Excel Assignment 3

1. What do you mean by "Relative Cell Referencing" in MS Excel and "Absolute cell referencing"?

There are two types of cell references: **relative** and **absolute**. Relative and absolute references behave differently when copied and filled to other cells. Relative references **change** when a formula is copied to another cell. Absolute references, on the other hand, remain **constant** no matter where they are copied.

Relative references

By default, all cell references are **relative references**. When copied across multiple cells, they change based on the relative position of rows and columns. For example, if you copy the formula **=A1+B1** from row 1 to row 2, the formula will become **=A2+B2.** Relative references are especially convenient whenever you need to **repeat** the same calculation across multiple rows or columns.

To create and copy a formula using relative references:

In the following example, we want to create a formula that will multiply each item's **price** by the **quantity**. Rather than create a new formula for each row, we can create a single formula in cell **D2** and then copy it to the other rows. We'll use relative references so the formula correctly calculates the total for each item.

1. Select the **cell** that will contain the formula. In our example, we'll select cell **D2**.

	A	B	C	D	E
1	**Menu Item**	**Price**	**Quantity**	**Total**	
2	Empanadas: Beef Picadillo	$2.99	15		
3	Empanadas: Chipotle Shrimp	$3.99	10		
4	Empanadas: Black Bean & Plantain	$2.49	20		
5	Tamales: Chicken Tinga	$2.29	20		
6	Tamales: Vegetable	$2.29	30		
7	Arepas: Carnitas	$2.89	10		
8	Arepas: Queso Blanco	$2.49	20		
9	Empanadas: Apple Cinnamon	$3.19	40		
10	Beverages: Horchata	$1.89	25		
11	Beverages: Lemonade	$1.89	35		
12	Beverages: Tamarindo	$1.89	10		
13			**Total**		
14					

D2

2. Enter the **formula** to calculate the desired value. In our example, we'll type **=B2*C2**.

C2			×	✓	fx	=B2*C2		

	A	B	C	D	E
1	**Menu Item**	**Price**	**Quantity**	**Total**	
2	Empanadas: Beef Picadillo	$2.99	15	=B2*C2	
3	Empanadas: Chipotle Shrimp	$3.99	10		
4	Empanadas: Black Bean & Plantain	$2.49	20		
5	Tamales: Chicken Tinga	$2.29	20		
6	Tamales: Vegetable	$2.29	30		
7	Arepas: Carnitas	$2.89	10		
8	Arepas: Queso Blanco	$2.49	20		
9	Empanadas: Apple Cinnamon	$3.19	40		
10	Beverages: Horchata	$1.89	25		
11	Beverages: Lemonade	$1.89	35		
12	Beverages: Tamarindo	$1.89	10		
13				**Total**	
14					

3. Press **Enter** on your keyboard. The formula will be **calculated**, and the result will be displayed in the cell.

4. Locate the **fill handle** in the lower-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D2**.

D2			×	✓	fx	=B2*C2		

	A	B	C	D	E
1	**Menu Item**	**Price**	**Quantity**	**Total**	
2	Empanadas: Beef Picadillo	$2.99	15	$44.85	
3	Empanadas: Chipotle Shrimp	$3.99	10		
4	Empanadas: Black Bean & Plantain	$2.49	20		
5	Tamales: Chicken Tinga	$2.29	20		
6	Tamales: Vegetable	$2.29	30		
7	Arepas: Carnitas	$2.89	10		
8	Arepas: Queso Blanco	$2.49	20		
9	Empanadas: Apple Cinnamon	$3.19	40		
10	Beverages: Horchata	$1.89	25		
11	Beverages: Lemonade	$1.89	35		
12	Beverages: Tamarindo	$1.89	10		
13				**Total**	
14					

The fill handle

5. Click, hold, and drag the **fill handle** over the cells you wish to fill. In our example, we'll select cells **D3:D12**.

6. Release the mouse. The formula will be **copied** to the selected cells with **relative references** and the values will be calculated in each cell.

Absolute references

There may be times when you do not want a cell reference to change when filling cells. Unlike relative references, **absolute references** do not change when copied or filled. You can use an absolute reference to keep a row and/or column **constant**.

An absolute reference is designated in a formula by the addition of a **dollar sign ($)** before the column and row. If it precedes the column or row (but not both), it's known as a **mixed reference**.

