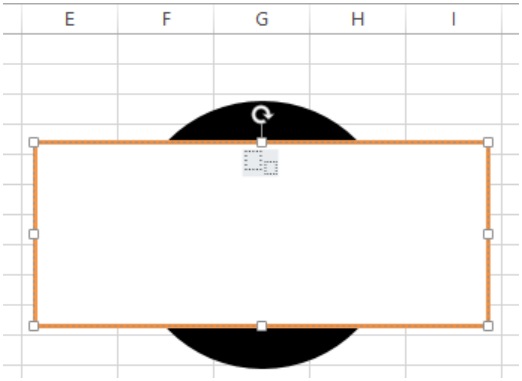


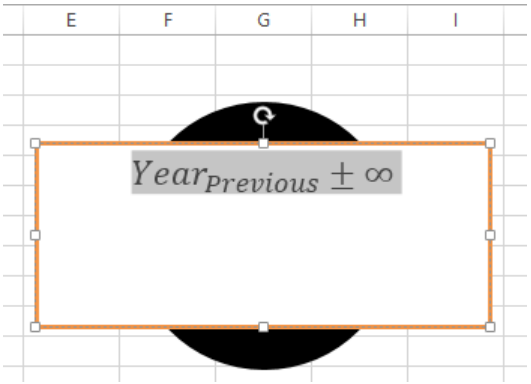
16 Click the left box of the structure and enter **Year**.

17 Click the right box of the structure and enter **Previous**.

18 Press the **Right Arrow** key once to move the cursor to the right of the word **Previous** and then, in the **Symbols** group's gallery, click the **Plus Minus** symbol (the first symbol in the top row).

19 In the **Symbols** group's gallery, click the **Infinity** symbol (the second symbol in the top row).

20 Select all of the text in the rectangle and then, on the **Home** tab, in the **Font** group, click the **Increase Font Size** button four times. Excel increases the equation text's font size.



CLEAN UP **Close the Shapes workbook, saving your changes if you want to.**

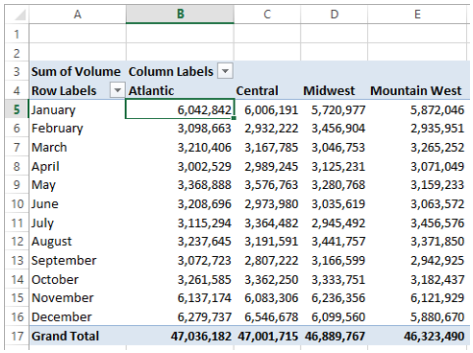
Key points

- You can use charts to summarize large sets of data in an easy-to-follow visual format.
- You're not stuck with the chart you create; if you want to change it, you can.
- If you format many of your charts the same way, creating a chart template can save you a lot of work in the future.
- Adding chart labels and a legend makes your chart much easier to follow.
- When you format your data properly, you can create dual-axis charts, which are compact and easy to read.
- If your chart data represents a series of events over time (such as monthly or yearly sales), you can use trendline analysis to extrapolate future events based on the past data.
- With sparklines, you can summarize your data in a compact space, providing valuable context for values in your worksheets.
- With Excel, you can quickly create and modify common business and organizational diagrams, such as organization charts and process diagrams.
- You can create and modify shapes to enhance your workbook's visual impact.
- The improved equation editing capabilities help Excel 2013 users communicate their thinking to their colleagues.

Chapter at a glance

Analyze

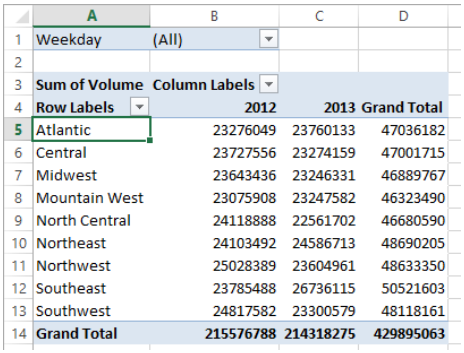
Analyze data dynamically by using PivotTables, page 288



Sum of Volume	Column Labels			
Row Labels	Atlantic	Central	Midwest	Mountain West
January	6,042,842	6,006,191	5,720,977	5,872,046
February	3,098,663	2,932,222	3,456,904	2,935,951
March	3,210,406	3,167,785	3,046,753	3,265,252
April	3,002,529	2,989,245	3,125,231	3,071,049
May	3,368,888	3,576,763	3,280,768	3,159,233
June	3,208,696	2,973,980	3,035,619	3,063,572
July	3,115,294	3,364,482	2,945,492	3,456,576
August	3,237,645	3,191,591	3,441,757	3,371,850
September	3,072,723	2,807,222	3,166,599	2,942,925
October	3,261,585	3,362,250	3,333,751	3,182,437
November	6,137,174	6,083,306	6,236,356	6,121,929
December	6,279,737	6,546,678	6,099,560	5,880,670
Grand Total	47,036,182	47,001,715	46,889,767	46,323,490

Filter

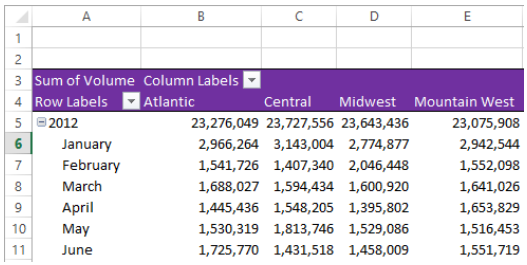
Filter, show, and hide PivotTable data, page 298



Weekday	(All)		
Sum of Volume	Column Labels		
Row Labels	2012	2013	Grand Total
Atlantic	23276049	23760133	47036182
Central	23727556	23274159	47001715
Midwest	23643436	23246331	46889767
Mountain West	23075908	23247582	46323490
North Central	24118888	22561702	46680590
Northeast	24103492	24586713	48690205
Northwest	25028389	23604961	48633350
Southeast	23785488	26736115	50521603
Southwest	24817582	23300579	48118161
Grand Total	215576788	214318275	429895063

Format

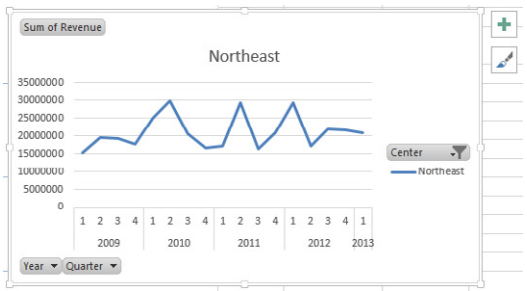
Format PivotTables, page 313



Sum of Volume	Column Labels			
Row Labels	Atlantic	Central	Midwest	Mountain West
2012	23,276,049	23,727,556	23,643,436	23,075,908
January	2,966,264	3,143,004	2,774,877	2,942,544
February	1,541,726	1,407,340	2,046,448	1,552,098
March	1,688,027	1,594,434	1,600,920	1,641,026
April	1,445,436	1,548,205	1,395,802	1,653,829
May	1,530,319	1,813,746	1,529,086	1,516,453
June	1,725,770	1,431,518	1,458,009	1,551,719

Create

Create dynamic charts by using PivotCharts, page 326



Using PivotTables and PivotCharts

10

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.
- Create dynamic charts by using PivotCharts.

When you create Microsoft Excel 2013 worksheets, you should 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.

However, Excel has a tool that you can use to create worksheets that can be sorted, filtered, and rearranged dynamically to emphasize different aspects of your data. That tool is the PivotTable.

In this chapter, you'll create and edit PivotTables from an existing worksheet, focus your PivotTable data by using filters, format PivotTables, create a PivotTable that has data imported from a text file, and summarize your data visually by using a PivotChart.

PRACTICE FILES To complete the exercises in this chapter, you need the practice files contained in the Chapter10 practice file folder. For more information, see "Download the practice files" in this book's Introduction.

Analyzing data dynamically by using PivotTables

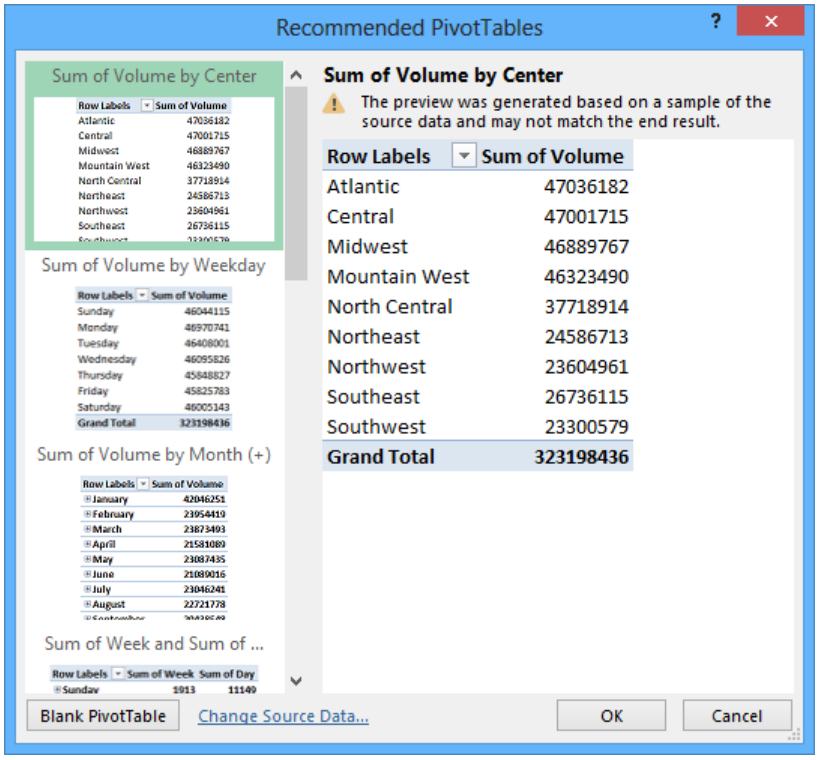
With Excel worksheets, you can gather and present important data, but the standard worksheet can't be changed from its original configuration easily. As an example, consider a worksheet that records monthly package volumes for each of nine distribution centers in the United States.

	A	B	C	D	E
1					
2		January	February	March	April
3	Atlantic	6,042,842	3,098,663	3,210,406	3,002,529
4	Central	6,006,191	2,932,222	3,167,785	2,989,245
5	Midwest	5,720,977	3,456,904	3,046,753	3,125,231
6	Mountain West	5,872,046	2,935,951	3,265,252	3,071,049
7	North Central	6,236,863	3,785,068	2,929,397	2,677,853
8	Northeast	6,370,982	3,281,469	3,725,669	3,148,289
9	Northwest	6,108,382	4,216,668	3,640,750	2,997,048
10	Southeast	6,396,724	4,877,758	4,387,252	3,583,479
11	Southwest	5,949,454	4,413,610	3,226,583	3,006,170
12		54,704,461	32,998,313	30,599,847	27,600,893

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.

To reorganize and redisplay your data dynamically, you can use the PivotTable tool. In Excel 2013, you can create Recommended PivotTables. To open the Recommended PivotTables dialog box for a data set, click any cell in the data range that you want to summarize and then, on the Insert tab of the ribbon, click Recommended PivotTables. When you do, Excel displays a set of PivotTables that you can create quickly.



Pointing to a recommended PivotTable shows a preview image of what that PivotTable would look like. To create it, just click the image of the arrangement you want to create and click OK.

TIP If Excel 2013 has no Recommended PivotTables for your data, it displays the option to create a blank PivotTable.

