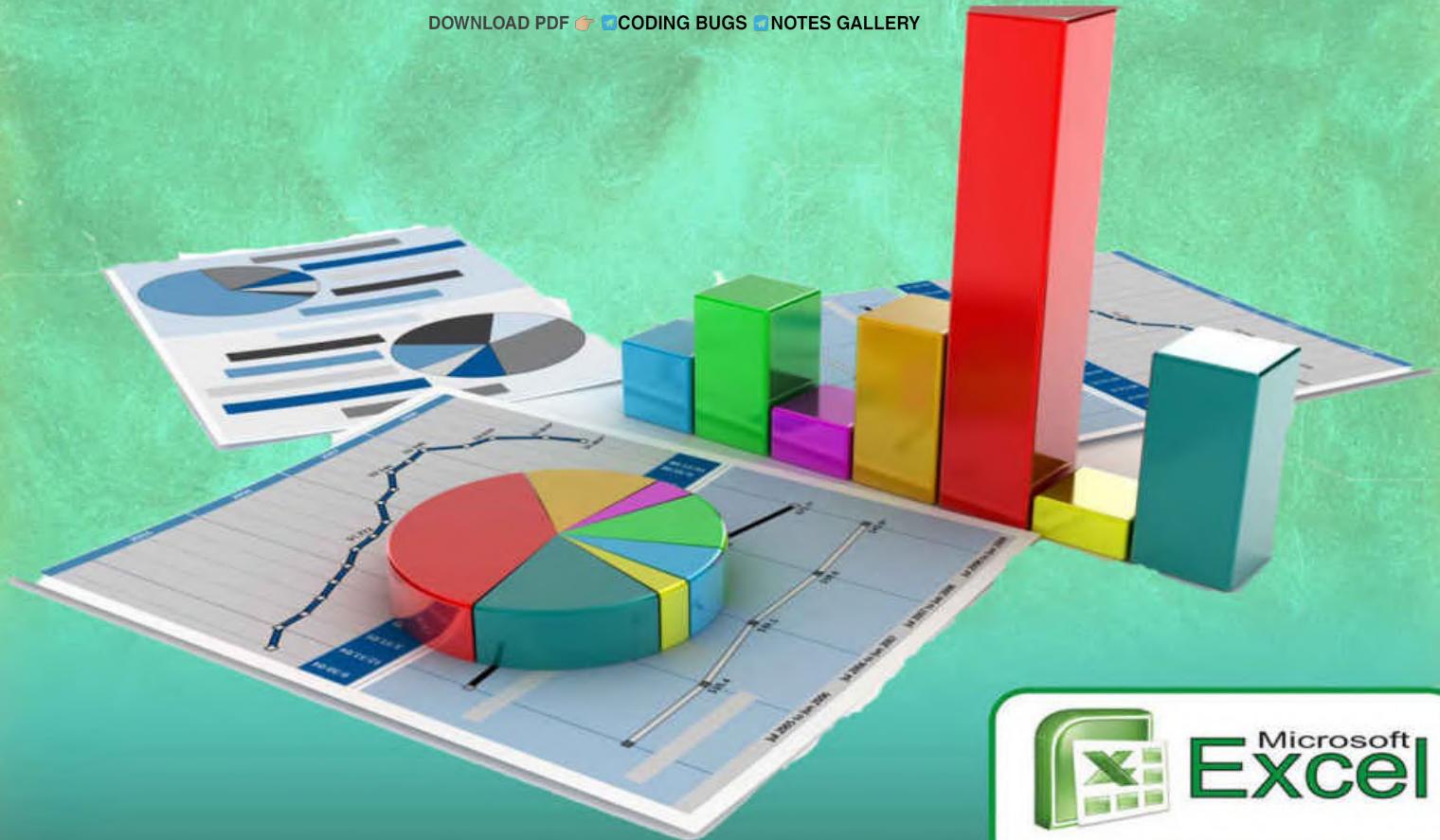


# MICROSOFT EXCEL AND BUSINESS DATA ANALYSIS

## for The Busy Professional

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# MICHAEL OLAFUSI

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eBook written and formatted by [mike@urbizedge.com](mailto:mike@urbizedge.com)

# Preface

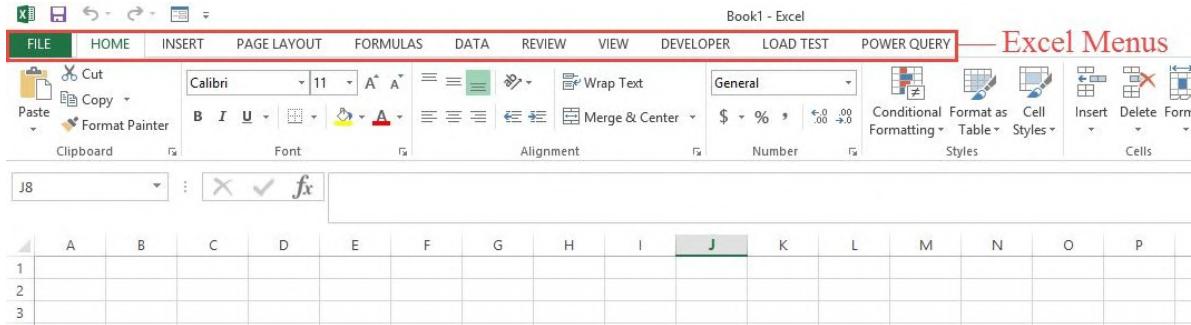
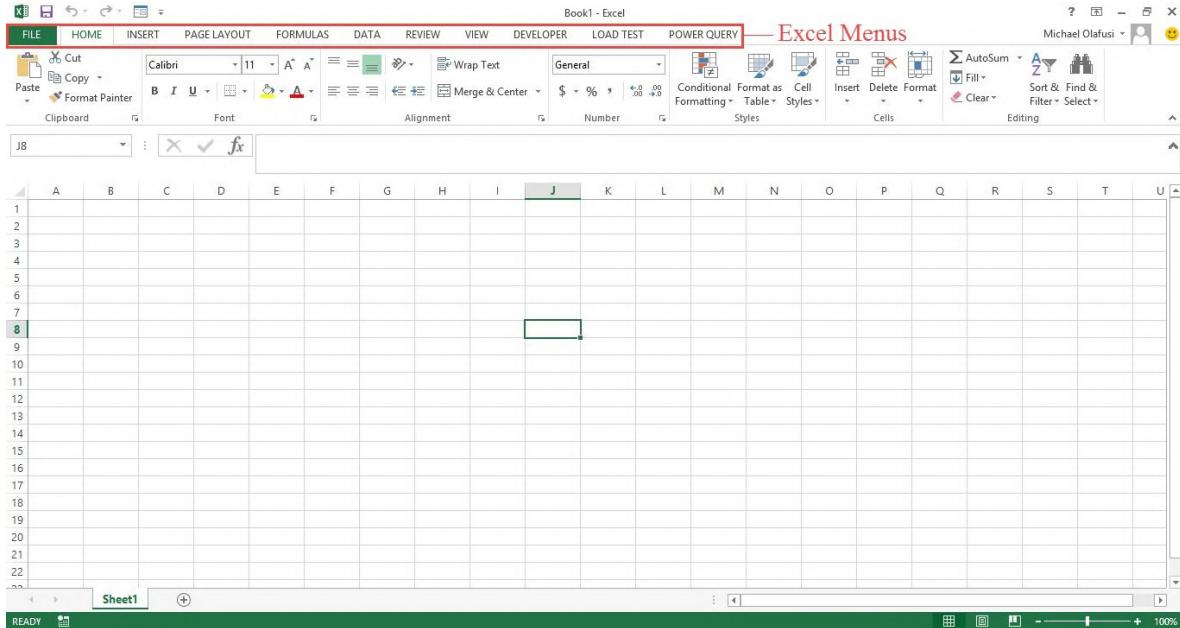
Microsoft Excel is the world's most used business intelligence tool. Its knowledge is even compulsory for an MBA degree and the business world depends greatly on it.

This book is aimed at making you very good in Microsoft Excel for business data analysis, teaching you with companion videos and practice files that can be access at [www.urbizedge.com/about](http://www.urbizedge.com/about) (bottom of the page). It's intended for Sales Managers, Financial Analysts, Business Analysts, Data Analysts, MIS Analysts, HR Executives and frequent Excel users.

It is written by Michael Olafusi a two time Microsoft Excel MVP (most valuable professional) and a full-time Microsoft Excel consultant. He is the founder of UrBizEdge, a business data analysis and Microsoft Excel consulting firm. He has trained hundreds of business professionals on Microsoft Excel and has used the experience gained from interacting with them both during such trainings and while consulting for companies to write this excellent guide for the busy professional who needs the improved work productivity Microsoft Excel provides.

If you feel any part of this book can be better improved or expanded, please send an email to [mike@urbizedge.com](mailto:mike@urbizedge.com)

# Microsoft Excel: It's more powerful and easier to use than you think!

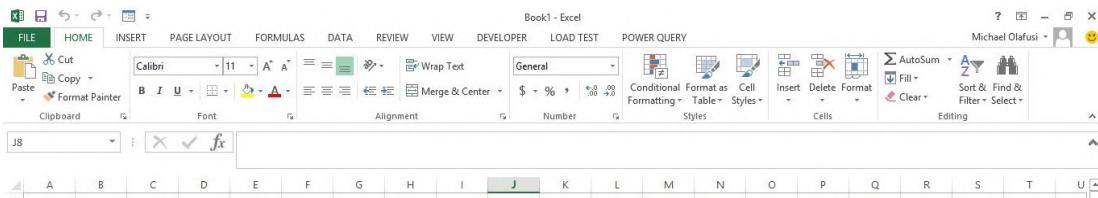


We've got Home menu, Insert menu, Page Layout menu, Formulas menu, Data menu, Review menu and View menu. Each of these menus will be discussed in practical terms.

The other menus — Developer menu, Load Test Menu and Power Query menu — are not displayed by default. I enabled them as I do a lot of programming and other advanced stuff in Excel which I need them for.

## Home Menu

The home menu is Excel's most used menu. It has very straightforward sub-menus.



**Clipboard:** Allows you to copy, cut and paste in Excel

**Font:** Allows you to set font size, color, background color (fill) & turn on bold or italics or underline.

**Alignment:** Allows you to set the position of whatever you've typed (or copied) into Excel. It also allows you to set how it's written: horizontal, vertical or slanting.

**Number:** Allows you to set how a number is shown in Excel: regular number, currency, scientific, percentage, fraction...

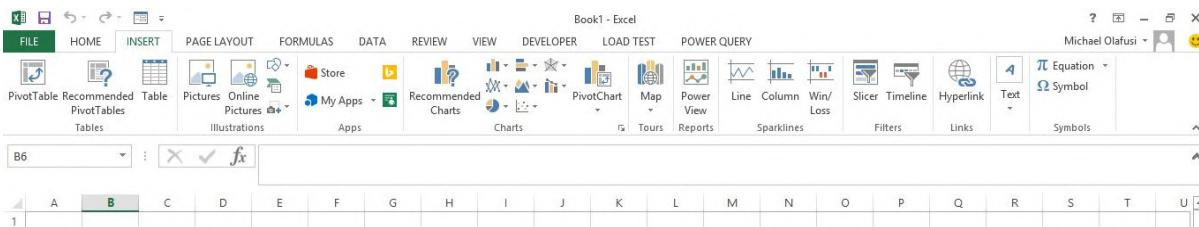
**Styles:** Allows you to set the format of an Excel cell based on the data it holds (conditional formatting). It also allows you to convert a selection of cells to table, and to set quick formats for a cell.

**Cells:** Allows you to insert new cells, delete cells and change cell format.

**Editing:** It houses the very useful Sort and filter tools. And also Find & Select, Find & Replace. There's also AutoSum which helps you sum all numbers in a selection.

## Insert Menu

The Insert menu houses some of Excel's best tools.



**Tables:** Allows you to insert PivotTable, PivotChart and Table. Inserting a table in Excel allows for quick formatting, and better formulas (via named ranges). PivotTable and PivotChart will be discussed later.

**Illustrations:** Allows you to insert images and shapes.

**Charts:** Allows you to insert charts, which will be specially discussed later.

**Tours:** Houses Map which takes you straight to Power Map. Power Map is part of Microsoft's new Power BI. It enables you make geo-maps and create amazing data visualization tours.

**Reports:** Lets you access Power View, another Power BI tool. Power View allows to create a data model, loading up many different databases and creating analysis that cuts across all the databases, allowing you to see insights that are beyond a single database.

**Sparklines:** Allows you to insert charts that fit into one Excel cell. They make some reports beautiful and easy to read.

**Filter:** Allows you to filter out field values you are not interested in.

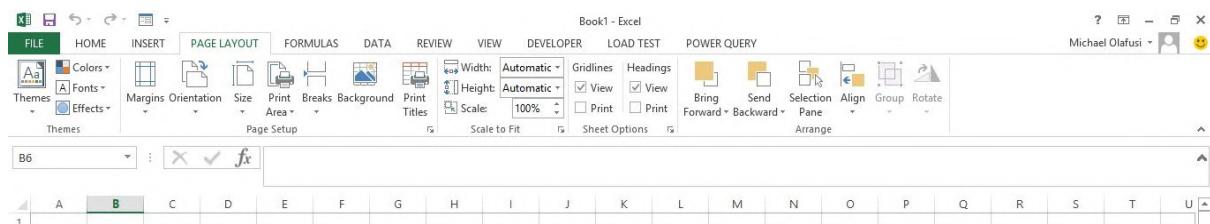
**Links:** Allows you point a cell content to a website or an email address.

**Text:** Allows you to insert texts and objects (pretty much anything, including a PDF document)

**Symbols:** Allows you to type out equations and special symbols.

## Page Layout Menu

The Page Layout menu does just that: setting up your Excel document's page look and for printing.



**Themes:** It's not often used; it sets the look of the Excel window itself.

**Page Setup:** It allows you to set how the page comes out when printed. Most used are the Orientation (to set as Portrait or Landscape) and Print Area (to select on the cells you want to print).

**Scale to Fit:** It allows you to set how much is printed per page. Most frequent use is to force Excel to print on one page, or fit all the fields (columns) on one page width.

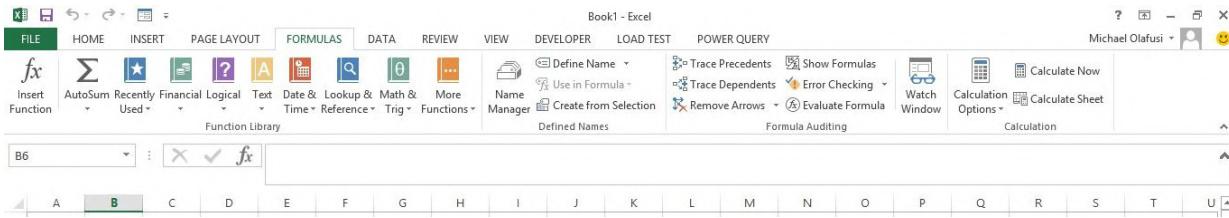
**Sheet Options:** You wouldn't want to change the default. It allows you set whether Excel gridlines be printed or not, and headings too. Default is no/off (unticked).

**Arrange:** It lets you rearrange overlapping objects (shapes, images, textboxes...). Or

align them.

## Formulas Menu

The Formulas menu gives you access to Excel's built-in formulas.



**Function Library:** It has the formulas grouped by category. Once you have an idea of what you want done, it helps you locate the formula to use. It's good to look through it once in a while to have an idea of the out-of-the-box analysis Excel can do.

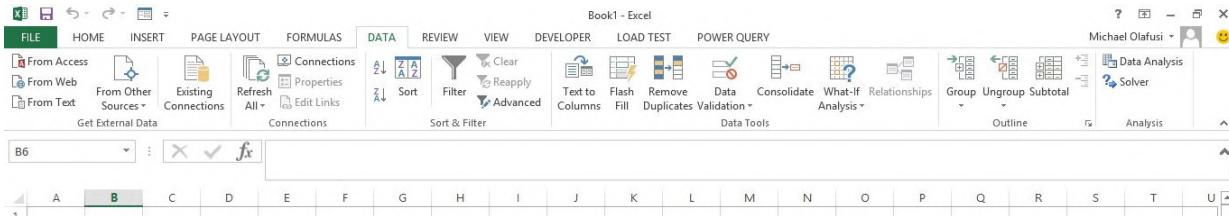
**Defined Names:** Lets you name a cell or selection of cells. Can be very useful when analyzing a big database or building a model.

**Formula Auditing:** Allows you to check for errors in your formulas, trace formula cells and see how your final result is being calculated.

**Calculation:** Allows you to set when the formulas in your Excel sheet are calculated: automatic (whenever a cell value changes) or manual (at first entry and when you force them to be recalculated).

## Data Menu

The Data menu allows you to work with external data and do basic data formatting.



**Get External Data:** It allows you to import or link to an external data file (non-Excel file). You'll use it whenever you have a data in text file and need it worked on in Excel.

**Connections:** Allows you to make changes to the connections/links to an external data file. Or force a refresh of the connections to capture changes made in the external data file since last connection.

**Sort & Filter:** Allows you to sort data and do some filtering too. Filter allows you to specify values to display.

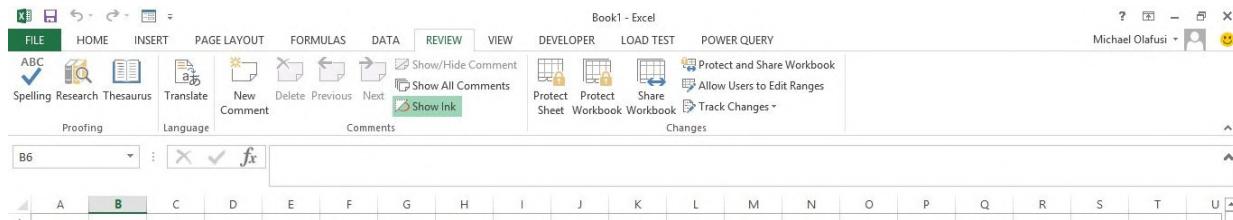
**Data Tools:** Allows you do very basic data analysis. Especially removing duplicate entries, and splitting one field into several (text-to-columns). Example is splitting full name into first name and last name.

**Outline:** Allows you to group (and hide) several rows. Useful for large data reports with few categories; helps to group categories.

**Analysis:** This is only visible after you enable Data Analysis add-in or Solver add-in. It allows you access a large collection of statistical analysis tools and modelling.

## Review Menu

The Review menu is for spell checks, commenting and setting access restrictions.



**Proofing:** Allows you to carry out spell checks and word meaning checks.

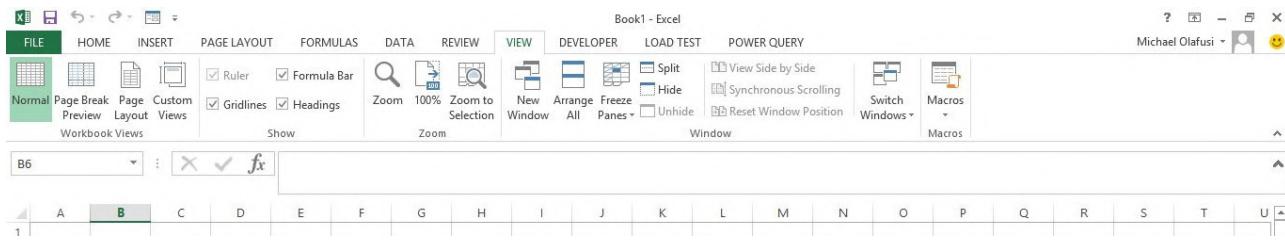
**Language:** Allows you to translate the Excel file content from one language to another.

**Comments:** Allows you to include comments in an Excel sheet, view all comments at once or delete comments.

**Changes:** Allows you to set access restrictions and track changes to the Excel file. Also allows you to share the file.

## View Menu

The View menu allows you to change the window layout of the Excel document. It doesn't change anything in the actual document, just the way it's displayed.



**Workbook views:** Allows you to set how the workbook (Excel file) is displayed.

**Show:** Controls what non-printing details are shown: Gridlines, Headings, Formula bar and Ruler. The one you'll be interested most in is Gridlines. If you want your Excel sheet to look more like a Word file, untick the Gridlines. That's what's done to every Excel sheet you see that has no Gridlines.

**Zoom:** Does what it says: sets zoom.

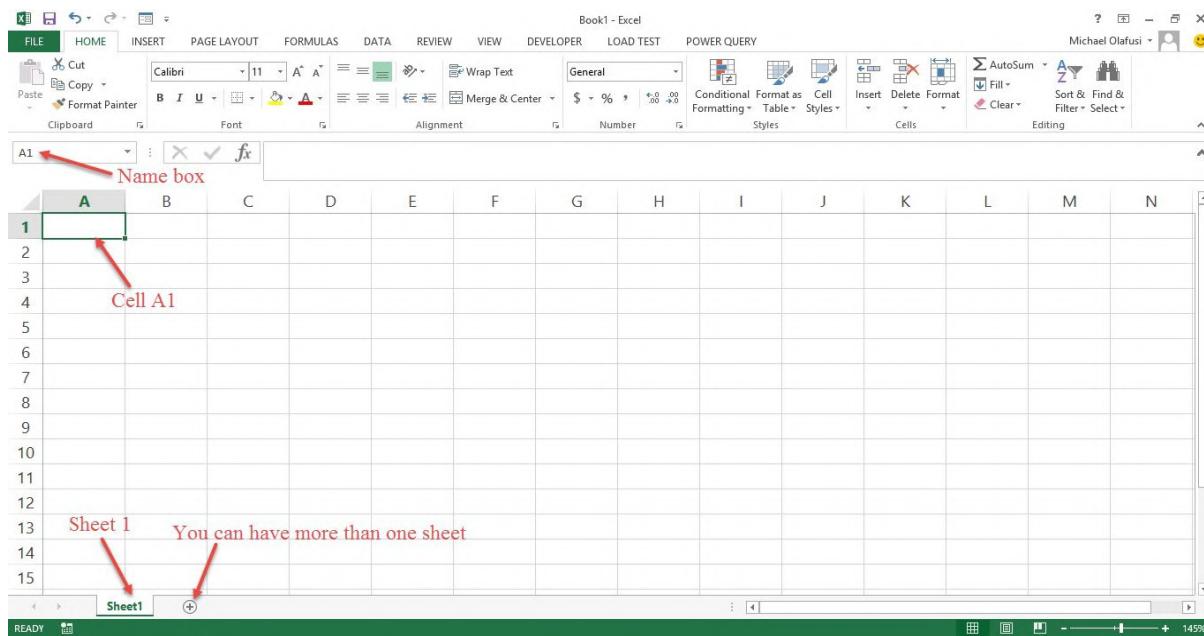
**Window:** Allows you to freeze headers so when you scroll they will never be out of view. And also allows you to split the Excel sheet display, so you can compare two different parts of the sheet.

**Macros:** Allows you to see the macros programmed in the Excel file (if there's any macro in it). Shows only when the developer menu is enabled.

# How Excel Handles What You Type

In Excel, you type into small rectangular boxes called cells. I would be referring to everything you type or copy into Excel cells as Data.

Every cell has an address, because each cell is an intersection of a row and a column. The cell selected in the image below, is addressed as cell A1. It is the intersection of column A and row 1. A collection of millions of these cells make an Excel sheet. And an Excel file (also referred to as Excel workbook) is a collection of one or more Excel sheets.



Sometimes, what you type into a cell takes more space than the cell has. Don't worry, just expand the column width by dragging the right border of the column header.

Like this:

	A	B	C
1	United States of America		
2			
3			
4			

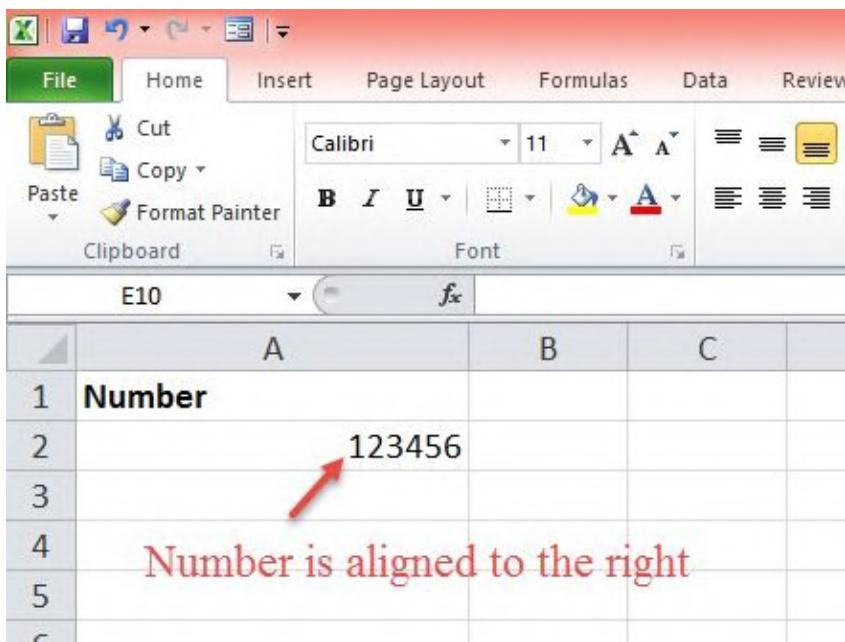
## Different Data Types in Excel

Excel recognizes 4 different data types: Text, Number, Boolean & Formula. Anything you type into Excel will fall under one of these.

**Text:** Whenever you type alphabets, or a mix of alphabets and numbers into Excel (without proceeding with =), everything is recognized as text. By default, Excel aligns text to the left of the cell.

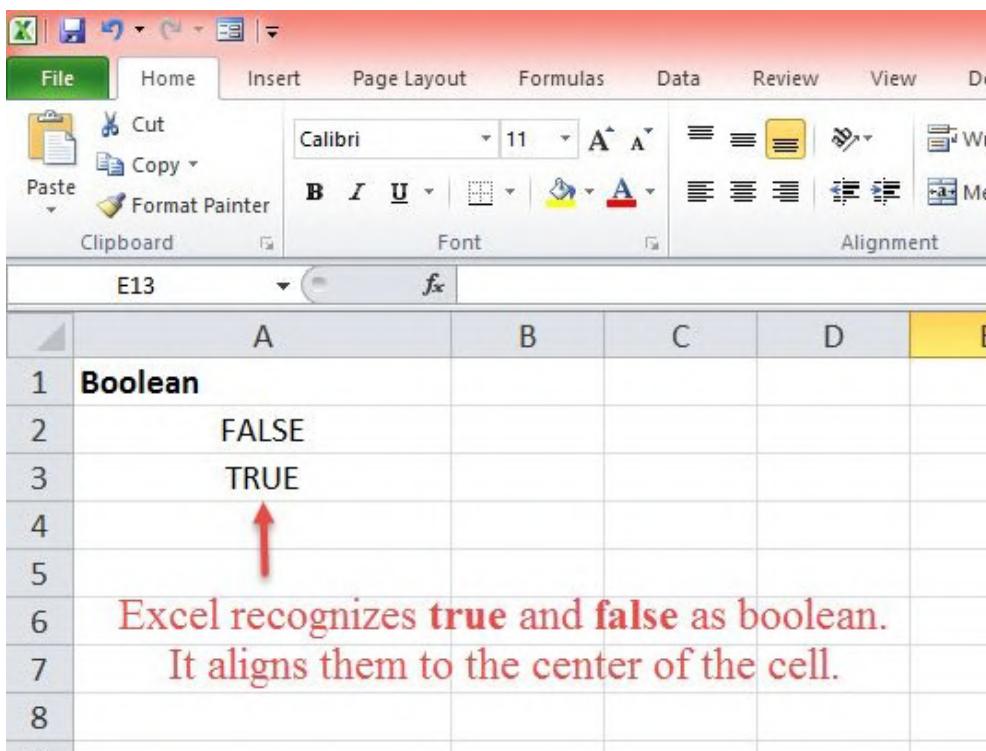
	A	B	C
1	Text		
2	Michael		
3			
4			

**Number:** If all you type into a cell are digits, they are recognized as Number by Excel. By default, Excel aligns number to the right.



A screenshot of the Microsoft Excel interface. The ribbon at the top shows the Home tab selected. In the center, there's a font toolbar with Calibri, 11pt, bold, italic, underline, and alignment buttons. Below the toolbar, the address bar shows 'E10'. The main area shows a table with one row and five columns. The first column has rows labeled 1 through 5. Row 1 contains the word 'Number'. Row 2 contains the number '123456' which is aligned to the right. A red arrow points to this number. Row 4 contains the text 'Number is aligned to the right'.

**Boolean:** FALSE and TRUE are Boolean entries. You'll hardly use them. They are used for setting up complex formulas. By default, whenever you type false or true in a cell, Excel will put it in upper case and align it to the center.



A screenshot of the Microsoft Excel interface. The ribbon at the top shows the Home tab selected. In the center, there's a font toolbar with Calibri, 11pt, bold, italic, underline, and alignment buttons. Below the toolbar, the address bar shows 'E13'. The main area shows a table with one row and five columns. The first column has rows labeled 1 through 7. Row 1 contains the word 'Boolean'. Row 2 contains the word 'FALSE'. Row 3 contains the word 'TRUE'. A red arrow points to the word 'TRUE'. Row 6 contains the text 'Excel recognizes true and false as boolean.' Row 7 contains the text 'It aligns them to the center of the cell.'

**Formula:** Once you begin a cell entry with =, Excel treats everything you type after as a formula.

A screenshot of Microsoft Excel's user interface. The ribbon at the top has 'File' selected. The 'Home' tab is active, showing the 'Clipboard' group with 'Cut', 'Copy', and 'Format Painter' options. Below the ribbon is the formula bar with 'VLOOKUP' and the formula '=47+57'. The main area shows a table with columns A, B, C, and D. Row 1 contains 'Formula' in cell A1. Row 2 contains '=47+57' in cell A2, which is highlighted with a red arrow pointing to it. The text 'Whenever you begin a cell entry with =' is overlaid in red.

	A	B	C	D
1	Formula			
2	=47+57			
3				
4				
5				
6				
7				
8				

As a recap, see the image below.

A screenshot of Microsoft Excel showing a table with four columns: 'Text', 'Number', 'Boolean', and 'Formula'. The 'Formula' column contains the value '=45+57'. The table has rows numbered 1 through 6. The 'Text' column contains 'Michael' in row 2. The 'Number' column contains '12345' in row 2. The 'Boolean' column contains 'FALSE' in row 2. The 'Formula' column contains '=45+57' in row 2.

	A	B	C	
1	Text	Number	Boolean	Formula
2	Michael	12345	FALSE	=45+57
3				
4				
5				
6				

The practical importance of this is that if you receive a sales report in Excel and the numbers are aligned to left instead of right you should be concerned. There are three reasons this can happen and two of those reasons will cause some of your mathematical formulas to not work correctly. You wouldn't want to do an incorrect analysis, so it's best to check why the numbers are aligned to the left and not to the right as expected.

1. It could be that the author forced the numbers to align to the left. To find out if that's the reason, check the alignment under Home menu.

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the 'Font' section, the font is set to 'Calibri' at size 11, and the alignment is set to 'Center'. The cell B2 contains the number '12345', which is displayed to the right of the cell boundary, indicating it is treated as text. A red arrow points to the center alignment icon in the ribbon.

A	B	C
1	<b>Number</b>	
2	12345	
3		
4		
5		

2. It could be that the author forced the number to be treated as text by setting the cell format to text

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the 'Number' section, the dropdown menu is open, and 'Text' is selected. The cell B2 contains the number '12345', which is displayed to the right of the cell boundary, indicating it is treated as text. A red arrow points to the 'Text' option in the dropdown menu.

A	B	C	D
1	<b>Number</b>		
2	12345		
3			
4			

3. It could be that the author preceded the number with a single apostrophe (' before typing the number. This is a trick savvy users use to force Excel to keep the zeros at the beginning of your phone number or bank account number. Unfortunately, it forces Excel to treat the cell entry as a text and align it to the left.

A screenshot of Microsoft Excel showing a spreadsheet with four rows and four columns. Row 1 contains column headers A, B, C, and D. Row 2 contains the text "Number" in cell B2 and the phone number "08089382423" in cell B2. Row 3 is empty. Row 4 contains the text "Notice the ' before the phone number" in cell A4. The formula bar at the top shows the cell reference B2 and the value '08089382423'. A red arrow points from the text in cell A4 to the formula bar.

	A	B	C	D
1		Number		
2		08089382423		
3				
4	Notice the ' before the phone number			

Out of these three ways of making a number show as aligned to the left, only the first one leaves the number intact. The other ways transform the number to text and will give you issues when you include them in calculations that normally would work on numbers.

Now you have an idea of how useful an understanding of the default ways Excel treat the different data types can be in your day to day use of Excel.

# Data Consistency, starting with the end in view

Excel is different from every other Microsoft Office program you use. Most of the documents, reports and analysis you do with Excel will be used some day in the future for another report or analysis.

To become an expert in Excel, you have to always work with the end in mind. You have to create your Excel documents in such a way that you can easily use them for some bigger reports in the future. And there are some general rules I'll recommend you work with to achieve this.

1. Always use a compact table structure for entering your core data in Excel. This means using the minimum number of rows and minimum number of columns. Example of a compact table and non-compact table is shown below:

	7 columns						Monthly Revenue from Clients
3	Clients	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
4	Mobil	₦ 4,129,000	₦ 3,695,000	₦ 2,770,000	₦ 4,520,000	₦ 2,223,000	₦ 3,929,000
5	Nestle	₦ 1,688,000	₦ 3,300,000	₦ 4,880,000	₦ 3,730,000	₦ 2,046,000	₦ 2,326,000
6	NBC	₦ 3,701,000	₦ 4,361,000	₦ 4,254,000	₦ 4,550,000	₦ 4,834,000	₦ 3,116,000
7	Exp Nigeria	₦ 2,587,000	₦ 4,198,000	₦ 2,146,000	₦ 1,062,000	₦ 2,341,000	₦ 4,713,000
8	Insight Nigeria	₦ 2,408,000	₦ 4,759,000	₦ 1,300,000	₦ 4,426,000	₦ 3,521,000	₦ 3,171,000
9	Radisson Blu	₦ 2,485,000	₦ 2,025,000	₦ 1,603,000	₦ 3,089,000	₦ 2,841,000	₦ 3,156,000
10	Guinness	₦ 2,703,000	₦ 1,888,000	₦ 1,360,000	₦ 1,664,000	₦ 1,097,000	₦ 4,920,000
11	Chevron	₦ 3,516,000	₦ 2,988,000	₦ 4,788,000	₦ 2,425,000	₦ 4,689,000	₦ 4,080,000
12	Etisalat	₦ 4,475,000	₦ 3,459,000	₦ 2,701,000	₦ 2,058,000	₦ 3,562,000	₦ 3,096,000
13	Dangote	₦ 1,457,000	₦ 3,241,000	₦ 4,441,000	₦ 1,544,000	₦ 3,749,000	₦ 3,544,000
14	Dana Group	₦ 2,984,000	₦ 1,882,000	₦ 2,898,000	₦ 4,618,000	₦ 2,372,000	₦ 3,723,000
15	LaFarge	₦ 2,111,000	₦ 3,293,000	₦ 1,427,000	₦ 3,953,000	₦ 1,616,000	₦ 2,885,000
16	NB	₦ 3,396,000	₦ 4,148,000	₦ 4,569,000	₦ 3,893,000	₦ 3,871,000	₦ 3,045,000
17	MTN	₦ 4,410,000	₦ 2,391,000	₦ 4,180,000	₦ 3,788,000	₦ 2,669,000	₦ 4,262,000
18	Monacom	₦ 4,190,000	₦ 2,228,000	₦ 4,615,000	₦ 2,756,000	₦ 3,123,000	₦ 1,464,000
19	ARM	₦ 4,536,000	₦ 1,412,000	₦ 4,313,000	₦ 1,130,000	₦ 3,700,000	₦ 3,196,000
20	C & I	₦ 1,655,000	₦ 3,942,000	₦ 4,727,000	₦ 2,763,000	₦ 3,987,000	₦ 2,621,000
21	Total	₦ 52,431,000	₦ 53,210,000	₦ 56,972,000	₦ 51,969,000	₦ 52,241,000	₦ 57,247,000
22							

Same table but not compact, shown below.

**8 Columns**

Monthly Revenue from Clients						
Clients	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Mobil	₦ 4,129,000	₦ 3,695,000	₦ 2,770,000	₦ 4,520,000	₦ 2,223,000	₦ 3,929,000
Nestle	₦ 1,688,000	₦ 3,300,000	₦ 4,880,000	₦ 3,730,000	₦ 2,046,000	₦ 2,326,000
NBC	₦ 3,701,000	₦ 4,361,000	₦ 4,254,000	₦ 4,550,000	₦ 4,834,000	₦ 3,116,000
Exp Nigeria	₦ 2,587,000	₦ 4,198,000	₦ 2,146,000	₦ 1,062,000	₦ 2,341,000	₦ 4,713,000
Insight Nigeria	₦ 2,408,000	₦ 4,759,000	₦ 1,300,000	₦ 4,426,000	₦ 3,521,000	₦ 3,171,000
Radisson Blu	₦ 2,485,000	₦ 2,025,000	₦ 1,603,000	₦ 3,089,000	₦ 2,841,000	₦ 3,156,000
Guinness	₦ 2,703,000	₦ 1,888,000	₦ 1,360,000	₦ 1,664,000	₦ 1,097,000	₦ 4,920,000
Chevron	₦ 3,516,000	₦ 2,988,000	₦ 4,788,000	₦ 2,425,000	₦ 4,689,000	₦ 4,080,000
Etisalat	₦ 4,475,000	₦ 3,459,000	₦ 2,701,000	₦ 2,058,000	₦ 3,562,000	₦ 3,096,000
Dangote	₦ 1,457,000	₦ 3,241,000	₦ 4,441,000	₦ 1,544,000	₦ 3,749,000	₦ 3,544,000
Dana Group	₦ 2,984,000	₦ 1,882,000	₦ 2,898,000	₦ 4,618,000	₦ 2,372,000	₦ 3,723,000
LaFarge	₦ 2,111,000	₦ 3,293,000	₦ 1,427,000	₦ 3,953,000	₦ 1,616,000	₦ 2,885,000
NB	₦ 3,396,000	₦ 4,148,000	₦ 4,569,000	₦ 3,893,000	₦ 3,871,000	₦ 3,045,000
MTN	₦ 4,410,000	₦ 2,391,000	₦ 4,180,000	₦ 3,788,000	₦ 2,669,000	₦ 4,262,000
Monocom	₦ 4,190,000	₦ 2,228,000	₦ 4,615,000	₦ 2,756,000	₦ 3,123,000	₦ 1,464,000
ARM	₦ 4,536,000	₦ 1,412,000	₦ 4,313,000	₦ 1,130,000	₦ 3,700,000	₦ 3,196,000
C & I	₦ 1,655,000	₦ 3,942,000	₦ 4,727,000	₦ 2,763,000	₦ 3,987,000	₦ 2,621,000
Total	₦ 52,431,000	₦ 53,210,000	₦ 56,972,000	₦ 51,969,000	₦ 52,241,000	₦ 57,247,000

In the non-compact table example, you can delete rows 37 and 38 without deleting any data in the table.

## 2. Use descriptive names for your column headers and row headers.

Be as descriptive as possible in naming the fields in your table, make it easy for anyone who will view your table to understand the information it convenes.

Below is a table with field names that are descriptive enough for anyone to understand the information the table convenes.

	A	B	C	D	E	F	G
1	Monthly Revenue from Clients						
2	Clients	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
3	Mobil	₦ 4,129,000	₦ 3,695,000	₦ 2,770,000	₦ 4,520,000	₦ 2,223,000	₦ 3,929,000
4	Nestle	₦ 1,688,000	₦ 3,300,000	₦ 4,880,000	₦ 3,730,000	₦ 2,046,000	₦ 2,326,000
5	NBC	₦ 3,701,000	₦ 4,361,000	₦ 4,254,000	₦ 4,550,000	₦ 4,834,000	₦ 3,116,000
6	Exp Nigeria	₦ 2,587,000	₦ 4,198,000	₦ 2,146,000	₦ 1,062,000	₦ 2,341,000	₦ 4,713,000
7	Insight Nigeria	₦ 2,408,000	₦ 4,759,000	₦ 1,300,000	₦ 4,426,000	₦ 3,521,000	₦ 3,171,000
8	Radisson Blu	₦ 2,485,000	₦ 2,025,000	₦ 1,603,000	₦ 3,089,000	₦ 2,841,000	₦ 3,156,000
9	Guinness	₦ 2,703,000	₦ 1,888,000	₦ 1,360,000	₦ 1,664,000	₦ 1,097,000	₦ 4,920,000
10	Chevron	₦ 3,516,000	₦ 2,988,000	₦ 4,788,000	₦ 2,425,000	₦ 4,689,000	₦ 4,080,000
11	Etisalat	₦ 4,475,000	₦ 3,459,000	₦ 2,701,000	₦ 2,058,000	₦ 3,562,000	₦ 3,096,000
12	Dangote	₦ 1,457,000	₦ 3,241,000	₦ 4,441,000	₦ 1,544,000	₦ 3,749,000	₦ 3,544,000
13	Dana Group	₦ 2,984,000	₦ 1,882,000	₦ 2,898,000	₦ 4,618,000	₦ 2,372,000	₦ 3,723,000
14	LaFarge	₦ 2,111,000	₦ 3,293,000	₦ 1,427,000	₦ 3,953,000	₦ 1,616,000	₦ 2,885,000
15	NB	₦ 3,396,000	₦ 4,148,000	₦ 4,569,000	₦ 3,893,000	₦ 3,871,000	₦ 3,045,000
16	MTN	₦ 4,410,000	₦ 2,391,000	₦ 4,180,000	₦ 3,788,000	₦ 2,669,000	₦ 4,262,000
17	Monacom	₦ 4,190,000	₦ 2,228,000	₦ 4,615,000	₦ 2,756,000	₦ 3,123,000	₦ 1,464,000
18	ARM	₦ 4,536,000	₦ 1,412,000	₦ 4,313,000	₦ 1,130,000	₦ 3,700,000	₦ 3,196,000
19	C & I	₦ 1,655,000	₦ 3,942,000	₦ 4,727,000	₦ 2,763,000	₦ 3,987,000	₦ 2,621,000
20							

Below is a table that has headers that are not descriptive enough. It's hard to figure out the specific information in the table. Is it a table of revenue or expense? Are the companies clients or suppliers? What year do the months represent — January 2014 or January 2015? Whomever you send this report to will call you back for a detailed explanation of what you intended to report.

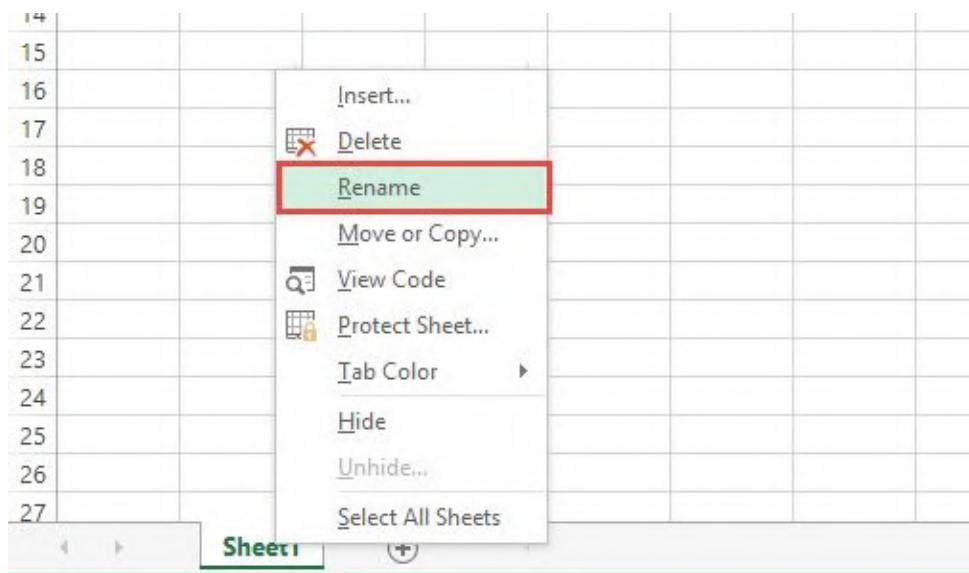
Some Data							
	Companies	January	February	March	April	May	June
22	<b>Mobil</b>	₦ 4,129,000	₦ 3,695,000	₦ 2,770,000	₦ 4,520,000	₦ 2,223,000	₦ 3,929,000
23	<b>Nestle</b>	₦ 1,688,000	₦ 3,300,000	₦ 4,880,000	₦ 3,730,000	₦ 2,046,000	₦ 2,326,000
24	<b>NBC</b>	₦ 3,701,000	₦ 4,361,000	₦ 4,254,000	₦ 4,550,000	₦ 4,834,000	₦ 3,116,000
25	<b>Exp Nigeria</b>	₦ 2,587,000	₦ 4,198,000	₦ 2,146,000	₦ 1,062,000	₦ 2,341,000	₦ 4,713,000
26	<b>Insight Nigeria</b>	₦ 2,408,000	₦ 4,759,000	₦ 1,300,000	₦ 4,426,000	₦ 3,521,000	₦ 3,171,000
27	<b>Radisson Blu</b>	₦ 2,485,000	₦ 2,025,000	₦ 1,603,000	₦ 3,089,000	₦ 2,841,000	₦ 3,156,000
28	<b>Guinness</b>	₦ 2,703,000	₦ 1,888,000	₦ 1,360,000	₦ 1,664,000	₦ 1,097,000	₦ 4,920,000
29	<b>Chevron</b>	₦ 3,516,000	₦ 2,988,000	₦ 4,788,000	₦ 2,425,000	₦ 4,689,000	₦ 4,080,000
30	<b>Etisalat</b>	₦ 4,475,000	₦ 3,459,000	₦ 2,701,000	₦ 2,058,000	₦ 3,562,000	₦ 3,096,000
31	<b>Dangote</b>	₦ 1,457,000	₦ 3,241,000	₦ 4,441,000	₦ 1,544,000	₦ 3,749,000	₦ 3,544,000
32	<b>Dana Group</b>	₦ 2,984,000	₦ 1,882,000	₦ 2,898,000	₦ 4,618,000	₦ 2,372,000	₦ 3,723,000
33	<b>LaFarge</b>	₦ 2,111,000	₦ 3,293,000	₦ 1,427,000	₦ 3,953,000	₦ 1,616,000	₦ 2,885,000
34	<b>NB</b>	₦ 3,396,000	₦ 4,148,000	₦ 4,569,000	₦ 3,893,000	₦ 3,871,000	₦ 3,045,000
35	<b>MTN</b>	₦ 4,410,000	₦ 2,391,000	₦ 4,180,000	₦ 3,788,000	₦ 2,669,000	₦ 4,262,000
36	<b>Monacom</b>	₦ 4,190,000	₦ 2,228,000	₦ 4,615,000	₦ 2,756,000	₦ 3,123,000	₦ 1,464,000
37	<b>ARM</b>	₦ 4,536,000	₦ 1,412,000	₦ 4,313,000	₦ 1,130,000	₦ 3,700,000	₦ 3,196,000
38	<b>C &amp; I</b>	₦ 1,655,000	₦ 3,942,000	₦ 4,727,000	₦ 2,763,000	₦ 3,987,000	₦ 2,621,000

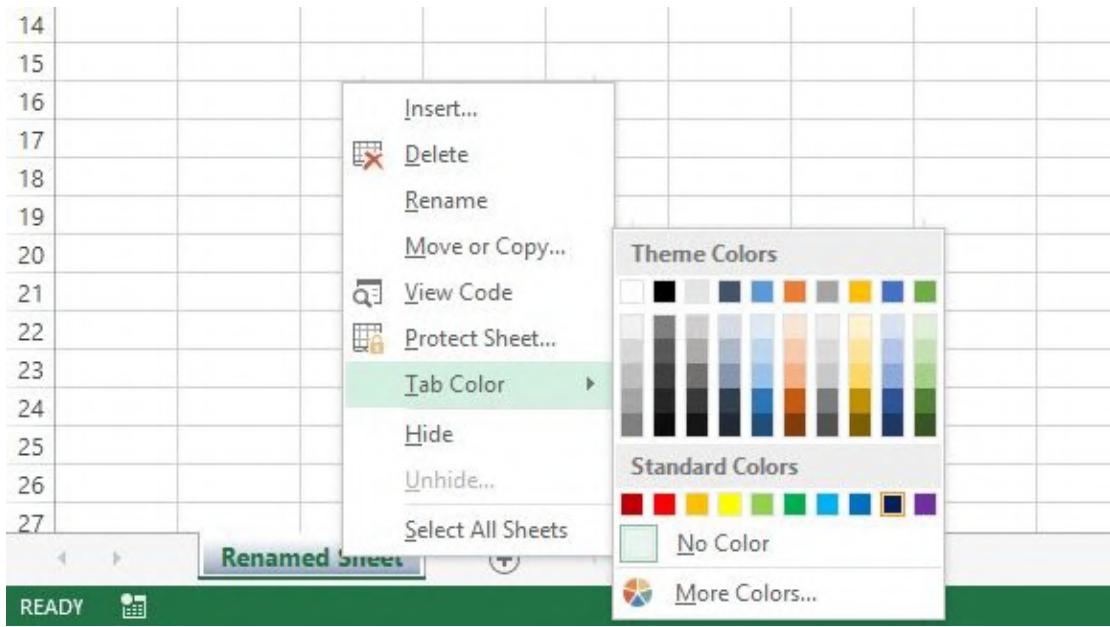
### 3. Name your Excel sheets

Don't just go ahead with the default names — Sheet1, Sheet2, ... — rename the sheets to reflect the contents of the sheet. This makes your work better organized and future use more convenient.



To rename a sheet, right click on the sheet name (the default names are Sheet1, Sheet2, ...) and select rename. And as you see above, you can change the color from the default too.





4. Also use descriptive names when renaming the Excel sheets.

Day	State	Revenue	Expenditure	Surplus	Debt
12	Bayelsa	₦ 2,033,433,300.00	₦ 1,734,000,100.00	₦ 1,210,040,400.00	₦ 3,330,117,
13	Rivers	₦ 4,860,256,800.00	₦ 4,459,705,200.00	₦ 2,423,028,900.00	₦ 4,148,808,
14	Anambra	₦ 1,511,863,500.00	₦ 3,015,652,900.00	₦ 2,159,322,900.00	₦ 4,060,131,
15	Enugu	₦ 2,609,372,800.00	₦ 4,581,716,900.00	₦ 1,409,979,200.00	₦ 1,990,646,
16	Benue	₦ 1,387,315,500.00	₦ 3,627,716,800.00	₦ 602,469,700.00	₦ 4,501,134,
17	Borno	₦ 1,616,065,000.00	₦ 4,166,988,100.00	₦ 2,361,614,200.00	₦ 4,908,244,
18	Gombe	₦ 2,201,453,200.00	₦ 2,523,019,700.00	₦ 620,111,300.00	₦ 1,885,641,
19	Katsina	₦ 1,293,838,700.00	₦ 2,648,689,500.00	₦ 3,589,421,500.00	₦ 638,877,
20	Kaduna	₦ 2,599,773,900.00	₦ 3,835,345,400.00	₦ 3,938,598,800.00	₦ 1,224,849,
21	Cross River	₦ 1,971,834,600.00	₦ 4,779,952,700.00	₦ 2,416,592,600.00	₦ 1,814,142,
22	Kwara	₦ 1,496,830,100.00	₦ 912,176,400.00	₦ 3,915,338,600.00	₦ 1,305,529,
23	Niger	₦ 4,592,318,900.00	₦ 1,826,747,300.00	₦ 3,002,387,100.00	₦ 3,219,870,
24	Akwa Ibom	₦ 1,691,712,500.00	₦ 2,202,014,900.00	₦ 824,782,800.00	₦ 4,927,386,
25	Plateau	₦ 2,371,220,000.00	₦ 4,894,816,200.00	₦ 4,527,323,100.00	₦ 4,471,653,
26	Taraba	₦ 785,603,400.00	₦ 3,244,525,900.00	₦ 531,248,900.00	₦ 2,475,480,
27	Zamfara	₦ 1,522,067,500.00	₦ 755,627,100.00	₦ 1,767,384,200.00	₦ 1,500,000

5. Avoid putting too many tables in one Excel sheet. Best to keep just related tables in the same sheet if you must put more than one table in the sheet. It makes naming the sheet easy and straightforward.

