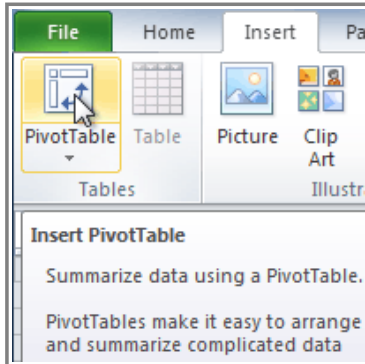




Creating PivotTables



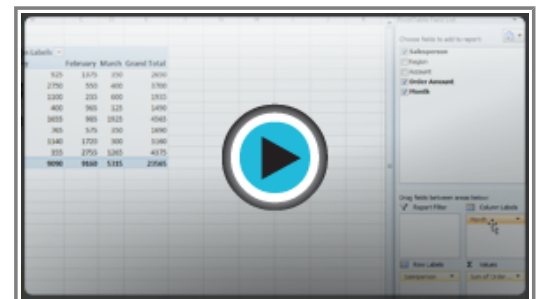
PivotTable reports (or, simply **PivotTables**) make the data in your worksheets much more manageable by **summarizing** the data and allowing you to **manipulate** it in different ways. PivotTables can be an indispensable tool when used with large, complex spreadsheets, but they can be used with smaller spreadsheets as well.

In this lesson, you will learn the basics of **creating** and **manipulating** PivotTables.

PivotTables

When you have a lot of data, it can sometimes be difficult to analyze all of it. A PivotTable **summarizes** the data, making it easier to manage. Best of all, you can quickly and easily change the PivotTable to see the data in a different way, making this an extremely powerful tool.

▶▶▶ Watch **Part 1** to learn about using PivotTables.



Watch the video (4:16). [Need help?](#)

▶▶▶ Watch **Part 2** to learn about using filters, slicers, and PivotCharts.



Watch the video (2:59). [Need help?](#)

Using PivotTables to Answer Questions

The example below contains sales statistics for a fictional company. There is a **row** for each order, and it includes the **order amount**, the name of the **salesperson** who made the sale, the **month**, the **sales region**, and the customer's **account number**.

Salesperson	Region	Account	Order Amount	Month
Albertson, Kathy	East	29386	\$925.00	January
Albertson, Kathy	East	74830	\$875.00	February
Albertson, Kathy	East	90099	\$500.00	February
Albertson, Kathy	East	74830	\$350.00	March
Brennan, Michael	West	82853	\$400.00	January
Brennan, Michael	West	72949	\$850.00	January
Brennan, Michael	West	90044	\$1,500.00	January
Brennan, Michael	West	82853	\$550.00	February
Brennan, Michael	West	72949	\$400.00	March
Davis, William	South	55223	\$235.00	February
Davis, William	South	10354	\$850.00	January
Davis, William	South	50192	\$600.00	March
Davis, William	South	27589	\$250.00	January
Dumlao, Richard	West	67275	\$400.00	January
Dumlao, Richard	West	41828	\$965.00	February
Dumlao, Richard	West	87543	\$125.00	March
Flores, Tia	South	97446	\$1,500.00	March
Flores, Tia	South	41400	\$305.00	January

Company Sales Statistics

Suppose we wanted to answer the question, "**What is the amount sold by each salesperson?**" This could be time-consuming, as each salesperson appears on multiple rows, and we would need to add up all of the order amounts for each salesperson. Of course, we could use the **Subtotal** feature to add them, but we would still have a lot of data to sift through.

Luckily, a **PivotTable** can instantly do all of the math for us and summarize the data in a way that's not only easy to read, but easy to manipulate. When we're done, the PivotTable will look something like this:

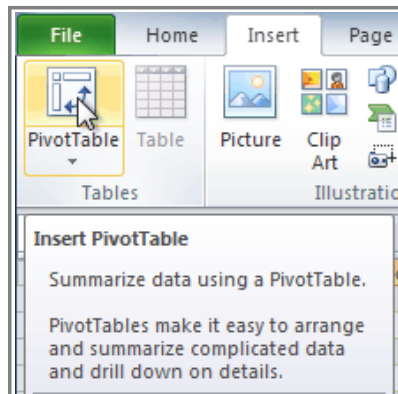
Row Labels	Sum of Order Amount
Albertson, Kathy	\$2,650.00
Brennan, Michael	\$3,700.00
Davis, William	\$1,935.00
Dumlao, Richard	\$1,490.00
Flores, Tia	\$4,565.00
Post, Melissa	\$1,690.00
Thompson, Shannon	\$3,160.00
Walters, Chris	\$4,375.00
Grand Total	\$23,565.00

A finished PivotTable

As you can see, the PivotTable is much easier to read. It only takes a **couple of steps** to create one, and once you create it you'll be able to take advantage of the PivotTable's powerful features.