If none of the Recommended PivotTables meet your needs, you can create a PivotTable by adding individual fields. 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.

	A	B	C	D	E
1					
2					
3	**Sum of Volume**	**Column Labels**			
4	**Row Labels**	**Atlantic**	**Central**	**Midwest**	**Mountain West**
5	January	6,042,842	6,006,191	5,720,977	5,872,046
6	February	3,098,663	2,932,222	3,456,904	2,935,951
7	March	3,210,406	3,167,785	3,046,753	3,265,252
8	April	3,002,529	2,989,245	3,125,231	3,071,049
9	May	3,368,888	3,576,763	3,280,768	3,159,233
10	June	3,208,696	2,973,980	3,035,619	3,063,572
11	July	3,115,294	3,364,482	2,945,492	3,456,576
12	August	3,237,645	3,191,591	3,441,757	3,371,850
13	September	3,072,723	2,807,222	3,166,599	2,942,925
14	October	3,261,585	3,362,250	3,333,751	3,182,437
15	November	6,137,174	6,083,306	6,236,356	6,121,929
16	December	6,279,737	6,546,678	6,099,560	5,880,670
17	**Grand Total**	**47,036,182**	**47,001,715**	**46,889,767**	**46,323,490**

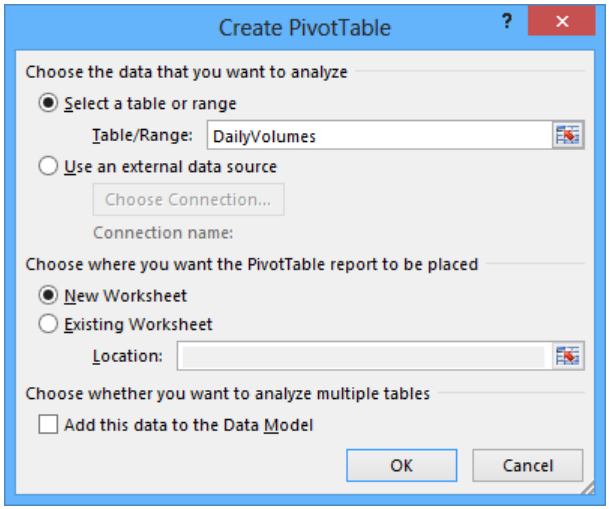
To create a PivotTable, your data must be collected in a list. Excel tables mesh perfectly with PivotTable dynamic views; not only do Excel tables have a well-defined column and row structure, but the ability to refer to an Excel table by its name also greatly simplifies PivotTable creation and management.

In the Excel table used to create the distribution PivotTable, each row of the table contains a value that represents the distribution center, date, month, week, weekday, day, and volume for every day of the years 2012 and 2013.

	B	C	D	E	F	G	H	I
1								
2	Center	Date	Year	Month	Week	Day	Weekda	Volume
3	Atlantic	1/1/2013	2013	January	1	1	Tuesday	120933
4	Atlantic	1/2/2013	2013	January	1	2	Wednesday	52979
5	Atlantic	1/3/2013	2013	January	1	3	Thursday	45683
6	Atlantic	1/4/2013	2013	January	1	4	Friday	53152
7	Atlantic	1/5/2013	2013	January	1	5	Saturday	149776
8	Atlantic	1/6/2013	2013	January	1	6	Sunday	108772
9	Atlantic	1/7/2013	2013	January	1	7	Monday	99919
10	Atlantic	1/8/2013	2013	January	2	8	Tuesday	138271
11	Atlantic	1/9/2013	2013	January	2	9	Wednesday	77451
12	Atlantic	1/10/2013	2013	January	2	10	Thursday	130536
13	Atlantic	1/11/2013	2013	January	2	11	Friday	119809

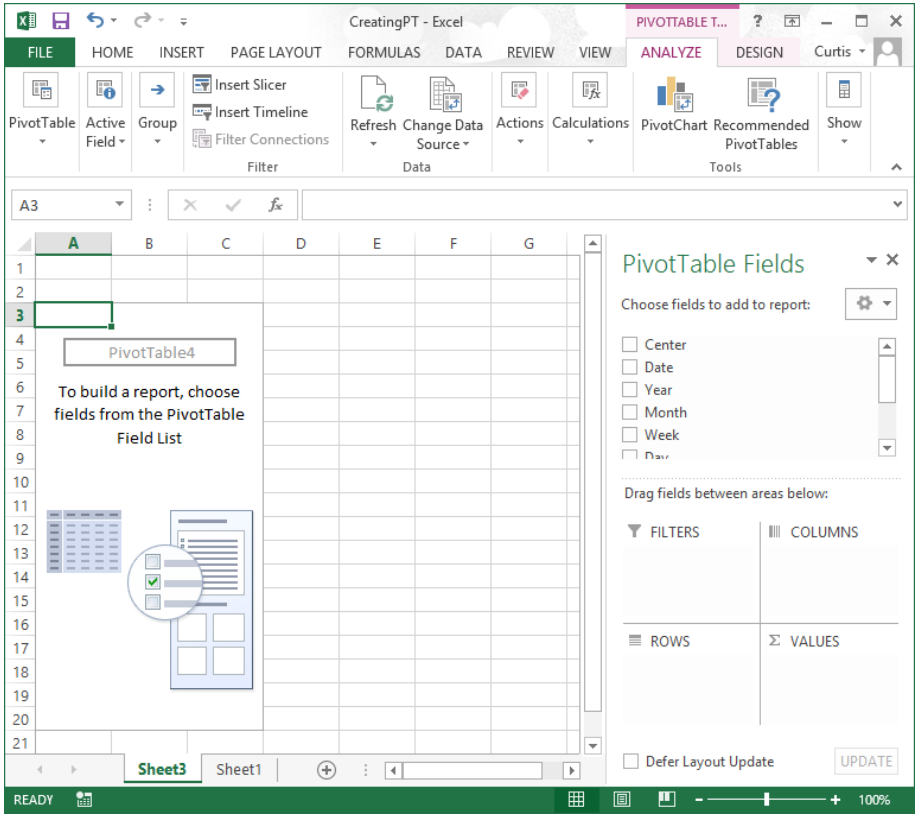
Excel needs that data when it creates the PivotTable so that it can maintain relationships among the data. If you want to filter your PivotTable so that it shows all package volumes on Thursdays in January, for example, Excel must be able to identify January 10, 2013 as a Thursday.

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.



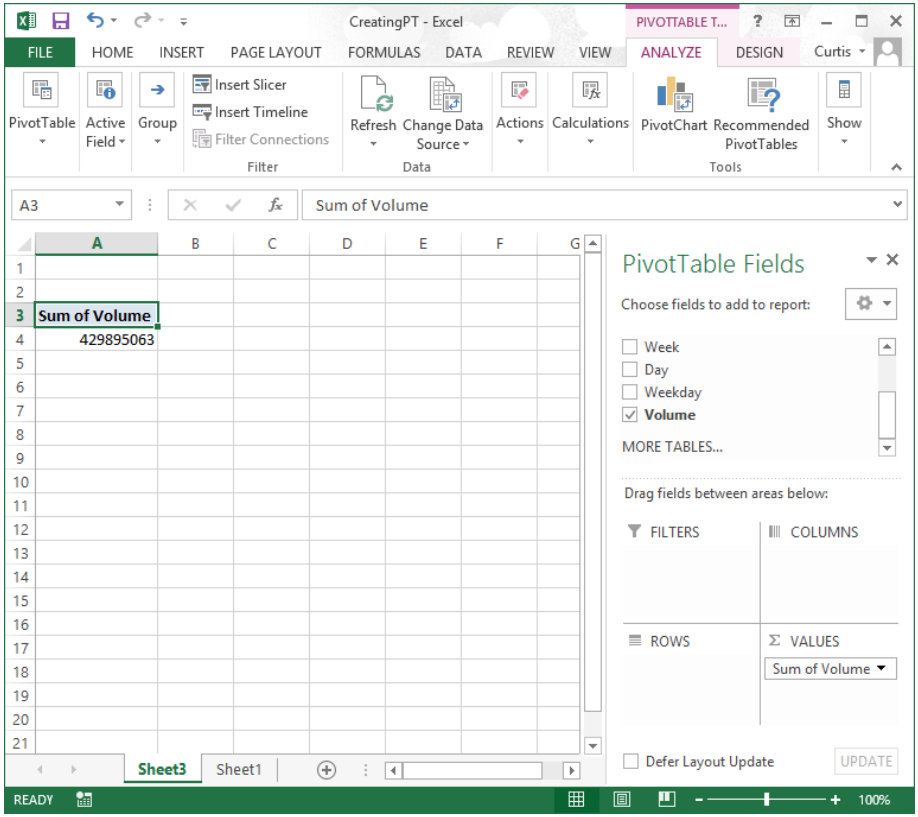
In this dialog box, you verify the data source for your PivotTable and whether you want to create a PivotTable on a new worksheet or an existing worksheet. After you click OK, Excel displays a new or existing worksheet and displays the PivotTable Fields pane.

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



If the PivotTable Fields pane isn't visible, you can display it by clicking any cell in the PivotTable, which displays the PivotTable Tools tabs. On the Options tool tab, in the Show/Hide group, click Field List.

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 Fields pane to the Drag Fields Between Areas Below area at the bottom of the 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 Rows and Columns 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.

3	Row Labels	Sum of Volume
4	**Atlantic**	**47036182**
5	January	6042842
6	February	3098663
7	March	3210406
8	April	3002529
9	May	3368888
10	June	3208696
11	July	3115294
12	August	3237645
13	September	3072723
14	October	3261585
15	November	6137174
16	December	6279737
17	**Central**	**47001715**
18	January	6006191
19	February	2932222
20	March	3167785
21	April	2989245
22	May	3576763
23	June	2973980

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

3	Row Labels	Sum of Volume
4	**January**	**54704461**
5	Atlantic	6042842
6	Central	6006191
7	Midwest	5720977
8	Mountain West	5872046
9	North Central	6236863
10	Northeast	6370982
11	Northwest	6108382
12	Southeast	6396724
13	Southwest	5949454
14	**February**	**32998313**
15	Atlantic	3098663
16	Central	2932222
17	Midwest	3456904
18	Mountain West	2935951
19	North Central	3785068
20	Northeast	3281469
21	Northwest	4216668
22	Southeast	4877758
23	Southwest	4413610

In the preceding examples, all the field headers are in the Rows area. If you drag the Center header from the Rows area to the Columns area, the PivotTable reorganizes (pivots) its data to form a different configuration.

	A	B	C	D	E
1					
2					
3	**Sum of Volume**	**Column Labels**			
4	**Row Labels**	**Atlantic**	**Central**	**Midwest**	**Mountain West**
5	January	6042842	6006191	5720977	5872046
6	February	3098663	2932222	3456904	2935951
7	March	3210406	3167785	3046753	3265252
8	April	3002529	2989245	3125231	3071049
9	May	3368888	3576763	3280768	3159233
10	June	3208696	2973980	3035619	3063572
11	July	3115294	3364482	2945492	3456576
12	August	3237645	3191591	3441757	3371850
13	September	3072723	2807222	3166599	2942925
14	October	3261585	3362250	3333751	3182437
15	November	6137174	6083306	6236356	6121929
16	December	6279737	6546678	6099560	5880670
17	**Grand Total**	**47036182**	**47001715**	**46889767**	**46323490**

To pivot a PivotTable, you drag a field header to a new position in the PivotTable Fields pane. As you drag a field within the 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 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 Fields 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 tool 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 workbook located in the Chapter10 practice file folder to complete this exercise. Open the workbook, and then follow the steps.**

1 Click any cell in the Excel table.

2 On the **Insert** tab, in the **Tables** group, click **Recommended PivotTables** to open the **Recommended PivotTables** dialog box.

