# INTRODUCTION

## TO COMPUTER APPLICATION

Author: Kabir Yusuf Bashir
C.E.O www.teampiccolo.com

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# Chapter 1: Computer and its components

## What is a Computer?

A computer is a machine or device that performs processes, calculations and operations based on instructions provided by a software or hardware program. It is designed to execute applications and provides a variety of solutions by combining integrated hardware and software components.

## Input Devices

An **input device** is any hardware device that sends data to a computer, allowing you to interact with and control it. Example of an Input devices.

- Keyboard
- Mouse
- Scanner
- Microphone
- Web Camera


## Output Devices

An **output device** is any device used to send data from a computer to another device or user. Most computer data output that is meant for humans is in the form of audio or video. Examples include:

- Monitors
- Projectors
- Speakers
- Headphones
- Printers.


## Storage Devices

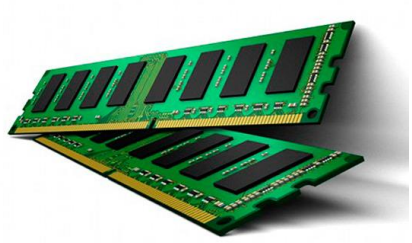
A **storage device** is any computing hardware that is used for storing, porting and extracting data files and objects. It can hold and store information both temporarily and permanently, and can be internal or external to a computer, server or any similar computing device. Examples of storage devices include:

- Hard disk
- DVDs
- CDs.
- Pen Drive (Flash)

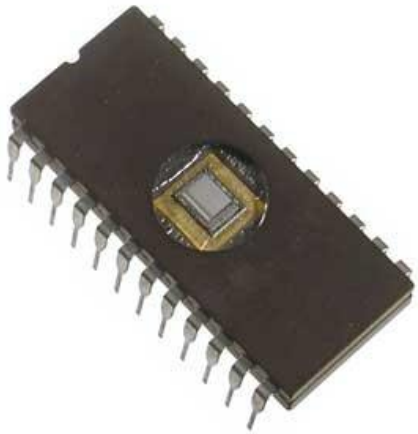
## Computer Memory

Computer **memory** is any physical device capable of storing information temporarily like RAM (random access memory), or permanently, like ROM (read-only memory).

- RAM (Random Access Memory): **RAM** (**random access memory**) is a hardware device that allows information to be stored and retrieved on a computer. RAM is a volatile memory and requires power to keep the data accessible. If the computer is turned off, all data contained in RAM is lost.



- ROM (Read Only Memory): **ROM** is a storage medium that is used with computers and other electronic devices. As the name indicates, data stored in ROM may only be read. It is either modified with extreme difficulty or not at all. A simple example of ROM is the cartridge used with video game consoles, which allows one system to run multiple games.



## A Processor

A processor is an integrated electronic circuit that performs the calculations that run a computer. A processor performs arithmetical, logical, input/output (I/O) and other basic instructions that are passed from an operating system (OS). Most other processes are dependent on the operations of a processor.

# References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# Chapter 2: Working with Windows OS

## What is a Computer Mouse?

A **computer mouse** is a handheld hardware input device that controls a cursor in a GUI and can move and select text, icons, files, and folders.


## How to Work with Mouse

**Step 1:** Pick up your mouse and have a look at it.


At the front (which points away from you), there are two buttons – left and right. You press or, more correctly, 'click' these to make things happen.

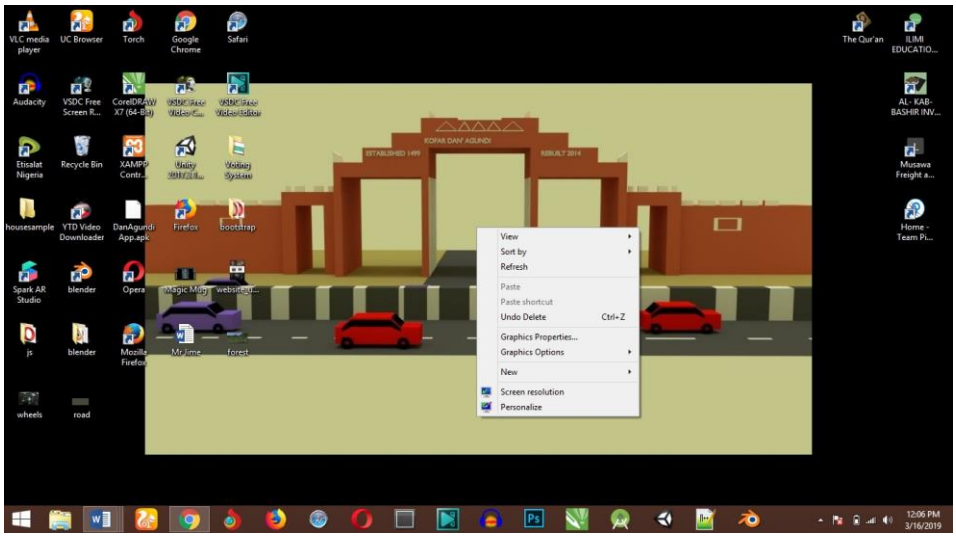
Most mice also have a wheel in between the buttons that you roll to move up and down the screen – technically called 'scrolling'.

**Step 2:** Learn to hold your mouse comfortably. It's normally held between your thumb and little finger like this:

**Step 3:** Have a click. Use your index finger to click the left button and your middle finger to click the right button:

**Step 4:** Try to double-click. This is done quite often on the left button. You have to click twice, as quickly as possible. The first click tells the computer that you are in a particular 'window', and the second click tells it that you're selecting a button or link or whatever to do something in that window. If you click too slowly, the computer just thinks you're telling it where you are again and again, so do click quickly.

**Step 5:** Now try a right-click. Just click the right button, paying no attention where the cursor is on the screen. A menu will appear, giving you options. Whenever you right-click, it opens a menu. If you move your cursor off the menu and left-click, the menu will close.



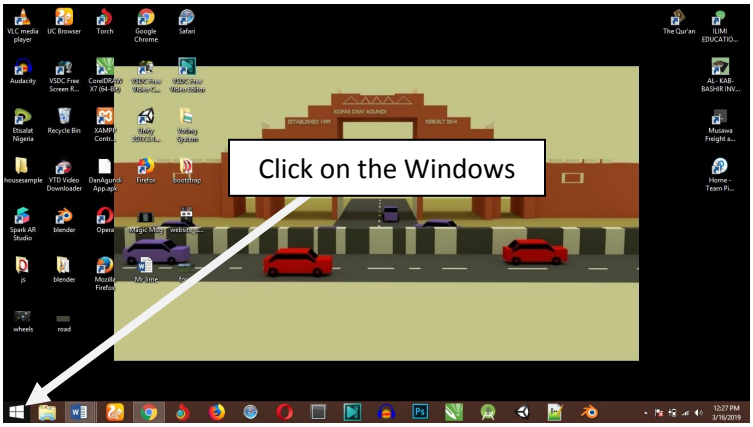

# Understanding the Window Environment

## User Account

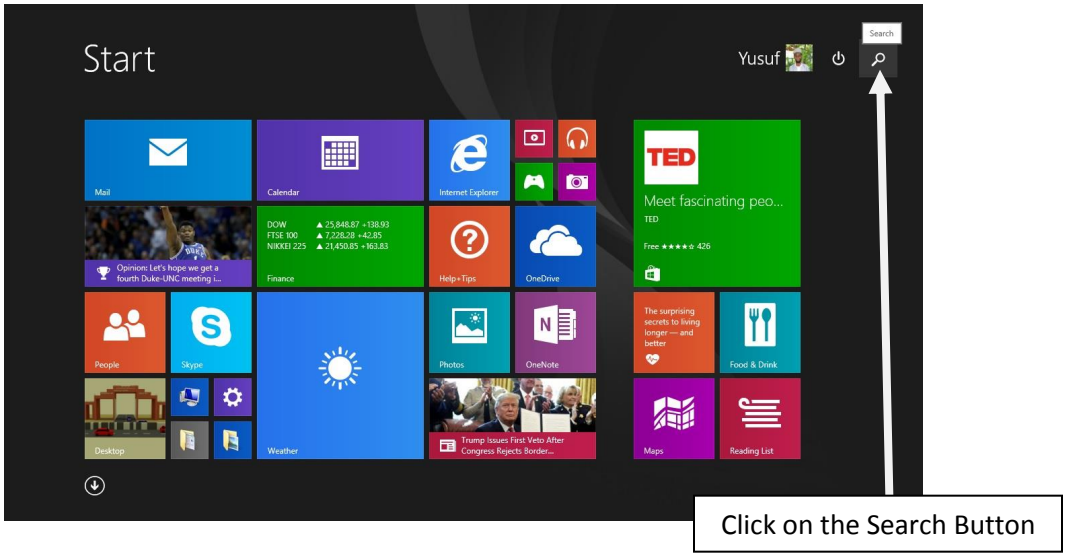
The User Accounts section of Control Panel allows you to control Windows user settings. User accounts determine who can and cannot access the system. User accounts are also used to determine what rights a user will have on the system. The User Accounts section of Control Panel has three options: Change your account picture, Add or remove user accounts, and Change your Windows password.

To locate the User Accounts section on your Computer, follow the following steps below:

**Step 1**:


Click on the Windows

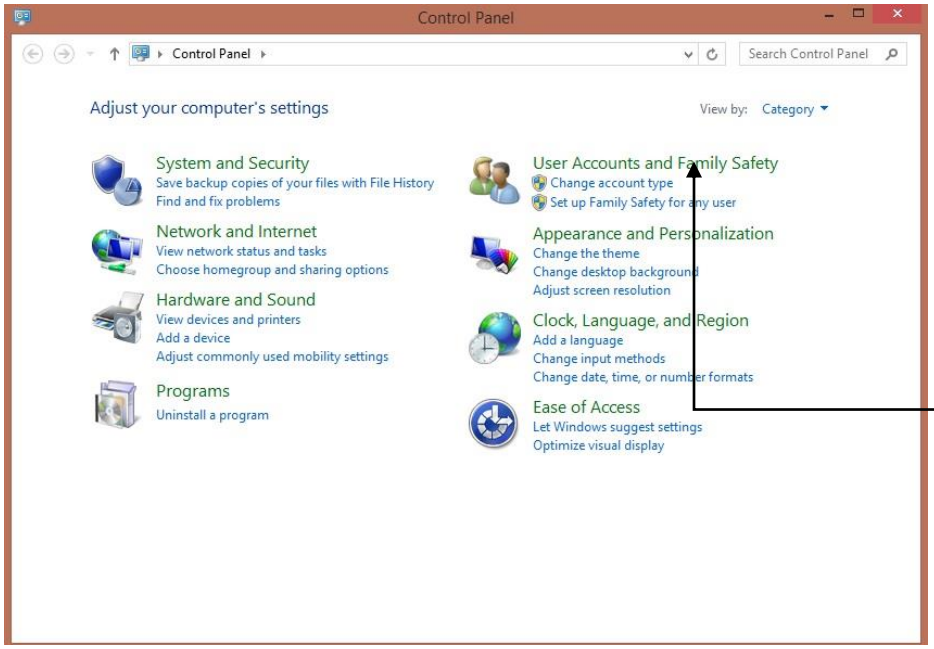
**Step 2:**


Start
Yusuf
Search
Click on the Search Button

**Step 3:**

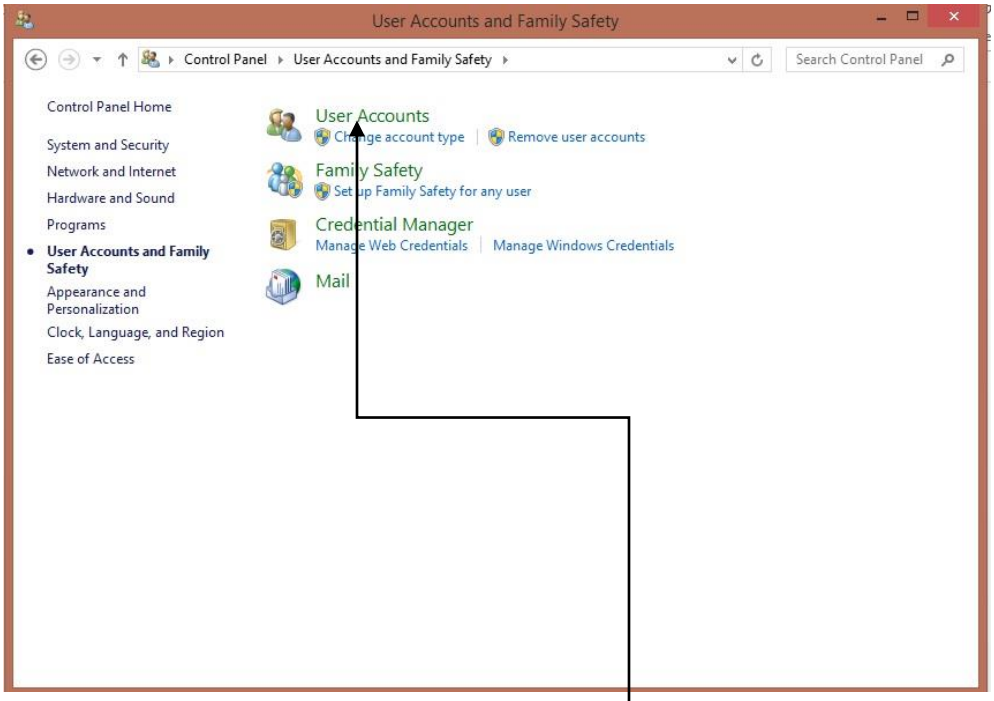

Type **Control Panel** inside the search box and click on the **enter** button on your keyboard

**Step 4:**



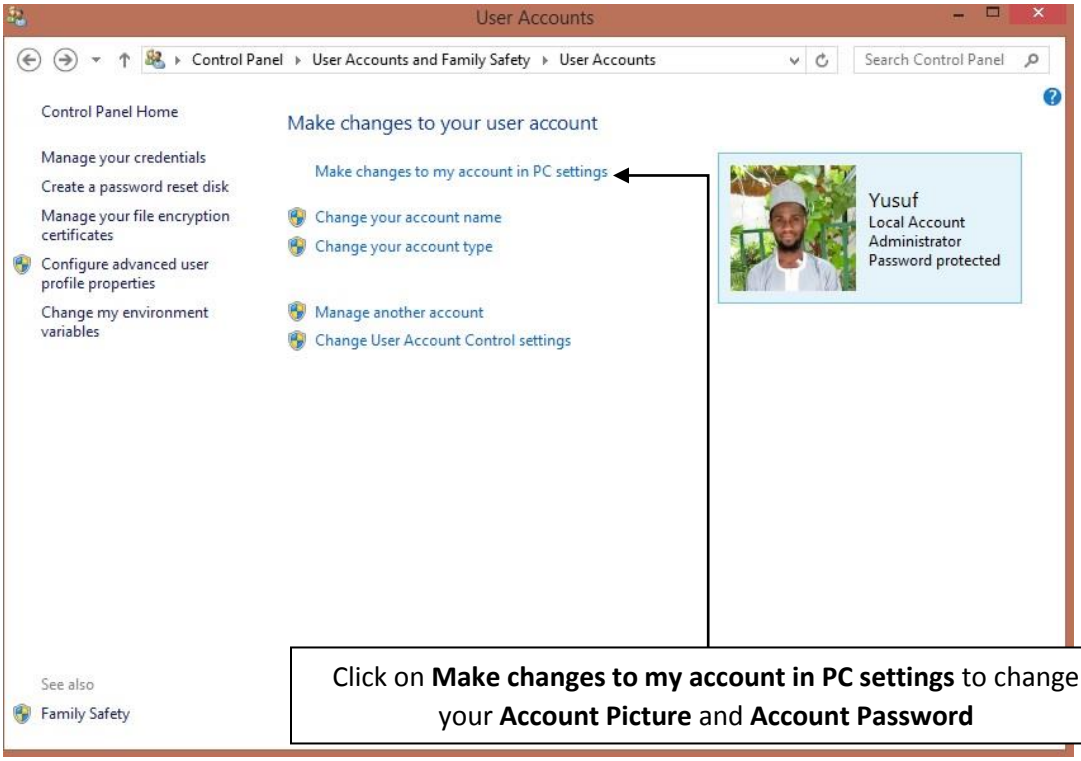

Click on **User Accounts and Family Safety**

**Step 5:**



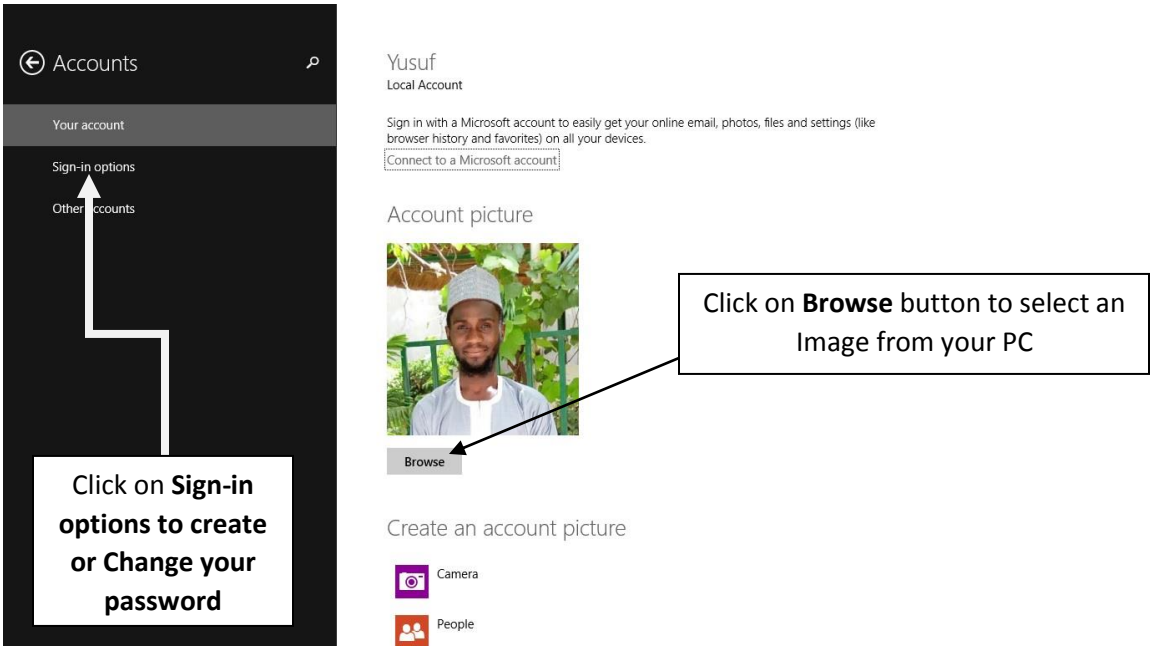

Click on **User Accounts**

**Step 6:**




Click on **Make changes to my account in PC settings** to change your **Account Picture** and **Account Password**

**Step 7:**

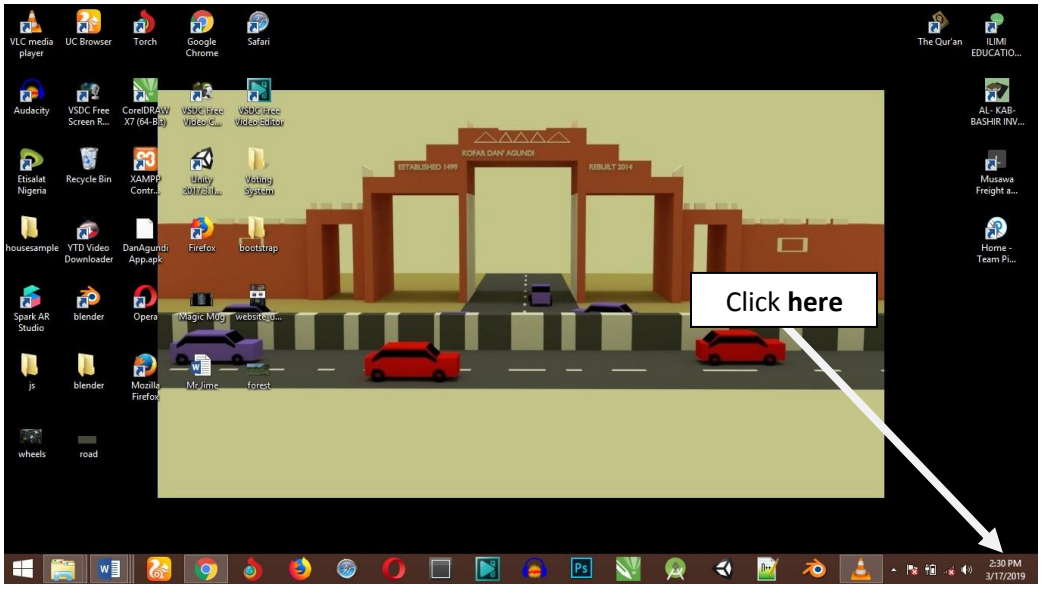



## Date and Time

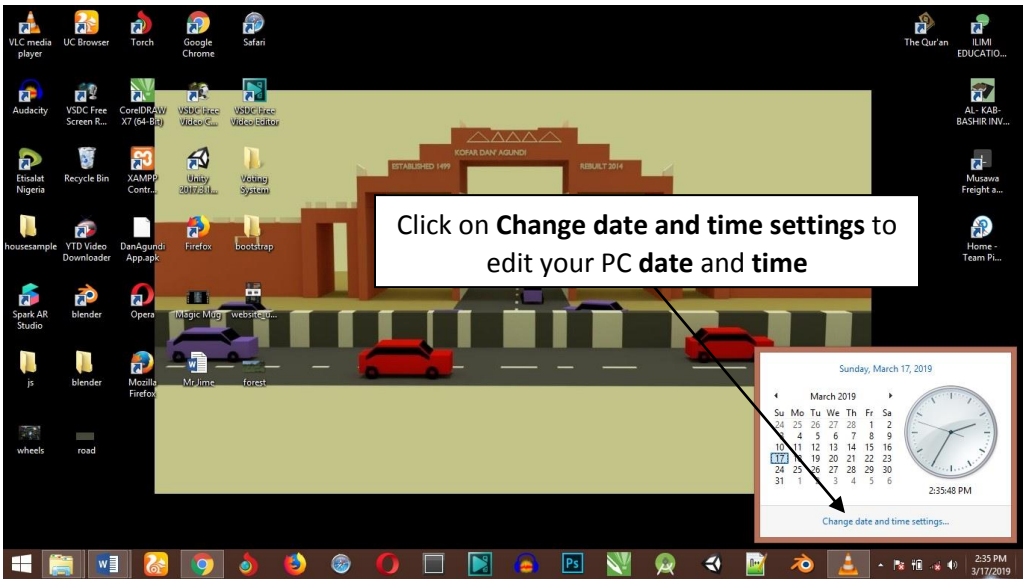
The **Date and Time** option allows you to configure time and date information for your PC. The Date and Time section of Control Panel has four options: Set the time and date, Change the time zone, Add clocks for different time zones, Add the Clock gadget to the desktop.

**How to locate the Date and Time option:**

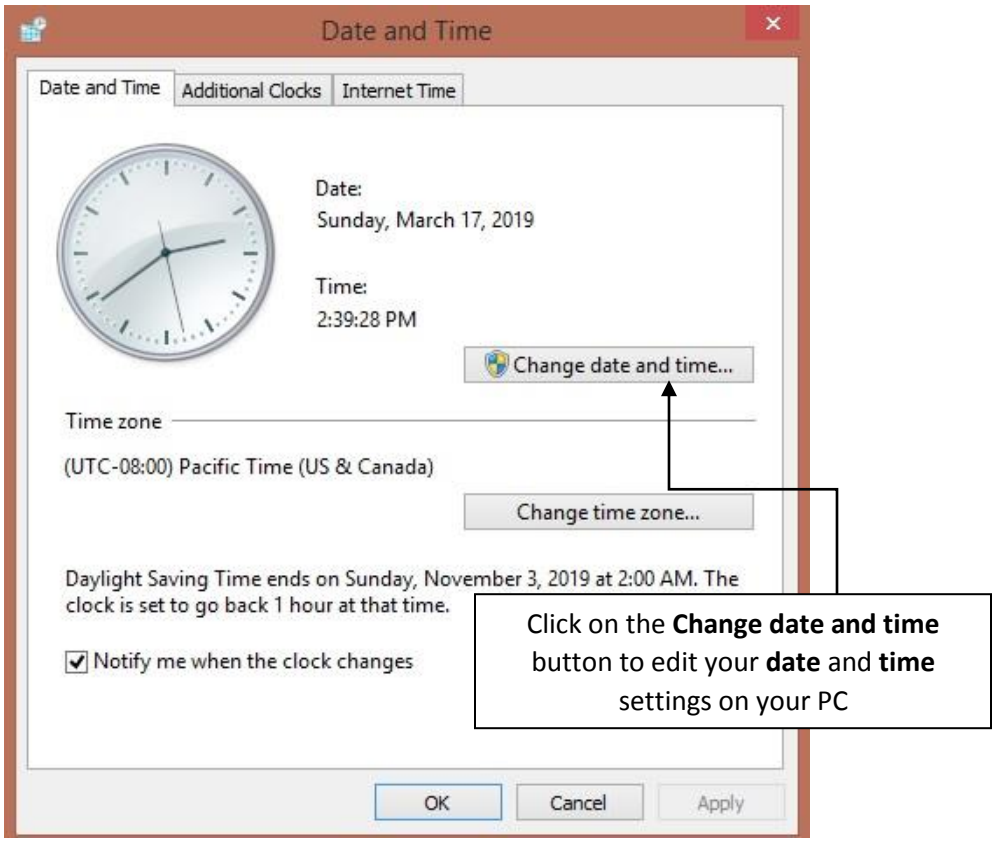
**Step 1:**




**Step 2:**



**Step 3:**

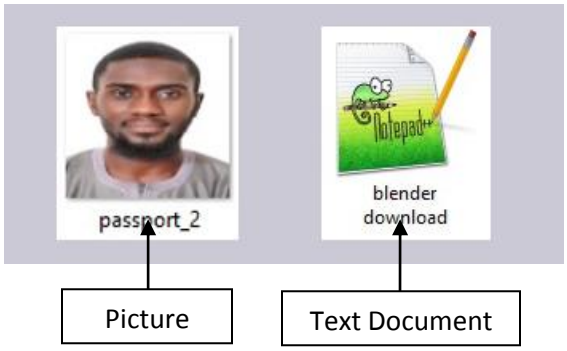



# Working with Files and Folders

## What are files and folders?

A **file** is very much like a typed document that you might find on someone's desk or in a filing cabinet; it's an item that contains a collection of related information. On a computer, examples of files include text documents, spreadsheets, digital pictures, and even songs. Every picture you take with a digital camera, for example, is a separate file, and a music CD might contain a dozen individual song files.

Your computer represents files with icons. By looking at a file's icon, you can tell at a glance what kind of file it is. Here are some common file icons:

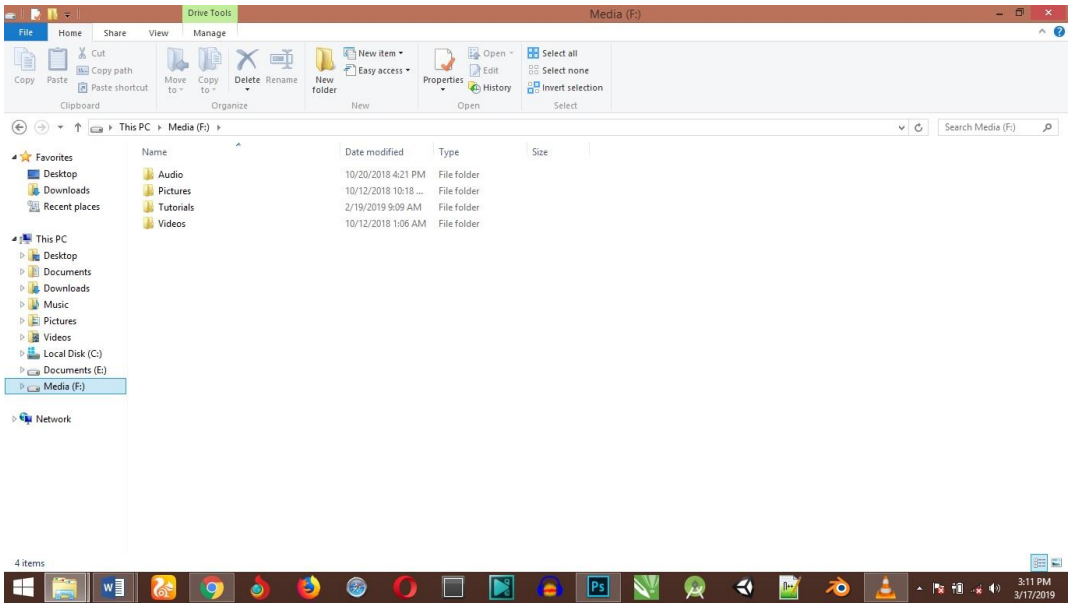



**A folder** is little more than a container in which you can store files. If you put thousands of paper files on someone's desk, it would be virtually impossible to find any particular one when you needed it. That's why people often store paper files in folders inside a filing cabinet. Arranging files into logical groups makes it easy to locate any particular file. Folders on your computer work exactly the same way. This is what a typical folder icon looks like:

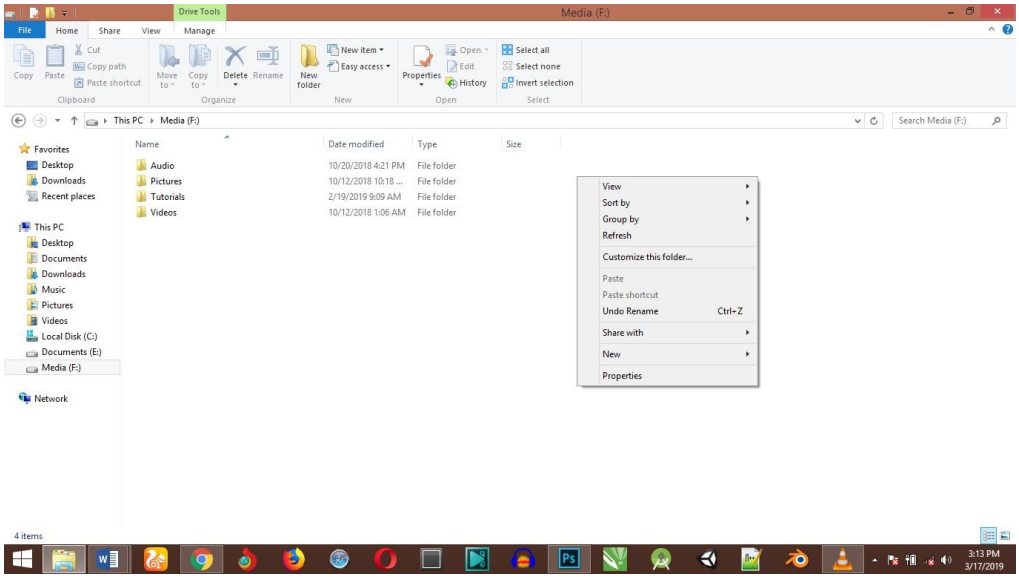

## Viewing your files in a folder

When you open a **folder** and see your **files**, you might prefer larger (or smaller) icons, or an arrangement that lets you see different kinds of information about each file. To make these kinds of changes, follow the following steps below:

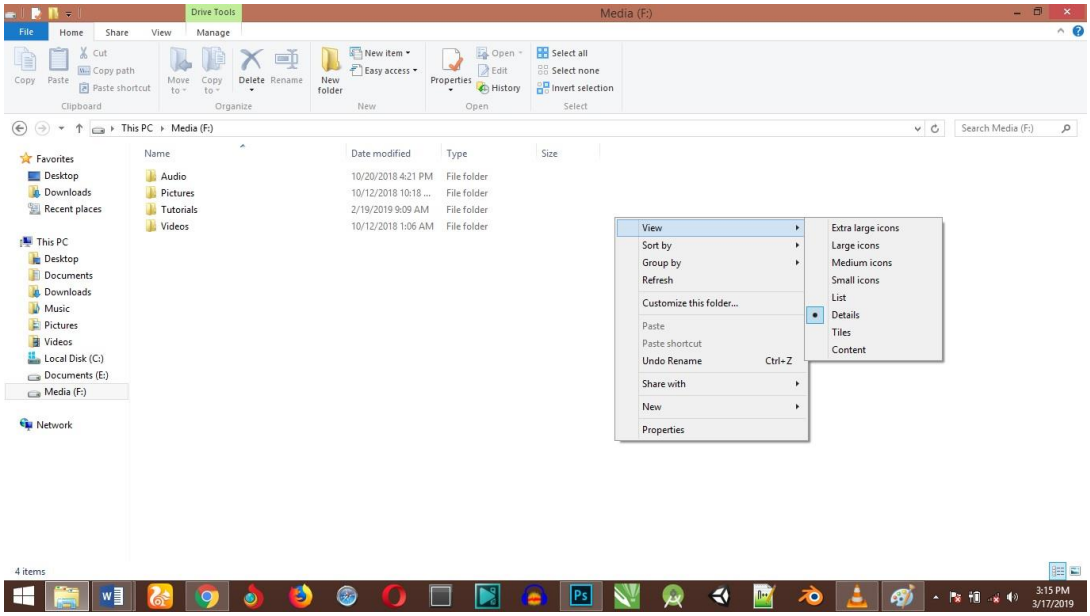
**Step 1:**



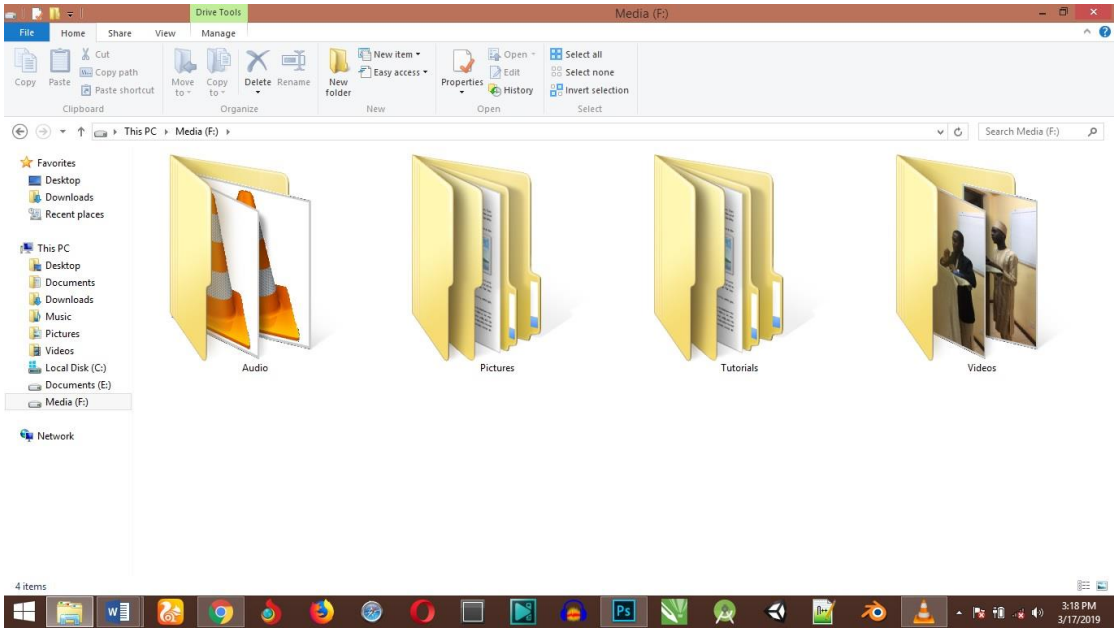

**Step 2: Press the right-click button on your Mouse**



**Step 3: Move your Mouse Pointer on the ARROW sign under the View**



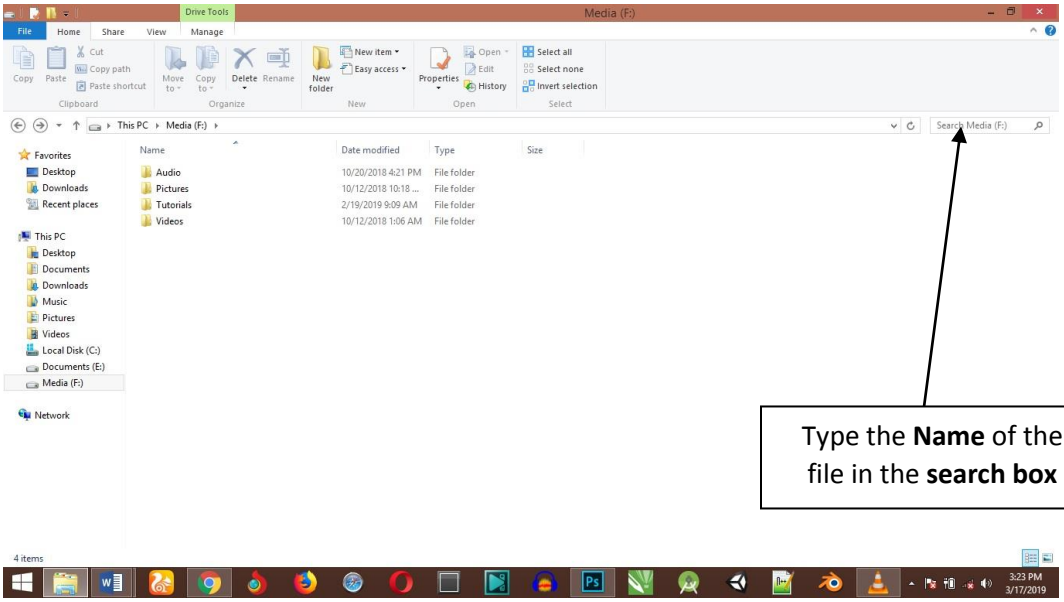

**Step 4: Select any of the option of your choice (I will try the Extra Large Icons)**



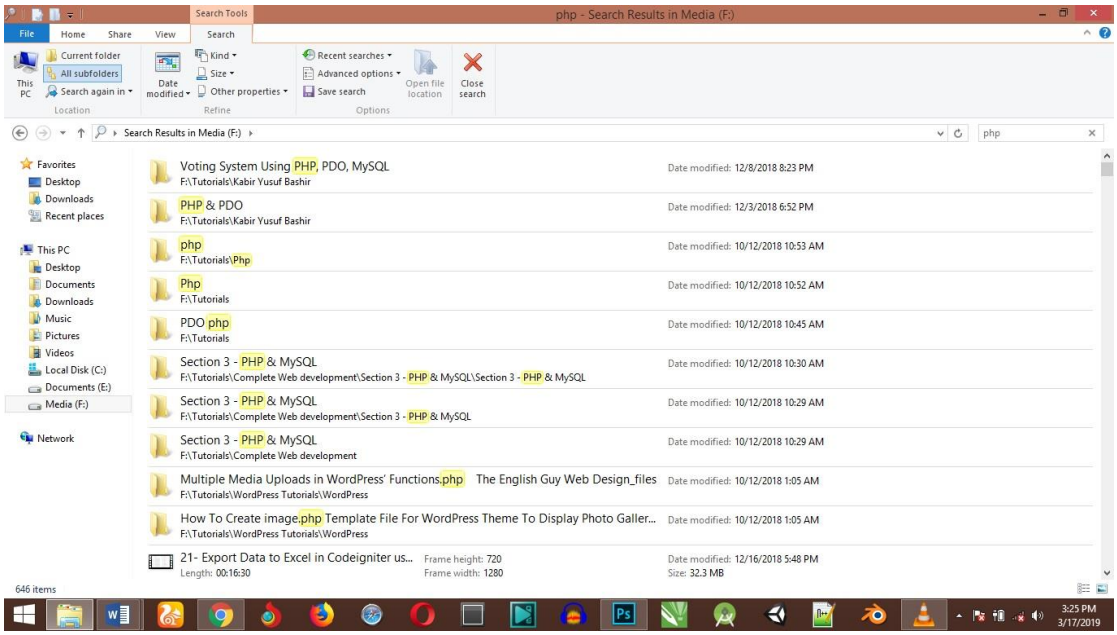

## Finding your files

When you need to find a particular file, you'll often know that it's located somewhere in a common folder like Documents or Pictures. Unfortunately, actually locating the file you want might mean browsing through hundreds of files and subfolders— not an easy task. To save yourself time and effort, use the Search box to find your file.

**Step 1:**



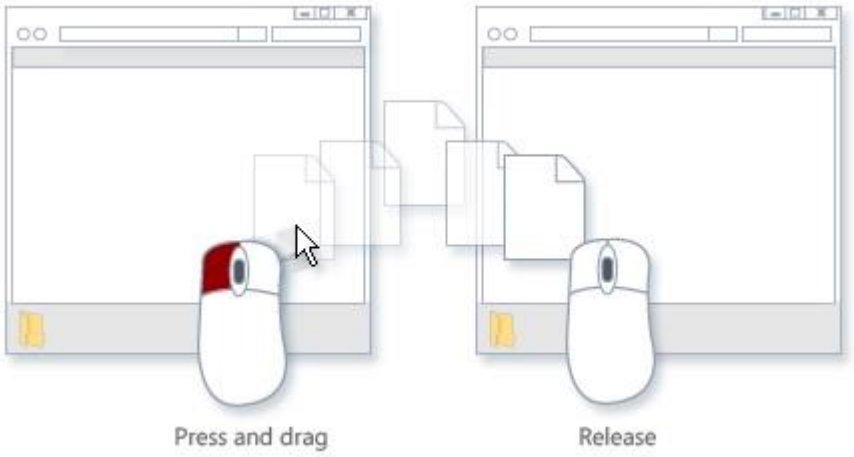

**Step 2: I will try to search for "php"**



## Copying and moving files and folders

Occasionally, you might want to change where files are stored on your computer. You might want to move files to a different folder, for example, or copy them to removable media (such as CDs or memory cards) to share with another person.

Most people copy and move files using a method called drag and drop. Start by opening the folder that contains the file or folder you want to move. Then open the folder where you want to move it to. Position the folder windows on the desktop so you can see the contents of both of them. Next, drag the file or folder from the first folder to the second folder. That's all there is to it.




## Creating and deleting files

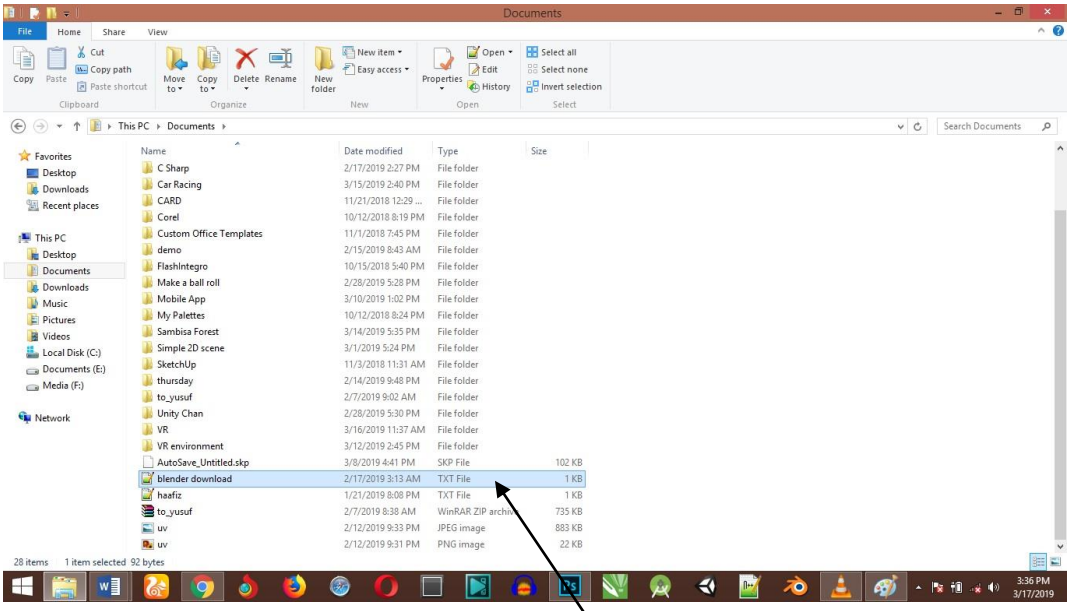
The most common way to create new files is by using a program. For example, you can create a text document in a word processing program or a movie file in a video editing program. Some programs create a file when you open them.

When you open Microsoft Word, for example, it starts with a blank page. This represents an empty (and unsaved) file. Start typing, and when you are ready to save your work, click File in the menu bar and then click **Save As**. In the dialog box that appears, type a file name that will help you find the file again in the future, and then click **Save** (We will learn about Microsoft Word in the next chapter).

To delete a file, open the folder that contains the file and then select the file. Press **DELETE** and then, in the Delete File dialog box, click on **Yes**. When you delete a file, it's temporarily stored in the **Recycle Bin**. Think of the **Recycle Bin** as a safety folder that allows you to recover files or folders that you deleted accidentally.

## Opening an existing file

To open a file, double-click it. The file will open in the program that you used to create or edit it. If it's a text file, for example, it will open in your word-processing program.




**Double Click** on the file to open the file

# References


1. https://www.computerhope.com/jargon/m/mouse.htm
2. https://www.digitalunite.com/technology-guides/computer-basics/using-computer/how-use-mouse
3. https://cdn.ttgtmedia.com/searchSystemsChannel/downloads/Microsoft_Windows_7_Administrator's_Reference_Chapter_5.pdf
4. https://www.wm.edu/offices/it/documents/training/Working%20with%20files%20and%20folders.pdf

# CHAPTER 3: Application Software

An **application** is any program, or group of programs, that is designed for the end user. **Applications software** (also called end-user programs) include such things as database programs, word processors, Web browsers, spreadsheets, etc.

In this chapter we will be learning Microsoft Word, Microsoft PowerPoint, Microsoft Excel, Microsoft Access and lastly CorelDraw.

## Microsoft Word

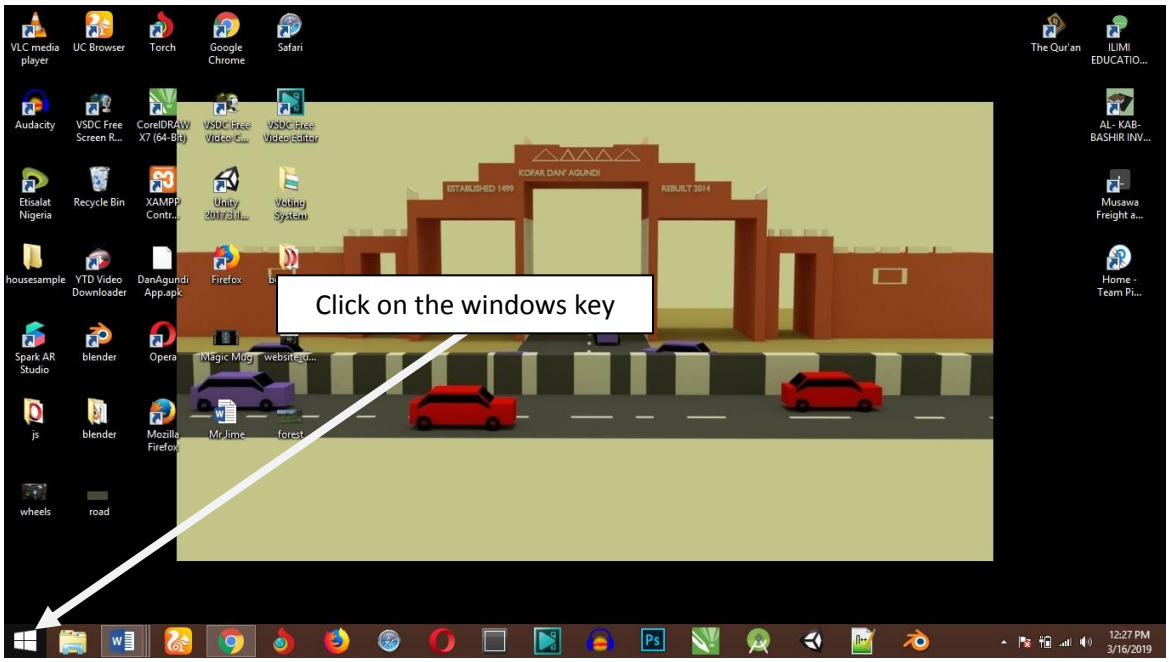
**Microsoft Word** allows you to create and edit personal and business documents, such as letters, reports, invoices, emails and books. By default, documents saved in Word 2010 are saved with the .docx extension. Microsoft Word can be used for the following purposes −

- To create business documents having various graphics including pictures, charts, and diagrams.
- To store and reuse readymade content and formatted elements such as cover pages and sidebars.
- To create letters and letterheads for personal and business purpose.
- To design different documents such as resumes or invitation cards etc.
- To create a range of correspondence from a simple office memo to legal copies and reference documents.

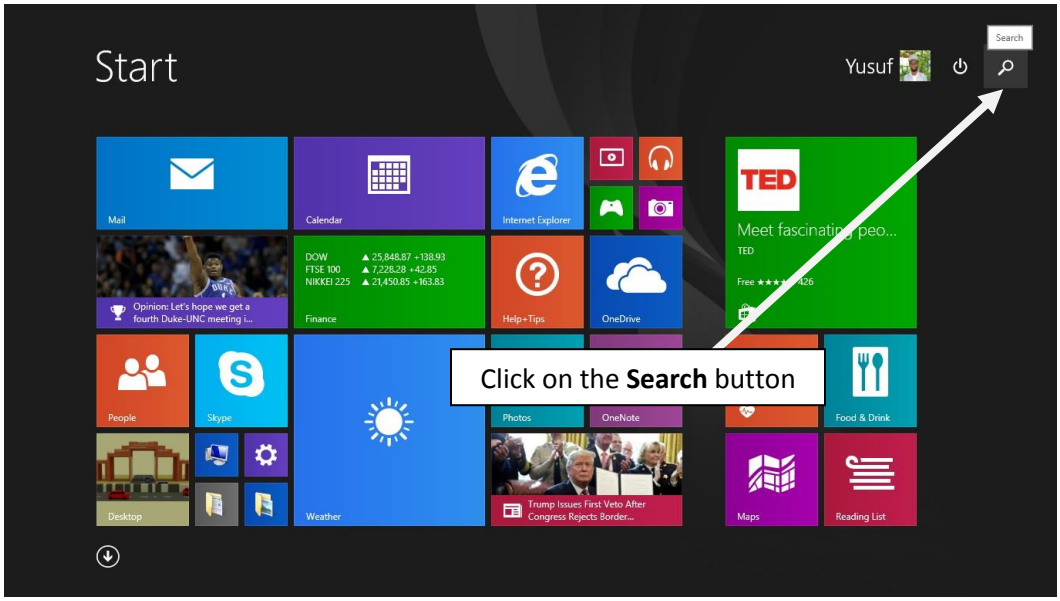
## Getting Started with Microsoft word

In this chapter, we will discuss how to get started with **Microsoft Word**. We will understand how to start a **Microsoft Word** application in simple steps. Assuming you have **Microsoft Word** installed in your PC, to start the Word application, follow these steps –

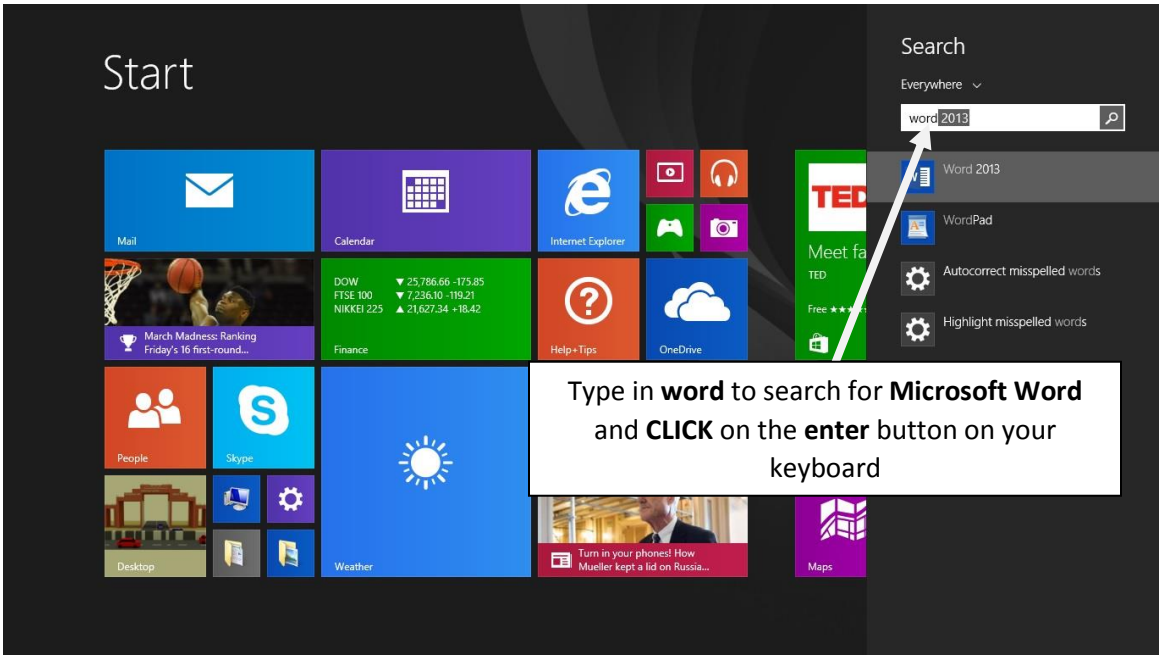
**Step 1:**




**Step 2:**

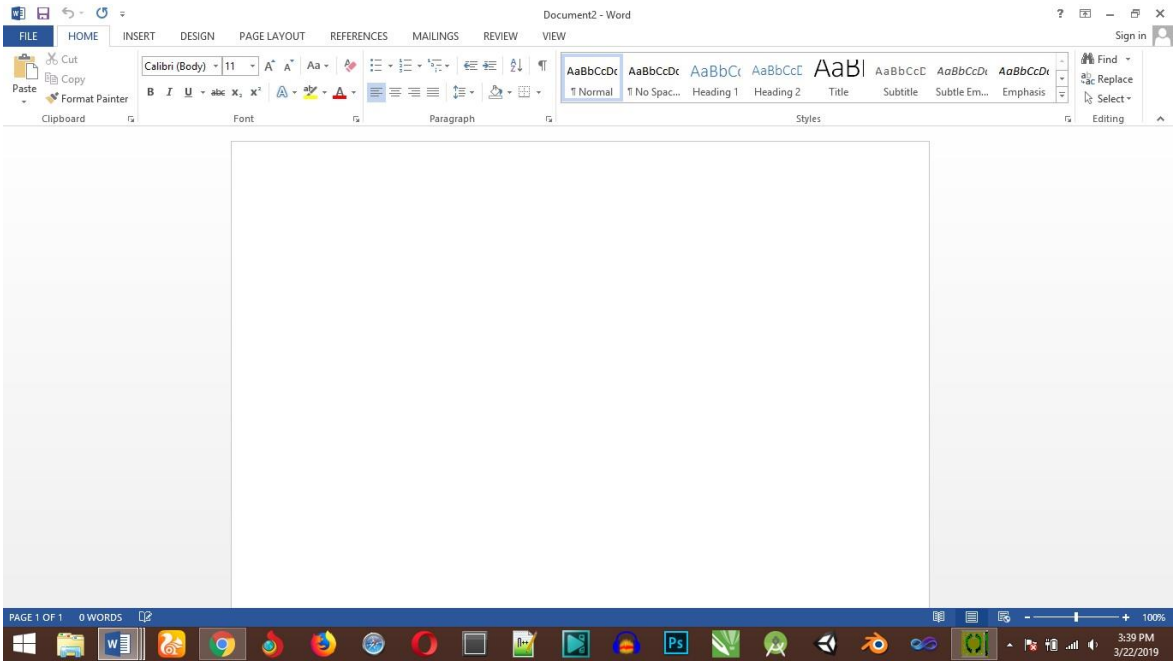


**Step 3:**

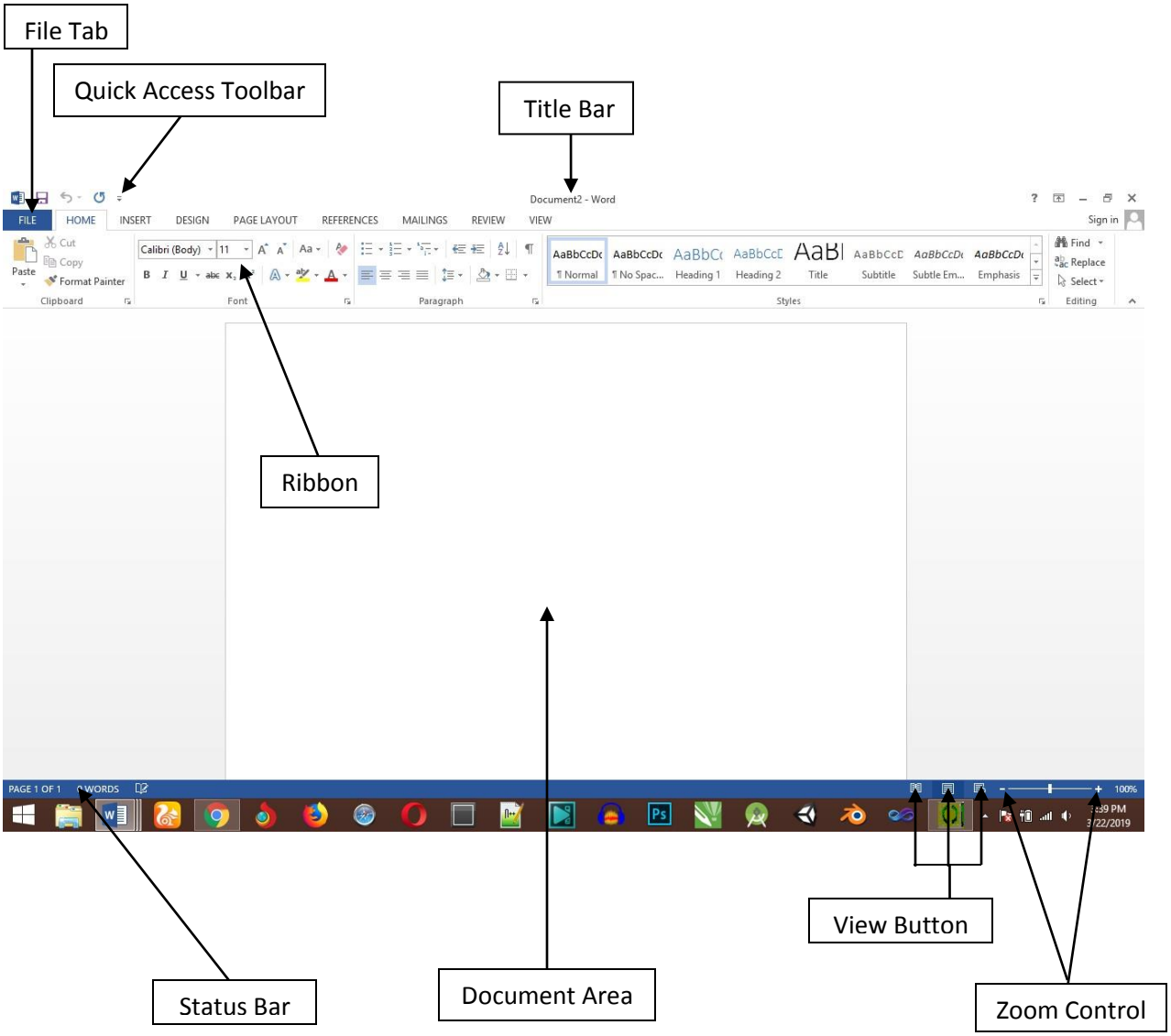



**NB: I have installed Microsoft word 2013 on my PC, the procedure will work on both later and earlier version of Microsoft Word.**

**Step 4:** We have **successfully** started our **Microsoft Word**



## Exploring Window in Microsoft Word




**File Tab**

The File tab replaces the Office button from Word 2007. You can click it to check the **backstage view**. This is where you come when you need to open or save files, create new documents, print a document, and do other file-related operations.