6. Use same naming conventions and table structure across all similar Excel files, especially weekly, monthly and yearly reports of the same data.

7. Don't use CAPS excessively. It makes your reports very unprofessional.

# Building Datasheets that can easily scale

Occasionally, you will have to work on a table whose data grows continually. We can refer to such tables as datatables. All tables hold data and can technically be referred to as a datatable, but in this book we will refer to all tables as just tables and limit the term datatable to only tables that grow perpetually.

An example of such a table is an Employee Record table. As long as the company exists the table will keep growing and even if the company aims to not have over a 100 employees, there will always be old employees leaving and new ones taken to replace them. And they all have to be captured in the employee record table, no employee's record is deleted when he leaves, there's only a field added to capture his resignation.

There are some peculiar ways of treating a datatable.

1. Have only one datatable on a sheet. Since a datatable is a table you expect to grow over time, having only one on a sheet lets you have access to all the rows and the columns in the Excel sheet.

	A	B	C	D	E	F	
1	UrBizEdge Employees Biodata Table						
2	First Name	Last Name	Employee ID	Sex	Employment Date	Phone Number	Contact Address
3	Michael	Olafusi	1000001	M	21-Oct-13	08089382423	21, Adigun Alabi
4	John	Abiola	1000002	M	1-Apr-14	08080810251	21, Adigun Alabi
5	Mary	Eze	1000003	F	1-Apr-14	08080810252	21, Adigun Alabi
6	Segun	Owolabi	1000004	M	1-Apr-14	08080810253	21, Adigun Alabi
7	Tolu	Owoeye	1000005	F	1-Apr-14	08080810254	21, Adigun Alabi
8	Uche	Nnamdi	1000006	M	1-Apr-14	08080810255	21, Adigun Alabi
9	David	Aluko	1000007	M	1-May-14	08080810256	21, Adigun Alabi
10	Lekan	Bello	1000008	M	1-May-14	08080810257	21, Adigun Alabi
11	Luke	Tsangi	1000009	M	1-May-14	08080810258	21, Adigun Alabi

2. Start a datatable as close to cell A1 as possible. Again, this is to afford you the maximum space in the sheet for your growing table.
3. Avoid meaningless gaps in the datatable. Make it as compact as possible.
4. Arrange the fields such that the most important or basic fields come first. For example, in an Employee record table, name should come before contact address.

5. Have a field for every meaningful chunk of data. It is better to have separate fields for first name and last name than have one field hold both.

6. Avoid merging cells in a datatable. It is better to repeat cell entries than merge the cells. Merged cells aren't formula friendly.

And as a bonus, avoid hiding rows and columns in the datatable. This will save you a lot of future headaches.

# Sorting

Sorting is one of the most frequent task we do in Excel. Sorting lets you re-arrange data in alphabetical order, lowest to highest, highest to lowest, and even by cell color.

We are used to having data arranged in a particular order — A to Z, January to December, 1 to 10, and so on.

Below is an example of a table that has its records haphazardly arranged. The states are not arranged alphabetically and the months are not in the natural order.

A	B	C	D	E	F	G	
1	Internally Generated Revenue of States in Nigeria						
2	State	Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14
3	Imo	₦ 2,521,764,800.00	₦ 2,922,241,900.00	₦ 2,591,742,600.00	₦ 2,013,994,900.00	₦ 3,014,428,300.00	₦ 4,994,515,700.00
4	Abia	₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00
5	Lagos	₦ 7,319,183,000.00	₦ 22,681,984,500.00	₦ 6,239,473,500.00	₦ 6,211,689,500.00	₦ 11,610,307,000.00	₦ 3,351,178,500.00
6	Kano	₦ 2,021,735,600.00	₦ 530,613,400.00	₦ 2,981,980,300.00	₦ 3,016,518,600.00	₦ 2,387,291,000.00	₦ 4,411,651,000.00
7	Ondo	₦ 1,690,422,800.00	₦ 4,925,747,700.00	₦ 716,222,900.00	₦ 4,362,953,800.00	₦ 4,300,936,900.00	₦ 977,876,300.00
8	Kogi	₦ 2,734,189,600.00	₦ 2,825,512,800.00	₦ 2,812,863,300.00	₦ 2,306,601,300.00	₦ 2,104,687,400.00	₦ 867,264,000.00
9	Benue	₦ 3,864,832,700.00	₦ 3,212,451,900.00	₦ 3,479,649,000.00	₦ 2,458,711,700.00	₦ 2,700,421,800.00	₦ 4,801,142,000.00
10	FCT	₦ 2,063,317,300.00	₦ 2,520,202,900.00	₦ 3,199,223,200.00	₦ 1,829,381,400.00	₦ 4,980,777,000.00	₦ 3,704,640,600.00
11	Ogun	₦ 2,586,000,100.00	₦ 3,200,451,900.00	₦ 3,434,714,900.00	₦ 3,907,557,600.00	₦ 2,265,022,600.00	₦ 1,642,410,200.00
12	Bayelsa	₦ 2,035,499,300.00	₦ 1,754,855,100.00	₦ 1,218,646,400.00	₦ 3,596,177,500.00	₦ 4,856,865,900.00	₦ 3,958,333,500.00
13	Rivers	₦ 4,860,256,800.00	₦ 4,459,705,200.00	₦ 2,423,028,900.00	₦ 4,148,808,900.00	₦ 4,882,684,300.00	₦ 859,719,700.00
14	Anambra	₦ 1,511,863,500.00	₦ 3,015,652,900.00	₦ 2,159,322,900.00	₦ 4,060,131,900.00	₦ 2,439,308,800.00	₦ 1,843,665,900.00
15	Enugu	₦ 2,609,372,800.00	₦ 4,581,716,900.00	₦ 1,409,979,200.00	₦ 1,990,646,300.00	₦ 1,893,090,400.00	₦ 3,219,650,200.00
16	Benue	₦ 1,387,315,500.00	₦ 3,627,716,800.00	₦ 602,469,700.00	₦ 4,501,134,600.00	₦ 1,687,978,600.00	₦ 2,728,902,800.00
17	Borno	₦ 1,616,065,000.00	₦ 4,166,988,100.00	₦ 2,361,614,200.00	₦ 4,908,244,600.00	₦ 581,980,000.00	₦ 4,216,846,800.00
18	Gombe	₦ 2,201,453,200.00	₦ 2,523,019,700.00	₦ 620,111,300.00	₦ 1,885,641,400.00	₦ 2,551,023,100.00	₦ 4,146,024,300.00
19	Katsina	₦ 1,293,838,700.00	₦ 2,648,689,500.00	₦ 3,589,421,500.00	₦ 638,877,300.00	₦ 1,025,989,500.00	₦ 2,969,721,400.00
20	Kaduna	₦ 2,599,773,900.00	₦ 3,835,345,400.00	₦ 3,938,598,800.00	₦ 1,224,849,400.00	₦ 450,931,500.00	₦ 1,662,248,400.00
21	Cross River	₦ 1,971,834,600.00	₦ 4,779,952,700.00	₦ 2,416,592,600.00	₦ 1,814,142,400.00	₦ 745,327,000.00	₦ 4,658,487,000.00
22	Kwara	₦ 1,496,830,100.00	₦ 912,176,400.00	₦ 3,915,338,600.00	₦ 1,305,529,900.00	₦ 2,214,504,600.00	₦ 4,919,941,300.00
23	Niger	₦ 4,592,318,900.00	₦ 1,826,747,300.00	₦ 3,002,387,100.00	₦ 3,219,870,900.00	₦ 3,979,805,300.00	₦ 1,086,334,400.00
24	Akwa Ibom	₦ 1,691,712,500.00	₦ 2,202,014,900.00	₦ 824,782,800.00	₦ 4,927,386,500.00	₦ 2,966,925,400.00	₦ 2,187,626,200.00
25	Plateau	₦ 2,371,220,000.00	₦ 4,894,816,200.00	₦ 4,527,323,100.00	₦ 4,471,653,300.00	₦ 3,593,441,000.00	₦ 932,778,800.00
26	Taraba	₦ 785,603,400.00	₦ 3,244,525,900.00	₦ 531,248,900.00	₦ 2,475,480,400.00	₦ 1,389,495,200.00	₦ 878,820,400.00
27	Zamfara	₦ 1,502,067,600.00	₦ 755,527,100.00	₦ 4,767,284,200.00	₦ 4,500,005,600.00	₦ 2,350,176,000.00	₦ 1,208,227,500.00

First, let's have the data sorted by State alphabetically

Below are the recommended steps to sorting a table. Select the table, go to the Home menu and click on Sort & Filter.

Sorting.xlsx - Excel

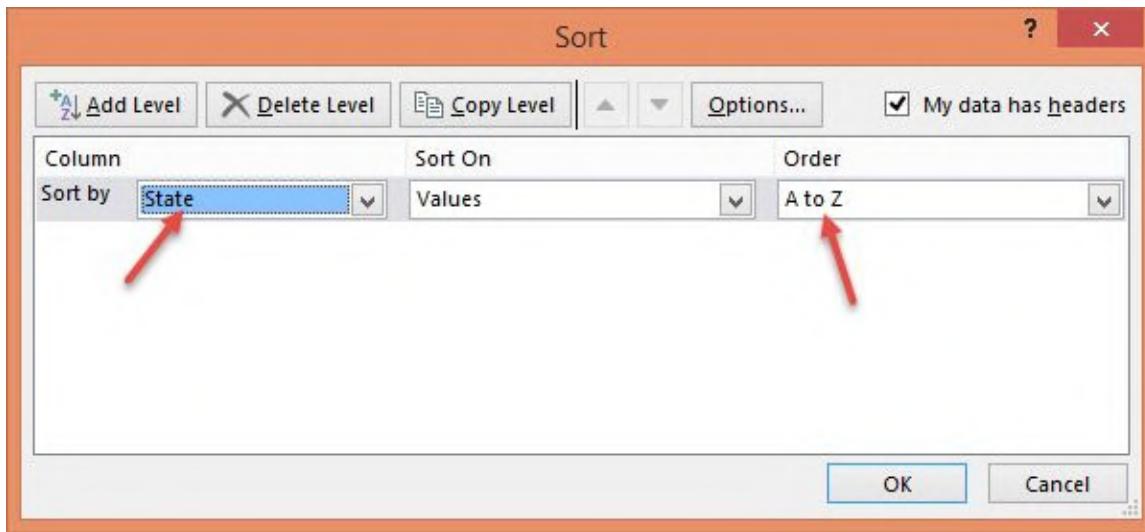
The screenshot shows the Microsoft Excel interface with the 'Sorting.xlsx' file open. The 'HOME' tab is selected. In the top right corner, there's a user profile for 'Michael Olafusi'. The ribbon has several tabs: FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, DEVELOPER, LOAD TEST, and POWER QUERY. Under the 'DATA' tab, the 'Sort & Filter' icon is highlighted. A dropdown menu is open, showing options like 'Sort A to Z', 'Sort Z to A', 'Filter', 'Clear', and 'Custom Sort...'. The main area of the screen shows a table titled 'Internally Generated Revenue of States in Nigeria' with columns for State, Feb-14, Jun-14, Jan-14, Mar-14, May-14, and Apr-14. The data includes various Nigerian states and their revenue figures.

The sorting dialog box comes up.

The screenshot shows the 'Sort' dialog box overlaid on the same table. The dialog box has an orange border and contains fields for 'Add Level', 'Delete Level', 'Copy Level', 'Options...', and a checkbox for 'My data has headers'. Below these are sections for 'Column', 'Sort On', and 'Order'. The 'Sort by' dropdown is set to 'Values' and the 'Order' dropdown is set to 'A to Z'. The 'OK' button is at the bottom right of the dialog.

This dialog box allows you to add more than the default one level of sorting.

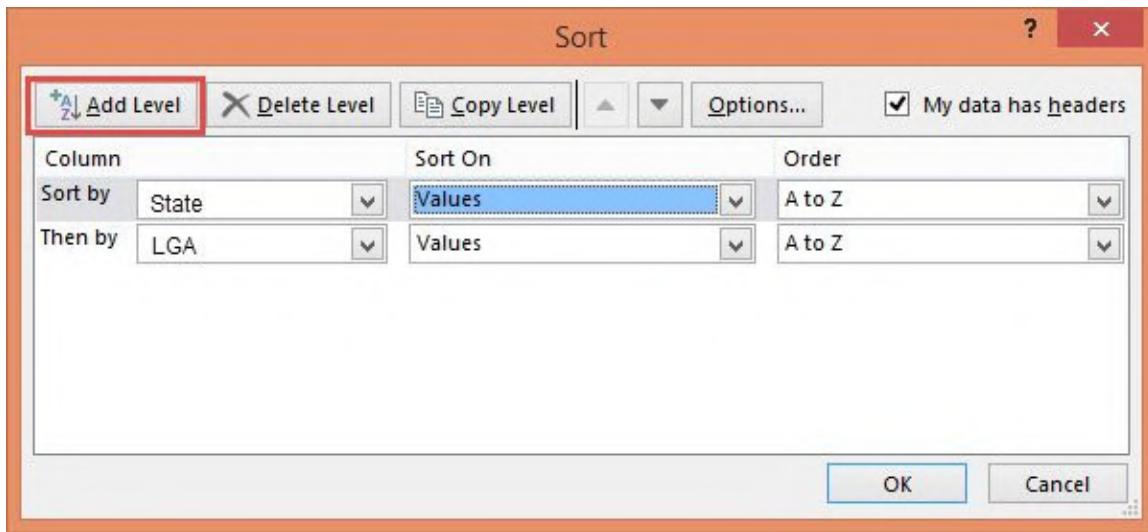
Select “State” in the Sort by box and A to Z in the Order box.



The result is shown below.

	A	B	C	D	E	F	G
1	Internally Generated Revenue of States in Nigeria						
2	State	Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14
3	Abia	₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00
4	Adamawa	₦ 4,317,641,300.00	₦ 1,973,059,900.00	₦ 4,022,792,500.00	₦ 1,627,470,600.00	₦ 3,493,691,500.00	₦ 1,023,694,700.00
5	Akwa Ibom	₦ 1,691,712,500.00	₦ 2,202,014,900.00	₦ 824,782,800.00	₦ 4,927,386,500.00	₦ 2,966,925,400.00	₦ 2,187,626,200.00
6	Anambra	₦ 1,511,863,500.00	₦ 3,015,652,900.00	₦ 2,159,322,900.00	₦ 4,060,131,900.00	₦ 2,439,308,800.00	₦ 1,843,665,900.00
7	Bauchi	₦ 3,059,451,100.00	₦ 3,000,312,200.00	₦ 764,748,600.00	₦ 2,879,985,600.00	₦ 2,609,030,900.00	₦ 3,032,115,500.00
8	Bayelsa	₦ 2,035,499,300.00	₦ 1,754,855,100.00	₦ 1,218,646,400.00	₦ 3,596,177,500.00	₦ 4,856,865,900.00	₦ 3,958,333,500.00
9	Benue	₦ 3,864,832,700.00	₦ 3,212,451,900.00	₦ 3,479,649,000.00	₦ 2,458,711,700.00	₦ 2,700,421,800.00	₦ 4,801,142,000.00
10	Benue	₦ 1,387,315,500.00	₦ 3,627,716,800.00	₦ 602,469,700.00	₦ 4,501,134,600.00	₦ 1,687,978,600.00	₦ 2,728,902,800.00
11	Borno	₦ 1,616,065,000.00	₦ 4,166,988,100.00	₦ 2,361,614,200.00	₦ 4,908,244,600.00	₦ 581,980,000.00	₦ 4,216,846,800.00
12	Cross River	₦ 1,971,834,600.00	₦ 4,779,952,700.00	₦ 2,416,592,600.00	₦ 1,814,142,400.00	₦ 745,327,000.00	₦ 4,658,487,000.00
13	Delta	₦ 2,382,209,500.00	₦ 2,363,220,900.00	₦ 4,755,914,300.00	₦ 3,361,514,600.00	₦ 4,671,269,900.00	₦ 2,060,298,000.00
14	Ebonyi	₦ 3,233,069,500.00	₦ 713,048,500.00	₦ 3,547,140,000.00	₦ 4,883,253,900.00	₦ 2,926,053,500.00	₦ 1,060,164,800.00
15	Edo	₦ 781,461,300.00	₦ 2,900,705,900.00	₦ 2,663,501,000.00	₦ 462,661,800.00	₦ 3,256,011,600.00	₦ 543,085,200.00
16	Ekiti	₦ 4,128,943,600.00	₦ 4,040,341,600.00	₦ 1,816,087,900.00	₦ 1,512,170,300.00	₦ 3,340,038,100.00	₦ 2,592,908,100.00
17	Enugu	₦ 2,609,372,800.00	₦ 4,581,716,900.00	₦ 1,409,979,200.00	₦ 1,990,646,300.00	₦ 1,893,090,400.00	₦ 3,219,650,200.00
18	FCT	₦ 2,063,317,300.00	₦ 2,520,202,900.00	₦ 3,199,223,200.00	₦ 1,829,381,400.00	₦ 4,980,777,000.00	₦ 3,704,640,600.00
19	Gombe	₦ 2,201,453,200.00	₦ 2,523,019,700.00	₦ 620,111,300.00	₦ 1,885,641,400.00	₦ 2,551,023,100.00	₦ 4,146,024,300.00
20	Imo	₦ 2,521,764,800.00	₦ 2,922,241,900.00	₦ 2,591,742,600.00	₦ 2,013,994,900.00	₦ 3,014,428,300.00	₦ 4,994,515,700.00
21	Jigawa	₦ 1,573,445,100.00	₦ 2,311,559,800.00	₦ 3,550,126,700.00	₦ 3,756,243,200.00	₦ 1,417,963,700.00	₦ 3,092,703,100.00
22	Kaduna	₦ 2,599,773,900.00	₦ 3,835,345,400.00	₦ 3,938,598,800.00	₦ 1,224,849,400.00	₦ 450,931,500.00	₦ 1,662,248,400.00

You can add an extra level of sorting in the sorting dialog box. This would be useful in sorting tables like a national population census table. You might want to sort first by state (from Abia to Zamfara) and then an extra level of sorting by Local Government Areas. So you'll have a setting similar to the one below



Next is to sort the months in the natural order we are used to — Jan to Dec. This will require a type of sorting called “Left to Right” as against the one we just did, called “Top to Bottom”.

So to get this done, we select the table starting from the first month to the last month. We will leave the state field out because we want it to remain in the position it is.

Internally Generated Revenue of States in Nigeria						
Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14	
₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00	
₦ 4,317,641,300.00	₦ 1,973,059,900.00	₦ 4,022,792,500.00	₦ 1,627,470,600.00	₦ 3,493,691,500.00	₦ 1,023,694,700.00	
₦ 1,691,712,500.00	₦ 2,202,014,900.00	₦ 824,782,800.00	₦ 4,927,386,500.00	₦ 2,966,925,400.00	₦ 2,187,626,200.00	
₦ 1,511,863,500.00	₦ 3,015,652,900.00	₦ 2,159,322,900.00	₦ 4,060,131,900.00	₦ 2,439,308,800.00	₦ 1,843,665,900.00	
₦ 3,059,451,100.00	₦ 3,000,31:					
₦ 2,035,499,300.00	₦ 1,754,85:					
₦ 3,864,832,700.00	₦ 3,212,45:					
₦ 1,387,315,500.00	₦ 3,627,71:					
₦ 1,616,065,000.00	₦ 4,166,98:					
₦ 1,971,834,600.00	₦ 4,779,95:					
₦ 2,382,209,500.00	₦ 2,363,22:					
₦ 3,233,069,500.00	₦ 713,04:					
₦ 781,461,300.00	₦ 2,900,70:					
₦ 4,128,943,600.00	₦ 4,040,34:					
₦ 2,609,372,800.00	₦ 4,581,71:					
₦ 2,063,317,300.00	₦ 2,520,20:					
₦ 2,201,453,200.00	₦ 2,523,01:					
₦ 2,521,764,800.00	₦ 2,922,24:					
₦ 1,573,445,100.00	₦ 2,311,559,800.00	₦ 3,550,126,700.00	₦ 3,756,243,200.00	₦ 1,417,963,700.00	₦ 3,092,703,100.00	
₦ 2,599,773,900.00	₦ 3,835,345,400.00	₦ 3,938,598,800.00	₦ 1,224,849,400.00	₦ 450,931,500.00	₦ 1,662,248,400.00	

Sort Options dialog box (highlighted with a red box) with the following steps numbered:

1. Click on the 'Sort Options' button in the Sort dialog box.
2. Select the 'Sort left to right' radio button under Orientation.
3. Click 'OK' to apply the settings.

Then select the row the months are on (Row 2) and set the order to **Oldest to Newest**.

	A	B	C	D	E	F	G	H
1		Internally Generated Revenue of States in Nigeria						
2	State	Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14	
3	Abia	₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00	
4	Adamawa	₦ 4,317,641,300.00	₦ 1,973,059,900.00	₦ 4,022,792,500.00	₦ 1,627,470,600.00	₦ 3,493,691,500.00	₦ 1,023,694,700.00	
5	Akwa Ibom	₦ 1,691,712,500.00	₦ 2,202,014,900.00	₦ 824,782,800.00	₦ 4,927,386,500.00	₦ 2,966,925,400.00	₦ 2,187,626,200.00	
6	Anambra	₦ 1,511,863,500.00	₦ 3,015,652,900.00	₦ 2,159,322,900.00	₦ 4,060,131,900.00	₦ 2,439,308,800.00	₦ 1,843,665,900.00	
7	Bauchi	₦ 3,059,451,100.00	₦ 3,000,312,000.00					
8	Bayelsa	₦ 2,035,499,300.00	₦ 1,754,855,000.00					
9	Benue	₦ 3,864,832,700.00	₦ 3,212,451,000.00					
10	Benue	₦ 1,387,315,500.00	₦ 3,627,712,000.00					
11	Borno	₦ 1,616,065,000.00	₦ 4,166,988,100.00					
12	Cross River	₦ 1,971,834,600.00	₦ 4,779,952,700.00					
13	Delta	₦ 2,382,209,500.00	₦ 2,363,220,900.00					
14	Ebonyi	₦ 3,233,069,500.00	₦ 713,048,500.00					
15	Edo	₦ 781,461,300.00	₦ 2,900,705,900.00					
16	Ekiti	₦ 4,128,943,600.00	₦ 4,040,341,600.00					
17	Enugu	₦ 2,609,372,800.00	₦ 4,581,712,000.00					
18	FCT	₦ 2,063,317,300.00	₦ 2,520,202,900.00					
19	Gombe	₦ 2,201,453,200.00	₦ 2,523,012,000.00					
20	Imo	₦ 2,521,764,800.00	₦ 2,922,241,900.00					
21	Jigawa	₦ 1,573,445,100.00	₦ 2,311,559,800.00	₦ 3,550,126,700.00	₦ 3,756,243,200.00	₦ 1,417,963,700.00	₦ 3,092,703,100.00	
22	Kaduna	₦ 2,599,773,900.00	₦ 3,835,345,400.00	₦ 3,938,598,800.00	₦ 1,224,849,400.00	₦ 450,931,500.00	₦ 1,662,248,400.00	

Below is the result.

	A	B	C	D	E	F	G
1		Internally Generated Revenue of States in Nigeria					
2	State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
3	Abia	₦ 1,297,498,300.00	₦ 821,123,500.00	₦ 1,175,454,800.00	₦ 967,327,400.00	₦ 2,265,644,000.00	₦ 4,544,916,100.00
4	Adamawa	₦ 4,022,792,500.00	₦ 4,317,641,300.00	₦ 1,627,470,600.00	₦ 1,023,694,700.00	₦ 3,493,691,500.00	₦ 1,973,059,900.00
5	Akwa Ibom	₦ 824,782,800.00	₦ 1,691,712,500.00	₦ 4,927,386,500.00	₦ 2,187,626,200.00	₦ 2,966,925,400.00	₦ 2,202,014,900.00
6	Anambra	₦ 2,159,322,900.00	₦ 1,511,863,500.00	₦ 4,060,131,900.00	₦ 1,843,665,900.00	₦ 2,439,308,800.00	₦ 3,015,652,900.00
7	Bauchi	₦ 764,748,600.00	₦ 3,059,451,100.00	₦ 2,879,985,600.00	₦ 3,032,115,500.00	₦ 2,609,030,900.00	₦ 3,000,312,200.00
8	Bayelsa	₦ 1,218,646,400.00	₦ 2,035,499,300.00	₦ 3,596,177,500.00	₦ 3,958,333,500.00	₦ 4,856,865,900.00	₦ 1,754,855,100.00
9	Benue	₦ 3,479,649,000.00	₦ 3,864,832,700.00	₦ 2,458,711,700.00	₦ 4,801,142,000.00	₦ 2,700,421,800.00	₦ 3,212,451,900.00
10	Benue	₦ 602,469,700.00	₦ 1,387,315,500.00	₦ 4,501,134,600.00	₦ 2,728,902,800.00	₦ 1,687,978,600.00	₦ 3,627,716,800.00
11	Borno	₦ 2,361,614,200.00	₦ 1,616,065,000.00	₦ 4,908,244,600.00	₦ 4,216,846,800.00	₦ 581,980,000.00	₦ 4,166,988,100.00
12	Cross River	₦ 2,416,592,600.00	₦ 1,971,834,600.00	₦ 1,814,142,400.00	₦ 4,658,487,000.00	₦ 745,327,000.00	₦ 4,779,952,700.00
13	Delta	₦ 4,755,914,300.00	₦ 2,382,209,500.00	₦ 3,361,514,600.00	₦ 2,060,298,000.00	₦ 4,671,269,900.00	₦ 2,363,220,900.00
14	Ebonyi	₦ 3,547,140,000.00	₦ 3,233,069,500.00	₦ 4,883,253,900.00	₦ 1,060,164,800.00	₦ 2,926,053,500.00	₦ 713,048,500.00
15	Edo	₦ 2,663,501,000.00	₦ 781,461,300.00	₦ 462,661,800.00	₦ 543,085,200.00	₦ 3,256,011,600.00	₦ 2,900,705,900.00
16	Ekiti	₦ 1,816,087,900.00	₦ 4,128,943,600.00	₦ 1,512,170,300.00	₦ 2,592,908,100.00	₦ 3,340,038,100.00	₦ 4,040,341,600.00
17	Enugu	₦ 1,409,979,200.00	₦ 2,609,372,800.00	₦ 1,990,646,300.00	₦ 3,219,650,200.00	₦ 1,893,090,400.00	₦ 4,581,716,900.00
18	FCT	₦ 3,199,223,200.00	₦ 2,063,317,300.00	₦ 1,829,381,400.00	₦ 3,704,640,600.00	₦ 4,980,777,000.00	₦ 2,520,202,900.00
19	Gombe	₦ 620,111,300.00	₦ 2,201,453,200.00	₦ 1,885,641,400.00	₦ 4,146,024,300.00	₦ 2,551,023,100.00	₦ 2,523,019,700.00
20	Imo	₦ 2,591,742,600.00	₦ 2,521,764,800.00	₦ 2,013,994,900.00	₦ 4,994,515,700.00	₦ 3,014,428,300.00	₦ 2,922,241,900.00
21	Jigawa	₦ 3,550,126,700.00	₦ 1,573,445,100.00	₦ 3,756,243,200.00	₦ 3,092,703,100.00	₦ 1,417,963,700.00	₦ 2,311,559,800.00
22	Kaduna	₦ 3,938,598,800.00	₦ 2,599,773,900.00	₦ 1,224,849,400.00	₦ 1,662,248,400.00	₦ 450,931,500.00	₦ 3,835,345,400.00

Video 4    Next Sheet    +

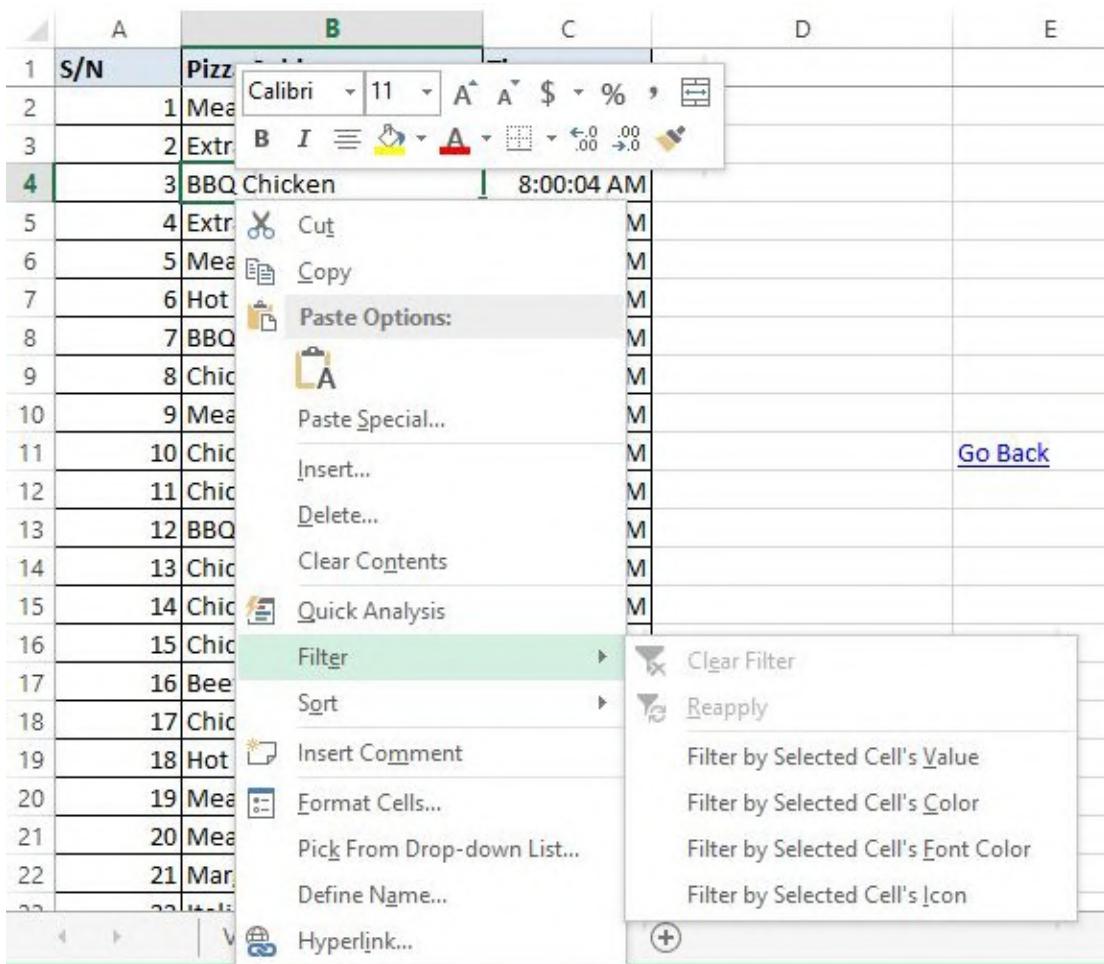
READY

# Filtering

Filter is one of the Excel power user's most used tool. It allows you selectively choose what you want to view in a table and hide the rest.

It is very easy to access and can be accessed from three different places in Excel.

By right clicking and selecting Filter.



From the Home menu, clicking on Sort & Filter at the right.

Filtering.xlsx - Excel

The screenshot shows the Excel ribbon with the 'DATA' tab selected. In the 'Sort & Filter' group, the 'Filter' icon is highlighted. A dropdown menu is open next to it, displaying options such as 'Sort A to Z', 'Sort Z to A', 'Custom Sort...', 'Filter', 'Clear', and 'Reapply'. The main worksheet area displays a table with columns 'S/N', 'Pizza Sold', and 'Time'. The row for 'Extravaganza' is currently selected.

S/N	Pizza Sold	Time
1	Meatzaa	8:00:01 AM
2	Extravaganza	8:00:02 AM
3	BBQ Chicken	8:00:04 AM
4	Extravaganza	8:00:07 AM
5	Meatzaa	8:00:08 AM
6	Hot Veggie	8:00:14 AM
7	BBQ Philly Steak	8:00:20 AM
8	Chicken Feast	8:00:20 AM
9	Meatzaa	8:00:22 AM
10	Chicken Suya	8:00:25 AM
11	Chicken Legend	8:00:26 AM
12	BBQ Philly Steak	8:00:27 AM
13	Chicken Suya	8:00:29 AM
14	Chicken Feast	8:00:33 AM
15	Chicken Feast	8:00:33 AM
16	Beef Suya	8:00:34 AM
17	Chicken Feast	8:00:35 AM
18	Hot Veggie	8:00:35 AM
19	Meatzaa	8:00:35 AM
20	Meatzaa	8:00:36 AM
21	Margarita	8:00:37 AM

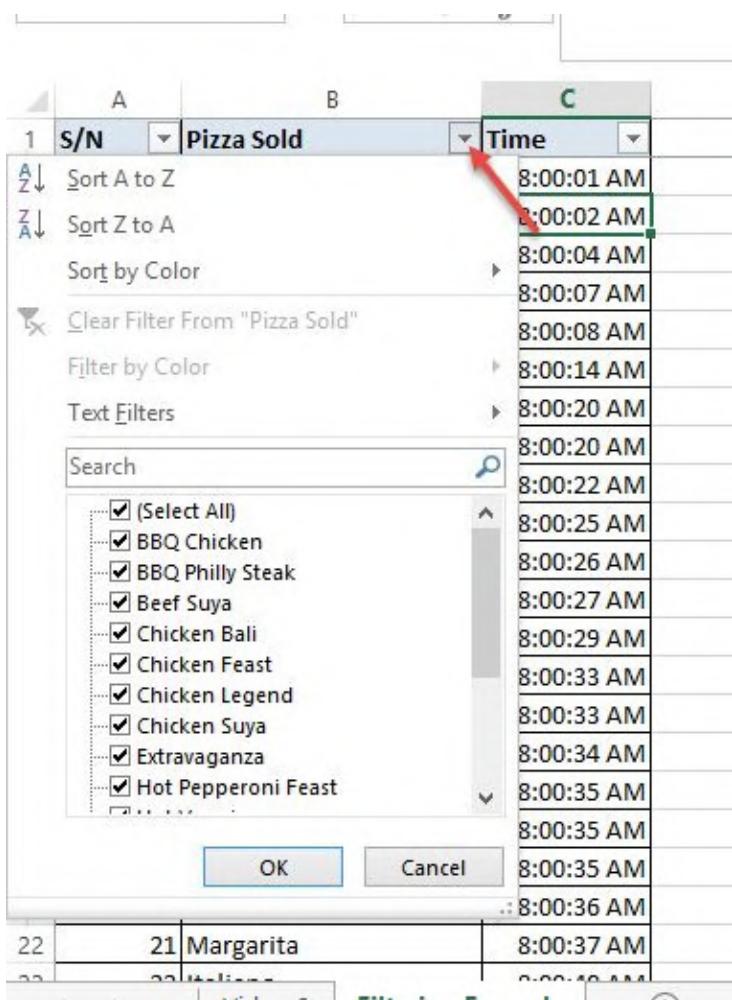
## From the Data menu.

Filtering.xlsx

The screenshot shows the Excel ribbon with the 'DATA' tab selected. In the 'Sort & Filter' group, the 'Filter' icon is highlighted. A dropdown menu is open next to it, displaying options such as 'Clear', 'Reapply', 'Advanced', 'Text to Columns', and 'F'. The main worksheet area displays the same table as the previous screenshot, with the row for 'Extravaganza' selected.

S/N	Pizza Sold	Time
1	Meatzaa	8:00:01 AM
2	Extravaganza	8:00:02 AM
3	BBQ Chicken	8:00:04 AM
4	Extravaganza	8:00:07 AM
5	Meatzaa	8:00:08 AM
6	Hot Veggie	8:00:14 AM
7	BBQ Philly Steak	8:00:20 AM
8	Chicken Feast	8:00:20 AM
9	Meatzaa	8:00:22 AM
10	Chicken Suya	8:00:25 AM
11	Chicken Legend	8:00:26 AM
12	BBQ Philly Steak	8:00:27 AM
13	Chicken Suya	8:00:29 AM
14	Chicken Feast	8:00:33 AM
15	Chicken Feast	8:00:33 AM
16	Beef Suya	8:00:34 AM
17	Chicken Feast	8:00:35 AM
18	Hot Veggie	8:00:35 AM
19	Meatzaa	8:00:35 AM
20	Meatzaa	8:00:36 AM
21	Margarita	8:00:37 AM

Once you've turned on the Filter tool by clicking on it, you will see a dropdown box beside the headers of the table.



Clicking on the dropdown box shows you all the unique items in that field and you can select the ones you want to view (hiding the rest). By default, all items are selected so you will have to unselect the ones you don't want to see.

In the screenshot below, all the pizza items were unselected except the BBQ Chicken (meaning only BBQ Chicken was selected).

S/N	Pizza Sold	Time
1	BBQ Chicken	8:00:04 AM
4	BBQ Chicken	8:01:34 AM
51	BBQ Chicken	8:02:06 AM
72	BBQ Chicken	8:02:13 AM
75	BBQ Chicken	8:02:37 AM
84	BBQ Chicken	8:02:49 AM
92	BBQ Chicken	8:05:23 AM
169	BBQ Chicken	8:05:34 AM
177	BBQ Chicken	8:05:39 AM
182	BBQ Chicken	8:05:40 AM
183	BBQ Chicken	8:06:01 AM
197	BBQ Chicken	8:06:03 AM
199	BBQ Chicken	8:06:22 AM
206	BBQ Chicken	8:06:40 AM
214	BBQ Chicken	8:06:46 AM
216	BBQ Chicken	8:07:07 AM
232	BBQ Chicken	8:07:28 AM
243	BBQ Chicken	8:08:31 AM
267	BBQ Chicken	8:08:45 AM
276	BBQ Chicken	8:08:45 AM
277	BBQ Chicken	8:09:55 AM
317	BBQ Chicken	

Notice the blue row numbers, it is Excel's way of visually hinting you that some rows have been hidden as they did not contain the items we want to view.

Filtering is that simple and straight forward.

# **Data Cleaning**

A lot of times the data you are given to work on in Excel is not in a format usable for you and need some cleaning before you can go ahead with the analysis you intended doing on it. In most cases you have to manually clean the data and fix whatever issues it has one by one before progressing with the original analysis you intended to do on the data.

Fortunately, Excel has some nifty tools to help you automate some of this data cleaning process. The most common ones are,

- Removing duplicates, and
- Text to Columns

Then we'll cover a special tool that can help you do a quick categorization of your data: Subtotal. Finally we'll cover Data Validation, an ingenious tool for reducing data entry errors in your Excel files.

## **Removing Duplicates.**

Occasionally, you will have a table and you'll want to remove duplicate entries. If it were a sales transaction table, you might want to remove the duplicate sales entries. In the example below, it is a table of items (Pizzas) and we want to remove the duplicate entries leaving only unique entries.

1 Pizza Sold

2 Meatzaa

3 Extravaganza

4 BBQ Chicken

5 Hot Veggie

6 BBQ Philly Steak

7 Meatzaa

8 Extravaganza

9 BBQ Chicken

10 Beef Suya

11 Margarita

12 Italiano

13 Pepperoni Suya

14 Veggie Supreme

15 Pepperoni Suya

16 Veggie Supreme

17 Hot Pepperoni Feast

As illustrated above, you select the entire records first and then go to Data menu, click on Remove Duplicates. You will get a confirmatory dialog box. Click on OK.

1 Pizza Sold

2 Meatzaa

3 Extravaganza

4 BBQ Chicken

5 Hot Veggie

6 BBQ Philly Steak

7 Meatzaa

8 Extravaganza

9 BBQ Chicken

10 Beef Suya

11 Margarita

12 Italiano

13 Pepperoni Suya

14 Veggie Supreme

15 Pepperoni Suya

16 Veggie Supreme

17 Hot Pepperoni Feast

You'll see a result showing the number of duplicate values that were found and the number of unique values found. Basically, what Remove Duplicates does is it leaves one

record of each item and removes all the extra record for that item that it finds.

The screenshot shows a Microsoft Excel spreadsheet titled "Data Cleaning.xls". The "DATA" tab is selected in the ribbon. In the "Connections" section of the ribbon, there are buttons for "From Access", "From Web", "From Text", "From Other Sources", "Existing Connections", "Refresh All", "Properties", and "Edit Links". Below the ribbon, a table is displayed in column A, containing the following data:

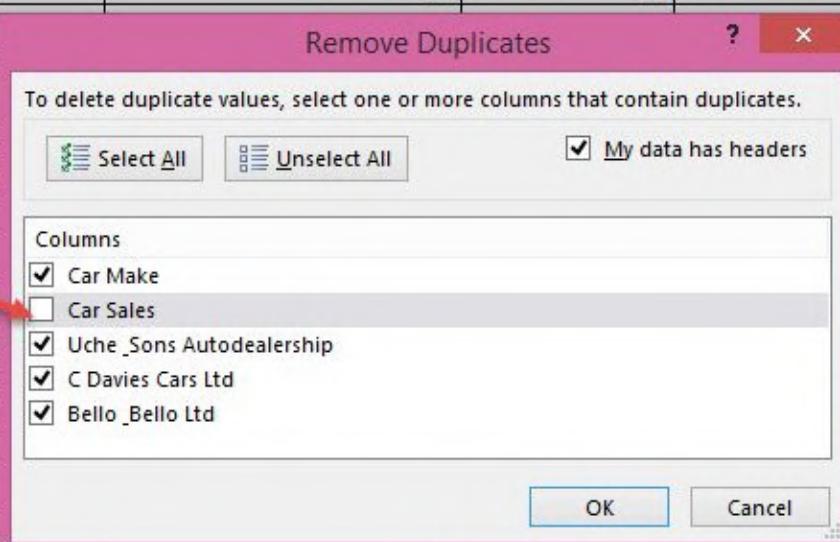
	A
1	Pizza Sold
2	Meatzaa
3	Extravaganza
4	BBQ Chicken
5	Hot Veggie
6	BBQ Philly Steak
7	Beef Suya
8	Margarita
9	Italiano
10	Pepperoni Suya
11	Veggie Supreme
12	Hot Pepperoni Feast
13	
14	
15	
16	
17	

A message box from Microsoft Excel is overlaid on the spreadsheet, stating: "5 duplicate values found and removed; 11 unique values remain." with an "OK" button. Below the message box, the text "Was this information helpful?" is visible. The status bar at the bottom of the screen shows "Text2Column".

When you select a table with more than one field entry, the Remove Duplicates remove only the entries that have same value in all the fields as a previous entry except you specify which fields to exclude in the search for duplicates.

In the screenshot below, we excluded Car Sales from the fields to include in the search for duplicates. So rows that have the same entries in all the other fields will be deleted except one.

	A	B	C	D	E	F
1	Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd	
2	France	Bugatti		25	25	33
3	France	Peugeot		20	5	25
4	France	Renault		24	24	31
5	Germany	BMW				33
6	Germany	Porsche				14
7	Germany	Audi				13
8	Germany	Volksw				11
9	Germany	Merced				34
10	Germany	Opel				41
11	India	Tata				7
12	India	Ashok				13
13	India	Mahind				15
14	Italy	Maserat				9
15	Italy	Lambor				27
16	Japan	Toyota				10
17	Japan	Honda				12
18	Japan	Honda				34
19	Japan	Mazda	22	5		25
20	Japan	Nissan	11	36		6
21	Japan	Isuzu	44	15		34
22	Japan	Infiniti	8	18		28
23			24	20		44



## Text to Columns

There will be times you will have data you would prefer split across multiple columns squeezed into one column. This happens a lot when you copy data from an external source into Excel or you open an exported data from other business software like CRMs and ERPs.

Excel's Text to Columns tool is the magic tool for splitting such data entries into multiple columns provided there is a recognizable character separating each field or they have fixed lengths per field. Below is a simple example for splitting a full name in one column to first Name column and last Name field column.

Screenshot of Microsoft Excel showing the 'Convert Text to Columns Wizard - Step 1 of 3' dialog box.

The dialog box displays the following information:

- Original data type:** Delimited
- Preview of selected data:**

1 FirstName LastName
2 Michael Olafusi
3 John Abiola
4 Mary Eze
5 Lola Adigun
6 Segun Owolabi
7 Tolu Owoeye
8 Uche Nnamdi
9 David Aluko
10 Lekan Bello
11 Luke Tsangi
- Buttons:** Cancel, < Back, Next >, Finish

Red numbered arrows indicate steps:

- 1: Points to the data range A1:A11 in the Excel worksheet.
- 2: Points to the 'Delimited' radio button in the dialog box.
- 3: Points to the 'Text to Columns' button in the Excel ribbon.
- 4: Points to the preview area in the dialog box.
- 5: Points to the 'Next >' button in the dialog box.

Delimited is the option to specify that there is a recognizable character separating each field. In this example, there is a space separating every first name from the last name.

Screenshot of Microsoft Excel showing the 'Convert Text to Columns Wizard - Step 2 of 3' dialog box.

The dialog box displays the following settings:

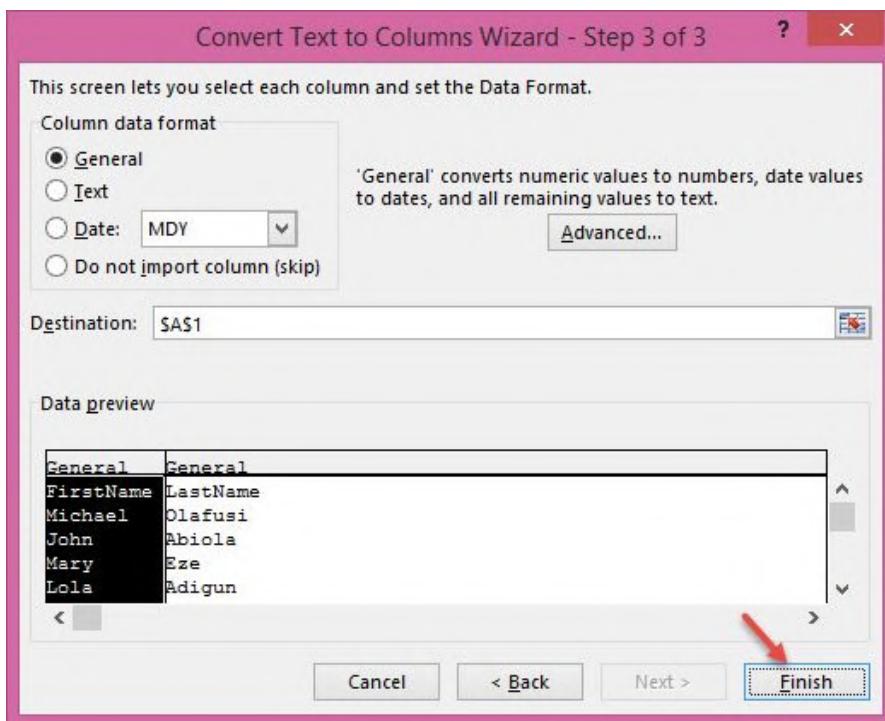
- Delimiters:** Space is checked.
- Treat consecutive delimiters as one:** Checked.
- Text qualifier:** None
- Data preview:**

FirstName	LastName
Michael	Olafusi
John	Abiola
Mary	Eze
Lola	Adigun
- Buttons:** Cancel, < Back, Next >, Finish

Red numbered arrows indicate steps:

- 1: Points to the 'Space' checkbox in the Delimiters section.
- 2: Points to the 'Next >' button in the dialog box.

Notice how Excel shows a line between the first names and the last names once you select the appropriate delimiter (space, in this case). Click on Next and Finish.



Below is the result. Just as desired.

	A	B	C
1	FirstName	LastName	
2	Michael	Olafusi	
3	John	Abiola	
4	Mary	Eze	
5	Lola	Adigun	
6	Segun	Owolabi	
7	Tolu	Owoeye	
8	Uche	Nnamdi	
9	David	Aluko	
10	Lekan	Bello	
11	Luke	Tsangi	
12			

## Subtotal

Subtotal is a secret tool for doing a quick analysis of a table in Excel. It breaks the data down by categories and creates grouping that shows you different levels of details.

It is also very easy to use.

Below is an example where we'll use it.

	A	B	C	D	E
1	Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd
2	France	Bugatti	25	25	33
3	France	Peugeot	20	5	25
4	France	Renault	24	24	31
5	Germany	BMW	20	6	33
6	Germany	Porsche	27	45	14
7	Germany	Audi	28	43	43
8	Germany	Volkswagen	16	43	11
9	Germany	Mercedes-Benz	23	45	34
10	Germany	Opel	24	16	41
11	India	Tata	41	29	7
12	India	Ashok Leyland	41	19	13
13	India	Mahindra	34	27	15
14	Italy	Maserati	13	22	9
15	Italy	Lamborghini	31	26	27
16	Japan	Toyota	30	24	40
17	Japan	Honda	11	42	12
18	Japan	Honda	36	31	34
19	Japan	Mazda	22	5	25
20	Japan	Nissan	11	36	6
21	Japan	Isuzu	44	15	34
22	Japan	Infiniti	8	18	28
23	Japan	Datsun	31	18	11
24	Japan	Subaru	24	7	20
25	Japan	Suzuki	13	29	43
26	Japan	Scion	26	18	36
27	South Korea	Hyundai	32	28	40

It is a market research data table showing the different car make sold in three different auto dealerships.

We can apply a subtotal to this to see some interesting analysis.

1

2

3

4

5

6

7

Select the table, go to Data menu and click on Subtotal. In the dialog box that comes up, in the “Add subtotal to” section tick all the fields that have numeric values (except you don’t want to see a numeric analysis of them).