3 Click the second icon, labeled **Sum of Volume by Weekday**.

4 Click **OK** to create the PivotTable.

	A	B
1		
2		
3	**Row Labels**	**Sum of Volume**
4	Sunday	61253579
5	Monday	62042322
6	Tuesday	62278691
7	Wednesday	60664392
8	Thursday	61694953
9	Friday	61441352
10	Saturday	60519774
11	**Grand Total**	**429895063**
12		

5 Click the **Sheet1** worksheet's sheet tab to display that worksheet.

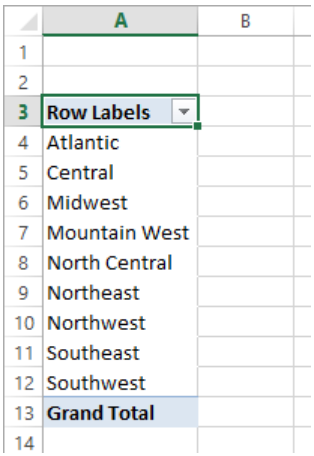
6 If necessary, click any cell in the Excel table.

7 On the **Insert** tab, in the **Tables** group, click the **PivotTable** button to open the **PivotTable** dialog box.

8 Verify that the **DailyVolumes** table name appears in the **Table/Range** field and that the **New Worksheet** option is selected.

9 Click **OK** to create a PivotTable on a new worksheet.

10 In the **PivotTable Fields** pane, drag the **Center** field header to the **Rows** area. Excel adds the **Center** field values to the PivotTable row area.

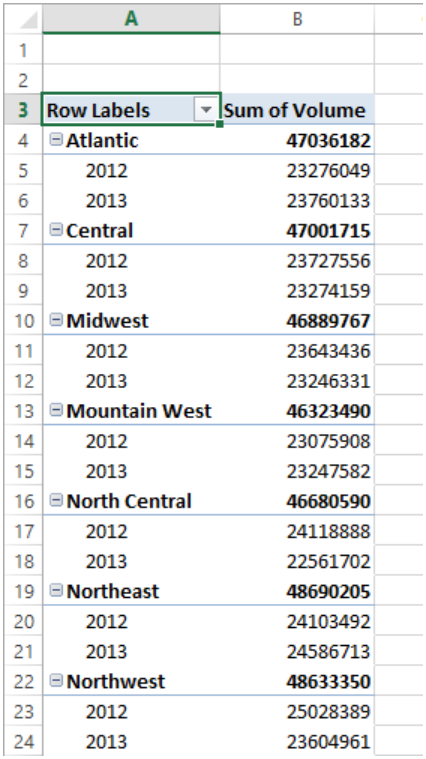


	A	B
1		
2		
3	**Row Labels**	
4	Atlantic	
5	Central	
6	Midwest	
7	Mountain West	
8	North Central	
9	Northeast	
10	Northwest	
11	Southeast	
12	Southwest	
13	**Grand Total**	
14		

11 In the **PivotTable Fields** pane, drag the **Year** field header to the **Columns** area. Excel adds the **Year** field values to the PivotTable column area.

12 In the **PivotTable Fields** pane, drag the **Volume** field header to the **Values** area. Excel fills in the body of the PivotTable with the **Volume** field values.

13 In the **PivotTable Fields** pane, in the **Columns** area, drag the **Year** field header to the **Rows** area, and drop it beneath the **Center** field header. Excel changes the PivotTable to reflect the new organization.



	A	B
1		
2		
3	Row Labels	Sum of Volume
4	Atlantic	47036182
5	2012	23276049
6	2013	23760133
7	Central	47001715
8	2012	23727556
9	2013	23274159
10	Midwest	46889767
11	2012	23643436
12	2013	23246331
13	Mountain West	46323490
14	2012	23075908
15	2013	23247582
16	North Central	46680590
17	2012	24118888
18	2013	22561702
19	Northeast	48690205
20	2012	24103492
21	2013	24586713
22	Northwest	48633350
23	2012	25028389
24	2013	23604961

CLEAN UP **Close the Creating workbook, saving your changes if you want to.**

Filtering, showing, and hiding PivotTable data

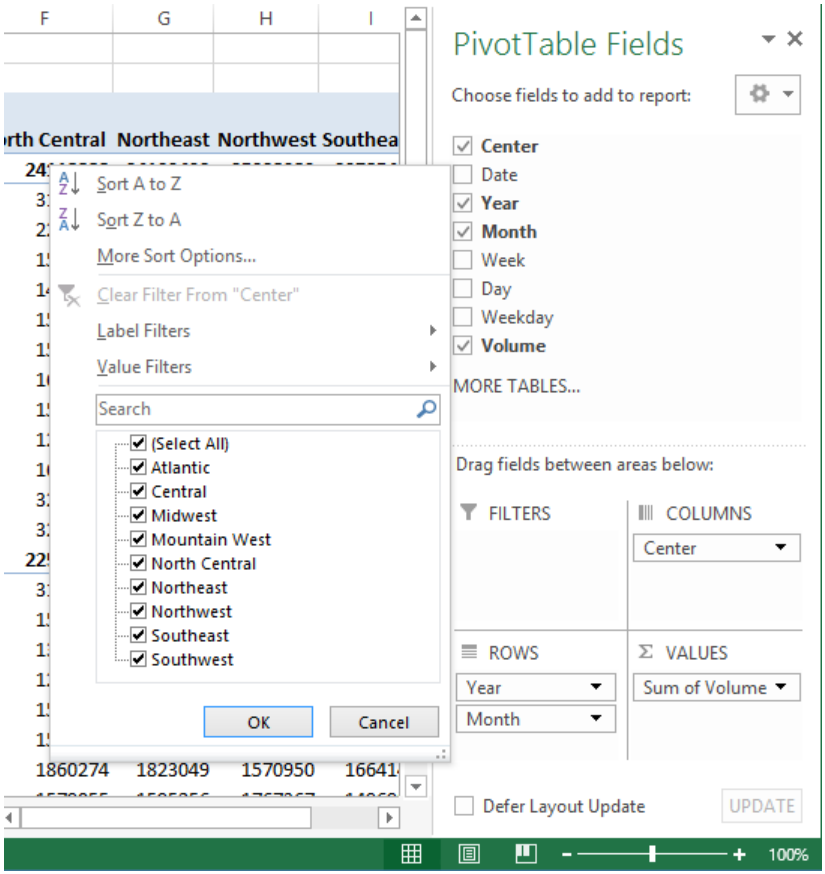
PivotTables often summarize huge data sets in a relatively small worksheet. The more details you can capture and write to a table, the more flexibility you have in analyzing the data. As an example, consider all the details captured in a table in which each row contains a value that represents the distribution center, date, month, week, weekday, day, and volume for every day of the year.

	B	C	D	E	F	G	H	I
1								
2	Center	Date	Year	Month	Week	Day	Weekda	Volume
3	Atlantic	1/2/2012	2012	January	1	1	Monday	46144
4	Atlantic	1/3/2012	2012	January	1	2	Tuesday	105578
5	Atlantic	1/4/2012	2012	January	1	3	Wednesday	83669
6	Atlantic	1/5/2012	2012	January	1	4	Thursday	100240
7	Atlantic	1/6/2012	2012	January	1	5	Friday	130597
8	Atlantic	1/7/2012	2012	January	1	6	Saturday	123563
9	Atlantic	1/8/2012	2012	January	1	7	Sunday	50054
10	Atlantic	1/9/2012	2012	January	2	8	Monday	78540

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 Fields pane. When you do, Excel displays a menu of sorting and filtering options.



TIP You can also create selection filters for PivotTables by using slicers, which are introduced in Chapter 5, "Focusing on specific data by using filters." To display the Insert Slicers dialog box for a PivotTable, click any cell in the PivotTable, click the Analyze tool tab, and then click Insert Slicer.

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. This 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.

2			
3	Sum of Volume	Column Labels	
4	Row Labels	Northwest	Grand Total
5	2012	25028389	25028389
6	January	3085352	3085352
7	February	2554130	2554130
8	March	1932304	1932304
9	April	1348145	1348145
10	May	1628489	1628489
11	June	1475038	1475038
12	July	1832445	1832445
13	August	1633582	1633582
14	September	1638024	1638024
15	October	2045639	2045639
16	November	3020217	3020217
17	December	2835024	2835024
18	2013	23604961	23604961
19	January	3023030	3023030
20	February	1662538	1662538
21	March	1708446	1708446
22	April	1648903	1648903
23	May	1607655	1607655

If you'd rather display as much PivotTable data as possible, you can hide the PivotTable Fields pane and filter the PivotTable by using the filter arrows on the Rows and Columns headers within the body of the PivotTable. When you click either of those headers, you can select a field by which you can filter; you can then define the filter by using the same controls that are available when you click a field header in the PivotTable Fields pane.

Excel indicates that a PivotTable has filters applied by placing a filter indicator next to the Columns or Rows header, as appropriate, and the filtered field name in the PivotTable Fields pane.

So far in this example, all the fields by which the PivotTable has been filtered has 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.

	A	B	C	D	E	F
1						
2						
3	Sum of Volume	Column Labels				
4		2012				
5	Row Labels	Sunday	Monday	Tuesday	Wednesday	Thursday
6	Atlantic	3453319	3349646	3366196	2917606	3567714
7	Central	3320819	3366199	3527584	3365866	3263079
8	Midwest	3667386	3475968	3091127	3463291	3245714
9	Mountain West	3357763	3268404	3068409	3200078	3298019
10	North Central	3457202	3741370	3215869	3428683	3686605
11	Northeast	3496199	3601318	3470147	3593310	3511717
12	Northwest	3791023	3767825	3374432	3812518	3519655
13	Southeast	3268002	3473394	3348605	3575267	3257557
14	Southwest	3178975	3570147	3396272	3632371	3872515
15	Grand Total	30990688	31614271	29858641	30988990	31222575

Instead of adding the Weekday field to the Rows or Columns area, you can drag the field to the Filters area near the bottom of the PivotTable Fields pane. Doing so leaves the body of the PivotTable unchanged, but adds a new area above the PivotTable in its worksheet.

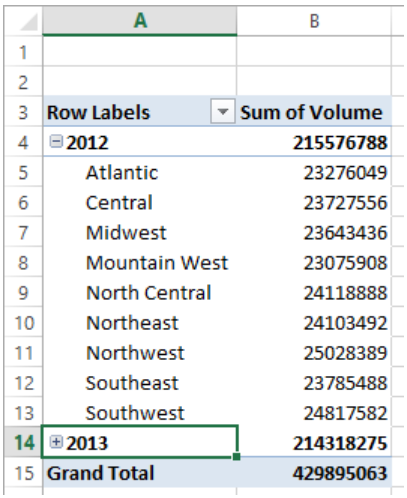
	A	B	C	D
1	Weekday	(All)		
2				
3	Sum of Volume	Column Labels		
4	Row Labels	2012	2013	Grand Total
5	Atlantic	23276049	23760133	47036182
6	Central	23727556	23274159	47001715
7	Midwest	23643436	23246331	46889767
8	Mountain West	23075908	23247582	46323490
9	North Central	24118888	22561702	46680590
10	Northeast	24103492	24586713	48690205
11	Northwest	25028389	23604961	48633350
12	Southeast	23785488	26736115	50521603
13	Southwest	24817582	23300579	48118161
14	Grand Total	215576788	214318275	429895063

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 Filters 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.