**Quick Access Toolbar**

This you will find just above the **File tab**. This is a convenient resting place for the **most frequently** used commands in Word. You can customize this toolbar based on your comfort.

**Ribbon**


Ribbon contains commands organized in three components:

- **Tabs** – these appear across the top of the Ribbon and contain groups of related commands. Home, Insert, Page Layout are examples of ribbon tabs.
- **Groups** – they organize related commands; each group name appears below the group on the Ribbon. For example, group of commands related to fonts or group of commands related to alignment, etc.
- **Commands** – Commands appear within each group as mentioned above.

**Title Bar**

This lies in the middle and at the top of the window. Title bar shows the program and document titles.

**Zoom Control**

Zoom control lets you zoom in for a closer look at your text. The zoom control consists of a slider that you can slide left or right to zoom in or out; you can click the + buttons to increase or decrease the zoom factor.

**View Button**

The group of five buttons located to the left of the Zoom control, near the bottom of the screen, lets you switch through the Word's various document views.

- **Print Layout view** – this displays pages exactly as they will appear when printed.
- **Full Screen Reading view** – this gives a full screen view of the document.
- **Web Layout view** – this shows how a document appears when viewed by a Web browser, such as Internet Explorer.
- **Outline view** – this lets you work with outlines established using Word's standard heading styles.

- **Draft view** – this formats text as it appears on the printed page with a few exceptions. For example, headers and footers aren't shown. Most people prefer this mode.

**Document Area**

This is the area where you type. The flashing vertical bar is called the insertion point and it represents the location where text will appear when you type.

**Status Bar**

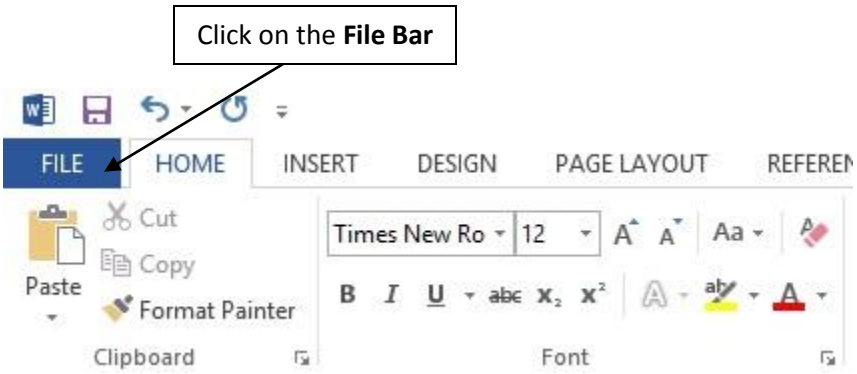
This displays the document information as well as the insertion point location. From left to right, this bar contains the total number of pages and words in the document, language, etc.

You can configure the status bar by right-clicking anywhere on it and by selecting or deselecting options from the provided list.

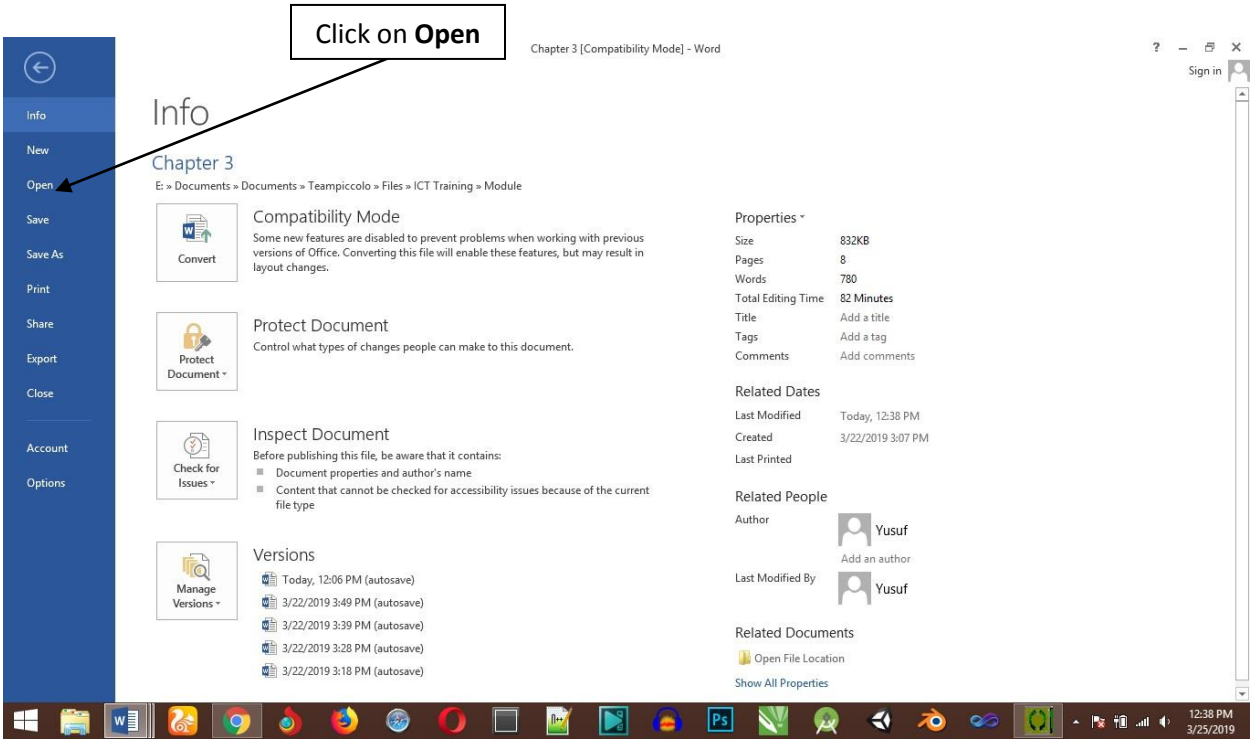
## Opening and Creating a Document

You can **open** an existing document save on your PC or on a USB drive connected to your computer. To open an **existing file**, follow the steps below:

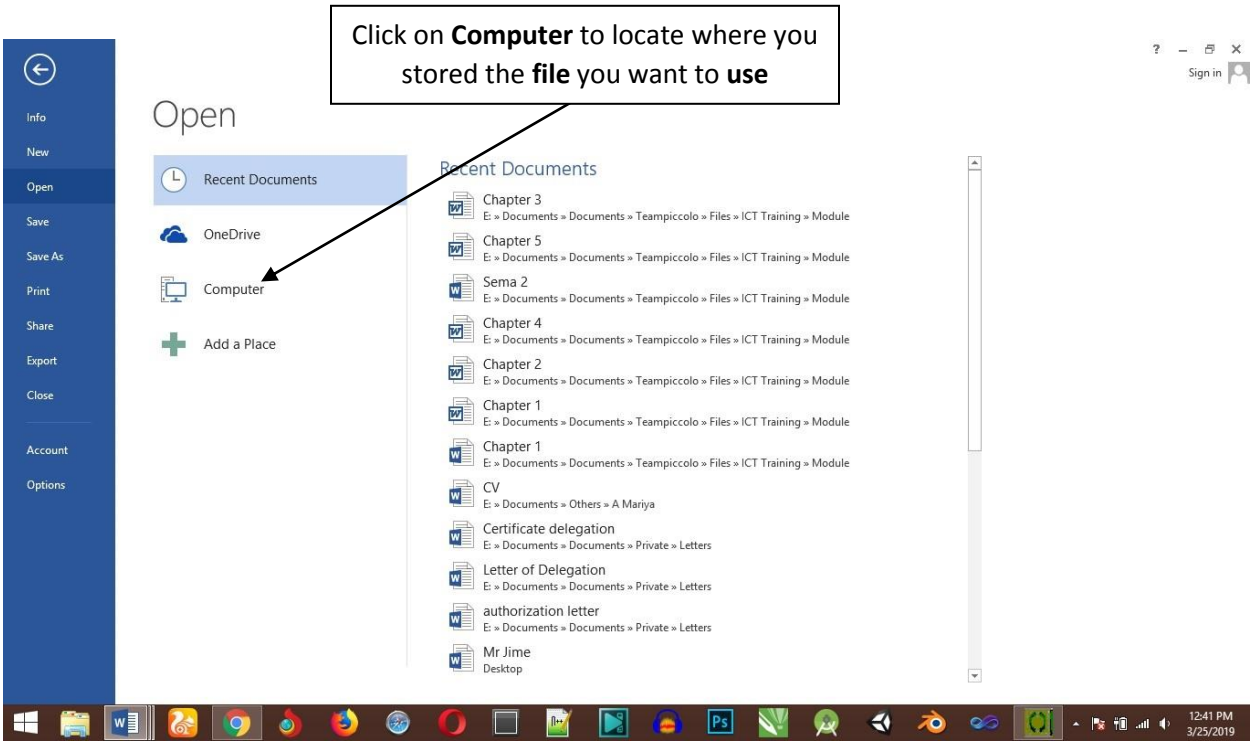
**Step 1:**



**Step 2:**


Click on **Open**
Chapter 3 [Compatibility Mode] - Word
Sign in
Info
New
Open
Save
Save As
Print
Share
Export
Close
Account
Options
Info
Chapter 3
E: » Documents » Documents » Teampiccolo » Files » ICT Training » Module
Convert
Compatibility Mode
Some new features are disabled to prevent problems when working with previous versions of Office. Converting this file will enable these features, but may result in layout changes.
Protect Document
Protect Document
Control what types of changes people can make to this document.
Check for Issues
Inspect Document
Before publishing this file, be aware that it contains:
Document properties and author's name
Content that cannot be checked for accessibility issues because of the current file type
Manage Versions
Versions
Today, 12:06 PM (autosave)
3/22/2019 3:49 PM (autosave)
3/22/2019 3:39 PM (autosave)
3/22/2019 3:28 PM (autosave)
3/22/2019 3:18 PM (autosave)
Properties
Size 832KB
Pages 8
Words 780
Total Editing Time 82 Minutes
Title Add a title
Tags Add a tag
Comments Add comments
Related Dates
Last Modified Today, 12:38 PM
Created 3/22/2019 3:07 PM
Last Printed
Related People
Author Yusuf
Add an author
Last Modified By Yusuf
Related Documents
Open File Location
Show All Properties
12:38 PM
3/25/2019

**Step 3:**


Click on **Computer** to locate where you stored the **file** you want to **use**
Sign in
Info
New
Open
Save
Save As
Print
Share
Export
Close
Account
Options
Open
Recent Documents
OneDrive
Computer
Add a Place
Recent Documents
Chapter 3
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Chapter 5
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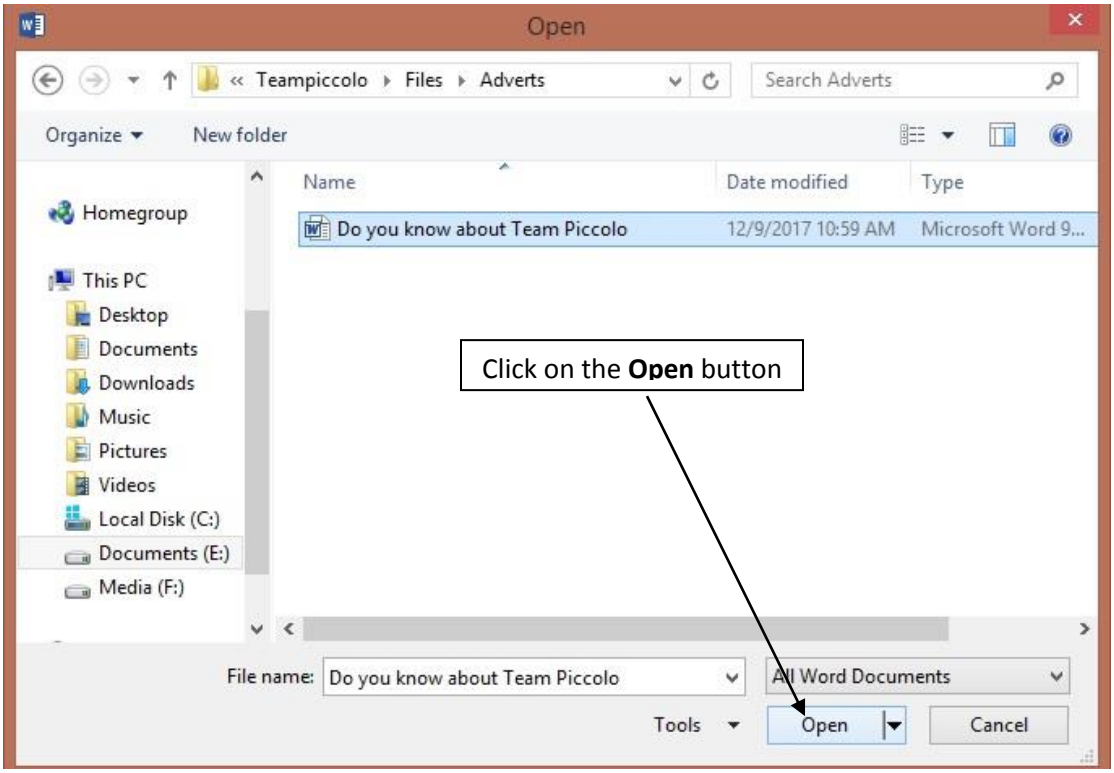
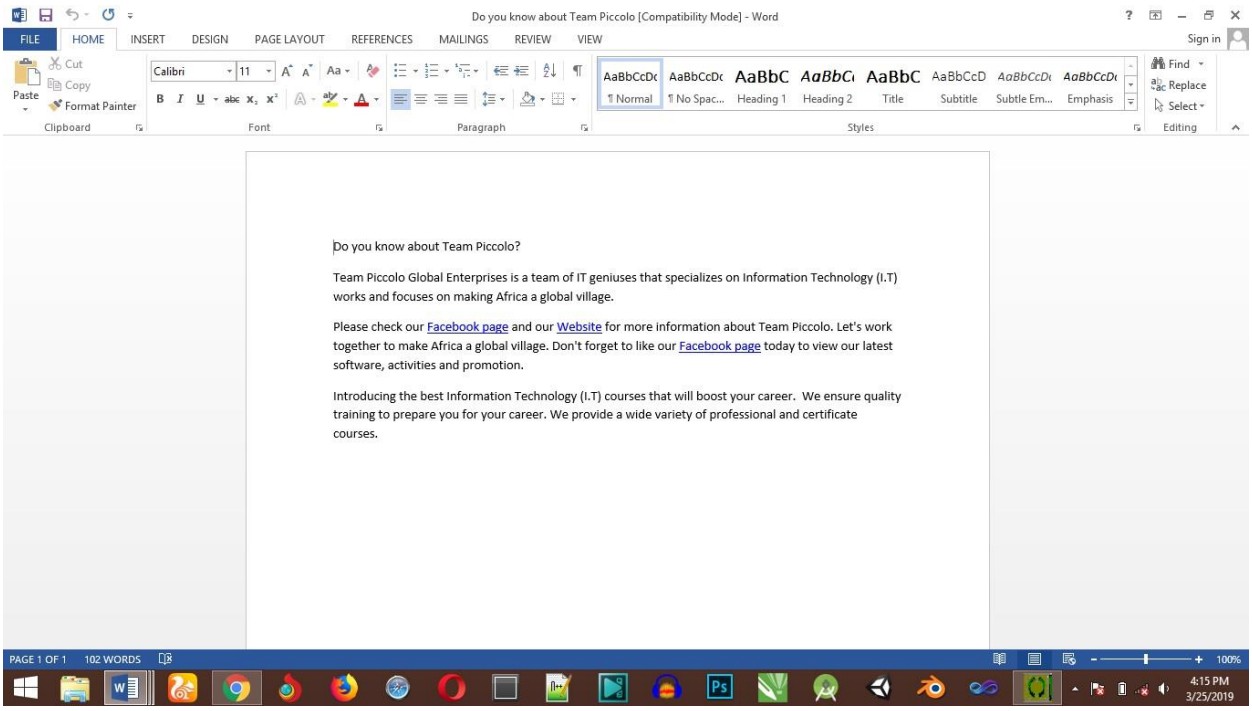
Letter of Delegation
E: » Documents » Documents » Private » Letters
authorization letter
E: » Documents » Documents » Private » Letters
Mr Jime
Desktop
12:41 PM
3/25/2019

**Step 4:**



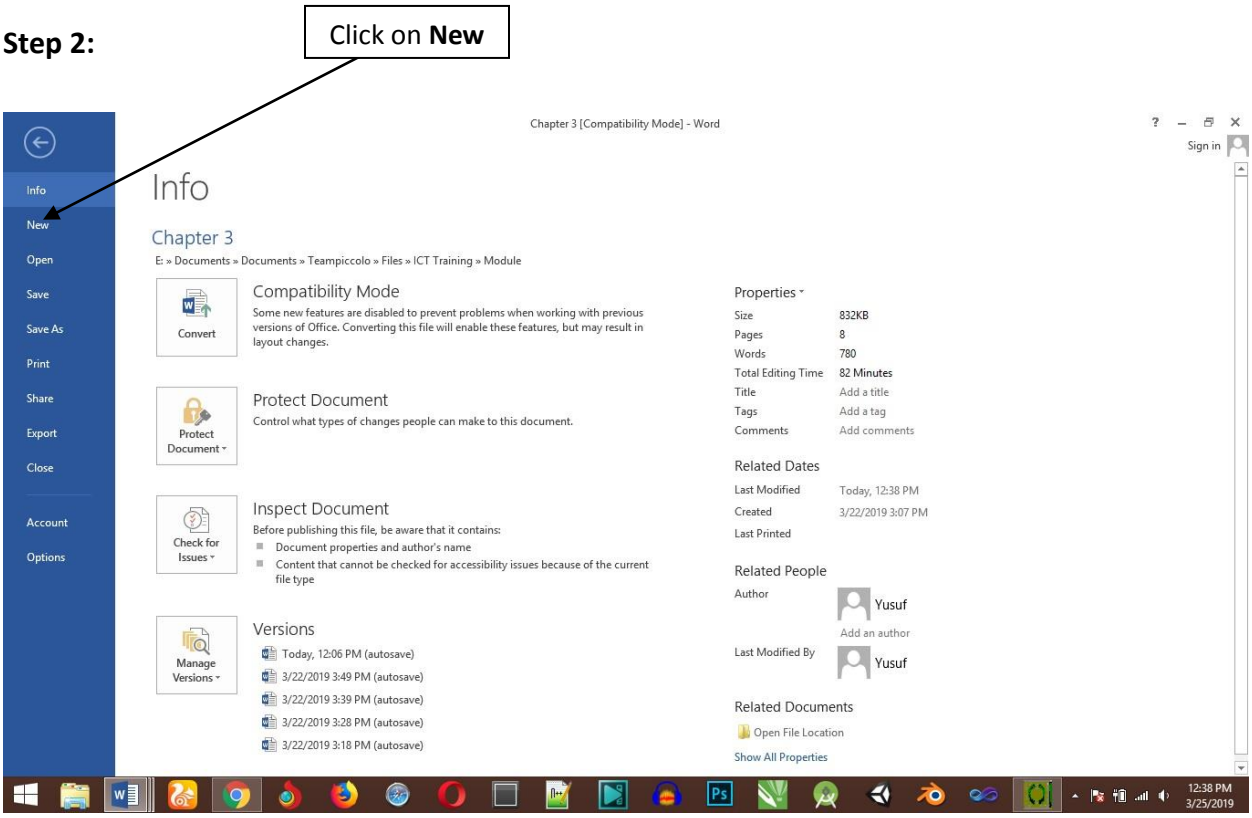

**Step 5: We have successfully opened our document.**



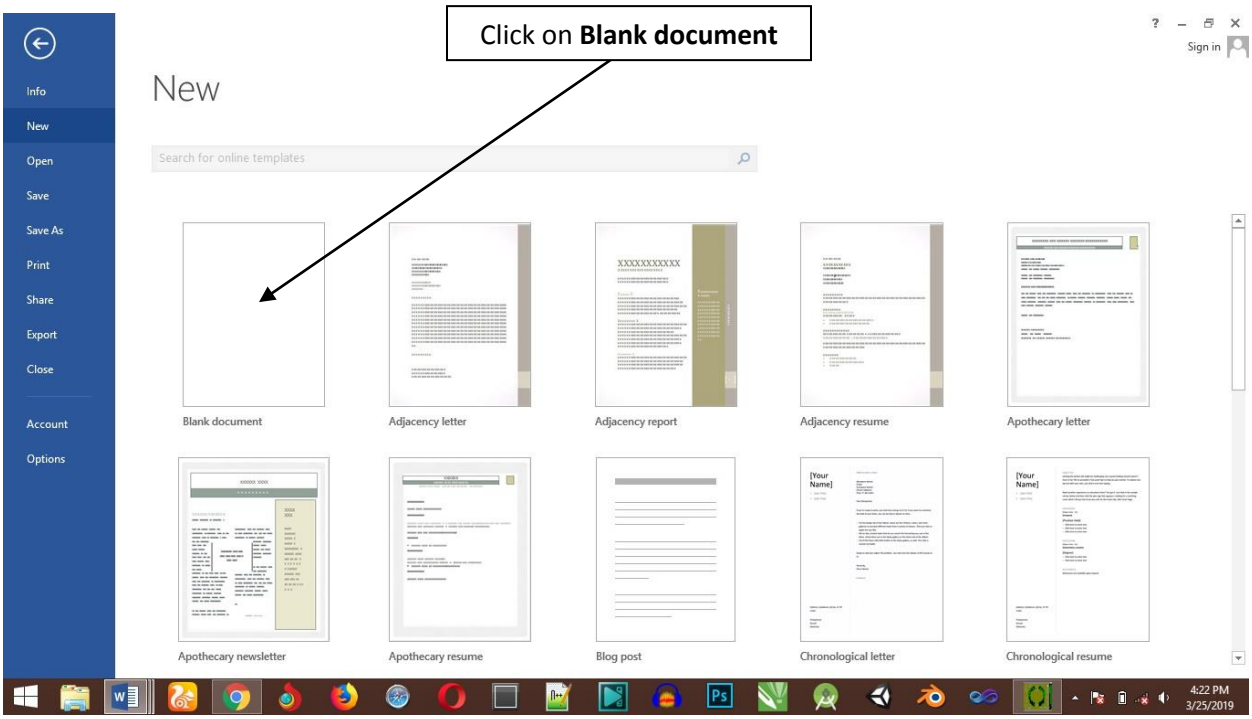
To **create a new** document, follow the following steps below:

**Step 1:**

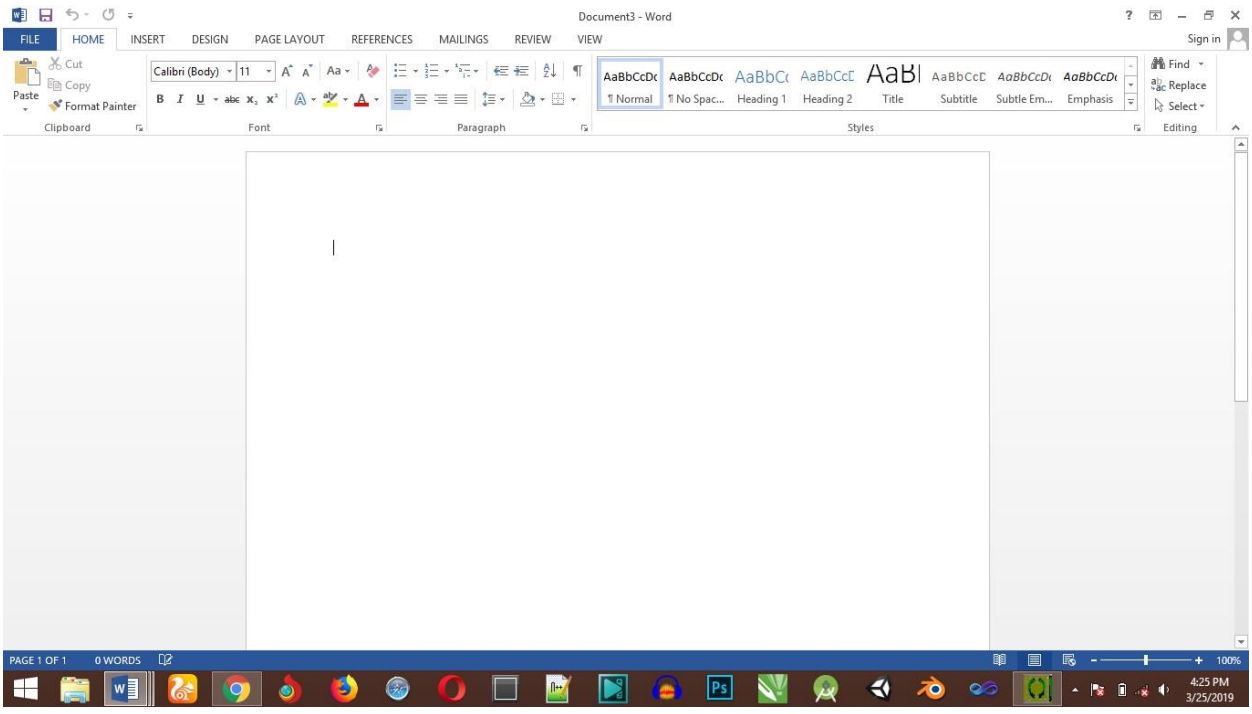

**Step 2:**



**Step 3:**



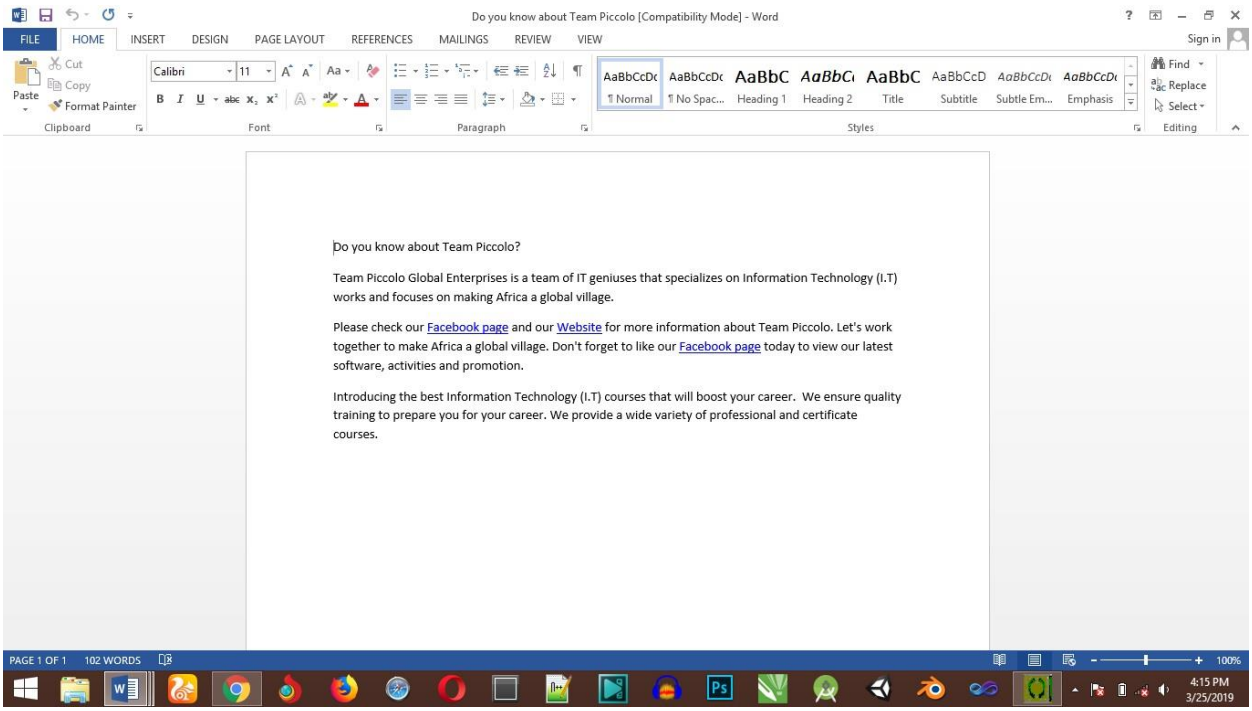

**Step 4:** You have successfully created a new document.



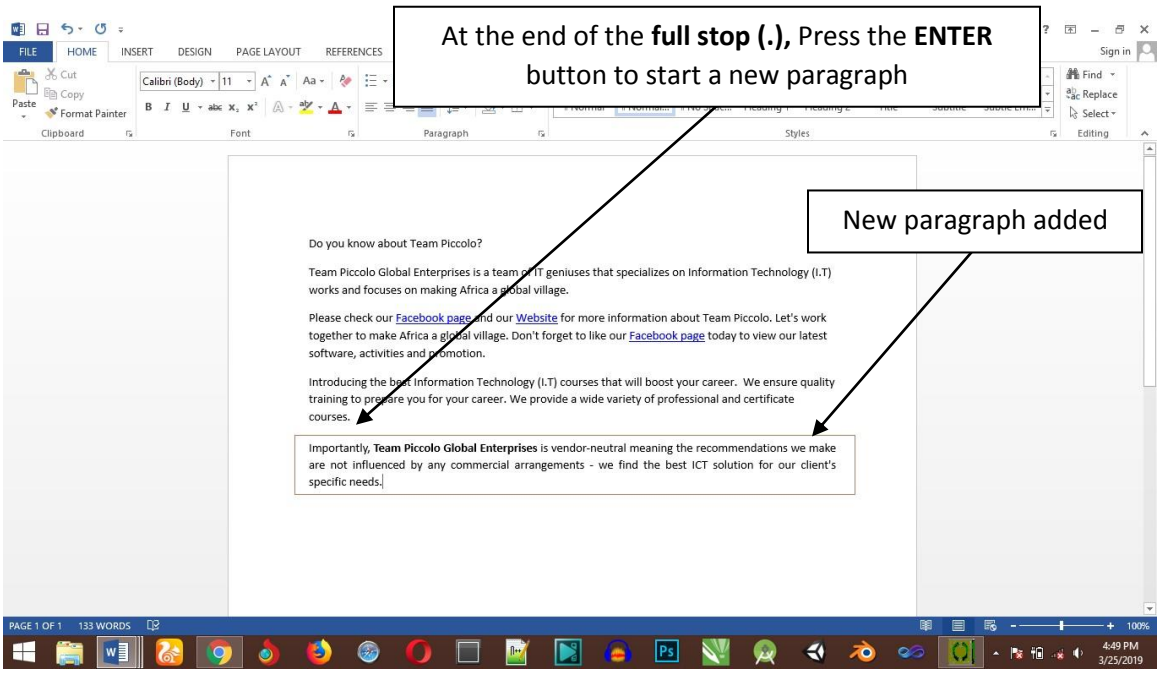
## Editing a Document

Document edition is quite useful but you have to be careful when editing documents, a little change might change the entire document.

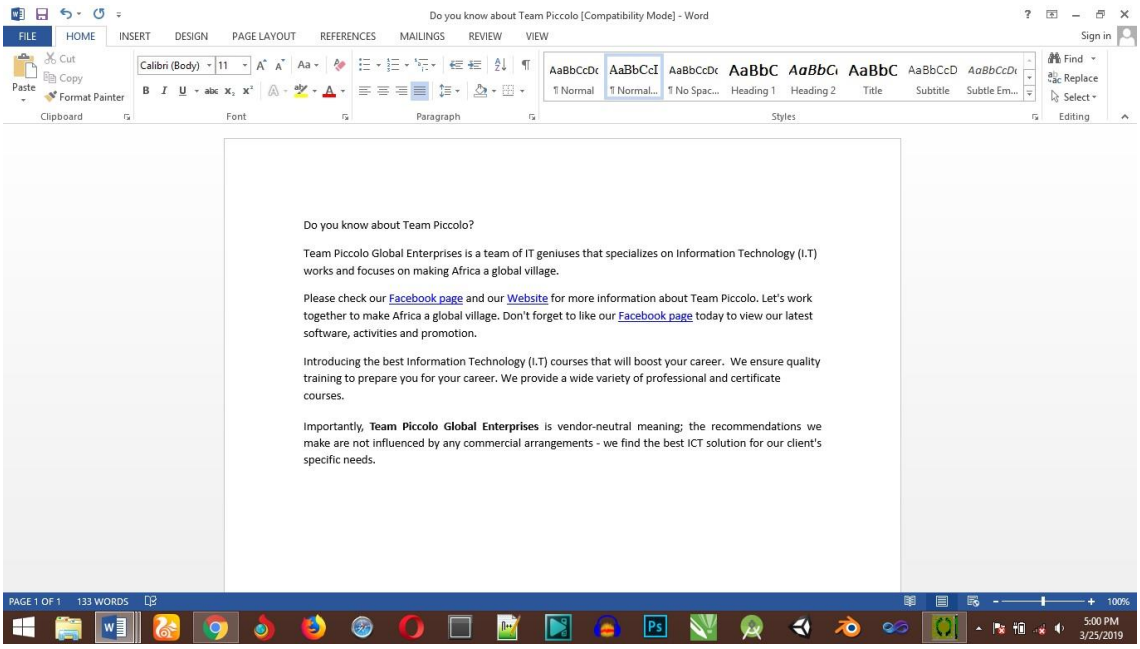
Let open a document to edit. If you don't know how to open a document, please refer back to the screenshots above.



Let us add a new paragraph in our existing document.




For instance, you want to add a **semi-colon (;)** after "**meaning**" on the first line of the new paragraph, move your **mouse cursor** behind **g** and press the **semi-colon (;)** button on your keyboard.

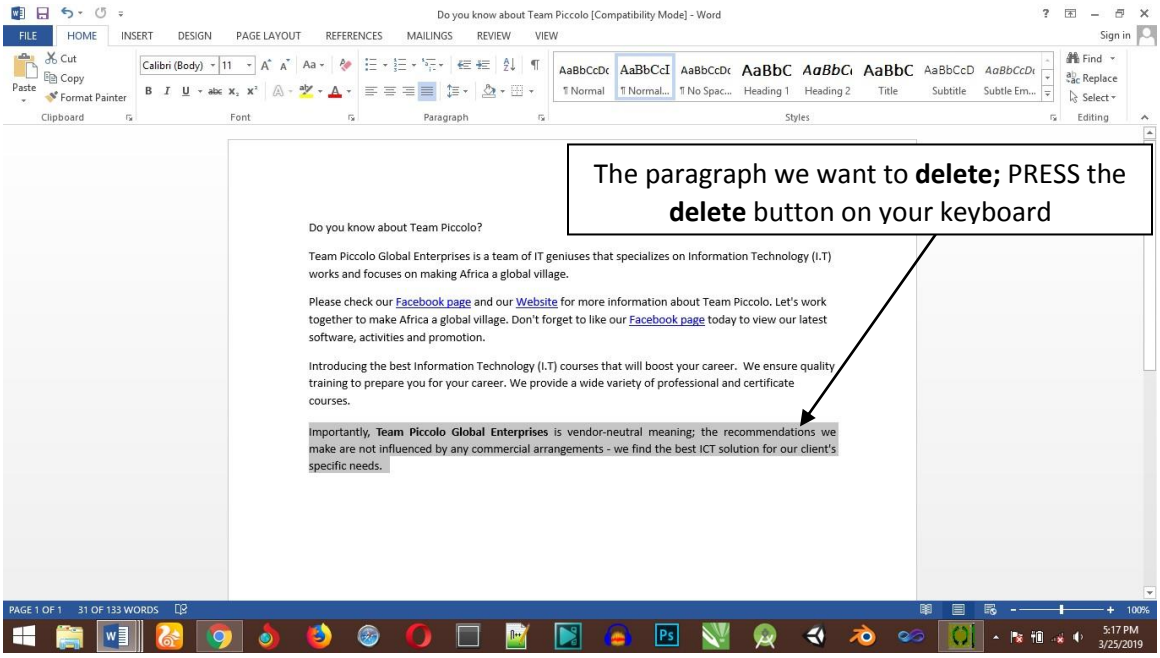


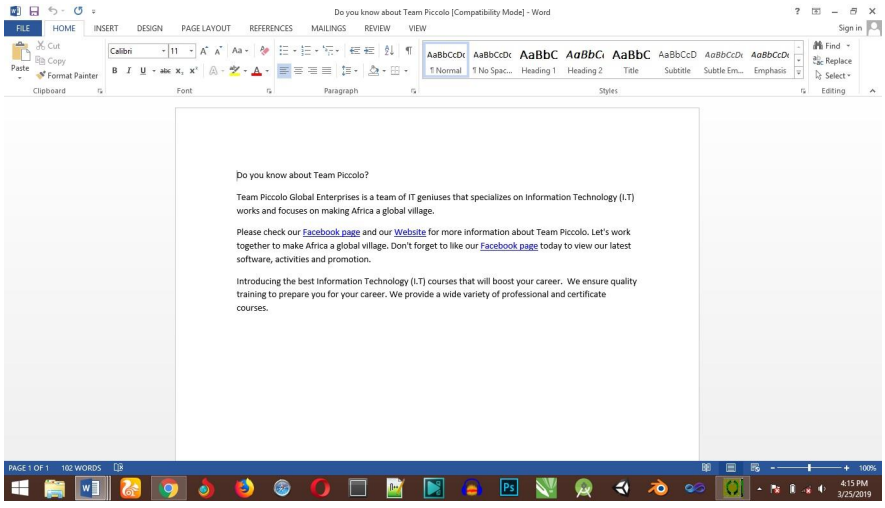
**Delete Text**

We have learned about how to edit a document, let us learn how to **delete** from a document. You might type something you did not want to type or there is something extra which is not required in the document.

You can **delete** a text by using the **backspace** button on your keyboard or the **delete** button. You can hold down the **shift** button on your keyboard and use the **arrow keys** on your keyboard to select a particular section or paragraph you want to delete.

**Let's delete the paragraph we added in the screenshot above.**

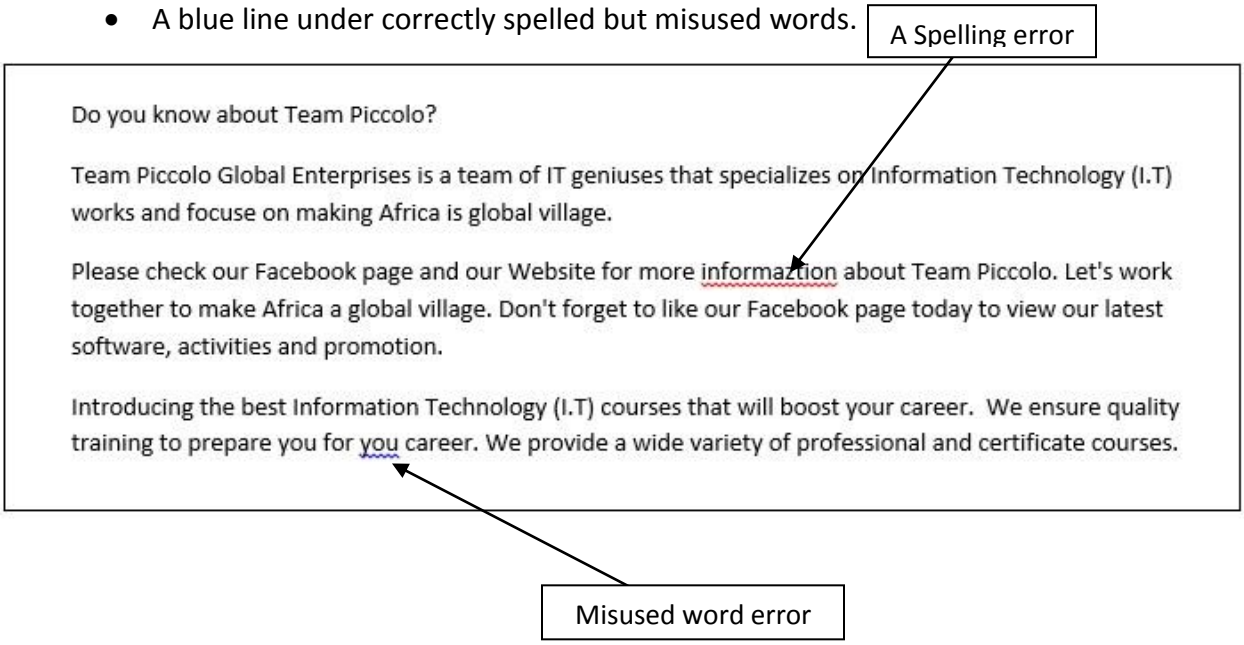


**Spell Check in Word**

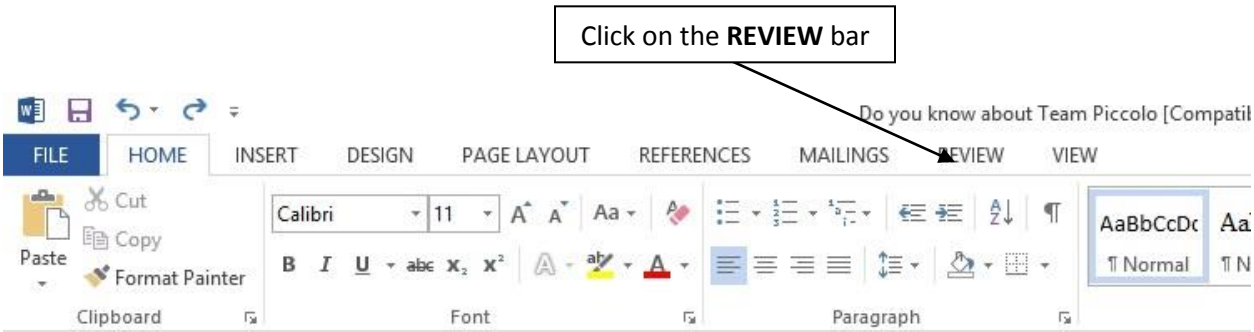
**Microsoft Word** provides a decent Spelling and Grammar Checker which enables you to search for and correct all spelling and grammar mistakes in your document. Word is intelligent enough to identify misspelled or misused, as well as grammar errors and underlines them as follows.

- A red underline beneath spelling errors.
- A green underline beneath grammar errors.
- A blue line under correctly spelled but misused words.




To correct these two errors in our document using the Spelling and Grammar checker, follow the follow steps below:

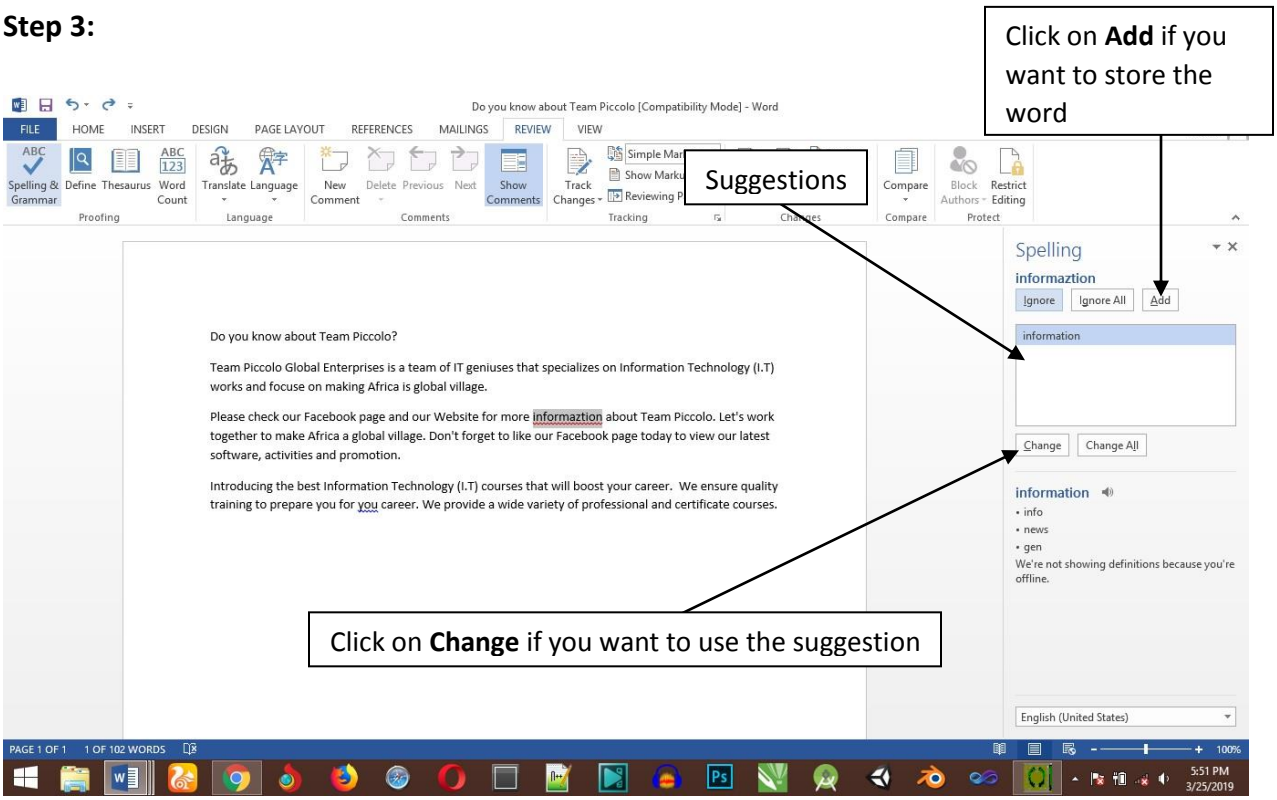
**Step 1:**



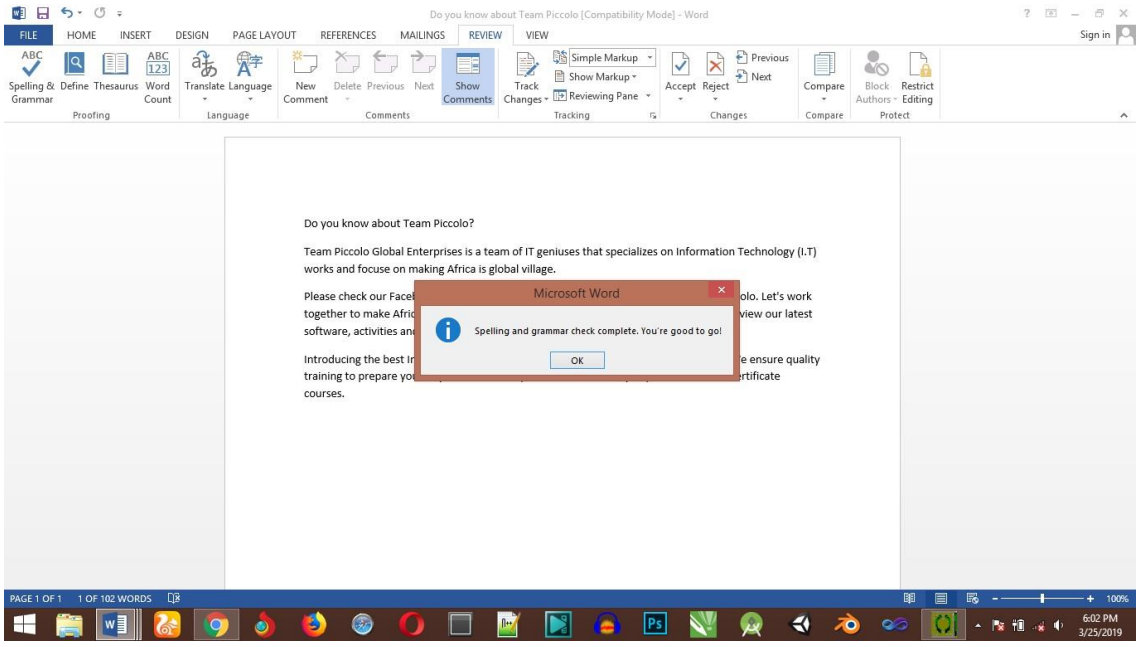
**Step 2:**


A **Spelling and Grammar** dialog box will appear and will display the wrong spellings or errors in grammar. You will also get suggestions to correct as shown below:

**Step 3:**



**Step 4:**

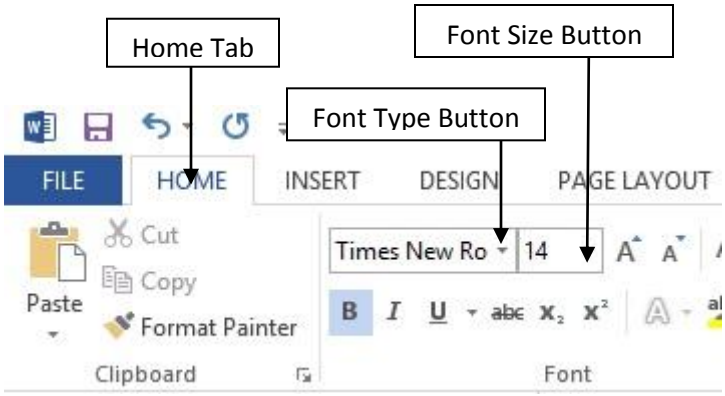



## Formatting Text

Formatting text deals with how you want the appearance of your document such as the **Font type and Size**, **Text Decoration**, **Text Color**, etc.

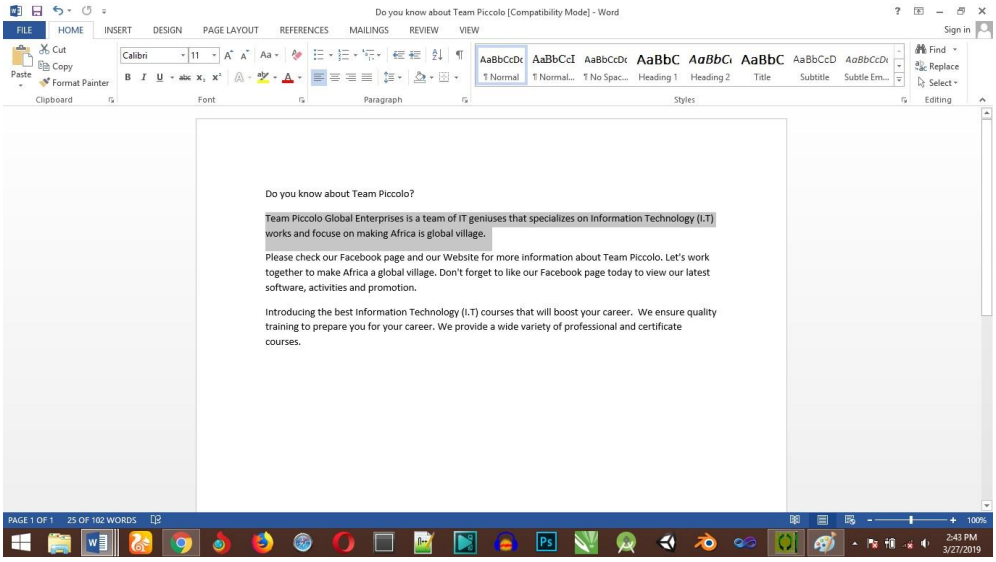
### Font Type and Size

We will understand in brief the font buttons that we will further use in this tutorial. Following is a screenshot to show you a few font related buttons.

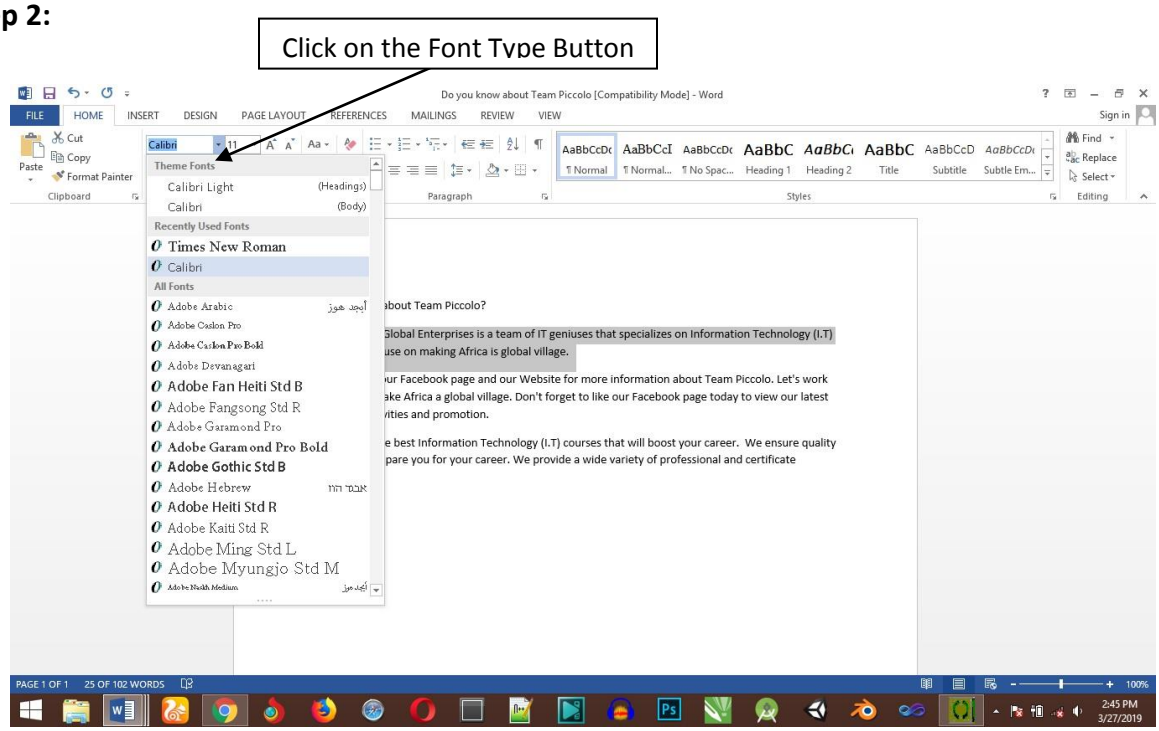


If you want to change the Font Type or the Font Size of a particular section of your document, select that section and follow the steps below:

**Step 1:**

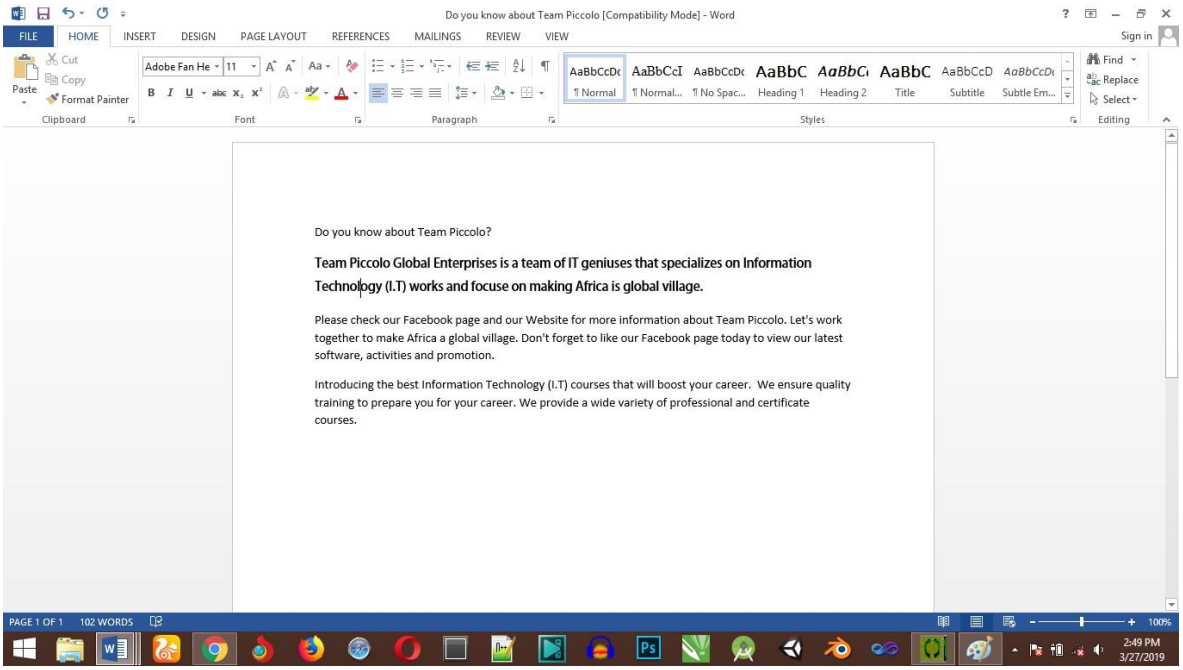



**Step 2:**

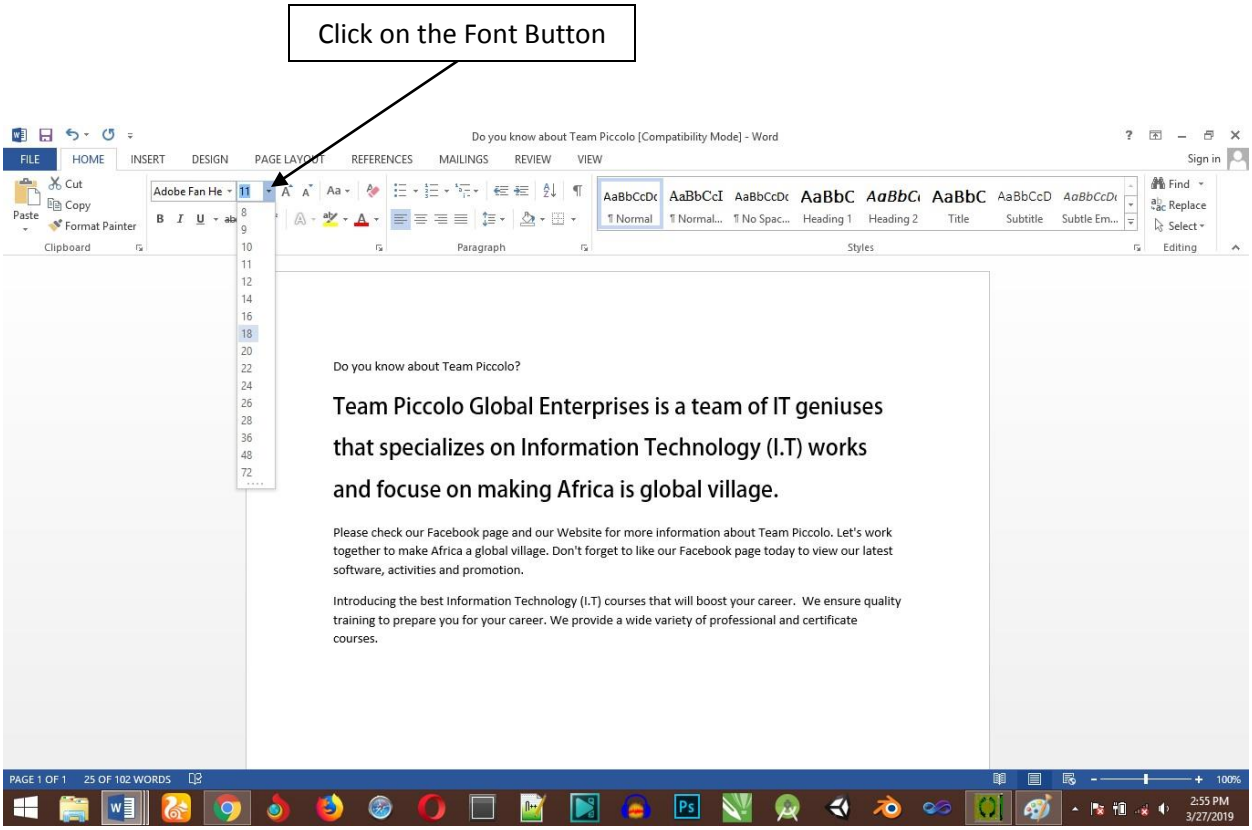



**Scroll down to select your desire Font Type and Double Click on it.**

**Step 3:**




To change the Font Size, select the section you want to change the font size and click on the Font Size Button.



