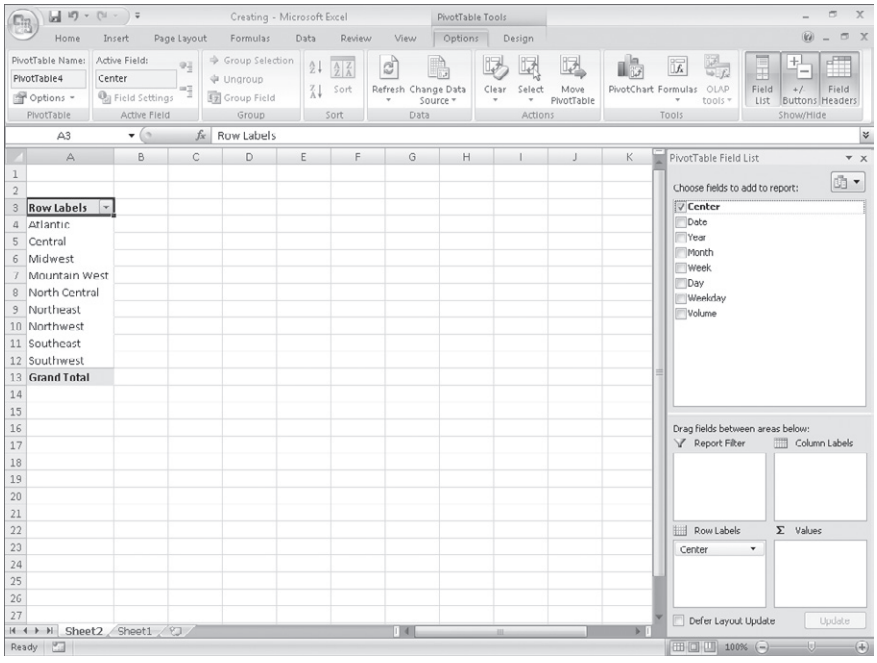
OPEN the *Creating* workbook.

1. Click any cell in the data table.
2. On the **Insert** tab, in the **Tables** group, click **PivotTable**.

   The Create PivotTable dialog box opens.
3. Verify that the **DailyVolumes** table name appears in the **Table/Range** field and that the **New Worksheet** option is selected.
4. Click **OK**.

   Excel 2007 creates a PivotTable on a new worksheet.
5. In the **PivotTable Field List** task pane, drag the **Center** field header to the **Row Labels** area.

   Excel 2007 adds the Center field values to the PivotTable row area.



6. In the **PivotTable Field List** task pane, drag the **Year** field header to the **Column Labels** area.

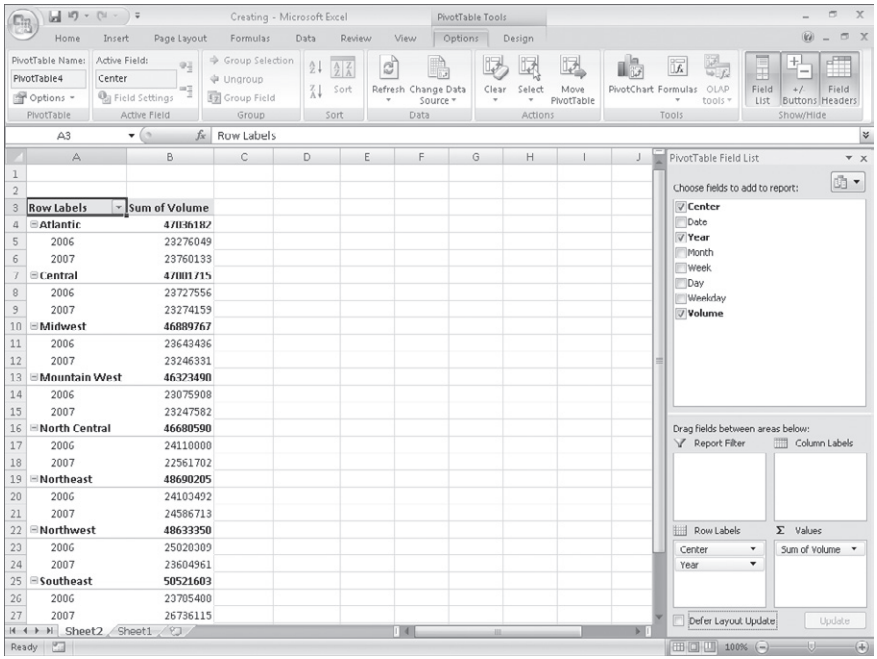
   Excel 2007 adds the Year field values to the PivotTable column area.

7. In the **PivotTable Field List** task pane, drag the **Volume** field header to the **Values** area.

   Excel 2007 fills in the body of the PivotTable with the Volume field values.

8. In the **PivotTable Field List** task pane, in the **Column Labels** area, drag the **Year** field header to the **Row Labels** area, and drop it beneath the **Center** field header.

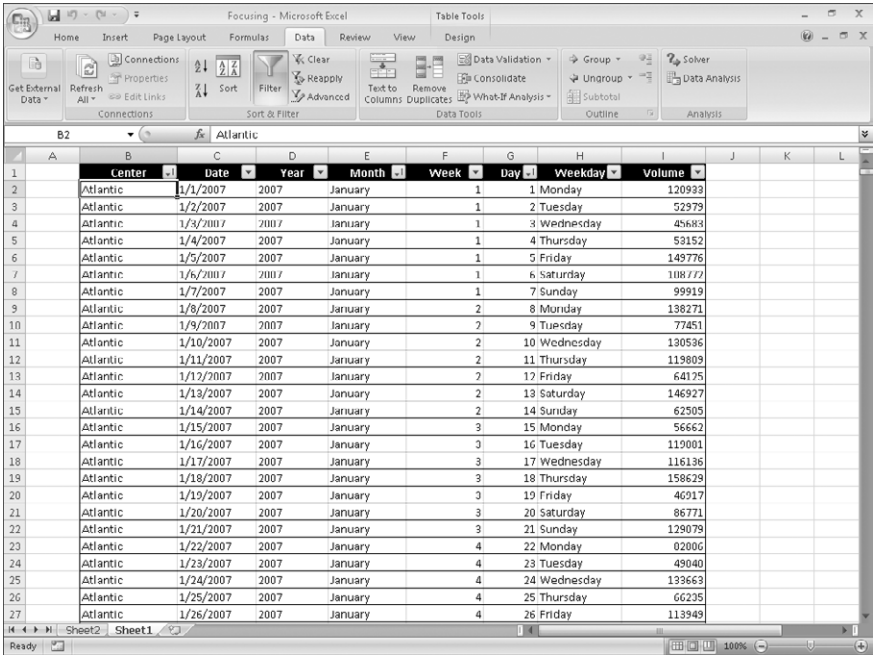
   Excel 2007 changes the PivotTable to reflect the new organization.



CLOSE the *Creating* workbook.

Filtering, Showing, and Hiding PivotTable Data

PivotTables often summarize huge data sets in a relatively small worksheet. The more details you can capture and write to a table, the more flexibility you have in analyzing the data. As an example, consider all the details captured in the following data table.

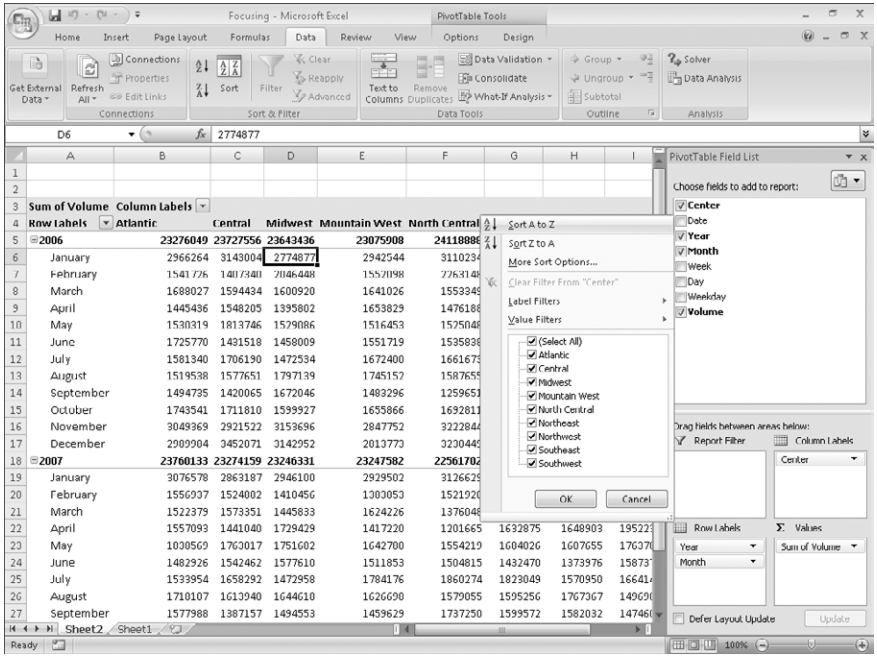


Center	Date	Year	Month	Week	Day	Weekday	Volume
Atlantic	1/1/2007	2007	January	1	1	Monday	120933
Atlantic	1/2/2007	2007	January	1	2	Tuesday	52979
Atlantic	1/3/2007	2007	January	1	3	Wednesday	45683
Atlantic	1/4/2007	2007	January	1	4	Thursday	53152
Atlantic	1/5/2007	2007	January	1	5	Friday	149776
Atlantic	1/6/2007	2007	January	1	6	Saturday	108777
Atlantic	1/7/2007	2007	January	1	7	Sunday	99919
Atlantic	1/8/2007	2007	January	2	8	Monday	138271
Atlantic	1/9/2007	2007	January	2	9	Tuesday	77451
Atlantic	1/10/2007	2007	January	2	10	Wednesday	130536
Atlantic	1/11/2007	2007	January	2	11	Thursday	119809
Atlantic	1/12/2007	2007	January	2	12	Friday	64175
Atlantic	1/13/2007	2007	January	2	13	Saturday	146927
Atlantic	1/14/2007	2007	January	2	14	Sunday	62505
Atlantic	1/15/2007	2007	January	3	15	Monday	56662
Atlantic	1/16/2007	2007	January	3	16	Tuesday	119001
Atlantic	1/17/2007	2007	January	3	17	Wednesday	116136
Atlantic	1/18/2007	2007	January	3	18	Thursday	158629
Atlantic	1/19/2007	2007	January	3	19	Friday	46917
Atlantic	1/20/2007	2007	January	3	20	Saturday	86771
Atlantic	1/21/2007	2007	January	3	21	Sunday	129079
Atlantic	1/22/2007	2007	January	4	22	Monday	02006
Atlantic	1/23/2007	2007	January	4	23	Tuesday	49040
Atlantic	1/24/2007	2007	January	4	24	Wednesday	133663
Atlantic	1/25/2007	2007	January	4	25	Thursday	66235
Atlantic	1/26/2007	2007	January	4	26	Friday	113949

