EXCEL FOR BEGINNERS 2020

Everything you must know in Excel

Richard Steve

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INTRODUCTION

Welcome to this Microsoft Excel beginners' tutorial. Microsoft Excel is a spreadsheet application used for collating, organizing and processing data. This is useful for individuals and businesses to record data like income, expense, budget etc. and produce information.

In this book, I will be showing you most of the things you need to know in your journey through Excel. In this tutorial, I will be using Microsoft Excel for windows. If you are using Excel on another operating system like Mac OS, there may be slight differences but you don't have to worry because 96% of what I will be showing you in this book will be applicable to the usage of Excel in other operating systems.

1

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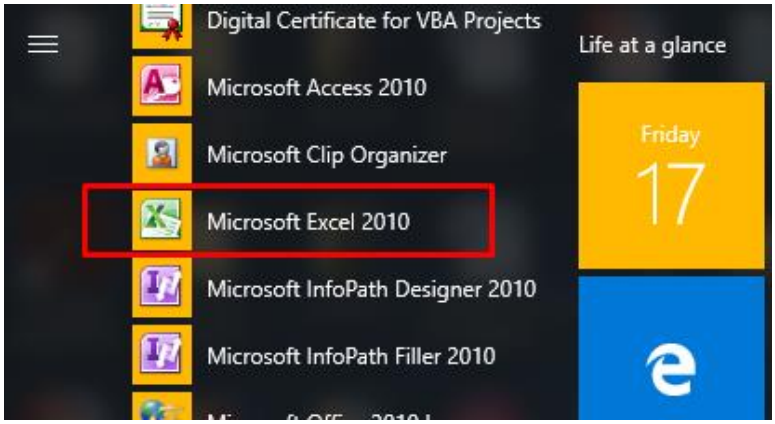
BEGINNER

This part will take you through the basic things you must know as a beginner. You will learn about the layout, terminologies and you will also create your first project in Excel.

THE FIRST TIME

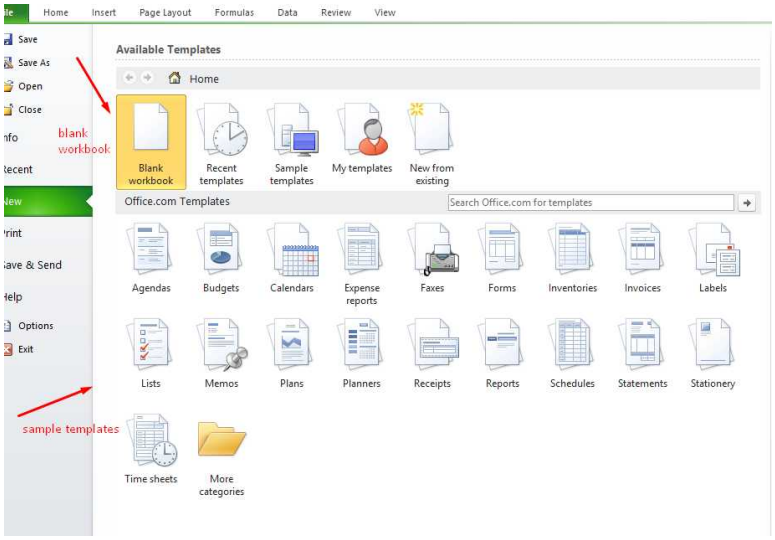
Simply locate and click on the Microsoft Excel icon from the Start Menu to get started using excel.



Now, you get to choose between opening up a Blank workbook or Microsoft Excel templates. You can see that there are lots of excel templates to choose from.

You will get to see a welcome to excel tour, this is a way to learn some of the basics of excel. Some of these templates are Agendas, Budgets, Calendars, Invoices and more great excel sheets.

You can just open it up, start changing the data and use it that way. I will also urge you to browse and explore the sample templates available to you.



In addition, there is also an option to search for online templates. If I search for budget, it will come up with more budget templates. You are not limited just to one budget template; there is a lot that you can choose from.

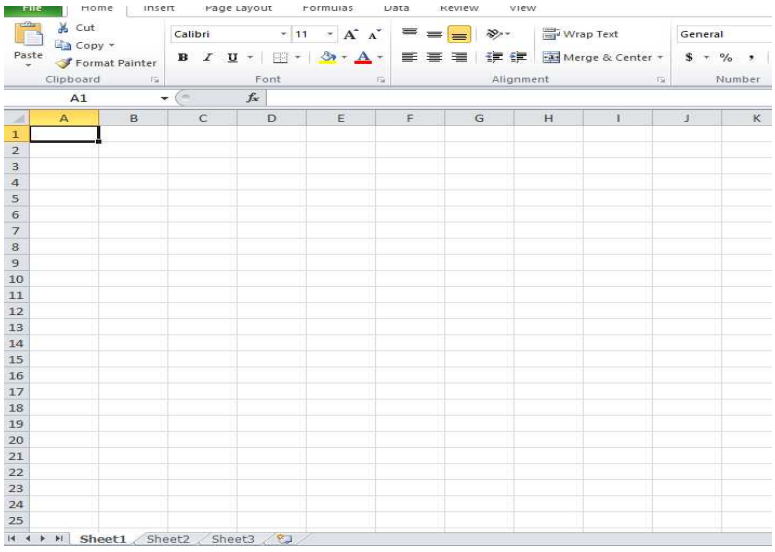
On this page, there is a category you can go through and you can select the specific kind of budget or excel template you would like to use. If

you find the one you would love to use, you can click create and it will make a copy of that as a spreadsheet that you can open and use in excel.

So, please try and spend some time exploring what is available. In many cases, much of the work is already done for you. Also, you can simply use somebody else's template and change it for what you need.

Templates are really useful but if you want to really know how to use excel fully and properly, it is best to start with a blank document.

Now, double click on blank document to open it up. We now have what we call the spreadsheet.



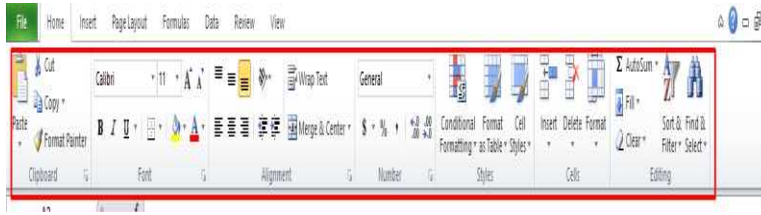
THE LAYOUT

The next thing to do is learn about the layout that we have in Microsoft Excel. There are terms you need to know.

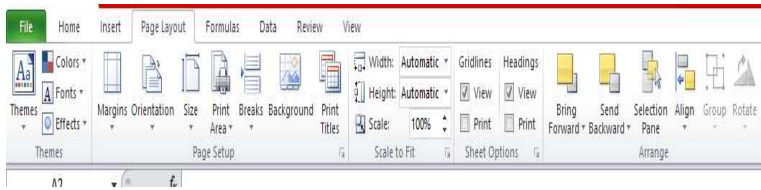
1. **The Tabs**
   Across the top, we have the Tabs. We have the Home, Insert, Page Layout, Formulas, Data, Review and View tabs as you can see.

   Each of these tabs is pretty important.

2. **The Ribbons**
   When you click on a particular tab, it opens up a ribbon. This is the ribbon for the Home tab;

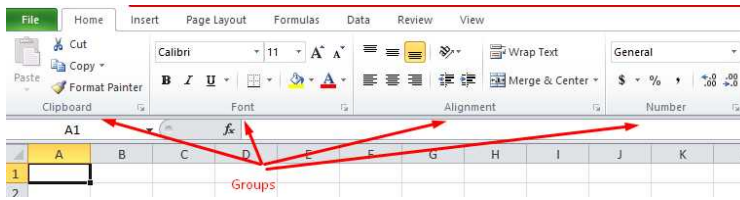


Also, clicking on the page layout tab, you get the page layout ribbon.



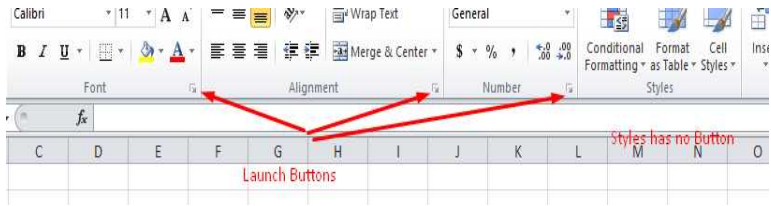
3. The Groups

Each ribbon is divided into groups. As you can see, under the home tab, we have the Clipboard, Font, Alignment, Number, Styles, Cells, and Editing Groups. These are all on the home ribbon.



4. The Launch Buttons

You will notice that in the corners of some of these groups, there is a launch button. The Font group has a little launch button in the corner. The Alignment group also has a launch button in the corner. The Styles group does not have one.



What these launch buttons do is to give you more options. What Microsoft has done here is to fit all of the Home Tab options in the ribbon but there is limited amount of space to work with, so they put in the launch button to get more options. Some have the launch button, some do not have. Those are some important things you will need to know; the Tabs, Ribbons, Groups and Layout Buttons.

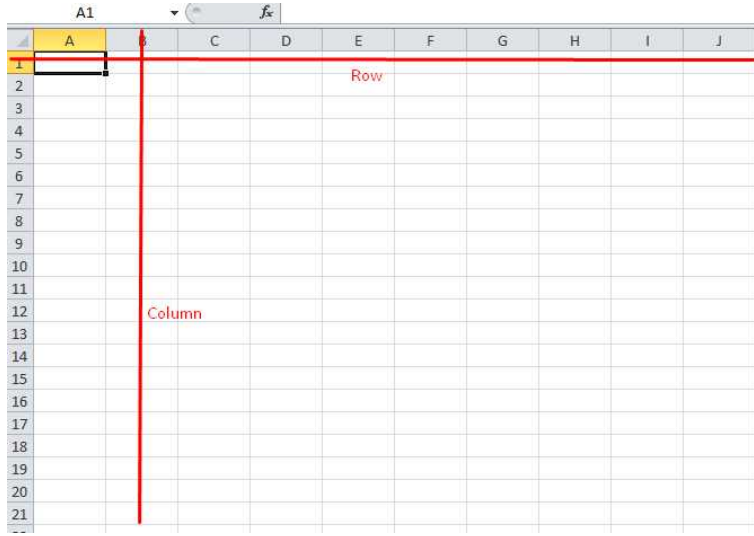
TERMINOLOGIES IN EXCEL

It is important to start with the terminologies used in Excel because these terminologies will be used throughout the lecture.

1. **The Columns and Rows**

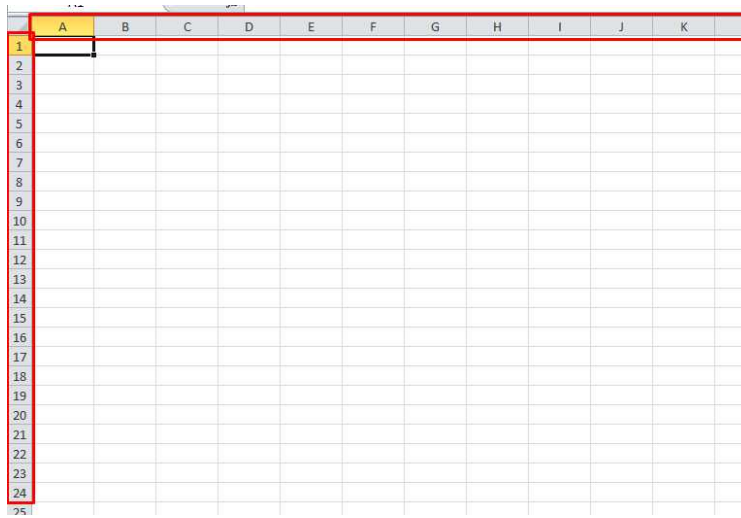
   A column is a vertical line of entries that reads from top to bottom.

   A row is a horizontal line of entries that reads from left to right.



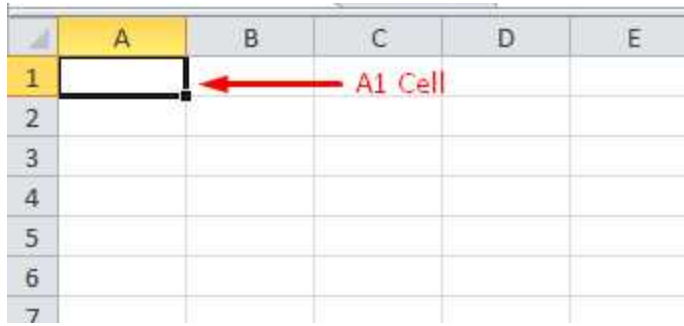
2. The Spreadsheet

This is the spreadsheet. Spreadsheets are made up of columns and rows. As you can see, we have the A column, B column, C column etc. Once it gets to Z, it goes to column AA. We also have the rows; row 1, row 2, row 3 etc.

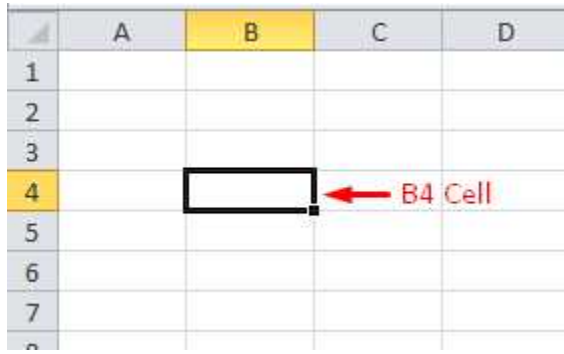


3. The Cell

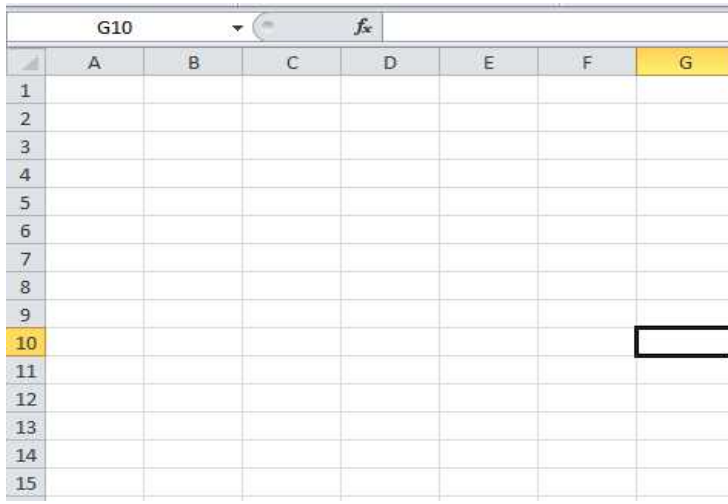
The intersection of a column and a row gives a cell. Below is a cell.



Every cell in excel has a name. This particular cell is named B4.



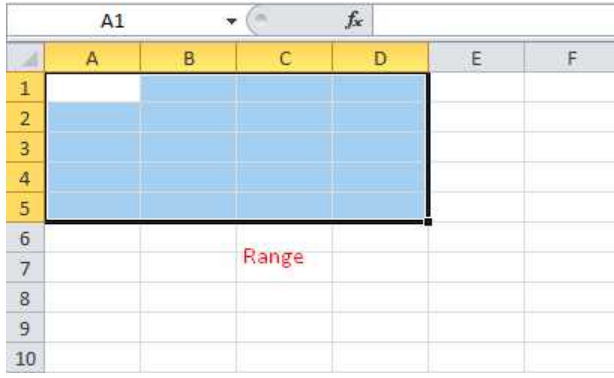
I got the name just by the intersection of the column and the row. This is G10 cell



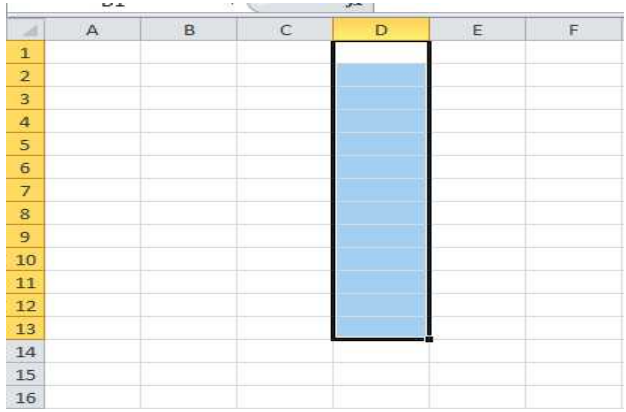
Every cell in excel has a name and you can describe it. You can also do certain things with the content in the cell.

4. The Range

This is a group of cells that are together. It could be this;

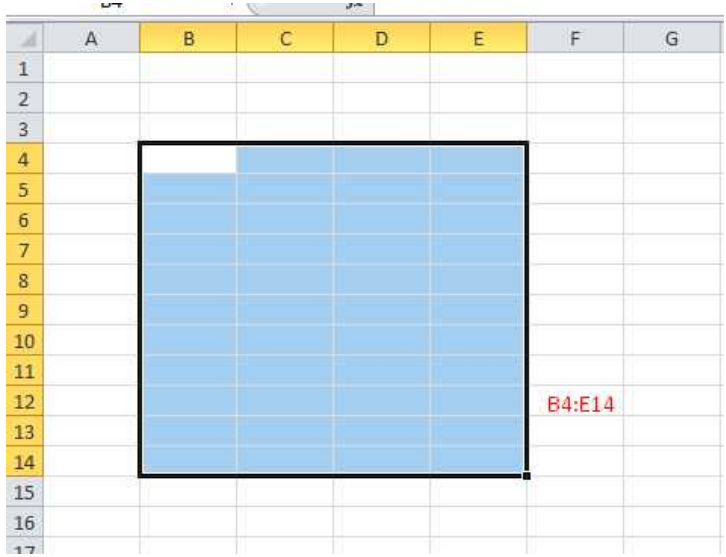


It could be this;



It could be any number of things. Basically, it is a group of cells that are together.

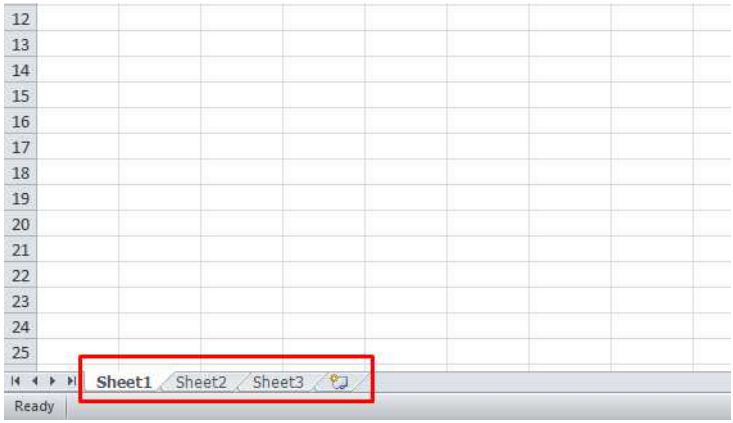
Ranges can also be named just like the cell. To name a range, you start in the upper left and name the cell in the upper left. This is B4 and you say “through” and you say the name of the cell in the lower right E14. B4 through E14 is the name of this range.



The way you would write the name of this range is B4:E14. The symbol for through is a column. That is how you would write the range you see there.

