

PivotTables and PivotCharts

In this chapter, you will learn how to summarize data using PivotTables and PivotCharts and work with the important tools needed to create both PivotTables and PivotCharts.

LEARNING OBJECTIVES

- Create PivotTables
- Modify and format PivotTables
- Apply a filter to a PivotTable
- Insert a slicer to filter a PivotTable
- Create a calculated field
- Create PivotCharts

CHAPTER TIMING

- Concepts/Develop Your Skills: 2 hrs
- Self-Assessment: 1 hr 20 mins
- Total: 3 hrs 20 mins

PROJECT: ANALYZING SALES DATA

You have been given an Excel file containing all of the sales information for the Airspace Travel employees for Q3, July to September. To analyze the employees' performance, you will create a variety of PivotTables and PivotCharts to highlight important details within the data.

Creating PivotTables

A PivotTable is another powerful, popular, and cooperative Excel tool used to summarize complex information. PivotTables make it easy to understand large amounts of information by creating a summary report of your data. They are created by taking the existing data in a worksheet and organizing the various fields into columns and rows, which can then be used to display different results. The purpose of a PivotTable is to take large amounts of data and to help you determine, for example, which products are selling the best, which employees are performing the best, which day of the week or time of day do we need to have more staff on hand to reduce wait times for customers?

To create a PivotTable, you can start with a blank table and add fields, or you can use one of the recommended PivotTables that Excel suggests based on your data.



View the video “Making a PivotTable.”

What Is a PivotTable?

A PivotTable combines some of the features of a table and some of the features of an outline and includes additional unique features that make it extremely flexible. You can arrange your data in different ways, which is where the term *pivot* comes from (which means to turn or rotate), and you can quickly switch between the different views rather than creating a separate table each time. PivotTables are made up of rows and columns that contain Field labels, and the Value fields are then summarized within. PivotTable fields can be used to subtotal, compare, count, or perform other calculations on your data, as well.

Last Name	First Name	Position	Region	State	Date	Type	Amount
Louis	Lin	Senior Account Mgr	Central	IL	2-May	Service	234,000
Darko	David	Sales Account Mgr	Central	CO	3-May	Product	162,000
Lemmon	LaShaun	Sales Account Mgr	Central	CO	3-May	Product	210,000
Tavares	Taneisha	Sales Rep	Central	IL	4-May	Service	230,000
Plumlee	Patricia	Sales Rep	Central	IL	4-May	Product	120,000
Louis	Lin	Senior Account Mgr	Central	IL	5-May	Service	560,000
Darko	David	Sales Account Mgr	Central	CO	6-May	Service	151,000
Lemmon	LaShaun	Sales Account Mgr	Central	CO	6-May	Product	340,000
Tavares	Taneisha	Sales Rep	Central	IL	6-May	Service	120,000
Plumlee	Patricia	Sales Rep	Central	IL	6-May	Product	170,000

The partial worksheet data being used to create a PivotTable

The following PivotTable uses the data above to compare product and service sales side by side for employees grouped by their positions.

The Row Labels field also includes a filter button to apply a Sort or Filter to the rows in the PivotTable.

The values for product and service sales are shown in two columns.

The Row Labels include position and last name.

Rows are grouped by position, and each group can be collapsed or expanded as needed.

Row Labels	Sum of Product	Sum of Service
☑ Sales Account Mgr	1,386,000	1,527,000
Darko	162,000	151,000
Egges	340,000	700,000
Lemmon	210,000	340,000
Mandel	228,000	216,000
Tucker	446,000	120,000
☑ Sales Rep	769,000	710,000
☑ Senior Account Mgr	1,603,000	2,145,000
Grand Total	3,758,000	4,382,000

Arranging the Source Data

To create a PivotTable, you must also understand where to get the source data and know the state the data has to be in. Because a PivotTable summarizes data, the source data should not be summarized in any way. You can also think of this as being the *raw* data.

Typically, you want the source data to have fields (column headings) listed across the top, and then each row in the worksheet should contain a unique list entry. For example, the source should not have a list of employees and then list a summary of sales for each month in the same row. Rather, the source should be the raw sales data listing with a separate row for each month of data or even a separate row for each individual sale.

The source can be a list of data formatted as either a normal range or a table. The source should not contain any blank rows or columns or duplicate values.

Remove Duplicates

When entering data or combining data from different sources, there is a chance of having the same information listed twice. This duplicate information can then cause your information to be incorrect, which in turn causes incorrect evaluations, analysis, and perhaps important decisions based on the flawed data. To check for duplicates and remove them, you can use the Remove Duplicates command in Excel. To decide whether a record is considered a duplicate, you must tell Excel which columns must match. In some cases, it requires only one or two columns to determine that a record is a duplicate; for other data, you may want to match all columns.

☰ Data → Data Tools → Remove Duplicates

Adding PivotTable Fields

Whether you start with a blank PivotTable or use a recommended one, after it is created you have the option of adding and removing fields as you choose to manipulate the table data. The PivotTable Fields pane allows you to quickly add and remove fields by either clicking or dragging.

Choose from the list of field names to be included in the PivotTable; these are the column names from the source data.

