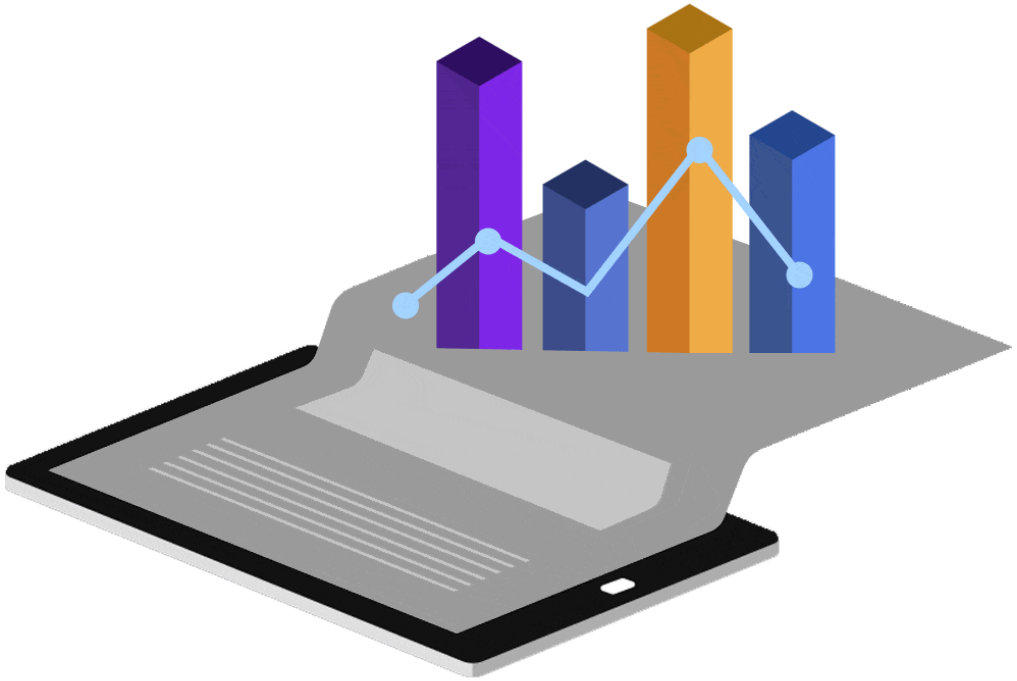
10Alytics
data & strategy



Excel For Data Analytics

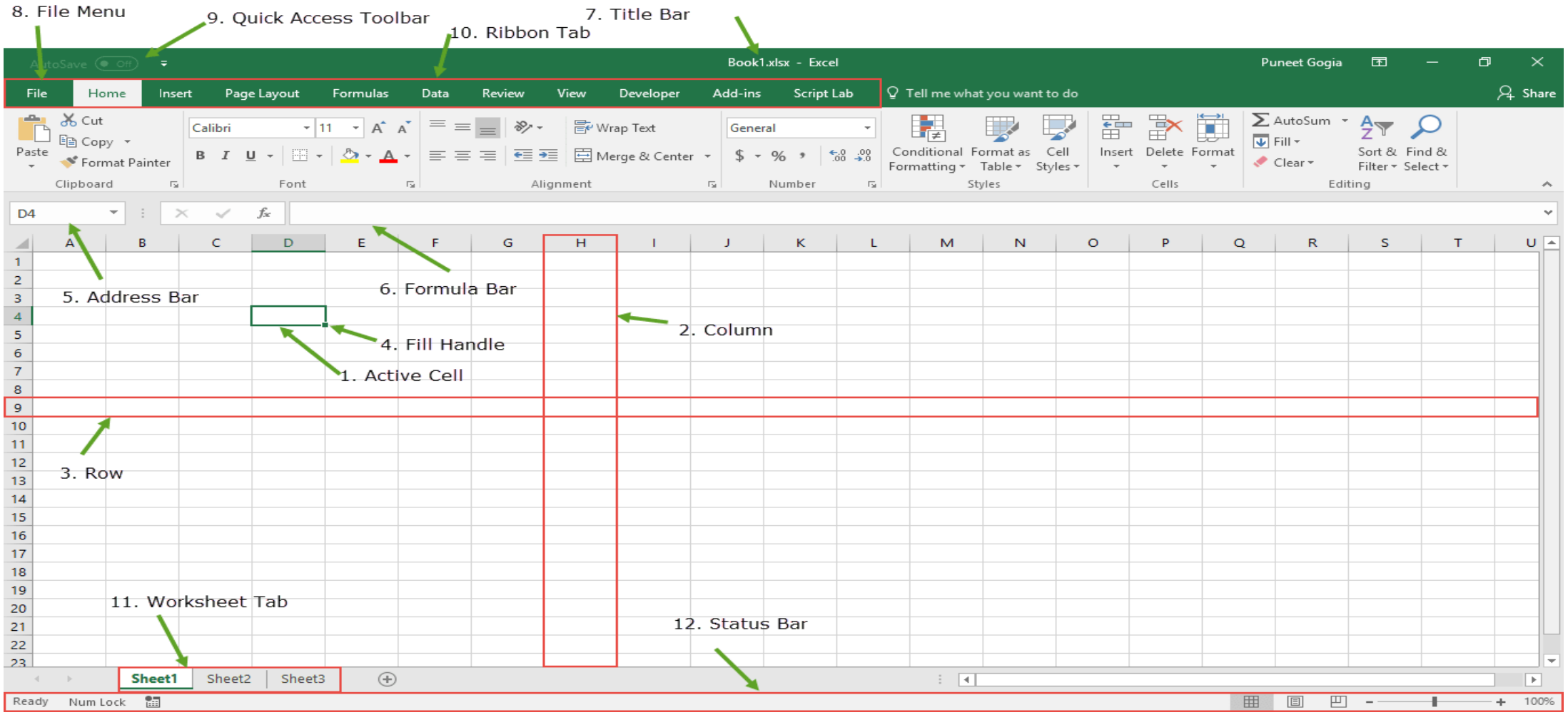
MODULE 1 - Introduction to Excel for Analytics

LEARNING OUTCOMES
• Video 1 – Introduction to Excel • Video 2 – Paste Special • Video 3 – Basic & Conditional Formatting • Video 4 – Name Range & Cell Referencing • Video 5 – Data Cleaning

Introduction to Excel

- The most widely used spreadsheet application
- Basically used for calculations, charting, and database
- The spreadsheet contains rows (horizontal) and columns (vertical)
- The meeting point of a row and column is a cell
- A cell is where you input your data. Every cell has a name
- Worksheet is a single page of an Excel sheet that contains cell
- The combination of more than one worksheet is called a Workbook

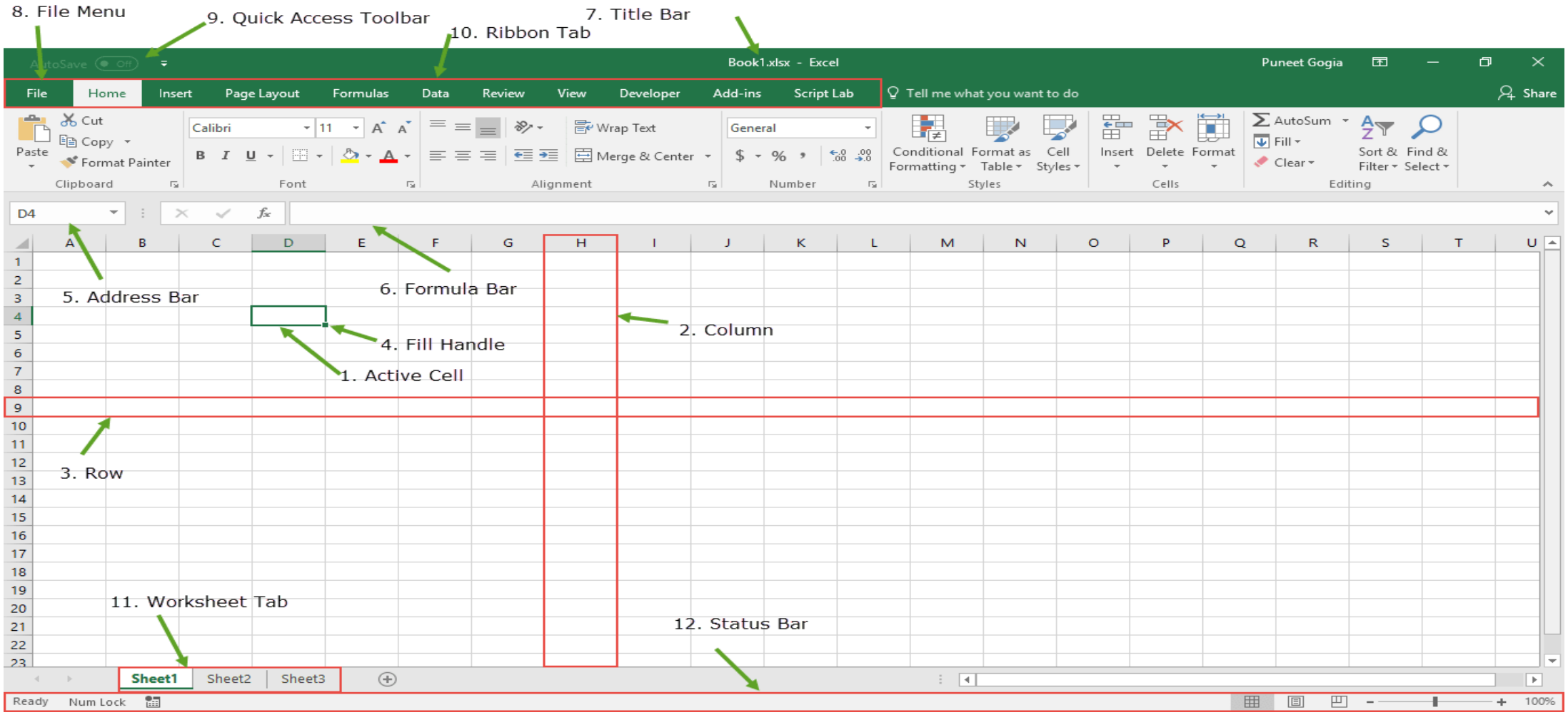
Excel Interface



1. Active Cell

A cell which is currently selected. It will be highlighted by a rectangular box and its name will be shown in the name/address bar. You can activate a cell by clicking on it or by using the arrow buttons on your laptop. To edit a cell, double-click on it or use F2.

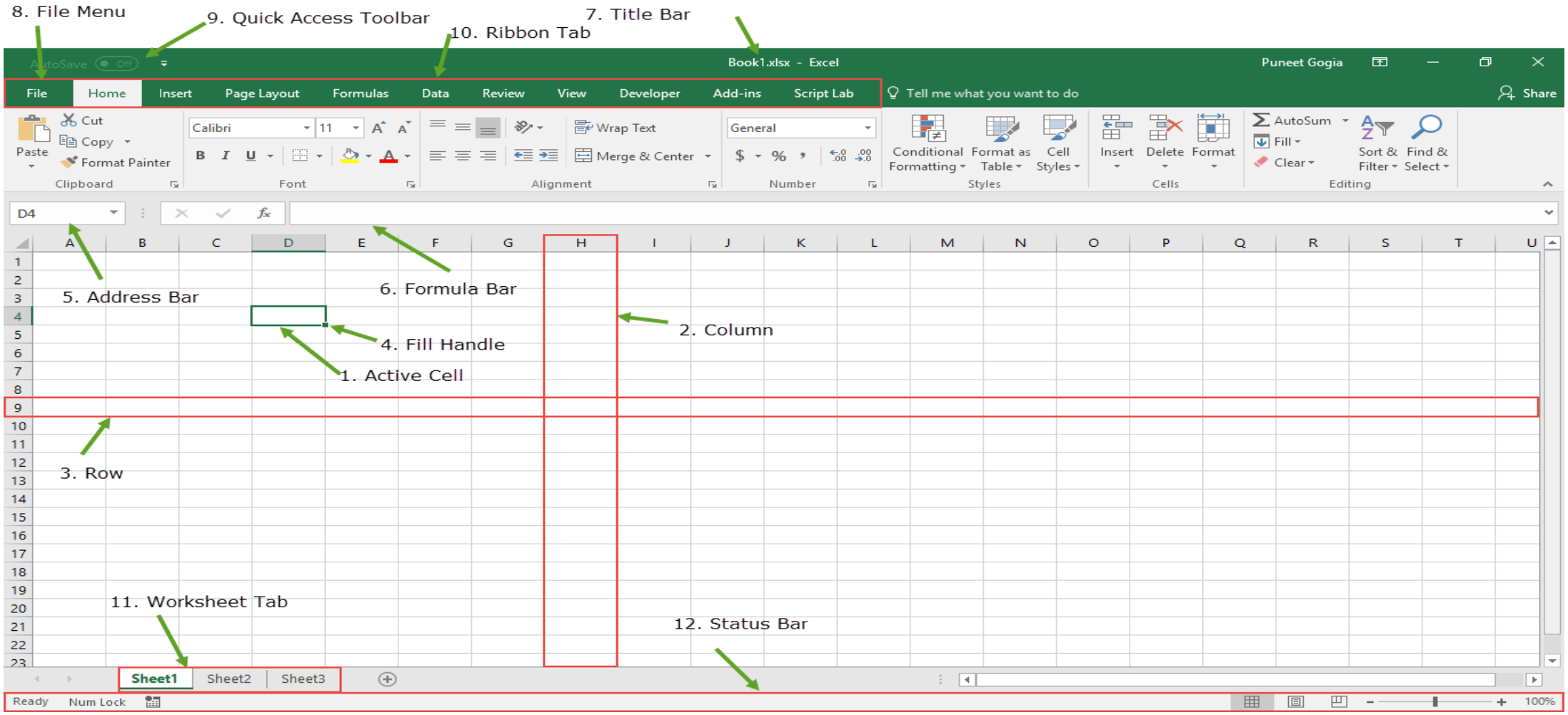
Excel Interface



2. Column

A column is a vertical set of cells. A worksheet has 16,384 columns. A column is depicted with alphabets from A to XFD. You can select an entire column by clicking on its header.

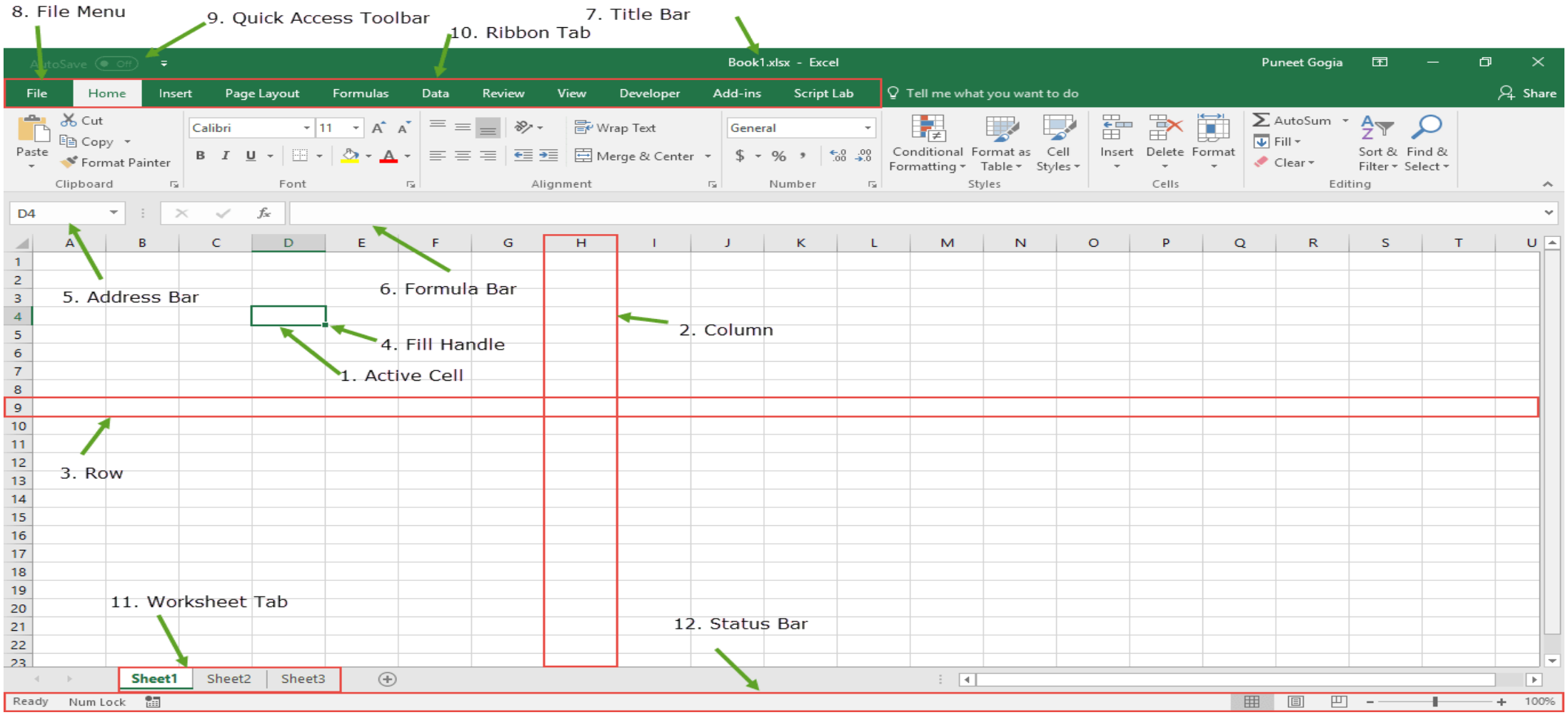
Excel Interface



3. Row

A Row is a horizontal set of cells. A worksheet has 1,048,576 rows. A row is depicted with numbers from 1 to 1,048,576. You can select an entire row clicking on its header.