5. The Sheet

All this is on a sheet. We can have sheet 1, sheet 2, sheet 3 and more. You can open more sheet by just clicking on the plus sign by the sheet space. Below is a sheet;



6. **The Workbook**
   Each of these sheets creates a workbook.

Those are the basic information you will need in order to use excel properly.

Now we have discussed about the layout, the tab, the ribbon, the groups, and the launch button and also the terminologies used in excel.

MY FIRST PROJECT

Now we have known the things to begin with in Excel use. Let us start creating and working on Excel spreadsheets.

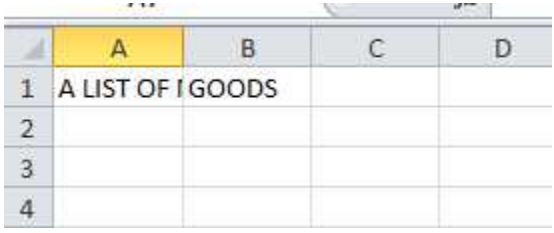
Now you will click on A1 cell and enter some data. This is just an example. Let us say you want to create a list of stocks. This could be anything; you can be a teacher keeping track of your students' performance.

Now let us do a list of stocks that we own. First thing you will do is to put a title in A1.

Now, you will type a list of stocks in A1.

You will notice that your text is bigger than the cell itself. Do not worry about that, just tap enter on the keyboard.

Now, you have successfully entered your first data into this spreadsheet. It looks like the word in A1 has extended into B1 but in reality that is not true. It is an illusion. If you click on B1, you can type in B1 and tap enter on your keyboard. You will notice that A LIST OF MY STOCKS is still stored in A1. They actually don't interfere with each other. There is no need to worry if your text is too wide to fit into A1.



To make it look better, you can fix this by stretching out any column or even row if you want to.

Now, you will put your mouse between two column letters. Your mouse cursor will change to a double sided arrow. You can click and drag to stretch it out to make it wider.

In Excel, when you tap Enter it moves you down the next cell on the spreadsheet. If you want to move up, you will press Shift and hold, then tap Enter and it will move up. If you want to move to the right, you would press Tab on your keyboard to move to the right.

For instance, you might want to move from A1 to B1, just tap Tab on your keyboard. To move to the left, you will press shift and hold, then tap Tab to move to the left. Shift key is basically used to do the opposite of a function.

You can also use the arrows on your keyboard to move to wherever you want to go or use your mouse.

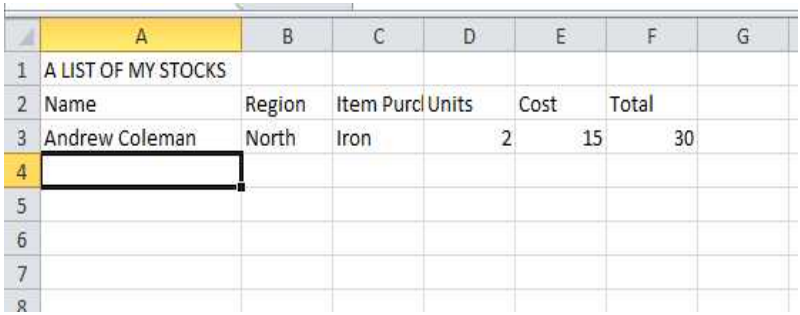
Now click on A2, type the word ‘Name’, tap Tab to move over to the right and type the word ‘Region’. Tap Tab again, type ‘Item Purchased’, tap Tab again and type ‘Units’, tap Tab again and type ‘Cost’ and tap Tab again and type ‘Total’.

This will help you store some information about your list of stocks.

	A	B	C	D	E	F
1	A LIST OF MY STOCKS					
2	Name	Region	Item Purc	Units	Cost	Total
3						
4						

With the last one and you hit enter it will bring you to the left i.e. A3 expecting you to put the first record. The first record would be the first item purchased.

Now, let’s put in ‘Andrew Coleman’, tap Tab, ‘North’, tap Tab, ‘Iron’, tap Tab, ‘2’, tap Tab, ‘15’ and tap Tab, ‘30’.



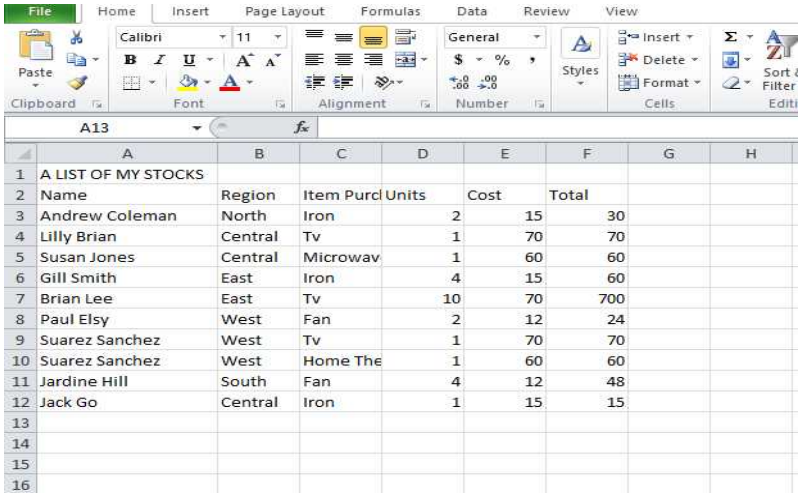
	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	Name	Region	Item Purc	Units	Cost	Total	
3	Andrew Coleman	North	Iron	2	15	30	
4							
5							
6							
7							
8							

That is an example of data entry. How you can enter data into a spreadsheet by entering the data into the cells as shown above. Let us add more record.

At this point, let us say you misspelt a word and you would like to correct that. If cell A4 is the cell and you click on cell A4 to fix that misspelling, as soon as you type to fix it, it erases what was there. The reason is that when you click on a cell, anything that you type replaces what is there.

There is a difference between being on a cell and being in a cell. To be in a cell, you have to double click on it. If you double click on A4, the cursor appears in the cell; you can now fix the error and tap the Enter button. Let us put in more records.

Now see.



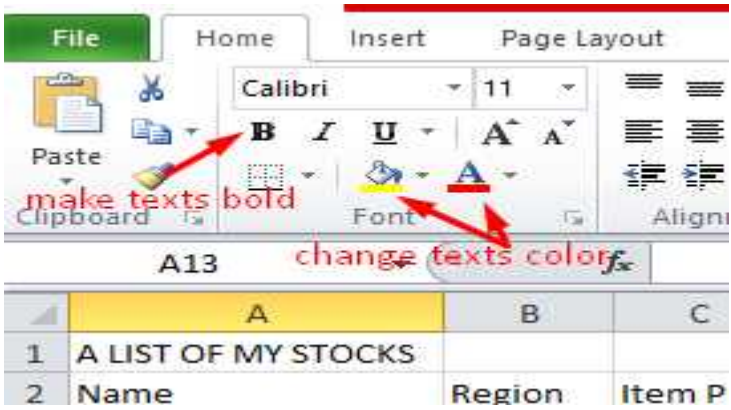
	A	B	C	D	E	F	G	H
1	A LIST OF MY STOCKS							
2	Name	Region	Item Purc	Units	Cost	Total		
3	Andrew Coleman	North	Iron	2	15	30		
4	Lilly Brian	Central	Tv	1	70	70		
5	Susan Jones	Central	Microwav	1	60	60		
6	Gill Smith	East	Iron	4	15	60		
7	Brian Lee	East	Tv	10	70	700		
8	Paul Elsy	West	Fan	2	12	24		
9	Suarez Sanchez	West	Tv	1	70	70		
10	Suarez Sanchez	West	Home The	1	60	60		
11	Jardine Hill	South	Fan	4	12	48		
12	Jack Go	Central	Iron	1	15	15		
13								
14								
15								
16								

We have finished putting in some records. Each row is called a Record. We have put in more goods bought in the spreadsheet.

Size and Color

The next thing we are going to do is make it look well. It doesn't look quite attractive to the eye presently.

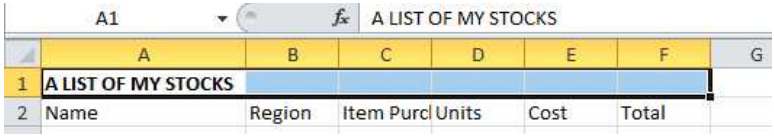
Let's start with the title; it is on one side and it is on cell A1. We can make it stand out and look different. You can click on the cell, then go to the home tab and click on B to give it a bold look. This will help it stand out. You can also change the background color as well by clicking here. See the picture below;



You can also change the color of the text itself. In addition, you can italicize and underline. These are all cool options in Excel.

Merge & Center

Now click on cell A1 and drag right up to the end of content in your spreadsheet F1.



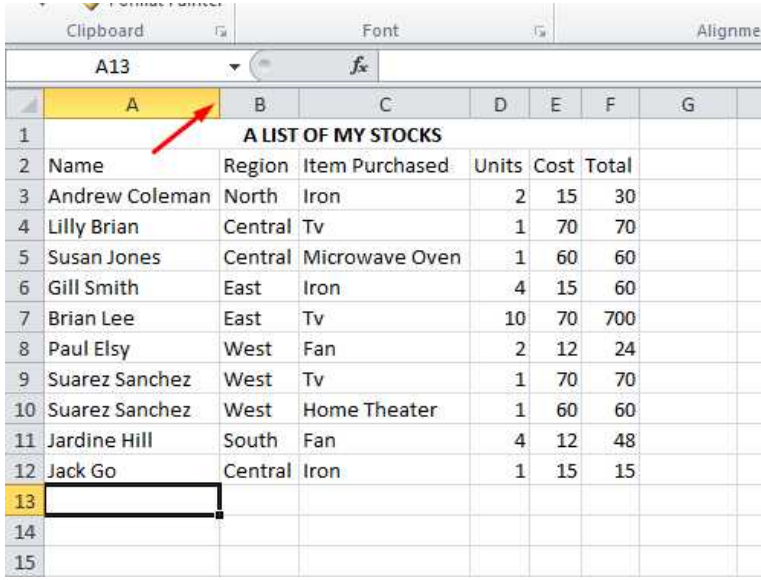
Now, on home tab, click on the merge and center ribbon. This can be found on the alignment group.

CKS

This will merge all the cells together. Now, we have one big cell and it has centered it. This now looks a lot better.

	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	Name	Region	Item Purc	Units	Cost	Total	
3	Andrew Coleman	North	Iron	2	15	30	
4	Lilly Brian	Central	Tv	1	70	70	
5	Susan Jones	Central	Microwav	1	60	60	

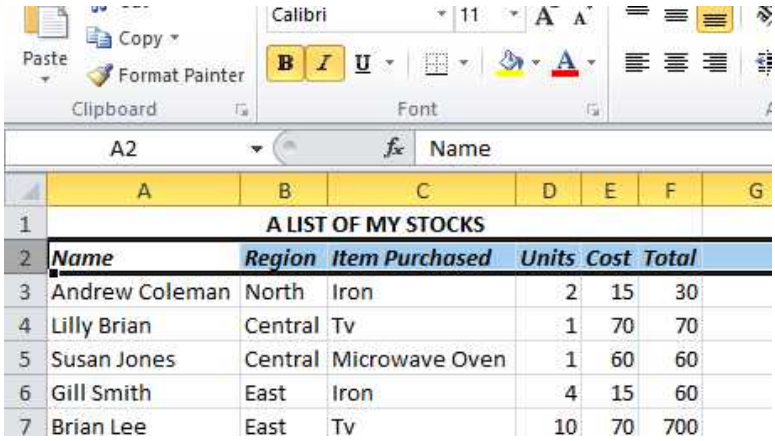
The text are not quite fitting, you can fix this by going to the top, put your mouse between two of the column letters and double click. This will expand the column and make the text fit into the cells. You can do the same for the other columns.



	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	Name	Region	Item Purchased	Units	Cost	Total	
3	Andrew Coleman	North	Iron	2	15	30	
4	Lilly Brian	Central	Tv	1	70	70	
5	Susan Jones	Central	Microwave Oven	1	60	60	
6	Gill Smith	East	Iron	4	15	60	
7	Brian Lee	East	Tv	10	70	700	
8	Paul Elsy	West	Fan	2	12	24	
9	Suarez Sanchez	West	Tv	1	70	70	
10	Suarez Sanchez	West	Home Theater	1	60	60	
11	Jardine Hill	South	Fan	4	12	48	
12	Jack Go	Central	Iron	1	15	15	
13							
14							
15							

Also, instead of double clicking every single column one at a time, you can just click and drag all the way from A to the end of your data F. Now, double click on the middle of any two column letters. Now, it would automatically resize every column. It is now perfectly sized to fit the contents in those cells. You can also resize your sheet with the same method. You click and drag the middle of any two column letters. You can see every single column was affected. All these are to make your data look good, easier to read and to understand.

Now, let's make our column titles look good and different. Highlight all the way from A2 to F2. Now, click on Bold and Italic. You can just click on the row number 2 to automatically highlight row 2.



	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***	
3	Andrew Coleman	North	Iron	2	15	30	
4	Lilly Brian	Central	Tv	1	70	70	
5	Susan Jones	Central	Microwave Oven	1	60	60	
6	Gill Smith	East	Iron	4	15	60	
7	Brian Lee	East	Tv	10	70	700	

You can adjust the rows as well. You click between two row numbers and adjust as you wish. The same technique applied to column applies to row.

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INTERMEDIATE

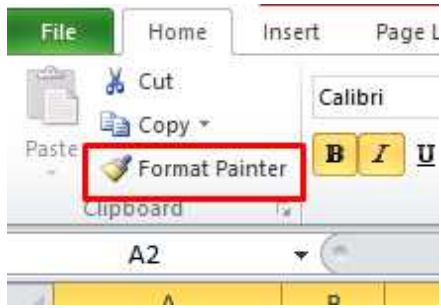
Let us take a look at the intermediate part that you need to know in order to use excel properly and efficiently. We will look into more advanced options like formatting, sorting & filtering, freeze panes, data entry form and data representation in Excel.

FORMATTING

Formatting is the arrangement of text in an organized manner. There are different options to make your data look well arranged. These options would save you time if put into use.

1. **Format Painter**

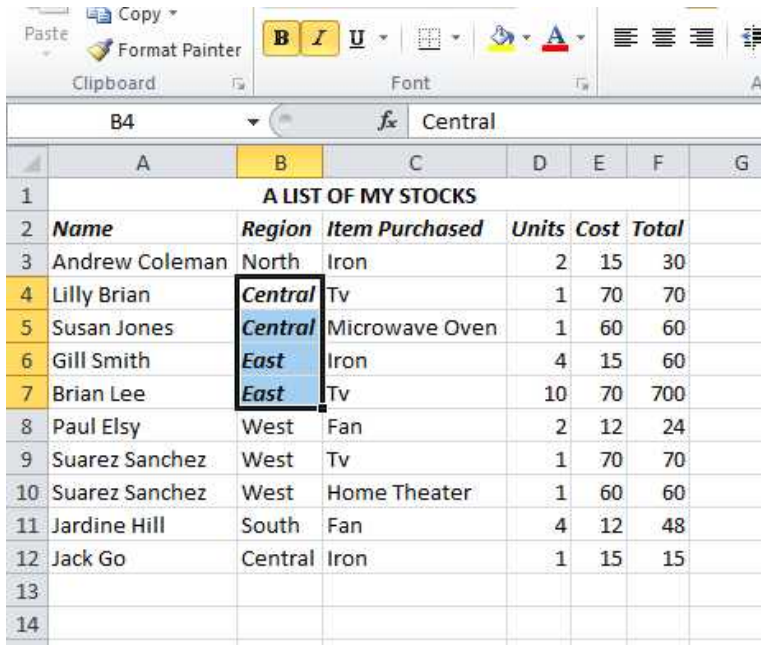
   This can be found on the home tab -> the home ribbon -> the clipboard group. The option looks like a paint brush.



   Let us say the part of your spreadsheet has a format that you wish the other part of your spreadsheet had. Click on an example that you would like -> click on the format painter icon and that will copy the format (not the content) of the cell -> move your mouse to the place where you want to copy that format to -> you can click and after

you release the mouse, it will copy the format.

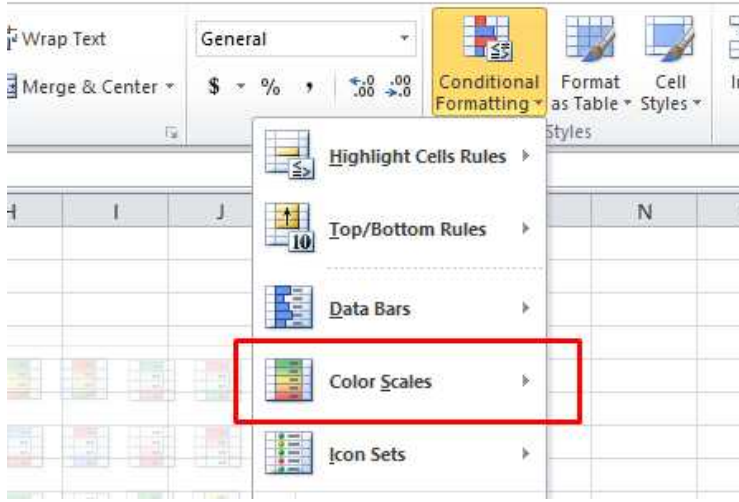
Let us copy the format of A2 into B4:B7



	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***	
3	Andrew Coleman	North	Iron	2	15	30	
4	Lilly Brian	***Central***	Tv	1	70	70	
5	Susan Jones	***Central***	Microwave Oven	1	60	60	
6	Gill Smith	***East***	Iron	4	15	60	
7	Brian Lee	***East***	Tv	10	70	700	
8	Paul Elsy	West	Fan	2	12	24	
9	Suarez Sanchez	West	Tv	1	70	70	
10	Suarez Sanchez	West	Home Theater	1	60	60	
11	Jardine Hill	South	Fan	4	12	48	
12	Jack Go	Central	Iron	1	15	15	
13							
14							

2. Conditional Formatting

Another formatting option is the conditional formatting. It is on the home tab -> the home ribbon -> the styles group. You can see the conditional formatting. It works by selecting a column or a row.

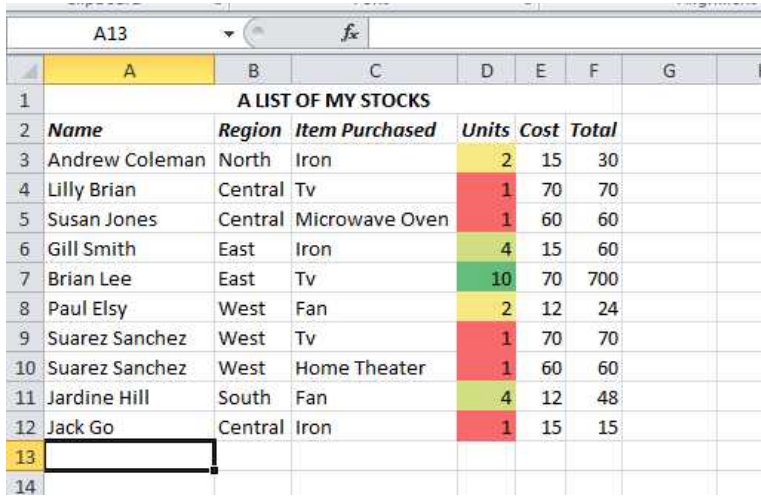


Select column D by clicking on letter D and the entire column would be selected. Go up and click conditional formatting, you should see some options. With these options, let us set up some rules for the formatting of the cells.