Fields added here are displayed in the Column Labels; in this example no field was added to columns, so the column labels are the Values fields.

Fields added here can be quickly filtered.

Fields added here are displayed in the Row Labels; note in the PivotTable on the right that position comes first, followed by last names.

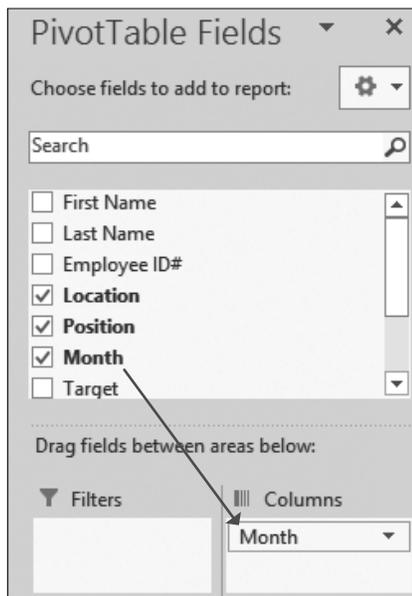
This area displays the Value fields added to the PivotTable and the function being performed.

Row Labels	Sum of Product	Sum of Service
Sales Account Mgr	1,386,000	1,527,000
Darko	162,000	151,000
Eggles	340,000	700,000
Lemmon	210,000	340,000
Mandel	228,000	216,000
Tucker	446,000	120,000
Sales Rep	769,000	710,000
Senior Account Mgr	1,603,000	2,145,000
Grand Total	3,758,000	4,382,000

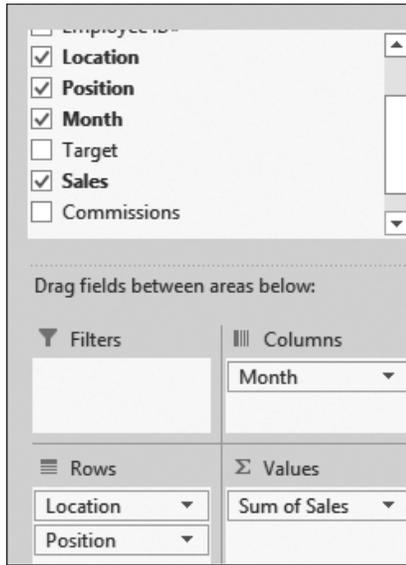
DEVELOP YOUR SKILLS: E3-D1

In this exercise, you will check the source data for duplicates, insert a blank PivotTable, and add fields to the PivotTable to show a summary of sales for each location.

1. Start Excel, open **E3-D1-Sales** from your **Excel Chapter 3** folder, and save it as **E3-D1-SalesTargets**.
2. Begin by verifying the data by quickly scrolling through the rows to the end of the sheet.
3. Choose **Data**→**Data Tools**→**Remove Duplicates**  to remove the duplicate values, if there are any.
4. Leave all columns checked and click **OK**.
5. Click **OK** to close the dialog box.
6. Quickly navigate to the last row of data by pressing **Ctrl**+**↓** and notice the data stops at row 89.
7. Choose **Insert**→**Tables**→**PivotTable**  to insert the PivotTable.
8. Confirm the range is *Sales!\$A\$3:\$I\$89* and then click **OK** to create the PivotTable.
9. Click the **Location** and **Position** checkboxes in the PivotTable Fields pane to add those fields as row labels and then drag the **Month** field into the Columns box.



- Click the **Sales** checkbox (this may require scrolling down in the field list, depending on screen size) in the PivotTable Fields pane, which will add the Sales field to the Values.



Sum of Sales	Column Labels			
Row Labels	Jul	Aug	Sep	Grand Total
Los Angeles	50223	47986	45450	143659
Agent	39714	37888	35250	112852
Manager	10509	10098	10200	30807
Miami	98409	95789	102700	296898
Agent	58331	54487	60725	173543
Manager	40078	41302	41975	123355

- Rename the Sheet to **Sum of Sales by Location**.
- Save the file.

Working with PivotTables

After you have created a PivotTable, you can modify the fields at any time by adding or removing them or by changing the positioning and order of the fields. To add fields, you can check the box next to the field name or drag it into the appropriate quadrant in the lower half of the PivotTable Fields pane. To remove fields, you can uncheck the box or drag a field name out of a quadrant and off the field list altogether. Each time you make a change, the PivotTable will automatically reconfigure to display the new data.

Changing the order of the fields in either the row or column will create different data groupings, and this is done by dragging and dropping the field names into the new positioning. Or you might want to switch a field label from row to column or column to row, which pivots the data.

Sum of Product	Column Labels			
Row Labels	Central	Eastern	Western	Grand Total
Sales Account Mgr	372000	228000	786000	1386000
Darko	162000			162000
Eggles			340000	340000
Lemmon	210000			210000
Mandel		228000		228000
Tucker			446000	446000
Sales Rep	350000	140000	279000	769000
Senior Account Mgr	234000	767000	602000	1603000
Grand Total	956000	1135000	1667000	3758000

This example shows the Sum of Product sales, organized by Position, then Last Name in the Rows, and Columns grouped by Region.

