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Excel 2010

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Curtis D. Frye



Includes
practice files and
online edition
of this book

Sample Chapters

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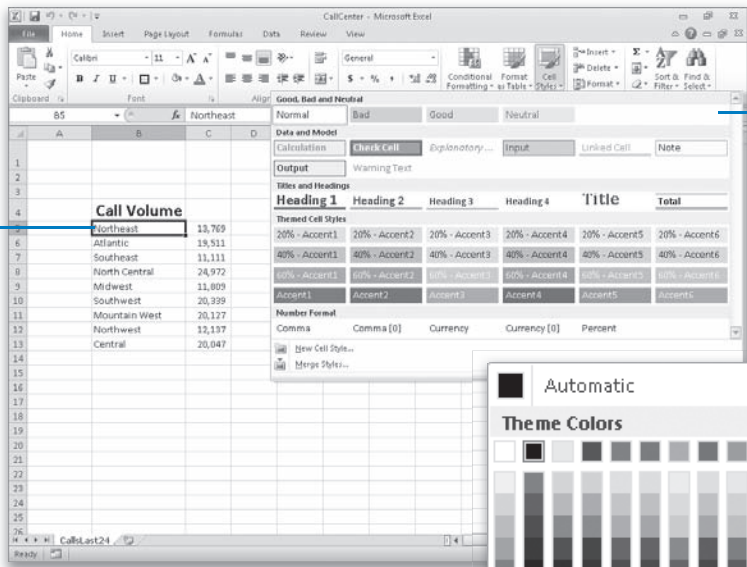
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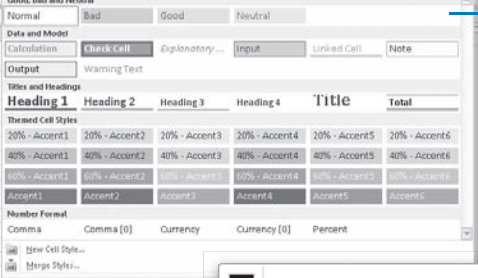
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Chapter at a Glance

Format cells, page 84

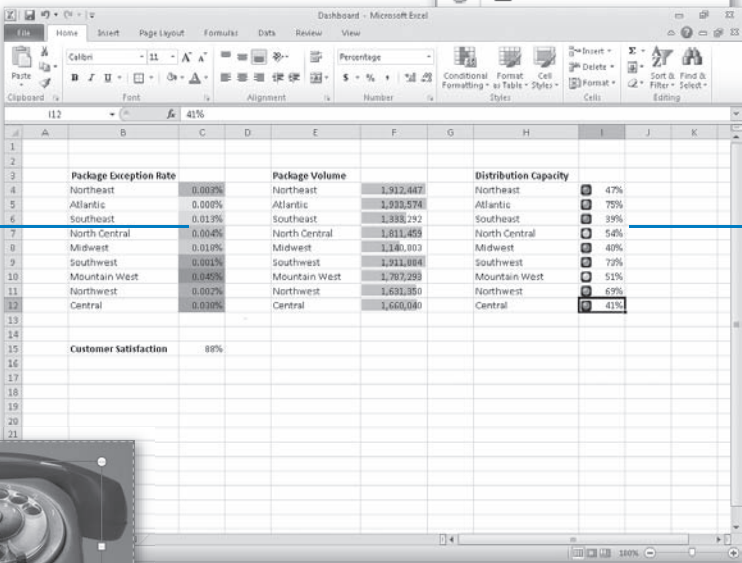


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Change the appearance of data based on its value, page 106



Add images to worksheets, page 113

4 Changing Workbook Appearance

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

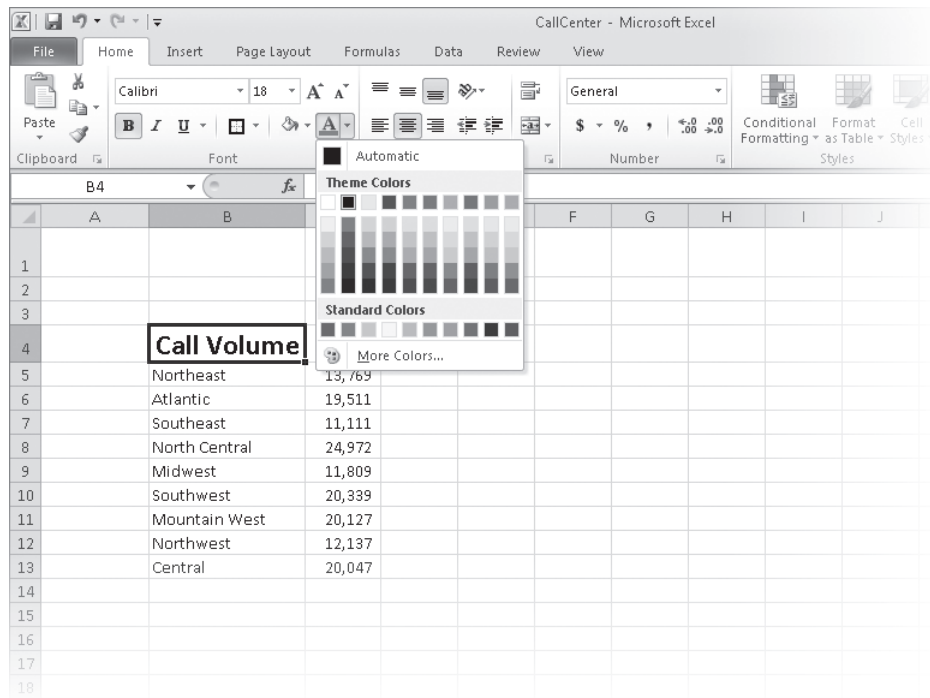
Excel spreadsheets can hold and process lots of data, but when you manage numerous spreadsheets it can be hard to remember from a worksheet's title exactly what data is kept in that worksheet. Data labels give you and your colleagues information about data in a worksheet, but it's important to format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

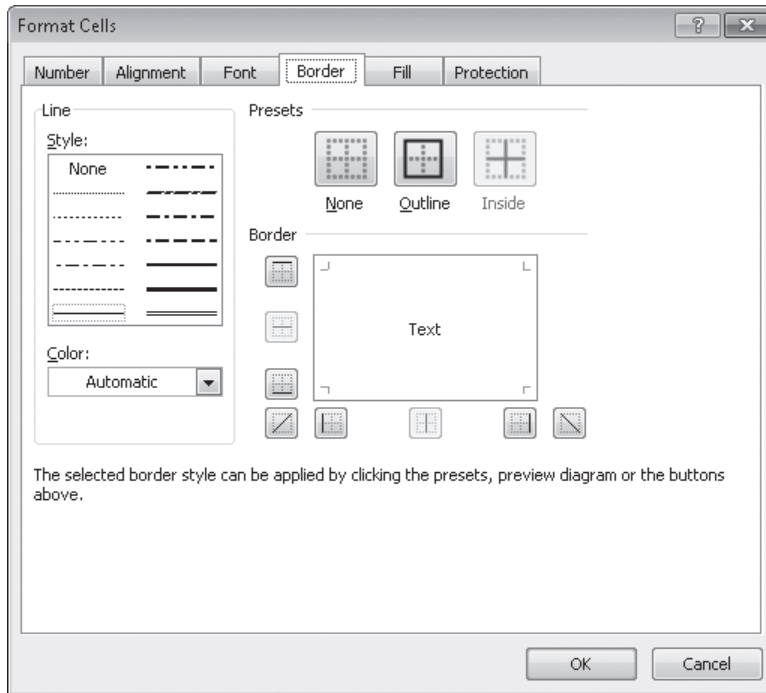
Most of the tools you need to change a cell's format can be found on the Home tab. You can apply the formatting represented on a button by selecting the cells you want to apply the style to and then clicking that button. If you want to set your data labels apart by making them appear bold, click the 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											
VehicleID	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	149	120					
V110	100	107	143	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				Vehicle Mile Summary						
3										
4			Day							
5		VehicleID	<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.

VehicleID	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	149	120
V110	100	107	143	144	152	132

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.

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

The Excel Options dialog box opens.

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

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

Verdana appears in the Use This Font field.

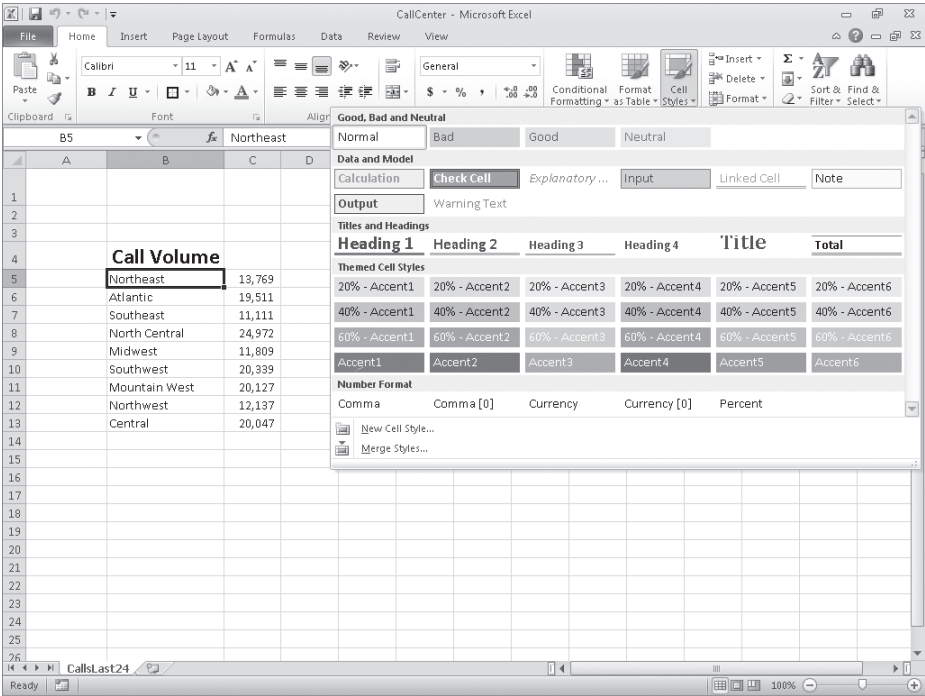
17. Click **Cancel**.

The Excel Options dialog box closes without saving your change.

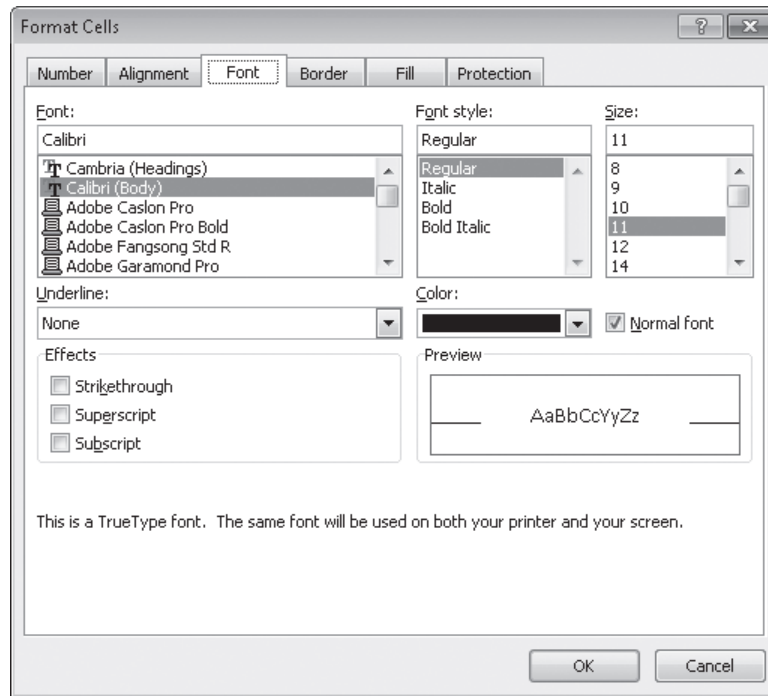
✖ CLEAN UP Save the **VehicleMileSummary** workbook, and then close it.

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.



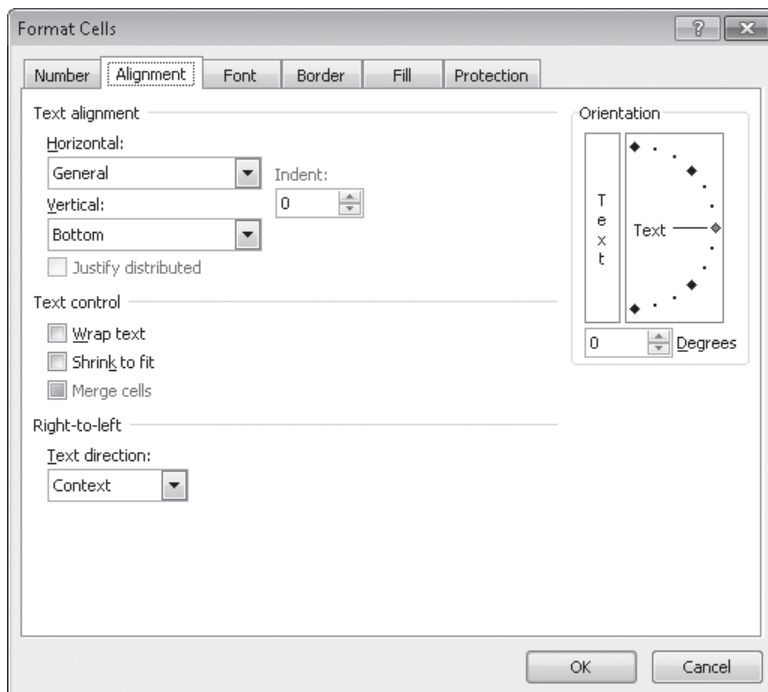
SET UP You need the *HourlyExceptions_start* workbook located in your Chapter04 practice file folder to complete this exercise. Open the *HourlyExceptions_start* workbook, and save it as *HourlyExceptions*. Then follow the steps.



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.



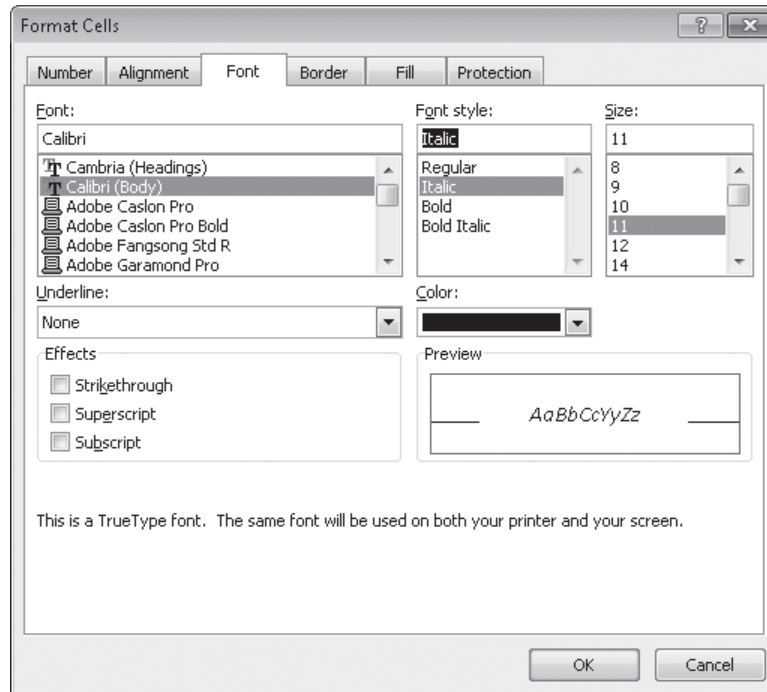
5. In the **Horizontal** list, click **Center**.

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.

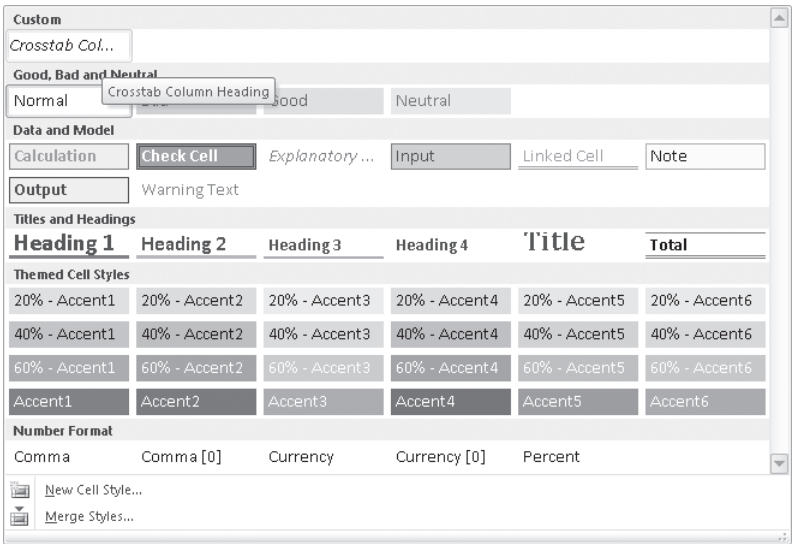
12. Click **OK**.