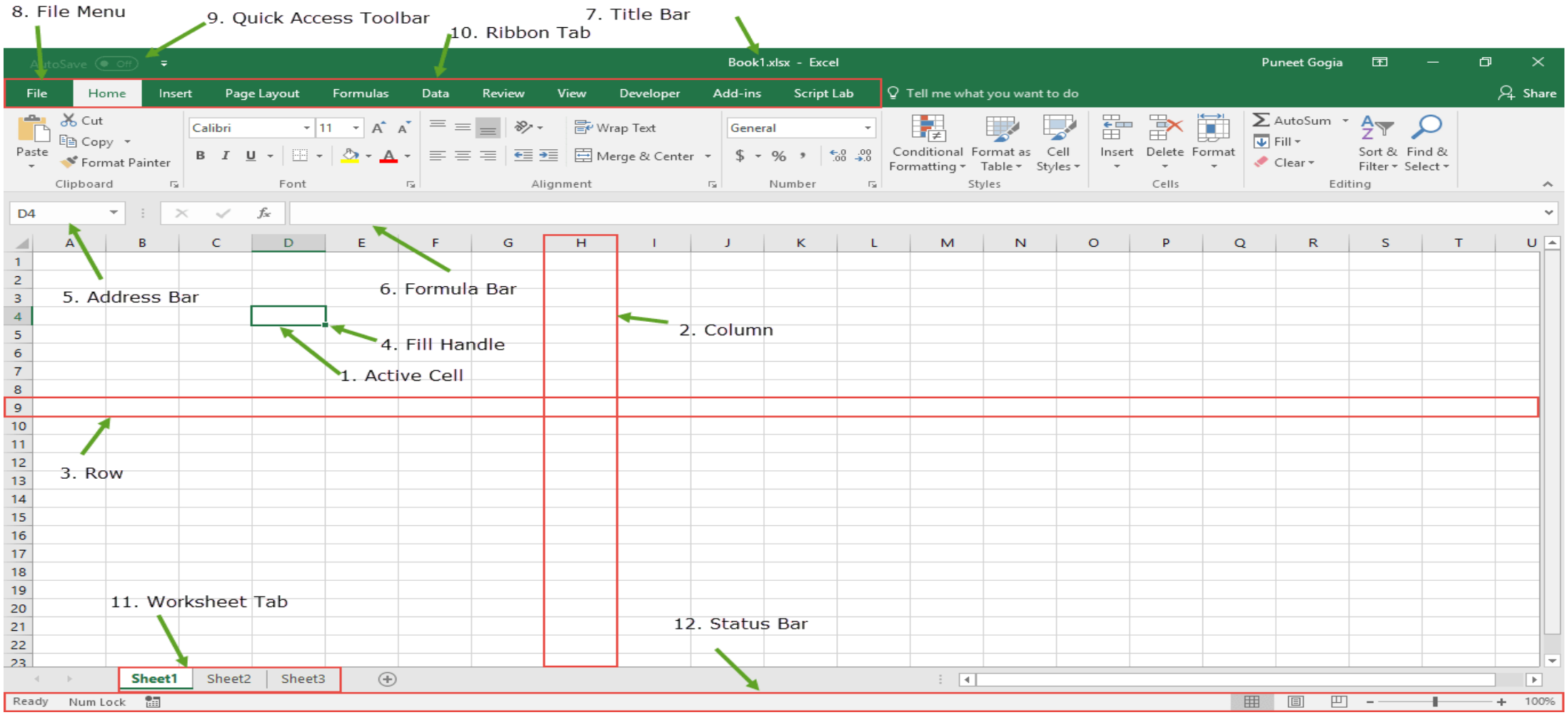
Excel Interface



4. Fill Handle

It's a small dot present on the lower right corner of the active cell. It helps you to fill numeric values, text series, insert ranges, insert serial numbers, etc.

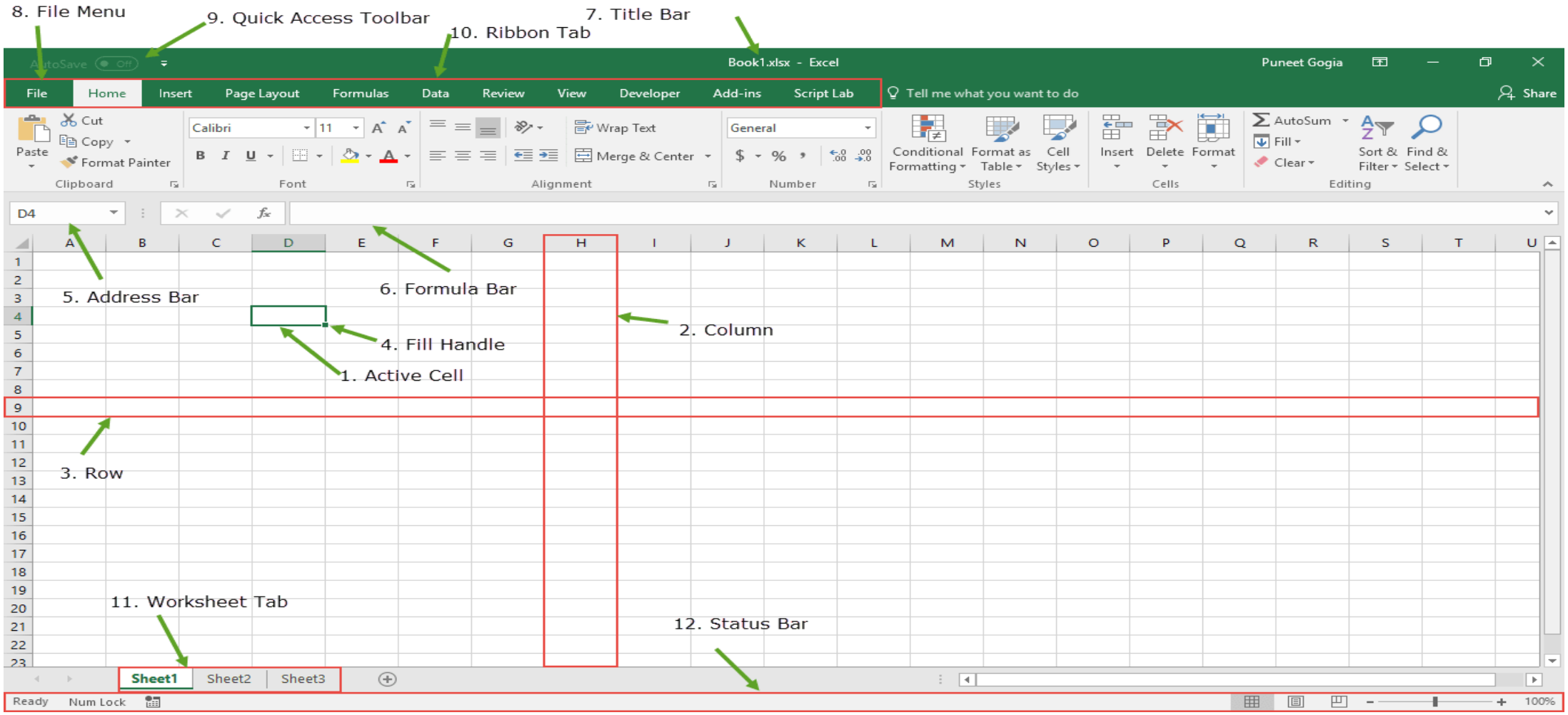
Excel Interface



5. Address Bar/Name Box

The Name Box normally displays the address of the "active cell" on the worksheet. The address bar is the small input bar at the left side of the window. From the name box, you'd see the name of an active cell or a cell range.

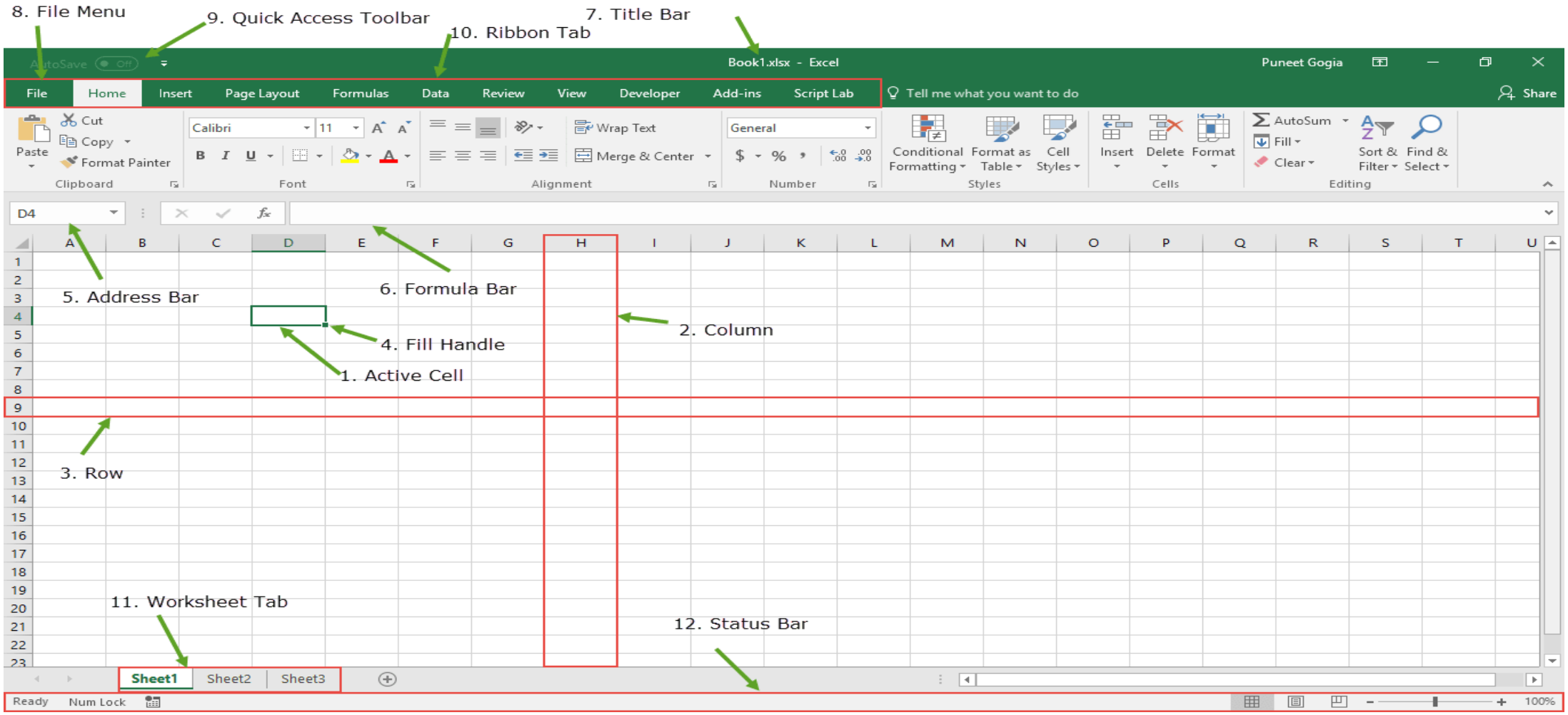
Excel Interface



6. Formula Bar

The formula bar is an input bar, below the ribbon. It shows the content of the active cell and you can also use it to enter a formula in a cell

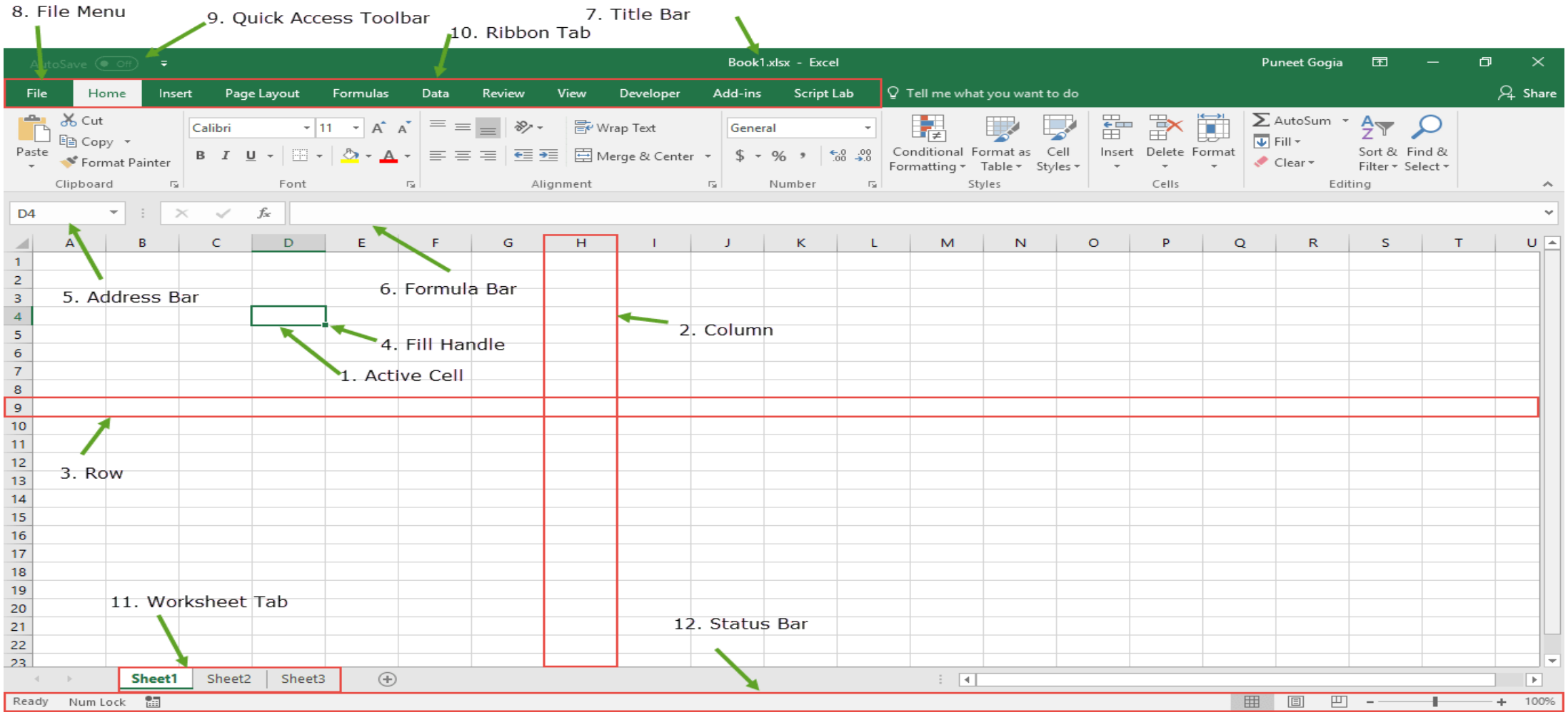
Excel Interface



7. Title Bar

The title bar will show the name of your workbook, followed by the application name ("Microsoft Excel"). By default, a new workbook is named "Book 1-Excel