A2	The column and the row do not change when copied
A$2	The row does not change when copied
$A2	The column does not change when copied

You will use the relative (**A2**) and absolute (**A2**) formats in most formulas. Mixed references are used less frequently

2. How to secure an excel workbook, demonstrate it with an example

1. Select **File > Info**.

2. Select the **Protect Workbook** box and choose **Encrypt with Password.**

3. Enter a password in the **Password** box, and then select **OK**.

4. Confirm the password in the **Reenter Password** box, and then select **OK**.
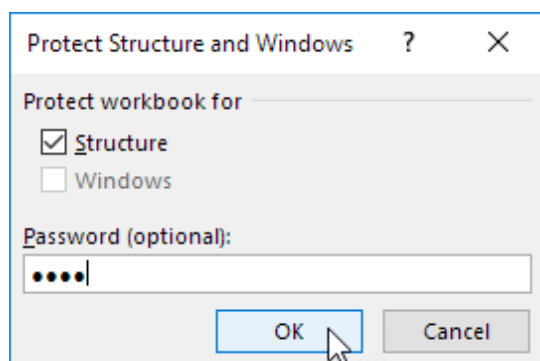
• Demonstrate :-

This example teaches you how to protect the workbook structure in Excel.

If you protect the workbook structure, users cannot insert, delete, rename, move, copy, hide or unhide worksheets anymore.

1. Open a workbook.

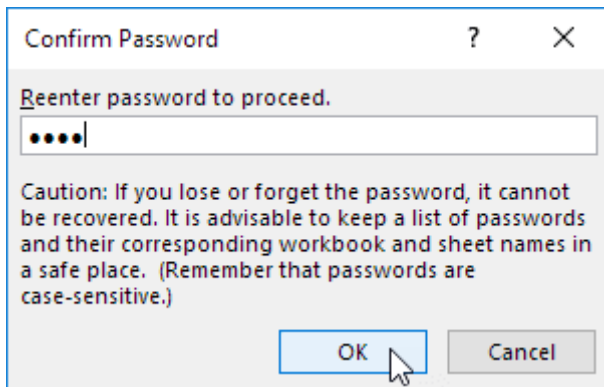2. On the Review tab, in the Protect group, click Protect Workbook.
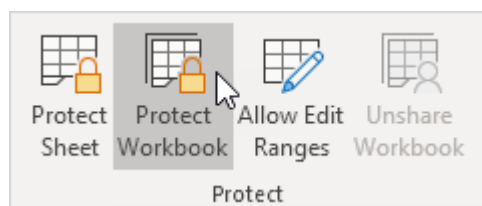
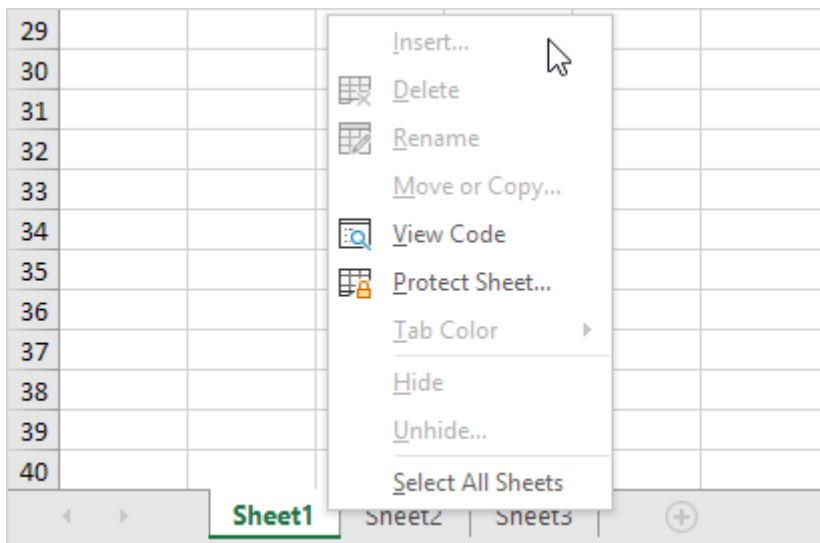3. Check Structure, enter a password and click OK.

Note: The Windows option is not available in Excel 2013 and later versions.