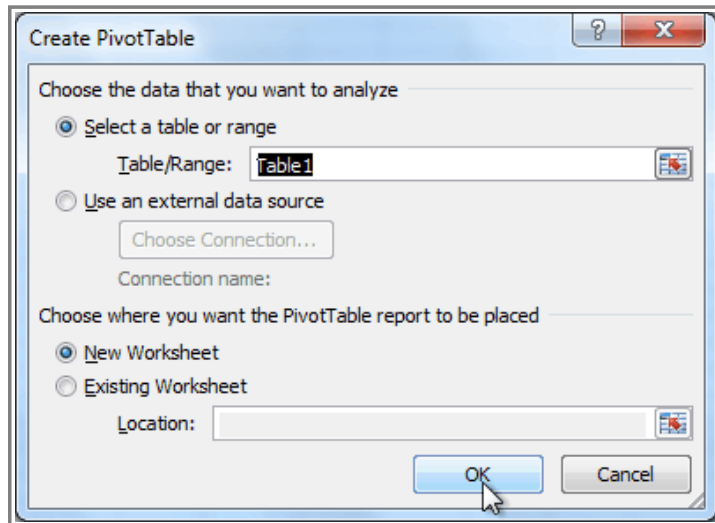
To Create a PivotTable:

1. Select the **table** or **cells** (including column headers) containing the data you want to use.
2. From the **Insert** tab, click the **PivotTable** command.