**Text Decoration**

When we use the term **decorate**, it means decorate by putting the text in italics, underlining the text or making it bold to look more fancy and much more.

**Making Text Bold**

We use bold text to give more emphasis on the sentence. It is very simple to change a selected portion of text into bold font by following two simple steps –

**Step 1** – Select the portion of text that the font of which needs to be made bold. You can use any of the text selection methods to select the portion of text.

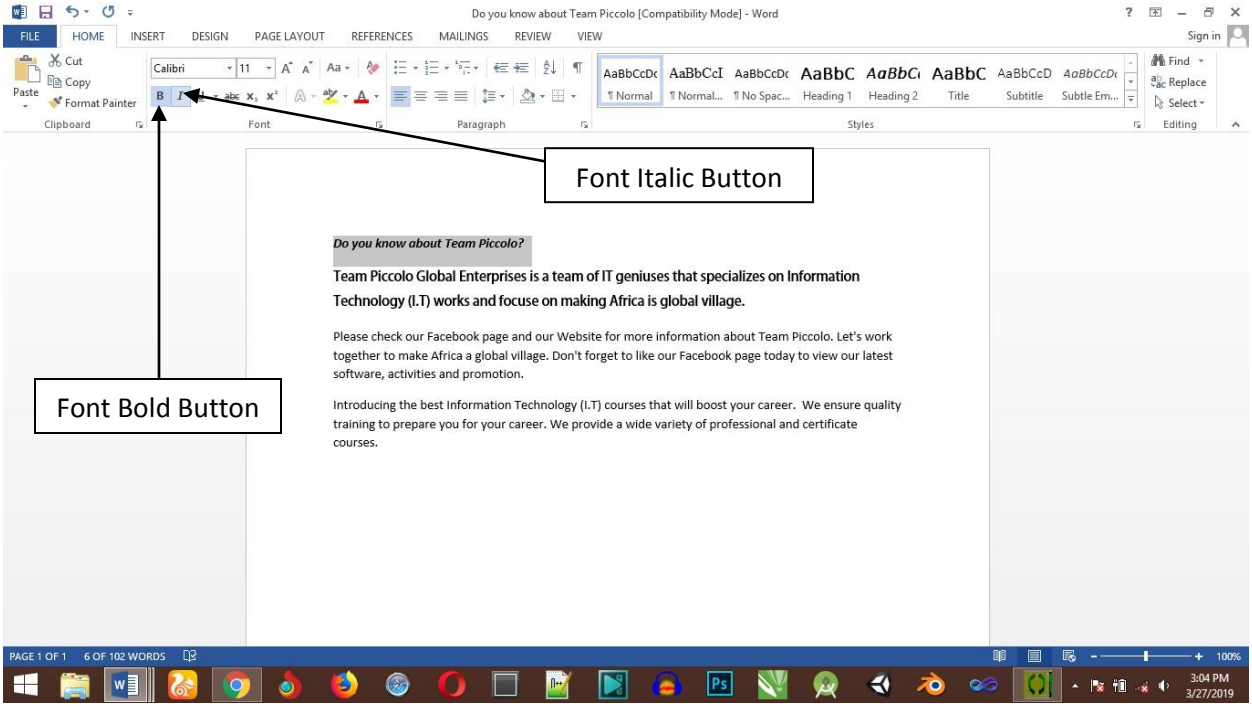
**Step 2** – Click the **Font Bold [ B ]** button in the **Home tab** Font group, or simply use **Ctrl + B** keys to make the selected portion of text bold.

**Making Text Italic**

An italic text appears with a small inclination and we use the italicized text to differentiate it from other text. It is very simple to change the selected text into italic font by following two simple steps –

**Step 1** – Select the portion of text the font of which needs to be italicized. You can use any of the text selection methods to select the portion of text.

**Step 2** – Click the **Font Italic *[ I ]*** button in the **Home tab** Font group, or simply use the **Ctrl + I** keys to convert the portion of text in italic font.



**Underline Text**

An underlined portion of text appears with an underline and we use the underlined portion of text to make it more distinguished from other text. It is very simple to change the selected text into underlined font by following two simple steps –

**Step 1** – Select the portion of text which needs to be underlined. You can use any of the text selection method to select the portion of text.

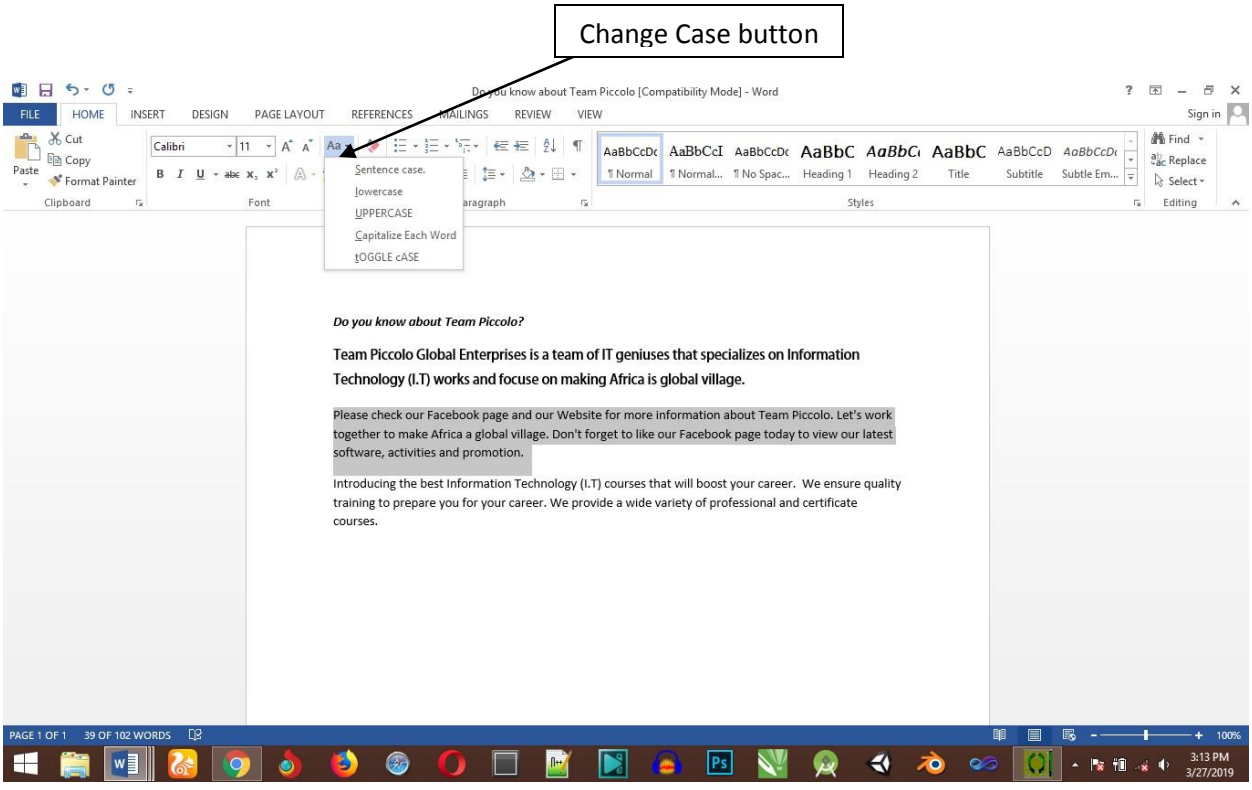
**Step 2** – Click **Font Underline [ U ]** button in the **Home tab** Font group, or simply use the **Ctrl + U** keys to put an underline under the text.

**Change Text to Sentence Case**

A sentence case is the case where the first character of every sentence is capitalized. It is very simple to change the selected portion of text into sentence case by following two simple steps –

**Step 1** – Select the portion of text that that needs to be put in sentence case. You can use any of the text selection methods to select the portion of text.

**Step 2** – Click the **Change Case** button and then select the **Sentence Case** option to capitalize the first character of every selected sentence.

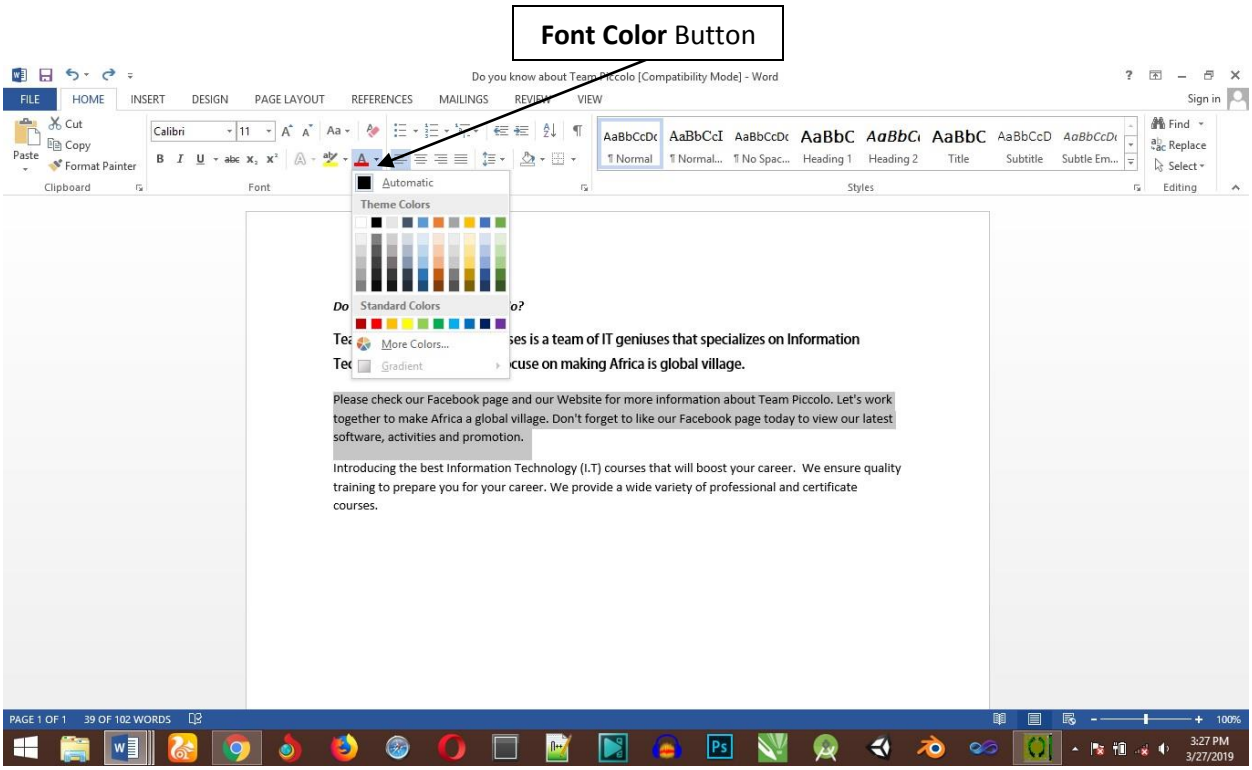


## Change Font Color

The text that we type comes in black by default; you can always change the color of the font to a color of your choice. It is very simple to change the text color by following two simple steps –

**Step 1** − Select the portion of text the font color of which needs to be changed. You can use any of the text selection method to select the portion of text.

**Step 2** − Click the **Font Color** button triangle to display a list of colors. Try to move your mouse pointer over different colors and you will see the text color will change automatically. You can select any of the colors available by simply clicking over it.




## Text Alignment

There are four types of paragraph alignment available in Microsoft Word — left-aligned, center-aligned, right-aligned, and justified.

## Left Aligned

A paragraph's text is left aligned when it is aligned evenly along the left margin. Here is a simple procedure to make a paragraph text left-aligned.

**Step 1** – Click anywhere on the paragraph you want to align and click the **Align Text Left** button available on the **Home tab** or simply press the **Ctrl + L** keys.

**Center Aligned**

A paragraph's text will be said center aligned if it is in the center of the left and right margins. Here is a simple procedure to make a paragraph text center aligned.

**Step 1** – Click anywhere on the paragraph you want to align and click the **Center** button available on the **Home tab** or simply press the **Ctrl + E** keys.

**Right Aligned**

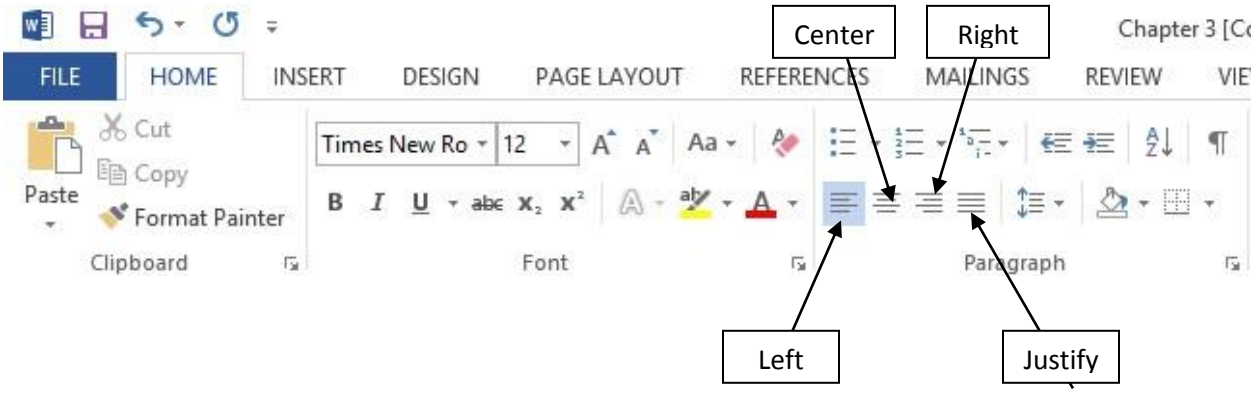
A paragraph's text is right-aligned when it is aligned evenly along the right margin. Here is a simple procedure to make a paragraph text right-aligned.

**Step 1** – Click anywhere on the paragraph you want to align and click the **Align Text Right** button available on the **Home tab** or simply press the **Ctrl + R** keys.

**Justified Text**

A paragraph's text is justified when it is aligned evenly along both the left and the right margins. Following is a simple procedure to make a paragraph text justified.

**Step 1** – Click anywhere on the paragraph you want to align and click the **Justify** button available on the **Home tab** or simply press the **Ctrl + J** keys



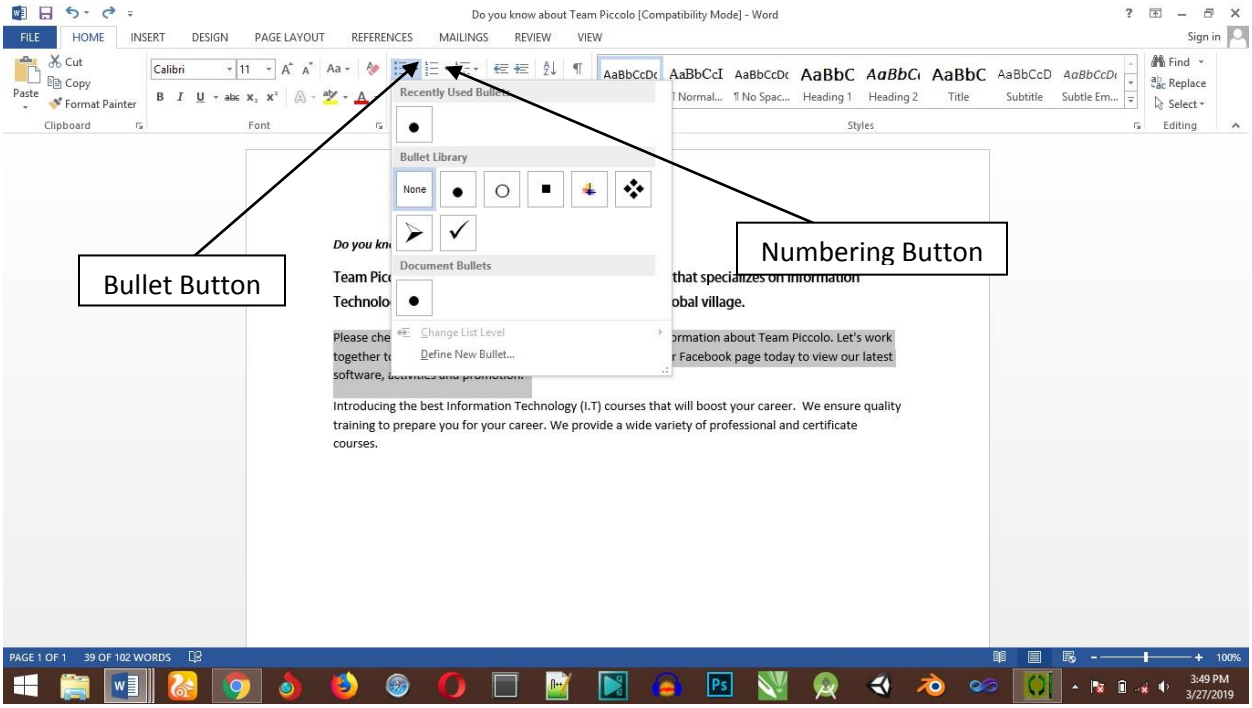

**Create Bullets in Word**

Microsoft word provides bullets and numbers to put a list of items in a nice order. This is very simple to convert a list of lines into a bulleted or numbered list. Following are the simple steps to create either bulleted list or numbered list.

**Step 1** – Select a list of text to which you want to assign bullets or numbers. You can use any of the text selection method to select the portion of text.

**Step 2** – Click the **Bullet Button** triangle to display a list of bullets you want to assign to the list. You can select any of the bullet style available by simply clicking over it.

**Step 3** – If you are willing to create a list with numbers, then click the **Numbering Button** triangle instead of the bullet button to display a list of numbers you want to assign to the list. You can select any of the numbering style available by simply clicking over it.

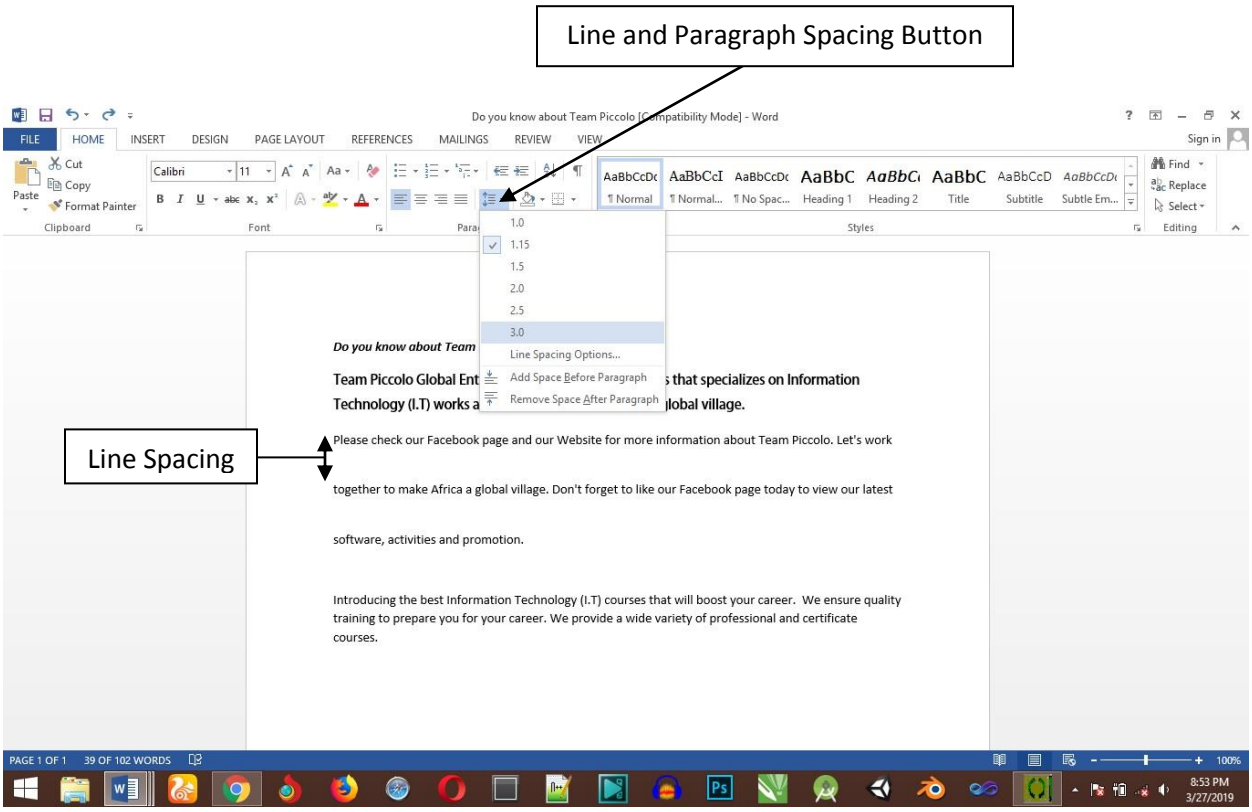



**Set Line Spacing**

A line spacing is the distance between two lines in a Microsoft Word document. You can increase or decrease this distance as per your requirement by following a few simple steps. Following are the simple steps to adjust spacing between two lines of the document.

**Step 1** – Select the paragraph or paragraphs for which you want to define spacing. You can use any of the text selection method to select the paragraph(s).

**Step 2** – Click the **Line and Paragraph Spacing Button** triangle to display a list of options to adjust space between the lines. You can select any of the option available by simply clicking over it.



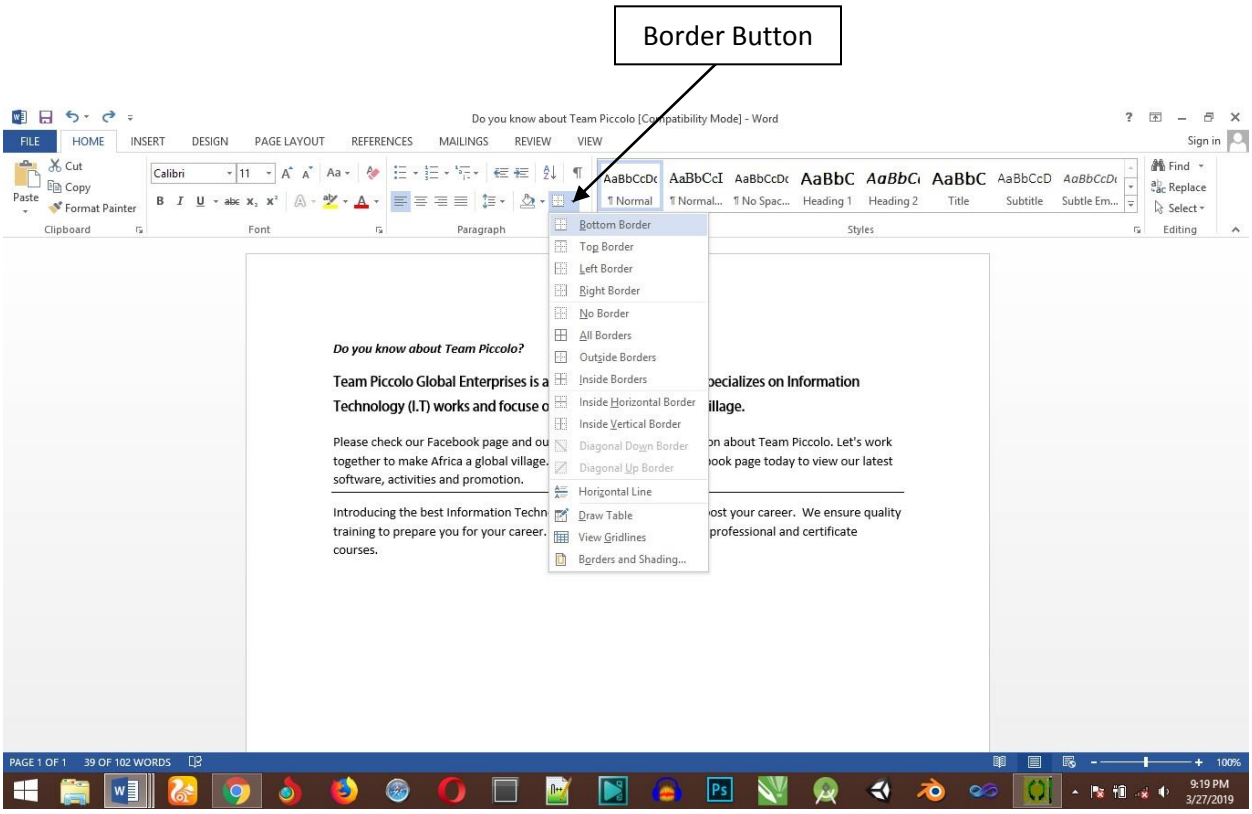

**Borders and Shades**

Microsoft Word allows you to place a border on any or all of the four sides of selected text, paragraphs, and pages. You can also add different shades to the space occupied by the selected text, paragraphs, and pages. This chapter will teach you how to add any of the borders (left, right, top or bottom) around a text or paragraph or a page and how to add different shadows to them.

Following are the simple steps to add border to any text or paragraph.

**Step 1** − Select the portion of text or paragraph to which you want to add border. You can use any of the text selection method to select the paragraph(s).

**Step 2** − Click the **Border Button** to display a list of options to put a border around the selected text or paragraph. You can select any of the option available by simply clicking over it.




## Formatting Pages

### Adjust Page Margin

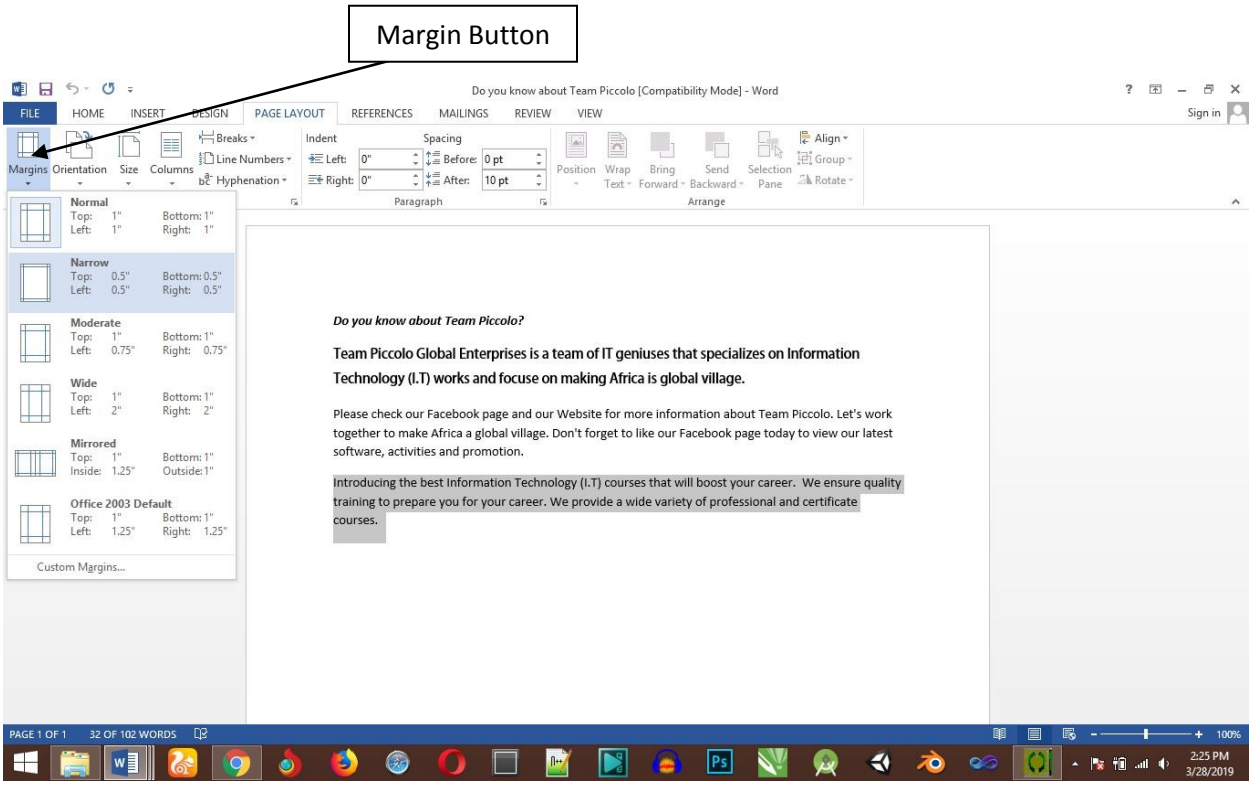
Margins are the space between the edge of the paper and the text. You can adjust the right, left, top, and bottom margins of your document. By default, Word sets all margins left, right, top, and bottom to 1 inch.

The following steps will help you understand how to set margins for an open document.

**Step 1** – Open the document the margins of which need to be set. If you want the margins to be applied only to a selected part of a document, select that particular part.

**Step 2** – Click the **Page Layout tab**, and click the **Margins** button in the Page Setup group. This will display a list of options to be selected but you have to click the **Custom Margins option** available at the bottom.

You can also select any of the predefined margins from the list, but using custom margins option you will have more control on all the settings.

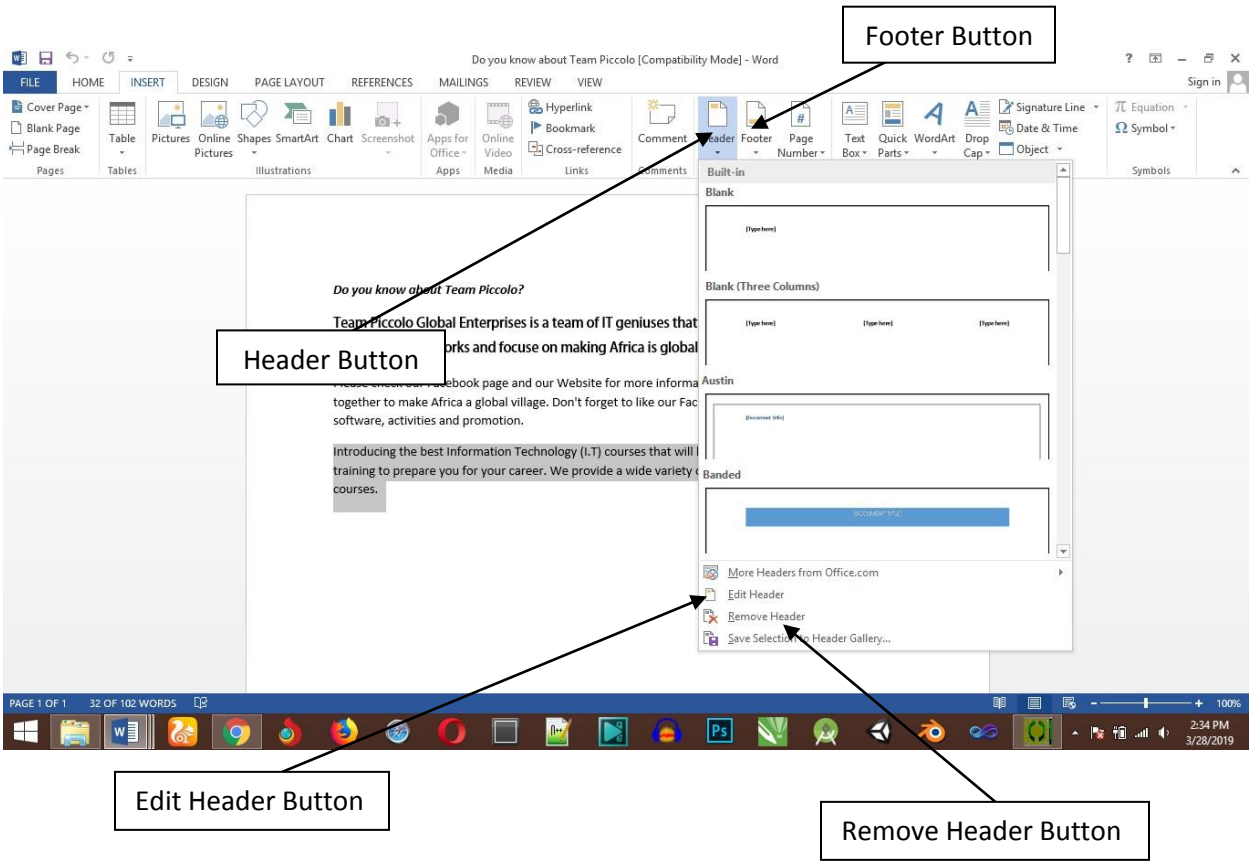



**Add Header and Footer**

Headers and footers are parts of a document that contain special information such as page numbers and the total number of pages, the document title, company logo, any photo, etc. The header appears at the top of every page, and the footer appears at the bottom of every page.

The following steps will help you understand how to add header and footer in a Word document.

**Step 1** − Click the **Insert tab**, and click either the **Header button** or the **Footer button** that which needs to be added first. Assume you are going to add Header; when you click the **Header button** it will display a list of built-in Headers from where you can choose any of the headers by simply clicking on it.

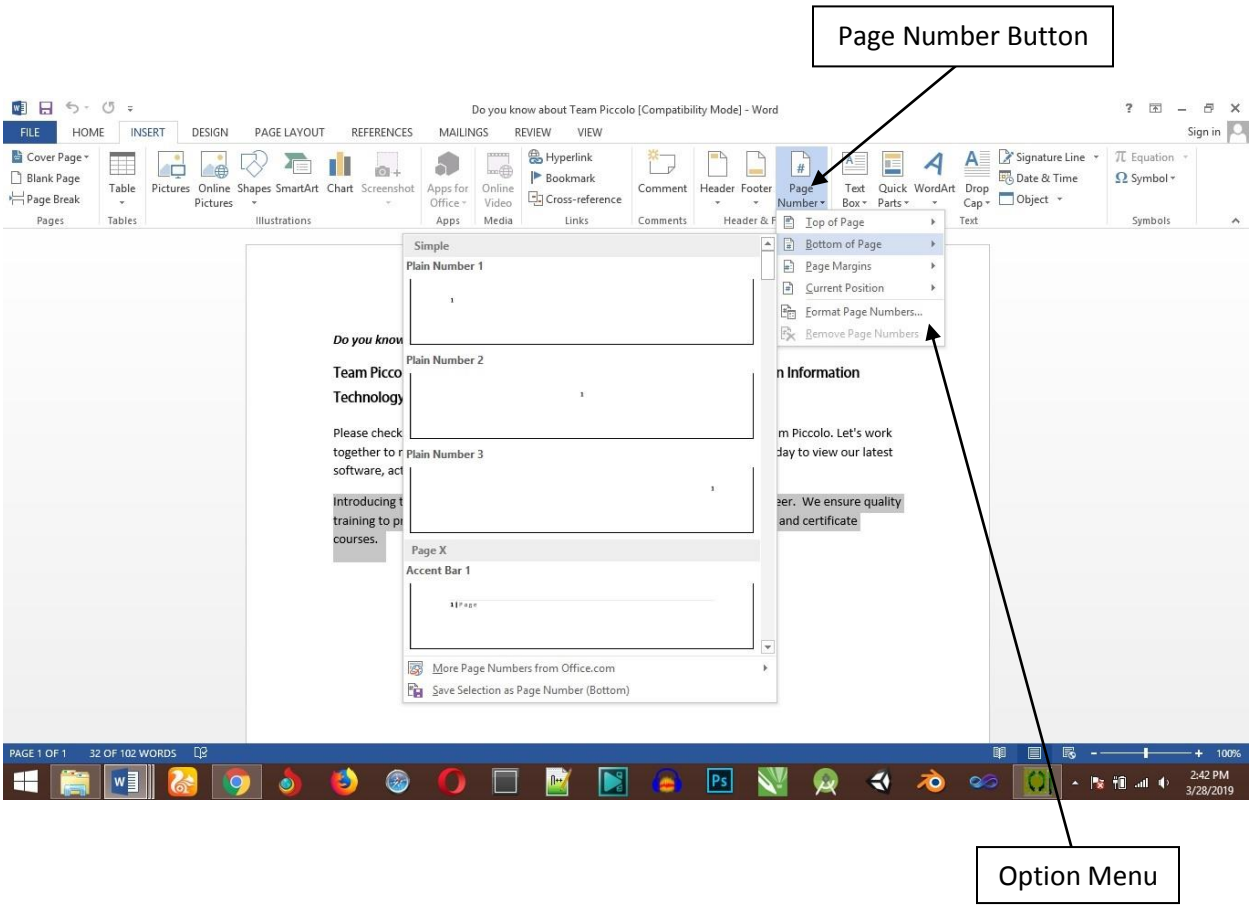



**Add Page Number**

Microsoft Word automatically assigns page numbers on the pages of your document. Typically, page numbers are printed either in header or footer but you have the option that can display the page number in the left or right margins at the top or the bottom of a page.

Following are the simple steps to add page numbers in a Word document.

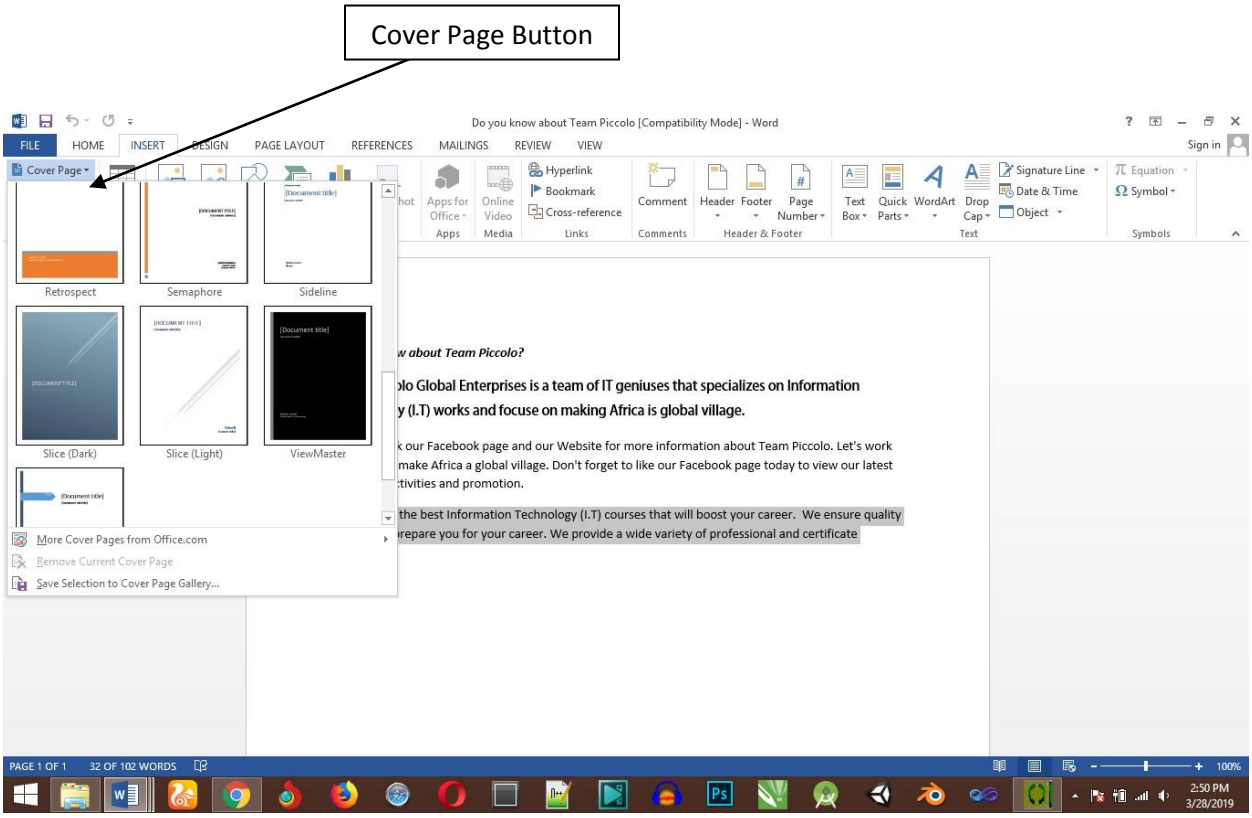
**Step 1** − Click the **Insert tab**, and click the **Page Number** button available in the header and footer section. This will display a list of options to display the page number at the top, bottom, current position etc.




**Page Cover**

Almost all the good documents and books have an attractive first page that includes the document title, its subject, author and publisher name etc. This first page is the **Cover Page** and Microsoft Word provides an easy way to add a cover page. Following are the simple steps to add a cover page in a Word document.

**Step 1** – Click the **Insert tab**, and click the **Cover Page** button available in the Pages group. This will display a list of **Built-in Cover Pages** as shown below.



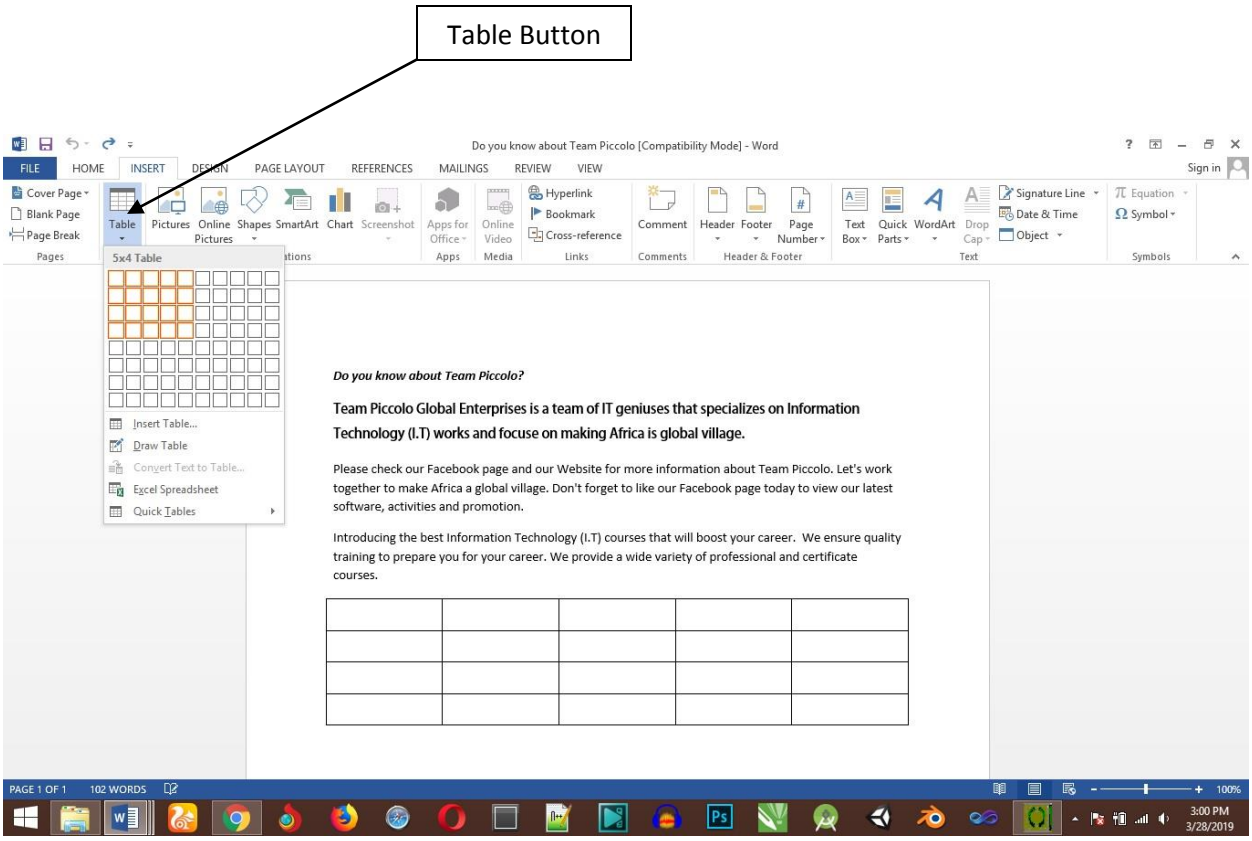

## Tables in Microsoft Word

A **table** is a structure of vertical columns and horizontal rows with a cell at every intersection. Each cell can contain text or graphics, and you can format the table in any way you want. Usually the top row in the table is kept as a table header and can be used to put some informative instruction.

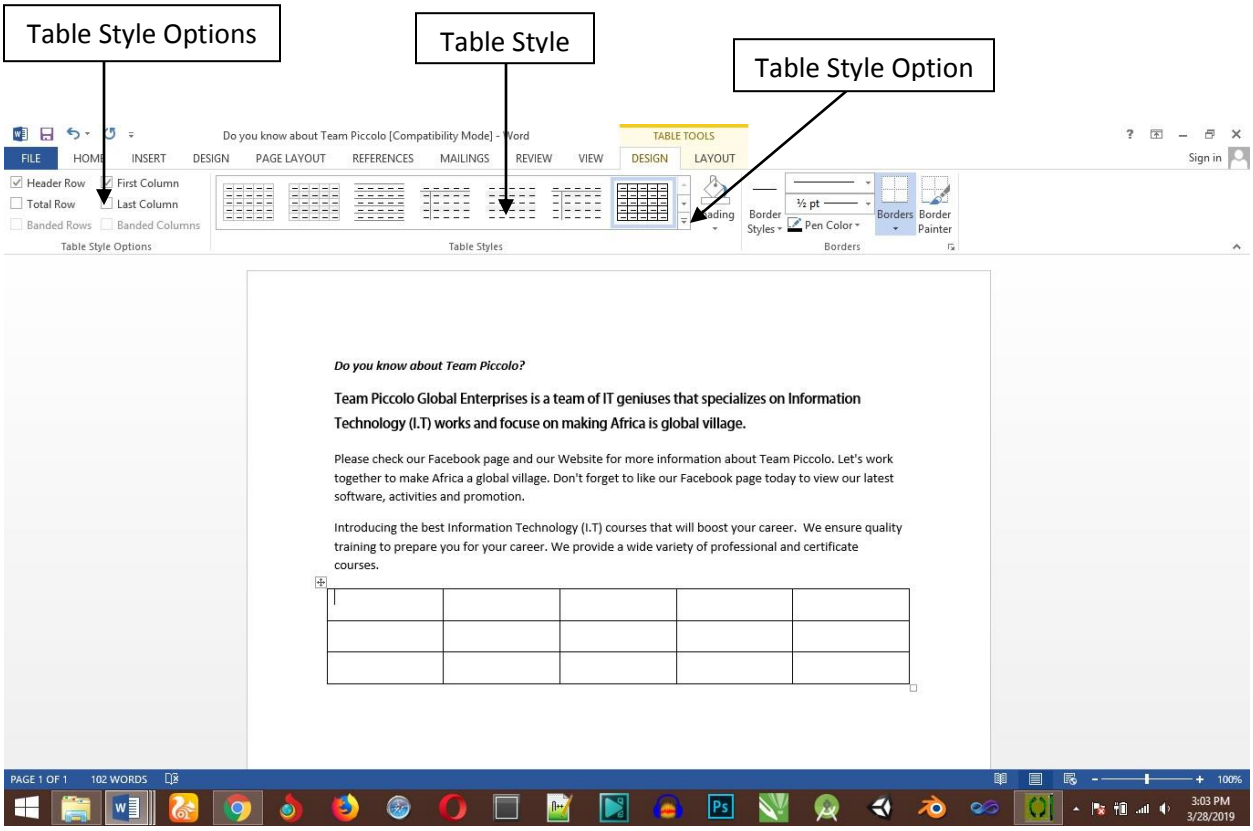
### Create Table

The following steps will help you understand how to create a table in a Word document.

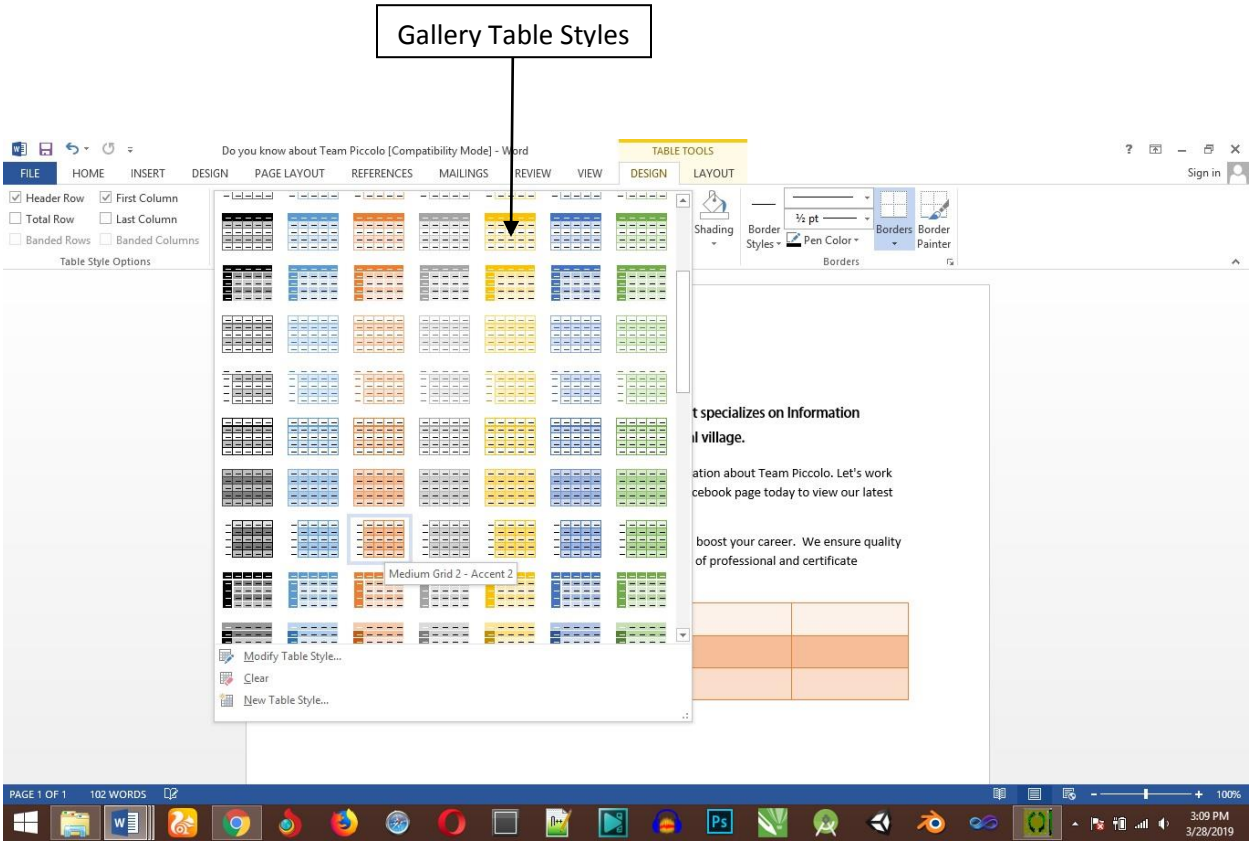
**Step 1** – Click the **Insert tab** followed by the **Table** button. This will display a simple grid as shown below. When you move your mouse over the grid cells, it makes a table in the table that appears in the document. You can make your table having the desired number of rows and columns.




**Step 2** – Click the square representing the lower-right corner of your table, which will create an actual table in your document and Word goes in the table design mode. The table design mode has many options to work with as shown below.




**Step 3** – this is an optional step that can be worked out if you want to have a fancy table. Click the **Table Styles button** to display a gallery of table styles. When you move your mouse over any of the styles, it shows real time preview of your actual table.




**Step 4** – to select any of the styles, just click the built-in table style and you will see that the selected style has been applied on your table.

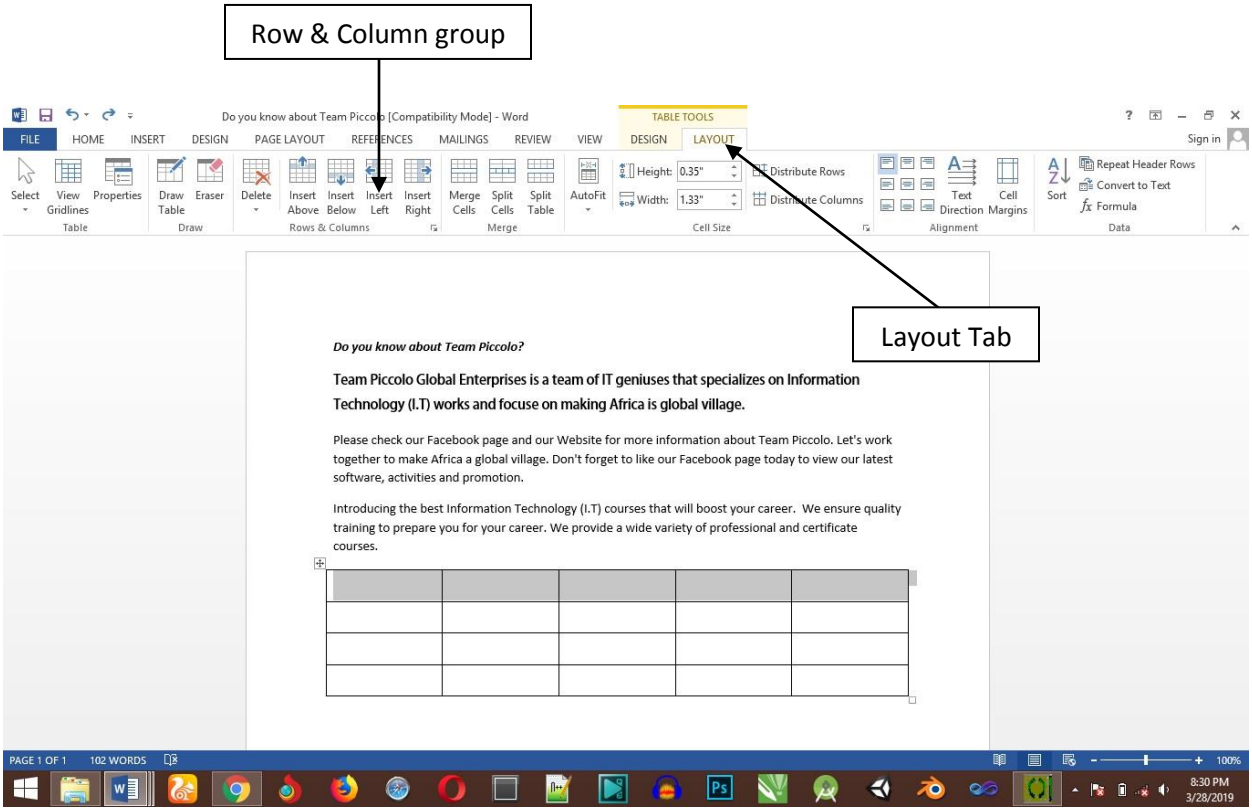
**Rows and Columns in Word**

A **table** is a structure of vertical columns and horizontal rows with a cell at every intersection. A Word table can contain as many as **63 columns** but the number of **rows is unlimited**.