Row Labels	Sum of Product
Central	956000
Sales Account Mgr	372000
Darko	162000
Lemmon	210000
Sales Rep	350000
Senior Account Mgr	234000
Eastern	1135000
Sales Account Mgr	228000
Mandel	228000
Sales Rep	140000
Senior Account Mgr	767000
Western	1667000
Sales Account Mgr	786000
Eggles	340000
Tucker	446000
Sales Rep	279000
Senior Account Mgr	602000
Grand Total	3758000

Now the PivotTable shows Product sales with Rows grouped by Region, then Position, then Last Name; it is the same data but is just organized differently.

This is perhaps the most important skill for working with PivotTables because each change in the data's organization tells a new story. It is important to practice organizing your fields in a variety of ways to see how the information can be shaped to answer different questions.



View the video "Changing a PivotTable."

Formatting PivotTables

Changing the PivotTable's format can help make the information easier to read and understand. Similar to tables, there are a number of styles to choose from in the gallery on the Design tab. There are also a number of layout and style options to choose from.

Report Layout options include Compact, Outline, and Tabular. Subtotals can either be displayed at the top or bottom of each category or group or turned off altogether, and grand totals can also be turned on or off for rows and columns.

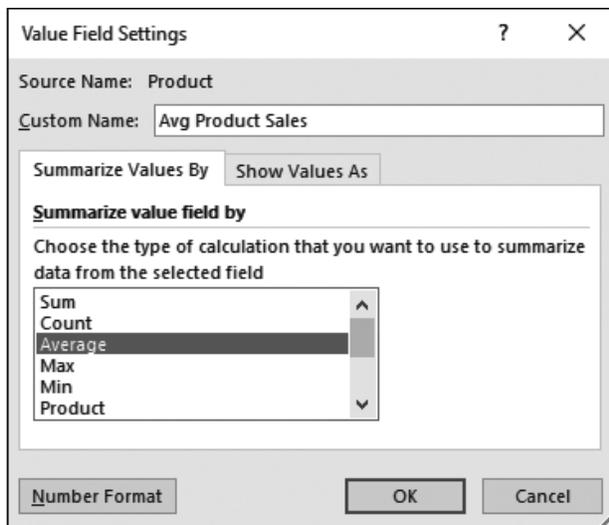
Number formatting does not automatically transfer from the source data, but you can quickly change the number format for an entire value field by right-clicking one of the values in the PivotTable and choosing Number Format or by using the Field Settings command.

Sum of Product		Region			
Position	Last Name	Central	Eastern	Western	Grand Total
Sales Account Mgr		\$372,000	\$228,000	\$786,000	\$1,386,000
	Darko	\$162,000			\$162,000
	Egges			\$340,000	\$340,000
	Lemmon	\$210,000			\$210,000
	Mandel		\$228,000		\$228,000
	Tucker			\$446,000	\$446,000
Sales Rep		\$350,000	\$140,000	\$279,000	\$769,000
Senior Account Mgr		\$234,000	\$767,000	\$602,000	\$1,603,000
Grand Total		\$956,000	\$1,135,000	\$1,667,000	\$3,758,000

This PivotTable has a style applied and contains number formatting, and the report layout is displayed in Outline form, which takes up more space but makes it easier to see the row labels.

Changing Value Field Settings

For each value field, the settings can be changed to better suit the information you want to show. The Field Name can be customized, the Number Format can be modified, and another function can be chosen instead of using the SUM function to summarize values. For example, instead of showing the sum of sales for each region, you might want to show the average sales by region. Then, instead of *Average of Product*, you could adjust the Custom Name to *Avg Product Sales*.



Avg Product Sales		Region		
Position	Last Name	Central	Eastern	Western
Sales Account Mgr		\$186,000	\$228,000	\$393,000
	Darko	\$162,000		
	Egges			\$340,000
	Lemmon	\$210,000		
	Mandel		\$228,000	
	Tucker			\$446,000
Sales Rep		\$175,000	\$140,000	\$139,500
Senior Account Mgr		\$234,000	\$383,500	\$602,000
Grand Total		\$191,200	\$283,750	\$333,400

DEVELOP YOUR SKILLS: E3-D2

In this exercise, you will create another PivotTable and adjust the fields and value field settings to show the average by position for commissions, sales, and targets.

1. Save your file as **E3-D2-SalesTargets**.
2. Go to the **Sales** worksheet.

3. Choose **Insert**→**Tables**→**Recommended PivotTables**  to insert a new PivotTable.
4. Select the third option on the left, **Sum of Commissions, Sum of Sales and Sum of Target by Location**, and then click **OK** to insert the PivotTable.
5. Uncheck the **Location** box in the PivotTable Fields pane to remove the Location field from the PivotTable.
6. Now check the **Position** box in the Field list to add that field.