4. Reenter the password and click on OK.

Users cannot insert, delete, rename, move, copy, hide or unhide worksheets anymore.

3. Explain the pivot tables and their implementations.

Pivot tables are one of Excel's most powerful features. A pivot table allows you to extract the significance from a large, detailed data set.

Our data set consists of 213 records and 6 fields. Order ID, Product, Category, Amount, Date and Country.

|	A	B	C	D	E	F	G	H
1	Order ID	Product	Category	Amount	Date	Country		
2	1	Carrots	Vegetables	$4,270	1/6/2016	United States		
3	2	Broccoli	Vegetables	$8,239	1/7/2016	United Kingdom		
4	3	Banana	Fruit	$617	1/8/2016	United States		
5	4	Banana	Fruit	$8,384	1/10/2016	Canada		
6	5	Beans	Vegetables	$2,626	1/10/2016	Germany		
7	6	Orange	Fruit	$3,610	1/11/2016	United States		
8	7	Broccoli	Vegetables	$9,062	1/11/2016	Australia		
9	8	Banana	Fruit	$6,906	1/16/2016	New Zealand		
10	9	Apple	Fruit	$2,417	1/16/2016	France		
11	10	Apple	Fruit	$7,431	1/16/2016	Canada		

Insert a Pivot Table

To insert a pivot table, execute the following steps.

1. Click any single cell inside the data set.

2. On the Insert tab, in the Tables group, click PivotTable.
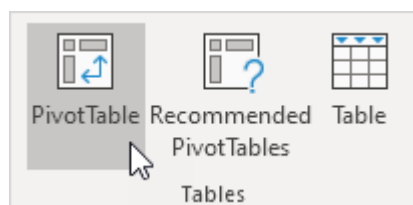
The following dialog box appears. Excel automatically selects the data for you. The default location for a new pivot table is New Worksheet.
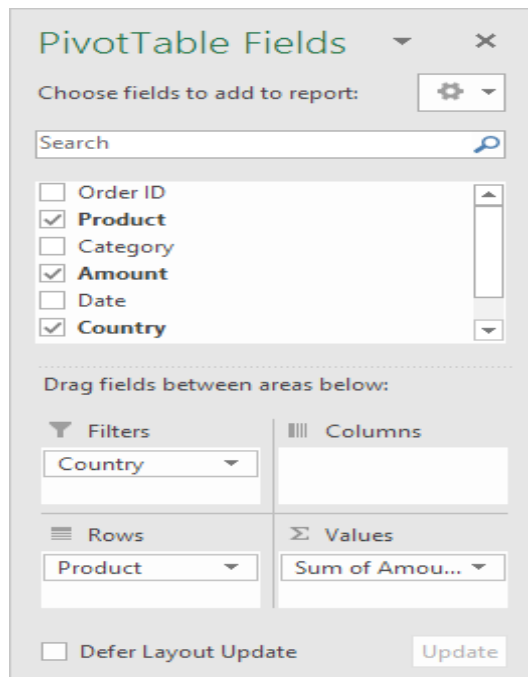
3. Click OK.
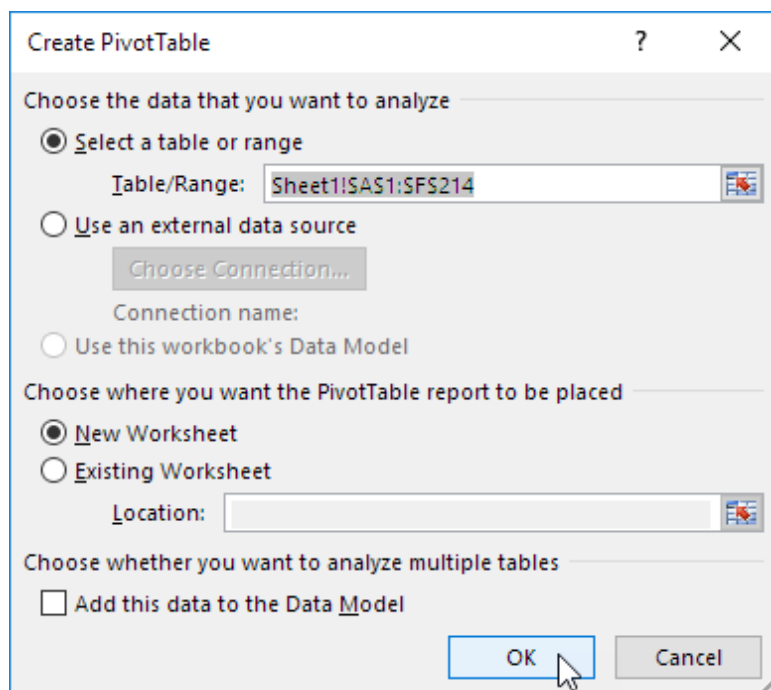
Drag fields

The PivotTable Fields pane appears. To get the total amount exported of each product, drag the following fields to the different areas.