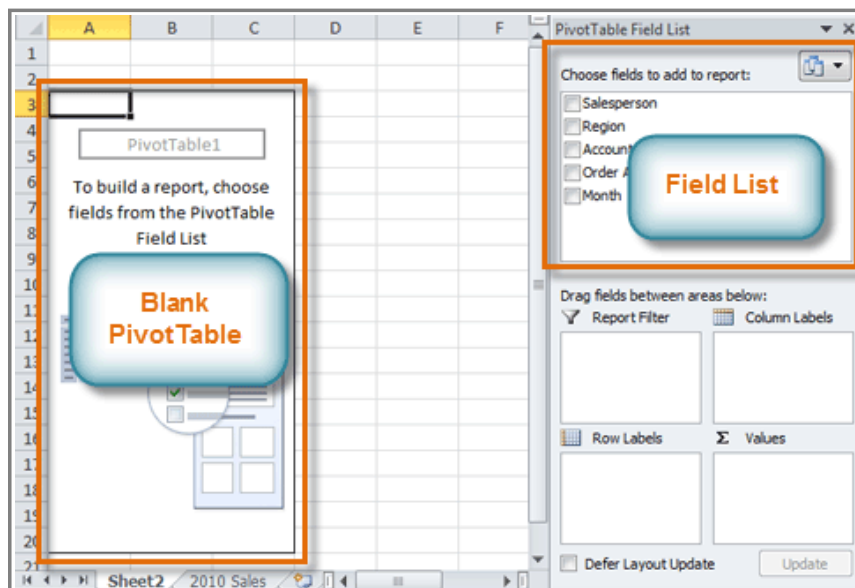
The PivotTable command

3. The **Create PivotTable** dialog box will appear. Make sure the settings are correct, and then click **OK**.



The Create PivotTable dialog box

4. A blank **PivotTable** will appear on the left, and the **Field List** will appear on the right



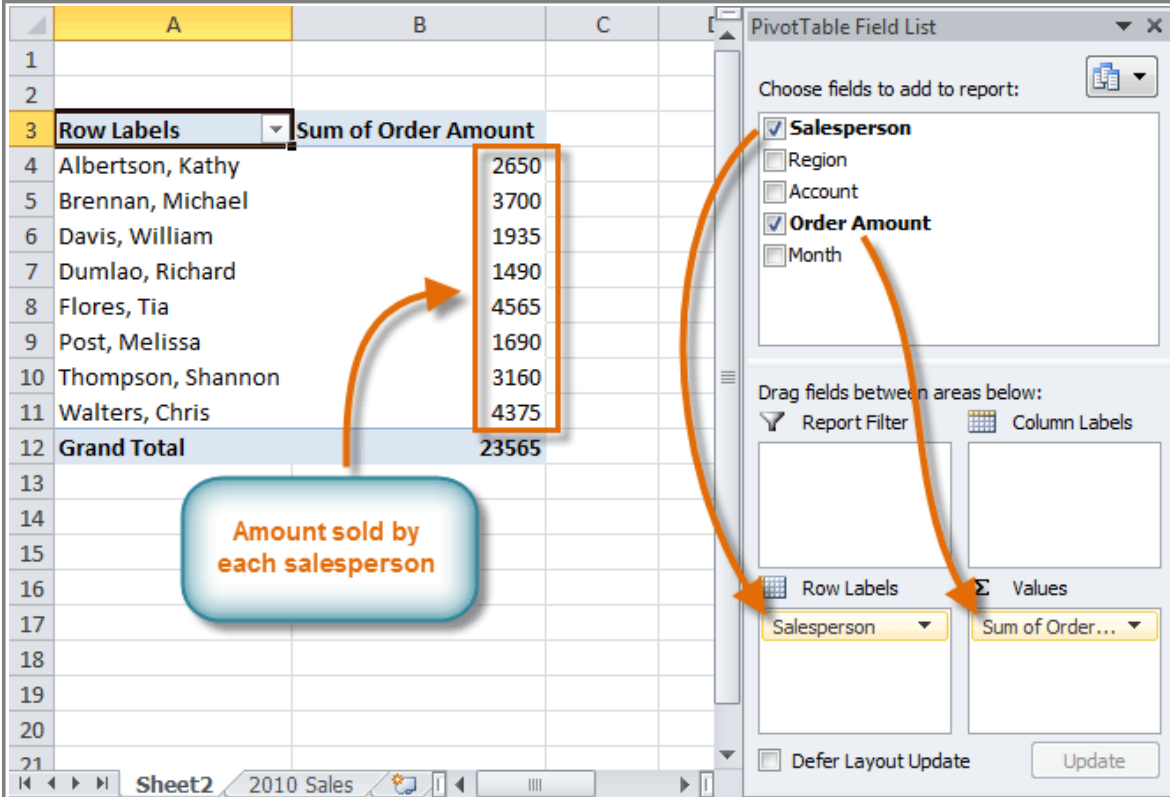
The Blank PivotTable and Field List

To Add Fields to the PivotTable:

Now, you'll need to decide which **fields** to add to the PivotTable. Each field is simply a **column header** from the source data. It may be helpful to recall the **question** that you are trying to answer. In this example, we want to know the total **amount** sold by each **salesperson**, so we'll just need the **Order Amount** and **Salesperson** fields.

1. In the **Field List**, place a checkmark next to each field you want to add.

- The selected fields will be added to one of the four **Areas** below the Field List. In this example, the **Salesperson** field is added to the **Row Labels** area, and the **Order Amount** is added to the **Values** area. If a field is not in the desired area, you can drag it to a different one.
- The PivotTable now shows the **amount sold** by each **salesperson**.



Row Labels	Sum of Order Amount
Albertson, Kathy	2650
Brennan, Michael	3700
Davis, William	1935
Dumlao, Richard	1490
Flores, Tia	4565
Post, Melissa	1690
Thompson, Shannon	3160
Walters, Chris	4375
Grand Total	23565

Amount sold by each salesperson

PivotTable Field List

Choose fields to add to report:

- Salesperson
- Region
- Account
- Order Amount
- Month

Drag fields between areas below:

Report Filter: [] Column Labels: []

Row Labels: Salesperson Values: Sum of Order...

Defer Layout Update Update

Adding fields to the PivotTable

Just like with normal spreadsheet data, you can sort the data in a PivotTable using the **Sort & Filter** command in the **Home** tab. You can also apply any type of formatting that you want. For example, you may want to change the **Number Format** to **Currency**. However, be aware that some types of formatting may disappear when you modify the PivotTable.

