



# Introduction to Pivot Tables

## Use IT+

## Introduction

When you have a lot of data, it can sometimes be difficult to analyze all of the information in your worksheet. **PivotTables** can help make your worksheets more manageable by **summarising** data and allowing you to **manipulate** it in different ways.

### Using PivotTables to answer questions

Let's say we wanted to answer the question: **What is the amount sold by each salesperson?** for the sales data in the example below. Answering this question could be time consuming and difficult—each salesperson appears on multiple rows, and we would need to total all of their different orders individually. We could use the **Subtotal** command to help find the total for each salesperson, but we would still have a lot of data to work with.

	A	B	C	D	E
1	<b>Salesperson</b>	<b>Region</b>	<b>Account</b>	<b>Order Amount</b>	<b>Month</b>
2	Albertson, Kathy	East	29386	£ 925.00	January
3	Albertson, Kathy	East	74830	£ 875.00	February
4	Albertson, Kathy	East	90099	£ 500.00	February
5	Albertson, Kathy	East	74830	£ 350.00	March
6	Brennan, Michael	West	82853	£ 400.00	January
7	Brennan, Michael	West	72949	£ 850.00	January
8	Brennan, Michael	West	90044	£ 1,500.00	January
9	Brennan, Michael	West	82853	£ 550.00	February
10	Brennan, Michael	West	70040	£ 400.00	March

Fortunately, a **PivotTable** can instantly **calculate** and **summarise** the data in a way that's both easy to read and manipulate. When we're done, the PivotTable will look something like this:

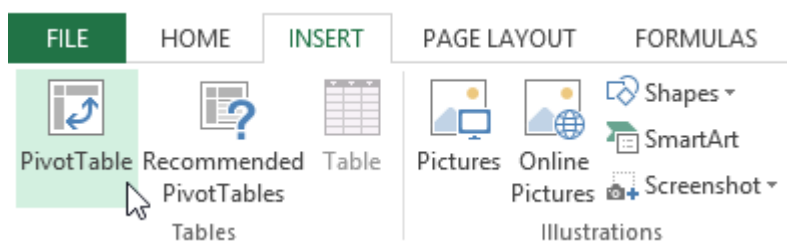
Row Labels	Sum of Order Amount
Albertson, Kathy	2650
Brennan, Michael	3700
Davis, William	1935
Dumlao, Richard	1490
Flores, Tia	4565
Post, Melissa	1690
Thompson, Shannon	3160
Walters, Chris	4375
<b>Grand Total</b>	<b>23565</b>

Once you've created a PivotTable, you can use it to answer different questions by rearranging—or **pivoting**—the data. For example, if we wanted to answer the question: **What is the total amount sold in each month?** we could modify our PivotTable to look like this:

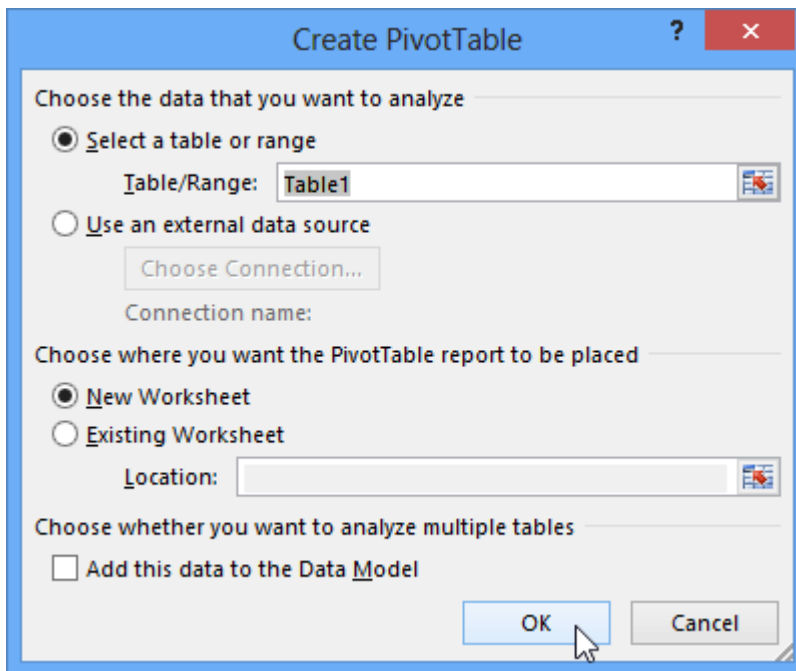
Row Labels	Sum of Order Amount
January	£ 9,090.00
February	£ 9,160.00
March	£ 5,315.00
<b>Grand Total</b>	<b>£ 23,565.00</b>

To create a PivotTable:

1. Select the **table** or **cells** (including column headers) containing the data you want to use. (A1:E40)
2. From the **Insert** tab, click the **PivotTable** command.