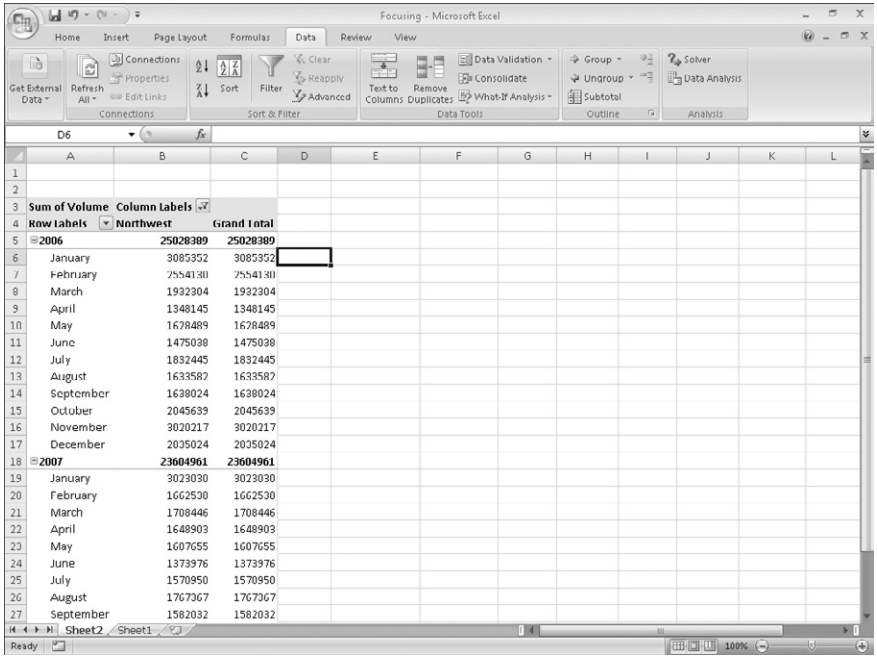
Each line of the table contains a value representing the Distribution Center, Date, Month, Week, Weekday, Day, and Volume for every day of the year. Each column, in turn, contains numerous values: there are nine distribution centers, data from two years, twelve months in a year, seven weekdays, and as many as five weeks and 31 days in a month. Just as you can filter the data that appears in a table, you can filter the data displayed in a PivotTable by selecting which values you want the PivotTable to include.

See Also For more information on filtering an Excel 2007 data table, see "Limiting Data That Appears on Your Screen" in Chapter 6, "Focusing on Specific Data by Using Filters."

To filter a PivotTable based on a field's contents, click the field's header in the Choose Fields To Add To Report area of the PivotTable Field List task pane to display a menu of sorting and filtering options.



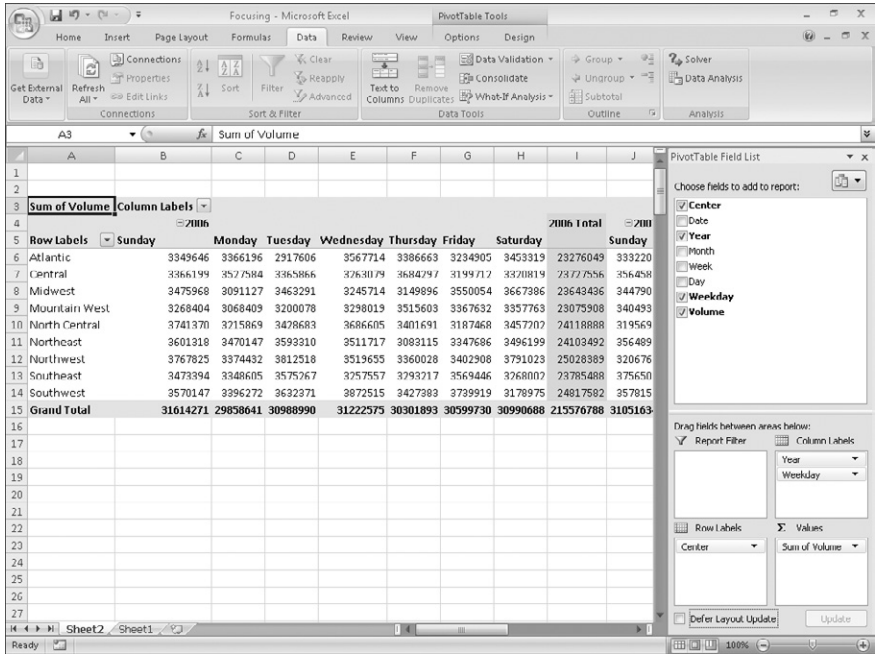
The PivotTable displays data that's related to the values with a checked box next to them. Clicking the Select All check box clears it, which enables you to select the check boxes of the values you want to display. Selecting only the Northwest check box, for example, leads to the following PivotTable configuration.



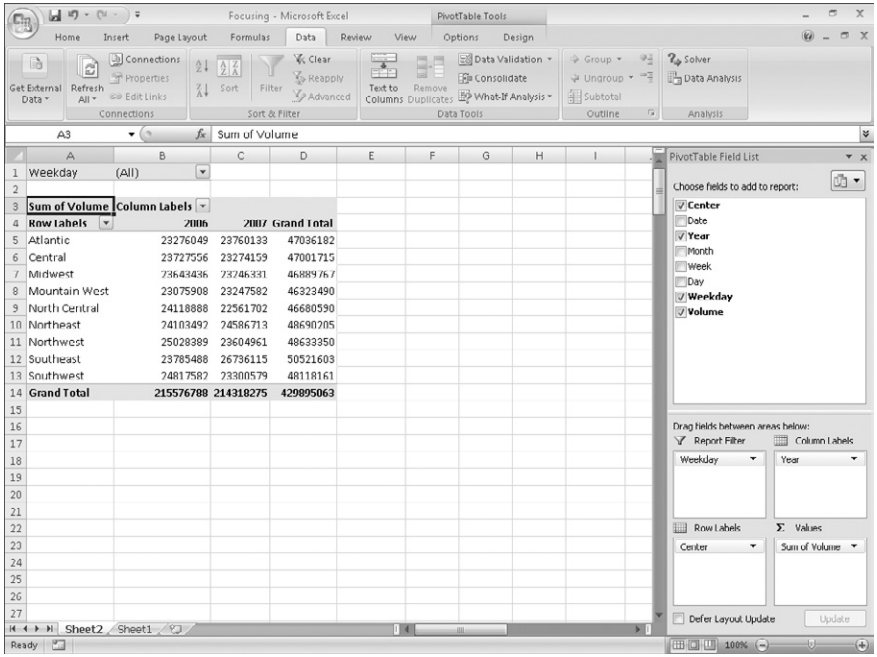
If you'd rather display as much PivotTable data as possible, you can hide the PivotTable Field List task pane and filter the PivotTable by using the filter arrows on the Row Labels and Column Labels headers within the body of the PivotTable. Clicking either of those headers enables you to select a field by which you want to filter; you can then define the filter using the same controls you see when you click a field header in the PivotTable Field List task pane.

Excel 2007 indicates that a PivotTable has filters applied by placing a filter indicator next to the Column Labels or Row Labels header, as appropriate, and the filtered field name in the PivotTable Field List task pane.

So far, all the fields by which we've filtered the PivotTable have changed the organization of the data in the PivotTable. Adding some fields to a PivotTable, however, might create unwanted complexity. For example, you might want to filter a PivotTable by weekday, but adding the Weekday field to the body of the PivotTable expands the table unnecessarily.



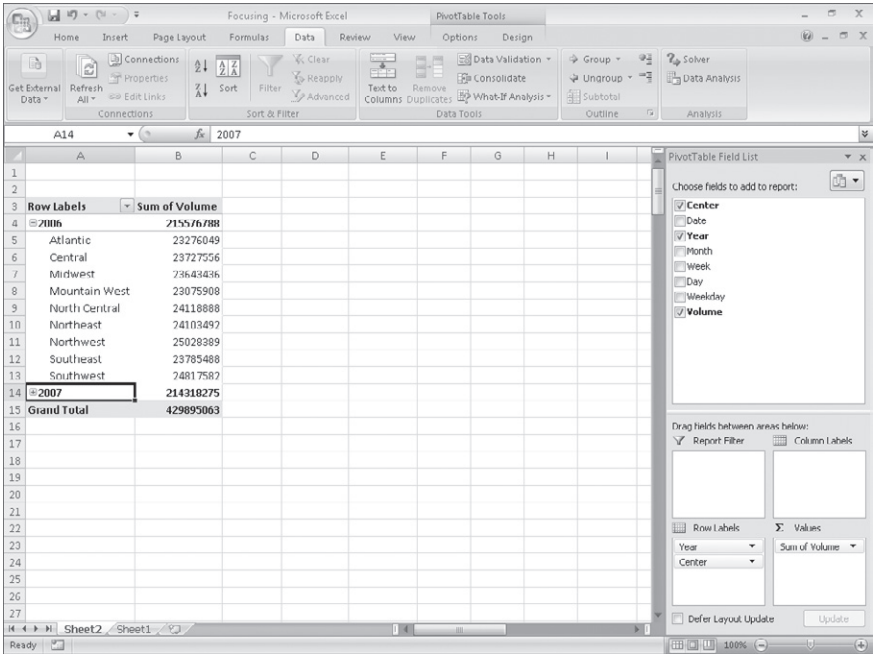
Instead of adding the Weekday field to the Row Labels or Column Labels area, you can drag the field to the Report Filter area near the bottom of the PivotTable Field List task pane. Doing so leaves the body of the PivotTable in the same position, but adds a new area above the PivotTable in its worksheet.



Tip In Excel 2003 and earlier versions, this area was called the Page Field area.