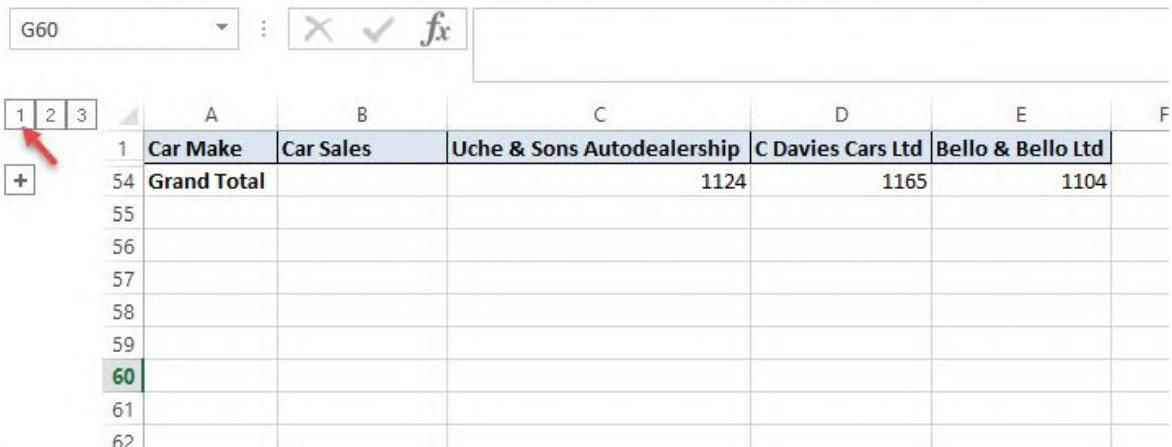
Once you click on OK, you get a result that looks like the following —

**3 levels of categorization**

1	2	3	D	E
Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd
France	Bugatti		25	25
France	Peugeot		20	5
France	Renault		24	24
Germany	BMW		20	6
Germany	Porsche		27	45
Germany	Audi		28	43
Germany	Volkswagen		16	43
Germany	Mercedes-Benz		23	45
Germany	Opel		24	16
India	Tata		41	29
India	Ashok Leyland		41	19
India	Mahindra		34	27
Italy	Maserati		13	22
Italy	Lamborghini		31	26
Japan	Toyota		30	24
Japan	Honda		11	42
Japan	Honda		36	31
Japan	Mazda		22	5
Japan	Nissan		11	36
Japan	Isuzu		44	15
Japan	Infiniti		8	18
Japan	Datsun		31	18

Level 1:

Screenshot of the Microsoft Excel ribbon showing the 'DATA' tab selected. The 'Connections' group is visible, containing 'From Access', 'From Web', 'From Text', 'Get External Data', 'Existing Connections', 'Refresh All', 'Connections', 'Properties', and 'Edit Links'. The 'Sort & Filter' group contains 'Sort' (with A-Z and Z-A dropdowns), 'Filter', 'Advanced', 'Clear', 'Reapply', 'Text to Columns', 'Flash Fill', and 'D'.



A screenshot of an Excel spreadsheet titled 'Data Cleaning.xlsx'. The table has columns A through F. Row 1 contains headers: 'Car Make', 'Car Sales', 'Uche & Sons Autodealership', 'C Davies Cars Ltd', and 'Bello & Bello Ltd'. Row 54 contains a subtotal: 'Grand Total' with values 1124, 1165, and 1104 respectively. Rows 55 through 60 are collapsed under row 1. Row 60 is currently selected. Row 62 is the next row below.

	A	B	C	D	E	F
1	Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd	
54	Grand Total			1124	1165	1104
55						
56						
57						
58						
59						
60						
61						
62						

## Level 2:

Screenshot of the Microsoft Excel ribbon showing the 'DATA' tab selected. The 'Connections' group is visible, containing 'From Access', 'From Web', 'From Text', 'Get External Data', 'Existing Connections', 'Refresh All', 'Connections', 'Properties', and 'Edit Links'. The 'Sort & Filter' group contains 'Sort' (with A-Z and Z-A dropdowns), 'Filter', 'Advanced', 'Clear', 'Reapply', 'Text to Columns', 'Flash Fill', and 'Remove Duplicates'.

A screenshot of an Excel spreadsheet titled 'Data Cleaning.xlsx - Exc'. The table has columns A through F. Row 1 contains headers: 'Car Make', 'Car Sales', 'Uche & Sons Autodealership', 'C Davies Cars Ltd', and 'Bello & Bello Ltd'. Rows 5 through 54 are collapsed under row 1. Row 54 contains a subtotal: 'Grand Total' with values 1124, 1165, and 1104 respectively. Rows 55 through 57 are the next rows below.

	A	B	C	D	E	F
1	Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd	
5	France Total			69	54	89
12	Germany Total			138	198	176
16	India Total			116	75	35
19	Italy Total			44	48	36
31	Japan Total			256	243	289
34	South Korea Total			60	69	53
37	Sweden Total			39	53	34
46	UK Total			251	243	228
53	US Total			151	182	164
54	Grand Total			1124	1165	1104
55						
56						
57						

## Level 3:

Screenshot of the Excel ribbon showing the 'DATA' tab selected. The 'Connections' section is open, displaying options like 'From Access', 'From Web', 'From Text', 'Existing Connections', 'Refresh All', 'Properties', and 'Edit Links'. Below this is the 'Get External Data' section. The 'Sort & Filter' section contains buttons for 'Sort', 'Filter', and 'Advanced'.

	A	B	C	D	E	F
1	Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd	
2	France	Bugatti		25	25	33
3	France	Peugeot		20	5	25
4	France	Renault		24	24	31
5	France Total			69	54	89
6	Germany	BMW		20	6	33
7	Germany	Porsche		27	45	14
8	Germany	Audi		28	43	43
9	Germany	Volkswagen		16	43	11
10	Germany	Mercedes-Benz		23	45	34
11	Germany	Opel		24	16	41
12	Germany Total			138	198	176
13	India	Tata		41	29	7
14	India	Ashok Leyland		41	19	13
15	India	Mahindra		34	27	15
16	India Total			116	75	35
17	Italy	Maserati		13	22	9
18	Italy	Lamborghini		31	26	27
19	Italy Total			44	48	36
20	Japan	Toyota		30	24	40
21	Japan	Honda		11	42	12
22	Japan	Honda		36	31	34

And the best part is that you can remove the subtotal and have your original table data back just as it was before. To remove is as easy as clicking the Subtotal again and clicking on Remove All.

Screenshot of the Excel ribbon showing the 'DATA' tab selected. The 'Sort & Filter' group is active, with the 'Subtotal' button highlighted by a red arrow. The 'Group' section of the ribbon is also highlighted by a red arrow. A 'Subtotal' dialog box is open, showing the 'At each change in:' dropdown set to 'Car Make', the 'Use function:' dropdown set to 'Sum', and the 'Add subtotal to:' list containing 'Uche & Sons Autodealership' (which is checked). At the bottom of the dialog box, the 'Remove All' button is highlighted by a red arrow.

See the result below. All the level 1, 2 & 3 groupings gone.

	A	B	C	D	E
1	Car Make	Car Sales	Uche & Sons Autodealership	C Davies Cars Ltd	Bello & Bello Ltd
2	France	Bugatti	25	25	33
3	France	Peugeot	20	5	25
4	France	Renault	24	24	31
5	Germany	BMW	20	6	33
6	Germany	Porsche	27	45	14
7	Germany	Audi	28	43	43
8	Germany	Volkswagen	16	43	11
9	Germany	Mercedes-Benz	23	45	34
10	Germany	Opel	24	16	41
11	India	Tata	41	29	7
12	India	Ashok Leyland	41	19	13
13	India	Mahindra	34	27	15
14	Italy	Maserati	13	22	9
15	Italy	Lamborghini	31	26	27
16	Japan	Toyota	30	24	40
17	Japan	Honda	11	42	12
18	Japan	Honda	36	31	34
19	Japan	Mazda	22	5	25
20	Japan	Nissan	11	36	6
21	Japan	Isuzu	44	15	34
22	Japan	Infiniti	8	18	28
23	Japan	Datsun	31	18	11
24	Japan	Subaru	24	7	20
25	Japan	Suzuki	13	29	43
26	Japan	Scion	26	18	36
27	South Korea	Hyundai	32	28	40

## Data Validation

This is another secret but powerful tool in Excel. It helps you put in place some error check mechanism and can be used by a skilled Excel user to make powerful Excel dashboards.

Let's see some of the common uses of it.

The table below is an Employee records table. In it we want to force people to enter just departments specified at the left of the table. In fact, we want them to have the easy option of seeing a pre-populated dropdown list and pick a department from the list options.

	A	B	C	D	E	F	G	H
1	First Name	Last Name	Employee ID	Department			List of Depts	
2	Mary	Porter	1000058				HR	
3	Joseph	Saliu	1000588				Finance	
4	Kenneth	Lenny	1000588				IT	
5	Lekan	Jakes	1000589				Operations	
6	Gabriel	Matthew	1000590				Marketing	
7								
8								

We select the cells we want to give this functionality, go to Data menu and click on Data Validation (sometimes twice).

The screenshot shows the 'Data Validation' dialog box overlaid on the Excel spreadsheet. The 'Allow' dropdown menu is open, displaying options like 'Any value', 'Whole number', 'Decimal', etc., with 'Any value' selected. The 'Data Tools' icon on the ribbon is circled in red, and the 'Sort & Filter' group on the ribbon is also circled in red.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	First Name	Last Name	Employee ID	Department			List of Depts						
2	Mary	Porter	1000058				HR						
3	Joseph	Saliu	1000588				Finance						
4	Kenneth	Lenny	1000588				IT						
5	Lekan	Jakes	1000589				Operations						
6	Gabriel	Matthew	1000590				Marketing						
7													
8													

You'll see that there are many options to pick between.

1. **Any Value.** This is the default and it is same as not having any data validation. The user can enter any value into the cell.
2. **Whole Number.** This forces the user to enter only numeric values that are whole numbers. If the user enters a text or decimal entry he'll get an error. This might be applicable in an invoice sheet, for the cells that hold the order quantity if you don't sell fraction of your products.
3. **Decimal.** This forces the user to enter a whole number or decimal entry. A whole number is same as a decimal with zeros after the decimal point. This might be great in a financial model sheet, to hold values of growth assumption, exchange rates and risk premiums.
4. **List.** This is the one we are most interested in. It enables us to limit the cell entries to a list of options. We will use this in the example under review.
5. **Date.** This forces the user to enter a valid date entry.
6. **Time.** This forces the user to enter a valid time entry.
7. **Text Length.** This allows the user to enter any value as long as the character length is not more than the specified value here. It is good for fields that hold phone numbers, maybe you want to limit the entry to the +2348123456789 14 characters long entry format.
8. **Custom.** Just as the name specifies, you want to limit the cell entry to something less conventional and not covered by the other options.

In this example we are going to use the List option. So let's select it.

Get External Data | Connections | Sort & Filter

D2 : X ✓ fx

	A	B	C	D	E	F	G	H
1	First Name	Last Name	Employee ID	Department			List of Depts	
2	Mary	Porter	1000058				HR	
3	Joseph	SalIU	1000588				Finance	
4	Kenneth	Lenny	1000588				IT	
5	Lekan	Jakes	1000589				Operations	
6	Gabriel	Matthew	1000590				Marketing	

Data Validation ? x

Settings Input Message Error Alert

Validation criteria

Allow: List  Ignore blank  In-cell dropdown

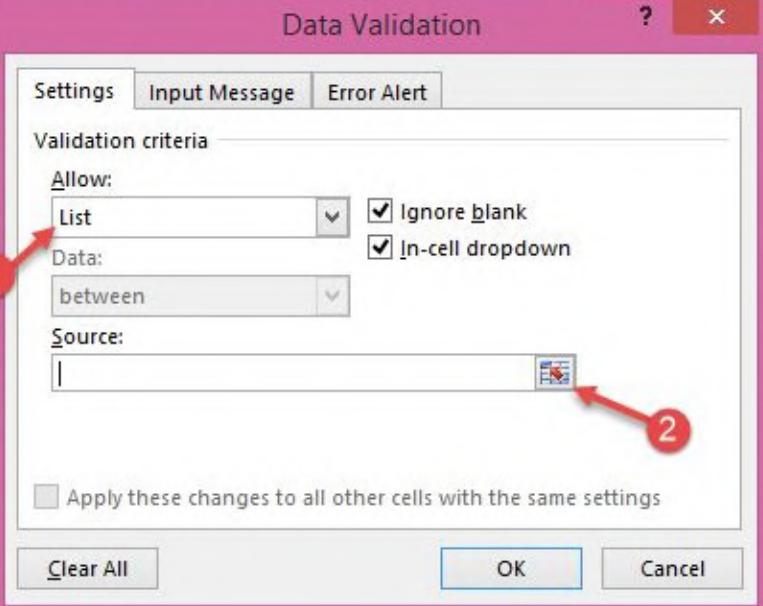
Data: between

Source:  

Apply these changes to all other cells with the same settings

Clear All OK Cancel

Go back



Once you click the icon on the far right corner of the Source box, select entries to limit the users to. In this case we have typed out the list options in cells G2:G6, holding the different departments.

Get External Data | Connections | Sort & Filter

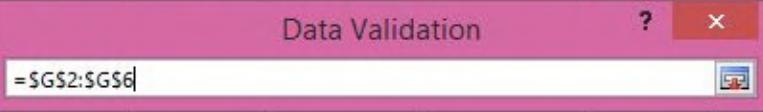
D2 : X ✓ fx G2:G6

	A	B	C	D	E	F	G
1	First Name	Last Name	Employee ID	Department			List of Depts
2	Mary	Porter	1000058	G2:G6			HR
3	Joseph	SalIU	1000588				Finance
4	Kenneth	Lenny	1000588				IT
5	Lekan	Jakes	1000589				Operations
6	Gabriel	Matthew	1000590				Marketing

Data Validation ? x

=G\$2:\$G\$6 

Go back



D2 : X ✓ fx G2:G6

	A	B	C	D	E	F	G	H	I
1	First Name	Last Name	Employee ID	Department			List of Depts		
2	Mary	Porter	1000058	G2:G6			HR		
3	Joseph	Saliu	1000588				Finance		
4	Kenneth	Lenny	1000588				IT		
5	Lekan	Jakes	1000589				Operations		
6	Gabriel	Matthew	1000590				Marketing		

Data Validation ? x

Settings Input Message Error Alert

Validation criteria

Allow:

List   Ignore blank  In-cell dropdown

Data:

between

Source: =G\$2:G\$6

Apply these changes to all other cells with the same settings

Go back

And it's done.

The user is forced to choose between the options in the list. He even sees a dropdown arrow that expands to a dropdown lists the moment he tries to fill the cell.

	A	B	C	D	E
1	First Name	Last Name	Employee ID	Department	
2	Mary	Porter	1000058		
3	Joseph	Saliu	1000588	HR	
4	Kenneth	Lenny	1000588	Finance	
5	Lekan	Jakes	1000589	IT	
6	Gabriel	Matthew	1000590	Operations	

And that is how Data Validation works. When used creatively it can save you from the stress of making corrections to forms people filled and can be used in conjunction with

formulas like VLOOKUP to make a dynamic report and dashboards.

# Data Formatting

There are some quick tips in Excel that would turn a bland looking data into a nice looking one. One of the best tip is to apply a table formatting to the data.

An example, is taking a table like the one below and turning it in a well formatted one.

	A	B	C	D	E	F	G
1	State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
2	Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
3	Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
4	Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
5	Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
6	Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
7	Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
8	Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
9	Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
10	Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
11	Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
12	Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
13	Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
14	Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
15	Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600
16	Enugu	₦ 1,409,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400	₦ 4,581,716,900
17	FCT	₦ 3,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000	₦ 2,520,202,900
18	Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100	₦ 2,523,019,700
19	Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300	₦ 2,922,241,900
20	Jigawa	₦ 3,550,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,963,700	₦ 2,311,559,800
21	Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500	₦ 3,835,345,400
22	Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,291,000	₦ 530,613,400
23	Katsina	₦ 2,500,421,500	₦ 1,202,820,700	₦ 1,620,377,200	₦ 2,060,721,400	₦ 1,025,000,500	₦ 2,548,600,500

Select the data and go to Home menu, Format as Table. Choose a color theme.

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the center, there's a 'Format as Table' dialog box. The 'Light' theme is chosen from the color palette, which includes various shades of blue, green, and yellow. Below the palette, there are buttons for 'New Table Style...' and 'New PivotTable Style...'. At the bottom of the dialog box, the table data is displayed in a grid format, showing columns A through G and rows 1 through 23. The data represents monthly financial figures for different states in Nigeria.

A	B	C	D	E	F	G
State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600
Enugu	₦ 1,409,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400	₦ 4,581,716,900
FCT	₦ 3,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000	₦ 2,520,202,900
Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100	₦ 2,523,019,700
Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300	₦ 2,922,241,900
Jigawa	₦ 3,550,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,963,700	₦ 2,311,559,800
Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500	₦ 3,835,345,400
Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,291,000	₦ 530,613,400
Katsina	₦ 3,589,421,500	₦ 1,293,838,700	₦ 638,877,300	₦ 2,969,721,400	₦ 1,025,989,500	₦ 2,648,689,500
Kebbi	₦ 1,684,273,500	₦ 4,790,202,900	₦ 991,721,500	₦ 4,897,014,100	₦ 4,131,210,900	₦ 3,990,418,100
Kogi	₦ 2,812,863,300	₦ 2,734,189,600	₦ 2,306,601,300	₦ 867,264,000	₦ 2,104,687,400	₦ 2,825,512,800
Kwara	₦ 3,915,338,600	₦ 1,496,830,100	₦ 1,305,529,900	₦ 4,919,941,300	₦ 2,214,504,600	₦ 912,176,400
Lagos	₦ 6,239,473,500	₦ 7,319,183,000	₦ 6,211,689,500	₦ 3,351,178,500	₦ 11,610,307,000	₦ 22,681,984,500

If you want to email the Excel file to a colleague, you can copy the table and paste in Outlook and you'll have the beautiful looking table in the body of the email. Your colleague will have no excuse to give regarding not seeing or acting on the data.

Screenshot of Microsoft Outlook showing an email message window. The message is titled "Untitled - Message (HTML)". The recipient is "john@colleague.com". The subject is "The Analyzed Data for your action". The message body contains the same table from the previous screenshot, pasted as HTML code.

State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600

So what if you needed to print it for your boss.

Here's what you get from Print Preview.

State	Jan-14	Feb-14	Mar-14	Apr-14
Aba	₦ 1,297,488,300	₦ 821,123,300	₦ 1,175,434,800	₦ 967,327,400
Adamawa	₦ 4,023,792,500	₦ 4,317,641,300	₦ 1,627,470,800	₦ 1,023,684,700
Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,526,200
Anambra	₦ 2,159,312,900	₦ 1,511,863,500	₦ 4,080,131,900	₦ 1,843,663,900
Bauchi	₦ 764,748,600	₦ 3,059,431,100	₦ 2,879,985,600	₦ 3,082,113,500
Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,396,377,500	₦ 3,958,333,500
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,438,711,700	₦ 4,801,142,000
Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,301,134,600	₦ 2,728,902,800
Borno	₦ 2,361,614,200	₦ 1,616,063,000	₦ 4,908,244,600	₦ 4,216,848,800
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,638,487,000
Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,381,514,800	₦ 2,060,288,000
Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,231,900	₦ 1,060,164,800
Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 343,085,200
Ekiti	₦ 1,816,087,900	₦ 4,128,943,800	₦ 1,512,170,300	₦ 2,592,908,100
Enugu	₦ 1,408,879,200	₦ 2,608,372,800	₦ 1,980,646,200	₦ 3,219,650,200
FCT	₦ 3,189,223,200	₦ 2,068,317,300	₦ 1,828,381,400	₦ 3,704,840,600
Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300
Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700
Jigawa	₦ 3,550,126,700	₦ 1,378,445,100	₦ 3,796,243,200	₦ 3,082,703,100
Kaduna	₦ 3,938,598,800	₦ 2,399,773,800	₦ 1,124,848,400	₦ 1,661,248,400
Kano	₦ 2,981,980,300	₦ 2,021,735,800	₦ 3,016,518,800	₦ 4,411,651,000
Katsina	₦ 3,589,421,500	₦ 1,298,838,700	₦ 638,377,300	₦ 2,969,721,400
Keppi	₦ 1,684,273,300	₦ 4,790,202,800	₦ 991,721,500	₦ 4,897,014,100
Kogi	₦ 2,812,863,300	₦ 2,734,189,600	₦ 2,306,801,300	₦ 867,264,000
Kwara	₦ 3,915,338,600	₦ 1,496,830,100	₦ 1,305,529,900	₦ 4,919,941,300
Lagos	₦ 6,239,473,200	₦ 7,315,183,000	₦ 6,211,889,500	₦ 3,351,178,500
Nasarawa	₦ 450,732,700	₦ 4,852,085,900	₦ 1,411,838,300	₦ 743,233,200
Niger	₦ 3,002,387,100	₦ 4,592,318,800	₦ 3,215,870,900	₦ 1,086,334,400
Ogun	₦ 3,434,714,800	₦ 2,586,000,100	₦ 3,907,257,800	₦ 1,642,410,200
Ondo	₦ 716,222,900	₦ 1,690,422,800	₦ 4,362,933,800	₦ 977,876,300
Plateau	₦ 4,327,323,300	₦ 2,371,220,000	₦ 4,471,833,300	₦ 932,778,800
Rivers	₦ 2,423,028,900	₦ 4,860,236,800	₦ 4,148,808,800	₦ 859,719,700
Taraba	₦ 531,248,900	₦ 783,603,400	₦ 2,475,480,400	₦ 878,820,400
Yobe	₦ 2,187,894,400	₦ 2,500,320,500	₦ 3,487,311,100	₦ 829,030,800
Zamfara	₦ 4,767,284,200	₦ 1,622,967,600	₦ 4,309,006,600	₦ 1,308,237,500
Total	₦ 90,504,729,800	₦ 91,889,335,800	₦ 101,344,816,300	₦ 87,169,591,800

May-14	Jun-14
₦ 2,265,644,000	₦ 4,544,816,100
₦ 5,493,691,500	₦ 1,973,059,900
₦ 2,966,925,400	₦ 2,202,014,900
₦ 2,439,308,800	₦ 3,013,652,900
₦ 2,809,030,900	₦ 3,000,312,200
₦ 4,856,865,900	₦ 1,754,855,100
₦ 2,700,421,800	₦ 3,212,431,900
₦ 1,687,978,600	₦ 3,627,716,800
₦ 381,980,000	₦ 4,166,988,100
₦ 745,327,000	₦ 4,779,852,700
₦ 4,671,265,900	₦ 2,363,220,900
₦ 2,926,051,500	₦ 713,048,500
₦ 3,256,011,600	₦ 2,900,709,900
₦ 3,340,038,100	₦ 4,040,941,600
₦ 1,889,090,400	₦ 4,381,716,900
₦ 4,880,777,000	₦ 2,520,202,900
₦ 2,551,023,100	₦ 2,523,019,700
₦ 3,014,428,300	₦ 2,922,241,900
₦ 1,417,965,700	₦ 2,311,559,800
₦ 450,931,500	₦ 3,835,345,400
₦ 2,887,281,000	₦ 530,613,400
₦ 1,025,989,500	₦ 2,645,689,500
₦ 4,431,210,900	₦ 3,980,418,300
₦ 2,104,687,400	₦ 2,823,512,800
₦ 2,214,504,600	₦ 912,176,400
₦ 11,610,307,000	₦ 22,681,984,500
₦ 492,081,500	₦ 1,310,892,700
₦ 3,879,805,300	₦ 1,826,747,300
₦ 2,265,022,600	₦ 3,200,431,900
₦ 4,300,938,900	₦ 4,925,747,700
₦ 3,593,441,000	₦ 4,884,816,200
₦ 4,882,684,300	₦ 4,439,705,200
₦ 1,389,485,200	₦ 3,244,525,900
₦ 3,799,677,800	₦ 2,986,053,000
₦ 3,350,176,900	₦ 756,637,100
₦ 104,376,072,900	₦ 112,184,285,800

So how can you make Excel print this table on just one page?

Very Easy.

Go to Page Layout menu, and under the Scale to Fit section, set the Width and Height to 1 page.

Book1.xlsx - Excel

The screenshot shows the Microsoft Excel ribbon with the 'PAGE LAYOUT' tab selected. In the 'Page Setup' group, the 'Orientation' icon is highlighted with a red arrow. Below it, the 'Width: 1 page' and 'Height: 1 page' dropdown menus are also highlighted with a red box. The main area displays a table with data from January to June 2014 across 22 states.

State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
1 Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
2 Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
3 Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
5 Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
6 Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
7 Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
8 Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
9 Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
10 Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
11 Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
12 Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
13 Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
14 Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
15 Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600
16 Enugu	₦ 1,409,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400	₦ 4,581,716,900
17 FCT	₦ 3,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000	₦ 2,520,202,900
18 Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100	₦ 2,523,019,700
19 Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300	₦ 2,922,241,900
20 Jigawa	₦ 3,550,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,963,700	₦ 2,311,559,800
21 Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500	₦ 3,835,345,400
22 Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,291,000	₦ 530,613,400
	₦ 2,522,431,500	₦ 1,302,020,300	₦ 620,877,300	₦ 2,020,721,400	₦ 1,225,020,500	₦ 2,140,600,500

So let's see the result.

Date	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Aba	₦127,482,000	₦211,223,000	₦1,273,454,000	₦267,227,400	₦265,644,000	₦434,916,200
Adamawa	₦402,911,000	₦427,612,000	₦1,274,706,000	₦123,694,700	₦149,691,500	₦172,259,400
Akwa Ibom	₦124,711,000	₦156,711,000	₦4,307,246,000	₦117,656,000	₦166,925,400	₦210,014,400
Anambra	₦115,221,000	₦151,263,000	₦4,050,121,000	₦143,655,000	₦149,208,000	₦215,651,000
Bauchi	₦76,474,000	₦108,451,000	₦1,093,655,000	₦322,115,000	₦369,030,000	₦300,213,200
Bayelsa	₦112,564,000	₦125,491,000	₦1,561,777,000	₦258,221,500	₦425,565,000	₦175,451,000
Benue	₦145,699,000	₦166,821,000	₦1,468,711,000	₦480,142,000	₦703,421,000	₦211,451,000
Enugu	₦67,469,700	₦137,215,000	₦4,301,124,000	₦172,561,000	₦147,978,000	₦217,714,400
Borno	₦120,614,000	₦165,055,000	₦4,908,244,000	₦415,646,000	₦591,960,000	₦416,568,000
Cross River	₦144,571,000	₦171,245,000	₦1,241,411,000	₦458,487,000	₦743,277,000	₦477,951,700
Delta	₦475,924,000	₦2,007,209,000	₦3,261,514,000	₦108,198,000	₦471,128,000	₦368,220,000
Ebonyi	₦157,160,000	₦193,056,000	₦4,065,151,000	₦165,164,000	₦215,651,000	₦711,46,000
Edo	₦166,531,000	₦191,461,000	₦451,661,000	₦549,085,000	₦258,601,000	₦300,703,000
Edo	₦121,077,000	₦128,943,000	₦1,511,700,000	₦291,208,000	₦240,028,000	₦404,241,000
Enugu	₦145,979,000	₦169,273,000	₦1,965,546,000	₦219,650,000	₦299,090,000	₦458,714,000
FCT	₦110,221,000	₦125,217,000	₦1,259,291,000	₦170,640,000	₦490,777,000	₦150,201,000
Gombe	₦150,111,000	₦201,453,000	₦1,885,641,000	₦414,613,000	₦251,023,000	₦153,201,000
Jigawa	₦152,761,000	₦151,764,000	₦1,033,943,000	₦494,515,700	₦214,423,000	₦192,124,100
Jigawa	₦355,126,700	₦157,445,000	₦2,551,243,000	₦202,703,000	₦141,968,700	₦211,559,000
Kaduna	₦122,558,000	₦156,773,000	₦1,24,449,000	₦165,249,000	₦451,930,000	₦295,245,400
Kano	₦192,980,000	₦201,752,000	₦2,058,18,000	₦441,651,000	₦287,291,000	₦326,63,400
Katsina	₦158,411,000	₦161,298,700	₦1,634,277,000	₦268,711,000	₦125,999,500	₦164,659,000
Kebbi	₦158,273,000	₦170,203,000	₦991,711,000	₦287,704,000	₦131,210,900	₦390,418,000
Kogi	₦121,261,000	₦174,189,000	₦2,205,601,000	₦87,764,000	₦210,687,400	₦125,511,000
Kwara	₦125,298,000	₦146,620,000	₦1,205,539,000	₦419,941,000	₦224,450,400	₦91,176,400
Lagos	₦120,473,000	₦129,183,000	₦6,211,68,000	₦251,178,000	₦11,612,207,000	₦22,681,998,500
Nasarawa	₦60,732,700	₦420,055,000	₦1,451,283,000	₦743,232,000	₦492,000,000	₦120,093,700
Niger	₦102,367,100	₦151,218,000	₦2,129,870,000	₦108,234,000	₦279,205,000	₦126,747,100
Ogun	₦240,754,000	₦258,000,000	₦2,907,557,000	₦164,410,000	₦285,072,000	₦220,451,000
Ondo	₦16,221,000	₦160,471,000	₦4,261,253,000	₦777,276,000	₦420,926,000	₦425,747,700
Panasonic	₦157,223,000	₦171,210,000	₦4,715,833,000	₦931,778,000	₦293,441,000	₦484,814,000
Rivers	₦142,038,000	₦145,256,000	₦4,148,203,000	₦855,719,700	₦481,684,000	₦459,701,200
Taraba	₦51,124,000	₦792,603,400	₦1,475,480,000	₦762,020,400	₦128,495,200	₦224,453,500
Yobe	₦117,364,000	₦130,210,500	₦2,467,511,000	₦629,030,000	₦279,677,000	₦198,053,000
Zamfara	₦475,294,000	₦162,267,000	₦4,329,006,000	₦120,227,500	₦220,176,900	₦756,627,100
Total	₦2,524,729,000	₦61,020,235,000	₦101,244,816,000	₦27,169,591,000	₦10,376,071,000	₦11,194,265,000

Goal achieved! But it could have looked better if it had used more space, the space below. So we need to try out one more setting and see if it will give us a better result. We will set the Orientation to Landscape.

Book1.xlsx - Excel

The screenshot shows the Microsoft Excel ribbon with the 'PAGE LAYOUT' tab selected. In the 'Orientation' section of the ribbon, a red arrow points to the 'Landscape' option, indicating it is selected. The main content area displays a table with columns for State, Jan-14 through Jun-14, showing financial values in Nigerian Naira.

State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600
Enugu	₦ 1,409,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400	₦ 4,581,716,900
FCT	₦ 3,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000	₦ 2,520,202,900
Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100	₦ 2,523,019,700
Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300	₦ 2,922,241,900
Jigawa	₦ 3,550,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,963,700	₦ 2,311,559,800
Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500	₦ 3,835,345,400
Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,291,000	₦ 530,613,400
Katsina	₦ 3,589,421,500	₦ 1,293,838,700	₦ 638,877,500	₦ 2,969,721,400	₦ 1,025,989,500	₦ 2,648,689,500
Kebbi	₦ 1,684,273,500	₦ 4,790,302,900	₦ 991,712,500	₦ 4,897,014,400	₦ 4,131,210,900	₦ 5,910,418,100
Kogi	₦ 2,812,863,300	₦ 2,734,189,600	₦ 2,306,601,300	₦ 867,264,000	₦ 2,104,687,400	₦ 2,825,512,800
Kwara	₦ 3,915,338,600	₦ 1,486,830,100	₦ 1,305,529,900	₦ 4,919,941,300	₦ 2,214,504,600	₦ 912,176,400
Lagos	₦ 6,239,473,500	₦ 7,319,183,000	₦ 6,211,689,500	₦ 3,351,178,500	₦ 11,610,307,000	₦ 22,681,984,500
Nasarawa	₦ 450,752,700	₦ 4,852,095,900	₦ 1,411,830,200	₦ 743,233,200	₦ 492,081,500	₦ 1,310,892,700
Niger	₦ 3,002,587,100	₦ 4,592,318,900	₦ 5,219,870,900	₦ 1,086,354,400	₦ 3,979,805,500	₦ 1,826,747,500
Ogun	₦ 3,434,714,900	₦ 2,586,000,100	₦ 5,907,557,600	₦ 1,642,410,200	₦ 2,265,022,600	₦ 3,200,451,900
Ondo	₦ 716,222,900	₦ 1,690,421,800	₦ 4,362,953,800	₦ 977,876,300	₦ 4,300,936,900	₦ 4,925,747,700
Plateau	₦ 4,527,523,100	₦ 2,371,220,000	₦ 4,471,653,300	₦ 952,778,800	₦ 3,593,441,000	₦ 4,894,816,200
Rivers	₦ 1,423,028,900	₦ 4,860,215,800	₦ 4,148,803,900	₦ 859,719,700	₦ 4,882,684,500	₦ 4,459,705,200
Taraba	₦ 531,248,900	₦ 785,603,400	₦ 2,475,480,400	₦ 878,820,400	₦ 1,389,495,200	₦ 3,244,525,900
Vobe	₦ 2,187,894,400	₦ 2,500,320,500	₦ 5,497,511,100	₦ 829,050,800	₦ 3,799,677,800	₦ 2,986,053,000
Zamfara	₦ 4,767,284,200	₦ 1,621,296,700	₦ 4,509,006,600	₦ 1,308,237,500	₦ 3,350,176,900	₦ 756,857,100
Total	₦ 90,504,729,800	₦ 91,889,335,900	₦ 101,344,816,300	₦ 87,169,591,800	₦ 104,376,072,900	₦ 122,184,295,800

Let's view the result.

State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600
Enugu	₦ 1,409,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400	₦ 4,581,716,900
FCT	₦ 3,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000	₦ 2,520,202,900
Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100	₦ 2,523,019,700
Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300	₦ 2,922,241,900
Jigawa	₦ 3,550,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,963,700	₦ 2,311,559,800
Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500	₦ 3,835,345,400
Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,291,000	₦ 530,613,400
Katsina	₦ 3,589,421,500	₦ 1,293,838,700	₦ 638,877,500	₦ 2,969,721,400	₦ 1,025,989,500	₦ 2,648,689,500
Kebbi	₦ 1,684,273,500	₦ 4,790,302,900	₦ 991,712,500	₦ 4,897,014,400	₦ 4,131,210,900	₦ 5,910,418,100
Kogi	₦ 2,812,863,300	₦ 2,734,189,600	₦ 2,306,601,300	₦ 867,264,000	₦ 2,104,687,400	₦ 2,825,512,800
Kwara	₦ 3,915,338,600	₦ 1,486,830,100	₦ 1,305,529,900	₦ 4,919,941,300	₦ 2,214,504,600	₦ 912,176,400
Lagos	₦ 6,239,473,500	₦ 7,319,183,000	₦ 6,211,689,500	₦ 3,351,178,500	₦ 11,610,307,000	₦ 22,681,984,500
Nasarawa	₦ 450,752,700	₦ 4,852,095,900	₦ 1,411,830,200	₦ 743,233,200	₦ 492,081,500	₦ 1,310,892,700
Niger	₦ 3,002,587,100	₦ 4,592,318,900	₦ 5,219,870,900	₦ 1,086,354,400	₦ 3,979,805,500	₦ 1,826,747,500
Ogun	₦ 3,434,714,900	₦ 2,586,000,100	₦ 5,907,557,600	₦ 1,642,410,200	₦ 2,265,022,600	₦ 3,200,451,900
Ondo	₦ 716,222,900	₦ 1,690,421,800	₦ 4,362,953,800	₦ 977,876,300	₦ 4,300,936,900	₦ 4,925,747,700
Plateau	₦ 4,527,523,100	₦ 2,371,220,000	₦ 4,471,653,300	₦ 952,778,800	₦ 3,593,441,000	₦ 4,894,816,200
Rivers	₦ 1,423,028,900	₦ 4,860,215,800	₦ 4,148,803,900	₦ 859,719,700	₦ 4,882,684,500	₦ 4,459,705,200
Taraba	₦ 531,248,900	₦ 785,603,400	₦ 2,475,480,400	₦ 878,820,400	₦ 1,389,495,200	₦ 3,244,525,900
Vobe	₦ 2,187,894,400	₦ 2,500,320,500	₦ 5,497,511,100	₦ 829,050,800	₦ 3,799,677,800	₦ 2,986,053,000
Zamfara	₦ 4,767,284,200	₦ 1,621,296,700	₦ 4,509,006,600	₦ 1,308,237,500	₦ 3,350,176,900	₦ 756,857,100
Total	₦ 90,504,729,800	₦ 91,889,335,900	₦ 101,344,816,300	₦ 87,169,591,800	₦ 104,376,072,900	₦ 122,184,295,800

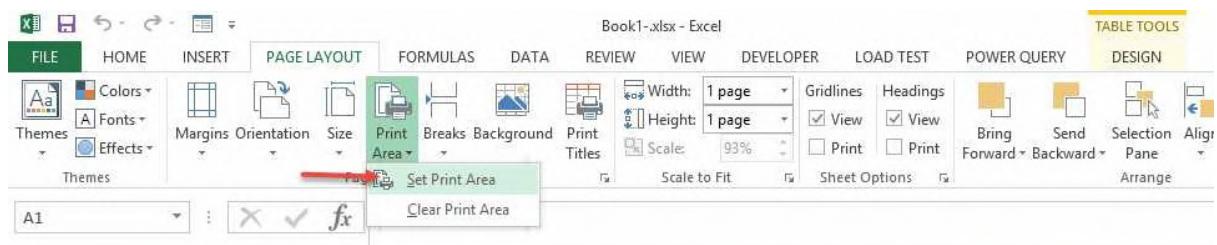
Bravo! This is much better!

What if the boss wanted just January to May data and not the entire table?

Also very easy.

Highlight the table from the beginning up to May, leaving out June. So we are highlighting just what we want to print.

Under same Page Layout, Click on Print Area, and select Set Print Area.



The screenshot shows the Microsoft Excel ribbon with the 'PAGE LAYOUT' tab selected. In the 'Print' section of the ribbon, the 'Print Area' dropdown is open, and the option 'Set Print Area' is highlighted with a red arrow. Below the ribbon, a portion of a table is visible, spanning columns A through F. The table has a header row and several data rows. The data starts at column A and ends at column F, which corresponds to the 'Set Print Area' selection in the ribbon.

State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Abia	₦ 1,297,498,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000	₦ 4,544,916,100
Adamawa	₦ 4,022,792,500	₦ 4,317,641,300	₦ 1,627,470,600	₦ 1,023,694,700	₦ 3,493,691,500	₦ 1,973,059,900
Akwa Ibom	₦ 824,782,800	₦ 1,691,712,500	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,966,925,400	₦ 2,202,014,900
Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800	₦ 3,015,652,900
Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 2,879,985,600	₦ 3,032,115,500	₦ 2,609,030,900	₦ 3,000,312,200
Bayelsa	₦ 1,218,646,400	₦ 2,035,499,300	₦ 3,596,177,500	₦ 3,958,333,500	₦ 4,856,865,900	₦ 1,754,855,100
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800	₦ 3,212,451,900
Benue	₦ 602,469,700	₦ 1,387,315,500	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600	₦ 3,627,716,800
Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000	₦ 4,166,988,100
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000	₦ 4,779,952,700
Delta	₦ 4,755,914,300	₦ 2,382,209,500	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,269,900	₦ 2,363,220,900
Ebonyi	₦ 3,547,140,000	₦ 3,233,069,500	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,053,500	₦ 713,048,500
Edo	₦ 2,663,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600	₦ 2,900,705,900
Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,592,908,100	₦ 3,340,038,100	₦ 4,040,341,600
Enugu	₦ 1,409,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400	₦ 4,581,716,900
FCT	₦ 3,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000	₦ 2,520,202,900
Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100	₦ 2,523,019,700
Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300	₦ 2,922,241,900
Jigawa	₦ 3,550,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,963,700	₦ 2,311,559,800
Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500	₦ 3,835,345,400
Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,291,000	₦ 530,613,400
Katsina	₦ 2,582,421,500	₦ 1,223,828,700	₦ 1,620,877,300	₦ 2,826,721,400	₦ 1,615,882,500	₦ 2,640,600,500

And that's it! So let's see the result.

State	Jan-14	Feb-14	Mar-14	Apr-14	May-14
Abia	₦ 1,297,486,300	₦ 821,123,500	₦ 1,175,454,800	₦ 967,327,400	₦ 2,265,644,000
Adamawa	₦ 4,022,792,500	₦ 1,627,641,300	₦ 4,927,386,500	₦ 2,187,626,200	₦ 2,965,925,400
Akwa Ibom	₦ 324,782,800	₦ 1,681,712,500	₦ 4,060,131,900	₦ 1,843,665,900	₦ 2,439,308,800
Anambra	₦ 2,159,322,900	₦ 1,511,863,500	₦ 2,879,985,600	₦ 3,082,115,900	₦ 2,609,030,900
Bauchi	₦ 764,748,600	₦ 3,059,451,100	₦ 3,596,177,500	₦ 3,958,333,900	₦ 4,856,865,900
Bayelsa	₦ 1,218,646,400	₦ 2,085,499,300	₦ 3,233,068,900	₦ 1,060,164,800	₦ 2,926,055,500
Benue	₦ 3,479,649,000	₦ 3,864,832,700	₦ 2,458,711,700	₦ 4,801,142,000	₦ 2,700,421,800
Borno	₦ 602,469,700	₦ 1,387,315,900	₦ 4,501,134,600	₦ 2,728,902,800	₦ 1,687,978,600
Borno	₦ 2,361,614,200	₦ 1,616,065,000	₦ 4,908,244,600	₦ 4,216,846,800	₦ 581,980,000
Cross River	₦ 2,416,592,600	₦ 1,971,834,600	₦ 1,814,142,400	₦ 4,658,487,000	₦ 745,327,000
Delta	₦ 4,755,914,300	₦ 2,382,209,300	₦ 3,361,514,600	₦ 2,060,298,000	₦ 4,671,126,900
Ebonyi	₦ 3,547,140,000	₦ 3,233,068,900	₦ 4,883,253,900	₦ 1,060,164,800	₦ 2,926,055,500
Edo	₦ 2,665,501,000	₦ 781,461,300	₦ 462,661,800	₦ 543,085,200	₦ 3,256,011,600
Ekiti	₦ 1,816,087,900	₦ 4,128,943,600	₦ 1,512,170,300	₦ 2,392,908,100	₦ 3,340,038,100
Enugu	₦ 1,406,979,200	₦ 2,609,372,800	₦ 1,990,646,300	₦ 3,219,650,200	₦ 1,893,090,400
FCT	₦ 5,199,223,200	₦ 2,063,317,300	₦ 1,829,381,400	₦ 3,704,640,600	₦ 4,980,777,000
Gombe	₦ 620,111,300	₦ 2,201,453,200	₦ 1,885,641,400	₦ 4,146,024,300	₦ 2,551,023,100
Imo	₦ 2,591,742,600	₦ 2,521,764,800	₦ 2,013,994,900	₦ 4,994,515,700	₦ 3,014,428,300
Jigawa	₦ 3,350,126,700	₦ 1,573,445,100	₦ 3,756,243,200	₦ 3,092,703,100	₦ 1,417,968,700
Kaduna	₦ 3,938,598,800	₦ 2,599,773,900	₦ 1,224,849,400	₦ 1,662,248,400	₦ 450,931,500
Kano	₦ 2,981,980,300	₦ 2,021,735,600	₦ 3,016,518,600	₦ 4,411,651,000	₦ 2,387,296,000
Katsina	₦ 3,589,421,500	₦ 1,293,838,700	₦ 638,877,300	₦ 2,969,721,400	₦ 1,025,989,500
Kebbi	₦ 1,684,273,500	₦ 4,790,202,900	₦ 991,721,500	₦ 4,897,014,100	₦ 4,131,210,900
Kogi	₦ 2,812,863,300	₦ 2,734,189,600	₦ 2,306,601,300	₦ 867,264,000	₦ 2,104,687,400
Kwara	₦ 3,915,338,600	₦ 1,486,830,100	₦ 1,305,529,900	₦ 4,919,941,300	₦ 2,214,504,600
Lagos	₦ 6,239,473,500	₦ 7,319,183,000	₦ 6,211,689,500	₦ 3,351,178,500	₦ 11,616,307,000
Nasarawa	₦ 450,732,700	₦ 4,852,095,900	₦ 1,411,888,200	₦ 743,233,200	₦ 492,081,500
Niger	₦ 3,002,387,100	₦ 4,562,318,900	₦ 3,218,870,900	₦ 1,086,334,400	₦ 3,978,805,300
Ogun	₦ 3,434,714,900	₦ 2,585,000,100	₦ 5,907,357,600	₦ 1,642,410,200	₦ 2,265,022,600
Ondo	₦ 716,222,900	₦ 1,690,422,800	₦ 4,362,953,800	₦ 977,876,300	₦ 4,300,936,900
Plateau	₦ 4,527,323,100	₦ 2,371,220,000	₦ 4,471,653,300	₦ 932,778,800	₦ 3,593,441,000
Rivers	₦ 2,423,028,900	₦ 4,860,256,800	₦ 4,148,808,900	₦ 859,719,700	₦ 4,882,684,300
Taraba	₦ 531,248,900	₦ 785,603,400	₦ 2,475,480,400	₦ 878,820,400	₦ 1,389,495,200
Yobe	₦ 2,187,894,400	₦ 2,500,320,500	₦ 3,497,511,100	₦ 829,030,800	₦ 3,799,677,800
Zamfara	₦ 4,767,284,200	₦ 1,622,957,600	₦ 4,509,006,600	₦ 1,308,237,500	₦ 3,350,176,900
Total	₦ 90,504,729,800	₦ 91,889,335,900	₦ 101,344,816,300	₦ 87,169,591,800	₦ 104,376,072,900

There we have it, no June data included!

One more big tip.

What if you have a big table that will print onto many pages but you want the header to repeat on the first row of every page?

Below is a sample.

S/N	Pizza Sold	Price	Quantity	Amount Sold	Time
1	Meatza	#2,000.00	5	#10,000.00	8:00:01 AM
2	Extravaganza	#2,000.00	4	#8,000.00	8:00:02 AM
3	BBQ Chicken	#4,000.00	3	#12,000.00	8:00:04 AM
4	Extravaganza	#2,000.00	1	#2,000.00	8:00:07 AM
5	Meatza	#2,000.00	4	#8,000.00	8:00:08 AM
6	Hot Veggie	#4,000.00	2	#8,000.00	8:00:14 AM
7	BBQ Philly Steak	#4,000.00	3	#12,000.00	8:00:20 AM
8	Chicken Feast	#2,000.00	1	#2,000.00	8:00:20 AM
9	Meatza	#2,000.00	3	#6,000.00	8:00:22 AM
10	Chicken Suya	#4,000.00	5	#20,000.00	8:00:25 AM
11	Chicken Legend	#2,000.00	5	#10,000.00	8:00:28 AM
12	BBQ Philly Steak	#4,000.00	4	#16,000.00	8:00:27 AM
13	Chicken Suya	#4,000.00	2	#8,000.00	8:00:28 AM
14	Chicken Feast	#2,000.00	3	#6,000.00	8:00:33 AM
15	Chicken Feast	#2,000.00	4	#8,000.00	8:00:33 AM
16	Beef Suya	#3,000.00	5	#15,000.00	8:00:34 AM
17	Chicken Feast	#2,000.00	3	#6,000.00	8:00:35 AM
18	Hot Veggie	#4,000.00	3	#12,000.00	8:00:35 AM
19	Meatza	#2,000.00	3	#6,000.00	8:00:35 AM
20	Meatza	#2,000.00	2	#4,000.00	8:00:36 AM
21	Margarita	#4,000.00	3	#12,000.00	8:00:37 AM
22	Italiano	#3,000.00	3	#9,000.00	8:00:40 AM
23	Hot Veggie	#4,000.00	2	#8,000.00	8:00:42 AM
24	Pepperoni Suya	#3,000.00	3	#9,000.00	8:00:43 AM
25	Veggie Supreme	#3,000.00	3	#9,000.00	8:00:43 AM
26	Hot Pepperoni Feast	#4,000.00	3	#12,000.00	8:00:48 AM
27	Chicken Legend	#2,000.00	4	#8,000.00	8:00:48 AM
28	BBQ Philly Steak	#4,000.00	1	#4,000.00	8:00:52 AM
29	Hot Pepperoni Feast	#4,000.00	2	#8,000.00	8:00:56 AM
30	Chicken Balli	#2,000.00	4	#8,000.00	8:00:56 AM
31	Chicken Feast	#2,000.00	3	#6,000.00	8:00:57 AM
32	Veggie Supreme	#3,000.00	2	#6,000.00	8:00:57 AM
33	Extravaganza	#2,000.00	4	#8,000.00	8:01:00 AM
34	Pepperoni Suya	#3,000.00	4	#12,000.00	8:01:01 AM
35	Veggie Supreme	#3,000.00	2	#6,000.00	8:01:02 AM
36	Extravaganza	#2,000.00	2	#4,000.00	8:01:08 AM
37	Italiano	#3,000.00	2	#6,000.00	8:01:14 AM
38	BBQ Philly Steak	#4,000.00	2	#8,000.00	8:01:16 AM
39	Pepperoni Feast	#4,000.00	5	#20,000.00	8:01:16 AM
40	Chicken Balli	#2,000.00	4	#8,000.00	8:01:17 AM
41	Pepperoni Suya	#3,000.00	2	#6,000.00	8:01:18 AM
42	BBQ Philly Steak	#4,000.00	3	#12,000.00	8:01:20 AM
43	Chicken Balli	#2,000.00	3	#6,000.00	8:01:21 AM
44	Italiano	#3,000.00	3	#9,000.00	8:01:22 AM
45	BBQ Philly Steak	#4,000.00	4	#16,000.00	8:01:26 AM
46	Hot Pepperoni Feast	#4,000.00	3	#12,000.00	8:01:28 AM

47	Chicken Legend	#2,000.00	2	#4,000.00	8:01:31 AM
48	Chicken Ball	#2,000.00	2	#4,000.00	8:01:32 AM
49	BBQ Philly Steak	#4,000.00	1	#4,000.00	8:01:34 AM
50	BBQ Chicken	#4,000.00	4	#16,000.00	8:01:34 AM
51	Pepperoni Feast	#4,000.00	4	#16,000.00	8:01:35 AM
52	BBQ Philly Steak	#4,000.00	1	#4,000.00	8:01:36 AM
53	BBQ Philly Steak	#4,000.00	4	#16,000.00	8:01:36 AM
54	Pepperoni Suya	#3,000.00	2	#6,000.00	8:01:37 AM
55	Veggie Supreme	#3,000.00	5	#15,000.00	8:01:37 AM
56	Chicken Suya	#4,000.00	3	#20,000.00	8:01:39 AM
57	Margarita	#4,000.00	4	#16,000.00	8:01:43 AM
58	Chicken Ball	#2,000.00	5	#10,000.00	8:01:44 AM
59	Meatzaa	#2,000.00	5	#10,000.00	8:01:44 AM
60	BBQ Philly Steak	#4,000.00	3	#12,000.00	8:01:46 AM
61	Pepperoni Suya	#3,000.00	3	#15,000.00	8:01:48 AM
62	Chicken Feast	#2,000.00	5	#10,000.00	8:01:49 AM
63	Chicken Feast	#2,000.00	4	#8,000.00	8:01:52 AM
64	Chicken Suya	#4,000.00	2	#8,000.00	8:01:54 AM
65	Chicken Legend	#2,000.00	3	#6,000.00	8:01:55 AM
66	Chicken Feast	#2,000.00	4	#8,000.00	8:01:56 AM
67	Chicken Ball	#2,000.00	1	#2,000.00	8:02:03 AM
68	Pepperoni Suya	#3,000.00	1	#3,000.00	8:02:03 AM
69	Pepperoni Feast	#4,000.00	5	#12,000.00	8:02:04 AM
70	Beef Suya	#3,000.00	3	#9,000.00	8:02:05 AM
71	BBQ Chicken	#4,000.00	1	#4,000.00	8:02:06 AM
72	Pepperoni Feast	#4,000.00	5	#12,000.00	8:02:10 AM
73	Pepperoni Feast	#4,000.00	5	#20,000.00	8:02:13 AM
74	BBQ Chicken	#4,000.00	2	#8,000.00	8:02:13 AM
75	Extravaganza	#2,000.00	5	#10,000.00	8:02:18 AM
76	Chicken Legend	#2,000.00	1	#2,000.00	8:02:18 AM
77	Pepperoni Suya	#3,000.00	2	#6,000.00	8:02:22 AM
78	Hot Veggie	#4,000.00	2	#8,000.00	8:02:22 AM
79	Extravaganza	#2,000.00	5	#6,000.00	8:02:30 AM
80	Chicken Suya	#4,000.00	3	#12,000.00	8:02:31 AM
81	Pepperoni Feast	#4,000.00	5	#20,000.00	8:02:35 AM
82	Pepperoni Feast	#4,000.00	5	#12,000.00	8:02:36 AM
83	BBQ Chicken	#4,000.00	3	#12,000.00	8:02:37 AM
84	BBQ Philly Steak	#4,000.00	4	#16,000.00	8:02:38 AM
85	Hot Veggie	#4,000.00	5	#20,000.00	8:02:38 AM
86	Chicken Ball	#2,000.00	1	#2,000.00	8:02:42 AM
87	Beef Suya	#3,000.00	2	#6,000.00	8:02:44 AM
88	BBQ Philly Steak	#4,000.00	2	#8,000.00	8:02:46 AM
89	Veggie Supreme	#3,000.00	4	#12,000.00	8:02:47 AM
90	Chicken Suya	#4,000.00	1	#4,000.00	8:02:47 AM
91	BBQ Chicken	#4,000.00	5	#20,000.00	8:02:49 AM
92	BBQ Philly Steak	#4,000.00	4	#16,000.00	8:02:50 AM
93	Meatzaa	#2,000.00	5	#10,000.00	8:02:50 AM

Notice that the page two has no header to help you identify what the fields are.