**Add a Row**

Following are the simple steps to add rows in a table of a word document.

**Step 1** – Click a row where you want to add an additional row and then click the **Layout tab**; it will show the following screen.

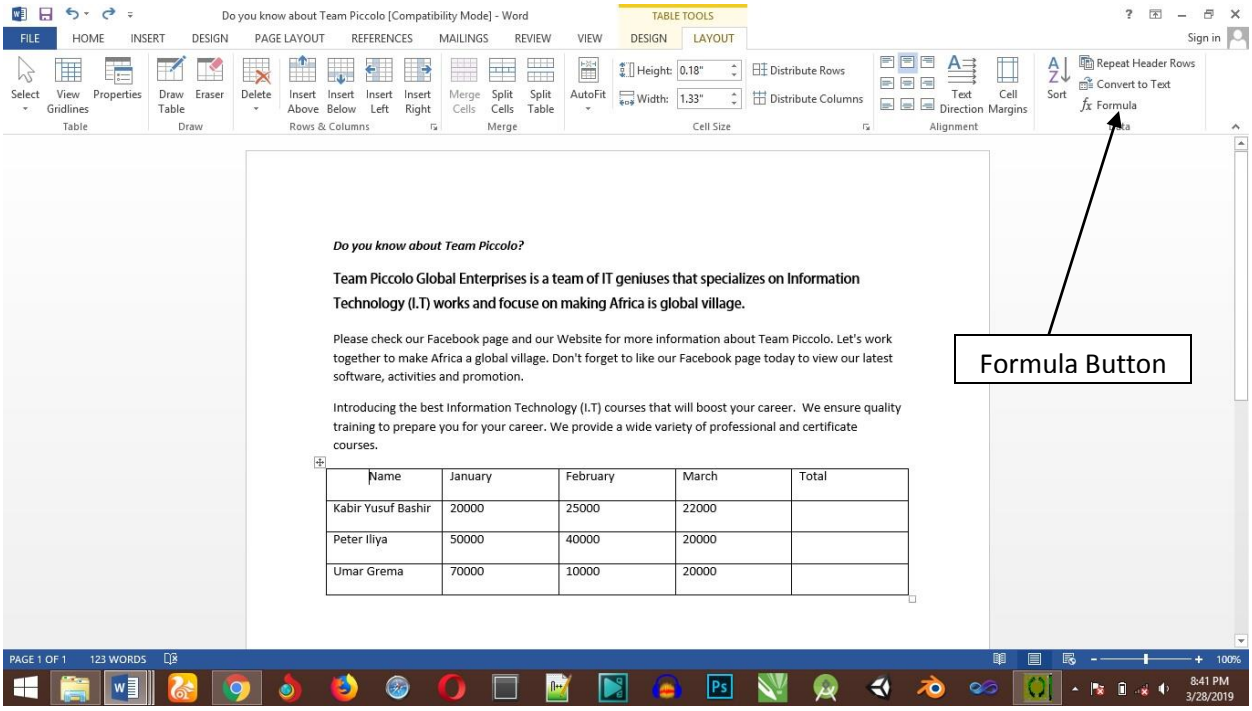



**Add a Formula**

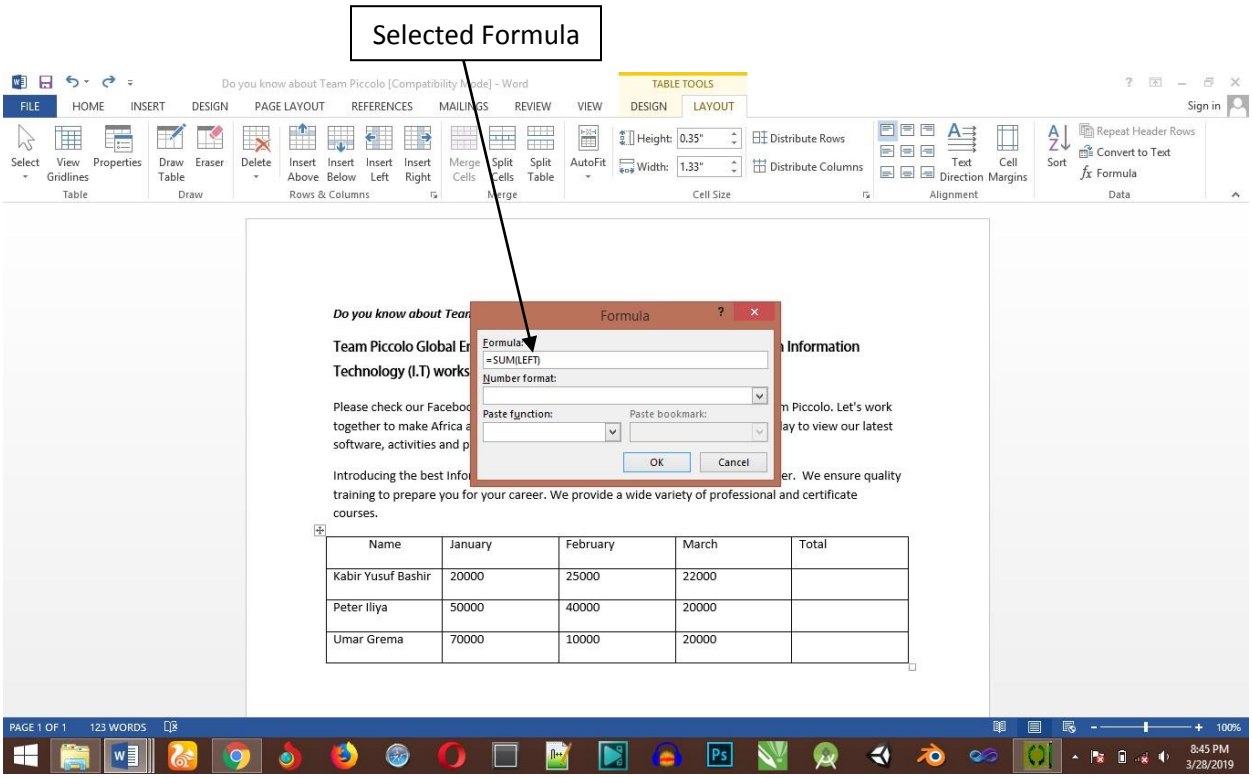
Microsoft Word allows you to use mathematical formula in table cells which can be used to add numbers, to find the average of numbers, or find the largest or the smallest number in table cells you specify. There is a list of formulae, you can choose from the many based on the requirement.

Following are the simple steps to add formula in a table cell available in Word document.

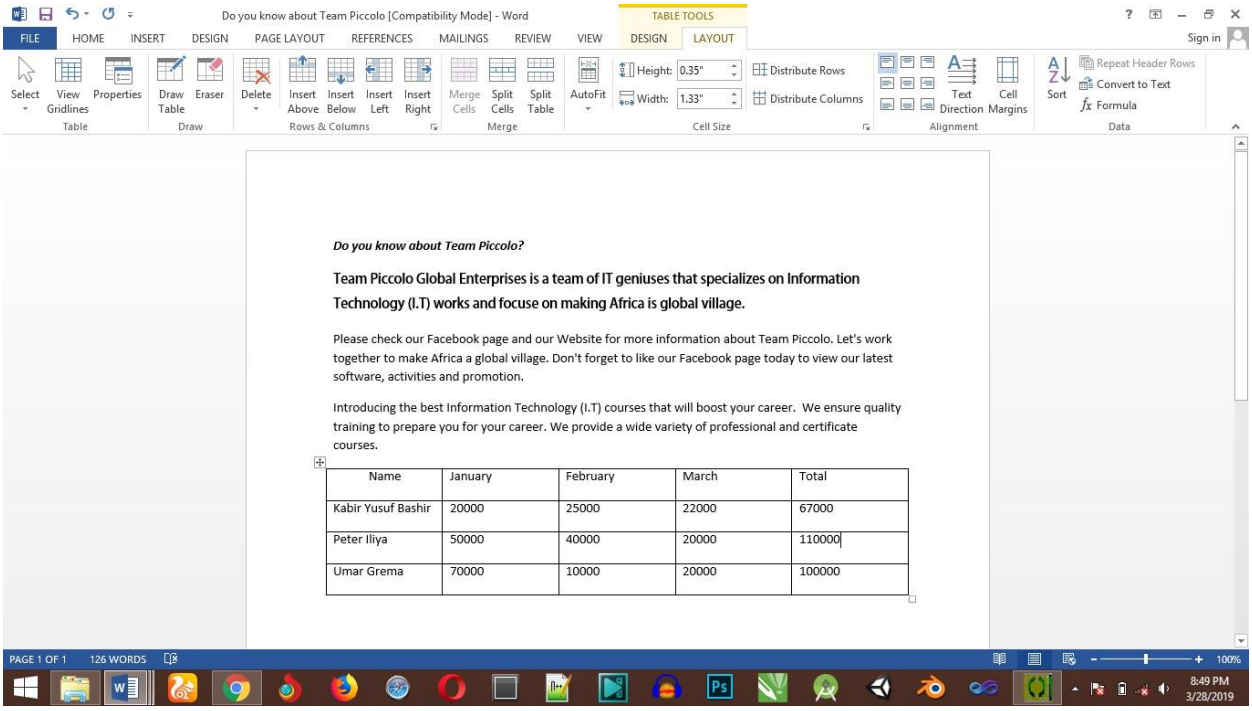
**Step 1** – Consider the following table with the total number of rows. Click in a cell that should contain the sum of the rows.




**Step 2** – Now click the **Layout tab** and then click the **Formula button**; this will display **a Formula Dialog Box** which will suggest a default formula, which is =**SUM (LEFT)** in our case. You can select a number format using **Number Format List Box** to display the result or you can change the formula using the **Formula List Box**.




**Step 3** – Now click **OK** to apply the formula and you will see that the left cells have been added and the sum has been put in the total cell where we wanted to have it. You can repeat the procedure to have the sum of other two rows as well.




## Cell Formulae

The Formula dialog box provides the following important functions to be used as formula in a cell.

| No | Formula & Description |
|---|---|
| 1 | **AVERAGE( )**<br>The average of a list of cells |
| 2 | **COUNT( )**<br>The number of items in a list of cells |
| 3 | **MAX( )**<br>The largest value in a list of cells |
| 4 | **MIN( )**<br>The smallest value in a list of cells |

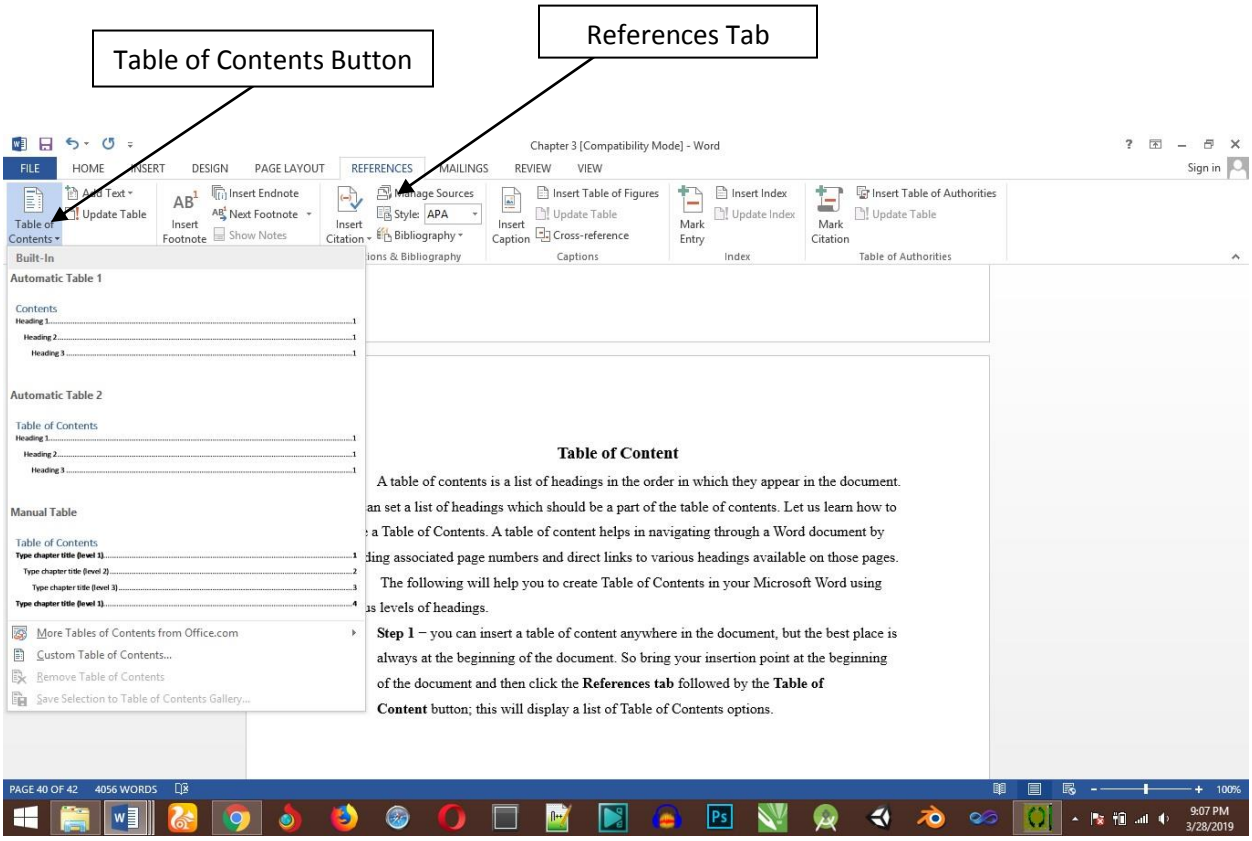
| | |
|---|---|
| 5 | **PRODUCT( )**<br>The multiplication of a list of cells |
| 6 | **SUM( )**<br>The sum of a list of cells |

## Table of Content

A table of contents is a list of headings in the order in which they appear in the document. You can set a list of headings which should be a part of the table of contents. Let us learn how to create a Table of Contents. A table of content helps in navigating through a Word document by providing associated page numbers and direct links to various headings available on those pages.

The following will help you to create Table of Contents in your Microsoft Word using various levels of headings.

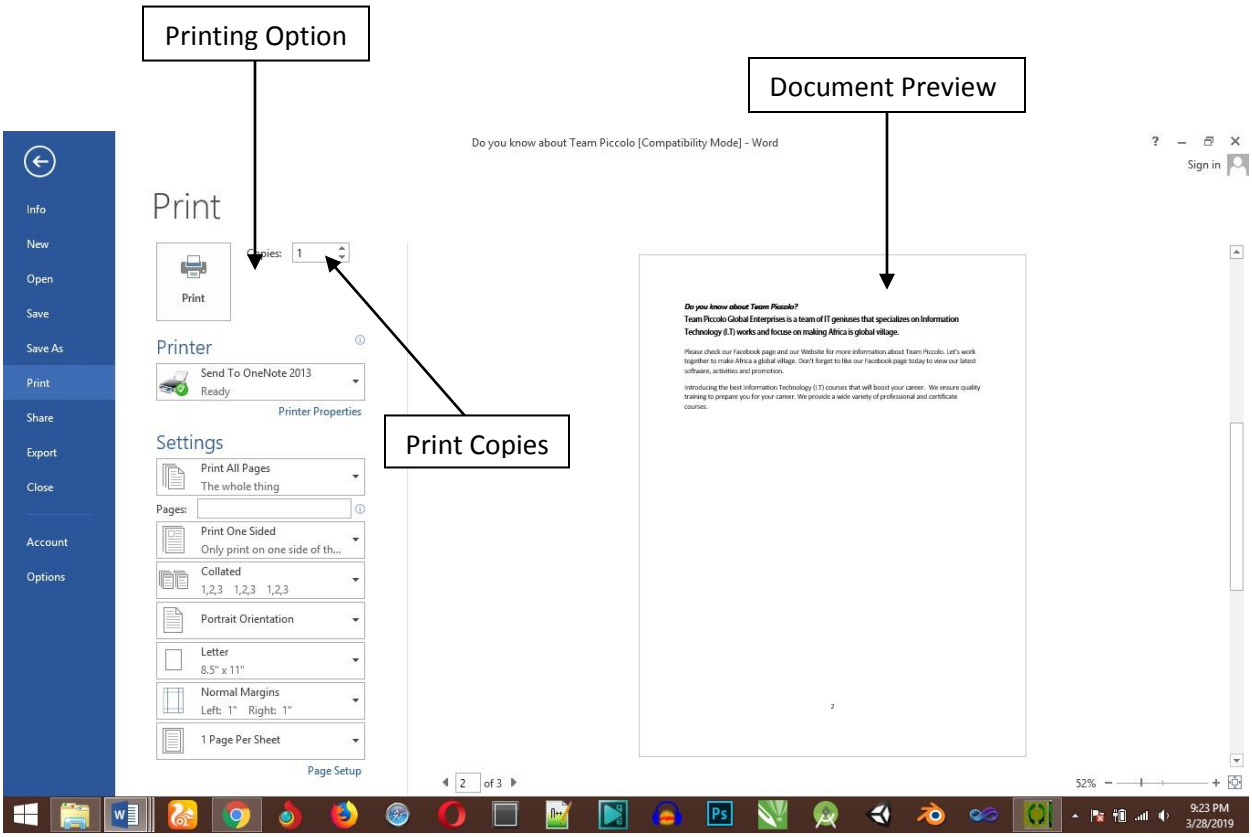
**Step 1** − you can insert a table of content anywhere in the document, but the best place is always at the beginning of the document. So bring your insertion point at the beginning of the document and then click the **References tab** followed by the **Table of Content** button; this will display a list of Table of Contents options.



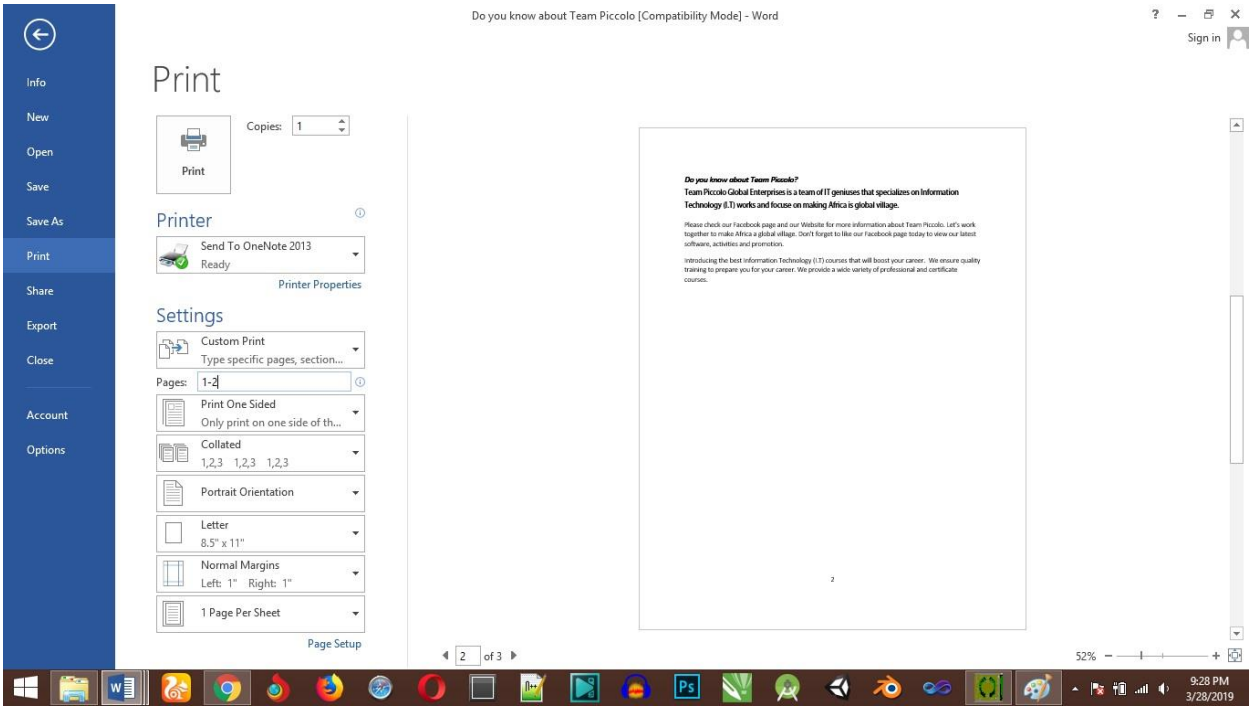

## Printing Document

Consider you are done with previewing and proofing your document and ready for the final printing. The following steps will help you print your Microsoft Word document.

**Step 1** – Open the document for which you want to see the preview. Next click the **File** tab followed by the **Print** option which will display a preview of the document in the right column. You can scroll up or scroll down your document to walk through the document using given **Scrollbar**. The middle column gives various options to be set before you send your document to the printer.



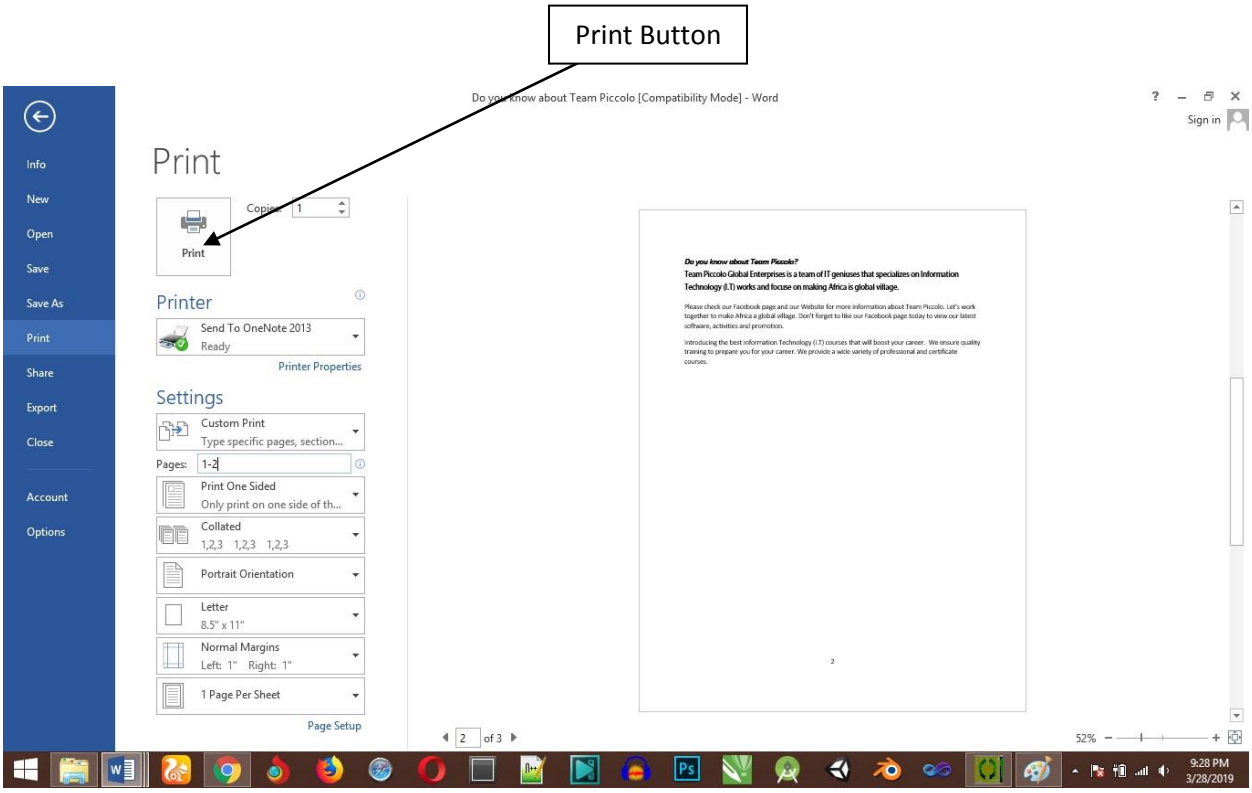

**Step 2** – you can set various other printing options available. Select from among the following options, depending on your preferences.




| No | Option and Description |
|---|---|
| 1 | **Copies**<br><br>Set the number of copies to be printed; by default, you will have one copy of the document. |
| 2 | **Print Custom Range**<br><br>This option will be used to print a particular page of the document. Type the number in **Pages** option, if you want to print all the pages from 7 till 10 then you would have to specify this option as **7-10** and Word will print only $7^{th}$, $8^{th}$, $9^{th}$ and $10^{th}$ pages. |
| 3 | **Print One Sided**<br><br>By default, you print one side of the page. There is one more option where you will turn up your page manually in case you want to print your page on both sides of the page. |
| 4 | **Collated**<br><br>By default, multiple copies will print **Collated**; if you are printing multiple copies and you want the copies uncollated, select the **Uncollated** option. |
| 5 | **Orientation** |

| | |
|---|---|
| | By default, page orientation is set to **Portrait**; if you are printing your document in landscape mode then select the **Landscape** mode. |
| 6 | **A4**<br>By default, the page size is A4, but you can select other page sizes available in the dropdown list. |
| 7 | **Custom Margin**<br>Click the **Custom Margins** dropdown list to choose the document margins you want to use. For instance, if you want to print fewer pages, you can create narrower margins; to print with more white space, create wider margins. |
| 8 | **1 Page Per Sheet**<br>By default, the number of pages per sheet is 1 but you can print multiple pages on a single sheet. Select any option you like from the given dropdown list by clicking over the **1 Page Per Sheet** option. |

**Step 3** − Once you are done with your setting, click on the **Print** button which will send your document to the printer for final printing.


Print Button
Do you know about Team Piccolo [Compatibility Mode] - Word
Sign in
Info
New
Open
Save
Save As
Print
Share
Export
Close
Account
Options
Print
Copies: 1
Print
Printer
Send To OneNote 2013
Ready
Printer Properties
Settings
Custom Print
Type specific pages, section...
Pages: 1-2
Print One Sided
Only print on one side of th...
Collated
1,2,3 1,2,3 1,2,3
Portrait Orientation
Letter
8.5" x 11"
Normal Margins
Left: 1" Right: 1"
1 Page Per Sheet
Page Setup
Do you know about Team Piccolo?
Team Piccolo Global Enterprises is a team of IT geniuses that specializes on Information Technology (I.T) works and focuse on making Africa is global village.
2 of 3
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# References


1. https://www.webopedia.com/TERM/A/application.html
2. https://www.tutorialspoint.com/word/index.htm
3. https://www.tutorialspoint.com/word/word_getting_started.htm
4. https://www.tutorialspoint.com/word/word_explore_window.htm
5. https://www.tutorialspoint.com/word/word_insert_text.htm
6. https://www.tutorialspoint.com/word/word_delete_text.htm
7. https://www.tutorialspoint.com/word/word_spell_check.htm
8. https://www.tutorialspoint.com/word/word_setting_text_fonts.htm
9. https://www.tutorialspoint.com/word/word_text_decoration.htm
10. https://www.tutorialspoint.com/word/word_change_text_case.htm
11. https://www.tutorialspoint.com/word/word_text_alignments.htm
12. https://www.tutorialspoint.com/word/word_create_bullets.htm
13. https://www.tutorialspoint.com/word/word_set_line_spacing.htm
14. https://www.tutorialspoint.com/word/word_borders_shades.htm
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17. https://www.tutorialspoint.com/word/word_add_page_numbers.htm
18. https://www.tutorialspoint.com/word/word_cover_pages.htm
19. https://www.tutorialspoint.com/word/word_create_table.htm
20. https://www.tutorialspoint.com/word/word_rows_columns.htm
21. https://www.tutorialspoint.com/word/word_add_formula.htm
22. https://www.tutorialspoint.com/word/word_table_of_contents.htm
23. https://www.tutorialspoint.com/word/word_printing_documents.htm

# Microsoft PowerPoint

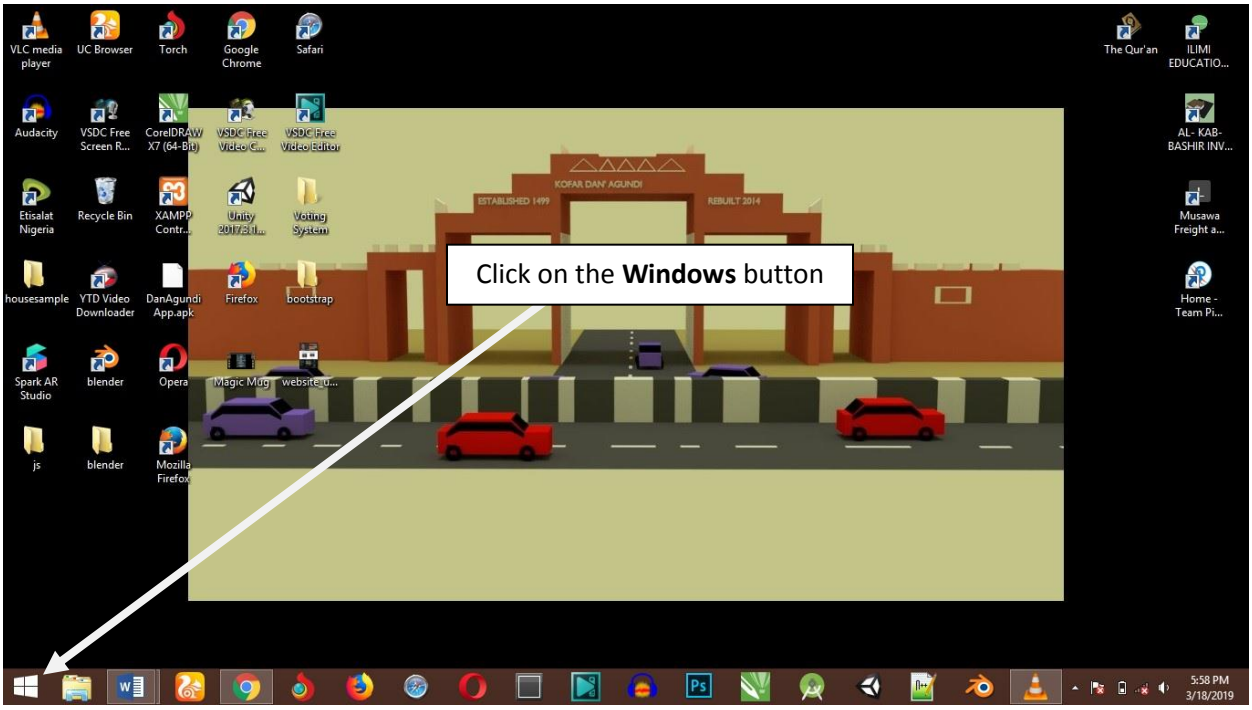
Microsoft PowerPoint is a commercial presentation application written and distributed by Microsoft for Microsoft Windows and Mac OS X.

Microsoft PowerPoint is a presentation tool that supports text, shapes, graphics, pictures and multimedia along with integration with other Microsoft Office products like Excel.

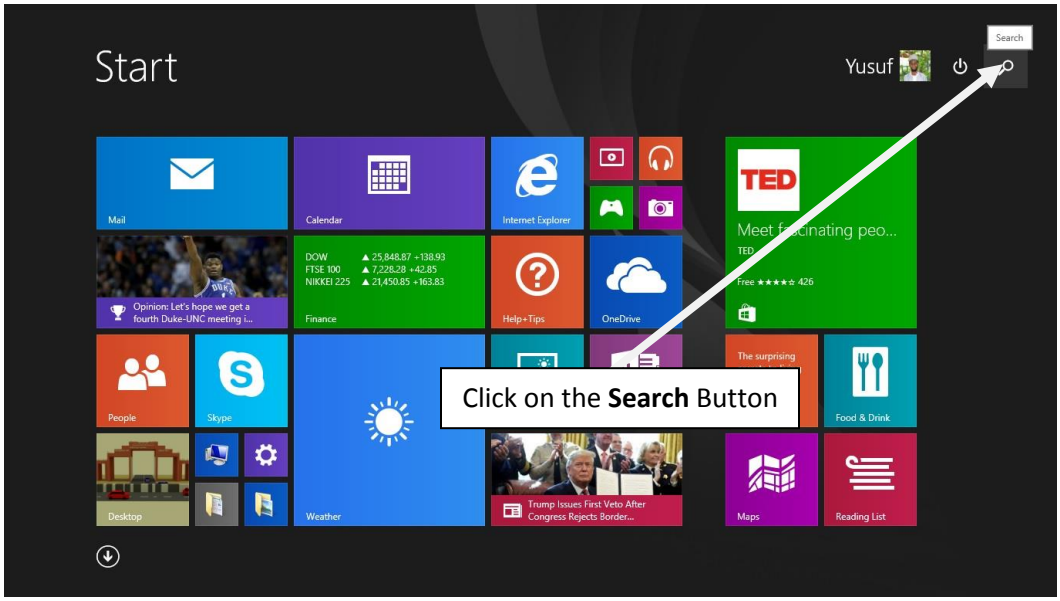
## Getting Started with Microsoft PowerPoint

In this section, we will discuss how to get started with **Microsoft PowerPoint**. We will understand how to start a **Microsoft PowerPoint** application in simple steps. Assuming you have **Microsoft PowerPoint** installed in your PC, to start the application, follow these steps –

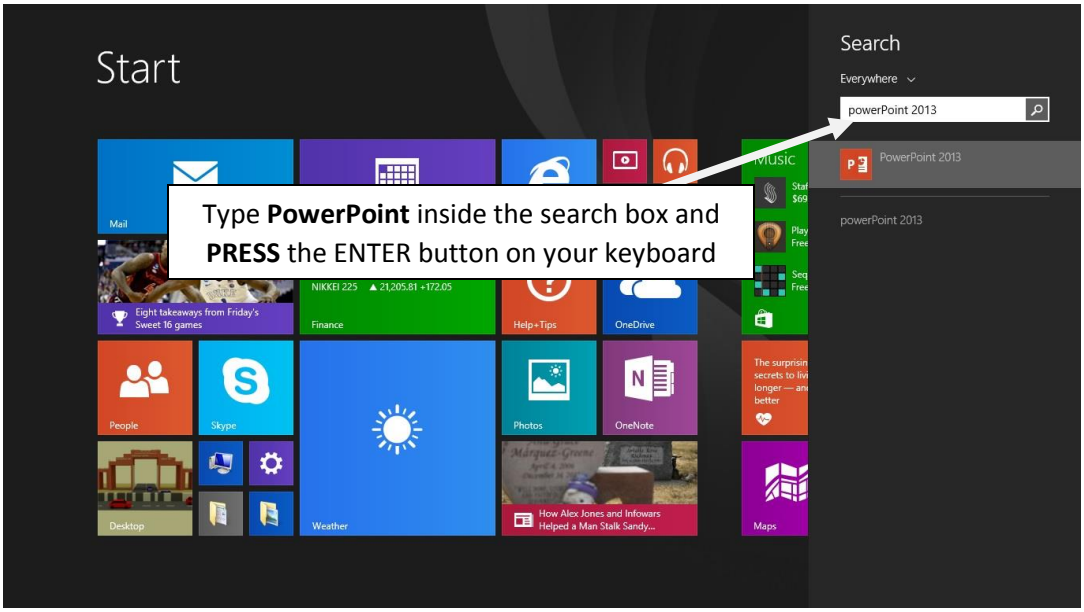
**Step 1:**



**Step 2:**

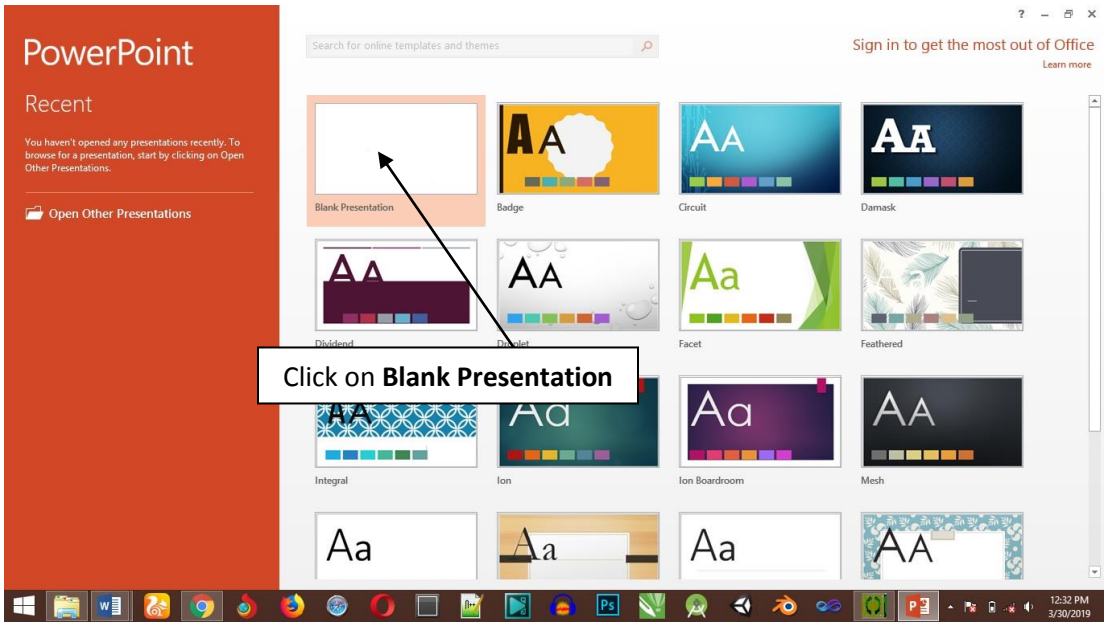



**Step 3:**

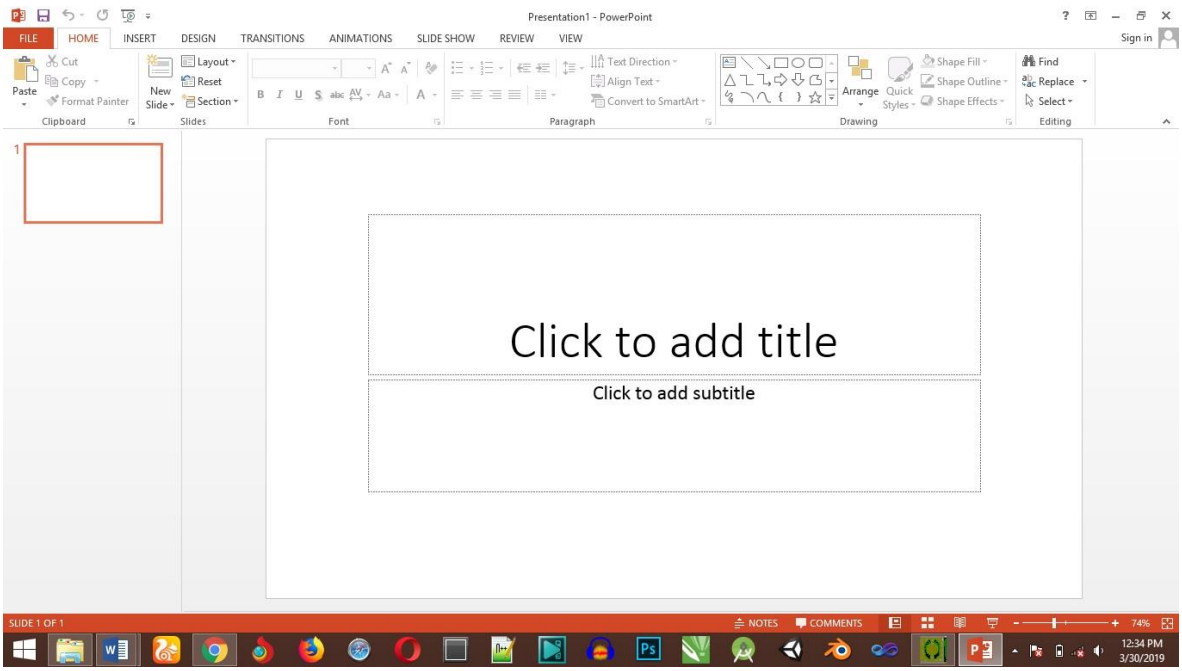



**NB: I have installed Microsoft PowerPoint 2013 on my PC, the procedure will work on both later and earlier version of Microsoft PowerPoint.**

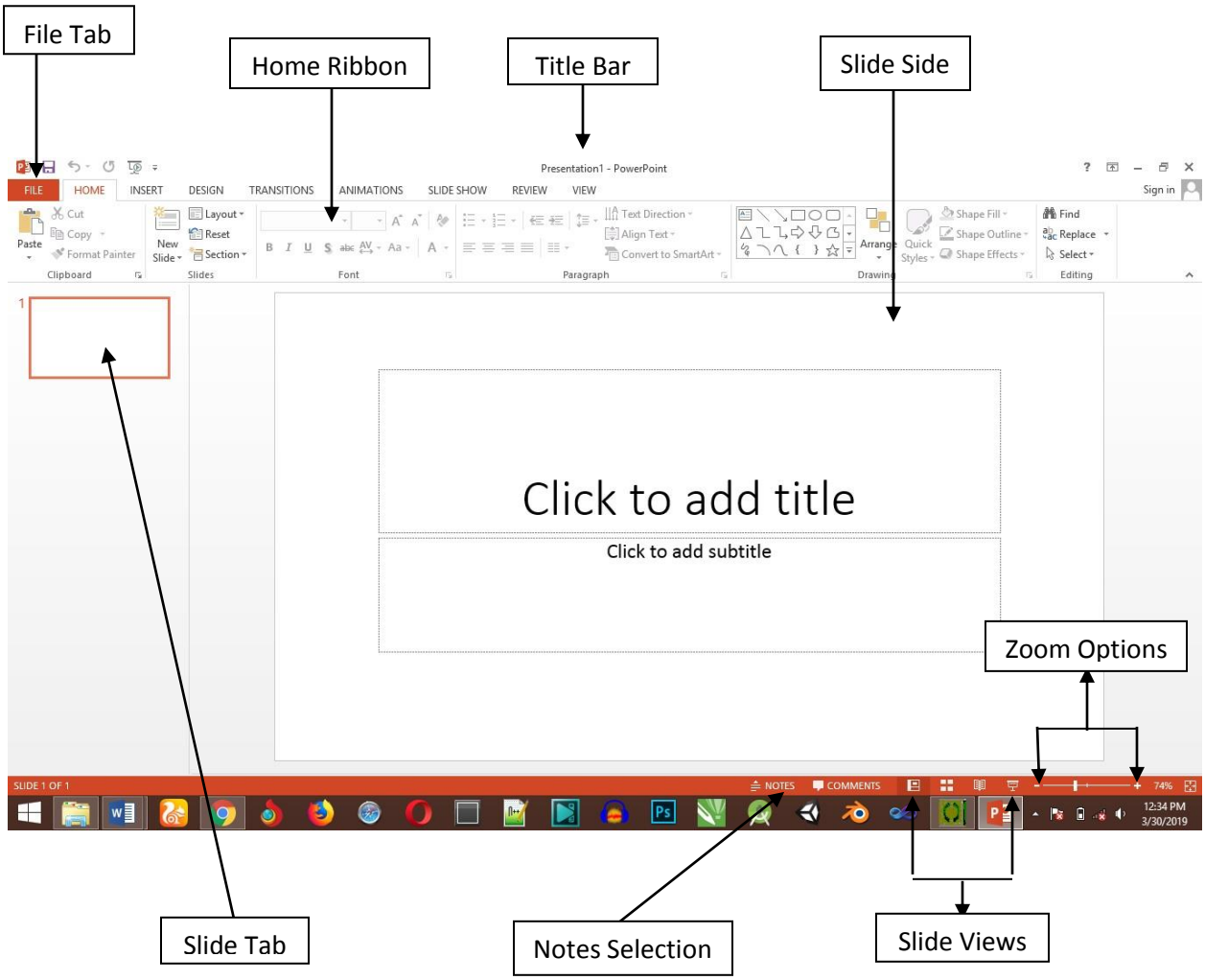
**Step 4:** We have **successfully** started our **Microsoft PowerPoint**




**Step 5:**



## Exploring Window in Microsoft Word




**File Tab**

This tab opens the **backstage** view which basically allows you to manage the file and settings in PowerPoint. You can save presentations, open existing ones and create new presentations based on blank or predefined templates. The other file related operations can also be executed from this view.

**Ribbon**


The ribbon contains three components −

- **Tabs** − they appear across the top of the Ribbon and contain groups of related commands. **Home**, **Insert**, **Design** are examples of ribbon tabs.
- **Groups** − they organize related commands; each group name appears below the group on the Ribbon. For example, a group of commands related to fonts or a group of commands related to alignment, etc.
- **Commands** − Commands appear within each group as mentioned above.

**Title Bar**

This is the top section of the window. It shows the name of the file followed by the name of the program which in this case is Microsoft PowerPoint.

**Slide Area**

This is the area where the actual slide is created and edited. You can add, edit and delete text, images, shapes and multimedia in this section.

**Zoom Option**

The zoom control lets you zoom in for a closer look at your text. The zoom control consists of a slider that you can slide left or right to zoom in or out, you can click on the - and + buttons to increase or decrease the zoom factor. The maximum zoom supported by PowerPoint is 400% and the 100% is indicated by the mark in the middle.

**Slide View**

The group of four buttons located to the left of the Zoom control, near the bottom of the screen, lets you switch between PowerPoint views.

- **Normal Layout view** − this displays page in normal view with the slide on the right and a list of thumbnails to the left. This view allows you to edit individual slides and also rearrange them.

- **Slide Sorter view** − this displays all the slides as a matrix. This view only allows you to rearrange the slides but not edit the contents of each slide.
- **Reading View** − this view is like a slideshow with access to the Windows task bar in case you need to switch windows. However, like the slideshow you cannot edit anything in this view.

**Notes Section**

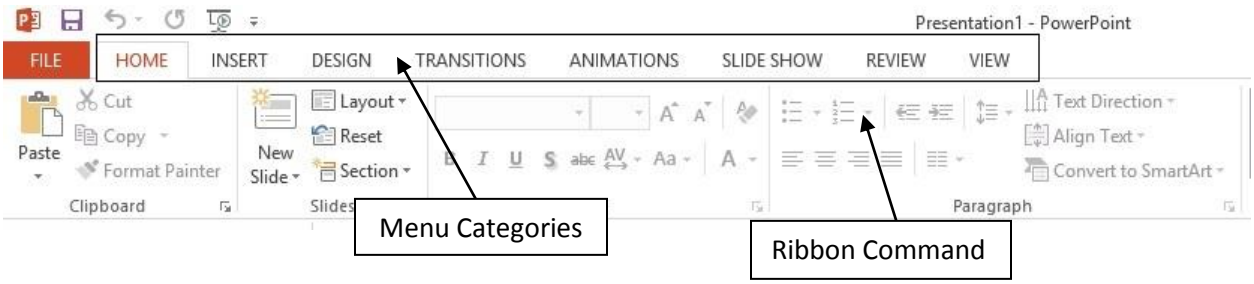
This sections allows you to add notes for the presentation. These notes will not be displayed on the screen during the presentation; these are just quick reference for the presenter.

**Slide Tab**

This section is available only in the Normal view. It displays all the slides in sequence. You can **add**, **delete** and **reorder** slides from this section.

## Create Presentation using PowerPoint

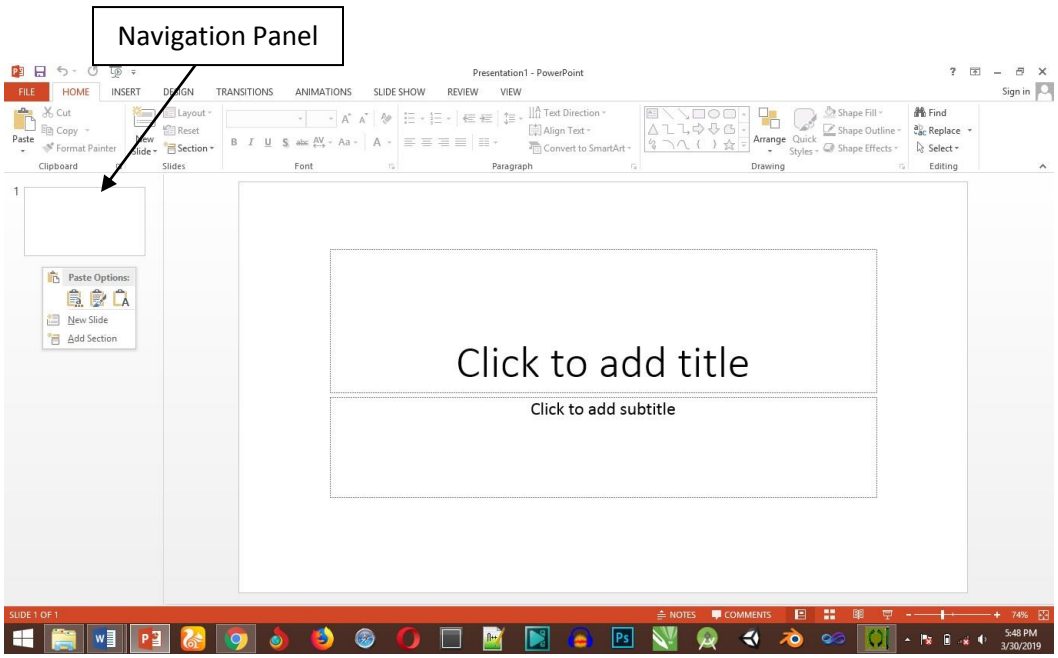
**PowerPoint** offers a host of tools that will aid you in creating a presentation. These tools are organized logically into various ribbons in PowerPoint. The table below describes the various commands you can access from the different menus.



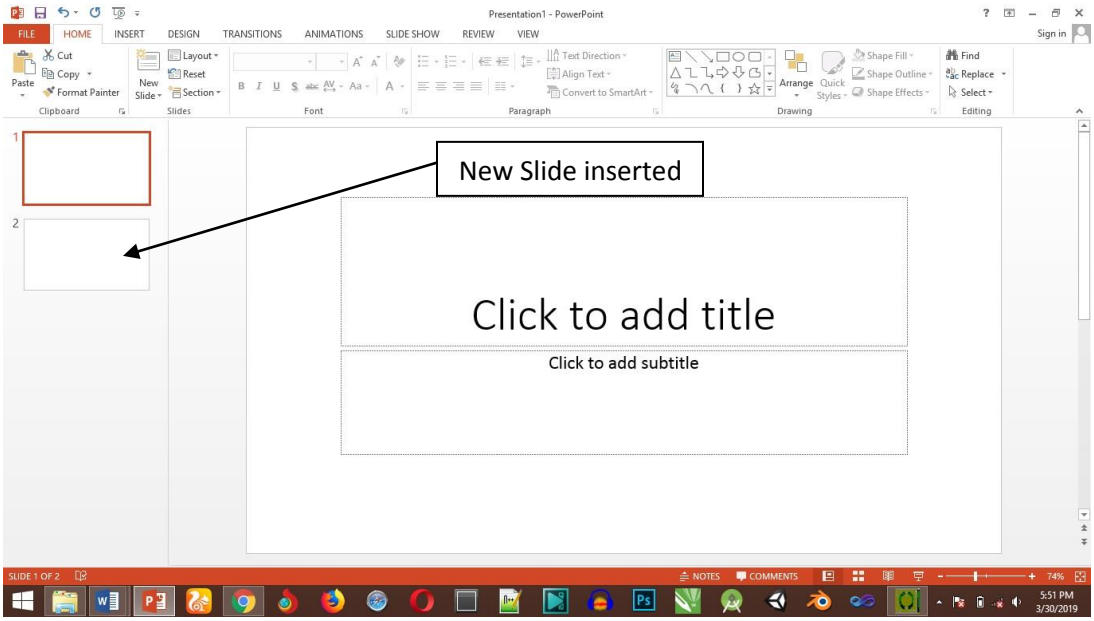

| Menu Category | Ribbon Commands |
|---|---|
| Home | Clipboard functions, manipulating slides, fonts, paragraph settings, drawing objects and editing functions. |
| Insert | Insert tables, pictures, images, shapes, charts, special texts, multimedia and symbols. |
| Design | Slide setup, slide orientation, presentation themes and background. |
| Transitions | Commands related to slide transitions. |
| Animations | Commands related to animation within the individual slides. |
| Slide Show | Commands related to slideshow set up and previews. |
| Review | Proofing content, language selection, comments and comparing presentations. |
| View | Commands related to presentation views, Master slides, color settings and window arrangements. |

**Add New Slide in PowerPoint**

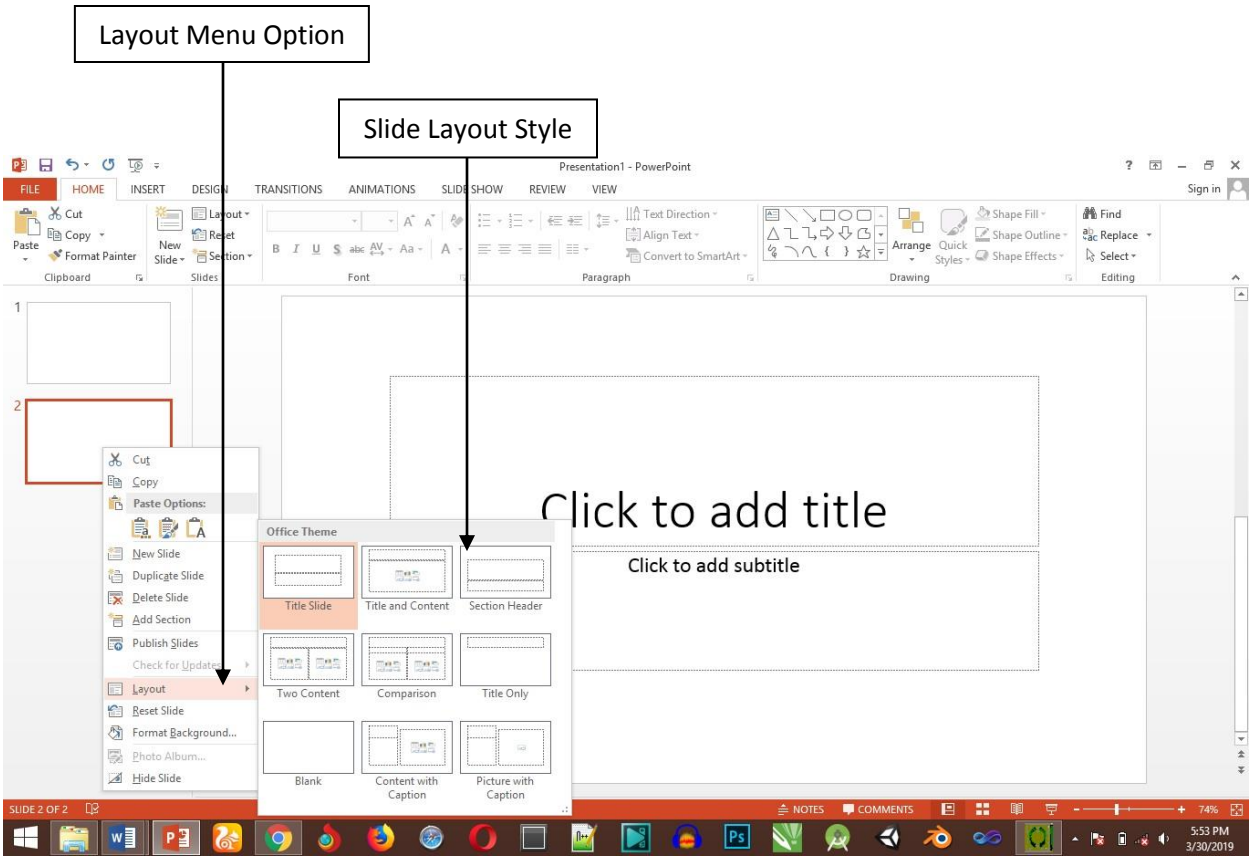
**Step 1**: Right-click in the **Navigation Panel** under any existing slide and click on the **New Slide** option.




**Step 2**: The new slide is inserted. You can now change the layout of this slide to suit your design requirements.



**Step 3**: To change the slide layout, right-click on the newly inserted slide and go to the **Layout** option where you can choose from the existing layout styles available to you.




You can follow the same steps to insert a new slide in between existing slides or at the end on the slide list.

When we insert a new slide, it inherits the layout of its previous slide with one exception. If you are inserting a new slide after the first slide (**Title** slide), the subsequent slide will have the **Title and Content** layout.

You will also notice that if you right-click in the first step without selecting any slide the menu options you get are different, although you can insert a new slide from this menu too.

**Adding Text in Boxes in PowerPoint**

PowerPoint allows users to add text to the slide in a well-defined manner to ensure the content is well distributed and easy to read. The procedure to add the text in a PowerPoint slide is always the same - just click in the text box and start typing. The text will follow the default formatting set for the text box, although this formatting can be changed later as required. What changes is the different kinds of content boxes that support text in a PowerPoint slide.

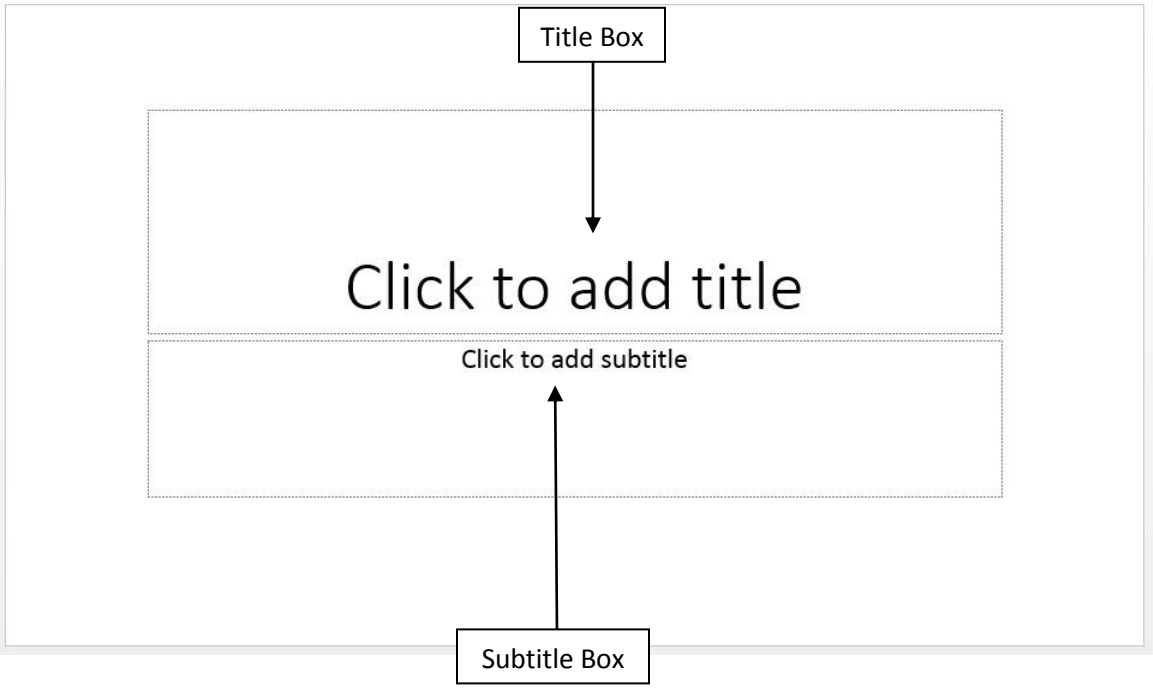
Given below are some of the most common content blocks you will see in PowerPoint.