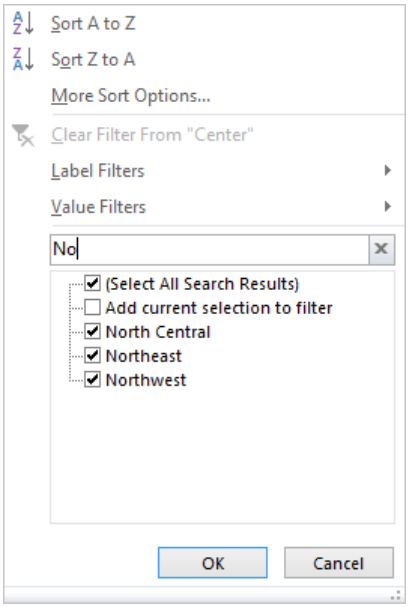
If your PivotTable has more than one field in the Rows area, you can filter values in a PivotTable by hiding and collapsing levels of detail within the report. To do that, you click the Hide Detail control (which looks like a box with a minus sign in it) or the Show Detail control (which looks like a 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 2012 year header would display that year's details. Conversely, clicking the 2013 year header's Hide Detail control would hide the individual months' values and display only the year's total.



	A	B
1		
2		
3	**Row Labels**	**Sum of Volume**
4	**2012**	**215576788**
5	Atlantic	23276049
6	Central	23727556
7	Midwest	23643436
8	Mountain West	23075908
9	North Central	24118888
10	Northeast	24103492
11	Northwest	25028389
12	Southeast	23785488
13	Southwest	24817582
14	**2013**	**214318275**
15	**Grand Total**	**429895063**

Excel 2013 also lets you filter PivotTables using search filters. With a search filter, you can enter 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 enter the character string that you want to search for 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, entering 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 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 Filters area, by showing and hiding levels of detail within the body of the PivotTable, and by using the Search box.

SET UP **You need the Focusing workbook located in the Chapter10 practice file folder to complete this exercise. Open the workbook, and then follow the steps.**

1 On the **Sheet2** worksheet, click any cell in the PivotTable.

2 In the **Choose fields to add to report** area of the **PivotTable Fields** pane, 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.

	A	B	C
1			
2			
3	**Sum of Volume**	**Column Labels**	
4	**Row Labels**	**Northwest**	**Grand Total**
5	**2012**	**25028389**	**25028389**
6	January	3085352	3085352
7	February	2554130	2554130
8	March	1932304	1932304
9	April	1348145	1348145
10	May	1628489	1628489
11	June	1475038	1475038
12	July	1832445	1832445
13	August	1633582	1633582
14	September	1638024	1638024
15	October	2045639	2045639
16	November	3020217	3020217
17	December	2835024	2835024
18	**2013**	**23604961**	**23604961**
19	January	3023030	3023030
20	February	1662538	1662538
21	March	1708446	1708446

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

5 In the **PivotTable Fields** pane, drag the **Weekday** field header from the **Choose fields to add to report area** to the **Filters** area in the **Drag fields between areas below** area.

6 In the **PivotTable Fields** pane, click the **Close** button to close it.

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 to clear every 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 2012, leaving only the subtotal row that summarizes that year's data.

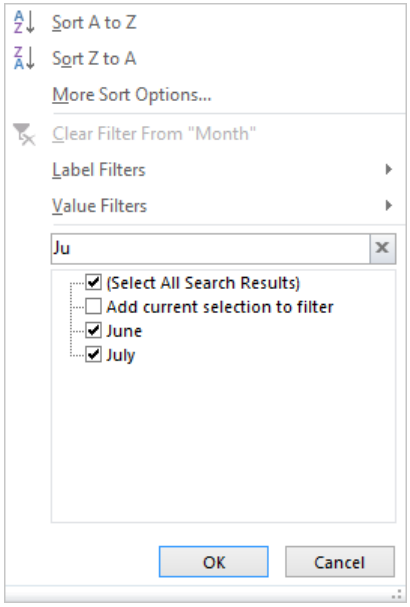
	A	B	C	D
1	Weekday	(Multiple Items)		
2				
3	Sum of Volume	Column Labels		
4	Row Labels	Atlantic	Central	Midwest
5	⊞2012	6933910	6790663	6336841
6	⊟2013	6783726	6541290	6650799
7	January	1017628	1087262	992605
8	February	453202	418419	515009
9	March	467334	359716	367785
10	April	458566	437695	452702
11	May	481096	516957	460397
12	June	302371	416959	450633
13	July	433346	452848	339017
14	August	564377	450209	452780
15	September	353976	278120	381304
16	October	458948	449253	570835
17	November	808929	819627	861745
18	December	983953	854225	805987
19	Grand Total	13717636	13331953	12987640

11 In cell **A5**, click the **Show Detail** button to redisplay the collapsed rows.

12 If the **PivotTable Fields** pane isn't displayed, click the **Analyze** tool tab, click **Show**, and then click **Field List**.

13 In the **PivotTable Fields** pane, click the **Month** field header arrow to open the filter menu.

14 In the **Search** box, enter **Ju**. Excel displays the months **June** and **July** in the filter list.



15 Click **OK** to apply the filter.

16 On the **Analyze** tool tab, click the **Actions** button, click **Clear**, and then click **Clear Filters** to remove all filters from the PivotTable.

CLEAN UP **Close the Focusing workbook, saving your changes if you want to.**

Editing PivotTables

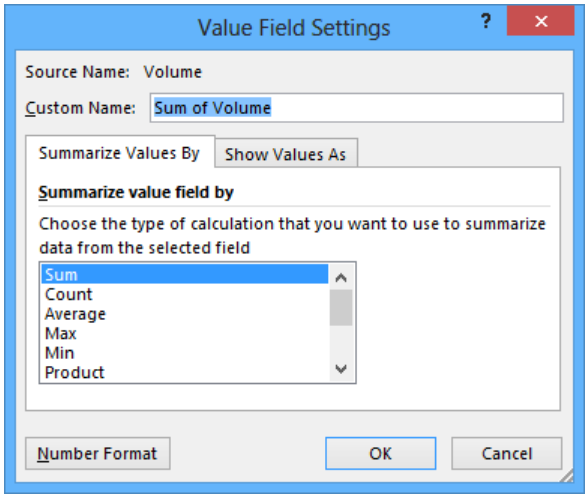
After you create a PivotTable, you can rename it, edit it to control how it summarizes your data, and use PivotTable cell data in a formula. As an example, consider a PivotTable named *PivotTable2* that summarizes package volumes for every Consolidated Messengers regional distribution hub.

	A	B	C	D	E
1					
2					
3	Sum of Volume	Column Labels			
4	Row Labels	Atlantic	Central	Midwest	Mountain West
5	2012	23276049	23727556	23643436	23075908
6	January	2966264	3143004	2774877	2942544
7	February	1541726	1407340	2046448	1552098
8	March	1688027	1594434	1600920	1641026
9	April	1445436	1548205	1395802	1653829
10	May	1530319	1813746	1529086	1516453
11	June	1725770	1431518	1458009	1551719
12	July	1581340	1706190	1472534	1672400
13	August	1519538	1577651	1797139	1745152
14	September	1494735	1420065	1672046	1483296
15	October	1743541	1711810	1599927	1655866
16	November	3049369	2921522	3153696	2847752
17	December	2989984	3452071	3142952	2813773
18	2013	23760133	23274159	23246331	23247582
19	January	3076578	2863187	2946100	2929502
20	February	1556937	1524882	1410456	1383853

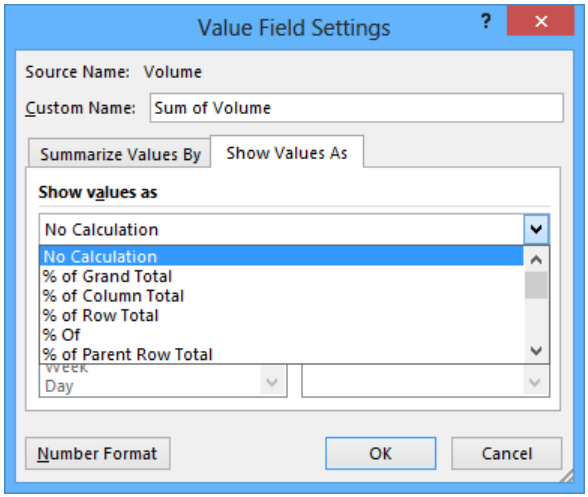
Excel displays the PivotTable name when you click the PivotTable button on the Analyze tool tab. The name *PivotTable2* doesn't help you or your colleagues understand the data the PivotTable contains, particularly if you use the PivotTable data in a formula on another worksheet. To give your PivotTable a more descriptive name, click any cell in the PivotTable and then, on the Options tool tab, in the PivotTable Options group, enter the new name in the PivotTable Name field.

When you create a PivotTable with at least one field in the Rows area and one field in the Columns area of the PivotTable Fields 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 tool 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.

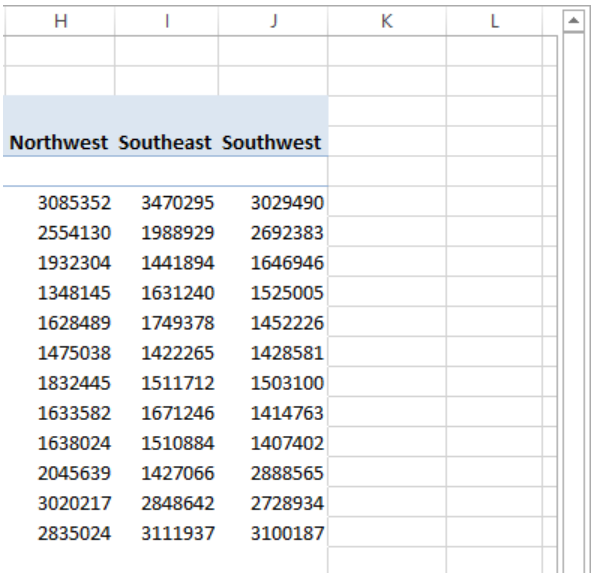


If you want, you can create a formula that incorporates a value from a PivotTable cell. To do so, you click the cell in which you want to create the formula, enter an equal sign, and then click the cell in the PivotTable that contains the data you want to appear in the other cell. A *GETPIVOTDATA* formula 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 workbook located in the Chapter10 practice file folder to complete this exercise. Open the workbook, and then follow the steps.**

1. On the **PivotTable** worksheet, click any cell in the PivotTable.
2. On the **Analyze** tool tab, click the **PivotTable** button and then, in the **PivotTable Name** field, enter **VolumeSummary** and press **Enter** to rename the PivotTable.
3. On the **Design** tool 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** tool 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.



H	I	J	K	L
Northwest	Southeast	Southwest		
3085352	3470295	3029490		
2554130	1988929	2692383		
1932304	1441894	1646946		
1348145	1631240	1525005		
1628489	1749378	1452226		
1475038	1422265	1428581		
1832445	1511712	1503100		
1633582	1671246	1414763		
1638024	1510884	1407402		
2045639	1427066	2888565		
3020217	2848642	2728934		
2835024	3111937	3100187		

5 On the **Quick Access Toolbar**, click the **Undo** button to reverse the last change.

6 Right-click any data cell in the PivotTable, point to **Summarize Values By**, and then click **Average** to change the **Value** field summary operation.