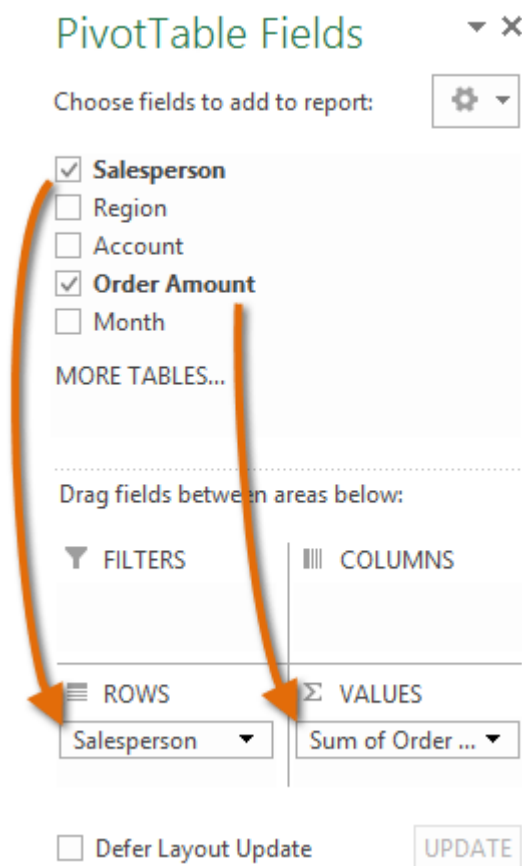
3. The **Create PivotTable** dialog box will appear. Choose your settings, then click **OK**. In our example, we'll use **Table1** as our source data and place the PivotTable on a **new worksheet**.



4. A blank **PivotTable** and **Field List** will appear on a new worksheet.

- Once you create a PivotTable, you'll need to decide which **fields** to add. Each field is simply a **column header** from the source data. In the **PivotTable Field List**, check the box for each field you want to add. In our example, we want to know the total **amount** sold by each **salesperson**, so we'll check the **Salesperson** and **Order Amount** fields.

- The selected fields will be added to one of the four areas below the Field List. In our example, the **Salesperson** field has been added to the **Rows** area, while the **Order Amount** has been added to the **Values** area. Alternatively, you can click, hold, and drag a field to the desired area.



7. The PivotTable will calculate and summarize the selected fields. In our example, the PivotTable 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
<b>Grand Total</b>	<b>23565</b>

The PivotTable Fields task pane on the right shows the following configuration:

- Choose fields to add to report:
  - Salesperson
  - Region
  - Account
  - Order Amount
  - Month
- MORE TABLES...
- Drag fields between areas below:
  - FILTERS: (empty)
  - COLUMNS: (empty)
  - ROWS: Salesperson
  - VALUES: Sum of Order ...
- Defer Layout Update
- UPDATE

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 **number formatting** 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.

If you change any of the data in your source worksheet, the PivotTable **will not update automatically**. To manually update it, select the PivotTable and then go to **Analyze → Refresh**.