Let us choose the color scales but you can explore other options to know more about them. Now I want the color of the cell to change depending on the number of unit sold.

Now, select color scales, the idea is that the greener it is, the more demand for the product sold. The redder it is the less

demand for the product sold. You can explore other colors as well. The moment you click on it, it evaluates the entire column; it looks for the highest numbers and gives them the greenest color. The lowest numbers get the darkest red color.



A13

	A	B	C	D	E	F	G	H
1	A LIST OF MY STOCKS							
2	*Name*	*Region*	*Item Purchased*	*Units*	*Cost*	*Total*		
3	Andrew Coleman	North	Iron	2	15	30		
4	Lilly Brian	Central	Tv	1	70	70		
5	Susan Jones	Central	Microwave Oven	1	60	60		
6	Gill Smith	East	Iron	4	15	60		
7	Brian Lee	East	Tv	10	70	700		
8	Paul Elsy	West	Fan	2	12	24		
9	Suarez Sanchez	West	Tv	1	70	70		
10	Suarez Sanchez	West	Home Theater	1	60	60		
11	Jardine Hill	South	Fan	4	12	48		
12	Jack Go	Central	Iron	1	15	15		
13								
14								

So easily, you can just glance through the excel sheet and you can see where the most sold products are. You can also check the conditional formatting for more great ways to display your data in a conditional way. For instance, you can do this; if the highlighted cell is greater than 10, then make the background green, if it's less than

5, format with the background of red. There are also more cool options there. Please do explore.

You can also add more formats by using the Number group. You can add a currency symbol if one of your columns represents money value. Highlight column E which is the price in Dollars by clicking on Letter E. You can click on the dollar sign under the Number group; it would now show up as money.

	A	B	C	D	E	F	G
1			A LIST OF MY STOCKS				
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***	
3	Andrew Coleman	North	Iron	2	$15.00	30	
4	Lilly Brian	Central	Tv	1	$70.00	70	
5	Susan Jones	Central	Microwave Oven	1	$60.00	60	
6	Gill Smith	East	Iron	4	$15.00	60	
7	Brian Lee	East	Tv	10	$70.00	700	
8	Paul Elsy	West	Fan	2	$12.00	24	
9	Suarez Sanchez	West	Tv	1	$70.00	70	
10	Suarez Sanchez	West	Home Theater	1	$60.00	60	
11	Jardine Hill	South	Fan	4	$12.00	48	
12	Jack Go	Central	Iron	1	$15.00	15	
13							
14							

You can also go to General on the number group and select the one you want.

3. The Auto fill Handle

You can find it whenever you click on a cell. Look at the lower right corner; you would

see a black square. Put your mouse on it and it will become a black plus sign. You can now click and drag to copy what is in the cell.

To copy what is in A12, click on the green square and drag down, it would copy A12 into A13. It also works with text and not just with numbers.

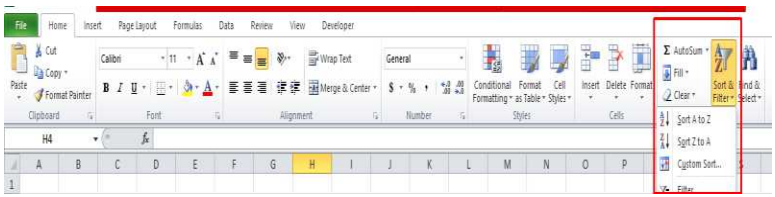
	A	B	
1			A LIST C
2	***Name***	***Region***	***Item***
3	Andrew Coleman	North	Iron
4	Lilly Brian	Central	Tv
5	Susan Jones	Central	Micro
6	Gill Smith	East	Iron
7	Brian Lee	East	Tv
8	Paul Elsy	West	Fan
9	Suarez Sanchez	West	Tv
10	Suarez Sanchez	West	Home
11	Jardine Hill	South	Fan
12	Jack Go	Central	Iron
13			
14			
15			
16			

With this tool, you can also copy a pattern. You can also use it to copy a formula. The auto fill handle is specially good for working efficiently and saving time.

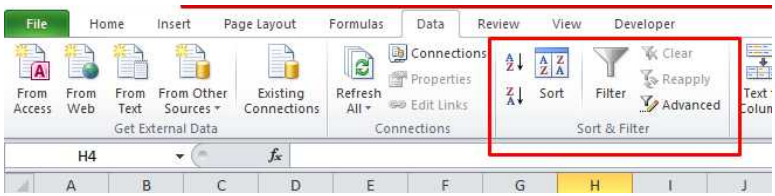
SORT & FILTER

Sorting

Sorting is a way to arrange your data according to certain criteria. If you look closely, our spreadsheet is in a random order. Let us sort alphabetically. Click on the first cell of the first record. Either on the home tab or the Data tab you should be able to find Sort and Filter. On Data tab click on Sort under the Sort & Filter Group. It will sort your data alphabetically. Sorting is a great feature in excel.



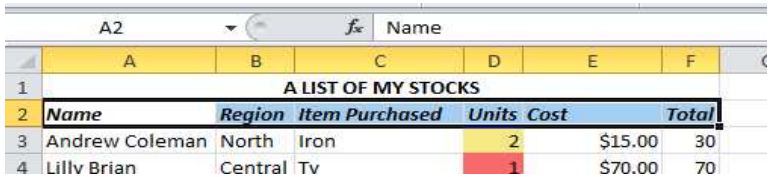
Or



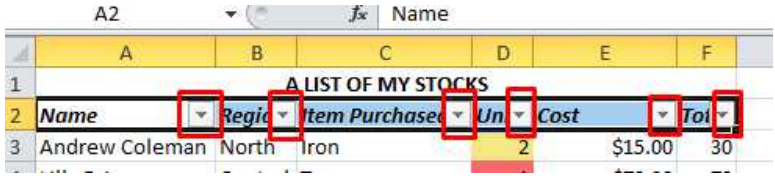
Filtering

Filtering is a way to eliminate part of your spreadsheet temporarily so that you can see the data you which to see.

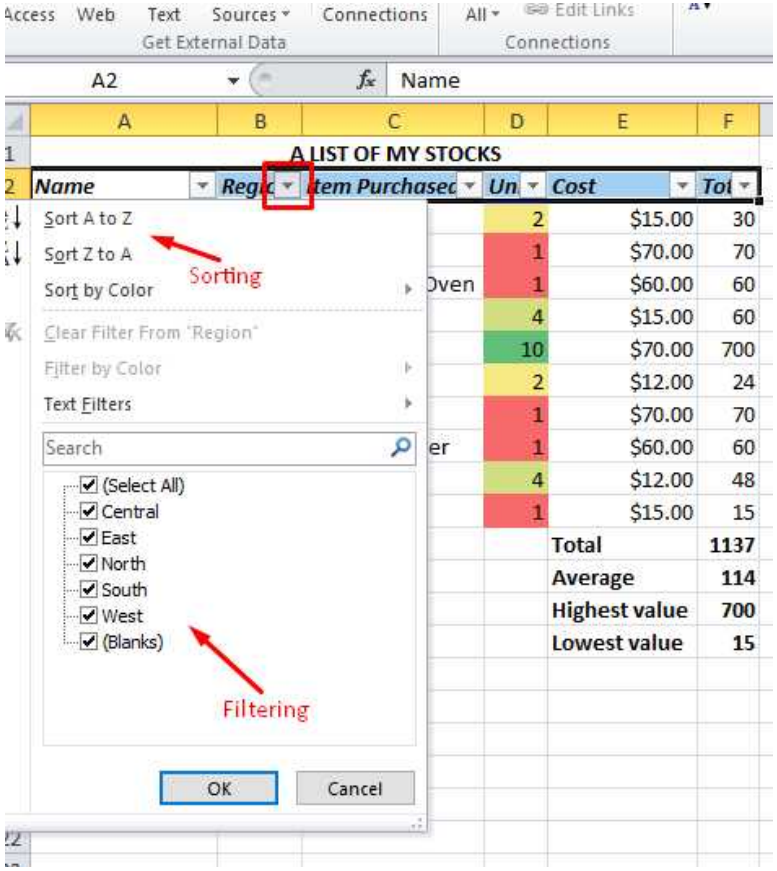
To turn on filtering, click and drag across the columns heading that you have created.



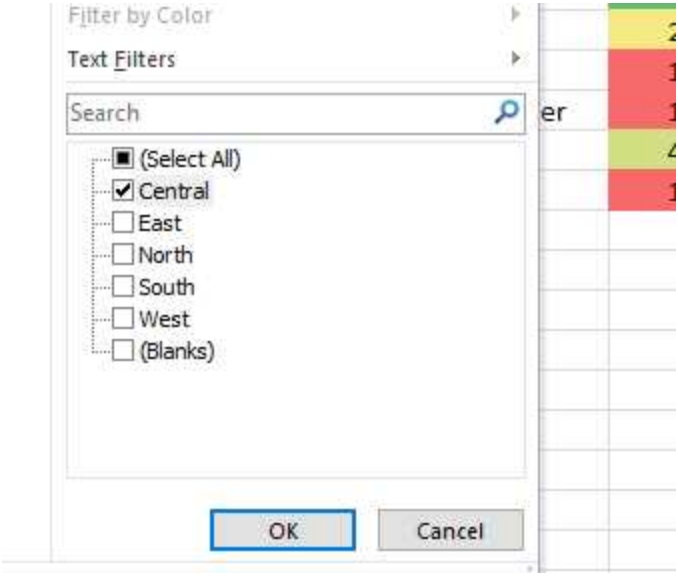
Once you have highlighted it, go to data tab and click filter. Now, you would see that they all have a drop down arrow.



Click on the drop down arrow that you would like to filter.



You can also sort with this method as shown above. Now deselect 'select all' and select the data you which to display. Let us say you want to view the Central Region only, you would have to tick only central and click ok.



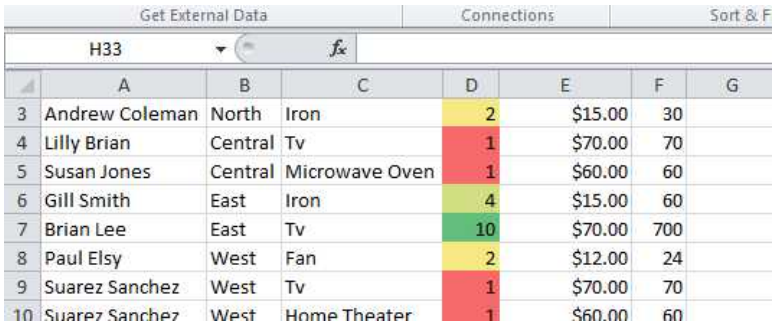
You should have just this;

A2 | Name

	A	B	C	D	E	F
1	A LIST OF MY STOCKS					
2	Name	Regic	Item Purchasec	Un	Cost	Tot
4	Lilly Brian	Central	Tv	1	$70.00	70
5	Susan Jones	Central	Microwave Oven	1	$60.00	60
12	Jack Go	Central	Iron	1	$15.00	15
17						
18						

FREEZE PANES

Let us say you add 50 more records, this is going to be a bigger spreadsheet, it going to be harder to put in more data or look at it. Now that you have more records in your spreadsheet, you may easily lose track of which column your titles are. Now you can freeze rows, this way you can keep rows visible while scrolling through the rest of your spreadsheet.



	A	B	C	D	E	F	G
3	Andrew Coleman	North	Iron	2	$15.00	30	
4	Lilly Brian	Central	Tv	1	$70.00	70	
5	Susan Jones	Central	Microwave Oven	1	$60.00	60	
6	Gill Smith	East	Iron	4	$15.00	60	
7	Brian Lee	East	Tv	10	$70.00	700	
8	Paul Elsy	West	Fan	2	$12.00	24	
9	Suarez Sanchez	West	Tv	1	$70.00	70	
10	Suarez Sanchez	West	Home Theater	1	$60.00	60	

No more column title

This is where freeze panes come in. What you would do is to click underneath the roll you want to freeze. Now we click on row 3 because it is underneath your column titles, then go to the

view Tab and click on the option freeze panes under window Group.

It pops up with three options, and then you click freeze panes. This is what happens, as you browse down the page and enter more records, you would still be able to see the first two rows. This is because you froze everything about row 3.

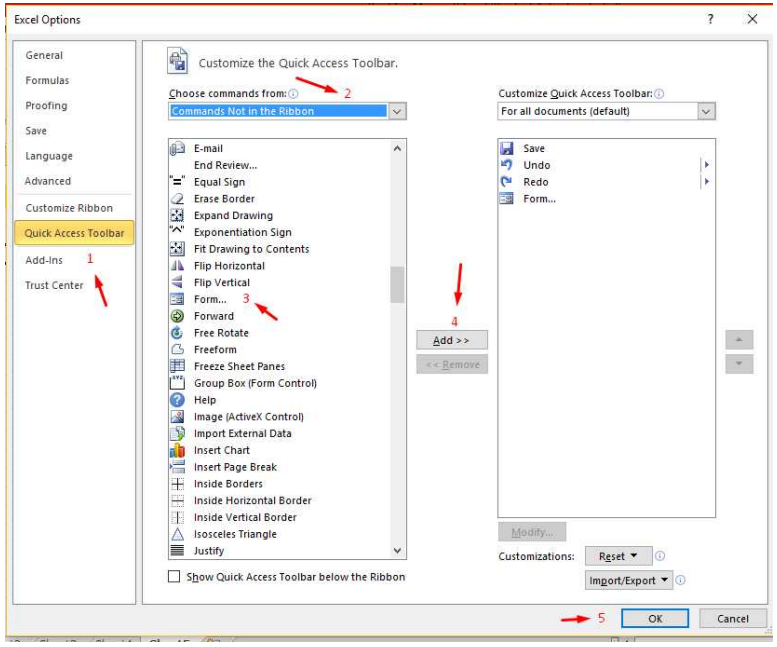
DATA ENTRY FORM

This is simple and easy to create. You do not have to write any code in order to create a Data entry form in Excel. Data entry form is a great way of inputting data into a spreadsheet. You do not have to type directly on the spreadsheet, all you have to do is fill the Data entry form which is user friendly and submit. The spreadsheet will be updated with the new record.

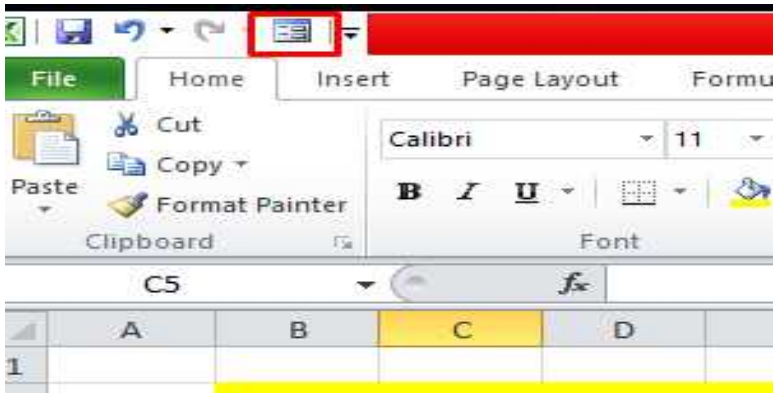
To start with, let us create a simple table. The table will record our data through the data entry form.

I will be using the same table format created earlier; a list of stocks. It would be left with just the Heading and the column titles. Just as shown below;

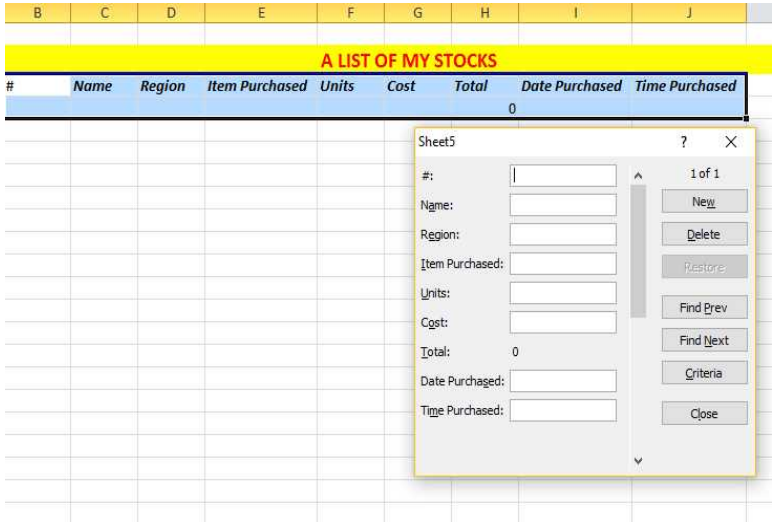
To create a data entry form, you click on File Tab and click on Options. A pop-up window comes out, click on Quick Access Toolbar by the left corner. On the 'Choose command from' box, select commands not in Ribbon. Now scroll down the box below the 'Choose command from' box, select Form and click on Add. Now click on OK.



Now at the top right corner of your Excel application, we have the form icon in the quick access toolbox.

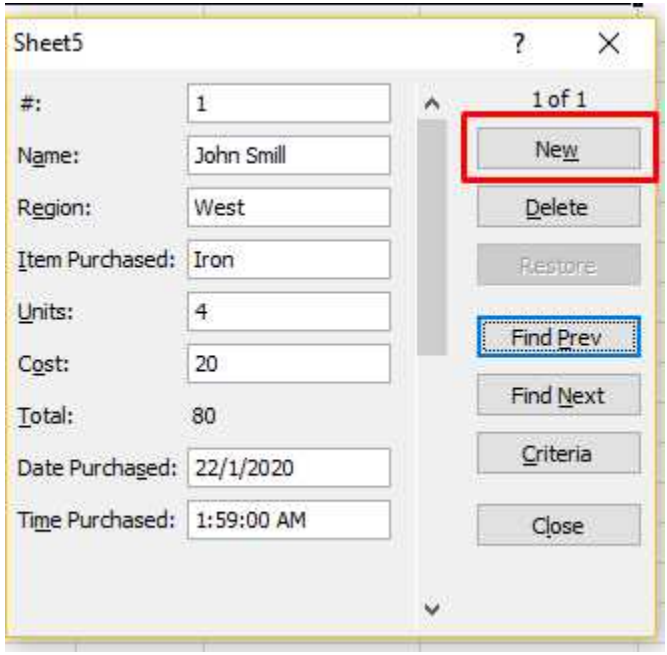


To open the Data entry form, we need to bring selection on our already created table by clicking on it. You can now click on the form icon. It would bring out your data entry form which contains all your column titles.