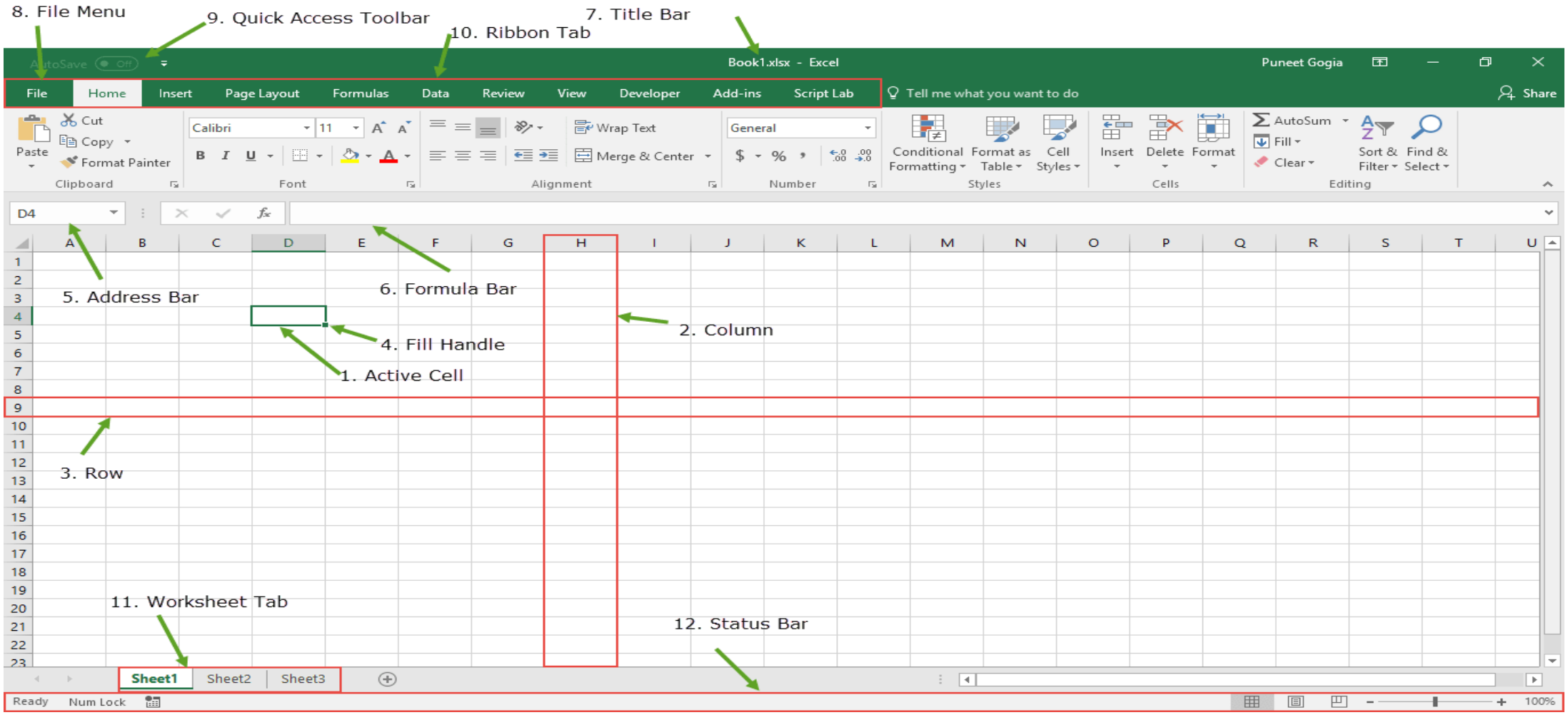
Excel Interface



8. File Menu

The file menu takes you the backstage view of Excel. It contains options like (Save, Save As, Open, New, Print, Excel Options, Share, etc.).

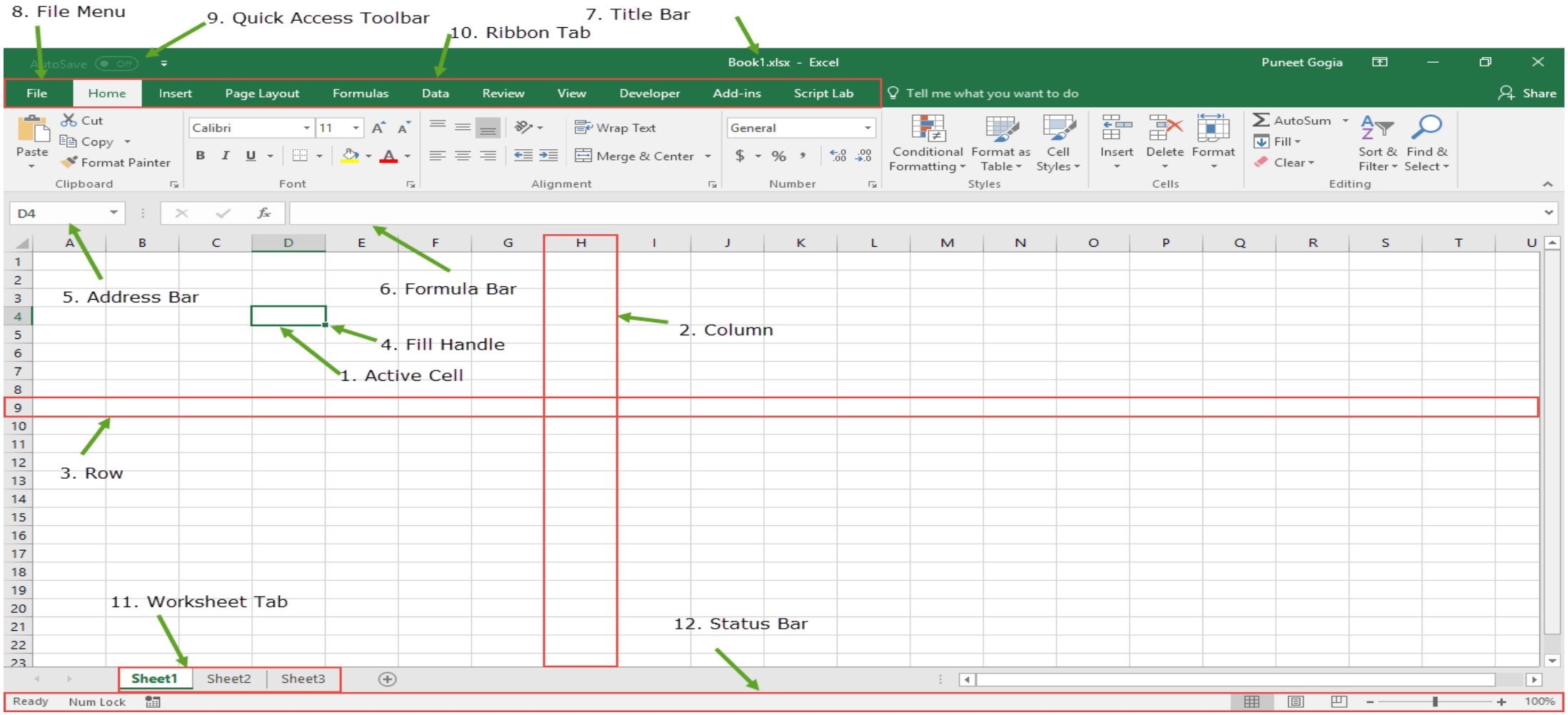
Excel Interface



9. Quick Access Toolbar

A toolbar to quickly access the options which you frequently use. You can add your favorite options by adding new options to quick access toolbar

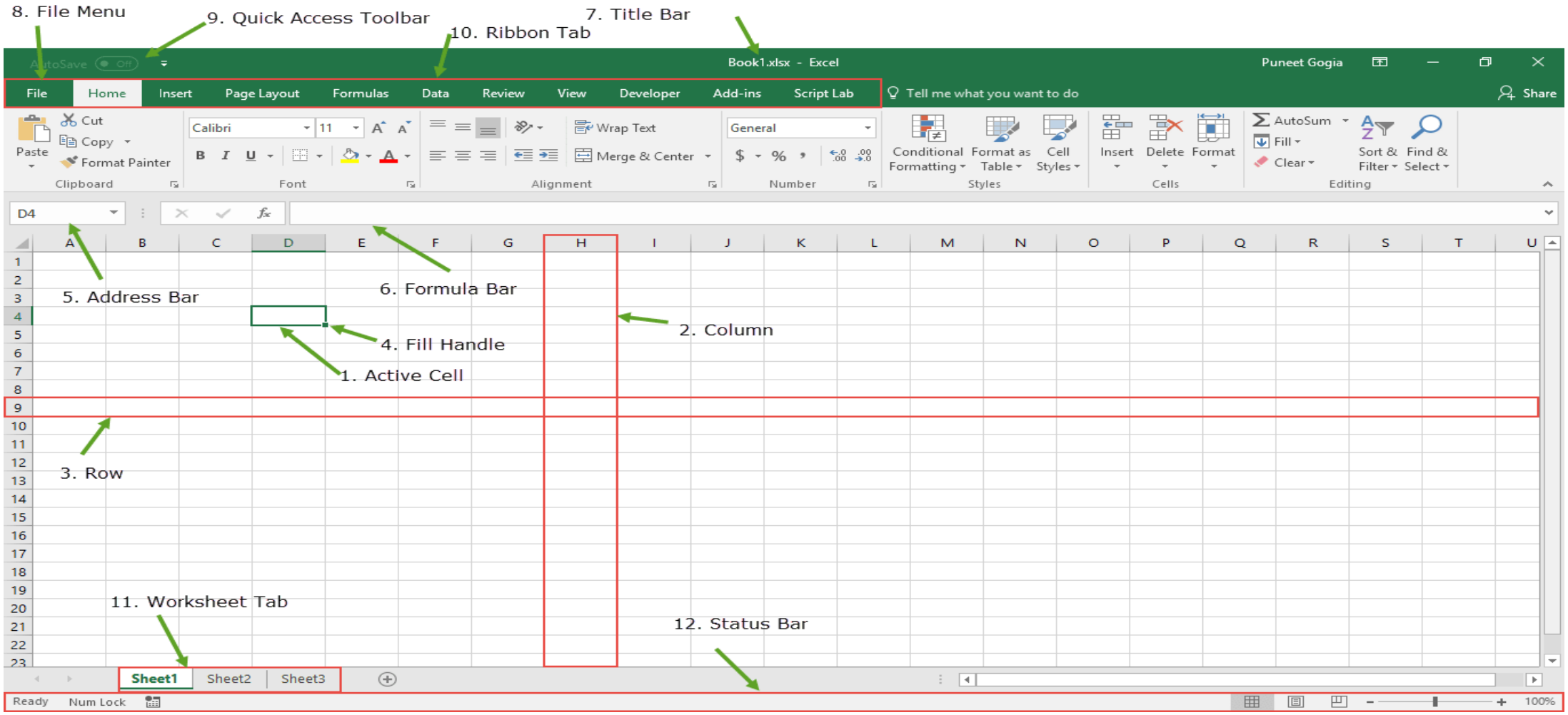
Excel Interface



10. Ribbon Bar

The ribbon bar is a section that contains different Excel capabilities organized into tabs such as; File, Home, Insert, Page Layout, Formulas, Data, Review.

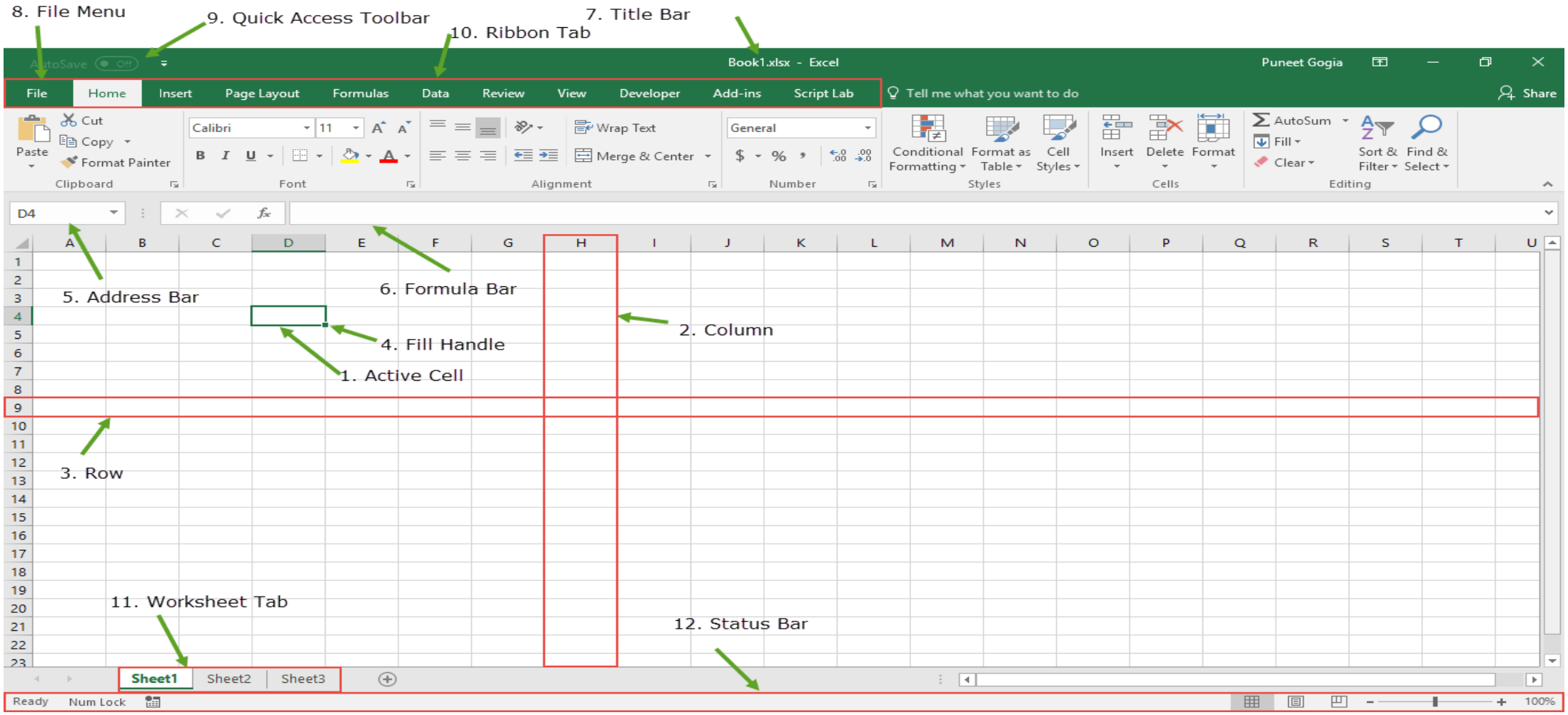
Excel Interface



11. Worksheet Tab

This tab shows all the worksheets in the workbook. By default, you will see three worksheets in your new workbook with the name of Sheet1, Sheet2, Sheet3. There are 255 worksheets in a workbook. You can always rename the worksheet name

Excel Interface



12. Status Bar

It is a thin bar at the bottom of the Excel window. It will give you an instant help once you start working in Excel. It displays messages about current Excel operations

MODULE 1 - Introduction to Excel for Analytics

LEARNING OUTCOMES
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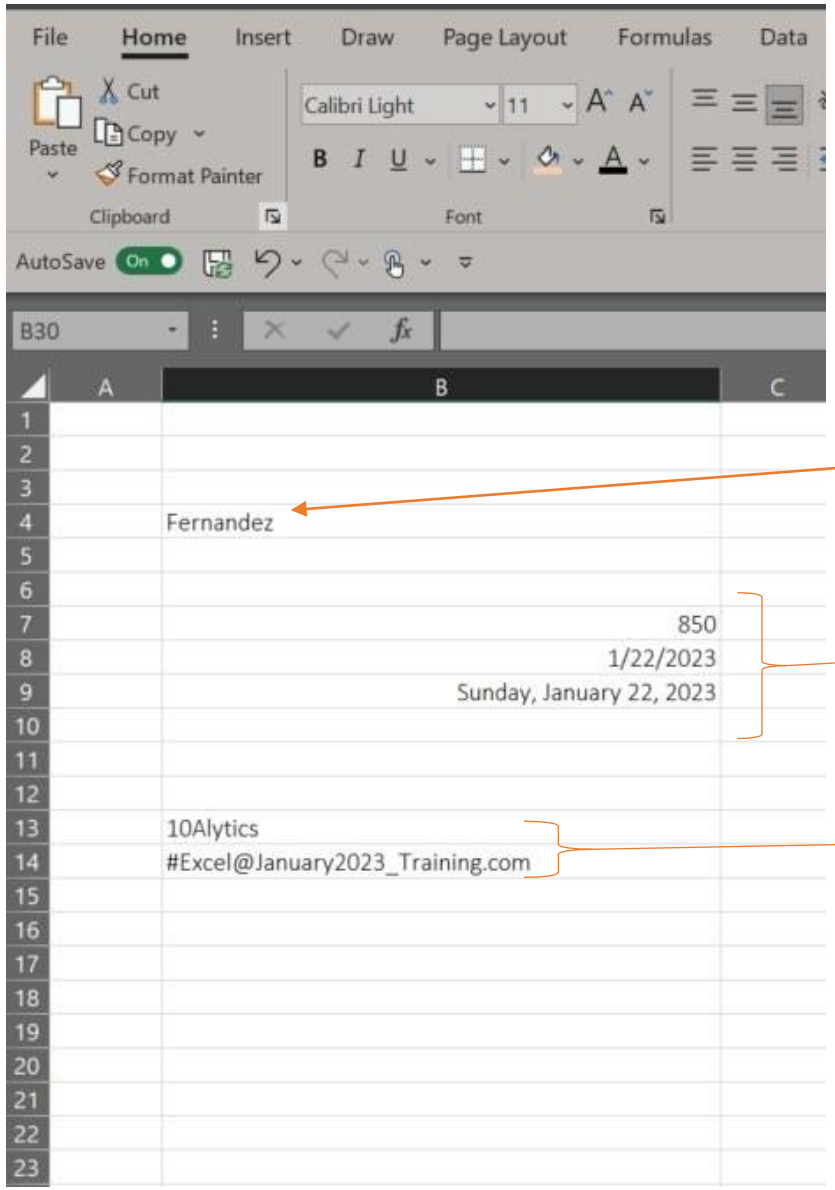
Data Entry



Texts are aligned to the left

Numbers and Dates are aligned to the right

Symbols/Alphanumeric are aligned to the left

These are the default settings in Excel for data entry.