So here's how to fix that.

Still at Page Layout menu, click on the small icon at the bottom right corner of the Sheet Options section.

Pivot table, Pivot Chart and PowerPivot.xlsx - Excel

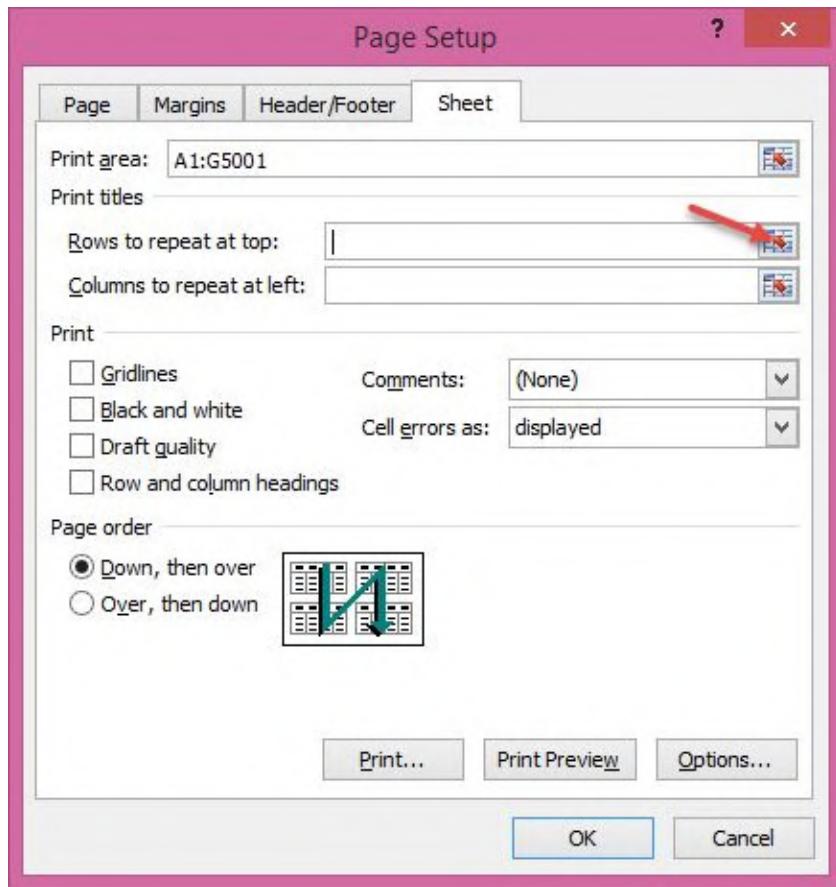
**FILE** **HOME** **INSERT** **PAGE LAYOUT** **FORMULAS** **DATA** **REVIEW** **VIEW** **DEVELOPER** **LOAD TEST** **POWER**

**Themes** **Colors** **Fonts** **Effects** **Margins** **Orientation** **Size** **Print** **Breaks** **Background** **Print Titles** **Width: Automatic** **Height: Automatic** **Scale: 100%** **Gridlines** **Headings** **View** **Print** **Bring Forward**

**Page Setup** **Sheet Options**

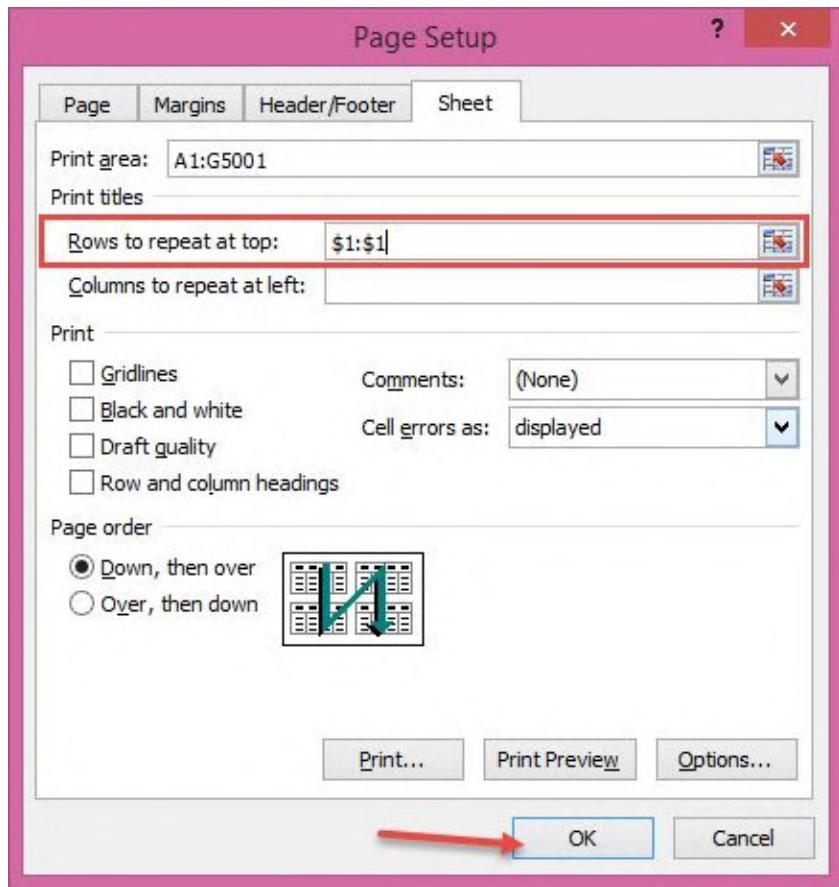
	A	B	C	D	E	F	G	H
1	S/N	Pizza Sold	Price	Quantity	Amount Sold	Time	Time Range	
2	1	Meatzaa	₦ 2,000.00	5	₦ 10,000.00	8:00:01 AM	Before 9:00am	
3	2	Extravaganza	₦ 2,000.00	4	₦ 8,000.00	8:00:02 AM	Before 9:00am	
4	3	BBQ Chicken	₦ 4,000.00	5	₦ 20,000.00	8:00:04 AM	Before 9:00am	
5	4	Extravaganza	₦ 2,000.00	1	₦ 2,000.00	8:00:07 AM	Before 9:00am	
6	5	Meatzaa	₦ 2,000.00	4	₦ 8,000.00	8:00:08 AM	Before 9:00am	
7	6	Hot Veggie	₦ 4,000.00	2	₦ 8,000.00	8:00:14 AM	Before 9:00am	
8	7	BBQ Philly Steak	₦ 4,000.00	5	₦ 20,000.00	8:00:20 AM	Before 9:00am	
9	8	Chicken Feast	₦ 2,000.00	1	₦ 2,000.00	8:00:20 AM	Before 9:00am	
10	9	Meatzaa	₦ 2,000.00	3	₦ 6,000.00	8:00:22 AM	Before 9:00am	
11	10	Chicken Suya	₦ 4,000.00	5	₦ 20,000.00	8:00:25 AM	Before 9:00am	
12	11	Chicken Legend	₦ 2,000.00	5	₦ 10,000.00	8:00:26 AM	Before 9:00am	
13	12	BBQ Philly Steak	₦ 4,000.00	4	₦ 16,000.00	8:00:27 AM	Before 9:00am	
14	13	Chicken Suya	₦ 4,000.00	2	₦ 8,000.00	8:00:29 AM	Before 9:00am	
15	14	Chicken Feast	₦ 2,000.00	5	₦ 10,000.00	8:00:33 AM	Before 9:00am	
16	15	Chicken Feast	₦ 2,000.00	4	₦ 8,000.00	8:00:33 AM	Before 9:00am	
17	16	Beef Suya	₦ 3,000.00	5	₦ 15,000.00	8:00:34 AM	Before 9:00am	
18	17	Chicken Feast	₦ 2,000.00	5	₦ 10,000.00	8:00:35 AM	Before 9:00am	
19	18	Hot Veggie	₦ 4,000.00	5	₦ 20,000.00	8:00:35 AM	Before 9:00am	
20	19	Meatzaa	₦ 2,000.00	5	₦ 10,000.00	8:00:35 AM	Before 9:00am	
21	20	Meatzaa	₦ 2,000.00	2	₦ 4,000.00	8:00:36 AM	Before 9:00am	
22	21	Margarita	₦ 4,000.00	3	₦ 12,000.00	8:00:37 AM	Before 9:00am	
		Total	₦ 2,000.00	5	₦ 10,000.00	8:00:40 AM	Before 9:00am	

In the dialog box that comes up, set the **Rows to repeat at top**



Select Row 1 that has the headers.

S/N	Pizza Sold	Price	Quantity	Amount Sold	Time	Time Range
1	1 Meatzaa					
2	2 Extravaganza					
3	3 BBQ Chicken					
4	4 Extravaganza	₦ 2,000.00	1	₦ 2,000.00	8:00:07 AM	After 9:00am
5	5 Meatzaa	₦ 2,000.00	4	₦ 8,000.00	8:00:08 AM	After 9:00am
6	6 Hot Veggie	₦ 4,000.00	2	₦ 8,000.00	8:00:14 AM	After 9:00am
7	7 BBQ Philly Steak	₦ 4,000.00	5	₦ 20,000.00	8:00:20 AM	After 9:00am
8	8 Chicken Feast	₦ 2,000.00	1	₦ 2,000.00	8:00:20 AM	After 9:00am
9	9 Meatzaa	₦ 2,000.00	3	₦ 6,000.00	8:00:22 AM	After 9:00am



And that is all!

So let's see the result.

S/N	Pizza Sold	Price	Quantity	Amount Sold	Time
1	Meatzaa	# 2,000.00	5	# 10,000.00	8:00:01 AM
2	Extravaganza	# 2,000.00	4	# 8,000.00	8:00:02 AM
3	BBQ.Chicken	# 4,000.00	5	# 20,000.00	8:00:04 AM
4	Extravaganza	# 2,000.00	1	# 2,000.00	8:00:07 AM
5	Meatzaa	# 2,000.00	4	# 8,000.00	8:00:08 AM
6	Hot Veggie	# 4,000.00	2	# 8,000.00	8:00:14 AM
7	BBQ.Philly Steak	# 4,000.00	5	# 20,000.00	8:00:20 AM
8	Chicken Feast	# 2,000.00	1	# 2,000.00	8:00:20 AM
9	Meatzaa	# 2,000.00	3	# 6,000.00	8:00:22 AM
10	Chicken Suya	# 4,000.00	5	# 20,000.00	8:00:25 AM
11	Chicken Legend	# 2,000.00	5	# 10,000.00	8:00:26 AM
12	BBQ.Philly Steak	# 4,000.00	4	# 16,000.00	8:00:27 AM
13	Chicken Suya	# 4,000.00	2	# 8,000.00	8:00:29 AM
14	Chicken Feast	# 2,000.00	5	# 10,000.00	8:00:33 AM
15	Chicken Feast	# 2,000.00	4	# 8,000.00	8:00:33 AM
16	Beef Suya	# 3,000.00	5	# 15,000.00	8:00:34 AM
17	Chicken Feast	# 2,000.00	5	# 10,000.00	8:00:35 AM
18	Hot Veggie	# 4,000.00	5	# 20,000.00	8:00:35 AM
19	Meatzaa	# 2,000.00	5	# 10,000.00	8:00:35 AM
20	Meatzaa	# 2,000.00	2	# 4,000.00	8:00:36 AM
21	Margarita	# 4,000.00	3	# 12,000.00	8:00:37 AM
22	Italiano	# 3,000.00	5	# 15,000.00	8:00:40 AM
23	Hot Veggie	# 4,000.00	2	# 8,000.00	8:00:45 AM
24	Pepperoni Suya	# 3,000.00	3	# 9,000.00	8:00:45 AM
25	Veggie Supreme	# 3,000.00	5	# 15,000.00	8:00:48 AM
26	Hot Pepperoni Feast	# 4,000.00	3	# 12,000.00	8:00:49 AM
27	Chicken Legend	# 2,000.00	4	# 8,000.00	8:00:49 AM
28	BBQ.Philly Steak	# 4,000.00	1	# 4,000.00	8:00:52 AM
29	Hot Pepperoni Feast	# 4,000.00	2	# 8,000.00	8:00:56 AM
30	Chicken Bali	# 2,000.00	4	# 8,000.00	8:00:56 AM
31	Chicken Feast	# 2,000.00	3	# 6,000.00	8:00:57 AM
32	Veggie Supreme	# 3,000.00	2	# 6,000.00	8:00:57 AM
33	Extravaganza	# 2,000.00	4	# 8,000.00	8:01:00 AM
34	Pepperoni Suya	# 3,000.00	4	# 12,000.00	8:01:01 AM
35	Veggie Supreme	# 3,000.00	2	# 6,000.00	8:01:02 AM
36	Extravaganza	# 2,000.00	2	# 4,000.00	8:01:08 AM
37	Italiano	# 3,000.00	2	# 6,000.00	8:01:14 AM
38	BBQ.Philly Steak	# 4,000.00	2	# 8,000.00	8:01:16 AM
39	Pepperoni Feast	# 4,000.00	5	# 20,000.00	8:01:16 AM
40	Chicken Bali	# 2,000.00	4	# 8,000.00	8:01:17 AM
41	Pepperoni Suya	# 3,000.00	2	# 6,000.00	8:01:18 AM
42	BBQ.Philly Steak	# 4,000.00	5	# 20,000.00	8:01:20 AM
43	Chicken Bali	# 2,000.00	3	# 6,000.00	8:01:21 AM
44	Italiano	# 3,000.00	5	# 15,000.00	8:01:22 AM
45	BBQ.Philly Steak	# 4,000.00	4	# 16,000.00	8:01:26 AM
46	Hot Pepperoni Feast	# 4,000.00	5	# 20,000.00	8:01:28 AM

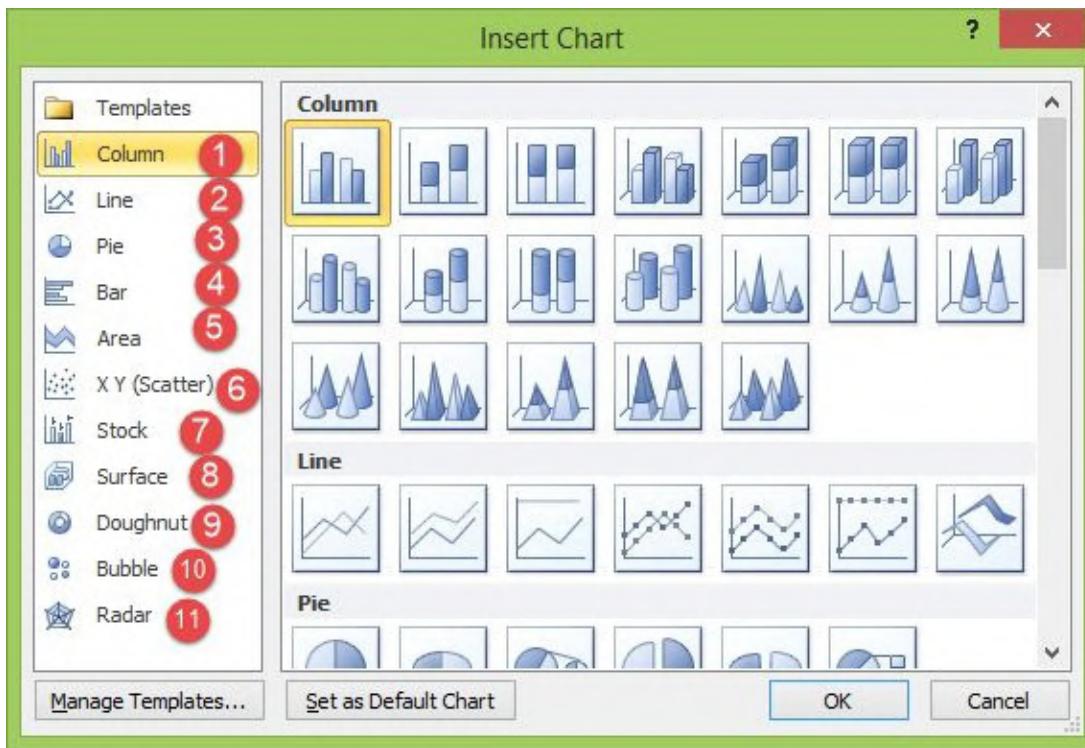
S/N	Pizza Sold	Price	Quantity	Amount Sold	Time
47	Chicken Legend	# 2,000.00	2	# 4,000.00	B01:31 AM
48	Chicken Balli	# 2,000.00	2	# 4,000.00	B01:32 AM
49	BBQ.Philly Steak	# 4,000.00	1	# 4,000.00	B01:34 AM
50	BBQ.Chicken	# 4,000.00	4	# 16,000.00	B01:34 AM
51	Pepperoni Feast	# 4,000.00	4	# 16,000.00	B01:35 AM
52	BBQ.Philly Steak	# 4,000.00	1	# 4,000.00	B01:36 AM
53	BBQ.Philly Steak	# 4,000.00	4	# 16,000.00	B01:36 AM
54	Pepperoni Suya	# 3,000.00	2	# 6,000.00	B01:37 AM
55	Veggie Supreme	# 3,000.00	5	# 15,000.00	B01:37 AM
56	Chicken Suya	# 4,000.00	5	# 20,000.00	B01:39 AM
57	Margarita	# 4,000.00	4	# 16,000.00	B01:43 AM
58	Chicken Balli	# 2,000.00	5	# 10,000.00	B01:44 AM
59	Meatzaa	# 2,000.00	5	# 10,000.00	B01:44 AM
60	BBQ.Philly Steak	# 4,000.00	3	# 12,000.00	B01:46 AM
61	Pepperoni Suya	# 3,000.00	5	# 15,000.00	B01:48 AM
62	Chicken Feast	# 2,000.00	5	# 10,000.00	B01:49 AM
63	Chicken Feast	# 2,000.00	4	# 8,000.00	B01:52 AM
64	Chicken Suya	# 4,000.00	2	# 8,000.00	B01:54 AM
65	Chicken Legend	# 2,000.00	3	# 6,000.00	B01:55 AM
66	Chicken Feast	# 2,000.00	4	# 8,000.00	B01:56 AM
67	Chicken Balli	# 2,000.00	1	# 2,000.00	B02:08 AM
68	Pepperoni Suya	# 3,000.00	1	# 3,000.00	B02:08 AM
69	Pepperoni Feast	# 4,000.00	3	# 12,000.00	B02:04 AM
70	BeefSuya	# 3,000.00	3	# 9,000.00	B02:05 AM
71	BBQ.Chicken	# 4,000.00	1	# 4,000.00	B02:06 AM
72	Pepperoni Feast	# 4,000.00	3	# 12,000.00	B02:10 AM
73	Pepperoni Feast	# 4,000.00	5	# 20,000.00	B02:13 AM
74	BBQ.Chicken	# 4,000.00	2	# 8,000.00	B02:13 AM
75	Extravaganza	# 2,000.00	5	# 10,000.00	B02:18 AM
76	Chicken Legend	# 2,000.00	1	# 2,000.00	B02:18 AM
77	Pepperoni Suya	# 3,000.00	2	# 6,000.00	B02:22 AM
78	Hot Veggie	# 4,000.00	2	# 8,000.00	B02:22 AM
79	Extravaganza	# 2,000.00	3	# 6,000.00	B02:30 AM
80	Chicken Suya	# 4,000.00	3	# 12,000.00	B02:31 AM
81	Pepperoni Feast	# 4,000.00	5	# 20,000.00	B02:35 AM
82	Pepperoni Feast	# 4,000.00	3	# 12,000.00	B02:36 AM
83	BBQ.Chicken	# 4,000.00	3	# 12,000.00	B02:37 AM
84	BBQ.Philly Steak	# 4,000.00	4	# 16,000.00	B02:38 AM
85	Hot Veggie	# 4,000.00	5	# 20,000.00	B02:38 AM
86	Chicken Balli	# 2,000.00	1	# 2,000.00	B02:42 AM
87	BeefSuya	# 3,000.00	2	# 6,000.00	B02:44 AM
88	BBQ.Philly Steak	# 4,000.00	2	# 8,000.00	B02:45 AM
89	Veggie Supreme	# 3,000.00	4	# 12,000.00	B02:47 AM
90	Chicken Suya	# 4,000.00	1	# 4,000.00	B02:47 AM
91	BBQ.Chicken	# 4,000.00	5	# 20,000.00	B02:49 AM
92	BBQ.Philly Steak	# 4,000.00	4	# 16,000.00	B02:50 AM

Done.

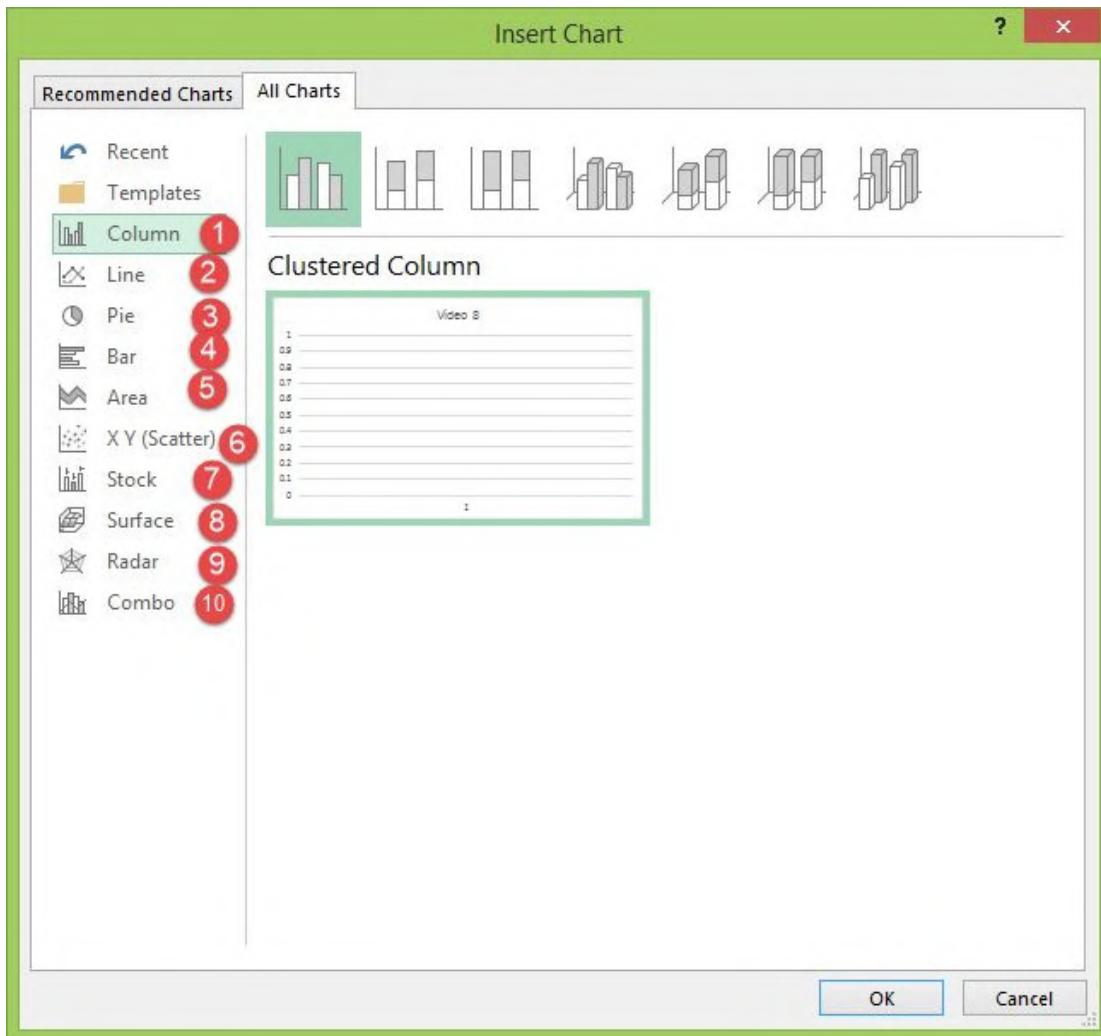
So these are the basic ways you format your data for printing.

# Charts

Excel 2010 has 11 main chart types.



Excel 2013 and Excel 2016 have 10 main chart types. Actually, 9 If you take combo chart as a combination of two or more other chart types.



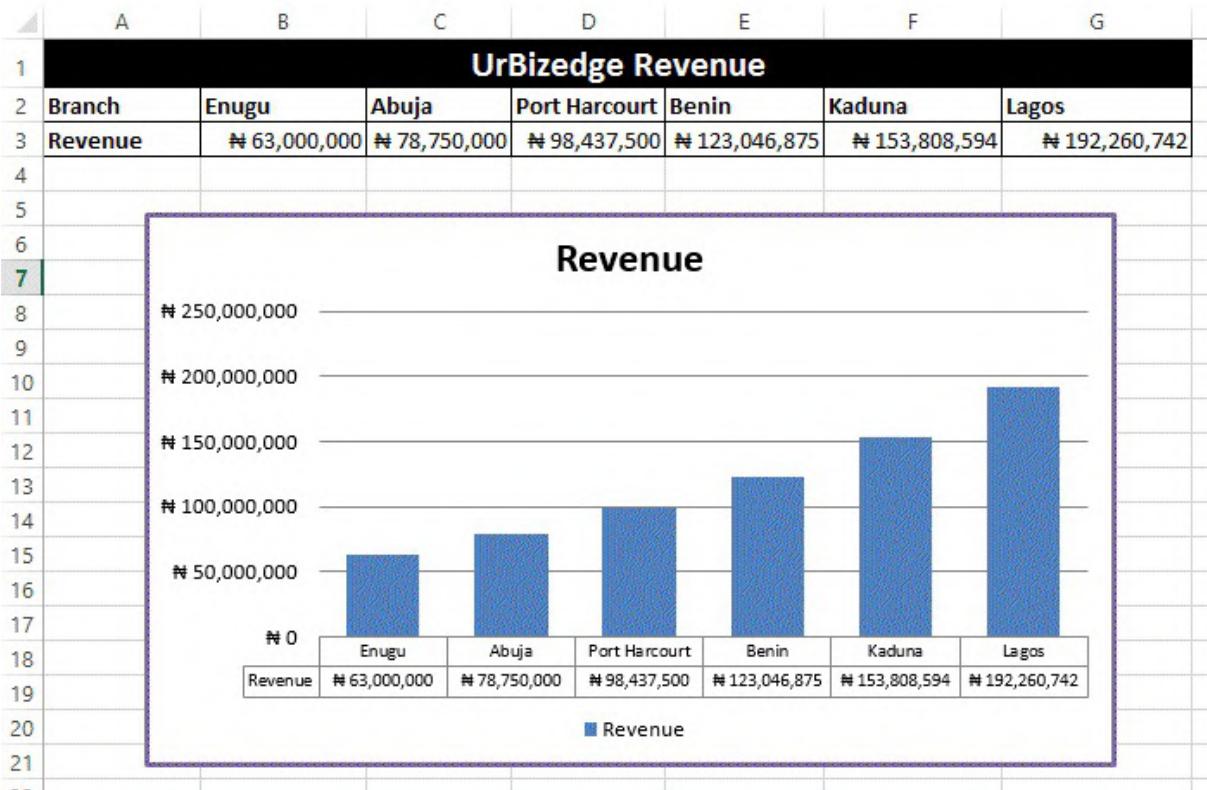
But in all you will end up using majorly,

1. Column chart
2. Line chart
3. Pie chart, and
4. Bar chart.

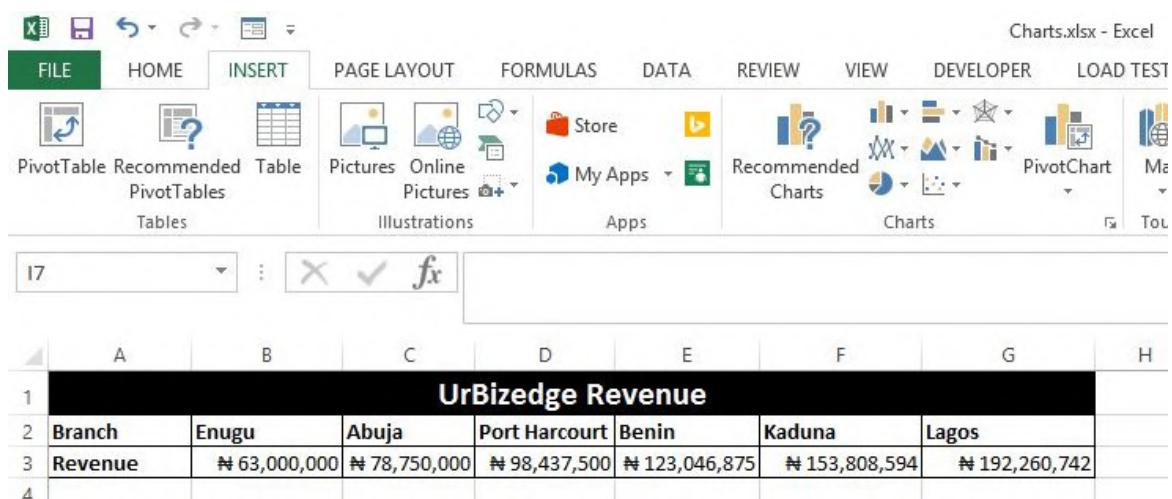
So let's focus on these four charts.

## **Column Chart and when to use it.**

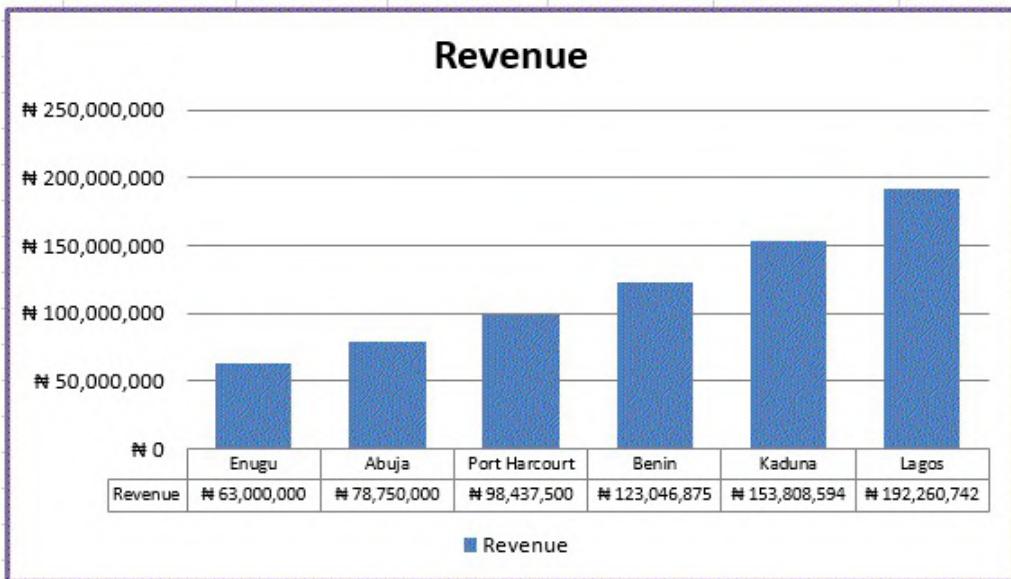
Column chart is used to visualize data across different categories. An example is revenue across the four different branches of a company.



So how do you turn a boring data like this:

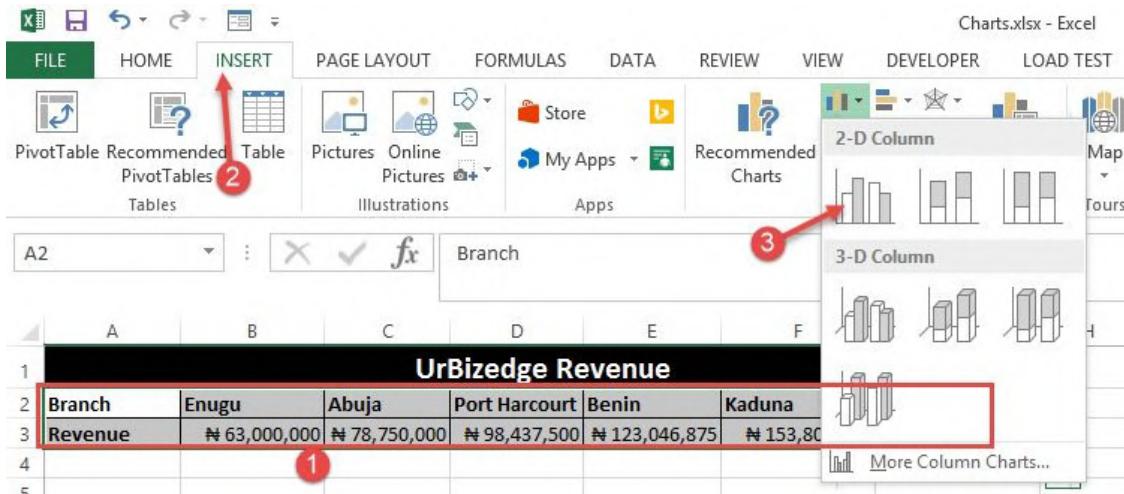


Into a beautiful insightful chart like this:

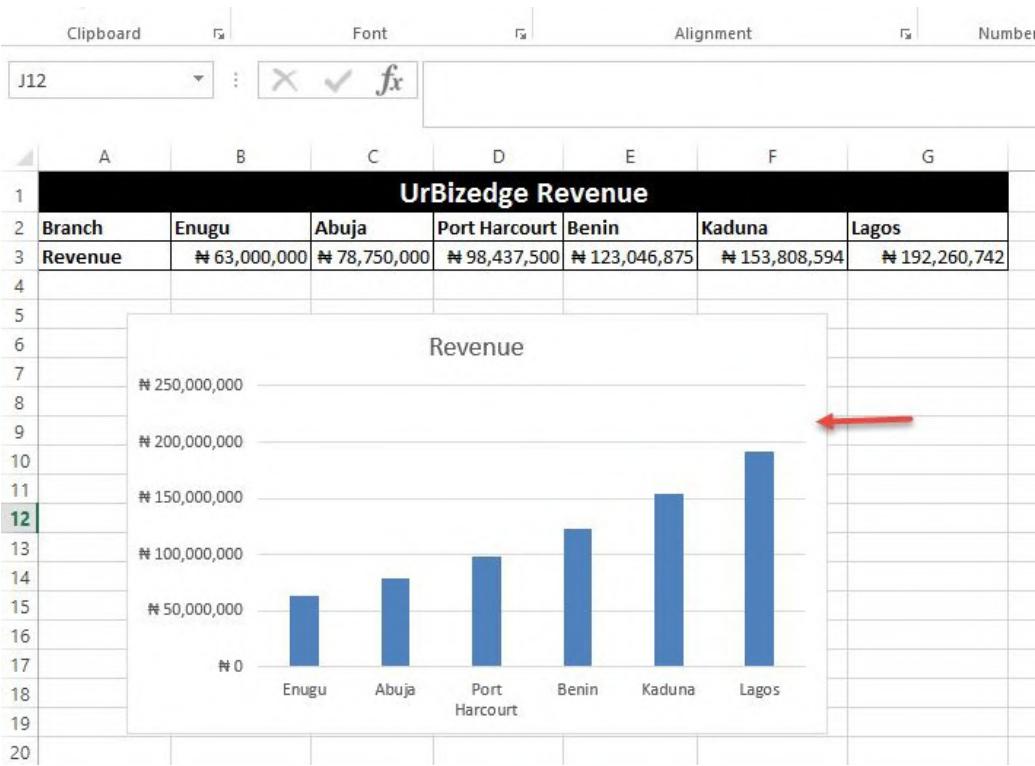


It is very easy.

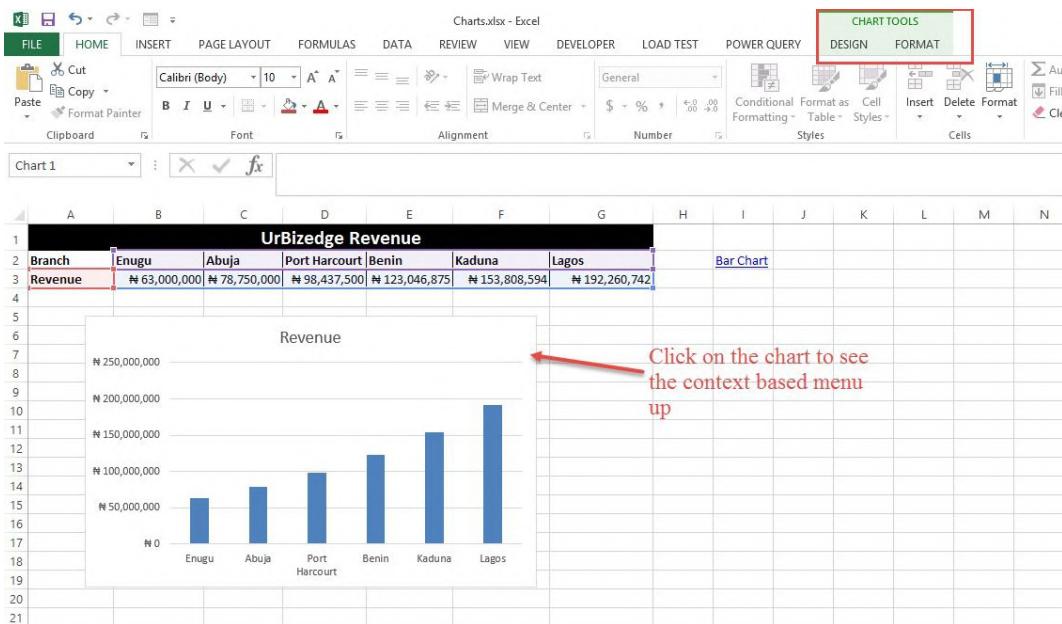
Select the table data you want to make a chart of and go to the Insert menu, click on the Column chart and select the 2D Clustered Column chart (the first option).



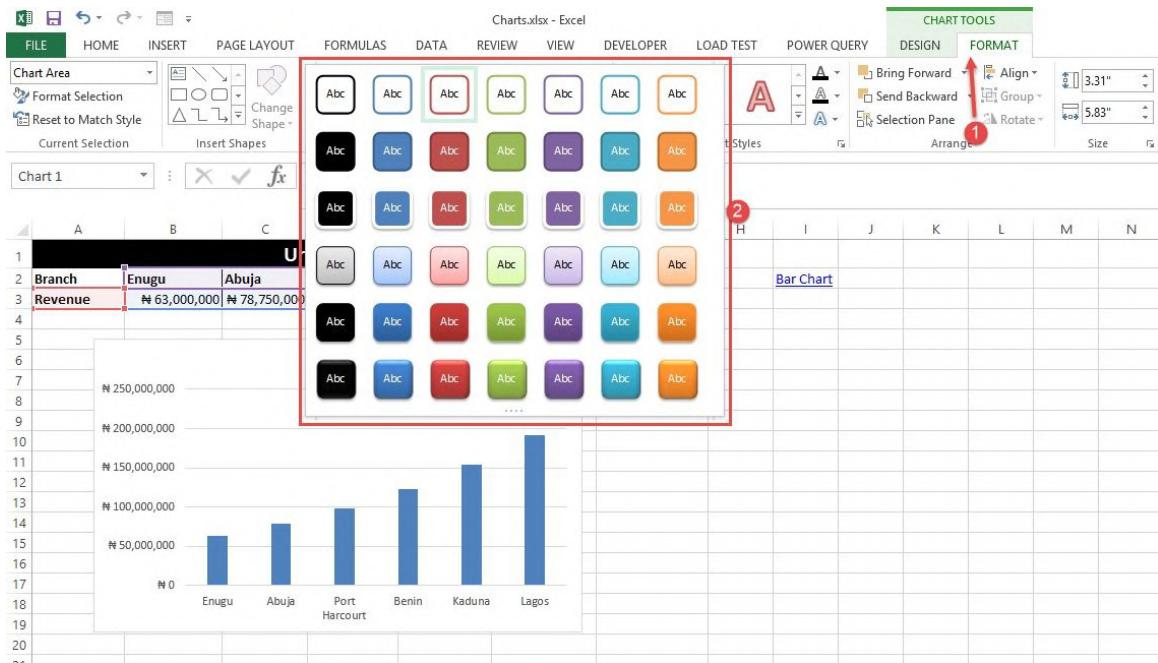
You will get a chart that looks like the one below. Not bad looking, just needs a little formatting to make great.



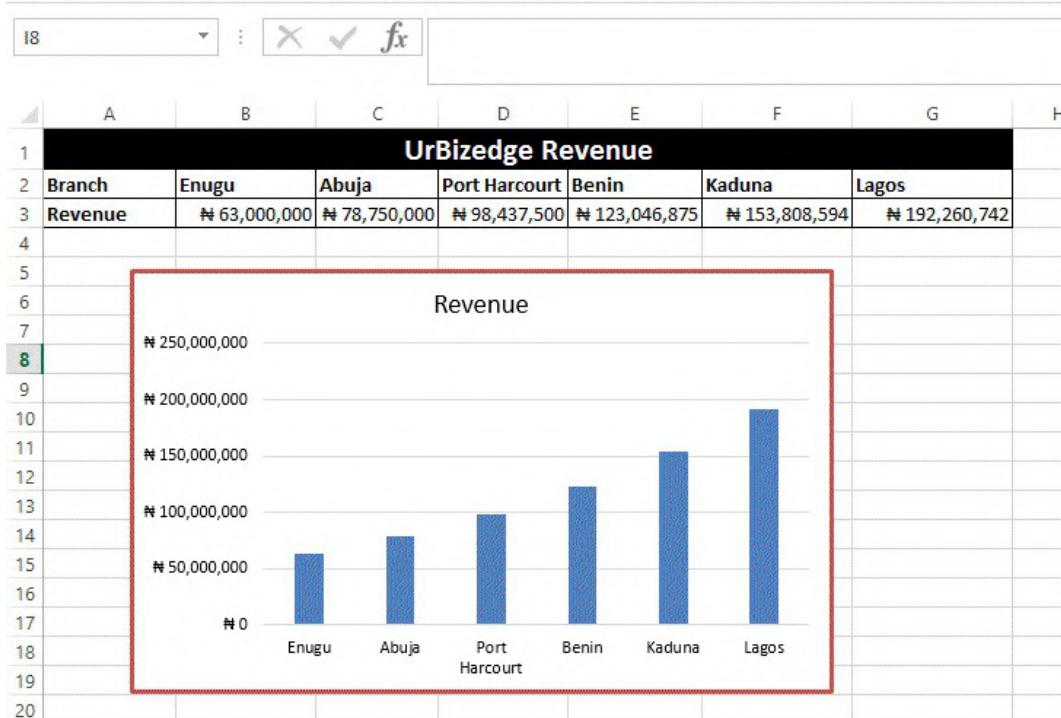
Click on the chart, and the context based menus will show up on the Excel menu bar.



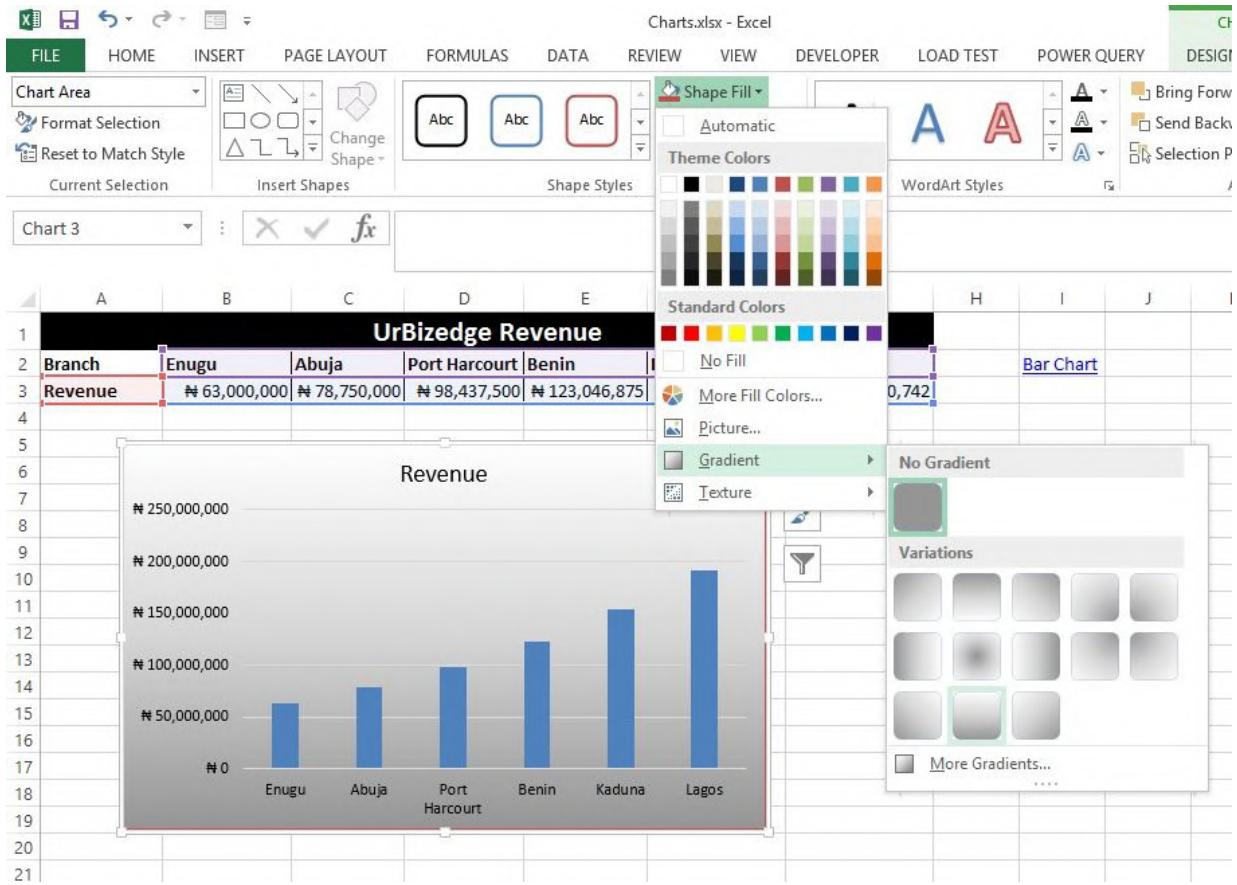
Go to the Format menu and choose a formatting you like for the entire chart. If your company's corporate color is red and purple, you might want to make charts that reflect that brand color.



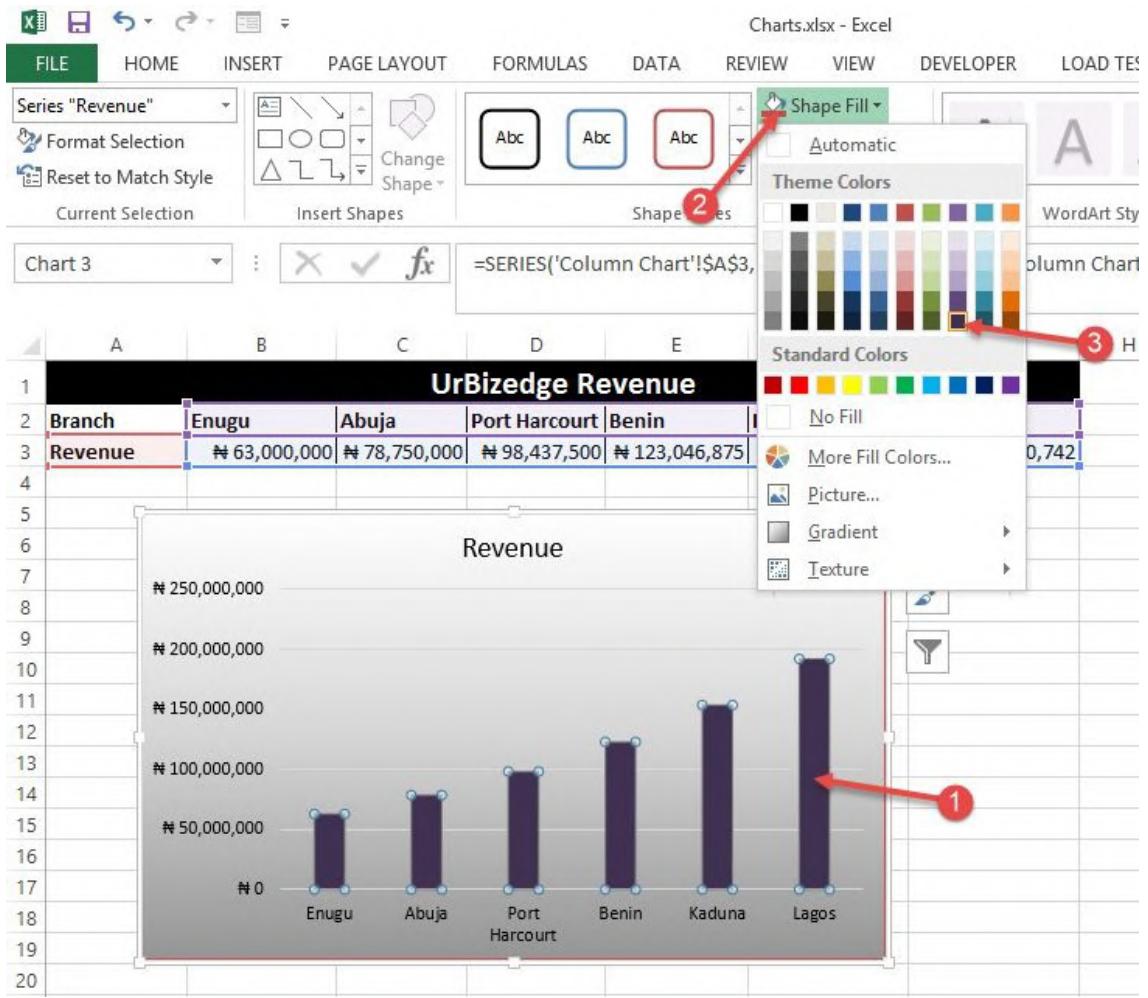
See the result red border white fill format.



