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# Excel 2010

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# **Microsoft® Excel® 2010**

Step by Step

**Curtis Frye**

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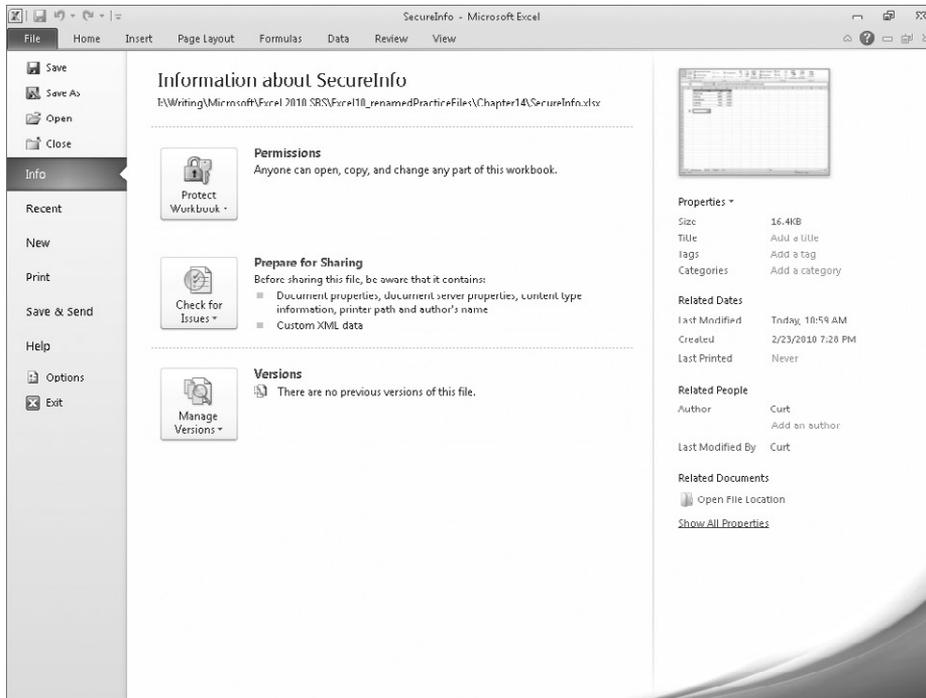
# Introducing Microsoft Excel 2010

For those of you who are upgrading to Microsoft Excel 2010 from an earlier version of the program, this introduction summarizes the new features in Excel 2010. One of the first things you'll notice about Excel 2010 is that the program incorporates the ribbon, which was introduced in Excel 2007. If you used Excel 2003 or an earlier version of Excel, you'll need to spend only a little bit of time working with the new user interface to bring yourself back up to your usual proficiency.

## Managing Excel Files and Settings in the Backstage View

If you used Excel 2007, you'll immediately notice one significant change: the Microsoft Office button, located at the top left corner of the program window in Excel 2007, has been replaced by the File tab. After releasing the 2007 Microsoft Office System, the Office User Experience team re-examined the programs' user interfaces to determine how they could be improved. During this process, they discovered that it was possible to divide user tasks into two categories: "in" tasks, such as formatting and formula creation, which affect the contents of the workbook directly, and "out" tasks, such as saving and printing, which could be considered workbook management tasks.

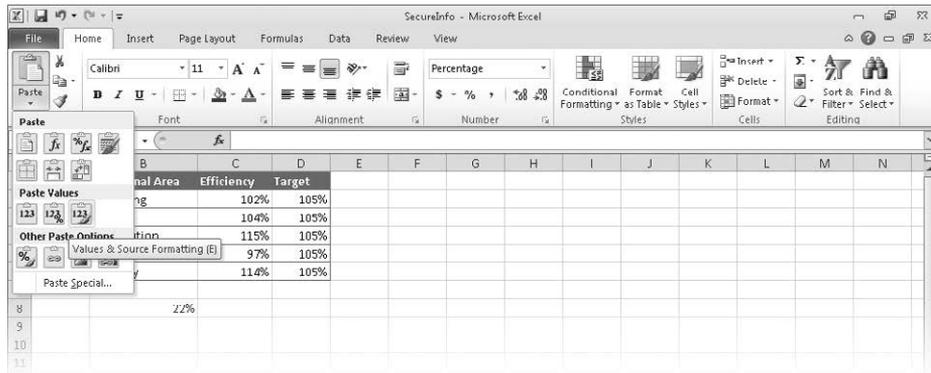
When the User Experience and Excel teams focused on the Excel 2007 user interface, they discovered that several workbook management tasks were sprinkled among the ribbon tabs that contained content-related tasks. The Excel team moved all of the workbook management tasks to the File tab, which users can click to display these commands in the new Backstage view.



## Previewing Data by Using Paste Preview

One of the most common tasks undertaken by Excel users involves cutting or copying a worksheet's contents, such as text or numbers, and pasting that data into either the same workbook or a separate Office document. Users have always been able to paste data from the Microsoft Office Clipboard and control which formatting elements were pasted into the destination; however, in versions prior to Excel 2010, you had to select a paste option, observe the results, and (often) undo the paste and try another option until you found the option that produced the desired result.

In Excel 2010, you can take advantage of the new Paste Preview capability to see how your data will appear in the worksheet before you commit to the paste. By pointing to any of the icons in the Paste Options palette, you can switch between options to discover the one that makes your pasted data appear the way you want it to.



**Troubleshooting** The appearance of buttons and groups on the ribbon changes depending on the width of the program window. For information about changing the appearance of the ribbon to match our screen images, see “Modifying the Display of the Ribbon” at the beginning of this book.

## Customizing the Excel 2010 User Interface

When the Office User Experience team designed the ribbon interface for Excel 2007, they allowed users to modify the program window by adding and removing commands on the Quick Access Toolbar. In Excel 2010, you can still modify the Quick Access Toolbar, but you also have many more options for changing the ribbon interface. You can hide or display built-in ribbon tabs, change the order of built-in ribbon tabs, add custom groups to a ribbon tab, and create custom ribbon tabs which, in turn, can contain custom groups. These custom groups provide easy access to existing ribbon commands as well as custom commands that run macros stored in the workbook.



## Summarizing Data by Using More Accurate Functions

In earlier versions of Excel, the program contained statistical, scientific, engineering, and financial functions that would return inaccurate results in some relatively rare circumstances. For Excel 2010, the Excel programming team identified the functions that returned inaccurate results and collaborated with academic and industry analysts to improve the functions' accuracy.

The Excel team also changed the naming conventions used to identify the program's functions. This change is most noticeable with regard to the program's statistical functions. The table below lists the statistical distribution functions that have been improved in Excel 2010.

Distribution	Functions
Beta	BETA.DIST, BETA.INV
Binomial	BINOM.DIST, BINOM.INV
Chi squared	CHISQ.DIST, CHISQ.DIST.RT, CHISQ.INV, CHISQ.INV.RT
Exponential	EXPON.DIST
F	F.DIST, F.DIST.RT, F.INV, F.INV.RT

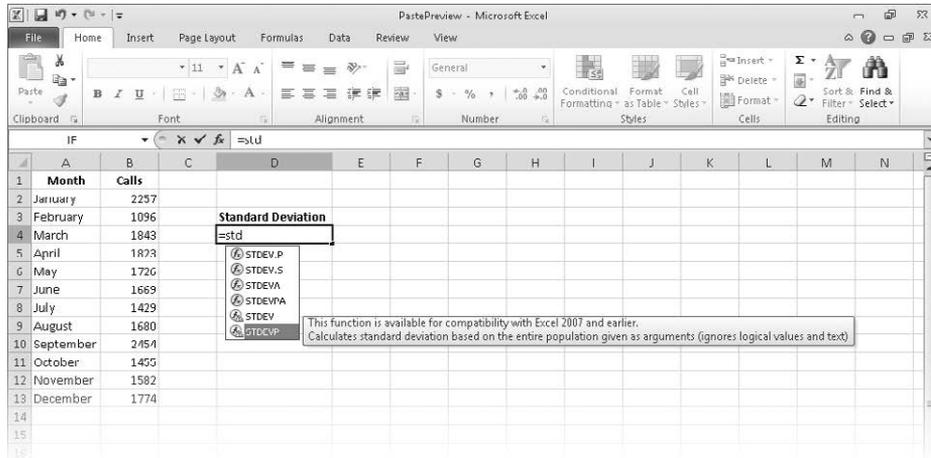
<b>Distribution</b>	<b>Functions</b>
Gamma	GAMMA.DIST, GAMMA.INV
Hypergeometric	HYPGEOM.DIST
Lognormal	LOGNORM.DIST, LOGNORM.INV
Negative Binomial	NEGBINOM.DIST
Normal	NORM.DIST, NORM.INV
Standard Normal	NORM.S.DIST, NORMS.INV
Poisson	POISSON.DIST
Student's t	T.DIST, T.DIST.RT, T.DIST.2T, T.INV, T.INV.2T
Weibull	WEIBULL.DIST

Excel 2010 also contains more accurate statistical summary and test functions. The following table lists those functions, as well as the new naming convention that distinguishes between new and old functions. The Excel programming team chose to retain the older functions to ensure that workbooks created in Excel 2010 would be compatible with workbooks created in previous versions of the program.

<b>Function name</b>	<b>Description</b>
CEILING.PRECISE	Consistent with mathematical definition; rounds up towards positive infinity regardless of sign of number being rounded
FLOOR.PRECISE	Consistent with mathematical definition; rounds down towards negative infinity regardless of sign of number being rounded
CONFIDENCE.NORM	Name for existing CONFIDENCE function that is internally consistent with naming of other confidence function
CONFIDENCE.T	Consistent definition with industry best practice; confidence function assuming a Student's t distribution
COVARIANCE.P	Name for existing COVAR function that is internally consistent with naming of other covariance function
COVARIANCE.S	Internally consistent name with other functions that act on a population or a sample
MODE.MULT	Consistent with user expectations; returns multiple modes for a range
MODE.SNGL	Name for existing MODE function that is internally consistent with naming of other mode function
PERCENTILE.EXC	Consistent with industry best practices, assuming percentile is a value between 0 and 1, exclusive
PERCENTILE.INC	Name for existing PERCENTILE function that is internally consistent with naming of other percentile function

<b>Function name</b>	<b>Description</b>
PERCENTRANK.EXC	Consistent with industry best practices; assuming percentile is a value between 0 and 1, exclusive
PERCENTRANK.INC	Name for existing PERCENTRANK function that is internally consistent with naming of other PERCENTRANK function
QUARTILE.EXC	Consistent with industry best practices, assuming percentile is a value between 0 and 1, exclusive
QUARTILE.INC	Name for existing QUARTILE function that is internally consistent with naming of other quartile function
RANK.AVG	Consistent with industry best practices, returning the average rank when there is a tie
RANK.EQ	Name for existing RANK function that is internally consistent with naming of other rank function
STDEV.P	Name for existing STDEVP function that is internally consistent with naming of other standard deviation function
STDEV.S	Name for existing STDEV function that is internally consistent with naming of other standard deviation function
VAR.P	Name for existing VARP function that is internally consistent with naming of other variance function
VAR.S	Name for existing VAR function that is internally consistent with naming of other variance function
CHISQ.TEST	Name for existing CHITEST function that is internally consistent with naming of other hypothesis test functions
F.TEST	Name for existing FTEST function that is internally consistent with naming of other hypothesis functions
T.TEST	Name for existing TTEST function that is internally consistent with naming of other hypothesis functions
Z.TEST	Name for existing ZTEST function that is internally consistent with naming of other hypothesis functions

It is possible in Excel 2010 to create formulas by using the older functions. The Excel team assigned these functions to a new group called Compatibility Functions. These older functions appear at the bottom of the Formula AutoComplete list, but they are marked with a different icon than the newer functions. Additionally, the tooltip that appears when you point to the older function's name indicates that the function is included for backward compatibility only.

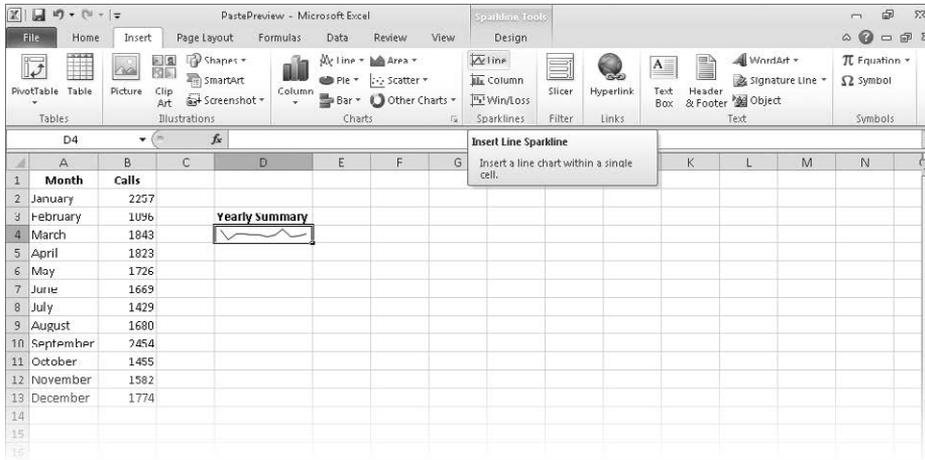


When a user saves a workbook that contains functions that are new in Excel 2010 to an older format, the Compatibility Checker flags the functions and indicates that they will return a #NAME? error when the workbook is opened in Excel 2007 or earlier versions.

## Summarizing Data by Using Sparklines

In his book *Beautiful Evidence*, Edward Tufte describes sparklines as “intense, simple, wordlike graphics.” In Excel 2010, sparklines take the form of small charts that summarize data in a single cell. These small but powerful additions to Excel 2010 enhance the program’s reporting and summary capabilities.

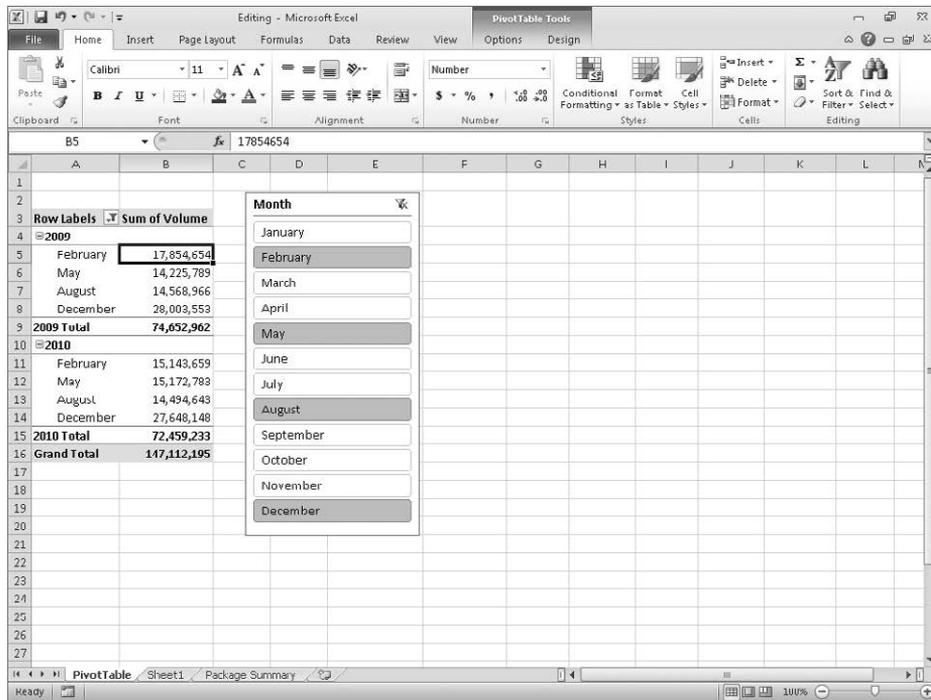
Adding a sparkline to a summary worksheet provides context for a single value, such as an average or total, displayed in the worksheet. Excel 2010 includes three types of sparklines: line, column, and win/loss. A line sparkline is a line chart that displays a data trend over time. A column sparkline summarizes data by category, such as sales by product type or by month. Finally, a win/loss sparkline indicates whether the points in a data series are positive, zero, or negative.



## Filtering PivotTable Data by Using Slicers

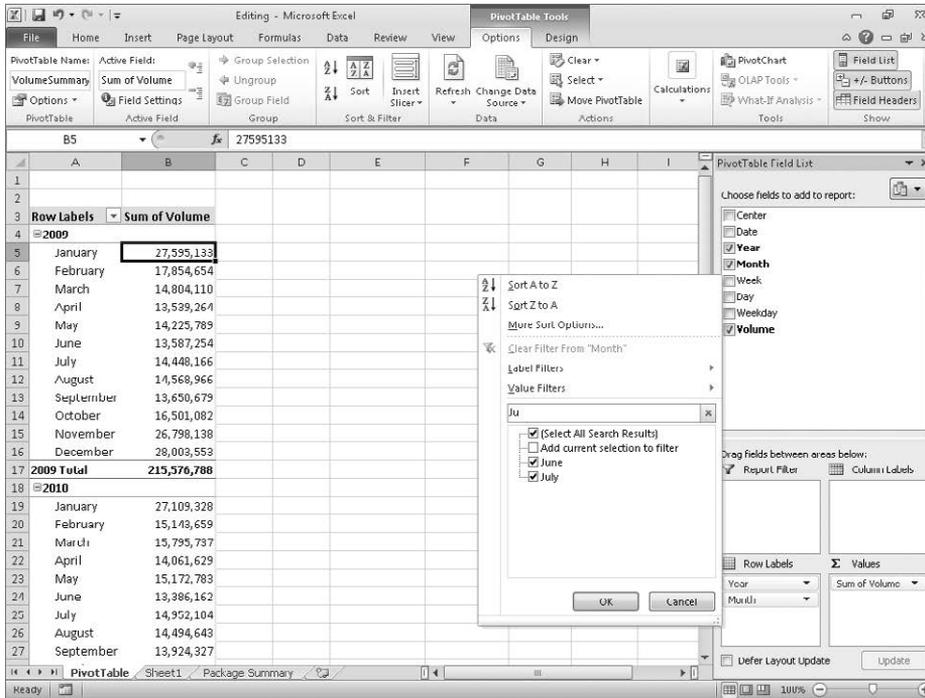
With PivotTables, users can summarize large data sets efficiently, such as by rearranging values dynamically to emphasize different aspects of the data. It's often useful to be able to limit the data that appears in a PivotTable, so the Excel team included the functionality for users to filter PivotTables. The PivotTable indicates that a filter is present for a particular data column, but it doesn't indicate which items are currently displayed or hidden by the filter.

Slicers, which are new in Excel 2010, visually indicate which values appear in a PivotTable and which are hidden. They are particularly useful when presenting data to an audience that contains visual thinkers who might not be skilled at working with numerical values. For example, a corporate analyst could use a Slicer to indicate which months are displayed in a PivotTable that summarizes monthly package volumes.



## Filtering PivotTable Data by Using Search Filters

Excel 2007 introduced several new ways to filter PivotTables. Excel 2010 extends these filtering capabilities by introducing search filters. With a search filter, you begin typing a sequence of characters that occur in the term (or terms) by which you want to filter. As you type in these characters, the PivotTable field's filter list displays only those terms that reflect the values entered into the search filter box.



## Visualizing Data by Using Improved Conditional Formats

In Excel 2007, the Excel programming team greatly improved the user’s ability to change a cell’s format based on the cell’s contents. One new conditional format, data bars, indicated a cell’s relative value by the length of the bar within the cell that contained the value. The cell in the range that contained the smallest value displayed a zero-length bar, and the cell that contained the largest value displayed a bar that spanned the entire cell width.

The default behavior of the Excel 2010 data bars has been changed so that bar length is calculated in comparison to a baseline value, such as zero. If you prefer, you can display values based on the Excel 2007 method or change the comparison value to something other than zero. Data bars in Excel 2010 also differ from those in Excel 2007 in that they display negative values in a different color than the positive values. In addition, data bars

representing negative values extend to the left of the baseline, not to the right. In Excel 2007, the conditional formatting engine placed the zero-length data bar in the cell that contained the smallest value, regardless of whether that value was positive or negative.

You have much more control over your data bars' formatting in Excel 2010 than in Excel 2007. When you create a data bar in Excel 2010, it has a solid color fill, not a gradient fill like the bars in Excel 2007. The gradient fill meant that the color of the Excel 2007 data bars faded as the bar extended to the right, making the cells' relative values harder to discern. In Excel 2010 you can select a solid or gradient fill style, apply borders to data bars, and change the fill and border colors for both positive and negative values.

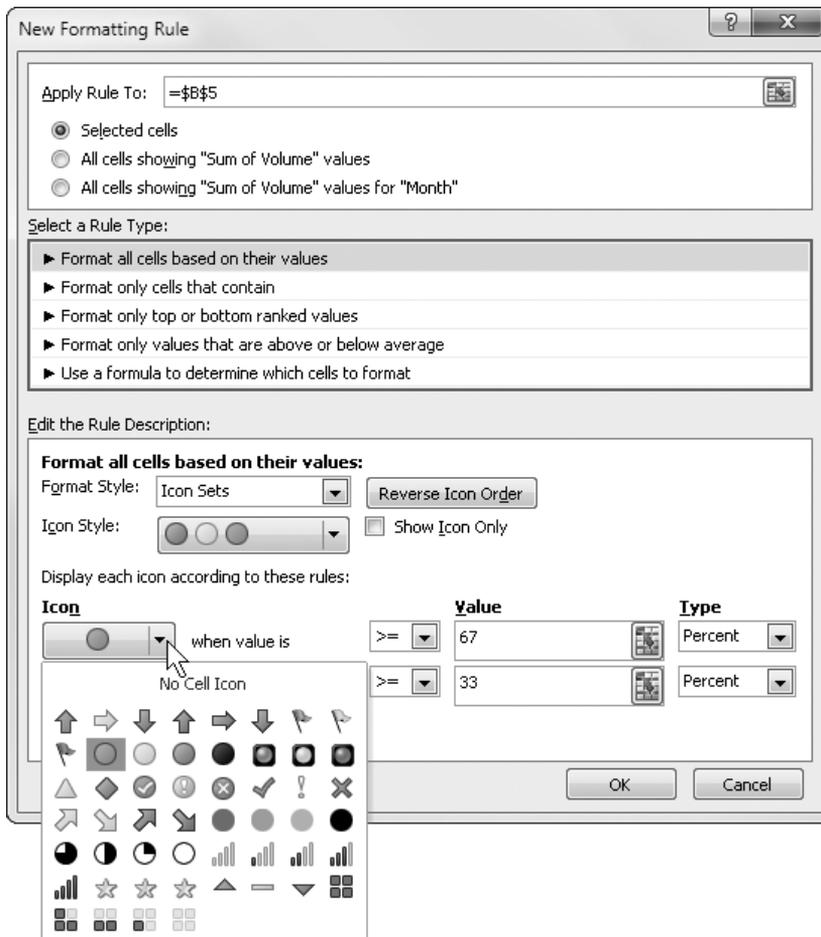
The screenshot displays the Microsoft Excel 2010 interface. The main window shows a PivotTable with data bars. The PivotTable is structured as follows:

Row Labels	Sum of Volume
<b>2009</b>	
January	27,595,133
February	17,854,654
March	14,804,110
April	13,539,264
May	14,225,789
June	13,587,254
July	14,448,166
August	14,568,966
September	13,650,679
October	16,501,082
November	26,798,138
December	28,003,553
<b>2009 Total</b>	<b>215,576,788</b>
<b>2010</b>	
January	27,109,328
February	15,143,659
March	15,795,737
April	14,061,629
May	15,172,783
June	13,386,162
July	14,952,104
August	14,494,643
September	13,924,327

The PivotTable Field List task pane on the right shows the following configuration:

- Choose fields to add to report:**
  - Center
  - Date
  - Year
  - Month
  - Week
  - Day
  - Weekday
  - Volume
- Drag fields between areas below:**
  - Report Filter:** (Empty)
  - Column Labels:** (Empty)
  - Row Labels:** Year, Month
  - Values:** Sum of Volume
- Defer Layout Update
- Update

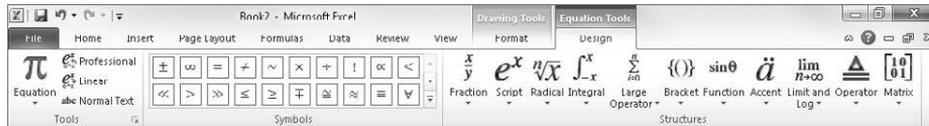
Another conditional format introduced in Excel 2007, icon sets, displayed an icon selected from a set of three, four, or five icons based on a cell's value. In Excel 2007, users were limited to using the icons within each set and had no ability to create their own sets. In Excel 2010, you can create custom icon sets from the icons included in the program and, if you prefer, define conditions that, when met, display no icon in the cell.



Finally, with Excel 2010 you can create conditional formats that refer to values on worksheets other than the sheet that contains the cell you're formatting. In previous versions of Excel, users had to create conditional formats that referred to values on the same worksheet.

## Creating and Displaying Math Equations

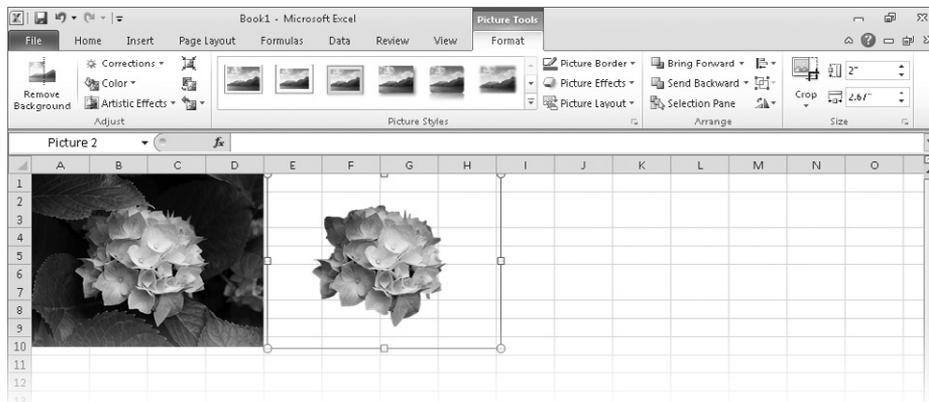
Scientists and engineers who use Microsoft Excel to support their work often want to include equations in their workbooks to help explain how they arrived at their results. Excel 2010 includes an updated equation designer with which you can create any equation you require. The new editor has several common equations built in, such as the quadratic formula and the Pythagorean theorem, but it also contains numerous templates that you can use to create custom equations quickly.