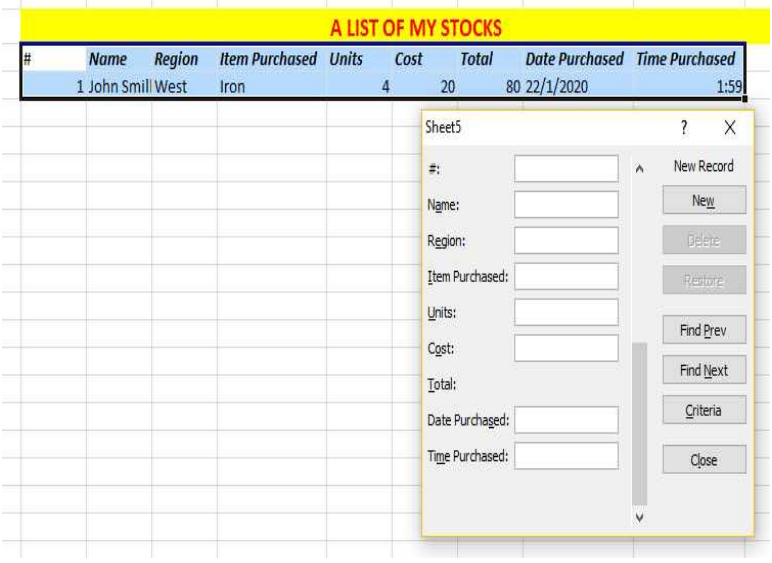


The name of the data entry form is the same as the name of your sheet. All fields are on the Data entry form but carefully look at the Total field on the form. We do not have the option to record. This is because our data entry form knows that we already used a formula in the Total column. Whenever we input a record, the value of Total will show automatically. *You can check the advance part of this book to learn how to use formulas in Excel.*

Now let us input our first record;



You can now tap Enter on your keyboard or click on New on the Entry Form to put your record into your spreadsheet after filling the entering form. As you can see, the spreadsheet is now updated with the new record from the data entry form.



You can use ‘Find Prev’ button to view and edit the previous record and the ‘Find next’ button to view and edit the next record. You can also make use of the Criteria button to search for something in the spreadsheet.

Pie Chart

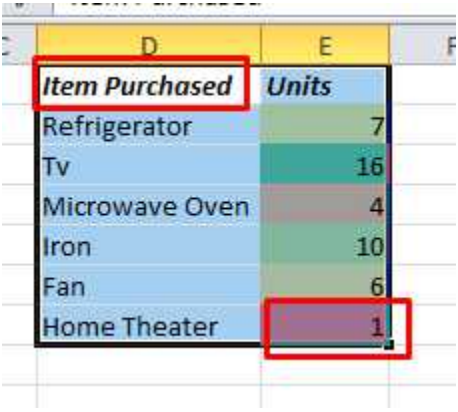
Pie chart is a pictorial graph in a circular shape. It contains segments representing data.

Let us represent our data pictorially. We want know how well the goods were sold by using the previous table containing the necessary data. We already have the items purchased and the units. Now let us sort the table properly due to multiply entries such as Refrigerator, TV and the rest.

	A	B	C	D	E	F
1	***Item Purchased***	***Units***		***Item Purchased***	***Units***	
2	Refrigerator	6		Refrigerator	7	
3	Tv	1		Tv	16	
4	Microwave Oven	1		Microwave Oven	4	
5	Iron	4		Iron	10	
6	Tv	10		Fan	6	
7	Fan	2		Home Theater	1	
8	Tv	1				
9	Home Theater	1				
10	Fan	4				
11	Refrigerator	1				
12	Iron	2				
13	Tv	4				
14	Microwave Oven	3				
15	Iron	4				
16						
17						

Creating a pie chart for this data will allow you to make a presentation which you can show to anyone; it could be your Boss, Colleagues or even Customers. You may need to show how well different goods were sold in a particular period of time; could be quarterly or yearly. The pie chart is one of the most effective ways of showing this.

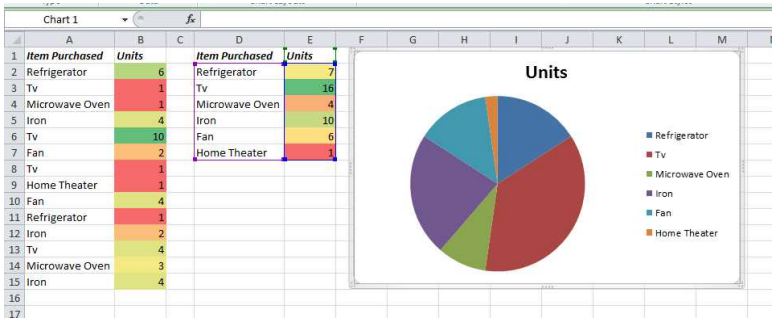
Now select the data range just by clicking and holding on the 'item purchased' title and drag it to the last cell of the 'Unit' title. This will highlight the data we want to represent.

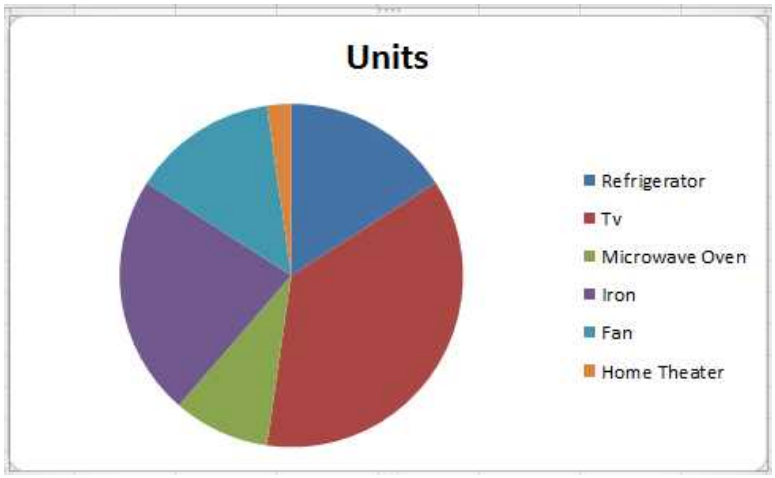


	D	E
	Item Purchased	Units
	Refrigerator	7
	Tv	16
	Microwave Oven	4
	Iron	10
	Fan	6
	Home Theater	1

Now go to the 'Insert' Tab, select Pie under 'Charts' Group. As you can see, there are several options within the 2-D Pie category as well as the

3-D Pie category. Let us use the 2-D pie, select the first one. As you can see, Excel has automatically created a chart on the same sheet and it has all the information that we have provided.



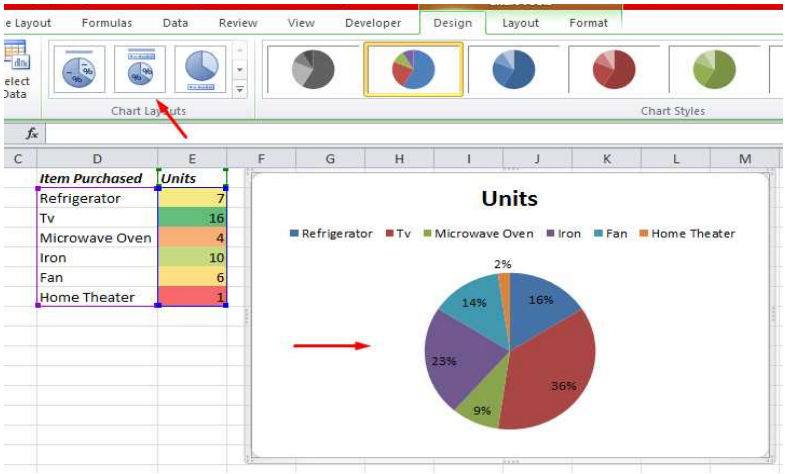


The Pie chart now has different segments of items purchased according to the number of unit purchased.

You can change the chart type by clicking on Change Chart Type under 'Type' Group and 'Design' Tab. You can get this done by clicking on the Pie chart first -> You will get to see Chart tools on top of the Tab and you can change your chart type. When you are not on the chart, you would not see Chart Tools.

Now we have Design, Layout and Format Tabs. Here you can select the kind of Charts available in Excel and not just the Pie chart. You can select a different Chart Layout by clicking on the Chart Layouts group and see the ones available.

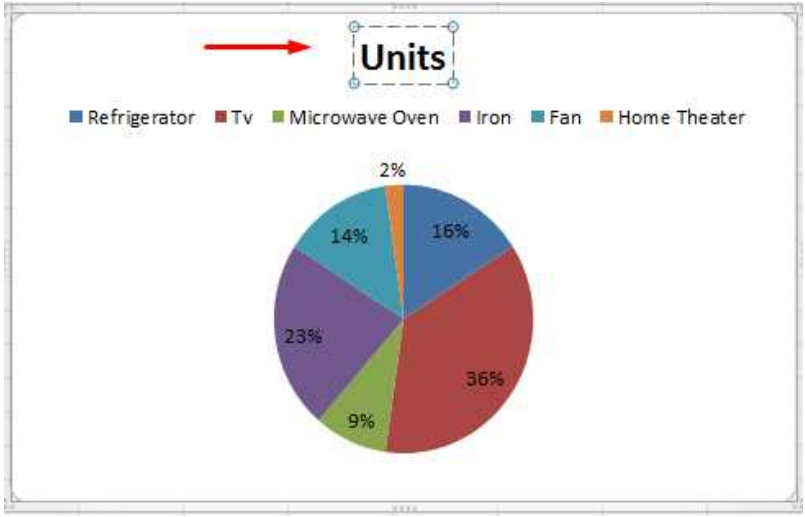
As you can see, our present does not have any information. We can include them by clicking on this particular one;



Now the percentage of the goods bought has been incorporated into the chart. We now have the information per segment in the chart.

You can also change the chart title by clicking on it and type what you want.

Can

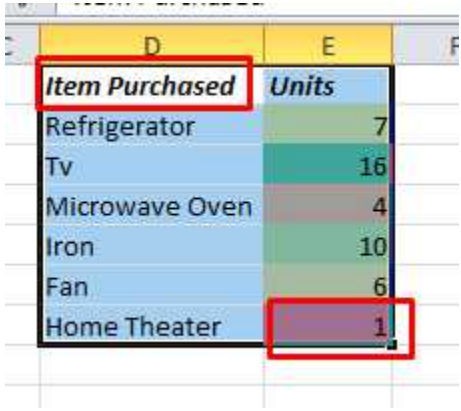


Now that you have your Pie chart, you can copy it into your presentation software and show it to your Boss.

Bar chart

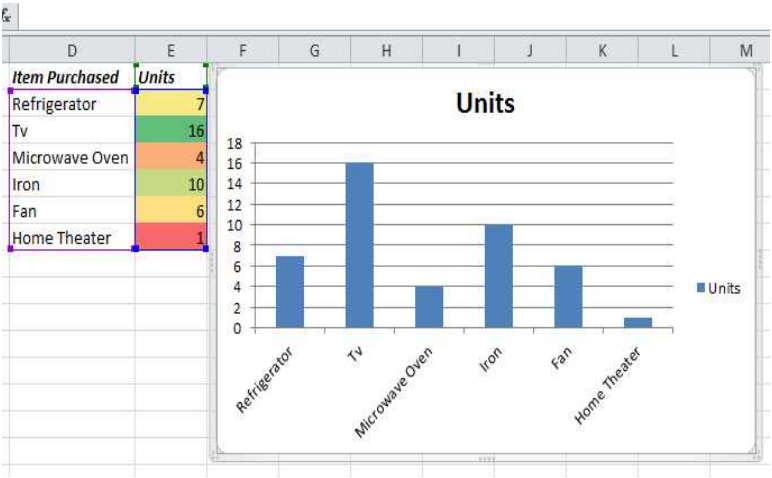
This is a graph in form of boxes of different heights representing data.

Using the same table, let us create a bar graph, now highlight the whole range starting from the 'item purchased' title to the last cell of the 'Unit' title.



D	E
Item Purchased	*Units*
Refrigerator	7
Tv	16
Microwave Oven	4
Iron	10
Fan	6
Home Theater	1

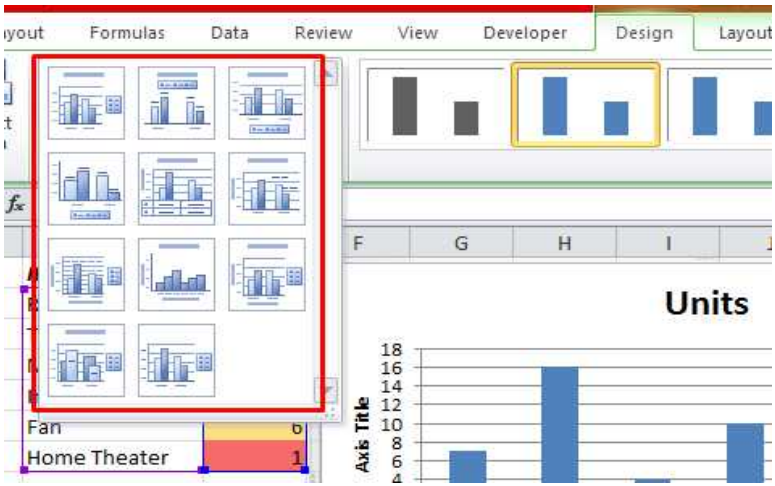
On the Insert Tab -> click on Column on the Chart Group, you will also see several options but let us choose the first one. Now we have this;



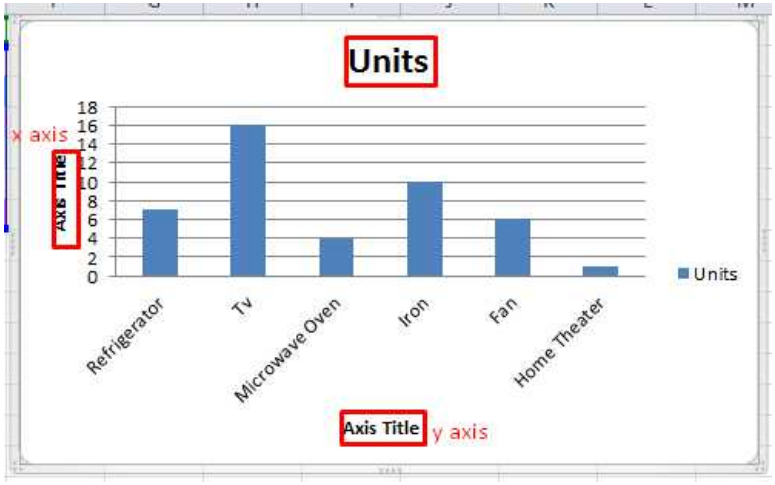
We now have our Bar chart with our Unit on the left and the Items purchased below.

You can choose to format your chart by clicking on the Bar chart. You would get to see the Chart Tools on top of the Tab. When you are not on the graph, you would not see the Chart Tools. Now we have Design, Layout and Format Tabs.

Click on the Design Tab -> under Chart Layouts Group you would see several chart layouts. You can explore around these entire charts. I chose layout 9.



Now, you can readjust your chart layout by adding titles on the x and y axis. You can also change the color of your graph as well as the size and font of the text.



The chart is user friendly and also interactive with the table. Whenever you click on the graph, it highlights the table. If you change any data on the table, it automatically reflects right on the graph. Next is the advanced part of Excel.

3

—

ADVANCED

Congratulations!!! You've made it this far. Now let's talk about the advanced part of Excel. We'll be going through formulas, data validation, using check boxes and functions.

FORMULAS

This is where the true power of excel is found. So far so good, we have done the entering of texts, numbers and formatting.

Now we will be talking about formulas. We will put some formulas in the spreadsheet. For instance; the formulas that will help you know the total cost of an item depending on the number of unit purchased, the overall total cost of items purchased, the average value, the most expensive value and so on.

1. **Product**

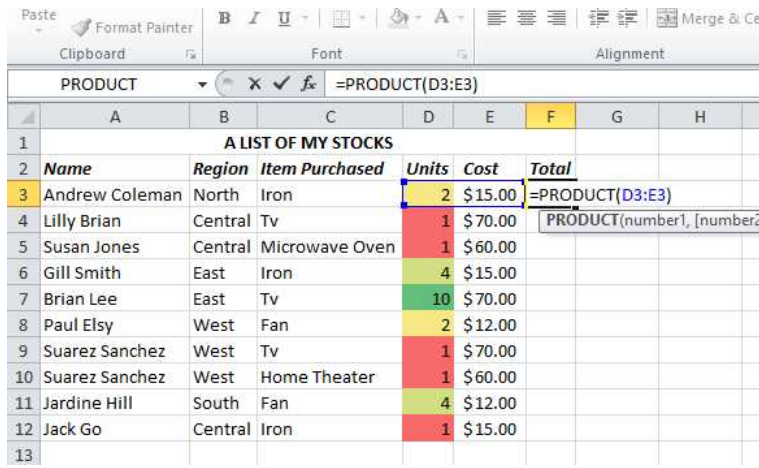
   This is the multiplication formula.

   Now let us set a formula to calculate the total cost price when more than one unit of an item is bought. We have the total cost column already created, let us add the formula.

   The logic is that the total cost of an item depending on the number of unit bought (Column F) equals the number of unit bought (column D) multiplied by the cost of

the item (column E). The Total cost for row 3 will be D3 multiplied by E3.

Now, our formula would be written as =product(D3:E3). Double click F3 cell -> type =product(D3:E3) -> tap Enter on your keyboard.



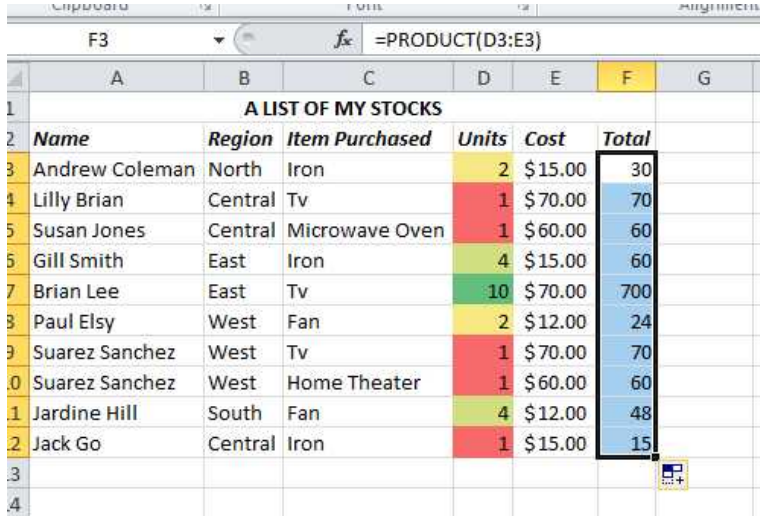
	A	B	C	D	E	F	G	H
1	A LIST OF MY STOCKS							
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***		
3	Andrew Coleman	North	Iron	2	$15.00	=PRODUCT(D3:E3)		
4	Lilly Brian	Central	Tv	1	$70.00			
5	Susan Jones	Central	Microwave Oven	1	$60.00			
6	Gill Smith	East	Iron	4	$15.00			
7	Brian Lee	East	Tv	10	$70.00			
8	Paul Elsy	West	Fan	2	$12.00			
9	Suarez Sanchez	West	Tv	1	$70.00			
10	Suarez Sanchez	West	Home Theater	1	$60.00			
11	Jardine Hill	South	Fan	4	$12.00			
12	Jack Go	Central	Iron	1	$15.00			
13								

This would multiply 2 by 15. Now follow the same approach to fill up other cells.

Alternatively, you could easily fill up other cells by using the auto fill method. Click on F3 -> click on the little square in the lower right corner of the cell you want to copy -> drag down and release your mouse. This

would just copy the formula of the first cell into others.