**Title Box**

This is typically found on slides with the title layout and in all the slides that have a title box in them. This box is indicated by "**Click to add title**".

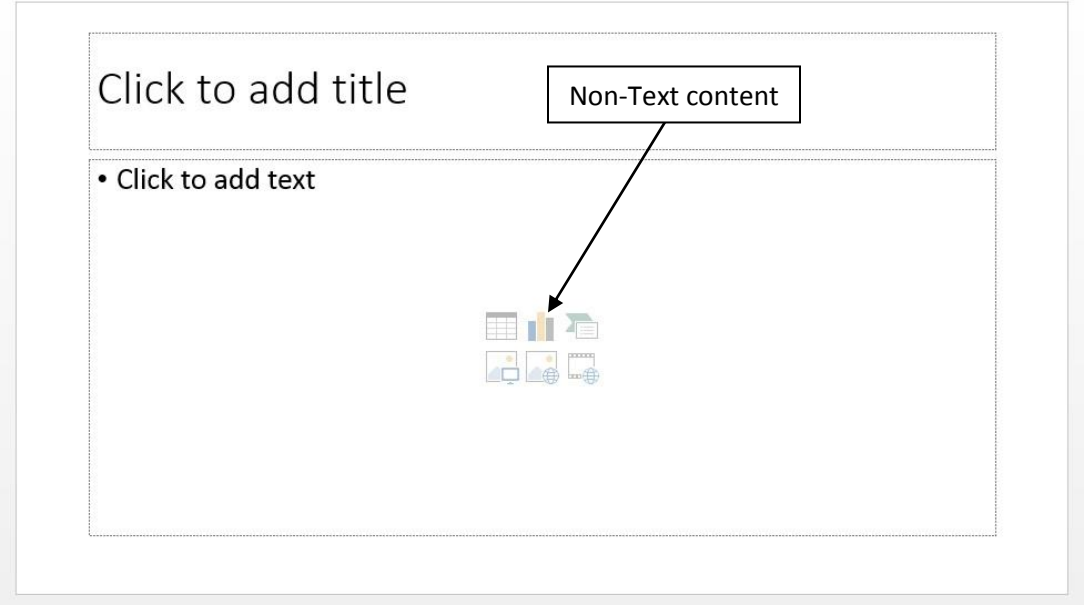
**Subtitle Box**

This is found only in slides with the **Title** layout. This is indicated by "**Click to add subtitle**"



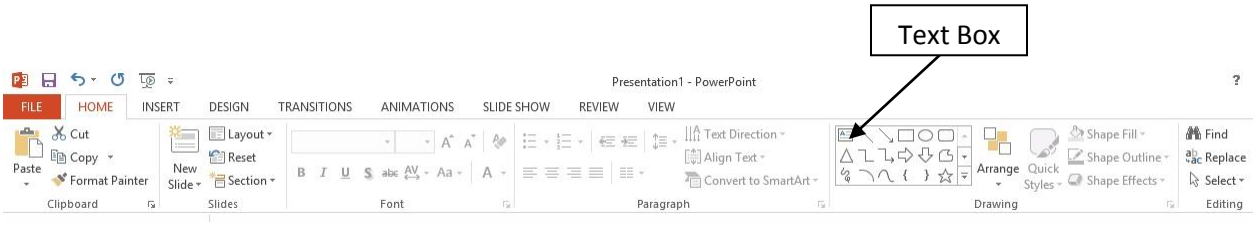
**Content Box**

This is found in most of the slides that have a placeholder for adding content. This is indicated by "**Click to add text**". As you can see, this box allows you to add text as well as non-text content. To add text to such a box, click anywhere on the box, except on one of the content icons in the center and start typing.



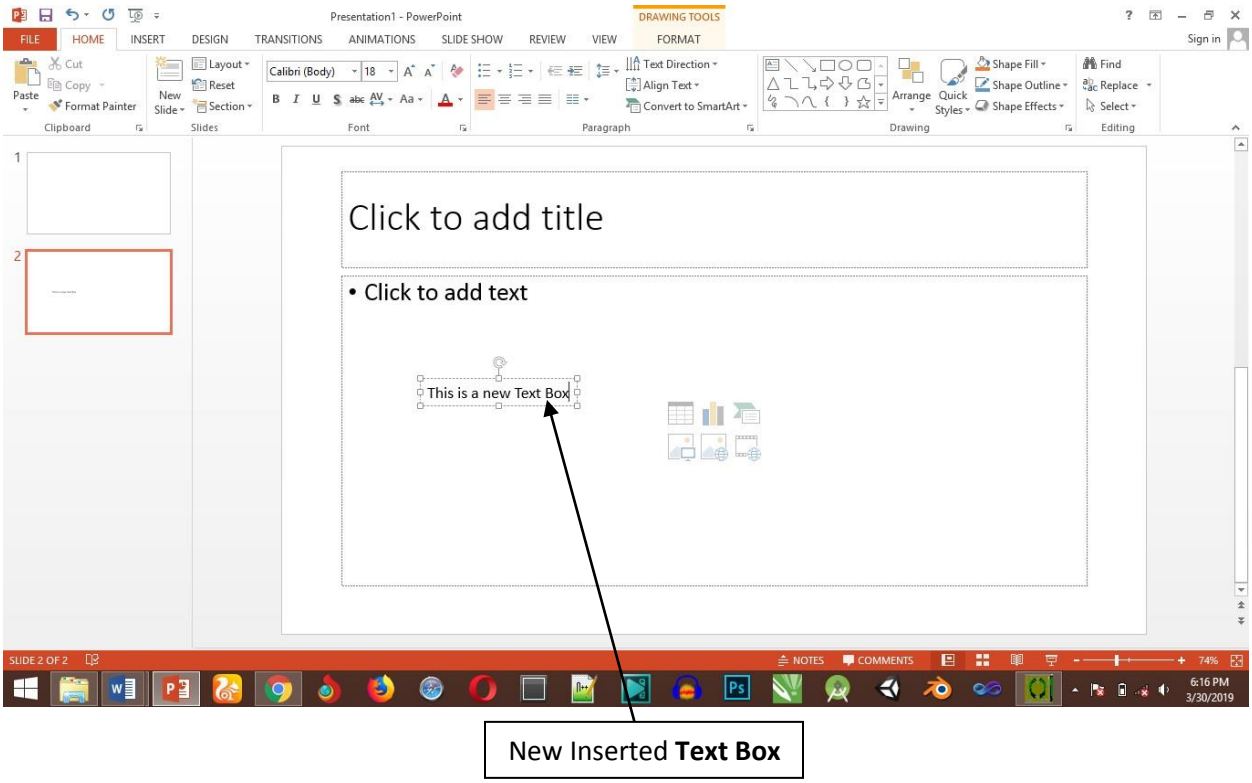

**Adding New Text Box in PowerPoint**

**Step 1**: Click on the **Text Box** icon in the **Home** ribbon under the **Drawing** section.




**Step 2**: You will get the insert text box cursor that looks like an inverted cross.

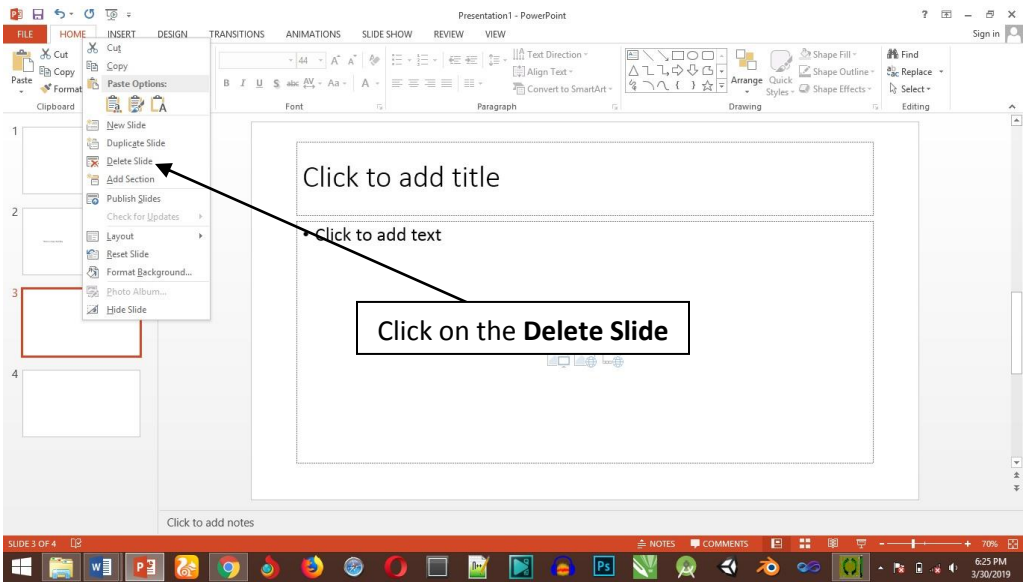
**Step 3**: Click to insert a text box. You can now start typing directly into the text box




**Deleting Existing Slide in PowerPoint**

There are times while creating a presentation, you may need to delete some slides. This can be done easily from PowerPoint.

**Step 1**: Right-click on the slide to be deleted and select the **Delete Slide** option.

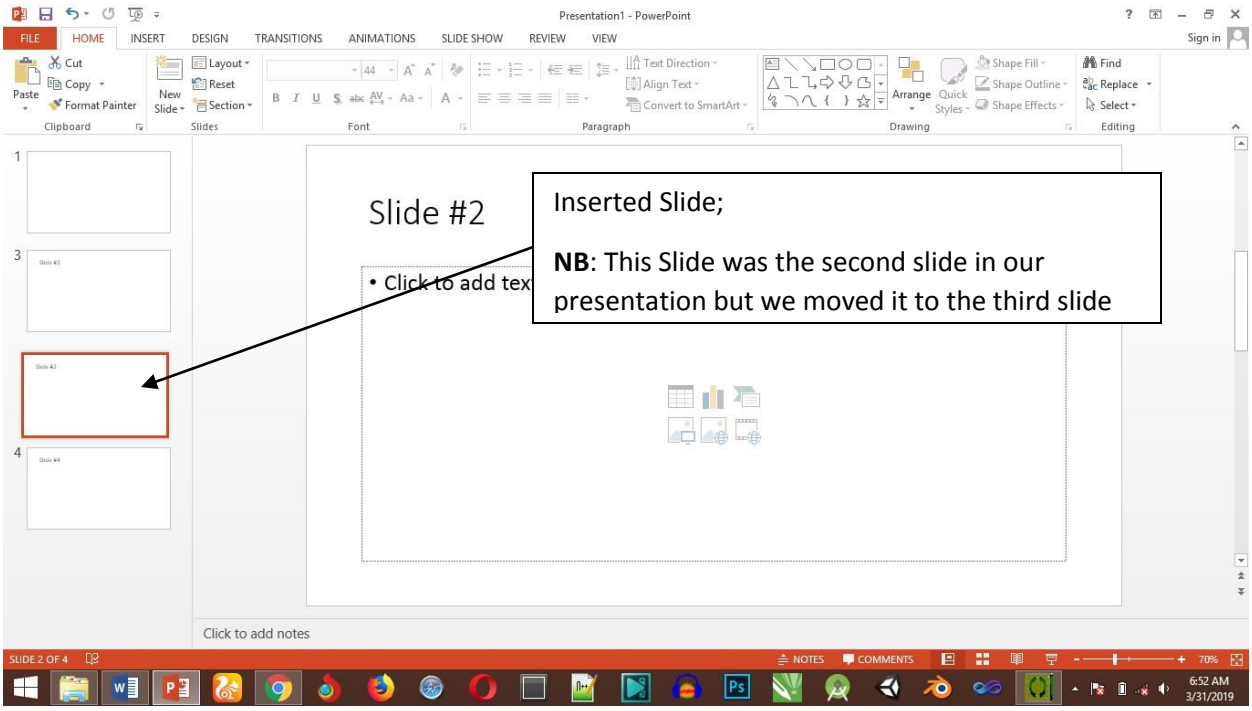



**Rearranging Slide in PowerPoint**

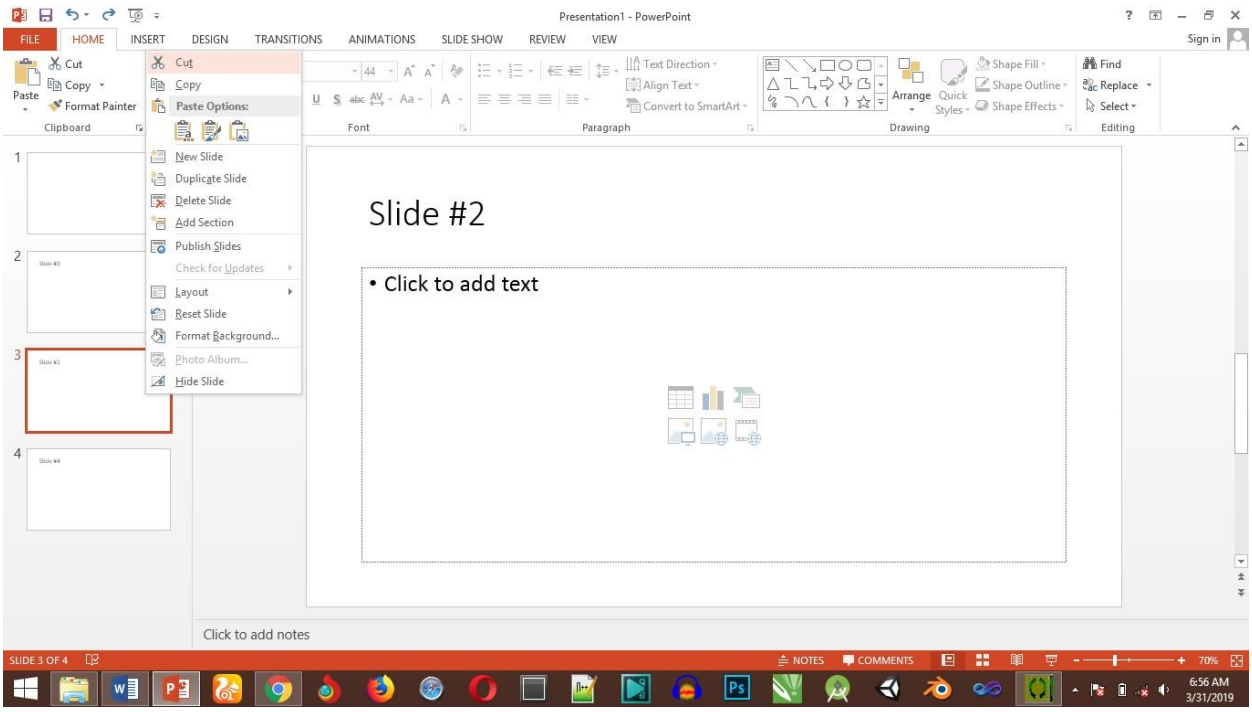
Rearranging slides is important when it comes to organizing the overall presentation flow. While it is vital that you get the right content in every slide, it is equally important that you are able to present them in a format that makes it easier for the audience to understand the content too; most times this will require rearranging the slides.

To rearrange your slide, follow the following steps below:

**Step 1**: Left click on the slide and drag it to the position in the sequence where you want to place it. PowerPoint will indicate the insert position with a line in-between existing slides.


Presentation1 - PowerPoint
Slide #2
Inserted Slide;
NB: This Slide was the second slide in our presentation but we moved it to the third slide
Click to add notes

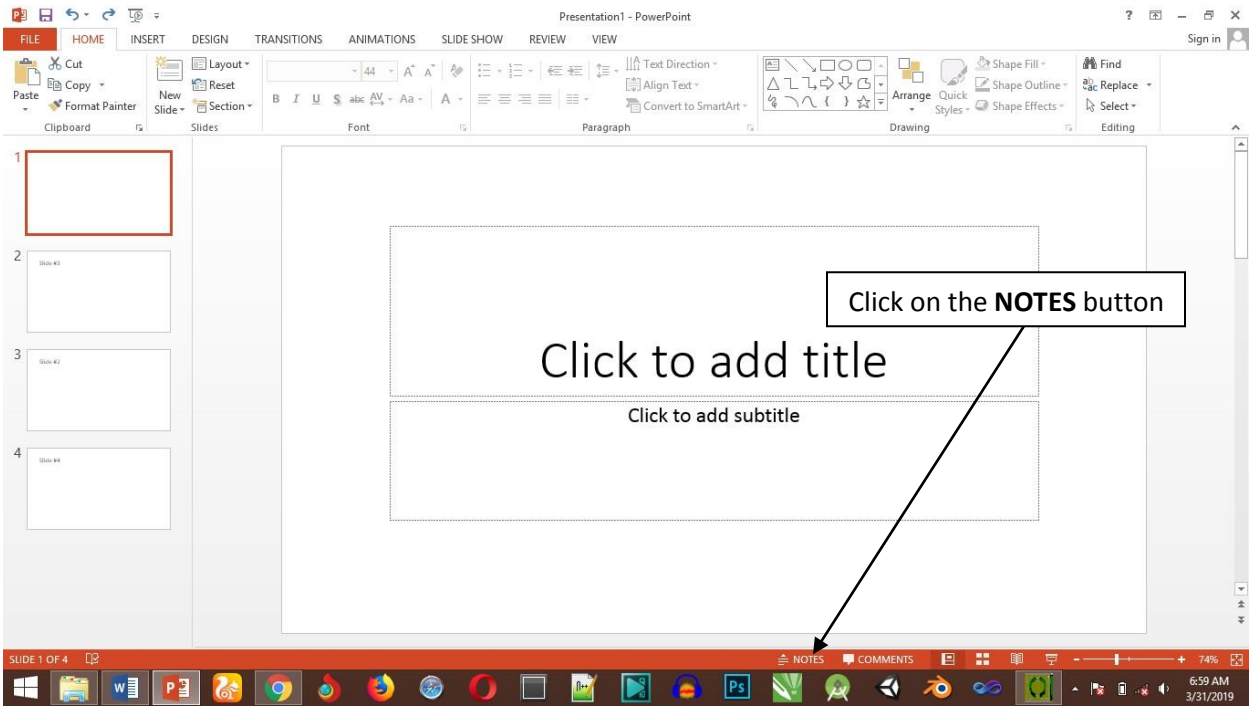
**Step 2**: When you get to the right position release the left click button to insert the slide. Alternately you can also cut the selected slide and paste it back in the sequence as shown below.



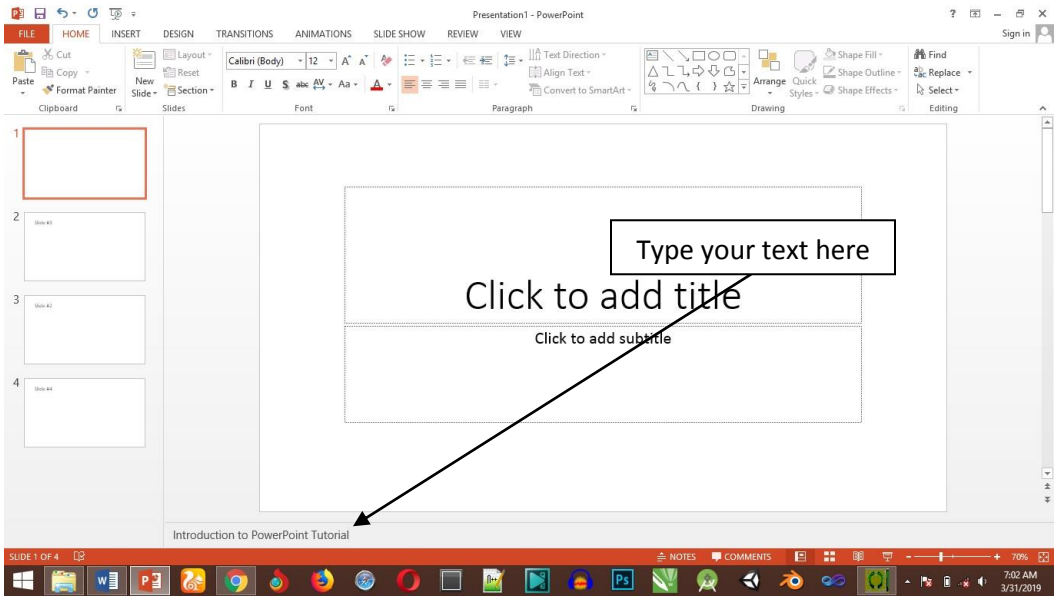
**Adding Slide Notes**

Slide notes can be very useful tools for presentation. These notes are not displayed on the screen in the **Slideshow** mode, but the presenter can see them so they can prepare well to present the slides. Depending on your Print settings, you can also print the slide notes along with the slides. To add notes to your slide, follow the following steps below:

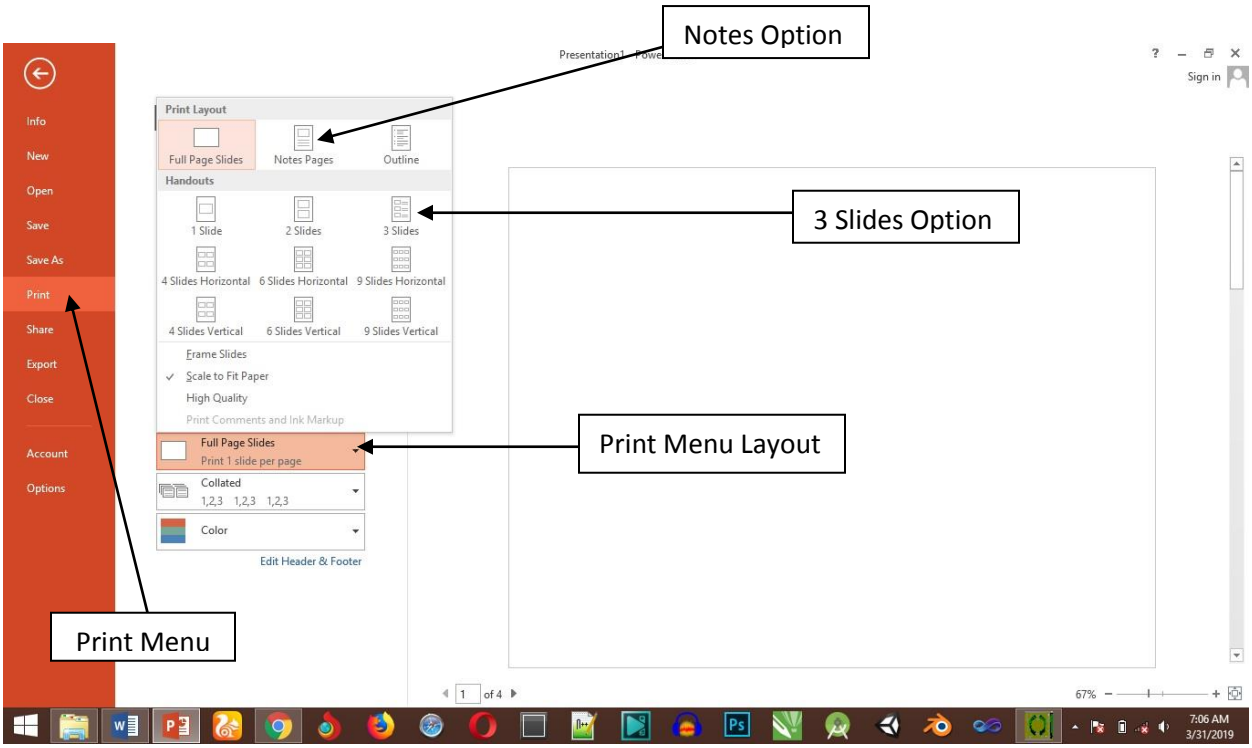
**Step 1:**




**Step 2**: Type your text in this section as slide notes.



**NB:** Slide notes can be printed from the print menu under the **backstage** view. From the Print Layout option, select **Notes Pages** or **3 Slides**. Notes Pages will print a single slide with the slide notes below it. The 3 Slides will print all three slides with notes on the right side.

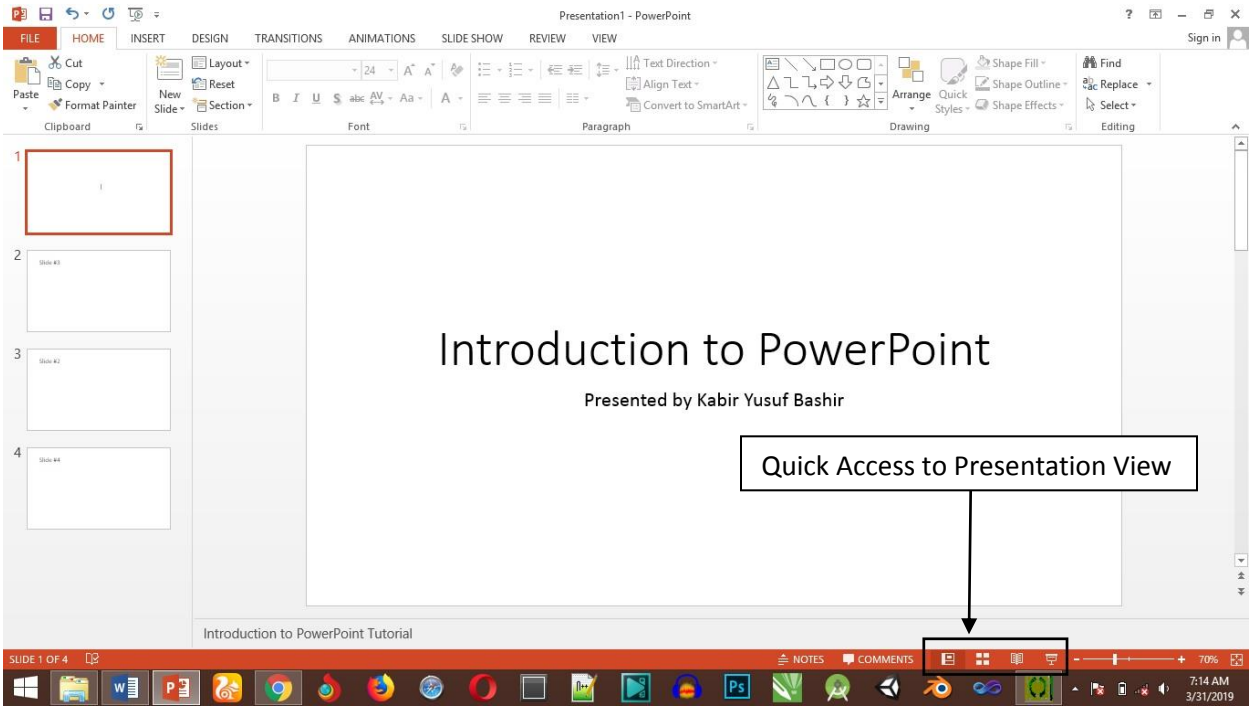



## Presentation Views in PowerPoint

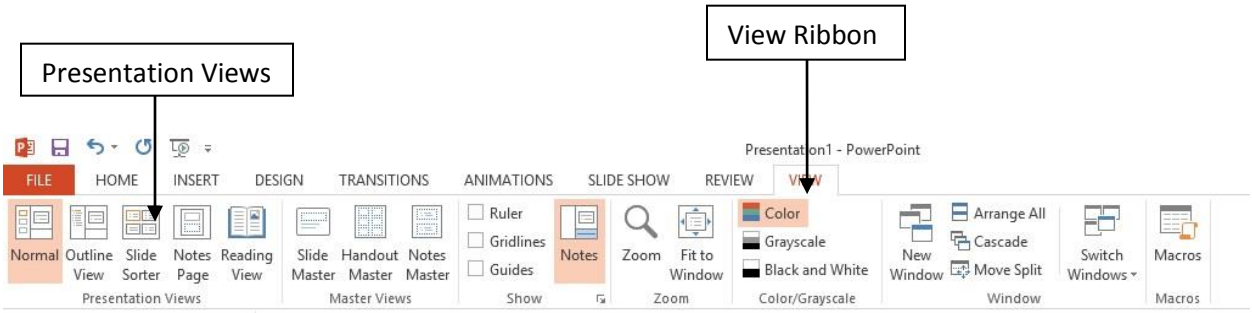
PowerPoint supports multiple views to allow users to gain the maximum from the features available in the program. Each view supports a different set of functions and is designed accordingly.

PowerPoint views can be accessed from two locations.

- Views can be accessed quickly from the bottom bar just to the left of the zoom settings.

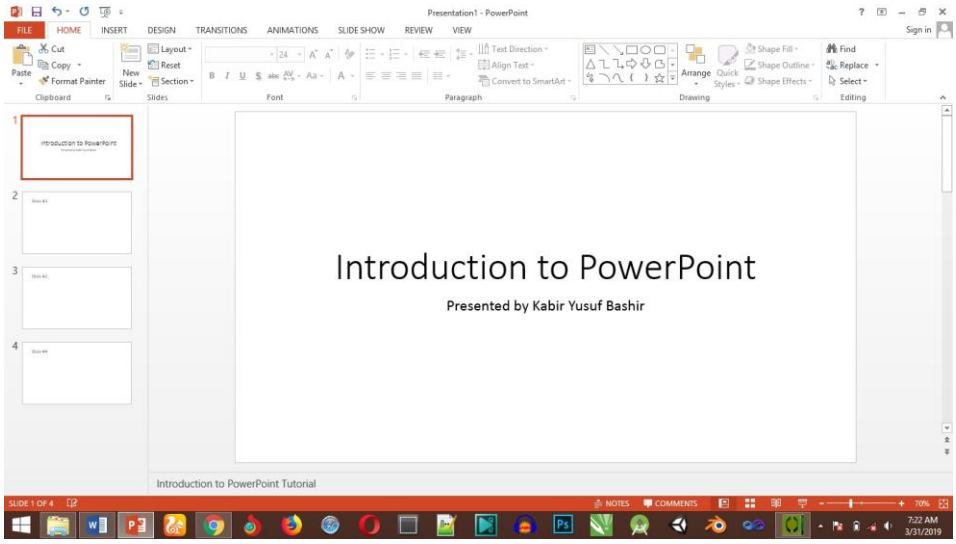



- Views can also be accessed from the **Presentation Views** section in the View ribbon



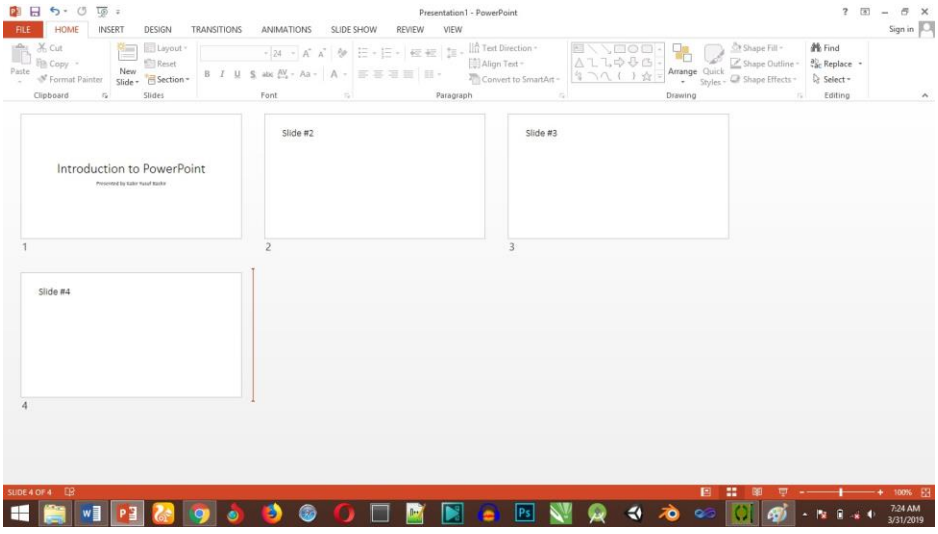
**Normal View**

This is the default view in PowerPoint and this is primarily used to create and edit slides. You can create/ delete/ edit/ rearrange slides, add/ remove/ modify content and manipulate sections from this view.



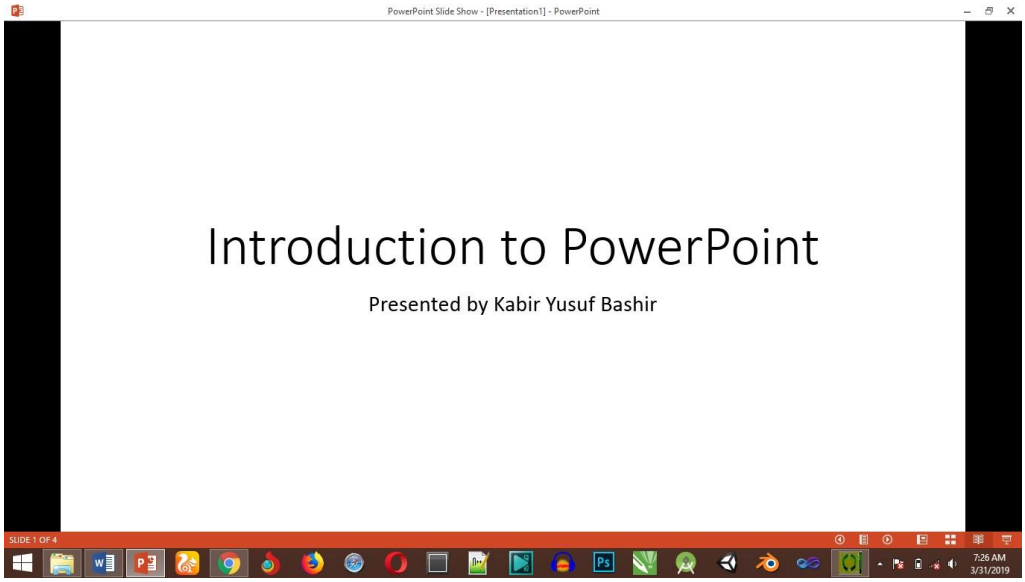

**Slide Sorter View**

This view is primarily used to sort slides and rearrange them. This view is also ideal to add or remove sections as it presents the slides in a more compact manner making it easier to rearrange them.



**Reading View**

This view was introduced in **PowerPoint 2010** and it was created mainly to review the slideshow without losing access to rest of the Windows applications. Typically, when you run the slideshow, the presentation takes up the entire screen so other applications cannot be accessed from the taskbar. In the reading view the taskbar is still available while viewing the slideshow which is convenient. You cannot make any modifications when on this view.




**Slide Show**

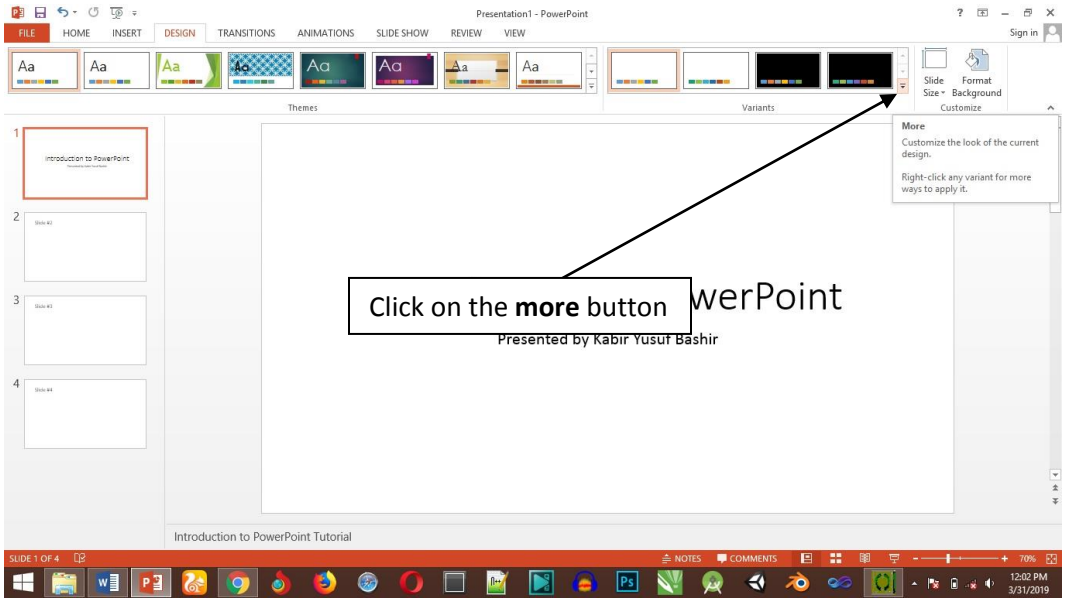
This is the traditional slideshow view available in all the earlier versions of PowerPoint. This view is used to run the slideshow during presentation.

## Setting Backgrounds in PowerPoint

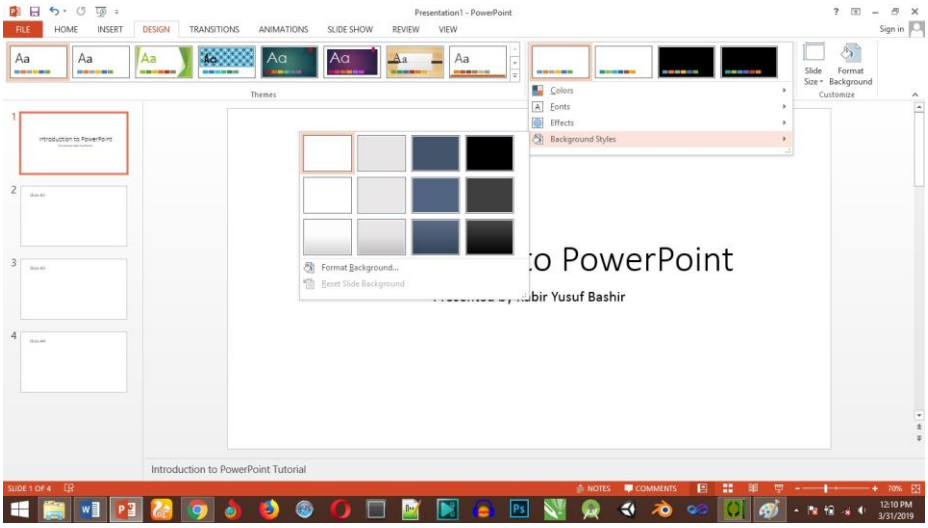
As PowerPoint is a design-based program, backgrounds are effective ways of improving the aesthetics and readability of the slides. The **Themes** in PowerPoint help select the backgrounds by default, so every time you change the theme, the default background is set automatically. Theme includes more than just backgrounds, so you can retain other aspects of the theme while changing the default background.

To apply backgrounds in PowerPoint, follow the steps below:

**Step 1**: In the **Design** ribbon, click on the **More** button



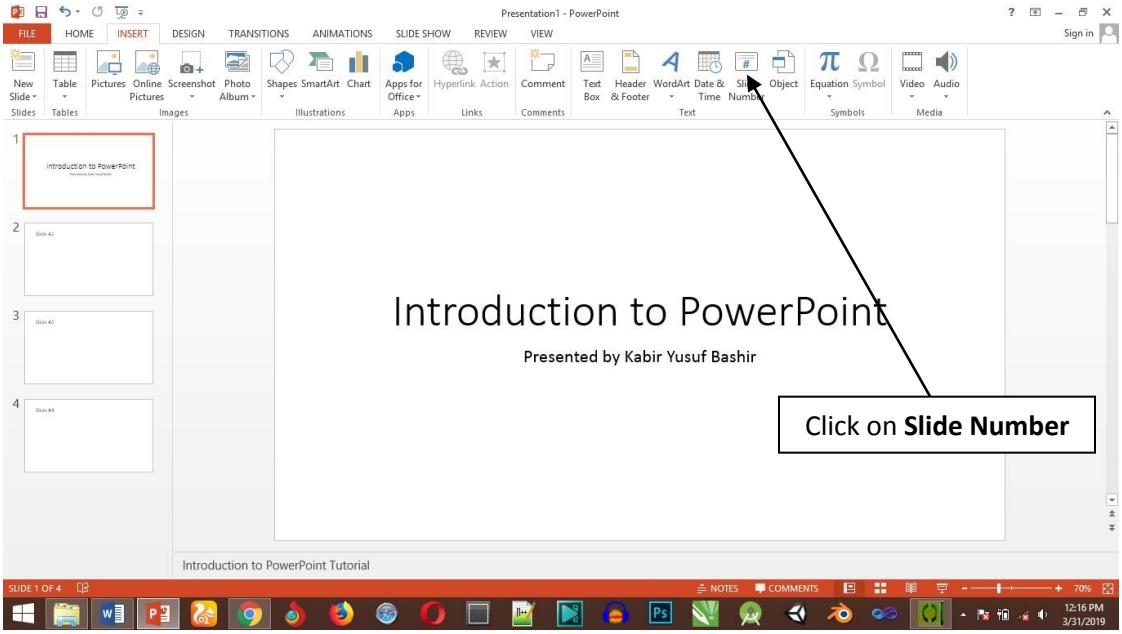

**Step 2:** Select one of the background styles that suits your requirements.



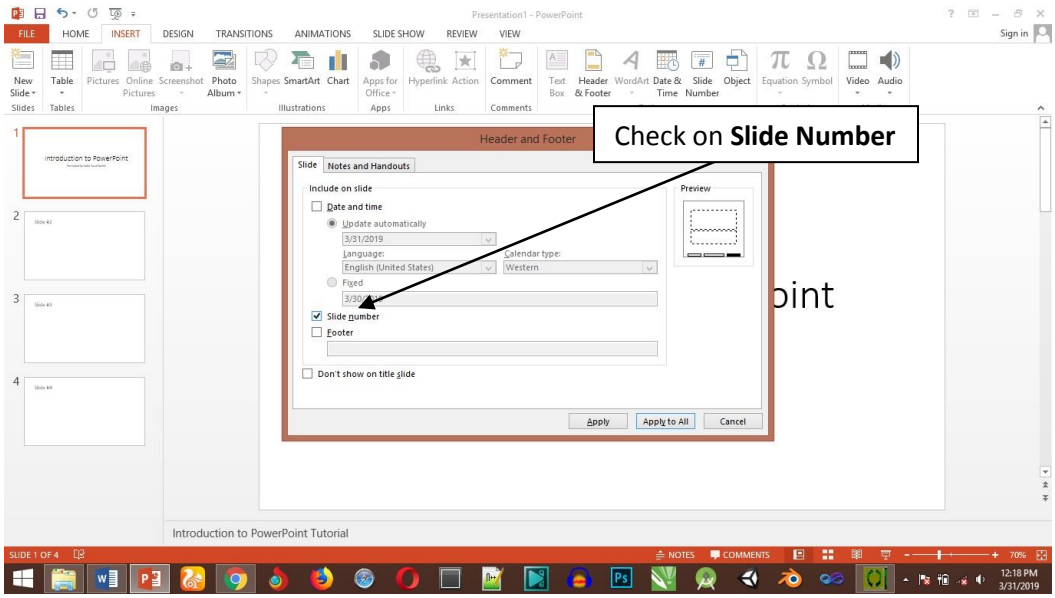
## Adding Slide Numbers in PowerPoint

Just like you have page numbers for books, it is usually a good idea to add slide numbers to presentations. There are two ways you can add slide numbers to your presentation and this chapter will show you both those techniques.

**Step 1**: Under the **Insert** ribbon, click on **Slide Number** command.




**Step 2**: Check the **Slide number** check box.

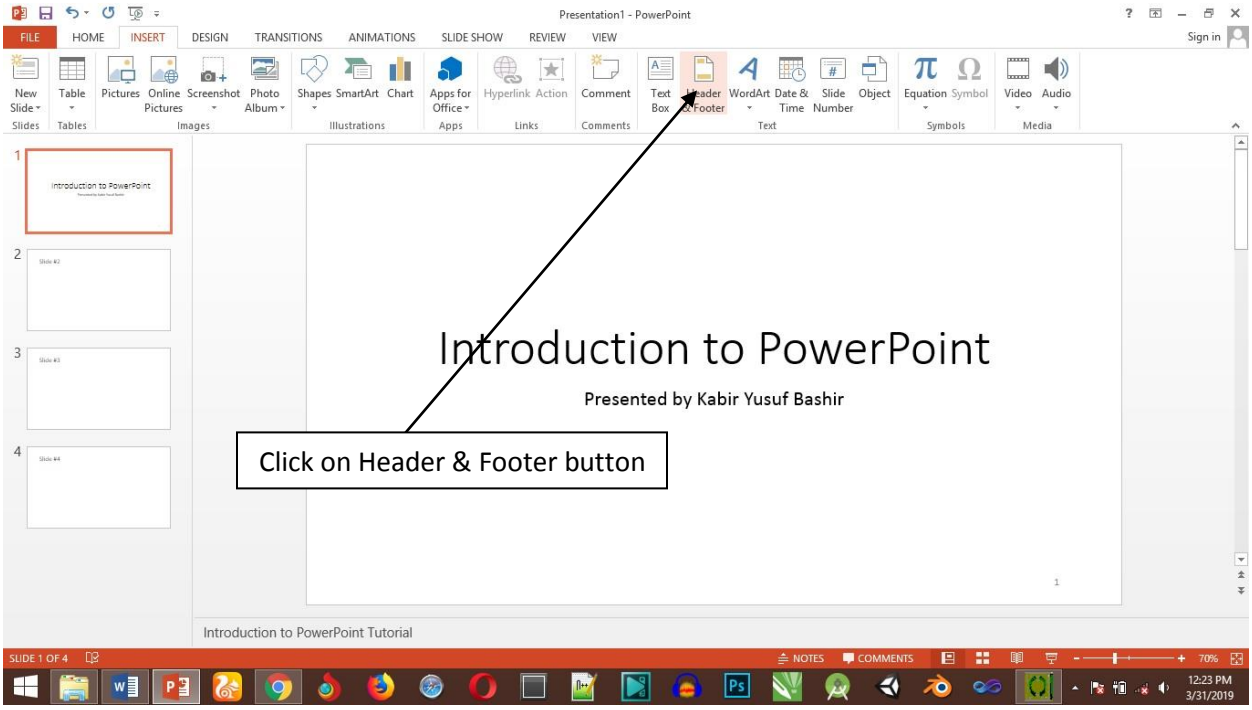


## Adding Header and Footer in PowerPoint

PowerPoint offers the ability to add header and footers to the slides. While having footers in presentations is logical, header may not be quite evident at first. Typically, the slide title would be the header in the main slide, however when it comes to printing out handouts a separate header would be quite useful.

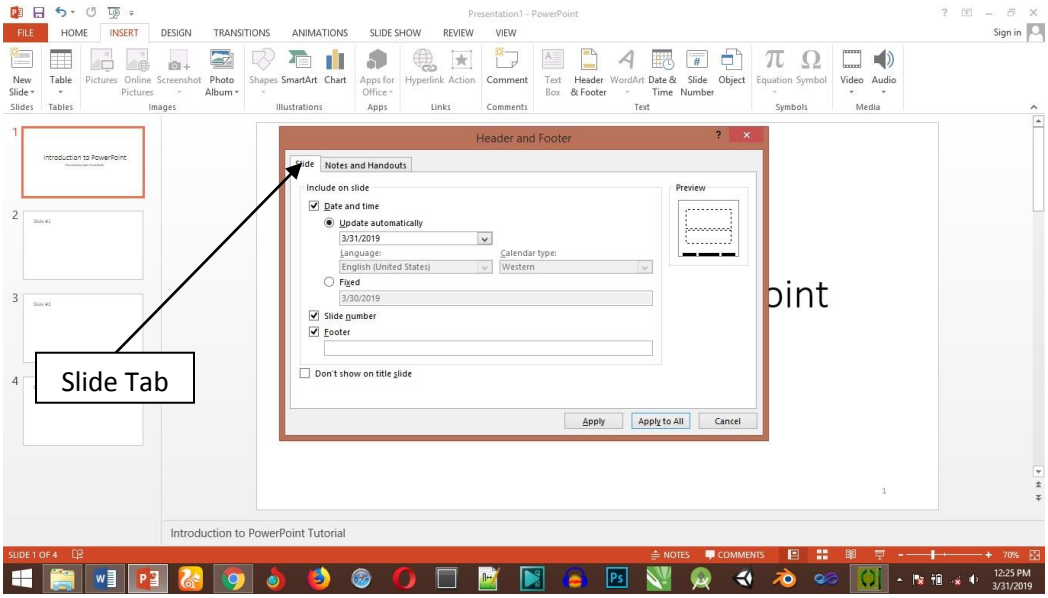
Here are the steps to add header and footer information to slides

**Step 1**: In the **Insert** ribbon, click on the **Header & Footer** menu item.



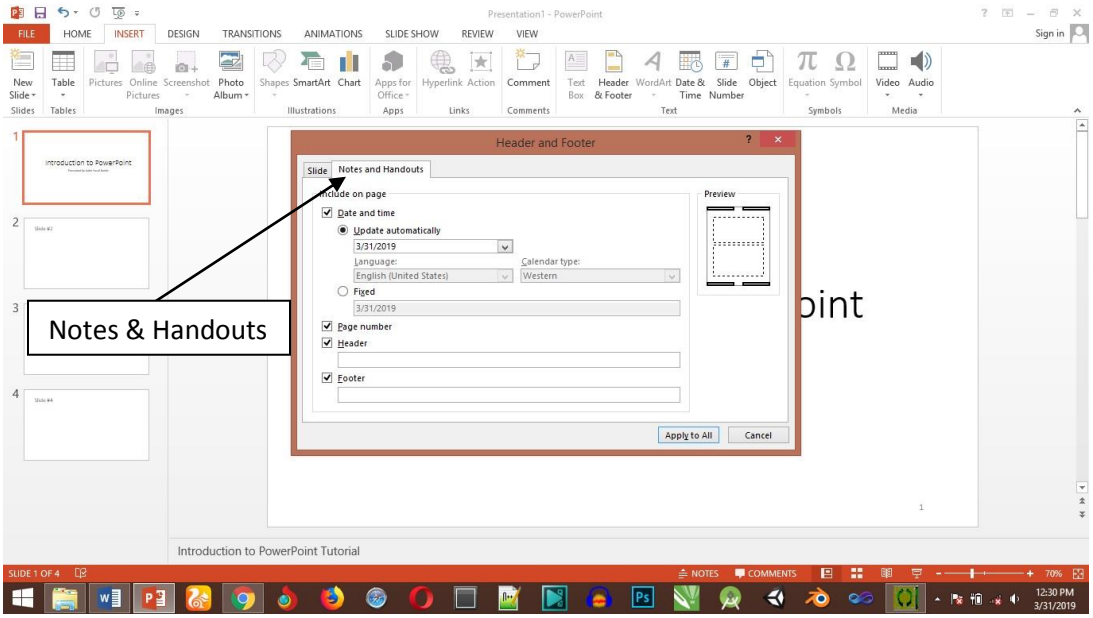

**Step 2**: The **Header and Footer** dialog has two tabs — the **Slide tab** and the **Notes and Handouts** tab.

**Step 3**: You can add details to the slide footer from the **Slide** tab.




| No | Slide Footer Options & Description |
|---|---|
| 1 | **Date and time**<br>• Add date and time to the footer<br>• Specify the format of the date and time entered<br>• Set up the footer to update automatically or use a fixed number |
| 2 | **Slide Number**<br>Insert Slide number in the footer |
| 3 | **Footer**<br>Add designated text to the footer - a good example of this is the confidentiality clause or copyright clause |
| 4 | **Don't show on title slide**<br>Decide on whether the footer information should be displayed on the title slide or not |

**Step 4**: You can add the details to the handouts from the **Notes and Handouts** tab.




| No | Notes and Handouts Options & Description |
|---|---|
| 1 | **Date and time**<br>• Add date and time to the footer<br>• Specify the format of the date and time entered<br>• Set up the footer to update automatically or use a fixed number |
| 2 | **Header**<br>Add the header information for every page on the handout |
| 3 | **Page Number**<br>Insert page number in the footer |
| 4 | **Footer**<br>Add designated text to the footer - a good example of this is the confidentiality clause or copyright clause |

## Running Slide Show in PowerPoint

Most PowerPoint presentations are created to be run as a slideshow. It is no surprise that there are many features related to running the slideshow that have been included in this program too. Most of these features are really to help you create a good slideshow without having to go through the entire presentation over and over again after every minor change. Features related to running the slideshow are grouped under the **Slideshow** ribbon.

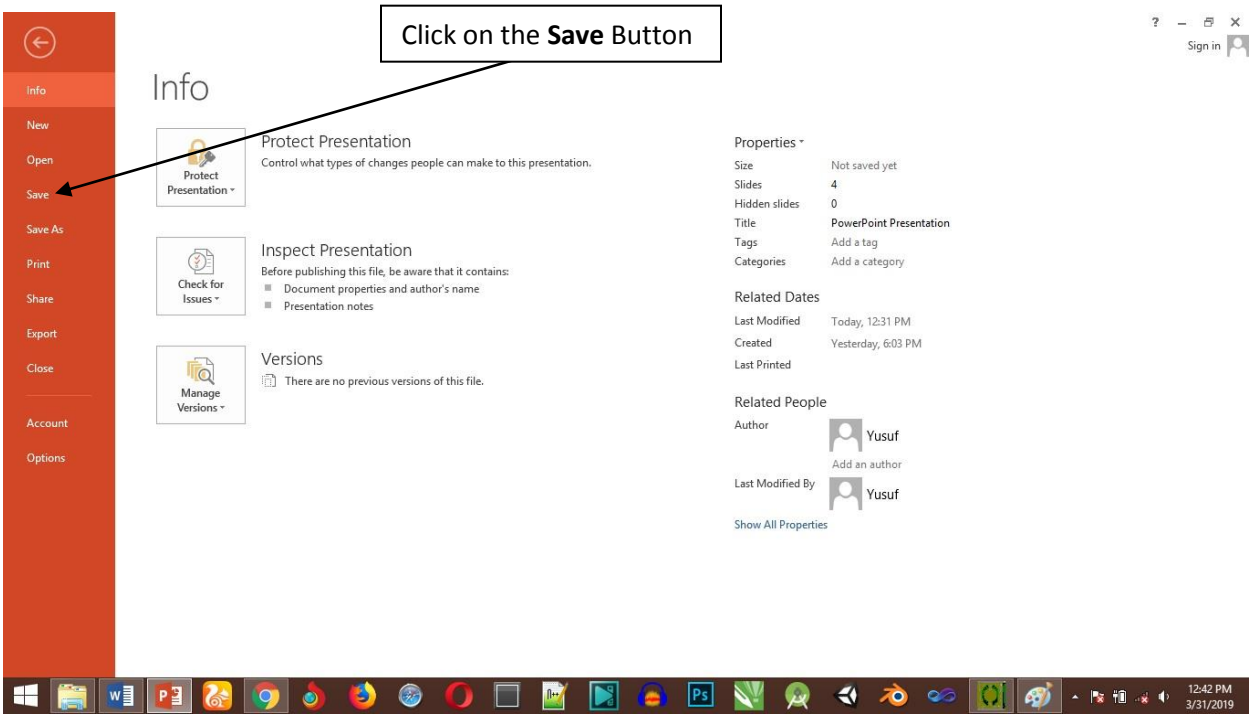

| Section | Menu Item | Description |
|---|---|---|
| Start Slideshow | From Beginning | Starts slideshow from beginning |
| | From Current Slide | Starts slideshow from the current slide |
| | Broadcast Slideshow | Allows users to broadcast the slideshows using Microsoft's PowerPoint Broadcast Service |
| | Custom Slideshow | Builds a custom slideshow by picking the slides you want to run |
| Set Up | Set Up Slideshow | Helps set up the slideshow including browser/ full screen display, show options with or without narration/ animation, pen and laser color during the slideshow and the slides to be presented during the show |
| | Hide Slide | Helps mark/ unmark the slide as hidden, so it is skipped or shown during the slideshow |

| | | |
|---|---|---|
| | | respectively |
| | Rehearse Timing | Allows users to rehearse the timing on each slide and the entire slideshow |
| | Record Slideshow | Records the slideshow including narration and animation |
| | Slideshow Checkboxes | Helps set or avoid the use of narrative audio and rehearsed timings during the show. Display media controls in the slideshow view |
| Monitors | Resolution | Defines resolution in slideshow view |
| | Show Presentation on | Picks the monitor to display the presentation one - in case of multiple monitors |
| | Use Presenter View | Run presentation in Presenter view rather than just slideshow view |

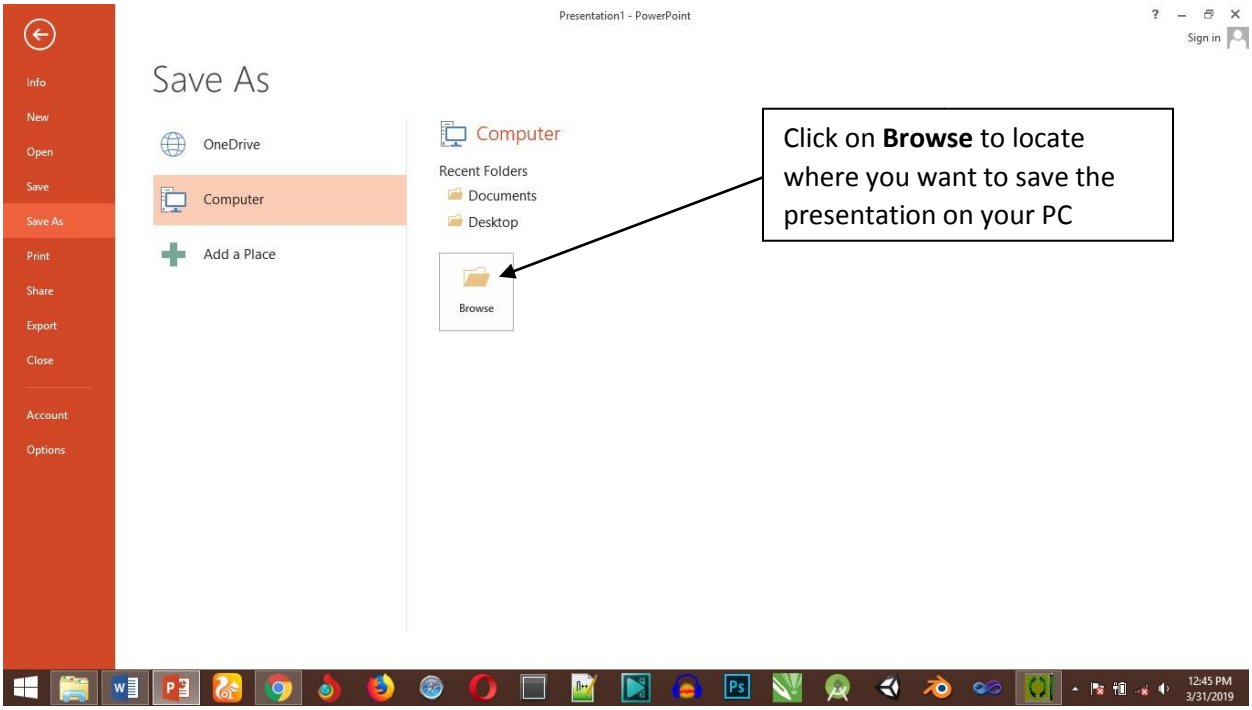
## Saving Presentation in PowerPoint

One of the most basic tasks in PowerPoint is being able to save your work; this is probably the most important task as well. There are many users who have burnt their fingers for not saving their work in time and losing hours of hard work. The following are the basic steps to save a presentation.