## Editing Pictures within Excel 2010

When you present data in an Excel workbook, you can insert images into your worksheets to illustrate aspects of your data. For example, a shipping company could display a scanned image of a tracking label or a properly prepared package. Rather than having to edit your images in a separate program and then insert them into your Excel 2010 workbook, you can insert the image and then modify it by using the editing tools built into Excel 2010.

One very helpful capability that is new in Excel 2010 is the ability to remove the background elements of an image. Removing an image's background enables you to create a composite image in which the foreground elements are placed in front of another background. For example, you could focus on a flower's bloom and remove most of the leaves and stem from the photo. After you isolate the foreground image, you can place the bloom in front of another background.



## Managing Large Worksheets by Using the 64-bit Version of Excel 2010

Some Excel 2010 users, such as business analysts and scientists, will need to manipulate extremely large data sets. In some cases, these data sets won't fit into the more than one million rows available in a standard Excel 2010 worksheet. To meet the needs of these users, the Excel product team developed the 64-bit version of Excel 2010. The 64-bit version takes advantage of the greater amount of random access memory (RAM) available in newer computers. As a result of its ability to use more RAM than the standard 32-bit version of Excel 2010, users of the 64-bit version can store hundreds of millions of rows of data in a worksheet. In addition, the 64-bit version takes advantage of multi-core processors to manage its larger data collections efficiently.

All of the techniques described in *Microsoft Excel 2010 Step by Step* apply to both the 32-bit and 64-bit versions of the program.

## Summarizing Large Data Sets by Using the PowerPivot (Project Gemini) Add-In

As businesses collect and maintain increasingly large data sets, the need to analyze that data efficiently grows in importance. More powerful computers offer some performance improvements, but even the fastest computer takes a long time to process huge data sets when using traditional data-handling procedures. A new add-in, PowerPivot for Excel 2010, uses enhanced data management techniques to store the data in a computer's memory, rather than forcing the Excel program to read the data from a hard disk. Reading data from a computer's memory instead of a hard disk speeds up the data analysis and display operations substantially. Tasks that might have taken minutes to complete in Excel 2010 without the PowerPivot add-in now take seconds.

PowerPivot relies on the Microsoft SQL Server Analysis Services engine to produce its results, so discussion of it is outside the scope of this book. If you would like to learn more about PowerPivot, you can visit the team's blog at [blogs.msdn.com/powerpivot/](http://blogs.msdn.com/powerpivot/).

## Accessing Your Data from Almost Anywhere by Using the Excel Web App and Excel Mobile 2010

As the workforce becomes increasingly mobile, information workers need to access their Excel 2010 data as they move around the world. To enable these mobile use scenarios, the Excel product team developed the Excel Web App and Excel Mobile 2010. The Excel Web App provides a high-fidelity experience that is very similar to the experience of using the Excel 2010 desktop application. In addition, you can collaborate with other users in real time. The Excel Web App identifies which changes were made by which users and enables you to decide which changes to keep and which to reject.

You can use the Excel Web App in Windows Internet Explorer 7 or 8, Safari 4, and Firefox 3.5.

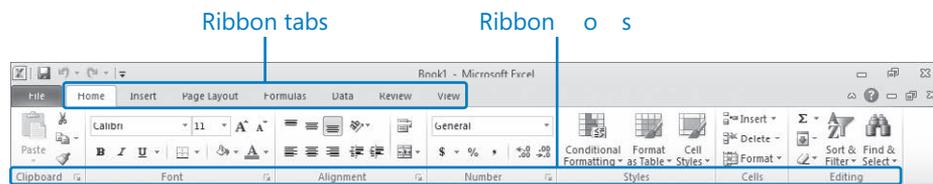
With Excel Mobile 2010, you can access and, in some cases, manipulate your data by using a Windows Phone or other mobile device. If you have a Windows Phone running Windows Mobile 6.5, you can use Excel Mobile 2010 to view and edit your Excel 2010 workbooks. If you have another mobile device that provides access to the Web, you can use your device's built-in Web browser to view your files.

A full discussion of the Excel Web App and Excel Mobile 2010 are beyond the scope of this book.



# Modifying the Display of the Ribbon

The goal of the Microsoft Office working environment is to make working with Office documents, including Microsoft Word documents, Excel workbooks, PowerPoint presentations, Outlook e-mail messages, and Access database tables, as intuitive as possible. You work with an Office document and its contents by giving commands to the program in which the document is open. All Office 2010 programs organize commands on a horizontal bar called the *ribbon*, which appears across the top of each program window whether or not there is an active document.



Commands are organized on task-specific tabs of the ribbon, and in feature-specific groups on each tab. Commands generally take the form of buttons and lists. Some appear in galleries. Some groups have related dialog boxes or task panes that contain additional commands.

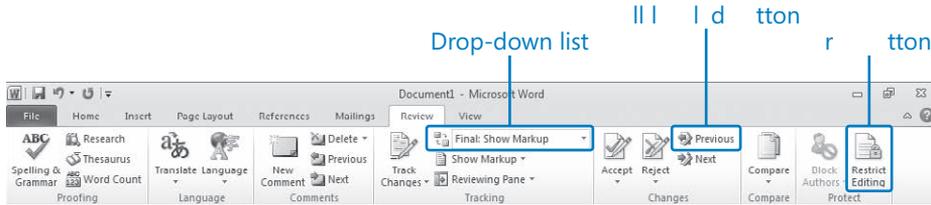
Throughout this book, we discuss the commands and ribbon elements associated with the program feature being discussed. In this topic, we discuss the general appearance of the ribbon, things that affect its appearance, and ways of locating commands that aren't visible on compact views of the ribbon.

**Tip** Some older commands no longer appear on the ribbon, but are still available in the program. You can make these commands available by adding them to the Quick Access Toolbar. For more information, see “Customizing the Excel 2010 Program Window” in Chapter 1, “Setting Up a Workbook.”

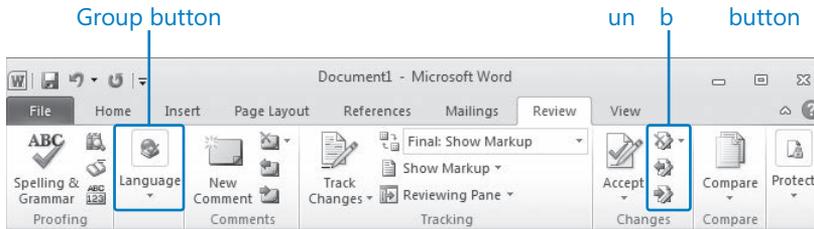
## Dynamic Ribbon Elements

The ribbon is dynamic, meaning that the appearance of commands on the ribbon changes as the width of the ribbon changes. A command might be displayed on the ribbon in the form of a large button, a small button, a small labeled button, or a list entry. As the width of the ribbon decreases, the size, shape, and presence of buttons on the ribbon adapt to the available space.

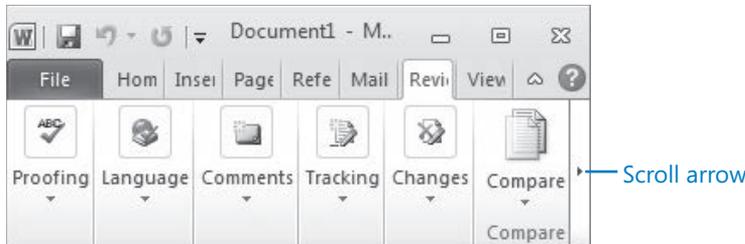
For example, when sufficient horizontal space is available, the buttons on the Review tab of the Word program window are spread out and you're able to see more of the commands available in each group.



If you decrease the width of the ribbon, small button labels disappear and entire groups of buttons hide under one button that represents the group. Click the group button to display a list of the commands available in that group.



When the window becomes too narrow to display all the groups, a scroll arrow appears at its right end. Click the scroll arrow to display hidden groups.



## Changing the Width of the Ribbon

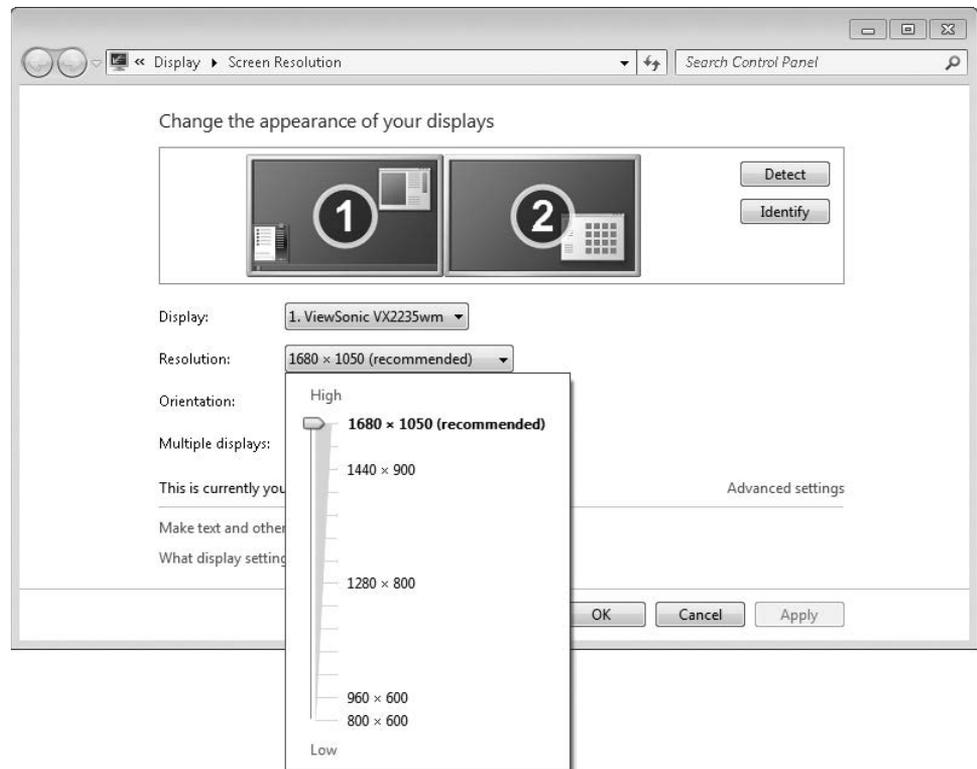
The width of the ribbon is dependent on the horizontal space available to it, which depends on these three factors:

- The width of the program window. Maximizing the program window provides the most space for ribbon elements. You can resize the program window by clicking the button in its upper-right corner or by dragging the border of a non-maximized window.

**Tip** On a computer running Windows 7, you can maximize the program window by dragging its title bar to the top of the screen.

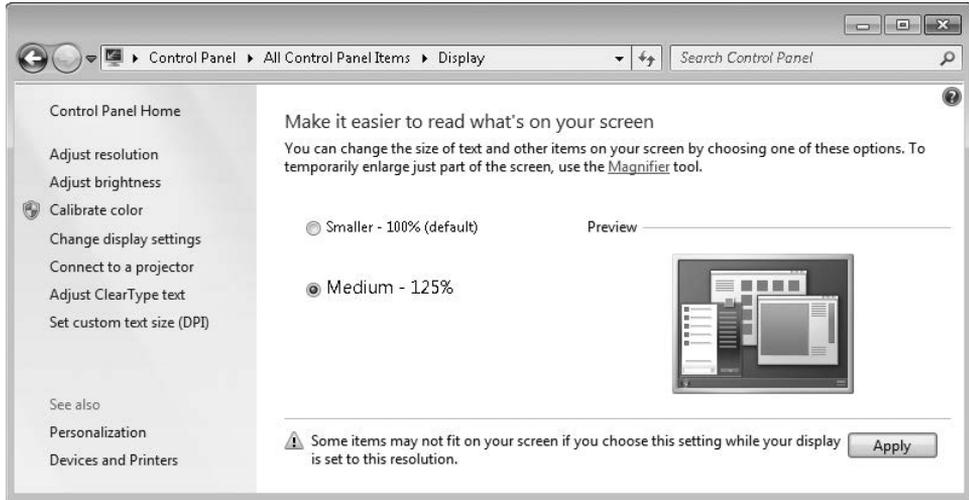
- Your screen resolution Screen resolution is the size of your screen display expressed as pixels wide × pixels high. The greater the screen resolution, the greater the amount of information that will fit on one screen. Your screen resolution options are dependent on your monitor. At the time of writing, possible screen resolutions range from 800 × 600 to 2048 × 1152. In the case of the ribbon, the greater the number of pixels wide (the first number), the greater the number of buttons that can be shown on the ribbon, and the larger those buttons can be.

On a computer running Windows 7, you can change your screen resolution from the Screen Resolution window of Control Panel. You set the resolution by dragging the pointer on the slider.

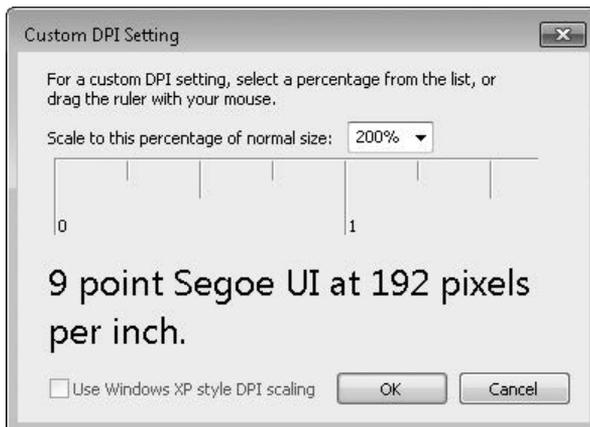


- The density of your screen display You might not be aware that you can change the magnification of everything that appears on your screen by changing the screen magnification setting in Windows. Setting your screen magnification to 125% makes text and user interface elements larger on screen. This increases the legibility of information, but means that less fits onto each screen.

On a computer running Windows 7, you can change the screen magnification from the Display window of Control Panel. You can choose one of the standard display magnification options, or create another by setting a custom text size.



The screen magnification is directly related to the density of the text elements on screen, which is expressed in dots per inch (dpi) or points per inch (ppi). (The terms are interchangeable, and in fact are both used in the Windows dialog box in which you change the setting.) The greater the dpi, the larger the text and user interface elements appear on screen. By default, Windows displays text and screen elements at 96 dpi. Choosing the Medium - 125% display setting changes the dpi of text and screen elements to 120 dpi. You can choose a custom setting of up to 500% magnification, or 480 dpi, in the Custom DPI Setting dialog box. The list allows you to choose a magnification of up to 200%. You can choose a greater magnification by dragging across the ruler from left to right.



**See Also** For more information about display settings, refer to *Windows 7 Step by Step* (Microsoft Press, 2009), *Windows Vista Step by Step* (Microsoft Press, 2006), or *Windows XP Step by Step* (Microsoft Press, 2002) by Joan Lambert Preppernau and Joyce Cox.

## Adapting Exercise Steps

The screen images shown in the exercises in this book were captured at a screen resolution of 1024 × 768, at 100% magnification, and the default text size (96 dpi). If any of your settings are different, the ribbon on your screen might not look the same as the one shown in the book. For example, you might see more or fewer buttons in each of the groups, the buttons you see might be represented by larger or smaller icons than those shown, or the group might be represented by a button that you click to display the group's commands.

When we instruct you to give a command from the ribbon in an exercise, we do it in this format:

- On the **Insert** tab, in the **Illustrations** group, click the **Chart** button.

If the command is in a list, we give the instruction in this format:

- On the **Page Layout** tab, in the **Page Setup** group, click the **Breaks** button and then, in the list, click **Page**.

The first time we instruct you to click a specific button in each exercise, we display an image of the button in the page margin to the left of the exercise step.

If differences between your display settings and ours cause a button on your screen to look different from the one shown in the book, you can easily adapt the steps to locate the command. First, click the specified tab. Then locate the specified group. If a group has been collapsed into a group list or group button, click the list or button to display the group's commands. Finally, look for a button that features the same icon in a larger or smaller size than that shown in the book. If necessary, point to buttons in the group to display their names in ScreenTips.

If you prefer not to have to adapt the steps, set up your screen to match ours while you read and work through the exercises in the book.



# Features and Conventions of This Book

This book has been designed to lead you step by step through all the tasks you're most likely to want to perform in Microsoft Excel 2010. If you start at the beginning and work your way through all the exercises, you'll gain enough proficiency to be able to create and work with all the common types of Excel workbooks. However, each topic is self contained. If you've worked with a previous version of Excel, or if you completed all the exercises and later need help remembering how to perform a procedure, the following features of this book will help you locate specific information:

- **Detailed table of contents** Search the listing of the topics and sidebars within each chapter.
- **Chapter thumb tabs** Easily locate the beginning of the chapter you want.
- **Topic-specific running heads** Within a chapter, quickly locate the topic you want by looking at the running heads at the top of odd-numbered pages.
- **Glossary** Look up the meaning of a word or the definition of a concept.
- **Detailed index** Look up specific tasks and features in the index, which has been carefully crafted with the reader in mind.

You can save time when reading this book by understanding how the *Step by Step* series shows exercise instructions, keys to press, buttons to click, and other information.

<b>Convention</b>	<b>Meaning</b>
<b>SET UP</b>	This paragraph preceding a step-by-step exercise indicates the practice files that you will use when working through the exercise. It also indicates any requirements you should attend to or actions you should take before beginning the exercise.
<b>CLEAN UP</b>	This paragraph following a step-by-step exercise provides instructions for saving and closing open files or programs before moving on to another topic. It also suggests ways to reverse any changes you made to your computer while working through the exercise.
1 2	Numbered steps guide you through hands-on exercises in each topic, as well as procedures in sidebars and expository text.
<b>See Also</b>	This paragraph directs you to more information about a topic in this book or elsewhere.
<b>Troubleshooting</b>	This paragraph alerts you to a common problem and provides guidance for fixing it.
<b>Tip</b>	This paragraph provides a helpful hint or shortcut that makes working through a task easier.
<b>Important</b>	This paragraph points out information that you need to know to complete a procedure.
<b>Keyboard Shortcut</b>	This paragraph provides information about an available keyboard shortcut for the preceding task.
Ctrl+B	A plus sign (+) between two keys means that you must press those keys at the same time. For example, "Press Ctrl+B" means that you should hold down the Ctrl key while you press the B key.
	Pictures of buttons appear in the margin the first time the button is used in a chapter.
<b>Bold</b>	In exercises that begin with SET UP information, bold type displays text that you should type; the names of program elements, such as buttons, commands, windows, and dialog boxes; and files, folders, or text that you interact with in the steps.

# Using the Practice Files

Before you can complete the exercises in this book, you need to copy the book's practice files to your computer. These practice files, and other information, can be downloaded from the book's detail page, located at:

<http://go.microsoft.com/fwlink/?Linkid=191751>

Display the detail page in your Web browser and follow the instructions for downloading the files.

**Important** The Microsoft Excel 2010 program is not available from this Web site. You should purchase and install that program before using this book.

The following table lists the practice files for this book.

Chapter	File
Chapter 1: Setting Up a Workbook	ExceptionSummary_start.xlsx
	ExceptionTracking_start.xlsx
	MisroutedPackages_start.xlsx
	PackageCounts_start.xlsx
	RouteVolume_start.xlsx
Chapter 2: Working with Data and Excel Tables	2010Q1ShipmentsByCategory_start.xlsx
	AverageDeliveries_start.xlsx
	DriverSortTimes_start.xlsx
	Series_start.xlsx
	ServiceLevels_start.xlsx
Chapter 3: Performing Calculations on Data	ConveyerBid_start.xlsx
	ITExpenses_start.xlsx
	PackagingCosts_start.xlsx
	VehicleMiles_start.xlsx

*(continued)*

<b>Chapter</b>	<b>File</b>
Chapter 4: Changing Workbook Appearance	CallCenter_start.xlsx Dashboard_start.xlsx ExecutiveSearch_start.xlsx HourlyExceptions_start.xlsx HourlyTracking_start.xlsx phone.jpg texture.jpg VehicleMileSummary_start.xlsx
Chapter 5: Focusing on Specific Data by Using Filters	Credit_start.xlsx ForFollowUp_start.xlsx PackageExceptions_start.xlsx
Chapter 6: Reordering and Summarizing Data	GroupByQuarter_start.xlsx ShipmentLog_start.xlsx ShippingSummary_start.xlsx
Chapter 7: Combining Data from Multiple Sources	Consolidate_start.xlsx DailyCallSummary_start.xlsx FebruaryCalls_start.xlsx FleetOperatingCosts_start.xlsx JanuaryCalls_start.xlsx OperatingExpenseDashboard_start.xlsx
Chapter 8: Analyzing Alternative Data Sets	2DayScenario_start.xlsx AdBuy_start.xlsx DriverSortTimes_start.xlsx MultipleScenarios_start.xlsx TargetValues_start.xlsx
Chapter 9: Creating Dynamic Lists by Using PivotTables	Creating_start.txt Creating_start.xlsx Editing_start.xlsx Focusing_start.xlsx Formatting_start.xlsx

<b>Chapter</b>	<b>File</b>
Chapter 10: Creating Charts and Graphics	FutureVolumes_start.xlsx OrgChart_start.xlsx RevenueAnalysis_start.xlsx RevenueSummary_start.xlsx Shapes_start.xlsx VolumebyCenter_start.xlsx YearlyPackageVolume_start.xlsx
Chapter 11: Printing	ConsolidatedMessenger.png CorporateRevenue_start.xlsx HourlyPickups_start.xlsx PickupsByHour_start.xlsx RevenueByCustomer_start.xlsx SummaryByCustomer_start.xlsx
Chapter 12: Automating Repetitive Tasks by Using Macros	PerformanceDashboard_start.xlsm RunOnOpen_start.xlsm VolumeHighlights_start.xlsm YearlySalesSummary_start.xlsx
Chapter 13: Working with Other Microsoft Office Programs	2010YearlyRevenueSummary_start.pptx Hyperlink_start.xlsx LevelDescriptions_start.xlsx RevenueByServiceLevel_start.xlsx RevenueChart_start.xlsx RevenueSummary_start.pptx SummaryPresentation_start.xlsx
Chapter 14: Collaborating with Colleagues	CostProjections_start.xlsx ProjectionChangeTracking_start.xlsx ProjectionsForComment_start.xlsx ProjectionsSigned_start.xlsx SecureInfo_start.xlsx ShipmentSummary_start.xlsx

# Your Companion eBook

The eBook edition of this book allows you to:

- Search the full text
- Print
- Copy and Paste

To download your eBook, please see the instruction page at the back of this book.

# Getting Help

Every effort has been made to ensure the accuracy of this book. If you do run into problems, please contact the sources listed in the following topics.

## Getting Help with This Book

If your question or issue concerns the content of this book or its practice files, please first consult the book's errata page, which can be accessed at:

*<http://go.microsoft.com/fwlink/?Linkid=191751>*

This page provides information about known errors and corrections to the book. If you do not find your answer on the errata page, send your question or comment to Microsoft Press Technical Support at:

*[mspinput@microsoft.com](mailto:mspinput@microsoft.com)*

## Getting Help with Excel 2010

If your question is about Microsoft Excel 2010, and not about the content of this book, your first recourse is the Excel Help system. This system is a combination of tools and files stored on your computer when you installed Excel and, if your computer is connected to the Internet, information available from Office.com. You can find general or specific Help information in the following ways:

- To find out about an item on the screen, you can display a ScreenTip. For example, to display a ScreenTip for a button, point to the button without clicking it. The ScreenTip gives the button's name, the associated keyboard shortcut if there is one, and unless you specify otherwise, a description of what the button does when you click it.
- In the Excel program window, you can click the Microsoft Excel Help button (a question mark in a blue circle) at the right end of the ribbon to display the Excel Help window.
- After opening a dialog box, you can click the Help button (also a question mark) at the right end of the dialog box title bar to display the Excel Help window. Sometimes, topics related to the functions of that dialog box are already identified in the window.

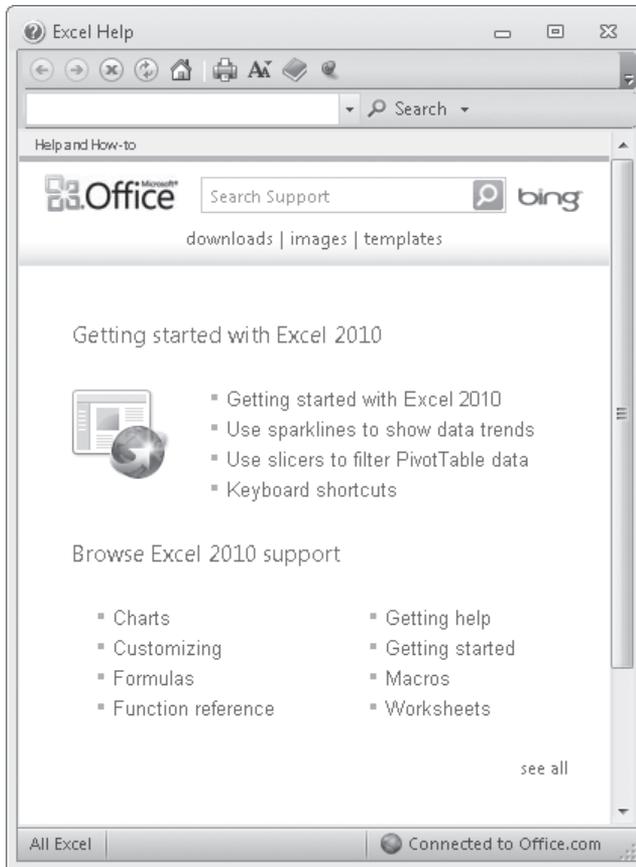
To practice getting help, you can work through the following exercise.