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.

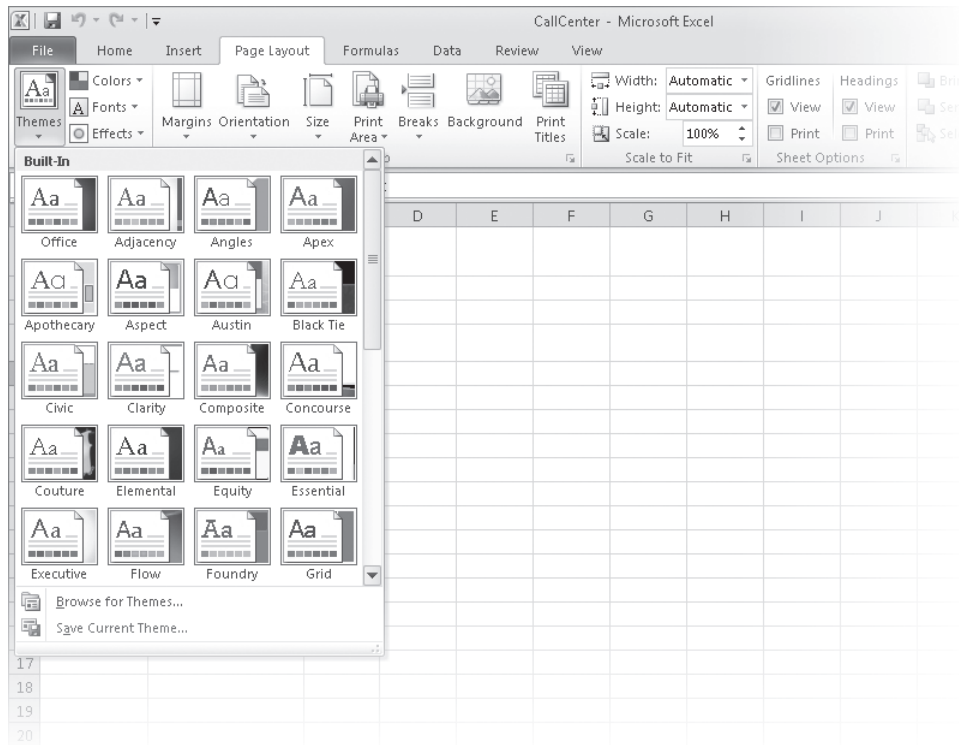


CLEAN UP Save the **HourlyExceptions** workbook, and then close it.

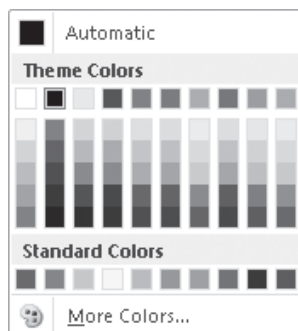
Applying Workbook Themes and Excel Table Styles

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.



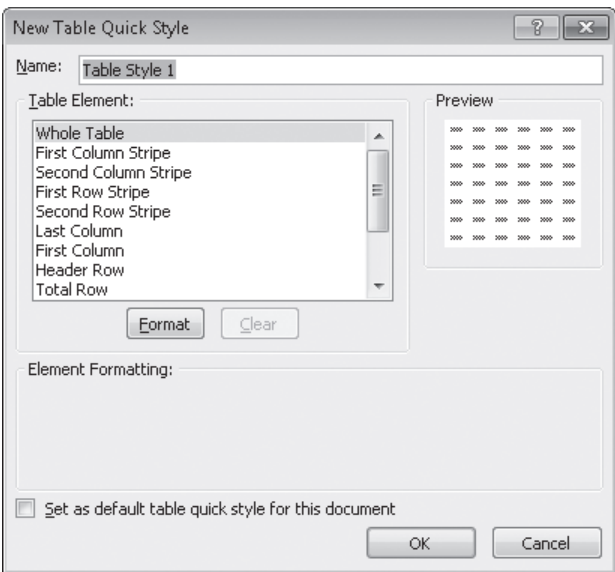
When you want to format a workbook element, Excel displays colors that are available within the active theme. For example, selecting a worksheet cell and then clicking the Font Color button's arrow displays a palette of colors you can use. The theme colors appear in the top segment of the color palette—the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

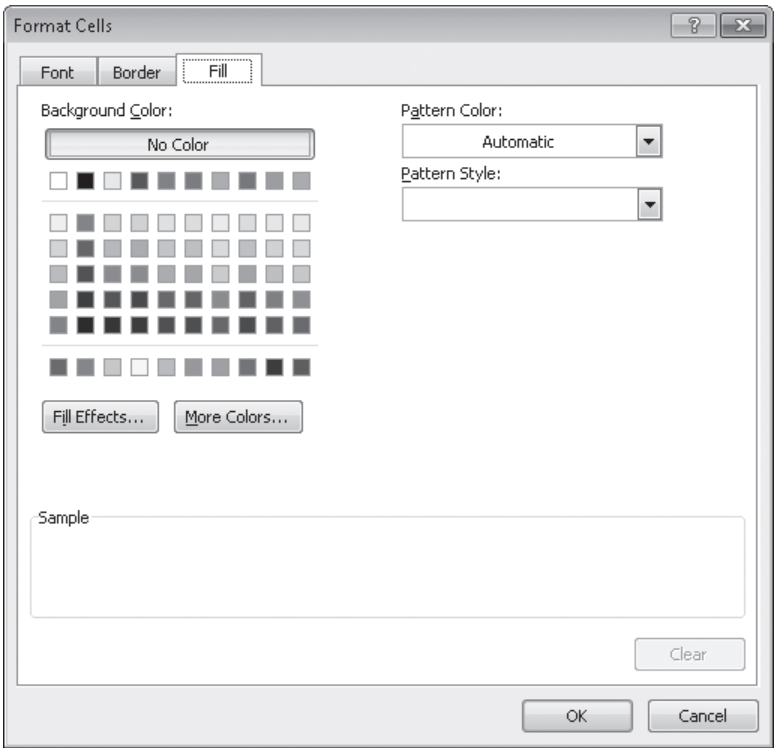


1. If necessary, click any cell in the Excel table.
2. On the **Home** tab, in the **Styles** group, click **Format as Table**, and then click the style at the upper-left corner of the **Table Styles** gallery.
Excel applies the style to the table.
3. On the **Home** tab, in the **Styles** group, click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

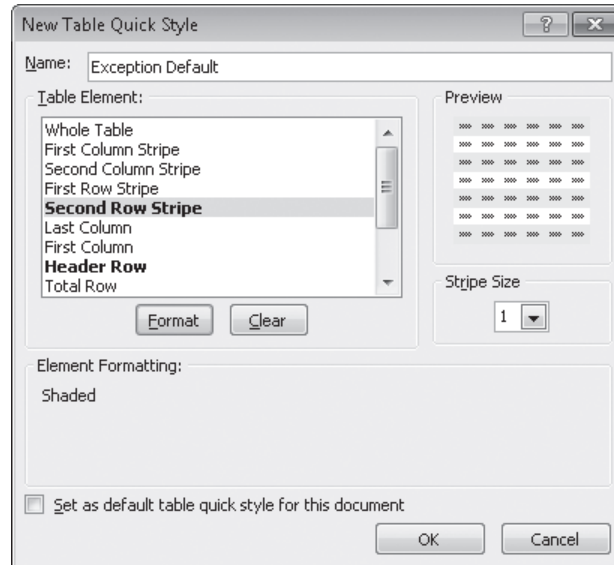
The Format Cells dialog box opens.

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.

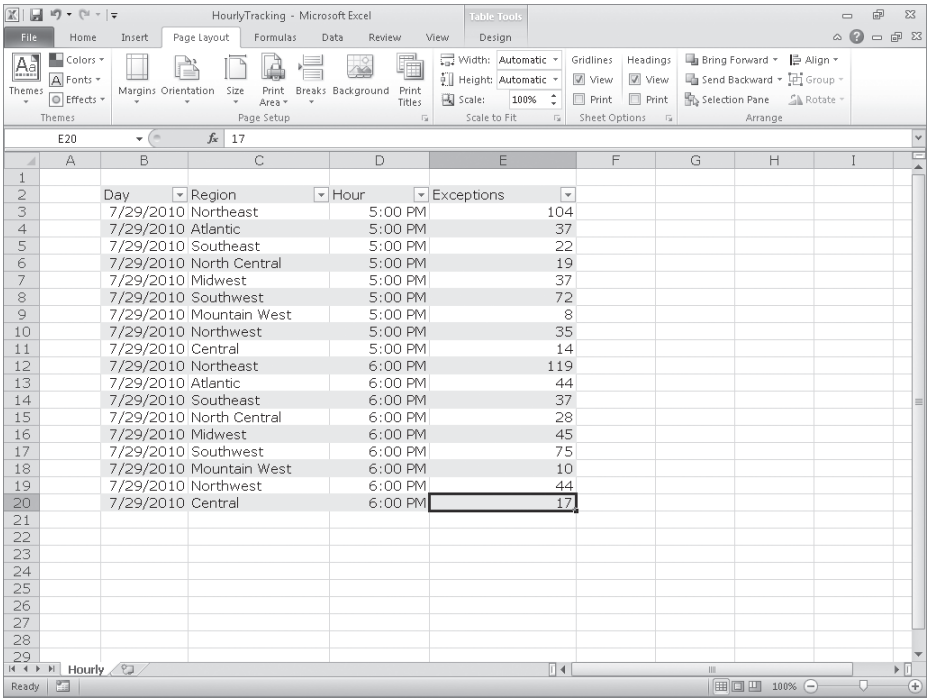
14. On the **Home** tab, in the **Styles** group, click **Format as Table**. In the gallery, in the **Custom** area, click the new format.

Excel applies the new format.



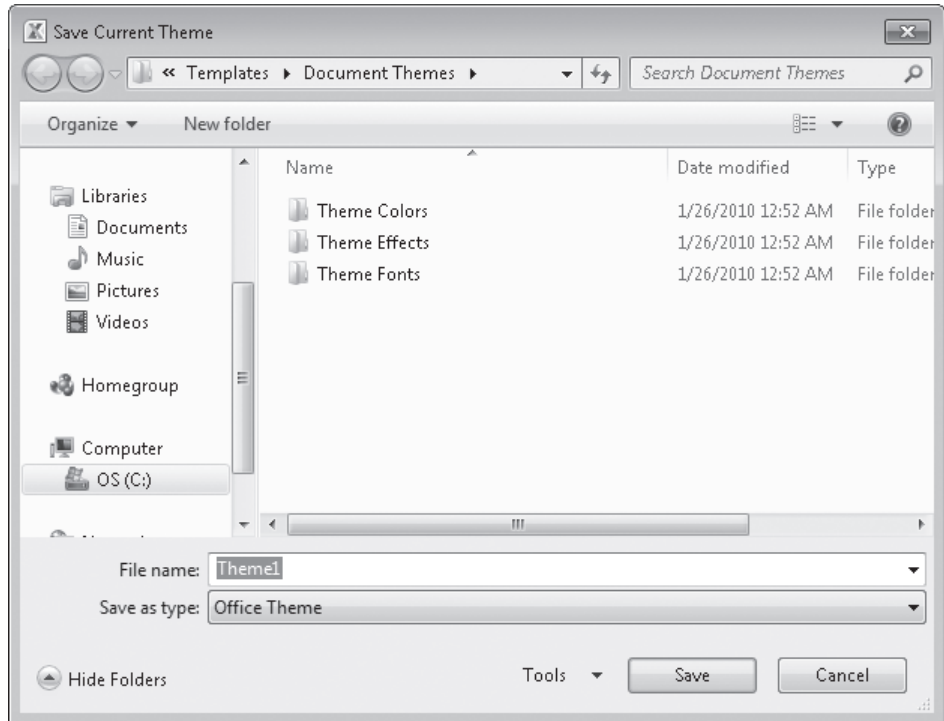
15. On the **Page Layout** tab, in the **Themes** group, click the **Fonts** arrow, and then in the list, click **Verdana**.

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.

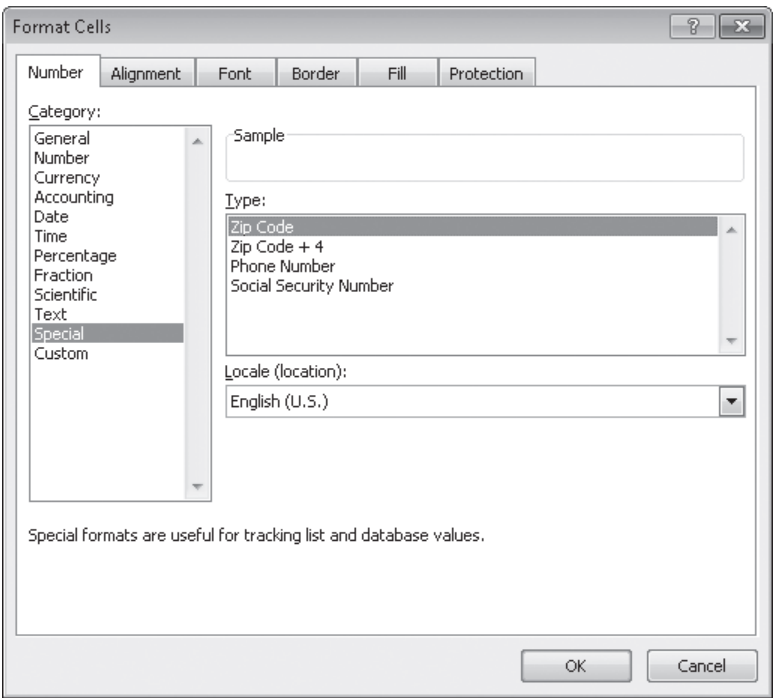
✖ CLEAN UP Save the *HourlyTracking* workbook, and then close it.

Making Numbers Easier to Read

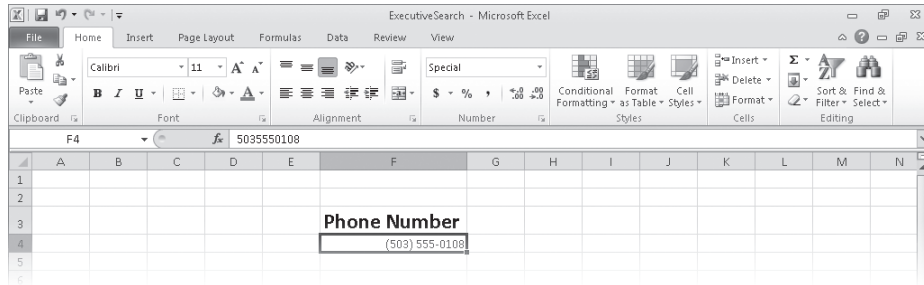
Changing the format of the cells in your worksheet can make your data much easier to read, both by setting data labels apart from the actual data and by adding borders to define the boundaries between labels and data even more clearly. Of course, using formatting options to change the font and appearance 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.

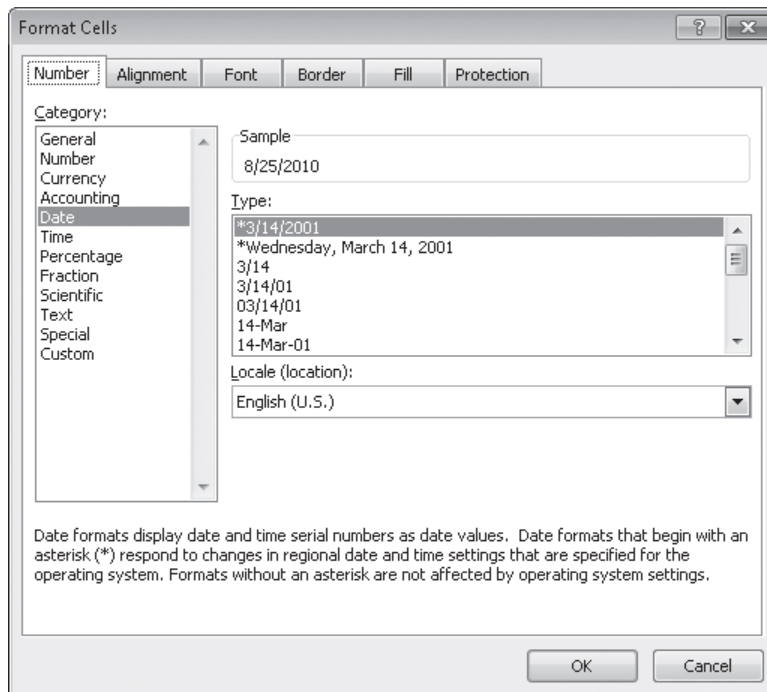
In this exercise, you’ll assign date, phone number, and currency formats to ranges of cells.



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**.

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

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

7. Click cell **G3**.



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

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

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

The Type list appears with a list of special formats.