However, you can also change the alignment if need be.

To change the format of a cell, use the short key Ctrl 1

Data Entry

Shortcuts in Excel

- F2 – Enter into a cell
- F4 – Repeats last command
- ESC – Exit a cell without making any changes
- Enter – Moves down a cell
- Tab – Moves right a cell
- Ctrl, Z – Undo
- CTRL, D – Fill Down
- CTRL, R – Fill Right
- Ctrl, (Up, Down, Left or Right) – Moves to first/last non-empty cell in range
- Alt, Enter – Insert a new line within a cell
- Ctrl, Home – Moves to Cell A1
- Ctrl, PgUp/Dn – Moves between worksheets within workbook
- Alt, Down – Opens a drop-down list
- Ctrl, Tab – Flips between opened files of the same program

For more Excel shortcuts, visit any of these websites

https://support.microsoft.com/en-us/topic/keyboard-shortcuts-in-excel-1798d9d5-842a-42b8-9c99-9b7213f0040f?ui=en-us&rs=en-us&ad=us

https://exceljet.net/keyboard-shortcuts

https://corporatefinanceinstitute.com/resources/excel/shortcuts/excel-shortcuts-pc-mac/

Data Entry

Paste Special – Ctrl, Alt, V

Paste Special is a function that gives you the options to paste the data you've copied in several ways; Formats, Values, Validation, Transpose, Links and more

1 Paste only the sales values

Movie	Price	Tickets Sold	Sales
Shanty Town	5,000.00	245	1,225,000.00
Blood & Water	5,500.00	150	825,000.00
Ginny & Georgia	3,500.00	115	402,500.00
The Wait	4,500.00	245	1,102,500.00

Paste sales values

Sales

To paste only the Value:

- Copy the range; Ctrl+C
- Ctrl + Alt + V (Paste Special)
- Select Values and Press OK

2 Paste only the sales formula

Branch - America Way

Movie	Price	Tickets Sold	Sales
Shanty Town	5,000.00	245	1,225,000.00
Blood & Water	5,500.00	150	825,000.00
Ginny & Georgia	3,500.00	115	402,500.00
The Wait	4,500.00	245	1,102,500.00

Branch - London Bridge

Movie	Price	Tickets Sold	Sales
Shanty Town	5,000.00	233	
Blood & Water	5,500.00	182	
Ginny & Georgia	3,500.00	200	
The Wait	4,500.00	154	

To paste only the Formulas:

- Copy the range; Ctrl+C
- Ctrl + Alt + V (Paste Special)
- Select Formulas and Press OK

Data Entry

Paste Special – Performing Operations

With Paste Special, you can perform arithmetic operations such as; Addition, Subtraction, Multiplication and Division.

3 Reduce the tickets price by 500

Movie	Old Price	New Price	Tickets Sold	Sales
Shanty Town	5,000.00	4,500.00	254	1,143,000.00
Blood & Water	5,500.00	5,000.00	212	1,060,000.00
Ginny & Georgia	3,500.00	3,000.00	198	594,000.00
The Wait	4,500.00	4,000.00	300	1,200,000.00

Using the Paste Special subtraction feature, you can subtract 500 from the ticket price all at once

1. Copy and paste the value in the "Old Price" column to "New Price" column
2. Write the figure 500 in a separate cell and copy it
3. Select the "New Price" column
4. Open Paste Special; Ctrl + Alt + V
5. Click on the Value, and the Subtraction option under the operations section
6. Press Ok

Data Entry

Paste Special – Transpose

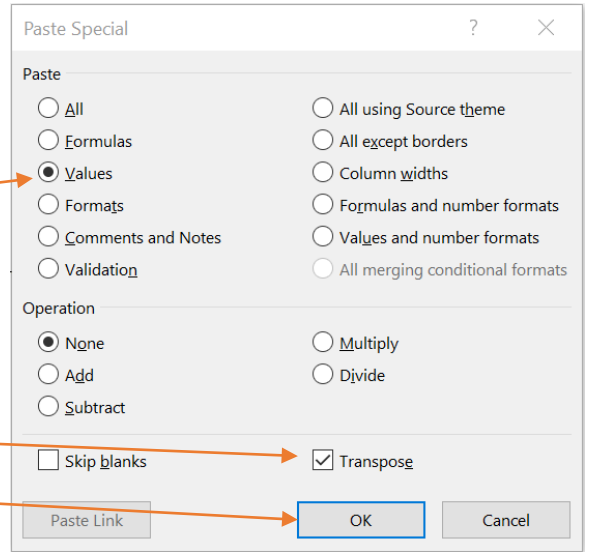
With the Paste Special function, you can transpose the data you copied from column to row and vice-versa

4 The movie names have been wrongly entered, you are required to transpose the names for proper reconciliation

Shanty Town Blood & Water Ginny & Georgia The Wait

Movie	Price	Tickets Sold	Sales
	4,500.00	254	1,143,000.00
	5,000.00	212	1,060,000.00
	3,000.00	198	594,000.00
	4,000.00	300	1,200,000.00

1. Select and copy the movie titles
2. Click on the first cell of the range you want to paste to
3. Open Paste Special; Ctrl + Alt + V
4. Select Values
5. Select Transpose
6. Press OK



MODULE 1 - Introduction to Excel for Analytics

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Formatting

Basic Formatting

Formatting simply means changing the appearance of your dataset in a spreadsheet. Formatting a *spreadsheet* isn't CAST in stone. You have the liberty to format your dataset in various ways in as much as you follow your company's brand colours and themes and best practices.

Formatting includes but not limited to; changing cell and font colours, *font types*, number formats, wrapping texts, merging cells, adding borders, as well as adding images and more…

From This

10ALYTICS STAFF DATA BASE						
Staff ID	Name	Country	Age	Department	Level	Salary
10A1	Olayinka Selhorst	Brazil	26	Procurement	Analyst	103832
10A2	Peter Ezichi	Brazil	22	Finance	Analyst	144551
10A3	Ayo Adams	Jamaica	30	HR	Senior Analyst	280501
10A4	Olaogun Panovsky	Japan	39	Technology	Manager	428869
10A5	Adeniyi Adams	France	25	Administration	Analyst	186216
10A6	Fasinu Dennis	Ghana	41	Internal Audit	Manager	359696
10A7	Ehindero Adams	Bahamas	39	Risk Management	Senior Manager	449996
10A8	Akanteyon Miller	Canada	31	Operations	Senior Analyst	285558
10A9	Temilade Adams	France	33	Finance	Analyst	125356
10A10	Taoheed Matt	USA	41	Marketing	Senior Manager	485726
10A11	Omolara Yancer	Mexico	43	Marketing	Senior Manager	449022
10A12	Adeniyi Panovsky	Nigeria	31	Finance	Analyst	130297
10A13	Adebola Selhorst	England	44	Technology	Manager	366069
10A14	Oludaisi Selhorst	Bahamas	24	Insurance	Analyst	177473
10A15	Adeniyi Ferris	England	42	Technology	Manager	385477
10A16	Toyin Mitchell	Brazil	37	Insurance	Manager	396635
10A17	Ayo ogbonna	Uruguay	42	Procurement	Manager	367637
10A18	Saheed Herriot	Nigeria	33	Risk Management	Senior Analyst	260955
10A19	Bamidele Thomas	Senegal	43	Operations	Senior Analyst	224903
10A20	Odumosu Jones	Ghana	39	Administration	Analyst	199439

To This

10ALYTICS STAFF DATA BASE						
Staff ID	Name	Country	Age	Department	Level	Salary
10A1	Olayinka Selhorst	Brazil	26	Procurement	Analyst	$ 103,832.00
10A2	Peter Ezichi	Brazil	22	Finance	Analyst	$ 144,551.00
10A3	Ayo Adams	Jamaica	30	HR	Senior Analyst	$ 280,501.00
10A4	Olaogun Panovsky	Japan	39	Technology	Manager	$ 428,869.00
10A5	Adeniyi Adams	France	25	Administration	Analyst	$ 186,216.00
10A6	Fasinu Dennis	Ghana	41	Internal Audit	Manager	$ 359,696.00
10A7	Ehindero Adams	Bahamas	39	Risk Management	Senior Manager	$ 449,996.00
10A8	Akanteyon Miller	Canada	31	Operations	Senior Analyst	$ 285,558.00
10A9	Temilade Adams	France	33	Finance	Analyst	$ 125,356.00
10A10	Taoheed Matt	USA	41	Marketing	Senior Manager	$ 485,726.00
10A11	Omolara Yancer	Mexico	43	Marketing	Senior Manager	$ 449,022.00
10A12	Adeniyi Panovsky	Nigeria	31	Finance	Analyst	$ 130,297.00
10A13	Adebola Selhorst	England	44	Technology	Manager	$ 366,069.00
10A14	Oludaisi Selhorst	Bahamas	24	Insurance	Analyst	$ 177,473.00
10A15	Adeniyi Ferris	England	42	Technology	Manager	$ 385,477.00
10A16	Toyin Mitchell	Brazil	37	Insurance	Manager	$ 396,635.00
10A17	Ayo ogbonna	Uruguay	42	Procurement	Manager	$ 367,637.00
10A18	Saheed Herriot	Nigeria	33	Risk Management	Senior Analyst	$ 260,955.00
10A19	Bamidele Thomas	Senegal	43	Operations	Senior Analyst	$ 224,903.00
10A20	Odumosu Jones	Ghana	39	Administration	Analyst	$ 199,439.00

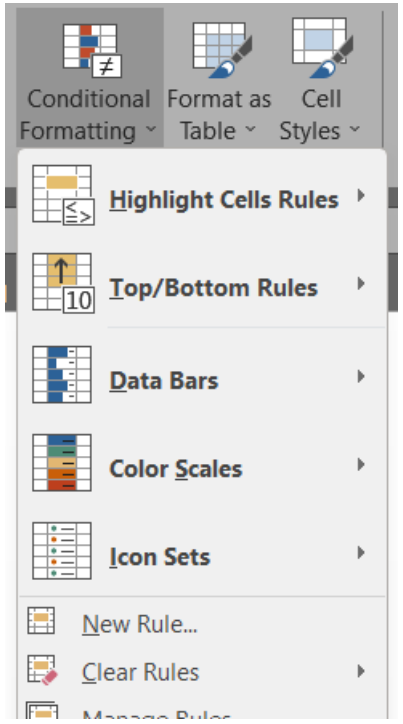
Formatting

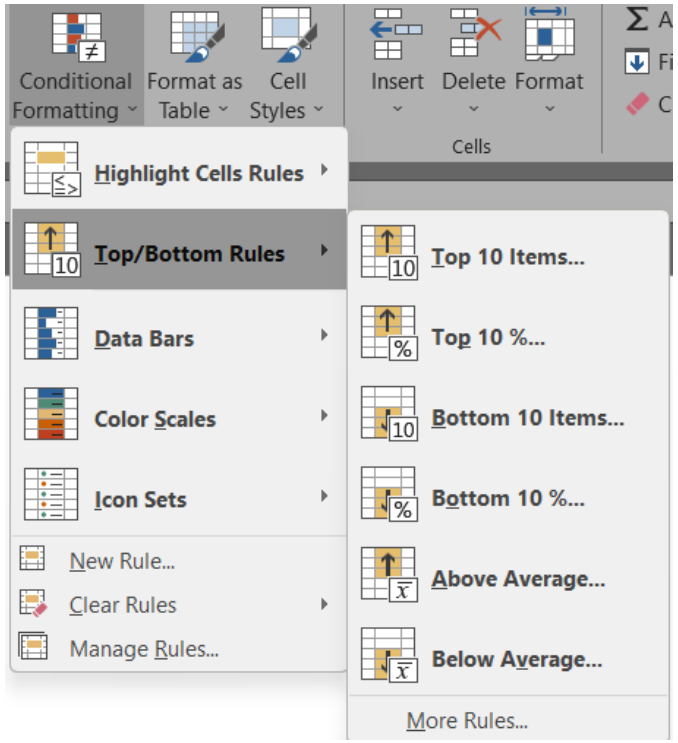
Conditional Formatting

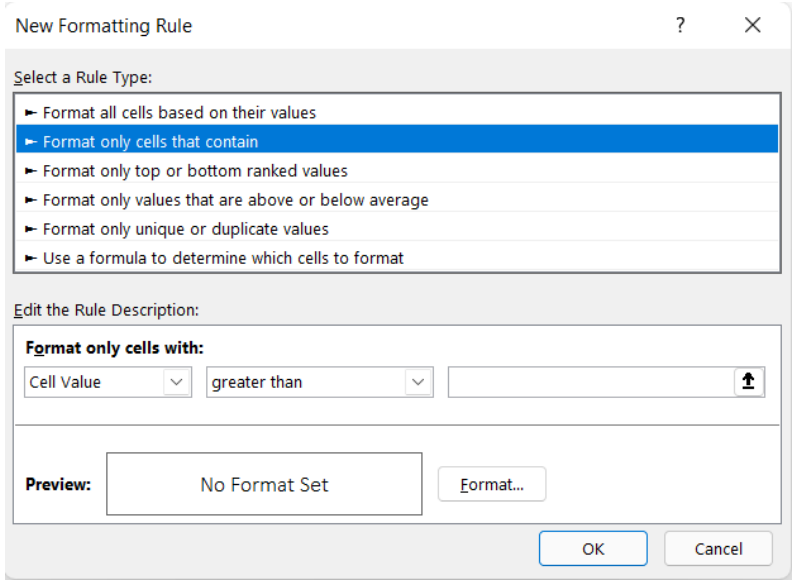
Conditional Formatting helps you visually explore and analyze data, detect critical issues, and identify patterns and trends.

Conditional Formatting makes it easy to highlight interesting cells or ranges of cells, emphasize unusual values, and visualize data by using data bars, color scales, and icon sets that correspond to specific variations in the data.

There are pre-designed formatting/rules while you can also define the rules by yourself







MODULE 1 - Introduction to Excel for Analytics

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Excel Cell References	
Relative	A2
Absolute	A2
Mixed	A$2 or $A2

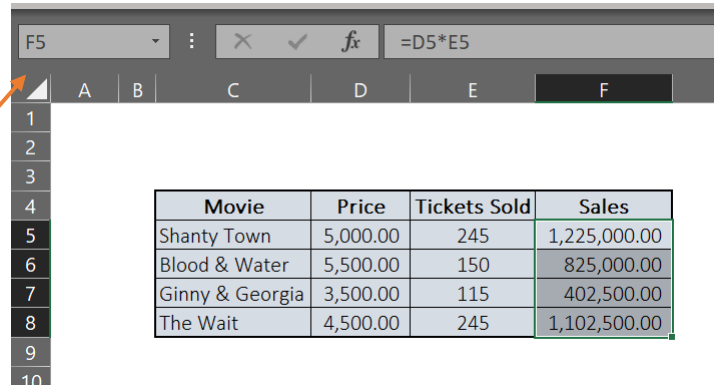
Name Range

This simply means giving a name to a cell or range of cells. Now, instead of using the cell reference (such as A1 or A1:A10), you can simply use the name that you assigned to it.