**SET UP** You don't need any practice files to complete this exercise. Start Excel, and then follow the steps.



1. At the right end of the ribbon, click the **Microsoft Excel Help** button.  
The Excel Help window opens.



If you are connected to the Internet, clicking any of the buttons below the Microsoft Office banner (Downloads, Images, and Templates) takes you to a corresponding page of the Office Web site.

**Tip** You can maximize the window or adjust its size by dragging the handle in the lower-right corner. You can change the size of the font by clicking the Change Font Size button on the toolbar.

2. Below the bulleted list under **Browse Excel 2010 support**, click **see all**.  
The window changes to display a list of help topics.

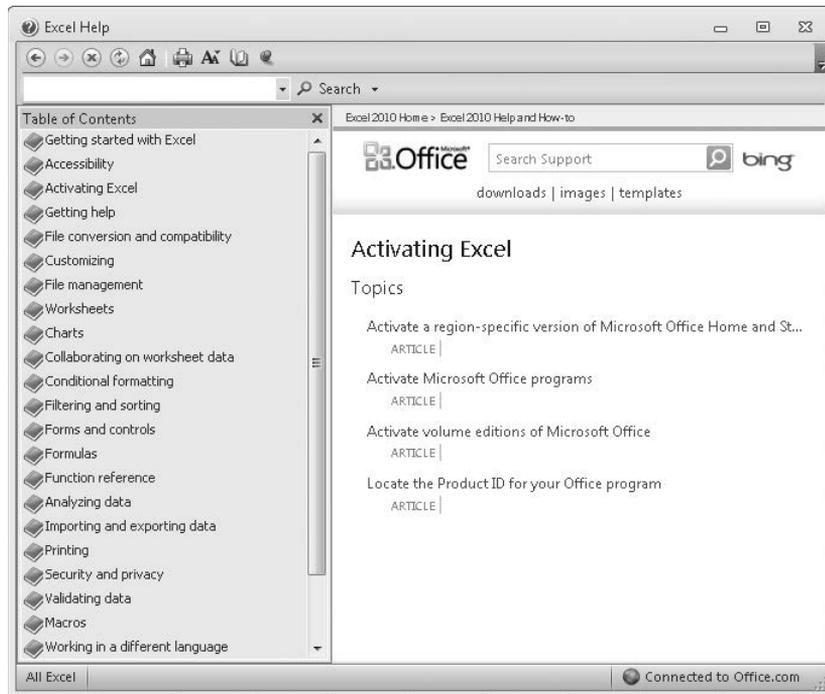
3. In the list of topics, click **Activating Excel**.

Excel Help displays a list of topics related to activating Microsoft Office programs. You can click any topic to display the corresponding information.



4. On the toolbar, click the **Show Table of Contents** button.

The window expands to accommodate two panes. The Table Of Contents task pane appears on the left, organized by category, like the table of contents in a book. If you're connected to the Internet, Excel displays categories, topics, and training available from the Office Online Web site as well as those stored on your computer. Clicking any category (represented by a book icon) displays that category's topics (represented by help icons).



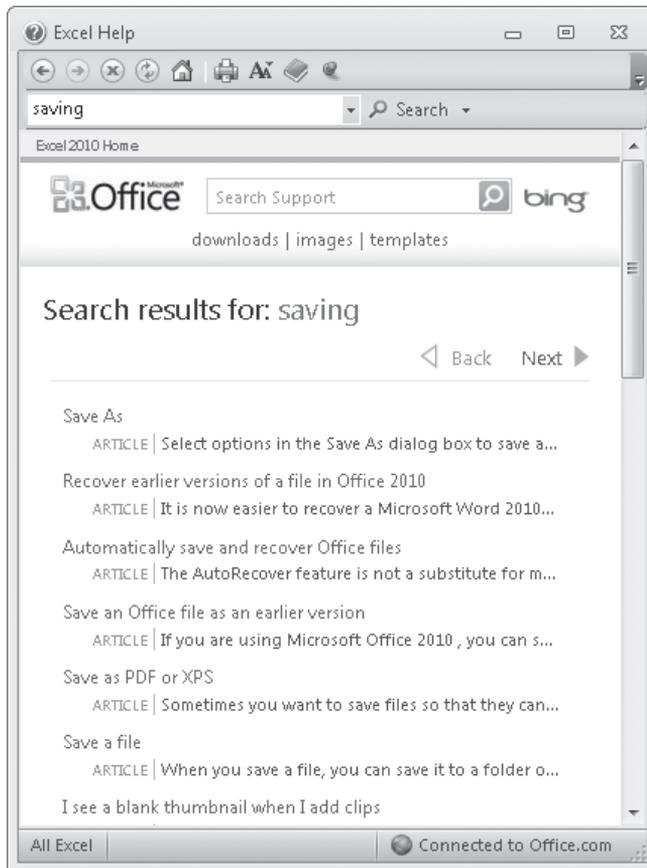
5. In the **Table of Contents** task pane, click a few categories and topics. Then click the **Back** and **Forward** buttons to move among the topics you have already viewed.



6. At the right end of the **Table of Contents** title bar, click the **Close** button.

7. At the top of the **Excel Help** window, click the **Type words to search for** box, type **saving**, and then press the Enter key.

The Excel Help window displays topics related to the word you typed. Next and Back buttons appear to make it easier to search for the topic you want.



8. In the results list, click the **Recover earlier versions of a file in Office 2010** topic.

The selected topic appears in the Excel Help window.

9. Below the title at the top of the topic, click **Show All**.

Excel displays any hidden auxiliary information available in the topic and changes the Show All button to Hide All. You can jump to related information by clicking hyperlinks identified by blue text.

**Tip** You can click the [Print](#) button on the toolbar to print a topic. Only the displayed information is printed.

**CLEAN UP** Click the [Close](#) button at the right end of the Excel Help window.

## More Information

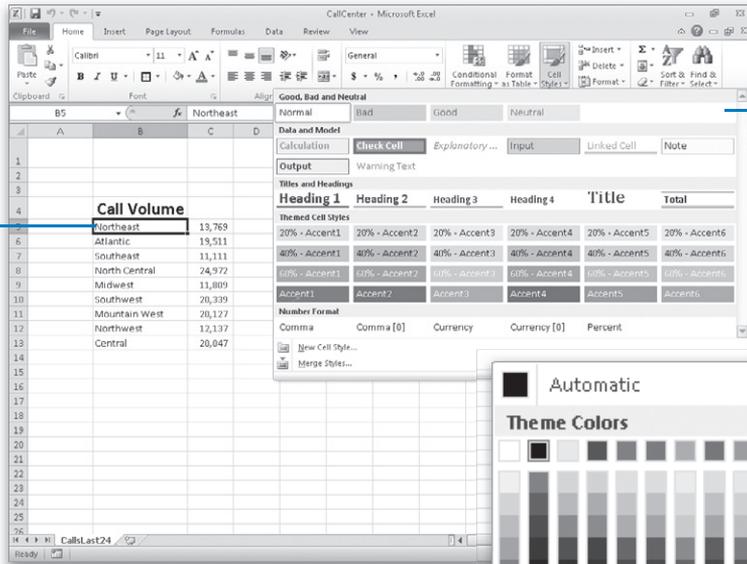
If your question is about Microsoft Excel 2010 or another Microsoft software product and you cannot find the answer in the product's Help system, please search the appropriate product solution center or the Microsoft Knowledge Base at:

*[support.microsoft.com](http://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/](http://support.microsoft.com/gp/selfoverview/)*

# Chapter at a Glance

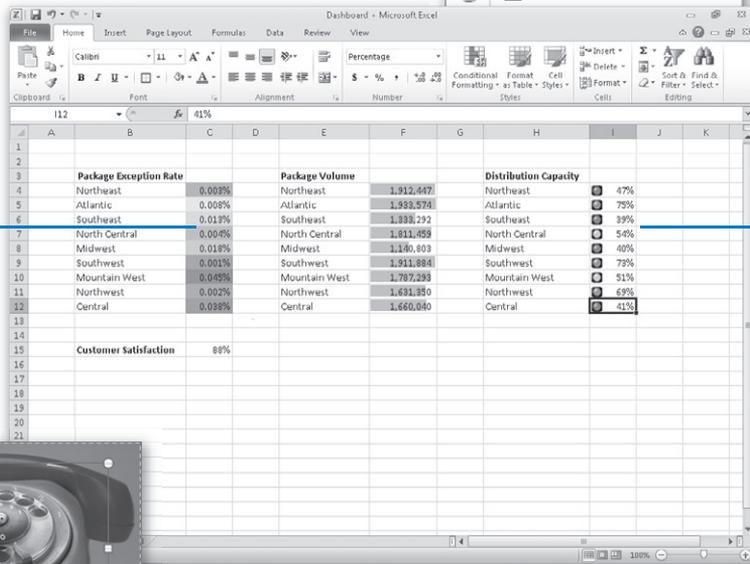


page 9 yl

or page 4 ll

Apply workbook

page 94 yl



page 11

page 10



work page

# 4 Changing Workbook Appearance

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## In this chapter, you will learn how to

- ✓ Format cells.
  - ✓ Define styles.
  - ✓ Apply workbook themes and Excel 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 Excel 2010 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 contains a list of days, you can easily set apart a label (for example, *Day*) 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 example, Lori Penor, 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 display a red traffic light icon, indicating that the center's performance is out of tolerance and requires attention.

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, and add images to worksheets.

**Practice Files** Before you can complete the exercises in this chapter, you need to copy the book's practice files to your computer. The practice files you'll use to complete the exercises in this chapter are in the Chapter04 practice file folder. A complete list of practice files is provided in "Using the Practice Files" at the beginning of this book.

## Formatting Cells

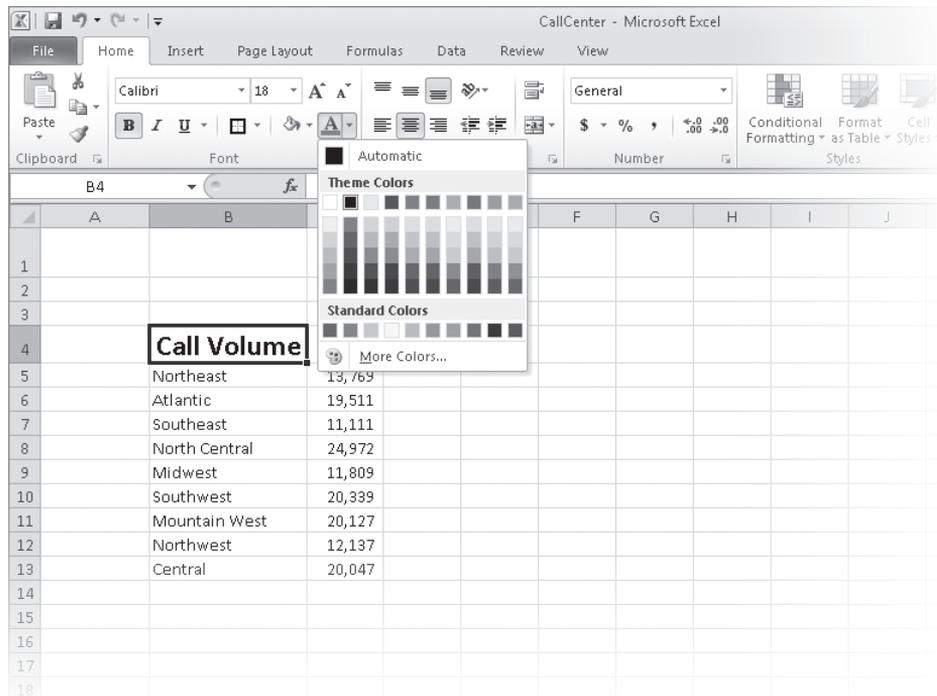
Excel spreadsheets can hold and process lots of data, but when you manage numerous spreadsheets it can be hard to remember from a worksheet's title exactly what data is kept in that worksheet. Data labels give you and your colleagues information about data in a worksheet, but it's important to format 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 that hold your data.

	A	B	C	D	E	F
1						
2						
3						
4		<b>Call Volume</b>				
5		Northeast	13,769			
6		Atlantic	19,511			
7		Southeast	11,111			
8		North Central	24,972			
9		Midwest	11,809			
10		Southwest	20,339			
11		Mountain West	20,127			
12		Northwest	12,137			
13		Central	20,047			
14						
15						
16						
17						

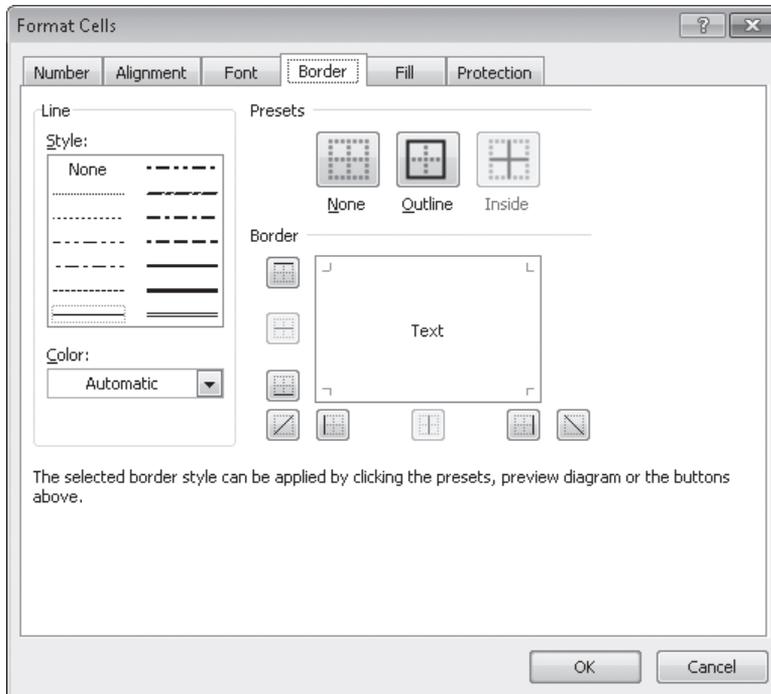
Most of the tools you need to change a cell's format can be found on the Home tab. You can apply the formatting represented on a button by selecting the cells you want to apply the style to and then clicking that button. If you want to set your data labels apart by making them appear bold, click the 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 (which looks like an eraser), and then click Clear Formats. Clicking Clear All from the same list will remove the cell's contents and formatting.

Buttons in the Home tab's Font group that give you choices, such as Font Color, have an arrow at the right edge of the button. Clicking the arrow displays a list of options accessible for that button, 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 from the Border list in the Font group. Excel does provide more options: To display the full range of border types and styles, in the Border list, click More Borders. The Border page of the Format Cells dialog box contains the full range of tools you can use to define your cells' borders.



You can also make a group of cells stand apart from its neighbors by changing its shading, which is the color that fills the cells. On a worksheet that tracks total package volume for the past month, Lori Penor could change the fill color of the cells holding her data labels to make the labels stand out even more than by changing the labels' text formatting.

**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 modify and then select your desired format.

One task you can't perform by 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 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 File tab, and then click Options. On the General 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 and restart the program.

In this exercise, you'll 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'll change the default font for the workbook.



**SET UP** You need the *VehicleMileSummary\_start* workbook located in your Chapter04 practice file folder to complete this exercise. Start Excel, open the *VehicleMileSummary\_start* workbook, and save it as *VehicleMileSummary*. Then follow the steps.

1. Click cell **D2**.
2. On the **Home** tab, in the **Font** group, click the **Bold** button.  
Excel displays the cell's contents in bold type.
3. In the **Font** group, click the **Font Size** arrow, and then in the list, click **18**.  
Excel increases the size of the text in cell D2.

**B**

11

Vehicle Mile Summary							
Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
VehicleID							
V101	159	144	124	108	125	165	
V102	113	106	111	116	119	97	
V103	87	154	124	128	111	100	
V104	137	100	158	96	127	158	
V105	86	132	154	97	154	165	
V106	159	163	155	101	89	160	
V107	111	165	155	92	91	94	
V108	101	162	123	87	93	140	
V109	164	159	116	97	149	170	
V110	100	107	140	144	152	132	

4. Click cell **B5**, hold down the Ctrl key, and click cell **C4** to select the non-contiguous cells.
5. On the **Home** tab, in the **Font** group, click the **Bold** button.  
Excel 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.  
Excel displays the cells' contents in italic type.



	A	B	C	D	E	F	G	H	I	J
1										
2			<b>Vehicle Mile Summary</b>							
3										
4			<b>Day</b>							
5		<b>VehicleID</b>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>		
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										
17										
18										

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



Excel 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 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** area of the color palette, click the yellow button.

Excel changes the selected cells' background color to yellow.

VehicleMileSummary - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Conditional Formatting Styles Cell Styles Insert Delete Format Sort & Find & Filter Editing

G14 fx 149

Vehicle Mile Summary

VehicleID	Day					
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
V101	159	144	124	108	125	165
V102	113	106	111	116	119	97
V103	87	154	124	128	111	100
V104	137	100	158	96	127	158
V105	86	132	154	97	154	165
V106	159	163	155	101	89	160
V107	111	165	155	92	91	94
V108	101	162	123	87	93	140
V109	164	159	116	97	143	120
V110	100	107	143	144	152	132

MilesLastWeek

Ready 100%

**Troubleshooting** The appearance of buttons and groups on the ribbon changes depending on the width of the program window. For information about changing the appearance of the ribbon to match our screen images, see “Modifying the Display of the Ribbon” at the beginning of this book.

- Click the **File** tab, and then click **Options**.

The Excel Options dialog box opens.

- If necessary, click **General** to display the **General** page.

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

*Verdana* appears in the Use This Font field.

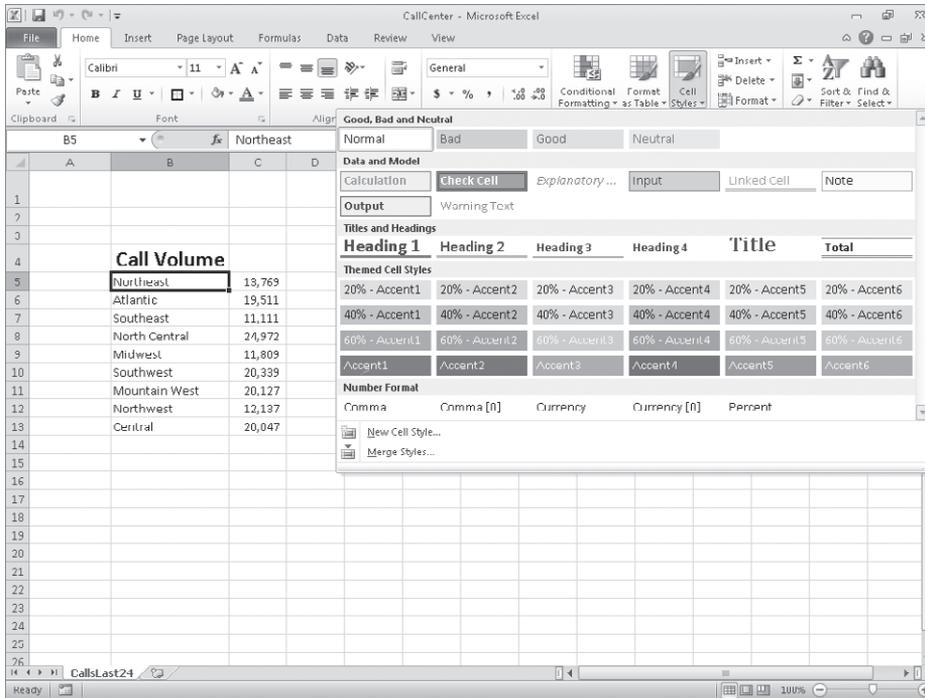
- Click **Cancel**.

The Excel Options dialog box closes without saving your change.

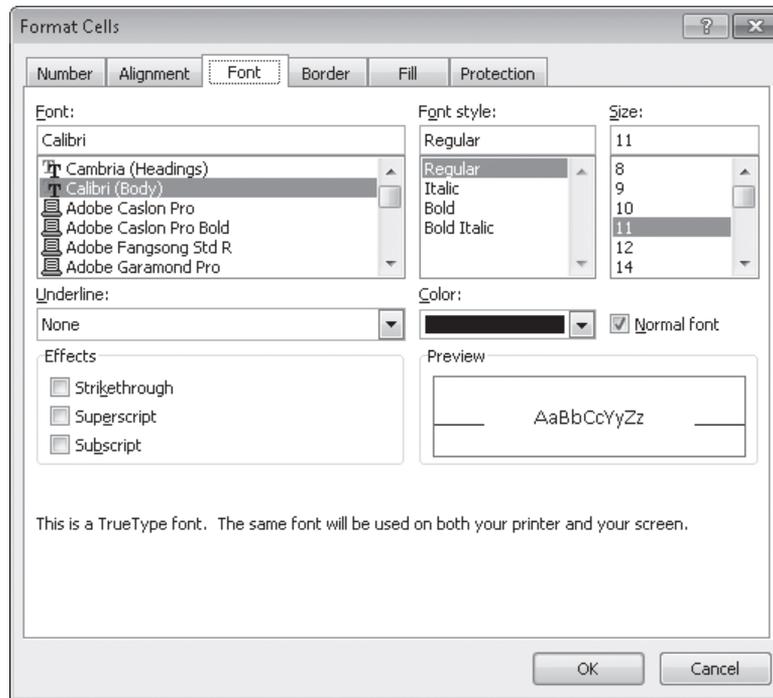
**✘ CLEAN UP** Save the **VehicleMileSummary** workbook, and then close it.

## Defining Styles

As you work with Excel, you will probably develop preferred formats for data labels, titles, and other worksheet elements. Instead of adding a format's characteristics one element at a time to the target cells, you can have Excel store the format and recall it as needed. You can find the predefined formats 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 also displays 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 clicking New Cell Style at the bottom of the gallery 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 custom 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 apply the copied format to the target range.

**Tip** If you want to apply the same formatting to multiple cells by using the Format Painter button, double-click the Format Painter button and then click the cells to which you want to apply the formatting. When you're done applying the formatting, press the Esc key.

In this exercise, you'll create a style and apply the new style to a data label.



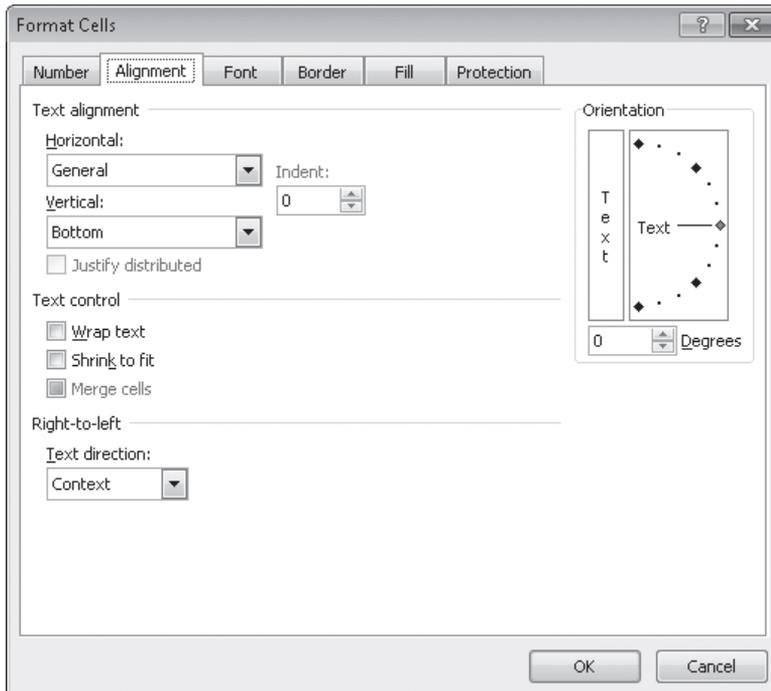
**SET UP** You need the `HourlyExceptions_start` workbook located in your `Chapter04` practice file folder to complete this exercise. Open the `HourlyExceptions_start` workbook, and save it as `HourlyExceptions`. Then follow the steps.



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.



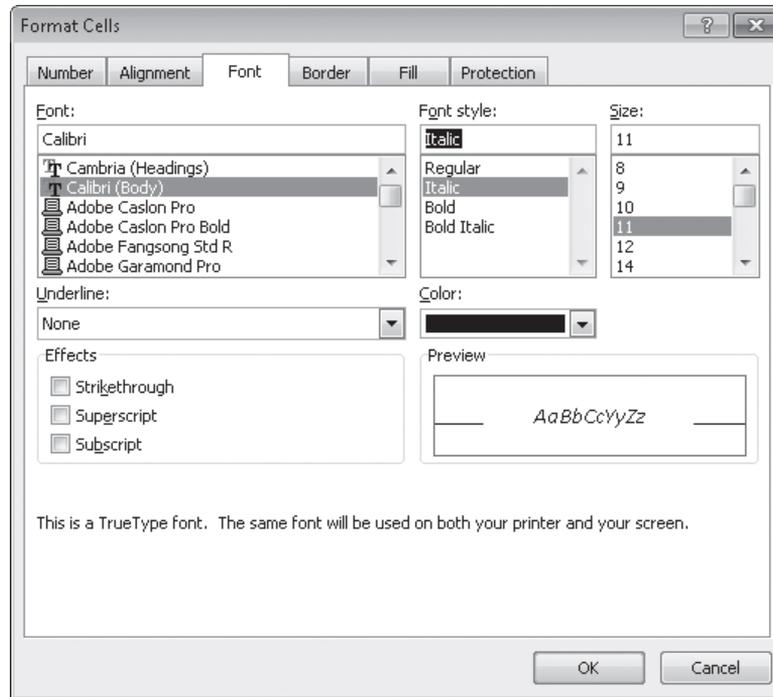
5. In the **Horizontal** list, click **Center**.

*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 page 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 save your changes.