	B	C	D	E	F	G
	A LIST OF MY STOCKS					
	gion	*Item Purchased*	*Units*	*Cost*	*Total*	
	orth	Iron	2	$15.00	30	
	entral	Tv	1	$70.00		
	entral	Microwave Oven	1	$60.00		
	st	Iron	4	$15.00		
	st	Tv	10	$70.00		
	est	Fan	2	$12.00		



F3 =PRODUCT(D3:E3)

	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	*Name*	*Region*	*Item Purchased*	*Units*	*Cost*	*Total*	
3	Andrew Coleman	North	Iron	2	$15.00	30	
4	Lilly Brian	Central	Tv	1	$70.00	70	
5	Susan Jones	Central	Microwave Oven	1	$60.00	60	
6	Gill Smith	East	Iron	4	$15.00	60	
7	Brian Lee	East	Tv	10	$70.00	700	
8	Paul Elsy	West	Fan	2	$12.00	24	
9	Suarez Sanchez	West	Tv	1	$70.00	70	
10	Suarez Sanchez	West	Home Theater	1	$60.00	60	
11	Jardine Hill	South	Fan	4	$12.00	48	
12	Jack Go	Central	Iron	1	$15.00	15	
13							
14							

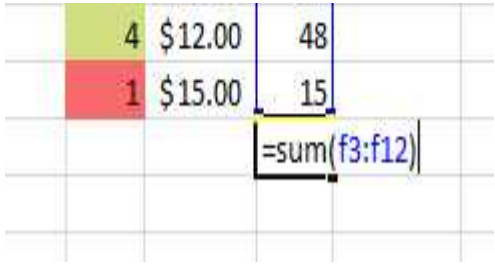
Now we have the total cost according to the number of unit bought.

2. Sum

This is the addition formula.

At the bottom of the spreadsheet, let us create a formula. Click on the F13, we want to get the overall total cost value.

Now let us find out the total amount of items sold. Click on F13 and type =sum(F3:F12). This formula here will add up the value starting from F3 through F12. Now the total worth of items sold would display.

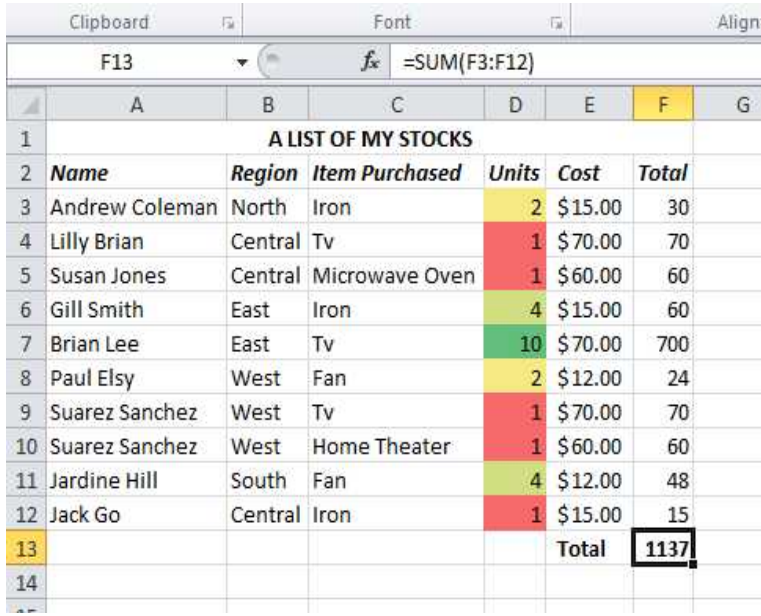


ıased	Units	Cost	Total
	2	$15.00	30
	1	$70.00	70
e Oven	1	$60.00	60
	4	$15.00	60
	10	$70.00	700
	2	$12.00	24
	1	$70.00	70
ater	1	$60.00	60
	4	$12.00	48
	1	$15.00	15
			1137

Another way to do this is to make use of the auto sum button on the Editing group.

Click on the cell you want the result to appear and click on the auto sum button. This will automatically add up everything in those cells.

You can now type Total in cell E13 for indication.



Clipboard | Font | Alignm

F13 | =SUM(F3:F12)

	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***	
3	Andrew Coleman	North	Iron	2	$15.00	30	
4	Lilly Brian	Central	Tv	1	$70.00	70	
5	Susan Jones	Central	Microwave Oven	1	$60.00	60	
6	Gill Smith	East	Iron	4	$15.00	60	
7	Brian Lee	East	Tv	10	$70.00	700	
8	Paul Elsy	West	Fan	2	$12.00	24	
9	Suarez Sanchez	West	Tv	1	$70.00	70	
10	Suarez Sanchez	West	Home Theater	1	$60.00	60	
11	Jardine Hill	South	Fan	4	$12.00	48	
12	Jack Go	Central	Iron	1	$15.00	15	
13					Total	1137	
14							

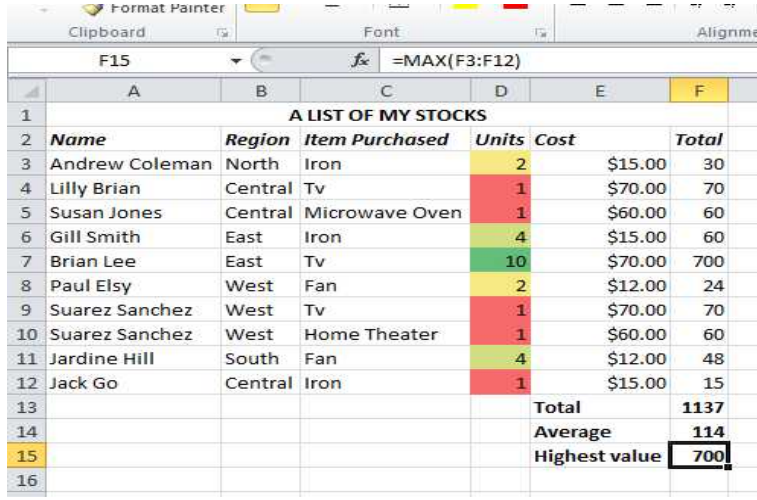
3. Average

This is also similar to the previous formulas, just type the formula =average(f3:f12) in the cell you wanted it to be and tap Enter on your keyboard. This formula will also find the average of the values from cell F3 through cell F12. We also have the auto average icon which you can use as well.

	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***	
3	Andrew Coleman	North	Iron	2	$ 15.00	30	
4	Lilly Brian	Central	Tv	1	$ 70.00	70	
5	Susan Jones	Central	Microwave Oven	1	$ 60.00	60	
6	Gill Smith	East	Iron	4	$ 15.00	60	
7	Brian Lee	East	Tv	10	$ 70.00	700	
8	Paul Elsy	West	Fan	2	$ 12.00	24	
9	Suarez Sanchez	West	Tv	1	$ 70.00	70	
10	Suarez Sanchez	West	Home Theater	1	$ 60.00	60	
11	Jardine Hill	South	Fan	4	$ 12.00	48	
12	Jack Go	Central	Iron	1	$ 15.00	15	
13					**Total**	**1137**	
14					**Average**	**114**	
15							

4. **Max**

   This will look through the column and give you the highest value. The formula is a little different. The formula is =max(F3:F12). Enter the formula in the cell you wanted it to be and tap Enter on your keyboard. This will look through the F column and give you the highest value.



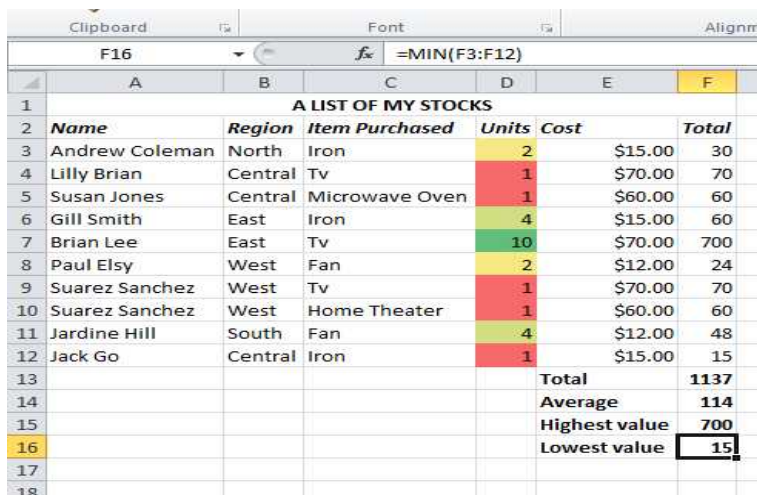
Format Painter | Clipboard | Font | Alignment

F15 | =MAX(F3:F12)

	A	B	C	D	E	F
1	A LIST OF MY STOCKS					
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***
3	Andrew Coleman	North	Iron	2	$15.00	30
4	Lilly Brian	Central	Tv	1	$70.00	70
5	Susan Jones	Central	Microwave Oven	1	$60.00	60
6	Gill Smith	East	Iron	4	$15.00	60
7	Brian Lee	East	Tv	10	$70.00	700
8	Paul Elsy	West	Fan	2	$12.00	24
9	Suarez Sanchez	West	Tv	1	$70.00	70
10	Suarez Sanchez	West	Home Theater	1	$60.00	60
11	Jardine Hill	South	Fan	4	$12.00	48
12	Jack Go	Central	Iron	1	$15.00	15
13					**Total**	**1137**
14					**Average**	**114**
15					**Highest value**	**700**
16						

5. Min

This will look through the column and give you the lowest value. The formula is =min(f3:f12). Type and tap enter; the lowest value would be displayed.



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F16 | =MIN(F3:F12)

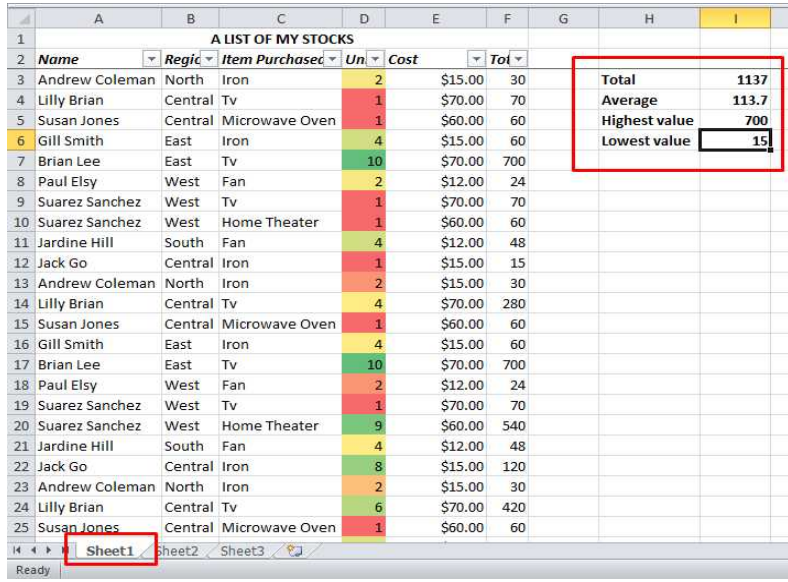
	A	B	C	D	E	F
1	A LIST OF MY STOCKS					
2	***Name***	***Region***	***Item Purchased***	***Units***	***Cost***	***Total***
3	Andrew Coleman	North	Iron	2	$15.00	30
4	Lilly Brian	Central	Tv	1	$70.00	70
5	Susan Jones	Central	Microwave Oven	1	$60.00	60
6	Gill Smith	East	Iron	4	$15.00	60
7	Brian Lee	East	Tv	10	$70.00	700
8	Paul Elsy	West	Fan	2	$12.00	24
9	Suarez Sanchez	West	Tv	1	$70.00	70
10	Suarez Sanchez	West	Home Theater	1	$60.00	60
11	Jardine Hill	South	Fan	4	$12.00	48
12	Jack Go	Central	Iron	1	$15.00	15
13					**Total**	**1137**
14					**Average**	**114**
15					**Highest value**	**700**
16					**Lowest value**	**15**
17						

These are the most common formulas. We have more, if you want to see more of the formulas that you can use in excel, go to the Formulas Tab. Here, you can get a whole function library. Please do explore the formula functions available to you.

6. 3D Formula

Let us look at an advanced excel technique and that is creating 3D formula. It is also known as cubed formula. It is a reference that refers to the same cell or range on different spreadsheets.

Let us get started creating a 3D formula. In the previous sections we have made use of a list of stocks that we own. We put in the Name, Region, Item purchased, Unit and total. Also, we put the overall total of all the stocks after it was calculated.



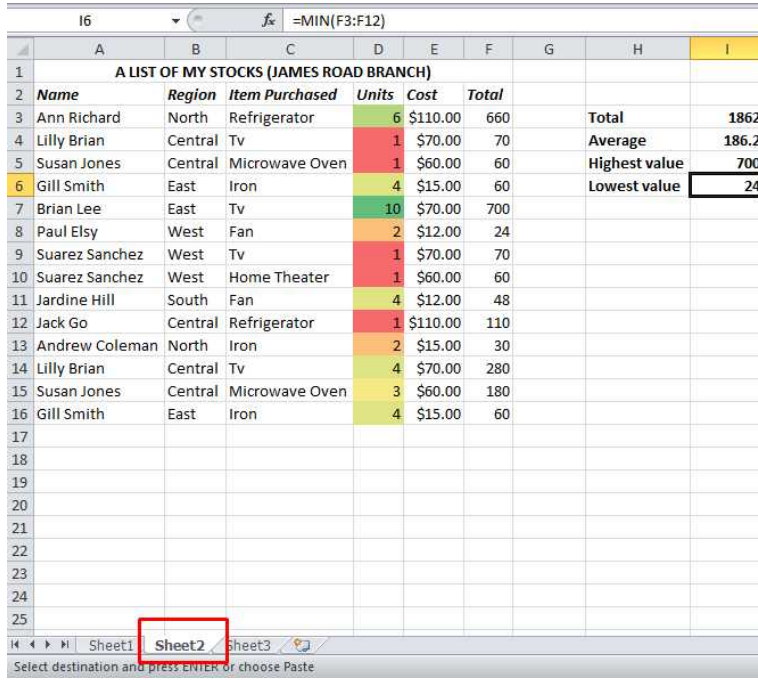
	A	B	C	D	E	F	G	H	I
1	A LIST OF MY STOCKS								
2	Name	Regic	Item Purchased	Un	Cost	Tol			
3	Andrew Coleman	North	Iron	2	$15.00	30		Total	1137
4	Lilly Brian	Central	Tv	1	$70.00	70		Average	113.7
5	Susan Jones	Central	Microwave Oven	1	$60.00	60		Highest value	700
6	Gill Smith	East	Iron	4	$15.00	60		Lowest value	15
7	Brian Lee	East	Tv	10	$70.00	700			
8	Paul Elsy	West	Fan	2	$12.00	24			
9	Suarez Sanchez	West	Tv	1	$70.00	70			
10	Suarez Sanchez	West	Home Theater	1	$60.00	60			
11	Jardine Hill	South	Fan	4	$12.00	48			
12	Jack Go	Central	Iron	1	$15.00	15			
13	Andrew Coleman	North	Iron	2	$15.00	30			
14	Lilly Brian	Central	Tv	4	$70.00	280			
15	Susan Jones	Central	Microwave Oven	1	$60.00	60			
16	Gill Smith	East	Iron	4	$15.00	60			
17	Brian Lee	East	Tv	10	$70.00	700			
18	Paul Elsy	West	Fan	2	$12.00	24			
19	Suarez Sanchez	West	Tv	1	$70.00	70			
20	Suarez Sanchez	West	Home Theater	9	$60.00	540			
21	Jardine Hill	South	Fan	4	$12.00	48			
22	Jack Go	Central	Iron	8	$15.00	120			
23	Andrew Coleman	North	Iron	2	$15.00	30			
24	Lilly Brian	Central	Tv	6	$70.00	420			
25	Susan Jones	Central	Microwave Oven	1	$60.00	60			

Sheet1 Sheet2 Sheet3

Ready

In this part, I have changed the arrangement of the spreadsheet. The total has been moved to the upper-right. The reason is that we might want to add more records later; there should be space to add more records.

Another thing here is that we need to create a second sheet. You can do this on your own by placing data in rows and columns as explained earlier.



I6 =MIN(F3:F12)

	A	B	C	D	E	F	G	H	I
1	A LIST OF MY STOCKS (JAMES ROAD BRANCH)								
2	*Name*	*Region*	*Item Purchased*	*Units*	*Cost*	*Total*			
3	Ann Richard	North	Refrigerator	6	$110.00	660		Total	1862
4	Lilly Brian	Central	Tv	1	$70.00	70		Average	186.2
5	Susan Jones	Central	Microwave Oven	1	$60.00	60		Highest value	700
6	Gill Smith	East	Iron	4	$15.00	60		Lowest value	24
7	Brian Lee	East	Tv	10	$70.00	700			
8	Paul Elsy	West	Fan	2	$12.00	24			
9	Suarez Sanchez	West	Tv	1	$70.00	70			
10	Suarez Sanchez	West	Home Theater	1	$60.00	60			
11	Jardine Hill	South	Fan	4	$12.00	48			
12	Jack Go	Central	Refrigerator	1	$110.00	110			
13	Andrew Coleman	North	Iron	2	$15.00	30			
14	Lilly Brian	Central	Tv	4	$70.00	280			
15	Susan Jones	Central	Microwave Oven	3	$60.00	180			
16	Gill Smith	East	Iron	4	$15.00	60			
17									
18									
19									
20									
21									
22									
23									
24									
25									

Sheet1 Sheet2 Sheet3

Select destination and press ENTER or choose Paste

My list of stock at James road branch

Now, on the second sheet, I created a very similar spreadsheet. If you look at it closely, you would see it is arranged similarly.

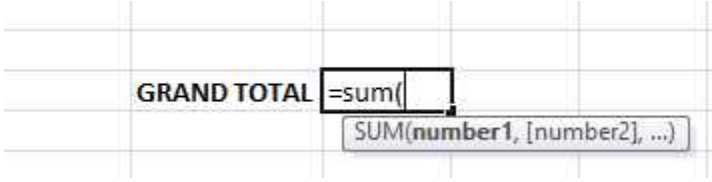
This time around, a list of stocks for another branch of my organization was created. I have also listed here some other products sold. We have the Name, Region, Item purchased, Unit and total.

Now, because I followed the same pattern as my first sheet, I have the ability to create a 3D formula. Although some of the

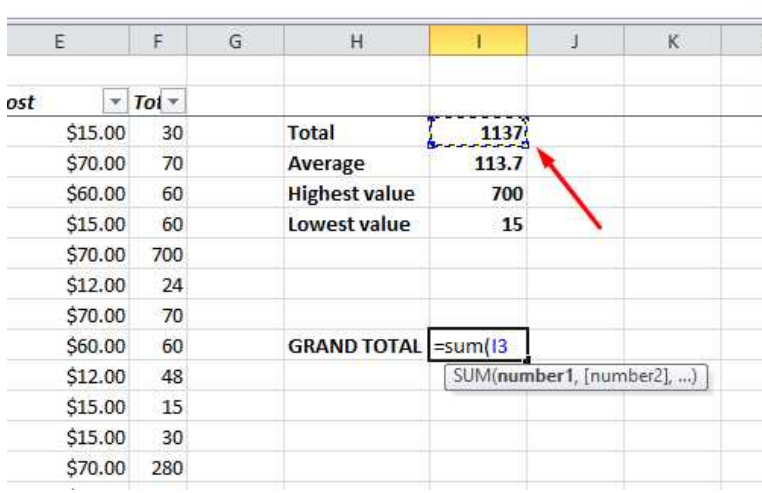
columns may change but for the most part, it is the same sheet. The overall total cell is the same as the overall total cell letter in the other sheet. We have I3 in Sheet 1 and also I3 in sheet 2.