**Step 1**: Click on the **File** tab to launch the **backstage** view and select **Save**.



**Step 2**: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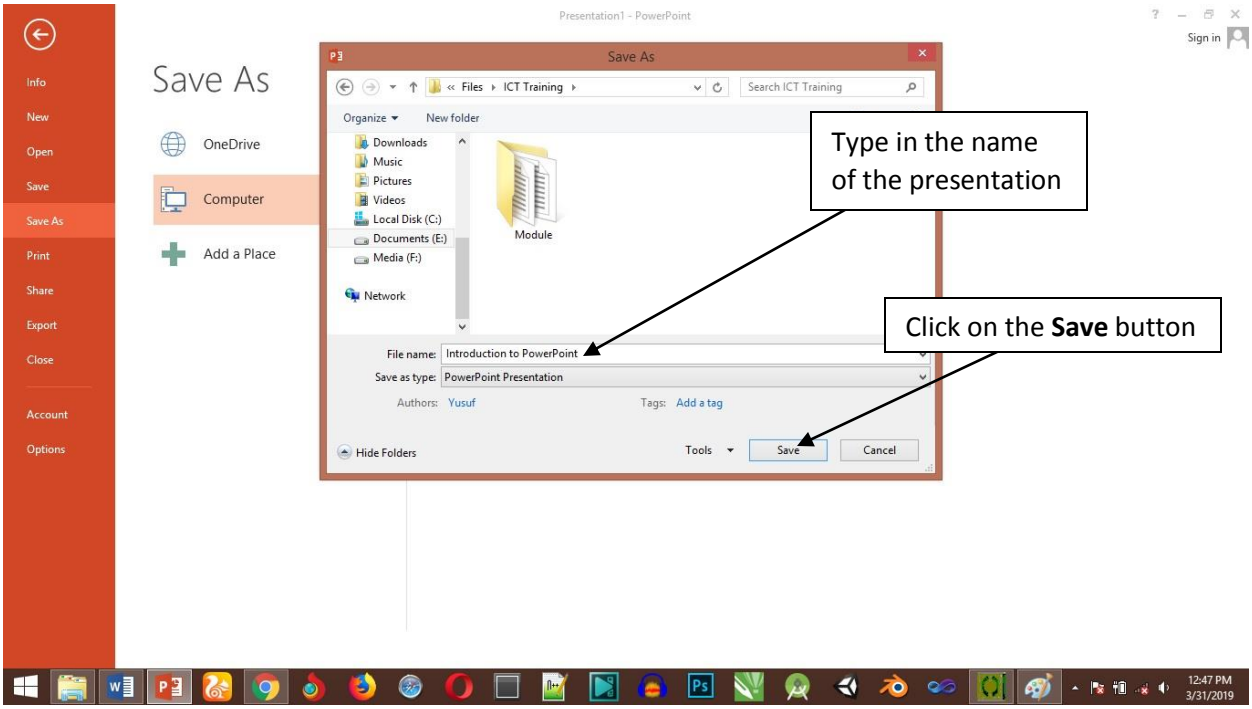
Click on **Browse** to locate where you want to save the presentation on your PC

**Step 3:**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Media (F:)
Network
Module
File name: Introduction to PowerPoint
Save as type: PowerPoint Presentation
Authors: Yusuf
Tags: Add a tag
Hide Folders
Tools
Save
Cancel
Type in the name of the presentation
Click on the **Save** button

## References


1. https://www.tutorialspoint.com/powerpoint/
2. https://www.tutorialspoint.com/powerpoint/powerpoint_explore_window.htm
3. https://www.tutorialspoint.com/powerpoint/powerpoint_create_presentation.htm
4. https://www.tutorialspoint.com/powerpoint/powerpoint_add_new_slides.htm
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10. https://www.tutorialspoint.com/powerpoint/powerpoint_presentation_views.htm
11. https://www.tutorialspoint.com/powerpoint/powerpoint_setting_backgrounds.htm
12. https://www.tutorialspoint.com/powerpoint/powerpoint_adding_slide_numbers.htm
13. https://www.tutorialspoint.com/powerpoint/powerpoint_adding_header_footer.htm
14. https://www.tutorialspoint.com/powerpoint/powerpoint_running_slide_show.htm
15. https://www.tutorialspoint.com/powerpoint/powerpoint_saving_presentation.htm

# Microsoft Excel

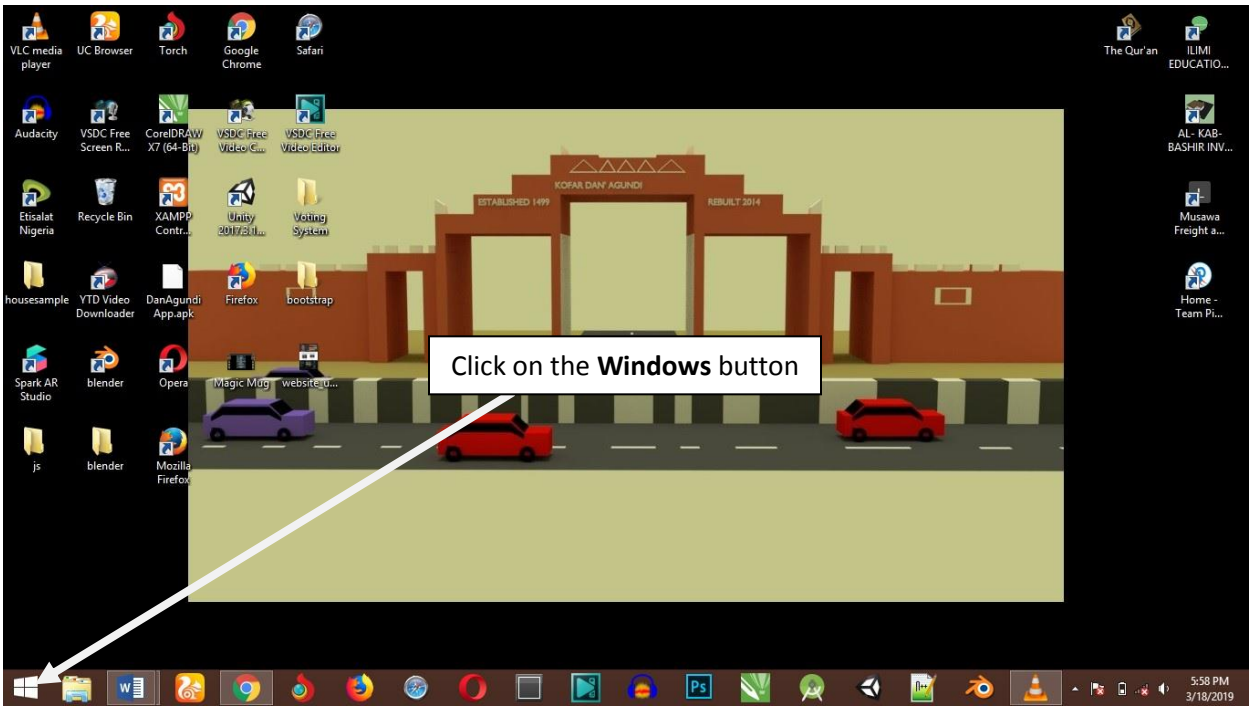
Microsoft Excel is a commercial spreadsheet application, written and distributed by Microsoft for Microsoft Windows and Mac OS X.

Microsoft Excel is a spreadsheet tool capable of performing calculations, analyzing data and integrating information from different programs.

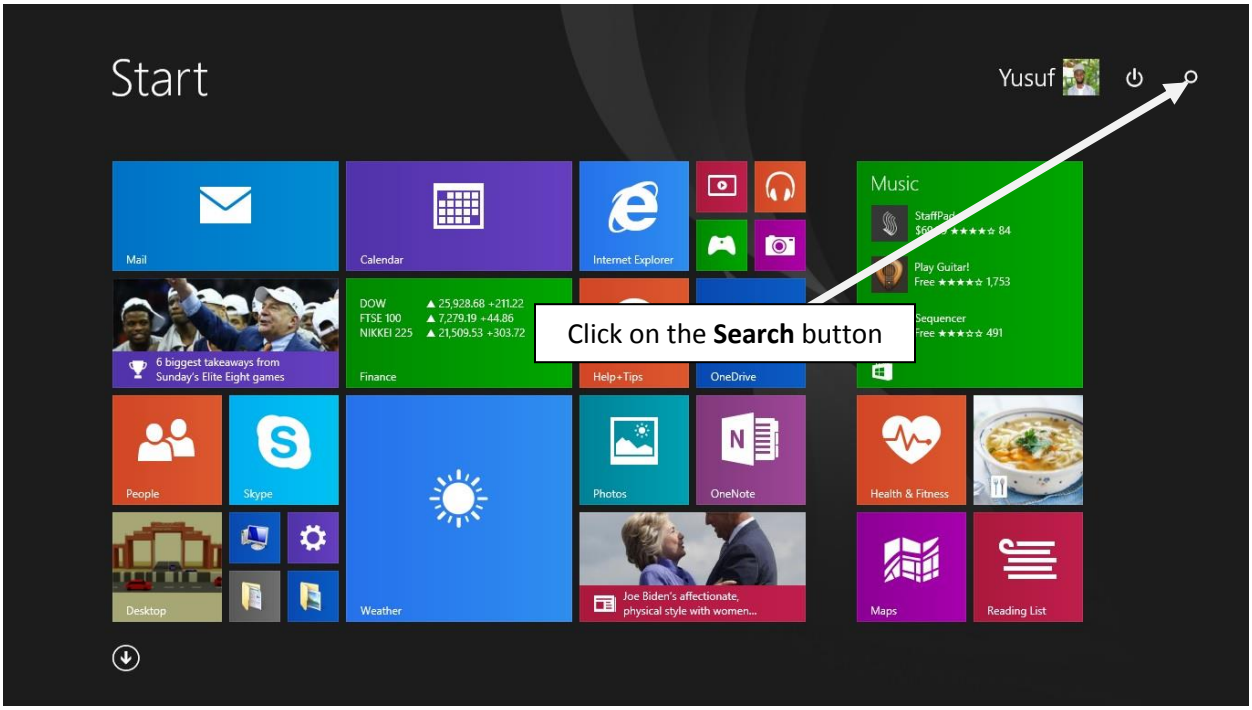
## Getting Started with Microsoft Excel

In this section, we will discuss how to get started with **Microsoft Excel**. We will understand how to start a **Microsoft Excel** application in simple steps. Assuming you have **Microsoft Excel** installed in your PC, to start the application, follow these steps –

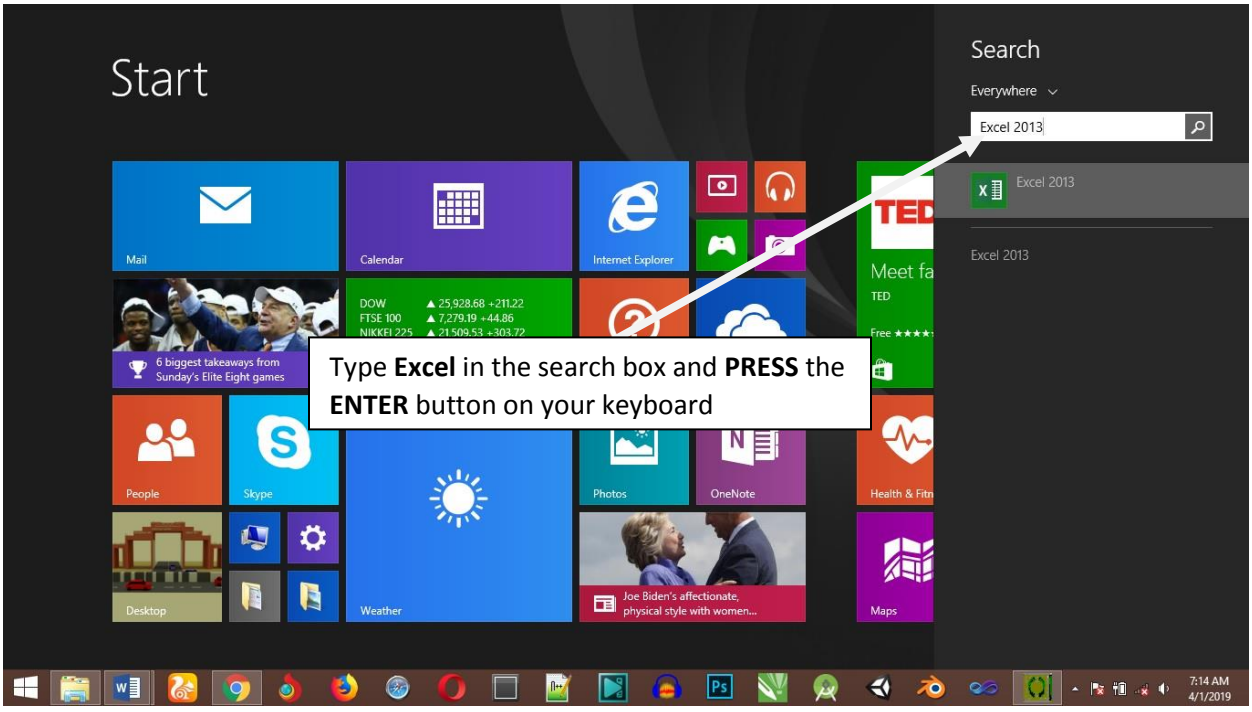
**Step 1:**



**Step 2:**

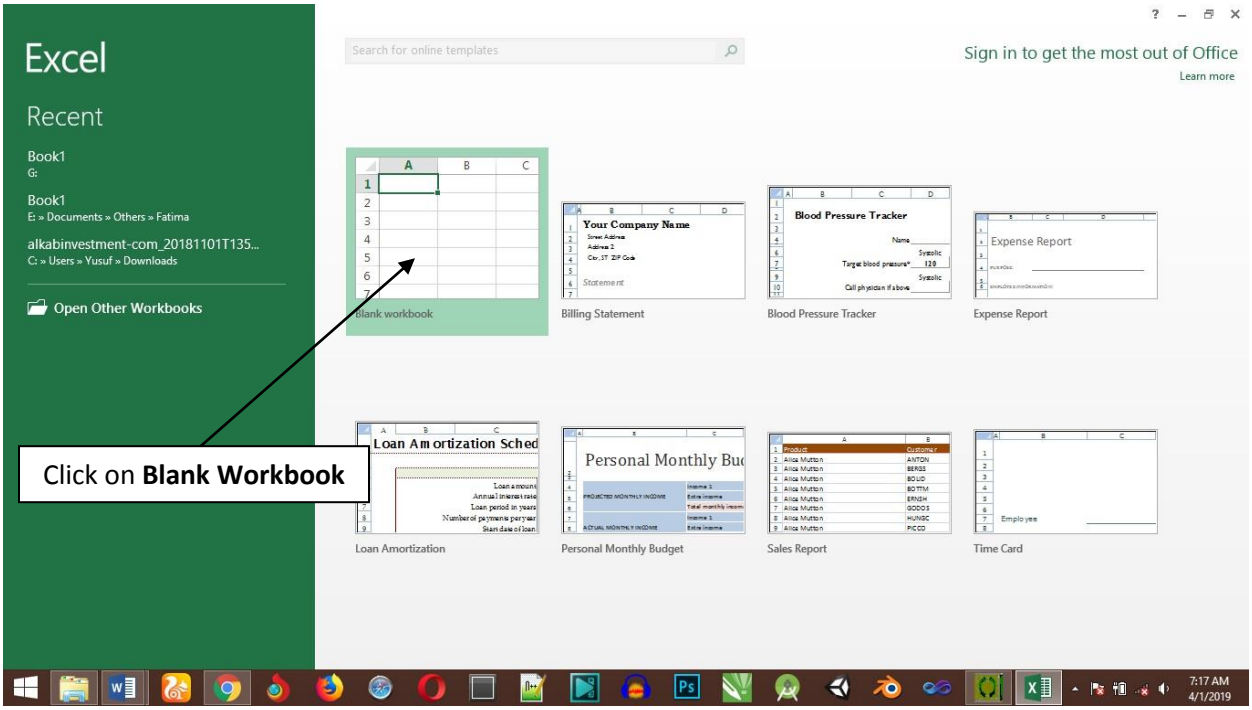



**Step 3:**




**NB: I have installed Microsoft Excel 2013 on my PC, the procedure will work on both later and earlier version of Microsoft Excel.**

**Step 4:**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C: » Users » Yusuf » Downloads
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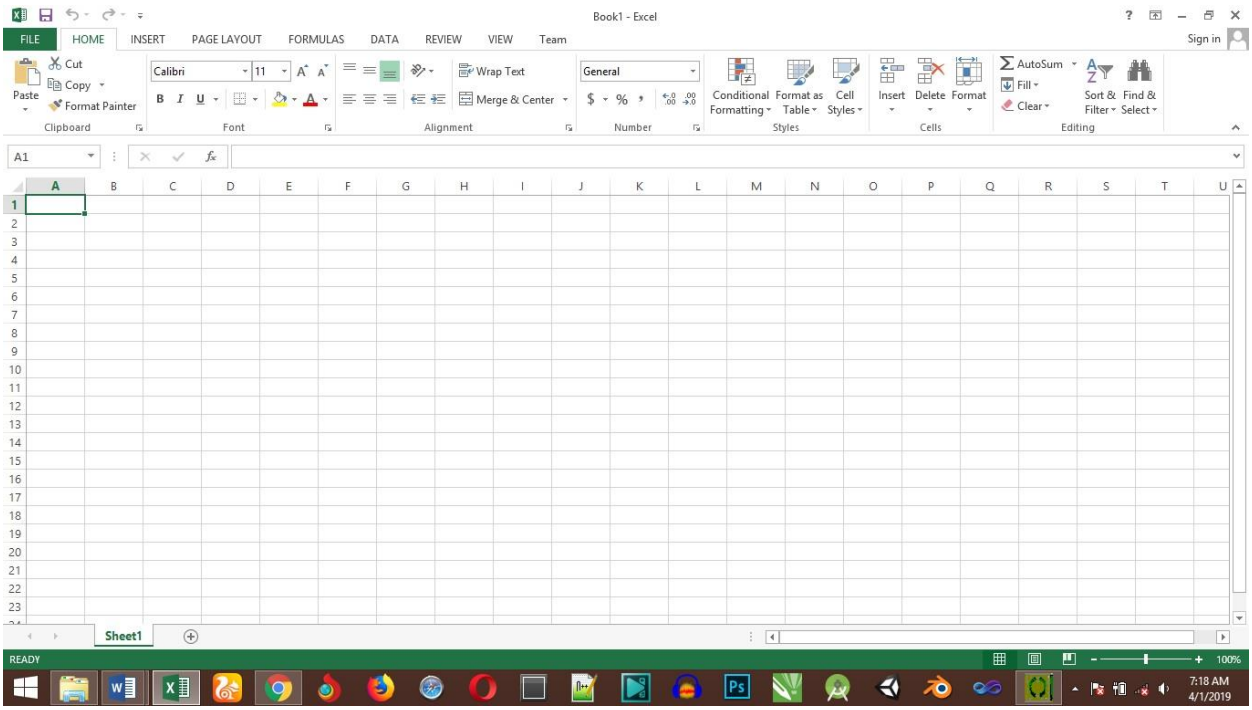
Sign in to get the most out of Office
Learn more
Blank workbook
Billing Statement
Blood Pressure Tracker
Expense Report
Loan Amortization
Personal Monthly Budget
Sales Report
Time Card
Click on **Blank Workbook**

**Step 5:**


Book1 - Excel
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Conditional Formatting
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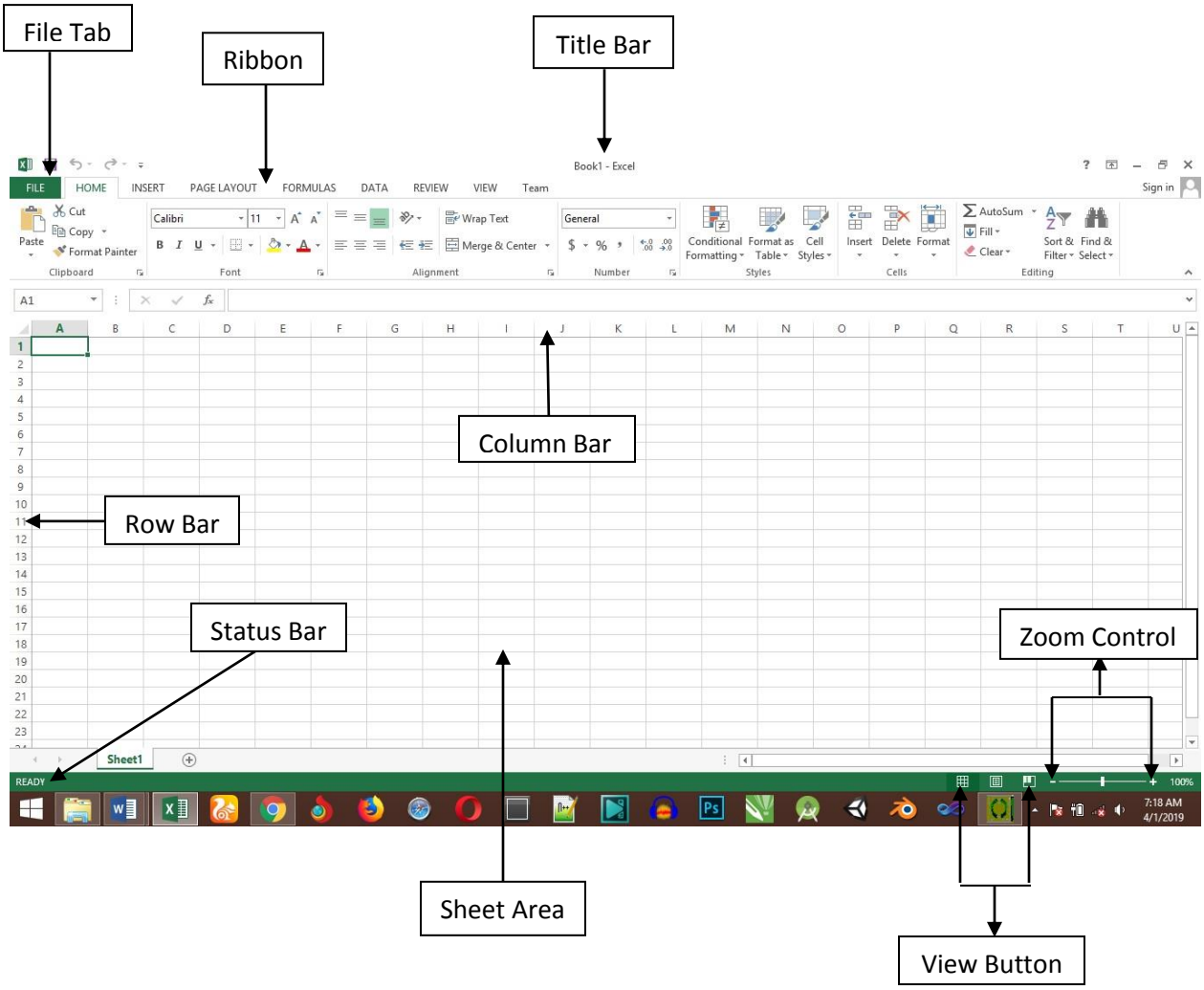
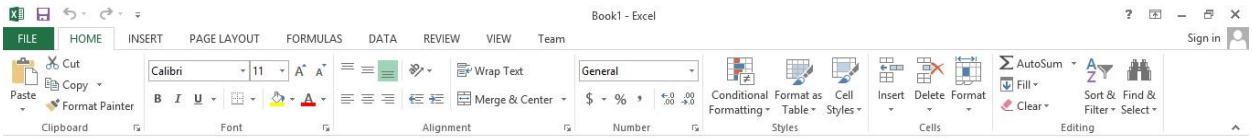
## Exploring Window in Microsoft Excel




### File Tab

The File tab replaces the Office button from Excel 2007. You can click it to check the **backstage view,** where you come when you need to open or save files, create new sheets, print a sheet, and do other file-related operations

### Ribbon



Ribbon contains commands organized in three components −

- **Tabs**: They appear across the top of the Ribbon and contain groups of related commands. Home, Insert, Page Layout are the examples of ribbon tabs.
- **Groups**: They organize related commands; each group name appears below the group on the Ribbon. For example, group of commands related to fonts or group of commands related to alignment etc.
- **Commands**: Commands appear within each group as mentioned above.

**Title Bar**

This lies in the middle and at the top of the window. Title bar shows the program and the sheet titles.

**Zoom Control**

Zoom control lets you zoom in for a closer look at your text. The zoom control consists of a slider that you can slide left or right to zoom in or out. The + buttons can be clicked to increase or decrease the zoom factor.

**View Button**

The group of three buttons located to the left of the Zoom control, near the bottom of the screen, lets you switch among excels various sheet views.

- **Normal Layout view**: This displays the page in normal view.
- **Page Layout view**: This displays pages exactly as they will appear when printed. This gives a full screen look of the document.
- **Page Break view**: This shows a preview of where pages will break when printed.

**Sheet Area**

The area where you enter data. The flashing vertical bar is called the **insertion point** and it represents the location where text will appear when you type.

**Row Bar**

Rows are numbered from 1 onwards and keeps on increasing as you keep entering data. Maximum limit is 1,048,576 rows.

**Column Bar**

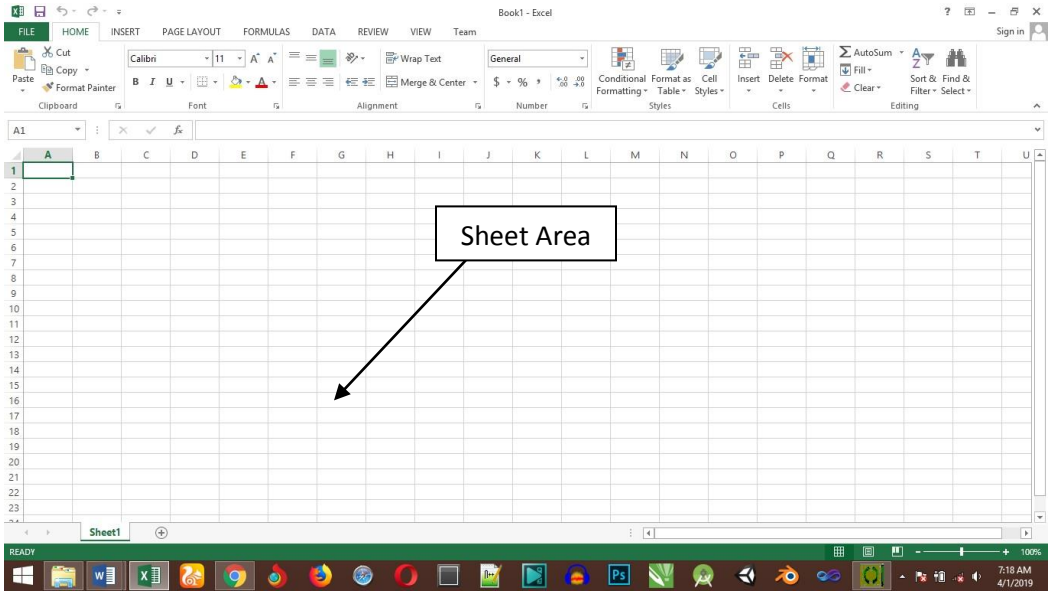
Columns are numbered from A onwards and keeps on increasing as you keep entering data. After Z, it will start the series of AA, AB and so on. Maximum limit is 16,384 columns.

**Status Bar**

This displays the sheet information as well as the insertion point location. From left to right, this bar can contain the total number of pages and words in the document, language etc.

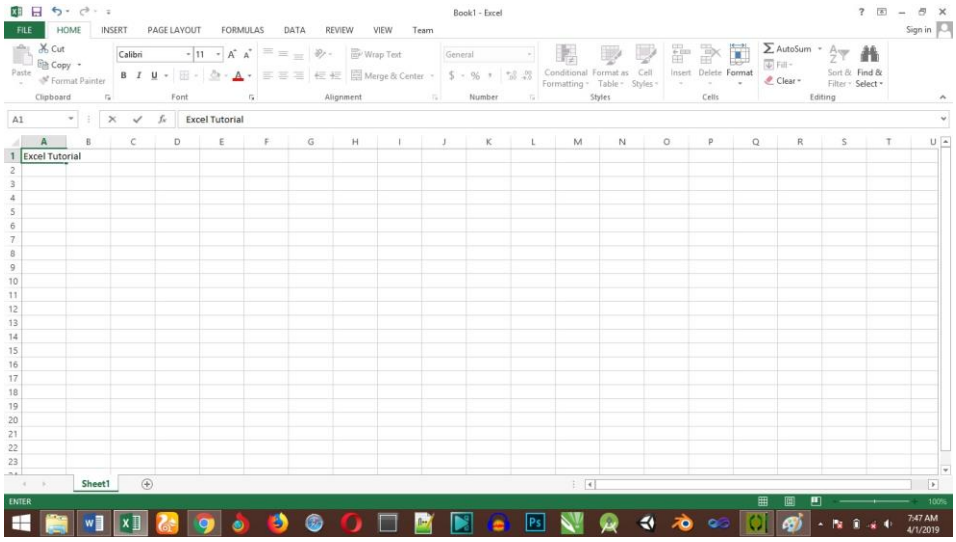
You can configure the status bar by right-clicking anywhere on it and by selecting or deselecting options from the provided list.

## Entering Values in Microsoft Excel




**Sheet area** is the place where you type your text. The flashing vertical bar is called the **insertion point** and it represents the location where text will appear when you type. When you click on a box then the box is highlighted. When you double click the box, the flashing vertical bar appears and you can start entering your data.

So, just keep your mouse cursor at the text **insertion point** and start typing whatever text you would like to type. We have typed only two words "Excel Tutorial" as shown below. The text appears to the left of the insertion point as you type.



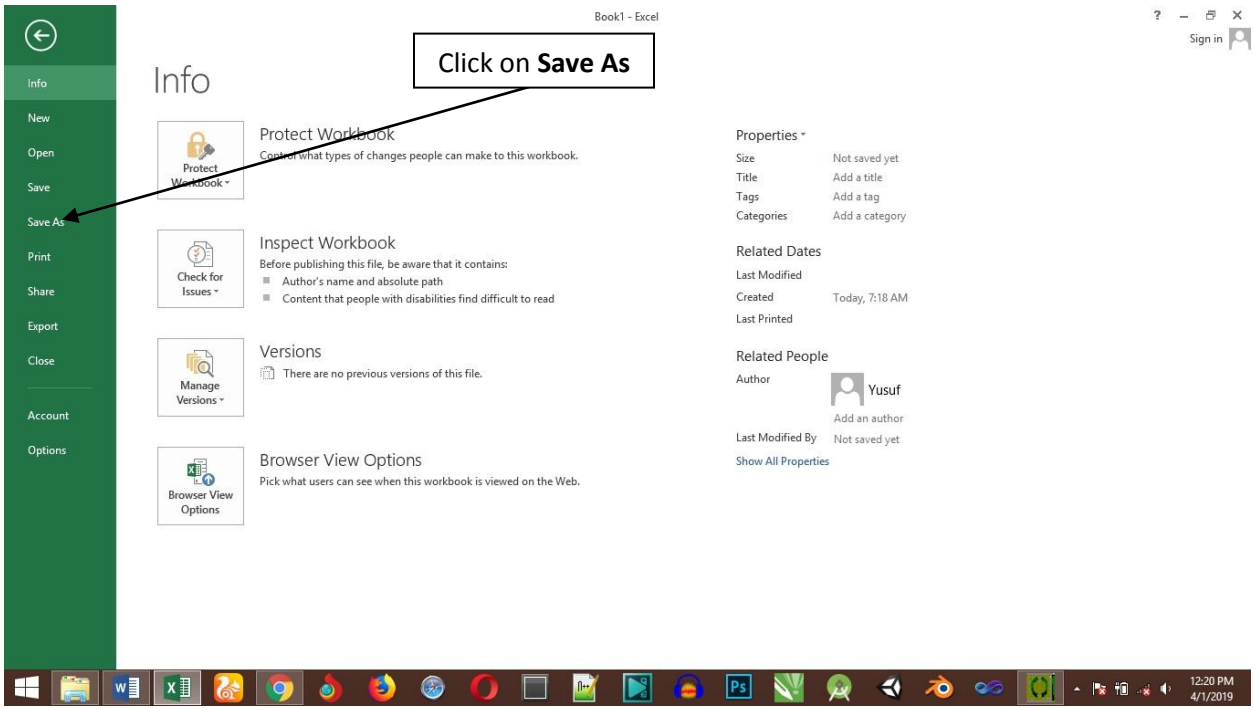

There are **three (3)** important points, which would help you while typing −

- Press **Tab** to go to next column.
- Press **Enter** to go to next row.
- Press **Alt + Enter** to enter a new line in the same column.

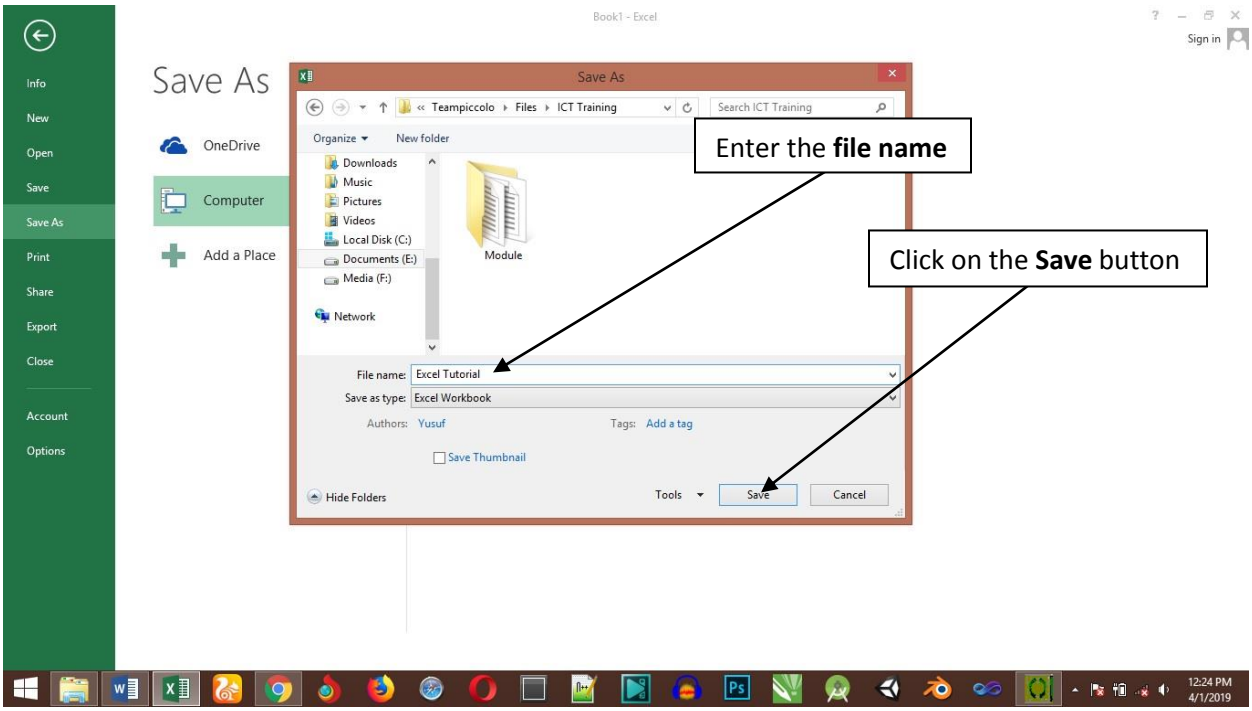
## Saving Workbook in Microsoft Excel

Once you are done with typing in your new excel sheet, it is time to save your sheet/workbook to avoid losing work you have done on an Excel sheet. Following are the steps to save an edited excel sheet –

**Step 1**: Click the **File tab** and select **Save As** option.



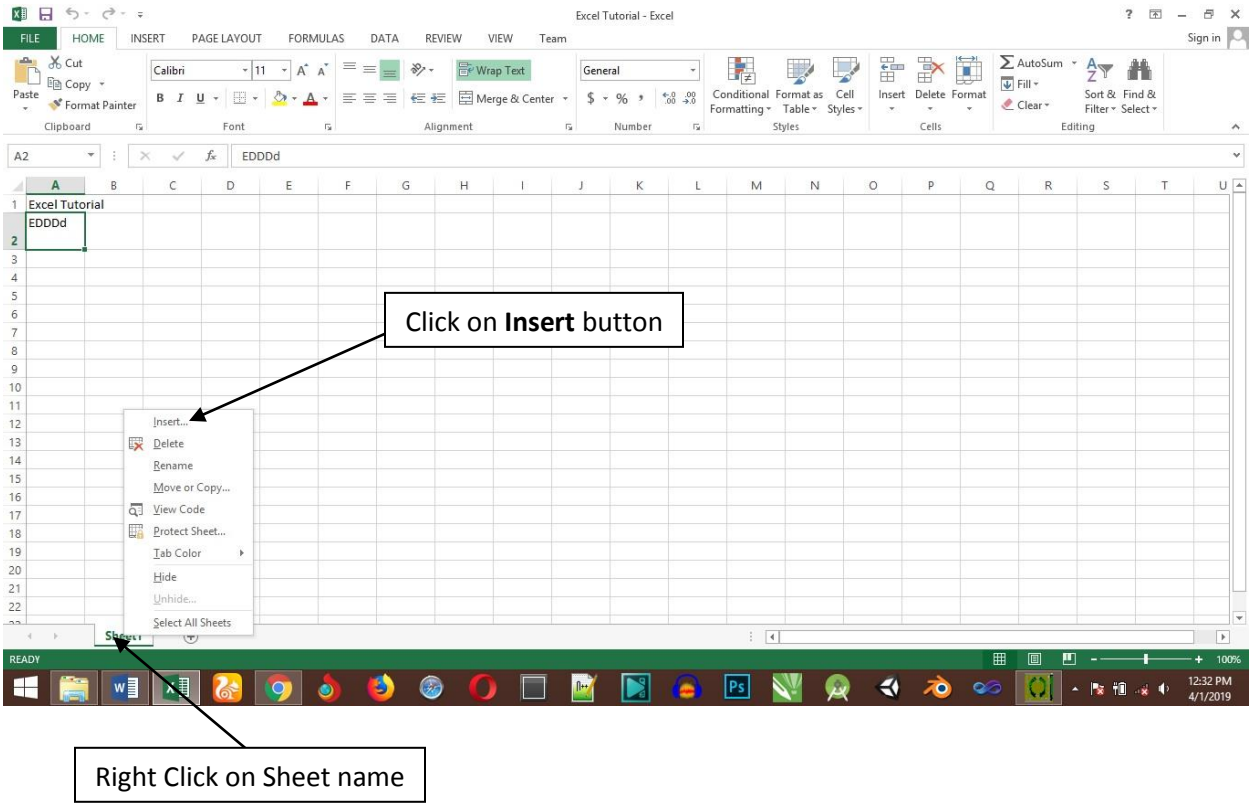
**Step 2**: Select a folder where you would like to save the sheet, Enter file name, which you want to give to your sheet and Click on **Save**.



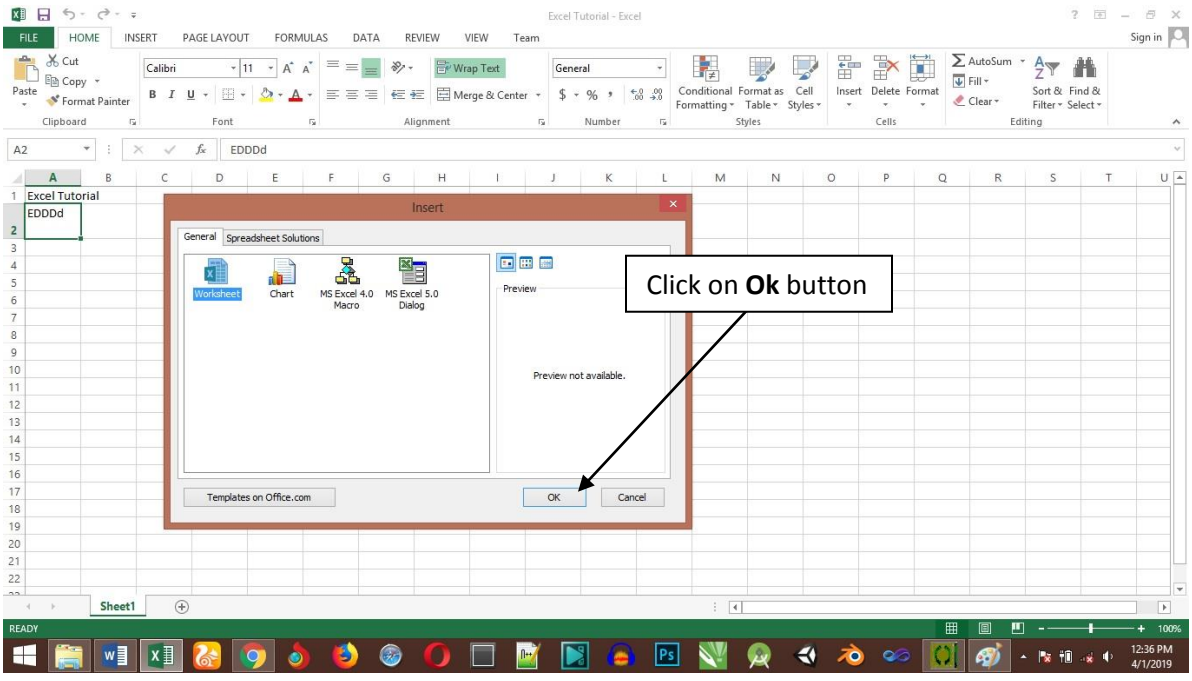

## Creating New Worksheet in Microsoft Excel

The following steps below explain you how to create a new worksheet if you want to start another new worksheet while you are working on a worksheet, or you closed an already opened worksheet and want to start a new worksheet.

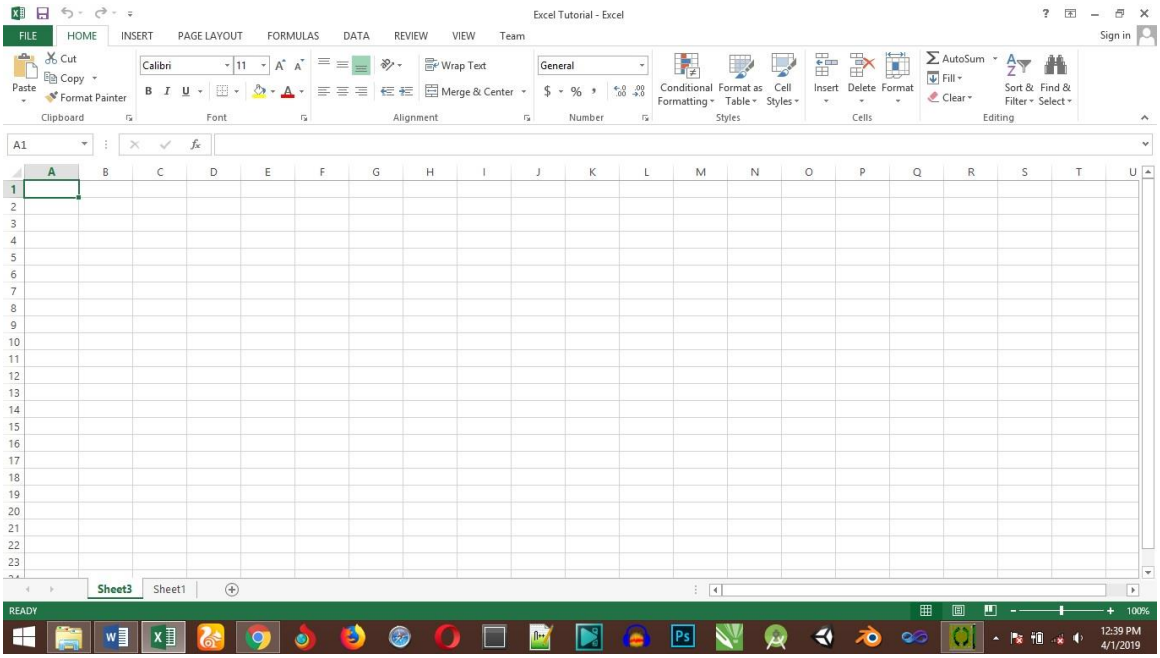
**Step 1**: Right Click the **Sheet Name** and select **Insert** option.




**Step 2** – Now you'll see the Insert dialog with select **Worksheet** option as selected from the general tab. Click the **Ok** button.



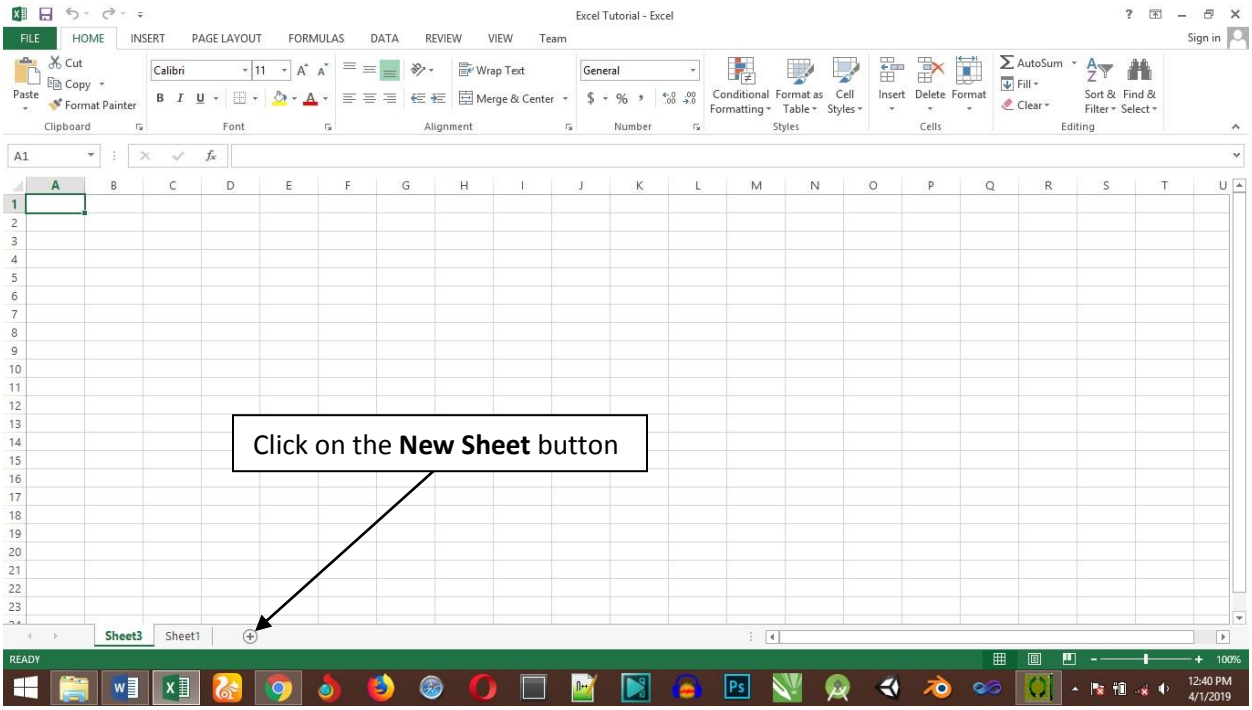
Now you should have your blank sheet as shown below ready to start typing your text.



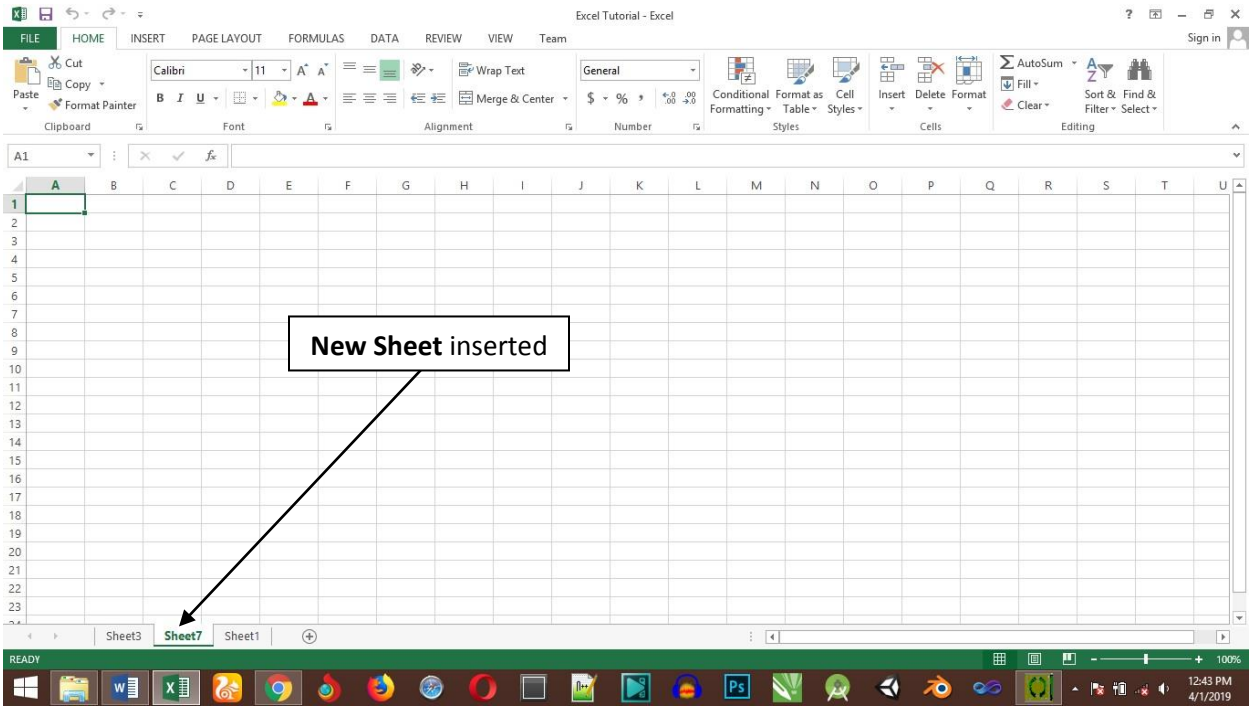

You can use a short cut to create a blank sheet anytime. Try using the **Shift+F11** keys and you will see a new blank sheet similar to the above sheet is opened.

**Or you can follow the steps below to create a new worksheet in Microsoft Excel**

**Step 1:**

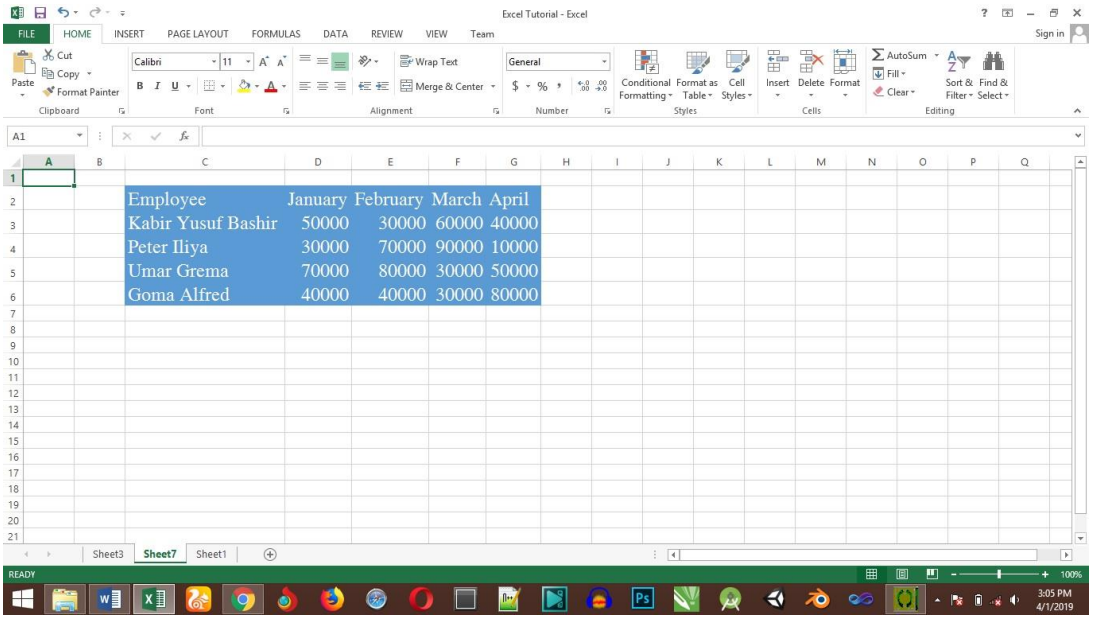


**Step 2:**



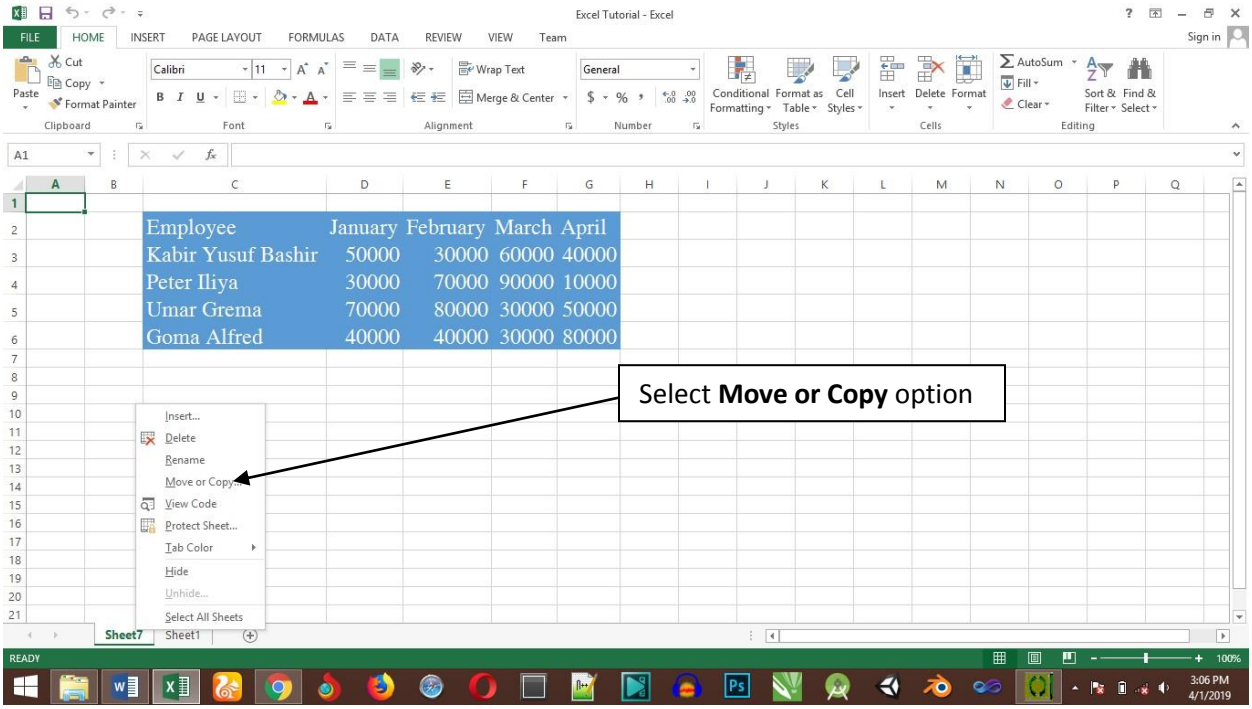

## Copying Worksheet in Microsoft Excel

First of all, let us create some sample text before we proceed. Open a new excel sheet and type any data. We've shown a sample data in the screenshot below.