1. Product field to the Rows area.

2. Amount field to the Values area.

3. Country field to the Filters area.

Below you can find the pivot table. Bananas are our main export product. That's how easy pivot tables can be!

	A	B	C
1	Country	(All)	
2			
3	Row Labels	Sum of Amount	
4	Apple	191257	
5	Banana	340295	
6	Beans	57281	
7	Broccoli	142439	
8	Carrots	136945	
9	Mango	57079	
10	Orange	104438	
11	Grand Total	1029734	
12			

Sort

To get Banana at the top of the list, sort the pivot table.

1. Click any cell inside the Sum of Amount column.
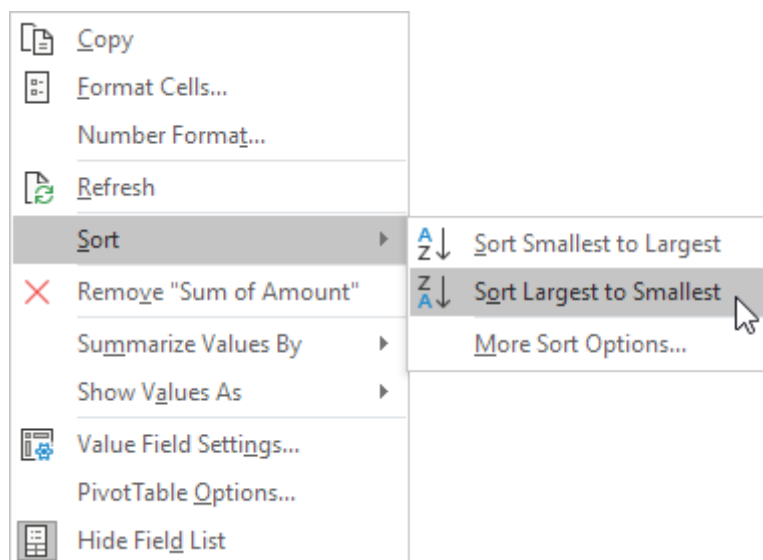
2. Right click and click on Sort, Sort Largest to Smallest.

Result.

	A	B	C
1	Country	(All)	
2			
3	Row Labels	Sum of Amount	
4	Banana	340295	
5	Apple	191257	
6	Broccoli	142439	
7	Carrots	136945	
8	Orange	104438	
9	Beans	57281	
10	Mango	57079	
11	Grand Total	1029734	
12			

Filter

Because we added the Country field to the Filters area, we can filter this pivot table by Country. For example, which products do we export the most to France?

1. Click the filter drop-down and select France. Result.

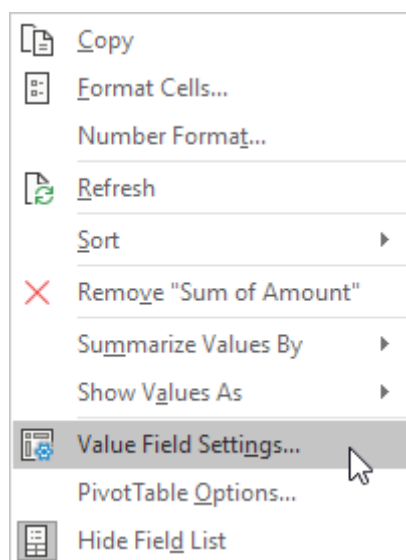Apples are our main export product to France.