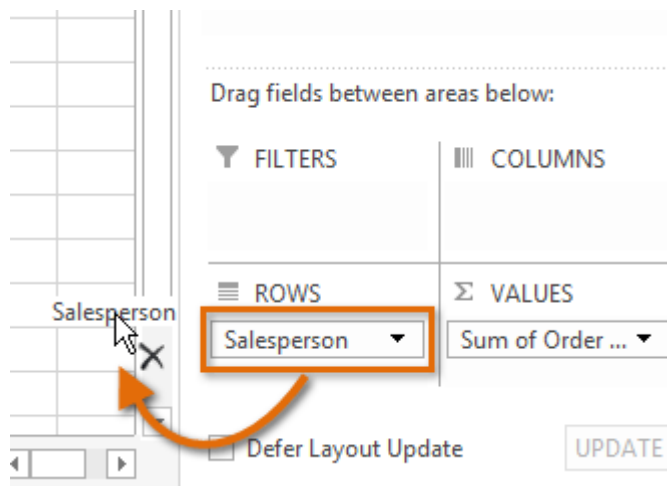
### Pivoting data

One of the best things about PivotTables is that they can quickly **pivot**—or reorganize—data, allowing you to look at your worksheet data in different ways. Pivoting data can help you answer **different questions** and even **experiment** with the data to discover new trends and patterns.

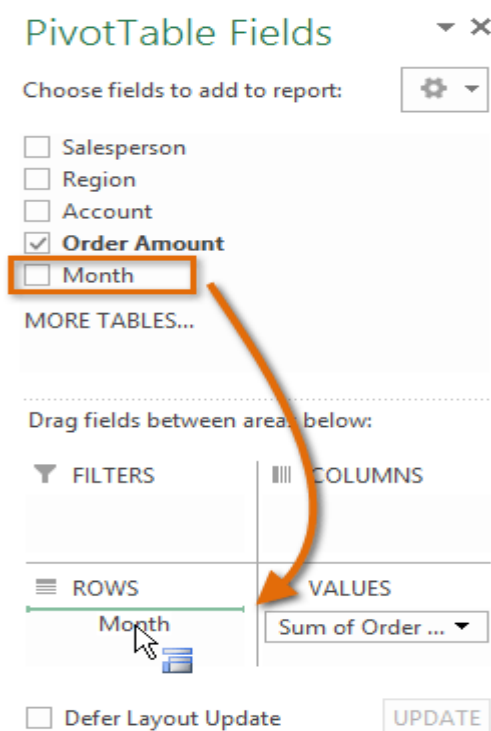
In our example, we used the PivotTable to answer the question: **What is the total amount sold by each salesperson?** But now we'd like to answer a new question: **What is the total amount sold in each month?** We can do this by simply changing the field in the Rows area.

To change the row:

1. Click, hold, and drag any existing fields out of the Rows area. The field will disappear.



2. Drag a new field from the Field List into the Rows area. In our example, we'll use the Month field.





3. The PivotTable will adjust—or pivot—to show the new data. In our example, it now shows the total order amount for each month.

Row Labels	Sum of Order Amount
January	9090
February	9160
March	5315
<b>Grand Total</b>	<b>23565</b>

**PivotTable Fields**

Choose fields to add to report:

- Salesperson
- Region
- Account
- Order Amount
- Month

MORE TABLES...

Drag fields between areas below:

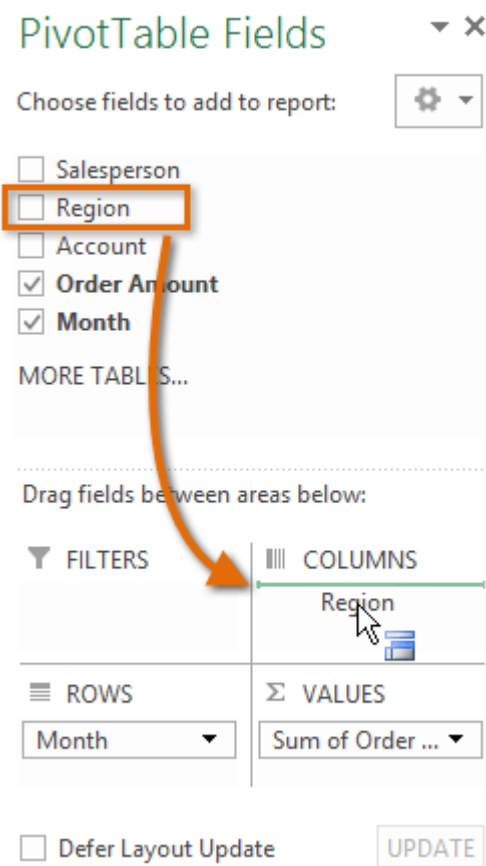
FILTERS	COLUMNS
ROWS	VALUES
Month	Sum of Order ...

Defer Layout Update UPDATE

To add columns:

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 a field to the **Columns** area.