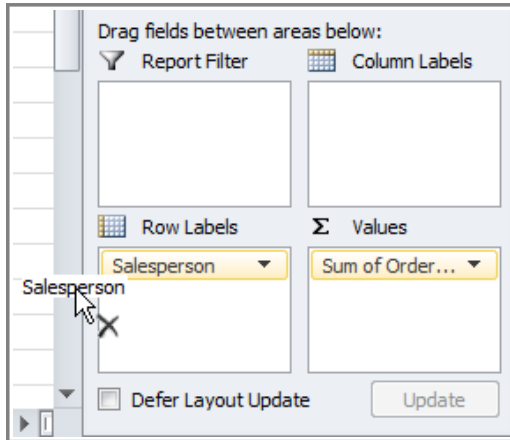
Pivoting Data

One of the best things about PivotTables is that they let you "pivot" the data in order to look at it in a different way. This allows you to answer **multiple questions** and even **experiment** with the data to learn new things about it.

In our example, we used the PivotTable to answer the question "What is the total amount sold by each salesperson?" But now we'd like to answer a new question, such as "What is the total amount sold in **each month**?" We can do this by simply changing the **Row Labels**.

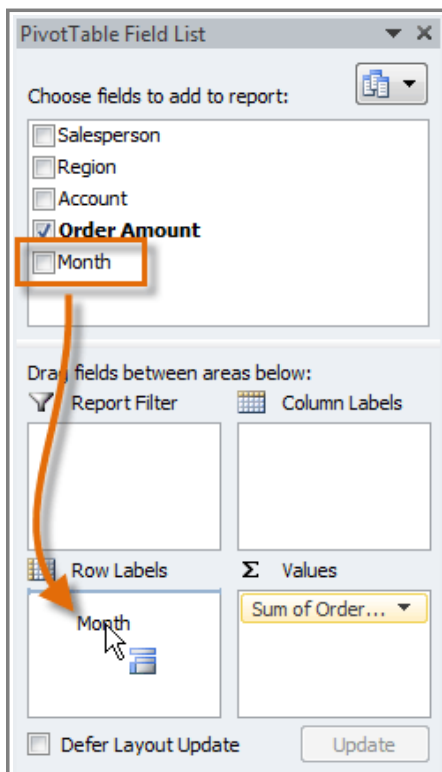
To Change the Row Labels:

1. Drag any existing **fields** out of the **Row Labels** area, and they will disappear.



Dragging a field out of Row Labels

2. Drag a new field from the **Field List** into the **Row Labels** area. In this example, we're using the **Month** field.



Dragging a new field into Row Labels

3. The PivotTable will adjust to show the new data. In this example, it now shows us the total **Order Amount** for each **month**.

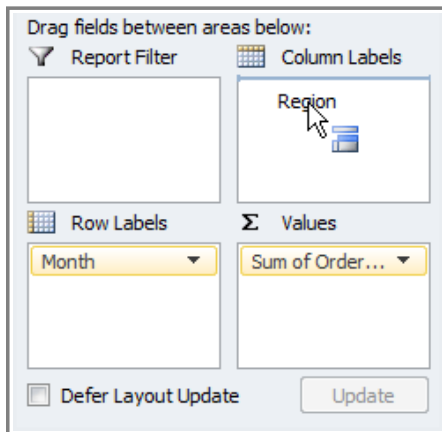
Row Labels	Sum of Order Amount
January	\$9,090.00
February	\$9,160.00
March	\$5,315.00
Grand Total	\$23,565.00

The updated PivotTable

To Add Column Labels:

So far, our PivotTable has only shown **one column** of data at a time. In order to show **multiple columns**, you'll need to add **Column Labels**.

1. Drag a field from the **Field List** into the **Column Labels** area. In this example, we're using the **Region** field.



Adding a field to Column Labels

2. The PivotTable will now have multiple columns. In this example, there is a column for each **region**.

Sum of Order Amount	Column Labels				
Row Labels	East	North	South	West	Grand Total
January	\$1,690.00	\$1,140.00	\$3,110.00	\$3,150.00	\$9,090.00
February	\$1,950.00	\$1,720.00	\$3,975.00	\$1,515.00	\$9,160.00
March	\$700.00	\$300.00	\$3,790.00	\$525.00	\$5,315.00
Grand Total	\$4,340.00	\$3,160.00	\$10,875.00	\$5,190.00	\$23,565.00

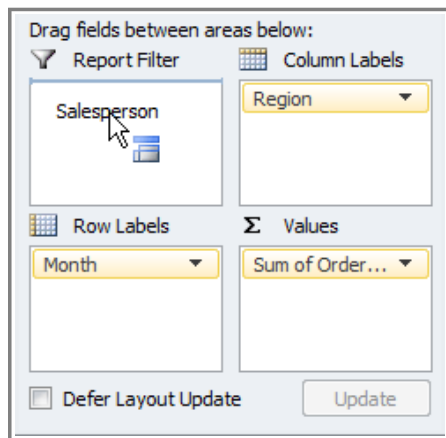
The updated PivotTable

Report Filters

Sometimes you may want focus on just a portion of the data and **filter out** everything else. In our example, we're going to focus on certain salespeople, to see how they affect the total sales.