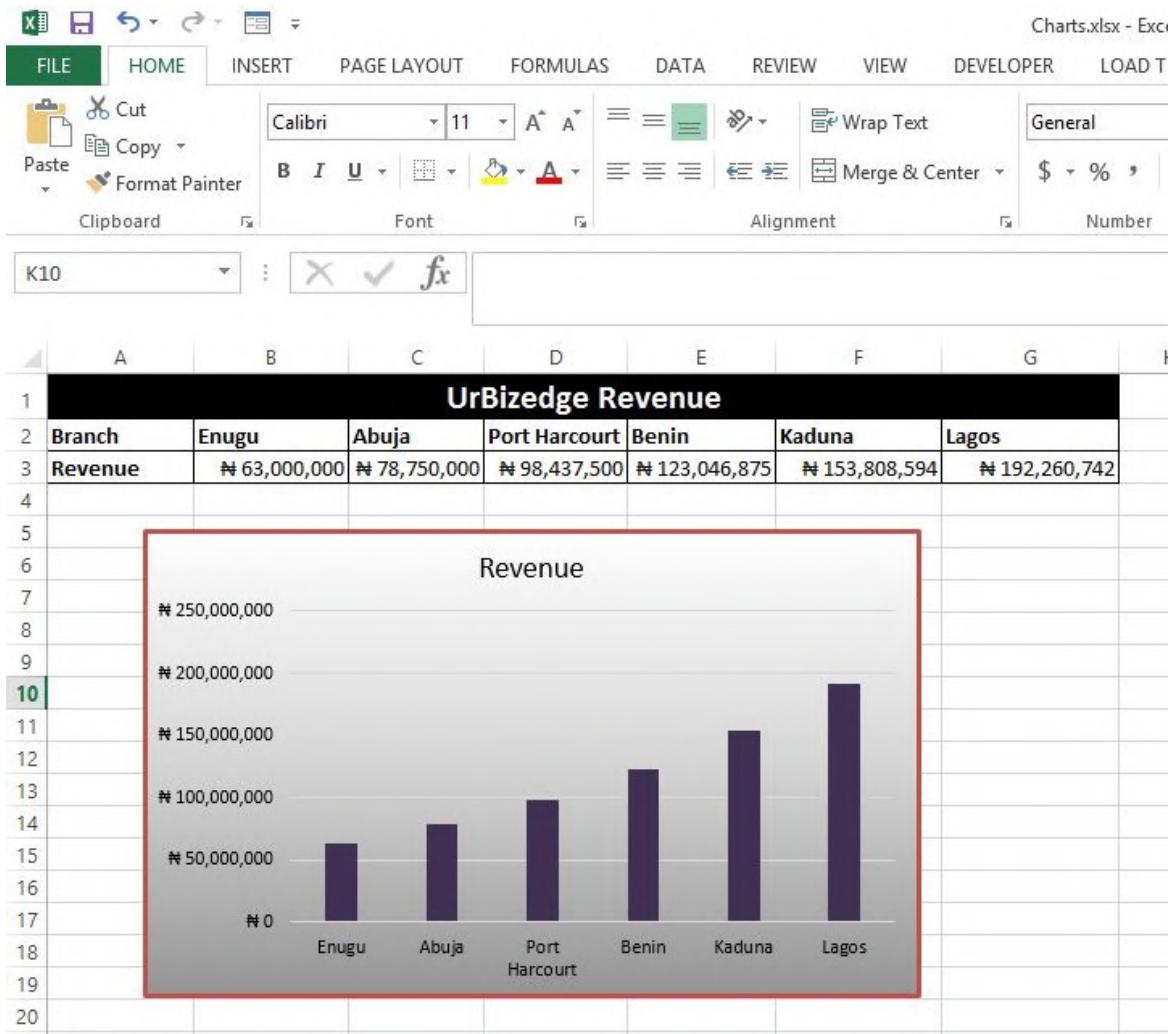
You can also change the chart background color.



Also you can change the color of the bars by clicking on them and choosing the color you want.



And this is the final result.



It looks better than the default and reflects your company's corporate color. Just that you might want to not use the red border. Most professionals argue that it's best to not use any border or background, just make only the important things obvious – data bar and the axis label. I suggest you do whatever looks great to you. This is not an exam and most likely what will look good to you will look good to your colleagues whom you'll share the report and charts with.

If you try out other color schemes you can end up with charts looking like the one below.

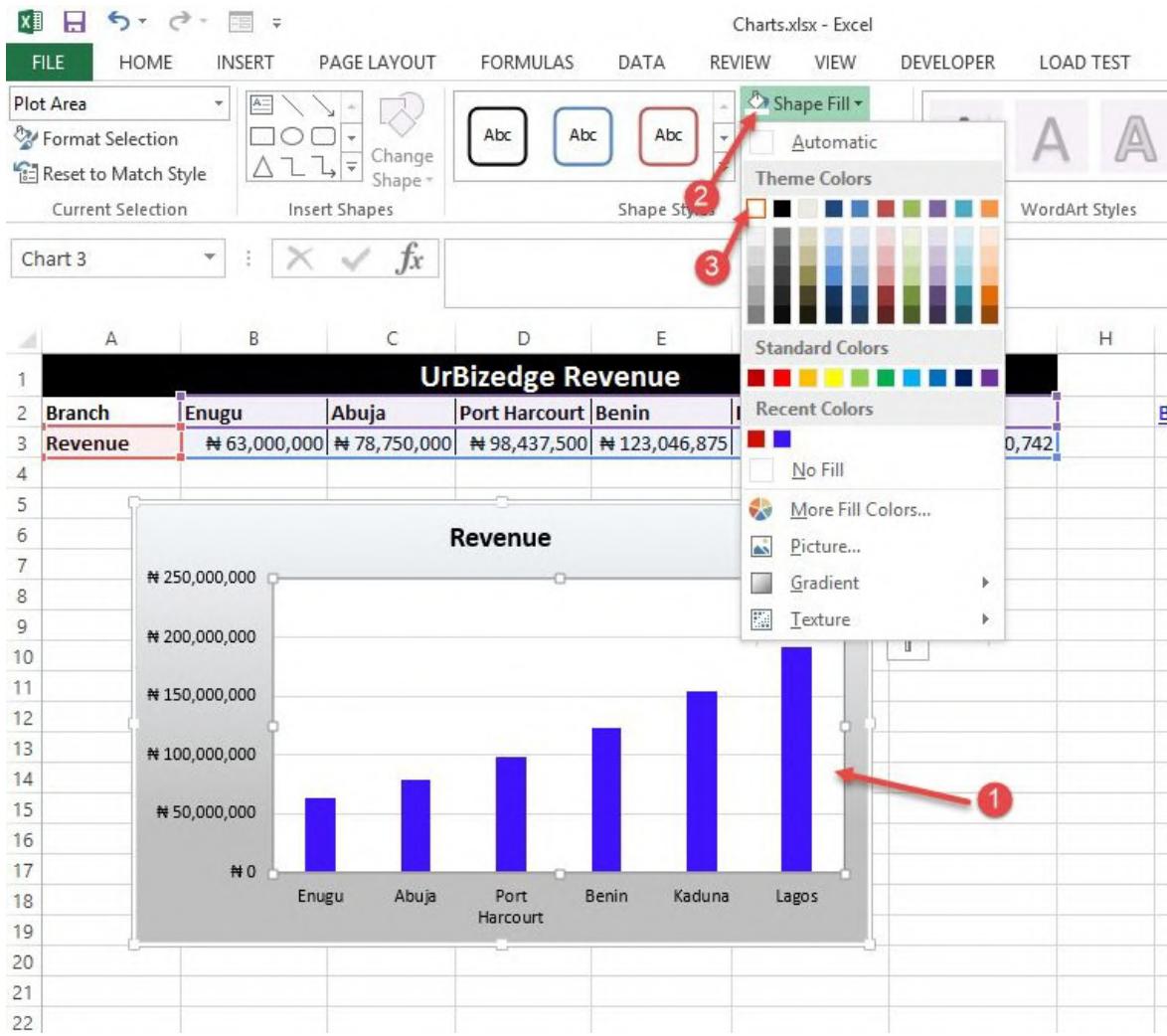
**UrBizedge Revenue**

Branch	Enugu	Abuja	Port Harcourt	Benin	Kaduna	Lagos
Revenue	₦ 63,000,000	₦ 78,750,000	₦ 98,437,500	₦ 123,046,875	₦ 153,808,594	₦ 192,260,742

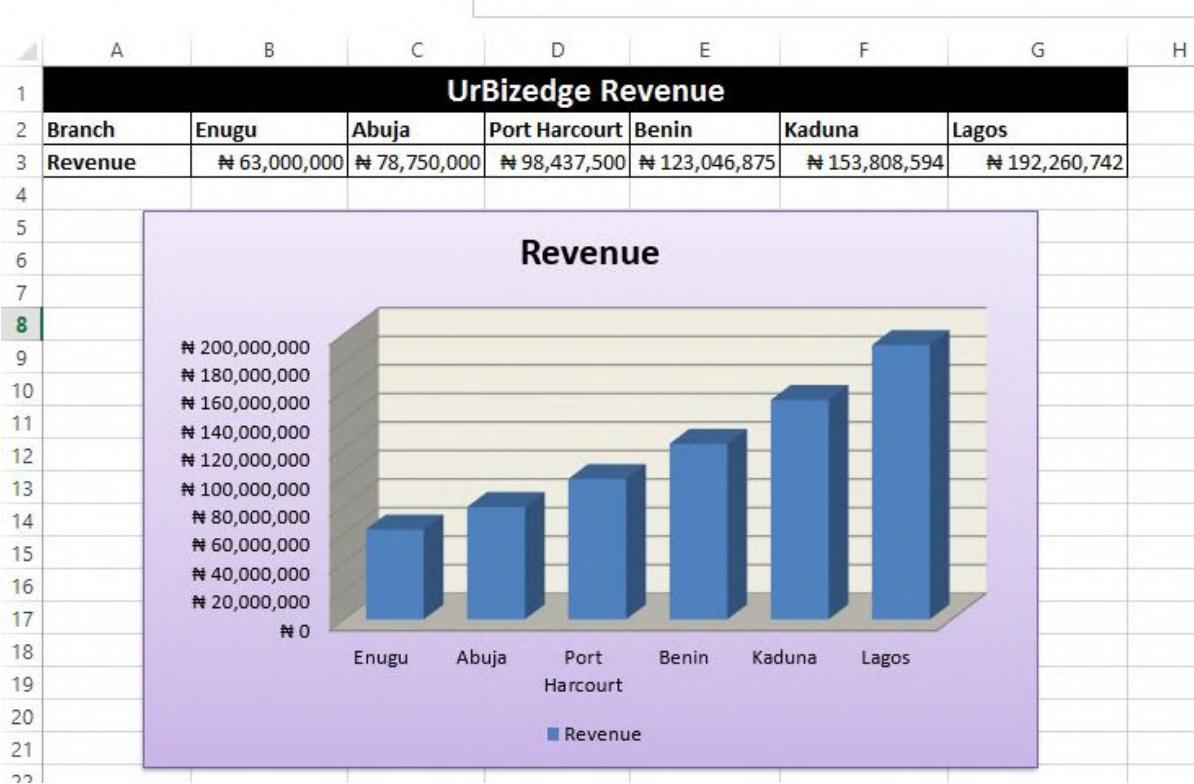
**Revenue**

Branch	Revenue (₦)
Enugu	63,000,000
Abuja	78,750,000
Port Harcourt	98,437,500
Benin	123,046,875
Kaduna	153,808,594
Lagos	192,260,742

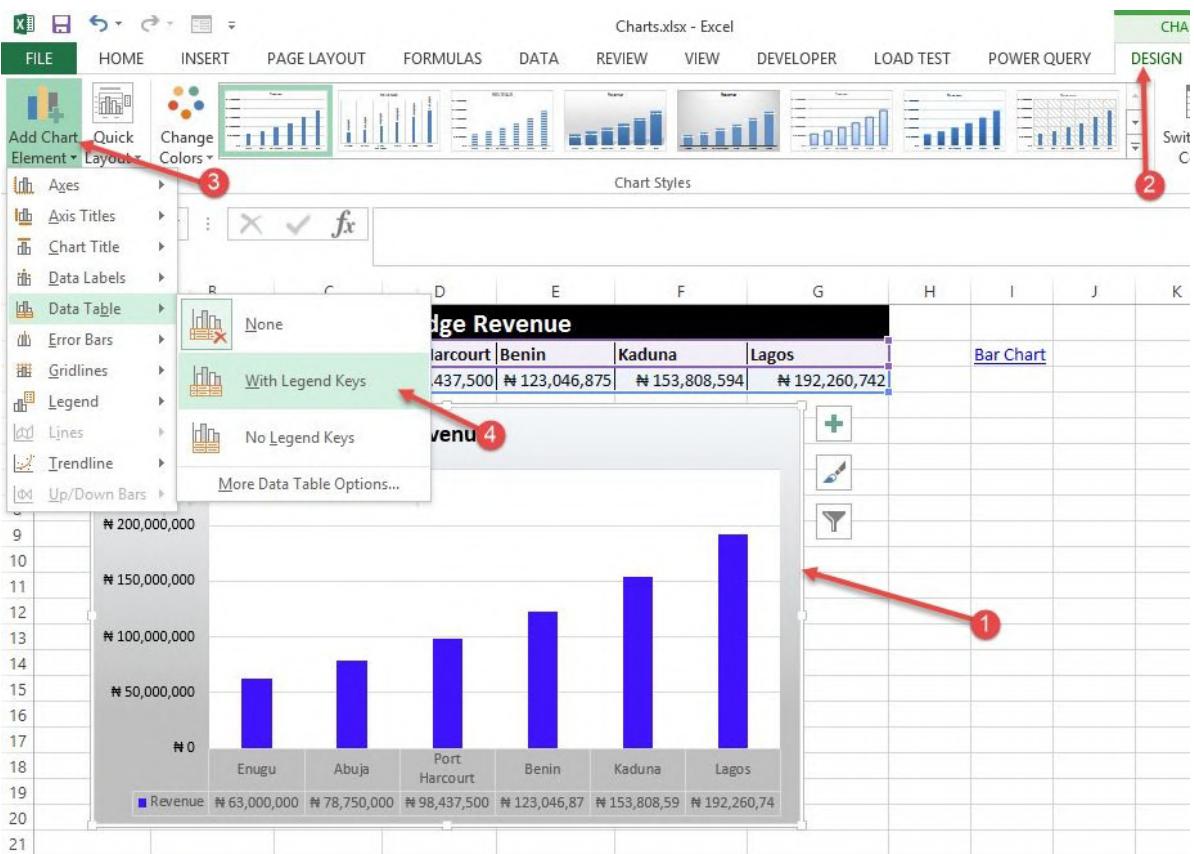
The extra step we took besides removing the red border and changing the bar color to bright blue is to change the chart area background to white.



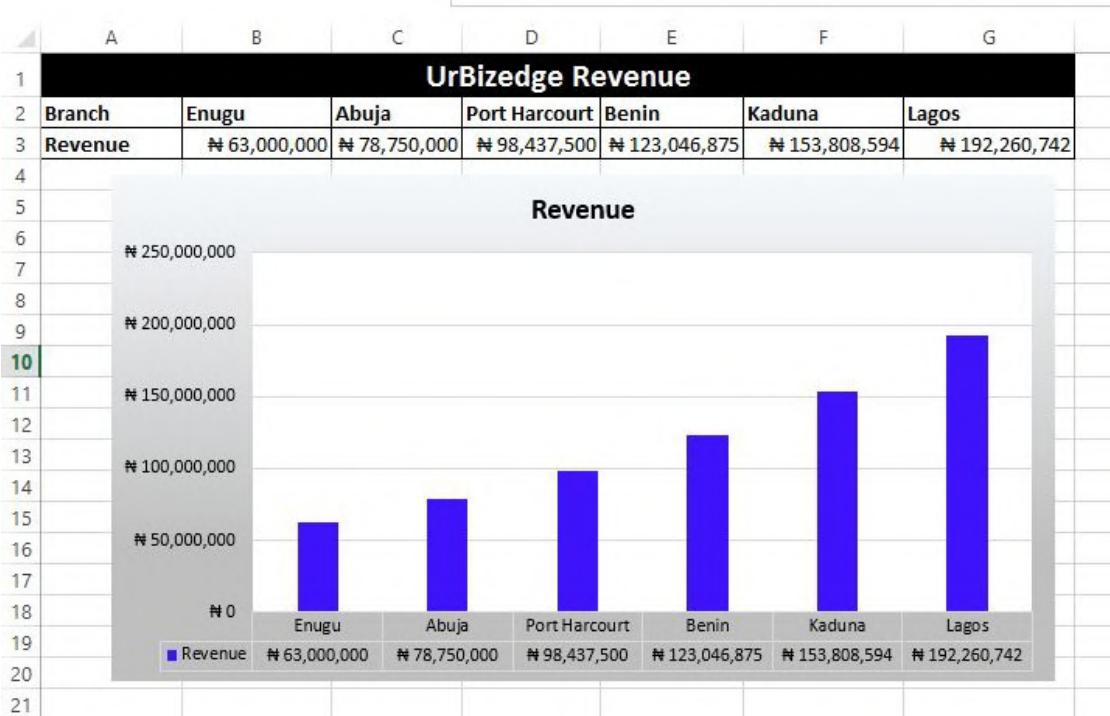
And that's basically how you insert and format a column chart. You can try inserting a 3D chart too for the same data. Follow the same steps but choose a 3D chart instead of the 2D we earlier used. And when you do the extra formatting already explained to you, you can end up with a beautiful chart like the one below.



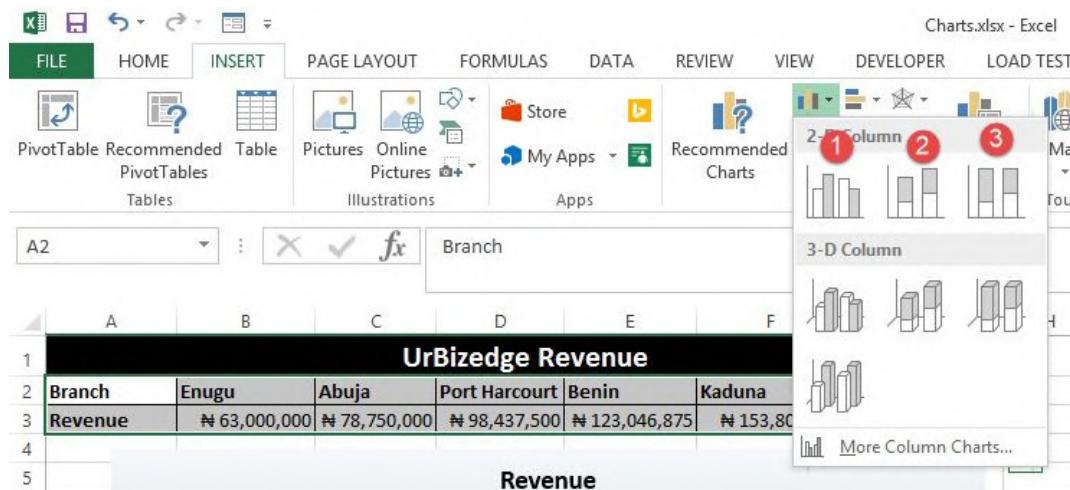
Finally, you can insert other elements on the chart like the data table, as shown below.



The result is shown below.



You would have noticed that there are other column chart types besides the Clustered one we selected (the first option).

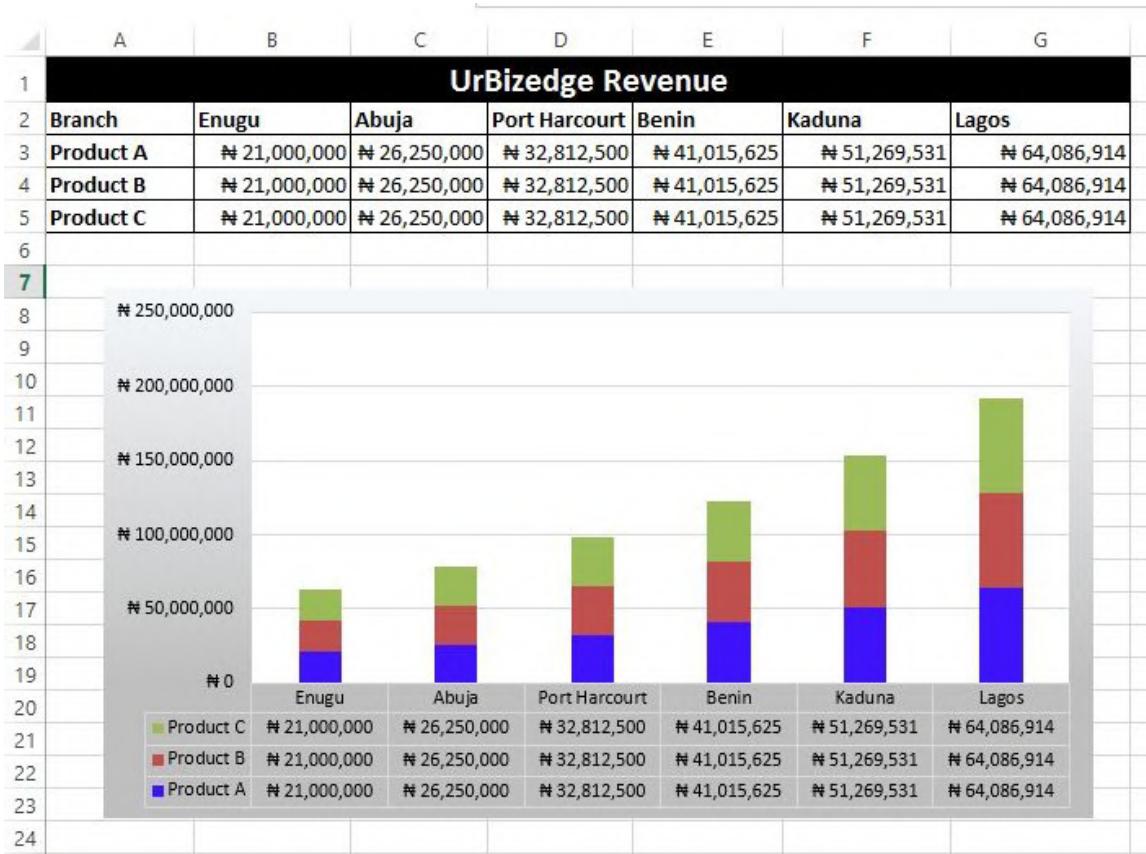


As numbered in the image above, they are

1. Clustered Column
2. Stacked Column
3. 100% Stacked Column

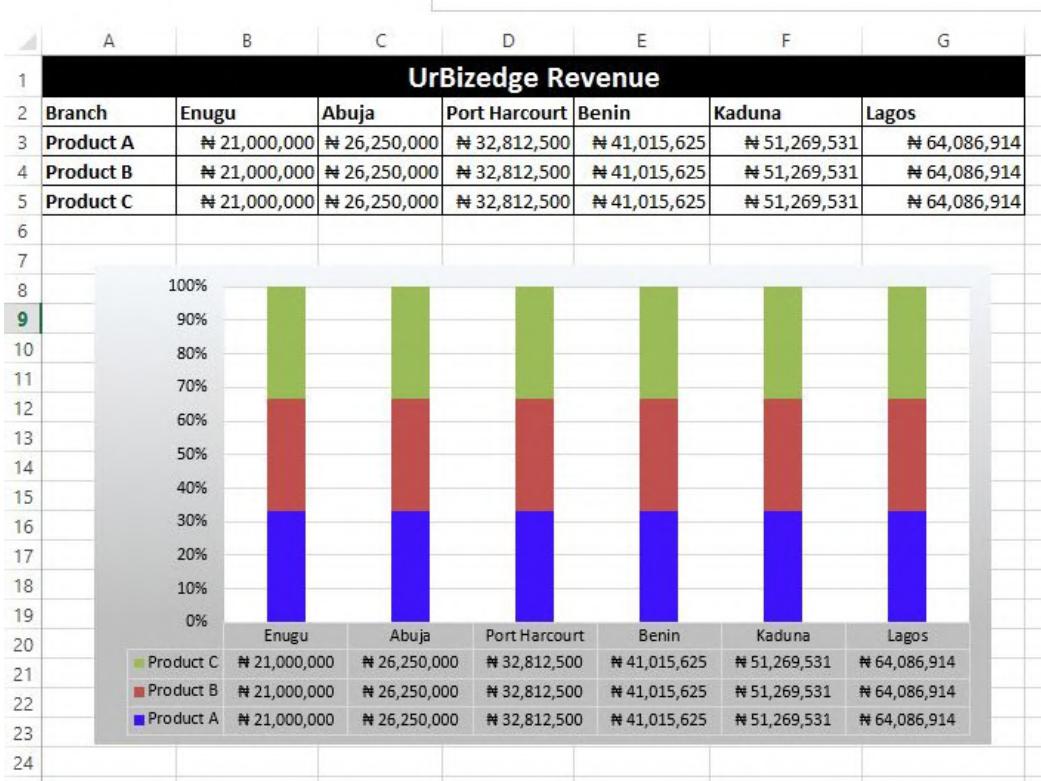
The clustered column is what we have used so far. It's straightforward to understand. The stacked column is useful for showing the breakdown of the data that makes up the bar. Below is an example of its use. We are going to breakdown the revenue by the products

that contributed to it.



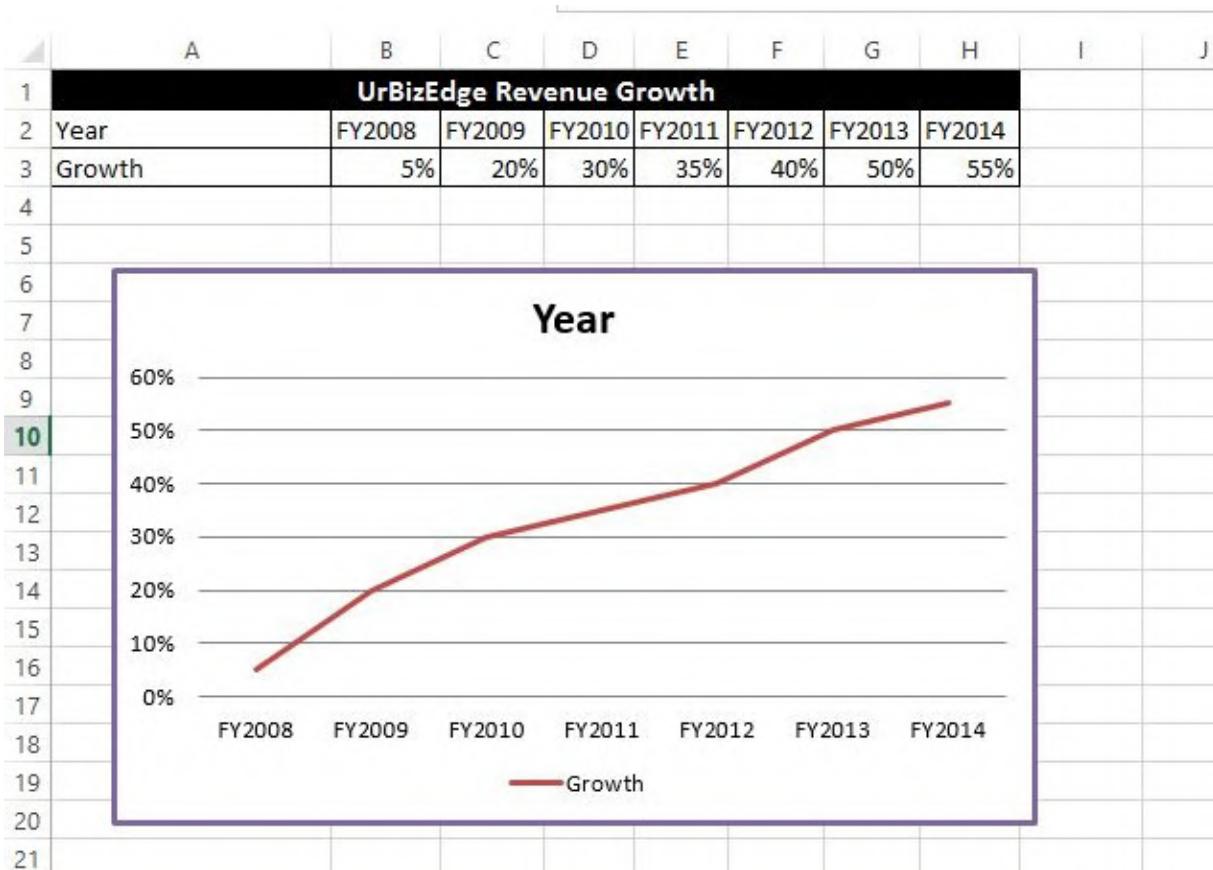
To do this stacked column chart, you simply select the entire table data, including the breakdown by products and choose the Stacked Column chart. And as you can see, it shows a breakdown of each bar by the constituting parts (products in this example)

The third one, 100% stacked column, is just slightly different. Rather than show you the breakdown by product revenue values, it shows the breakdown by the percentage contribution each product makes to the total. Below is the 100% Stacked Column output for the same data.



## Line Chart and when to use it.

Line chart is used to show trend, usually over a time period. An example is if you want to show the trend of how the company's revenue has been growing for the last five years.



You create a line chart of a table in a similar way as we did for the column chart. You select the table's data and go to insert menu, click on the Line chart type you prefer.

Charts.xlsx - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER LOAD TEST POWER QUERY

1. Select the table data (A1:H3)

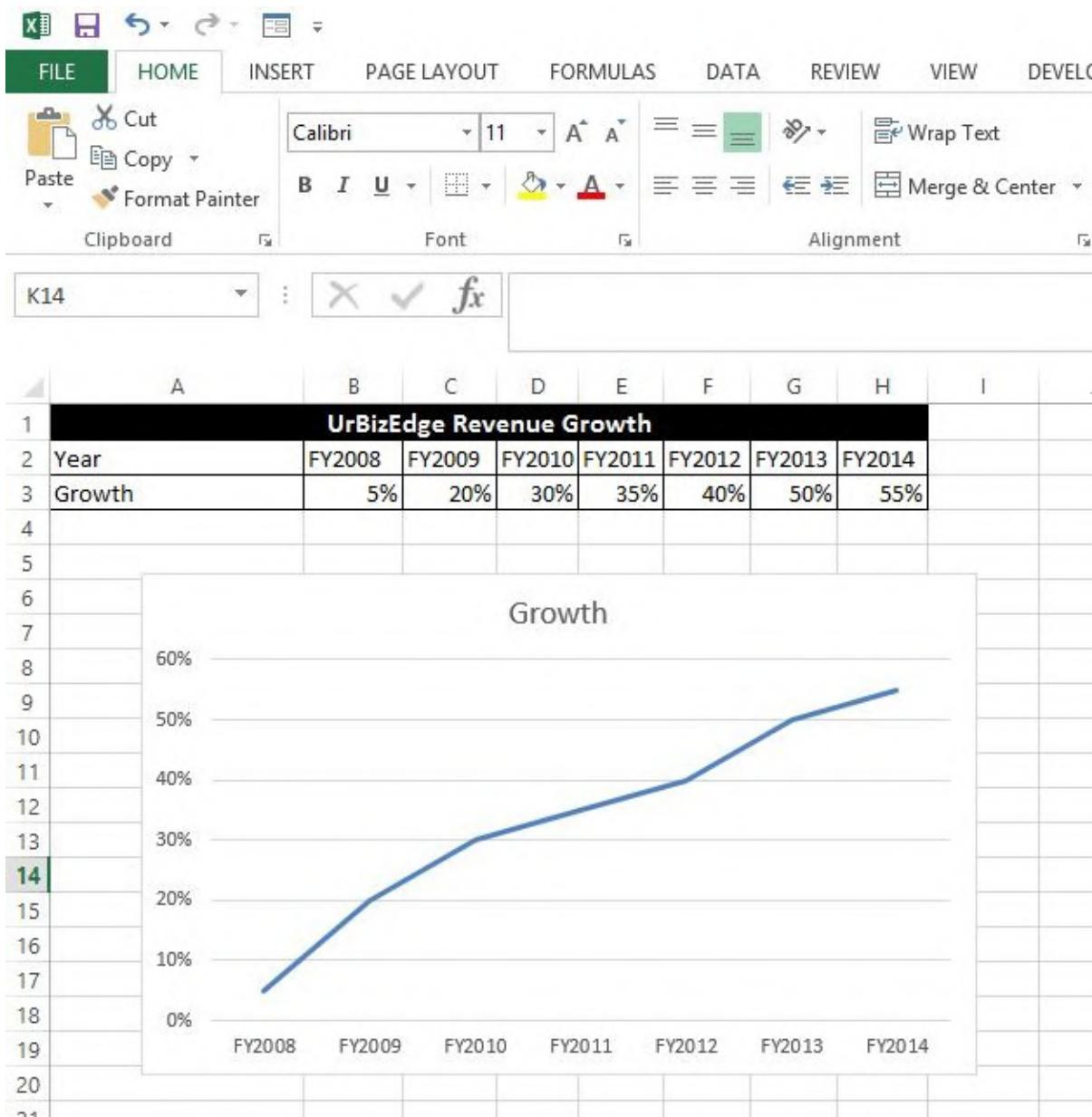
2. Go to the INSERT tab

3. Click on the Line chart icon in the Charts group

The chart is now displayed below the table, showing the same data as the one in the first figure.

	A	B	C	D	E	F	G	H		
1	<b>UrBizEdge Revenue Growth</b>									
2	Year	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014		
3	Growth		5%	20%	30%	35%	40%	50%	55%	
4										
5										
6										
7										
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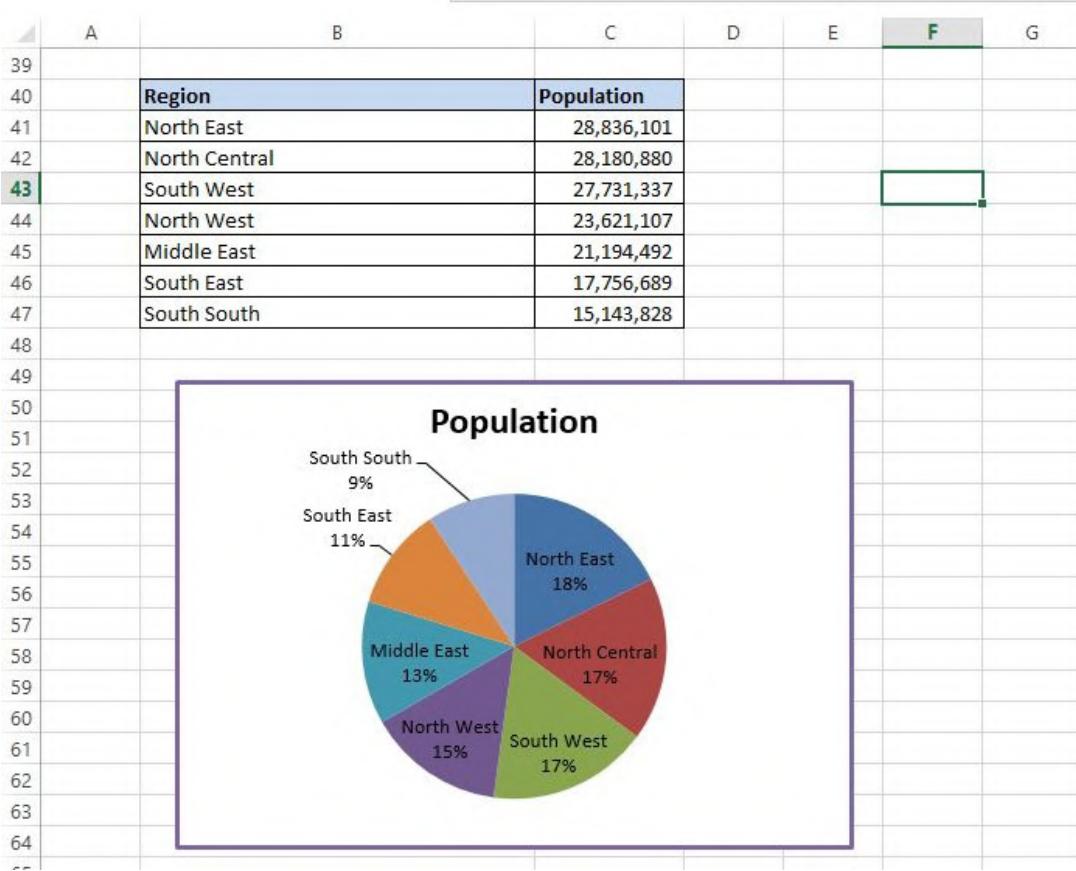
Again, Excel does a fairly good job and you can easily improve the format of the chart using the steps already explained.



## Pie Chart and when to use it.

Pie chart is used to show the contribution of each category to the pie that represents the grand total.

Below is an example showing the breakdown of Nigerian population by region. You can see how the Pie Chart makes it easy to see the contribution of each region to the total population of Nigeria.

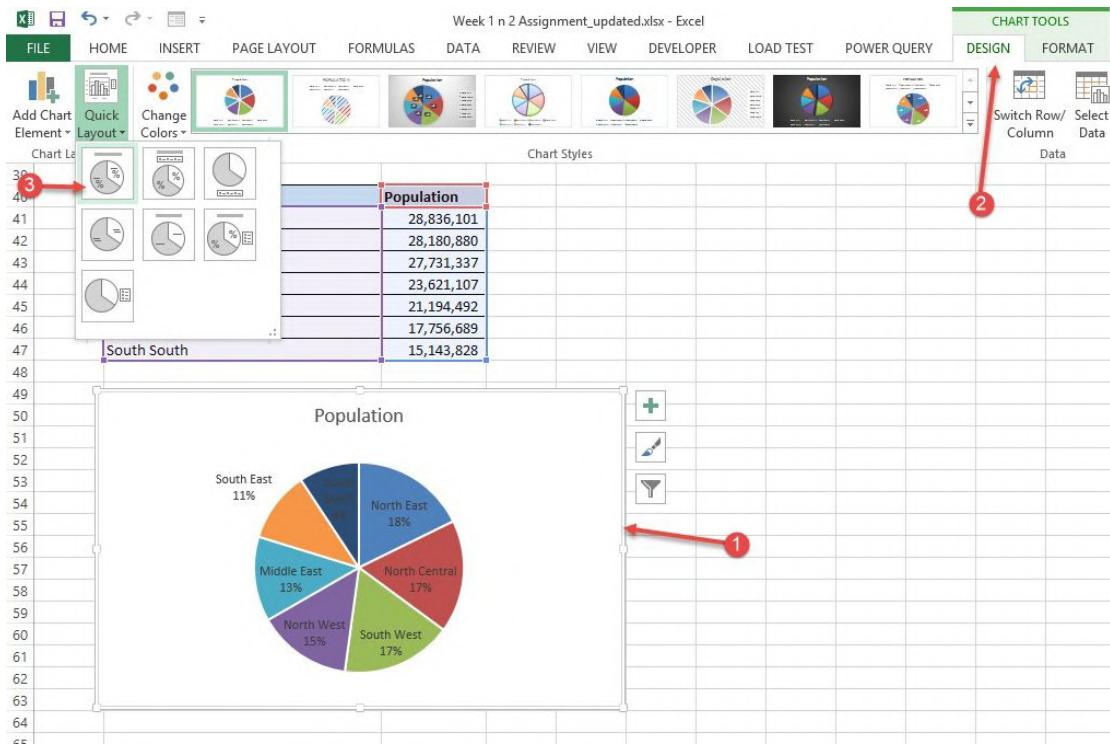


It is extremely easy to make. You, like for others, select the table's data and select Pie Chart under the Insert menu.

The screenshot shows the Excel ribbon with the 'Insert' tab selected. In the worksheet, a table of regional population data is highlighted with a red border. A callout with the number '1' points to the bottom-left corner of the table. A callout with the number '2' points to the 'Insert' tab. A callout with the number '3' points to the '2-D Pie' icon in the chart dropdown menu. The pie chart is displayed in the worksheet area, corresponding to the data in the table.

A	B	C	D	E	F	G
39						
40	<b>Region</b>	<b>Population</b>				
41	North East	28,836,101				
42	North Central	28,180,880				
43	South West	27,731,337				
44	North West	23,621,107				
45	Middle East	21,194,492				
46	South East	17,756,689				
47	South South	15,143,828				
48						
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51						
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60						

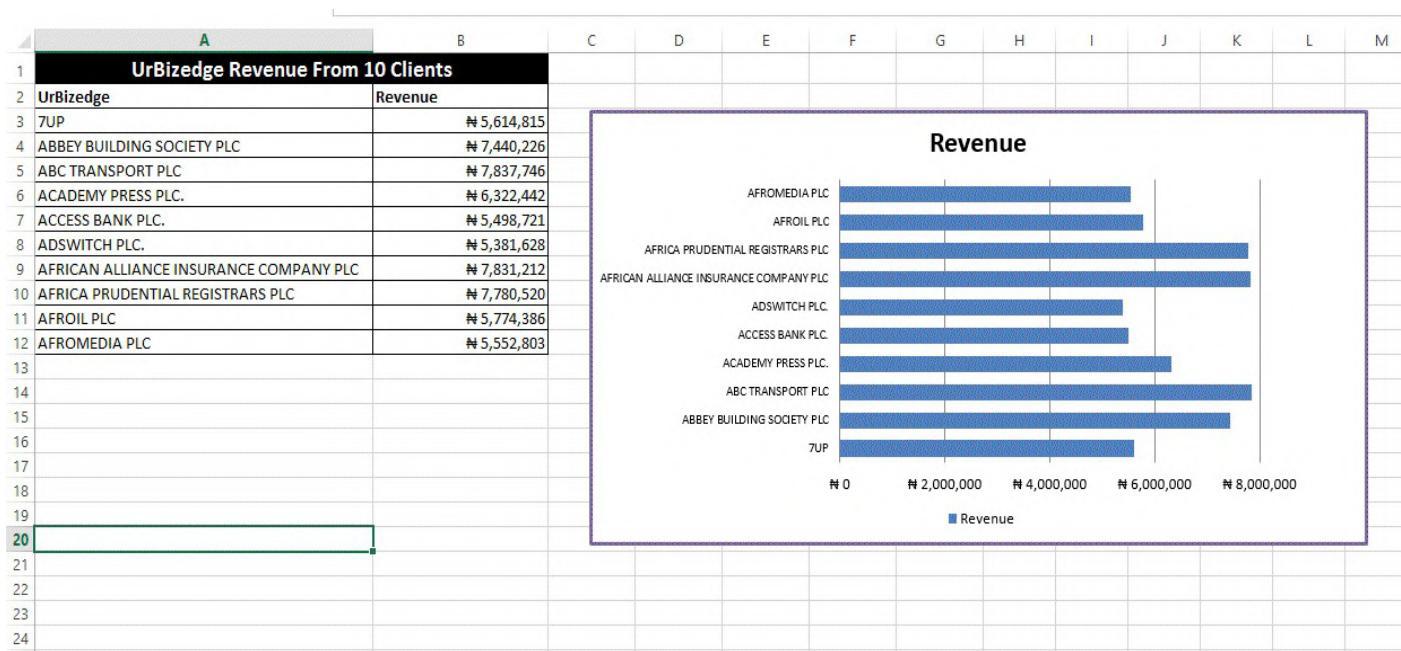
Excel does a default pie chart that you can greatly improve.



## Bar Chart and when to use it.

Bar chart is technically the same as Column chart. The difference is that when you have a table with lots of entries, usually over 8, you are better off with using a bar chart rather than the column chart. Also when the entries have long label names, it's better to use bar chart even if the entries aren't many.

Below is an example.

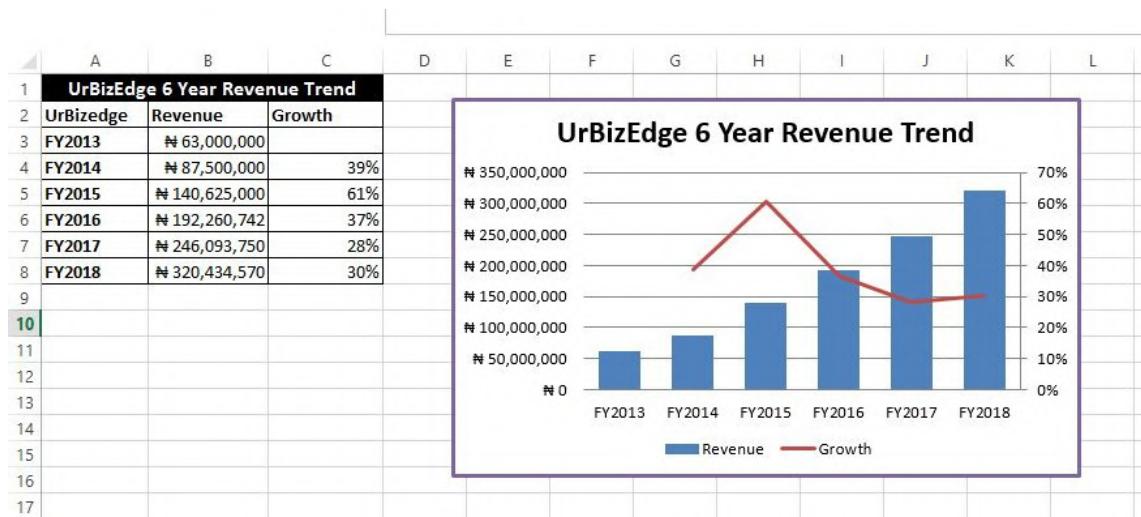


The same rules about Stacked and 100% stacked apply to bar chart and, even, line charts.

## Combo Chart

Occasionally, you will have to combine two or more chart types in one visualization/graph. This is very useful if you want to show two interconnected data and their combined relevance.

An example is showing how a company's revenue has been changing in values and as a growth ratio.



In Excel 2013 and Excel 2016, it is very easy to make.

Just select the entire table and insert a combo chart. It can be easily located under Recommended Charts.

Charts.xlsx - Excel

**Excel ribbon:**

- FILE
- HOME
- INSERT** (selected)
- PAGE LAYOUT
- FORMULAS
- DATA
- REVIEW
- VIEW
- DEVELOPER
- LOAD TEST
- POWER QUERY

**Table Data:**

A	B	C
UrBizedge 6 Year Revenue Trend		
UrBizedge	Revenue	Growth
FY2013	₦ 63,000,000	
FY2014	₦ 87,500,000	39%
FY2015	₦ 140,625,000	61%
FY2016	₦ 192,260,742	37%
FY2017	₦ 246,093,750	28%
FY2018	₦ 320,434,570	30%

**Insert Chart Dialog Box:**

The dialog box shows a preview of a "Clustered Column - Line on Secondary Axis" chart. The chart displays Revenue (blue bars) and Growth (red line) from FY2013 to FY2018. The Y-axis ranges from ₦ 0 to ₦ 350,000,000. The X-axis shows years from FY2013 to FY2018.

**Buttons:**

- OK
- Cancel

# PivotTable and PivotChart

PivotTable is Excel's premium tool for working with huge data table and even data stored in other database systems like Access, SQL servers and MySQL servers.

Below is an example of a large data table we will use PivotTable on to do some very relevant quick analysis. It is a table of sales for a particular Pizza Restaurant for a day and it has 5000 entries.

S/N	Pizza Sold	Price	Quantity	Amount Sold	Time	Time Range	
1	Meatzaa	₦ 2,000.00	5	₦ 10,000.00	8:00:01 AM	Before 9:00am	
2	Extravaganza	₦ 2,000.00	4	₦ 8,000.00	8:00:02 AM	Before 9:00am	
3	BBQ Chicken	₦ 4,000.00	5	₦ 20,000.00	8:00:04 AM	Before 9:00am	
4	Extravaganza	₦ 2,000.00	1	₦ 2,000.00	8:00:07 AM	Before 9:00am	
5	Meatzaa	₦ 2,000.00	4	₦ 8,000.00	8:00:08 AM	Before 9:00am	
6	Hot Veggie	₦ 4,000.00	2	₦ 8,000.00	8:00:14 AM	Before 9:00am	
7	BBQ Philly Steak	₦ 4,000.00	5	₦ 20,000.00	8:00:20 AM	Before 9:00am	
8	Chicken Feast	₦ 2,000.00	1	₦ 2,000.00	8:00:20 AM	Before 9:00am	
9	Meatzaa	₦ 2,000.00	3	₦ 6,000.00	8:00:22 AM	Before 9:00am	
10	Chicken Suya	₦ 4,000.00	5	₦ 20,000.00	8:00:25 AM	Before 9:00am	
11	Chicken Legend	₦ 2,000.00	5	₦ 10,000.00	8:00:26 AM	Before 9:00am	
12	BBQ Philly Steak	₦ 4,000.00	4	₦ 16,000.00	8:00:27 AM	Before 9:00am	
13	Chicken Suya	₦ 4,000.00	2	₦ 8,000.00	8:00:29 AM	Before 9:00am	
14	Chicken Feast	₦ 2,000.00	5	₦ 10,000.00	8:00:33 AM	Before 9:00am	
15	Chicken Feast	₦ 2,000.00	4	₦ 8,000.00	8:00:33 AM	Before 9:00am	
16	Beef Suya	₦ 3,000.00	5	₦ 15,000.00	8:00:34 AM	Before 9:00am	
17	Chicken Feast	₦ 2,000.00	5	₦ 10,000.00	8:00:35 AM	Before 9:00am	
18	Hot Veggie	₦ 4,000.00	5	₦ 20,000.00	8:00:35 AM	Before 9:00am	
19	Meatzaa	₦ 2,000.00	5	₦ 10,000.00	8:00:35 AM	Before 9:00am	
20	Meatzaa	₦ 2,000.00	2	₦ 4,000.00	8:00:36 AM	Before 9:00am	
21	Margarita	₦ 4,000.00	3	₦ 12,000.00	8:00:37 AM	Before 9:00am	

So how can we make a report that will show us the sales performance that day by the different type of Pizzas the restaurant sells. A report like the one below:

J	K	L
Pizza Type	Sum of Quantity	Total Sales Amount
BBQ Chicken	900	₦ 3,600,000.00
BBQ Philly Steak	952	₦ 3,808,000.00
Beef Suya	981	₦ 2,943,000.00
Chicken Bali	889	₦ 1,778,000.00
Chicken Feast	872	₦ 1,744,000.00
Chicken Legend	883	₦ 1,766,000.00
Chicken Suya	956	₦ 3,824,000.00
Extravaganza	907	₦ 1,814,000.00
Hot Pepperoni Feast	1,073	₦ 4,292,000.00
Hot Veggie	950	₦ 3,800,000.00
Italiano	985	₦ 2,955,000.00
Margarita	871	₦ 3,484,000.00
Meatzaa	838	₦ 1,676,000.00
Pepperoni Feast	907	₦ 3,628,000.00
Pepperoni Suya	1,077	₦ 3,231,000.00
Veggie Supreme	1,009	₦ 3,027,000.00
<b>Grand Total</b>	<b>15,050</b>	<b>₦ 47,370,000.00</b>

It's quite easy with Pivot Table.

You start by selecting the sales transaction table or selecting one of the cells in it. Then go to Insert menu and click on Pivot Table.