Now, we can go back to sheet 1 and do a 3D formula. This is the reason why you might want to do a 3D formula. You can create several different sheets and want to have a grand total value of all of your stocks.

Now, in the empty cell of your Grand total, type =sum(



Then you simply click on the cell that you would like to add. So we want to add the total value in sheet 1 but not just that. We also want to add the total value in sheet 2.

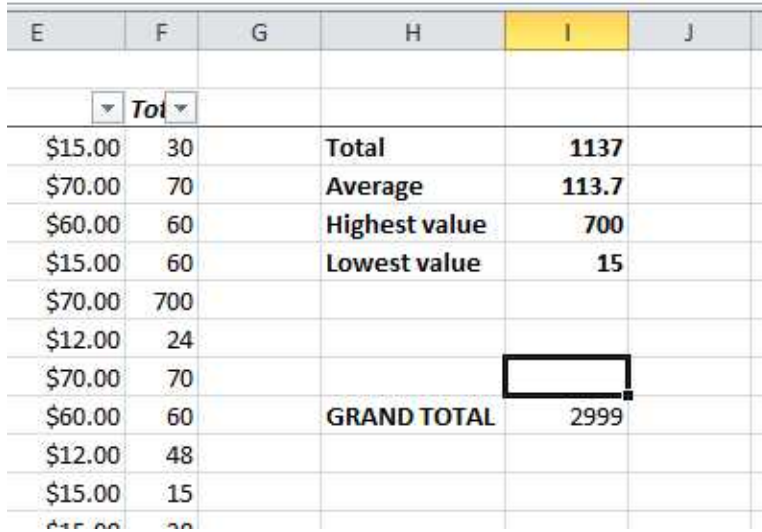


The way you would do that with the correct cell selected is to go down to the list of sheets, press and hold shift on the keyboard and click on the other sheet or sheets to enlist in your sum up.

Let us say you want just sheet 1 and sheet 2, while holding shift you would click on sheet 2. Now they're both selected.

Now look at the formula, it is incorporating the two sheets. This is what we call a 3D formula. It is not just dealing with columns and rows but also sheets. So now select the two sheets and tap Enter on the keyboard.

This will generate a Grand total value of your stocks.



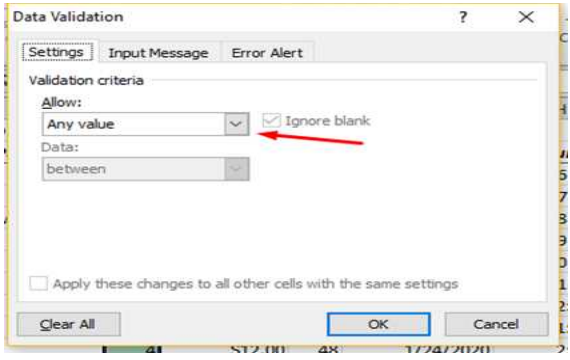
E	F	G	H	I	J
	Tot				
$15.00	30		Total	1137	
$70.00	70		Average	113.7	
$60.00	60		Highest value	700	
$15.00	60		Lowest value	15	
$70.00	700				
$12.00	24				
$70.00	70				
$60.00	60		GRAND TOTAL	2999	
$12.00	48				
$15.00	15				

This is basically how you do a 3D formula in Excel. You would click on the cell you want the 3D formula to appear in, input =, put in the formula you want to use, whether it's sum, average, min, max and so on. Click on the cell in question, it has to be the same cell on sheet 2 or sheet 3 and so on. The data has to be in the same location.

DATA VALIDATION

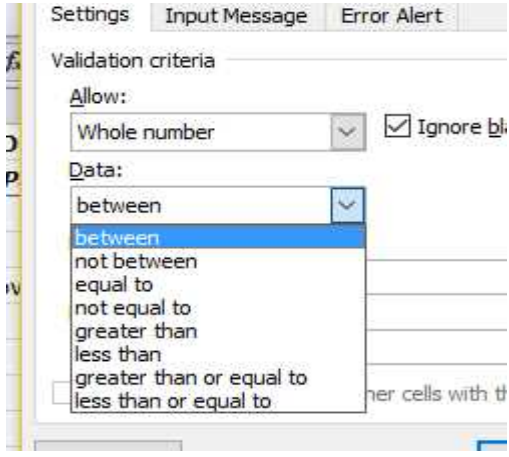
Data Validation is a way of making sure that your data in a particular column is of the same type. For instance, if you are inputting numbers in a particular column, it will make sure the column accepts just numbers and not text. If you are inputting text, it will make sure the column accepts only text and not numbers. It depends on the rule you set. Dates usually have numbers and Names usually have letters.

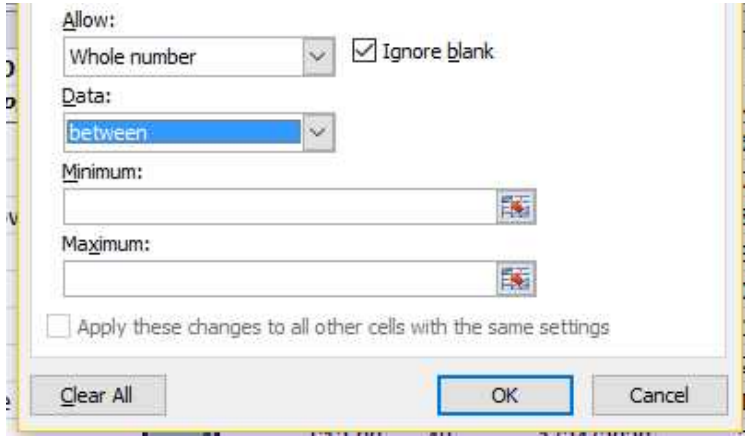
Now click on the Data Tab. In the Data Tools Group, we have Data Validation. To use this, select the data you want to effect. Let us pick column D for instance. Select Column D -> click on Data Validation and you get a pop-up which can be used to make some decisions and choices about the data that will be in column D.



Notice that it is on Any Value; right now it will allow anything to be typed into this column.

Let us change that and make it so that it is not just any value but a whole number. The unit should show up as a whole number. As soon as you select the whole number, the information below changes.





You can change the data to be between, not between, equal to, greater than or less than etc. Now enter the two numbers if between was selected and click OK.

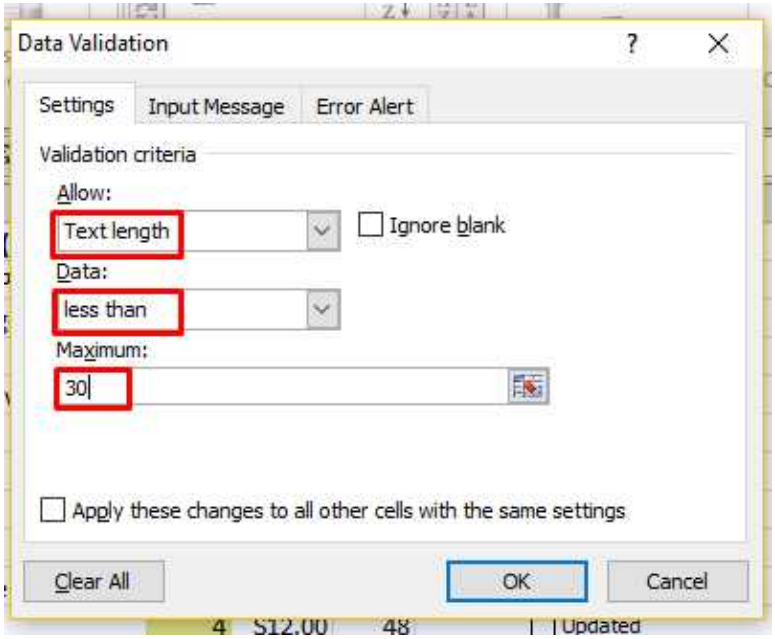
Now, if you type something into this particular column that does not fit into those parameters, it returns an error message.

With data validation, you can prevent people from entering data that just does not make sense and does not fit certain parameters.

This data validation can be very helpful as you try to make your spreadsheet have accurate information especially if you are sharing a spreadsheet with other people that do not know excel as you do.

This also applies to text. Select column A which contains names i.e. text -> go to Data Validation and you will see an option to set your parameters. If you also type something into this particular column that does not fit into the text parameter, it would return an error message.

Now select Text length as shown below;



The length of the text will have to be a maximum of 30 characters as inputted. Click OK. If you try to type in something too long, you will get an error message that you should stick to the parameters of the column. This is the most common kind of data validation whereby you can set parameters for numbers or texts.

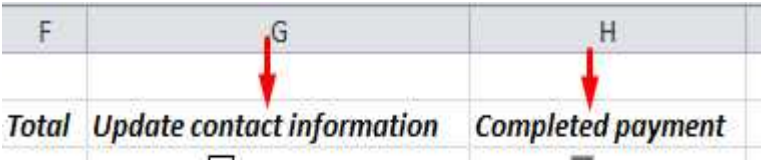
USING CHECK BOXES

This lecture will teach you how to add check boxes into your excel spreadsheet and its usefulness to you.

In this spreadsheet, we have a list of items bought by customers and some other information. Now, let us create two columns with checkboxes.

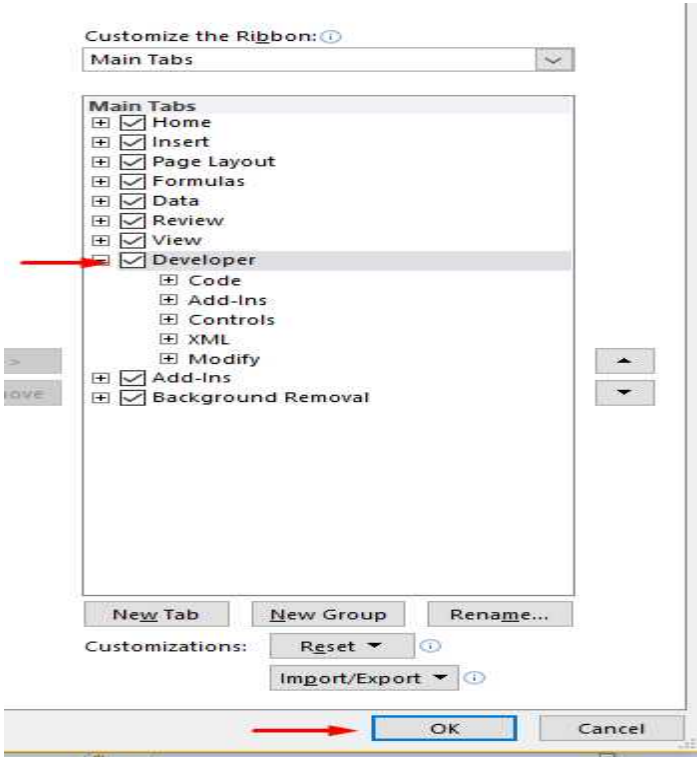
One of the columns will show us if each customer has updated their contact information for the year 2020 and the second column will show us if they had completed their payment for the items bought.

Here we have the easiest way to add check boxes into your spreadsheet. The two newly created columns would have the titles Update Contact information and Completed payment.

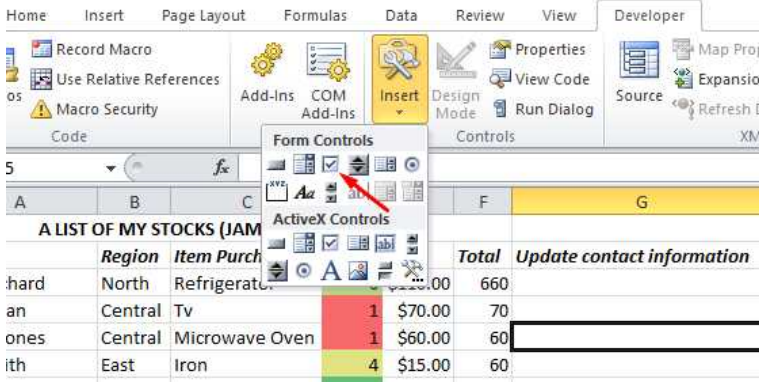


In cell G3, Let us create a checkbox.

The first step is to enable the Developer Tab. It is not always there by default, so you may not see that. The way to get the Developer Tab is to right click on the ribbon -> now you can select customize the ribbon. It will bring up some options which you can use to change the way your ribbon looks and the options that appear. Go to the right side where we have Main Tabs -> you will have to check 'Developer' -> click OK. Now you should have the Developer Tab.



We can now add a checkbox to G3. All you have to do is make sure you are on the developer Tab -> click on Insert on the Control Group. It will show you the options for form controls. There are two sets of form control. Let us go for the first set because they are easier to use. Now click on the check box icon -> then click on where you want the checkbox to appear.



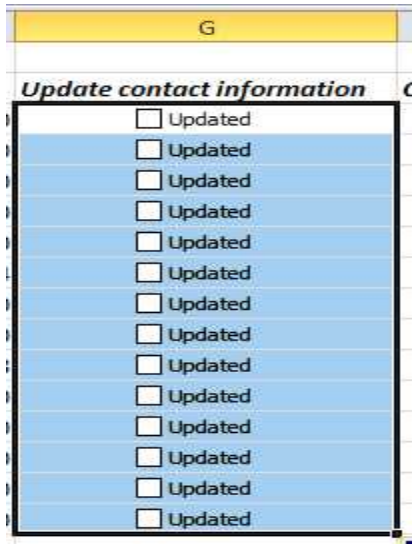
Now reposition your checkbox and line it up properly. You can move your checkbox by clicking and holding while dragging the checkbox. Now this is better;

The checkbox comes in with some text. If you do not want the text you can replace it with another. Just right click on the checkbox and click Edit Text. You will now get a cursor which you can use.

Now that you've changed the name, if the checkbox is checked we know the employee has updated his contact information. Now let us do this all over again for the other records.

You can easily do this by clicking on the first checkbox and use the auto fill method as thought earlier. Just click on the little square in the lower right corner of the cell you want to copy, drag down and release your mouse. This would just copy the content of the first cell into others.

Now all the cells have a form control.

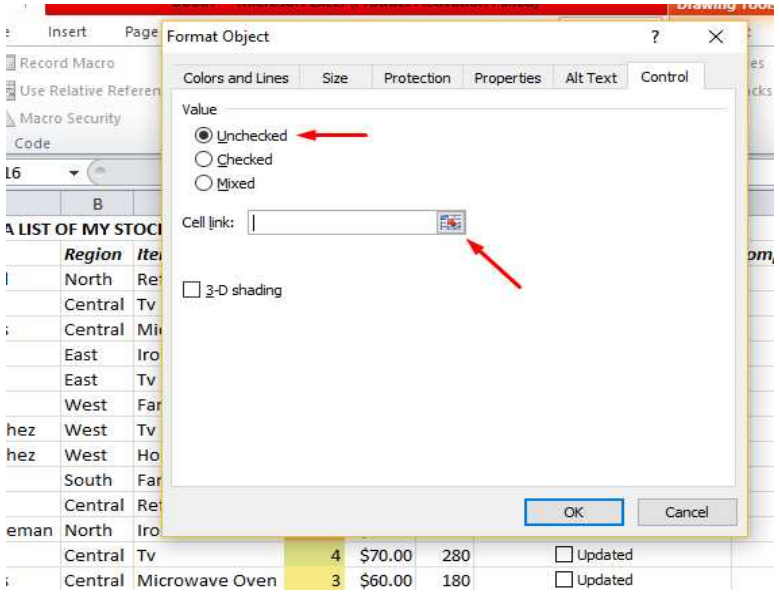


It is even possible to use these checkboxes for more than just a visual queue that something has been completed.

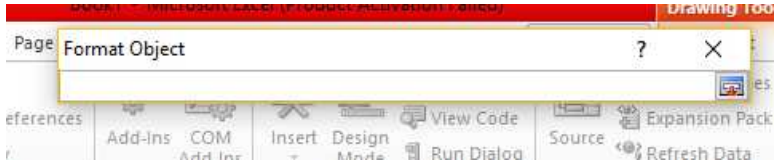
On the completed payment column, click on H3 in this case -> the developer tab -> the control group -> click Insert checkbox. Click and drag to put it in the proper place.

In this case, right click on it and delete the text. Now, right click on the checkout and click on format control.

Let the value of the checkbox be unchecked -> click on Cell link. We want to link the cell box to a cell so that the result of the checkbox goes to the other cell.

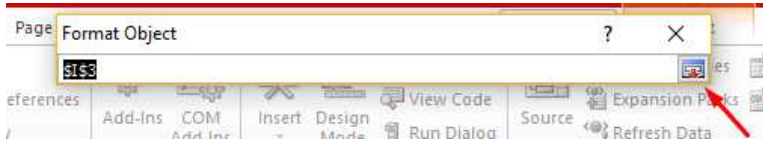


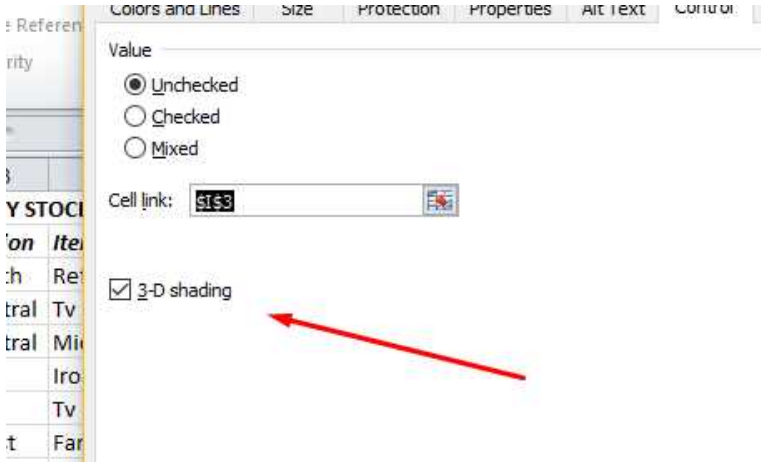
Click on the arrow on cell link. You should see a blank pop up.



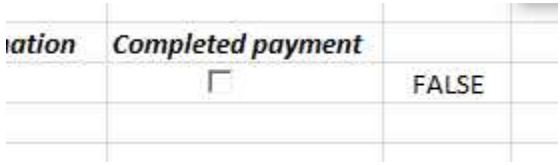
Now click on the cell you want to link to the checkbox.

Go to the pop-up and click the arrow again. You can tick 3-D shading to the checkbox.