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

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

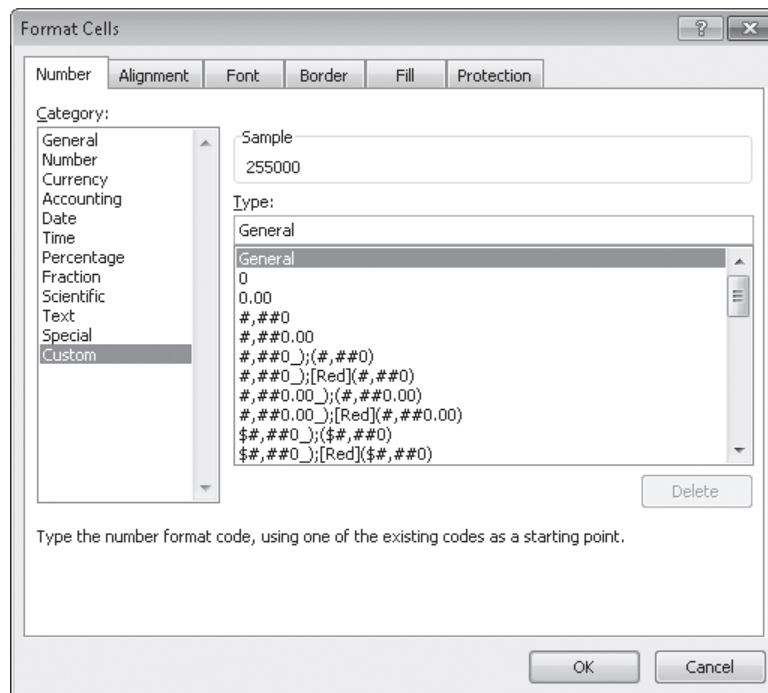
12. Click cell **H3**.

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

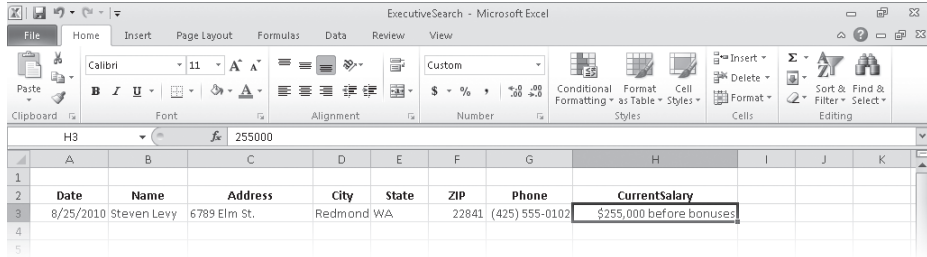
14. If necessary, click the **Number** tab in the **Format Cells** dialog box.

15. In the **Category** list, click **Custom**.

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



16. In the **Type** list, click the **#,##0** item.
#,##0 appears in the Type box.
17. In the **Type** box, click to the left of the existing format, and type **\$**. Then click to the right of the format, and type **" before bonuses"** (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.

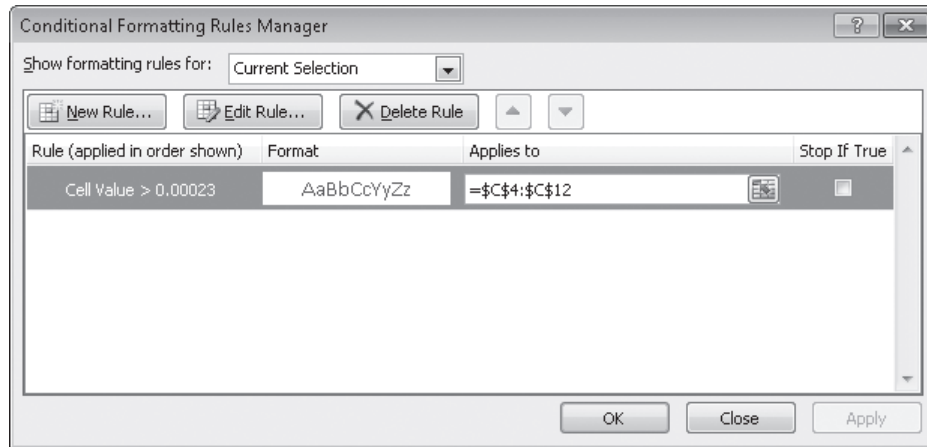
Changing the Appearance of Data Based on Its Value

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.

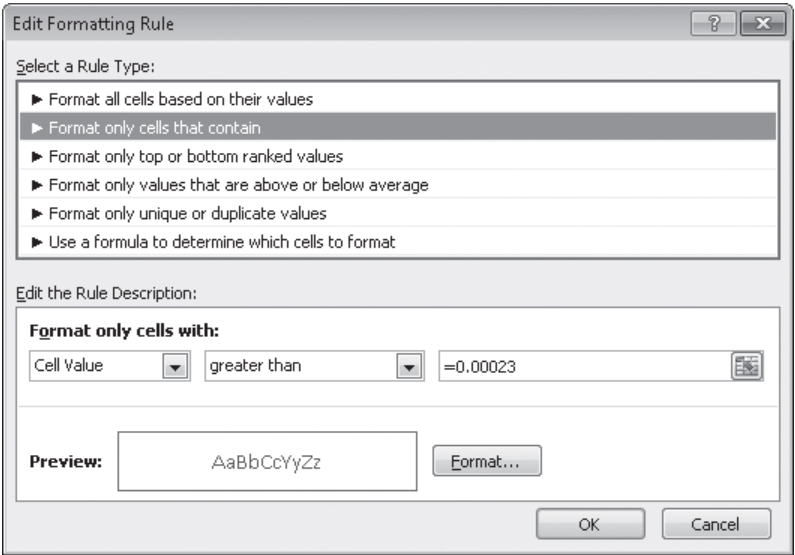


The Conditional Formatting Rules Manager enables you to control your conditional formats in the following ways:

- 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.

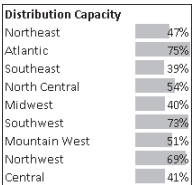
Tip Clicking the New Rule button in the Conditional Formatting Rules Manager opens the New Formatting Rule dialog box. The commands in the New Formatting Rule dialog box duplicate the options displayed when you click the Conditional Formatting button in the Styles group on the Home tab.

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.



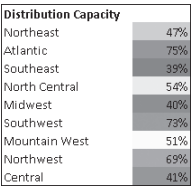
You can create two types of data bars in Excel 2010: solid fill and gradient fill. When data bars were introduced in Excel 2007, they filled cells with a color band that decreased in intensity as it moved across the cell. This gradient fill pattern made it a bit difficult to determine the relative length 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.

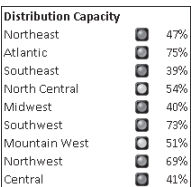
Excel also draws data bars differently than was done in Excel 2007. Excel 2007 drew a very short data bar for the lowest value in a range and a very long data bar for the highest value. The problem was that similar values could be represented by data bars of very different lengths if there wasn't much 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.



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




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.

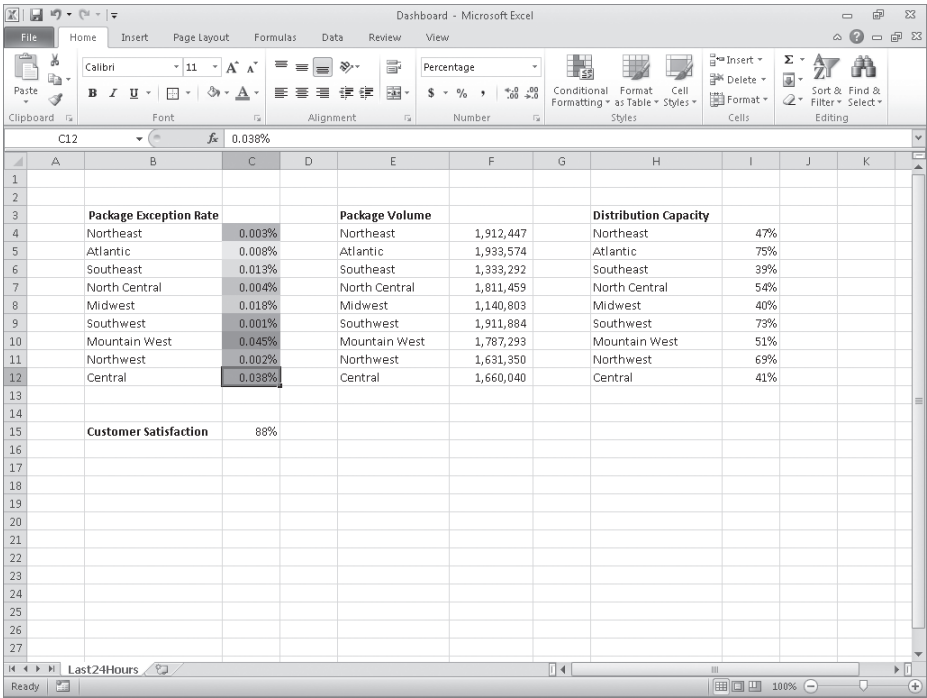
Important Be sure to not include cells that contain summary formulas in your conditionally formatted ranges. The values, which could be much higher or lower than your regular cell data, could throw off your comparisons.

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.



	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3		Package Exception Rate			Package Volume			Distribution Capacity			
4		Northeast	0.003%		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		Customer Satisfaction	88%								
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											

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

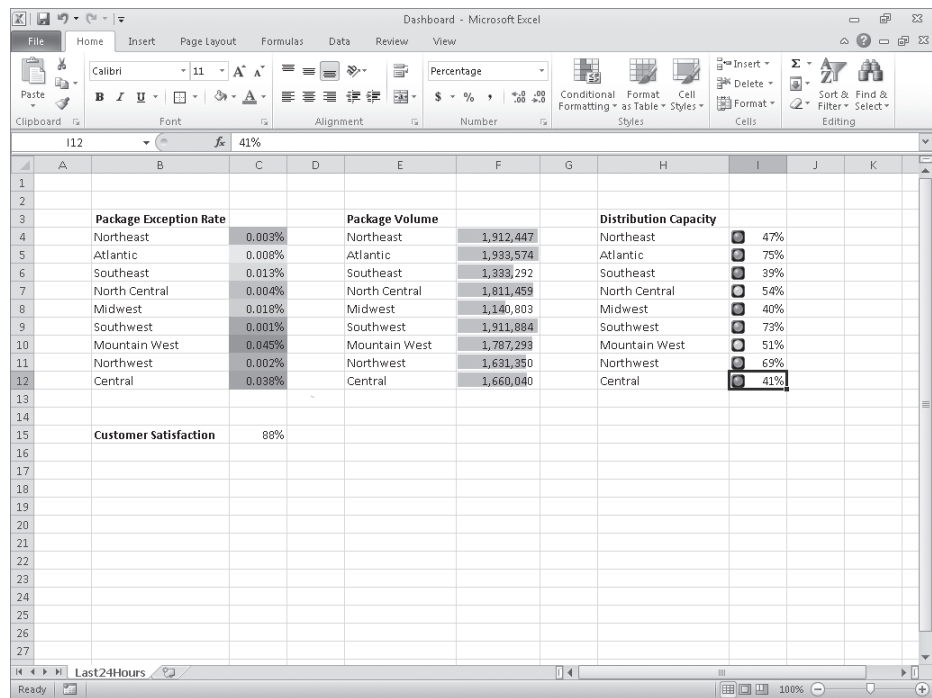
4. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu, point to **Data Bars**, and then, in the **Solid Fill** group, click the orange data bar format.

Excel formats the selected range.

5. Select cells **I4:I12**.

6. 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.

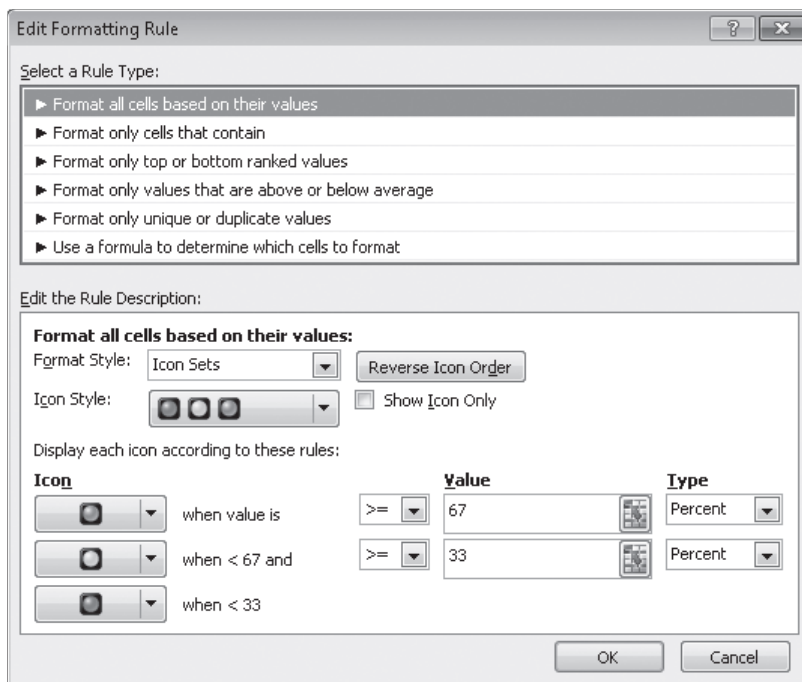


7. With the range **I4:I12** still selected, on the **Home** tab, in the **Styles** group, click **Conditional Formatting**, and then click **Manage Rules**.

The Conditional Formatting Rules Manager opens.

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

The Edit Formatting Rule dialog box opens.



9. 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.

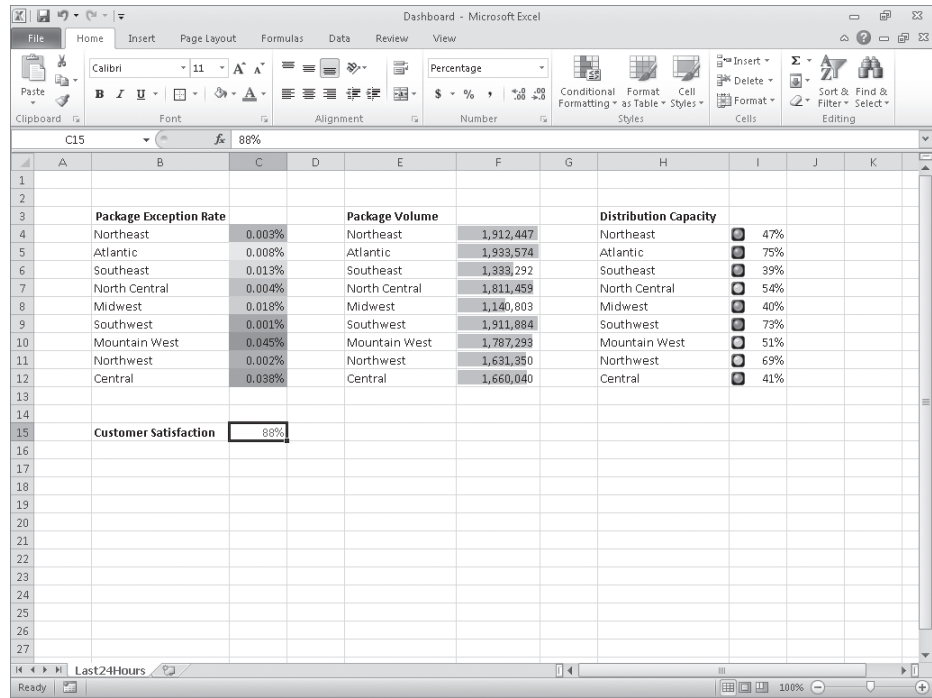
15. Click cell **C15**.
16. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**. On the menu, point to **Highlight Cells Rules**, and then click **Less Than**.

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.



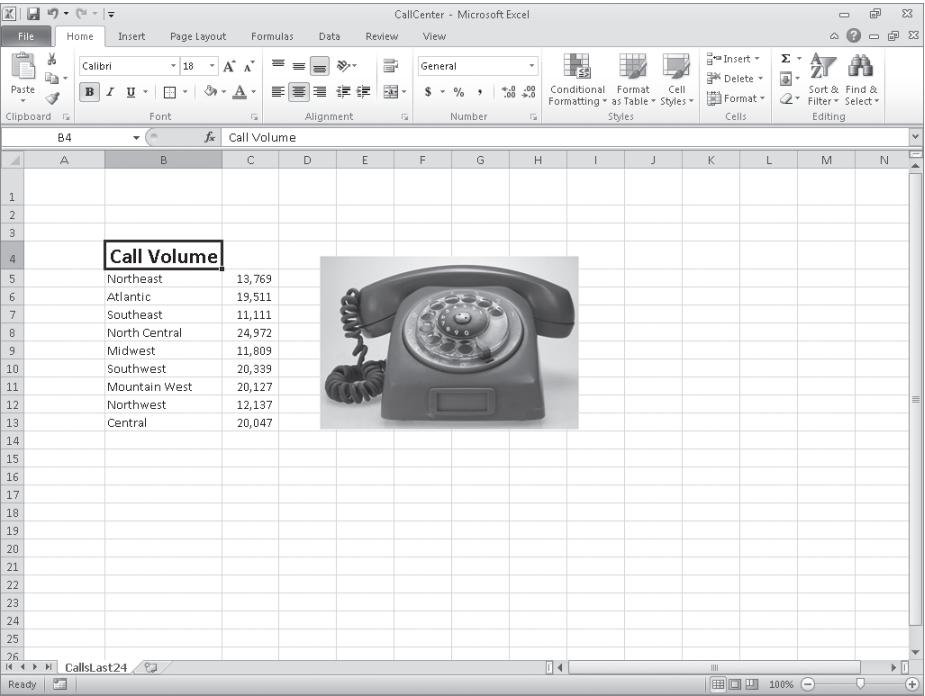
CLEAN UP Save the Dashboard workbook, and then close it.