When you click the filter arrow of a field in the Report Filter area, Excel 2007 displays a list of the values in the field. In previous versions of Excel 2007, you could select only one Report Filter value by which to filter a PivotTable; in Excel 2007, selecting the Select Multiple Items check box enables you to filter by more than one value.

Finally, you can filter values in a PivotTable by hiding and collapsing levels of detail within the report. To do that, you click the Hide Detail control (which looks like a box with a minus sign in it) or the Show Detail control (which looks like a box with a plus sign in it) next to a header. For example, you might have your data divided by year; clicking the Show Detail control next to the 2006 year header would display that year's details. Conversely, clicking the 2007 year header Hide Detail control would hide the individual months' values and display only the year's total.



In this exercise, you will focus the data displayed in a PivotTable by creating a filter, by filtering a PivotTable based on the contents of a field in the Report Filters area, and by showing and hiding levels of detail within the body of the PivotTable.

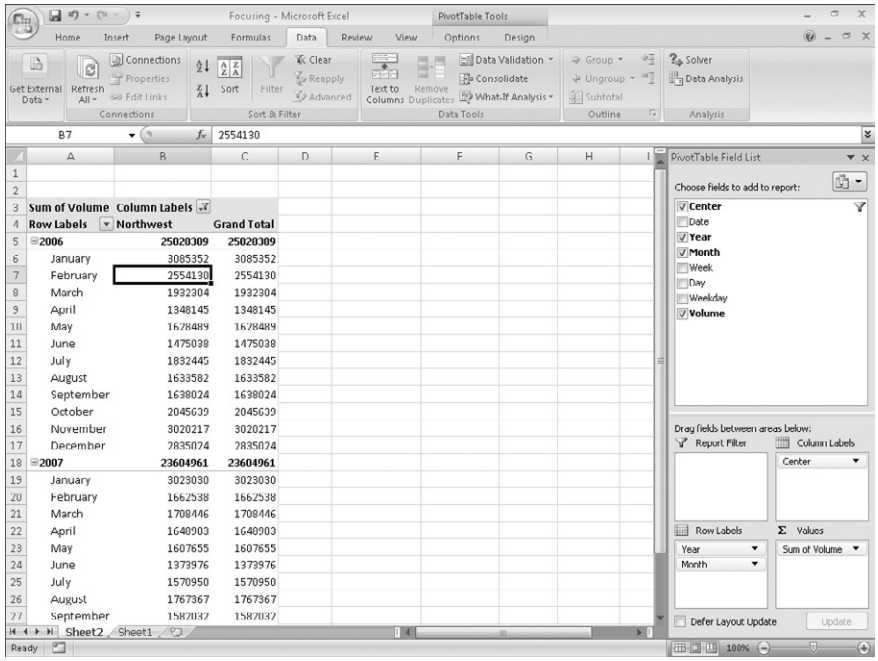
USE the *Focusing* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\PivotTables* folder.

OPEN the *Focusing* workbook.

1. On the PivotTable worksheet, click any cell in the PivotTable.
2. In the **PivotTable Field List** task pane's **Choose fields to add to report** section, click the **Center** field header, click the **Center** field filter arrow, and then clear the **(Select All)** check box.

   Excel 2007 clears all the check boxes in the filter menu.
3. Select the **Northwest** check box, and then click **OK**.

   Excel 2007 filters the PivotTable.



Undo

4. On the **Quick Access Toolbar**, click the **Undo** button.

   Excel 2007 removes the filter.

5. In the **PivotTable Field List** task pane, drag the **Weekday** field header from the **Choose fields to add to report** section to the **Report Filter** area in the **Drag fields between areas below** section.

Close

6. In the **PivotTable Field List** task pane, click the **Close** button.

   The PivotTable Field List task pane closes.

7. In the body of the worksheet, click the **Weekday** filter arrow, and then select the **Select Multiple Items** check box.

   Excel 2007 adds check boxes beside the items in the Weekday field filter list.

8. Clear the **All** check box.

   Excel 2007 clears each check box in the list.

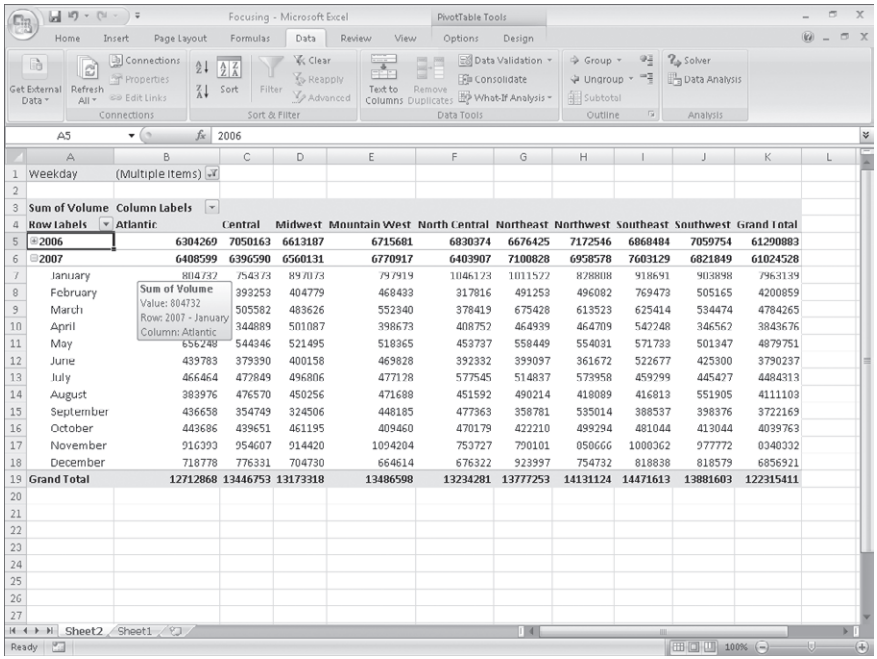
9. Select the **Tuesday** and **Thursday** check boxes, and then click **OK**.

Excel 2007 filters the PivotTable, summarizing only those values from Tuesdays and Thursdays.

Hide Detail

10. In cell A5, click the **Hide Detail** button.

Excel 2007 collapses rows that contain data from the year 2006, leaving only the subtotal row that summarizes that year's data.

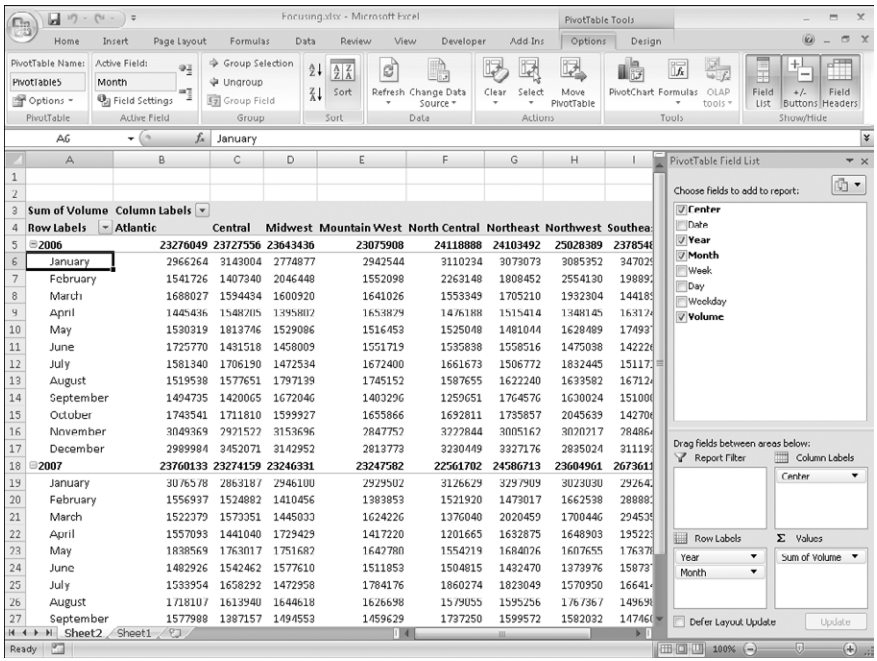


Weekday	(Multiple Items)										
Sum of Volume	Column Labels										
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total	
2006	6304269	7050163	6613187	6715681	6830374	6676425	7172546	6868484	7059754	61290883	
2007	6408599	6396590	6560131	6770917	6403907	7100828	6958578	7603129	6821849	61024528	
January	804732	754373	897073	797919	1046123	1011522	828808	918691	903898	7963139	
February	393253	404779	468433	317816	491253	496082	769473	505165	4200859		
March	505582	483626	552340	378419	675428	613523	625414	534474	4784265		
April	344889	501087	398673	408752	464939	464709	542748	346562	3843676		
May	656249	544346	521495	518365	453737	559449	554031	571733	501347	4879751	
June	439783	379390	400158	469828	392332	399097	361672	522677	425300	3790237	
July	466464	472849	496806	477128	577545	514837	573958	459799	445427	4484313	
August	383976	476570	450256	471688	451592	490214	418089	416813	551905	4111103	
September	436658	354749	324506	448185	477363	358781	535014	388537	398376	3722169	
October	443686	439651	461195	409460	470179	422210	499294	481044	413044	4039763	
November	916393	954607	914420	1094204	753727	790101	950666	1000362	977772	9340332	
December	718778	776331	704730	664614	676322	923997	754732	818838	818579	6856921	
Grand Total	12712868	13446753	13173318	13486598	13234281	13777253	14131124	14471613	13881603	122315411	

CLOSE the *Focusing* workbook.

Editing PivotTables

After you create a PivotTable, you can rename it, edit it to control how it summarizes your data, and use the PivotTable cell data in a formula. As an example, consider the following PivotTable.

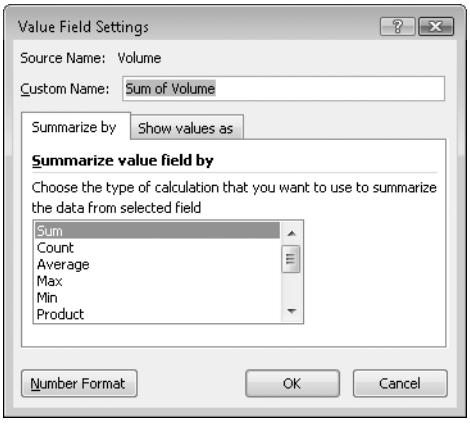


Excel 2007 displays the PivotTable name on the Options contextual tab, in the PivotTable Options group. The name PivotTable5 doesn't help you or your colleagues understand the data the PivotTable contains, particularly if you use the PivotTable data in a formula on another worksheet. To give your PivotTable a more descriptive name, click any cell in the PivotTable and then, on the Options contextual tab, in the PivotTable Options group, type the new name in the PivotTable Name field.