	A	B	C
1	Country	France	
2			
3	Row Labels	Sum of Amount	
4	Apple	80193	
5	Banana	36094	
6	Carrots	9104	
7	Mango	7388	
8	Broccoli	5341	
9	Orange	2256	
10	Beans	680	
11	Grand Total	141056	
12			

Note: you can use the standard filter (triangle next to Row Labels) to only show the amounts of specific products.
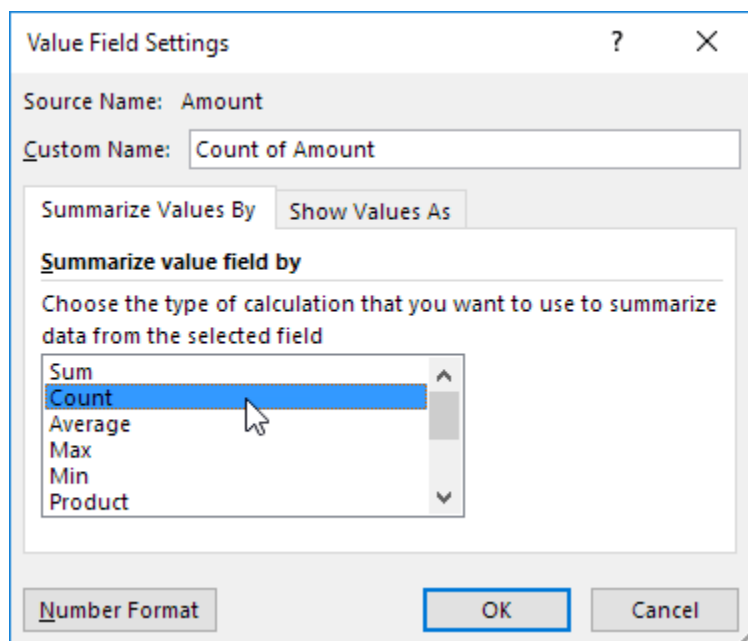
Change Summary Calculation

By default, Excel summarizes your data by either summing or counting the items. To change the type of calculation that you want to use, execute the following steps.

1. Click any cell inside the Sum of Amount column.

2. Right click and click on Value Field Settings.

- Copy
- Format Cells...
- Number Format...
- Refresh
- Sort ▶
- ✕ Remove "Sum of Amount"
- Summarize Values By ▶
- Show Values As ▶
- Value Field Settings...
- PivotTable Options...
- Hide Field List

3. Choose the type of calculation you want to use. For example, click Count.

Value Field Settings

Source Name: Amount

Custom Name: Count of Amount

Summarize Values By | Show Values As

Summarize value field by

Choose the type of calculation that you want to use to summarize data from the selected field

- Sum
- **Count**
- Average
- Max
- Min
- Product

Number Format | OK | Cancel

4. Click OK.

Result. 16 out of the 28 orders to France were 'Apple' orders.

	A	B	C
1	Country	France	
2			
3	Row Labels	Count of Amount	
4	Apple	16	
5	Banana	7	
6	Carrots	1	
7	Mango	1	
8	Orange	1	
9	Beans	1	
10	Broccoli	1	
11	**Grand Total**	28	
12			

Two-dimensional Pivot Table

If you drag a field to the Rows area and Columns area, you can create a two-dimensional pivot table.

First, insert a pivot table. Next, to get the total amount exported to each country, of each product, drag the following fields to the different areas.

1. Country field to the Rows area.

2. Product field to the Columns area.

3. Amount field to the Values area.

4. Category field to the Filters area.

PivotTable Fields panel:

Choose fields to add to report:

Search

- ☐ Order ID
- ☑ **Product**
- ☑ **Category**
- ☑ **Amount**
- ☐ Date
- ☑ **Country**

Drag fields between areas below:

▼ Filters
Category ▼

▥ Columns
Product ▼

≡ Rows
Country ▼

Σ Values
Sum of Amou... ▼

☐ Defer Layout Update   Update

Below you can find the two-dimensional pivot table.