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.

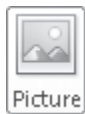
Tip To remove a background image from a worksheet, display the Page Layout tab, and then in the Page Setup group, click Delete Background.

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.

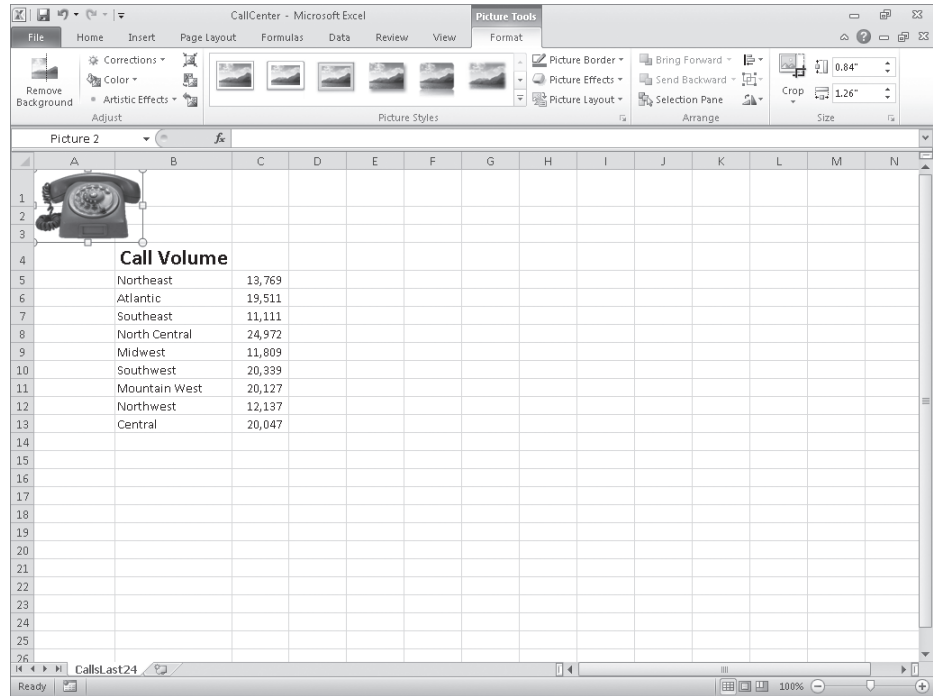
4. Drag the handles at the upper-left and bottom-right corners of the outline until the entire phone, including the cord, is within the frame.



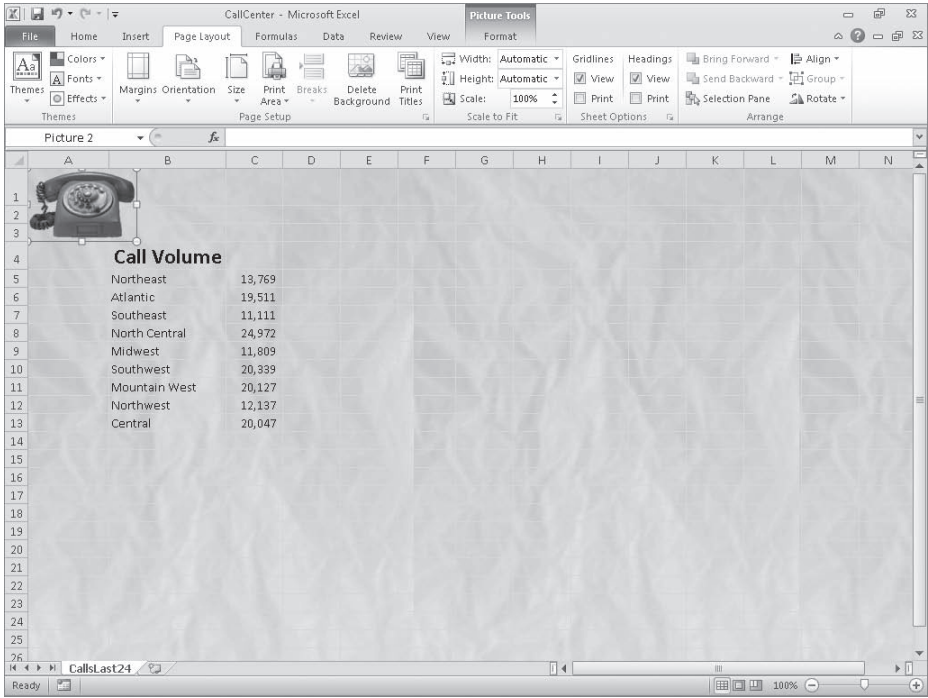
5. On the **Background Removal** tab, click **Keep Changes**.

Excel removes the highlighted image elements.

6. 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.



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



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



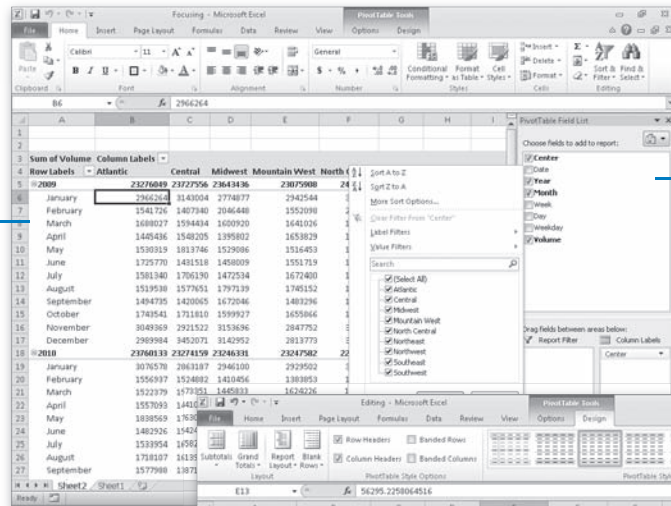
CLEAN UP Save the CallCenter workbook, and then close it. If you are not continuing directly to the next chapter, exit Excel.

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.

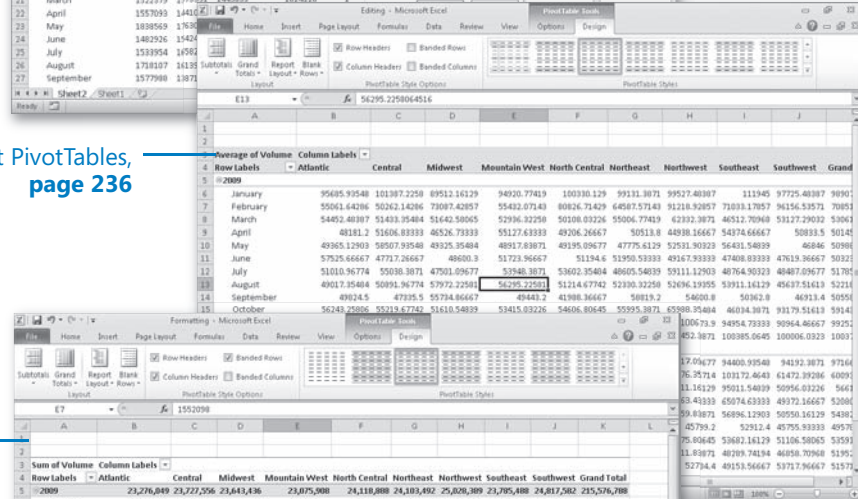
Chapter at a Glance

Analyze data dynamically by using PivotTables, **page 212**



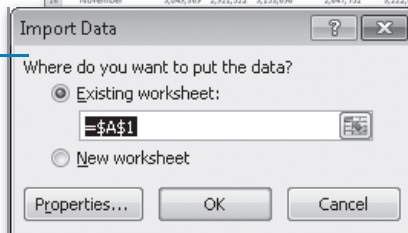
Filter, show, and hide PivotTable data, **page 222**

Edit PivotTables, **page 236**



Format PivotTables, **page 242**

Create PivotTables from external data, **page 250**



9 Creating Dynamic Worksheets by Using PivotTables

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	3,098,663	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	3,191,591	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	3,159,233	3,063,572	3,456,576	3,371,850	2,900,000
North Central	6,236,063	3,785,068	2,929,397	2,677,053	3,079,267	3,040,653	3,521,947	3,166,710	2,900,000
Northeast	6,370,982	3,281,469	3,725,669	3,148,289	3,165,070	2,990,986	3,329,821	3,217,496	3,300,000
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	3,200,000
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	3,226,583	3,006,170	3,019,281	2,801,259	3,087,404	2,867,383	3,000,000
Grand Total	54,704,461	32,998,313	30,599,847	27,600,893	29,398,572	26,973,416	29,400,270	29,063,609	27,500,000

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.

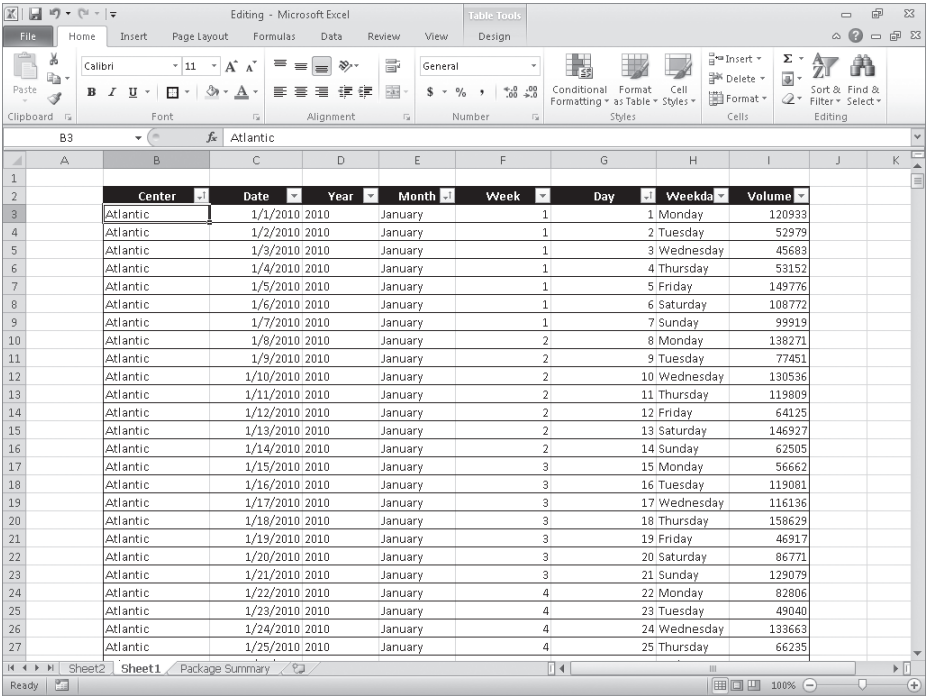
Such a neutral presentation of your data is versatile, but it has limitations. First, although you can use sorting and filtering to restrict the rows or columns shown, it's difficult to change the worksheet's organization. For example, in this worksheet, you can't easily reorganize the contents of your 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										
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total		
January	6,042,842	6,006,191	5,720,977	5,872,046	6,236,863	6,370,982	6,108,382	6,396,724	5,949,454	54,704,461		
February	3,098,663	2,932,222	3,456,904	2,935,951	3,785,068	3,281,469	4,216,668	4,877,758	4,413,610	32,998,313		
March	3,210,406	3,167,785	3,046,753	3,265,252	2,929,397	3,725,669	3,640,750	4,987,252	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	3,456,576	3,521,947	3,329,821	3,403,395	3,175,859	3,087,404	29,400,270		
August	3,237,645	3,191,591	3,441,757	3,371,850	3,166,710	3,217,496	3,400,949	3,168,228	2,867,383	29,063,609		
September	3,072,723	2,807,222	3,166,599	2,942,925	2,996,901	3,364,148	3,220,056	2,985,491	3,018,941	27,575,006		
October	3,261,585	3,362,250	3,333,751	3,182,437	3,125,591	3,346,381	3,789,687	3,196,785	4,462,698	31,061,165		
November	6,137,174	6,083,306	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	6,279,737	6,546,678	6,039,560	5,880,670	6,093,514	6,462,079	5,768,374	5,981,613	6,539,476	55,651,701		
Grand Total	47,036,182	47,001,715	46,889,767	46,323,490	46,680,590	48,690,205	48,633,350	50,521,603	48,118,161	429,895,063		

To create a PivotTable, you must have your data collected in a list. 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.

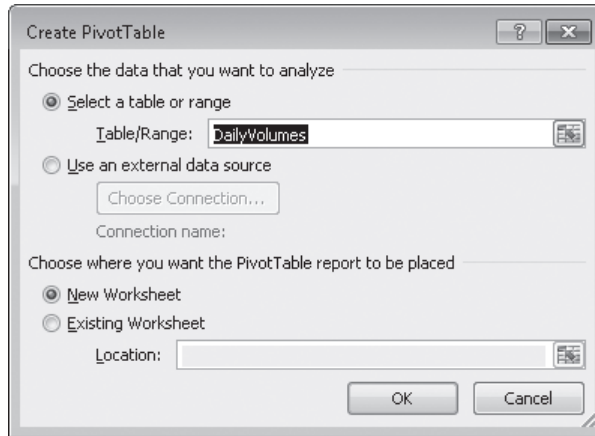
In the Excel table used to create the distribution PivotTable, each row of the table contains a value representing the distribution center, date, month, week, weekday, day, and volume for every day of the years 2009 and 2010.



	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		99919
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

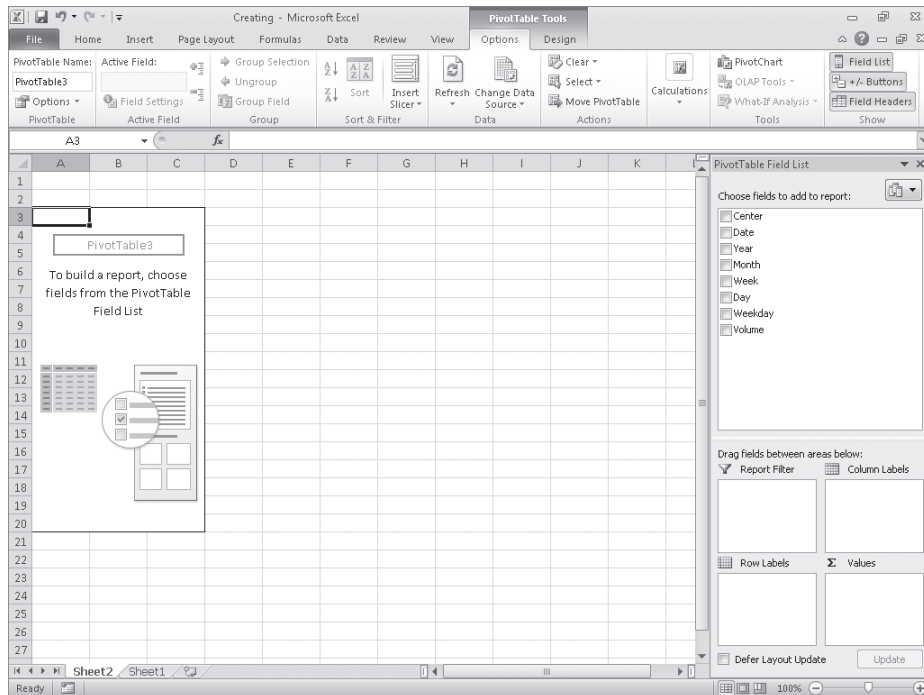
Excel needs that data when it creates the PivotTable so that it can maintain relationships among the data. If you want to filter your PivotTable so that it shows all package volumes on Thursdays in January, for example, Excel must be able to identify January 11 as a Thursday.

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.