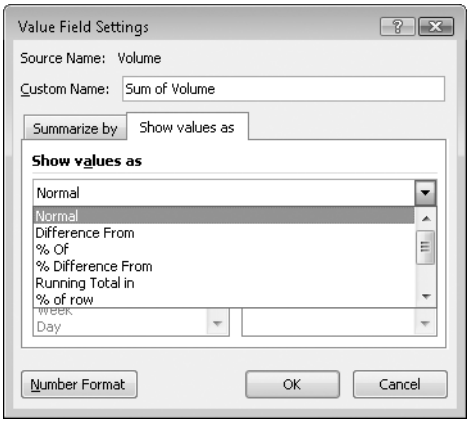
When you create a PivotTable with at least one field in the Row Labels area and one field in the Column Labels area of the PivotTable Field List task pane, Excel 2007 adds a grand total row and column to summarize your data. You can control how and where these summary rows and columns appear by clicking any PivotTable cell and then, in the Design contextual tab, in the Layout group, clicking either the Subtotals or Grand Totals button and selecting the desired layout.

After you create a PivotTable, Excel 2007 determines the best way to summarize the data in the column you assign to the Values area. For numeric data, for example, Excel 2007 uses the *Sum* function. If you want to change a PivotTable summary function, right-click

any data cell in the PivotTable values area, point to Summarize Data By, and then click the desired operation. If you want to use a function other than those listed, click More Options to display the Value Field Settings dialog box. On the Summarize By tab of the dialog box, you can choose the summary operation you want to use.



You can also change how the PivotTable displays the data in the Values area. On the Show Values As tab of the Value Field Settings dialog box, you can select whether to display each cell's percentage contribution to its column's total, its row's total, or its contribution to the total of all values displayed in the PivotTable.



You can create a link from a cell in another workbook to a cell in your PivotTable. To create a link, you click the cell you want to link to your PivotTable, type an equal sign, and then click the cell in the PivotTable with the data you want linked. A *GETPIVOTDATA* formula appears in the formula box of the worksheet with the PivotTable. When you press Enter, the contents of the PivotTable cell appear in the linked cell.

In this exercise, you will rename a PivotTable, specify whether subtotal and grand total rows will appear, change the PivotTable summary function, display each cell's contribution to its row's total, and create a link to a PivotTable cell.

USE the *Editing* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\PivotTables* folder.

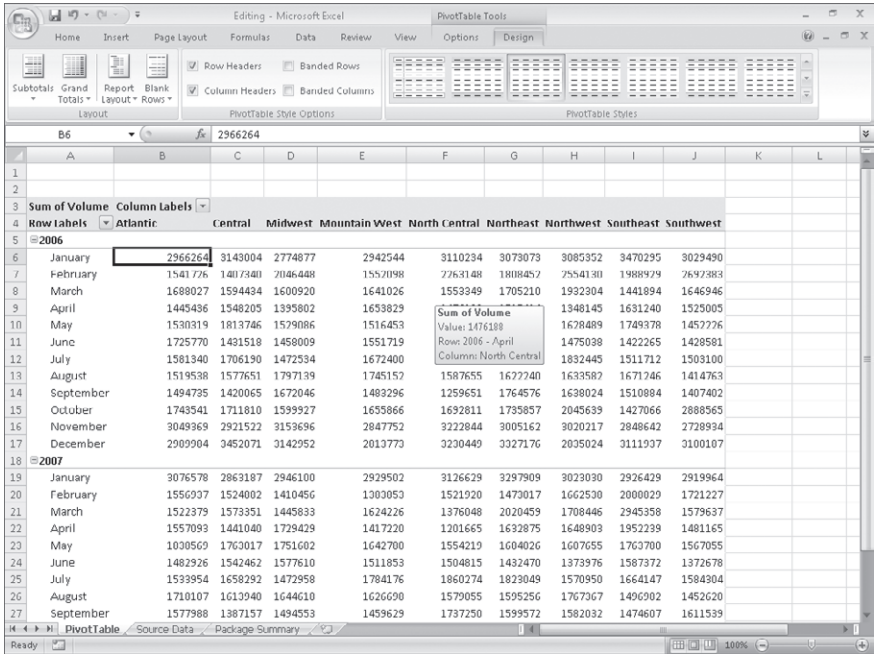
OPEN the *Editing* workbook.

1. On the PivotTable worksheet, click any cell in the PivotTable.
2. On the **Options** contextual tab, in the **PivotTable** group, in the **PivotTable Name** field, type **VolumeSummary**.

   Excel 2007 renames the PivotTable.
3. On the **Design** contextual tab, in the **Layout** group, click **Subtotals**, and then click **Do Not Show Subtotals**.

   Excel 2007 removes the subtotal rows from the PivotTable.
4. On the **Design** contextual tab, in the **Layout** group, click **Grand Totals**, and then click **On for columns only**.

   Excel 2007 removes the cells that calculate each row's grand total.



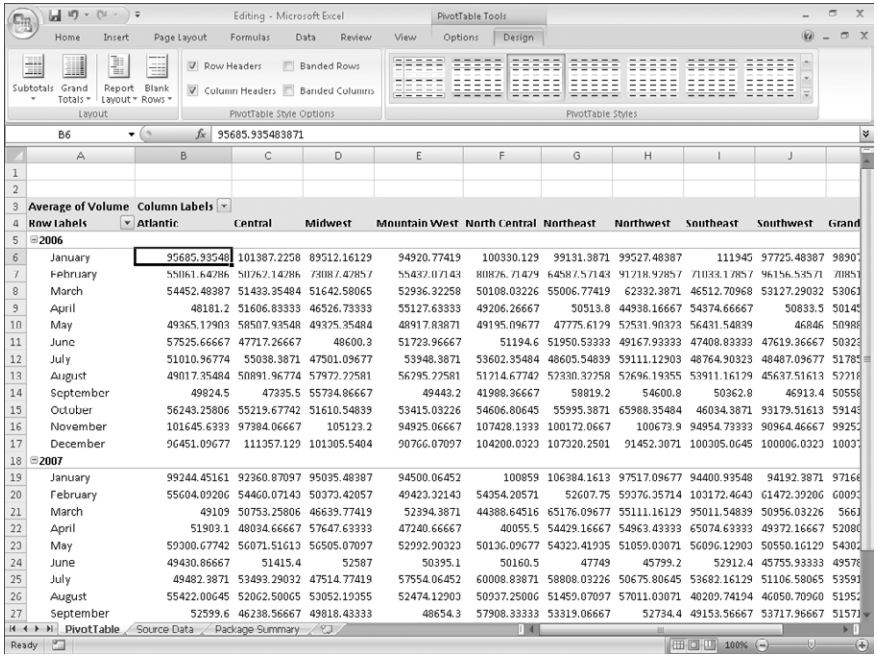
Undo

5. On the **Quick Access Toolbar**, click the **Undo** button.

   Excel 2007 reverses the last change.

6. Right-click any data cell in the PivotTable, point to **Summarize Data By**, and then click **Average**.

   Excel 2007 changes the Value field summary operation.



7. On the **Quick Access Toolbar**, click the **Undo** button.

   Excel 2007 reverses the last change.

8. Right-click any data cell in the PivotTable, and then click **Value Field Settings**.

   The Value Field Settings dialog box opens.

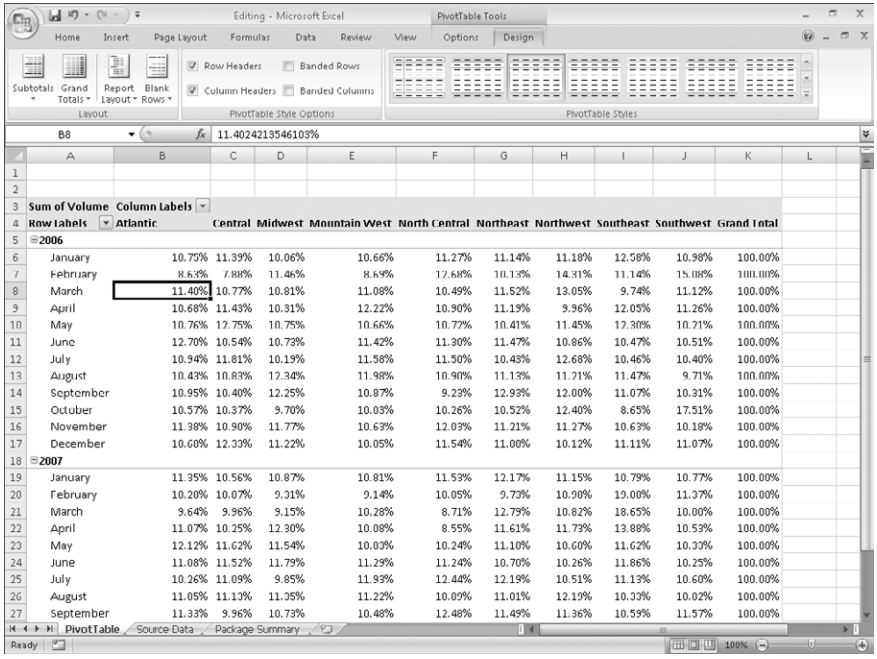
9. Click the **Show values as** tab.

   The Show Values As tab appears.

10. In the **Show values as** list, click **% of row**.

11. Click **OK**.

    Excel 2007 changes how it calculates the values in the PivotTable.



12. On the **Quick Access Toolbar**, click the **Undo** button.

Excel 2007 reverses the last change.

13. On the **Design** tab, in the **Layout** group, click **Subtotals**, and then click **Show All Subtotals at Bottom of Group**.

Excel 2007 displays subtotals in the workbook.

14. Click the **Package Summary** sheet tab.

The Package Summary worksheet appears.