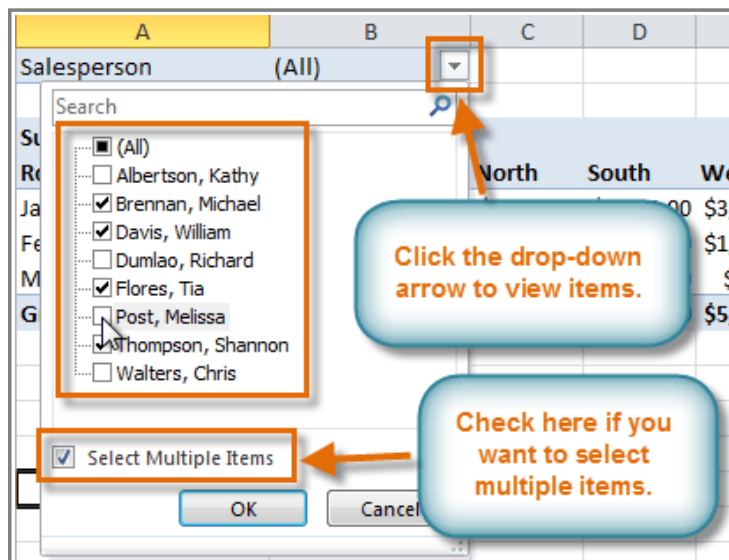
To Add a Report Filter:

1. Drag a field from the **Field List** into the **Report Filter** area. In this example, we're using the **Salesperson** field.



Adding a Report Filter

2. The report filter appears above the PivotTable. Click the **drop-down arrow** on the right side of the filter to view the list of items.
3. Select the item that you wish to view. If you want to select more than one item, place a checkmark next to **Select Multiple Items**. Then click **OK**. In the example below, we are selecting five salespeople.



Using a Report Filter

4. Click **OK**. The PivotTable will adjust to reflect the changes.

Salesperson	(Multiple Items) ▼				
Sum of Order Amount	Column Labels ▼				
Row Labels ▼	East	North	South	West	Grand Total
January	\$765.00	\$1,140.00	\$2,755.00	\$2,750.00	\$7,410.00
February	\$575.00	\$1,720.00	\$1,220.00	\$550.00	\$4,065.00
March	\$350.00	\$300.00	\$2,525.00	\$400.00	\$3,575.00
Grand Total	\$1,690.00	\$3,160.00	\$6,500.00	\$3,700.00	\$15,050.00

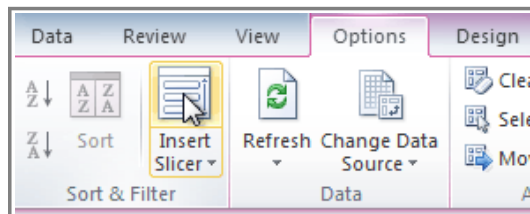
The updated PivotTable

Slicers

Slicers were introduced in Excel 2010 to make filtering data **easier** and **more interactive**. They're basically just **report filters**, but they're more interactive and faster to use, as they let you quickly select items and **instantly see the result**. If you filter your PivotTables a lot, you might want to use slicers instead of report filters.

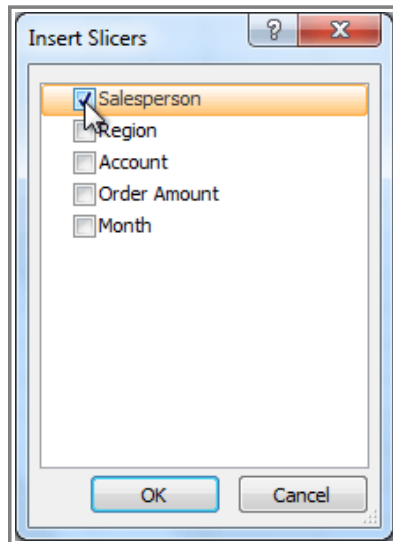
To Add a Slicer:

1. Select any cell in your PivotTable. The **Options** tab will appear on the **Ribbon**.
2. From the **Options** tab, click the **Insert Slicer** command. A dialog box will appear.