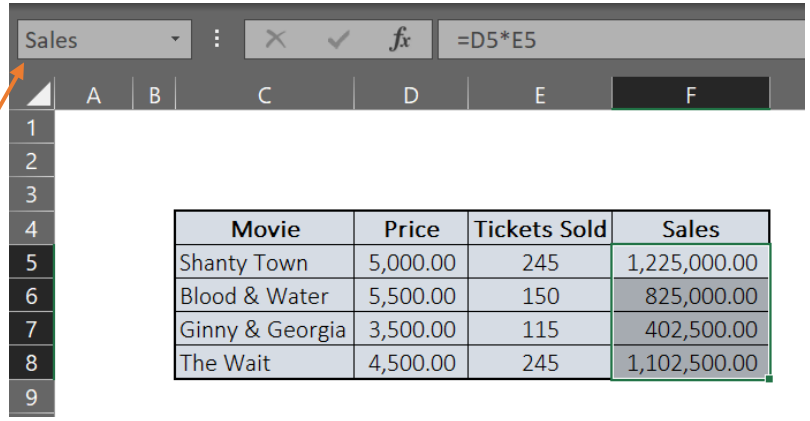
By using names, you can make your formulas much easier to understand and maintain. You can define a name for a cell range, function, constant, or table. Once you adopt the practice of using names in your workbook, you can easily update, audit, and manage these names

To Rename a Range

1. Select the cell or range you want to rename
2. Go to the name box and edit to the new name
3. Press Enter



Movie	Price	Tickets Sold	Sales
Shanty Town	5,000.00	245	1,225,000.00
Blood & Water	5,500.00	150	825,000.00
Ginny & Georgia	3,500.00	115	402,500.00
The Wait	4,500.00	245	1,102,500.00



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Ginny & Georgia	3,500.00	115	402,500.00
The Wait	4,500.00	245	1,102,500.00

Cell Referencing

Cell Referencing

With the help of cell referencing, you can perform various functions/formulas in Excel after you've inputted the first function/formula and using fill handle to complete other cells required.

There are three types of referencing

1. Relative Referencing – Both or either of Rows and Columns changes as you move to the next cells. Hence, Relative References changes when a formula is copied to another cell. In Excel, cell referencing is relative by default, it is the most used cell reference in Excel. A2, A3, A4, B1, B2, B3.

2. Absolute Referencing – In this instance, the rows or column does not change when filling next cells. Unlike relative referencing, absolute reference remains constant. An absolute reference is designated in a formula by the addition of a dollar sign ($) before the column and row. A2. Make sure you first formula is correct before you use fill handle

3. Mixed Referencing – For Mixed Referencing, either the row or the column changes, while the other is locked when you move to the next cell. i.e., the row is locked while the column changes when you copy your formula, or the column is locked while the row changes when you copy your formula. A$2, $B6

N:B

- *Rows are depicted by numbers*
- *Columns are depicted by alphabets*

MODULE 1 - Introduction to Excel for Analytics

10Alytics
data & strategy

LEARNING OUTCOMES

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TOOLS

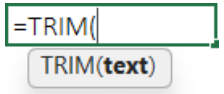
- TRIM
- CLEAN
- SUBSTITUTE
- UPPER, Proper, lower
- CONCATENATE
- TEXT TO COLUMN
- REMOVING DUPLICATES

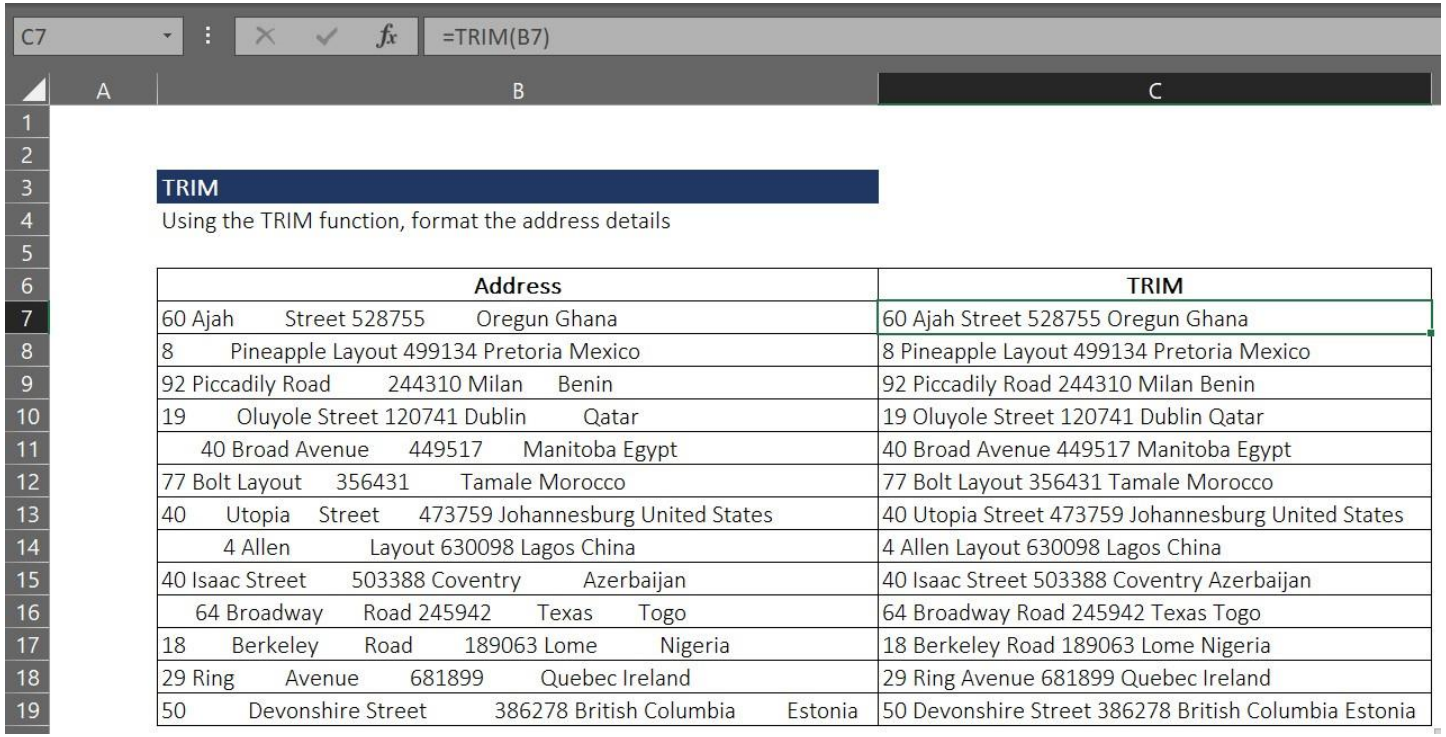
Data Cleaning

TRIM

The TRIM function removes all the leading, trailing and excess middle spaces in a data. It leaves out single spaces between words. TRIM removes the ASCII space characters (32) but not the non-breaking space characters (160)

Syntax





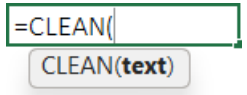
Address	TRIM
60 Ajah Street 528755 Oregun Ghana	60 Ajah Street 528755 Oregun Ghana
8 Pineapple Layout 499134 Pretoria Mexico	8 Pineapple Layout 499134 Pretoria Mexico
92 Piccadily Road 244310 Milan Benin	92 Piccadily Road 244310 Milan Benin
19 Oluyole Street 120741 Dublin Qatar	19 Oluyole Street 120741 Dublin Qatar
40 Broad Avenue 449517 Manitoba Egypt	40 Broad Avenue 449517 Manitoba Egypt
77 Bolt Layout 356431 Tamale Morocco	77 Bolt Layout 356431 Tamale Morocco
40 Utopia Street 473759 Johannesburg United States	40 Utopia Street 473759 Johannesburg United States
4 Allen Layout 630098 Lagos China	4 Allen Layout 630098 Lagos China
40 Isaac Street 503388 Coventry Azerbaijan	40 Isaac Street 503388 Coventry Azerbaijan
64 Broadway Road 245942 Texas Togo	64 Broadway Road 245942 Texas Togo
18 Berkeley Road 189063 Lome Nigeria	18 Berkeley Road 189063 Lome Nigeria
29 Ring Avenue 681899 Quebec Ireland	29 Ring Avenue 681899 Quebec Ireland
50 Devonshire Street 386278 British Columbia Estonia	50 Devonshire Street 386278 British Columbia Estonia

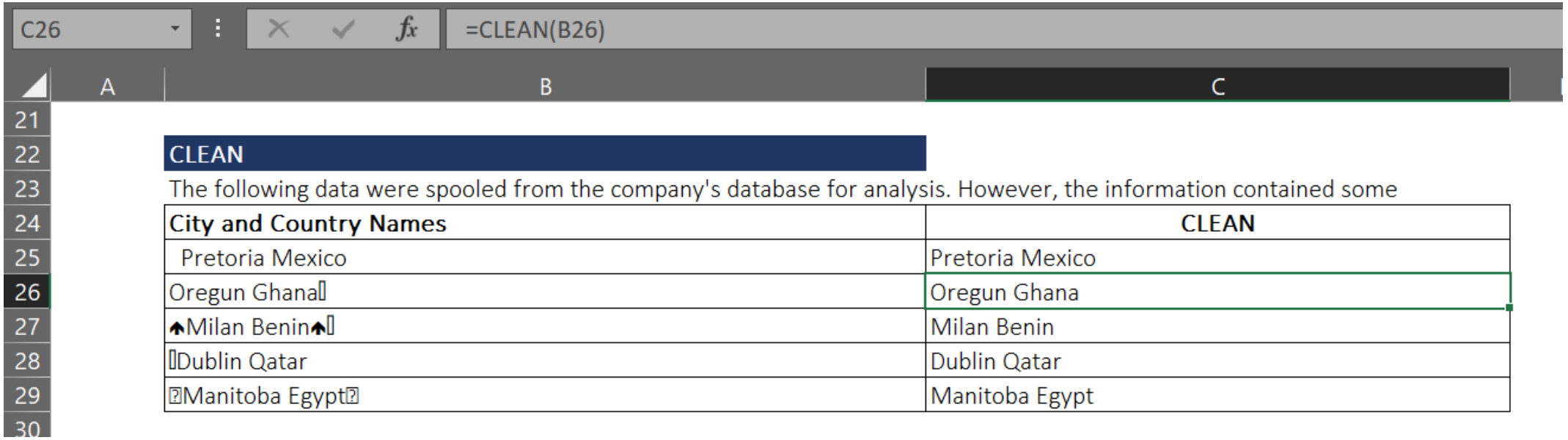
Data Cleaning

CLEAN

The CLEANfunction takes a text string and removes all non-printable characters

Syntax





CLEAN

The following data were spooled from the company's database for analysis. However, the information contained some

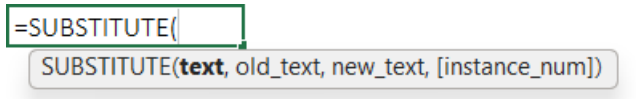
City and Country Names	CLEAN
Pretoria Mexico	Pretoria Mexico
Oregun Ghana	Oregun Ghana
Milan Benin	Milan Benin
Dublin Qatar	Dublin Qatar
Manitoba Egypt	Manitoba Egypt

Data Cleaning

SUBSTITUTE

The Substitute function is used when you want to replace specific text in a text string. The function is useful when we wish to substitute old text in a string with a new string. It is CASESENSITIVE

Syntax

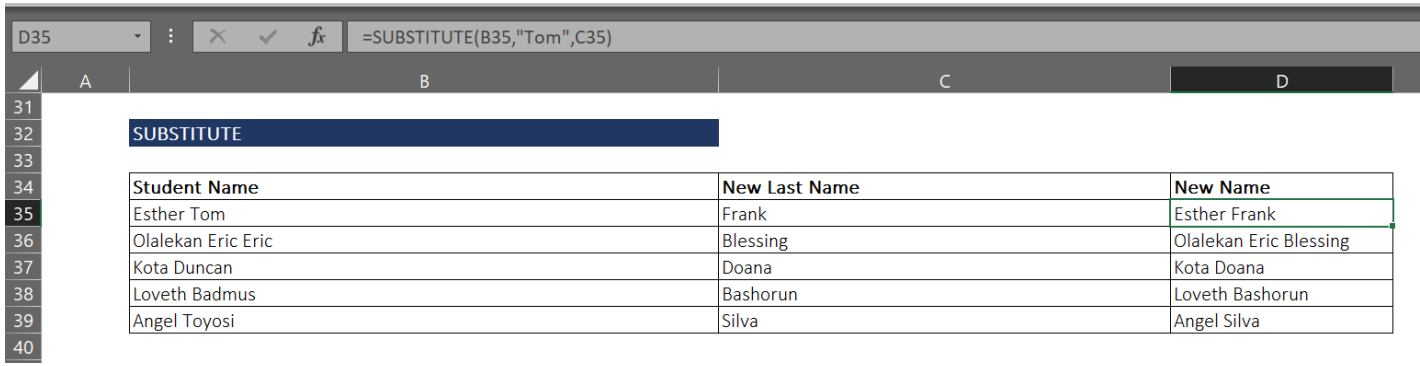


Text – the entire text you want to make a change in

old_text – the particular text you want to change

new_text – the new text you want to have

[instance_num] – Specifies which occurrence of old_text you want to replace with new_text. (optional)



Student Name	New Last Name	New Name
Esther Tom	Frank	Esther Frank
Olalekan Eric Eric	Blessing	Olalekan Eric Blessing
Kota Duncan	Doana	Kota Doana
Loveth Badmus	Bashorun	Loveth Bashorun
Angel Toyosi	Silva	Angel Silva

Data Cleaning

CONCATENATE

The CONCATENATE function helps you connect/join data from different cells together.

Syntax

=CONCATENATE(

CONCATENATE(**text1**, [text2], ...)