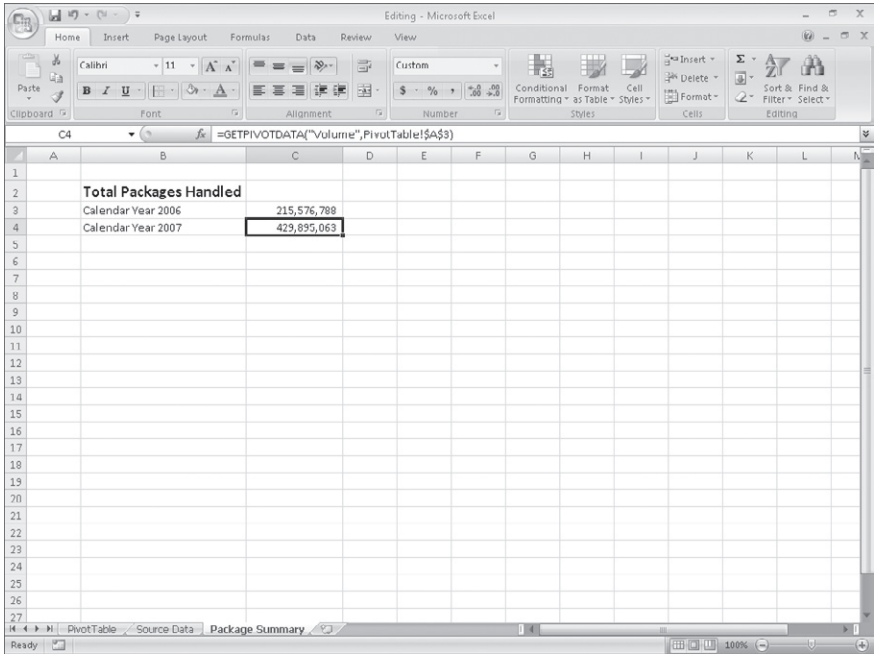
15. In cell C4, type =, but do not press Enter.

16. Click the **PivotTable** sheet tab.

The PivotTable worksheet appears.

17. Click cell K32, and then press Enter.

Excel 2007 creates the formula =*GETPIVOTDATA("Volume",PivotTable!$A$3,"Year", 2007)* in cell C4.



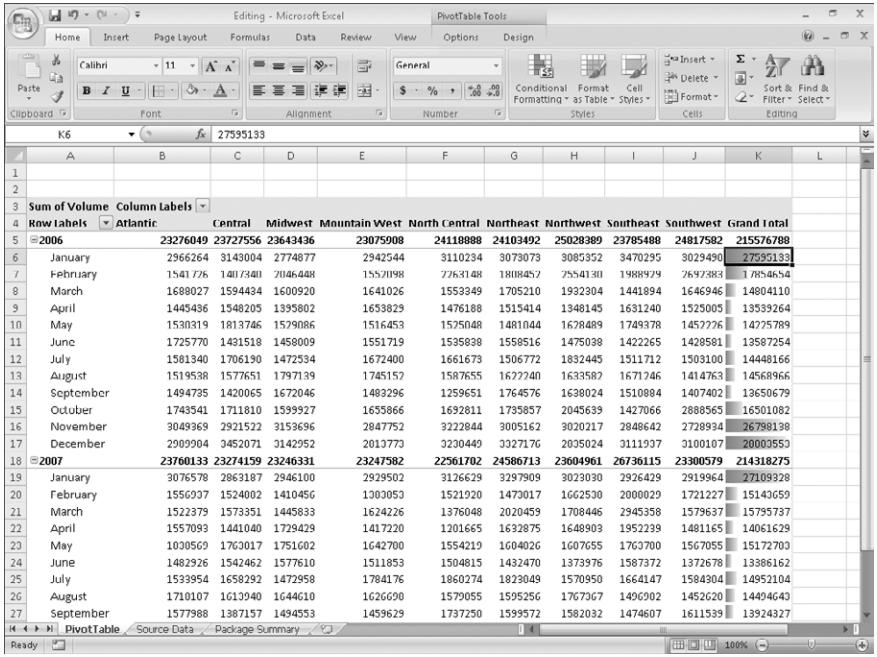
CLOSE the *Editing* workbook.

Formatting PivotTables

PivotTables are the ideal tools for summarizing and examining large data tables, even those containing in excess of 10 or even 100,000 rows. Even though PivotTables often end up as compact summaries, you should do everything you can to make your data more comprehensible. One way to improve your data's readability is to apply a number format to the PivotTable Values field. To apply a number format to a field, right-click any cell in the field, and then click Number Format to display the Format Cells dialog box. Select or define the format you want to apply, and then click OK to enact the change.

See Also For more information on selecting and defining cell formats by using the Format Cells dialog box, see "Formatting Cells" in Chapter 5, "Changing Workbook Appearance."

Analysts often use PivotTables to summarize and examine organizational data with an eye to making important decisions about the company. For example, chief operating officer Jenny Lysaker might examine monthly package volumes handled by Consolidated Messenger and notice that there's a surge in package volume during the winter months in the United States.



Sum of Volume	Column Labels									
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
2006	23276049	23727556	23643436	23075908	24118888	24103492	25028389	23785488	24817582	215576788
January	2966264	3143004	2774877	2942544	3110234	3073073	3085352	3470295	3029490	27595133
February	1541776	1407340	7046448	1550098	7263148	1808457	7554130	1988929	2692383	17846654
March	1688027	1594434	1600920	1641026	1553349	1705210	1932304	1441894	1646946	14804110
April	1445436	1548205	1395802	1653829	1476188	1515414	1348145	1631240	1525005	13539264
May	1530319	1813746	1529086	1516453	1525048	1481044	1628489	1749378	1452226	14225789
June	1725770	1431518	1458009	1551719	1535838	1558516	1475038	1422265	1428581	13587254
July	1581340	1706190	1472534	1672400	1661673	1506772	1832445	1511712	1503100	14448166
August	1519538	1577651	1797139	1745157	1587655	1622240	1633582	1671246	1414763	14568966
September	1494735	1420065	1672046	1483296	1259651	1764576	1638024	1510884	1407402	13650679
October	1743541	1711810	1599327	1655866	1692811	1735857	2045639	1427066	2888565	16501082
November	3049369	2921522	3153696	2847752	3222844	3005162	3020217	2848642	2728934	26798138
December	2909904	3452071	3142952	2013773	3230449	3327176	2035024	3111937	3100107	26003553
2007	23760133	23274159	23246331	23247582	22561702	24586713	23604961	26736115	23300579	214318275
January	3076578	2863187	2946100	2929502	3126629	3297909	3023030	2926429	2919964	27109328
February	1556937	1524002	1410456	1300353	1521920	1473017	1662530	2000029	1721227	15143659
March	1522379	1573351	1445833	1624226	1376048	2020459	1708446	2945358	1579637	15795737
April	1557093	1441040	1729429	1417220	1201665	1632875	1648903	1952239	1481165	14061629
May	1030569	1763017	1751602	1642700	1554219	1604026	1607655	1763700	1567055	15172703
June	1482926	1542462	1577610	1511853	1504815	1432470	1373976	1587372	1372678	13386162
July	1533954	1658292	1472958	1784176	1860274	1823049	1570950	1664147	1584304	14952104
August	1710107	1613940	1644610	1626690	1579055	1595256	1767067	1496902	1452620	14404643
September	1577988	1387157	1494553	1459629	1737250	1599572	1582032	1474607	1611539	13924327

Excel 2007 extends the capabilities of your PivotTables by enabling you to apply a conditional format to the PivotTable cells. What's more, you can select whether to apply the conditional format to every cell in the Values area, to every cell at the same level as the selected cell (that is, a regular data cell, a subtotal cell, or a grand total cell) or to every cell that contains or draws its values from the selected cell's field (such as the Volume field in the previous example).

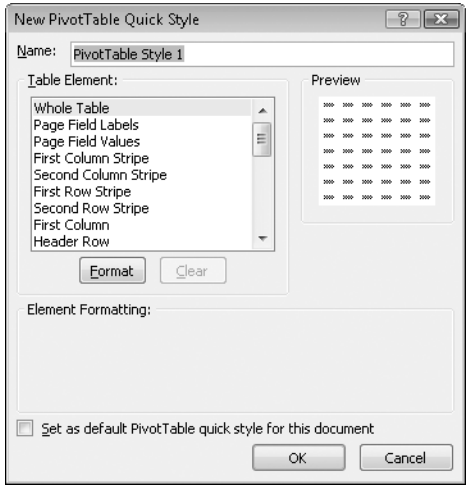
To apply a conditional format to a PivotTable field, click a cell in the Values area. On the Home tab, in the Styles group, click Conditional Formatting, and then create the desired conditional format. After you do, Excel 2007 displays a Formatting Options smart tag, which offers three options on how to apply the conditional format:

- Selected cells, which applies the conditional format to the selected cells only
- All cells showing *Sum of field_name* values, which applies the conditional format to every cell in the data area, regardless of whether the cell is in the data area, a subtotal row or column, or a grand total row or column
- All cells showing *Sum of field_name* values for fields, which applies the conditional format to every cell at the same level (for example, data cell, subtotal, or grand total) as the selected cells

See Also **For more information on creating conditional formats, see "Changing the Appearance of Data Based on Its Value" in Chapter 5.**

In Excel 2003 and earlier versions of the program, you were limited to a small number of formatting styles, called autoformats, which you could apply to a PivotTable. In Excel 2007, you can take full advantage of the Microsoft Office system enhanced formatting capabilities to apply existing formats to your PivotTables. Just as you can create data table formats, you can also create your own PivotTable formats to match your organization's desired color scheme.

To apply a PivotTable style, click any cell in the PivotTable and then, on the Design contextual tab, in the PivotTable Styles group, click the gallery item representing the style you want to apply. If you want to create your own PivotTable style, click the More button in the PivotTable Styles gallery (in the lower-right corner of the gallery), and then click New PivotTable Style to display the New PivotTable QuickStyle dialog box.



Type a name for the style in the Name field, click the first table element you want to customize, and then click Format. Use the controls in the Format Cells dialog box to change the element's appearance. After you click OK to close the Format Cells dialog box, the New PivotTable Quick Style dialog box Preview pane displays the style's appearance. If you want Excel 2007 to use the style by default, select the Set As Default PivotTable Quick Style For This Document check box. After you finish creating your formats, click OK to close the New PivotTable Quick Style dialog box and save your style.

The Design contextual tab contains many other tools you can use to format your PivotTable, but one of the most useful is the Banded Columns check box, which you can find in the PivotTable Style Options group. If you select a PivotTable style that offers banded rows as an option, selecting the Banded Rows check box turns banding on. If you prefer not to have Excel 2007 band the rows in your PivotTable, clearing the check box turns banding off.