Pivot table, Pivot Chart and PowerPivot.xlsx - Excel

**FILE** **HOME** **INSERT** **PAGE LAYOUT** **FORMULAS** **DATA** **REVIEW** **VIEW** **DEVELOPER** **LOAD TEST** **POWER QUERY**

PivotTable Recommended PivotTables Tables Illustrations Online Pictures Apps Recommended Charts Charts Tours Power View Reports

A1 3 : X ✓ fx 2000

S/N	Pizza Sold	Price	Quantity	Amount Sold	Time	Time Range
1	Meatzaa	₦ 2,000.00	5	₦ 10,000.00	8:00:01 AM	Before 9:00am
2	Extravaganza	₦ 2,000.00	4	₦ 8,000.00	8:00:02 AM	Before 9:00am
3	BBQ Chicken	₦ 4,000.00	5			
4	Extravaganza	₦ 2,000.00	1			
5	Meatzaa	₦ 2,000.00	4			
6	Hot Veggie	₦ 4,000.00	2			
7	BBQ Philly Steak	₦ 4,000.00	5			
8	Chicken Feast	₦ 2,000.00	1			
9	Meatzaa	₦ 2,000.00	3			
10	Chicken Suya	₦ 4,000.00	5			
11	Chicken Legend	₦ 2,000.00	5			
12	BBQ Philly Steak	₦ 4,000.00	4			
13	Chicken Suya	₦ 4,000.00	2			
14	Chicken Feast	₦ 2,000.00	5			
15	Chicken Feast	₦ 2,000.00	4			
16	Beef Suya	₦ 3,000.00	5			
17	Chicken Feast	₦ 2,000.00	5			
18	Hot Veggie	₦ 4,000.00	5			
19	Meatzaa	₦ 2,000.00	5			
20	Meatzaa	₦ 2,000.00	2	₦ 4,000.00	8:00:36 AM	Before 9:00am
21	Margarita	₦ 4,000.00	3	₦ 12,000.00	8:00:37 AM	Before 9:00am
22				₦ 15,000.00	8:00:40 AM	Before 9:00am

Create PivotTable

Choose the data that you want to analyze

Select a table or range 4

Table/Range: 'Pivot Table n Pivot Chart'!\$A\$1:\$G\$5001

Use an external data source

Choose where you want the PivotTable report to be placed

New Worksheet

Existing Worksheet

Location:

Choose whether you want to analyze multiple tables

Add this data to the Data Model 5

OK Cancel

In the screenshot above, I selected one of the cells in the table, clicked on Insert menu, clicked on PivotTable, confirmed that my entire table has been selected and clicked on OK.

You will be taken to a new sheet that looks like the one below:

The screenshot shows a Microsoft Excel spreadsheet titled "Pivot table, Pivot Chart and PowerPivot.xlsx". The ribbon menu is visible at the top, with the "PIVOTTABLE TOOLS" tab selected. On the left, a "Field List" pane is open, showing a tree structure of fields: S/N, Pizza Sold, Price, Quantity, Amount Sold, Time, and Time Range. A red box highlights the main data area (rows 1-22, columns A-K) which contains a placeholder text "To build a report, choose fields from the PivotTable Field List". Another red box highlights the "PivotTable Fields" pane on the right, which lists the same fields with checkboxes. Red arrows point from the text labels "Core part" and "Result part" to their respective highlighted areas.

At first it looks really different, like you are no longer in Excel. But it is very easy to work with. The core part is the part on the right with the name **PivotTable Fields**. It has a list of all the fields in the original data table. The part below the field names are where you actually set up your report.

Whatever field you want to display its unique entries, one per line/row, you will drag to ROWS. Let's do that for the Pizza Sold field so we will be able to see all the pizza types the restaurant sells.

The screenshot shows the Microsoft Excel ribbon with the 'PivotTable' tab selected. The main area displays a list of items under 'Row Labels'. A red box highlights the 'Row Labels' dropdown menu, which lists items like 'BBQ Chicken', 'Grand Total', etc. To the right, the 'PivotTable Fields' pane is open, showing fields for 'S/N', 'Price', 'Quantity', 'Amount Sold', 'Time', and 'Time Range'. The 'ROWS' section has 'Pizza Sold' selected, indicated by a red arrow. The 'VALUES' section also has 'Pizza Sold' selected. The status bar at the bottom shows 'Sheet1'.

Then if it is that you want to display those unique entries one per column, drag the field to COLUMNS. Let's see what will happen if we drag that Pizza Sold field from ROWS to COLUMNS.

The screenshot shows a Microsoft Excel interface with the following details:

- File Tab:** FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, DEVELOPER, LOAD TEST, POWER QUERY, ANALYZE, DESIGN.
- PivotTable Fields Panel:** Shows fields to add to report:
  - S/N
  - Pizza Sold
  - Price
  - Quantity
  - Amount Sold
  - Time
  - Time Range
- Drag Fields Between Areas:** FILTERS, COLUMNS, ROWS, VALUES.
- Columns:** A, B, C, D, E.
- Rows:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22.
- Data:** The range A3:E4 is highlighted with a red box. The data is as follows:

	Column Labels				
3	Column Labels	B	C	D	E
4	BBQ Chicken	BBQ Philly Steak	Beef Suya	Chicken Bali	Chicken Feast
- Bottom Navigation:** Video 9, Sheet1, Pivot Table n Pivot Cha ..., +, UPDATE, Defer Layout Update.

So now you understand how ROWS and COLUMNS work.

Drag Pizza Sold back to ROWS, that is where we need it for our quick analysis.

Next is VALUES. Whatever you want to do a mathematical calculation on, you drag to the VALUES part. Common calculations you will find yourself doing are counts (to see the number of time each unique entry occurred in the original table), sum (to add the values a particular field) and average (to average the values of a particular field).

In our case, let's drag Quantity and Amount Sold fields to VALUES.

The screenshot shows a Microsoft Excel spreadsheet titled "Pivot table, Pivot Chart and PowerPivot.xlsx - Excel". The PivotTable Fields pane is open on the right side, showing fields for "Choose fields to add to report". The "Quantity" and "Amount Sold" checkboxes are checked. Red arrows point from these checkboxes to the "Sum of Quantity" and "Sum of Amount Sold" columns in the PivotTable grid. The PivotTable grid itself contains data for various pizza types, showing their quantity and amount sold. The PivotTable Fields pane also shows "ROWS" set to "Pizza Sold" and "VALUES" set to "Sum of Quant..." and "Sum of Amou...".

Row Labels	Sum of Quantity	Sum of Amount Sold
BBQ Chicken	900	3600000
BBQ Philly Steak	952	3808000
Beef Suya	981	2943000
Chicken Bali	889	1778000
Chicken Feast	872	1744000
Chicken Legend	883	1766000
Chicken Suya	956	3824000
Extravaganza	907	1814000
Hot Pepperoni Feast	1073	4292000
Hot Veggie	950	3800000
Italiano	985	2955000
Margarita	871	3484000
Meatzaa	838	1676000
Pepperoni Feast	907	3628000
Pepperoni Suya	1077	3231000
Veggie Supreme	1009	3027000
<b>Grand Total</b>	<b>15050</b>	<b>47370000</b>

Can you see how quick this is? We have just analyzed a 5000 sales record table in seconds. Now we have a report that shows us how many of each Pizza type was sold and the total sales amount generated.

Those are the type of lightning fast analysis PivotTable allows you to do.

There is now one part we haven't touched: FILTERS. As the name suggests, it simply

gives us the capability to filter our report. We will drag Time Range to FILTERS to see which sales occurred at the peak period (before 9:00am) and after the peak period.

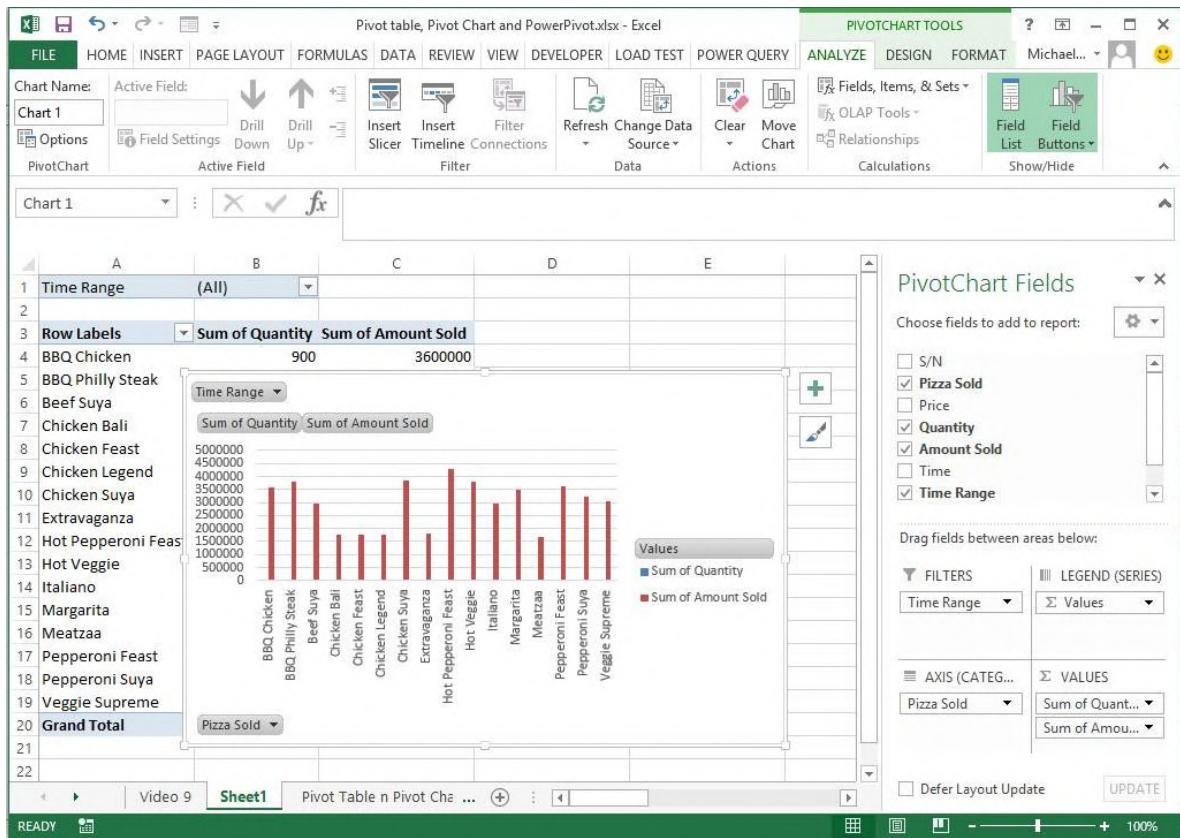
The screenshot shows an Excel spreadsheet titled "Pivot table, Pivot Chart and PowerPivot.xlsx". A PivotTable is displayed in the center of the screen, showing the "Sum of Amount Sold" for various pizza categories. To the left of the table, a "Time Range" filter dialog box is open, with two options selected: "After 9:00am" and "Before 9:00am". On the right side of the screen, the "PivotTable Fields" pane is visible, showing a list of fields: S/N, Pizza Sold, Price, Quantity, Amount Sold, Time, and Time Range. The "Time Range" field is currently selected and has a red arrow pointing to it from the text above. The "FILTERS" section of the pane also shows "Time Range" selected. The Excel ribbon at the top includes tabs for FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, DEVELOPER, LOAD TEST, POWER QUERY, ANALYZE, DESIGN, and Michael... (a user profile). The "PIVOTTABLE TOOLS" tab is active, showing sub-options for ANALYZE and DESIGN.

And that's how PivotTable works. Very easy to use and powerful.

## PivotChart

Whenever you insert a chart using data generated via a PivotTable, that chart is a PivotChart. It has some extra functionalities it inherits from the PivotTable which makes it a little different from the regular charts we have already discussed.

Below is the PivotChart for the PivotTable we just created.



Notice the extra elements on it. Even the Time Range filter is showing on the chart. Besides those extra elements, a PivotChart is same as the regular charts and the same kind of formatting you can do on the regular charts work on PivotCharts.

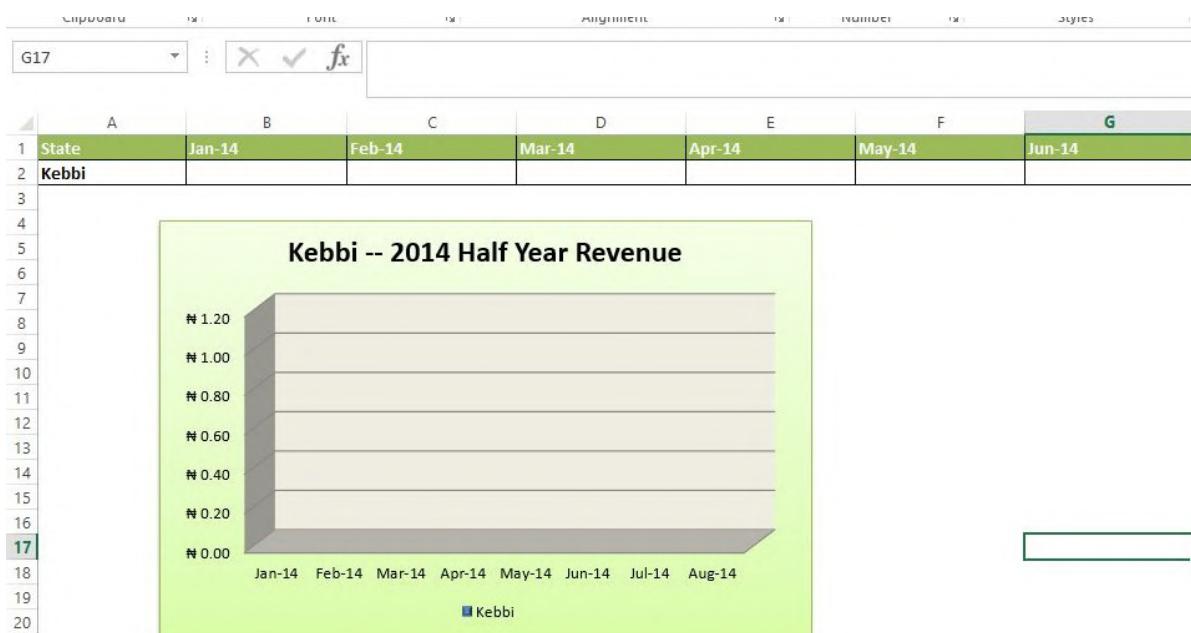
# Business Data Analysis

When using Excel to organize or analyze your business operations data, there are some tools you need to be aware of.

## Linking Sheets

You often have to pull data into a report from another report or Excel file, the most effective way to do this is to link the sheets. You will be mirroring the value in the source sheet in your destination sheet.

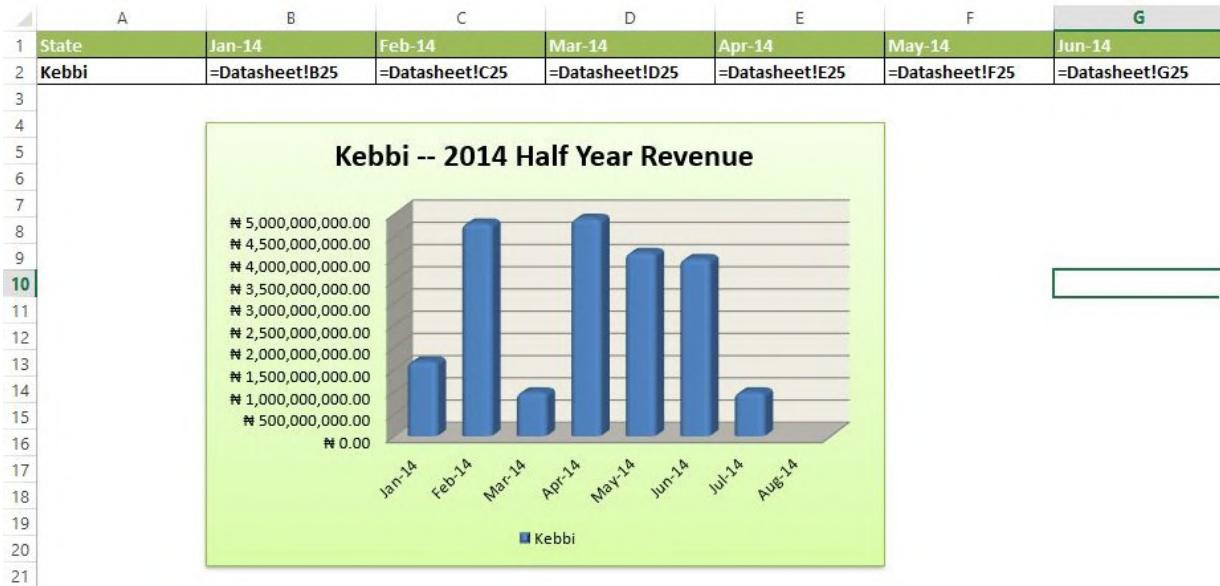
An example is if there is a sheet that contains the internal revenue of all the states in Nigeria and you are doing a report on Kebbi state. You want to pull the values for Kebbi state from the sheet that has everything (source sheet), your best bet is to link the sheets. It is preferable to copying the values from the source sheet because if the source sheet is updated with new values your analysis sheet will not automatically update (will still be showing the now incorrect old values). So how do you link sheets?



	A	B	C	D	E	F	G
1	State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
2	Abia	₦ 1,297,498,300.00	₦ 821,123,500.00	₦ 1,175,454,800.00	₦ 967,327,400.00	₦ 2,265,644,000.00	₦ 4,544,916,100.00
4	Adamawa	₦ 4,022,792,500.00	₦ 4,317,641,300.00	₦ 1,627,470,600.00	₦ 1,023,694,700.00	₦ 3,493,691,500.00	₦ 1,973,059,900.00
23	Kano	₦ 2,981,980,300.00	₦ 2,021,735,600.00	₦ 3,016,518,600.00	₦ 4,411,651,000.00	₦ 2,387,291,000.00	₦ 530,613,400.00
24	Katsina	₦ 3,589,421,500.00	₦ 1,293,838,700.00	₦ 638,877,300.00	₦ 2,969,721,400.00	₦ 1,025,989,500.00	₦ 2,648,689,500.00
25	Kebbi	₦ 1,684,273,500.00	₦ 4,790,202,900.00	₦ 991,721,500.00	₦ 4,897,014,100.00	₦ 4,131,210,900.00	₦ 3,990,418,100.00
26	Kogi	₦ 2,812,863,300.00	₦ 2,734,189,600.00	₦ 2,306,601,300.00	₦ 867,264,000.00	₦ 2,104,687,400.00	₦ 2,825,512,800.00
27	Kwara	₦ 3,915,338,600.00	₦ 1,496,830,100.00	₦ 1,305,529,900.00	₦ 4,919,941,300.00	₦ 2,214,504,600.00	₦ 912,176,400.00
28	Lagos	₦ 6,239,473,500.00	₦ 7,319,183,000.00	₦ 6,211,689,500.00	₦ 3,351,178,500.00	₦ 11,610,307,000.00	₦ 22,681,984,500.00
29	Nasarawa	₦ 450,732,700.00	₦ 4,852,095,900.00	₦ 1,411,838,200.00	₦ 743,233,200.00	₦ 492,081,500.00	₦ 1,310,892,700.00
30	Niger	₦ 3,002,387,100.00	₦ 4,592,318,900.00	₦ 3,219,870,900.00	₦ 1,086,334,400.00	₦ 3,979,805,300.00	₦ 1,826,747,300.00
31	Ogun	₦ 3,434,714,900.00	₦ 2,586,000,100.00	₦ 3,907,557,600.00	₦ 1,642,410,200.00	₦ 2,265,022,600.00	₦ 3,200,451,900.00
32	Ondo	₦ 716,222,900.00	₦ 1,690,422,800.00	₦ 4,362,953,800.00	₦ 977,876,300.00	₦ 4,300,936,900.00	₦ 4,925,747,700.00
33	Plateau	₦ 4,527,323,100.00	₦ 2,371,220,000.00	₦ 4,471,653,300.00	₦ 932,778,800.00	₦ 3,593,441,000.00	₦ 4,894,816,200.00
34	Rivers	₦ 2,423,028,900.00	₦ 4,860,256,800.00	₦ 4,148,808,900.00	₦ 859,719,700.00	₦ 4,882,684,300.00	₦ 4,459,705,200.00
35	Taraba	₦ 531,248,900.00	₦ 785,603,400.00	₦ 2,475,480,400.00	₦ 878,820,400.00	₦ 1,389,495,200.00	₦ 3,244,525,900.00
36	Yobe	₦ 2,187,894,400.00	₦ 2,500,320,500.00	₦ 3,497,511,100.00	₦ 829,030,800.00	₦ 3,799,677,800.00	₦ 2,986,053,000.00
37	Zamfara	₦ 4,767,284,200.00	₦ 1,622,967,600.00	₦ 4,509,006,600.00	₦ 1,308,237,500.00	₦ 3,350,176,900.00	₦ 756,637,100.00

It's very easy. In the fields in the analysis sheet, for the different months values you will type = and select the cell with the actual figure in the source sheet.

In the end you will have the following or similar:



A	B	C	D	E	F	G	
1		Internally Generated Revenue of States in Nigeria					
2	State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
3	Abia	₦ 1,297,498,300.00	₦ 821,123,500.00	₦ 1,175,454,800.00	₦ 967,327,400.00	₦ 2,265,644,000.00	₦ 4,544,916,100.00
4	Adamawa	₦ 4,022,792,500.00	₦ 4,317,641,300.00	₦ 1,627,470,600.00	₦ 1,023,694,700.00	₦ 3,493,691,500.00	₦ 1,973,059,900.00
23	Kano	₦ 2,981,980,300.00	₦ 2,021,735,600.00	₦ 3,016,518,600.00	₦ 4,411,651,000.00	₦ 2,387,291,000.00	₦ 530,613,400.00
24	Katsina	₦ 3,589,421,500.00	₦ 1,293,838,700.00	₦ 638,877,300.00	₦ 2,969,721,400.00	₦ 1,025,989,500.00	₦ 2,648,689,500.00
25	Kebbi	₦ 1,625,500.00	₦ 4,025,2,900.00	₦ 9D25,500.00	₦ 4,025,4,100.00	₦ 4,125,0,900.00	₦ 3,9025,100.00
26	Kogi	₦ 2,812,863,300.00	₦ 2,734,189,600.00	₦ 2,306,601,300.00	₦ 867,264,000.00	₦ 2,104,687,400.00	₦ 2,825,512,800.00
27	Kwara	₦ 3,915,338,600.00	₦ 1,496,830,100.00	₦ 1,305,529,900.00	₦ 4,919,941,300.00	₦ 2,214,504,600.00	₦ 912,176,400.00
28	Lagos	₦ 6,239,473,500.00	₦ 7,319,183,000.00	₦ 6,211,689,500.00	₦ 3,351,178,500.00	₦ 11,610,307,000.00	₦ 22,681,984,500.00
29	Nasarawa	₦ 450,732,700.00	₦ 4,852,095,900.00	₦ 1,411,838,200.00	₦ 743,233,200.00	₦ 492,081,500.00	₦ 1,310,892,700.00
30	Niger	₦ 3,002,387,100.00	₦ 4,592,318,900.00	₦ 3,219,870,900.00	₦ 1,086,334,400.00	₦ 3,979,805,300.00	₦ 1,826,747,300.00
31	Ogun	₦ 3,434,714,900.00	₦ 2,586,000,100.00	₦ 3,907,557,600.00	₦ 1,642,410,200.00	₦ 2,265,022,600.00	₦ 3,200,451,900.00
32	Ondo	₦ 716,222,900.00	₦ 1,690,422,800.00	₦ 4,362,953,800.00	₦ 977,876,300.00	₦ 4,300,936,900.00	₦ 4,925,747,700.00
33	Plateau	₦ 4,527,323,100.00	₦ 2,371,220,000.00	₦ 4,471,653,300.00	₦ 932,778,800.00	₦ 3,593,441,000.00	₦ 4,894,816,200.00
34	Rivers	₦ 2,423,028,900.00	₦ 4,860,256,800.00	₦ 4,148,808,900.00	₦ 859,719,700.00	₦ 4,882,684,300.00	₦ 4,459,705,200.00
35	Taraba	₦ 531,248,900.00	₦ 785,603,400.00	₦ 2,475,480,400.00	₦ 878,820,400.00	₦ 1,389,495,200.00	₦ 3,244,525,900.00
36	Yobe	₦ 2,187,894,400.00	₦ 2,500,320,500.00	₦ 3,497,511,100.00	₦ 829,030,800.00	₦ 3,799,677,800.00	₦ 2,986,053,000.00
37	Zamfara	₦ 4,767,284,200.00	₦ 1,622,967,600.00	₦ 4,509,006,600.00	₦ 1,308,237,500.00	₦ 3,350,176,900.00	₦ 756,637,100.00

The source sheet has the name Datasheet, hence the =Datasheet!B25 in January value cell in the analysis sheet. You don't type anything beyond = into the values cells in the analysis sheet, once you select the right cell in the source sheet, Excel will write everything you see in the cell.

## Duplicating Sheets

Sometimes you will want an exact copy of a sheet to work with or email to someone (especially if the Excel file contains other sheets you don't want the person to access). Excel has a nifty tool for duplicating sheets. And it's very easy to use.

Right click on the name of the sheet you want to duplicate. Click on **Move or Copy...**

G90 : X ✓ fx

	B	C	D	E	F	G
1	Family Monthly Budget and Expense Sheet					
2						
3	Budgeted Expense for the Month		Actual Expense	Surplus/Deficit		
4	May	NGN 40,000	NGN 35,000	NGN 5,000		
5						
6	Housing	Budgeted Cost	Actual Cost	Difference		
7	House Rent	NGN 5,000	NGN 5,000	NGN 0		
8	Business Rent	NGN 0	NGN 0	NGN 0		
9	Phone	NGN 25,000	NGN 15,000	NGN 10,000		
10	Electricity	NGN 10,000	NGN 15,000	-NGN 5,000		
11	Gas			NGN 0		
12	Water and sewer			NGN 0		
13	Cable			NGN 0		
14	Waste removal maintenance or			NGN 0		
15	-----			NGN 0		
16	Supplies			NGN 0		
17	Other			NGN 0		
18	Total	NGN 40,000	NGN 35,000	NGN 5,000		

Video 10 Dashboard Datasheet Nestle Stock Analysis Monthly Family Budget New Name ...

READY

You'll see a dialog box. Select **new book** and tick **Create a Copy**.

G90 : X ✓ fx

	B	C	D	E	F	G
1	Family Monthly Budget and Expense Sheet					
2						
3	Budgeted Expense for the Month		Actual Expense	Surplus/Deficit		
4	May	NGN 40,000	NGN 35,000	NGN 5,000		
5						
6	Housing	Budgeted Cost	Actual Cost	Difference		
7	House Rent	NGN 5,000	NGN 5,000	NGN 0		
8	Business Rent	NGN 0	NGN 0	NGN 0		
9	Phone	NGN 25,000	NGN 15,000	NGN 10,000		
10	Electricity	NGN 10,000	NGN 15,000	-NGN 5,000		
11	Gas			NGN 0		
12	Water and sewer			NGN 0		
13	Cable			NGN 0		
14	Waste removal maintenance or			NGN 0		
15	-----			NGN 0		
16	Supplies			NGN 0		
17	Other			NGN 0		
18	Total	NGN 40,000	NGN 35,000	NGN 5,000		

Video 10 Dashboard Datasheet Nestle Stock Analysis Monthly Family Budget New Name ...

READY

And the sheet will be duplicated in a new Excel file for you.

The screenshot shows a Microsoft Excel spreadsheet titled "Family Monthly Budget and Expense Sheet". The spreadsheet contains several tables and sections:

- Budgeted Expense for the Month**: A table with columns for Budgeted Expense, Actual Expense, and Surplus/Deficit.
- Projected Monthly Income**: A table listing Income 1 (NGN 100,000), Income 2 (NGN 80,000), Extra income (NGN 50,000), and Total monthly income (NGN 230,000).
- Actual Monthly Income (filled at Month End)**: A table listing Income 1 (NGN 100,000), Income 2 (NGN 80,000), Extra income (NGN 25,000), and Total monthly income (NGN 205,000).
- Difference**: A table showing the difference between Budgeted Income and Actual Income, resulting in a deficit of NGN 20,000.

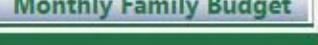
A sidebar on the right is titled "Instructions" and contains the following text:

The Family Budget sheet  
Just fill in Budgeted Expenses for the ones that you find no parts that you don't. Also fill your Budgeted monthly. Then at the end fill in Actual income for that month.  
You can save a copy of this sheet if you'll need it for the next month.  
If you need any help don't hesitate to ask me at mike@urbizedge.com

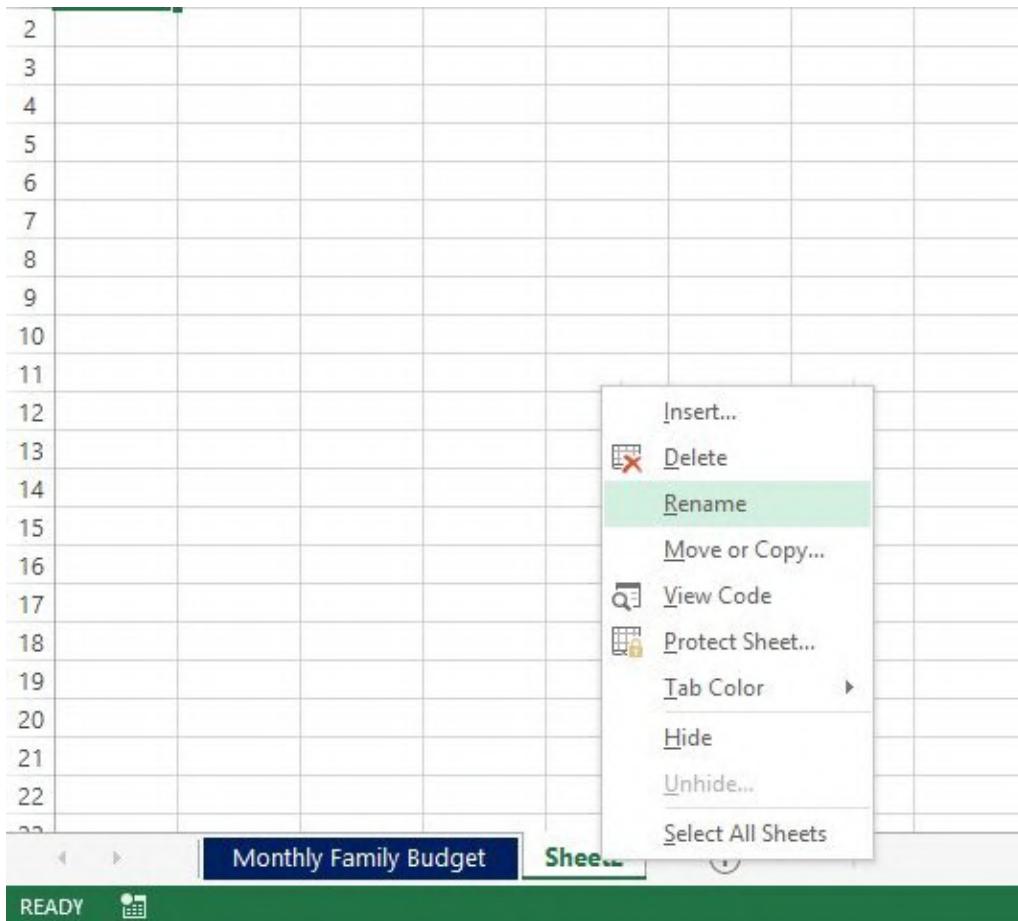
## Inserting Sheets, Renaming Sheets and Changing Sheet Tab color

You can insert a new Sheet in an Excel file. Just click on the new sheet icon at the right of the last sheet tab in the file.

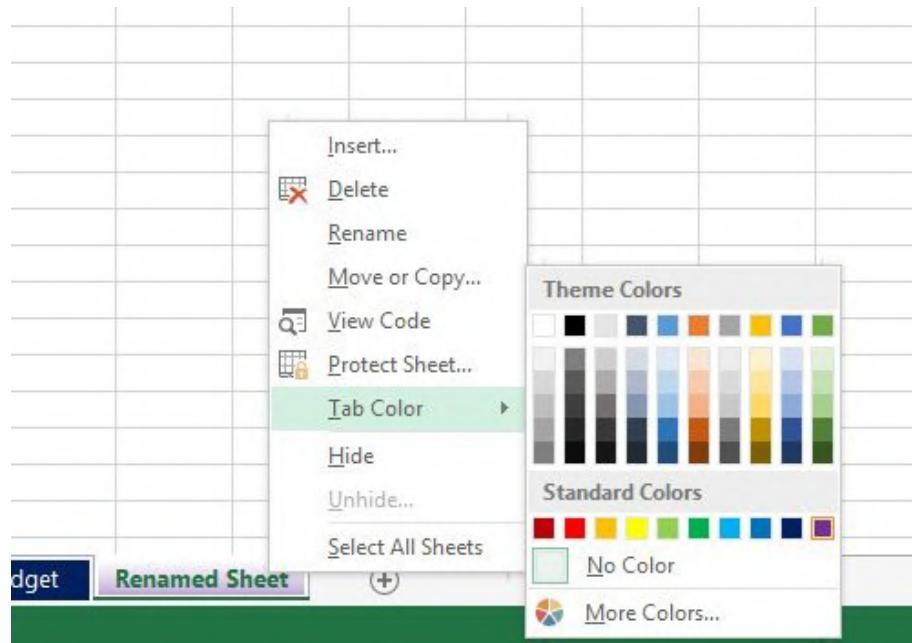
1	Family Monthly Budget and Expenses
2	
3	Budgeted Expense for the Month
4	May NGN 40,000
5	
6	Housing
7	House Rent NGN 5,000
8	Business Rent NGN 0
9	Phone NGN 25,000
10	Electricity NGN 10,000
11	Gas
12	Water and sewer
13	Cable
14	Waste removal Maintenance or
15	-----
16	Supplies
17	Other
18	Total NGN 40,000 NGN

READY  Monthly Family Budget  New sheet

You can also rename the new Sheet to what you want. Just right click on the sheet tab and select Rename.



Finally, you can give it the color you want. Again, right click on the sheet name and click on Tab Color. Choose the color you want.



## Freezing Panes

There will be times you have a table with lots of entries and will require a lot scrolling up and down, and even left and right. Often you will want some part of the table to never scroll out of view. This is usually the headers. Achieving this requires enabling a tool called Freeze Panes.

It freezes the part of your report you don't want to scroll out of view. Below is an example. You access it from the View menu.

	A	B	C	D	E
1	State	Jan-14	Feb-14	Mar-14	Apr-14
2	Abia	₦ 1,297,498,300.00	₦ 821,123,500.00	₦ 1,175,454,800.00	₦ 4,121,592,700.00
3	Adamawa	₦ 4,022,792,500.00	₦ 4,317,641,300.00	₦ 1,627,470,600.00	₦ 3,493,691,500.00
4	Akwa Ibom	₦ 824,782,800.00	₦ 1,691,712,500.00	₦ 4,927,386,500.00	₦ 2,966,925,400.00
5	Anambra	₦ 2,159,322,900.00	₦ 1,511,863,500.00	₦ 4,060,131,900.00	₦ 2,439,308,800.00
6	Bauchi	₦ 764,748,600.00	₦ 3,059,451,100.00	₦ 2,879,985,600.00	₦ 3,032,115,500.00
7	Bayelsa	₦ 1,218,646,400.00	₦ 2,035,499,300.00	₦ 3,596,177,500.00	₦ 4,856,865,900.00
8	Benue	₦ 3,479,649,000.00	₦ 3,864,832,700.00	₦ 2,458,711,700.00	₦ 2,700,421,800.00
9	Benue	₦ 602,469,700.00	₦ 1,387,315,500.00	₦ 4,501,134,600.00	₦ 2,728,902,800.00
10	Borno	₦ 2,361,614,200.00	₦ 1,616,065,000.00	₦ 4,908,244,600.00	₦ 4,216,846,800.00
11	Cross River	₦ 2,416,592,600.00	₦ 1,971,834,600.00	₦ 1,814,142,400.00	₦ 4,658,487,000.00
12	Delta	₦ 4,755,914,300.00	₦ 2,382,209,500.00	₦ 3,361,514,600.00	₦ 2,060,298,000.00
13	Ebonyi	₦ 3,547,140,000.00	₦ 3,233,069,500.00	₦ 4,883,253,900.00	₦ 1,060,164,800.00
14	Edo	₦ 2,663,501,000.00	₦ 781,461,300.00	₦ 462,661,800.00	₦ 543,085,200.00
15	Ekiti	₦ 1,816,087,900.00	₦ 4,128,943,600.00	₦ 1,512,170,300.00	₦ 2,592,908,100.00
16	Enugu	₦ 1,409,979,200.00	₦ 2,609,372,800.00	₦ 1,990,646,300.00	₦ 3,219,650,200.00
17	FCT	₦ 3,199,223,200.00	₦ 2,063,317,300.00	₦ 1,829,381,400.00	₦ 3,704,640,600.00
18	Gombe	₦ 620,111,300.00	₦ 2,201,453,200.00	₦ 1,885,641,400.00	₦ 4,146,024,300.00
19	Imo	₦ 2,591,742,600.00	₦ 2,521,764,800.00	₦ 2,013,994,900.00	₦ 4,994,515,700.00

There are three options:

- 1. Freeze Panes.** To use this option you have to select a cell in the table. This option will freeze all the rows above the cell you selected and all the columns to the left of the cell you selected. So you have to select just the right cell. If you want to freeze rows 1 and 2, then you will select cell A3.
- 2. Freeze Top Row.** This freezes the top row in your Excel's current view.
- 3. Freeze First Column.** This freezes the first column in your Excel's current view.

Below is the result of freezing row 1. It doesn't scroll out of view even when I scroll way down.

	A	B	C	D	E	F	G
1	State	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
26	Kwara	₦ 3,915,338,600.00	₦ 1,496,830,100.00	₦ 1,305,529,900.00	₦ 4,919,941,300.00	₦ 2,214,504,600.00	₦ 912,176,400.00
27	Lagos	₦ 6,239,473,500.00	₦ 7,319,183,000.00	₦ 6,211,689,500.00	₦ 3,351,178,500.00	₦ 11,610,307,000.00	₦ 22,681,984,500.00
28	Nasarawa	₦ 450,732,700.00	₦ 4,852,095,900.00	₦ 1,411,838,200.00	₦ 743,233,200.00	₦ 492,081,500.00	₦ 1,310,892,700.00
29	Niger	₦ 3,002,387,100.00	₦ 4,592,318,900.00	₦ 3,219,870,900.00	₦ 1,086,334,400.00	₦ 3,979,805,300.00	₦ 1,826,747,300.00
30	Ogun	₦ 3,434,714,900.00	₦ 2,586,000,100.00	₦ 3,907,557,600.00	₦ 1,642,410,200.00	₦ 2,265,022,600.00	₦ 3,200,451,900.00
31	Ondo	₦ 716,222,900.00	₦ 1,690,422,800.00	₦ 4,362,953,800.00	₦ 977,876,300.00	₦ 4,300,936,900.00	₦ 4,925,747,700.00
32	Plateau	₦ 4,527,323,100.00	₦ 2,371,220,000.00	₦ 4,471,653,300.00	₦ 932,778,800.00	₦ 3,593,441,000.00	₦ 4,894,816,200.00
33	Rivers	₦ 2,423,028,900.00	₦ 4,860,256,800.00	₦ 4,148,808,900.00	₦ 859,719,700.00	₦ 4,882,684,300.00	₦ 4,459,705,200.00
34	Taraba	₦ 531,248,900.00	₦ 785,603,400.00	₦ 2,475,480,400.00	₦ 878,820,400.00	₦ 1,389,495,200.00	₦ 3,244,525,900.00
35	Yobe	₦ 2,187,894,400.00	₦ 2,500,320,500.00	₦ 3,497,511,100.00	₦ 829,030,800.00	₦ 3,799,677,800.00	₦ 2,986,053,000.00
36	Zamfara	₦ 4,767,284,200.00	₦ 1,622,967,600.00	₦ 4,509,006,600.00	₦ 1,308,237,500.00	₦ 3,350,176,900.00	₦ 756,637,100.00
37	All States	₦ 90,504,729,800.00	₦ 91,889,335,900.00	₦ 101,344,816,300.00	₦ 87,169,591,800.00	₦ 104,376,072,900.00	₦ 122,184,295,800.00
38							
39							

## Splitting Windows

Excel lets you split your current Excel view into two independent windows that you can scroll separately. This is useful if you want to monitor changes in two different far away parts of your Excel file that are dependent.

An example is shown below. The Excel file is a stock analysis file and at the top far right are projected values based on assumptions made far down the Excel sheet. So in order to see instantaneously the effect of a change in an assumption on the projected values, splitting window was used.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	NESTLE														
2	INCOME STATEMENT														
3	(Ngn in thousands, except per share data)		2008	2009	2010	2011	2012	Projected values		2013	2014	2015	2016	2017	
7	Revenues	N 51,742,302	N 68,317,303	N 82,726,225	N 97,961,260	N 116,707,394		N 137,714,725	N 164,102,126	N 194,753,691	N 231,258,097	N 274,377,1			
8	Cost of goods sold	31,300,680	39,956,777	46,495,387	57,368,192	66,538,762		80,083,818	94,660,140	112,028,169	133,636,694	158,128,8			
9	Gross Profit	20,441,622	28,380,526	36,230,842	40,593,068	50,168,632		57,630,906	69,441,986	82,725,522	97,621,403	116,249,1			
11	Selling, general & administrative expenses	8,537,995	12,628,323	17,297,463	19,078,795	24,179,063		26,465,637	32,428,338	38,982,529	45,876,359	54,628,9			
12	Operating Profit	11,903,627	15,732,203	18,933,379	21,514,273	25,989,569		31,165,269	37,013,648	43,742,993	51,745,043	61,620,1			
14	Interest Income, net	(41,414)	(1,948,959)	(688,925)	(3,315,024)	(939,397)		(2,190,918)	(3,106,592)	(3,313,034)	(4,335,658)	(4,315,8			
15	Earnings before income taxes	11,862,213	13,783,244	18,244,454	18,199,249	25,050,172		28,974,351	33,907,056	40,429,959	47,409,385	57,304,2			
17	Income tax expense	3,530,614	3,999,666	5,642,345	3,702,796	3,912,897		6,772,667	7,444,958	8,322,276	8,704,040	11,438,5			
19	NET EARNINGS	N 8,331,599	N 9,783,578	N 12,602,109	N 16,496,453	N 21,137,275		N 22,201,685	N 26,462,098	N 32,107,683	N 38,705,346	N 45,865			
21	x BALANCE SHEET														

And the assumptions far down

Normal Page Break Preview Custom Layout Views Workbook Views

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER LOAD TEST POWER QUERY

Zoom 100% Zoom to Selection Show Zoom

New Window All Arrange Panes Hide Synchronous Scrolling View Side by Side Window

Switch Windows Macros Macros

K9 fx =K7-K8

105  
106 x ASSUMPTIONS  
107  
108 (N\$ in thousands, except per share data) 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017  
109 Income Statement Assumptions:  
110 Revenue Growth 32.03% 21.09% 18.42% 19.14% 18.00% 19.16% 18.68% 18.74% 18.6  
111 Cost of goods sold as a % of Rev. 60.49% 58.49% 56.20% 58.56% 57.01% 58.15% 57.68% 57.52% 57.79% 57.6  
112 SG&A as a % of Rev. 16.50% 18.48% 20.91% 19.48% 20.72% 19.22% 19.76% 20.02% 19.84% 19.3  
113 Operating Profit Margin 23.01% 23.03% 22.89% 21.96% 22.27% 22.12% 22.19% 22.15% 22.17% 22.1  
114 ROIC 46.35% 46.49% 32.50% 37.44% 34.61% 36.03% 35.32% 35.67% 35.50% 35.5  
115 Cash Flow as a % of Rev 2.53% -2.33% -0.69% -3.75% 6.60% 0.47% 0.06% 0.54% 0.78% 1.6  
116 ROA 28.57% 25.61% 23.42% 23.89% 25.36% 25.37% 24.73% 24.56% 24.78% 24.9  
117 ROE 92.25% 92.79% 84.78% 71.07% 61.83% 80.54% 78.20% 75.29% 73.39% 73.8  
118 Interest Income, net as a % of Rev. -0.08% -2.85% -0.83% -3.38% -0.80% -1.59% -1.89% -1.70% -1.87% -1.5  
119 Income tax expense as a % of Rev. 6.82% 5.85% 6.82% 1.74% 3.35% 4.92% 4.54% 4.27% 3.76% 4.1  
120 Balance Sheet Assumptions:  
121 Accounts receivable as a % of Rev. 0.04% 0.04% 11.21% 11.53% 5.70% 5.70% 6.84% 8.20% 7.6  
122 Inventories as a % of Rev. 15.66% 10.27% 10.11% 7.53% 10.89% 10.89% 9.94% 9.87% 9.8  
123 Prepaid expenses and other as a % of Rev. 10.92% 10.26% 0.26% 0.26% 5.42% 5.42% 4.32% 3.14% 3.7  
124 .....

Splitting window allows us to view this two far away parts of the Excel sheet at once.

To do this, select the middle row in the Excel sheet and go to View menu and click on Split.

Normal Page Break Preview Custom Layout Views Workbook Views

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER LOAD TEST POWER QUERY

Zoom 100% Zoom to Selection Show Zoom

New Window All Arrange Panes Hide Synchronous Scrolling View Side by Side Window

Switch Windows Macros Macros

A11 fx

1 NESTLE  
2 x INCOME STATEMENT  
3 (N\$ in thousands, except per share data) 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017  
4 Revenues N 51,742,302 N 68,317,303 N 82,726,229 N 97,961,260 N 116,707,394 N 137,714,725 N 164,102,126 N 194,753,691 N 231,258,097 N 274,377,  
5 Cost of goods sold 31,300,680 39,956,777 46,495,387 57,368,192 66,538,762 80,083,818 94,660,140 112,028,169 133,636,694 158,128,8  
6 Gross Profit 20,441,622 28,360,526 36,230,842 40,593,068 50,168,632 57,630,906 69,441,986 82,725,522 97,621,403 116,249,1  
7 Selling, general & administrative expenses 8,537,995 12,628,323 17,297,463 19,078,795 24,179,063 26,465,637 32,428,338 38,982,529 45,876,359 54,628,9  
8 Operating Profit 11,903,627 15,732,203 18,933,379 23,514,273 25,989,569 31,165,269 37,013,648 43,742,993 51,745,043 61,620,1  
9  
10 Interest Income, net (41,414) (1,948,959) (688,925) (3,315,024) (939,397) (2,190,918) (3,106,592) (3,313,034) (4,335,658) (4,315,8  
11 Earnings before income taxes 11,862,213 13,783,244 18,244,454 18,199,249 25,050,172 28,974,351 33,907,056 40,429,359 47,409,385 57,304,2  
12 Income tax expense 3,530,614 3,999,666 5,642,345 1,702,796 3,912,897 6,772,667 7,444,958 8,322,276 8,704,040 11,438,5  
13 NET EARNINGS N 8,331,599 N 9,783,578 N 12,602,109 N 16,496,453 N 21,137,275 N 22,201,685 N 26,462,098 N 32,107,683 N 38,705,346 N 45,865  
14  
15 x BALANCE SHEET

Then scroll the section below the splitting point down to the assumptions part. It will scroll independent of the part above the split line.

Business Data Analysis, part 1.xlsx - Excel																							
FILE	HOME	INSERT	PAGE LAYOUT	FORMULAS	DATA	REVIEW	VIEW	DEVELOPER	LOAD TEST	POWER QUERY		Michael Olafusi											
Normal	Page Break Preview	Page Layout	Custom Views	<input checked="" type="checkbox"/> Ruler	<input checked="" type="checkbox"/> Formula Bar	<input type="checkbox"/> Gridlines	<input checked="" type="checkbox"/> Headings	<input type="checkbox"/> Zoom	100%	<input type="checkbox"/> Zoom to Selection	New Window	Arrange All	<input type="checkbox"/> Split	<input type="checkbox"/> View Side by Side	<input type="checkbox"/> Hide	<input type="checkbox"/> Synchronous Scrolling	<input type="checkbox"/> Unhide	<input type="checkbox"/> Reset Window Position	Window	<input type="checkbox"/> Switch Windows	<input type="checkbox"/> Macros	<input type="checkbox"/> Macros	
Workbook Views	Show																						
F17	:	X	✓	f	3530614																		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O									
1	NESTLE																						
2	x INCOME STATEMENT																						
5	(N\$ in thousands, except per share data)				2008	2009	2010	2011	2012	2013	2014	2015	2016	2017									
7	Revenues	N 51,742,302	N 68,317,303	N 82,726,229	N 97,961,260	N 116,707,394	N 137,714,725	N 164,102,126	N 194,753,691	N 231,258,097	N 274,377,												
8	Cost of goods sold	31,300,680	39,956,777	46,495,387	57,368,192	66,538,762	80,083,818	94,660,140	112,028,169	133,636,694	158,128,8												
9	Gross Profit	20,441,622	28,360,526	36,230,842	40,593,068	50,168,632	57,630,906	69,441,986	82,725,522	97,621,403	116,249,1												
10																							
104																							
105																							
106	x ASSUMPTIONS																						
107																							
108	(N\$ in thousands, except per share data)				2008	2009	2010	2011	2012	2013	2014	2015	2016	2017									
110	Income Statement Assumptions:																						
112	Revenue Growth		32.03%	21.09%	18.42%	19.14%	18.00%	19.16%	18.68%	18.74%	18.6												
113	Cost of goods sold as a % of Rev.	60.49%	58.49%	56.20%	58.56%	57.01%	58.15%	57.68%	57.52%	57.79%	57.6												
114	SG&A as a % of Rev.	16.50%	18.48%	20.91%	19.48%	20.72%	19.22%	19.76%	20.02%	19.84%	19.9												
115	Operating Profit Margin	23.01%	23.03%	22.89%	21.96%	22.27%	22.12%	22.19%	22.15%	22.17%	22.1												

Notice the jump from row 10 to row 104.

Now whenever you alter the assumptions you won't have to scroll up to see the effect on the projected revenue and projected profit.

## Conditional Formatting

Conditional formatting is another power tool in the power Excel user's toolbox. It allows you to indicate the relative performance of metrics (KPIs). Below is a simple example of its use.

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

## Family Monthly Budget and Expense Sheet

	Budgeted Expense for the Month	Actual Expense	Surplus/Deficit
May	NGN 40,000	NGN 35,000	NGN 5,000
Housing	Budgeted Cost	Actual Cost	Difference
House Rent	NGN 5,000	NGN 5,000	NGN 0
Business Rent	NGN 0	NGN 0	NGN 0
Phone	NGN 25,000	NGN 15,000	NGN 10,000
Electricity	NGN 10,000	NGN 15,000	-NGN 5,000
Gas			NGN 0
Water and sewer			NGN 0
Cable			NGN 0
Waste removal maintenance or			NGN 0
Supplies			NGN 0
Other			NGN 0
Total	NGN 40,000	NGN 35,000	NGN 5,000

Notice the green, yellow and red arrows. They are conditional formats that let you visually see where you are spending below your budget, where you are spending exactly what you budgeted and where you are spending above your budget.

Those are type of practical visual analysis conditional formatting provides.

You can access it via the Home menu. And it has the following formatting groups.