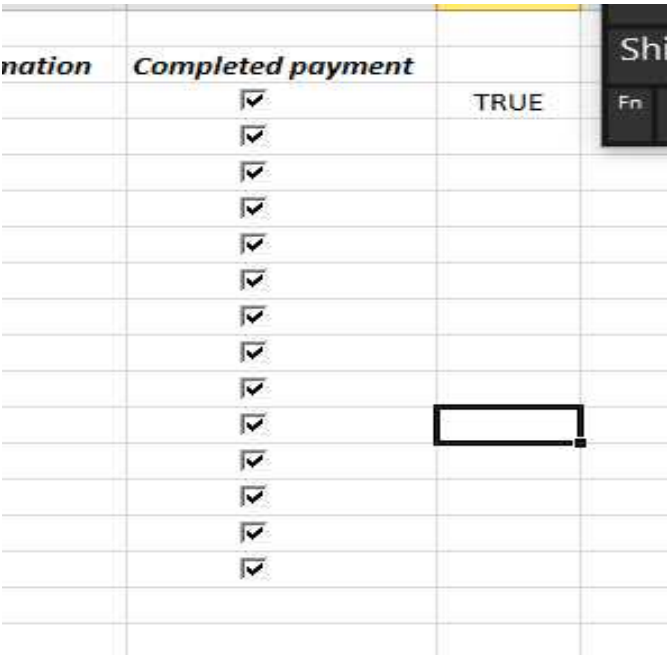




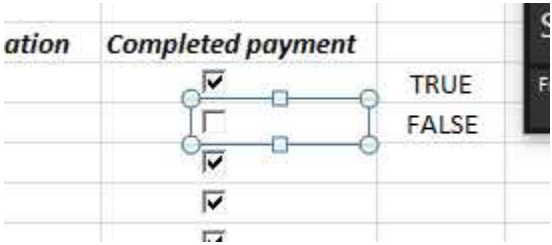
Now click OK. Cell I3 is now linked to the checkbox. It will now show whether it is TRUE or FALSE that the box is checked or not respectively.



Now let's use the auto fill handle to copy this down the page. You might need to right click in order to select the cell. You'll see that when you check one checkbox, they all get checked. They are all working out of I3 cell. That is a problem.

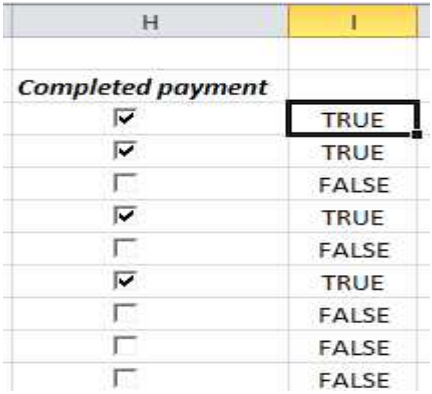


Now right click on your second checkbox -> click on form control -> update it to be I4. If you try it now, the second one is now working independently.



This is the not cool side i.e. the way checkbox form control works in Excel. You would have to update each of these record. This is not cool especially if you have a big spreadsheet. So let us fix the rest of the form control.

Now that we have finished updating it, we have this;



The awesome part about having this report TRUE or FALSE is that you can setup a formula, basically an IF statement. Click on J3 -> input your IF statement. You can also use conditional formatting as well. You can even hide the true or false column just by right clicking on the column letter and selecting hide. The TRUE or FALSE logical statement still exists but it is hidden from the view of the people that look at the spreadsheet. Visually, it will only show the checkboxes.

FUNCTIONS

1. **Date and Time Function**

   You can display a particular date and time in an empty cell in Excel.

   This will show you how to quickly enter today's date and time into your spreadsheet. You can display a particular date in an empty cell in excel by entering the formula =today() and tap enter on your keyboard. Every time you open the spreadsheet it will display the current date.

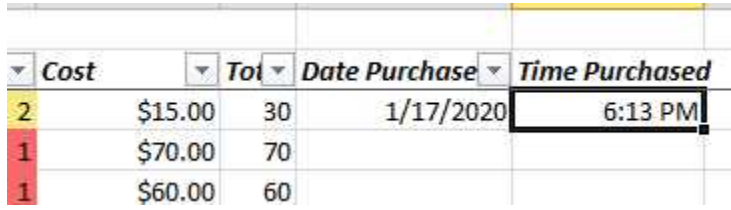
   Sometimes that is not what we want. For instance, in our list of stocks spreadsheet, we have the name of the buyer and we can also add the purchased date and time.

   Here, we do not want the purchased date to change anytime we open the spreadsheet by using this formula; =today(). Every time something is bought, you have to go and type in the current date and time. Actually, there's a quicker way to do this.

   All you have to do is click on a particular cell you want it displayed, press and hold the

Control key -> then tap the semi column key (;). When you do this, it automatically puts whatever today's date is, right into that cell that is selected. You can now tap enter on the keyboard and move on. So we have Ctrl + ;

To add the current time, all you have to do is press and hold Control -> then Shift and tap the semi column key (;). The will display the current time. So we have Ctrl + Shift + ;



	Cost	Tot	Date Purchase	Time Purchased
2	$15.00	30	1/17/2020	6:13 PM
1	$70.00	70		
1	$60.00	60		

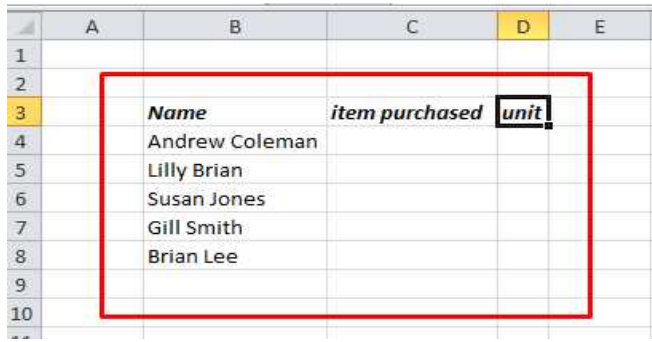
You need to know that this date and time that we put will remain the same even if you close the spreadsheet and open it another time. That is the difference with the today's function, anytime you open the spreadsheet and it is a different date, the today's function will change the date displayed to the current date.

2. Vlook Up

VLOOK UP is one of the most powerful yet simple functions in Excel that we use every day. It is very important to know the basics of the concept. It is used to look up information that is corresponding to information in other tables or spreadsheets.

You might have a big giant table and in this table you wanted some specific details about some customers. Instead of going through this giant table, you could just create a simple table with the customers' names and use the VLOOK UP function to fetch out what you wanted.

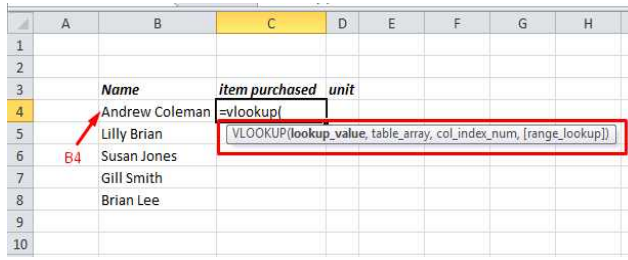
For instance, from our list of stocks let us get the items purchased and the units' number for the following customers; Andrew Coleman, Lilly Brian, Susan Jones, Gill Smith and Brian Lee. We already have our giant table i.e. the list of stocks. Now let us create a new table in a new sheet. In our table, we will have three columns containing the names of the customers, items purchased and units' number.



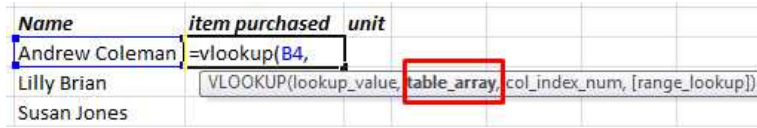
The items purchased and the units' number is what we wanted. We have to look up these two values to know the corresponding values. Now we are going to make use of the Vlook up function.

Starting with 'item purchased', click on the first cell i.e. C4. Enter =vlookup(

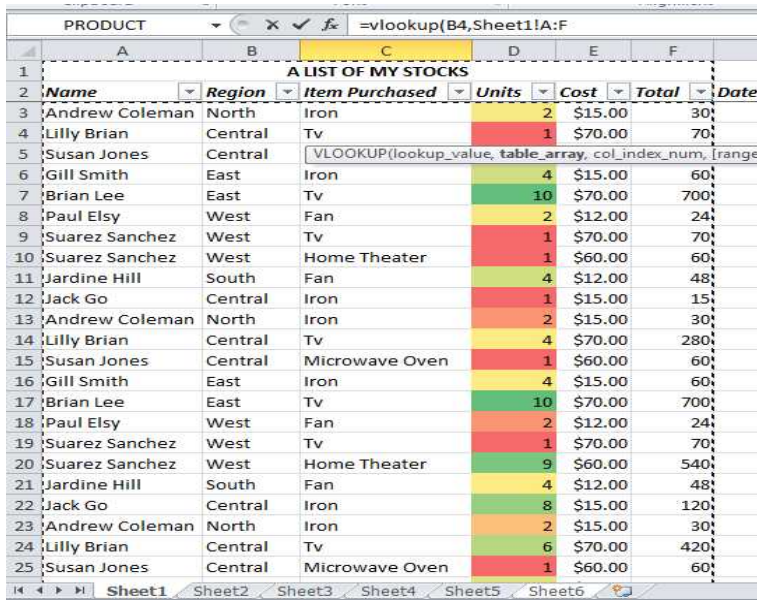
If you look below, it is now asking for the look up value i.e. what did you want to look up in the other table? We want the item purchased by Andrew Coleman which is in cell B4.



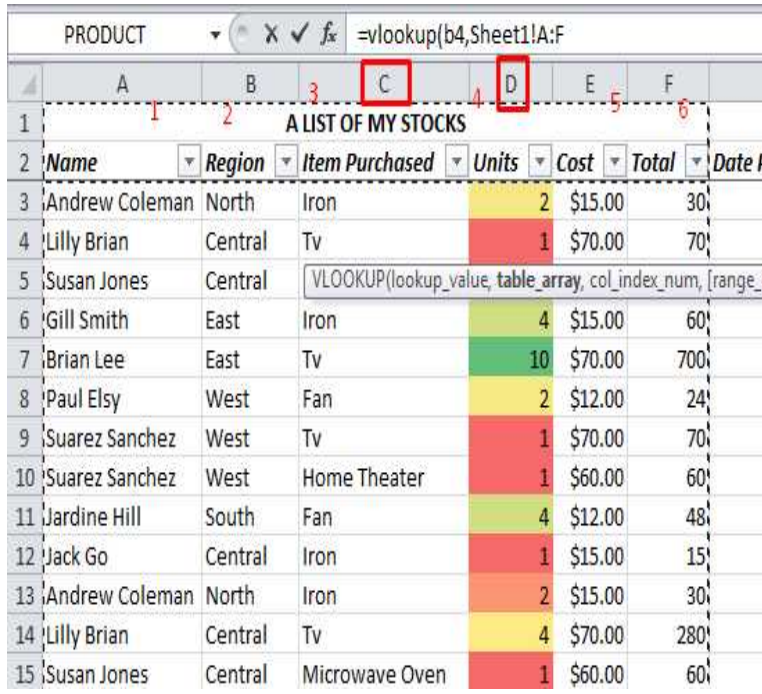
Type B4 next -> then add , . Now it is asking for the table array you want to see.



Now go to the other table and select the entire table by clicking on the top of the column and dragging it to the last content column. Please take note of the number showing as you drag, the number changes as you drag.

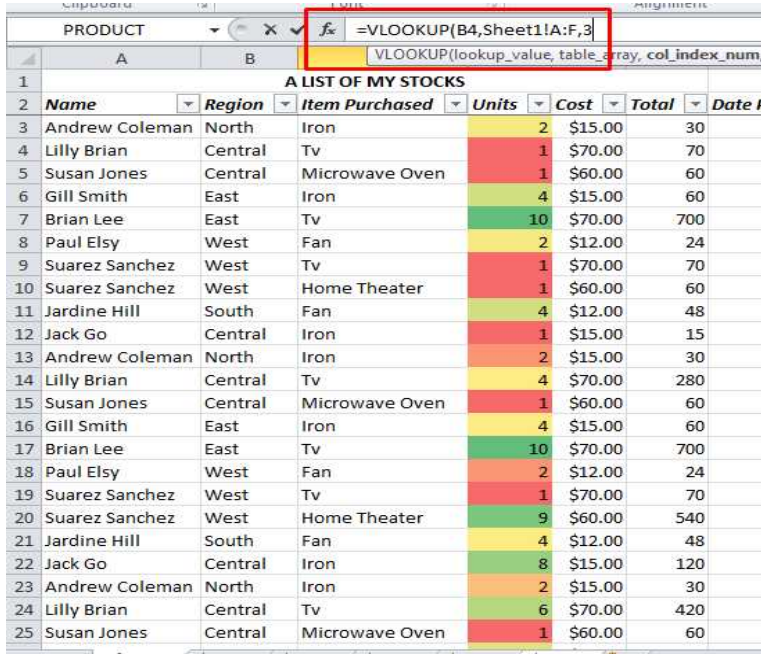


Now, at the top of your giant table add , . The next thing is inputting the column index number which is the column number of the data we wanted to get. The column number for item purchased is 3, it is found in the third column. This is the column that we wanted to search which corresponds to the name. If we had wanted to get the unit number first, we would have picked 4 instead i.e. the fourth column that has the Unit.



	A	B	C	D	E	F
1	A LIST OF MY STOCKS					
2	Name	Region	Item Purchased	Units	Cost	Total
3	Andrew Coleman	North	Iron	2	$15.00	30
4	Lilly Brian	Central	Tv	1	$70.00	70
5	Susan Jones	Central				
6	Gill Smith	East	Iron	4	$15.00	60
7	Brian Lee	East	Tv	10	$70.00	700
8	Paul Elsy	West	Fan	2	$12.00	24
9	Suarez Sanchez	West	Tv	1	$70.00	70
10	Suarez Sanchez	West	Home Theater	1	$60.00	60
11	Jardine Hill	South	Fan	4	$12.00	48
12	Jack Go	Central	Iron	1	$15.00	15
13	Andrew Coleman	North	Iron	2	$15.00	30
14	Lilly Brian	Central	Tv	4	$70.00	280
15	Susan Jones	Central	Microwave Oven	1	$60.00	60

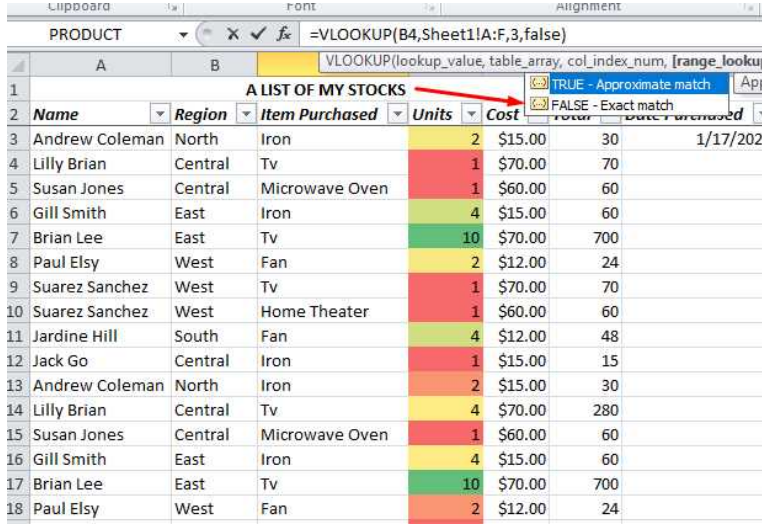
We have;

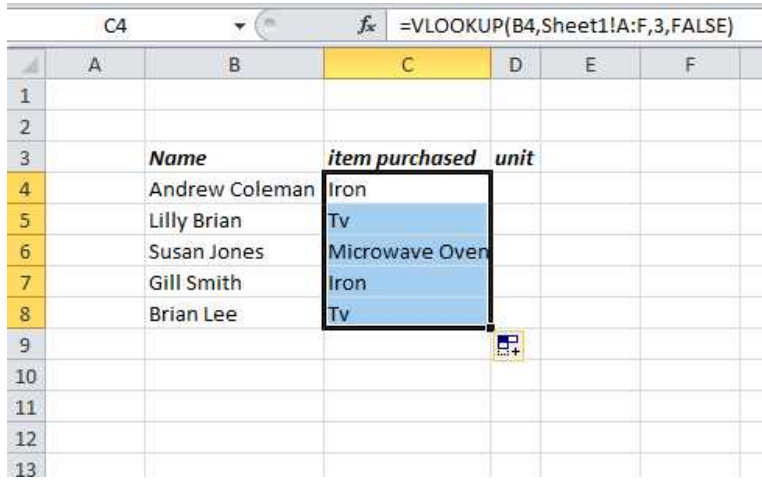


PRODUCT | =VLOOKUP(B4,Sheet1!A:F,3 | VLOOKUP(lookup_value, table_array, col_index_num, [

	A	B	C	D	E	F	G
1	A LIST OF MY STOCKS						
2	Name	Region	Item Purchased	Units	Cost	Total	Date Pu
3	Andrew Coleman	North	Iron	2	$15.00	30	
4	Lilly Brian	Central	Tv	1	$70.00	70	
5	Susan Jones	Central	Microwave Oven	1	$60.00	60	
6	Gill Smith	East	Iron	4	$15.00	60	
7	Brian Lee	East	Tv	10	$70.00	700	
8	Paul Elsy	West	Fan	2	$12.00	24	
9	Suarez Sanchez	West	Tv	1	$70.00	70	
10	Suarez Sanchez	West	Home Theater	1	$60.00	60	
11	Jardine Hill	South	Fan	4	$12.00	48	
12	Jack Go	Central	Iron	1	$15.00	15	
13	Andrew Coleman	North	Iron	2	$15.00	30	
14	Lilly Brian	Central	Tv	4	$70.00	280	
15	Susan Jones	Central	Microwave Oven	1	$60.00	60	
16	Gill Smith	East	Iron	4	$15.00	60	
17	Brian Lee	East	Tv	10	$70.00	700	
18	Paul Elsy	West	Fan	2	$12.00	24	
19	Suarez Sanchez	West	Tv	1	$70.00	70	
20	Suarez Sanchez	West	Home Theater	9	$60.00	540	
21	Jardine Hill	South	Fan	4	$12.00	48	
22	Jack Go	Central	Iron	8	$15.00	120	
23	Andrew Coleman	North	Iron	2	$15.00	30	
24	Lilly Brian	Central	Tv	6	$70.00	420	
25	Susan Jones	Central	Microwave Oven	1	$60.00	60	

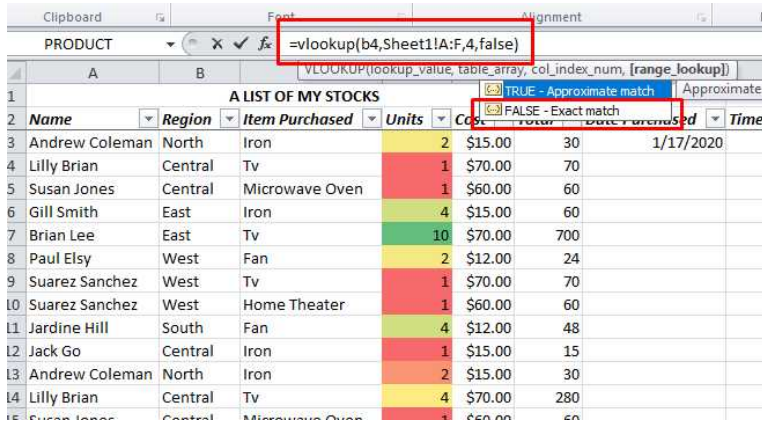
Then add , again. You should see a pop-up to select between TRUE or FALSE. Type FALSE to get Exact value -> type) -> tap Enter. You should have the corresponding value.