In this exercise, you will apply a number format to a PivotTable values field, apply a PivotTable style, create your own PivotTable style, give your PivotTable banded rows, and apply a conditional format to a PivotTable.

USE the *Formatting* workbook. This practice file is located in the *Documents\Microsoft Press\Excel2007SBS\PivotTables* folder.

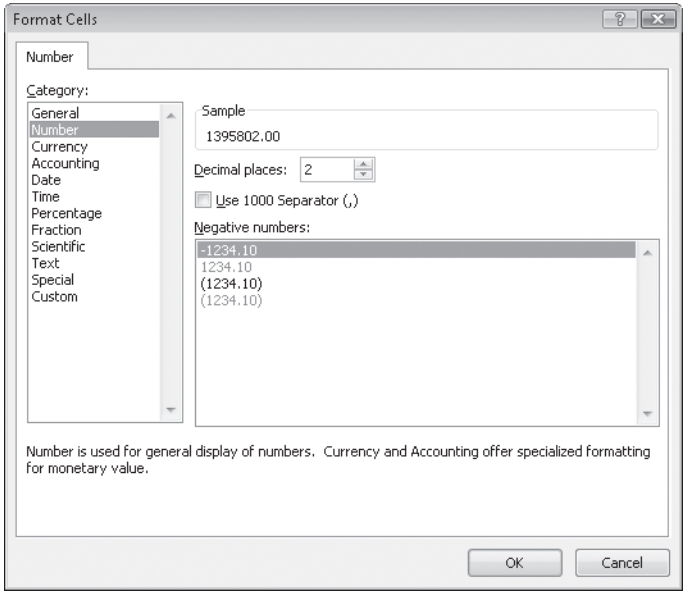
OPEN the *Formatting* workbook.

1. On the PivotTable worksheet, right-click any data cell, and then click **Number Format**.

   The Format Cells dialog box opens.

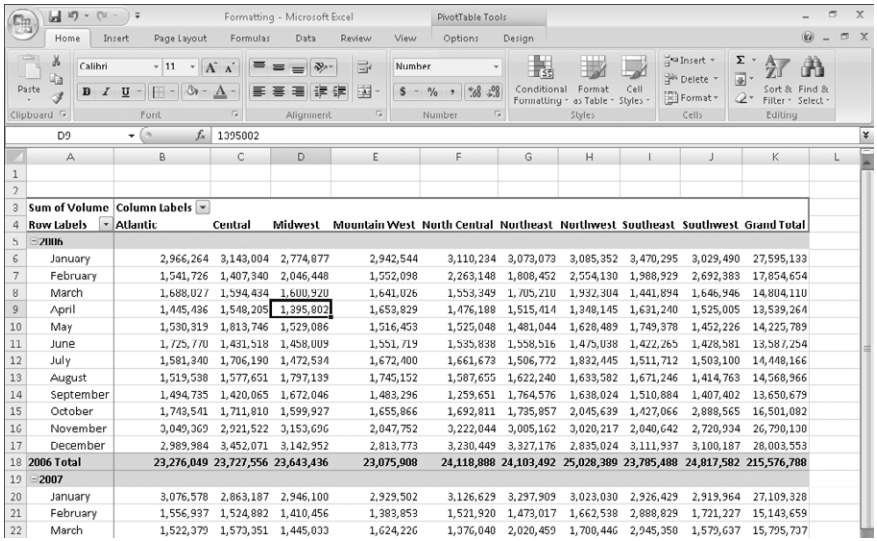
2. In the **Category** list, click **Number**.

   The Number tab page opens.



3. In the **Decimal places** field, type **0**.
4. Select the **Use 1000 Separator (,)** check box.
5. Click **OK**.

   Excel 2007 reformats your PivotTable data.

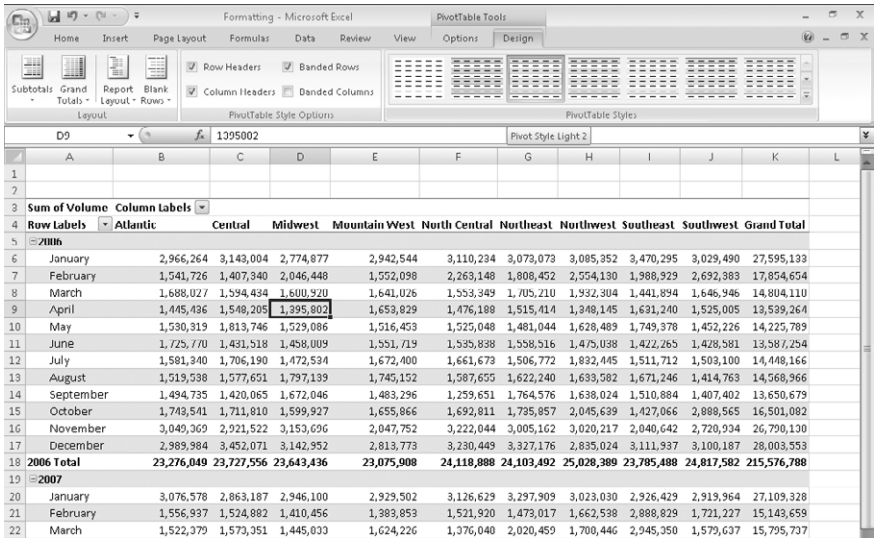


Sum of Volume	Column Labels									
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
2006										
January	2,966,264	3,143,004	2,774,877	2,942,544	3,110,234	3,073,073	3,085,352	3,470,295	3,029,490	27,595,133
February	1,541,726	1,407,340	2,046,448	1,552,098	2,263,148	1,808,452	2,554,130	1,988,929	2,692,383	17,854,654
March	1,688,027	1,594,434	1,600,920	1,641,026	1,553,349	1,705,210	1,932,304	1,441,894	1,646,946	14,804,110
April	1,445,436	1,548,205	1,395,802	1,653,829	1,476,188	1,515,414	1,348,145	1,631,240	1,525,005	13,539,264
May	1,530,319	1,813,746	1,529,086	1,516,453	1,525,048	1,481,044	1,628,489	1,749,378	1,452,226	14,225,789
June	1,725,770	1,431,518	1,458,009	1,551,719	1,535,838	1,558,516	1,475,038	1,422,265	1,428,581	13,587,254
July	1,581,340	1,706,190	1,472,534	1,672,400	1,661,673	1,506,772	1,832,445	1,511,712	1,503,100	14,448,166
August	1,519,538	1,577,651	1,797,139	1,745,152	1,587,655	1,622,240	1,633,582	1,671,246	1,414,763	14,568,966
September	1,494,735	1,420,065	1,672,046	1,483,296	1,259,651	1,764,576	1,638,024	1,510,884	1,407,402	13,650,679
October	1,743,541	1,711,810	1,599,927	1,655,866	1,692,811	1,735,857	2,045,639	1,427,066	2,888,565	16,501,082
November	3,049,369	2,921,522	3,153,696	2,047,752	3,222,044	3,005,162	3,020,217	2,040,642	2,720,934	26,790,130
December	2,989,984	3,452,071	3,142,952	2,813,773	3,230,449	3,327,176	2,835,024	3,111,937	3,100,187	28,003,553
2006 Total	**23,276,049**	**23,727,556**	**23,643,436**	**23,075,908**	**24,118,888**	**24,103,492**	**25,028,389**	**23,785,488**	**24,817,582**	**215,576,788**
2007										
January	3,076,578	2,863,187	2,946,100	2,929,502	3,126,629	3,297,909	3,023,030	2,926,429	2,919,964	27,109,328
February	1,556,937	1,524,882	1,410,456	1,383,853	1,521,920	1,473,017	1,662,538	2,888,829	1,721,227	15,143,659
March	1,522,379	1,573,351	1,445,033	1,624,226	1,376,040	2,020,459	1,700,446	2,945,350	1,579,637	15,795,737

6. If necessary, on the **Design** contextual tab, in the **PivotTable Style Options** group, select the **Banded Rows** check box.

7. On the **Design** contextual tab, in the **PivotTable Styles** group, click the third style from the left (when you point to it, Excel 2007 displays a ScreenTip that reads **Pivot Style Light 2**).

   Excel 2007 applies the PivotTable style.



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July	1,581,340	1,706,190	1,472,534	1,672,400	1,661,673	1,506,772	1,832,445	1,511,712	1,503,100	14,448,166
August	1,519,538	1,577,651	1,797,139	1,745,152	1,587,655	1,622,240	1,633,582	1,671,246	1,414,763	14,568,966
September	1,494,735	1,420,065	1,672,046	1,483,296	1,259,651	1,764,576	1,638,024	1,510,884	1,407,402	13,650,679
October	1,743,541	1,711,810	1,599,927	1,655,866	1,692,811	1,735,857	2,045,639	1,427,066	2,888,565	16,501,082
November	3,049,369	2,921,522	3,153,696	2,047,752	3,222,044	3,005,162	3,020,217	2,040,642	2,720,934	26,790,130
December	2,989,984	3,452,071	3,142,952	2,813,773	3,230,449	3,327,176	2,835,024	3,111,937	3,100,187	28,003,553
2006 Total	**23,276,049**	**23,727,556**	**23,643,436**	**23,075,908**	**24,118,888**	**24,103,492**	**25,028,389**	**23,785,488**	**24,817,582**	**215,576,788**
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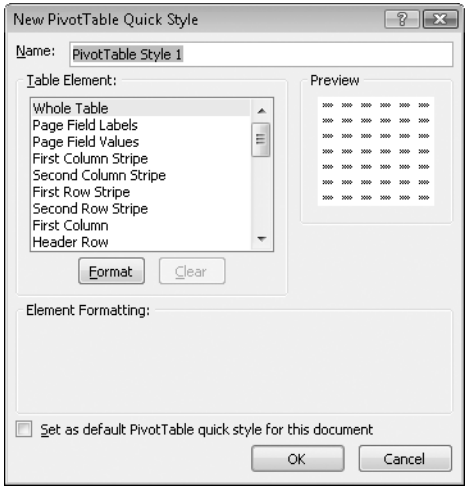
February	1,556,937	1,524,882	1,410,456	1,383,853	1,521,920	1,473,017	1,662,538	2,888,829	1,721,227	15,143,659
March	1,522,379	1,573,351	1,445,033	1,624,226	1,376,040	2,020,459	1,700,446	2,945,350	1,579,637	15,795,737

8. In the lower-right corner of the **PivotTable Styles** gallery, click the **More** button.

   The gallery expands.