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

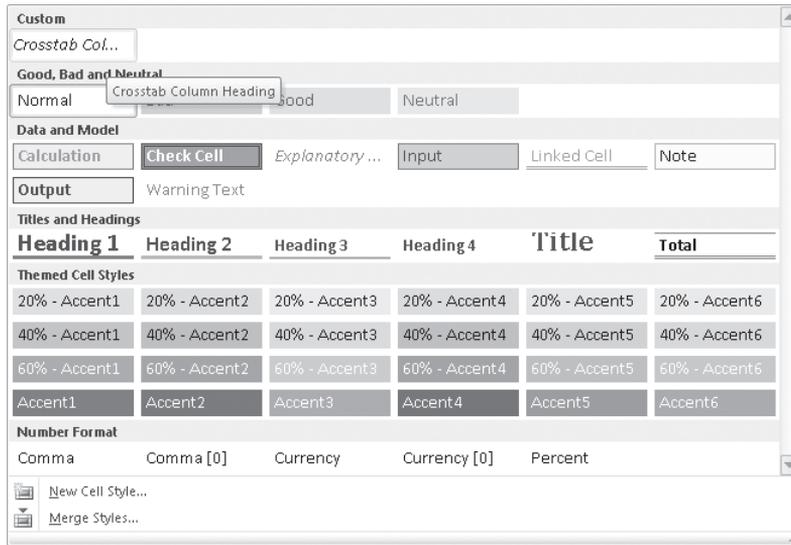
12. Click **OK**.

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.

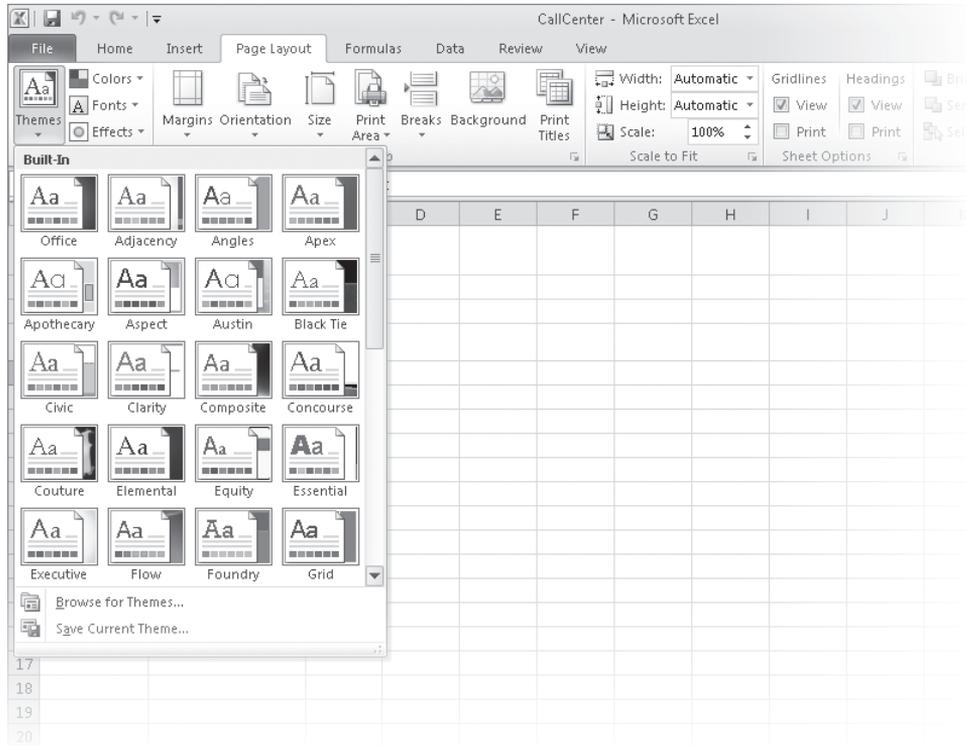
Excel applies your new style to the selected cells.

**✘ CLEAN UP** Save the *HourlyExceptions* workbook, and then close it.

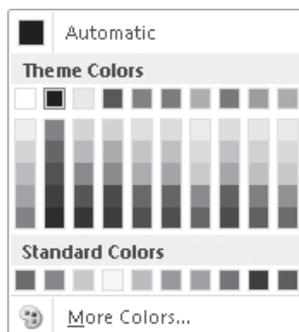
## Applying Workbook Themes and Excel Table Styles

Microsoft Office 2010 includes powerful design tools that enable you to create attractive, professional documents quickly. The Excel product team implemented the new design capabilities by defining workbook themes and Excel table styles. A theme is a way to specify the fonts, colors, and graphic effects that appear in a workbook. Excel 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 applies the Office theme to your workbooks.



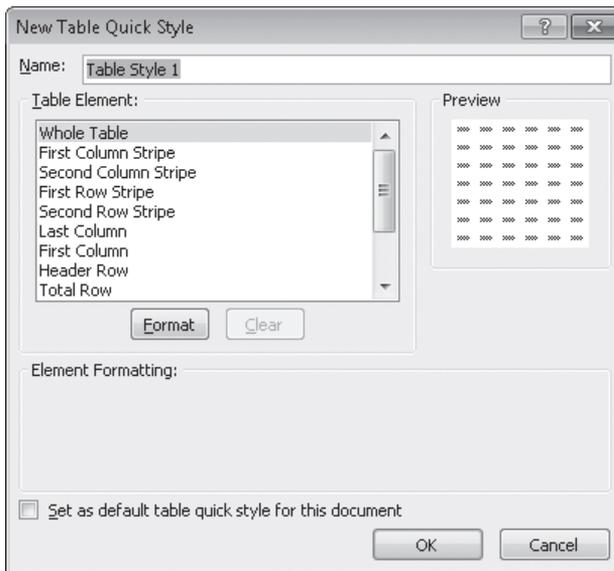
When you want to format a workbook element, Excel displays colors that are available within the active theme. For example, selecting a worksheet cell and then clicking the Font Color button's arrow displays a palette of colors you can use. The theme colors appear in the top segment of the color palette—the 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 area 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 then, 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 Save Current Theme 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 other Office 2010 documents as well.

Just as you can define and apply themes to entire workbooks, you can apply and define Excel table styles. You select an Excel 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** area describes the selected element's appearance. Also, in the **Table Element** list, Excel displays the element's name in bold to indicate it has been changed. To make the new style the default for new Excel tables created in the current workbook, select the **Set As Default Table Quick Style For This Document** check box. When you click **OK**, Excel saves the new table style.

**Tip** To remove formatting from a table element, click the name of the table element and then click the **Clear** button.

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



**SET UP** You need the *HourlyTracking\_start* workbook located in your **Chapter04 practice file folder** to complete this exercise. Open the *HourlyTracking\_start* workbook, and save it as *HourlyTracking*. Then follow the steps.



1. If necessary, click any cell in the Excel 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 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**.

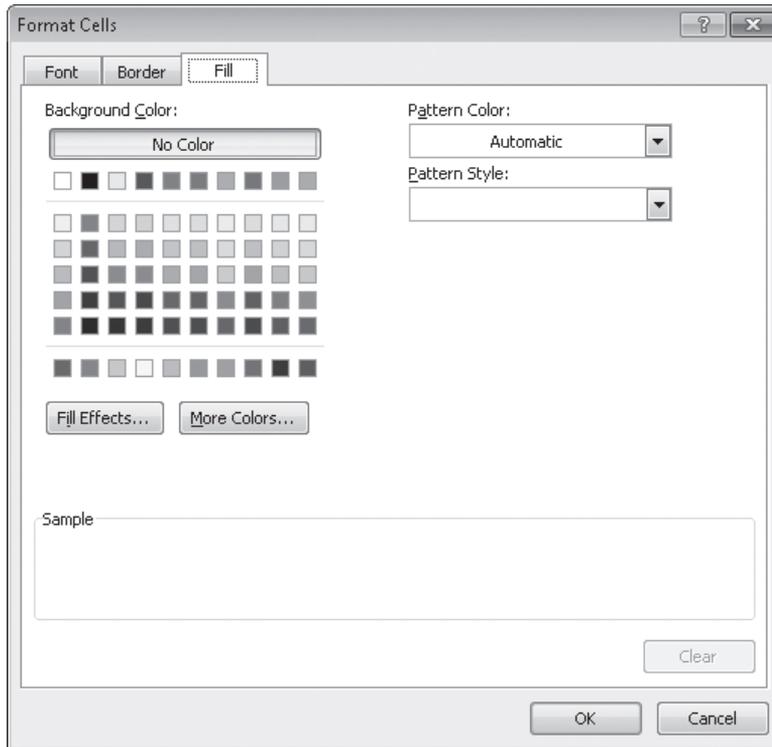
The **New Table Quick Style** dialog box opens.

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 page is displayed.



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**.

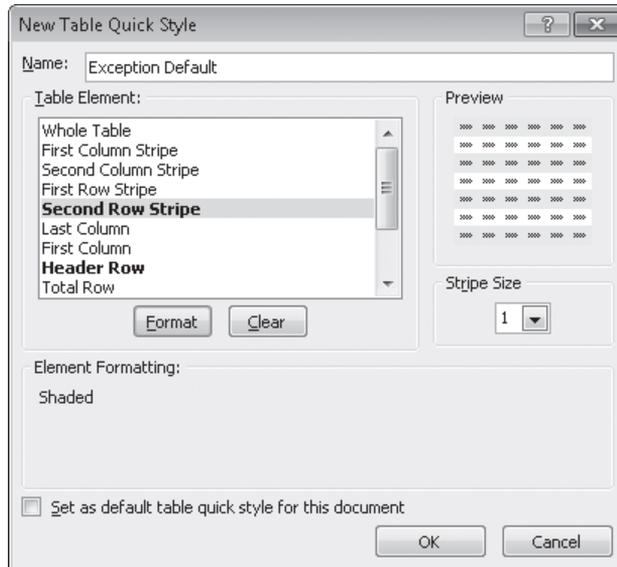
The Format Cells dialog box opens.

11. Just below the **No Color** button, 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**.

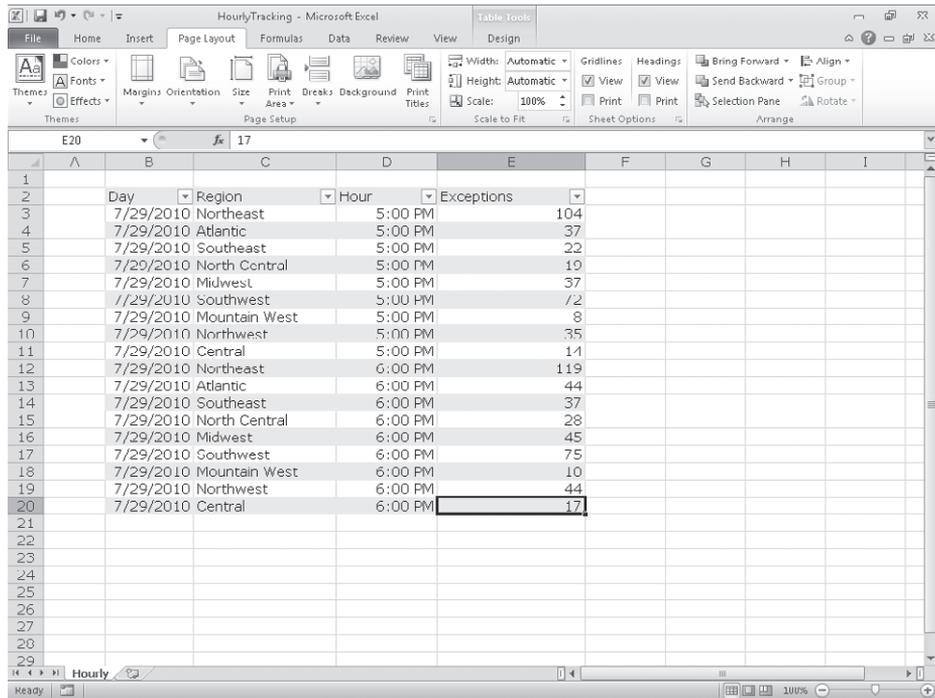
The New Table Quick Style dialog box closes.

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

Excel applies the new format.

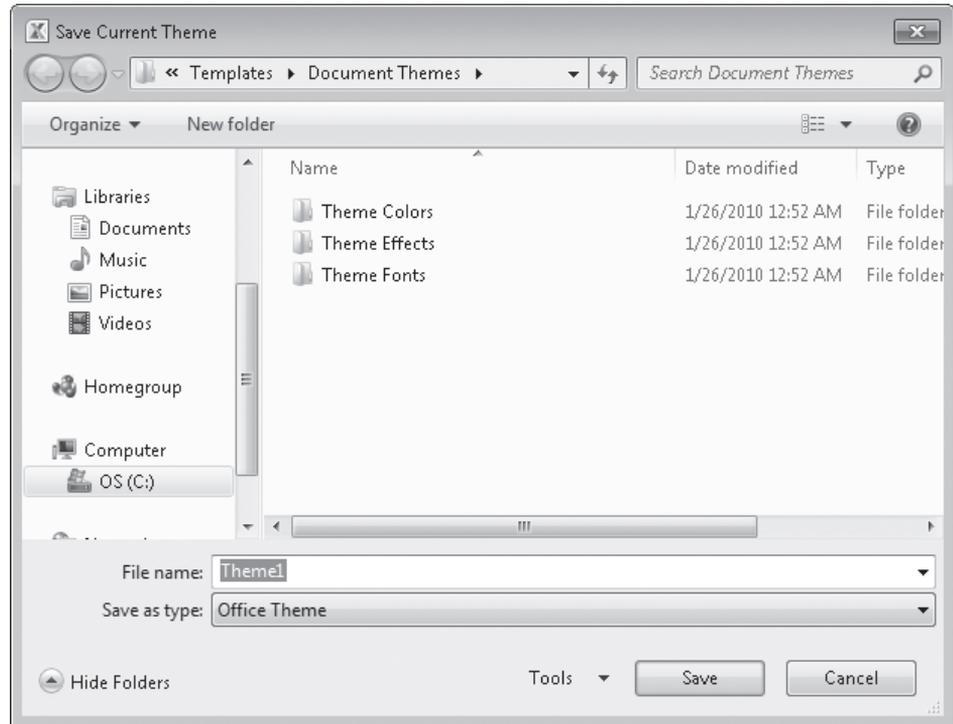
15. On the **Page Layout** tab, in the **Themes** group, click the **Fonts** arrow, and then in the list, click **Verdana**.

Excel changes the theme's font to Verdana (which is part of the Aspect font set).

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 saves your theme.
18. In the **Themes** group, click the **Themes** button, and then click **Origin**.  
Excel applies the new theme to your workbook.

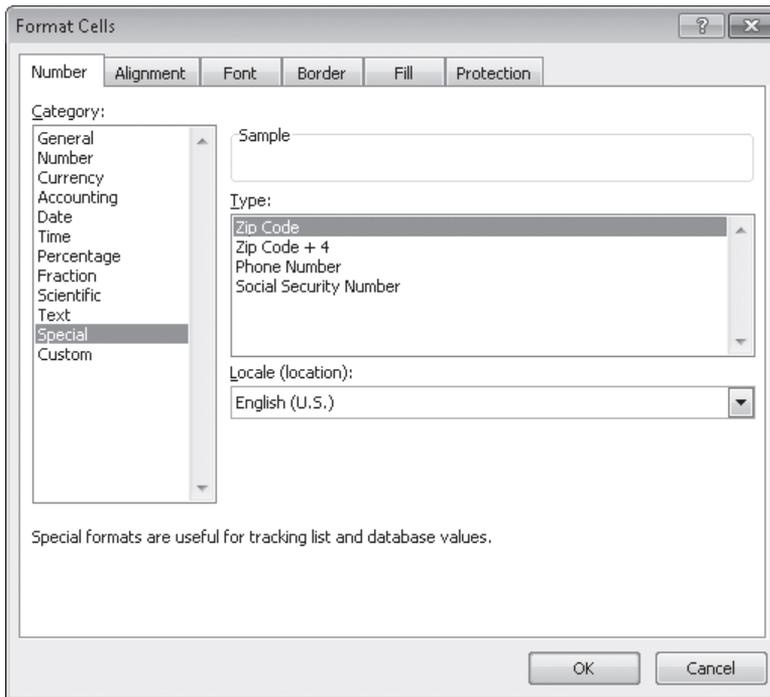
**✕ CLEAN UP** Save the *HourlyTracking* workbook, and then close it.

## Making Numbers Easier to Read

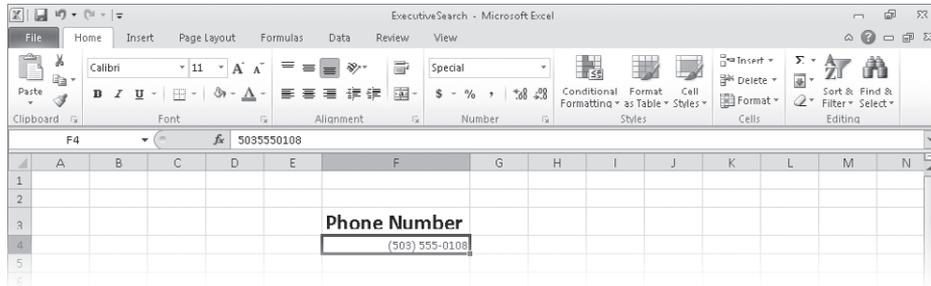
Changing the format of the cells in your worksheet can make your data much easier to read, both by setting data labels apart from the actual data and by adding borders to define the boundaries between labels and data even more clearly. Of course, using formatting options to change the font and appearance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

As an 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 change the data's appearance.

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



Clicking Phone Number in the Type list tells Excel to format 10-digit numbers in the standard phone number format. You can see this in operation if you compare the contents of the active cell and the contents of the formula box for a cell with the Phone Number formatting.



**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 425550012 would be displayed as (42) 555-0012. An 11-digit number would be displayed with a 4-digit area code. If the phone number doesn't look right, you probably left out a digit or included an extra one, so you should make sure your entry is correct.

Just as you can instruct Excel 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 should display negative numbers.

**Tip** The Excel user interface enables you to make the most common format changes by displaying the Home tab of the ribbon and then, in the Number group, either clicking a button representing a built-in format or selecting a format from the Number Format list.

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 (found at the bottom right corner of the Number group on the ribbon) 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 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*” (including quote marks) 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 to be displayed as part of the format in quotes so that Excel recognizes the text as a string to be displayed in the cell.

In this exercise, you’ll assign date, phone number, and currency formats to ranges of cells.



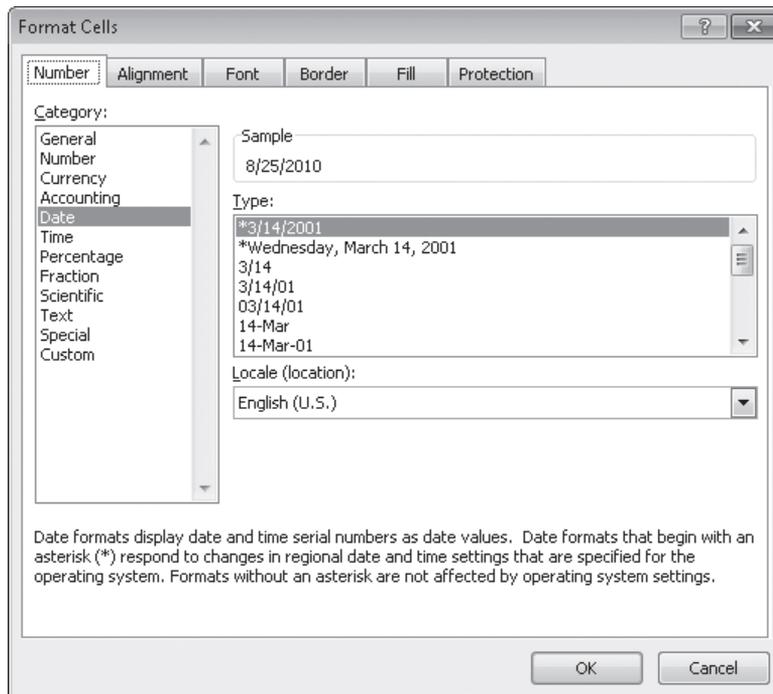
**SET UP** You need the *ExecutiveSearch\_start* workbook located in your Chapter04 practice file folder to complete this exercise. Open the *ExecutiveSearch\_start* workbook, and save it as *ExecutiveSearch*. Then follow the steps.

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

- Click **OK** to assign the chosen format to the cell.

Excel displays the contents of cell A3 to reflect the new format.

- Click cell **G3**.



- On the **Home** tab, in the **Number** group, click the **Number Format** button's down arrow and then click **More Number Formats**.

- If necessary, click the **Number** tab in the **Format Cells** dialog box.

- In the **Category** list, click **Special**.

The Type list appears with a list of special formats.

- In the **Type** list, click **Phone Number**, and then click **OK**.

Excel displays the contents of the cell as (425) 555-0102, matching the format you selected, and the Format Cells dialog box closes.

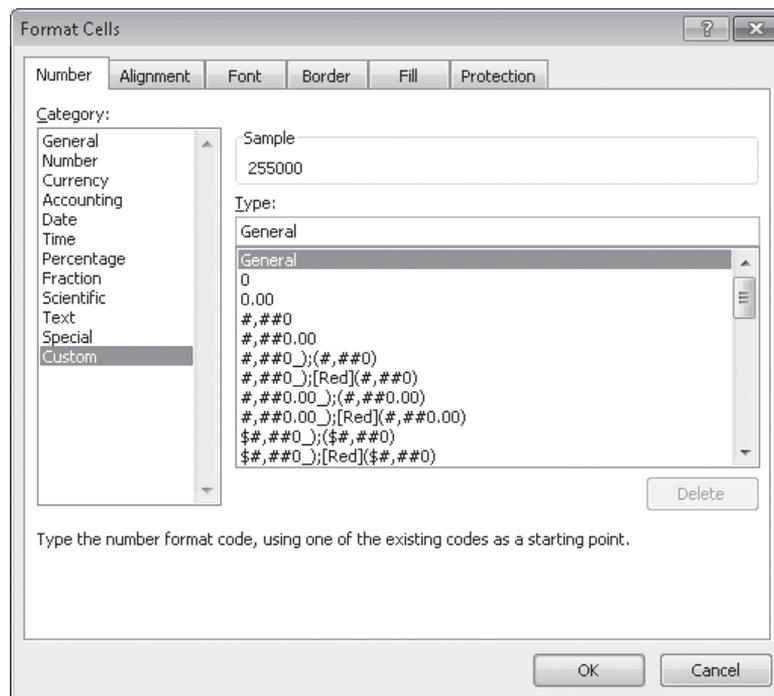
- Click cell **H3**.

- Click the **Font** dialog box launcher.

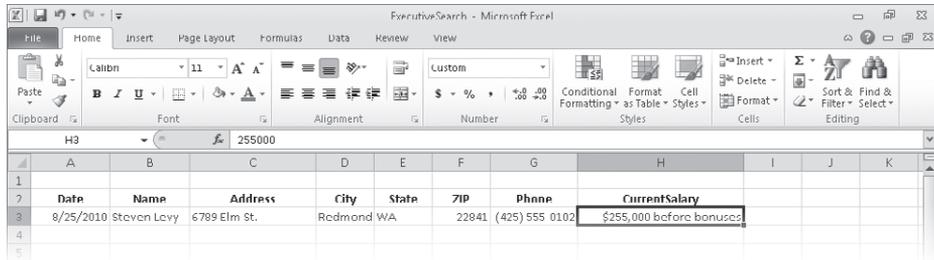
- If necessary, click the **Number** tab in the **Format Cells** dialog box.

- 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"** (note the space after the opening quote).
18. Click **OK** to close the dialog box.



**✕ CLEAN UP** Save the ExecutiveSearch workbook, and then close it.

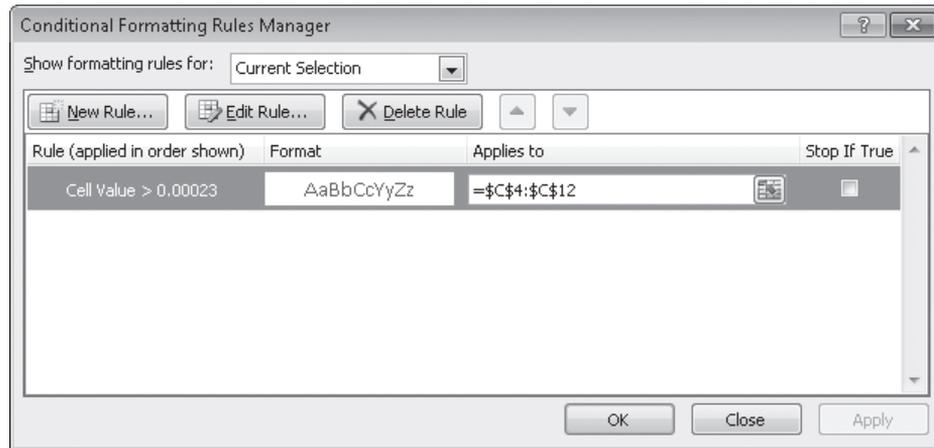
## Changing the Appearance of Data Based on Its Value

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 change the appearance of your data based on its value. These formats are called conditional formats because the data must meet certain conditions, defined in conditional formatting rules, to have a format applied to it. For example, if chief operating officer Lori Penor 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 changes the format of the cell's contents when the condition is met.

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. In Excel, 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 displays a dialog box that contains fields and controls you can use to define your rule. To display all of the rules for the selected cells, display the Home tab, and then in the Styles group, click Conditional Formatting. On the menu, click Manage Rules to display the Conditional Formatting Rules Manager.

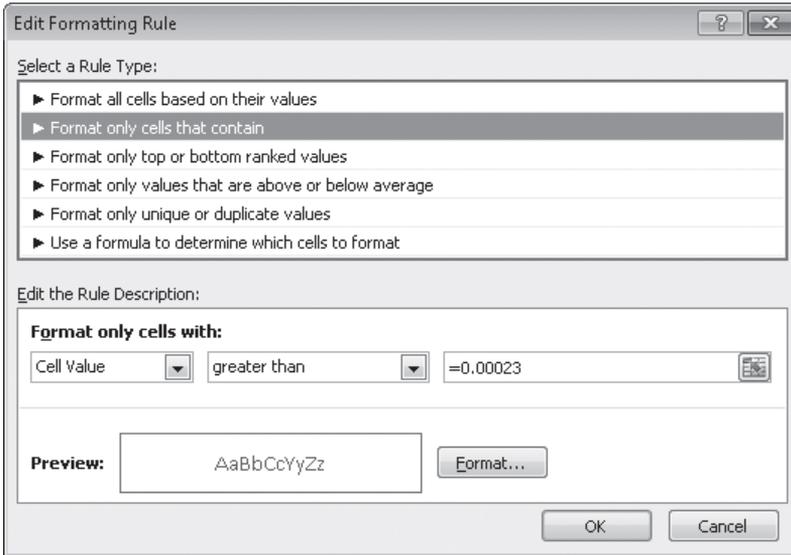


The Conditional Formatting Rules Manager enables you to control your conditional formats in the following ways:

- 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 rule and then clicking the Move Up button or Move Down button.
- Control whether Excel 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.