1. Drag a field from the **Field List** into the **Columns** area. In our example, we'll use the **Region** field.



- The PivotTable will include multiple columns. In our example, there is now a column for each region.

Sum of Order Amount	Column Labels					
Row Labels	East	North	South	West	Grand Total	
January	1690	1140	3110	3150	9090	
February	1950	1720	3975	1515	9160	
March	700	300	3790	525	5315	
<b>Grand Total</b>	<b>4340</b>	<b>3160</b>	<b>10875</b>	<b>5190</b>	<b>23565</b>	

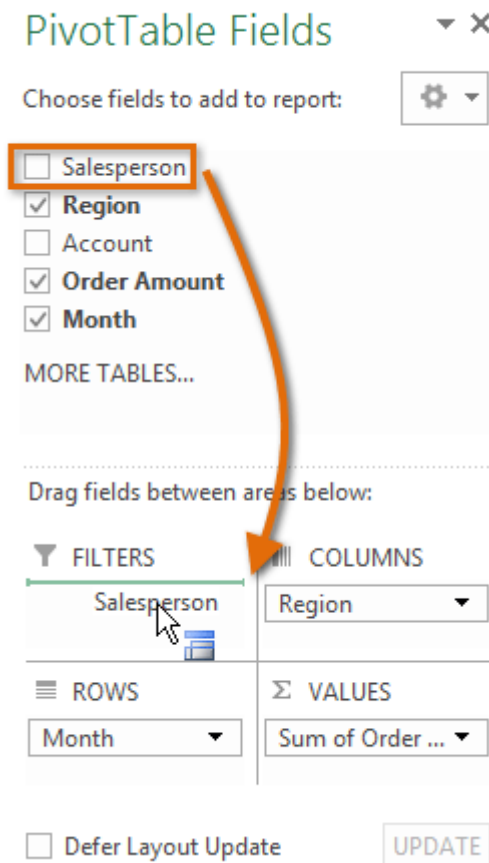
## Filters

Sometimes you may want focus on just a certain section of your data. **Filters** can be used to **narrow down** the data in your PivotTable, allowing you to view only the information you need.

To add a filter:

In our example, we'll filter out certain salespeople to determine how they affect the total sales.

1. Drag a field from the **Field List** to the **Filters** area. In this example, we'll use the **Salesperson** field.



2. The **filter** will appear above the PivotTable. Click the **drop-down arrow**, then check the box next to **Select Multiple Items**.

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable field list for 'Salesperson' is open, showing a dropdown arrow. A task pane is open over the PivotTable, displaying a list of salespeople with checkboxes. The 'Select Multiple Items' checkbox is checked and highlighted with an orange box.

North	South	West	Grand Total
1140	3110	3150	9090
1720	3975	1515	9160
300	3790	525	5315
<b>3160</b>	<b>10875</b>	<b>5190</b>	<b>23565</b>

3. Uncheck the box for any items you don't want to include in the PivotTable. In our example, we'll uncheck the boxes for a few different salespeople, then click OK.

The screenshot shows the same Excel spreadsheet as before, but now the 'Select Multiple Items' checkbox is checked. The 'OK' button is highlighted with a mouse cursor, indicating that the user is about to click it.

North	South	West	Grand Total
1140	3110	3150	9090
1720	3975	1515	9160
300	3790	525	5315
<b>3160</b>	<b>10875</b>	<b>5190</b>	<b>23565</b>

4. The PivotTable will adjust to reflect the changes.

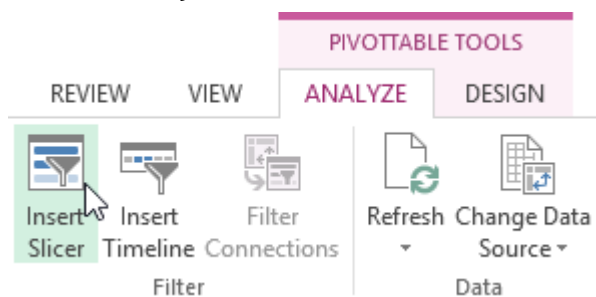
	A	B	C	D	E	F	G
1	Salesperson	(Multiple Items) ▼					
2							
3	Sum of Order Amount		Column Labels	▼			
4	Row Labels	▼ East	North	South	West	Grand Total	
5	January	925	1140	2755	3150	7970	
6	February	1375	1720	1220	1515	5830	
7	March	350	300	2525	525	3700	
8	<b>Grand Total</b>	<b>2650</b>	<b>3160</b>	<b>6500</b>	<b>5190</b>	<b>17500</b>	
9							
10							