I6 | =CONCATENATE(B6," ",C6," ",D6," ",E6," ",F6," ",G6)

CONCATENATE

No	Street	Area	Zip Code	City	Country	Full Address
60	Ajah	Street	528755	Oregun	Ghana	60 Ajah Street 528755 Oregun Ghana
8	Pineapple	Layout	499134	Pretoria	Mexico	8 Pineapple Layout 499134 Pretoria Mexico
92	Piccadily	Road	244310	Milan	Benin	92 Piccadily Road 244310 Milan Benin
63	Odeku	Road	781568	Plateau	Japan	63 Odeku Road 781568 Plateau Japan
22	Oxford	Avenue	816476	Merida	Australia	22 Oxford Avenue 816476 Merida Australia
39	Carnaby	Layout	239606	Cario	Germany	39 Carnaby Layout 239606 Cario Germany
65	Main	Street	342875	Madrid	Gabon	65 Main Street 342875 Madrid Gabon
89	Ozumba	Layout	437845	York	England	89 Ozumba Layout 437845 York England
6	Crosswall	Road	984003	Leeds	Niger	6 Crosswall Road 984003 Leeds Niger
18	Bartlett	Avenue	473234	Accra	Portugal	18 Bartlett Avenue 473234 Accra Portugal

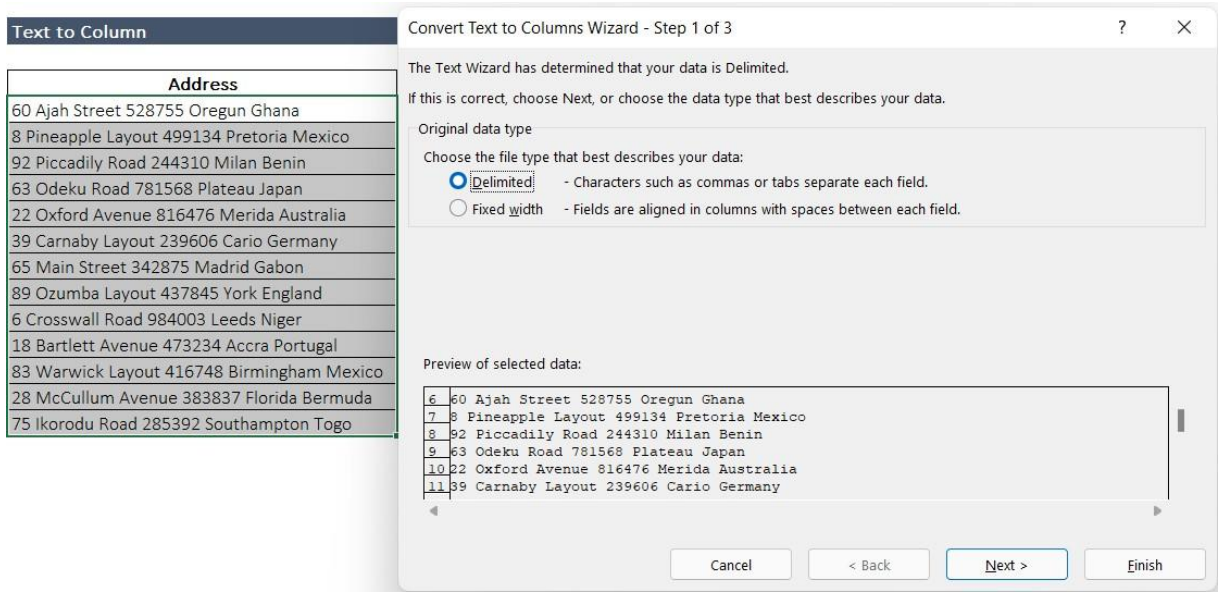
Here,
We joined the No, Street, Area, Zip Code, City, Country that were contained in separate columns into a single column. The space character " " was added to ensure that there's space between each of the characters

Data Cleaning

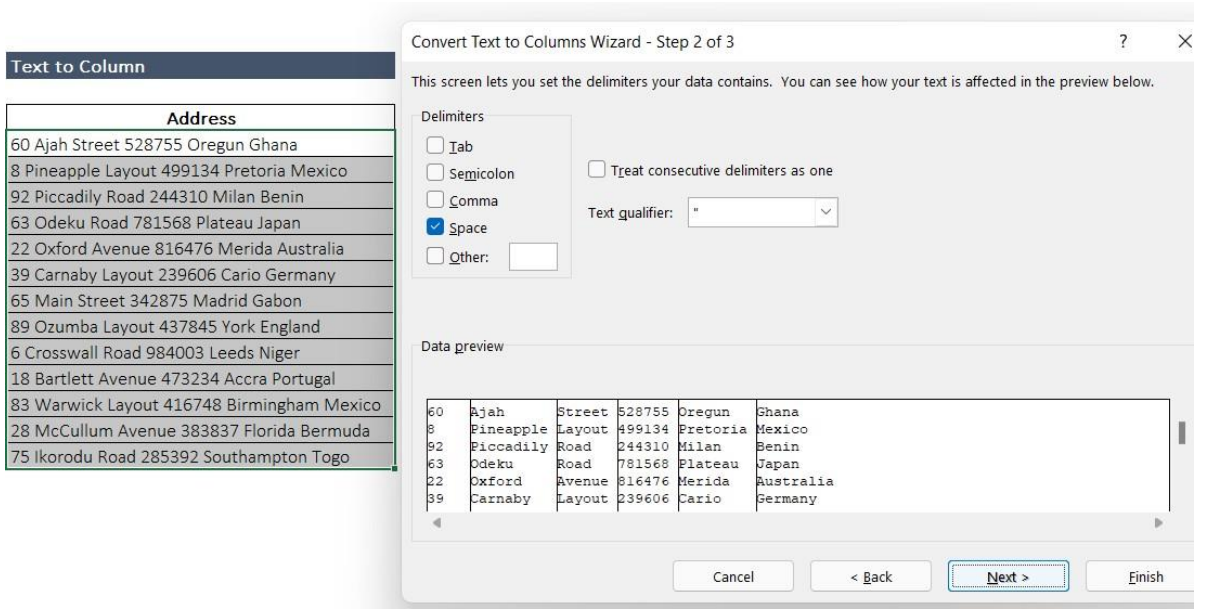
TEXT TO COLUMN

The TEXT TO COLUMN function is used to split the text into multiple columns.

Select the data you want to split.
Go to Data – Data Tools – Text to Columns.
Select Delimited
Click Next



Choose what your data is delimited by, and check the preview of the end result under the data review

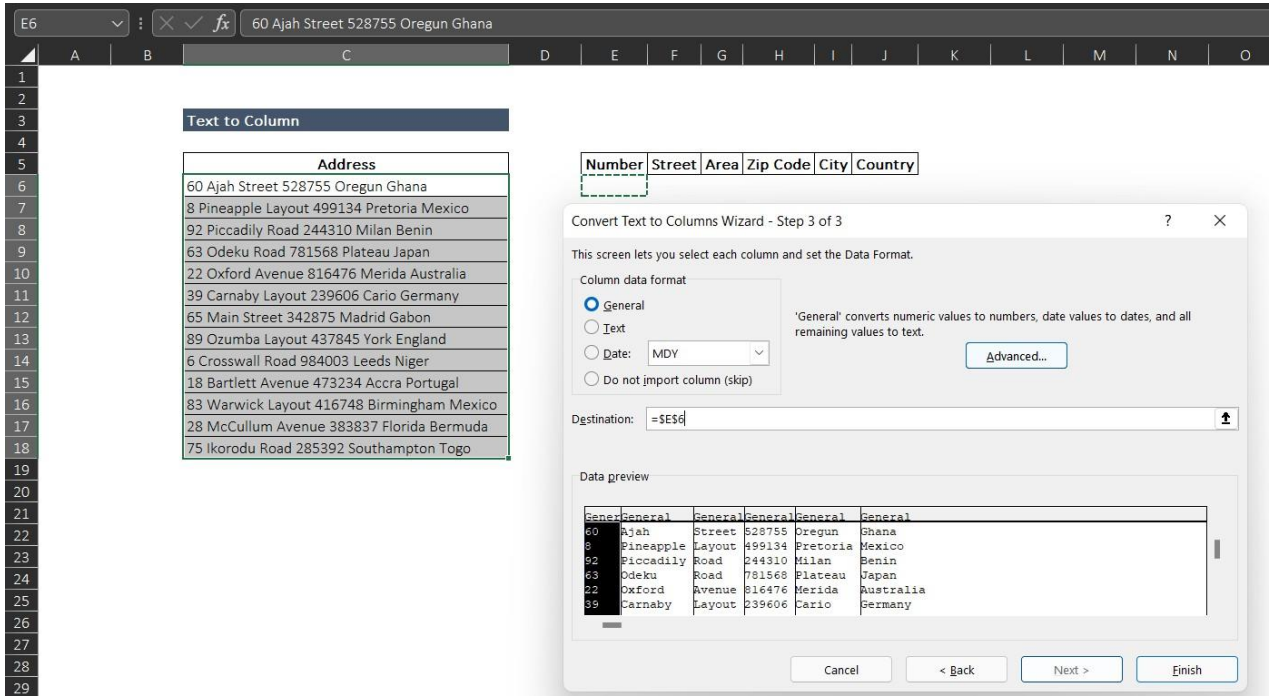


Data Cleaning

TEXT TO COLUMN

Select the destination you want your new data to be in.

Click finish



Result

Number	Street	Area	Zip Code	City	Country
60	Ajah	Street	528755	Oregun	Ghana
8	Pineapple	Layout	499134	Pretoria	Mexico
92	Piccadily	Road	244310	Milan	Benin
63	Odeku	Road	781568	Plateau	Japan
22	Oxford	Avenue	816476	Merida	Australia
39	Carnaby	Layout	239606	Cario	Germany
65	Main	Street	342875	Madrid	Gabon
89	Ozumba	Layout	437845	York	England
6	Crosswall	Road	984003	Leeds	Niger
18	Bartlett	Avenue	473234	Accra	Portugal
83	Warwick	Layout	416748	Birmingham	Mexico
28	McCullum	Avenue	383837	Florida	Bermuda
75	Ikorodu	Road	285392	Southampton	Togo

Data Cleaning

REMOVING DUPLICATES

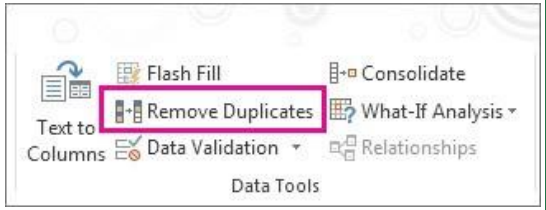
Sometimes, there are duplicate data in our record and it's necessary to clean them up to have an accurate record. One of the ways to this is by using the "Remove Duplicate" feature in Excel. This feature completely removes any duplicate data in the column(s) you specified and the corresponding data in the other column of the same row that the duplicate exist.

This feature will remove the duplicates and leave one unique data

To use this feature,

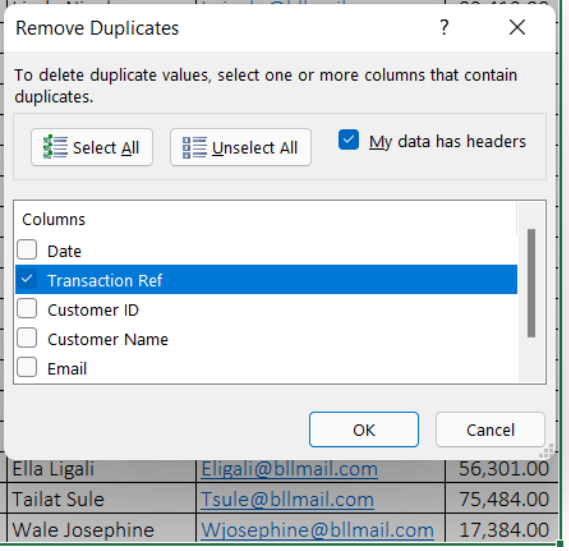
- Select the range you want to remove duplicates from
- Go to the Data tab, Data tools group and click Remove Duplicates

Date	Transaction Ref	Customer ID	Customer Name	Email	Amount
7/1/2022	DP1975D	CLB0238	Chima Oyebanji	Coyebanji@bllmail.com	59,429.00
7/1/2022	DP2069D	CLB02361	Alis Peter	Apeter@bllmail.com	81,146.00
7/1/2022	DP1293D	CLB0734	Akintunde Ikhilae	Aikhilae@bllmail.com	73,155.00
7/1/2022	DP2146A	CLB0414	Raufu Lekan	Rlekan@bllmail.com	15,175.00
7/1/2022	DP2280C	CLB0639	Linda Nicole	Lnicole@bllmail.com	82,412.00
7/1/2022	DP2464A	CLB01907	Tailat Sule	Tsule@bllmail.com	75,484.00
7/1/2022	DP1435B	CLB0449	Elysha Okin	Eokin@bllmail.com	32,382.00
7/1/2022	DP2004A	CLB02214	Adebare Lucy	Alucy@bllmail.com	48,146.00
7/1/2022	DP1545D	CLB01433	Omodia Yemi	Oyemi@bllmail.com	85,355.00
7/1/2022	DP1595E	CLB01116	Emmy Olugbenga	Eolugbenga@bllmail.com	35,537.00
7/1/2022	DP1545D	CLB01433	Omodia Yemi	Oyemi@bllmail.com	85,355.00
7/1/2022	DP2280C	CLB0639	Linda Nicole	Lnicole@bllmail.com	82,412.00
7/1/2022	DP1575E	CLB01116	Emmy Olugbenga	Eolugbenga@bllmail.com	96,581.00
7/1/2022	DP2328C	CLB0649	Deena Doyin	Ddoyin@bllmail.com	32,697.00
7/1/2022	DP2432A	CLB0209	[illegible]	Aewuyemi@bllmail.com	88,335.00
7/1/2022	DP2186C	CLB02269	Jasmine Ajayi	[illegible]	
7/1/2022	DP1293D	CLB0734	Akintunde Ikhilae	Aikhilae@bllmail.com	
7/1/2022	DP1910A	CLB02036	Pamela Mercy	Pmercy@bllmail.com	70,652.0
7/1/2022	DP1948A	CLB0854	Kimberly Ferdinand	Kferdinand@bllmail.com	64,916.00
7/1/2022	DP1861B	CLB01989	Ella Ligali	Eligali@bllmail.com	56,301.00
7/1/2022	DP2464A	CLB01907	Tailat Sule	Tsule@bllmail.com	75,484.00
7/1/2022	DP1570D	CLB02837	Wale Josephine	Wjosephine@bllmail.com	17,384.00



In this dataset, we used conditional formatting to highlight the duplicate first

Select the column that contains the duplicates

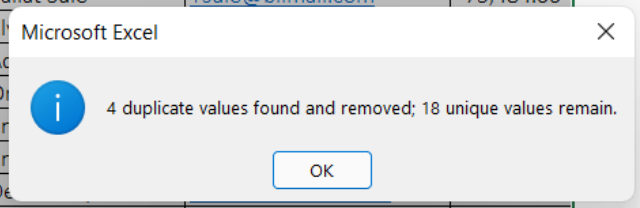


Data Cleaning

REMOVING DUPLICATES

Excel tells how many duplicate data were removed

Date	Transaction Ref	Customer ID	Customer Name	Email	Amount
7/1/2022	DP1975D	CLB0238	Chima Oyebanji	Coyebanji@bllmail.com	59,429.00
7/1/2022	DP2069D	CLB02361	Alis Peter	Apeter@bllmail.com	81,146.00
7/1/2022	DP1293D	CLB0734	Akintunde Ikhilae	Aikhilae@bllmail.com	73,155.00
7/1/2022	DP2146A	CLB0414	Raufu Lekan	Rlekan@bllmail.com	15,175.00
7/1/2022	DP2280C	CLB0639	Linda Nicole	Lnicole@bllmail.com	82,412.00
7/1/2022	DP2464A	CLB01907	Tailat Sule	Tsule@bllmail.com	75,484.00
7/1/2022	DP1435B	CLB0449	El		
7/1/2022	DP2004A	CLB02214	Ad		
7/1/2022	DP1545D	CLB01433	Om		
7/1/2022	DP1595E	CLB01116	Em		
7/1/2022	DP1575E	CLB01116	Em		
7/1/2022	DP2328C	CLB0649	De		
7/1/2022	DP2432A	CLB0209	Ashaju Ewuyemi	Aewuyemi@bllmail.com	88,335.00
7/1/2022	DP2186C	CLB02269	Jasmine Ajayi	Jajayi@bllmail.com	60,103.00
7/1/2022	DP1910A	CLB02036	Pamela Mercy	Pmercy@bllmail.com	70,652.00
7/1/2022	DP1948A	CLB0854	Kimberly Ferdinand	Kferdinand@bllmail.com	64,916.00
7/1/2022	DP1861B	CLB01989	Ella Ligali	Eligali@bllmail.com	56,301.00
7/1/2022	DP1570D	CLB02837	Wale Josephine	Wjosephine@bllmail.com	17,384.00



Here, Excel has removed the duplicate value and leaves a unique. For example, in the raw data, the transaction ref "DP1293D appeared twice, but now, it's appearing just once.