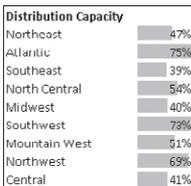
**Tip** Clicking the New Rule button in the Conditional Formatting Rules Manager opens the New Formatting Rule dialog box. The commands in the New Formatting Rule dialog box duplicate the options displayed when you click the Conditional Formatting button in the Styles group on the Home tab.

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 to display the rule.



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

Excel also enables you to create three other 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.



You can create two types of data bars in Excel 2010: solid fill and gradient fill. When data bars were introduced in Excel 2007, they filled cells with a color band that decreased in intensity as it moved across the cell. This gradient fill pattern made it a bit difficult to determine the relative length of two data bars because the end points weren't as distinct as they would have been if the bars were a solid color. Excel 2010 enables you to choose between a solid fill pattern, which makes the right edge of the bars easier to discern,

and a gradient fill, which you can use if you share your workbook with colleagues who use Excel 2007.

Excel also draws data bars differently than was done in Excel 2007. Excel 2007 drew a very short data bar for the lowest value in a range and a very long data bar for the highest value. The problem was that similar values could be represented by data bars of very different lengths if there wasn't much variance among the values in the conditionally formatted range. In Excel 2010, data bars compare values based on their distance from zero, so similar values are summarized using data bars of similar lengths.

**Tip** Excel 2010 data bars summarize negative values by using bars that extend to the left of a baseline that the program draws in a cell. You can control how your data bars summarize negative values by clicking the Negative Value And Axis button, which can be accessed from either the New Formatting Rule dialog box or the Edit Formatting Rule dialog box.

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.

Distribution Capacity	
Northeast	47%
Atlantic	75%
Southeast	39%
North Central	54%
Midwest	40%
Southwest	78%
Mountain West	51%
Northwest	69%
Central	41%

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

Distribution Capacity	
Northeast	47%
Atlantic	75%
Southeast	39%
North Central	54%
Midwest	40%
Southwest	78%
Mountain West	51%
Northwest	69%
Central	41%

When icon sets were introduced in Excel 2007, you could apply an icon set as a whole, but you couldn't create custom icon sets or choose to have Excel 2007 display no icon if the value in a cell met a criterion. In Excel 2010, you can display any icon from any set for any criterion or display no icon.

When you click a color scale or icon set in the Conditional Formatting Rules Manager and then click the Edit Rule button, you can control when Excel 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 comparisons.

In this exercise, you'll 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.



**SET UP** You need the `Dashboard_start` workbook located in your `Chapter04` practice file folder to complete this exercise. Open the `Dashboard_start` workbook, and save it as `Dashboard`. Then follow the steps.

1. Select cells **C4:C12**.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu, point to **Color Scales**, and then in the top row of the palette, click the second pattern from the left.



Excel formats the selected range.

The screenshot shows the Microsoft Excel interface with the 'Dashboard' workbook open. The 'Home' tab is active, and the 'Conditional Formatting' menu is open, showing the 'Color Scales' option. The selected range C4:C12 is highlighted in the worksheet. The data in the worksheet is as follows:

	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3		<b>Package Exception Rate</b>		<b>Package Volume</b>		<b>Distribution Capacity</b>					
4		Northeast	0.009%	Northeast		1,912,447		Northeast		47%	
5		Atlantic	0.008%	Atlantic		1,933,574		Atlantic		75%	
6		Southeast	0.013%	Southeast		1,333,292		Southeast		39%	
7		North Central	0.004%	North Central		1,811,459		North Central		54%	
8		Midwest	0.018%	Midwest		1,140,803		Midwest		40%	
9		Southwest	0.001%	Southwest		1,911,884		Southwest		73%	
10		Mountain West	0.045%	Mountain West		1,787,293		Mountain West		51%	
11		Northwest	0.002%	Northwest		1,631,350		Northwest		69%	
12		Central	0.038%	Central		1,660,040		Central		41%	
13											
14											
15		<b>Customer Satisfaction</b>	88%								
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											

3. Select cells **F4:F12**.

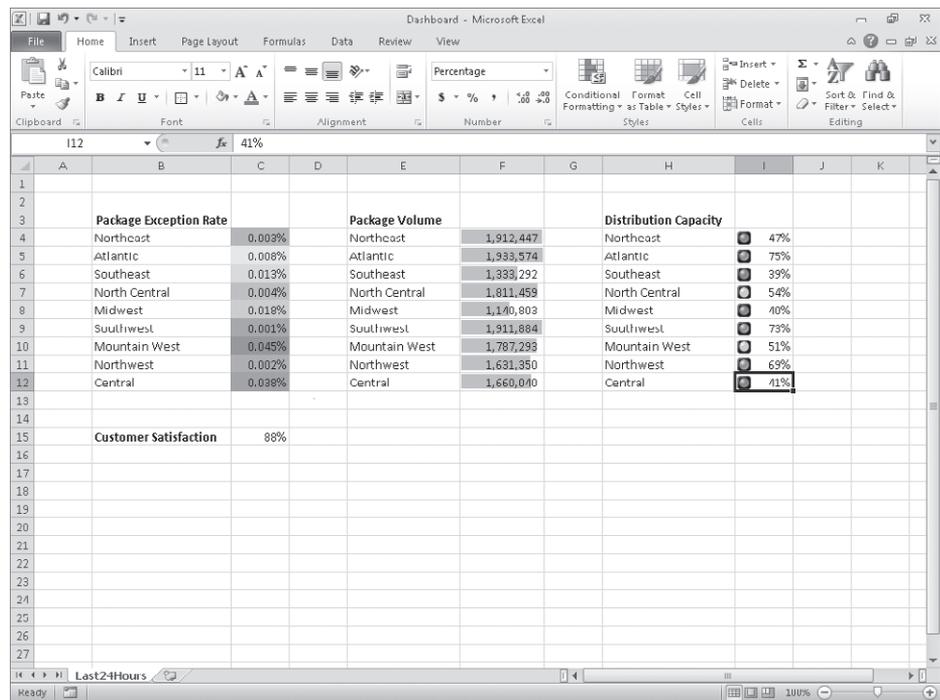
- On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu, point to **Data Bars**, and then, in the **Solid Fill** group, click the orange data bar format.

Excel formats the selected range.

- Select cells **I4:I12**.

- On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu, point to **Icon Sets**, and then in the left column of the list of formats, click the three traffic lights with black borders.

Excel formats the selected cells.

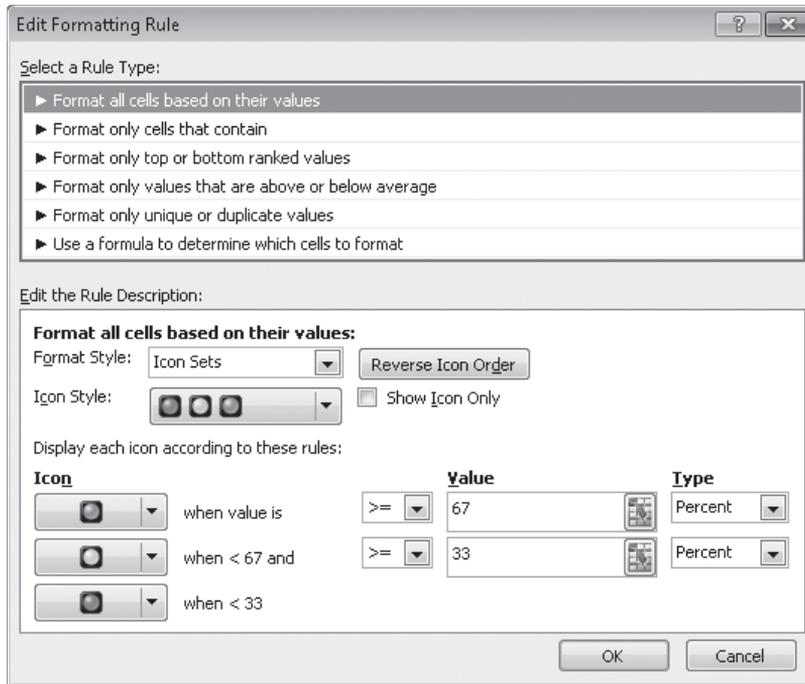


- With the range **I4:I12** still selected, on the **Home** tab, in the **Styles** group, click **Conditional Formatting**, and then click **Manage Rules**.

The Conditional Formatting Rules Manager opens.

- Click the **Icon Set** rule, and then click **Edit Rule**.

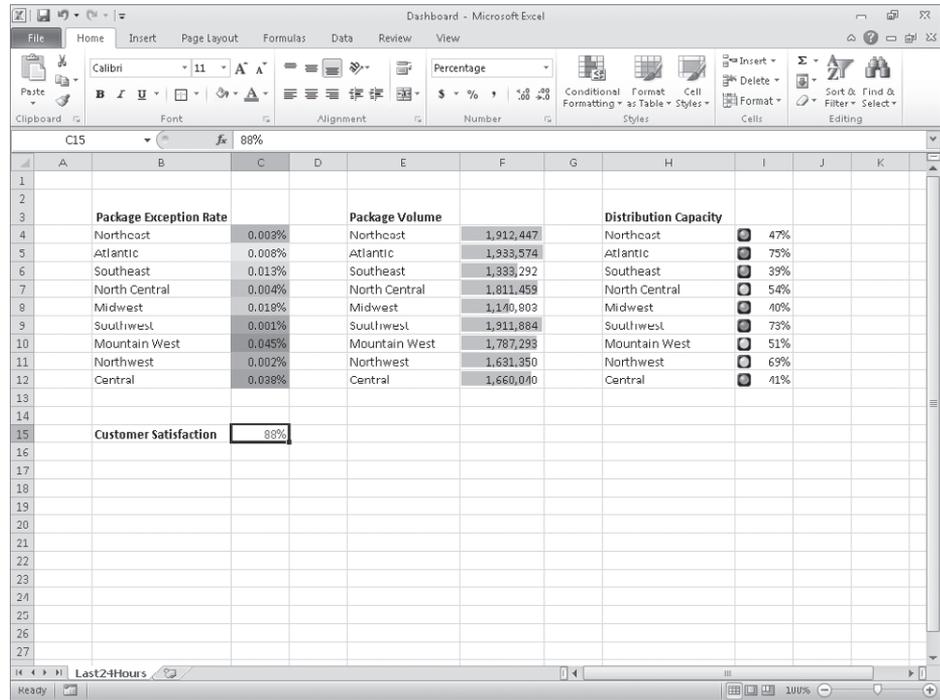
The Edit Formatting Rule dialog box opens.



9. Click the **Reverse Icon Order** button.  
Excel 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 **Number**.
11. In the red light icon's **Value** field, type **0.7**.
12. In the yellow light icon's row, in the **Type** list, click **Number**.
13. In the yellow light icon **Value** field, type **0.5**.
14. Click **OK** twice to close the **Edit Formatting Rule** dialog box and the **Conditional Formatting Rules Manager**.  
Excel formats the selected cell range.
15. Click cell **C15**.
16. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu, 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 displays the text in cell C15 in red.



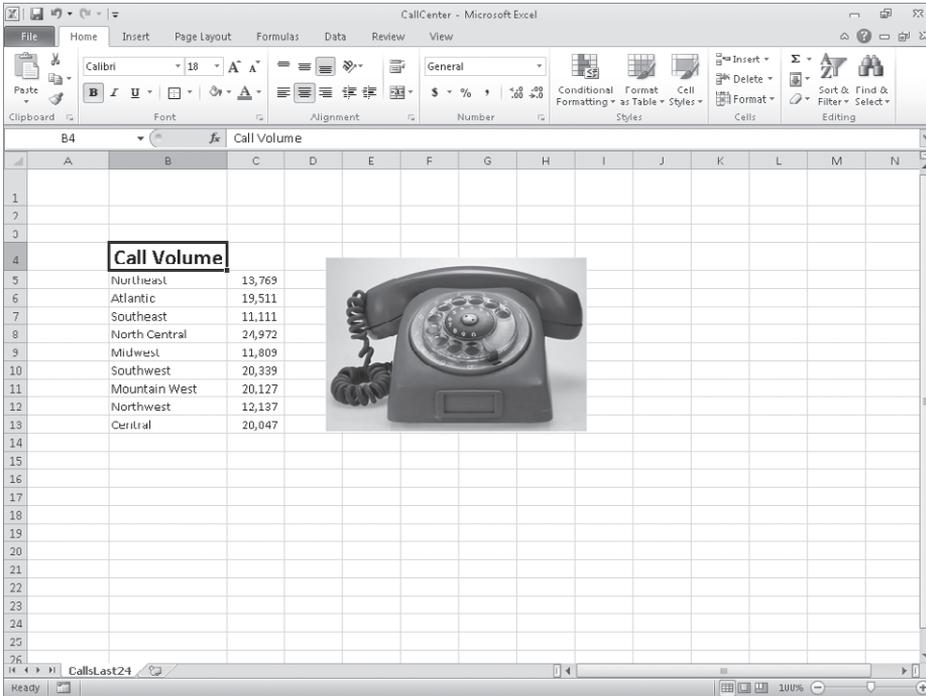
**✘ CLEAN UP** Save the Dashboard workbook, and then close it.

## Adding Images to Worksheets

Establishing a strong corporate identity helps customers remember your organization as well as 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, from which you can 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 other attributes. With the controls in the Picture Styles group, you can place a border around the picture, change the picture's shape, or change a picture's effects (such as shadow, reflection, or three-dimensional effects). 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 appears on the graphic. If you accidentally resize a graphic by dragging a handle, just click the Undo button to remove your change.

Excel 2010 includes a new built-in capability that you can use to remove the background of an image you insert into a workbook. To do so, click the image and then, on the Format contextual tab of the ribbon, in the Adjust group, click Remove Background. When you do, Excel attempts to identify the foreground and background of the image.



You can drag the handles on the inner square of the background removal tool to change how the tool analyzes the image. When you have adjusted the outline to identify the elements of the image you want to keep, click the Keep Changes button on the Background Removal contextual tab of the ribbon to complete the operation.

If you want to generate a repeating image in the background of a worksheet to form 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; you could also 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'll add an image to an existing worksheet, change its location on the worksheet, reduce the size of the image, and then set another image as a repeating background for the worksheet.



**SET UP** You need the *CallCenter\_start* workbook and the phone and texture images located in your *Chapter04* practice file folder to complete this exercise. Open the *CallCenter\_start* workbook, and save it as *CallCenter*. Then follow the steps.



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

The Insert Picture dialog box opens.

2. Navigate to the **Chapter04** practice file folder, and then double-click the **phone** image file.

The image appears on your worksheet.



3. On the **Format** contextual tab, in the **Adjust** group, click **Remove Background**.

Excel attempts to separate the image's foreground from its background.

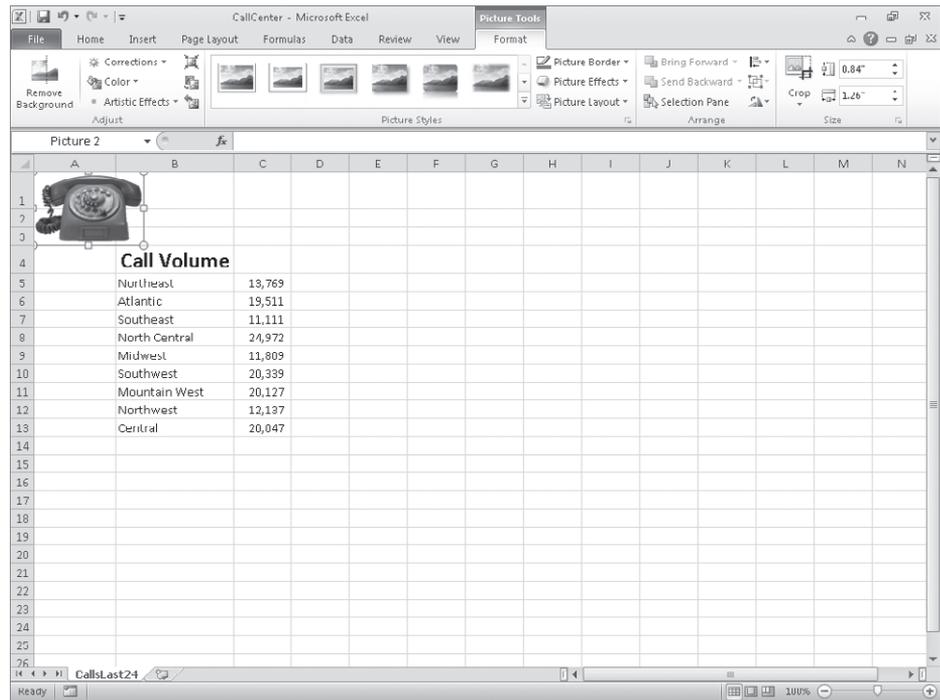
4. Drag the handles at the upper-left and bottom-right corners of the outline until the entire phone, including the cord, is within the frame.



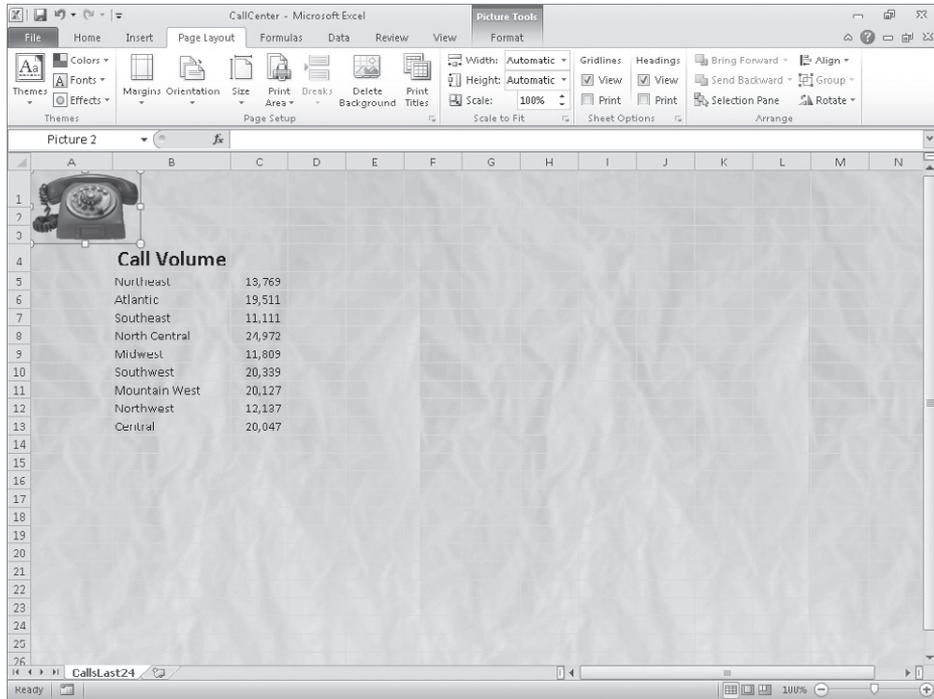
5. On the **Background Removal** tab, click **Keep Changes**.

Excel removes the highlighted image elements.

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



- On the **Page Layout** tab, in the **Page Setup** group, click **Background**.  
The Sheet Background dialog box opens.
- Navigate to the **Chapter04** practice file folder, and then double-click the **texture** image file.  
Excel repeats the image to form a background pattern.



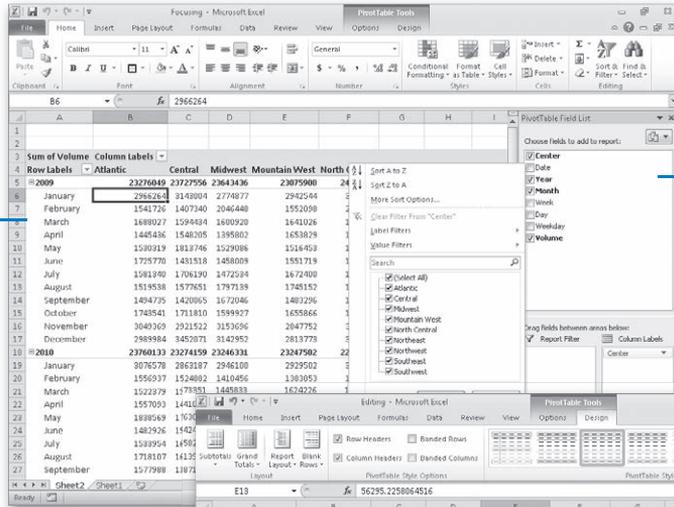
- On the **Page Layout** tab, in the **Page Setup** group, click **Delete Background**.  
Excel removes the background image.

**CLEAN UP** Save the CallCenter workbook, and then close it. 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 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 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 Excel 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 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. Excel 2010 greatly enhances your ability to manage your images without leaving Excel.

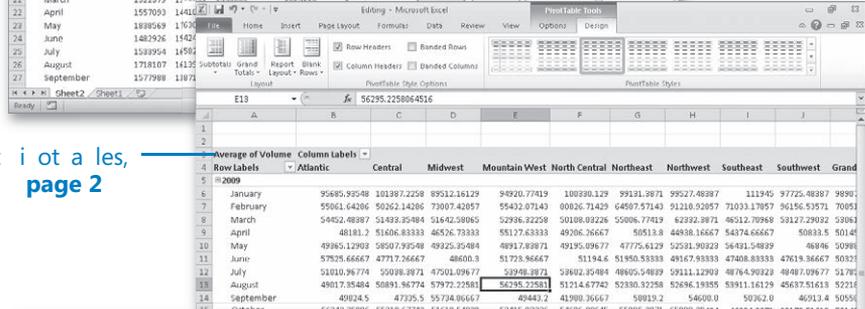
# Chapter at a Glance



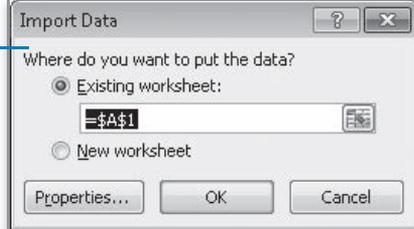
Filter, show, and hide data, page 222

Filter, show, and hide data, page 222

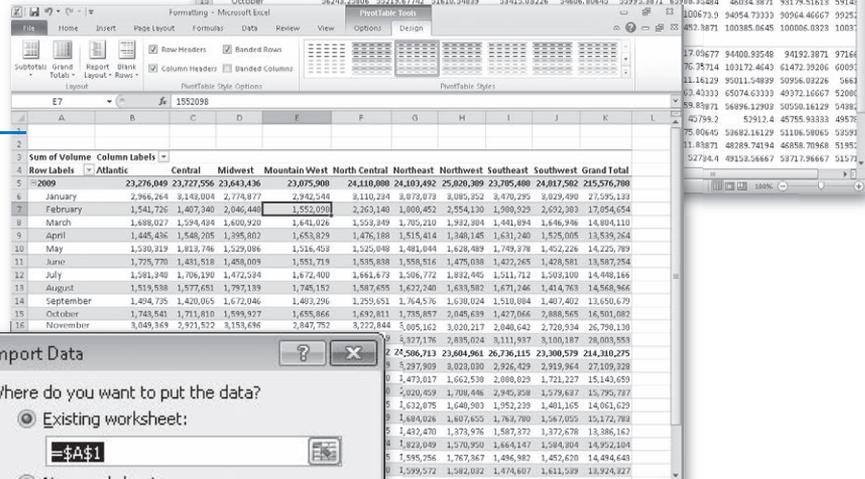
Sort data, page 2



Sort data, page 2



Import data, page 2



Import data, page 2

# 9 Creating Dynamic Worksheets by Using PivotTables

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## In this chapter, you will learn how 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 Excel 2010 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 easily 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 change the worksheet quickly so that it displays only sales on Tuesdays during the afternoon.

There is an Excel tool with which you can 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, focus your PivotTable data using filters and Slicers, format PivotTables, and create a PivotTable with data imported from a text file.

**Practice Files** Before you can complete the exercises in this chapter, you need to copy the book's practice files to your computer. The practice files you'll use to complete the exercises in this chapter are in the Chapter09 practice file folder. A complete list of practice files is provided in "Using the Practice Files" at the beginning of this book.

## Analyzing Data Dynamically by Using PivotTables

With Excel worksheets you can gather and present important data, but the standard worksheet can't be changed from its original configuration easily. As an example, consider a worksheet that records monthly package volumes for each of nine distribution centers in the United States.

	January	February	March	April	May	June	July	August	September
Atlantic	6,042,842	3,098,669	3,210,406	3,002,529	3,368,888	3,208,696	3,115,294	3,237,645	3,000,000
Central	6,006,191	2,932,222	3,167,785	2,989,245	3,576,763	2,973,980	3,364,482	3,194,591	2,800,000
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	3,100,000
Mountain West	5,872,046	2,935,951	3,265,252	3,071,049	3,153,233	3,063,572	3,456,576	3,371,850	2,900,000
North Central	6,236,863	3,785,068	2,929,397	2,677,853	3,079,267	3,040,653	3,521,947	3,166,710	2,900,000
Northeast	6,370,902	3,201,469	3,725,669	3,140,209	3,165,070	2,990,906	3,329,021	3,217,406	3,000,000
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	3,000,000
Southeast	6,396,724	4,877,758	4,387,252	3,583,479	3,513,158	3,009,637	3,175,859	3,168,228	2,900,000
Southwest	5,949,454	4,413,610	3,276,583	3,006,170	3,019,281	2,801,259	3,087,404	2,867,383	3,000,000
<b>Grand Total</b>	<b>54,704,461</b>	<b>32,998,313</b>	<b>30,599,847</b>	<b>27,600,893</b>	<b>29,398,572</b>	<b>26,973,416</b>	<b>29,400,270</b>	<b>29,063,609</b>	<b>27,500,000</b>

**Troubleshooting** The appearance of buttons and groups on the ribbon changes depending on the width of the program window. For information about changing the appearance of the ribbon to match our screen images, see "Modifying the Display of the Ribbon" at the beginning of this book.