## Slicers

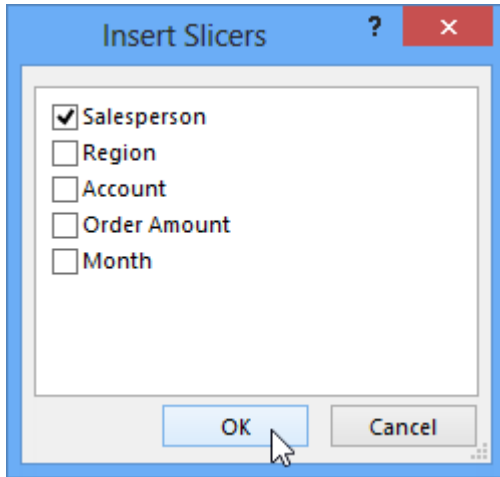
**Slicers** make filtering data in PivotTables even easier. Slicers are basically just **filters**, but they're easier and faster to use, allowing you to instantly pivot your data. If you frequently filter your PivotTables, you may want to consider using slicers instead of filters.

To add a slicer:

1. Select any cell in the PivotTable.
2. From the **Analyze** tab, click the **Insert Slicer** command.



3. A dialog box will appear. Select the desired **field**. In our example, we'll select **Salesperson**, then click **OK**.



- The slicer will appear next to the PivotTable. Each selected item will be highlighted in blue. In the example below, the slicer contains a list of all salespeople, and six of them are currently selected.

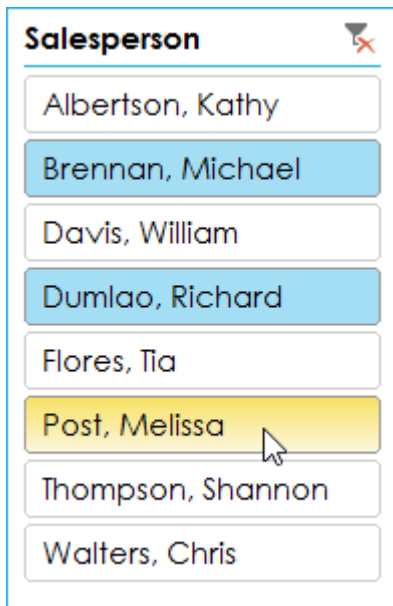
	A	B	C	D	E	F	G
1	Salesperson	(Multiple Items)					
2							
3	<b>Sum of Order Amount</b>	<b>Column Labels</b>					
4	<b>Row Labels</b>	East	North	South	West	Grand Total	
5	January	925	1140	2755	3150	7970	
6	February	1375	1720	1220	1515	5830	
7	March	350	300	2525	525	3700	
8	<b>Grand Total</b>	<b>2650</b>	<b>3160</b>	<b>6500</b>	<b>5190</b>	<b>17500</b>	
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Salesperson	
<input checked="" type="checkbox"/>	Albertson, Kathy
<input checked="" type="checkbox"/>	Brennan, Michael
<input checked="" type="checkbox"/>	Davis, William
<input checked="" type="checkbox"/>	Dumlao, Richard
<input checked="" type="checkbox"/>	Flores, Tia
<input type="checkbox"/>	Post, Melissa
<input checked="" type="checkbox"/>	Thompson, Shannon
<input type="checkbox"/>	Walters, Chris

- Just like filters, only 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. Press

and hold the **Ctrl** key on your keyboard to select multiple items from a slicer.



You can also click the **Filter** icon in the top-right corner to select all items from the slicer at once.

## PivotCharts

**PivotCharts** are like regular charts, except they display data from a **PivotTable**. Just like regular charts, you'll be able to select a **chart type**, **layout**, and **style** that will best represent the data.