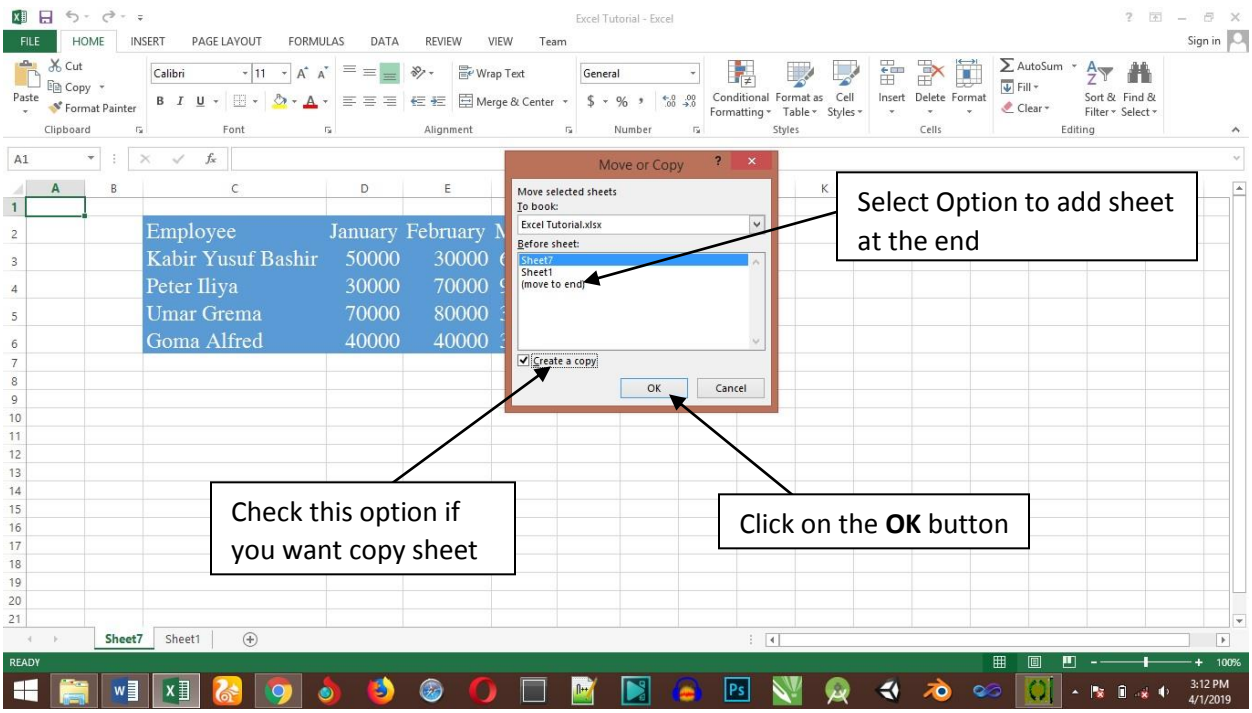


Here are the steps to copy an entire worksheet.

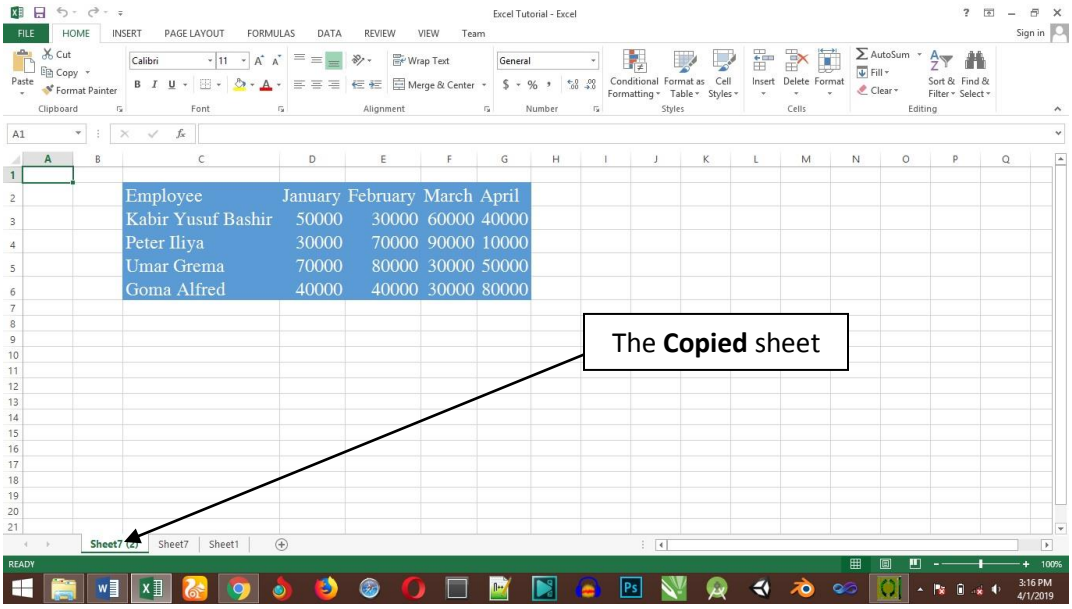
**Step 1**: Right Click the **Sheet Name** and select the **Move or Copy** option.




**Step 2**: Now you'll see the Move or Copy dialog with select **Worksheet** option as selected from the general tab. Click on the **Ok** button.



Now you should have your copied sheet as shown below.

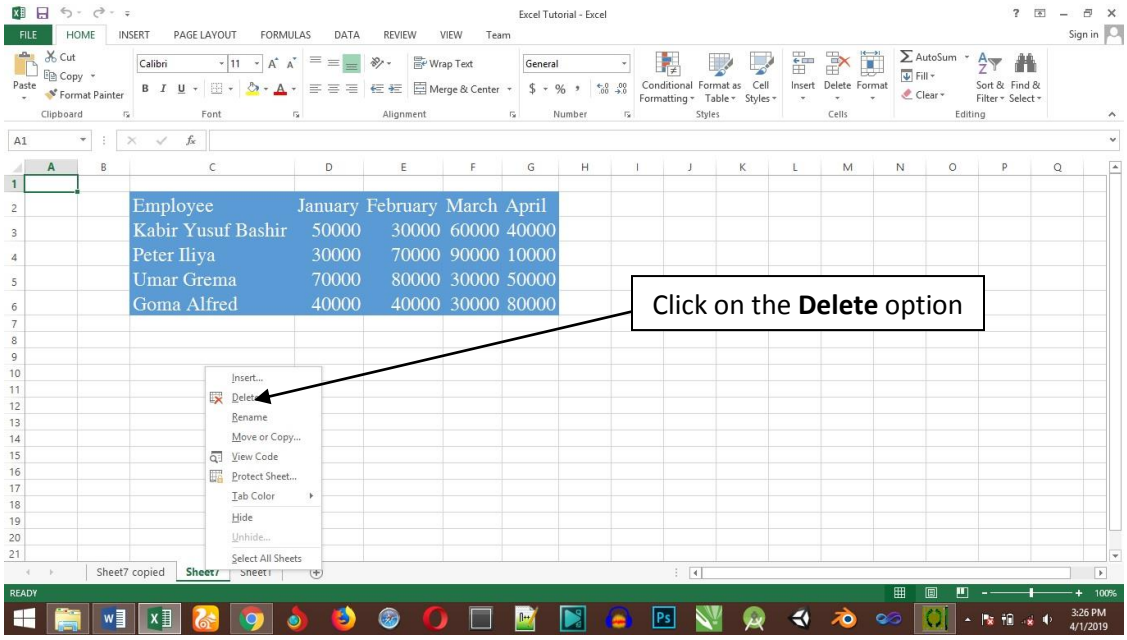



**NB**: You can rename the sheet by double clicking on it. On double click, the sheet name becomes editable. Enter any name say **Sheet7 copied** and press **Tab** or **Enter** button on your keyboard.

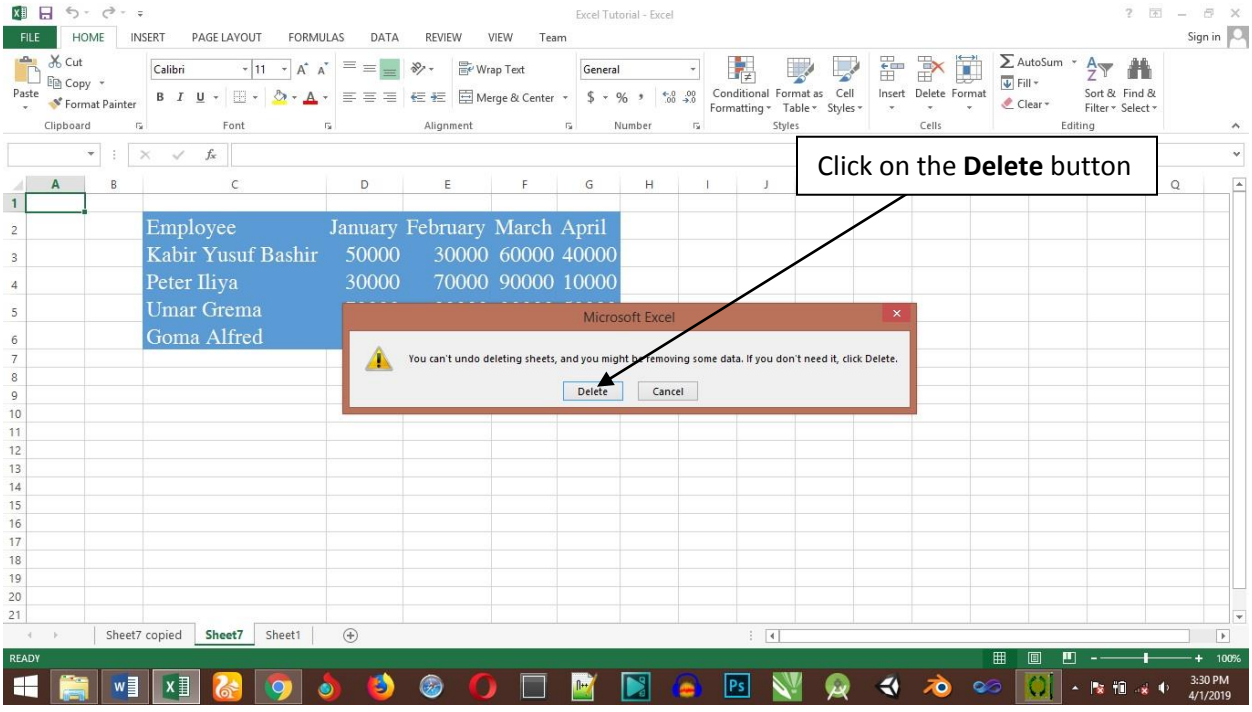
## Delete Worksheet in Microsoft Excel

You might need to delete your worksheet for one or more reasons. To delete a worksheet in **Microsoft Excel**, follow the steps below.

**Step 1**: Right Click the **Sheet Name** and select the **Delete** option.



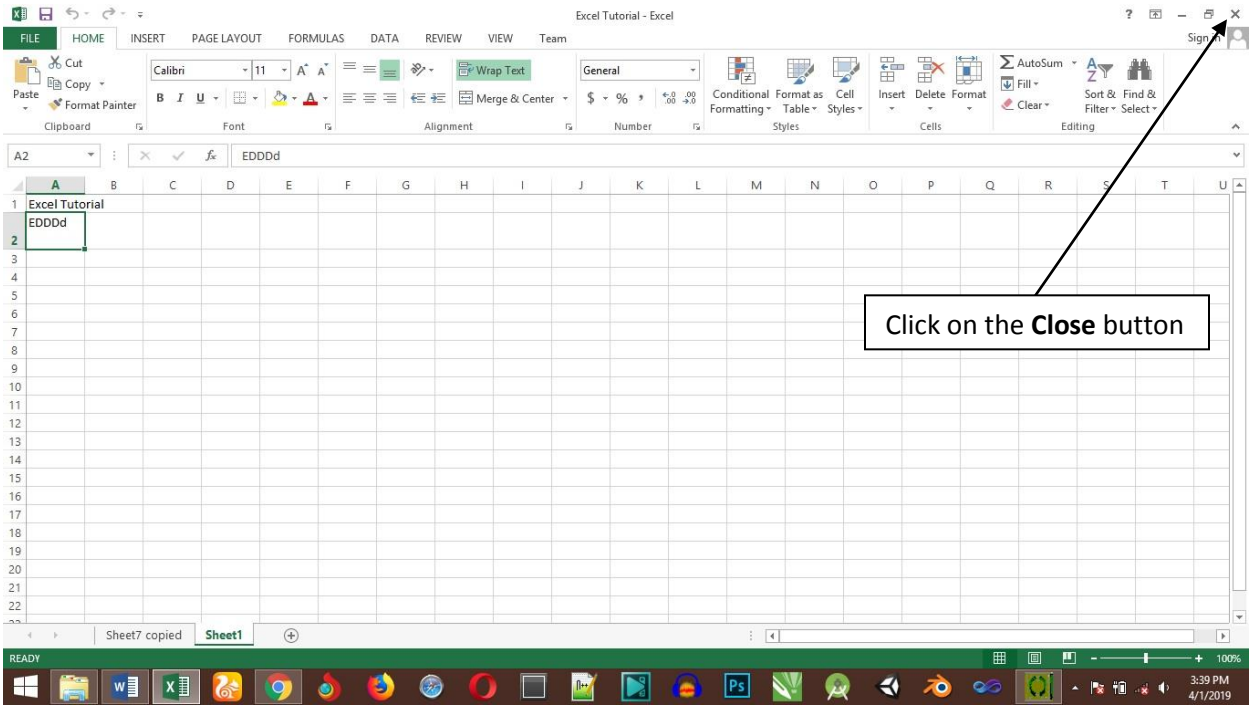

**Step 2:** Sheet will get deleted if it is empty, otherwise you'll see a confirmation message.



## Close a Worksheet in Microsoft Excel

After working on your Sheet in **Microsoft Excel**, you can close the sheet; to close a sheet in **Microsoft Excel**, follow the following steps below:

**Step 1**: Click the **Close Button** as shown below.




**NB**: if you haven't save your save, you'll see a confirmation message to save the workbook.

## Editing Worksheet in Microsoft Excel

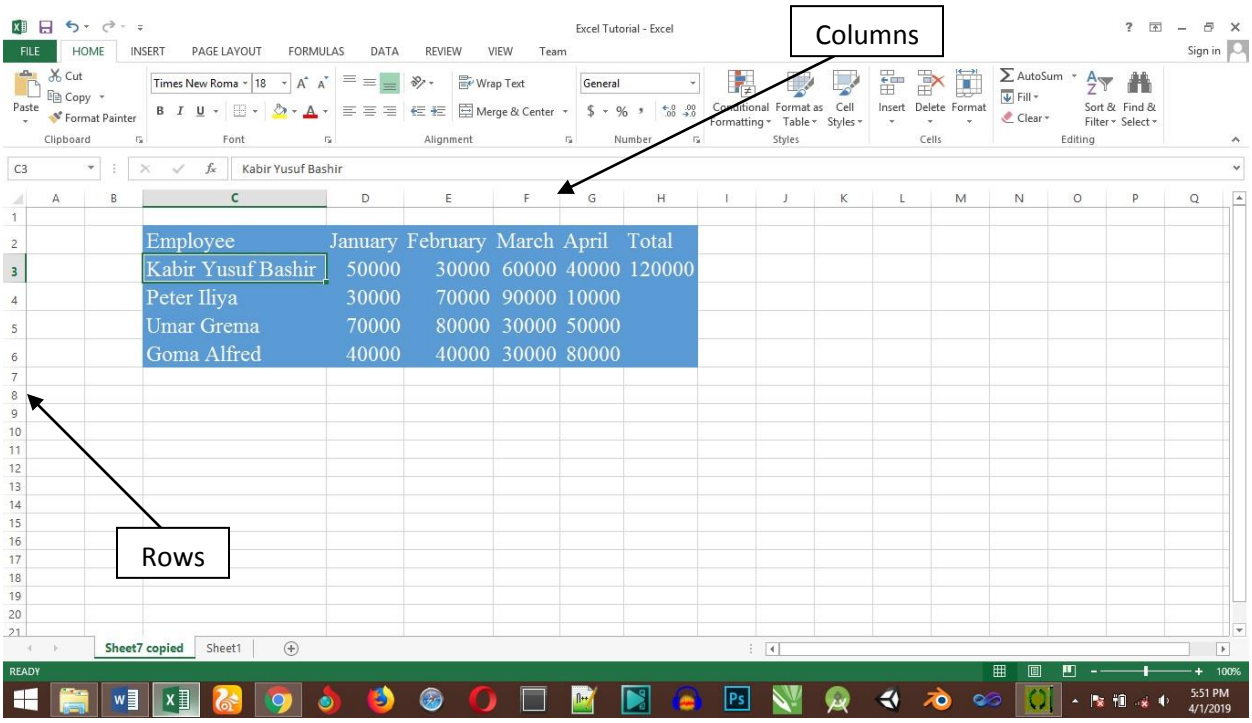
In **Microsoft Excel,** there are **1048576*16384** cells. Microsoft Excel cell can have **Text, Numeric value or formulas.** An MS Excel cell can have maximum of 32000 characters.

### Rows and Columns in Microsoft Excel

**Microsoft Excel** is in tabular format consisting of rows and columns.

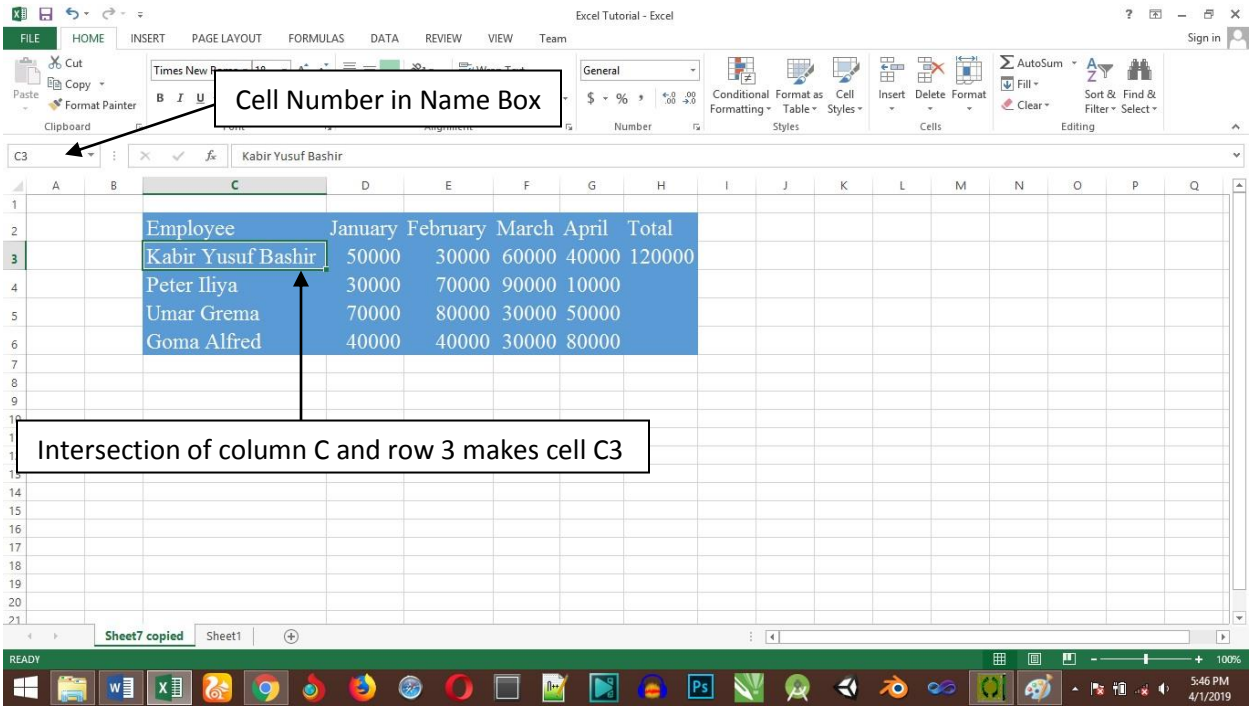
- Row runs horizontally while Column runs vertically.
- Each row is identified by row number, which runs vertically at the left side of the sheet.
- Each column is identified by column header, which runs horizontally at the top of the sheet.

Row numbers ranges from **1 to 1048576;** in total **1048576** rows, and Columns ranges from **A to XFD;** in total **16384** columns.



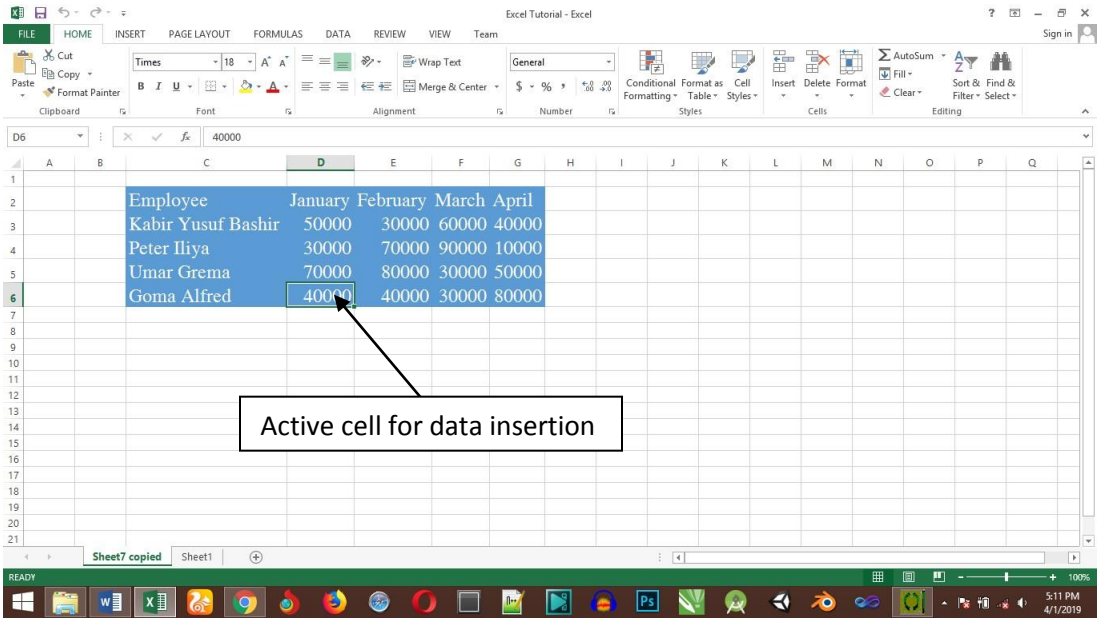
## Cell Introduction

The intersection of rows and columns is called **cell**. Cell is identified with **Combination of column header and row number**. For example – A1, A2.



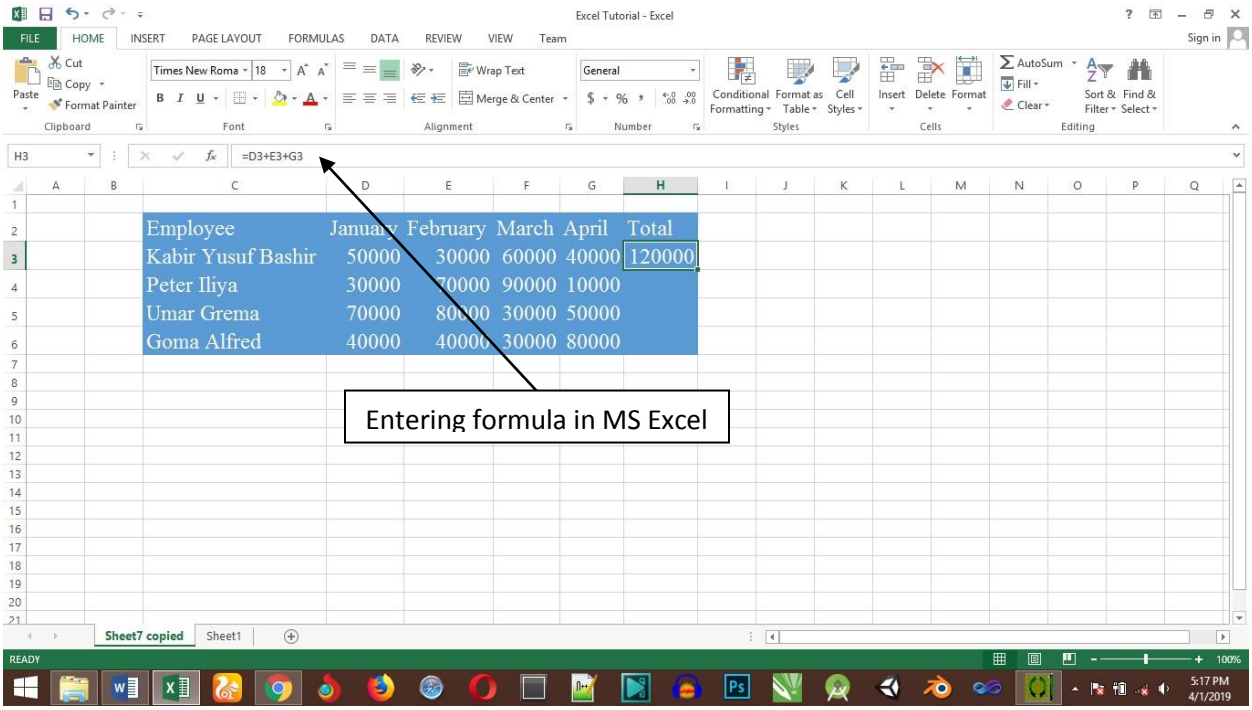

## Inserting Data

To **insert data** in **Microsoft Excel,** just activate the cell; type **text** example "Kabir Yusuf Bashir" or **number** example "1929292" and press enter or Navigation keys.



**Inserting Formula**

To **insert formula** in **Microsoft Excel** go to the formula bar, enter the formula and then press enter or navigation key. See the screen-shot below to understand it.

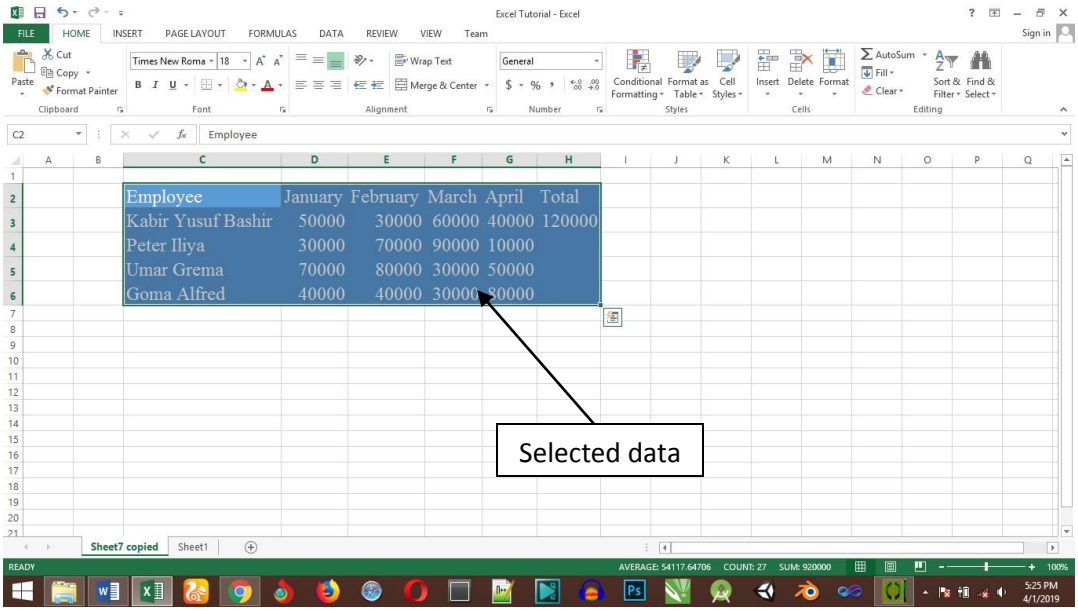



**NB: I sum the months; January, February, March and April for the employee Kabir Yusuf Bashir.**

## Select Data in Microsoft Excel

Selecting data in Microsoft Excel is vital especially when you want to print a particular section in your worksheet. To select data in Microsoft Excel, follow the steps below:

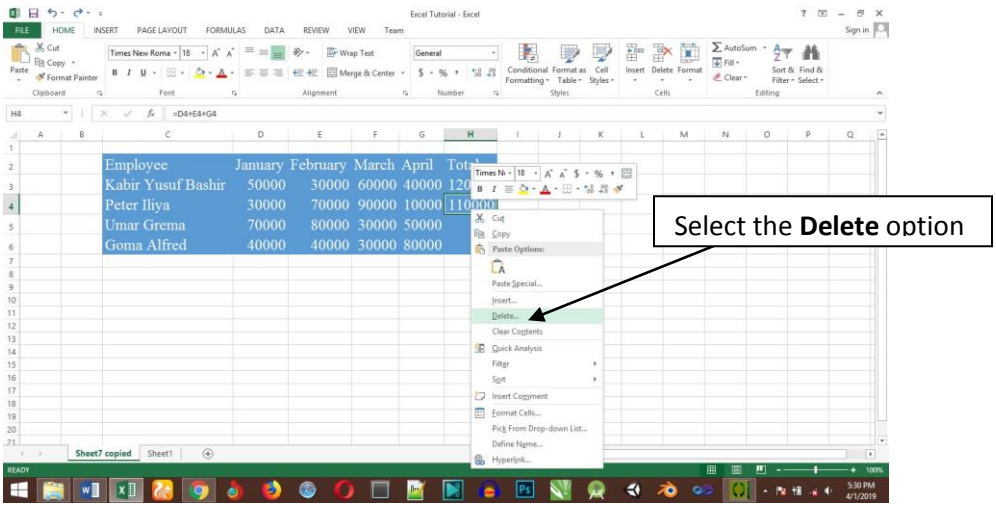
**Step 1**: Drag the mouse over the data you want to select. It will select those cells as shown below.




## Delete Data in Microsoft Excel

To delete a data in Microsoft Excel, follow the steps below:

**Step 1:** Select the data you want to delete. **Right Click** on the sheet. Select the **delete option**, to delete the data.

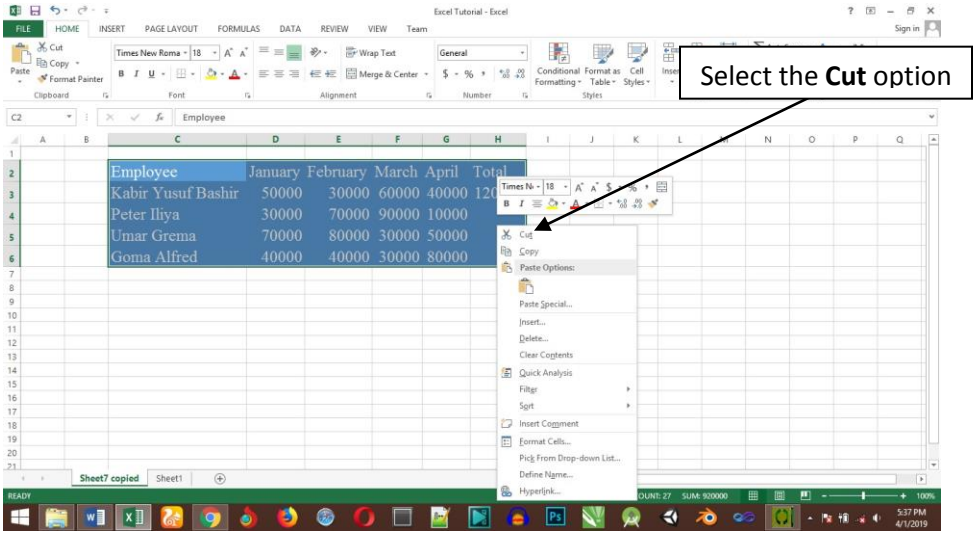


**NB:** Or you can use the Delete button on your keyboard after selecting the data you want to delete.

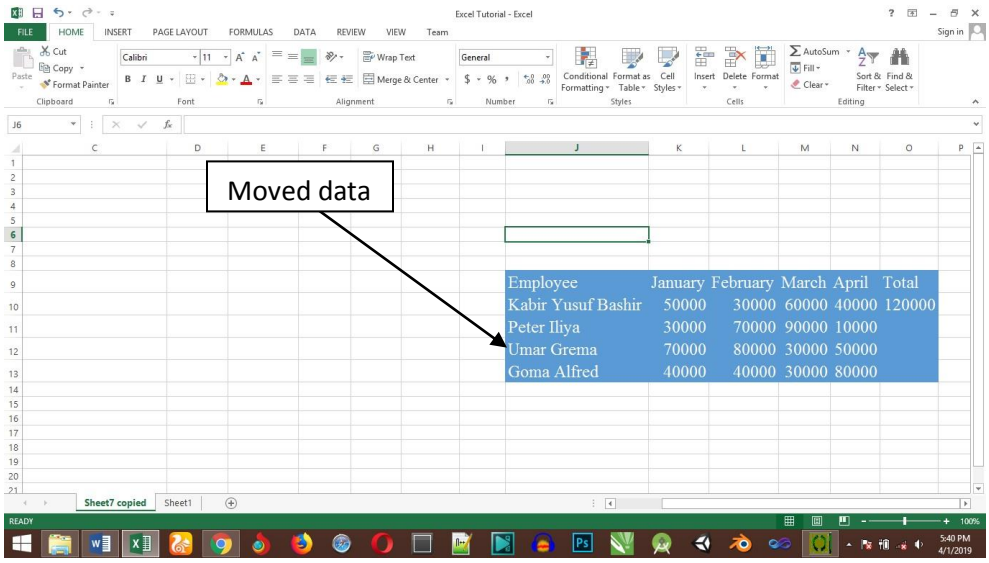
**Move Data in Microsoft Excel**

Sometimes you might need to move your data from the top of your worksheet to the bottom or from the right to the left. To move data in Microsoft Excel, follow the steps below:

**Step 1** – Select the data you want to Move. **Right Click** and Select the **cut option.**



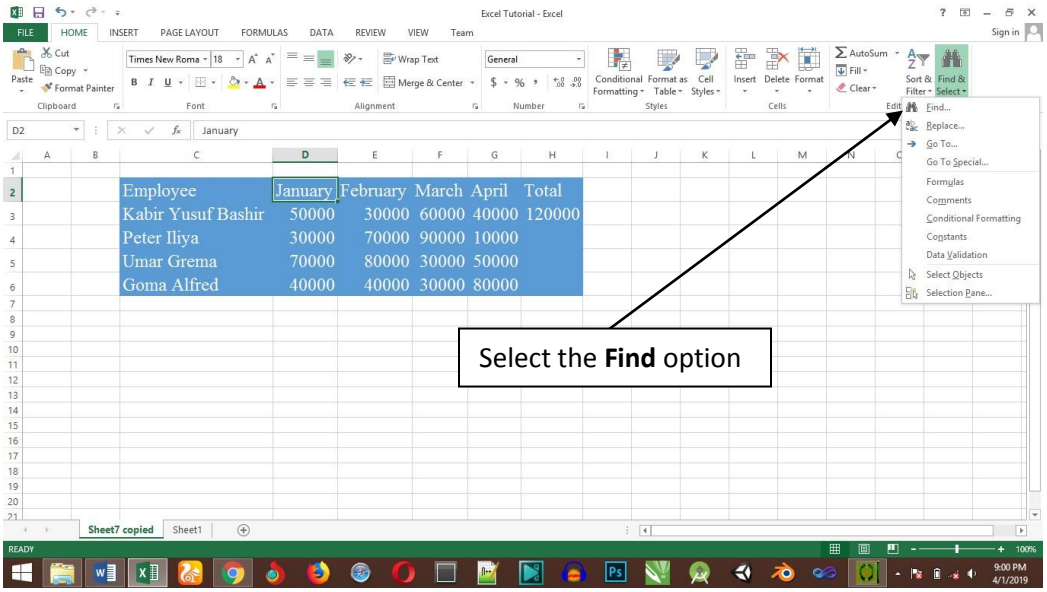

**Step 2** – **Select the first cell** where you want to move the data. Right click on it and **paste the data**. You can see the data is moved now.



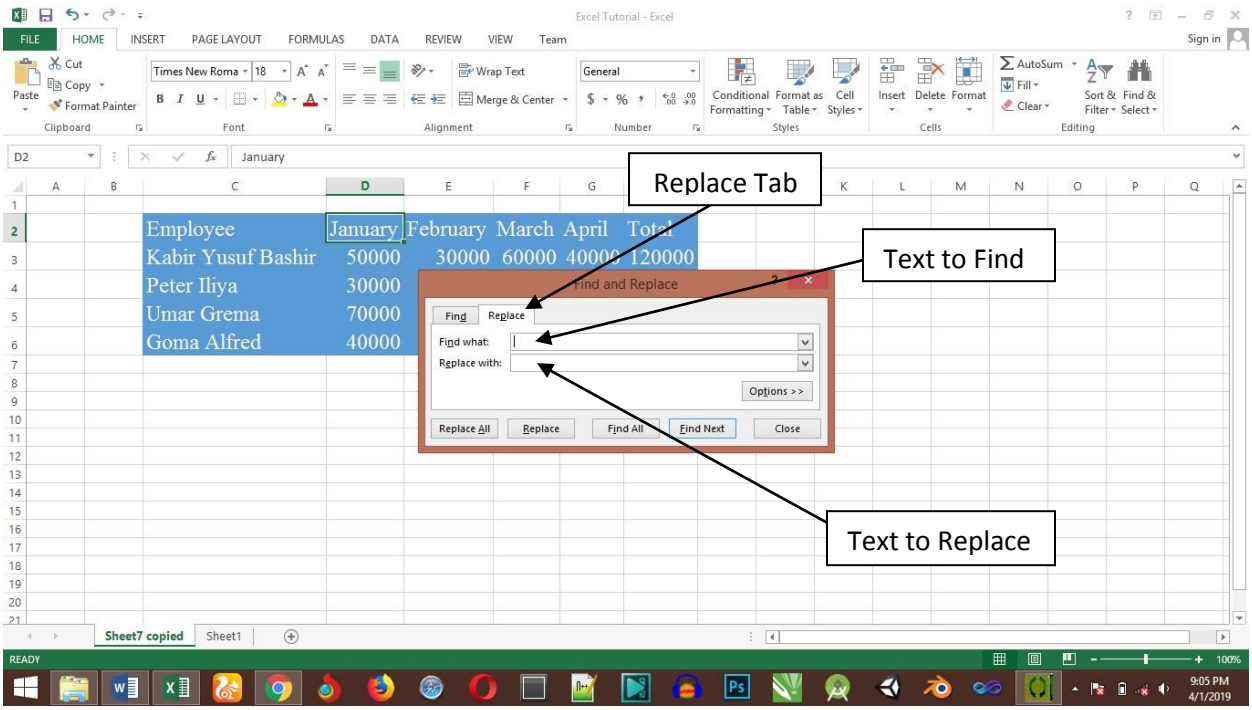
**Find and Replace in Microsoft Excel**

**Microsoft Excel** provides **Find & Replace** option for finding text within the sheet. To find and replace a text in Microsoft Excel, follow the steps below:

**Step 1:** To access the Find & Replace, Choose **Home → Find & Select → Find** or press **Control + F Key**. See the image below.



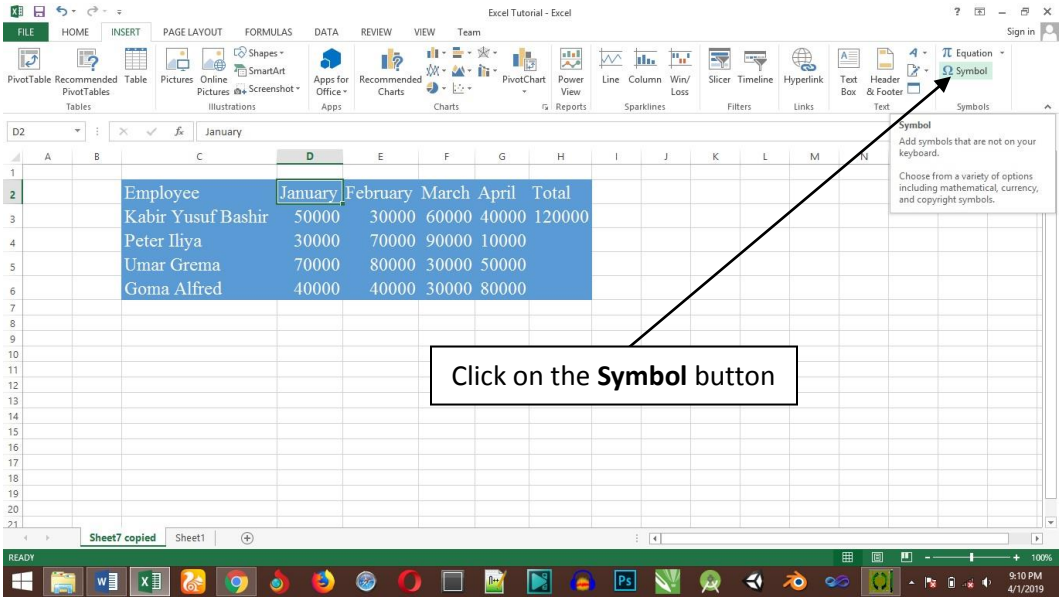

**Step 2:** You can see the **Find and Replace dialog box** as below.



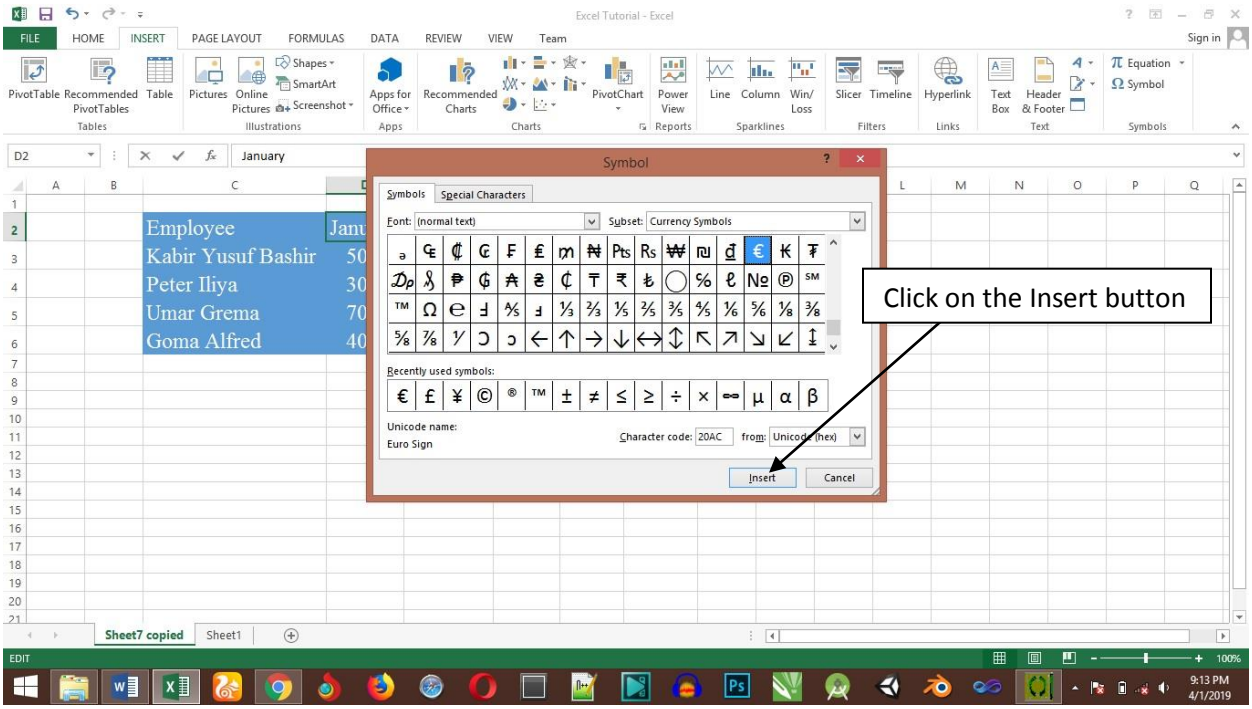
**Special Symbols in Microsoft Excel**

If you want to insert some symbols or special characters that are not found on the keyboard in that case you need to use the **Symbols option**.

**Step1:** Go to **Insert » Symbols » Symbol** to view available symbols. You can see many symbols available there like Pi, alpha, beta, etc.




**Step 2:** Choose your desire symbol you want to use and click on the **Insert** button

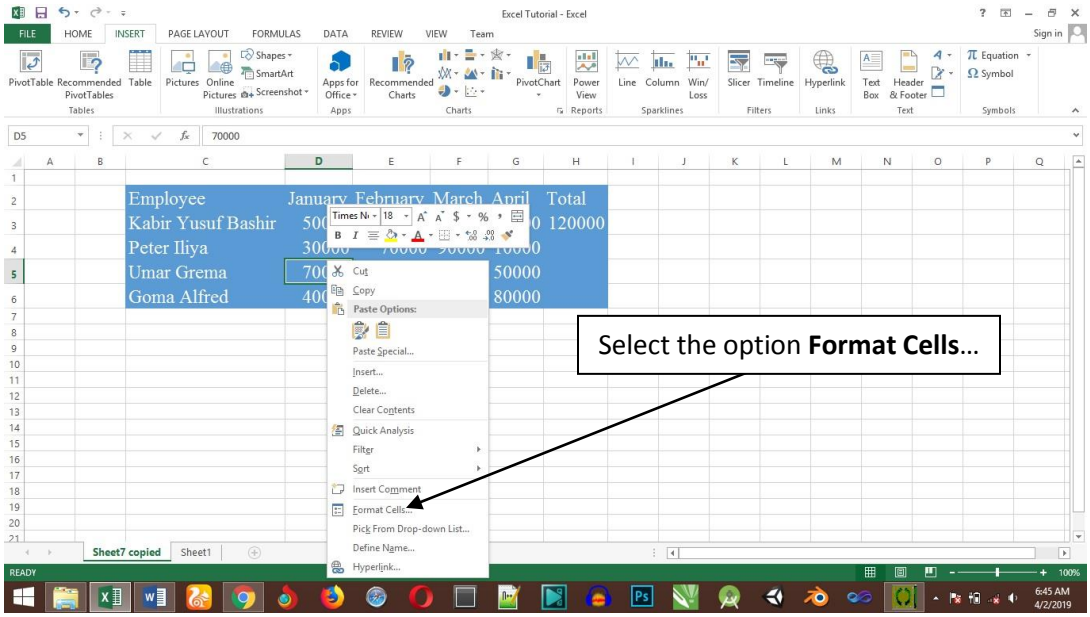


# Formatting Cells in Microsoft Excel

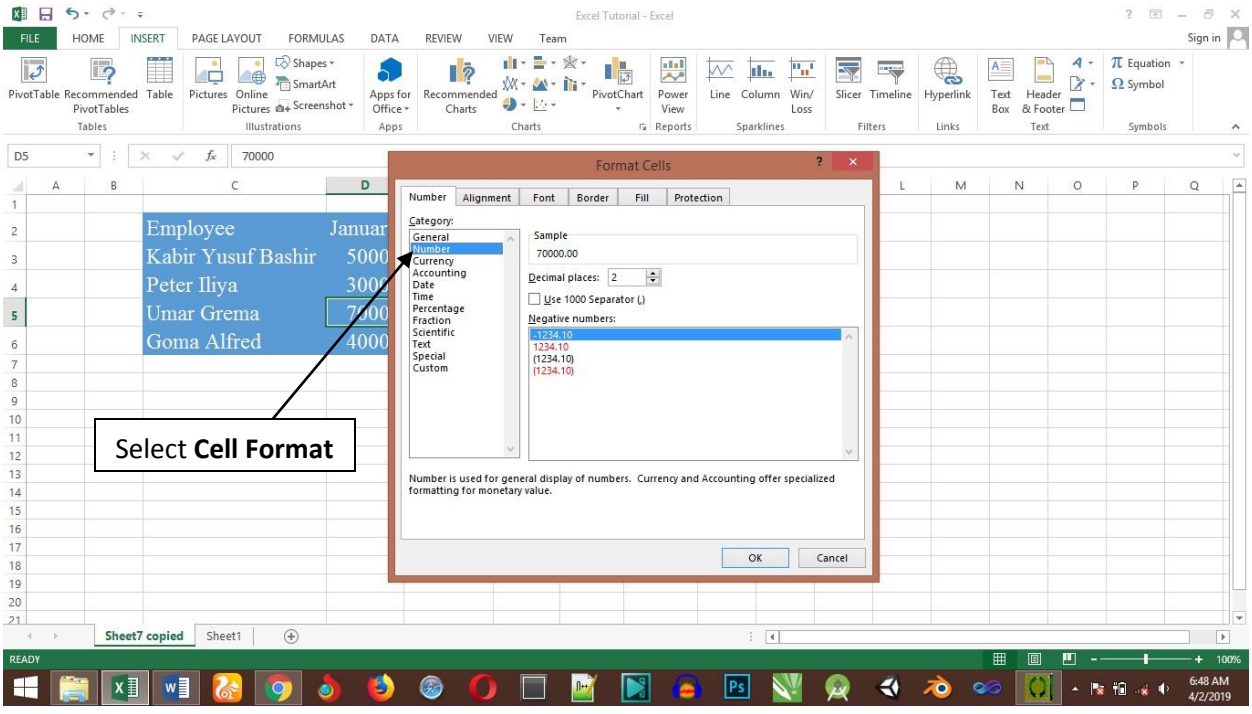
## Setting Cell Type

**Microsoft Excel** Cell can hold different types of data like Numbers, Currency, Dates, etc. You can set the cell type by following the steps below:

**Step1:** Right Click on the cell and select the **Format cells** option.

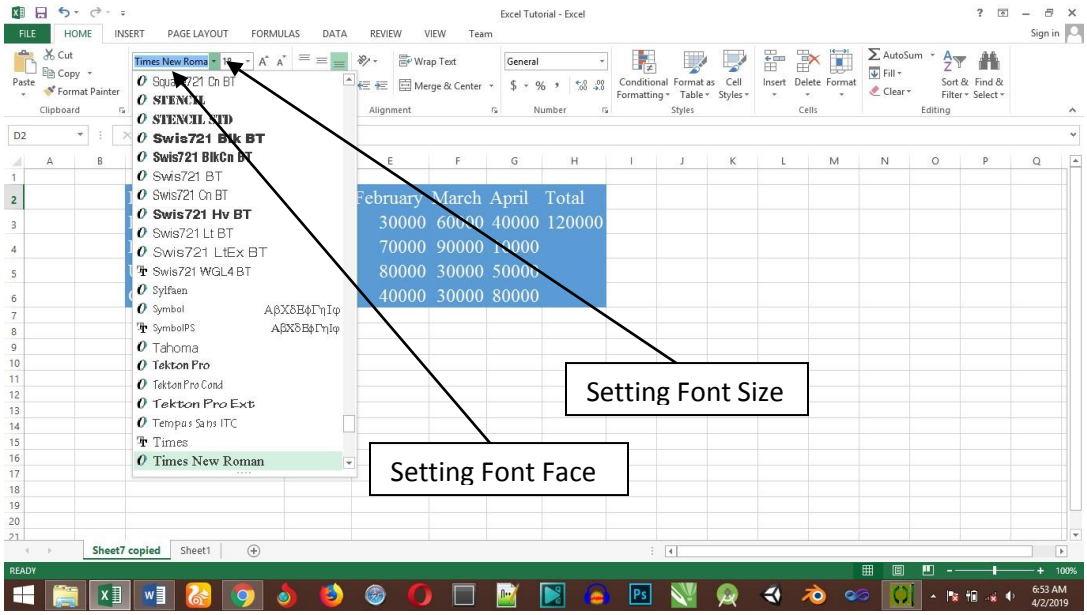



**Step 2:**



## Setting Fonts in Microsoft Excel

**Step 1:**

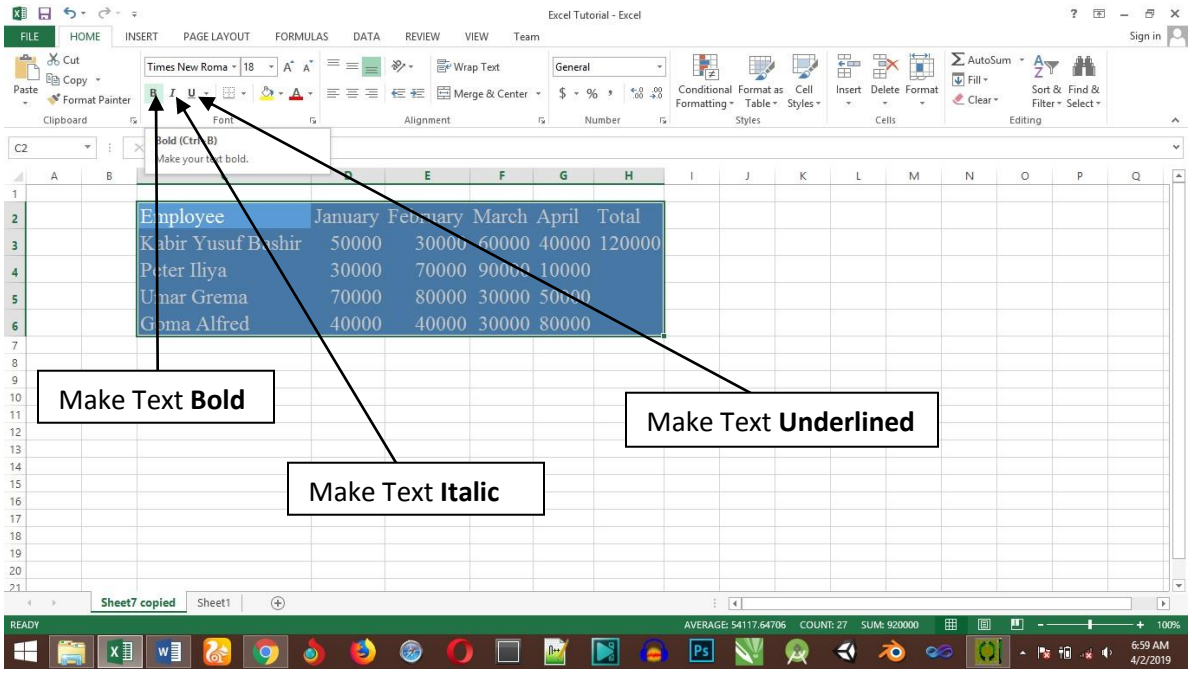



**NB:** You can selected more than one cell and assign the **font face** or **font size** to those cells.

## Text Decoration in Microsoft Excel

You can change the text decoration of the cell to change its look and feel.

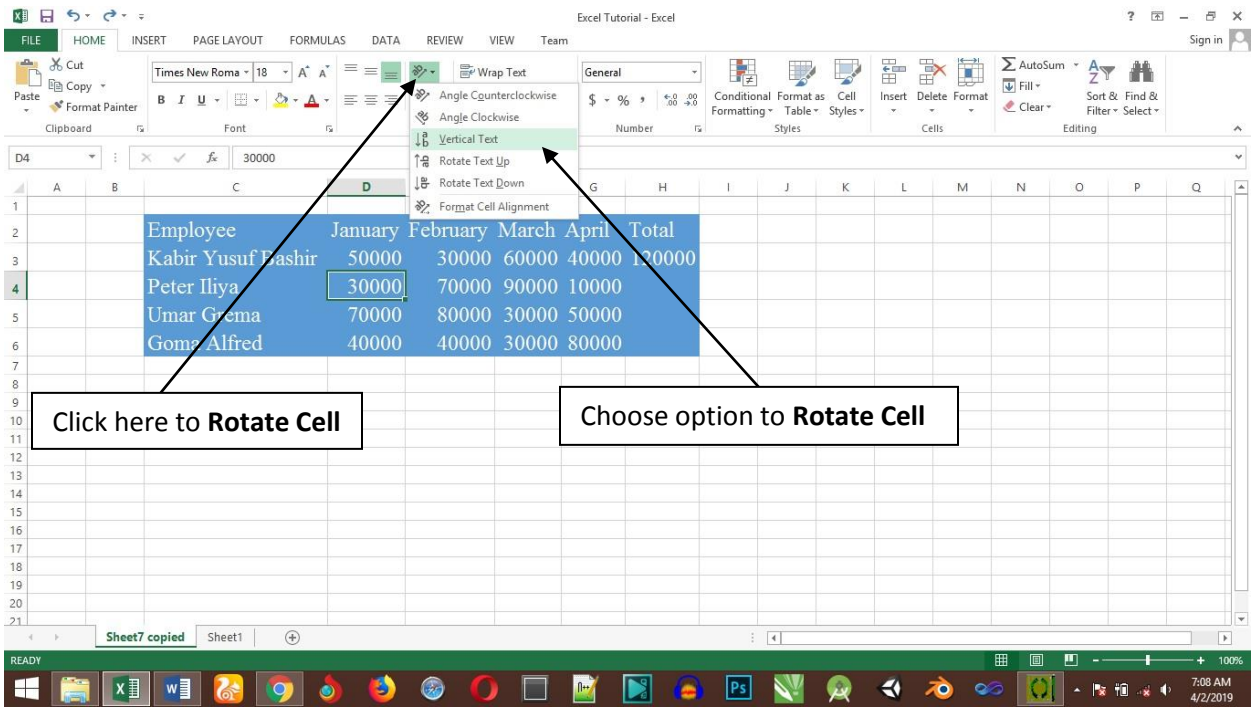
**Step 1:**



**Rotate Cells in Microsoft Excel**

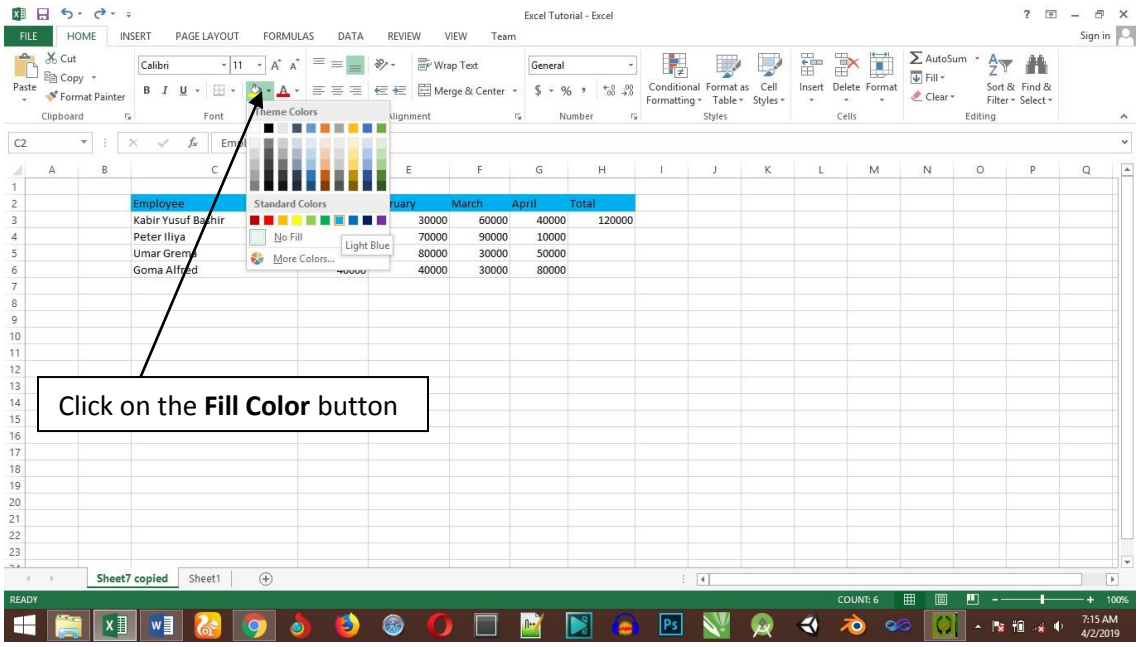
You can rotate the cell by any degree to change the orientation of the cell.