The data in the worksheet is organized so that each row represents a distribution center and each column represents 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 this worksheet, you can't easily reorganize the contents of your worksheet so that the months are assigned to the rows and the distribution centers are assigned to the columns.

The Excel 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 described 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 the distribution centers. The new layout emphasizes the totals by regional distribution center.

Sum of Volume	Column Labels	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
Row Labels	Atlantic									
January	6,042,842	6,006,191	5,770,977	5,872,046	6,236,863	6,370,987	6,108,387	6,396,774	5,949,454	54,704,461
February	3,090,663	2,932,222	3,456,904	2,935,951	3,705,060	3,201,469	4,216,660	4,077,750	4,413,610	32,990,310
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	2,801,259	26,973,416
July	3,115,294	3,364,482	2,945,492	3,406,576	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	6,083,306	6,236,356	6,121,929	6,026,826	6,287,815	6,002,883	6,245,619	5,725,902	54,867,810
December	6,273,737	6,546,678	6,039,360	5,880,670	6,033,514	6,462,073	5,768,374	5,981,613	6,533,476	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

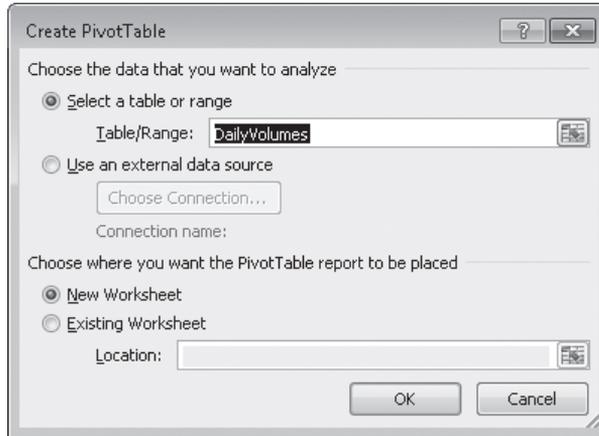
To create a PivotTable, you must have your data collected in a list. Excel tables mesh perfectly with PivotTable dynamic views; not only do Excel tables have a well-defined column and row structure, but the ability to refer to an Excel table by its name also greatly simplifies PivotTable creation and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

In the Excel table used to create the distribution PivotTable, each row of the table contains a value representing the distribution center, date, month, week, weekday, day, and volume for every day of the years 2009 and 2010.

	Center	Date	Year	Month	Week	Day	Weekday	Volume
3	Atlantic	1/1/2010	2010	January	1	1	Monday	120933
4	Atlantic	1/2/2010	2010	January	1	2	Tuesday	52979
5	Atlantic	1/3/2010	2010	January	1	3	Wednesday	45683
6	Atlantic	1/4/2010	2010	January	1	4	Thursday	53152
7	Atlantic	1/5/2010	2010	January	1	5	Friday	149776
8	Atlantic	1/6/2010	2010	January	1	6	Saturday	108772
9	Atlantic	1/7/2010	2010	January	1	7	Sunday	99913
10	Atlantic	1/8/2010	2010	January	2	8	Monday	138271
11	Atlantic	1/9/2010	2010	January	2	9	Tuesday	77451
12	Atlantic	1/10/2010	2010	January	2	10	Wednesday	130536
13	Atlantic	1/11/2010	2010	January	2	11	Thursday	119809
14	Atlantic	1/12/2010	2010	January	2	12	Friday	64125
15	Atlantic	1/13/2010	2010	January	2	13	Saturday	146927
16	Atlantic	1/14/2010	2010	January	2	14	Sunday	62505
17	Atlantic	1/15/2010	2010	January	3	15	Monday	56662
18	Atlantic	1/16/2010	2010	January	3	16	Tuesday	119081
19	Atlantic	1/17/2010	2010	January	3	17	Wednesday	116136
20	Atlantic	1/18/2010	2010	January	3	18	Thursday	158629
21	Atlantic	1/19/2010	2010	January	3	19	Friday	46917
22	Atlantic	1/20/2010	2010	January	3	20	Saturday	86771
23	Atlantic	1/21/2010	2010	January	3	21	Sunday	129079
24	Atlantic	1/22/2010	2010	January	4	22	Monday	82906
25	Atlantic	1/23/2010	2010	January	4	23	Tuesday	49040
26	Atlantic	1/24/2010	2010	January	4	24	Wednesday	133663
27	Atlantic	1/25/2010	2010	January	4	25	Thursday	66235

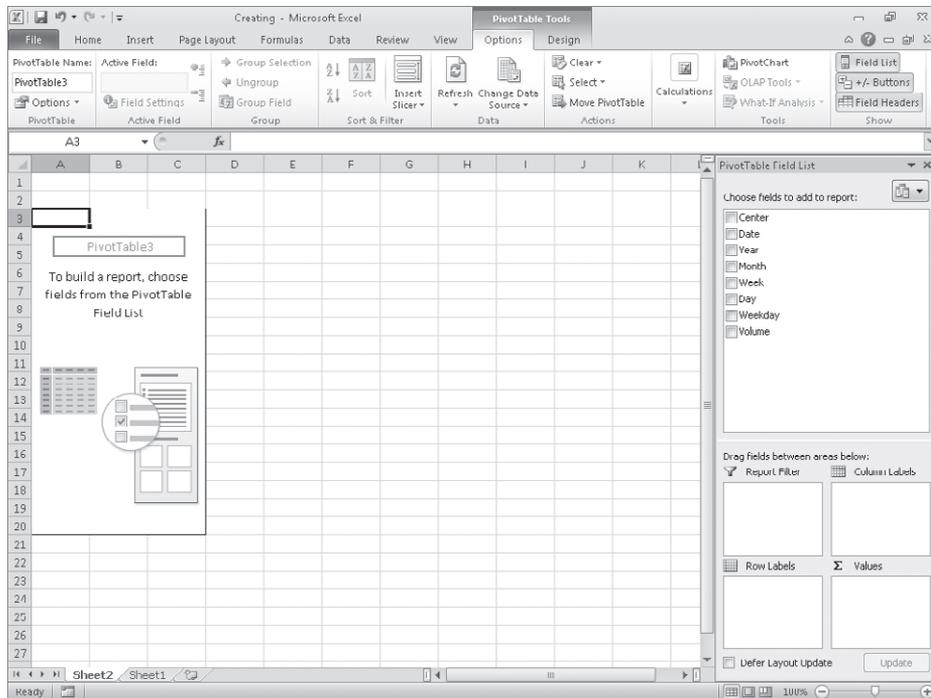
Excel needs that data when it creates the PivotTable so that it can maintain relationships among the data. If you want to filter your PivotTable so that it shows all package volumes on Thursdays in January, for example, Excel must be able to identify January 11 as a Thursday.

After you create an Excel table, you can click any cell in the table, display the Insert tab and then, in the Tables group, click PivotTable to open 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 or an existing worksheet. After you click OK, Excel displays a new or existing worksheet and displays the PivotTable Field List task pane.

**Tip** You should always place your PivotTable on its own worksheet to avoid cluttering the display.





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 organizes the data in your PivotTable. As an example, consider a PivotTable that groups the PivotTable rows by distribution center and then by month.

The screenshot displays the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is structured as follows:

Center	Month	Sum of Volume
<b>Atlantic</b>		<b>47036182</b>
	January	6042842
	February	3098663
	March	3210406
	April	3003529
	May	3368888
	June	3208696
	July	3115294
	August	3297645
	September	3072723
	October	3261585
	November	6137174
	December	6279737
<b>Central</b>		<b>47001715</b>
	January	6006191
	February	2932222
	March	3167785
	April	2989245
	May	3576763
	June	2973980
	July	3364482
	August	3191591
	September	2807222
	October	3362250

The PivotTable Field List task pane on the right shows the following configuration:

- Choose fields to add to report:**
  - Center
  - Date
  - Year
  - Month
  - Week
  - Day
  - Weekday
  - Volume
- Drag fields between areas below:**
  - Report Filter:** (Empty)
  - Column Labels:** (Empty)
  - Row Labels:** Center, Month
  - Values:** Sum of Volume
- Defer Layout Update
-

The same PivotTable data could also be organized by month and then by distribution center.

The screenshot displays the Microsoft Excel interface with a PivotTable. The PivotTable is named 'PivotTable3' and is located in the range A3:J27. The Row Labels are 'Month' and the Values are 'Sum of Volume'. The PivotTable is organized by month (January, February, March) and then by distribution center (Atlantic, Central, Midwest, Mountain West, North Central, Northeast, Northwest, Southeast, Southwest). The PivotTable Field List on the right shows 'Center' and 'Volume' as field headers.

Month	Center	Sum of Volume
January	Atlantic	6042842
	Central	6006191
	Midwest	5720977
	Mountain West	5872046
	North Central	6236863
	Northeast	6370982
	Northwest	6108382
	Southeast	6396724
	Southwest	5949454
February	Atlantic	3098563
February	Central	2932222
February	Midwest	3456304
February	Mountain West	2935951
February	North Central	3785068
February	Northeast	3281469
February	Northwest	4216668
February	Southeast	4877758
February	Southwest	4413510
March	Atlantic	3210406
	Central	3167785
	Midwest	3046753

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 a different configuration.

The screenshot shows an Excel PivotTable with the following data:

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast
January	6042842	6006191	5720977	5872046	6236863	6370982	6108382	63967
February	3098663	2932222	3456904	2935951	3785068	3281469	4216668	48777
March	3210406	3167785	3046753	3265252	2929397	3725669	3640750	43872
April	3002529	2989245	3125231	3071049	2677853	3148289	2997048	35834
May	3368888	3576763	3280768	3159233	3079267	3165070	3236144	35131
June	3208696	2973980	3035619	3063572	3040653	2990986	2849014	30096
July	3115294	3364482	2945492	3456576	3521947	3329821	3403395	31758
August	3237645	3191591	3441757	3371850	3166710	3217496	3400949	31682
September	3072723	2807222	3166599	2942925	2996901	3364148	3220056	29854
October	3261585	3362250	3333751	3182437	3125591	3346381	3789687	31967
November	6137174	6083306	6236356	6121929	6026826	6287815	6002883	62456
December	6279737	6546678	6099560	5880670	6093514	6462079	5768374	59816
<b>Grand Total</b>	<b>47036182</b>	<b>47001715</b>	<b>46889767</b>	<b>46323490</b>	<b>46680590</b>	<b>48690205</b>	<b>48633350</b>	<b>5052161</b>

To pivot a PivotTable, you drag a field header to a new position in the PivotTable Field List task pane. As you drag a field within the task pane, Excel 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 to reorganize the PivotTable after a pivot. You can have Excel delay redrawing the PivotTable by selecting the Defer Layout Update check box in the lower-left corner of the PivotTable Field List task pane. When you're ready for Excel 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, you should ensure that your PivotTable summarizes all the available data. To do that, you can refresh the PivotTable connection to its data source. If Excel 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'll create a PivotTable by using data from a table, add fields to the PivotTable, and then pivot the PivotTable.



**SET UP** You need the *Creating\_start* workbook located in your Chapter09 practice file folder to complete this exercise. Start Excel, open the *Creating\_start* workbook, and save it as *Creating*. Then follow the steps.



1. Click any cell in the Excel table.
2. On the **Insert** tab, in the **Tables** group, click the **PivotTable** button (not the arrow).  
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 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 adds the Center field values to the PivotTable row area.

The screenshot shows the Microsoft Excel interface with the PivotTable Tools ribbon active. The PivotTable is located on a new worksheet named 'Sheet2'. The PivotTable has 'Center' as the Row Labels and 'Volume' as the Values. The PivotTable Field List task pane is open on the right, showing the 'Center' field in the Row Labels area and the 'Volume' field in the Values area. The PivotTable data is as follows:

Center	Volume
Atlantic	1000
Central	1000
Midwest	1000
Mountain West	1000
North Central	1000
Northeast	1000
Northwest	1000
Southeast	1000
Southwest	1000
<b>Grand Total</b>	<b>10000</b>

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

Excel 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 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 changes the PivotTable to reflect the new organization.

Row Labels	Sum of Volume
Atlantic	47036182
2009	23276049
2010	23760133
Central	47001715
2009	23727556
2010	23274159
Midwest	46889767
2009	23643436
2010	23246331
Mountain West	46323490
2009	23075908
2010	23247582
North Central	46680590
2009	24118888
2010	22561702
Northeast	48690205
2009	24103492
2010	24586713
Northwest	48633350
2009	25028389
2010	23604961
Southeast	50521603
2009	23785488
2010	26736115

**CLEAN UP** Save the Creating workbook, and then close it.

## 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 a table in which each row contains a value representing the distribution center, date, month, week, weekday, day, and volume for every day of the year.

	Center	Date	Year	Month	Week	Day	Weekda	Volume
3	Atlantic	1/1/2010	2010	January	1	1	Monday	120933
4	Atlantic	1/2/2010	2010	January	1	2	Tuesday	52979
5	Atlantic	1/3/2010	2010	January	1	3	Wednesday	45683
6	Atlantic	1/4/2010	2010	January	1	4	Thursday	53152
7	Atlantic	1/5/2010	2010	January	1	5	Friday	149776
8	Atlantic	1/6/2010	2010	January	1	6	Saturday	108772
9	Atlantic	1/7/2010	2010	January	1	7	Sunday	99519
10	Atlantic	1/8/2010	2010	January	2	8	Monday	138271
11	Atlantic	1/9/2010	2010	January	2	9	Tuesday	77451
12	Atlantic	1/10/2010	2010	January	2	10	Wednesday	130536
13	Atlantic	1/11/2010	2010	January	2	11	Thursday	119809
14	Atlantic	1/12/2010	2010	January	2	12	Friday	64125
15	Atlantic	1/13/2010	2010	January	2	13	Saturday	146927
16	Atlantic	1/14/2010	2010	January	2	14	Sunday	62505
17	Atlantic	1/15/2010	2010	January	3	15	Monday	56662
18	Atlantic	1/16/2010	2010	January	3	16	Tuesday	119081
19	Atlantic	1/17/2010	2010	January	3	17	Wednesday	116136
20	Atlantic	1/18/2010	2010	January	3	18	Thursday	158629
21	Atlantic	1/19/2010	2010	January	3	19	Friday	46917
22	Atlantic	1/20/2010	2010	January	3	20	Saturday	86771
23	Atlantic	1/21/2010	2010	January	3	21	Sunday	129079
24	Atlantic	1/22/2010	2010	January	4	22	Monday	82806
25	Atlantic	1/23/2010	2010	January	4	23	Tuesday	49040
26	Atlantic	1/24/2010	2010	January	4	24	Wednesday	133663
27	Atlantic	1/25/2010	2010	January	4	25	Thursday	66235

Each column, in turn, contains numerous values: there are nine distribution centers, data from two years, 12 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 an Excel table or other data collection, 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 table, see “Limiting Data That Appears on Your Screen” in Chapter 5, “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. When you do, Excel displays a menu of sorting and filtering options.

The screenshot shows the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable displays sales data by month and region. The task pane shows the 'Volume' field selected, and a context menu is open over the 'Center' column header, displaying sorting and filtering options.

Row Labels	Atlantic	Central	Midwest	Mountain West	North
<b>2009</b>	<b>23276049</b>	<b>23727556</b>	<b>23643436</b>	<b>23075908</b>	<b>24742133</b>
January	2966264	3143004	2774877	2942544	2592544
February	1541726	1407340	2046448	1552098	1552098
March	1688027	1594434	1600920	1641026	1641026
April	1445436	1548205	1395802	1653829	1653829
May	1530319	1813746	1529086	1516453	1516453
June	1725770	1431518	1458009	1551719	1551719
July	1581340	1706190	1472534	1672400	1672400
August	1519598	1577651	1797139	1745152	1745152
September	1494735	1420065	1672046	1483296	1483296
October	1743541	1711810	1599927	1655866	1655866
November	3049969	2921522	3153696	2847752	2847752
December	2989984	3452071	3142952	2813773	2813773
<b>2010</b>	<b>23760133</b>	<b>23274159</b>	<b>23246331</b>	<b>23247582</b>	<b>22742133</b>
January	3076578	2863187	2946100	2929502	2929502
February	1556937	1524082	1410456	1383853	1383853
March	1522979	1573351	1445833	1624226	1624226
April	1557093	1441040	1729429	1417220	1417220
May	1838569	1763017	1751682	1642780	1642780
June	1482926	1542462	1577610	1511853	1511853
July	1533954	1658292	1472958	1784176	1784176
August	1718107	1613940	1644618	1626698	1626698
September	1577988	1387157	1494553	1459629	1459629
October	1554213	1684026	1607655	1763717	1763717
November	1504815	1432470	1373976	1587317	1587317
December	1860274	1823049	1570950	1664117	1664117
	1579055	1595256	1767367	1496317	1496317
	1582032	1599572	1582032	1474617	1474617

The PivotTable displays several sorting options, commands for different categories of filters, and a list of items that appear in the field you want to filter. Every list item has a check box next to it. Items with a check mark in the box are currently displayed in the PivotTable, and items without a check mark are hidden.

The first entry at the top of the item list is the Select All check box. The Select All check box can have one of three states: displaying a check mark, displaying a black square, or empty. If the Select All check box contains a check mark, then the PivotTable displays every item in the list. If the Select All check box is empty, then no filter items are selected. Finally, if the Select All check box contains a black square, it means that some, but not all, of the items in the list are displayed. Selecting only the Northwest check box, for example, leads to a PivotTable configuration in which only the data for the Northwest center is displayed.

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 can filter; you can then define the filter by using the same controls you see when you click a field header in the PivotTable Field List task pane.

Excel 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.

The screenshot shows the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is titled 'Sum of Volume' and is filtered by '2009'. The data is organized by 'Row Labels' (regions) and 'Column Labels' (days of the week). The PivotTable Field List task pane shows the following configuration:

- Report Filter:** Year (2009)
- Columns:** Weekday
- Rows:** Center
- Values:** Sum of Volume

Row Labels	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	2009 Total
Atlantic	3349646	3366196	2917606	3567714	3386663	3234905	3453319	23276049
Central	3366199	3527584	3365866	3263079	3684297	3199712	3320819	23727556
Midwest	3475968	3091127	3463291	3245714	3149896	3550054	3667386	23643436
MuirLairi West	3268404	3068409	3200078	3298013	3515603	3367632	3957763	23075908
North Central	3741370	3215869	3428683	3686605	3401691	3187468	3457202	24118888
Northeast	3601318	3470147	3593310	3511717	3083115	3347686	3496199	24103492
Northwest	3767825	3374432	3812518	3519655	3360028	3402908	3791023	25028389
Southeast	3473394	3348605	3575267	3257557	3293217	3569446	3268002	23785488
Southwest	3570147	3396272	3632371	3872515	3427383	3739919	3178975	24817582
<b>Grand Total</b>	<b>31614271</b>	<b>29858641</b>	<b>30988990</b>	<b>31222575</b>	<b>30301893</b>	<b>30599730</b>	<b>30990688</b>	<b>215576788</b>

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 unchanged, but adds a new area above the PivotTable in its worksheet.

The screenshot shows the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is titled 'Sum of Volume' and has 'Column Labels' as '2009' and '2010', and 'Row Labels' as 'Center'. The data is as follows:

Center	2009	2010	Grand Total
Atlantic	23276049	23760133	47036182
Central	23727556	23274159	47001715
Midwest	23643436	23246331	46889767
Mountain West	23075908	23247582	46323490
North Central	24118898	22561702	46680590
Northeast	24103492	24586713	48690205
Northwest	25028389	23604961	48633350
Southeast	23785488	26796115	50521603
Southwest	24817582	23300579	48118161
<b>Grand Total</b>	<b>215576788</b>	<b>214318275</b>	<b>429895063</b>

The PivotTable Field List task pane shows the following configuration:

- Choose fields to add to report:
  - Center
  - Date
  - Year
  - Month
  - Week
  - Day
  - Weekday
  - Volume
- Drag fields between areas below:
  - Report Filter: Weekday
  - Column Labels: Year
  - Row Labels: Center
  - Values: Sum of Volume

**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 displays a list of the values in the field. When you click the filter arrow, you can choose to filter by one value at a time. If you'd like to filter your PivotTable by more than one value, you can do so by selecting the Select Multiple Items check box.

If your PivotTable has more than one field in the Row Labels area, 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 2009 year header would display that year's details. Conversely, clicking the 2010 year header's Hide Detail control would hide the individual months' values and display only the year's total.

The screenshot displays the Microsoft Excel 2010 interface. The PivotTable is located in the worksheet, showing data for the years 2009 and 2010, categorized by region. The PivotTable Field List task pane is open on the right, showing the fields available for the report.

Row Labels	Sum of Volume
<b>2009</b>	<b>215576788</b>
Atlantic	23276049
Central	23727556
Midwest	23643436
Mountain West	23075908
North Central	24118888
Northeast	24103492
Northwest	25028389
Southeast	23785488
Southwest	24817582
<b>2010</b>	<b>214318275</b>
<b>Grand Total</b>	<b>429895063</b>

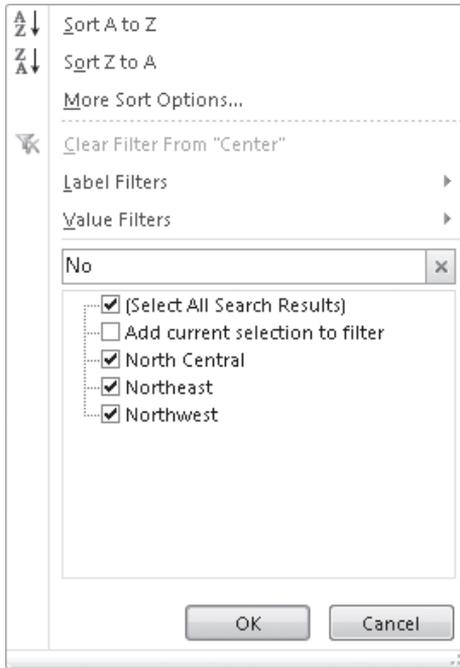
The PivotTable Field List task pane shows the following fields:

- Center:  Center
- Date:  Date
- Year:  Year
- Month:  Month
- Week:  Week
- Day:  Day
- Weekday:  Weekday
- Volume:  Volume

The task pane also shows the following fields in the Report Filter and Column Labels areas:

- Report Filter: Year, Center
- Column Labels: Sum of Volume

Excel 2010 provides two new ways for you to filter PivotTables: search filters and Slicers. With a search filter, you can type in a series of characters for Excel to filter that field's values. To create a search filter, click a field's filter arrow and type the character string for which you want to search in the filter menu's Search box.

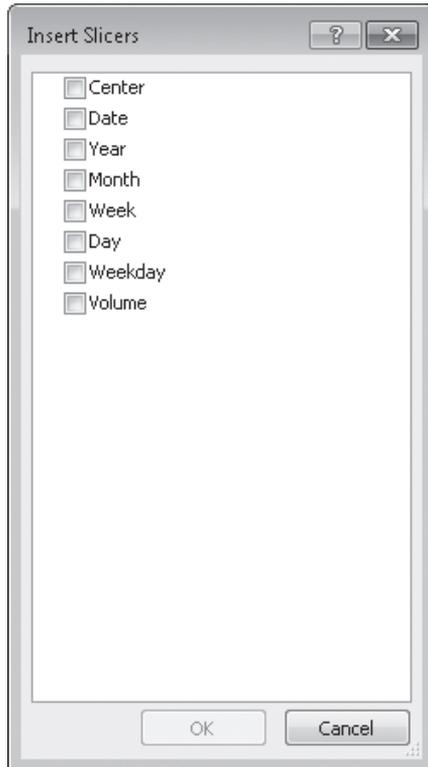


For example, if the PivotTable's Center field contains the values Atlantic, Central, Midwest, Mountain West, North Central, Northeast, Northwest, Southeast, and Southwest, typing the character string "No" limits the values to *North Central*, *Northeast*, and *Northwest*.

**Tip** Search filters look for the character string you specify anywhere within a field's value, not just at the start of the value. In the previous example, the search filter string "cen" would return both *Central* and *North Central*.

In versions of Excel prior to Excel 2010, the only visual indication that you had applied a filter to a field was the indicator added to a field's filter arrow. The indicator told users that there was an active filter applied to that field but provided no information on which values were displayed and which were hidden. In Excel 2010, Slicers provide a visual indication of which items are currently displayed or hidden in a PivotTable.

To create a Slicer, click any cell in a PivotTable and then, on the Options contextual tab of the ribbon, in the Sort & Filter group, click Insert Slicer to display the Insert Slicers dialog box.



Select the check box next to the fields for which you want to create a Slicer, and click OK. When you do, Excel 2010 displays a Slicer for each field you identified.

The screenshot shows an Excel PivotTable with the following data:

Row Labels	Northwest	Grand Total
<b>2009</b>	<b>25028389</b>	<b>25028389</b>
January	3085352	3085352
February	2554130	2554130
March	1932304	1932304
April	1348145	1348145
May	1628489	1628489
June	1475038	1475038
July	1832445	1832445
August	1633582	1633582
September	1638024	1638024
October	2045639	2045639
November	3020217	3020217
December	2835024	2835024
<b>2010</b>	<b>23604961</b>	<b>23604961</b>
January	3023030	3023030
February	1662538	1662538
March	1708446	1708446
April	1648903	1648903
May	1607655	1607655
June	1373976	1373976
July	1570950	1570950
August	1767367	1767367
September	1582032	1582032

The 'Center' slicer shows the following options: Atlantic, Central, Midwest, Mountain West, North Central, Northwest (selected), Southeast. The 'Weekday' slicer shows the following options: Sunday (selected), Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.

**Tip** If you have already applied a filter to the field for which you display a Slicer, the Slicer reflects the filter's result.