The Insert Slicer command


3. Select the desired field. In this example, we will select **Salesperson**. Then click **OK**.



Selecting a field

4. The slicer will appear next to the PivotTable. Each item that is selected will be highlighted in **blue**. In the example below, the slicer contains a list of all of the different salespeople, and **four** of them are currently selected.

Sum of Order Amount	Column Labels			
Row Labels	South	West	Grand Total	
January	\$2,010.00	\$3,150.00	\$5,160.00	
February	\$3,740.00	\$1,515.00	\$5,255.00	
March	\$3,190.00	\$525.00	\$3,715.00	
Grand Total	\$8,940.00	\$5,190.00	\$14,130.00	



A slicer with four selected items

Using the Slicer:

Just like with **report filters**, only the **selected** items are used in the PivotTable. When you **select** or **deselect** items, the PivotTable will instantly reflect the changes. Try selecting different items to see how they affect the PivotTable.

- To select a single item, just click on it.
- To select multiple items, hold down the **Control (Ctrl)** key on your keyboard, and then click on each item that you want.

- You can also select multiple items by clicking and dragging the mouse. This is useful if the desired items are **adjacent** to one another, or if you want to **select all of the items**.
- To deselect an item, hold down the **Control (Ctrl)** key on your keyboard, and then click on the item.

Sum of Order Amount	Column Labels		
Row Labels	East	South	Grand Total
January	\$1,690.00	\$1,100.00	\$2,790.00
February	\$1,950.00	\$235.00	\$2,185.00
March	\$700.00	\$600.00	\$1,300.00
Grand Total	\$4,340.00	\$1,935.00	\$6,275.00

Salesperson
Albertson, Kathy
Brennan, Michael
Davis, William
Dumlao, Richard
Flores, Tia
Post, Melissa
Thompson, Shannon
Walters, Chris

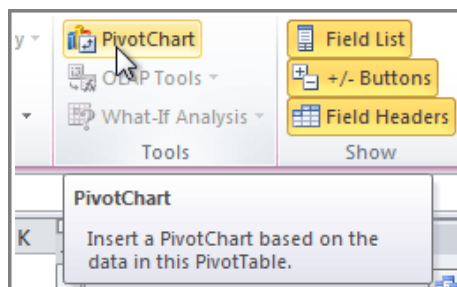
Ctrl-clicking to select multiple items

PivotCharts

PivotCharts are like regular charts, except they display data from a **PivotTable**. As with a regular chart, you'll be able to select a **chart type**, **layout** and **style** to best represent the data. In this example, we'll use a PivotChart so we can visualize the **trends** in each sales region.

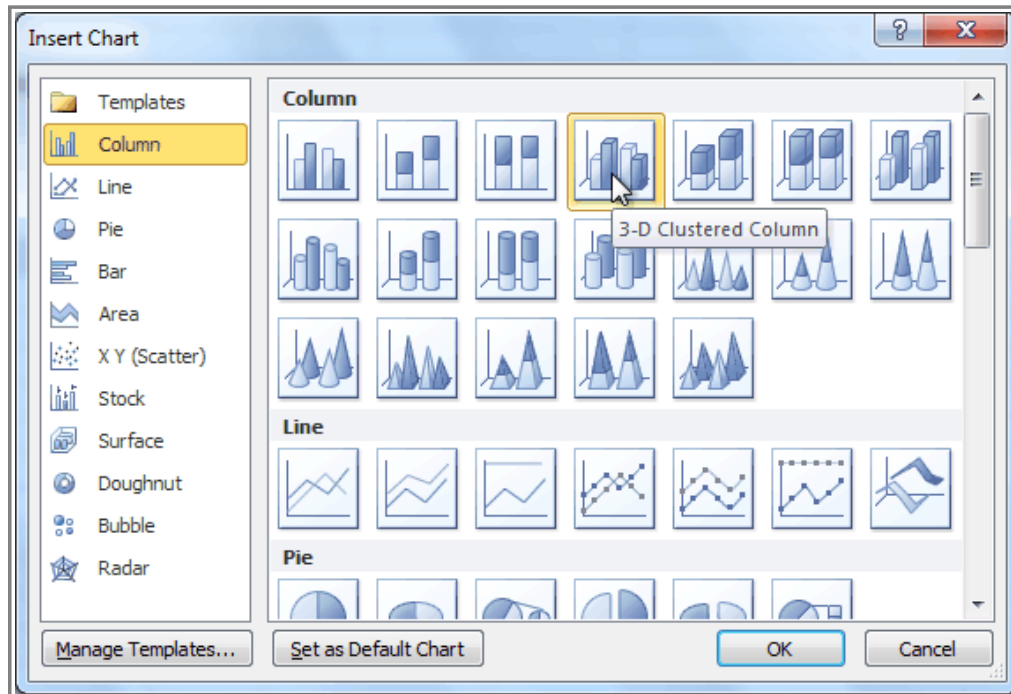
To Create a PivotChart:

1. Select any cell in your PivotTable. The **Options** tab will appear in the **Ribbon**.
2. From the **Options** tab, click the **PivotChart** command.



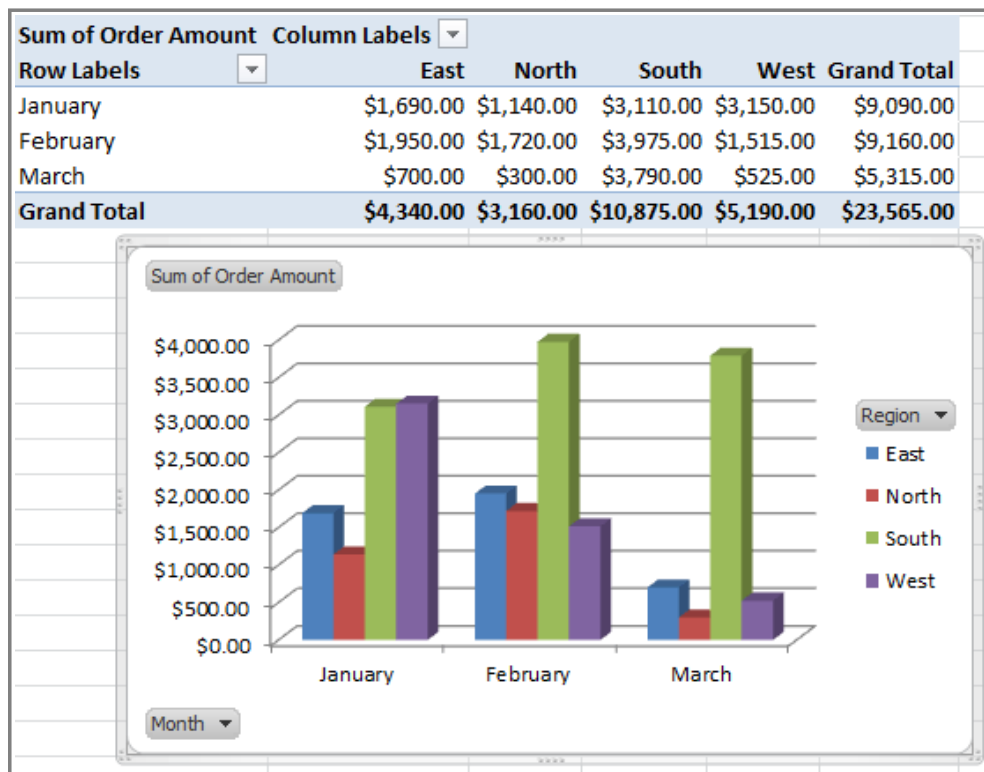
The PivotChart command

3. From the **dialog box**, select the desired **chart type** (3-D Clustered Column, for example) and click **OK**.



Selecting a chart type

4. The PivotChart will appear in the worksheet. If you want, you can move it by clicking and dragging.



A PivotChart

If you make any changes to the PivotTable, the PivotChart will adjust automatically.

Challenge!



- Open an **existing Excel workbook**. If you want, you can use this [example](#).
- Create a **PivotTable** using the data in the workbook.
- Experiment with different **Row Labels** and **Column Labels**.
- Filter the report with a **slicer**.
- Create a **PivotChart**.
- If you are using the **example**, use the PivotTable to answer the question, "**Which salesperson sold the lowest amount in January?**" Hint: First decide which **fields** you need in order to answer the question.