	A	B	C	D	E
1					
2					
3	**Average of Volume**	**Column Labels**			
4	**Row Labels**	**Atlantic**	**Central**	**Midwest**	**Mountain West**
5	**2012**				
6	January	95685.93548	101387.2258	89512.16129	94920.77419
7	February	55061.64286	50262.14286	73087.42857	55432.07143
8	March	54452.48387	51433.35484	51642.58065	52936.32258
9	April	48181.2	51606.83333	46526.73333	55127.63333
10	May	49365.12903	58507.93548	49325.35484	48917.83871
11	June	57525.66667	47717.26667	48600.3	51723.96667
12	July	51010.96774	55038.3871	47501.09677	53948.3871
13	August	49017.35484	50891.96774	57972.22581	56295.22581
14	September	49824.5	47335.5	55734.86667	49443.2
15	October	56243.25806	55219.67742	51610.54839	53415.03226
16	November	101645.6333	97384.06667	105123.2	94925.06667
17	December	96451.09677	111357.129	101385.5484	90766.87097
18	**2013**				
19	January	99244.45161	92360.87097	95035.48387	94500.06452
20	February	55604.89286	54460.07143	50373.42857	49423.32143

7 On the **Quick Access Toolbar**, click the **Undo** button to reverse the last change.

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

9 Click the **Show Values As** tab to display the **Show Values As** page.

10 In the **Show Values As** list, click **% of Row Total**.

11 Click **OK** to change how Excel calculates the values in the PivotTable.

	A	B	C	D	E
1					
2					
3	Sum of Volume	Column Labels			
4	Row Labels	Atlantic	Central	Midwest	Mountain West
5	2012				
6	January	10.75%	11.39%	10.06%	10.66%
7	February	8.63%	7.88%	11.46%	8.69%
8	March	11.40%	10.77%	10.81%	11.08%
9	April	10.68%	11.43%	10.31%	12.22%
10	May	10.76%	12.75%	10.75%	10.66%
11	June	12.70%	10.54%	10.73%	11.42%
12	July	10.94%	11.81%	10.19%	11.58%
13	August	10.43%	10.83%	12.34%	11.98%
14	September	10.95%	10.40%	12.25%	10.87%
15	October	10.57%	10.37%	9.70%	10.03%
16	November	11.38%	10.90%	11.77%	10.63%
17	December	10.68%	12.33%	11.22%	10.05%
18	2013				
19	January	11.35%	10.56%	10.87%	10.81%
20	February	10.28%	10.07%	9.31%	9.14%
21	March	9.64%	9.96%	9.15%	10.28%

12 On the **Quick Access Toolbar**, click the **Undo** button to reverse the last change.

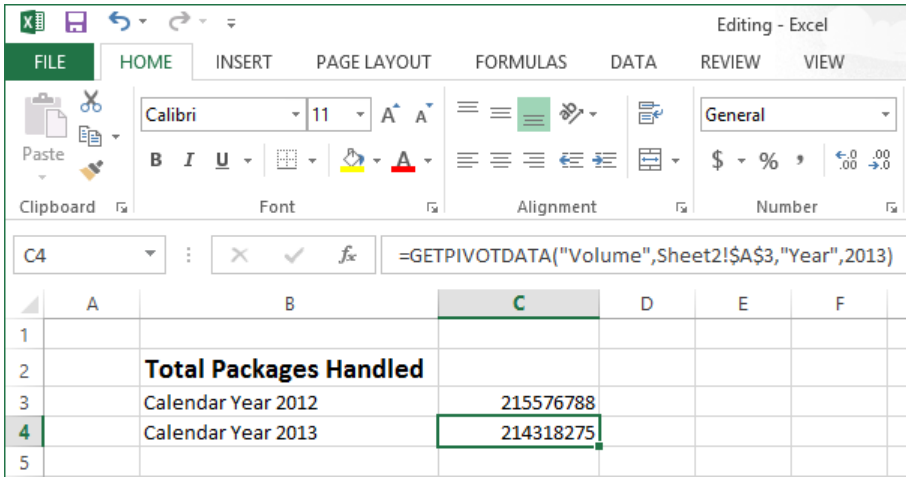
13 On the **Design** tab, in the **Layout** group, click **Subtotals**, and then click **Show All Subtotals at Bottom of Group** to display subtotals in the workbook.

14 Click the **Package Summary** sheet tab to display the **Package Summary** worksheet.

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

16 Click the **PivotTable** sheet tab to display that worksheet.

17 Click cell **K32**, and then press **Enter**. When you do, Excel creates the formula **=GETPIVOTDATA("Volume",Sheet2!$A$3,"Year",2013)** in cell **C4**.



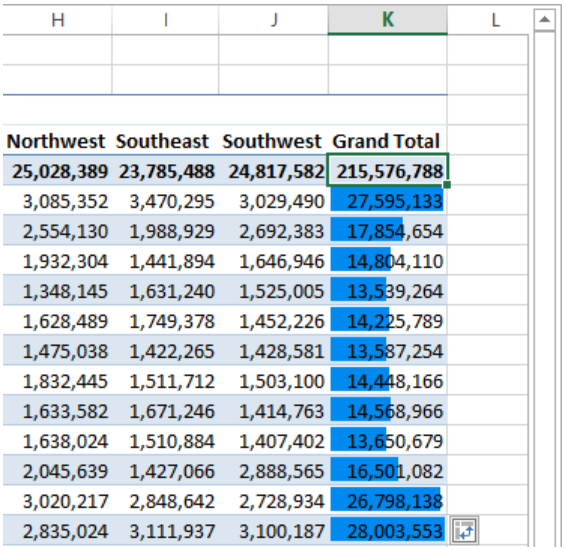
CLEAN UP **Close the Focusing workbook, saving your changes if you want to.**

Formatting PivotTables

PivotTables are the ideal tools for summarizing and examining large data collections, 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 open 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.



H	I	J	K	L
Northwest	Southeast	Southwest	Grand Total	
25,028,389	23,785,488	24,817,582	215,576,788	
3,085,352	3,470,295	3,029,490	27,595,133	
2,554,130	1,988,929	2,692,383	17,854,654	
1,932,304	1,441,894	1,646,946	14,804,110	
1,348,145	1,631,240	1,525,005	13,539,264	
1,628,489	1,749,378	1,452,226	14,225,789	
1,475,038	1,422,265	1,428,581	13,587,254	
1,832,445	1,511,712	1,503,100	14,448,166	
1,633,582	1,671,246	1,414,763	14,568,966	
1,638,024	1,510,884	1,407,402	13,650,679	
2,045,639	1,427,066	2,888,565	16,501,082	
3,020,217	2,848,642	2,728,934	26,798,138	
2,835,024	3,111,937	3,100,187	28,003,553	

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).

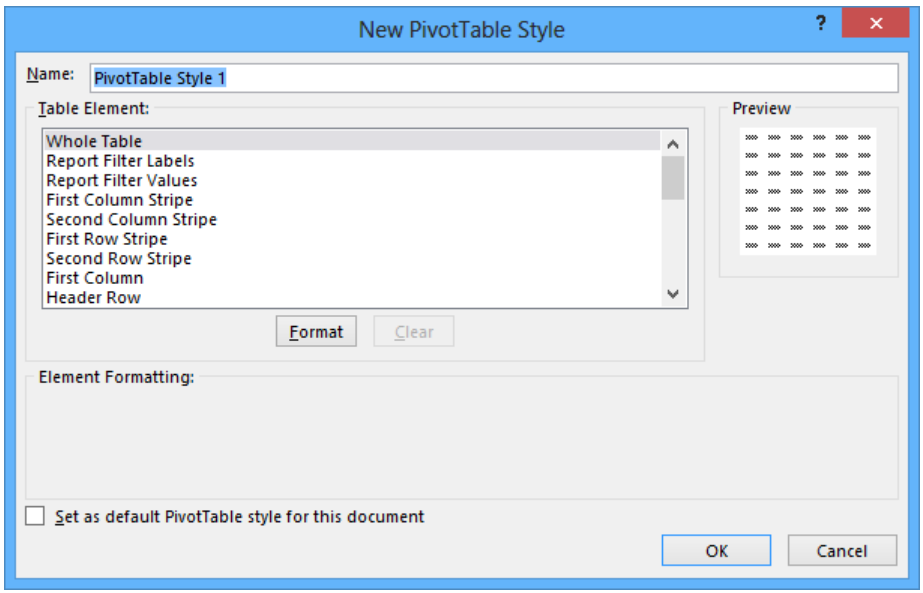
To apply a conditional format to a PivotTable field, click a cell in the Values area. On the Home tab, in the Styles group, click Conditional Formatting, and then create the desired conditional format. After you do, Excel displays a Formatting Options action button, which offers three options for applying 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 tool tab, in the PivotTable Styles group, click the style that you want to apply. If you want to create your own PivotTable style, click the More button to display a menu containing a gallery, and then click New PivotTable Style below the gallery to open the New PivotTable Style dialog box.



Enter 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 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.

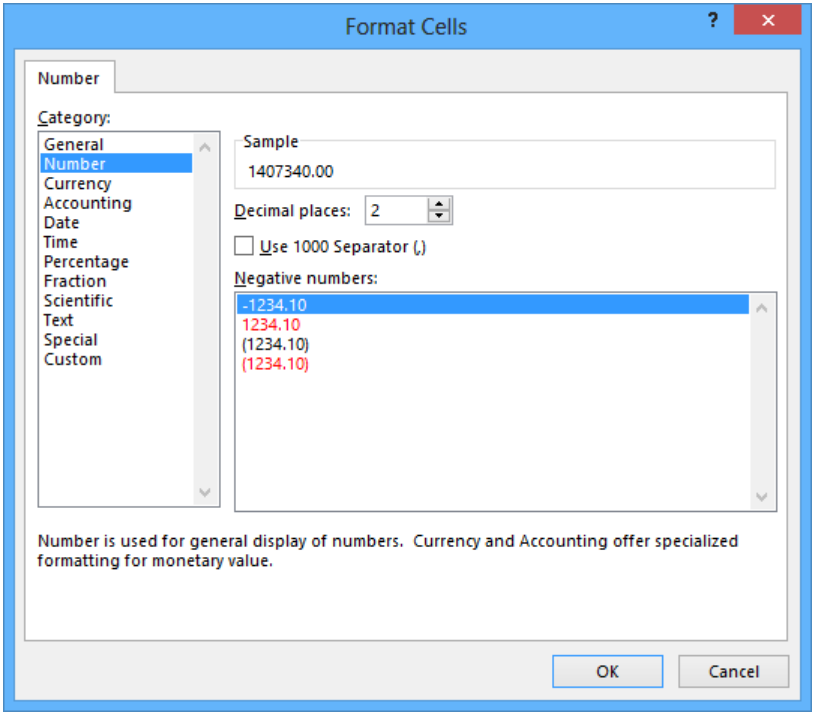
The Design tool tab contains many other tools that you can use to format your PivotTable, but one of the most useful is the Banded Columns check box, which you can find in the PivotTable Style Options group. If you select a PivotTable style that offers banded rows as an option, selecting the Banded Rows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

SET UP **You need the Formatting workbook located in the Chapter10 practice file folder to complete this exercise. Open the workbook, and then follow the steps.**

1 On the **Sheet2** worksheet, right-click any data cell, and then click **Number Format** to open the **Format Cells** dialog box.