A Slicer displays the values within the PivotTable field you identified. Any value displayed in color (or gray if you select a gray-and-white color scheme) appears within the PivotTable. Values displayed in light gray or white do not appear in the PivotTable.

Clicking an item in a Slicer changes that item's state—if a value is currently displayed in a PivotTable, clicking it hides it. If it's hidden, clicking its value in the Slicer displays it in the PivotTable. As with other objects in an Excel 2010 workbook, you can use the Shift and Ctrl keys to help define your selections. For example, suppose you create a Slicer for the Month field while every month is displayed.



If you want to hide every month except January, February, and March, you click the January item to hide every month except January. Then hold down the Shift key and click March to have Excel 2010 display just the data for the months of January, February, and March. You can then add another month, such as July, to the filter by holding down the Ctrl key and clicking July in the Slicer.

Row Labels	January	February	March	July	Grand Total
Atlantic	6042842	3098663	3210406	3115294	15467205
Central	6006191	2932222	3167785	3364482	15470680
Midwest	5720977	3456904	3046753	2945492	15170126
Mountain West	5872046	2935951	3265252	3456576	15529825
NorLI Central	6236863	3785068	2929397	3521947	16473275
Northeast	6370982	3281469	3725669	3329821	16707941
Northwest	6108382	4216668	3640750	3403395	17369195
Southeast	6396724	4877758	4387252	3175859	18837593
Suuthwest	5949454	4413610	3226583	3087404	16677051
<b>Grand Total</b>	<b>54704461</b>	<b>32998313</b>	<b>30599847</b>	<b>29400270</b>	<b>147702891</b>

To use a Slicer to remove a filter, click the Clear Filter button in the upper-right corner of the Slicer. If you want to resize a Slicer, you can do so by dragging the resize handle in the lower-right corner of the Slicer. To hide the Slicer, right-click it and then click the menu command that starts with the word "Remove." For example, the Month field's menu command would be Remove Month.

**Tip** You can change a Slicer's formatting by clicking the Slicer and then, on the Slicer Tools Options contextual tab on the ribbon, clicking a style in the Slicer Styles gallery.

In this exercise, you'll 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, by showing and hiding levels of detail within the body of the PivotTable, by using the Search box, and by using Slicers.



**SET UP** You need the *Focusing\_start* workbook located in your Chapter09 practice file folder to complete this exercise. Open the *Focusing\_start* workbook, and save it as *Focusing*. Then follow the steps.

1. On the **Sheet2** worksheet, click any cell in the PivotTable.
2. In the **PivotTable Field List** task pane's **Choose fields to add to report** area, click the **Center** field header, click the **Center** field filter arrow, and then clear the **(Select All)** check box.

Excel clears all the check boxes in the filter menu.

3. Select the **Northwest** check box, and then click **OK**.

Excel filters the PivotTable.

Row Labels	Northwest	Grand Total
<b>2009</b>	<b>25028389</b>	<b>25028389</b>
January	3085352	3085352
February	2554130	2554130
March	1932304	1932304
April	1348145	1348145
May	1628489	1628489
June	1475038	1475038
July	1832445	1832445
August	1633582	1633582
September	1638024	1638024
October	2045639	2045639
November	3020217	3020217
December	2835024	2835024
<b>2010</b>	<b>23604961</b>	<b>23604961</b>
January	3023030	3023030
February	1662538	1662538
March	1708446	1708446
April	1648903	1648903
May	1607655	1607655
June	1373976	1373976
July	1570950	1570950
August	1767367	1767367
September	1582032	1582032



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

Excel removes the filter.

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



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, if necessary, select the **Select Multiple Items** check box.

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

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

Excel clears each check box in the list.

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

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

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

Excel collapses rows that contain data from the year 2009, leaving only the subtotal row that summarizes that year's data.

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
2009	6304269	7050163	6613187	6715681	6830374	6676425	7172546	6868484	7059754	61290883
2010	6408599	6396590	6560131	6770917	6403907	7100828	6958578	7603129	6821849	61024528
January	804732	754373	897073	797919	1046123	1011522	828808	918691	903898	7963139
February	354605	393253	404779	468433	317816	491253	496082	769473	505165	4200859
March	415459	505582	483626	552340	378419	675428	613523	625414	534474	4784265
April	371817	344889	501087	398673	408752	464939	464709	542248	346562	3843676
May	656248	544346	521495	518365	453737	558449	554031	571733	501347	4879751
June	439783	379390	400158	469828	392332	399097	361672	526277	425900	3790237
July	466464	472849	496806	477128	577545	514837	573958	459299	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	1094284	753727	790101	858666	1088362	977772	8348332
December	718778	776331	704730	664614	676322	923997	754732	818838	818579	6856921
<b>Grand Total</b>	<b>12712868</b>	<b>13446753</b>	<b>13173318</b>	<b>13486598</b>	<b>13234281</b>	<b>13777253</b>	<b>14131124</b>	<b>14471613</b>	<b>13881603</b>	<b>122315411</b>

11. In cell **A5**, click the **Show Detail** button.

Excel redisplay the collapsed rows.



12. On the ribbon, click the **Options** contextual tab, and then, in the **Show** group, click **Field List**.

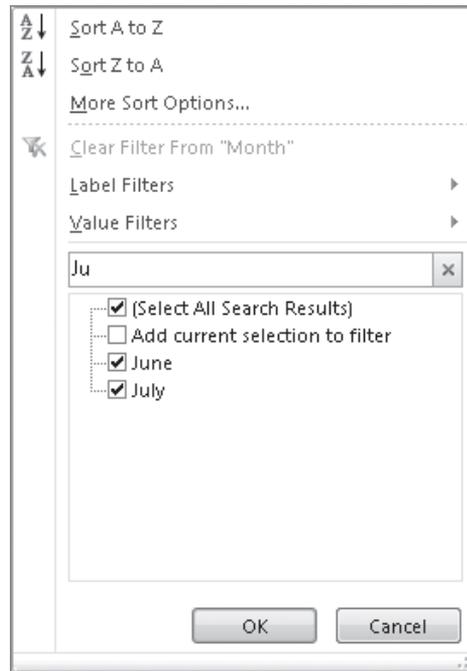
The PivotTable Field List task pane opens.

13. In the **PivotTable Field List** task pane, click the **Month** field header arrow.

The filter menu opens.

14. In the **Search** box, type **Ju**.

Excel displays the months June and July in the filter list.



15. Click **OK**.

Excel applies the filter.



16. On the **Options** contextual tab of the ribbon, in the **Actions** group, click the **Clear** button, and then click **Clear Filters**.

Excel clears all filters from the PivotTable.



17. On the **Options** contextual tab of the ribbon, in the **Sort & Filter** group, click **Insert Slicer**.

The Insert Slicers dialog box opens.

18. In the **Insert Slicers** dialog box, select the **Center** check box, and then click **OK**.

A Slicer for the Center field appears.

19. Click the **Atlantic** item.

Excel filters the PivotTable so only results for the Atlantic center appear.

20. In the Slicer, click **Midwest**, and then, while holding down the Ctrl key, click **Mountain West** and then **Northwest**.

Excel filters the PivotTable so it displays results for the Midwest, Mountain West, and Northwest centers.

Row Labels	Midwest	Mountain West	Northwest	Grand Total
2009	6613187	6715681	7172546	20501414
January	792834	764561	959024	2516419
February	685389	494819	746762	1926970
March	437581	455881	588124	1481586
April	294802	318039	428172	1241013
May	389622	535536	456219	1381377
June	559270	411328	417390	1387988
July	419866	399082	520732	1339680
August	550578	374290	531564	1656432
September	469726	433862	398105	1301693
October	446065	441216	619675	1506956
November	931687	849746	825744	2607177
December	635767	843321	681035	2160123
2010	6560131	6770917	6958578	20289626
January	897073	797919	828808	2523800
February	404779	468433	496082	1369294
March	483626	352940	613523	1649489
April	501087	398673	464709	1364469
May	521495	518365	554031	1593891
June	400158	469828	361672	1231658
July	496806	477128	573958	1547892
August	450256	471688	418089	1340033
September	324506	448185	535014	1307705



21. In the upper-right corner of the Slicer, click the **Clear Filter** button.

Excel removes the filter from the Center field.

22. Right-click the Slicer, and then click **Remove "Center"**.

Excel closes the Slicer.



**CLEAN UP** Save the Focusing workbook, and then close it.

## 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 a PivotTable named *PivotTable2* that summarizes package volumes for every Consolidated Messengers regional distribution hub.

The screenshot shows Microsoft Excel with a PivotTable named 'PivotTable2' and the PivotTable Field List task pane open. The PivotTable is structured as follows:

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast
<b>2009</b>	<b>23276049</b>	<b>23727556</b>	<b>23643436</b>	<b>23075908</b>	<b>24118888</b>	<b>24103492</b>	<b>25028389</b>	<b>2378544</b>
January	2966264	3143004	2774877	2942544	3110234	3073073	3085352	34702
February	1541726	1407340	2046448	1552098	2263148	1808452	2554130	19889
March	1688027	1594434	1600920	1641026	1553349	1705210	1922304	14418
April	1445436	1548205	1395802	1655829	1476188	1515414	1348145	16312
May	1530319	1813746	1529086	1516453	1525048	1481044	1628489	17493
June	1725770	1431518	1458009	1551719	1535838	1558516	1475038	14222
July	1581940	1706190	1472534	1672400	1661673	1506772	1832445	15117
August	1519538	1577651	1797139	1745152	1587655	1622240	1633582	16712
September	1494735	1420065	1672046	1483296	1259651	1764576	1638024	15108
October	1743541	1711810	1599927	1655866	1692811	1735857	2045639	14270
November	3049369	2921522	3153696	2947752	3222844	3005162	3020217	28486
December	2989984	3452071	3142952	2813773	3230449	3321716	2835024	31119
<b>2010</b>	<b>23760133</b>	<b>23274159</b>	<b>23246331</b>	<b>23247582</b>	<b>22561702</b>	<b>24586713</b>	<b>23604961</b>	<b>267361</b>
January	3076578	2863187	2946100	2929502	3126629	3297909	3023030	29264
February	1556937	1524882	1410456	1383853	1521920	1473017	1662538	28888
March	1522379	1573351	1445833	1624226	1376048	2020459	1708446	29439
April	1557093	1441040	1729429	1417220	1201665	1632875	1648903	19522
May	1838569	1763017	1751682	1642780	1554219	1684026	1607655	17637
June	1482926	1542462	1577610	1511853	1504815	1432470	1373976	15873
July	1533954	1658292	1472958	1784176	1860274	1823049	1570950	16641
August	1718107	1613940	1644618	1626698	1579055	1595256	1767367	14969
September	1577988	1387157	1494553	1459629	1737250	1599572	1582032	14746

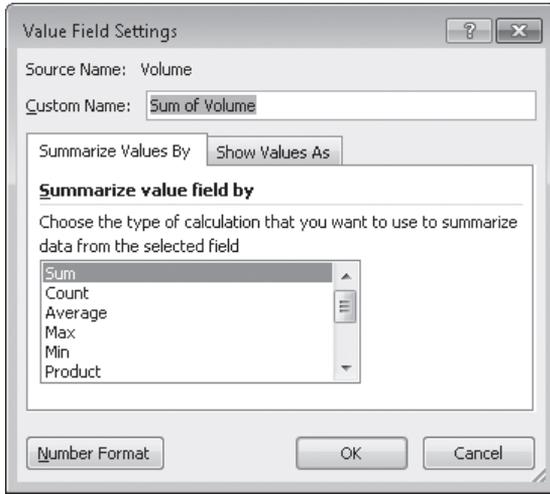
The PivotTable Field List task pane shows the following configuration:

- Choose fields to add to report:
  - Center
  - Date
  - Year
  - Month
  - Week
  - Day
  - Weekday
  - Volume
- Drag fields between areas below:
  - Report Filter: (empty)
  - Column Labels: Center
  - Row Labels: (empty)
  - Values: Sum of Volume

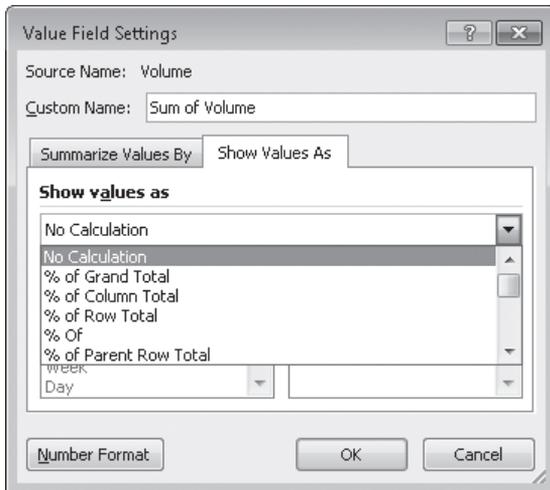
Excel displays the PivotTable name on the Options contextual tab, in the PivotTable Options group. The name *PivotTable2* doesn't help you or your colleagues understand the data the PivotTable contains, particularly if you use the PivotTable data in a formula on another worksheet. To give your PivotTable 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 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, on 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 determines the best way to summarize the data in the column you assign to the Values area. For numeric data, for example, Excel 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 Values 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 Values By page 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 page 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.



If you want, you can create a formula that incorporates a value from a PivotTable cell. To do so, you click the cell where you want to create the formula, type an equal sign, and then click the cell in the PivotTable that contains the data you want to appear in the other cell. A *GETPIVOTDATA* formula appears in the formula box of the worksheet that contains the PivotTable. When you press Enter, Excel creates the *GETPIVOTDATA* formula and displays the contents of the PivotTable cell in the target cell.

In this exercise, you'll 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 formula that incorporates a value in a PivotTable cell.



**SET UP** You need the *Editing\_start* workbook located in your *Chapter09* practice file folder to complete this exercise. Open the *Editing\_start* workbook, and save it as *Editing*. Then follow the steps.

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** and press **Enter**.

Excel renames the PivotTable.



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

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

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest
<b>2009</b>									
January	2966264	3143004	2774877	2942544	3110234	3073073	3085352	3470295	3029490
February	1541726	1407340	2046448	1552098	2263148	1808452	2554130	1988929	2692383
March	1688027	1594434	1600920	1641026	1553349	1705210	1923204	1441894	1646946
April	1445436	1548205	1395802	1653829	1476188	1515414	1348145	1631240	1525005
May	1530319	1813746	1529086	1516453	1525048	1481044	1628489	1749378	1452226
June	1725770	1431518	1485009	1551719	1535838	1558516	1475038	1422265	1428581
July	1581340	1706190	1472534	1672400	1661673	1506772	1892445	1511712	1503100
August	1519598	1577651	1797139	1745152	1587655	1622240	1633582	1671246	1414763
September	1494735	1420065	1672046	1483296	1259651	1764576	1638024	1510884	1407402
October	1743541	1711810	1599927	1655866	1692811	1735857	2045639	1427066	2888565
November	3049369	2921522	3153696	2847752	3222844	3005162	3020217	2848642	2728934
December	2983984	3452071	3142952	2813773	3230449	3327176	2855024	3111937	3100187
<b>2010</b>									
January	3076578	2863187	2946100	2929502	3126629	3297909	3023030	2926429	2919964
February	1556937	1524882	1410456	1383853	1521920	1473017	1662538	2888829	1721227
March	1522379	1573351	1445833	1624226	1376048	2020459	1708446	2945358	1579637
April	1557093	1441040	1729429	1417220	1201665	1632875	1648903	1952239	1481165
May	1838569	1763017	1751682	1642780	1554219	1684026	1607655	1763780	1567055
June	1482926	1542462	1577610	1511853	1504815	1432470	1373976	1587372	1372678
July	1533954	1608292	1472958	1784176	1860274	1823049	1570950	1664147	1584304
August	1718107	1613940	1644618	1626698	1579055	1595256	1767367	1496982	1452620
September	1577988	1387157	1494553	1459629	1737250	1599572	1582032	1474607	1611539

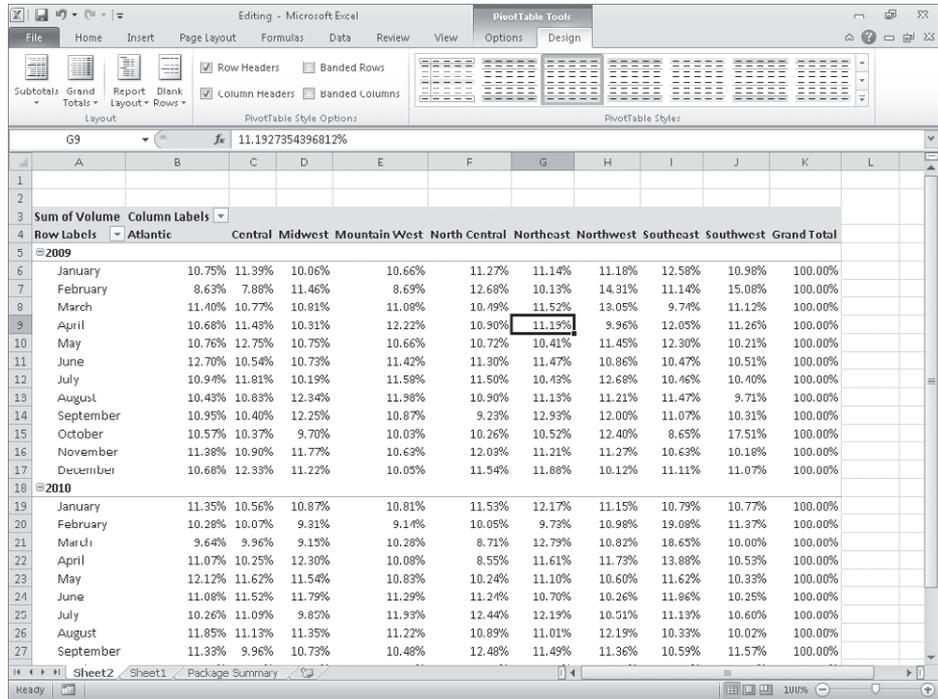


5. On the Quick Access Toolbar, click the **Undo** button.  
Excel reverses the last change.
6. Right-click any data cell in the PivotTable, point to **Summarize Values By**, and then click **Average**.  
Excel changes the Value field summary operation.

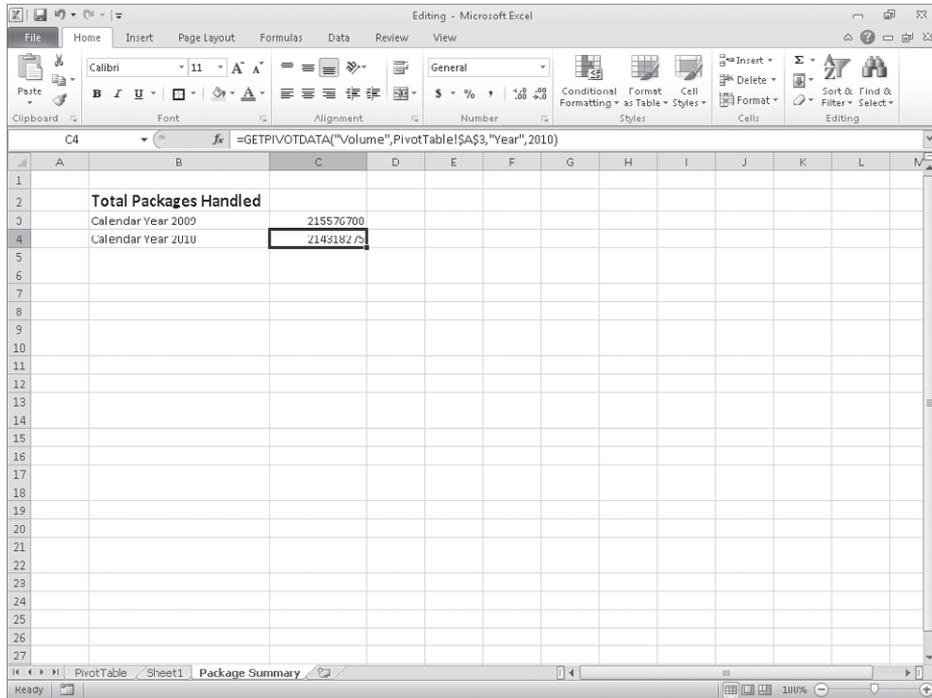
The screenshot shows an Excel PivotTable with the following structure:

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand
<b>2009</b>										
January	95685.93548	101387.2258	89512.16129	94920.77419	100330.129	99131.3871	99527.48387	111945	97725.48387	98901
February	55061.64286	50262.14286	73087.42857	55432.07143	80826.71429	64587.57143	91218.92857	71033.17857	96156.53571	70851
March	54452.48387	51433.35484	51642.58065	52936.32258	50108.03226	55006.77419	62332.3871	46512.70968	53127.29032	53061
April	48181.2	51606.83333	46526.79333	55127.69333	49206.26667	50513.8	44938.16667	54374.66667	50893.5	50145
May	49365.12903	58507.93548	49325.35484	48917.83871	49195.09677	47775.6129	52531.90323	56431.54839	46846	50986
June	57525.66667	47717.26667	48600.3	51723.36667	51194.6	51950.53333	49167.93333	47408.83333	47619.36667	50323
July	51010.96774	55038.3871	47501.09677	53948.3871	53602.35484	48605.54839	59111.12903	48764.90323	48487.09677	51785
August	49017.35484	50891.96774	57972.22581	56295.22581	51214.67742	52330.32258	52696.19355	53911.16129	45637.51613	52218
September	49824.5	47335.5	55734.86667	49443.2	41988.36667	58819.2	54600.8	50362.8	46913.4	50556
October	56243.25806	55219.67742	51610.54839	53415.03226	54606.80645	55995.3871	65988.35484	46034.3871	93179.51613	59145
November	101645.6333	97384.06667	105123.2	94925.06667	107428.1333	100172.0667	100673.9	94954.73333	90964.46667	99253
December	96451.09677	111357.129	101385.5484	90766.87097	104208.0323	107328.2581	91452.3871	100385.0645	100006.0323	10037
<b>2010</b>										
January	99244.45161	92360.87097	95035.48387	94500.06452	100859	106384.1613	97517.09677	94400.93548	94192.3871	97166
February	55604.89286	54460.07143	50373.42857	49423.32143	54354.28571	52607.75	59376.35714	103172.4643	61472.39286	60093
March	49109	50753.25806	46639.77419	52394.3871	44388.64516	65176.09677	55111.16129	95011.54839	50956.03226	5661
April	51903.1	48034.66667	57647.63333	47240.66667	40055.5	54429.16667	54963.43333	65074.63333	49372.16667	52080
May	59308.67742	56871.51613	56505.87097	52992.90323	50136.09677	54323.41935	51859.83871	56896.12903	50550.16129	54382
June	49430.86667	51415.4	52587	50395.1	50160.5	47749	45799.2	52912.4	45755.93333	49576
July	49482.3871	53493.29032	47514.77419	57554.06452	60008.83871	58808.03226	50675.80645	53682.16129	51106.58065	33591
August	55422.80645	52062.58065	53052.19355	52474.12903	50937.25806	51459.87097	57011.83871	48289.74194	46858.70968	51952
September	52599.6	46238.56667	49818.43333	48654.3	57908.33333	53319.06667	52734.4	49153.56667	53717.96667	51571

7. On the Quick Access Toolbar, click the **Undo** button.  
Excel 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 page appears.
10. In the **Show Values As** list, click **% of Row Total**.
11. Click **OK**.  
Excel changes how it calculates the values in the PivotTable.



12. On the Quick Access Toolbar, click the **Undo** button.  
Excel 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 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 creates the formula `=GETPIVOTDATA("Volume",PivotTable!$A$3,"Year",2010)` in cell C4.



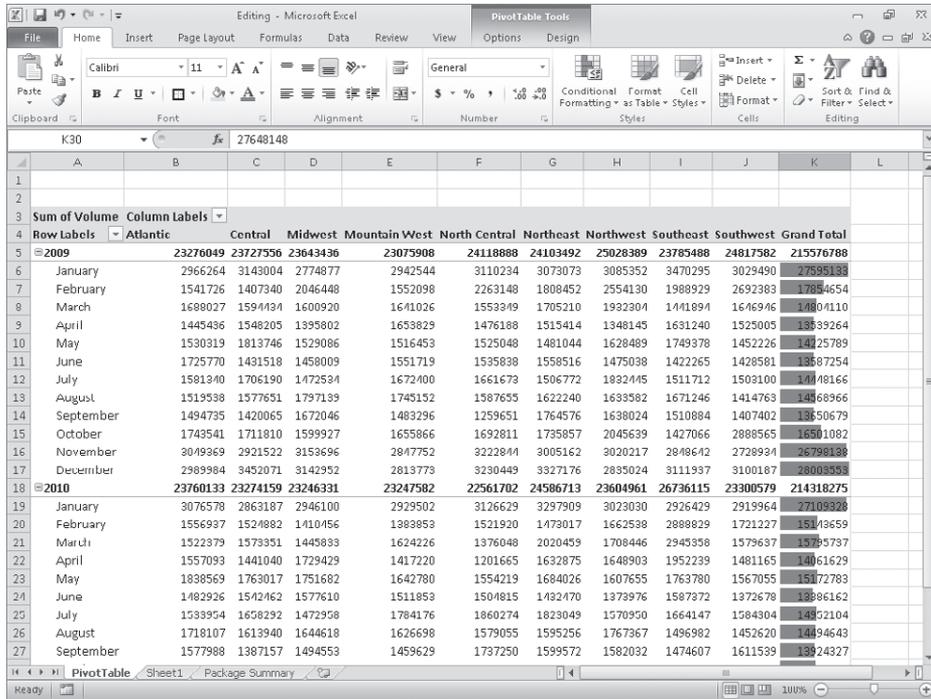
**✘ CLEAN UP** Save the Focusing workbook, and then close it.

## Formatting PivotTables

PivotTables are the ideal tools for summarizing and examining large data tables, even those containing more than 10,000 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 4, "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 Lori Penor 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.



Excel 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).