Filters		Columns	
		Σ Values	
Rows		Σ Values	
First Name		Sum of Co...	▲
Position		Sum of Sales	▼

Row Labels	Sum of Commissions	Sum of Sales	Sum of Target
Adam	805.479	14647	15000
Manager	805.479	14647	15000
Alexander	1083.608	17471	15000
Agent	1083.608	17471	15000
Cam	4189.56	68904	75000
Agent	4189.56	68904	75000

7. Next drag the **Position** field above the First Name field in the Field List Rows to change the order of the fields.

Filters		Columns	
		Σ Values	
Rows		Σ Values	
Position		Sum of Co...	▲
First Name		Sum of Sales	▼

Row Labels	Sum of Commissions	Sum of Sales	Sum of Target
Agent	31288.38	504496	471000
Alexander	1083.608	17471	15000
Cam	4189.56	68904	75000
Cassie	1804.5	26250	24000
Cynthia	2384.273	41188	30000
Debra	2893.21	54870	45000

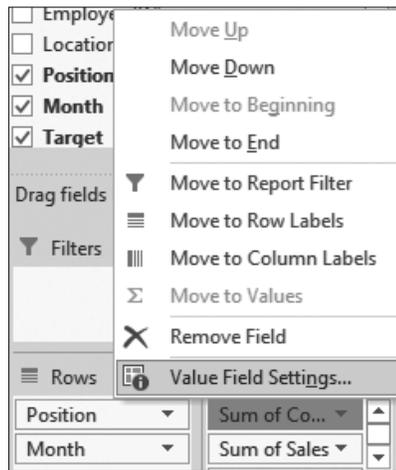
8. Check the Month box in the list to add the Month field and remove the First Name field by dragging it out of the Rows section of the Field List pane and onto the worksheet (an alternative method is to remove the field by removing the checkmark in the Field list).

Filters		Columns	
		Σ Values	
Rows		Σ Values	
Position		Sum of Co...	▲
Month		Sum of Sales	▼

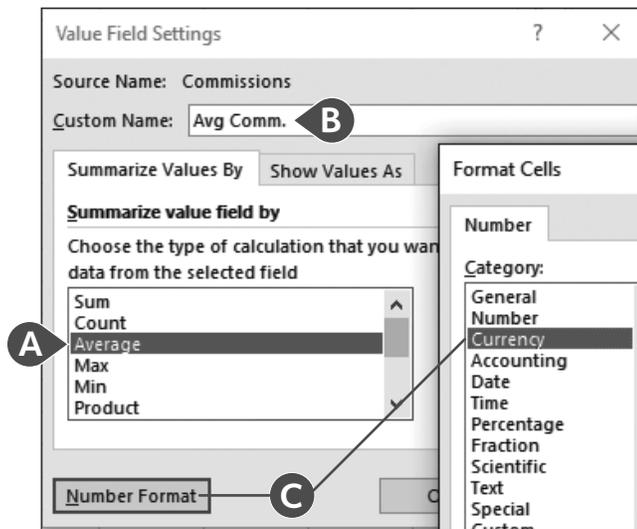
Row Labels	Sum of Commissions	Sum of Sales	Sum of Target
Agent	31288.38	504496	471000
Jul	9466.241	158462	156000
Aug	11183	176881	156000
Sep	10639.139	169153	159000
Manager	29018.726	464380	459000
Jul	9587.954	150754	153000
Aug	8974	150612	153000
Sep	10456.772	163014	153000
Grand Total	60307.106	968876	930000

9. Choose **PivotTable Tools**→**Design**→**PivotTable Styles**→**Pivot Style Dark 20**.

10. In the Field List pane Values section, click the **menu** button ▼ beside *Sum of Commissions* (the first field listed in Values; because of the small space the names are often cut off, but you can see the full name by hovering the mouse over the field) and then choose **Value Field Settings....**



11. Follow these steps to change the field settings:



- Ⓐ Choose **Average** in Summarize Value Field By.
 - Ⓑ In the Custom Name box, type **Avg Comm..**
 - Ⓒ Click **Number Format**, choose **Currency**, and then click **OK**.
12. Click **OK** to close the Value Field Settings dialog box.
13. Repeat this process for the Sum of Sales and Sum of Target fields, so that both fields display the Average summary function, with the names **Avg Sales** and **Avg Target** and the **Currency** number format.

14. Choose **PivotTable Tools**→**Design**→**Layout**→**Report Layout**→**Show in Outline Form** to change the report layout.

Position	Month	Avg Comm.	Avg Sales	Avg Target
Agent		\$711.10	\$11,465.82	\$10,704.55
	Jul	\$676.16	\$11,318.71	\$11,142.86
	Aug	\$745.53	\$11,792.07	\$10,400.00
	Sep	\$709.28	\$11,276.87	\$10,600.00
Manager		\$690.92	\$11,056.67	\$10,928.57
	Jul	\$684.85	\$10,768.14	\$10,928.57
	Aug	\$641.00	\$10,758.00	\$10,928.57
	Sep	\$746.91	\$11,643.86	\$10,928.57
Grand Total		\$701.25	\$11,266.00	\$10,813.95

15. Rename the worksheet **Averages by Position**.
16. Save your work.

Filtering a PivotTable

PivotTables can be filtered to remove unnecessary data and focus on the data that is important. A filter can be added several ways: by using AutoFilter, by adding a filter field, or by adding a slicer. Each time a PivotTable is filtered, the totals and subtotals are instantly recalculated throughout the table.