2 In the **Category** list, click **Number** to display the **Number** page of the dialog box.



3 In the **Decimal places** field, enter **0**.

4 Select the **Use 1000 Separator (,)** check box.

5 Click **OK** to reformat your PivotTable data.

	A	B	C	D
1				
2				
3	**Sum of Volume**	**Column Labels**		
4	**Row Labels**	**Atlantic**	**Central**	**Midwest**
5	**2012**	**23,276,049**	**23,727,556**	**23,643,436**
6	January	2,966,264	3,143,004	2,774,877
7	February	1,541,726	1,407,340	2,046,448
8	March	1,688,027	1,594,434	1,600,920
9	April	1,445,436	1,548,205	1,395,802
10	May	1,530,319	1,813,746	1,529,086
11	June	1,725,770	1,431,518	1,458,009
12	July	1,581,340	1,706,190	1,472,534
13	August	1,519,538	1,577,651	1,797,139
14	September	1,494,735	1,420,065	1,672,046
15	October	1,743,541	1,711,810	1,599,927
16	November	3,049,369	2,921,522	3,153,696
17	December	2,989,984	3,452,071	3,142,952
18	**2013**	**23,760,133**	**23,274,159**	**23,246,331**
19	January	3,076,578	2,863,187	2,946,100
20	February	1,556,937	1,524,882	1,410,456
21	March	1,522,379	1,573,351	1,445,833

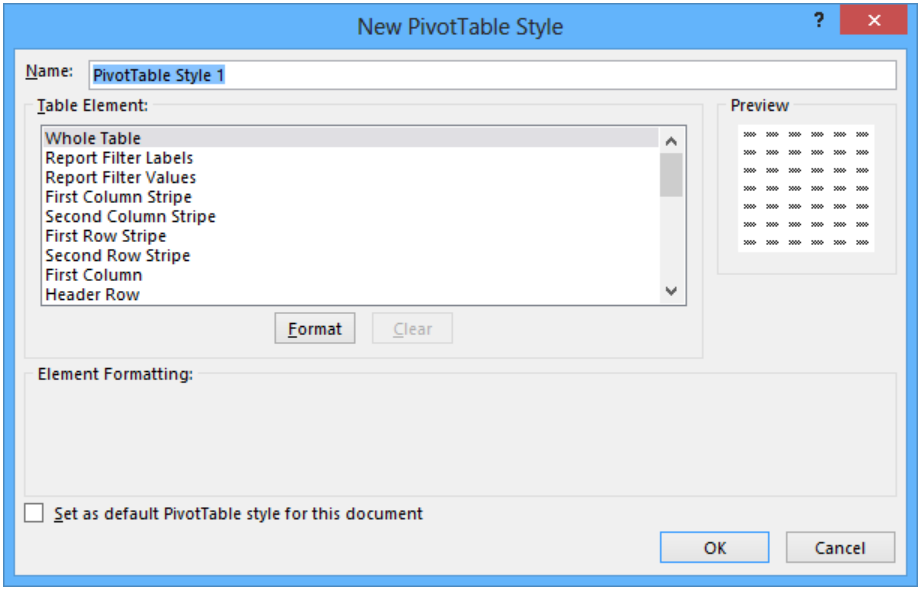
6 If necessary, on the **Design** tool tab, in the **PivotTable Style Options** group, select the **Banded Rows** check box.

7 On the **Design** tool 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 (**Pivot Style Light 2**.). Clicking the style causes Excel to apply it to your PivotTable.

	A	B	C	D
1				
2				
3	Sum of Volume	Column Labels		
4	Row Labels	Atlantic	Central	Midwest
5	2012	23,276,049	23,727,556	23,643,436
6	January	2,966,264	3,143,004	2,774,877
7	February	1,541,726	1,407,340	2,046,448
8	March	1,688,027	1,594,434	1,600,920
9	April	1,445,436	1,548,205	1,395,802
10	May	1,530,319	1,813,746	1,529,086
11	June	1,725,770	1,431,518	1,458,009
12	July	1,581,340	1,706,190	1,472,534
13	August	1,519,538	1,577,651	1,797,139
14	September	1,494,735	1,420,065	1,672,046
15	October	1,743,541	1,711,810	1,599,927
16	November	3,049,369	2,921,522	3,153,696
17	December	2,989,984	3,452,071	3,142,952
18	2013	23,760,133	23,274,159	23,246,331
19	January	3,076,578	2,863,187	2,946,100
20	February	1,556,937	1,524,882	1,410,456

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

9 Click **New PivotTable Style** to open the **New PivotTable Style** dialog box.



10 In the **Name** field, enter **Custom Style 1**.

11 In the **Table Element** list, click **Header Row**, and then click **Format** to open the **Format Cells** dialog box.

12 On the **Font** page, in the **Color** list, click the white swatch.

13 On the **Border** page, in the **Presets** area, click **Outline**.

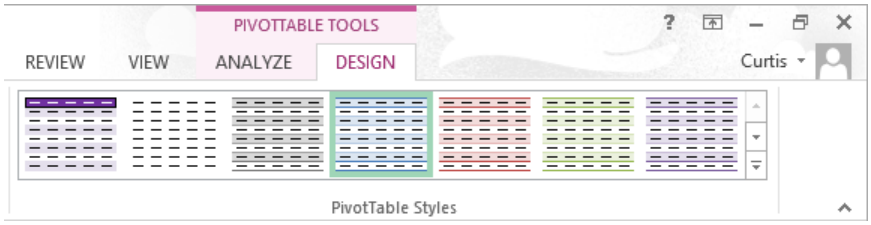
14 On the **Fill** page, in the **Background Color** area, click the purple swatch in the lower-right corner of the color palette.

15 Click **OK** to close the **Format Cells** dialog box. 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** to open the **Format Cells** dialog box.

17 On the **Fill** page, in the middle part of the **Background Color** area, click the eighth swatch in the second row (it's a light, dusty purple).

18 Click **OK** twice to close the **Format Cells** dialog box. Your format appears in the **PivotTable Styles** group.



19 Click the **More** button in the lower-right corner of the **PivotTable Styles** group, and then click your new style to reformat the PivotTable.

20 On the **Design** tool 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.

	A	B	C	D	E
1					
2					
3	Sum of Volume	Column Labels			
4	Row Labels	Atlantic	Central	Midwest	Mountain West
5	2012	23,276,049	23,727,556	23,643,436	23,075,908
6	January	2,966,264	3,143,004	2,774,877	2,942,544
7	February	1,541,726	1,407,340	2,046,448	1,552,098
8	March	1,688,027	1,594,434	1,600,920	1,641,026
9	April	1,445,436	1,548,205	1,395,802	1,653,829
10	May	1,530,319	1,813,746	1,529,086	1,516,453
11	June	1,725,770	1,431,518	1,458,009	1,551,719

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 to apply the conditional format to the selected cells.

I	J	K	L
Southeast	Southwest	Grand Total	
23,785,488	24,817,582	215,576,788	
3,470,295	3,029,490	27,595,133	
1,988,929	2,692,383	17,854,654	
1,441,894	1,646,946	14,804,110	
1,631,240	1,525,005	13,539,264	
1,749,378	1,452,226	14,225,789	
1,422,265	1,428,581	13,587,254	
1,511,712	1,503,100	14,448,166	
1,671,246	1,414,763	14,568,966	
1,510,884	1,407,402	13,650,679	
1,427,066	2,888,565	16,501,082	
2,848,642	2,728,934	26,798,138	
3,111,937	3,100,187	28,003,553	
26,736,115	23,300,579	214,318,275	
2,926,429	2,919,964	27,109,328	
2,888,829	1,721,227	15,143,659	
2,945,358	1,579,637	15,795,737	

CLEAN UP **Close the Formatting workbook, saving your changes if you want to.**

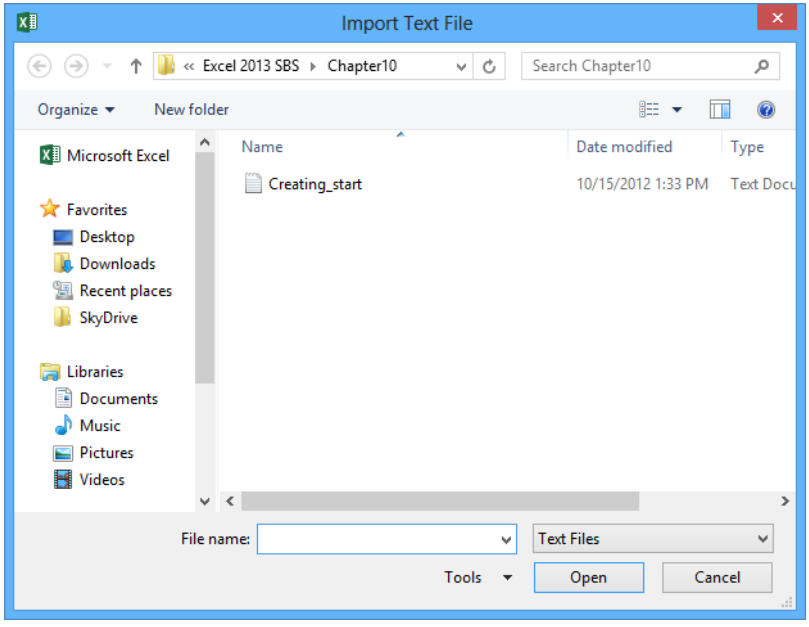
Creating PivotTables from external data

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 by using 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.

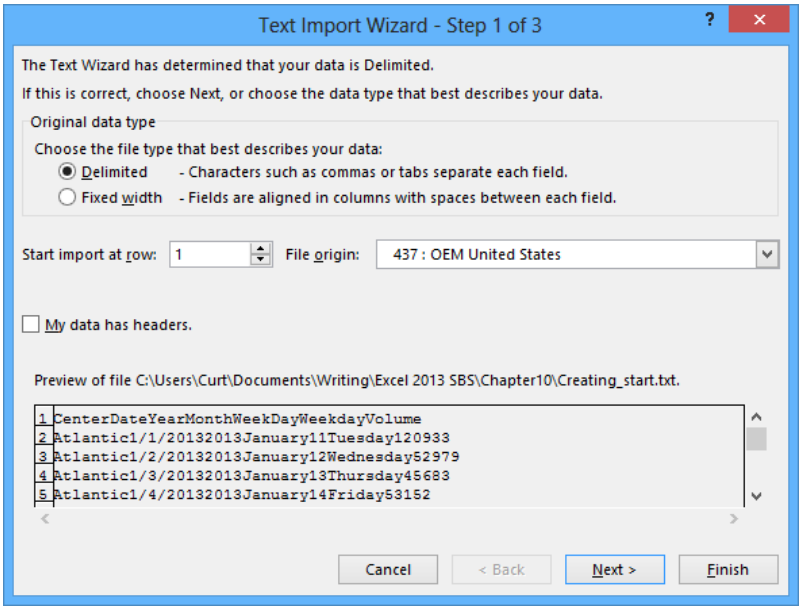
TIP The data import technique shown here isn't exclusive to PivotTables. You can use this procedure to bring data into your worksheets for any purpose.

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.