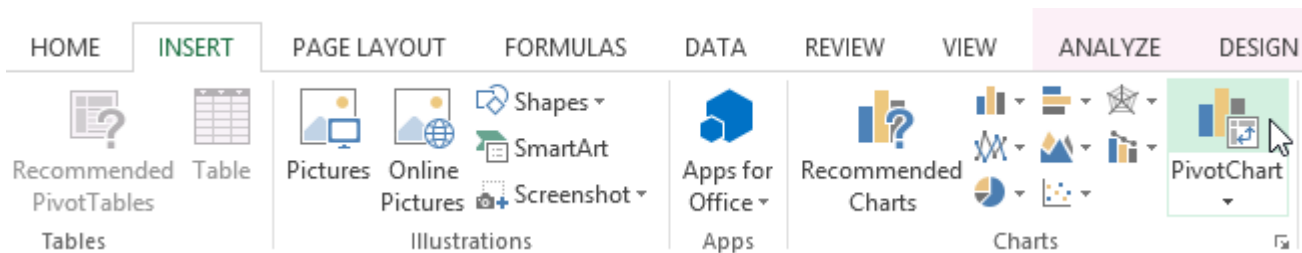
To create a PivotChart:

In this example, our PivotTable is showing each person's total sales per month. We'll use a PivotChart so we can see the information more clearly.

1. Select any cell in your PivotTable.

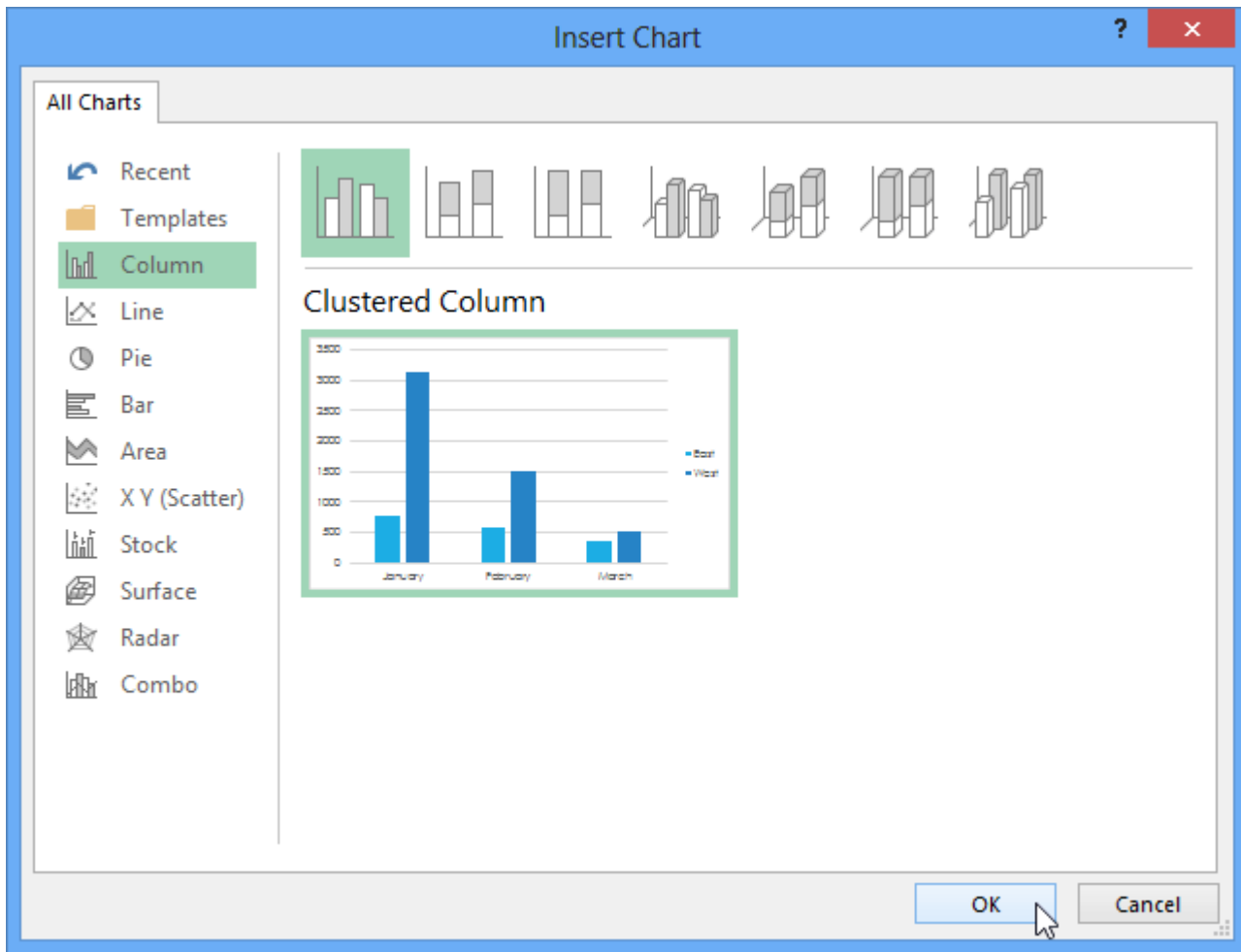
1					
2					
3	<b>Sum of Order Amount</b>	<b>Column Labels</b> ▼			
4	<b>Row Labels</b> ▼	<b>January</b>	<b>February</b>	<b>March</b>	<b>Grand Total</b>
5	Albertson, Kathy	£925.00	£1,375.00	£350.00	£2,650.00
6	Brennan, Michael	£2,750.00	£550.00	£400.00	£3,700.00
7	Davis, William	£1,100.00	£235.00	£600.00	£1,935.00
8	Dumlao, Richard	£400.00	£965.00	£125.00	£1,490.00
9	Flores, Tia	£1,655.00	£985.00	£1,925.00	£4,565.00
10	Post, Melissa	£765.00	£575.00	£350.00	£1,690.00
11	Thompson, Shannon	£1,140.00	£1,720.00	£300.00	£3,160.00
12	Walters, Chris	£355.00	£2,755.00	£1,265.00	£4,375.00
13	<b>Grand Total</b>	<b>£9,090.00</b>	<b>£9,160.00</b>	<b>£5,315.00</b>	<b>£23,565.00</b>
14					
15					