	A	B	C	D	E	F	G	H	I	J
1	Category	(All) ▼								
2										
3	Sum of Amount	Column ▼								
4	Row Labels ▼	Apple	Banana	Beans	Broccoli	Carrots	Mango	Orange	Grand Total	
5	Australia	20634	52721	14433	17953	8106	9186	8680	131713	
6	Canada	24867	33775		12407		3767	19929	94745	
7	France	80193	36094	680	5341	9104	7388	2256	141056	
8	Germany	9082	39686	29905	37197	21636	8775	8887	155168	
9	New Zealand	10332	40050		4390			12010	66782	
10	United Kingdom	17534	42908	5100	38436	41815	5600	21744	173137	
11	United States	28615	95061	7163	26715	56284	22363	30932	267133	
12	Grand Total	191257	340295	57281	142439	136945	57079	104438	1029734	
13										

To easily compare these numbers, create a pivot chart and apply a filter. Maybe this is one step too far for you at this stage, but it shows you one of the many other powerful pivot table features Excel has to offer.
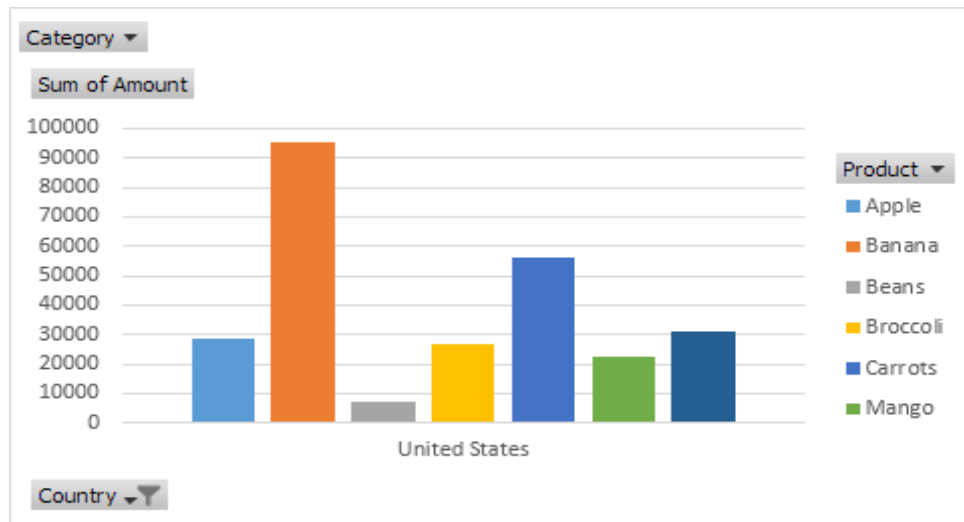
4. Explain lookup in excel with suitable examples

LOOKUP FUNCTION :-

LOOKUP function in excel are used for looking through
a single column or row to find a particular value
from the same place in a second column or row
This often takes place when there are multiple worksheets
within a workbook or a large amount of data in a worksheet

LOOKUP function work in both vertical and horizontal table

EXAMPLE 1 :-

INCOME	TAX
0	$5.00
500	$10.00
1000	$15.00
6000	$20.00
25000	$25.00

INCOME	TAX
1000	$15.00

EXAMPLE 2 :-

INCOME	0	500	1000	6000	25000
TAX	$5.00	$10.00	$15.00	$20.00	$25.00

INCOME	TAX
25000	$25.00

EXAMPLE 3 :-

ID	LAST	FIRST	E-MAIL	PHONE
880-10048	Leff	Julia	Leff@PBY.com	254-765-8547
880-10049	Piano	Rose	Piano@PBY.com	865-453-7824
880-10050	Coller	Elena	Coller@PBY.com	467-982-2341
880-10051	Stackpole	Alia	Stackpole@PBY.com	354-871-0344
880-10052	Lintz	Pinky	Lintz@PBY.com	837-456-2780
880-10053	Dudgeon	Joey	Dudgeon@PBY.com	376-835-0173
880-10054	Hughs	Kurt	Hughs@PBY.com	772-029-3333

1).

ID	PHONE
880-10048	254-765-8547

2).

ID	FIRST
880-10050	Elena

EXAMPLE 4:-

ID	LAST	FIRST	E-MAIL	PHONE
880-10048	Leff	Julia	Leff@PBY.com	254-765-8547
880-10049	Piano	Rose	Piano@PBY.com	865-453-7824
880-10050	Coller	Elena	Coller@PBY.com	467-982-2341
880-10051	Stackpole	Alia	Stackpole@PBY.com	354-871-0344
880-10052	Lintz	Pinky	Lintz@PBY.com	837-456-2780
880-10053	Dudgeon	Joey	Dudgeon@PBY.com	376-835-0173
880-10054	Hughs	Kurt	Hughs@PBY.com	772-029-3333