9. Click **New PivotTable Style**.

   The New PivotTable Quick Style dialog box opens.



10. In the **Name** field, type Custom Style 1.
11. In the **Table Element** list, click **Header Row**, and then click **Format**.

    The Format Cells dialog box opens.

12. On the **Font** tab, in the **Color** list, click the white square.
13. On the **Border** tab, in the **Presets** area, click **Outline**.
14. On the **Fill** tab, in the **Background Color** area, click the purple square at the lower-right corner of the color palette.
15. Click **OK**.

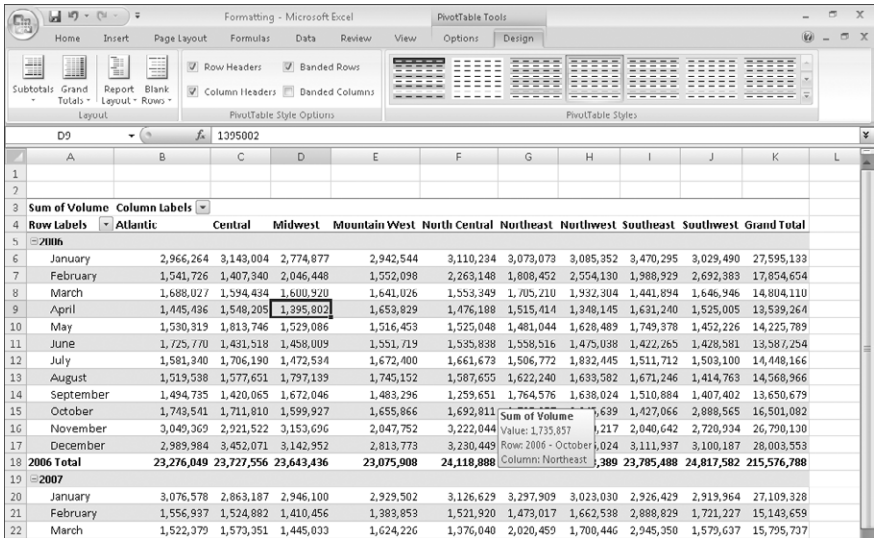
    The Format Cells dialog box closes, and the style change appears in the Preview pane of the New PivotTable Quick Style dialog box.

16. In the **Table Element** list, click **Second Row Stripe**, and then click **Format**.

    The Format Cells dialog box opens.

17. On the **Fill** tab, in the middle part of the **Background Color** section, click the eighth square in the second row (it's a light, dusty purple).
18. Click **OK** twice.

    The Format Cells dialog box closes, and your format appears in the PivotTable Styles gallery.

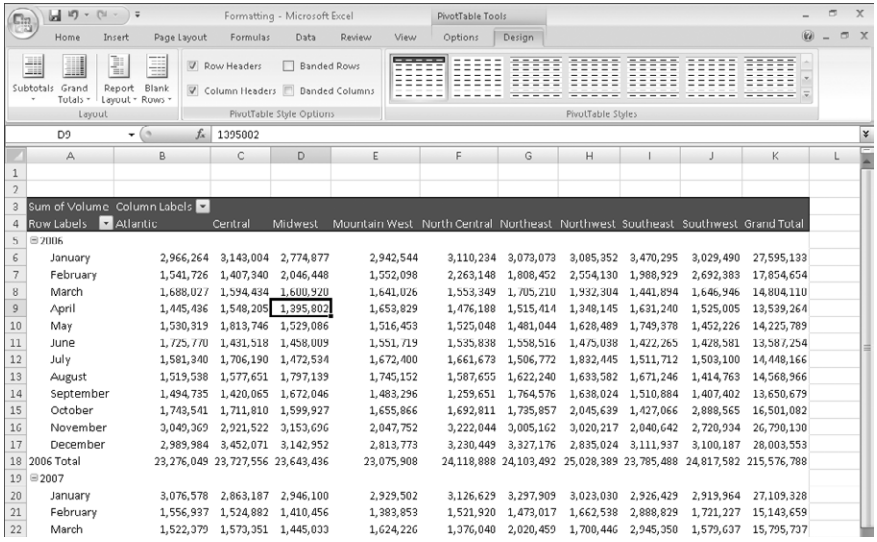


19. Click the new style.

Excel 2007 formats your PivotTable using your custom PivotTable style.

20. On the **Design** contextual tab, in the **PivotTable Style Options** group, clear the **Banded Rows** check box.

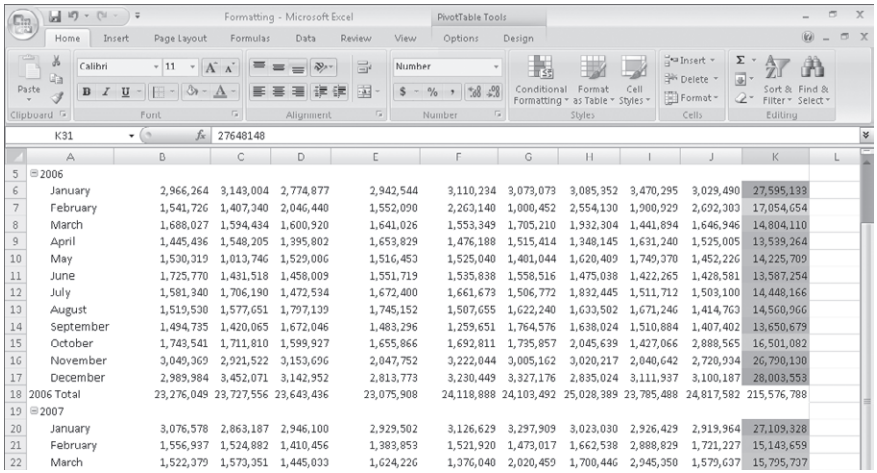
Excel 2007 removes the banding from your PivotTable.



21. Select the cell ranges K6:K17 and K20:K31.

22. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, point to **Color Scales**, and in the top row, click the three-color scale with red at the top.

    Excel 2007 applies the conditional format to the selected cells.



	A	B	C	D	E	F	G	H	I	J	K	L
5	⊟2006											
6	January	2,966,264	3,143,004	2,774,877	2,942,544	3,110,234	3,073,073	3,085,352	3,470,295	3,029,490	27,595,133	
7	February	1,541,726	1,407,340	2,046,440	1,552,090	2,263,140	1,000,452	2,554,130	1,900,929	2,692,303	17,054,654	
8	March	1,688,027	1,594,434	1,600,920	1,641,026	1,553,349	1,705,210	1,932,304	1,441,894	1,646,946	14,804,110	
9	April	1,445,436	1,548,205	1,395,802	1,653,829	1,476,188	1,515,414	1,348,145	1,631,240	1,525,005	13,539,264	
10	May	1,530,319	1,013,746	1,529,006	1,516,453	1,525,040	1,401,044	1,620,409	1,749,370	1,452,226	14,225,709	
11	June	1,725,770	1,431,518	1,458,009	1,551,719	1,535,838	1,558,516	1,475,038	1,422,265	1,428,581	13,587,254	
12	July	1,581,340	1,706,190	1,472,534	1,672,400	1,661,673	1,506,772	1,832,445	1,511,712	1,503,100	14,448,166	
13	August	1,519,530	1,577,651	1,797,139	1,745,152	1,507,655	1,622,240	1,633,502	1,671,246	1,414,763	14,560,966	
14	September	1,494,735	1,420,065	1,672,046	1,483,296	1,259,651	1,764,576	1,638,024	1,510,884	1,407,402	13,650,679	
15	October	1,743,541	1,711,810	1,599,927	1,655,866	1,692,811	1,735,857	2,045,639	1,427,066	2,888,565	16,501,082	
16	November	3,049,369	2,921,522	3,153,696	2,047,752	3,222,044	3,005,162	3,020,217	2,040,642	2,720,934	26,790,130	
17	December	2,989,984	3,452,071	3,142,952	2,813,773	3,230,449	3,327,176	2,835,024	3,111,937	3,100,187	28,003,553	
18	2006 Total	23,276,049	23,727,556	23,643,436	23,075,908	24,118,888	24,103,492	25,028,389	23,785,488	24,817,582	215,576,788	
19	⊟2007											
20	January	3,076,578	2,863,187	2,946,100	2,929,502	3,126,629	3,297,909	3,023,030	2,926,429	2,919,964	27,109,328	
21	February	1,556,937	1,524,882	1,410,456	1,383,853	1,521,920	1,473,017	1,662,538	2,888,829	1,721,227	15,143,659	
22	March	1,522,379	1,573,351	1,445,033	1,624,226	1,376,040	2,020,459	1,700,446	2,945,350	1,579,637	15,795,727	

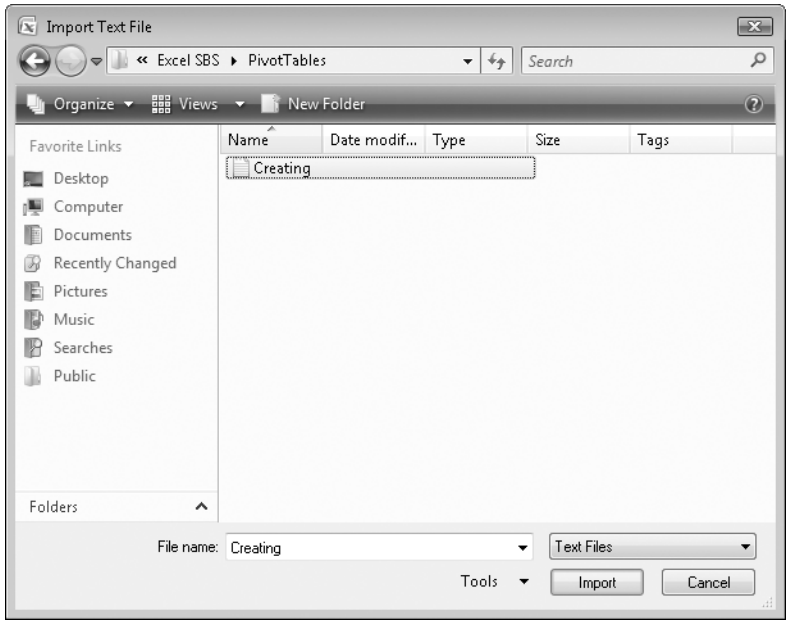
CLOSE the *Formatting* workbook.