Filtering a PivotTable with AutoFilter

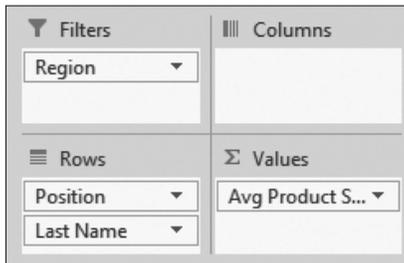
The row labels and column labels have an AutoFilter menu button ▼ that provides the same sorting and filtering options that are available in worksheet lists and tables.

Avg Product Sales		Region		
Position	Last Name	Central	Eastern	Western
Sales Account Mgr		\$186,000	\$228,000	\$393,000
	Darko	\$162,000		
	Egges		\$340,000	
	Lemmon	\$210,000		
	Mandel		\$228,000	
	Tucker		\$446,000	
Senior Account Mgr		\$234,000	\$383,500	\$602,000
	Anderson		\$602,000	
	Cartman		\$450,000	
	Louis	\$234,000		
	Oster		\$317,000	
Grand Total		\$202,000	\$331,667	\$462,667

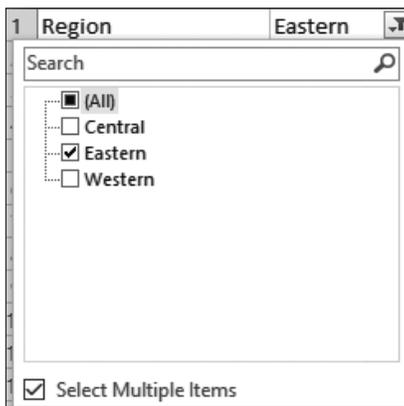
This PivotTable has been filtered to show Sales Account Mgr and Senior Account Mgr positions only and to sort by Position A to Z; because Sales comes first alphabetically, it is listed first.

Filtering a PivotTable with a Filter Field

Adding a field to the filter section of the PivotTable Field list simplifies the process of filtering the data to display one or more categories of data at a time. To turn on the option for showing more than one category, click the Select Multiple Items checkbox in the filter drop-down menu. The filtered field and the current filter setting will always display directly above the PivotTable.



By adding a field to the Filters area, that filter will remain displayed above the PivotTable as shown below.



Region	Eastern	
Position	Last Name	Avg Product Sales
Sales Account Mgr		
Mandel		\$228,000
Sales Rep		
		\$140,000
Senior Account Mgr		
		\$383,500
Grand Total		\$283,750

This PivotTable has been filtered to show only the Eastern region.

Filtering a PivotTable with Slicers

Slicers are menu frames placed on a worksheet that contain all filtering choices in one field. Selected items are highlighted in the slicer, making it easy to identify currently applied criteria. To select multiple fields in a slicer, you can use the Multi-Select feature or use the **Ctrl** key on the keyboard.

Slicers are more appealing because they can be moved around, resized, and styled to match the PivotTable, but the real benefit is that slicers can be shared with other sheets in the same workbook for other PivotTables that use the same source data. Changing the filtered selections in a shared slicer automatically updates all connected PivotTables.

Position	Last Name	Avg Product Sales
Sales Account Mgr		\$200,000
	Darko	\$162,000
	Lemmon	\$210,000
	Mandel	\$228,000
Sales Rep		\$163,333
Senior Account Mgr		\$333,667
Grand Total		\$232,333

Region [Filter Icon] [Reset Icon]

Central

Eastern

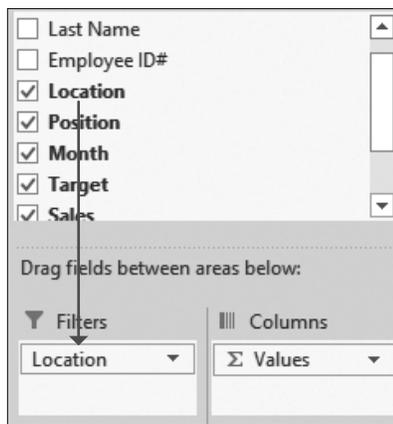
Western

The PivotTable with a slicer; displays the Central and Eastern region data

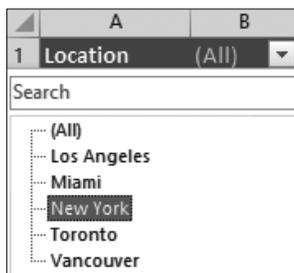
DEVELOP YOUR SKILLS: E3-D3

In this exercise, you will add filters to the existing PivotTables using two different methods.