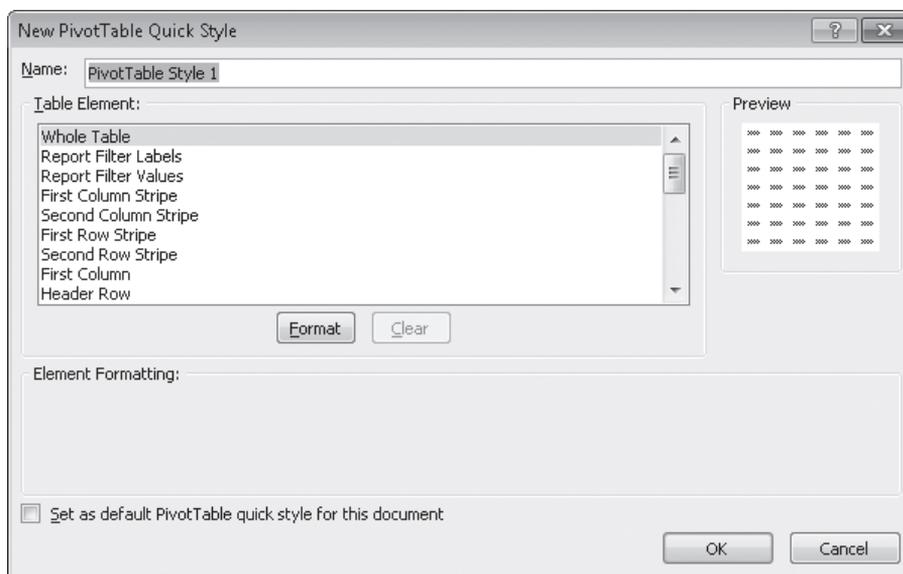
To apply a conditional format to a PivotTable field, click a cell in the Values area. On the Home tab, in the Styles group, click Conditional Formatting, and then create the desired conditional format. After you do, Excel displays a Formatting Options action button, which offers three options for applying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

- **Selected Cells** Applies the conditional format to the selected cells only
- **All Cells Showing Sum of field\_name Values** 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** 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 4, “Changing Workbook Appearance.”

In Excel, 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 Excel 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 Quick Style 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 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.

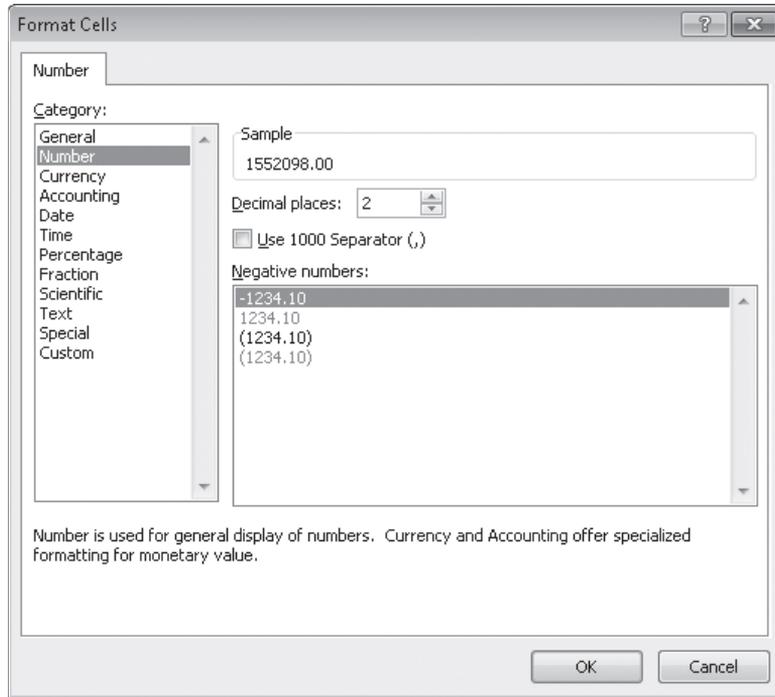
The Design contextual tab contains many other tools you can use to format your PivotTable, but one of the most useful is the Banded Columns check box, which you can find in the PivotTable Style Options group. If you select a PivotTable style that offers banded rows as an option, selecting the Banded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

In this exercise, you'll 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.



**SET UP** You need the *Formatting\_start* workbook located in your Chapter09 practice file folder to complete this exercise. Open the *Formatting\_start* workbook, and save it as *Formatting*. Then follow the steps.

1. On the **Sheet2** 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 page is displayed.



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

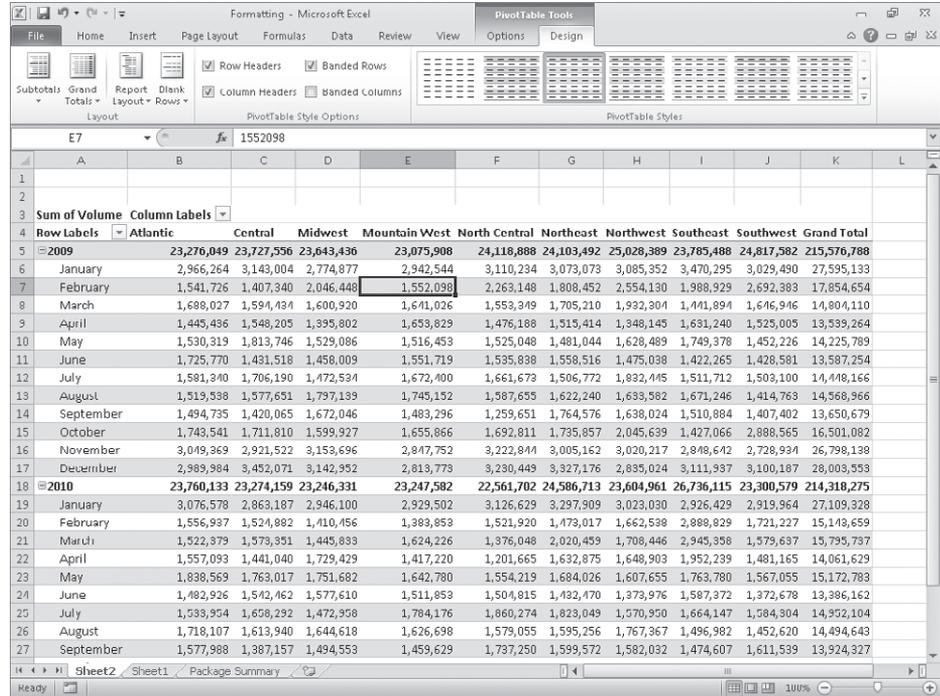
Excel reformats your PivotTable data.

Row Labels	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total	
<b>2009</b>	<b>23,276,049</b>	<b>23,727,556</b>	<b>23,643,436</b>	<b>23,075,908</b>	<b>24,118,888</b>	<b>24,103,492</b>	<b>25,026,369</b>	<b>23,785,488</b>	<b>24,817,582</b>	<b>215,576,788</b>
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	1,552,038	2,263,148	1,808,452	2,554,130	1,988,929	2,692,383	17,854,654
March	1,688,027	1,594,424	1,600,920	1,641,026	1,553,249	1,705,210	1,932,304	1,441,894	1,646,946	14,804,110
April	1,445,496	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	1,414,783	14,568,966
September	1,484,735	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	2,847,752	3,222,844	3,005,162	3,020,217	2,848,642	2,728,934	26,798,138
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
<b>2010</b>	<b>23,760,133</b>	<b>23,274,159</b>	<b>23,246,331</b>	<b>23,247,582</b>	<b>22,561,702</b>	<b>24,586,713</b>	<b>23,604,961</b>	<b>26,736,115</b>	<b>23,300,579</b>	<b>214,318,275</b>
January	3,076,578	2,863,187	2,946,100	2,923,502	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	2,080,829	1,721,227	15,143,659
March	1,522,379	1,573,351	1,445,833	1,624,226	1,376,048	2,020,459	1,708,446	2,945,358	1,579,637	15,795,737
April	1,557,093	1,441,040	1,729,429	1,417,220	1,201,665	1,632,875	1,648,903	1,952,239	1,481,165	14,061,629
May	1,838,569	1,763,017	1,751,682	1,642,780	1,554,219	1,684,026	1,607,655	1,763,780	1,567,055	15,172,783
June	1,482,926	1,542,462	1,577,610	1,511,853	1,504,815	1,432,470	1,373,976	1,587,372	1,372,678	13,386,162
July	1,533,954	1,658,292	1,472,958	1,784,176	1,860,274	1,823,049	1,570,950	1,664,147	1,584,304	14,952,104
August	1,718,107	1,613,940	1,644,618	1,626,698	1,579,055	1,595,256	1,767,367	1,496,982	1,452,620	14,494,643
September	1,577,988	1,387,157	1,494,553	1,459,629	1,737,250	1,599,572	1,582,032	1,474,607	1,611,539	13,924,327

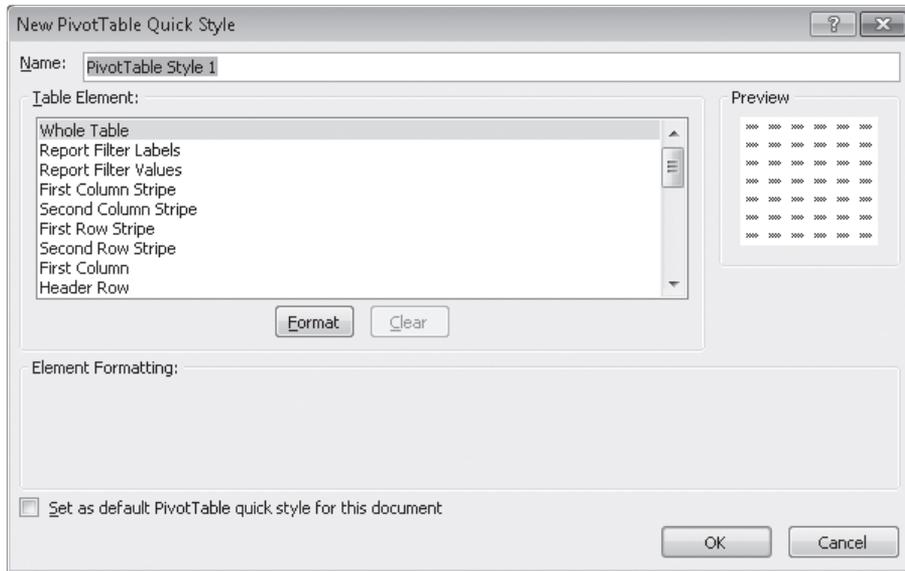
6. If necessary, on the **Design** contextual tab, in the **PivotTable Style Options** group, select the **Banded Rows** check box.
7. On the **Design** contextual tab, in the **PivotTable Styles** group, click the **More** button. Then, in the top row of the gallery, click the third style from the left. (When you point to it, Excel displays a ScreenTip that reads **Pivot Style Light 2**.)



Excel applies the PivotTable style.

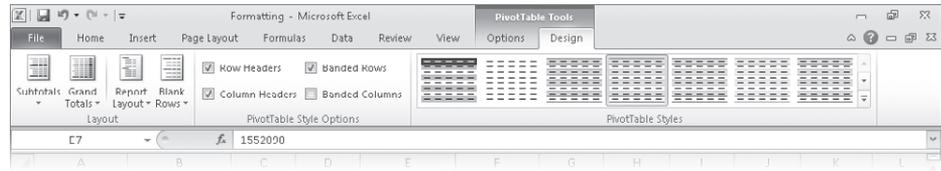


- In the lower-right corner of the **PivotTable Styles** gallery, click the **More** button. The gallery expands.
- Click **New PivotTable Style**. The New PivotTable Quick Style dialog box opens.



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** page, in the **Color** list, click the white square.
13. On the **Border** page, in the **Presets** area, click **Outline**.
14. On the **Fill** page, 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** page, in the middle part of the **Background Color** area, 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.

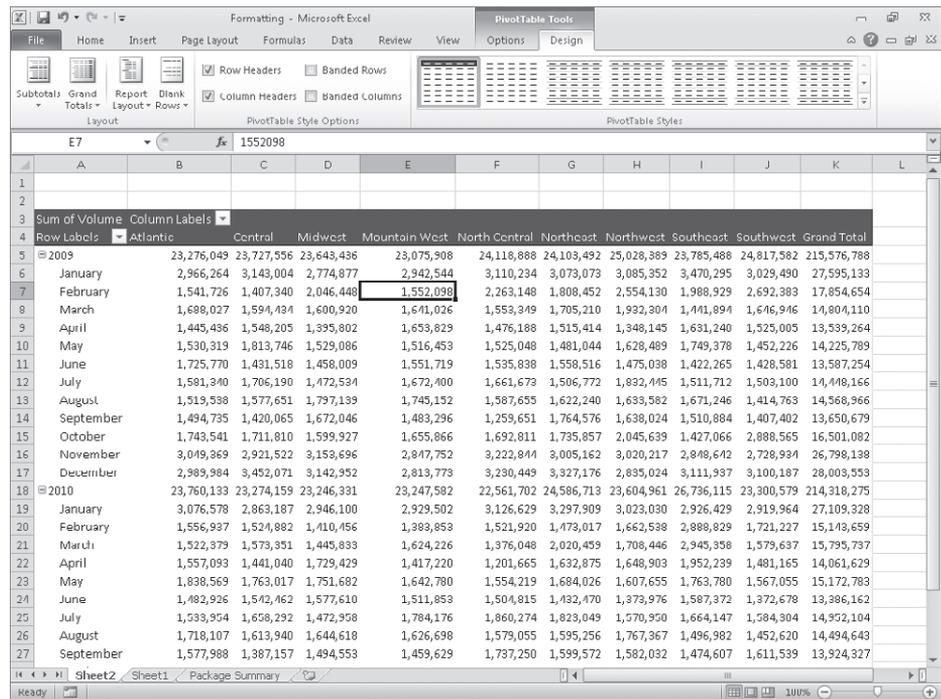


19. Click the new style.

Excel 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 removes the banding from your PivotTable and from the preview of the custom style.





21. Select the cell ranges **K6:K17** and **K19:K30**.
22. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, point to **Color Scales**, and in the top row, click the second three-color scale from the left. Excel applies the conditional format to the selected cells.

The screenshot shows the Microsoft Excel interface with a PivotTable. The PivotTable is titled "Sum of Volume" and has "Column Labels" as the field. The data is organized by "Row Labels" (years and months) and "Column Labels" (Atlantic, Central, Midwest, Mountain West, North Central, Northeast, Northwest, Southeast, Southwest, Grand Total). The Grand Total column is highlighted with a three-color scale conditional format.

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
2009	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
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	1,698,027	1,594,434	1,600,920	1,641,026	1,553,349	1,705,210	1,932,304	1,941,894	1,646,946	14,804,110
April	1,445,496	1,548,205	1,395,802	1,653,829	1,476,188	1,515,414	1,948,145	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	1,661,679	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	2,847,752	3,222,844	3,005,162	3,020,217	2,848,642	2,728,934	26,798,138
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	28,008,553
2010	23,760,133	23,274,159	23,246,331	23,247,582	22,561,702	24,586,713	23,604,961	26,736,115	23,300,579	214,318,275
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	1,445,833	1,624,226	1,376,048	2,020,459	1,708,446	2,945,358	1,579,637	15,795,737
April	1,557,093	1,441,040	1,729,429	1,417,220	1,201,665	1,632,875	1,648,903	1,952,239	1,481,165	14,061,629
May	1,838,569	1,763,017	1,751,682	1,642,780	1,554,219	1,684,026	1,607,655	1,763,780	1,567,055	15,172,783
June	1,482,926	1,542,462	1,577,610	1,511,853	1,504,815	1,432,470	1,373,976	1,587,372	1,372,678	13,386,162
July	1,539,954	1,658,292	1,472,958	1,784,176	1,860,274	1,823,849	1,570,950	1,664,147	1,584,304	14,952,104
August	1,718,107	1,613,940	1,644,618	1,626,698	1,573,055	1,595,256	1,767,367	1,496,982	1,452,620	14,494,643
September	1,577,988	1,387,157	1,494,553	1,459,629	1,737,250	1,599,572	1,582,032	1,474,607	1,611,539	13,924,327

**✖ CLEAN UP** Save the Formatting workbook, and then close it.

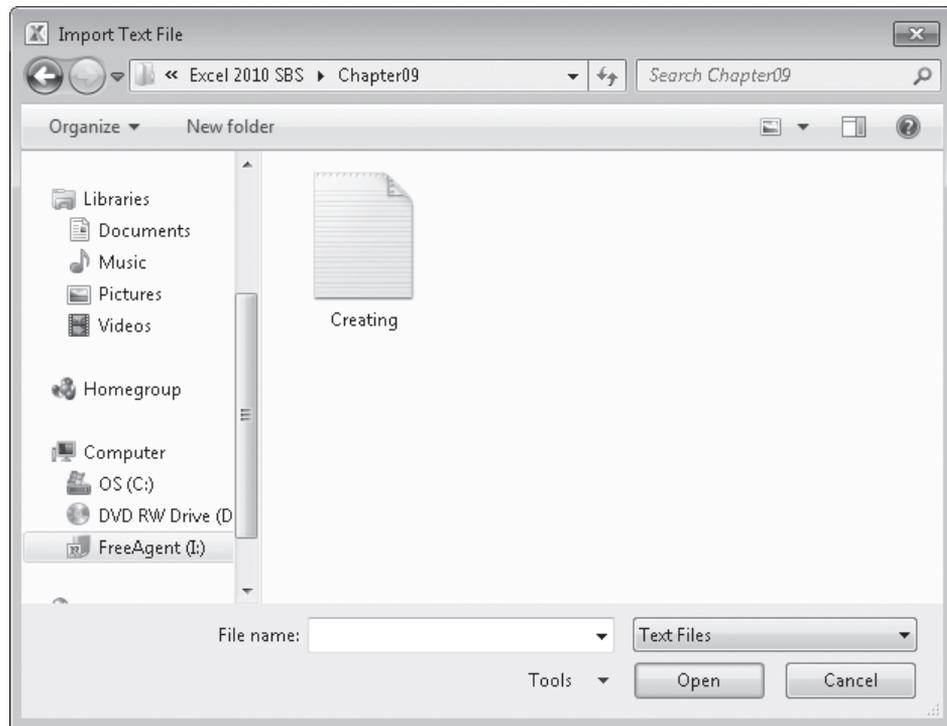
## Creating PivotTables from External Data

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

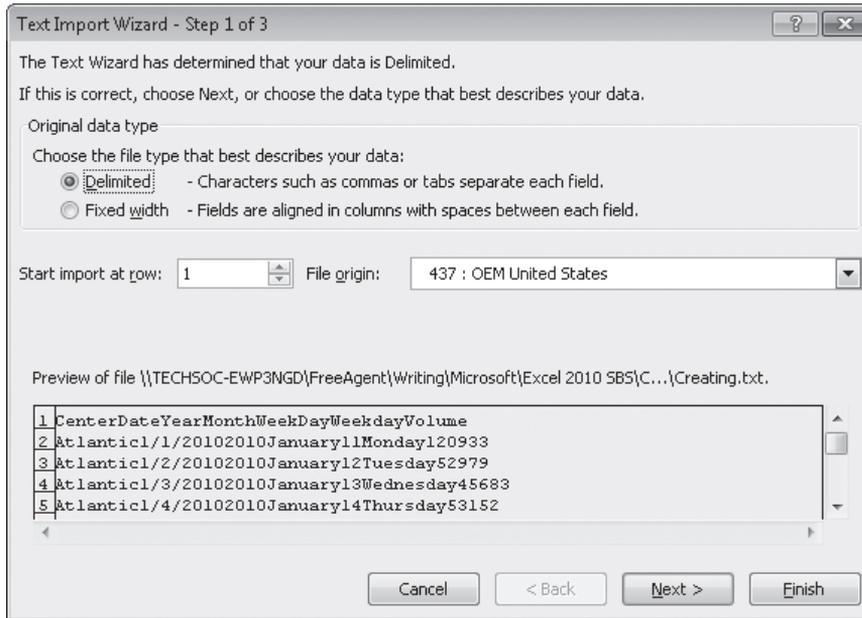
**Tip** The data import technique shown here isn't exclusive to PivotTables. You can use this procedure to bring data into your worksheets for any purpose.

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.



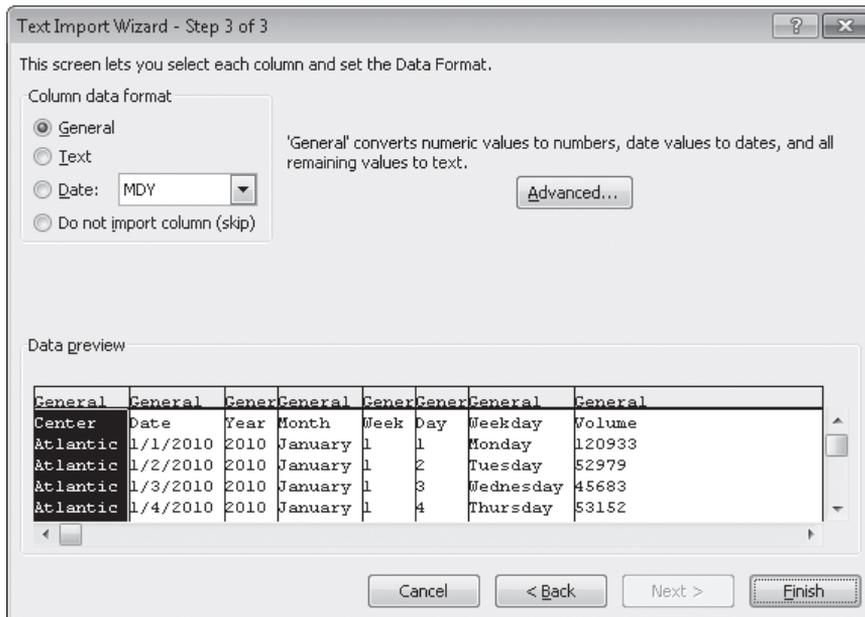
From within the Import Text File dialog box, browse to the directory that contains the text file you want to import. Double-clicking the file launches the Text Import wizard.



On the first page of the Text Import wizard, you can 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 assigns after examining the data source you selected), advances you to the next wizard page.



On this page, you can choose the delimiter for the file (in this case, Excel 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 page.



On this page, you can change the data type and formatting of the columns in your data. 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, you can work with it normally.

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



**SET UP** You need the **Creating\_start** text file located in your **Chapter09** practice file folder to complete this exercise.



1. Create a new Excel workbook. On the **Data** tab, click the **Get External Data** button, and then click **From Text**.

The Import Text File dialog box opens.

2. Navigate to the **Chapter09** practice file folder, and then double-click **Creating\_start.txt**.

The Text Import wizard starts.

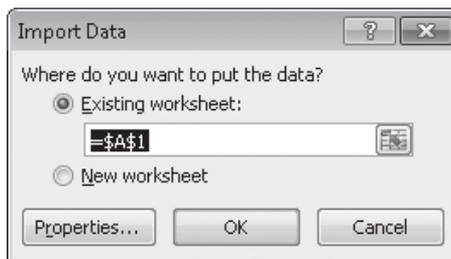
3. Verify that the **Delimited** option is selected, and then click **Next**.

The next Text Import Wizard page opens.

4. In the **Delimiters** area, 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**.

Clicking Finish skips page 3 of the wizard, which has commands you can use to assign specific data types to each column. Excel assigns data types for you, so you don't need to do so. After you click Finish, the Import Data dialog box opens.



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

Excel imports the data into your workbook.



7. On the **Home** tab, in the **Styles** group, click **Format as Table**, and then click the first table style.

The Format As Table dialog box opens.

8. Verify that the **My table has headers** check box is selected and that the range **=SA\$1:SH\$6571** appears in the **Where is the data for your table?** box, and then click **OK**.

A confirmation dialog box opens.

9. Click **Yes** to confirm you want to create the Excel table and break its link to the external data source.

Excel creates an Excel table from your imported data.



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

The Create PivotTable dialog box opens.

11. Verify that the **Select a table or range** option is selected, that **Table1** appears in the **Table/Range** field, and that the **New Worksheet** option is selected.

12. Click **OK**.

Excel creates the PivotTable on a new worksheet.

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

14. Drag the **Weekday** field header to the **Column Labels** area.

15. Drag the **Center** field header to the **Row Labels** data area.

The screenshot shows Microsoft Excel with a PivotTable named 'Sum of Volume'. The PivotTable is structured as follows:

Row Labels	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total
Atlantic	6681849	6718491	6065016	6999145	6647852	6592351	7331478	47036182
Central	6930783	6787961	6530917	6543992	6915836	6523218	6769008	47001715
Midwest	6923875	6358123	6705800	6629517	6467518	7011908	6793026	46889767
Mountain West	6673339	6661710	6698354	6563217	6788244	6457215	6481411	46232490
Nurth Central	6937060	6295847	6767203	7093316	6467078	6448849	6676237	46680590
Northeast	7166215	6941642	7068465	6808329	6708788	7049366	6947400	48630205
Northwest	6974586	6750727	7213121	7087334	6918003	6639912	7049667	48633350
Southeast	7229898	7272423	7600639	7199113	6870974	7286536	7118020	50521603
Southwest	7148300	6736137	7145226	7010575	6736377	6863256	6478290	48118161
<b>Grand Total</b>	<b>62665905</b>	<b>60523061</b>	<b>61794741</b>	<b>61928538</b>	<b>60520670</b>	<b>60817611</b>	<b>61644537</b>	<b>429895063</b>

The PivotTable Field List task pane on the right shows the following configuration:

- Choose fields to add to report:
  - Center
  - Date
  - Year
  - Month
  - Week
  - Day
  - Weekday
  - Volume
- Drag fields between areas below:
  - Report Filter: (empty)
  - Column Labels: Weekday
  - Row Labels: Center
  - Values: Sum of Volume



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

The Save As dialog box opens.

17. Browse to the **Chapter09** folder.
18. In the **File name** field, type **ImportedData**.
19. Click **Save**.

Excel saves your file.



**CLEAN UP** Close the Imported Data workbook. If you're 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. By using a data table as the PivotTable data source, you can 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 comes with many attractive styles for PivotTables; you'll probably find one you like.
- With the PivotTable Field List task pane, you can 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.
- Excel 2010 includes two new types of filters, search filters and Slicers, that you can use to limit the data in your PivotTables.
- If you have data in a compatible format, such as a text file, you can import that data into Excel and create a PivotTable from it.

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