Date	Transaction Ref	Customer ID	Customer Name	Email	Amount
7/1/2022	DP1975D	CLB0238	Chima Oyebanji	Coyebanji@bllmail.com	59,429.00
7/1/2022	DP2069D	CLB02361	Alis Peter	Apeter@bllmail.com	81,146.00
7/1/2022	DP1293D	CLB0734	Akintunde Ikhilae	Aikhilae@bllmail.com	73,155.00
7/1/2022	DP2146A	CLB0414	Raufu Lekan	Rlekan@bllmail.com	15,175.00
7/1/2022	DP2280C	CLB0639	Linda Nicole	Lnicole@bllmail.com	82,412.00
7/1/2022	DP2464A	CLB01907	Tailat Sule	Tsule@bllmail.com	75,484.00
7/1/2022	DP1435B	CLB0449	Elysha Okin	Eokin@bllmail.com	32,382.00
7/1/2022	DP2004A	CLB02214	Adebare Lucy	Alucy@bllmail.com	48,146.00
7/1/2022	DP1545D	CLB01433	Omodia Yemi	Oyemi@bllmail.com	85,355.00
7/1/2022	DP1595E	CLB01116	Emmy Olugbenga	Eolugbenga@bllmail.com	35,537.00
7/1/2022	DP1575E	CLB01116	Emmy Olugbenga	Eolugbenga@bllmail.com	96,581.00
7/1/2022	DP2328C	CLB0649	Deena Doyin	Ddoyin@bllmail.com	32,697.00
7/1/2022	DP2432A	CLB0209	Ashaju Ewuyemi	Aewuyemi@bllmail.com	88,335.00
7/1/2022	DP2186C	CLB02269	Jasmine Ajayi	Jajayi@bllmail.com	60,103.00
7/1/2022	DP1910A	CLB02036	Pamela Mercy	Pmercy@bllmail.com	70,652.00
7/1/2022	DP1948A	CLB0854	Kimberly Ferdinand	Kferdinand@bllmail.com	64,916.00
7/1/2022	DP1861B	CLB01989	Ella Ligali	Eligali@bllmail.com	56,301.00
7/1/2022	DP1570D	CLB02837	Wale Josephine	Wjosephine@bllmail.com	17,384.00

MODULE 2 – Data LookUp & Referencing

LEARNING OUTCOMES
• Video 1 – VLookUp • Video 2 – Index and Match • Video 3 – XLookUp

VLOOKUP

This functions helps to search for a data based on a specified criteria. i.e., you use the known data to get the unknown data.
With VlookUp, you want Excel to look up a value for you in a table or a range and give a corresponding value that you've specified in your syntax. After you've specified your look up value, Vlookup checks for the return value on another column but the same row as the look up value

Syntax;

Lookup value – The value to lookup in the first column of a table/range

Table array – the table/range that contains both the look up value and the value you want to return

Col_index_num – the column number in the table/range that contains the value you want to return

[range lookup] – TRUE=approximate match (default) and FALSE = exact match (this argument is optional)

Points to note about VLookUp

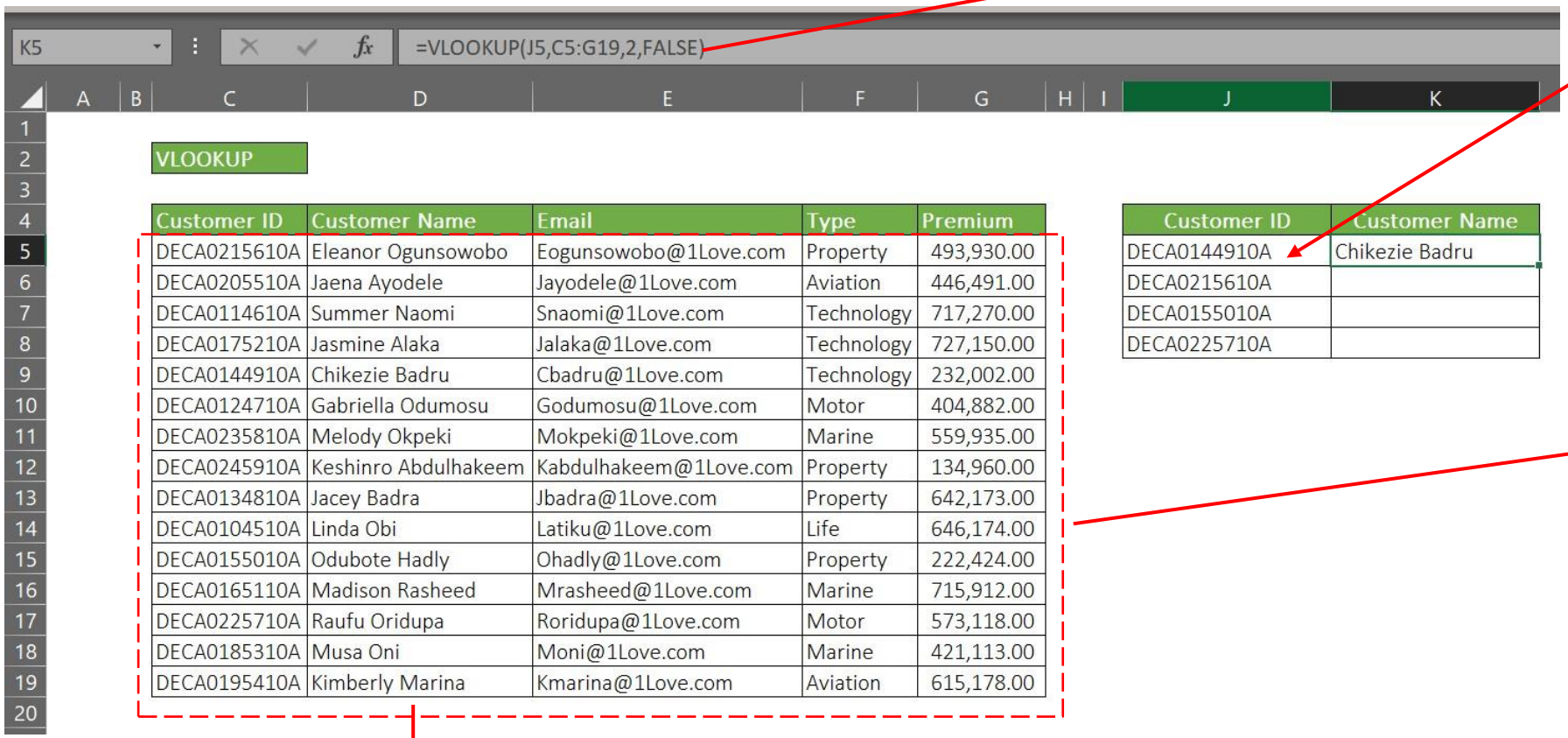
- Lookup value must appear in the first column of the table/range
- VLOOKUP on looks right
- VLOOKUP finds the first match
- #N/A! error is displayed when result not found
- Vlookup isn't cAseSensiTive

VLOOKUP

```
=VLOOKUP(
VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])
```

Range_Lookup; FALSE

Look Up Value; J5



Customer ID	Customer Name	Email	Type	Premium
DECA0215610A	Eleanor Ogunsowobo	Eogunsowobo@1Love.com	Property	493,930.00
DECA0205510A	Jaena Ayodele	Jayodele@1Love.com	Aviation	446,491.00
DECA0114610A	Summer Naomi	Snaomi@1Love.com	Technology	717,270.00
DECA0175210A	Jasmine Alaka	Jalaka@1Love.com	Technology	727,150.00
DECA0144910A	Chikezie Badru	Cbadru@1Love.com	Technology	232,002.00
DECA0124710A	Gabriella Odumosu	Godumosu@1Love.com	Motor	404,882.00
DECA0235810A	Melody Okpeki	Mokpeki@1Love.com	Marine	559,935.00
DECA0245910A	Keshinro Abdulhakeem	Kabdulhakeem@1Love.com	Property	134,960.00
DECA0134810A	Jacey Badra	Jbadra@1Love.com	Property	642,173.00
DECA0104510A	Linda Obi	Latiku@1Love.com	Life	646,174.00
DECA0155010A	Odubote Hadly	Ohadly@1Love.com	Property	222,424.00
DECA0165110A	Madison Rasheed	Mrasheed@1Love.com	Marine	715,912.00
DECA0225710A	Raufu Oridupa	Roridupa@1Love.com	Motor	573,118.00
DECA0185310A	Musa Oni	Moni@1Love.com	Marine	421,113.00
DECA0195410A	Kimberly Marina	Kmarina@1Love.com	Aviation	615,178.00

Customer ID	Customer Name
DECA0144910A	Chikezie Badru
DECA0215610A	
DECA0155010A	
DECA0225710A	

Table_Array; C5:G19

Col_Index_num
2

Toget the column index number, you count the columns from the first column. Customer ID column is 1, Customer Name column is 2, Email column is 3, Type column is 4, Premium column is 5. Since we want the customer's name to be returned, we'd choose 2 as the column index number

INDEX AND MATCH

10Alytics
data & strategy

MODULE 2 – Data LookUp & Referencing

LEARNING OUTCOMES
• Video 1 – VLookUp • Video 2 – Index and Match • Video 3 – XLookUp

INDEX AND MATCH

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data & strategy

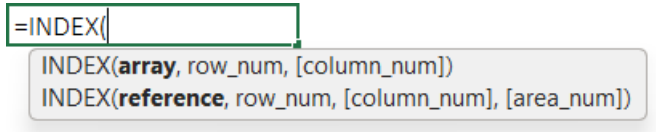
INDEX AND MATCH

Due to the limitations of VLookUp, there is need for another way to be able to perform advanced lookup successfully. This is where Index and Match comes in.

Index and Match is flexible and dynamic – you can look up horizontally, vertically, left and right

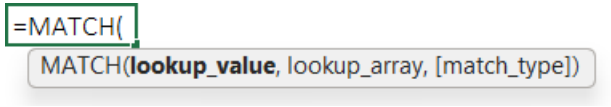
INDEX

This Function returns a specific value from the intersection of a row and column in a table or range. This means you will specify the row number and the column number. But if the table/range has just 1 column, you don't need to specify the column since the array is just 1 column



MATCH

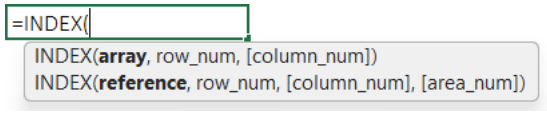
This Function returns the numerical position of a data within a single column or row. With MATCH, you look for a value in an array and the MATCH function will return the position of that value you are looking for in a single column or row.



Note, when you are selecting your *look up_array*, you must reference only 1 column or 1 row.

INDEX AND MATCH

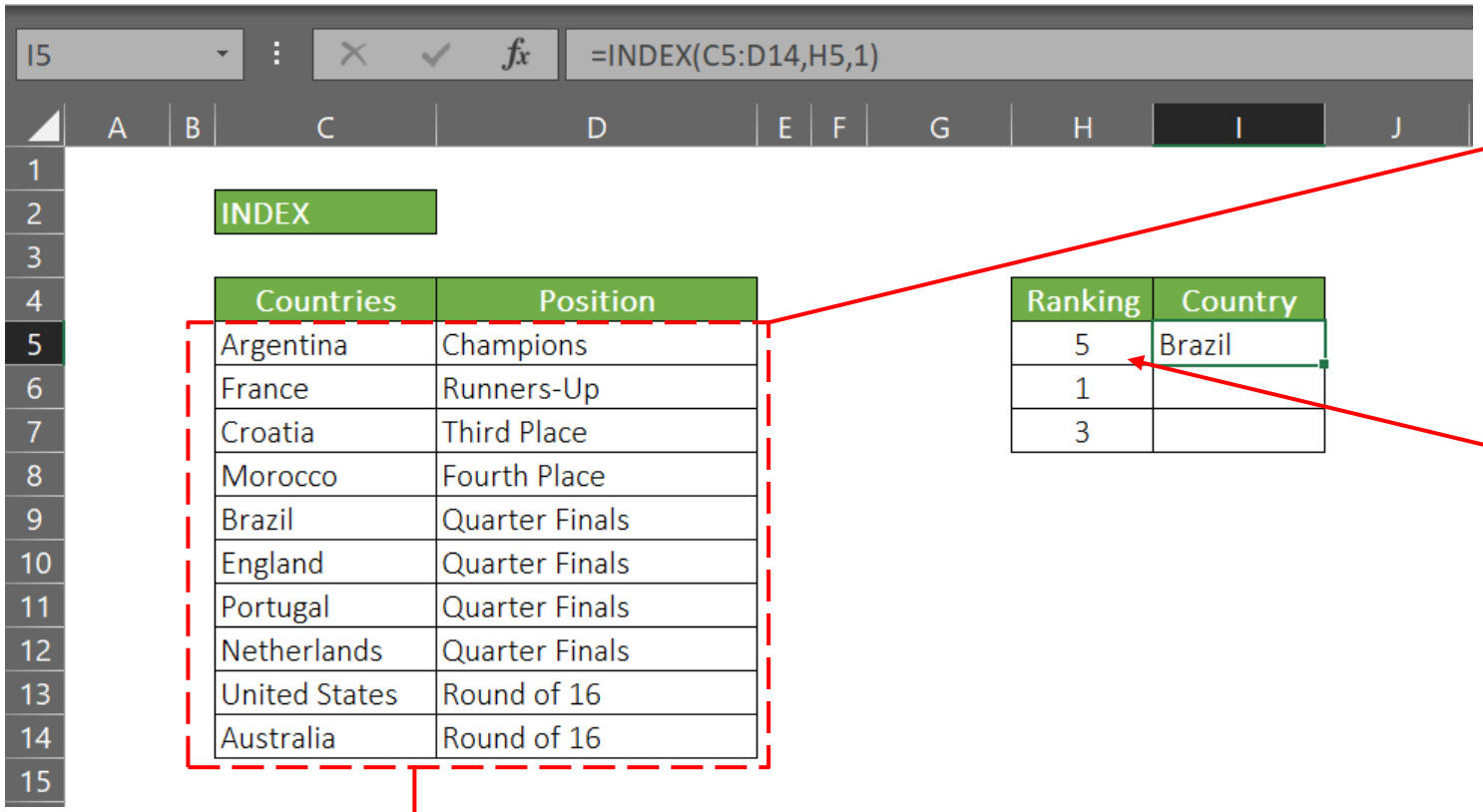
INDEX



Array – The rows and columns that contains the lookup value

row_num – the row number you want to retrieve the data from

[column_num] – the column number you want to retrieve the data from. If you only selected just 1 column under the array, then, you don't need to use the column_num argument



array; C5:D14

The array has more than 1 column, so, you must specify the column_num

row_num; *5 (which is already written in cell H5)*

That's the row we want to retrieve the data from

col_num; 1

This is because the column we want to retrieve data from is the Country column and that's number 1

INDEX AND MATCH

MATCH

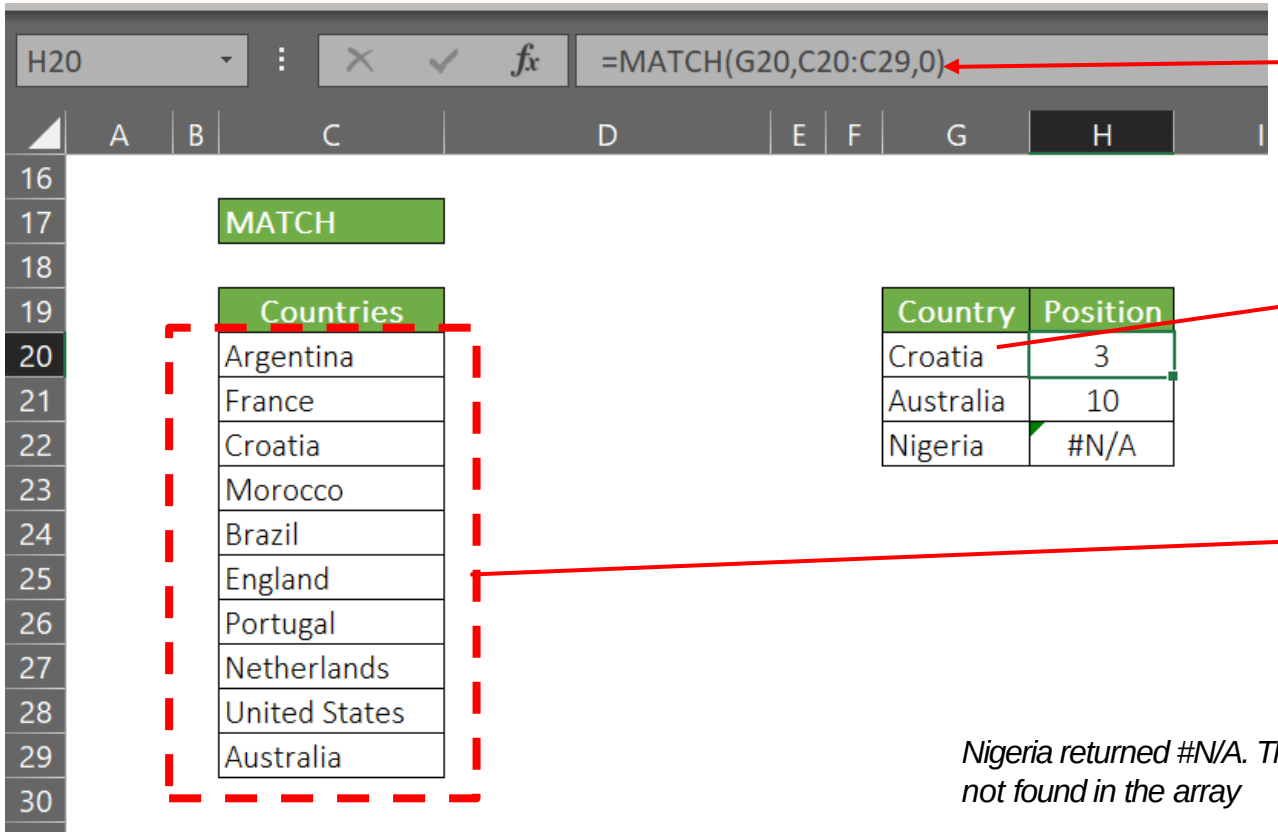
=MATCH(

MATCH(**lookup_value**, lookup_array, [match_type])

lookup value; The data you are searching for

lookup_array; the specific row or column where the data you are searching for is contained

[match_type]; 1 – Less than
0 – Exact match
– 1 – Greater than



lookup value; Croatia which is on cell G20

We want to know the position on Croatia in the country column

lookup array; C20:C29

This array contains the look up value

match_type; 0 (exact match)

Nigeria returned #N/A. This is because Nigeria was not found in the array

INDEX AND MATCH

Time to combine both Index and Match to perform a lookup

INDEX (array, row_num, [column_num])

MATCH (lookup_value, lookup_array, [match_type])

The first function to type is INDEX, you enter the array (where your answer can be found) and then, you replace the row number with MATCH function. This is because the MATCH function will return a number for the index function.