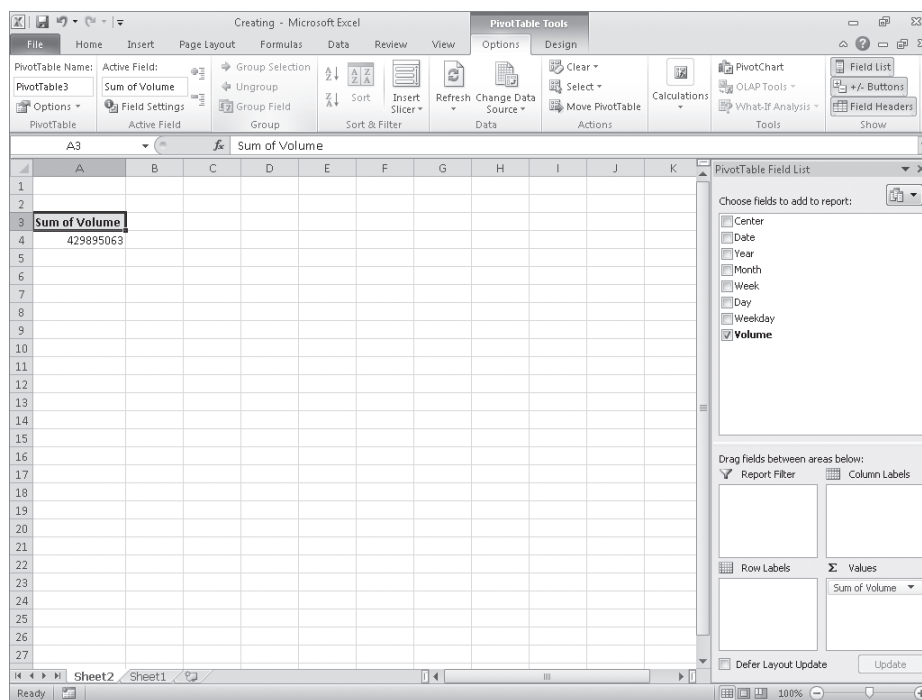


In this dialog box, you verify the data source for your PivotTable and whether you want to create a PivotTable on a new worksheet or an existing worksheet. After you click OK, Excel displays a new or existing worksheet and displays the PivotTable Field List task pane.

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



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



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.

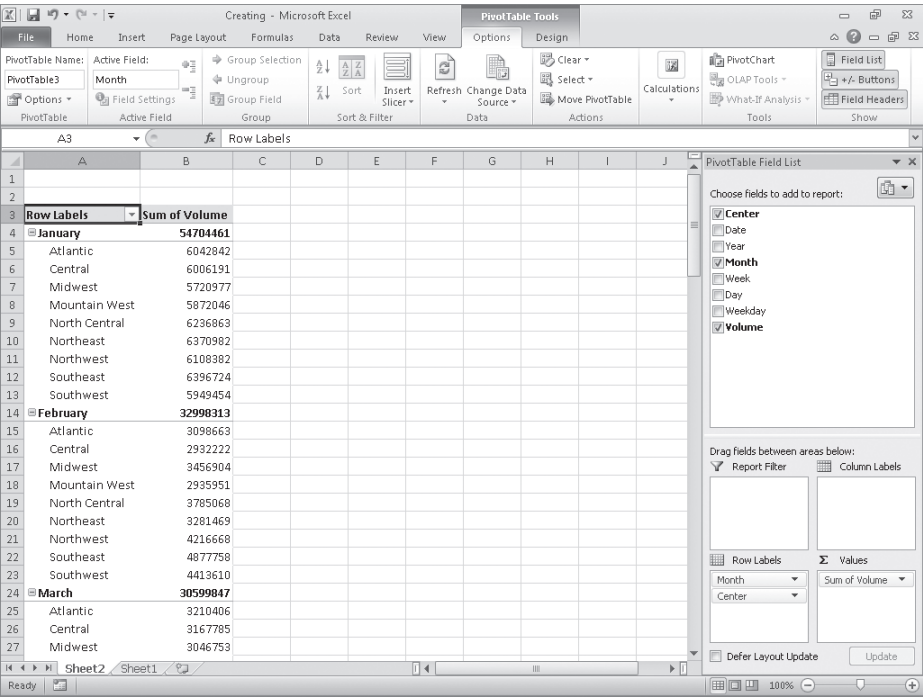
The screenshot displays the Microsoft Excel interface with a PivotTable and the PivotTable Field List task pane. The PivotTable is structured as follows:

Row Labels	Sum of Volume
Atlantic	47036182
January	6042842
February	3098663
March	3210406
April	3002529
May	3368888
June	3208696
July	3115294
August	3237645
September	3072723
October	3261585
November	6137174
December	6279737
Central	47001715
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.



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 Microsoft Excel with a PivotTable and the PivotTable Field List task pane. The PivotTable is titled 'Sum of Volume' and has 'Row Labels' as 'Month' and 'Column Labels' as 'Region'. The data is summarized by month and region.

Month	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
Grand Total	47036182	47001715	46889767	46323490	46680590	48690205	48633350	5052164

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:** Center
 - Row Labels:** Month
 - Values:** Sum of Volume
- ☐ Defer Layout Update
-

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.

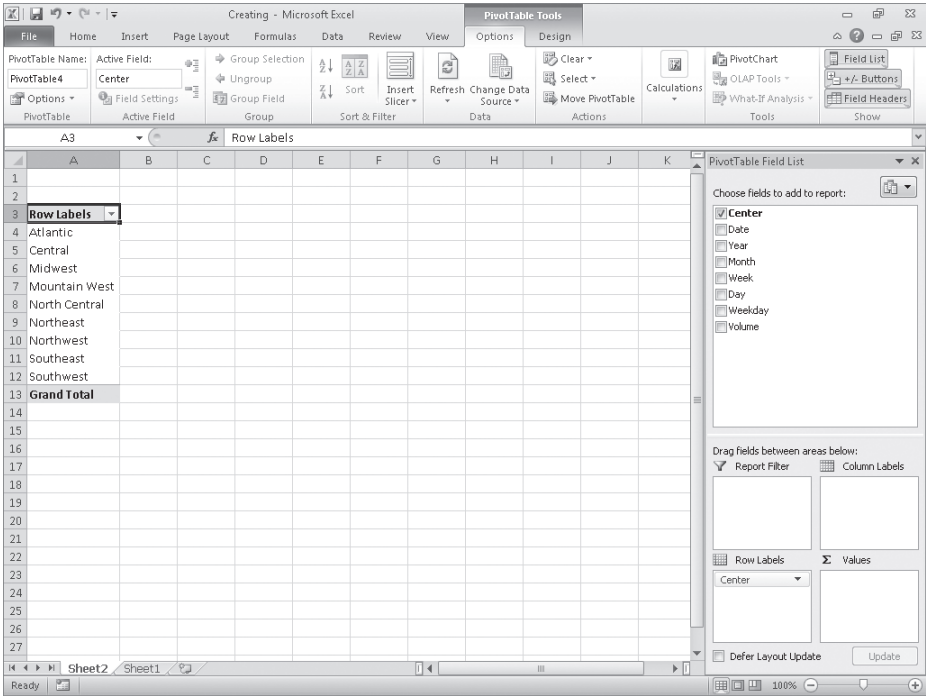


1. Click any cell in the Excel table.
2. On the **Insert** tab, in the **Tables** group, click the **PivotTable** button (not the arrow).
The Create PivotTable dialog box opens.
3. Verify that the **DailyVolumes** table name appears in the **Table/Range** field and that the **New Worksheet** option is 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.



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.

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

Center	Sum of Volume
Atlantic	47036182
2009	23276049
2010	23760133
Central	47001715
2009	23727556
2010	23274159
Midwest	46809767
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

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

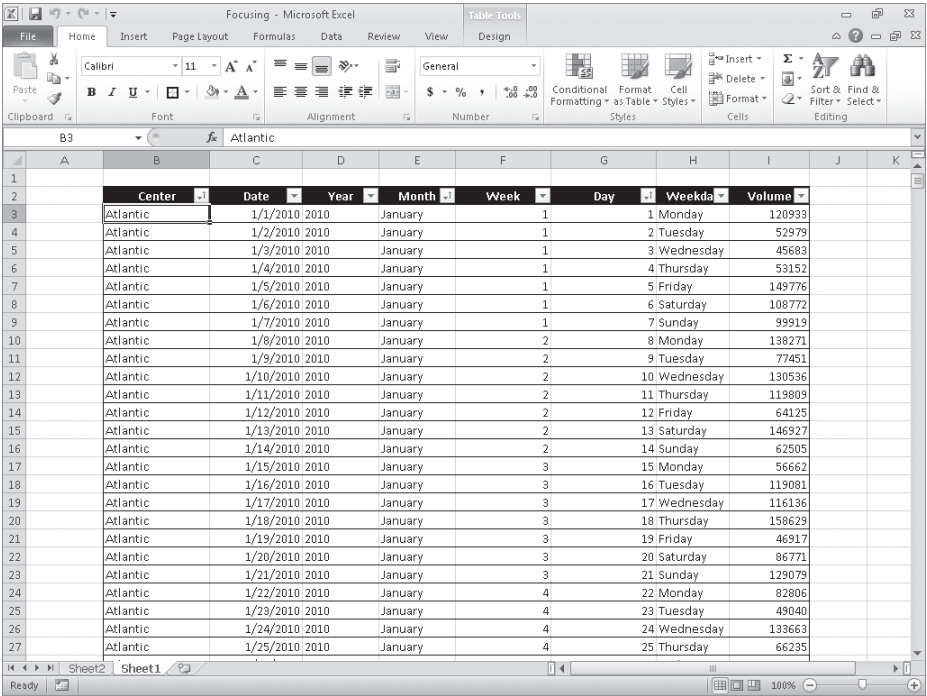
- Choose fields to add to report:**
 - ☒ Center
 - ☐ Date
 - ☒ Year
 - ☐ Month
 - ☐ Week
 - ☐ Day
 - ☐ Weekday
 - ☒ Volume
- Drag fields between areas below:**
 - Report Filter:** (Empty)
 - Column Labels:** (Empty)
 - Row Labels:** Center, Year
 - Values:** Sum of Volume



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.

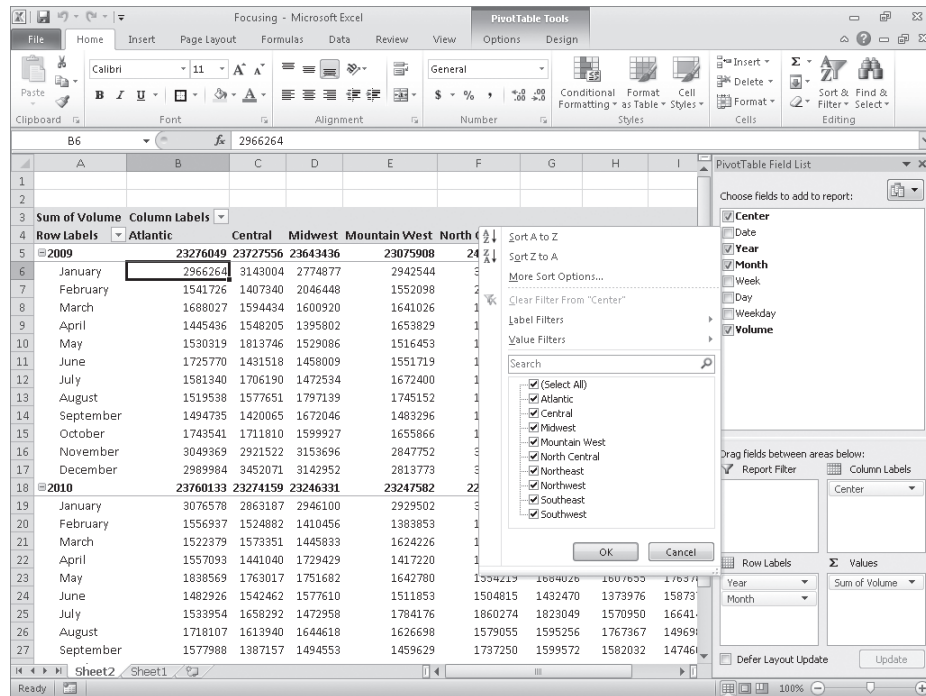


	Center	Date	Year	Month	Week	Day	Weekda	Volume
3	Atlantic	1/1/2010	2010	January	1	1 Monday		120933
4	Atlantic	1/2/2010	2010	January	1	2 Tuesday		52979
5	Atlantic	1/3/2010	2010	January	1	3 Wednesday		45683
6	Atlantic	1/4/2010	2010	January	1	4 Thursday		53152
7	Atlantic	1/5/2010	2010	January	1	5 Friday		149776
8	Atlantic	1/6/2010	2010	January	1	6 Saturday		108772
9	Atlantic	1/7/2010	2010	January	1	7 Sunday		99919
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.

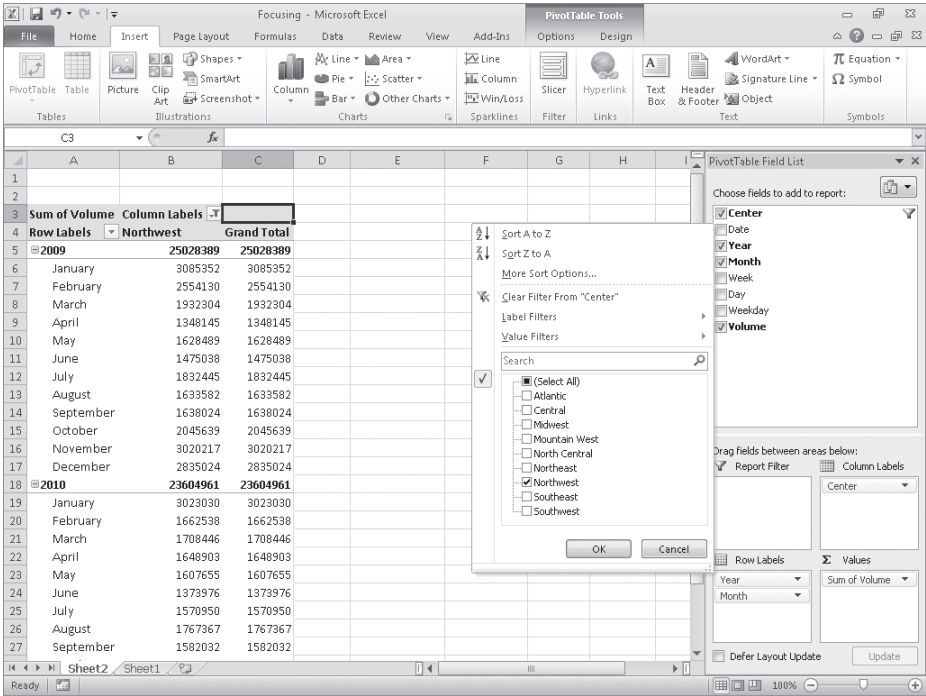
See Also For more information on filtering an Excel table, see “Limiting Data That Appears on Your Screen” in Chapter 5, “Focusing on Specific Data by Using Filters.”

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 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.

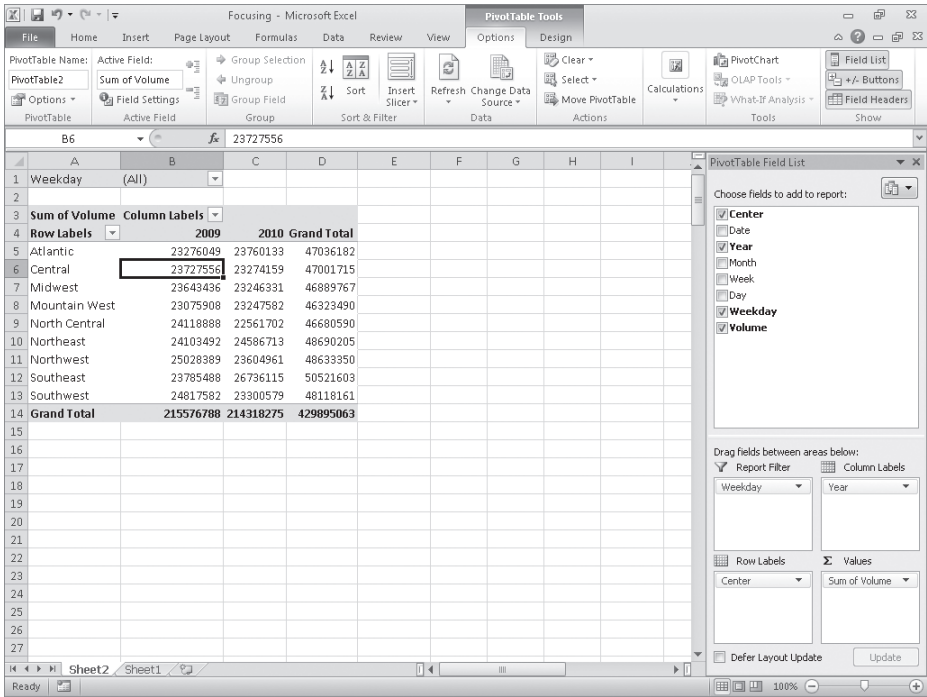
Excel indicates that a PivotTable has filters applied by placing a filter indicator next to the Column Labels or Row Labels header, as appropriate, and the filtered field name in the PivotTable Field List task pane.