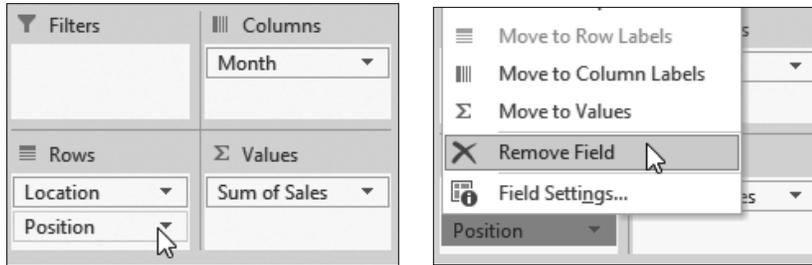
1. Save your file as **E3-D3-SalesTargets**.
2. Add a filter field to the PivotTable by dragging the **Location** field into the **Filters** section of the PivotTable Fields pane.



3. Click the **filter menu** button ▼ above the PivotTable and select **New York** from the list to display the information for New York only; click **OK**.



- Go to the **Sum of Sales by Location** sheet and, if necessary, select any cell in the PivotTable.
- Click the **Position** field in the Rows section of the PivotTable Fields pane and choose **Remove Field**.



- Choose **PivotTable Tools**→**Analyze**→**Filter**→**Insert Slicer** .
- In the Insert Slicers dialog box click the **Position** checkbox and then click **OK**.



- Drag the Slicer window so that it is directly beside the PivotTable and the tops of both are roughly aligned.
- Now resize the slicer in **Slicer Tools**→**Options**→**Size** to exactly **1" high** and **1.5" wide**.
- Apply the **Slicer Style Dark 5** style (**Slicer Tools**→**Options**→**Slicer Styles**) to the slicer and then click **Agent** to display the sales data for Agents only.
- Now adjust the Number Format for sales values by right-clicking cell **E5** and choosing **Number Format...**
- Choose **Currency** and click **OK**.
- Now select **Manager** in the slicer to display the sales data for Managers only.
- Save the file.



Creating Calculated Fields

In addition to the functions that are provided, you may want to create your own calculations and add them to the PivotTable. A calculated field uses a formula containing values from one or more of the existing fields. For example, you could take Sales values and multiply by 5% or take the Cost field from a PivotTable and subtract the Sales field.

Insert Calculated Field	
Name:	Product Sales Growth
Formula:	=Product*105%

☰ PivotTable Tools→Analyze→Calculations→Fields, Items, & Sets

Show Values As

Another option for displaying your PivotTable values is to use comparison operations, which are also available from the Value Field Settings dialog box. There are options already created to determine calculations such as a % of the grand total, the difference between values in two fields, or a ranking order.

Value Field Settings	
Source Name:	Product
Custom Name:	Product Sales %
Summarize Values By:	Show Values As
Show values as	
☑ % of Grand Total	
☐ No Calculation	
☐ % of Grand Total	
☐ % of Column Total	
☐ % of Row Total	
☐ % Of	
☐ % of Parent Row Total	

Position	Last Name	Product Sales	Product Sales %
☑ Sales Account Mgr		\$1,386,000	36.88%
	Darko	\$162,000	4.31%
	Eggles	\$340,000	9.05%
	Lemmon	\$210,000	5.59%
	Mandel	\$228,000	6.07%
	Tucker	\$446,000	11.87%
☑ Sales Rep		\$769,000	20.46%
☑ Senior Account Mgr		\$1,603,000	42.66%
Grand Total		\$3,758,000	100.00%

The Value Field Settings can be used to show options such as the % of Grand Total, as displayed in the PivotTable here.

Refreshing PivotTable Data

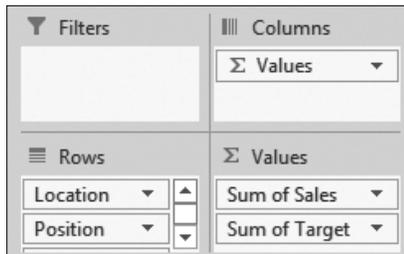
Whenever the source data changes, an existing PivotTable has to be refreshed to update the data in the PivotTable. You have the option of refreshing only the current PivotTable or all of them at once, and you can also set up an option to refresh the data each time the file is opened.

☰ PivotTable Tools→Analyze→Data→Refresh

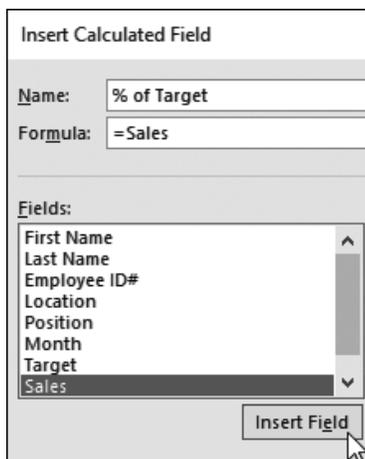
DEVELOP YOUR SKILLS: E3-D4

In this exercise, you will create a new PivotTable that will show which employees achieved their sales target.

1. Save your file as **E3-D4-SalesTargets**.
2. Go to the **Sales** sheet and insert a new blank PivotTable using the default values.
3. Rename the new sheet **% of Target**.
4. Add the **Location**, **Position**, and **Last Name** fields to the Rows, in that order.
5. Add **Sales** and **Target** to the Values, in that order. Values will automatically be added to the Columns quadrant.