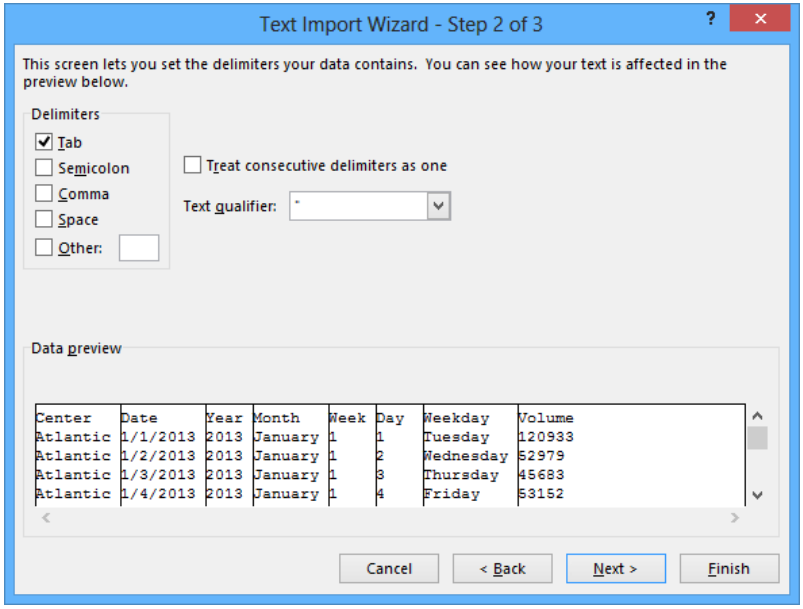
To import data from a text file, on the Data tab, click Get External Data group, and then click From Text to display the Import Text File dialog box.



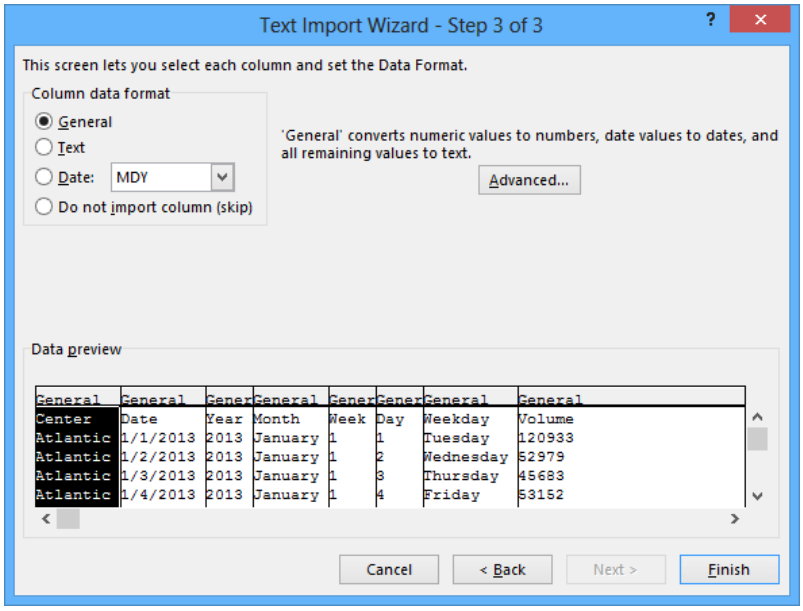
From within the Import Text File dialog box, browse to the directory that contains the text file you want to import. When you double-click the file, Excel launches the Text Import wizard.



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



On this page, you can choose the delimiter for the file (in this case, Excel detected tabs in the file and selected the Tab check box for you) and you can preview what the text file will look like when imported. Clicking Next advances you to the final wizard page.

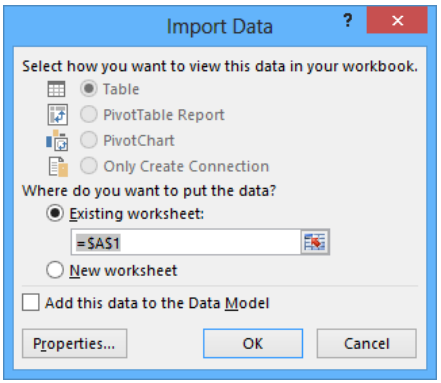


On this page, you can change the data type and formatting of the columns in your data. Because you'll assign number styles and PivotTable Quick Styles after you create the PivotTable, you can click Finish to import the data into your worksheet. After the data is in Excel, you can work with it normally.

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

SET UP **You need the Creating text file located in the Chapter10 practice file folder to complete this exercise. Don't open the file yet; just follow the steps.**

1. Create a new Excel workbook. On the **Data** tab, click the **Get External Data** button, and then click **From Text** to open the **Import Text File** dialog box.
2. Navigate to the **Chapter10** practice file folder, and then double-click the **Creating** text file to start the **Text Import** wizard.
3. Verify that the **Delimited** option is selected, and then click **Next** to display the next page of the wizard.
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** to skip the third page 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 **Existing worksheet** is selected, and then click **OK** to import 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 to display the **Format As Table** dialog box.

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**.

9 In the confirmation dialog box, click **Yes** to confirm that 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, click **PivotTable** to open the **Create PivotTable** dialog box.

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

12 Click **OK** to create the PivotTable on a new worksheet.

13 In the **PivotTable Fields** pane, drag the **Volume** field header to the **Values** area.

14 Drag the **Weekday** field header to the **Columns** area.

15 Drag the **Center** field header to the **Rows** data area.

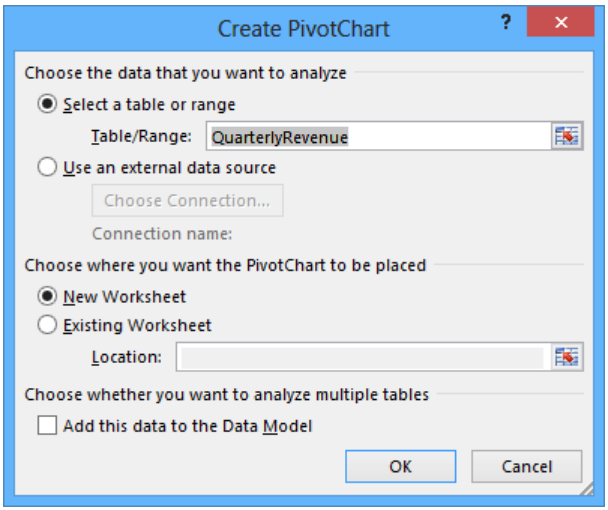
	A	B	C	D	E	F	G	H	I
1									
2									
3	Sum of Volume	Column Labels							
4	Row Labels	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total
5	Atlantic	7113064	6785522	6701941	6513606	6349037	6828903	6744109	47036182
6	Central	6647901	6885403	6626576	6692635	6646779	6494618	7007803	47001715
7	Midwest	6675694	7115293	6742964	6333636	6847094	6563336	6611750	46889767
8	Mountain West	6491280	6762698	6861705	6566685	6465276	6570660	6605186	46323490
9	North Central	6406503	6652892	6821348	6554389	6835394	6751992	6658072	46680590
10	Northeast	6798887	7061096	7072813	6945302	6889922	7137390	6784795	48690205
11	Northwest	6661552	6997784	7144120	6775035	7380197	7077630	6597032	48633350
12	Southeast	7419464	7024506	7397212	7373977	7510823	6835314	6960307	50521603
13	Southwest	7039234	6757128	6910012	6909127	6770431	7181509	6550720	48118161
14	**Grand Total**	**61253579**	**62042322**	**62278691**	**60664392**	**61694953**	**61441352**	**60519774**	**429895063**
15									

CLEAN UP **Close the Imported Data workbook, saving your changes if you want to.**

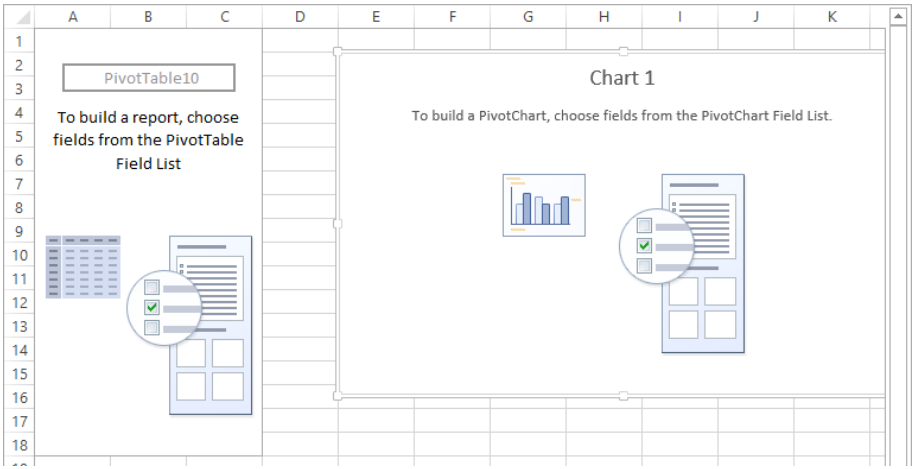
Creating dynamic charts by using PivotCharts

Just as you can create PivotTables that you can reorganize on the fly to emphasize different aspects of the data in a list, you can also create dynamic charts, or PivotCharts, to reflect the contents and organization of a PivotTable.

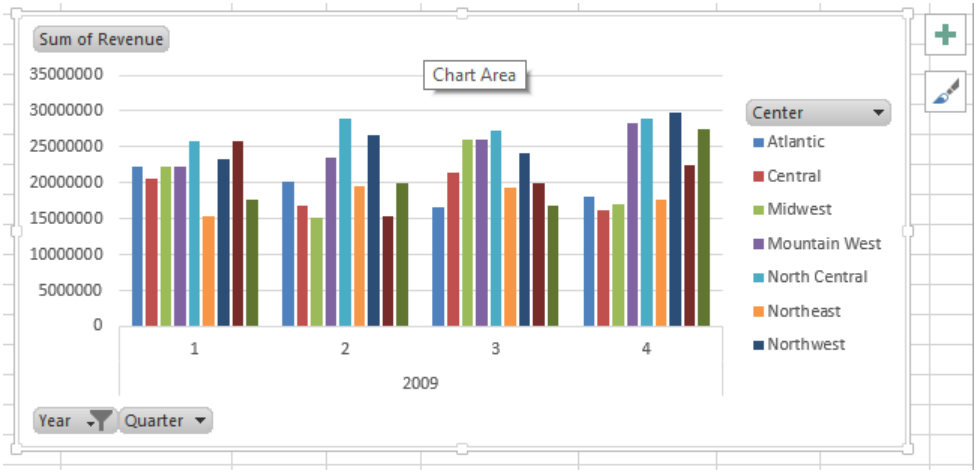
Creating a PivotChart is fairly straightforward. Just click any cell in a list or Excel table that you would use to create a PivotTable, and then click the Insert tab. In the Charts group, click the PivotChart button to create the chart. When you do, Excel 2013 opens the Create PivotChart dialog box.



To create a PivotChart from an existing PivotTable, click a cell in the PivotTable, display the Insert tab and then, in the Charts group, click the type of chart you want to create. After you complete either of these procedures, Excel displays a new PivotChart in your workbook.



Any changes to the PivotTable on which the PivotChart is based are reflected in the PivotChart. For example, if the data in an underlying data set changes, clicking the Refresh button in the Data group on the Analyze tool tab will change the PivotChart to reflect the new data. Also, if you filter the contents of a PivotTable, the filter will be reflected in the PivotChart. For instance, if you click 2009 in the Year list of a revenue analysis PivotTable and then click OK, both the PivotTable and the PivotChart will show only revenues from 2009.



SEE ALSO For more information on manipulating PivotTables, see "Filtering, showing, and hiding PivotTable data" earlier in this chapter.

A PivotChart has tools with which you can filter the data in the PivotChart and PivotTable. Clicking the Year arrow, clicking (All) in the list that appears, and then clicking OK will restore the PivotChart to its original configuration.

If you ever want to change the chart type of an existing chart, you can do so by selecting the chart and then, on the Design tab, in the Type group, clicking Change Chart Type to display the Change Chart Type dialog box. When you select the type you want and click OK, Excel re-creates your chart.