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 a Microsoft Excel worksheet with a PivotTable. The PivotTable is titled 'Sum of Volume' and is filtered by '2009'. The PivotTable has 'Row Labels' (Atlantic, Central, Midwest, Mountain West, North Central, Northeast, Northwest, Southeast, Southwest) and 'Column Labels' (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday). The 'Grand Total' row shows a total volume of 3105163. The PivotTable Field List task pane is open on the right, showing the 'Choose fields to add to report:' section with 'Center', 'Date', 'Year', 'Month', 'Week', 'Day', 'Weekday', and 'Volume' fields. The 'Weekday' field is currently in the 'Report Filter' area. The 'Report Filter' area also shows 'Year' and 'Month' fields. The 'Row Labels' area shows 'Center' and the 'Values' area shows '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
Mountain West	3268404	3068409	3200078	3298019	3515603	3367632	3357763	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
Grand Total	31614271	29858641	30980990	31222575	30301893	30599730	30990688	215576788

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.

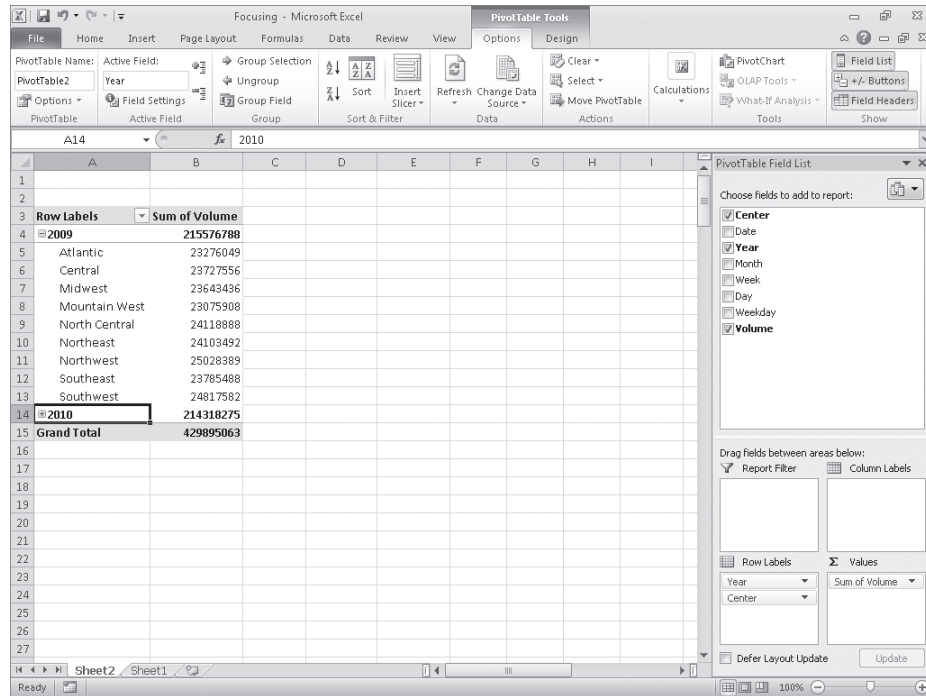


Tip In Excel 2003 and earlier versions, this area was called the Page Field area.

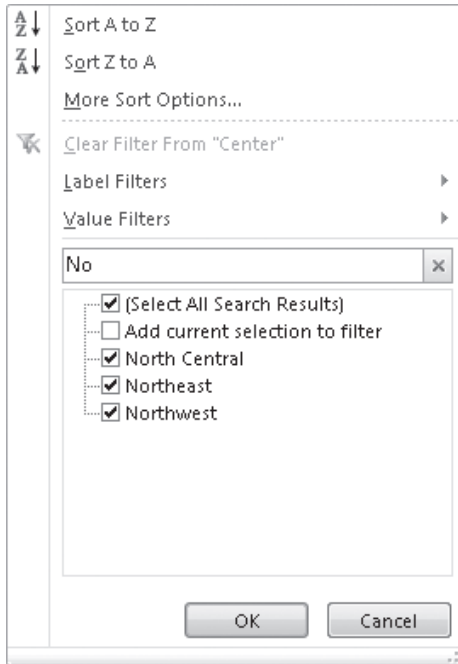
When you click the filter arrow of a field in the Report Filter area, Excel displays a list of the values in the field. When you click the filter arrow, you can choose to filter by one value at a time. If you'd like to filter your PivotTable by more than one value, you can do so by selecting the Select 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.



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.

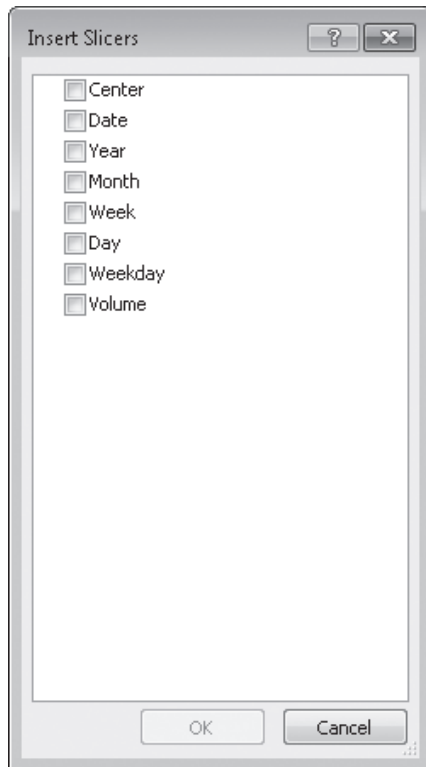


For example, if the PivotTable's Center field contains the values Atlantic, Central, Midwest, Mountain West, North Central, Northeast, Northwest, Southeast, and Southwest, typing the character string "No" limits the values to *North Central*, *Northeast*, and *Northwest*.

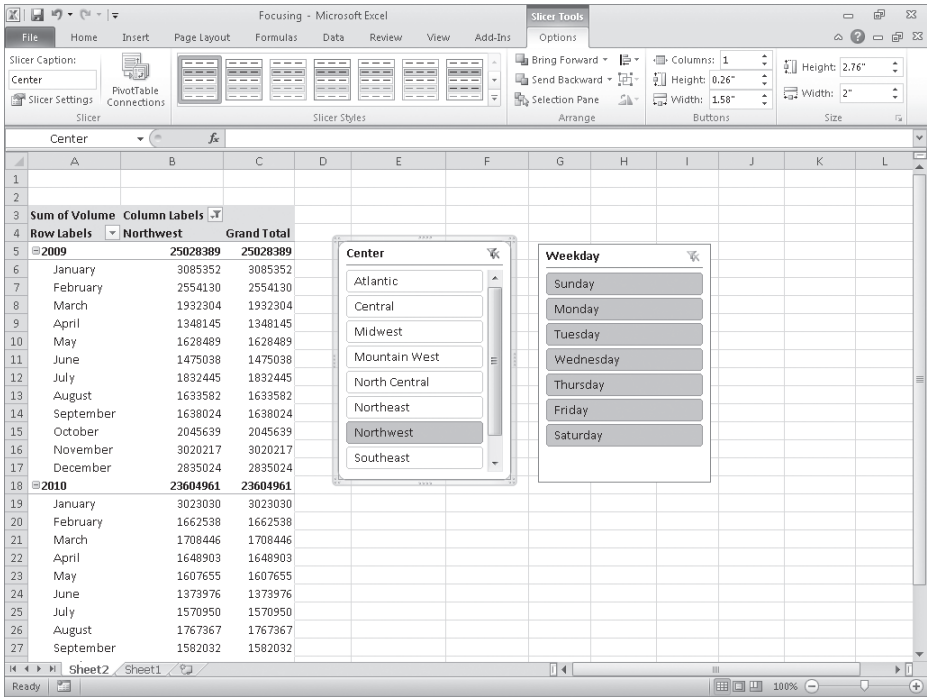
Tip Search filters look for the character string you specify anywhere within a field's value, not just at the start of the value. In the previous example, the search filter string "cen" would return both *Central* and *North Central*.

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.



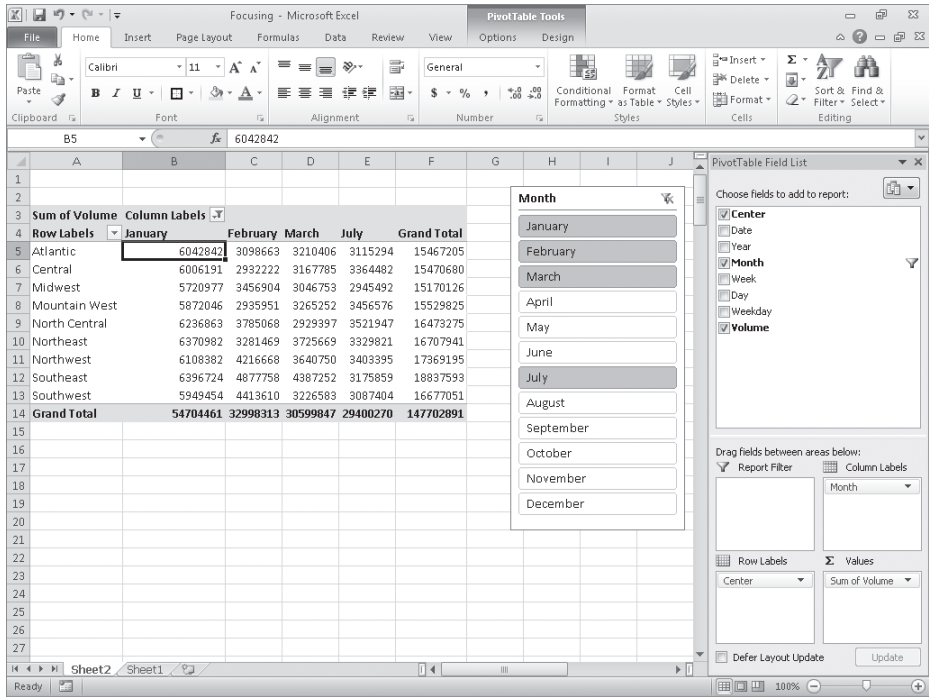
Tip If you have already applied a filter to the field for which you display a Slicer, the Slicer reflects the filter's result.

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.



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.



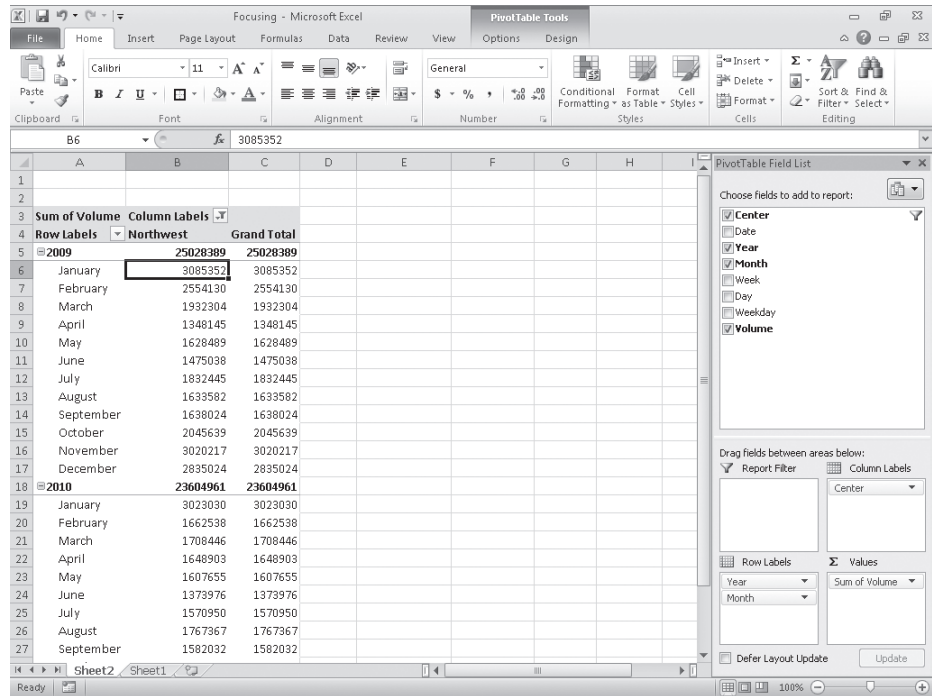
SET UP You need the *Focusing_start* workbook located in your Chapter09 practice file folder to complete this exercise. Open the *Focusing_start* workbook, and save it as *Focusing*. Then follow the steps.

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.



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.

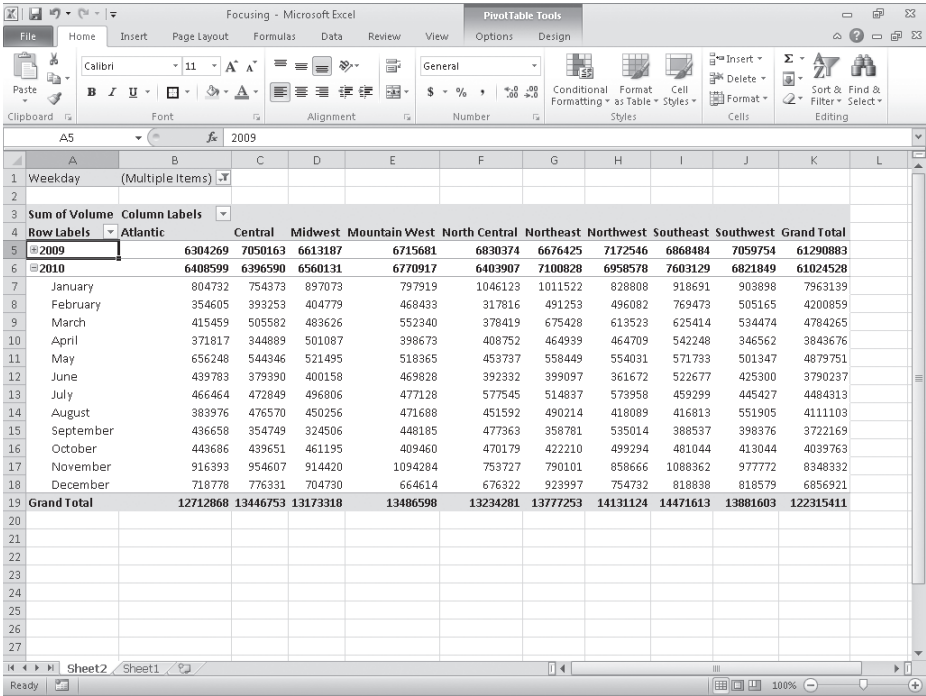
Excel clears each check box in the list.

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.



Weekday	(Multiple Items)											
Sum of Volume	Column Labels											
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	522677	425300	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	440185	477363	358781	535014	380537	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		
Grand Total	12712868	13446753	13173318	13486598	13234281	13777253	14131124	14471613	13881603	122315411		

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

Excel redisplayes the collapsed rows.



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

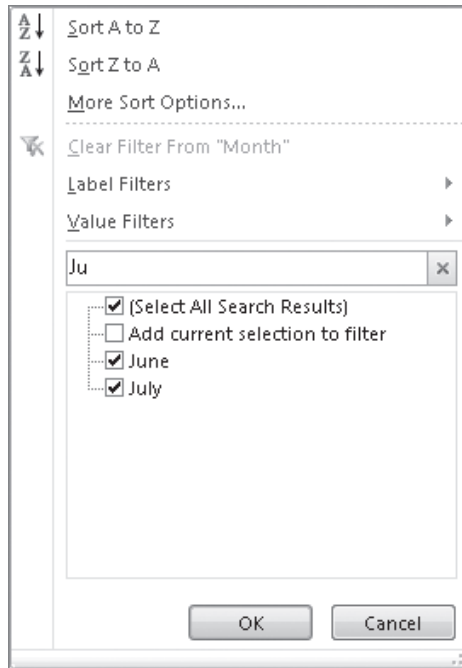
The PivotTable Field List task pane opens.

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**.

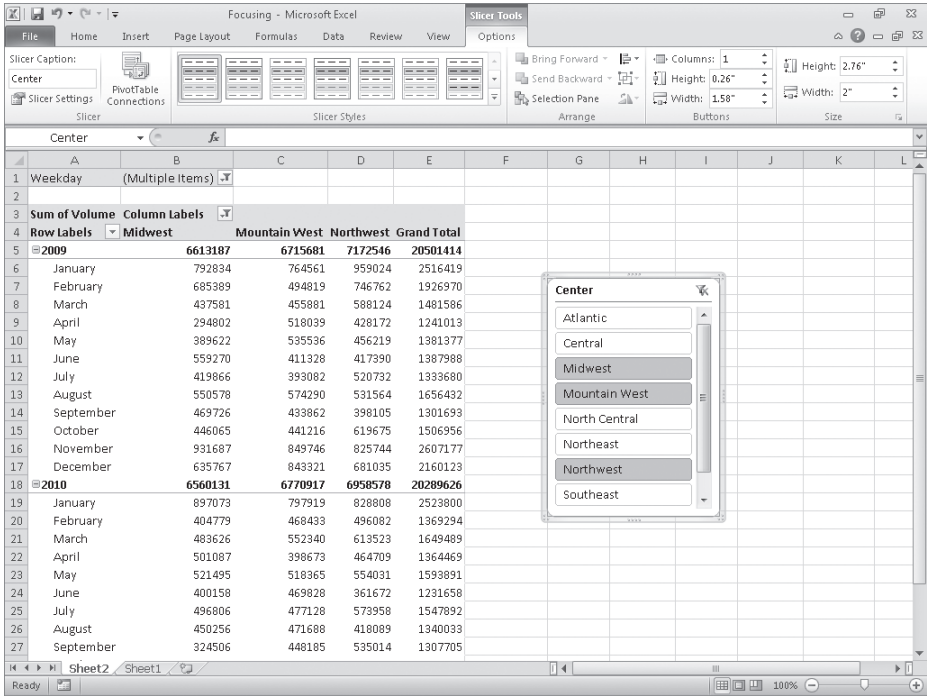
A Slicer for the Center field appears.