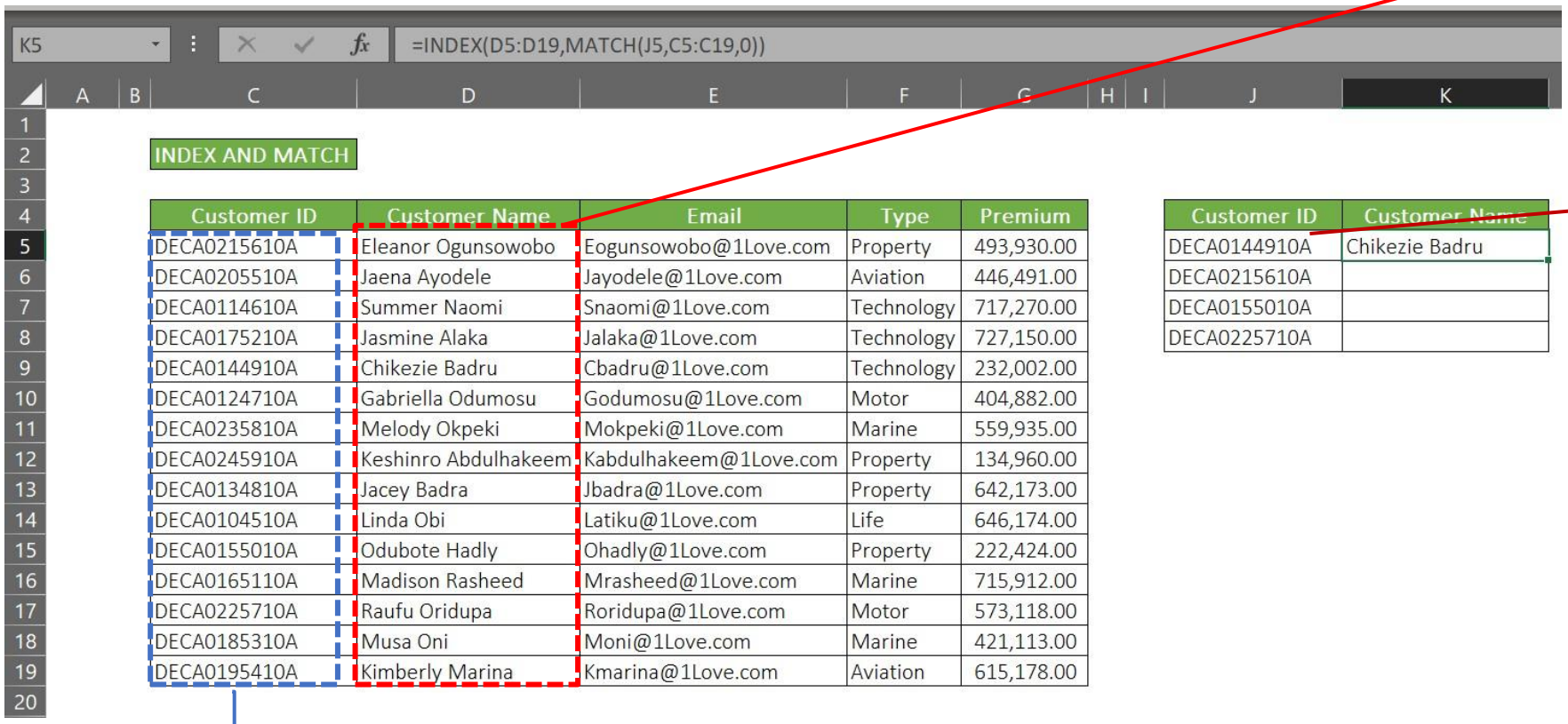
So, the MATCH function replaces the “row_num” syntax

INDEX (Array, MATCH (lookup value, lookup array, match type))

INDEX AND MATCH

INDEX(Array, MATCH(lookup value, lookup array, match type))

Array; D5:D19



Customer ID	Customer Name	Email	Type	Premium
DECA0215610A	Eleanor Ogunsowobo	Eogunsowobo@1Love.com	Property	493,930.00
DECA0205510A	Jaena Ayodele	Jayodele@1Love.com	Aviation	446,491.00
DECA0114610A	Summer Naomi	Snaomi@1Love.com	Technology	717,270.00
DECA0175210A	Jasmine Alaka	Jalaka@1Love.com	Technology	727,150.00
DECA0144910A	Chikezie Badru	Cbadru@1Love.com	Technology	232,002.00
DECA0124710A	Gabriella Odumosu	Godumosu@1Love.com	Motor	404,882.00
DECA0235810A	Melody Okpeki	Mokpeki@1Love.com	Marine	559,935.00
DECA0245910A	Keshinro Abdulhakeem	Kabdulhakeem@1Love.com	Property	134,960.00
DECA0134810A	Jacey Badra	Jbadra@1Love.com	Property	642,173.00
DECA0104510A	Linda Obi	Latiku@1Love.com	Life	646,174.00
DECA0155010A	Odubote Hadly	Ohadly@1Love.com	Property	222,424.00
DECA0165110A	Madison Rasheed	Mrasheed@1Love.com	Marine	715,912.00
DECA0225710A	Raufu Oridupa	Roridupa@1Love.com	Motor	573,118.00
DECA0185310A	Musa Oni	Moni@1Love.com	Marine	421,113.00
DECA0195410A	Kimberly Marina	Kmarina@1Love.com	Aviation	615,178.00

Customer ID	Customer Name
DECA0144910A	Chikezie Badru
DECA0215610A	
DECA0155010A	
DECA0225710A	

lookup value;DECA0144910A
(which is on cell J5)

lookup array;C5:C19

MODULE 2 – Data LookUp & Referencing

LEARNING OUTCOMES
• Video 1 – VLookUp • Video 2 – Index and Match • Video 3 – XLookUp

XLOOKUP

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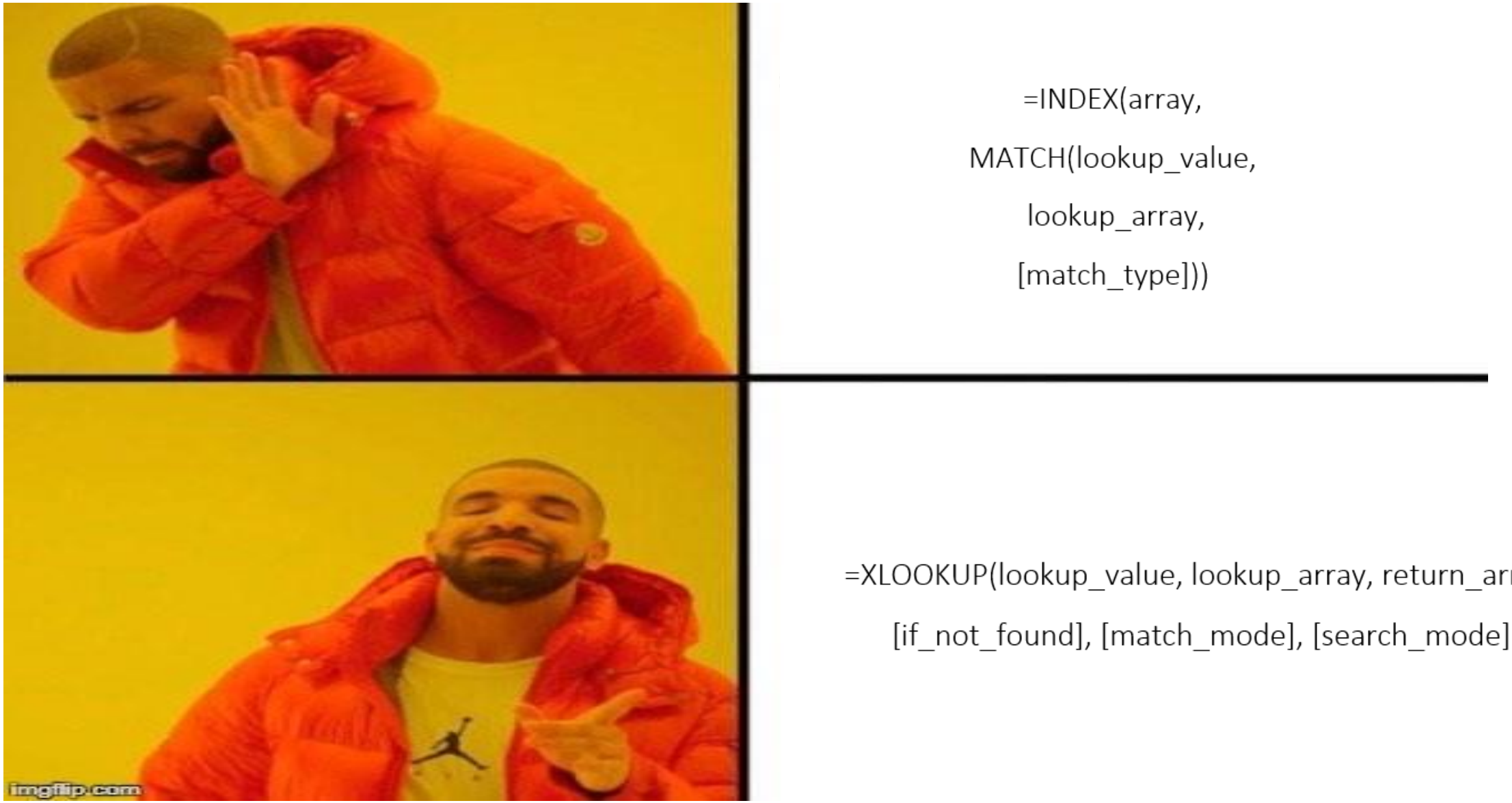
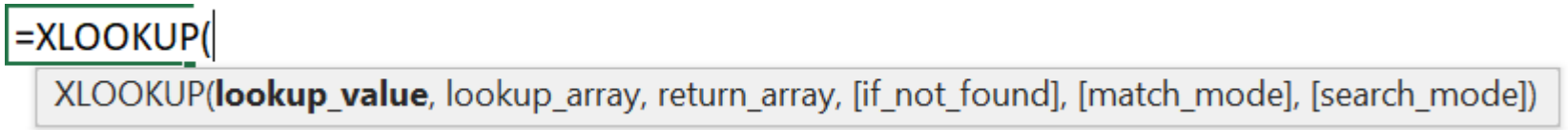


XLOOKUP

This is an advanced function that helps with any limitations of VLookUp and not combining 2 functions like Index & Match.
It performs lookup tasks; vertically and horizontally

Syntax;



Lookup value – The value to lookup for

Lookup array – the column that contains the look up value

Return_array – the column that contains the value you want to return

Other arguments; [if not found], [match mode], [search mode], are all optional – you don't have to necessarily fulfill them to perform a simple lookup task

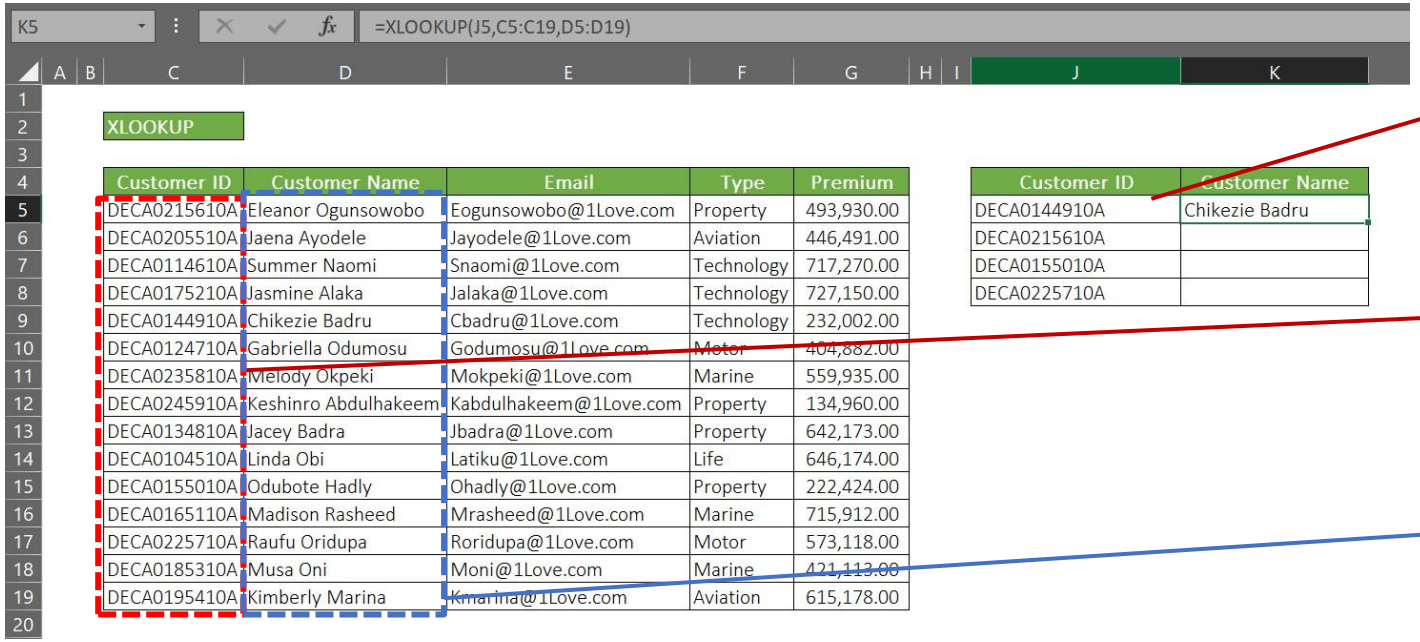
N:B

- The default match mode for XLOOKUP is EXACT.
- The lookup array and return array must be of the same length

XLOOKUP

=XLOOKUP(

XLOOKUP(**lookup_value**, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])



Customer ID	Customer Name	Email	Type	Premium
DECA0215610A	Eleanor Ogunsowobo	Eogunsowobo@1Love.com	Property	493,930.00
DECA0205510A	Jaena Ayodele	Jayodele@1Love.com	Aviation	446,491.00
DECA0114610A	Summer Naomi	Snaomi@1Love.com	Technology	717,270.00
DECA0175210A	Jasmine Alaka	Jalaka@1Love.com	Technology	727,150.00
DECA0144910A	Chikezie Badru	Cbadru@1Love.com	Technology	232,002.00
DECA0124710A	Gabriella Odumosu	Godumosu@1Love.com	Motor	404,882.00
DECA0235810A	Melody Okpeki	Mokpeki@1Love.com	Marine	559,935.00
DECA0245910A	Keshinro Abdulhakeem	Kabdulhakeem@1Love.com	Property	134,960.00
DECA0134810A	Jacey Badra	Jbadra@1Love.com	Property	642,173.00
DECA0104510A	Linda Obi	Latiku@1Love.com	Life	646,174.00
DECA0155010A	Odubote Hadly	Ohadly@1Love.com	Property	222,424.00
DECA0165110A	Madison Rasheed	Mrasheed@1Love.com	Marine	715,912.00
DECA0225710A	Raufu Oridupa	Roridupa@1Love.com	Motor	573,118.00
DECA0185310A	Musa Oni	Moni@1Love.com	Marine	421,113.00
DECA0195410A	Kimberly Marina	Kmarina@1Love.com	Aviation	615,178.00

Customer ID	Customer Name
DECA0144910A	Chikezie Badru
DECA0215610A	
DECA0155010A	
DECA0225710A	

lookup value;DECA0144910A
(which is on cell J5)

lookup array; C5:C19
(where you can find your lookup value)

return array; D5:D19
(the column containing the result you want to return)

THANK YOU!