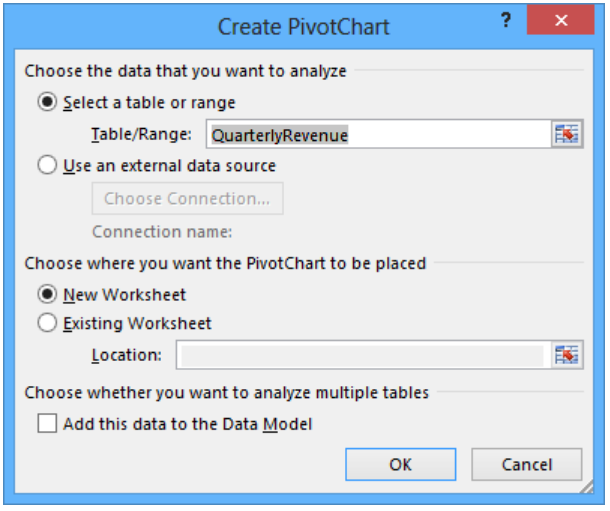
IMPORTANT If your data is the wrong type to be represented by the chart type you select, Excel displays an error message.

In this exercise, you'll create a PivotTable and associated PivotChart, change the underlying data and update the PivotChart to reflect that change, change the PivotChart's type, and then filter a PivotTable and PivotChart.

SET UP **You need the RevenueAnalysis workbook located in the Chapter10 practice file folder to complete this exercise. Open the workbook, and then follow the steps.**

1 On the **Through 2012** worksheet, click any cell in the Excel table.

2 On the **Insert** tab, in the **Charts** group, click the **PivotChart** button to open the **Create PivotChart** dialog box.



3 Verify that the **QuarterlyRevenue** table appears in the **Table/Range** field and that **New Worksheet** is selected.

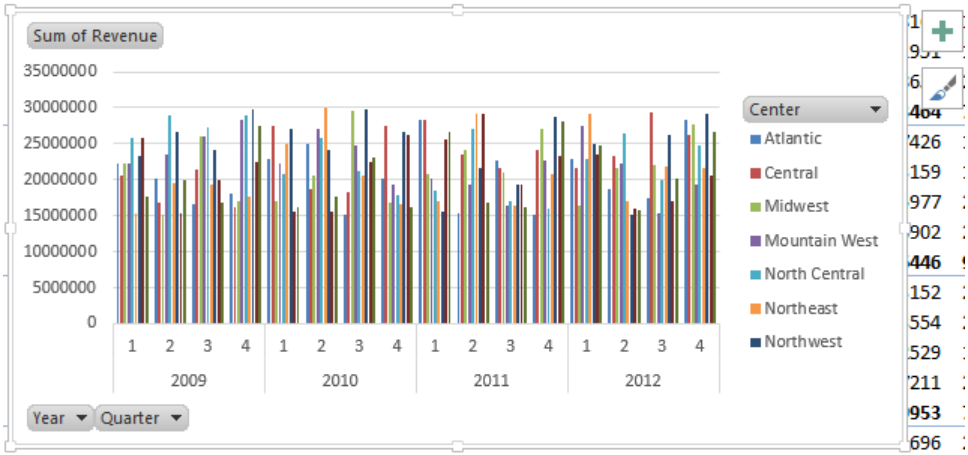
4 Click **OK** to create the PivotChart and associated PivotTable.

5 In the **PivotChart Fields** pane, drag the **Center** field header from the **Choose fields to add to report** area to the **Legend (Series)** area.

6 Drag the **Year** field header from the **Choose fields to add to report** area to the **Axis (Category)** area.

7 Drag the **Quarter** field header from the **Choose fields to add to report** area to the **Axis (Category)** area, positioning it below the **Year** field header.

8 Drag the **Revenue** field header from the **Choose fields to add to report** area to the **Values** area. Excel updates the PivotChart to reflect the field placements.



9 Click the **2013** sheet tab to display that worksheet.

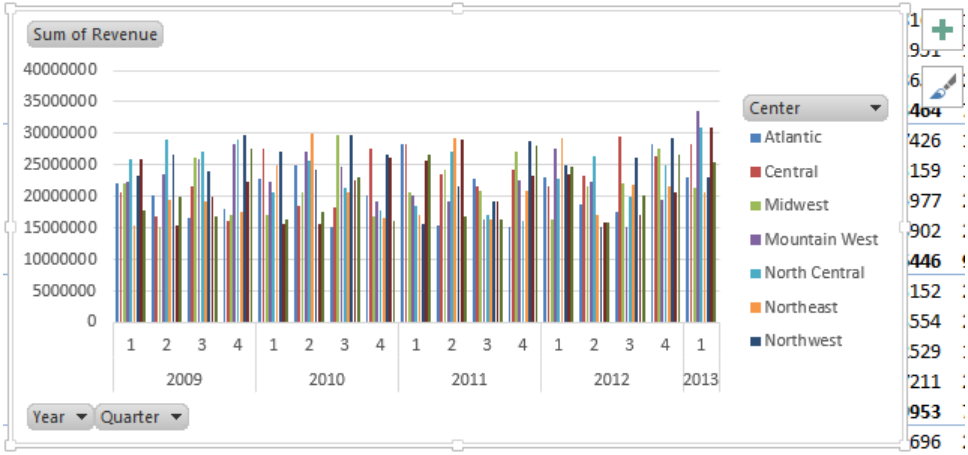
10 Select the data in cells **B2:E10**, and then press **Ctrl+C**. Excel copies the data to the Microsoft Office Clipboard.

11 On the tab bar, click the **Through 2012** sheet tab to display that worksheet.

12 Select cell **B147**, and then press **Ctrl+V** to paste the data into the worksheet and include it in the Excel table.

13 Click the tab of the worksheet that contains the PivotTable and the PivotChart. The PivotChart appears.

14 Select the PivotChart and then, on the **Analyze** tool tab, in the **Data** group, click **Refresh** to add the data to your PivotChart.

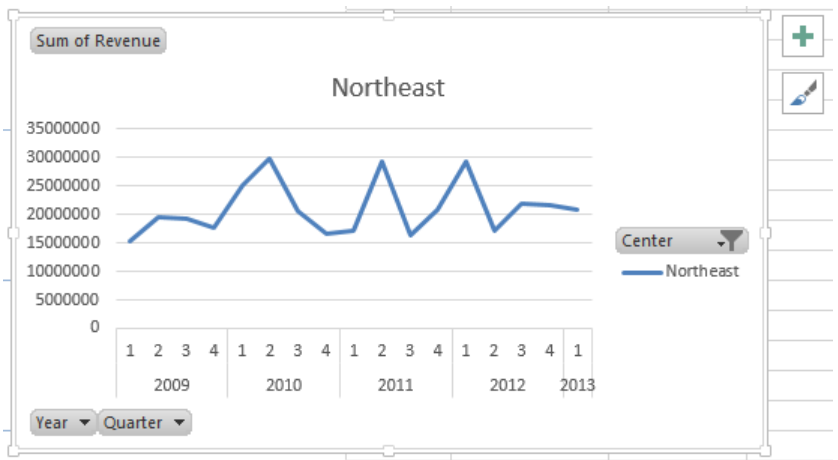


15 On the **Design** tool tab, in the **Type** group, click **Change Chart Type** to open the **Change Chart Type** dialog box.

16 Click **Line**, click the first **Line** chart subtype, and then click **OK** to change your PivotChart to a line chart.

17 In the **PivotTable Fields** pane, in the **Choose fields to add to report** area, point to the **Center** field header. Click the filter arrow that appears and then, in the filter menu, clear the **Select All** check box to remove the check boxes from the filter list items.

18 Select the **Northeast** check box, and then click **OK** to filter the PivotChart.



CLEAN UP **Close the RevenueAnalysis workbook, saving your changes if you want to.**

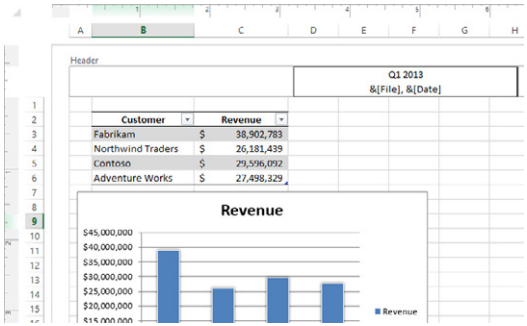
Key points

- A PivotTable is a versatile tool that 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.
- You can choose from a variety of styles when you create PivotTables.
- With the PivotTable Fields 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.
- 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.
- You can summarize your data visually by using a PivotChart, which you can pivot just like a PivotTable.

Chapter at a glance

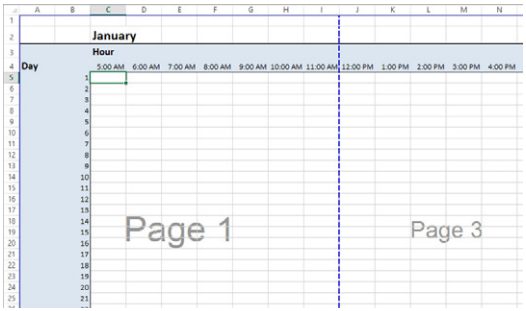
Headers

Add headers and footers to printed pages, page 334



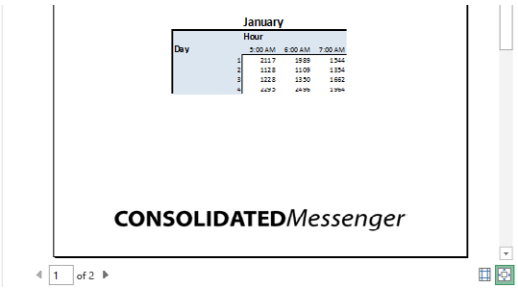
Prepare

Prepare worksheets for printing, page 340



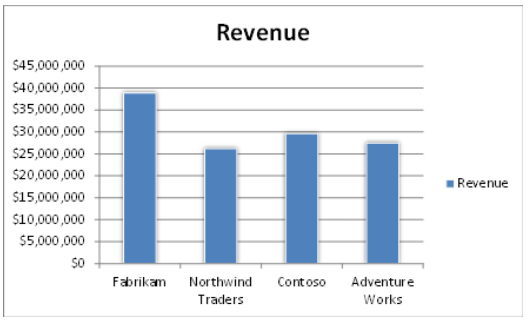
Print

Print parts of worksheets, page 352



Charts

Print charts, page 357



Printing worksheets and charts

11

IN THIS CHAPTER, YOU WILL LEARN HOW TO

- Add headers and footers to printed pages.
- Prepare worksheets for printing.
- Print worksheets.
- Print parts of worksheets.
- Print charts.

Microsoft Excel 2013 provides you with a wide range of tools that you can use to create and manipulate your data. By using filters, by sorting, and by creating PivotTables and charts, you can change your worksheets so that they convey the greatest possible amount of information. After you configure your worksheet so that it shows your data to best advantage, you can print your Excel documents to use in a presentation or include in a report. You can choose to print all or part of any of your worksheets, change how your data and charts appear on the printed page, and even suppress any error messages that might appear in your worksheets.

In this chapter, you'll add headers and footers to your worksheets, prepare your worksheets for printing, print all of and part of a worksheet, and print a chart.

PRACTICE FILES To complete the exercises in this chapter, you need the practice files contained in the Chapter11 practice file folder. For more information, see "Download the practice files" in this book's Introduction.