- From the **Insert** tab, click the **PivotChart** command.

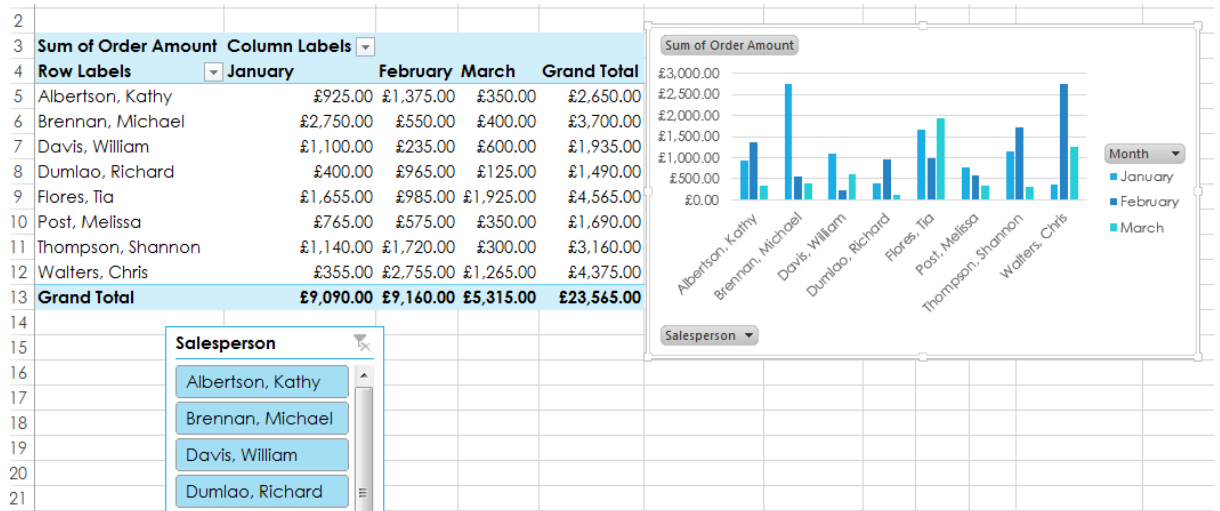


- The **Insert Chart** dialog box will appear. Select the desired **chart type** and **layout**, then click **OK**.





4. The PivotChart will appear.



Try using **slicers** or **filters** to change the data that is displayed. The PivotChart will automatically adjust to show the new data.