Creating PivotTables from External Data

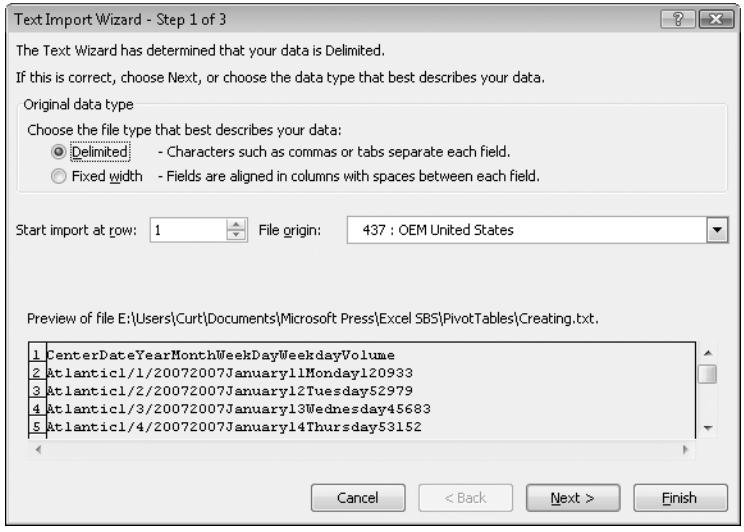
Although most of the time you will create PivotTables from data stored in Excel 2007 worksheets, you can also bring data from outside sources into Excel 2007. For example, you might need to work with data created in another spreadsheet program with a file format that Excel 2007 can't read directly. Fortunately, you can export the data from the original program into a text file, which Excel 2007 then translates into a worksheet.

Spreadsheet programs store data in cells, so the goal of representing spreadsheet data in a text file is to indicate where the contents of one cell end and those of the next cell begin. The character that marks the end of a cell is a delimiter, in that it marks the end (or "limit") of a cell. The most common cell delimiter is the comma, so the delimited sequence *15, 18, 24, 28* represents data in four cells. The problem with using commas to delimit financial data is that larger values—such as *52,802*—can be written by using commas as thousands markers. To avoid confusion when importing a text file, the most commonly used delimiter for financial data is the Tab character.

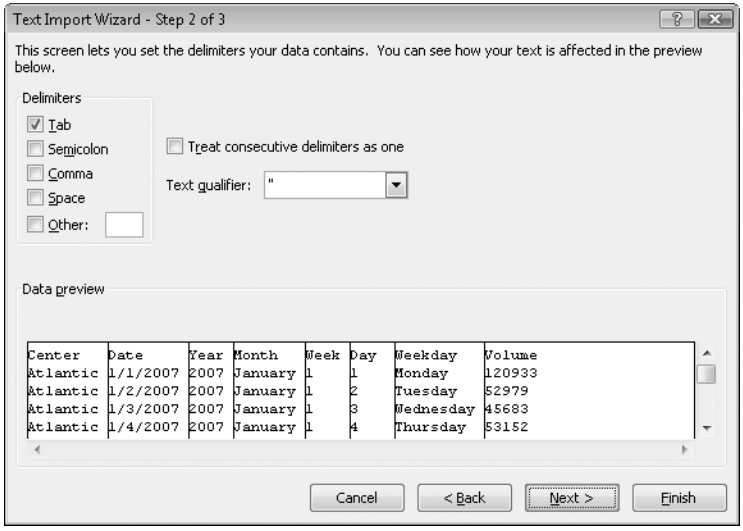
To import data from a text file, on the Data tab, in the Get External Data group, click From Text to display the Import Text File dialog box.



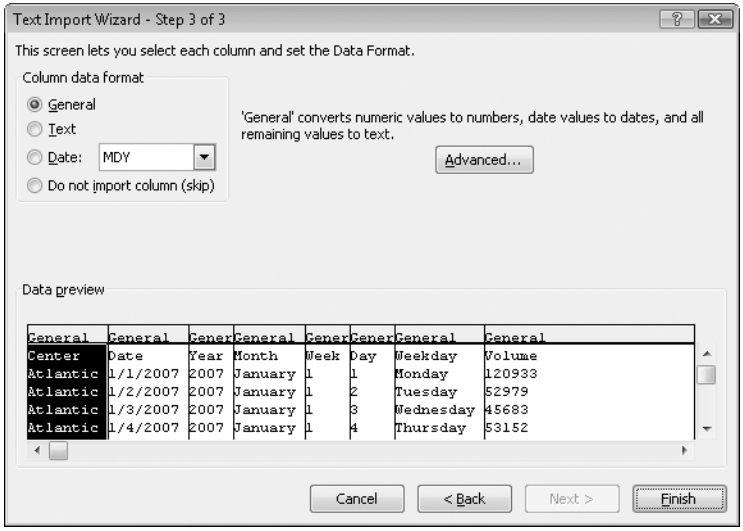
From within the Import Text File dialog box, you browse to the directory that contains the text file you want to import. Double-clicking the file launches the Text Import Wizard.



The first page of the Text Import Wizard enables you to indicate whether the data file you are importing is Delimited or Fixed Width; Fixed Width means that each cell value will fall within a specific position in the file. Clicking Next to accept the default choice, Delimited (which Excel 2007 assigns after examining the data source you selected), advances you to the next wizard screen.



This screen enables you to choose the delimiter for the file (in this case, Excel 2007 detected tabs in the file and selected the Tab check box for you) and gives you a preview of what the text file will look like when imported. Clicking Next advances you to the final wizard screen.



This screen enables you to change the data type and formatting of the columns in your data list. Because you'll assign number styles and PivotTable Quick Styles after you create the PivotTable, you can click Finish to import the data into your worksheet. After the data is in Excel 2007, you can work with it normally.

In this exercise, you will import a data list into Excel 2007 from a text file and then create a PivotTable based on that list.

USE the *Creating* text file.

1. On the **Data** tab, in the **Get External Data** group, click **From Text**.

   The Import Text File dialog box opens.

2. Navigate to the *Documents\Microsoft Press\Excel2007SBS\PivotTables* folder, and then double-click **Creating.txt**.

   The Text Import Wizard starts.

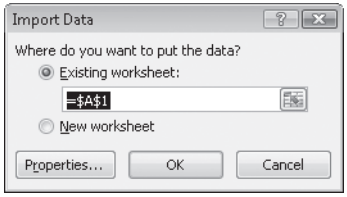
3. Verify that the **Delimited** option is selected, and then click **Next**.

   The next Text Import Wizard page appears.

4. In the **Delimiters** section, verify that the **Tab** check box is selected and also verify that the data displayed in the **Data preview** area reflects the structure you expect.

5. Click **Finish**.

   The Import Data dialog box opens.



6. Verify that the **Existing worksheet** option is selected, and then click **OK**.

   Excel 2007 imports the data into your workbook.

7. On the **Insert** tab, in the **Tables** group, click **PivotTable**.

   The Create PivotTable dialog box opens.

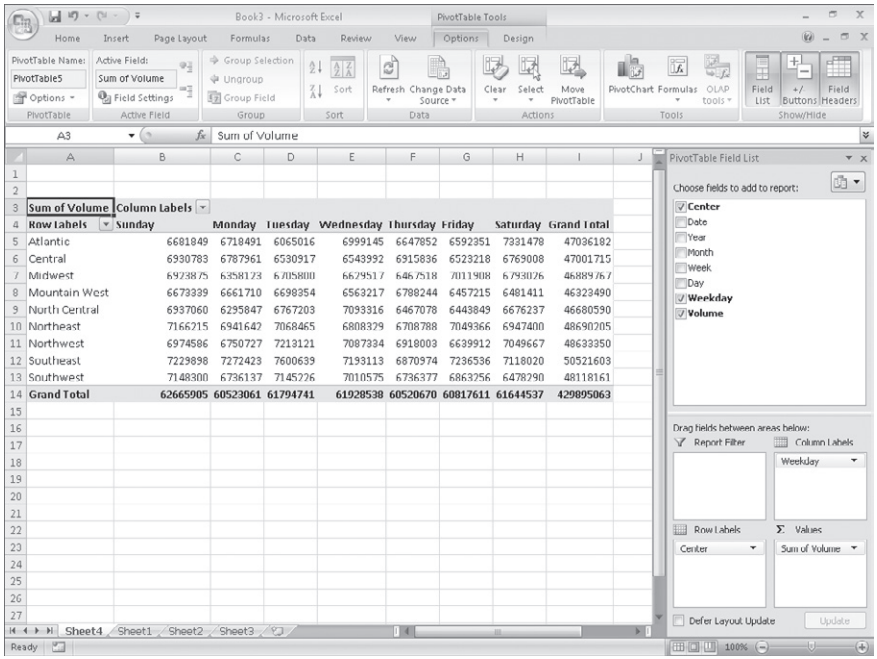
8. Verify that the **Select a table or range** option is selected, that the range Sheet1$A$1:$H$6571 appears in the **Table/Range** field, and that the **New Worksheet** option is selected.

9. Click **OK**.

   Excel 2007 creates a new worksheet.

10. In the **PivotTable Field List** task pane, drag the **Volume** field header to the **Values** area.

11. Drag the **Weekday** field header to the **Column Labels** area.
12. Drag the **Center** field header to the **Row Labels** data area.



Save

13. On the **Quick Access Toolbar**, click the **Save** button.

    The Save As dialog box opens.
14. Browse to the *Documents\Microsoft Press\Excel2007SBS\PivotTables* folder.
15. In the **File name** field, type **Imported Data**.
16. Click **OK**.

    Excel 2007 saves your file.

CLOSE the *Imported Data* workbook. If you are not continuing directly to the next chapter, exit Excel.

Key Points

- A PivotTable is a versatile tool you can use to rearrange your data dynamically, enabling you to emphasize different aspects of your data without creating new worksheets.
- PivotTable data must be formatted as a list. Using a data table as the PivotTable data source enables you to streamline the creation process by referring to the table name instead of being required to select the entire range that contains the data you want to summarize.
- Excel 2007 comes with many attractive styles for PivotTables; you'll probably find one you like.
- The PivotTable Field List task pane enables you to create your PivotTable by using a straightforward, compact tool.
- Just as you can limit the data shown in a static worksheet, you can use filters to limit the data shown in a PivotTable.
- If you have data in a compatible format, such as a text file, you can import that data into Excel 2007 and create a PivotTable from it.

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