6. Adjust the Value Field Settings for both Values to be **Currency**, no decimals, and the Custom Names to **Total Sales** and **Total Target**, respectively.
7. Now choose **PivotTable Tools**→**Analyze**→**Calculations**→**Fields, Items, & Sets** →**Calculated Field...**
8. In the Name box, enter **% of Target**.
9. Delete the number 0 in the Formula box; in the Fields list, select **Sales** and click **Insert Field**.



- Type / and then in the Fields list select **Target** and click **Insert Field**.

- Click **OK** to create the calculated field, which will divide sales by the target and is displayed in the Values quadrant.
- Right-click **cell D4** and open the Value Field Settings for the calculated field, change the name to **Total % of Target** and the Number Format to **Percentage** with two decimal places. Click **OK** to close the Number Format and **OK** again to close the Value Field Settings dialog box.
- Click the **collapse** buttons to collapse the Agent and Manager labels. This will display the Locations and Positions only.

Row Labels	Total Sales	Total Target	Total % of Target
[-] Los Angeles	\$143,659	\$141,000	101.89%
[-] Agent	\$112,852	\$111,000	101.67%
Bryant	\$43,948	\$36,000	122.08%
Owens	\$68,904	\$75,000	91.87%
[-] Manager	\$30,807	\$30,000	102.69%
Curry	\$30,807	\$30,000	102.69%

Row Labels	Total Sales	Total Target	Total % of Target
[-] Los Angeles	\$143,659	\$141,000	101.89%
[-] Agent	\$112,852	\$111,000	101.67%
[-] Manager	\$30,807	\$30,000	102.69%

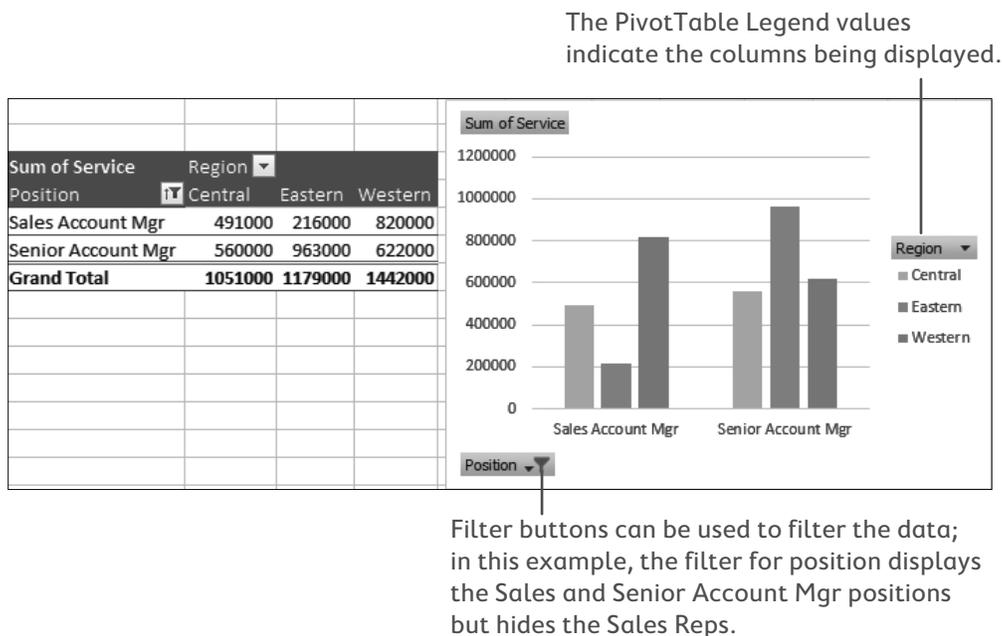
- Change the PivotTable style to **Pivot Style Dark 20**.
- Now go to the **Sales** sheet and select **cell H7**.
- Edit the cell and enter the correct information by typing **12900** in **cell H7**.
- Return to the % of Target sheet and choose **PivotTable Tools**→**Analyze**→**Data**→**Refresh**  **menu button** ▼→**Refresh All**.
- The data in all PivotTables is now updated to reflect the correction.
- Save the file.

Creating PivotCharts

PivotCharts are charts based on PivotTable data. PivotCharts can be created simultaneously with the PivotTable or after the PivotTable has been created, but a PivotChart must have an associated PivotTable. The fields on the Values area of the PivotTable are displayed as data series on the chart. The row labels are used as the axis labels, and the column labels are used in the chart legend. The PivotChart Tools tab contains all of the normal options for chart formatting in addition to the Analyze options for PivotTables.

Filtering PivotCharts

A PivotChart also includes AutoFilter buttons directly in the chart for quick and easy access to filter options. Filtering the PivotChart will also filter the associated PivotTable, and vice versa. If a slicer has been added to the PivotTable, filtering can also be performed with the slicer for the PivotChart.