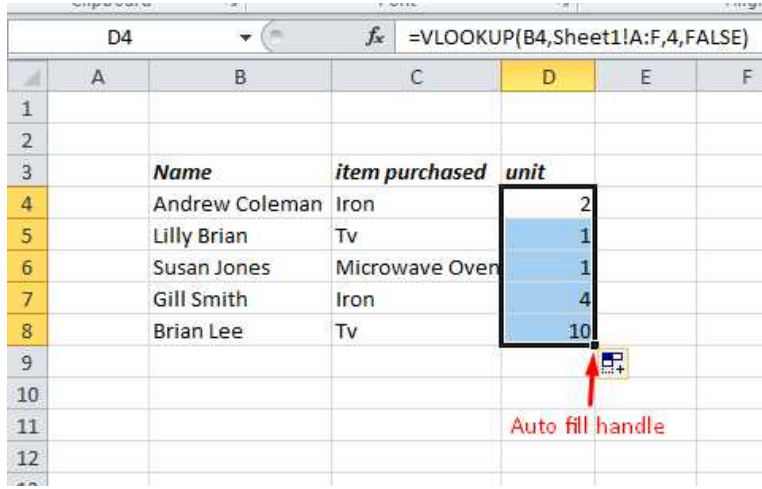




As shown above, we now have the result. You can apply the auto fill handle tool to complete other cells.

Now, let us get the result for the Unit column by using the same method. So we have this below;

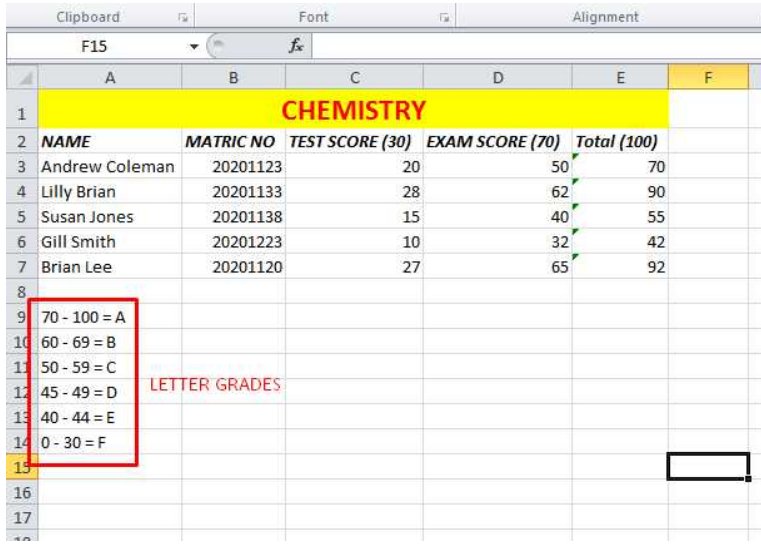




3. IF Function

In this part, you will learn the IF logical function in excel. The IF function allows you to make logical comparisons of two or more values. The IF, AND and OR are called logical functions.

Let us turn a score into a letter grade with the IF function. Firstly, let us create students records for a particular subject that contain the Name, Matric No, Test Score and Examination Score. We have also added what they will be graded on including the Letter grades.

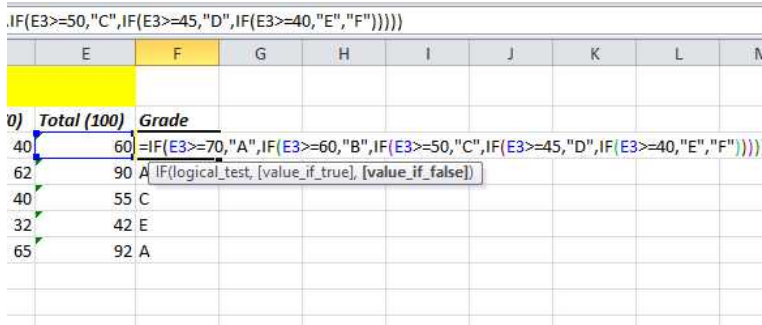


To make excel bring out letter grades as a representation for scores or percentage, we would have to make use of the IF statement.

Now we have the test and exam report of Students. Let us get the Total and grade them.

On the grade column, double click on F3 to put in the IF statement.

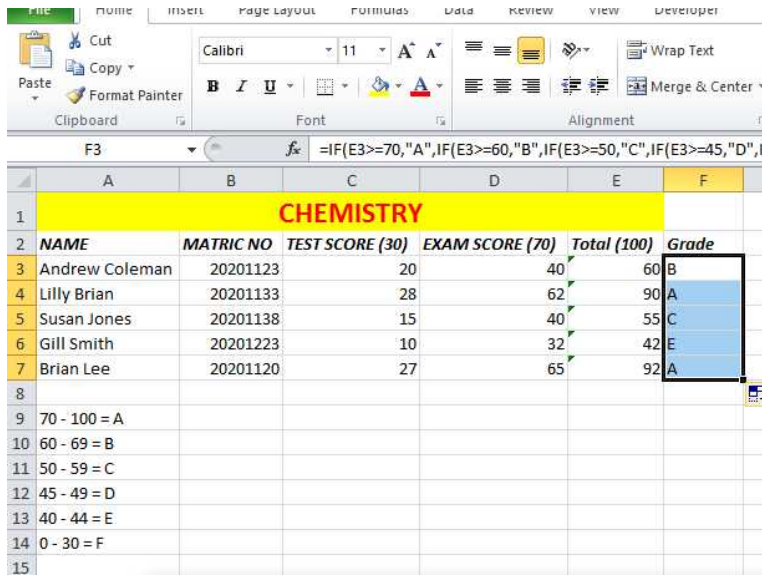
Enter
=IF(E3>=70,"A",IF(E3>=60,"B",IF(E3>=50,"C"
,IF(E3>=45,"D",IF(E3>=40,"E","F")))))



Since we are grading the Total score i.e. column letter E, we start by entering =IF(E3>=70,”A”, this will display A if the

score is 70 and above, we continue by adding ,IF(E3>=60,"B" this will display B if the score is within 60 and 69, we continue by adding ,IF(E3>=50,"C" this will display C if the score is within 50 and 59, we continue by adding ,IF(E3>=45,"D" this will display D if the score is within 45 and 49, we continue by adding ,IF(E3>=40,"E" this will display E if the score is within 40 and 44, we continue by adding just ,"F" this will display F if the score is within 0 and 39.

You can now use the auto fill handle to complete the other cells.

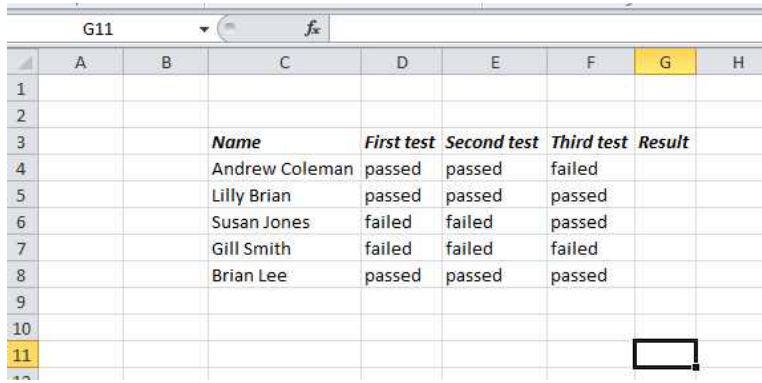


	A	B	C	D	E	F
1	CHEMISTRY					
2	NAME	MATRIC NO	TEST SCORE (30)	EXAM SCORE (70)	Total (100)	Grade
3	Andrew Coleman	20201123	20	40	60	B
4	Lilly Brian	20201133	28	62	90	A
5	Susan Jones	20201138	15	40	55	C
6	Gill Smith	20201223	10	32	42	E
7	Brian Lee	20201120	27	65	92	A
8						
9	70 - 100 = A					
10	60 - 69 = B					
11	50 - 59 = C					
12	45 - 49 = D					
13	40 - 44 = E					
14	0 - 30 = F					
15						

4. AND Function

This will show you how and when to use the AND function. The AND function takes multiple logical tests and if all of the tests are true, it will return a true statement. If any of them is false, it will return a FALSE statement. All conditions must be passed to return a TRUE statement.

Below is a simple table that denotes if a number of students would be promoted or not. They will be given three different tests. The condition of the table is that a student has to pass all tests to be successful. The table will have five columns which are; Name, First test, Second test, Third test and Result column. Each row is the record for a student.



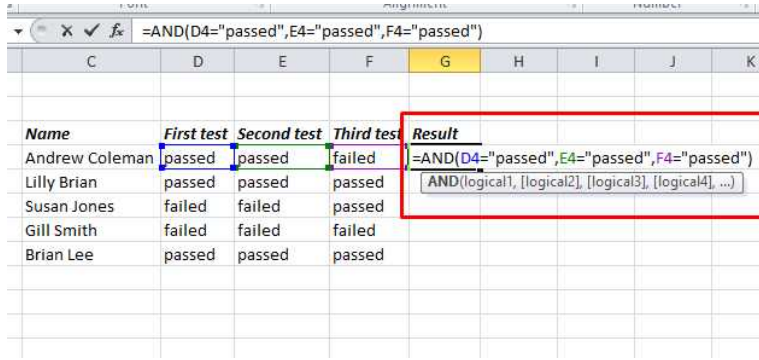
The first row (student) has passed, passed and failed which means that the student did not pass the third test. The result will be failed since the condition says all tests must be passed.

Also from the table, the second student has passed, passed and passed. So he has passed. That's the idea, now we want the result column to automatically give us each student's status. Here comes the AND function.

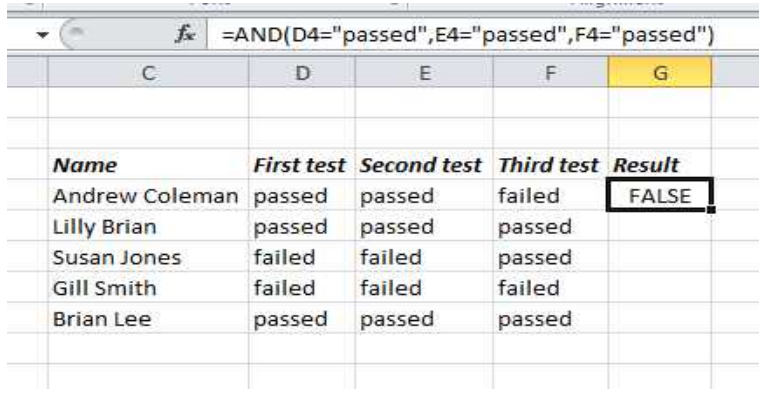
The AND function will take multiple logical tests and if all of the tests are true, it will return a TRUE statement. If any of them is false, it will return a FALSE statement.

In the Result column, now enter the AND function. Type =and(Now let us do a series of logical test. The first test will start with First test column and we want to see if the first student passed the first test. So we have =and(D4="passed", Now the second logical test will be added. We have =and(D4="passed", E4="passed", Lastly, the third logical test =and(D4="passed", E4="passed",F4="passed") That is all, do not forget to end your statement with)

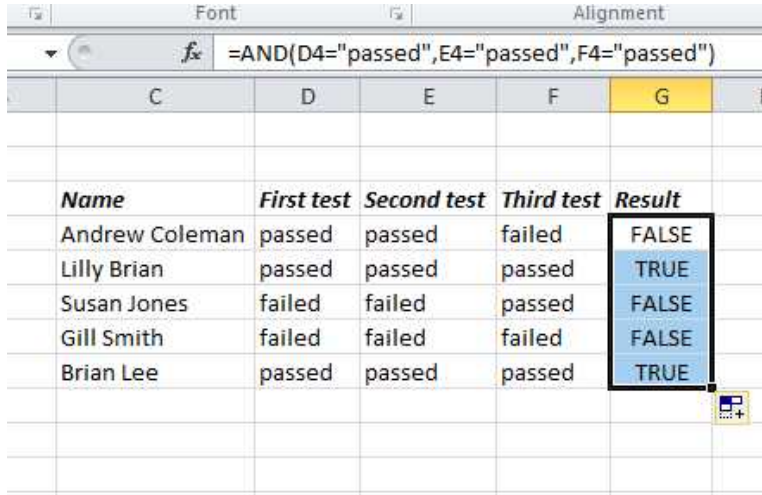
Now our full formula is =and(D4=”passed”, E4=”passed”,F4=”passed”)



If the entire test columns were passed, the AND function would return TRUE but if any is failed, it would return FALSE. Now, the first student Result would be FALSE because one of the tests was failed. The moment you hit enter, we have FALSE.



Now you can make use of the auto fill handle to complete the other cells. The next student's result would be TRUE because the entire tests were passed.

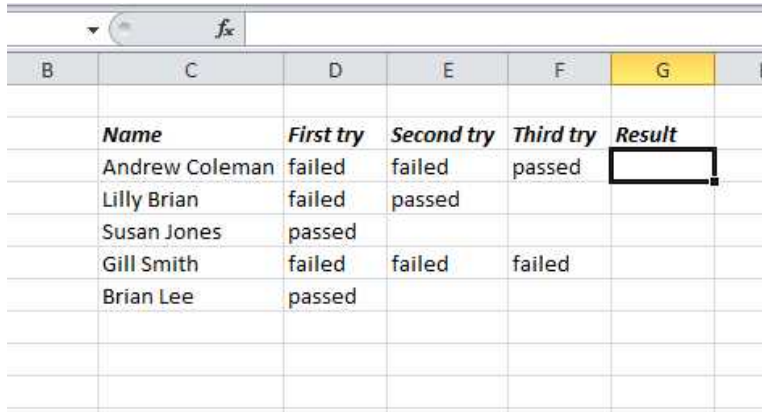


5. OR Function

This will show you how and when to use the OR function. The OR function takes multiple logical tests and if one of the tests is true, it will return a true statement. If all of them are false, it will return a FALSE statement. At least one condition must be passed to return a TRUE statement.

Below is a simple table that will determine if a number of students will be promoted or not. They will be given only three attempts to pass a test. The condition of the table is that a student has to pass at least in one attempt to be successful. The table will have five columns which are; Name, First try, Second try, Third try and Result column. Each row is the record for a student.

Below is a simple table that denotes if a student has passed or not. He will be given just three attempts to pass a test.



	B	C	D	E	F	G	H
		Name	***First try***	***Second try***	***Third try***	***Result***	
		Andrew Coleman	failed	failed	passed		
		Lilly Brian	failed	passed			
		Susan Jones	passed				
		Gill Smith	failed	failed	failed		
		Brian Lee	passed				

From the table above we have the test record. If a student passed the test, then one of the columns must be passed. The Result would be TRUE.

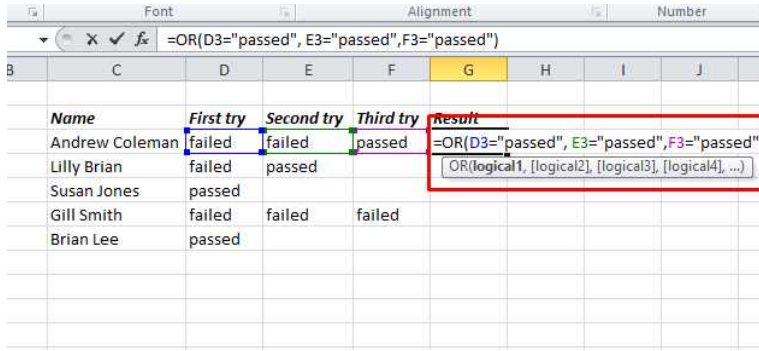
You have up to three attempts to pass the test. If a student failed all the three attempts, the Result would be FAILED. For instance, the first student in the table failed the first and second try but passed the third try, now he passed. The Result would be TRUE.

The OR function is very useful especially when you have a lot of records to look into. You would not want to go through it line by line, there would be human errors and also a lot of time would be wasted.

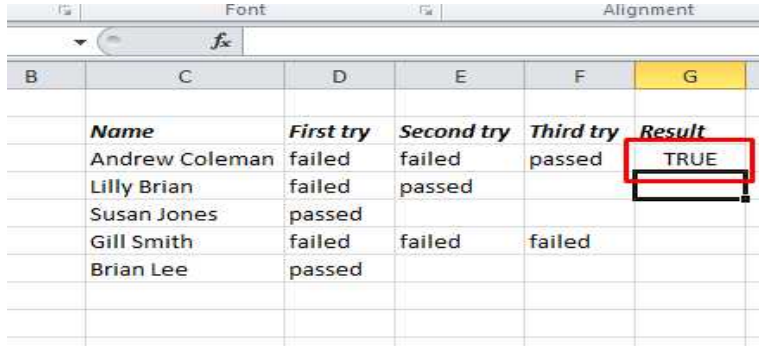
In the Result column, now enter the OR function. Type =OR(Now let us do a series of logical test. The first test will start with First test column and we want to see if the first student passed at the first try. So we have =OR(D3=”passed”, Now the second logical test will be added. We have =OR(D3=”passed”, E3=”passed”, Lastly, the third logical test =OR(D3=”passed”,

E3=”passed”,F3=”passed”) That is all, do not forget to end your statement with)

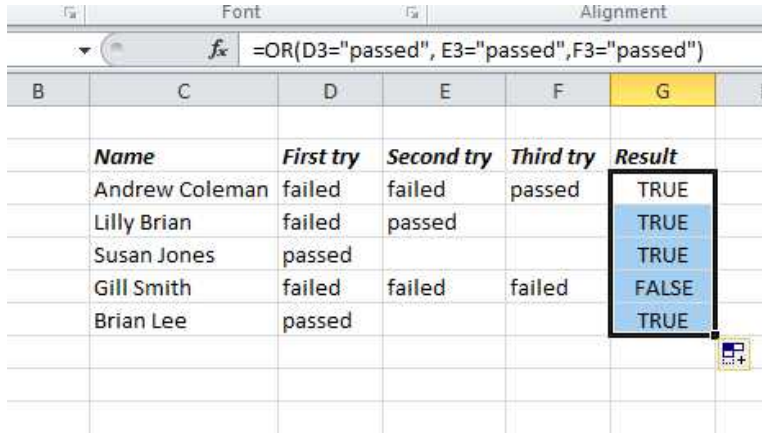
Now our full formula is =OR(D3=”passed”, E3=”passed”,F3=”passed”)



If the entire test columns were failed, the OR function will return FALSE but if any was passed, it would return TRUE. Now, the first student Result would be TRUE because one of the attempts was passed. The moment you tap enter, we have TRUE.



Now you can make use of the auto fill handle to complete the other cells. The fourth student's result would be FALSE because all the attempts were failed.



Exercise

Create a table that will contain necessary employees details and apply the following functions; Product, Sum, Average, Max, Min, IF, AND and OR.

Richard is a Data Analyst and he has spent more than 17 years in the ICT industry. He is a specialist and he has vast knowledge of Business applications especially the Microsoft Suite. His strength lies in providing solutions to daily business challenges in the world of ICT.
Richard has a Bachelor's Degree in Statistics and certified in Data Management and Analytics.