ID	LAST	FIRST	EMAIL	PHONE
880-10050	Coller	Elena	Coller@PBY.com	467-982-2341

5. What is Data validation, and how to implement it in Excel?

Data validation is a feature in Excel which is used to control what users can enter into a cell. It allows you to dictate specific rules. It also allows users to display a custom message if users try to enter invalid data
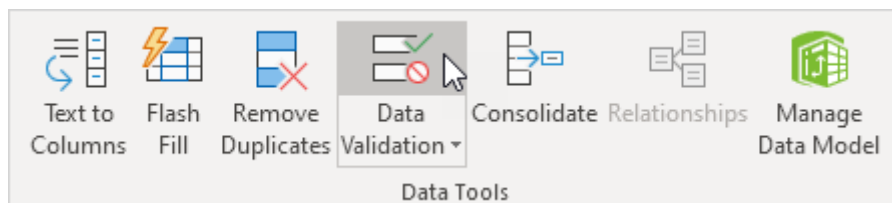
Data Validation Example

In this example, we restrict users to enter a whole number between 0 and 10.

▲	A	B	C	D	E
1					
2		How many glasses of alcohol do you drink per day?			
3					

Create Data Validation Rule
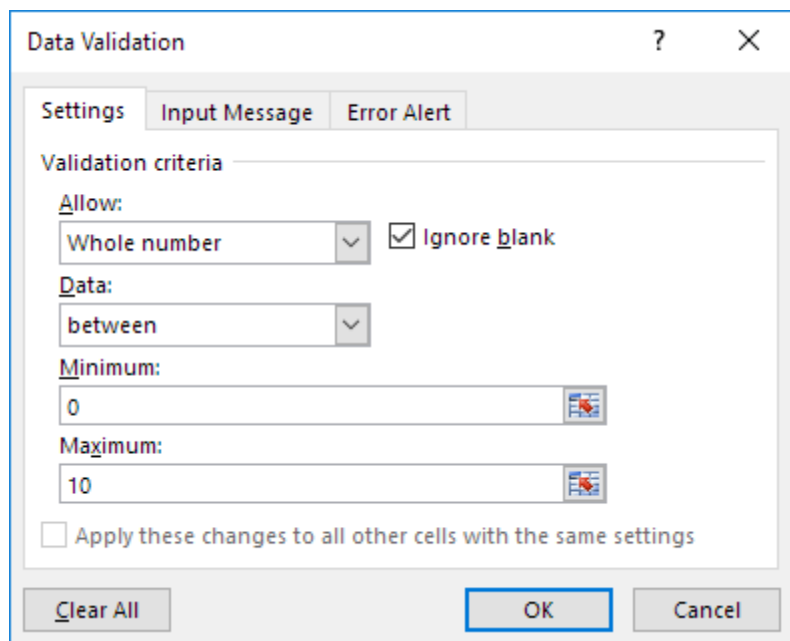
To create the data validation rule, execute the following steps.

1. Select cell C2.

2. On the Data tab, in the Data Tools group, click Data Validation.

On the Settings tab:

3. In the Allow list, click Whole number.

4. In the Data list, click between.

5. Enter the Minimum and Maximum values.

Input Message

Input messages appear when the user selects the cell and tell the user what to enter. On the

Input Message tab:

1. Check 'Show input message when cell is selected'.

2. Enter a title.

3. Enter an input message.

Error Alert

If users ignore the input message and enter a number that is not valid, you can show them an error alert. On the Error Alert tab:

1. Check 'Show error alert after invalid data is entered'.

2. Enter a title.

3. Enter an error message.

5. Click OK.

Data Validation Result

1. Select cell C2.

2. Try to enter a number higher than 10.

Result:
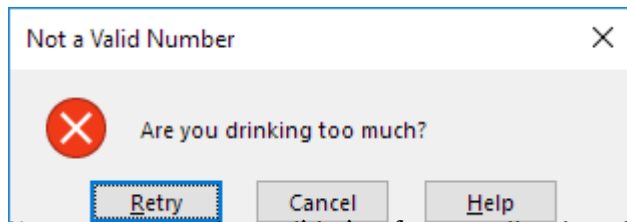
Note: to remove data validation from a cell, select the cell, on the Data tab, in the Data Tools group, click Data Validation, and then click Clear All. You can use Excel's Go To Special feature to quickly select all cells with data validation.

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