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.



Weekday	(Multiple Items)														
Sum of Volume	Column Labels														
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	518039	428172	1241013											
May	389622	535536	456219	1381377											
June	559270	411328	417390	1387988											
July	419866	393082	520732	1336680											
August	550578	574290	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	552340	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 located in the range C3:I27 and has the following structure:

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast
2009	23276049	23727556	23643436	23075908	24118888	24103492	25028389	2378544
January	2966264	3143004	2774877	2942544	3110234	3073073	3085352	34702
February	1541726	1407340	2046448	1552098	2263148	1808452	2554130	19889
March	1688022	1594434	1600920	1641026	1553349	1705210	1932304	14418
April	1445436	1548205	1395802	1653829	1476188	1515414	1348145	16312
May	1530319	1813746	1529086	1516453	1525048	1481044	1628489	17493
June	1725770	1431518	1458009	1551719	1535838	1558516	1475038	14222
July	1581340	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	3153636	2847752	3222844	3005162	3020217	28486
December	2989984	3452071	3142952	2813773	3230449	3327176	2835024	31119
2010	23760133	23274159	23246331	23247582	22561702	24506713	23604961	267361
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	29453
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

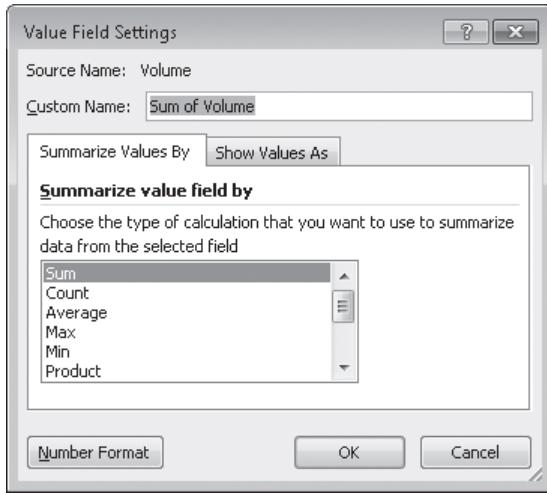
The PivotTable Field List task pane on the right shows the following settings:

- Choose fields to add to report:** Center, Date, Year, Month, Week, Day, Weekday, Volume (all checked).
- Report Filter:** Center.
- Column Labels:** Center.
- Row Labels:** Year, Month.
- Values:** Sum of Volume.
- Defer Layout Update:** Unchecked.

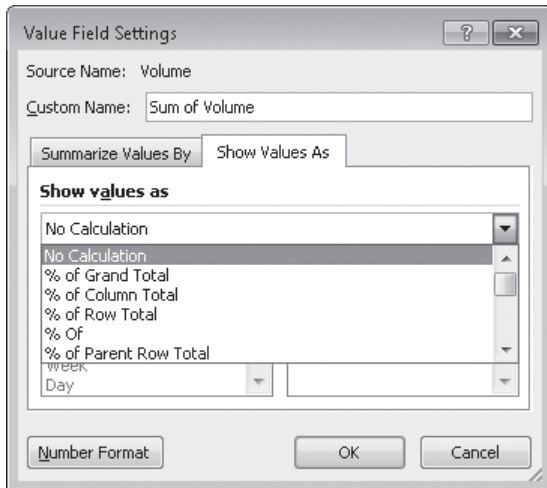
Excel displays the PivotTable name on the Options contextual tab, in the PivotTable Options group. The name *PivotTable2* doesn't help you or your colleagues understand the data the PivotTable contains, particularly if you use the PivotTable data in a formula on another worksheet. To give your PivotTable 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 **Sheet2** 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.



Subtotal



Grand Totals

Editing - Microsoft Excel													
PivotTable Tools													
Options Design													
PivotTable Style Options													
PivotTable Styles													
B6 2966264													
A B C D E F G H I J K L													
1													
2													
3	Sum of Volume Column Labels												
4	Row Labels Atlantic Central Midwest Mountain West North Central Northeast Northwest Southeast Southwest												
5	2009												
6	January	2966264	3143004	2774877	2942544	3110234	3073073	3085352	3470295	3029490			
7	February	1541726	1407340	2046448	1552098	2263148	1808452	2554130	1988929	2692383			
8	March	1688027	1594434	1600920	1641026	1553349	1705210	1932304	1441894	1646946			
9	April	1445436	1548205	1395802	1653829	1476188	1515414	1348145	1631240	1525005			
10	May	1530319	1813746	1529086	1516453	1525048	1481044	1628489	1749378	1452226			
11	June	1725770	1431518	1458009	1551719	1535838	1558516	1475038	1422265	1428581			
12	July	1581340	1706190	1472534	1672400	1661673	1506772	1892445	1511716	1503100			
13	August	1519538	1577651	1797139	1745152	1587655	1622240	1633582	1671246	1414763			
14	September	1494735	1420065	1672046	1483296	1259651	1764576	1638024	1510884	1407402			
15	October	1743541	1711810	1599927	1655866	1692811	1735857	2045639	1427066	2888565			
16	November	3049369	2921522	3153696	2847752	3222844	3005162	3020217	2848642	2728934			
17	December	2989984	3452071	3142952	2813773	3230449	3327176	2855024	3111937	3100187			
18	2010												
19	January	3076578	2863187	2946100	2929502	3126629	3297909	3023030	2926429	2919964			
20	February	1556937	1524882	1410456	1383853	1521920	1473017	1662538	2888829	1721227			
21	March	1522379	1573351	1445833	1624226	1376048	2020459	1708446	2945358	1579637			
22	April	1557093	1441040	1729429	1417220	1201665	1632875	1648903	1952239	1481165			
23	May	1838569	1763017	1751682	1642780	1554219	1684026	1607655	1763780	1567055			
24	June	1482926	1542462	1577610	1511853	1504815	1432470	1373976	1587372	1372678			
25	July	1533954	1658292	1472958	1784176	1860274	1823049	1570950	1664147	1584304			
26	August	1718107	1613940	1644618	1626698	1579055	1595256	1767367	1496982	1452620			
27	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 the Microsoft Excel interface with a PivotTable. The PivotTable is titled 'Average of Volume' and has 'Column Labels' as the field name. The data is organized by 'Row Labels' (months) and 'Column Labels' (regions). The value field summary is set to 'Average'.

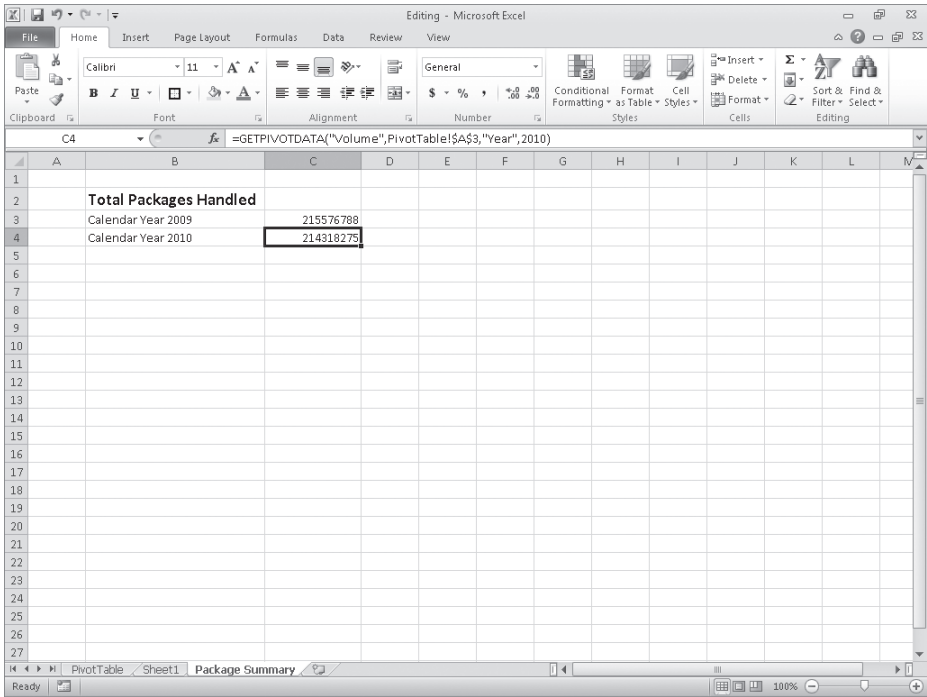
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand
2009										
January	95685.93548	101387.2258	89512.16129	94920.77419	100330.129	99131.3871	99527.48387	111945	97725.48387	98901
February	55061.64286	50262.14286	73087.42857	55432.07143	80826.71429	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	55127.63333	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	51723.96667	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	52216
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	59143
November	101645.6333	97384.06667	105123.2	94925.06667	107428.1333	100172.0667	100673.9	94954.73333	90964.46667	99252
December	96451.09677	111357.129	101385.5484	90766.87097	104208.0323	107328.2581	91452.3871	100385.0645	100006.0323	10037
2010										
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	53591
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.

Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total
2009										
January	10.75%	11.39%	10.06%	10.66%	11.27%	11.14%	11.18%	12.58%	10.98%	100.00%
February	8.63%	7.88%	11.46%	8.69%	12.68%	10.13%	14.31%	11.14%	15.08%	100.00%
March	11.40%	10.77%	10.81%	11.08%	10.49%	11.52%	13.05%	9.74%	11.12%	100.00%
April	10.68%	11.43%	10.31%	12.22%	10.90%	11.19%	9.96%	12.05%	11.26%	100.00%
May	10.76%	12.75%	10.75%	10.66%	10.72%	10.41%	11.45%	12.30%	10.21%	100.00%
June	12.70%	10.54%	10.73%	11.42%	11.30%	11.47%	10.86%	10.47%	10.51%	100.00%
July	10.94%	11.81%	10.19%	11.58%	11.50%	10.43%	12.68%	10.46%	10.40%	100.00%
August	10.43%	10.83%	12.34%	11.98%	10.90%	11.13%	11.21%	11.47%	9.71%	100.00%
September	10.95%	10.40%	12.25%	10.87%	9.23%	12.93%	12.00%	11.07%	10.31%	100.00%
October	10.57%	10.37%	9.70%	10.03%	10.26%	10.52%	12.40%	8.65%	17.51%	100.00%
November	11.38%	10.90%	11.77%	10.63%	12.03%	11.21%	11.27%	10.63%	10.18%	100.00%
December	10.68%	12.33%	11.22%	10.05%	11.54%	11.86%	10.12%	11.11%	11.07%	100.00%
2010										
January	11.35%	10.56%	10.87%	10.81%	11.53%	12.17%	11.15%	10.79%	10.77%	100.00%
February	10.28%	10.07%	9.31%	9.14%	10.05%	9.73%	10.98%	19.08%	11.37%	100.00%
March	9.64%	9.96%	9.15%	10.28%	8.71%	12.79%	10.82%	18.65%	10.00%	100.00%
April	11.07%	10.25%	12.30%	10.08%	8.55%	11.61%	11.73%	13.88%	10.53%	100.00%
May	12.12%	11.62%	11.54%	10.83%	10.24%	11.10%	10.60%	11.62%	10.33%	100.00%
June	11.08%	11.52%	11.79%	11.29%	11.24%	10.70%	10.26%	11.86%	10.25%	100.00%
July	10.26%	11.09%	9.85%	11.93%	12.44%	12.19%	10.51%	11.13%	10.60%	100.00%
August	11.85%	11.13%	11.35%	11.22%	10.89%	11.01%	12.19%	10.33%	10.02%	100.00%
September	11.33%	9.96%	10.73%	10.48%	12.48%	11.49%	11.36%	10.59%	11.57%	100.00%

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!A3,"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.

The screenshot shows an Excel PivotTable with the following structure:

Sum of Volume	Column Labels											
Row Labels	Atlantic	Central	Midwest	Mountain West	North Central	Northeast	Northwest	Southeast	Southwest	Grand Total		
2009	23276049	23727556	23643436	23075908	24118888	24103492	25028389	23785488	24817582	215576788		
January	2966264	3143004	2774877	2942544	3110234	3073073	3085352	3470295	3029490	27595138		
February	1541726	1407340	2046448	1552098	2263148	1808452	2554130	1988929	2692383	17854654		
March	1688027	1594434	1600920	1641026	1553349	1705210	1932304	1441894	1646946	14804110		
April	1445436	1548205	1395802	1653829	1476188	1515414	1348145	1631240	1525005	13839264		
May	1530319	1813746	1529086	1516453	1525048	1481044	1628489	1749378	1452226	14825789		
June	1725770	1431518	1458009	1551719	1535838	1558516	1475038	1422265	1428581	13587254		
July	1581340	1706190	1472534	1672400	1661673	1506772	1832445	1511712	1503100	14848166		
August	1519538	1577651	1797139	1745152	1587655	1622240	1633582	1671246	1414763	14868966		
September	1494735	1420065	1672046	1483296	1259651	1764576	1638024	1510884	1407402	13550679		
October	1743541	1711810	1599927	1655866	1692811	1735857	2045639	1427066	2888565	16501082		
November	3049369	2921522	3153636	2847752	3222844	3005162	3020217	2848642	2728934	26798138		
December	2989984	3452071	3142952	2813773	3230449	3327176	2835024	3111937	3100187	28003558		
2010	23760133	23274159	23246331	23247582	22561702	24506713	23604961	26736115	23300579	214310275		
January	3076578	2863187	2946100	2929502	3126629	3297909	3023030	2926429	2919964	27109328		
February	1556937	1524882	1410456	1383853	1521920	1473017	1662538	2888829	1721227	15143659		
March	1522379	1573351	1445833	1624226	1376048	2020459	1708446	2945358	1579637	15789737		
April	1557093	1441040	1729429	1417220	1201665	1632875	1648903	1952239	1481165	14861629		
May	1838569	1763017	1751682	1642780	1554219	1684026	1607655	1763780	1567055	15172783		
June	1482926	1542462	1577610	1511853	1504815	1432470	1373976	1587372	1372678	13386162		
July	1533954	1658292	1472958	1784176	1860274	1823049	1570950	1664147	1584304	14852104		
August	1718107	1613940	1644618	1626698	1579055	1595256	1767367	1496982	1452620	14894643		
September	1577988	1387157	1494553	1459629	1737250	1599572	1582032	1474607	1611539	13824327		

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).

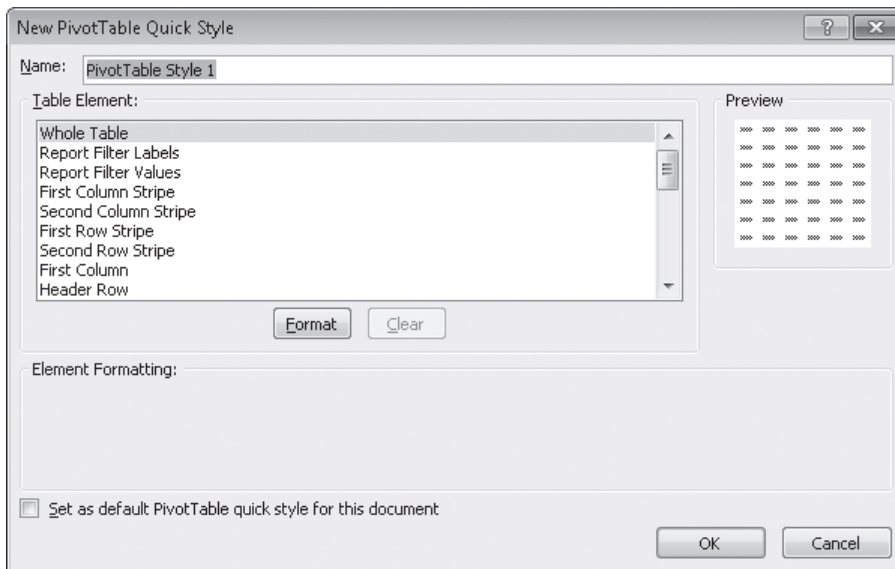
To apply a conditional format to a PivotTable field, click a cell in the Values area. On the Home tab, in the Styles group, click Conditional Formatting, and then create the desired conditional format. After you do, Excel displays a Formatting Options action button, which offers three options for applying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

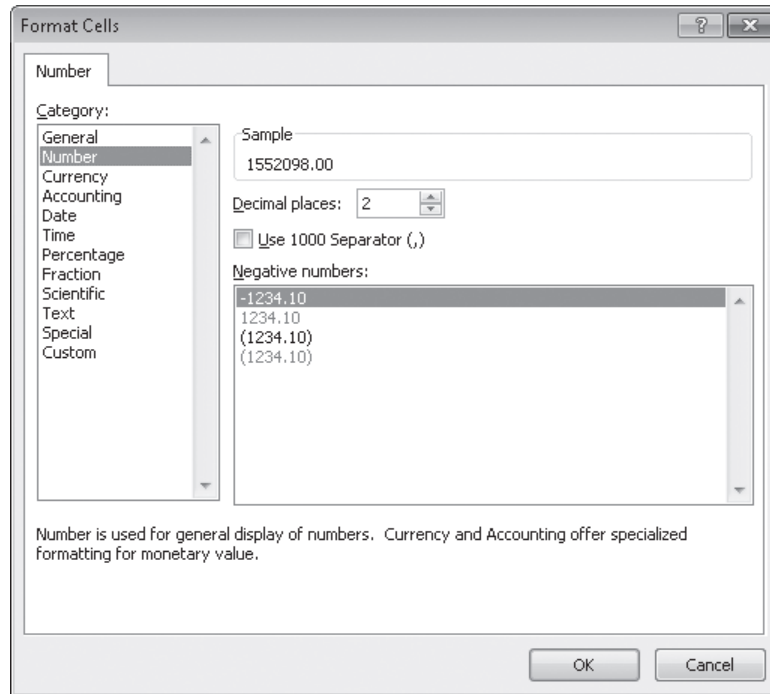
The Design contextual tab contains many other tools you can use to format your PivotTable, but one of the most useful is the Banded Columns check box, which you can find in the PivotTable Style Options group. If you select a PivotTable style that offers banded rows as an option, selecting the Banded 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.