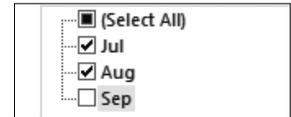
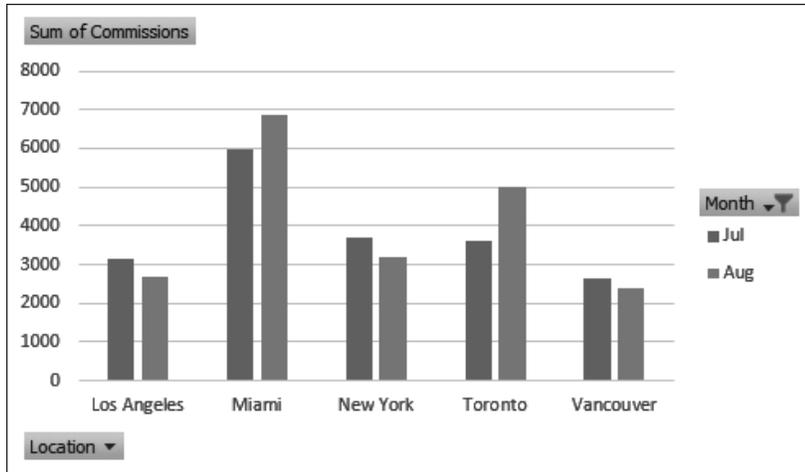


DEVELOP YOUR SKILLS: E3-D5

In this exercise, you will insert a PivotChart for an existing PivotTable and then build a new PivotChart while creating the adjoining PivotTable at the same time.

1. Save your file as **E3-D5-SalesTargets**.
2. Go to the **Sum of Sales by Location** sheet.
3. Choose **PivotTable Tools**→**Analyze**→**Tools**→**PivotChart** .
4. In the Insert Chart dialog box, click **OK** to insert the clustered column chart.
5. Drag to move the chart so it is directly below the PivotTable.

6. In the slicer, click the **Multi-Select**  button and then click **Agent** to display data for both Positions in the chart.
7. Now go to the **Sales** worksheet and choose **Insert**→**Charts**→**PivotChart** .
8. In the Create PivotChart dialog box, click **OK**.
9. In the PivotTable Fields pane, add **Location** to the Axis, **Month** to the Legend, and **Commissions** to the Values.
10. Click the **Month filter menu** button , uncheck **Sep**, and click **OK**.



11. Rename the worksheet **Commissions by Month**.
12. Drag to move the chart so it is directly below the PivotTable.
13. Save your work and close the file.

Self-Assessment

Check your knowledge of this chapter's key concepts and skills by completing the Self-Assessment. The answers to these questions can be found at the back of this book.

1. PivotTable fields can be used to subtotal, compare, count, or perform other calculations on your data. True False
2. You can use the PivotTable Field list to quickly add and remove fields by either clicking or dragging. True False
3. You are the manager of a car dealership and want to modify a PivotTable to show the average inventory level instead of a sum of the inventory level; you could do this by changing the Value Field Settings for Inventory. True False
4. Number formatting will automatically transfer from the source data to the PivotTable. True False
5. The following PivotTable has been filtered by both Position and Region. True False

Avg Product Sales		Region		
Position	Last Name	Central	Eastern	Western
<input checked="" type="checkbox"/> Sales Account Mgr		\$186,000	\$228,000	\$393,000
	Darko	\$162,000		
	Egges			\$340,000
	Lemmon	\$210,000		
	Mandel		\$228,000	
	Tucker			\$446,000
<input checked="" type="checkbox"/> Senior Account Mgr		\$234,000	\$383,500	\$602,000
	Anderson			\$602,000
	Cartman		\$450,000	
	Louis	\$234,000		
	Oster		\$317,000	
Grand Total		\$202,000	\$331,667	\$462,667

6. The Value Field Settings dialog box has an option to display a value field as a % of the Grand Total. True False
7. When you create a PivotChart, the fields in the Values area of the PivotTable are displayed as data series on the chart. True False
8. To add a field to a PivotTable you can:
 - A. Click the field checkbox.
 - B. Type the field name.
 - C. Click the Field checkbox or drag the field into the chosen Pivot area.
 - D. Drag the field into the chosen Pivot area.

9. The following PivotTable has the Region added to Rows and Type added to:

Region	Count of Type
Central	10
Eastern	8
Western	10
Grand Total	28

- A. Columns
 - B. Filters
 - C. Styles
 - D. Values
10. If you want the ability to filter several PivotTables at once, all of which use the same source data, which type of filter should you use:
- A. AutoFilter
 - B. Filter Field
 - C. PivotFilter
 - D. Slicer
11. Dayna has a PivotTable with inventory items that lists cost and markup percentages. She has asked you to help her add the retail price to the PivotTable (which is cost multiplied by markup). You should tell her to use:
- A. Value Field Settings
 - B. A calculated field
 - C. Show Values As
 - D. Tell her this is not possible with PivotTables
12. If the following PivotTable was used to create a PivotChart, which field would display in the legend?

Sum of Amount	Type		
Region	Product	Service	Grand Total
Central	\$840,000	\$1,457,000	\$2,297,000
Eastern	\$1,614,000	\$830,000	\$2,444,000
Western	\$1,356,000	\$2,043,000	\$3,399,000
Grand Total	\$3,810,000	\$4,330,000	\$8,140,000

- A. Amount
- B. Region
- C. Type
- D. Grand Total