TABLE TOOLS

POWER QUERY DESIGN

Conditional Formatting ▾ Format as Table ▾ Cell Styles ▾ Insert Delete Format

**Highlight Cells Rules**

- Greater Than...
- Less Than...
- Between...
- Equal To...
- Text that Contains...
- A Date Occurring...
- Duplicate Values...
- More Rules...

Actual Monthly Income (Finalized at Month End)

TABLE TOOLS

POWER QUERY DESIGN

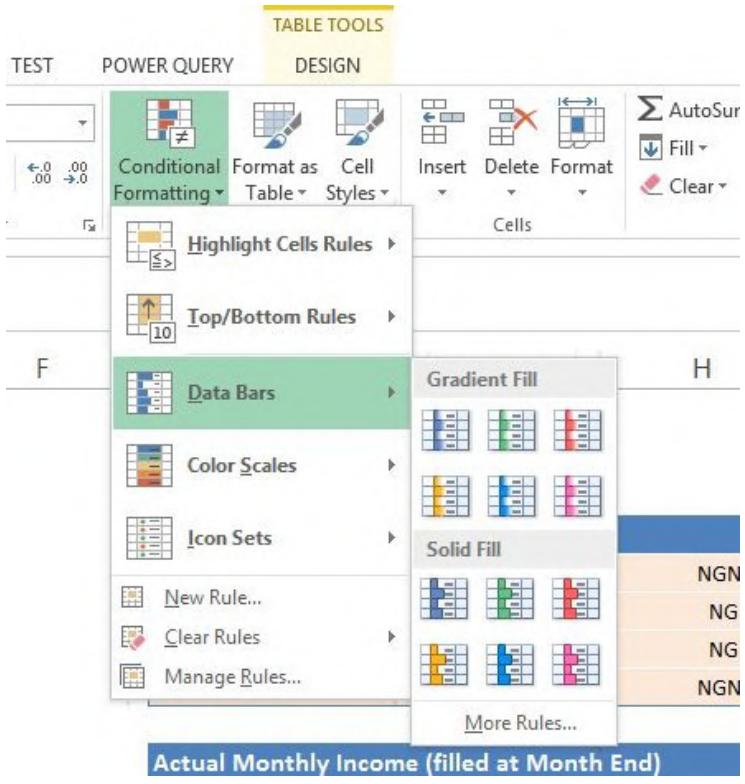
Conditional Formatting ▾ Format as Table ▾ Cell Styles ▾ Insert Delete Format

**Top/Bottom Rules**

- Top 10 Items...
- Top 10 %...
- Bottom 10 Items...
- Bottom 10 %...
- Above Average...
- Below Average...
- More Rules...

Actual Monthly Income (Finalized at Month End)

Income 1	NGN 100,000
----------	-------------



The screenshot shows the Microsoft Excel ribbon with the "Table Tools" tab selected. The "Design" tab is active. On the far right, the name "Michael Ola" is visible. The main area displays a table with columns labeled "F" and "H". The table has several rows with different background colors and icons. The "Conditional Formatting" dropdown menu is open, showing options like "Highlight Cells Rules", "Top/Bottom Rules", "Data Bars", "Color Scales", and "Icon Sets". The "Icon Sets" option is highlighted. A context menu for "Icon Sets" is displayed, containing "New Rule...", "Clear Rules", and "Manage Rules...". Below the table, there are two sections: "Actual Monthly Income" and "Budgeted Income - Budget". Each section contains four rows: "Income 1", "Income 2", "Extra income", and "Total monthly income". The "Budgeted Income - Budget" section also includes "Actual Income - Actual" and "Difference". At the bottom left, there is a "New Name..." button. The ribbon tabs include "LOAD TEST", "POWER QUERY", "DESIGN", and "Michael Ola".

# Power Excel Formulas

Excel has thousands of formulas but a select few stand out as very versatile and useful for day to day business data analysis and reporting. We are going to focus on those formulas in this section.

## VLOOKUP

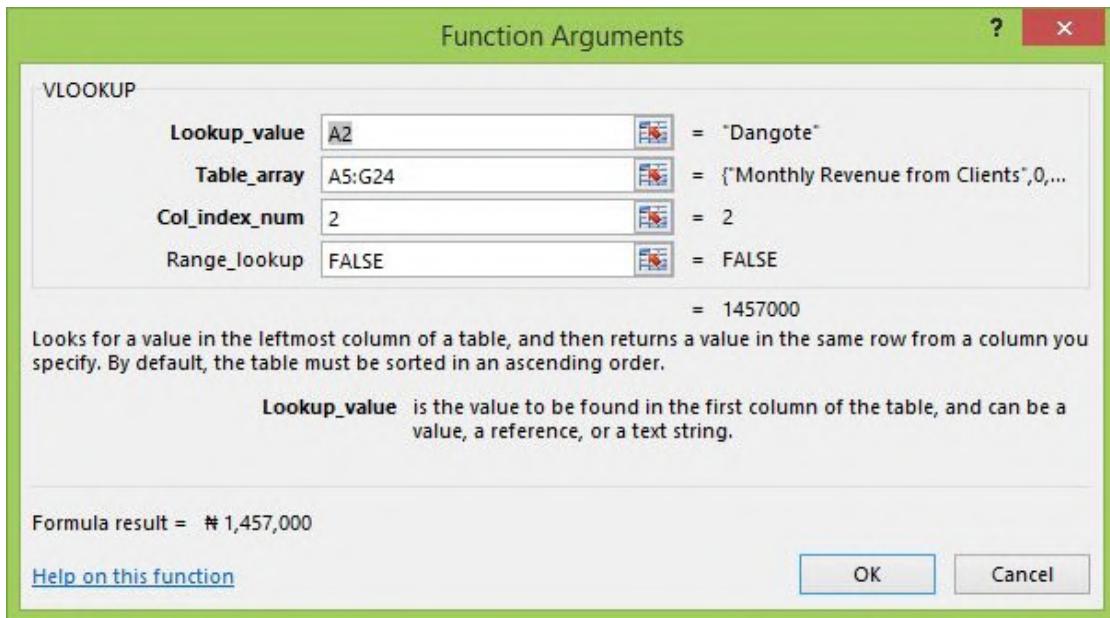
This is perhaps Excel's most popular function. In interviews it is used to sieve the power Excel users from the occasional Excel user. Its popularity lies in its ease of use and capability to get you the data you need from another table if you provide it a clue.

Below is an example of its use.

The screenshot shows a Microsoft Excel spreadsheet. The formula bar at the top contains the formula `=VLOOKUP(A2,A5:G24,2,FALSE)`. The main table below has columns labeled Jan-14 through Jun-14. Row 2 contains the formula `=VLOOKUP(A2,A5:G24,2,FALSE)` in cell B2, which is highlighted in blue. A tooltip below the formula in cell B2 displays the full formula: `VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])`. The table data starts from row 6, with columns Clients, Jan-14, Feb-14, Mar-14, Apr-14, May-14, and Jun-14. The data includes various clients like Mobil, Nestle, NBC, Exp Nigeria, Insight Nigeria, Radisson Blu, Guinness, Chevron, Etisalat, Dangote, Dana Group, Lafarge, NB, MTN, Monacom, and ARM, along with their monthly revenue figures.

Clients\Month	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Dangote	=VLOOKUP(A2,A5:G24,2,FALSE)					
Monthly Revenue from Clients						
Clients	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14
Mobil	₦ 4,129,000	₦ 3,695,000	₦ 2,770,000	₦ 4,520,000	₦ 2,223,000	₦ 3,929,000
Nestle	₦ 1,688,000	₦ 3,300,000	₦ 4,880,000	₦ 3,730,000	₦ 2,046,000	₦ 2,326,000
NBC	₦ 3,701,000	₦ 4,361,000	₦ 4,254,000	₦ 4,550,000	₦ 4,834,000	₦ 3,116,000
Exp Nigeria	₦ 2,587,000	₦ 4,198,000	₦ 2,146,000	₦ 1,062,000	₦ 2,341,000	₦ 4,713,000
Insight Nigeria	₦ 1,688,000	₦ 4,759,000	₦ 1,300,000	₦ 4,426,000	₦ 3,521,000	₦ 3,171,000
Radisson Blu	₦ 2,485,000	₦ 2,025,000	₦ 1,603,000	₦ 3,089,000	₦ 2,841,000	₦ 3,156,000
Guinness	₦ 2,703,000	₦ 1,888,000	₦ 1,360,000	₦ 1,664,000	₦ 1,097,000	₦ 4,920,000
Chevron	₦ 3,516,000	₦ 2,988,000	₦ 4,788,000	₦ 2,425,000	₦ 4,689,000	₦ 4,080,000
Etisalat	₦ 4,475,000	₦ 3,459,000	₦ 2,701,000	₦ 2,058,000	₦ 3,562,000	₦ 3,096,000
Dangote	₦ 1,457,000	₦ 3,241,000	₦ 4,441,000	₦ 1,544,000	₦ 3,749,000	₦ 3,544,000
Dana Group	₦ 2,984,000	₦ 1,882,000	₦ 2,898,000	₦ 4,618,000	₦ 2,372,000	₦ 3,723,000
LaFarge	₦ 2,111,000	₦ 3,293,000	₦ 1,427,000	₦ 3,953,000	₦ 1,616,000	₦ 2,885,000
NB	₦ 3,396,000	₦ 4,148,000	₦ 4,569,000	₦ 3,893,000	₦ 3,871,000	₦ 3,045,000
MTN	₦ 4,410,000	₦ 2,391,000	₦ 4,180,000	₦ 3,788,000	₦ 2,669,000	₦ 4,262,000
Monacom	₦ 4,190,000	₦ 2,228,000	₦ 4,615,000	₦ 2,756,000	₦ 3,123,000	₦ 1,464,000
ARM	₦ 4,536,000	₦ 1,412,000	₦ 4,313,000	₦ 1,130,000	₦ 3,700,000	₦ 3,196,000

The formula breakdown is



## Lookup\_value

=VLOOKUP(A2,A5:G24,2,FALSE)

Basically, it is asking you for the clue you have. What piece of information do you have that I should look for in the table that has everything.

## Table\_array

=VLOOKUP(A2,A5:G24,2,FALSE)

Where is the table that has everything? So here you are selecting the table that has everything.

## Col\_index\_num

=VLOOKUP(A2,A5:G24,2,FALSE)

When I see the clue, what data should I bring back? That data is in what column counting from the leftmost column in the selected table.

## Range\_lookup

=VLOOKUP(A2,A5:G24,2,FALSE)

If I am unable to find the clue, should I take a guess? Usually, you wouldn't want Excel to take a guess, that could cause you trouble. So say no by typing FALSE.

And that is how VLOOKUP works. It will look through the first column in the table you selected for the clue that you provided and when it finds it, it will bring back the data you specified for it to get.

It makes a lot of reports easy to do and very helpful with making dashboards.

The screenshot shows a Microsoft Excel interface with a formula bar at the top containing the formula `=VLOOKUP(A2,A5:G24,2,TRUE)`. The formula bar has a red arrow pointing to the `fx` button. Below the formula bar is a table with columns labeled A through G. Column A is titled "Clients\Month" and contains rows for "Dangote" and "Etisalat". Column B is titled "Jan-14" and contains the value "₦ 1,457,000" for Dangote. A red arrow points from the formula bar to this value. Another red arrow points from the formula bar to the "Etisalat" row in the table. The table also includes a header row "Monthly Revenue from Clients" and several data rows for various clients like Mobil, Nestle, NBC, etc., with their monthly revenue values.

A	B	C	D	E	F	G
1 Clients\Month	2 Jan-14	3 Feb-14	4 Mar-14	5 Apr-14	6 May-14	7 Jun-14
2 Dangote	3 ₦ 1,457,000					
Monthly Revenue from Clients						
6 Clients	7 Jan-14	8 Feb-14	9 Mar-14	10 Apr-14	11 May-14	12 Jun-14
7 Mobil	8 ₦ 4,129,000	9 ₦ 3,695,000	10 ₦ 2,770,000	11 ₦ 4,520,000	12 ₦ 2,223,000	13 ₦ 3,929,000
8 Nestle	9 ₦ 1,688,000	10 ₦ 3,300,000	11 ₦ 4,880,000	12 ₦ 3,730,000	13 ₦ 2,046,000	14 ₦ 2,326,000
9 NBC	10 ₦ 3,701,000	11 ₦ 4,361,000	12 ₦ 4,254,000	13 ₦ 4,550,000	14 ₦ 4,834,000	15 ₦ 3,116,000
10 Exp Nigeria	11 ₦ 2,587,000	12 ₦ 4,198,000	13 ₦ 2,146,000	14 ₦ 1,062,000	15 ₦ 2,341,000	16 ₦ 4,713,000
11 Insight Nigeria	12 ₦ 1,688,000	13 ₦ 4,759,000	14 ₦ 1,300,000	15 ₦ 4,426,000	16 ₦ 3,521,000	17 ₦ 3,171,000
12 Radisson Blu	13 ₦ 2,485,000	14 ₦ 2,025,000	15 ₦ 1,603,000	16 ₦ 3,089,000	17 ₦ 2,841,000	18 ₦ 3,156,000
13 Guinness	14 ₦ 2,703,000	15 ₦ 1,888,000	16 ₦ 1,360,000	17 ₦ 1,664,000	18 ₦ 1,097,000	19 ₦ 4,920,000
14 Chevron	15 ₦ 3,516,000	16 ₦ 2,988,000	17 ₦ 4,788,000	18 ₦ 2,425,000	19 ₦ 4,689,000	20 ₦ 4,080,000
15 Etisalat	16 ₦ 4,475,000	17 ₦ 3,459,000	18 ₦ 2,701,000	19 ₦ 2,058,000	20 ₦ 3,562,000	21 ₦ 3,096,000
16 Dangote	17 ₦ 1,457,000	18 ₦ 3,241,000	19 ₦ 4,441,000	20 ₦ 1,544,000	21 ₦ 3,749,000	22 ₦ 3,544,000
17 Dana Group	18 ₦ 2,984,000	19 ₦ 1,882,000	20 ₦ 2,898,000	21 ₦ 4,618,000	22 ₦ 2,372,000	23 ₦ 3,723,000
18 Lafarge	19 ₦ 2,111,000	20 ₦ 3,293,000	21 ₦ 1,427,000	22 ₦ 3,953,000	23 ₦ 1,616,000	24 ₦ 2,885,000
19 NB	20 ₦ 3,396,000	21 ₦ 4,148,000	22 ₦ 4,569,000	23 ₦ 3,893,000	24 ₦ 3,871,000	25 ₦ 3,045,000
20 MTN	21 ₦ 4,410,000	22 ₦ 2,391,000	23 ₦ 4,180,000	24 ₦ 3,788,000	25 ₦ 2,669,000	26 ₦ 4,262,000
21 Monocom	22 ₦ 4,190,000	23 ₦ 2,228,000	24 ₦ 4,615,000	25 ₦ 2,756,000	26 ₦ 3,123,000	27 ₦ 1,464,000
22 ARM	23 ₦ 4,536,000	24 ₦ 1,412,000	25 ₦ 4,313,000	26 ₦ 1,130,000	27 ₦ 3,700,000	28 ₦ 3,196,000

## IF

IF is arguably the most powerful function in Excel. It can do almost the impossible. And it's only limited by the creativity of the user.

It allows you to check for a condition and specify what should be done when the condition is met and also what should be done when it is not met.

Here is the structure.

The screenshot shows a Microsoft Excel spreadsheet. The formula bar at the top contains the formula `=IF(B24>1000000,B24*0.05,0)`. The main area displays a table with columns for Sales person, Sales Made (NGN), and Sales Bonus (NGN). Row 22 is a header row. Rows 24, 25, and 26 contain data. Row 24 shows a sales bonus of 0.00 because the sales made were less than 1 million naira. Rows 25 and 26 show sales bonuses of 250,000.00 and 100,000.00 respectively, for sales made of 5,000,000.00 and 2,000,000.00.

A	B	C	D
20			
21			
22	Sales Bonus	5% of sales when sales is more than N1,000,000, otherwise no bonus	
23	<b>Sales person</b>	<b>Sales Made (NGN)</b>	<b>Sales Bonus (NGN)</b>
24	Peter Slow	₦ 800,000.00	₦ 0.00
25	Michael Olafusi Sharp	₦ 5,000,000.00	₦ 250,000.00
26	Some Guy	₦ 2,000,000.00	₦ 100,000.00
27			
28			
29			

The screenshot shows the Microsoft Excel interface with the Function Arguments dialog box open. The dialog box is titled "Function Arguments" and is for the IF function. It shows three input fields: "Logical test" (B24>1000000), "Value\_if\_true" (B24\*0.05), and "Value\_if\_false" (0). The formula result is shown as 0.00. The dialog box also contains a description of the IF function and links to help and cancel buttons.

Function Arguments

IF

Logical test	B24>1000000	= FALSE
Value_if_true	B24*0.05	= 40000
Value_if_false	0	= 0

Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.

Logical test is any value or expression that can be evaluated to TRUE or FALSE.

Formula result = ₦ 0.00

[Help on this function](#)

OK Cancel

In the example above, we have specified a condition that only when the salesman makes more than 1 million naira worth of sales should he get the sales bonus of 5%. If he fails to meet that condition he is not entitled to any sales bonus.

## COUNTIFS and SUMIFS

These combine an inbuilt if function with simple functions like count and sum.

A relevant example is the Pizza Sales record we used for PivotTable. We could have generated the same analysis without PivotTable by using the COUNTIFS and SUMIFS functions.

S/N	Pizza Sold	Sales Amount	Time	Sales Report		
				Pizza Type	Count of Sales	Sum of Sales Amount
1	Meatzaa	₦ 2,500.00	8:00:01 AM	BBQ Chicken	310	₦ 620,000.00
2	Extravaganza	₦ 3,000.00	8:00:02 AM	BBQ Philly Steak	301	₦ 752,500.00
3	BBQ Chicken	₦ 2,000.00	8:00:04 AM	Beef Suya	314	₦ 847,800.00
4	Extravaganza	₦ 3,000.00	8:00:07 AM	Chicken Bali		
5	Meatzaa	₦ 2,500.00	8:00:08 AM	Chicken Feast		
6	Hot Veggie	₦ 2,200.00	8:00:14 AM	Chicken Legend		
7	BBQ Philly Steak	₦ 2,500.00	8:00:20 AM	Chicken Suya		
8	Chicken Feast	₦ 3,000.00	8:00:20 AM	Extravaganza		
9	Meatzaa	₦ 2,500.00	8:00:22 AM	Hot Pepperoni Feast		
10	Chicken Suya	₦ 2,500.00	8:00:25 AM	Hot Veggie		
11	Chicken Legend	₦ 2,800.00	8:00:26 AM	Italiano		
12	BBQ Philly Steak	₦ 2,500.00	8:00:27 AM	Margarita		
13	Chicken Suya	₦ 2,500.00	8:00:29 AM	Meatzaa		
14	Chicken Feast	₦ 3,000.00	8:00:33 AM	Pepperoni Feast		
15	Chicken Feast	₦ 3,000.00	8:00:33 AM	Pepperoni Suya		
16	Beef Suya	₦ 2,700.00	8:00:34 AM	Veggie Supreme		
17	Chicken Feast	₦ 3,000.00	8:00:35 AM			
18	Hot Veggie	₦ 2,200.00	8:00:35 AM			
19	Meatzaa	₦ 2,500.00	8:00:35 AM			
20	Meatzaa	₦ 2,500.00	8:00:36 AM			
21	Margarita	₦ 2,000.00	8:00:37 AM			
22	Italiano	₦ 2,000.00	8:00:40 AM			
23	Hot Veggie	₦ 2,200.00	8:00:45 AM			
24	Pepperoni Suya	₦ 2,500.00	8:00:45 AM			
25	Veggie Supreme	₦ 2,200.00	8:00:48 AM			
26	Hot Pepperoni Feast	₦ 2,500.00	8:00:49 AM			

For the Count of Sales, the COUNTIFS structure is

Function Arguments											
COUNTIFS											
Criteria_range1	B1:B5001	= {"Pizza Sold";"Meatzaa";"Extravaganza";"BBQ Chicken";"BBQ Philly Steak";"Beef Suya";"Chicken Bali";"Chicken Feast";"Chicken Legend";"Chicken Suya";"Extravaganza";"Hot Pepperoni Feast";"Hot Veggie";"Italiano";"Margarita";"Meatzaa";"Pepperoni Feast";"Pepperoni Suya";"Veggie Supreme"} = 310									
Criteria1	G3	= "BBQ Chicken"									
Counts the number of cells specified by a given set of conditions or criteria.											
Criteria_range1: is the range of cells you want evaluated for the particular condition.											
Formula result = 310											
<a href="#">Help on this function</a>											

This will count cells between range B1 and B5001 where the cell entry is equal to the G3 value (BBQ Chicken). And it was replicated for the other pizza types.

For the Sum Of Sales Amount, the SUMIFS structure is

The screenshot shows a Microsoft Excel spreadsheet with two main sections. On the left, there is a table titled "Sales Report" with columns for "Pizza Type", "Count of Sales", and "Sum of Sales Amount". The data includes rows for BBQ Chicken, BBQ Philly Steak, Beef Suya, and Chicken Bali. On the right, there is a larger table with columns for "S/N", "Pizza Sold", "Sales Amount", and "Time". A formula bar at the top shows the formula =SUMIFS(C1:C5001,B1:B5001,G3). A "Function Arguments" dialog box is open in the center, specifically for the SUMIFS function. It shows three criteria ranges: "Sum\_range" (C1:C5001), "Criteria\_range1" (B1:B5001), and "Criteria1" (G3). The "Criteria1" cell contains the value "BBQ Chicken". Below the dialog box, a note states "Adds the cells specified by a given set of conditions or criteria." and "Sum\_range: are the actual cells to sum." The formula result is displayed as 620000. Buttons for "OK" and "Cancel" are visible at the bottom of the dialog.

S/N	Pizza Sold	Sales Amount	Time
1	Meatzaa	₦ 2,500.00	8:00:01 AM
2	Extravaganza	₦ 3,000.00	8:00:02 AM
3	BBQ Chicken	₦ 2,000.00	8:00:04 AM
4	Extravaganza	₦ 3,000.00	8:00:07 AM
5	Meatzaa	₦ 2,500.00	8:00:08 AM
6	Hot Veggie	₦ 2,200.00	8:00:14 AM
7	BBQ Philly Steak	₦ 2,500.00	8:00:20 AM
8	Chicken Feast	₦ 3,000.00	8:00:20 AM
9	Meatzaa	₦ 2,500.00	8:00:22 AM
10	Chicken Suya	₦ 2,500.00	8:00:25 AM
11	Chicken Legend	₦ 2,800.00	8:00:26 AM
12	BBQ Philly Steak	₦ 2,500.00	8:00:27 AM
13	Chicken Suya	₦ 2,500.00	8:00:29 AM
14	Chicken Feast	₦ 3,000.00	8:00:33 AM
15	Chicken Feast	₦ 3,000.00	8:00:33 AM
16	Beef Suya	₦ 2,700.00	8:00:34 AM
17	Chicken Feast	₦ 3,000.00	8:00:35 AM
18	Hot Veggie	₦ 2,200.00	8:00:35 AM
19	Meatzaa	₦ 2,500.00	8:00:35 AM
20	Meatzaa	₦ 2,500.00	8:00:36 AM
21	Margarita	₦ 2,000.00	8:00:37 AM
22	Italiano	₦ 2,000.00	8:00:40 AM
23	Hot Veggie	₦ 2,200.00	8:00:45 AM
24	Pepperoni Suya	₦ 2,500.00	8:00:45 AM
25	Veggie Suoreme	₦ 2,200.00	8:00:48 AM

It will sum values in cells C1 to C5001 where the cells in B1 to B5001 has cell entry equal to G3 (BBQ Chicken).

## AVERAGEIFS

AVERAGEIFS is similar to SUMIFS. Generally, I think it is much less used than SUMIFS. In my several consulting jobs for clients I have used more of COUNTIFS and SUMIFS than AVERAGEIFS. It is particularly useful in performance analysis. An example is if you are a stock analyst and you want to find the profit margin for a particular industry. You will need to use AVERAGEIFS to specify which companies to include in the computation of the profit margin, and statistically, you can't count or sum the individual profit margins, you have to average them.

Below is an example we'll use for illustration.

	A	B	C	D
1	Company	Industry	Profit Margin	
2	Mobil	Oil & Gas	23%	
3	Dangote Cement	Manufacturing	15%	
4	Access Bank	Finance	10%	
5	Julius Berger	Construction	15%	
6	Oando	Oil & Gas	23%	
7	Arik Air	Airline	12%	
8	NBC	Food & Beverage	7%	
9	Nigerian Breweries	Food & Beverage	10%	
10	La Casera	Food & Beverage	21%	
11	Lafarge	Manufacturing	12%	
12	GTBank	Finance	23%	
13	Aero Contractors	Airline	6%	
14	Aiico Insurance	Finance	17%	
15	Berger Paints	Manufacturing	25%	
16	Cadbury	Food & Beverage	13%	
17	Nestle	Food & Beverage	23%	
18	PZ	Manufacturing	21%	
19	Unilever	Manufacturing	24%	
20	Total	Oil & Gas	22%	
21	First Bank	Finance	14%	
22	Dana Air	Airline	11%	
23				

So how do we find the profit margin performance for the Airline Industry? We have to use AVERAGEIFS.

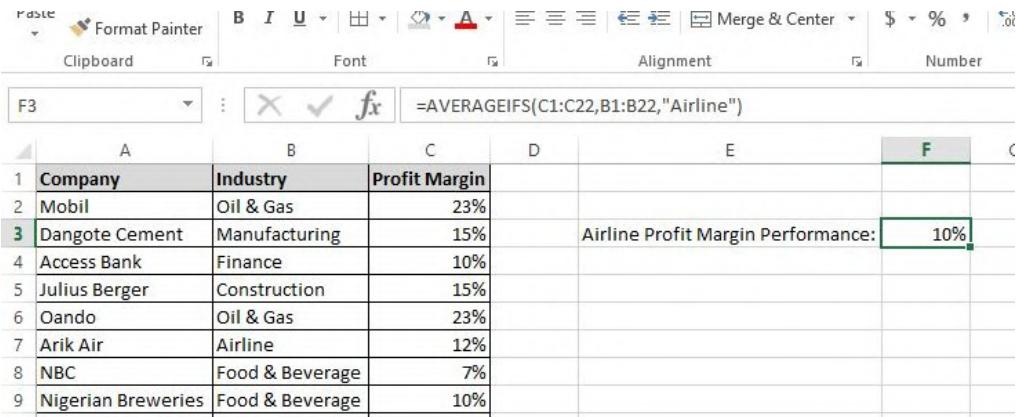
Here is how it works: =AVERAGEIFS(average\_range, criteria\_range, criteria)

The average range in our case is the Profit Margin field. That is where the profit margin values we want to average are.

The criteria range is the Industry field. It is where we will identify the companies that fall under the airline industry.

The criterion we are looking for is Airline. But remember to put it in double quotes. All texts in a formula must be in double quotes.

The resulting formula will be: =AVERAGEIFS(C1:C22,B1:B22,"Airline")



A screenshot of Microsoft Excel showing a table of company data. The table has columns for Company, Industry, Profit Margin, and a summary row. The formula bar at the top shows the formula =AVERAGEIFS(C1:C22,B1:B22,"Airline"). The summary cell F3 contains the result 10%.

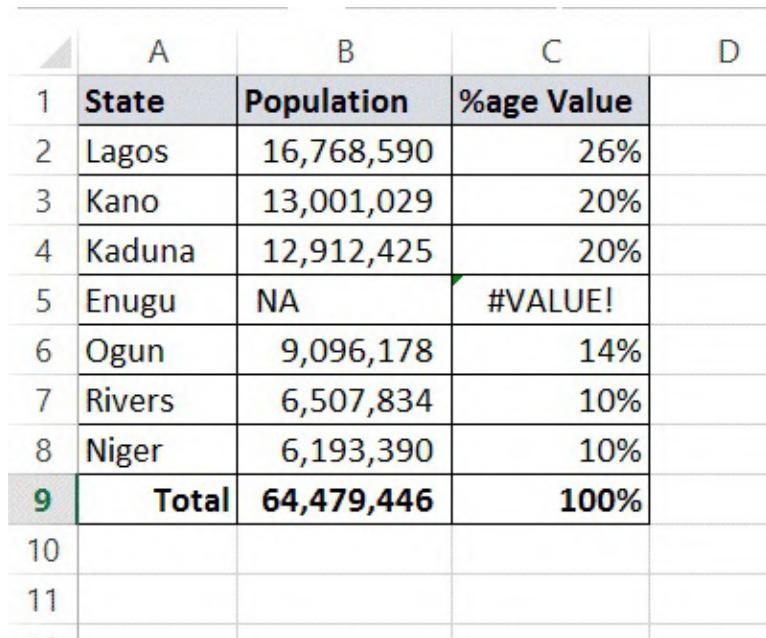
	A	B	C	D	E	F	G
1	Company	Industry	Profit Margin				
2	Mobil	Oil & Gas	23%				
3	Dangote Cement	Manufacturing	15%		Airline Profit Margin Performance:	10%	
4	Access Bank	Finance	10%				
5	Julius Berger	Construction	15%				
6	Oando	Oil & Gas	23%				
7	Arik Air	Airline	12%				
8	NBC	Food & Beverage	7%				
9	Nigerian Breweries	Food & Beverage	10%				

## IFERROR

A lot of times your formulas in Excel will generate an error. It could be for reasons beyond your control: a missing record, wrong value type or a problematic entry. IFERROR lets you trap errors and display something more meaningful or less annoying than the cryptic error entry Excel gives you.

Its syntax is: =IFERROR(value, value\_if\_error)

An example to illustrate its use is given below.



A screenshot of Microsoft Excel showing a table of state population and percentage values. The table has columns for State, Population, and %age Value. The %age Value column contains a #VALUE! error for Enugu. The summary row 9 shows a total population of 64,479,446 and a 100% value.

	A	B	C	D
1	State	Population	%age Value	
2	Lagos	16,768,590	26%	
3	Kano	13,001,029	20%	
4	Kaduna	12,912,425	20%	
5	Enugu	NA	#VALUE!	
6	Ogun	9,096,178	14%	
7	Rivers	6,507,834	10%	
8	Niger	6,193,390	10%	
9	Total	64,479,446	100%	
10				
11				

Notice that we have no value for Enugu state and it is generating an error in the %age value field. It would be nicer to have left a blank space or a hyphen instead of an error code in the Enugu row.

IFERROR can help us with that. And here is how we would do it.

	A	B	C	D	E
1	State	Population	%age Value		
2	Lagos	16,768,590	26%		
3	Kano	13,001,029	20%		
4	Kaduna	12,912,425	20%		
5	Enugu	NA	-		
6	Ogun	9,096,178	14%		
7	Rivers	6,507,834	10%		
8	Niger	6,193,390	10%		
9	Total	64,479,446	100%		
10					
11					
12					
13					

=IFERROR(B5/\$B\$9,"-") which is simply telling Excel to calculate B5/\$B\$9 and if the result is an error it should put a hyphen in the cell instead of an error code.

## CONCATENATE

Concatenate lets you join entries in different cells.

The syntax is =CONCATENATE(text1, text2, ...)

A clear example is what we have below.

	A	B	C	D	E
1	<b>First Name</b>	<b>Last Name</b>		<b>Full Name</b>	
2	Matthew	Silas			
3	Mark	Paul			
4	Luke	Apollo			
5	John	Stephen			
6					
7					

How do we join the First Name and Last Name to get the Full Name?

This is what CONCATENATE does for us.

	A	B	C	D	E
1	<b>First Name</b>	<b>Last Name</b>		<b>Full Name</b>	
2	Matthew	Silas		=CONCATENATE(A2,B2)	
3	Mark	Paul			
4	Luke	Apollo			
5	John	Stephen			
6					
7					
8					

	A	B	C	D	E
1	First Name	Last Name		Full Name	
2	Matthew	Silas		MatthewSilas	
3	Mark	Paul			
4	Luke	Apollo			
5	John	Stephen			
6					
7					
8					
9					

But there is a small problem: no space between the first name and the last name. How do we fix this?

CONCATENATE can handle that. You are not restricted to joining cell entries. You can put in your own text and that's what we will do to fix the problem we have.

	A	B	C	
1	First Name	Last Name		CONCATENATE(text1, [text2], [text3], [text4], ...)
2	Matthew	Silas		CONCATENATE(A2, " ", B2)
3	Mark	Paul		
4	Luke	Apollo		
5	John	Stephen		
6				
7				
8				
9				
10				

We have added a space between the first name and the last name. We added it as a text entry, hence the double quotes encapsulating it.

=CONCATENATE(A2, " ", B2)

	A	B	C	D	E
1	First Name	Last Name		Full Name	
2	Matthew	Silas		Matthew Silas	
3	Mark	Paul			
4	Luke	Apollo			
5	John	Stephen			
6					
7					
8					
9					

And that's how you can join different cell entries using CONCATENATE.

I'm sure you are wondering why the formula had to be a long name one. Well, there is a very short alternative operator: &.

We can simply join the different cell entries by putting an ampersand (&) between the entries. So replacing our long formula, we will have: =A3&" "&B3

	A	B	C	D	E
1	First Name	Last Name		Full Name	
2	Matthew	Silas		Matthew Silas	
3	Mark	Paul		=A3&" "&B3	
4	Luke	Apollo			
5	John	Stephen			
6					
7					
8					

Clipboard

Font

Alignment

D4

	A	B	C	D	E
1	<b>First Name</b>	<b>Last Name</b>		<b>Full Name</b>	
2	Matthew	Silas		Matthew Silas	
3	Mark	Paul		Mark Paul	
4	Luke	Apollo			
5	John	Stephen			
6					
7					
8					

Great, right?

All that is left is to drag the formula down for the other entries.

Clipboard

Font

Alignment

D3

	A	B	C	D	E
1	<b>First Name</b>	<b>Last Name</b>		<b>Full Name</b>	
2	Matthew	Silas		Matthew Silas	
3	Mark	Paul		Mark Paul	
4	Luke	Apollo			
5	John	Stephen			
6					
7					
8					
9					

	A	B	C	D	E
1	<b>First Name</b>	<b>Last Name</b>		<b>Full Name</b>	
2	Matthew	Silas		Matthew Silas	
3	Mark	Paul		Mark Paul	
4	Luke	Apollo		Luke Apollo	
5	John	Stephen		John Stephen	
6					
7					
8					

## LEFT, RIGHT and MID

There will be times you need to extract a portion of a cell's entry. A practical case was a template I built for a telecoms company to determine the least cost partner to use for each international call destination. So I had to use a formula to pick out the country codes and check which provider is the cheapest to use to that destination.

I have prepared a sample data for a simple illustration. It is the matriculation number of the university I attended. It is a clever combination of department name, year of admission and candidate number.

	A	B	C	D	E
1	<b>Federal University of Technology Akure</b>				
2					
3	<b>Matric Number</b>		<b>Dept</b>	<b>Year of Admission</b>	<b>Candidate Number</b>
4	EEE/04/2995		EEE	04	2995
5	CVE/03/1235				
6	ARC/01/3254				
7	MNE/05/1005				
8	PHY/00/2145				
9					

The first three characters are the department acronym. The two digits sandwiched between two forward slashes are the year of admission and the last four characters are the candidate number.

We are going to use LEFT to extract the department name, RIGHT to extract the candidate number and MID to extract the admission year.

The screenshot shows a Microsoft Excel spreadsheet. The formula bar at the top displays '=LEFT(A5,3)'. The spreadsheet has columns A through F. Row 1 contains the text 'Federal University of Technology Akure'. Row 2 is blank. Row 3 contains the header 'Matric Number' in column A, 'Dept' in column B, 'Year of Admission' in column C, and 'Candidate Number' in column D. Row 4 contains the data 'EEE/04/2995' in column A, 'EEE' in column B, '04' in column C, and '2995' in column D. Row 5 is selected and contains the value 'CVE/03/1235' in column A and the formula '=LEFT(A5,3)' in column C. Rows 6 through 10 are empty. The formula bar also shows 'C5' as the active cell.

	A	B	C	D	E	F
1	Federal University of Technology Akure					
2						
3	Matric Number	Dept	Year of Admission	Candidate Number		
4	EEE/04/2995	EEE	04	2995		
5	CVE/03/1235	=LEFT(A5,3)				
6	ARC/01/3254					
7	MNE/05/1005					
8	PHY/00/2145					
9						
10						

The screenshot shows the same Microsoft Excel spreadsheet after the formula was executed. Cell C5 now contains the value 'CVE'. The formula bar still shows '=LEFT(A5,3)'. The rest of the spreadsheet remains the same, with rows 6 through 10 still empty.

	A	B	C	D	E
1	Federal University of Technology Akure				
2					
3	Matric Number	Dept	Year of Admission	Candidate Number	
4	EEE/04/2995	EEE	04	2995	
5	CVE/03/1235	CVE			
6	ARC/01/3254				
7	MNE/05/1005				
8	PHY/00/2145				
9					
10					
11					

It is very easy to understand the formula: =LEFT(A5,3). You simply specify the cell you want to extract from and specify the number of characters you want to extract starting from the leftmost character.

In this example, it's three characters we want to extract starting from the left (beginning of the cell entry).

Now let's proceed to extracting the candidate number. This time we want to extract

starting from the right, four characters. So we will use RIGHT.

The screenshot shows a Microsoft Excel spreadsheet with data in columns A through F. The formula bar at the top displays the formula =RIGHT(A5,4). The cell A5 contains the string "CVE/03/1235". The cell E5 contains the result of the formula, which is "1235".

	A	B	C	D	E	F
1	Federal University of Technology Akure					
2						
3	Matric Number		Dept	Year of Admission	Candidate Number	
4	EEE/04/2995		EEE	04	2995	
5	CVE/03/1235		CVE		=RIGHT(A5,4)	
6	ARC/01/3254					
7	MNE/05/1005					
8	PHY/00/2145					
9						
10						
11						

The screenshot shows the same Microsoft Excel spreadsheet after applying the formula =RIGHT(A5,4) to row 5. The formula has been copied down to rows 6 through 11. In row 5, the formula is in cell E5 and the result is "1235". In rows 6 through 11, the formula is in cell E6, E7, E8, E9, and E10 respectively, and the results are "3254", "1005", "2145", "", and "" respectively. The formula bar at the top now shows G7.

	A	B	C	D	E	F
1	Federal University of Technology Akure					
2						
3	Matric Number		Dept	Year of Admission	Candidate Number	
4	EEE/04/2995		EEE	04	2995	
5	CVE/03/1235		CVE		1235	
6	ARC/01/3254					
7	MNE/05/1005					
8	PHY/00/2145					
9						
10						
11						

=RIGHT(A5,4)

Also very easy to understand.

Finally, let's extract the admission year. It requires the MID formula. It's a little not easy to grasp like the LEFT and RIGHT. It requires that you specify the starting point for the extraction. The concept is very easy to understand, the part that trips a lot of people up is how the starting point is determined. You have to count from the first character (from the left) to the first character you want to extract.

In this example, we will count till the first character of the year. It is the character number 5. Then you'll proceed to specify the number of characters you want to extract (2 in our case).

The screenshot shows a Microsoft Excel spreadsheet with a table of student information. The table has columns for Matric Number, Dept, Year of Admission, and Candidate Number. Row 5 contains the value 'CVE/03/1235' in column A and the formula '=MID(A5,5,2)' in column D. The formula is highlighted with a green border. The formula bar at the top also displays '=MID(A5,5,2)'. The ribbon menu is visible at the top.

	A	B	C	D	E	F
1	Federal University of Technology Akure					
2						
3	Matric Number	Dept	Year of Admission	Candidate Number		
4	EEE/04/2995	EEE	04	2995		
5	CVE/03/1235	CVE	=MID(A5,5,2)	1235		
6	ARC/01/3254					
7	MNE/05/1005					
8	PHY/00/2145					
9						
10						

The screenshot shows the same Excel spreadsheet after the formula was evaluated. The value '1235' is now displayed in cell D5, and the formula bar no longer shows the original formula. The rest of the table remains the same.

	A	B	C	D	E	F
1	Federal University of Technology Akure					
2						
3	Matric Number	Dept	Year of Admission	Candidate Number		
4	EEE/04/2995	EEE	04	2995		
5	CVE/03/1235	CVE	03	1235		
6	ARC/01/3254					
7	MNE/05/1005					
8	PHY/00/2145					
9						
10						
11						

=MID(A5,5,2)

A5 is the cell we are extracting from.

5 is the starting point.

2 is the number of characters we want to extract.

# TODAY, DAY, MONTH and YEAR

Excel allows you to do a lot on dates. There is even a formula to call up today's date; it is aptly named TODAY(). You have to enter the brackets.

The screenshot shows two instances of the Microsoft Excel interface. The top instance is the 'HOME' tab selected, displaying the ribbon menu and various toolbar icons. The formula bar at the top contains '=TODAY()' with a dropdown arrow. Below the formula bar is a table with four columns labeled 'Today's Date', 'Day of Today', 'Month of Today', and 'Year of Today'. The first row has headers, and the second row contains the formula '=TODAY()'. The bottom instance shows the result of the formula being evaluated. The 'C' column is selected, and the formula bar now displays 'Saturday, July 4, 2015'. The same table structure is present, with the third row now showing the actual date value.

	A	B	C	D	E	F
1						
2	Today's Date	Day of Today	Month of Today	Year of Today		
3	=TODAY()					
4						
5						

	A	B	C	D	E
1					
2	Today's Date	Day of Today	Month of Today	Year of Today	
3	Saturday, July 4, 2015				
4					
5					

Then you can extract the day of the date, the month of the date and the year of the date very easily.

Screenshot of Microsoft Excel showing the formula `=DAY(A3)` entered into cell B3. The formula extracts the day of the month from the date in A3.

A	B	C	D	E	F
1					
2	<b>Today's Date</b>	<b>Day of Today</b>	<b>Month of Today</b>	<b>Year of Today</b>	
3	Saturday, July 4, 2015	=DAY(A3)			
4					
5					
6					
7					

Screenshot of Microsoft Excel showing the formula `=MONTH(A3)` entered into cell C3. The formula extracts the month number from the date in A3.

A	B	C	D	E
1				
2	<b>Today's Date</b>	<b>Day of Today</b>	<b>Month of Today</b>	<b>Year of Today</b>
3	Saturday, July 4, 2015		4 =MONTH(A3)	
4				
5				
6				

Screenshot of Microsoft Excel showing the formula `=YEAR(A3)` entered into cell D3. The formula extracts the year from the date in A3.

A	B	C	D	E
1				
2	<b>Today's Date</b>	<b>Day of Today</b>	<b>Month of Today</b>	<b>Year of Today</b>
3	Saturday, July 4, 2015		4	7 =YEAR(A3)
4				
5				

Paste	Copy	Format Painter	Calibri	11	A A	= =	Wrap Text	General
Clipboard	Font	Alignment						
C10	X	✓	fx					
	A	B	C	D	E	F	G	
1								
2	Today's Date	Day of Today	Month of Today	Year of Today				
3	Saturday, July 4, 2015	4	7	2015				
4								
5								
6								
7								

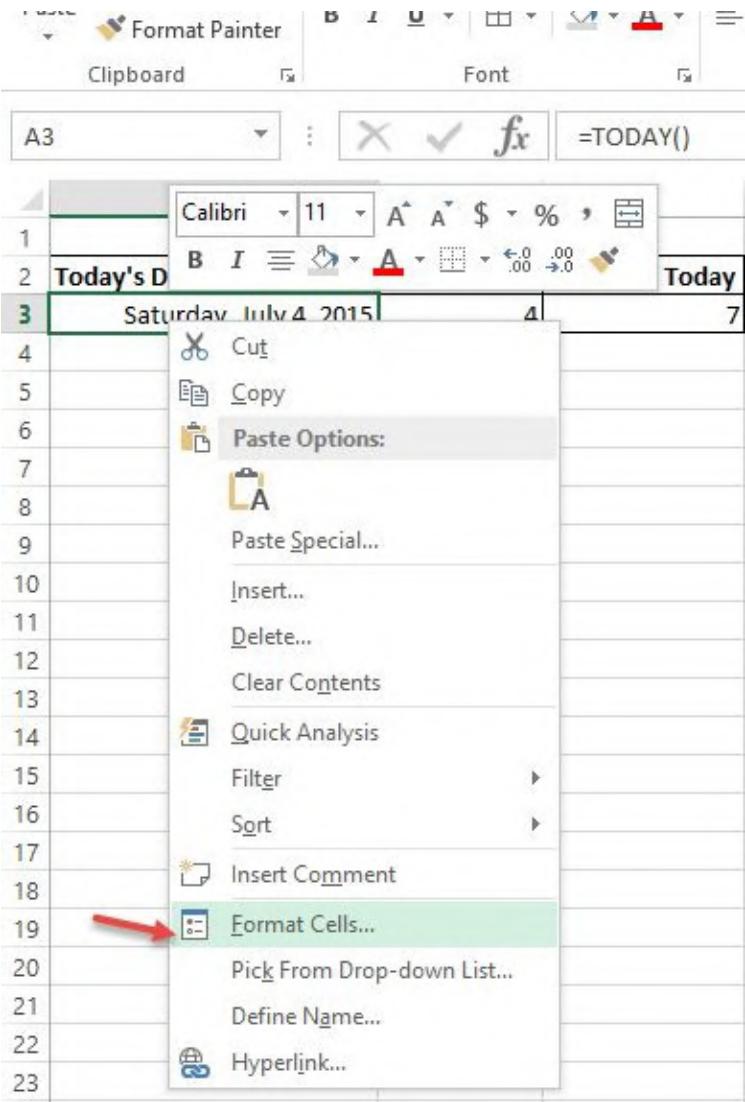
=DAY(A3)

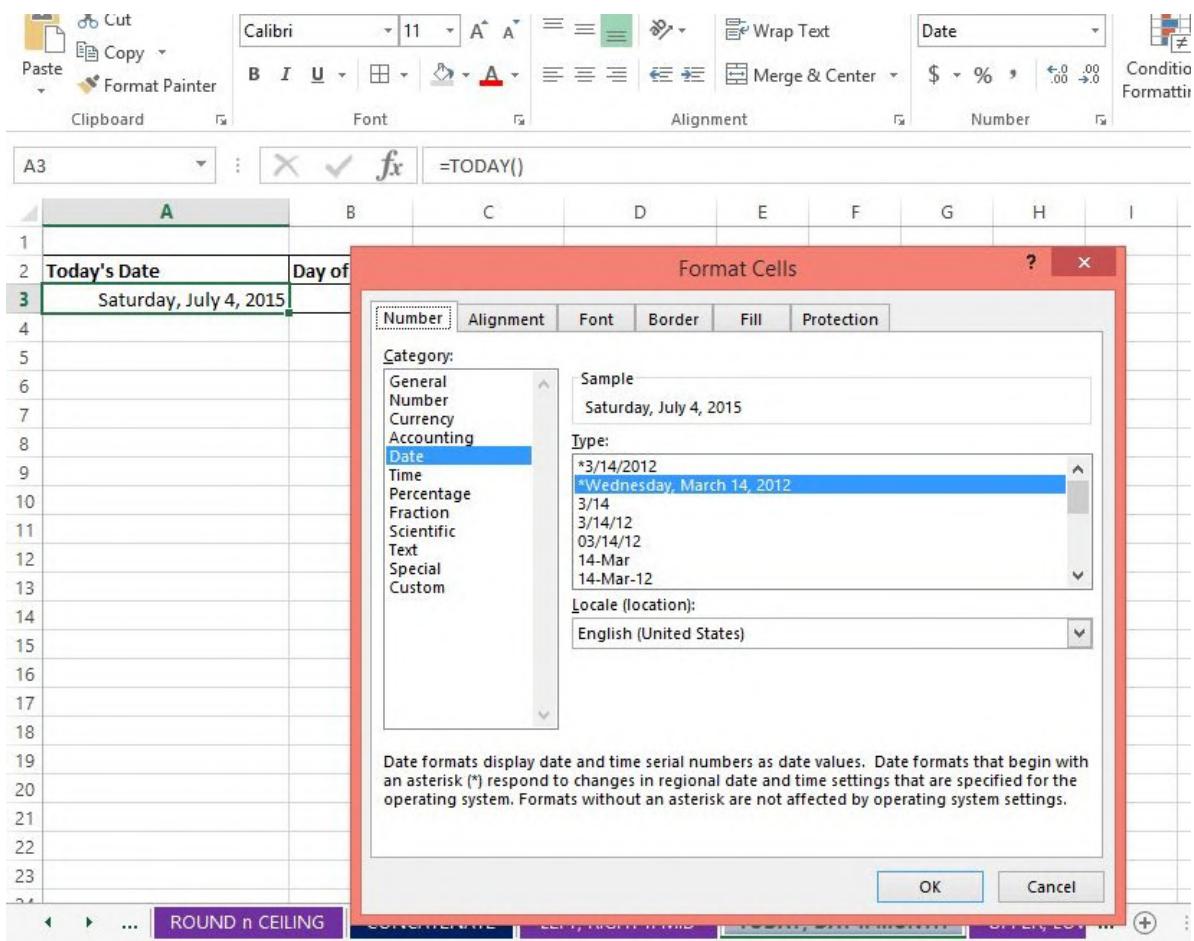
=MONTH(A3)

=YEAR(A3)

A3 is the cell that has the date. And it works on dates you manually type or copy into Excel and not just the ones we use a formula like TODAY() to generate.

Finally, Excel lets you choose how a date should be displayed. Right click on the cell housing the date and click on Format Cells.





You can specify how it should be displayed.

## UPPER, LOWER and PROPER

Ever tried changing a text from upper case to lower case in Excel? Too quickly people give up and conclude that it's not possible in Excel. Well, Excel has that functionality but as a formula.

UPPER converts a cell entry to all upper case.

LOWER converts a cell entry to all lower case.

Proper capitalizes the first letter of each word in the cell.



A1 is the cell entry we want to change the caps of.

See the results of the UPPER, LOWER and PROPER formulas below.

Function Library		
H8	:	X ✓ fx
	A	B
1	Let us change the case of this sentence	
2		
3	LET US CHANGE THE CASE OF THIS SENTENCE	
4		
5	let us change the case of this sentence	
6		
7	Let Us Change The Case Of This Sentence	
8		
9		
10		

## RAND and RANDBETWEEN

Wondered how I generated all the data I have been using for illustrations? Well, I used RAND and RANDBETWEEN for most of the numbers and even some of the texts (in conjunction with a magic formula called INDIRECT).

RAND() generates random decimal numbers that are greater than 0 but less than 1. Essentially, decimal numbers between 0 and 1 (0 and 1 non-included).

RANDBETWEEN(bottom\_number, top\_number) generates numbers between the bounds

you specified as bottom and top.

Below is a relevant example. I have used the formulas to generate sales number and profit margin.