	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	27,595,193
February	1,541,726	1,407,340	2,046,448	1,552,098	2,263,148	1,808,452	2,554,130	1,988,929	2,692,383	17,854,654
March	1,688,027	1,594,434	1,600,920	1,641,026	1,553,349	1,705,210	1,932,304	1,441,894	1,646,946	14,804,110
April	1,445,436	1,548,205	1,395,802	1,653,829	1,476,188	1,515,414	1,348,145	1,631,240	1,525,005	13,539,264
May	1,530,319	1,813,746	1,529,086	1,516,453	1,525,048	1,481,044	1,628,489	1,749,378	1,452,226	14,225,789
June	1,725,770	1,431,518	1,458,009	1,551,719	1,535,838	1,558,516	1,475,038	1,422,265	1,428,581	13,587,254
July	1,581,340	1,706,190	1,472,534	1,672,400	1,661,673	1,506,772	1,832,445	1,511,712	1,503,100	14,448,166
August	1,519,538	1,577,651	1,797,139	1,745,152	1,587,655	1,622,240	1,633,582	1,671,246	1,414,763	14,568,966
September	1,494,735	1,420,065	1,672,046	1,483,296	1,259,651	1,764,576	1,638,024	1,510,884	1,407,402	13,650,679
October	1,743,541	1,711,810	1,599,927	1,655,866	1,692,811	1,735,857	2,045,639	1,427,066	2,888,565	16,501,082
November	3,049,369	2,921,522	3,153,696	2,847,752	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
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	1,524,082	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	1,533,954	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.

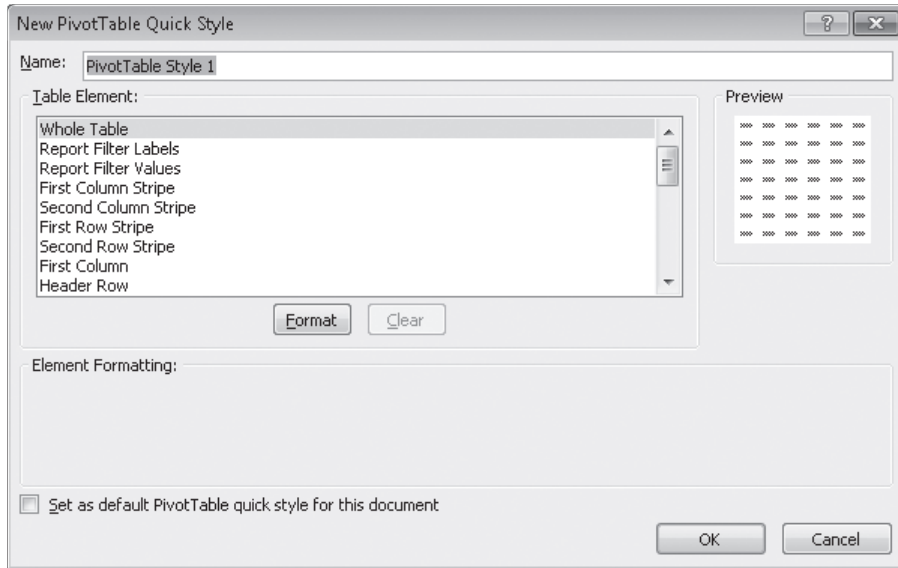
FileHomeInsertPage LayoutFormulasDataReviewViewOptionsDesign

SubtotalsGrand TotalsReport LayoutBlank LayoutRowsLayout

☒ Row Headers☒ Banded Rows☒ Column Headers☒ Banded Columns

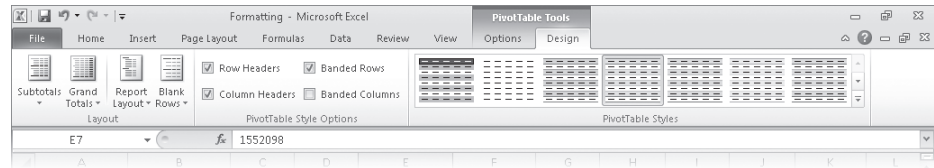
PivotTable Style Options

- 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.

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	1,688,027	1,594,434	1,600,920	1,641,026	1,553,349	1,705,210	1,932,304	1,441,894	1,646,946	14,804,110
April	1,445,436	1,548,205	1,395,802	1,653,829	1,476,188	1,515,414	1,348,145	1,631,240	1,525,005	13,539,264
May	1,530,319	1,813,746	1,529,086	1,516,453	1,525,048	1,481,044	1,628,489	1,749,378	1,452,226	14,225,789
June	1,725,770	1,431,518	1,458,009	1,551,719	1,535,838	1,558,516	1,475,038	1,422,265	1,428,581	13,587,254
July	1,581,340	1,706,190	1,472,534	1,672,400	1,661,673	1,506,772	1,832,445	1,511,712	1,503,100	14,448,166
August	1,519,538	1,577,651	1,797,139	1,745,152	1,587,655	1,622,240	1,633,582	1,671,246	1,414,763	14,568,966
September	1,494,735	1,420,065	1,672,046	1,483,296	1,259,651	1,764,576	1,638,024	1,510,884	1,407,402	13,650,679
October	1,743,541	1,711,810	1,599,927	1,655,866	1,692,811	1,735,857	2,045,639	1,427,066	2,888,565	16,501,082
November	3,049,369	2,921,522	3,153,696	2,847,752	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
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	1,533,954	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



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.

	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	1,688,027	1,594,434	1,600,920	1,641,026	1,553,349	1,705,210	1,932,304	1,441,894	1,646,946	14,804,110
April	1,445,436	1,548,205	1,395,802	1,653,829	1,476,188	1,515,414	1,348,145	1,631,240	1,525,005	13,539,264
May	1,530,319	1,813,746	1,529,086	1,516,453	1,525,048	1,481,044	1,628,489	1,749,378	1,452,226	14,225,789
June	1,725,770	1,431,518	1,458,009	1,551,719	1,535,838	1,558,516	1,475,038	1,422,265	1,428,581	13,587,254
July	1,581,340	1,706,190	1,472,534	1,672,400	1,661,673	1,506,772	1,832,445	1,511,712	1,503,100	14,448,166
August	1,519,538	1,577,651	1,797,139	1,745,152	1,587,655	1,622,240	1,633,582	1,671,246	1,414,763	14,568,966
September	1,494,735	1,420,065	1,672,046	1,483,296	1,259,651	1,764,576	1,638,024	1,510,884	1,407,402	13,650,679
October	1,743,541	1,711,810	1,599,927	1,655,866	1,692,811	1,735,857	2,045,639	1,427,066	2,888,565	16,501,082
November	3,049,369	2,921,522	3,153,696	2,847,752	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	3,290,449	3,327,176	2,895,024	3,111,937	3,100,187	28,003,553
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	1,533,954	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



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

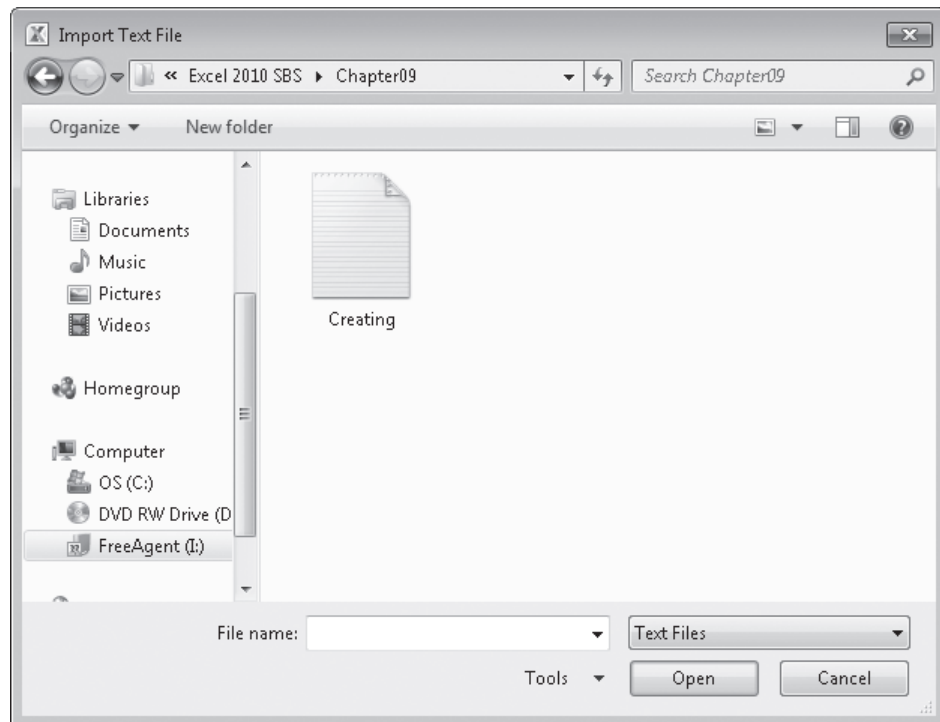
Creating PivotTables from External Data

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.

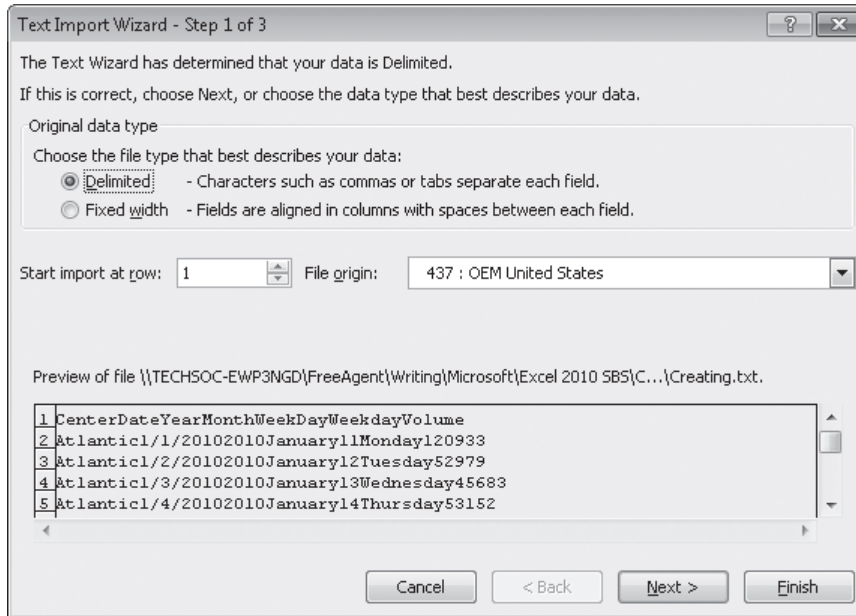
Tip The data import technique shown here isn't exclusive to PivotTables. You can use this procedure to bring data into your worksheets for any purpose.

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.



Text Import Wizard - Step 1 of 3

The Text Wizard has determined that your data is Delimited.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

☒ Delimited - Characters such as commas or tabs separate each field.

☐ Fixed width - Fields are aligned in columns with spaces between each field.

Start import at row: 1 File origin: 437 : OEM United States

Preview of file \\TECHSOC-EWP3NGD\FreeAgent\Writing\Microsoft\Excel 2010 SBS\C...\Creating.txt.

	CenterDateYearMonthWeekDayWeekdayVolume
1	Atlantic1/1/20102010January11Monday120933
2	Atlantic1/2/20102010January12Tuesday52979
3	Atlantic1/3/20102010January13Wednesday45683
4	Atlantic1/4/20102010January14Thursday53152

Buttons: Cancel, < Back, Next >, Finish

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.

Text Import Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

☒ Tab
☐ Semicolon
☐ Comma
☐ Space
☐ Other:

☐ Treat consecutive delimiters as one

Text qualifier: "

Data preview

Center	Date	Year	Month	Week	Day	Weekday	Volume
Atlantic	1/1/2010	2010	January	1	1	Monday	120933
Atlantic	1/2/2010	2010	January	1	2	Tuesday	52979
Atlantic	1/3/2010	2010	January	1	3	Wednesday	45683
Atlantic	1/4/2010	2010	January	1	4	Thursday	53152

Cancel < Back Next > Finish

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.

Text Import Wizard - Step 3 of 3

This screen lets you select each column and set the Data Format.

Column data format

☒ General
☐ Text
☐ Date: MDY
☐ Do not import column (skip)

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

Advanced...

Data preview

General	General	General	General	General	General	General	General
Center	Date	Year	Month	Week	Day	Weekday	Volume
Atlantic	1/1/2010	2010	January	1	1	Monday	120933
Atlantic	1/2/2010	2010	January	1	2	Tuesday	52979
Atlantic	1/3/2010	2010	January	1	3	Wednesday	45683
Atlantic	1/4/2010	2010	January	1	4	Thursday	53152

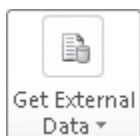
Cancel < Back Next > Finish

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.

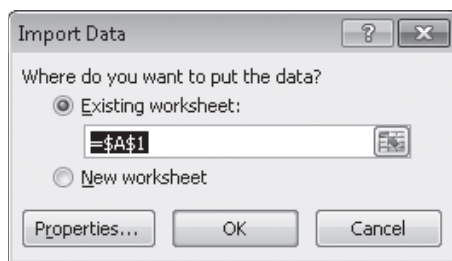
3. Verify that the **Delimited** option is selected, and then click **Next**.

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 **=A\$1:\$H\$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.

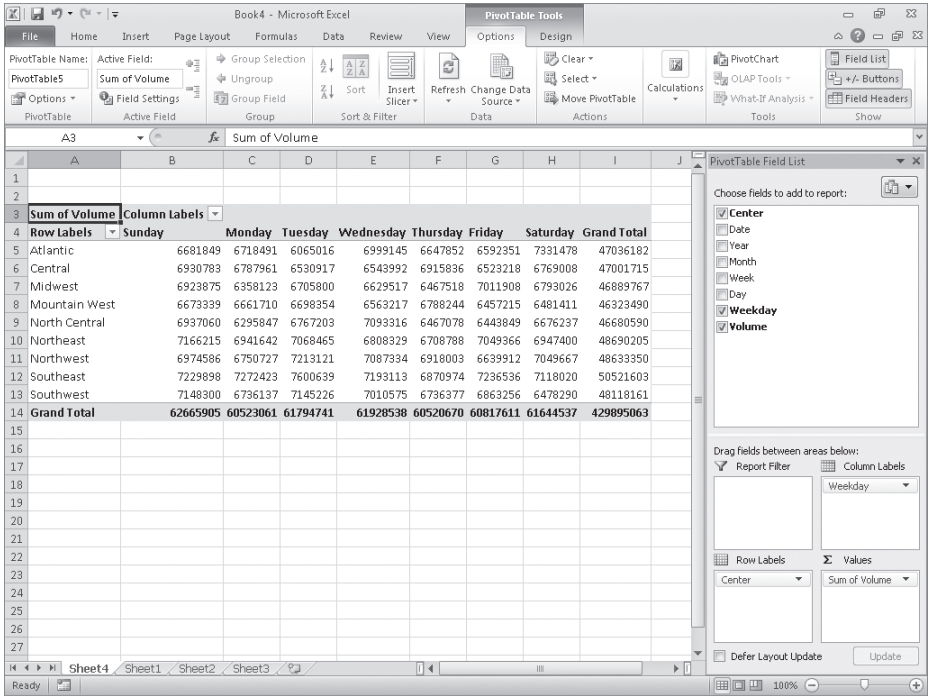
12. Click **OK**.

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.



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.