2			
3	<b>Sales Man</b>	<b>Sales Made</b>	<b>Profit Margin</b>
4	Mark David	=RANDBETWEEN(400000,800000)	=RAND()
5	Tunde Seun	=RANDBETWEEN(400000,800000)	=RAND()
6	Akeem Saliu	=RANDBETWEEN(400000,800000)	=RAND()
7	Ahmed Tafa	=RANDBETWEEN(400000,800000)	=RAND()
8	Obi Okonkwo	=RANDBETWEEN(400000,800000)	=RAND()
9	Uche Mba	=RANDBETWEEN(400000,800000)	=RAND()
10	Inam Effiong	=RANDBETWEEN(400000,800000)	=RAND()
11	Segun Azeez	=RANDBETWEEN(400000,800000)	=RAND()
12	Kola Adesida	=RANDBETWEEN(400000,800000)	=RAND()
13	Mark Femi	=RANDBETWEEN(400000,800000)	=RAND()
14	Seun Akinde	=RANDBETWEEN(400000,800000)	=RAND()
15	Lola Adigun	=RANDBETWEEN(400000,800000)	=RAND()
16	Nana Lolu	=RANDBETWEEN(400000,800000)	=RAND()

2			
3	<b>Sales Man</b>	<b>Sales Made</b>	<b>Profit Margin</b>
4	Mark David	₦ 401,083	73%
5	Tunde Seun	₦ 720,482	8%
6	Akeem Saliu	₦ 456,036	91%
7	Ahmed Tafa	₦ 716,166	76%
8	Obi Okonkwo	₦ 739,312	74%
9	Uche Mba	₦ 564,919	13%
10	Inam Effiong	₦ 544,028	94%
11	Segun Azeez	₦ 702,257	20%
12	Kola Adesida	₦ 799,302	1%
13	Mark Femi	₦ 693,876	59%
14	Seun Akinde	₦ 657,925	52%
15	Lola Adigun	₦ 487,943	99%
16	Nana Lolu	₦ 682,111	84%

# Named Range, Goal Seek and Scenario Manager

Excel has some what-if-analysis tools that greatly help with business decision analysis. You can easily simulate effect of changes in circumstances on your business projections and create compelling business case analysis.

## Named Range

Excel lets you name a cell or a selection of cells. It's very useful when you are building models in Excel as it makes the model formulas easy to write and troubleshoot.

There are two ways to create a named range and I will start with the very quick and easy way.

Just select the cell or group of cells you want to name. Go to the name box and type in the name, replacing the cell address in the name box.



Internally Generated Revenue of States in Nigeria						
State	Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14
Imo	₦ 2,521,764,800.00	₦ 2,922,241,900.00	₦ 2,591,742,600.00	₦ 2,013,994,900.00	₦ 3,014,428,300.00	₦ 4,994,515,700.00
Abia	₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00
Lagos	₦ 7,319,183,000.00	₦ 22,681,984,500.00	₦ 6,239,473,500.00	₦ 6,211,689,500.00	₦ 11,610,307,000.00	₦ 3,351,178,500.00
Kano	₦ 2,021,735,600.00	₦ 530,613,400.00	₦ 2,981,980,300.00	₦ 3,016,518,600.00	₦ 2,387,291,000.00	₦ 4,411,651,000.00
Ondo	₦ 1,690,422,800.00	₦ 4,925,747,700.00	₦ 716,222,900.00	₦ 4,362,953,800.00	₦ 4,300,936,900.00	₦ 977,876,300.00
Kogi	₦ 2,734,189,600.00	₦ 2,825,512,800.00	₦ 2,812,863,300.00	₦ 2,306,601,300.00	₦ 2,104,687,400.00	₦ 867,264,000.00
Benue	₦ 3,864,832,700.00	₦ 3,212,451,900.00	₦ 3,479,649,000.00	₦ 2,458,711,700.00	₦ 2,700,421,800.00	₦ 4,801,142,000.00



Internally Generated Revenue of States in Nigeria						
State	Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14
Imo	₦ 2,521,764,800.00	₦ 2,922,241,900.00	₦ 2,591,742,600.00	₦ 2,013,994,900.00	₦ 3,014,428,300.00	₦ 4,994,515,700.00
Abia	₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00
Lagos	₦ 7,319,183,000.00	₦ 22,681,984,500.00	₦ 6,239,473,500.00	₦ 6,211,689,500.00	₦ 11,610,307,000.00	₦ 3,351,178,500.00
Kano	₦ 2,021,735,600.00	₦ 530,613,400.00	₦ 2,981,980,300.00	₦ 3,016,518,600.00	₦ 2,387,291,000.00	₦ 4,411,651,000.00

We've successfully named all the Imo state revenue values as Imo. As benefit number 1, we can use it in a SUM formula instead of highlighting the entire range.

A screenshot of the Microsoft Excel ribbon showing the 'Formulas' tab selected. In the formula bar, 'PMT' is defined as '=SUM(Imo)'. Below the ribbon, a table titled 'Internally Generated Revenue of States in Nigeria' is displayed. The table has columns for State and months from Feb-14 to Apr-14. The 'Imo' row contains the formula '=SUM(Imo)' in the 'Apr-14' column.

	A	B	C	D	E	F	G	H
1	Internally Generated Revenue of States in Nigeria							
2	State	Feb-14	Jun-14	Jan-14	Mar-14	May-14	Apr-14	
3	Imo	₦ 2,521,764,800.00	₦ 2,922,241,900.00	₦ 2,591,742,600.00	₦ 2,013,994,900.00	₦ 3,014,428,300.00	₦ 4,994,515,700.00	=SUM(Imo)
4	Abia	₦ 821,123,500.00	₦ 4,544,916,100.00	₦ 1,297,498,300.00	₦ 1,175,454,800.00	₦ 2,265,644,000.00	₦ 967,327,400.00	
5	Lagos	₦ 7,319,183,000.00	₦ 22,681,984,500.00	₦ 6,239,473,500.00	₦ 6,211,689,500.00	₦ 11,610,307,000.00	₦ 3,351,178,500.00	
6	Kano	₦ 2,021,735,600.00	₦ 530,613,400.00	₦ 2,981,980,300.00	₦ 3,016,518,600.00	₦ 2,387,291,000.00	₦ 4,411,651,000.00	

Another advantage will become obvious later when we do Scenario Manager.

So what is the second way of creating a named range?

It is, in fact, the standard way. It's also the only way that allows you to edit an already created named range.

Go to Formulas menu and click on the Name Manager.

A screenshot of the Microsoft Excel ribbon showing the 'Formulas' tab selected. In the formula bar, 'PMT' is defined as '=NamedRange!\$B\$3:\$G\$3'. Below the ribbon, a table titled 'Internally Generated Revenue of States in Nigeria' is displayed. The 'Name Manager' dialog box is open, showing a list of named ranges. The 'New...' button is highlighted with a red arrow (1). The 'Edit...' button is highlighted with a red arrow (2). The 'Delete' button is highlighted with a red arrow (3).

Name	Value	Refers To	Scope	Comment
Imo	₦ 2,521,764,800.00	=NamedRange!\$B\$3:\$G\$3	Workbook	

The 'Refers to:' field shows the formula '=NamedRange!\$B\$3:\$G\$3'.

You can create new named range, edit already created ones and delete a named range.

# GOAL SEEK

Goal seek is one of those powerful but seldom used tools in Excel.

It allows you to set-up a small model and tell Excel to optimize it for you based on one variable input and one set output. It's the perfect introduction to a model and linear programming in Excel.

Let's a simple and common use case. Below is a loan calculation table. Let's say I have found a huge business opportunity in large scale cocoa farming and I want to borrow N100 million from the bank. And the table below is the conditions the bank gave me: a payment period of 10 years and annual interest rate of 24%.

D11		fx
A	B	C
1	Loan Amount	₦ 100,000,000.00
2	Payment period	10
3	Interest Rate	24%
4	Payment Amount	
5		
6		

Excel has a formula for calculating the annual payment amount.

The screenshot shows a Microsoft Excel spreadsheet with a green border around the 'Function Arguments' dialog box. The dialog box is titled 'PMT' and displays the following arguments:

Argument	Value	Description
Rate	B3	= 0.24
Nper	B2	= 10
Pv	-B1	= -100000000
Fv		= number
Type		= number

Below the dialog box, the formula `=PMT(B3,B2,-B1)` is entered into cell B4. The formula result is displayed as `₦ 27,160,212.71`. The 'Function Arguments' dialog box includes a help section and OK/Cancel buttons.

So I go and check my business financial projection, and find out that I can only afford to make N20 million annual payment. What rate will I negotiate with the bank?

This is where Goal Seek comes in. We simply tell it to find out what interest rate will evaluate to N20 million annual payment.

To access Goal Seek, go to Data menu and What-If-Analysis.

FILE		HOME	INSERT	PAGE LAYOUT	FORMULAS	DATA	REVIEW	VIEW	DEVELOPER	L
From Access	From Web	From Other Sources	Existing Connections	Refresh All	Connections Properties Edit Links	Sort	Filter	Clear Reapply Advanced	Text to Columns	Flash Fill
Get External Data										
B3	:	X	✓	fx						
A	B	C	D	E	F					
1 Loan Amount	₦ 100,000,000.00									
2 Payment period	10									
3 Interest Rate	24%									
4 Payment Amount	₦ 27,160,212.71									
5										
6										
7										
8										
9										
10										

I set payment amount cell to N20 million and tell Goal Seek to vary the interest rate.

Once I click on OK, it does a series of iteration and gives me the result.

FILE		HOME	INSERT	PAGE LAYOUT	FORMULAS	DATA	REVIEW	VIEW	DEVELOPER	LOAD
From Access	From Web	From Other Sources	Existing Connections	Refresh All	Connections Properties Edit Links	Sort	Filter	Clear Reapply Advanced	Text to Columns	Flash Fill
Get External Data										
E4	:	X	✓	fx						
A	B	C	D	E	F					
1 Loan Amount	₦ 100,000,000.00									
2 Payment period	10									
3 Interest Rate	15%									
4 Payment Amount	₦ 20,000,000.00									
5										
6										
7										
8										
9										
10										
11										
12										

I should ask for 15% annual interest rate.

## **Scenario Manager**

Scenario Manager is one of Excel's decision analysis tool. It allows you compare outcome for different business scenarios.

Below is a practical business use case of the scenario manager. It is taken from our business circumstance and you'll find it very interesting.

We run a Microsoft Excel and Business Data Analysis business. Our major income streams are consulting for big multinational firms on data analysis and business process automations, and Microsoft Excel training. So let's say we decide to run a special one day Microsoft Excel training. It was specifically my idea. I had stumbled on a training advert on Punch newspaper. A one day training at VCP Hotel and costing N80,000. So I felt we should try it too. But I needed to build a convincing business case for the idea. And in doing this I used scenario manager.

I called up the hotel to get the details of the cost of hosting a full day training in their conference hall. I then went to work on the other costs that would be incurred in putting together the training. And below is the sheet of the cost details.

A	B	C	D	E
1	<b>High Quality Full Day Excel Training</b>			
2				
3	<b>Cost Item</b>	<b>Amount</b>		
4	Hotel Conference Room	₦ 600,000.00		
5	Feeding per participant	₦ 12,500.00		
6	Training Material	₦ 3,000.00		
7	Certificate	₦ 2,000.00		
8	Prize for best participant	₦ 100,000.00		
9				
10	<b>Analysis based on estimates</b>	<b>Figure</b>		
11	Number of participants	40		
12	Course Fee	₦ 100,000.00		
13	Total Feeding cost	₦ 500,000.00		
14	Conference Room cost	₦ 600,000.00		
15	Training Materials cost	₦ 120,000.00		
16	Certificate Costs	₦ 80,000.00		
17	Prize Award cost	₦ 100,000.00		
18				
19	Total Revenue	₦ 4,000,000.00		
20	Total Cost	₦ 1,400,000.00		
21	VAT Fee (5%)	₦ 200,000.00		
22	Contingencies (7%)	₦ 280,000.00		
23	<b>Gross Profit</b>	<b>₦ 2,120,000.00</b>		
24				

And the underlying formulas are:

High Quality Full Day Excel Training	
Cost Item	Amount
Hotel Conference Room	600000
Feeding per participant	12500
Training Material	3000
Certificate	2000
Prize for best participant	100000
Analysis based on estimates	Figure
Number of participants	40
Course Fee	100000
Total Feeding cost	=B11*B5
Conference Room cost	=B4
Training Materials cost	=B6*B11
Certificate Costs	=B7*B11
Prize Award cost	=B8
Total Revenue	=B11*B12
Total Cost	=SUM(B13:B17)
VAT Fee (5%)	=B19*0.05
Contingencies (7%)	=B19*0.07
Gross Profit	=B19-SUM(B20:B22)

As you can see, I have gotten every cost item listed; the estimated number of participants and the course fee too. But to build a convincing business case I need to create different scenarios. Maybe three scenarios.

- Scenario 1: The worst that could happen if we don't market the training well and put the course fee enticingly low.
- Scenario 2: The most likely thing to happen if we do our regular marketing and put up a fair course fee.
- Scenario 3: What would happen if everything goes extremely well. Which will be our marketing aim.

So how do you set up this scenarios in Excel? You use Scenario Manager.

But first we need to use Named Range for the most important cells in our scenario. They are the Gross Profit cell, the Number of Participants cell and the Course Fee cell. In our scenarios we want to monitor what the Gross Profit will be for different combinations of Number of Participants and Course Fee.

I hope you remember how to do Named Range. You simply select the cell or range, go to the name box and type in the name you want to name the selection as.

The screenshot shows a Microsoft Excel spreadsheet with the ribbon menu at the top. The 'FILE' tab is selected. In the formula bar, the name 'Number\_of\_Participants' is typed, and the value '40' is displayed. A red arrow labeled '2' points to the formula bar. The main content area contains a table titled 'High Quality Full Day Excel Training'. The first row has a purple header with columns for 'Cost Item' and 'Amount'. Rows 3 through 8 list various cost items with their amounts. Row 10 is a header for analysis. Row 11 is highlighted in green and shows 'Number of participants' in column A and '40' in column B. A red arrow labeled '1' points from the formula bar to the value '40' in cell B11.

High Quality Full Day Excel Training	
Cost Item	Amount
Hotel Conference Room	₦ 600,000.00
Feeding per participant	₦ 12,500.00
Training Material	₦ 3,000.00
Certificate	₦ 2,000.00
Prize for best participant	₦ 100,000.00
Analysis based on estimates	Figure
Number of participants	40
Course Fee	₦ 100,000.00
Total Feeding cost	₦ 500,000.00
Conference Room cost	₦ 600,000.00
Training Materials cost	₦ 120,000.00

We do same for Course Fee.

A screenshot of a Microsoft Excel spreadsheet titled "High Quality Full Day Excel Training". The ribbon menu shows FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, and REVIEW. The formula bar at the top has "Course\_Fee" and "100000".

	A	B	C	D
1		<b>High Quality Full Day Excel Training</b>		
2				
3	<b>Cost Item</b>	<b>Amount</b>		
4	Hotel Conference Room	₦ 600,000.00		
5	Feeding per participant	₦ 12,500.00		
6	Training Material	₦ 3,000.00		
7	Certificate	₦ 2,000.00		
8	Prize for best participant	₦ 100,000.00		
9				
10	<b>Analysis based on estimates</b>	<b>Figure</b>		
11	Number of participants	40		
12	Course Fee	₦ 100,000.00	1	
13	Total Feeding cost	₦ 500,000.00		
14	Conference Room cost	₦ 600,000.00		
15	Training Materials cost	₦ 120,000.00		
16	Certificate Costs	₦ 80,000.00		
17	Prize Award cost	₦ 100,000.00		
18				
19	<b>Total Revenue</b>	<b>₦ 4 000 000.00</b>		

And for Gross Profit.

Gross_Profit				
	A	B	C	D
1	<b>High Quality Full Day Excel Training</b>			
2				
3	<b>Cost Item</b>	<b>Amount</b>		
4	Hotel Conference Room	₦ 600,000.00		
5	Feeding per participant	₦ 12,500.00		
6	Training Material	₦ 3,000.00		
7	Certificate	₦ 2,000.00		
8	Prize for best participant	₦ 100,000.00		
9				
10	<b>Analysis based on estimates</b>	<b>Figure</b>		
11	Number of participants	40		
12	Course Fee	₦ 100,000.00		
13	Total Feeding cost	₦ 500,000.00		
14	Conference Room cost	₦ 600,000.00		
15	Training Materials cost	₦ 120,000.00		
16	Certificate Costs	₦ 80,000.00		
17	Prize Award cost	₦ 100,000.00		
18				
19	Total Revenue	₦ 4,000,000.00		
20	Total Cost	₦ 1,400,000.00		
21	VAT Fee (5%)	₦ 200,000.00		
22	Contingencies (7%)	₦ 280,000.00		
23	<b>Gross Profit</b>	<b>₦ 2,120,000.00</b>		

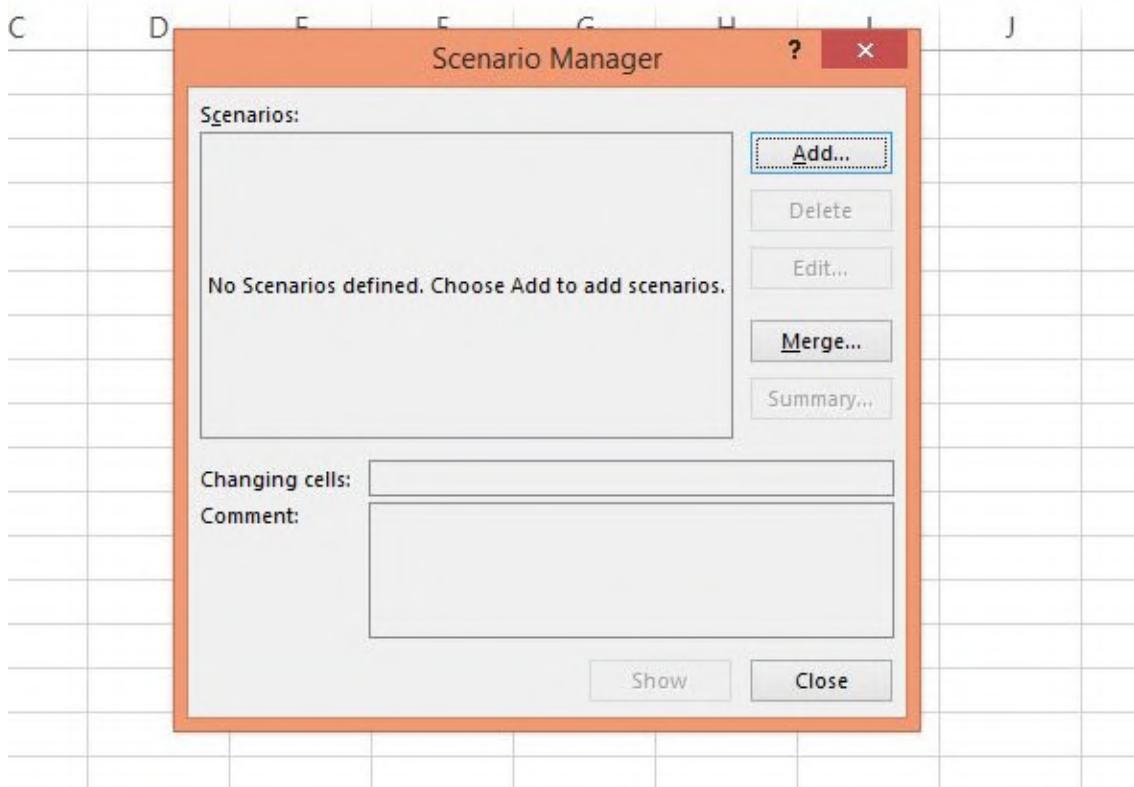
Now, we launch the Scenario Manager.

It is under Data Menu, What-If-Analysis.

The screenshot shows the Microsoft Excel ribbon with the 'DATA' tab selected. A red box highlights the 'Data Tools' icon in the ribbon. A red arrow labeled '1' points to the 'Scenario Manager...' option in the 'What-If Analysis' dropdown menu. Another red arrow labeled '2' points to 'Goal Seek...', and a third red arrow labeled '3' points to 'Data Table...'. The main worksheet area displays a table with columns for Cost Item and Amount.



20:B22)



So let's add the three different scenarios.

I'll start with the worst. Click on Add and give the Scenario name as Worst. The cells we will vary are the Number of Participants and Course Fee cells.

B11 :  $=\text{B19-SUM}(\text{B20:B22})$

A	B	C	D	E	F	G	H	I
7 Certificate	₦ 2,000.00							
8 Prize for best participant	₦ 100,000.00							
9								
10 Analysis based on estimates	Figure							
11 Number of participants	40							
12 Course Fee	₦ 100,000.00							
13 Total Feeding cost	₦ 500,000.00							
14 Conference Room cost	₦ 600,000.00							
15 Training Materials cost	₦ 120,000.00							
16 Certificate Costs	₦ 80,000.00							
17 Prize Award cost	₦ 100,000.00							
18								
19 Total Revenue	₦ 4,000,000.00							
20 Total Cost	₦ 1,400,000.00							
21 VAT Fee (5%)	₦ 200,000.00							
22 Contingencies (7%)	₦ 280,000.00							
23 Gross Profit	₦ 2,120,000.00							
24								

Click on OK.

It will ask you to set the number of participants and course fee. So based on experience, I know that if we do no serious marketing and set the price to N45,000 we can get 20 people. And that is the worst that can happen.

B23 :  $=\text{B19-SUM}(\text{B20:B22})$

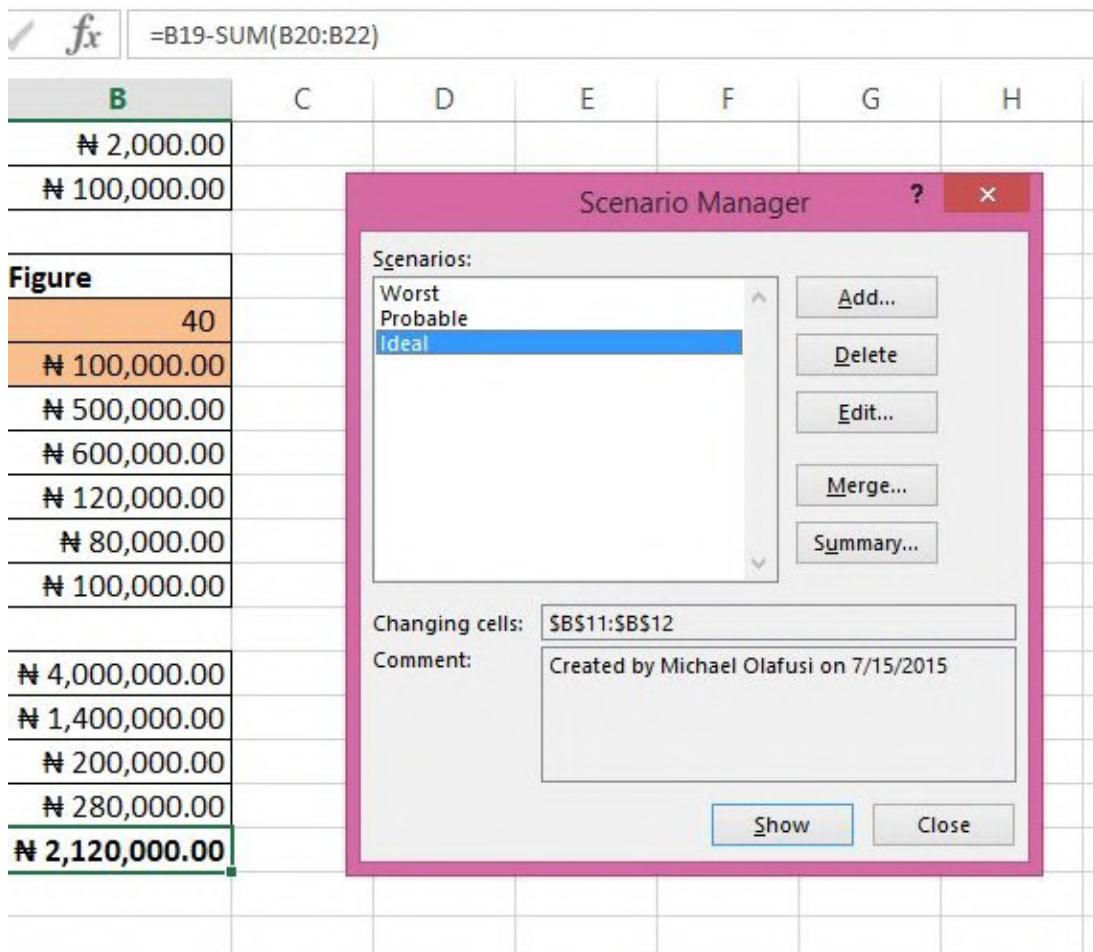
A	B	C	D	E	F	G	H
7 Certificate	₦ 2,000.00						
8 Prize for best participant	₦ 100,000.00						
9							
10 Analysis based on estimates	Figure						
11 Number of participants	40						
12 Course Fee	₦ 100,000.00						
13 Total Feeding cost	₦ 500,000.00						
14 Conference Room cost	₦ 600,000.00						
15 Training Materials cost	₦ 120,000.00						
16 Certificate Costs	₦ 80,000.00						
17 Prize Award cost	₦ 100,000.00						
18							
19 Total Revenue	₦ 4,000,000.00						
20 Total Cost	₦ 1,400,000.00						
21 VAT Fee (5%)	₦ 200,000.00						
22 Contingencies (7%)	₦ 280,000.00						
23 Gross Profit	₦ 2,120,000.00						
24							
25							

Click on OK.

Create a second scenario. Name it “Probable”. It will be what we will most likely achieve. Give the number of participants as 30 and the cost as N70,000.

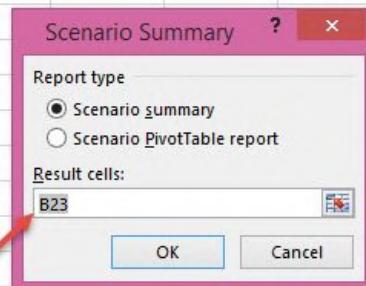
Finally, do the last scenario. Name it “Ideal”. It will be our marketing aim if we decide to go ahead with the training idea. Give the number of participants as 40 and the cost as N100,000

Once you are done, the Scenario Manager dialog box would look like the one below.



Click on Summary. It will ask you for the Result cell to monitor. That is the Gross Profit cell.

10	Analysis based on estimates	Figure
11	Number of participants	40
12	Course Fee	₦ 100,000.00
13	Total Feeding cost	₦ 500,000.00
14	Conference Room cost	₦ 600,000.00
15	Training Materials cost	₦ 120,000.00
16	Certificate Costs	₦ 80,000.00
17	Prize Award cost	₦ 100,000.00
18		
19	Total Revenue	₦ 4,000,000.00
20	Total Cost	₦ 1,400,000.00
21	VAT Fee (5%)	₦ 200,000.00
22	Contingencies (7%)	₦ 280,000.00
23	Gross Profit	₦ 2,120,000.00
24		



Click on OK.

You will be taken to a new sheet showing the comparison of the different scenarios.

	Current Values:	Worst	Probable	Ideal
Number_of_Participants	40	20	30	40
Course_Fee	₦ 100,000.00	₦ 45,000.00	₦ 70,000.00	₦ 100,000.00
Gross_Profit	₦ 2,120,000.00	-₦ 258,000.00	₦ 623,000.00	₦ 2,120,000.00

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

And as you can see, I now have a convincing case to show my partners and make them agree to organizing the one day training.

That's how easy and powerful the Scenario Manager is.

# **Introduction To Excel VBA (macros)**

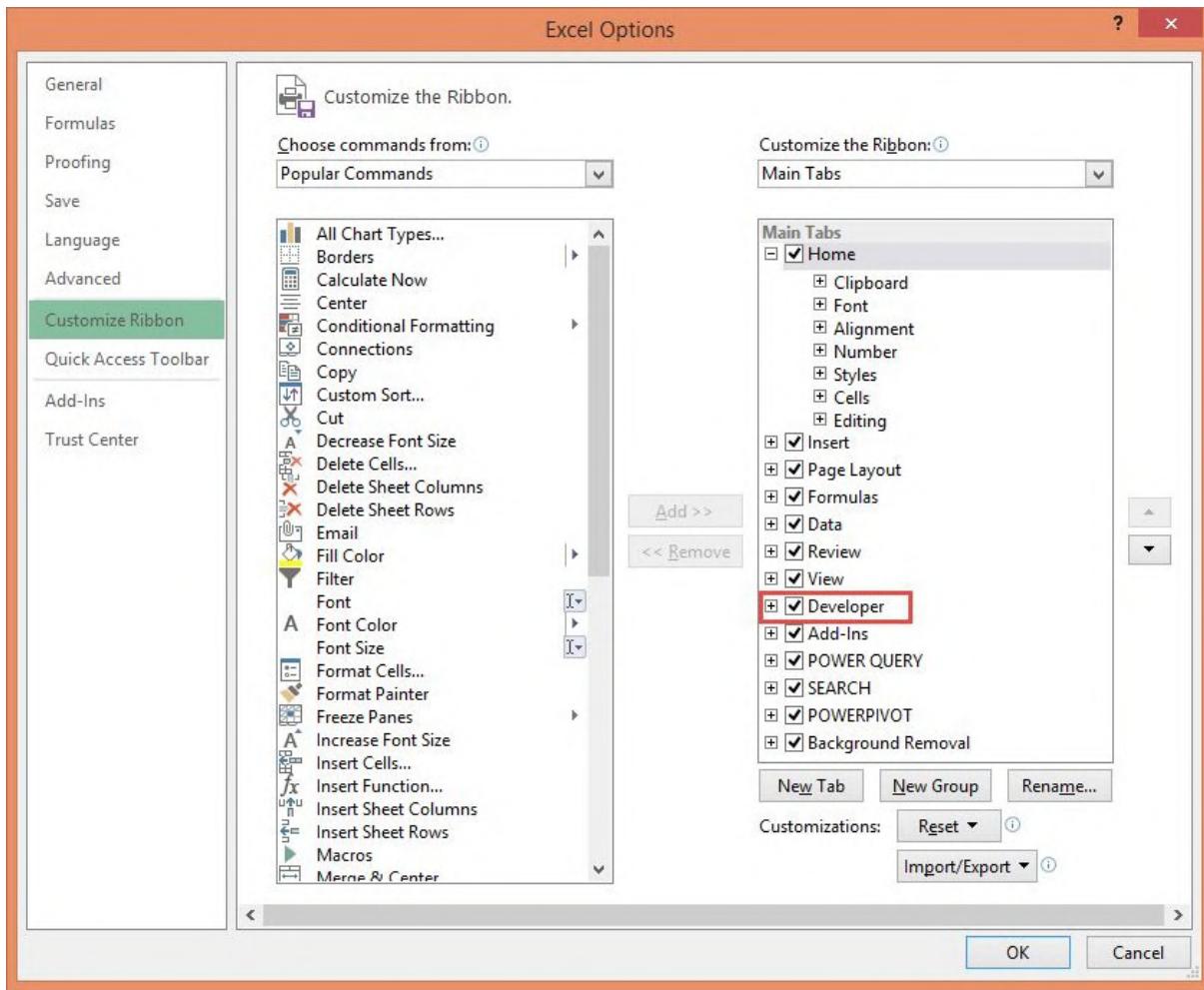
A lot of people feel making macros in Excel is extremely hard and should be left only people who make a living from doing it full-time. If you are one of such people, I have a pleasant surprise for you. Macros in Excel are very easy and in the next five minutes I will guide you into making one.

So just before we start, let me do a brief explanation of what a macro is, why you might need to make one and the benefits of being able to make one.

Macros are simply a means of automating tasks in Excel. It's no more than that. You might need to do it when you have a daily or weekly report you make that is of an unvarying standard format, input and output-wise. Having a macro can cut your analysis time from hours to 15 seconds. It's like magic and everyone in your office will see you as a special being.

To be able to make macros, you need to make a small settings change in your Microsoft Excel.

Go to Files, Options and Customize Ribbon. Check the box beside Developer.



Now you will be able to access the Developer menu.

Excel Macros (VBA).xlsx - Excel

The screenshot shows the Excel ribbon with the DEVELOPER tab selected. The DEVELOPER tab contains several icons for managing macros and add-ins. A red box highlights this tab and its icons.

Month	Toyota	Ford	Mercerdes Benz	BMW	GMC
Jan-13	John Sparrow	54	95	46	123
	Jane Porter	90	86	138	90
	Mark Spencer	144	142	74	156
	Kate Greitz	71	158	120	96
	Michael Peter	131	141	145	156
	Total	490	622	523	621
Feb-13	John Sparrow	60	105	107	102
	Jane Porter	124	126	147	116
	Mark Spencer	143	139	77	48
	Kate Greitz	81	153	122	58
	Michael Peter	148	126	101	160
	Total	556	649	554	484
Mar-13	John Sparrow	116	65	94	96
	Jane Porter	104	103	133	61

Video 14 | **Record Macro** | +

Also enabling the Macro record button which we will use in this introduction to Excel VBA.

Month	Toyota	Ford	Mercerdes Benz	BMW	GMC
Jan-13	Kate Greitz	71	158	120	96
	Michael Peter	131	141	145	156
	Total	490	622	523	621
Feb-13	John Sparrow	60	105	107	102
	Jane Porter	124	126	147	116
	Mark Spencer	143	139	77	48
	Kate Greitz	81	153	122	58
	Michael Peter	148	126	101	160
	Total	556	649	554	484
Mar-13	John Sparrow	116	65	94	96
	Jane Porter	104	103	133	61

Video 14 | **Record Macro** | +

READY

Next, I will show you how to create a macro by clicking the right button twice — the macro record button.

I have prepared a sample illustration data.

	A	B	C	D	E	F	G	H
1	XYZ Car Dealership Sales Record for year 2013							
3	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC		
4	John Sparrow	54	95	46	123	139		
5	Jane Porter	90	86	138	90	152		
6	Mark Spencer	144	142	74	156	54		
7	Kate Greitz	71	158	120	96	132		
8	Michael Peter	131	141	145	156	153		
9	Total	490	622	523	621	630		
10								
11								
12	Feb-13	Toyota	Ford	Mercerdes Benz	BMW	GMC		
13	John Sparrow	60	105	107	102	61		
14	Jane Porter	124	126	147	116	113		
15	Mark Spencer	143	139	77	48	125		
16	Kate Greitz	81	153	122	58	152		
17	Michael Peter	148	126	101	160	104		
18	Total	556	649	554	484	555		
19								
20								
21	Mar-13	Toyota	Ford	Mercerdes Benz	BMW	GMC		
22	John Sparrow	116	65	94	96	116		
23	Jane Porter	104	103	133	61	62		

It is fictitious table of Sales at an Autodealership by the different salesmen and the car make.

So the task I will use a macro to automate is a series of formatting steps.

**Note:** For the gurus, it would be obvious that copy pasting format would have done the same thing our macro will do. Yes. But we have to do the illustration with something not too complex to confuse anyone. The good thing is that you will learn all the steps required to make any complex recorded macro you desire.

So here are the easy steps to creating a macro.

First, I select the month I want to manually do the formatting for and have the macro recorder save my steps.

A	B	C	D	E	F	G	H
XYZ Car Dealership Sales Record for year 2013							
Jan-13 Toyota Ford Mercerdes Benz BMW GMC							
4 John Sparrow	54	95	46	123	139		
5 Jane Porter	90	86	138	90	152		
6 Mark Spencer	144	142	74	156	54		
7 Kate Greitz	71	158	120	96	132		
8 Michael Peter	131	141	145	156	153		
9 Total	490	622	523	621	630		
Feb-13 Toyota Ford Mercerdes Benz BMW GMC							
13 John Sparrow	60	105	107	102	61		
14 Jane Porter	124	126	147	116	113		
15 Mark Spencer	143	139	77	48	125		
16 Kate Greitz	81	153	122	58	152		
17 Michael Peter	148	126	101	160	104		
18 Total	556	649	554	484	555		
Mar-13 Toyota Ford Mercerdes Benz BMW GMC							
22 John Sparrow	116	65	94	96	116		
23 Jane Porter	104	103	133	61	62		

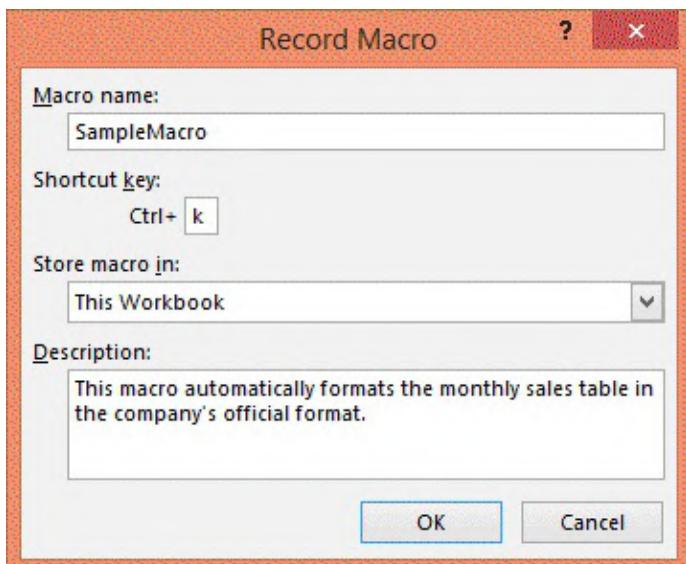
Click on the macro record button.

	XYZ Car Dealership Sales Record for year 2013					
	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC
4	John Sparrow	54	95	46	123	139
5	Jane Porter	90	86	138	90	152
6	Mark Spencer	144	142	74	156	54
7	Kate Greitz	71	158	120	96	132
8	Michael Peter	131	141	145	156	153
9	<b>Total</b>					<b>630</b>
10						
11						
12	<b>Feb-1</b>					
13	John Sparrow					61
14	Jane Porter					113
15	Mark Spencer					125
16	Kate Greitz					152
17	Michael Peter					104
18	<b>Total</b>					<b>555</b>
19						
20						
21	<b>Mar-1</b>					
22	John Sparrow	104	103	133	61	116
23	Jane Porter					62

Video 14      Record Macro      +

READY 

Give the macro a name, a keyboard shortcut and a description.



A3 :    1/1/2013

	A	B	C	D	E	F	G	H	I	J	K
1	XYZ Car Dealership Sales Record for year 2013										
3	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC					
4	John Sparrow		54	95	46	123	139				
5	Jane Porter		90	86	138	90	152				
6	Mark Spencer		144	142	74	156	54				
7	Kate Greitz		71	158	120	96	132				
8	Michael Peter		131	141	145	156	153				
9	Total		490	622	523	621	630				
10											
11											
12	Feb-13	Toyota	Ford	Mercerdes Benz	BMW	GMC					
13	John Sparrow		60	105	107	102	61				
14	Jane Porter		124	126	147	116	113				
15	Mark Spencer		143	139	77	48	125				
16	Kate Greitz		81	153	122	58	152				
17	Michael Peter		148	126	101	160	104				
18	Total		556	649	554	484	555				
19											
20											
21	Mar-13	Toyota	Ford	Mercerdes Benz	BMW	GMC					
22	John Sparrow		116	65	94	96	116				
23	Jane Porter		104	103	133	61	62				

Click on OK.

Then begin doing the formatting steps. I change the font type, font color and add border, making it have our corporate color feel. Once I am done, I click on the stop recording button.

A	B	C	D	E	F	G	H
<b>XYZ Car Dealership Sales Record for year 2013</b>							
3	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC	
4	John Sparrow	54	95	46	123	139	
5	Jane Porter	90	86	138	90	152	
6	Mark Spencer	144	142	74	156	54	
7	Kate Greitz	71	158	120	96	132	
8	Michael Peter	131	141	145	156	153	
9	<b>Total</b>	<b>490</b>	<b>622</b>	<b>523</b>	<b>621</b>	<b>630</b>	
10							
11							
12	Feb-13	Toyota	Ford	Mercerdes Benz	BMW	GMC	
13	John Sparrow	60	105	107	102	61	
14	Jane Porter	124	126	147	116	113	
15	Mark Spencer	143	139	77	48	125	
16	Kate Greitz	81	153	122	58	152	
17	Michael Peter	148	126	101	160	104	
18	<b>Total</b>	<b>556</b>	<b>649</b>	<b>554</b>	<b>484</b>	<b>555</b>	
19							
20							
21	Mar-13	Toyota	Ford	Mercerdes Benz	BMW	GMC	
22	John Sparrow	116	65	94	96	116	
23	Jane Porter	104	103	133	61	62	

Video 14

**Record Macro**

READY



And that's all. We have created a macro. Next is to try it out and see it work.

Select another month's record and press CTRL + k (the keyboard shortcut we used for the macro).

	A	B	C	D	E	F	G	
1	<b>XYZ Car Dealership Sales Record for year 2013</b>							
2								
3	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC		
4	John Sparrow	54	95	46	123	139		
5	Jane Porter	90	86	138	90	152		
6	Mark Spencer	144	142	74	156	54		
7	Kate Greitz	71	158	120	96	132		
8	Michael Peter	131	141	145	156	153		
9	<b>Total</b>	<b>490</b>	<b>622</b>	<b>523</b>	<b>621</b>	<b>630</b>		
10								
11								
12	Feb-13	Toyota	Ford	Mercerdes Benz	BMW	GMC		
13	John Sparrow	60	105	107	102	61		
14	Jane Porter	124	126	147	116	113		
15	Mark Spencer	143	139	77	48	125		
16	Kate Greitz	81	153	122	58	152		
17	Michael Peter	148	126	101	160	104		
18	<b>Total</b>	<b>556</b>	<b>649</b>	<b>554</b>	<b>484</b>	<b>555</b>		
19								
20								
21	Mar-13	Toyota	Ford	Mercerdes Benz	BMW	GMC		
22	John Sparrow	116	65	94	96	116		
23	Jane Porter	104	103	133	61	62		

&lt;

Video 14

Record Macro

(+)

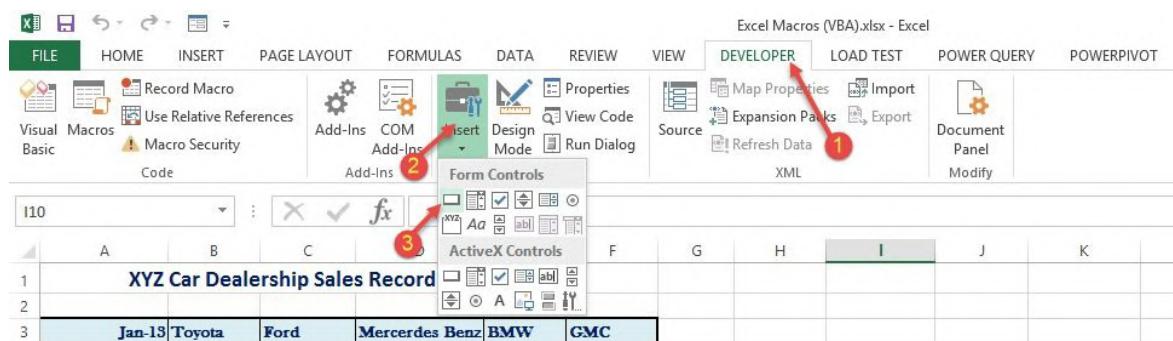
A12 : X ✓ fx 2/1/2013

	A	B	C	D	E	F	G
1	<b>XYZ Car Dealership Sales Record for year 2013</b>						
2							
3	<b>Jan-13</b>	<b>Toyota</b>	<b>Ford</b>	<b>Mercerdes Benz</b>	<b>BMW</b>	<b>GMC</b>	
4	John Sparrow	54	95	46	123	139	
5	Jane Porter	90	86	138	90	152	
6	Mark Spencer	144	142	74	156	54	
7	Kate Greitz	71	158	120	96	132	
8	Michael Peter	131	141	145	156	158	
9	<b>Total</b>	<b>490</b>	<b>622</b>	<b>523</b>	<b>621</b>	<b>630</b>	
10							
11							
12	<b>Feb-13</b>	<b>Toyota</b>	<b>Ford</b>	<b>Mercerdes Benz</b>	<b>BMW</b>	<b>GMC</b>	
13	John Sparrow	60	105	107	102	61	
14	Jane Porter	124	126	147	116	113	
15	Mark Spencer	143	139	77	48	125	
16	Kate Greitz	81	153	122	58	152	
17	Michael Peter	148	126	101	160	104	
18	<b>Total</b>	<b>556</b>	<b>649</b>	<b>554</b>	<b>484</b>	<b>555</b>	
19							
20							
21	<b>Mar-13</b>	<b>Toyota</b>	<b>Ford</b>	<b>Mercerdes Benz</b>	<b>BMW</b>	<b>GMC</b>	
22	John Sparrow	116	65	94	96	116	
23	Jane Porter	104	103	133	61	62	
		Video 14	<b>Record Macro</b>				

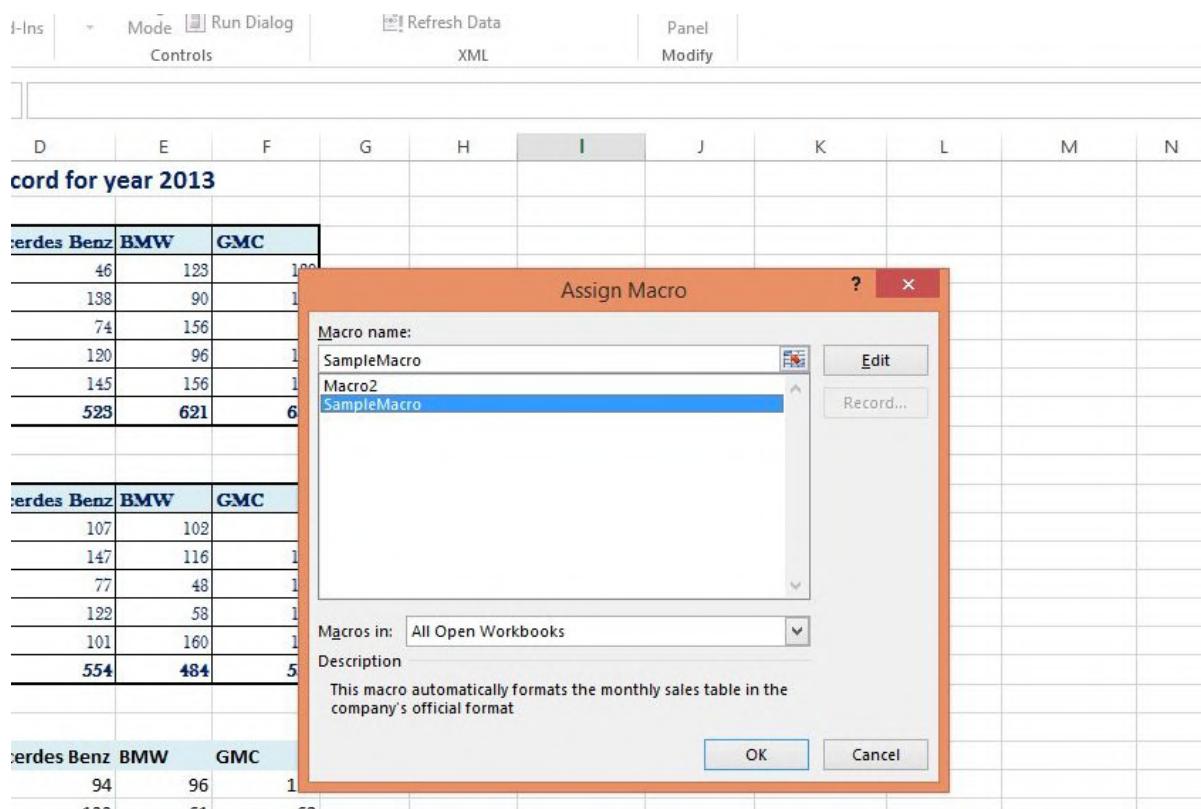
Voila! It works!

So let's insert a macro button. A button you will click to run the macro. I am sure you've seen one before. They are super easy to create.

Go to the Developer menu, Insert and select Button under Form Controls.



Draw a rectangular button where you want the macro button to be. Immediately, Excel will ask you to select the macro to link it to. Select the macro we just created.



Click on OK.

Then edit the name of the rectangular button.

	E	F	G	H	I	J	K	L
· year 2013								
nz	<b>BMW</b>	<b>GMC</b>						
46	123	139						
38	90	152						
74	156	54						
20	96	132						
45	156	153						
23	<b>621</b>	<b>630</b>						
nz	<b>BMW</b>	<b>GMC</b>						
07	102	61						
47	116	113						
77	48	125						
22	58	152						

And that's it! You've created a macro button.

Now select another month's data and click on the macro button to see it work the magic we configured it for.

A21						G	H	I	J	K
2										
3	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC				
4	John Sparrow	54	95	46	123	139				
5	Jane Porter	90	86	138	90	152				
6	Mark Spencer	144	142	74	156	54				
7	Kate Greitz	71	158	120	96	132				
8	Michael Peter	131	141	145	156	153				
9	<b>Total</b>	<b>490</b>	<b>622</b>	<b>523</b>	<b>621</b>	<b>630</b>				
10										
11										
12	Feb-13	Toyota	Ford	Mercerdes Benz	BMW	GMC				
13	John Sparrow	60	105	107	102	61				
14	Jane Porter	124	126	147	116	113				
15	Mark Spencer	143	139	77	48	125				
16	Kate Greitz	81	153	122	58	152				
17	Michael Peter	148	126	101	160	104				
18	<b>Total</b>	<b>556</b>	<b>649</b>	<b>554</b>	<b>484</b>	<b>555</b>				
19										
20										
21	Mar-13	Toyota	Ford	Mercerdes Benz	BMW	GMC				
22	John Sparrow	116	65	94	96	116				
23	Jane Porter	104	103	133	61	62				
24	Mark Spencer	110	63	87	128	88				
25	Kate Greitz	74	51	45	80	144				
26	Michael Peter	79	55	164	95	51				
27	<b>Total</b>	<b>483</b>	<b>337</b>	<b>523</b>	<b>460</b>	<b>461</b>				

See the result!

The screenshot shows an Excel spreadsheet with three data tables. The first table (Row 3) is for January 2013, the second (Row 12) for February, and the third (Row 21) for March. Each table has columns for Toyota, Ford, Mercedes Benz, BMW, and GMC. Row 9 shows totals for each month. A button labeled "Run Macro!" is located in the top right corner of the spreadsheet area.

A	B	C	D	E	F	G	H	I	J	K
2										
3	Jan-13	Toyota	Ford	Mercerdes Benz	BMW	GMC				
4	John Sparrow	54	95	46	128	139				
5	Jane Porter	90	86	138	90	152				
6	Mark Spencer	144	142	74	156	54				
7	Kate Greitz	71	158	120	96	132				
8	Michael Peter	131	141	145	156	153				
9	<b>Total</b>	<b>490</b>	<b>622</b>	<b>523</b>	<b>621</b>	<b>630</b>				
10										
11										
12	Feb-13	Toyota	Ford	Mercerdes Benz	BMW	GMC				
13	John Sparrow	60	105	107	102	61				
14	Jane Porter	124	126	147	116	113				
15	Mark Spencer	143	139	77	48	125				
16	Kate Greitz	81	153	122	58	152				
17	Michael Peter	148	126	101	160	104				
18	<b>Total</b>	<b>556</b>	<b>649</b>	<b>554</b>	<b>484</b>	<b>555</b>				
19										
20										
21	Mar-13	Toyota	Ford	Mercerdes Benz	BMW	GMC				
22	John Sparrow	116	65	94	96	116				
23	Jane Porter	104	108	133	61	62				
24	Mark Spencer	110	63	87	128	88				
25	Kate Greitz	74	51	45	80	144				
26	Michael Peter	79	55	164	95	51				
27	<b>Total</b>	<b>483</b>	<b>337</b>	<b>523</b>	<b>460</b>	<b>461</b>				
28										

Amazing, isn't it?

I hope you are now convinced that creating a macro in Excel is very easy.

It's now time for you to think up other creative ways to use a recorded macro.

Bonne chance!