**Step 1:** Click on the **orientation** in the **Home tab**. Choose options available like Angle Counter Clockwise, Angle Clockwise, etc.



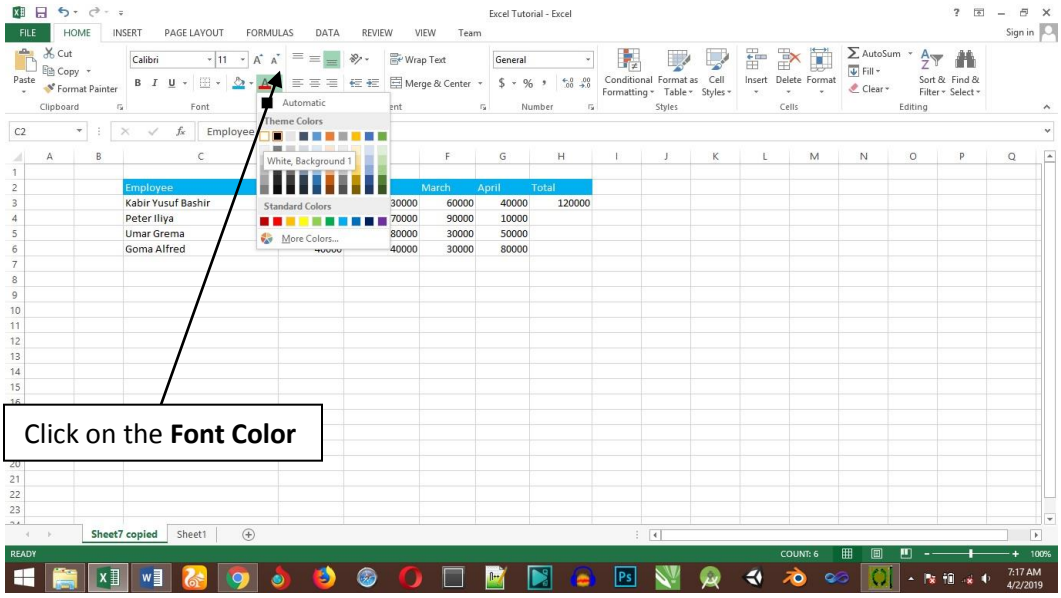
## Changing Background Color in Microsoft Excel

By default the background color of the cell is white in **Microsoft Excel**. You can change it as per your need from **Home tab » Font group » Background color**.




## Changing Foreground Color in Microsoft Excel

By default, the foreground or text color is black in **Microsoft Excel**. You can change it as per your need from **Home tab » Font group » Foreground color**.

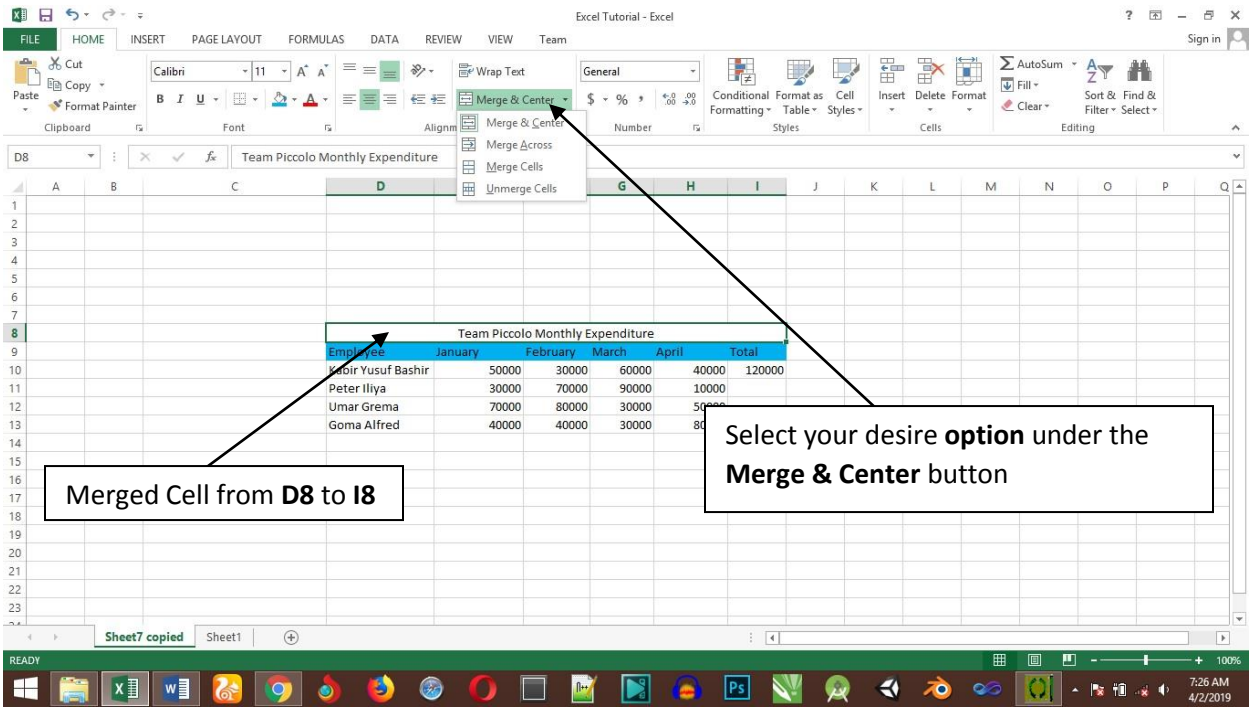


## Merge Cells in Microsoft Excel

**Microsoft Excel** enables you to merge two or more cells. When you merge cells, you don't combine the contents of the cells. Rather, you combine a group of cells into a single cell that occupies the same space.

You can merge cells by various ways as mentioned below.

- Choose **Merge & Center control** on the Ribbon, which is simpler. To merge cells, select the cells that you want to merge and then click the Merge & Center button.

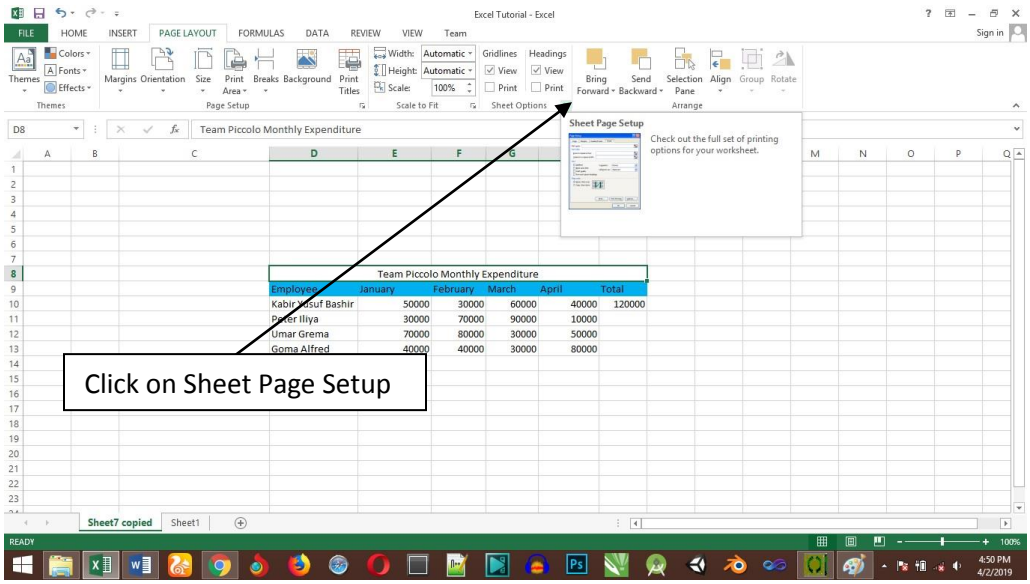


# Formatting Worksheet in Microsoft Excel

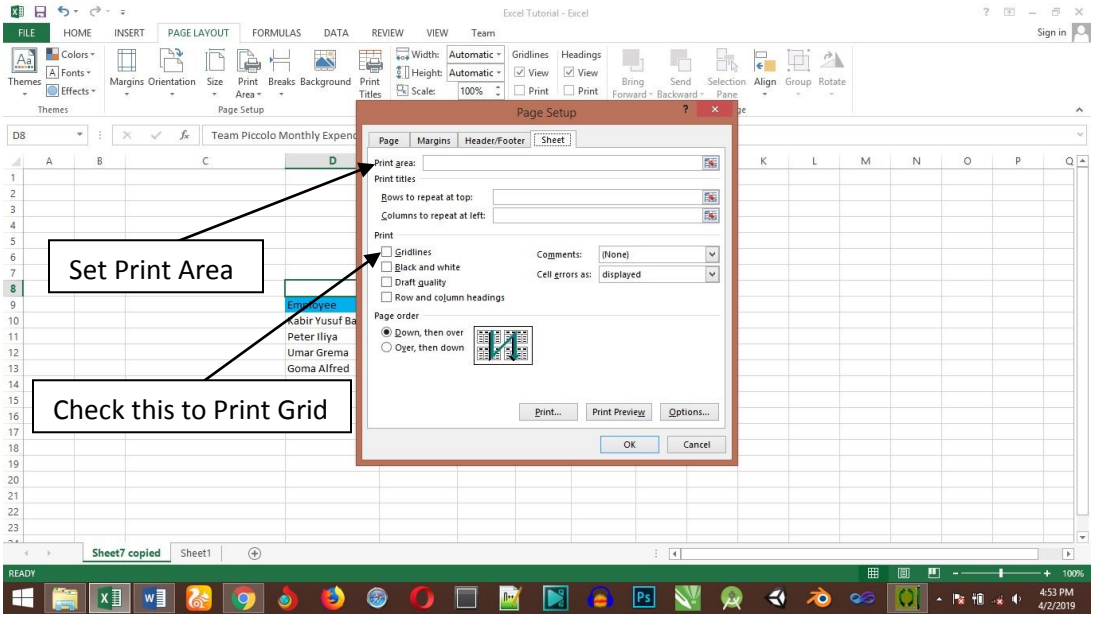
## Sheet Options in Microsoft Excel

**Microsoft Excel** provides various sheet options for printing purpose like generally cell gridlines aren't printed. If you want your printout to include the gridlines, follow the steps below:

**Step 1:** Click on **Page Layout** on your **Ribbon**




**Step 2:**



**Options in Sheet Options Dialog Box**

- **Print Area**: You can set the print area with this option.
- **Print Titles**: You can set titles to appear at the top for rows and at the left for columns.
- **Print**:
    - **Gridlines**: Gridlines to appear while printing worksheet.
    - **Black & White**: Select this check box to have your color printer print the chart in black and white.
    - **Draft quality**: Select this check box to print the chart using your printer's draft-quality setting.
    - **Rows & Column Heading**: Select this check box to have rows and column heading to print.
- **Page Order**:
    - **Down, then Over**: It prints the down pages first and then the right pages.
    - **Over, then Down**: It prints right pages first and then comes to print the down pages.

**Page Orientation**

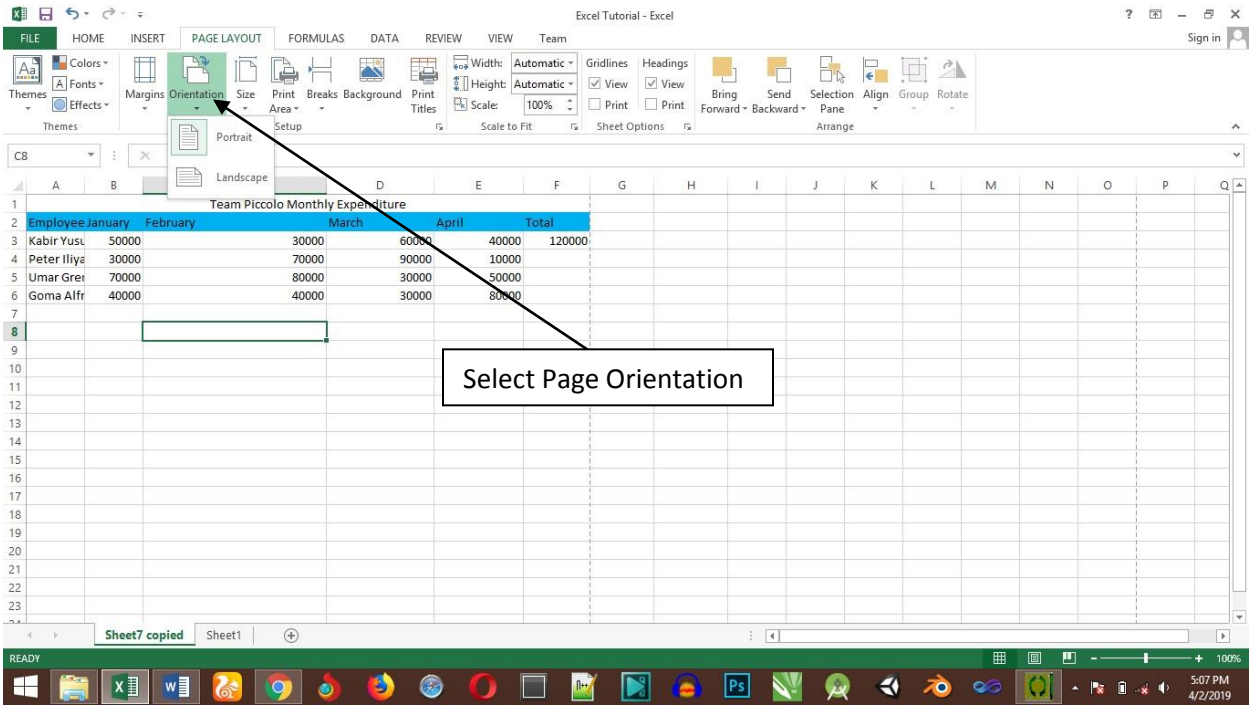
Page orientation refers to how output is printed on the page. If you change the orientation, the onscreen page breaks adjust automatically to accommodate the new paper orientation.

**Types of Page Orientation**

- **Portrait** − Portrait to print tall pages (the default).
- **Landscape** − Landscape to print wide pages. Landscape orientation is useful when you have a wide range that doesn't fit on a vertically oriented page.

## Changing Page Orientation

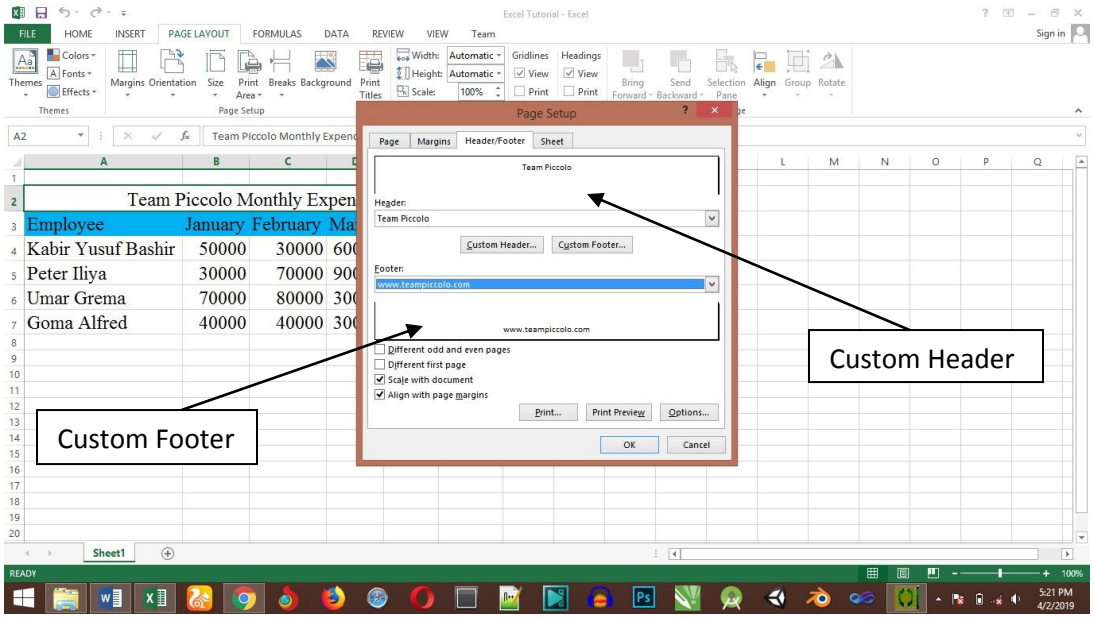
Choose **Page Layout** » **Page Setup** » **Orientation** » **Portrait** or **Landscape**.




## Header and Footer in Microsoft Excel

A **header** is the information that appears at the top of each printed page and a **footer** is the information that appears at the bottom of each printed page. By default, new workbooks do not have headers or footers. To insert a Header or Footer to your worksheet, follow the steps below:

**Step 1:** Choose Page Setup dialog box » Header or Footer tab.




**Other Header and Footer Options**

When a header or footer is selected in Page Layout view, the **Header & Footer » Design » Options** group contains controls that let you specify other options −

- **Different First Page** − Check this to specify a different header or footer for the first printed page.
- **Different Odd & Even Pages** − Check this to specify a different header or footer for odd and even pages.
- **Scale with Document** − If checked, the font size in the header and footer will be sized. Accordingly if the document is scaled when printed. This option is enabled, by default.
- **Align with Page Margins** − If checked, the left header and footer will be aligned with the left margin, and the right header and footer will be aligned with the right margin. This option is enabled, by default.

## Working with Formula in Microsoft Excel

**Formulas** are the Bread and butter of worksheet. Without formula, worksheet will be just simple tabular representation of data. A formula consists of special code, which is entered into a cell. It performs some calculations and returns a result, which is displayed in the cell.

**Formulas** use a variety of operators and worksheet functions to work with values and text. The values and text used in formulas can be located in other cells, which makes changing data easy and gives worksheets their dynamic nature. For example, you can quickly change the data in a worksheet and formulas works.

A **formula** can consist of any of these elements −

- **Mathematical operators, such as +(for addition) and *(for multiplication)**

  **Example –**

  - =A1+A2 Adds the values in cells A1 and A2.

- **Values or text**

  **Example –**

  - =200*0.5 Multiplies 200 times 0.15. This formula uses only values, and it always returns the same result as 100.

- **Cell references (including named cells and ranges)**

  **Example** −

  - =A1=C12 Compares cell A1 with cell C12. If the cells are identical, the formula returns TRUE; otherwise, it returns FALSE.

- **Worksheet functions (such as SUM or AVERAGE)**

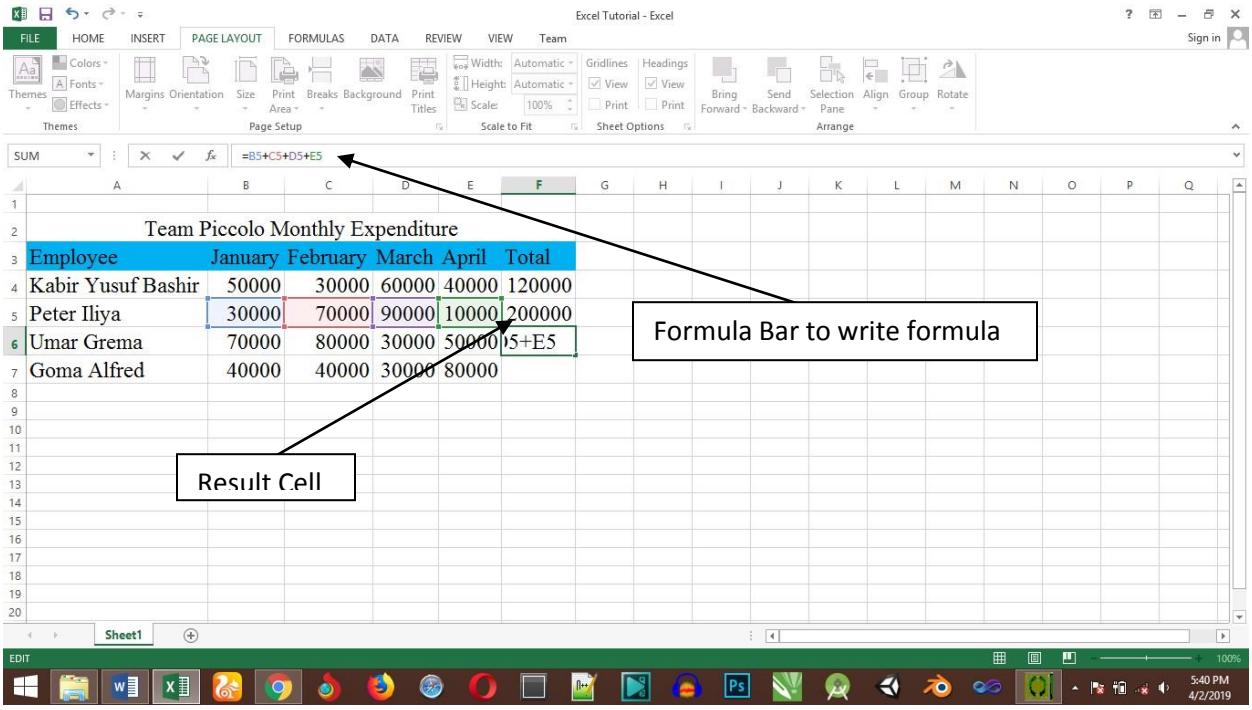
  **Example** −

  - =SUM (A1:A12) Adds the values in the range A1:A12.

## Creating Formulas in Microsoft Excel

To create a formula you need to type in the **Formula Bar**. Formula begins with '=' sign. When building formulas manually, you can either type in the cell addresses or you can point to them in the worksheet.

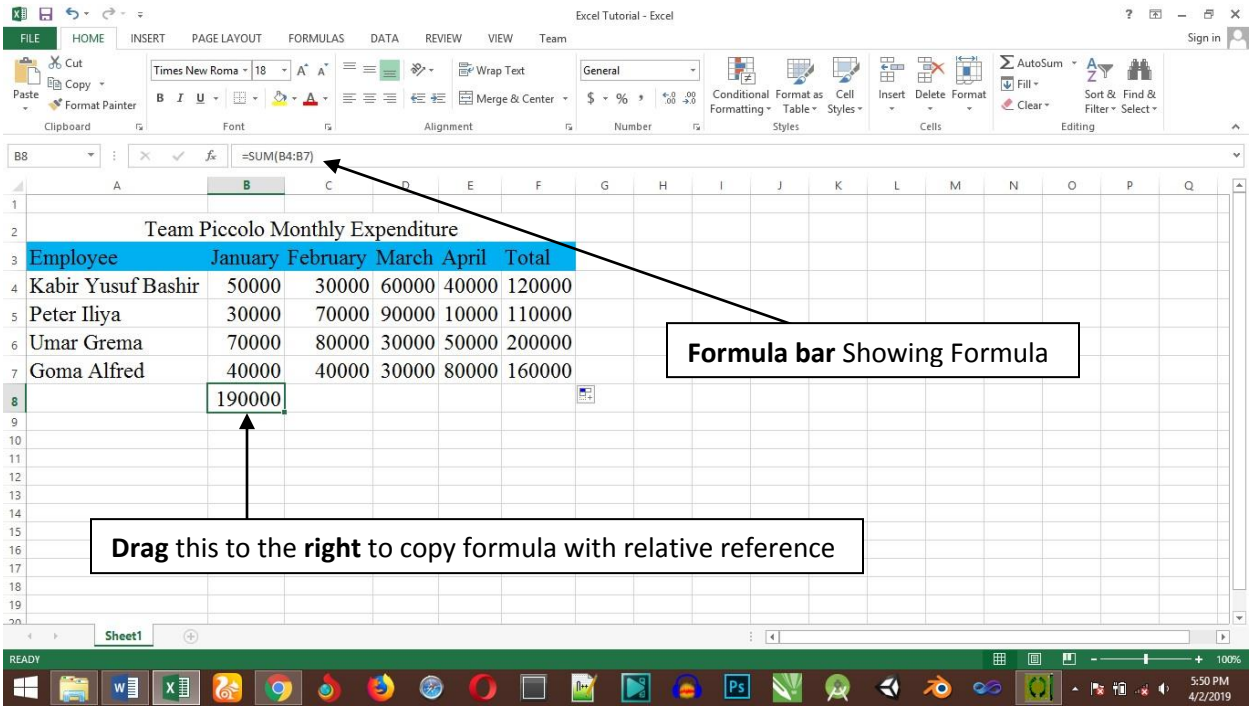
Using the **Pointing method** to supply the cell addresses for formulas is often easier and more powerful method of formula building. When you are using built-in functions, you click the cell or drag through the cell range that you want to use when defining the function's arguments in the Function Arguments dialog box. See the below screen shot.

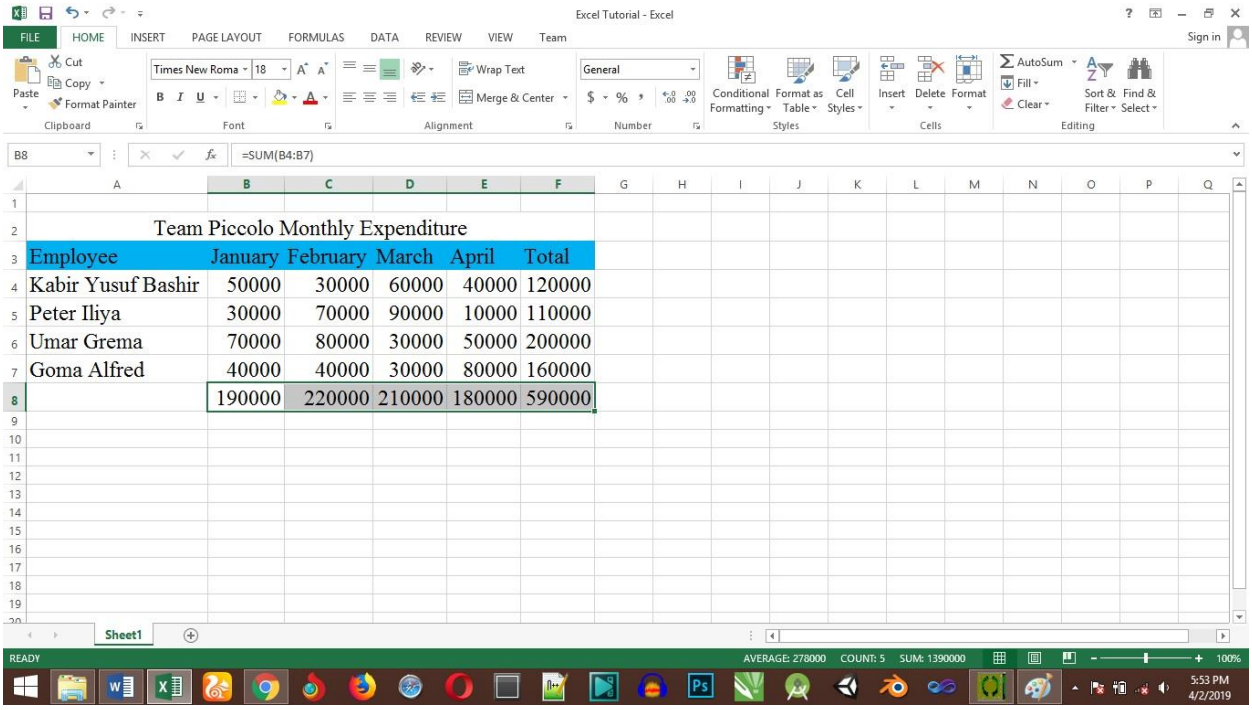



## Copying Formulas in Microsoft Excel

MS Excel does it automatically adjusting the cell references in the original formula to suit the position of the copies that you make. It does this through a system known as **relative cell addresses,** where by the column references in the cell address in the formula change to suit their new column position and the row references change to suit their new row position.

Let us see this with the help of example. Suppose we want the sum of all the rows at last, then we will write a formula for first column i.e. B. We want sum of the rows from 4 to 7 in the 8$^{th}$ row.


Excel Tutorial - Excel
=SUM(B4:B7)
Team Piccolo Monthly Expenditure
Employee January February March April Total
Kabir Yusuf Bashir 50000 30000 60000 40000 120000
Peter Iliya 30000 70000 90000 10000 110000
Umar Grema 70000 80000 30000 50000 200000
Goma Alfred 40000 40000 30000 80000 160000
190000
Formula bar Showing Formula
Drag this to the right to copy formula with relative reference
Sheet1
READY
5:50 PM
4/2/2019


Excel Tutorial - Excel
=SUM(B4:B7)
Team Piccolo Monthly Expenditure
Employee January February March April Total
Kabir Yusuf Bashir 50000 30000 60000 40000 120000
Peter Iliya 30000 70000 90000 10000 110000
Umar Grema 70000 80000 30000 50000 200000
Goma Alfred 40000 40000 30000 80000 160000
190000 220000 210000 180000 590000
Sheet1
READY
AVERAGE: 278000 COUNT: 5 SUM: 1390000
5:53 PM
4/2/2019

## Cell References in Formulas

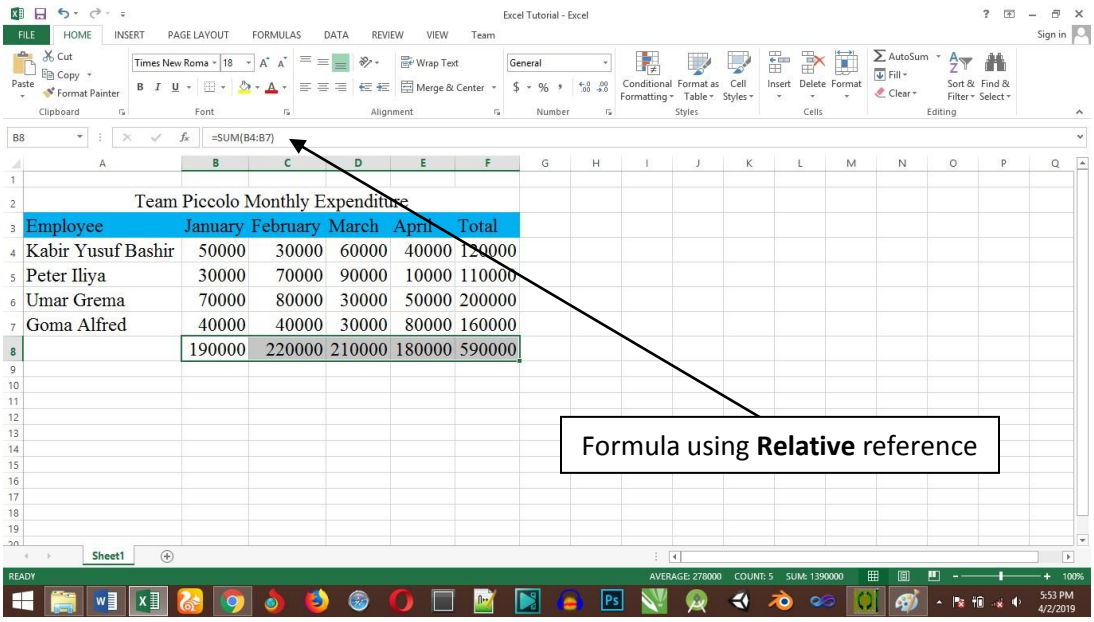
Most formulas you create include references to cells or ranges. These references enable your formulas to work dynamically with the data contained in those cells or ranges. For example, if your formula refers to cell C2 and you change the value contained in C2, the formula result reflects new value automatically. If you didn't use references in your formulas, you would need to edit the formulas themselves in order to change the values used in the formulas.

When you use a cell (or range) reference in a formula, you can use three types of references:

- Relative
- Absolute
- Mixed references.

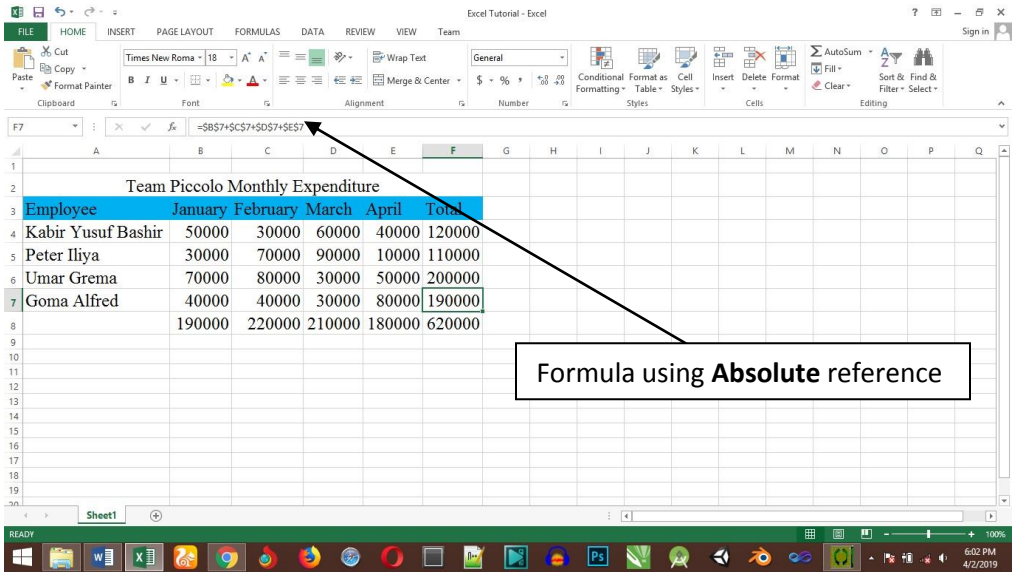
## Relative Cell Reference

The row and column references can change when you copy the formula to another cell because the references are actually offsets from the current row and column. By default, Excel creates relative cell references in formulas.



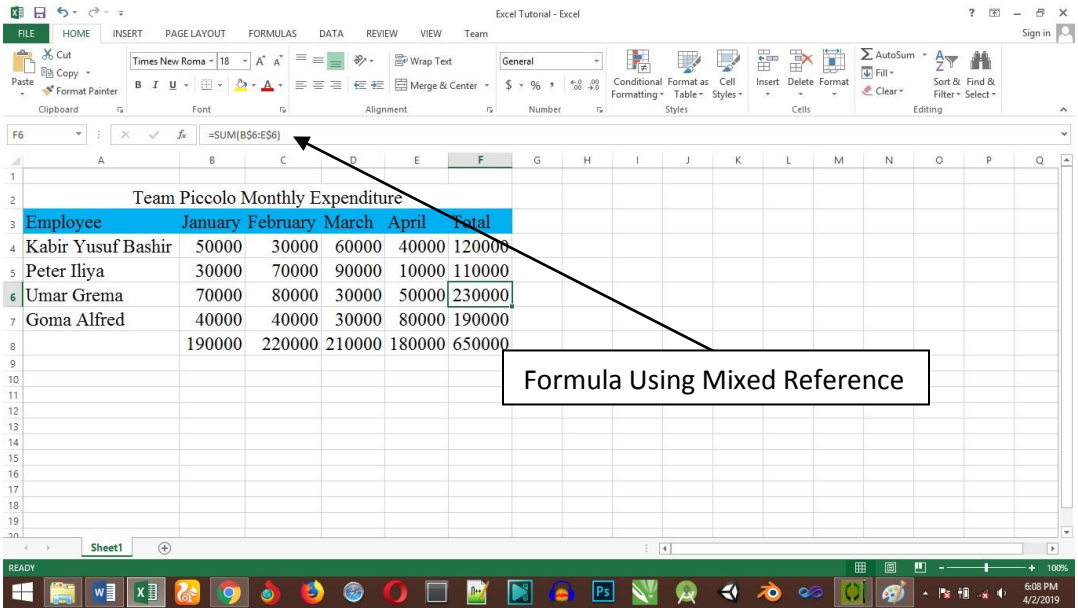
## Absolute Cell Reference

The row and column references do not change when you copy the formula because the reference is to an actual cell address. An absolute reference uses two dollar signs in its address: one for the column letter and one for the row number (for example, $A$5).




## Mixed Cell Reference

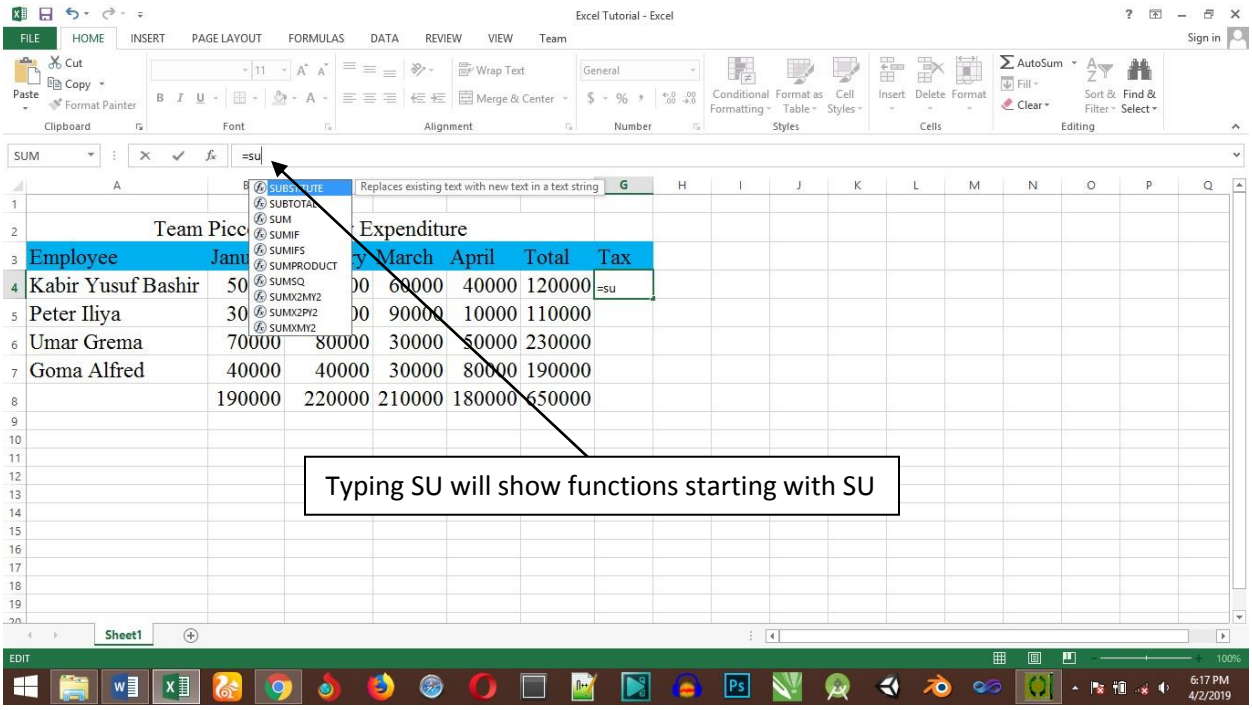
Both the row or column reference is relative and the other is absolute. Only one of the address parts is absolute (for example, $A5 or A$5).



**Using Formulas in Microsoft Excel**

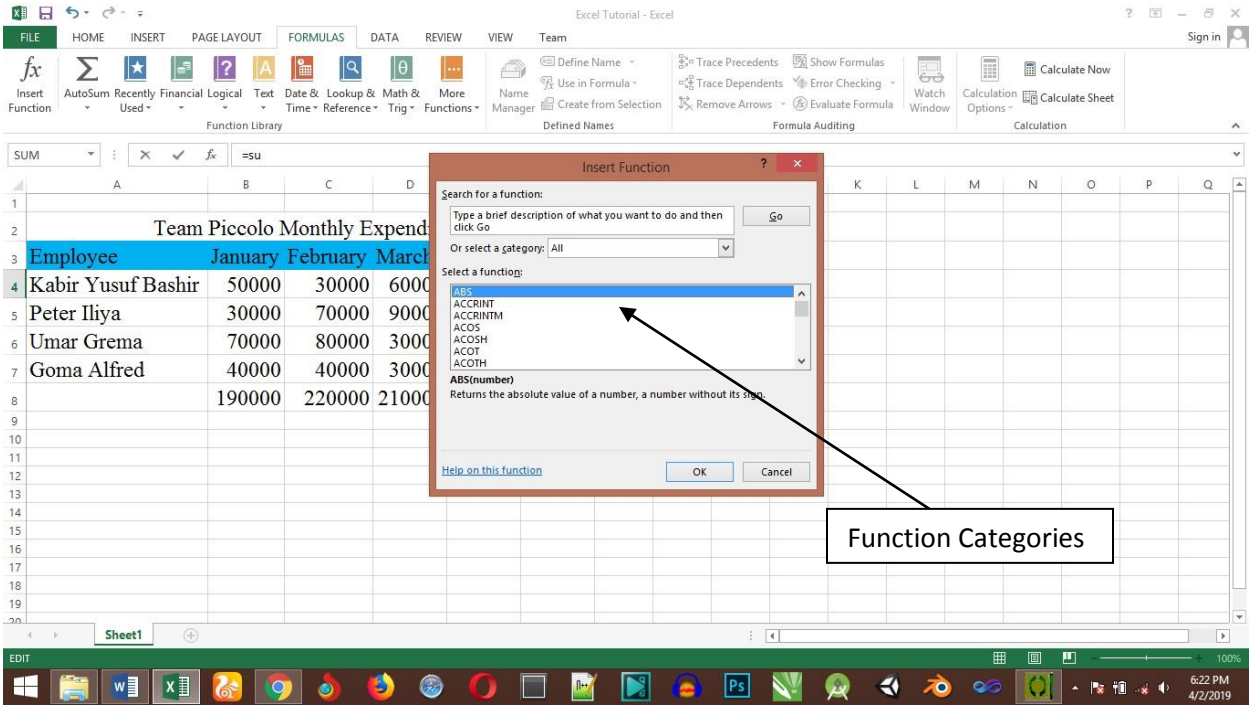
Many formulas you create use available worksheet functions. These functions enable you to greatly enhance the power of your formulas and perform calculations that are difficult if you use only the operators. For example, you can use the LOG or SIN function to calculate the Logarithm or Sin ratio. You can't do this complicated calculation by using the mathematical operators alone.

When you type = sign and then type any alphabet you will see the searched functions as below.



## Built-in Functions in Microsoft Excel

MS Excel has many built in functions, which we can use in our formula. To see all the functions by category, choose **Formulas Tab » Insert Function.** Then Insert function Dialog appears from which we can choose the function.




### Functions by Categories

Let us see some of the built in functions in MS Excel.

- **Text Functions**
    - **LOWER** – Converts all characters in a supplied text string to lower case
    - **UPPER** – Converts all characters in a supplied text string to upper case
    - **TRIM** – Removes duplicate spaces, and spaces at the start and end of a text string
    - **CONCATENATE** – Joins together two or more text strings.
    - **LEFT** – Returns a specified number of characters from the start of a supplied text string.
    - **MID** – Returns a specified number of characters from the middle of a supplied text string

- **RIGHT** − Returns a specified number of characters from the end of a supplied text string.
- **LEN** − Returns the length of a supplied text string
- **FIND** − Returns the position of a supplied character or text string from within a supplied text string (case-sensitive).

- **Date & Time**
  - **DATE** − Returns a date, from a user-supplied year, month and day.
  - **TIME** − Returns a time, from a user-supplied hour, minute and second.
  - **DATEVALUE** − Converts a text string showing a date, to an integer that represents the date in Excel's date-time code.
  - **TIMEVALUE** − Converts a text string showing a time, to a decimal that represents the time in Excel.
  - **NOW** − Returns the current date & time.
  - **TODAY** − Returns today's date.
- **Statistical**
  - **MAX** − Returns the largest value from a list of supplied numbers.
  - **MIN** − Returns the smallest value from a list of supplied numbers.
  - **AVERAGE** − Returns the Average of a list of supplied numbers.
  - **COUNT** − Returns the number of numerical values in a supplied set of cells or values.
  - **COUNTIF** − Returns the number of cells (of a supplied range), that satisfies a given criteria.
  - **SUM** − Returns the sum of a supplied list of numbers
- **Logical**
  - **AND** − Tests a number of user-defined conditions and returns TRUE if ALL of the conditions evaluate to TRUE, or FALSE otherwise
  - **OR** − Tests a number of user-defined conditions and returns TRUE if ANY of the conditions evaluate to TRUE, or FALSE otherwise.

- **NOT** – Returns a logical value that is the opposite of a user supplied logical value or expression i.e. returns FALSE if the supplied argument is TRUE and returns TRUE if the supplied argument is FAL

- **Math & Trig**
  - **ABS** – Returns the absolute value (i.e. the modulus) of a supplied number.
  - **SIGN** – Returns the sign (+1, -1 or 0) of a supplied number.
  - **SQRT** – Returns the positive square root of a given number.
  - **MOD** – Returns the remainder from a division between two supplied numbers.

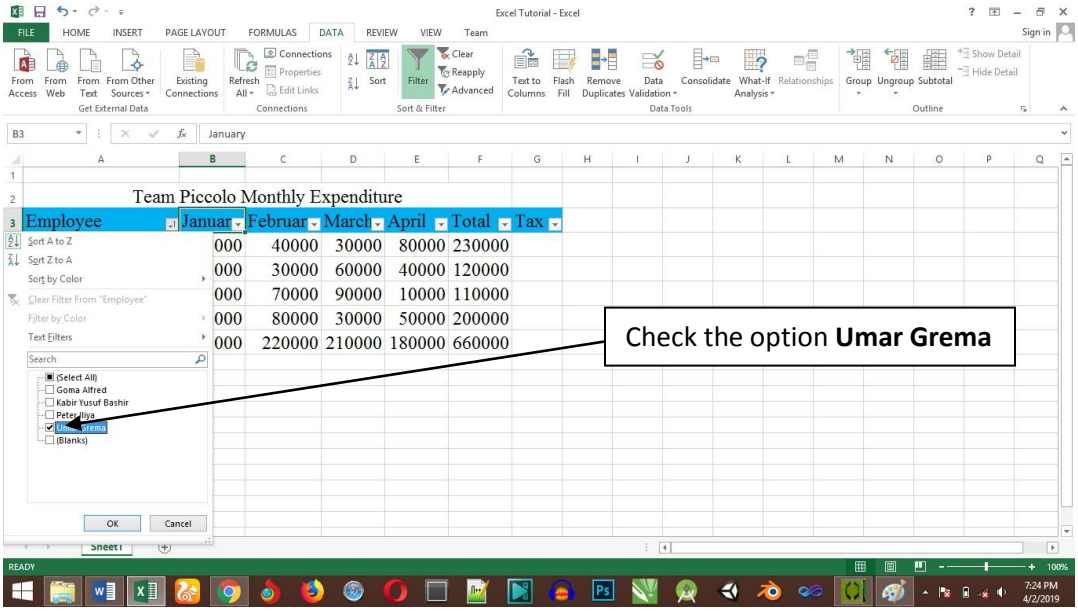
## Advanced Operations in Microsoft Excel

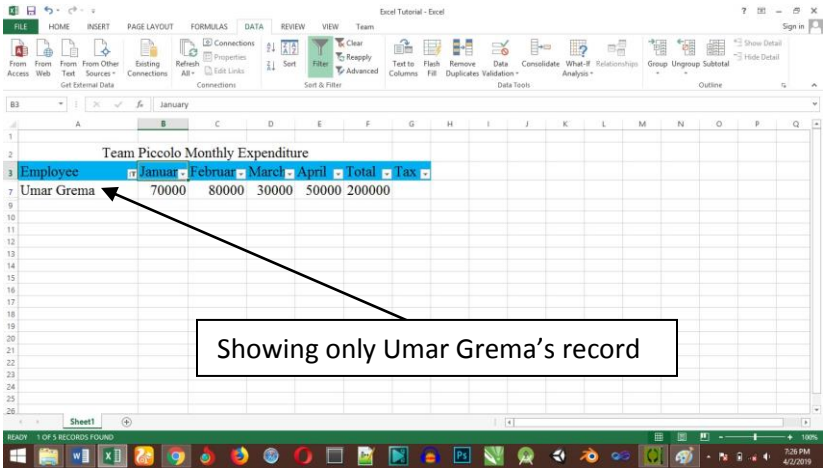
### Data Filtering in Microsoft Excel

Filtering data in MS Excel refers to displaying only the rows that meet certain conditions. (The other rows gets hidden.)

Using the store data, we can only display the **employee Umar Grema.**

- Place a cursor on the Header Row.
- Choose **Data Tab » Filter** to set filter.



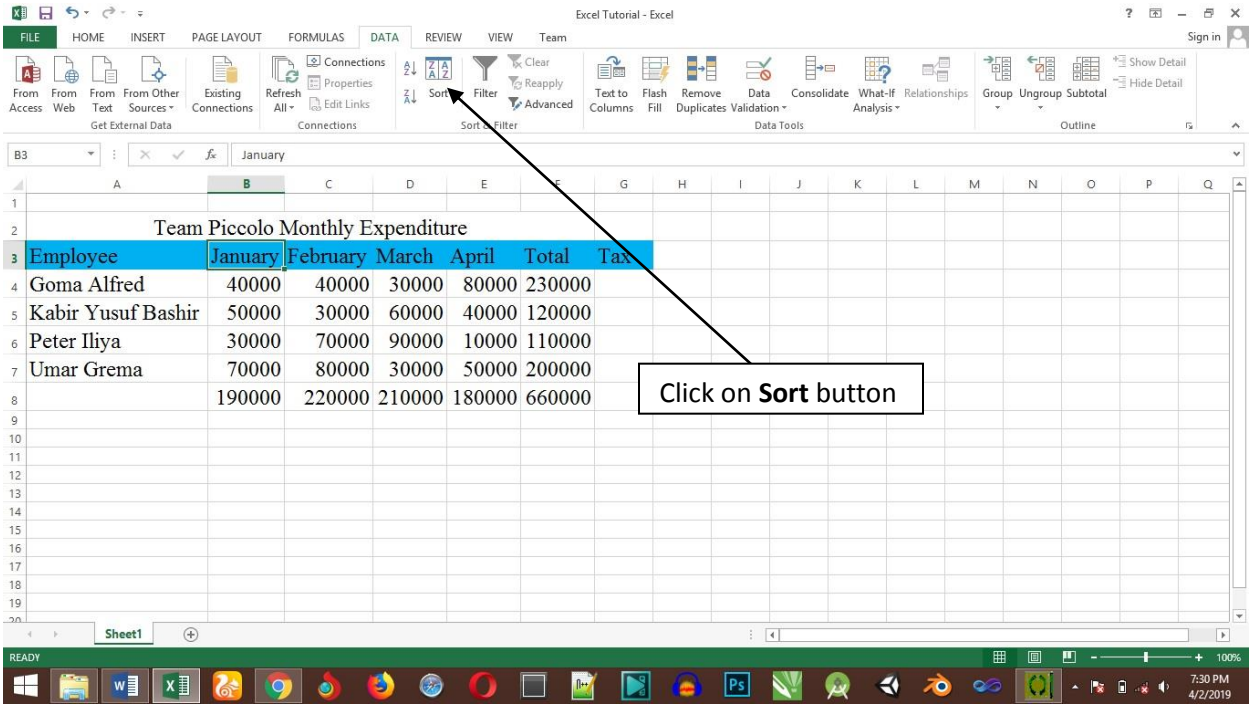


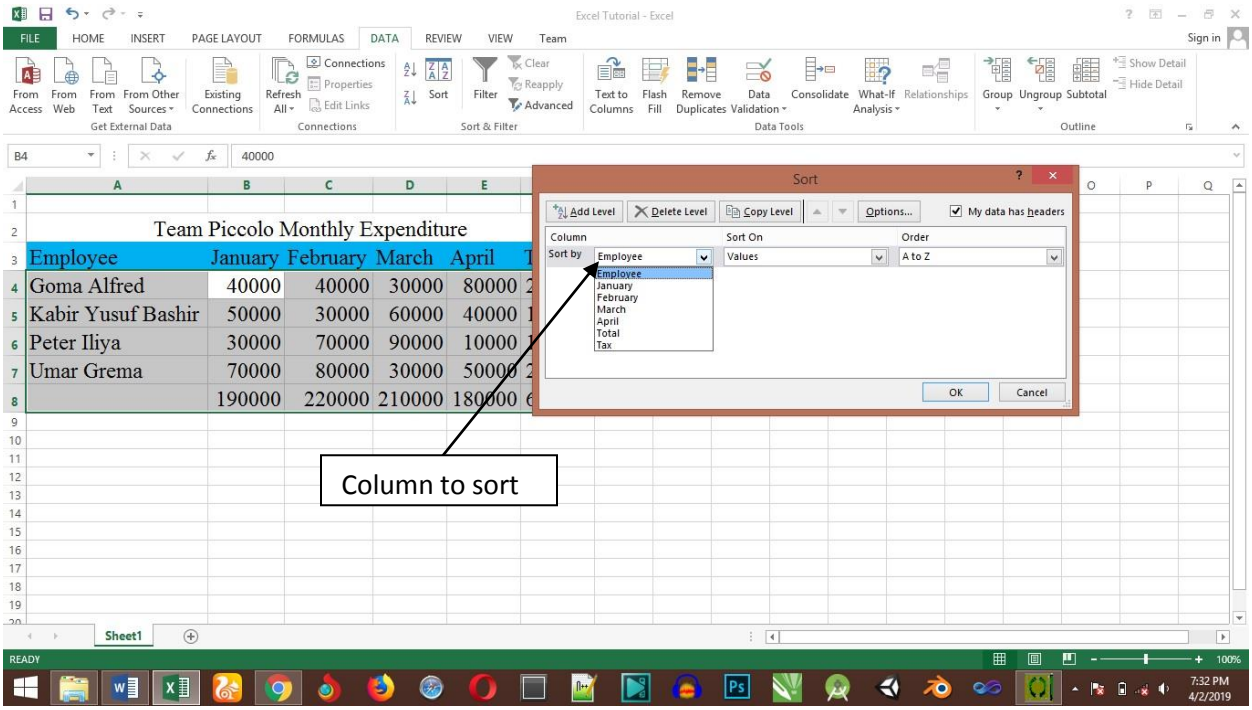

## Data Sorting in Microsoft Excel

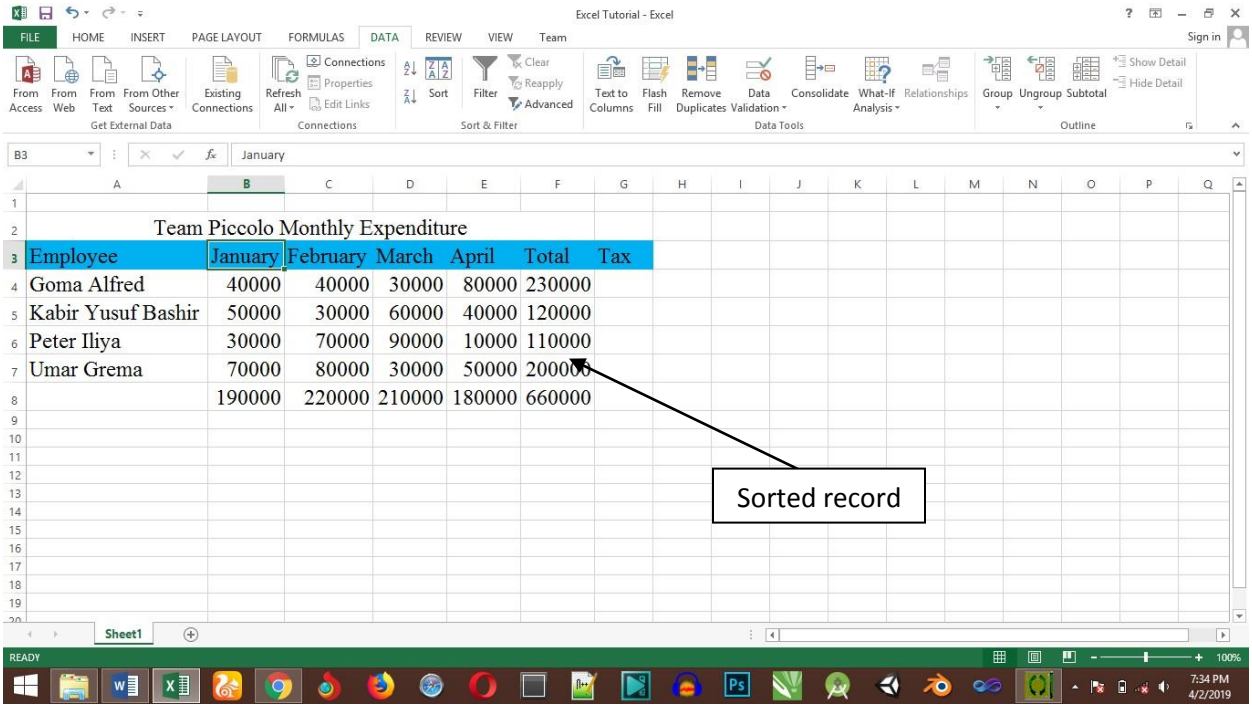
**Sorting data** in Microsoft Excel rearranges the rows based on the contents of a particular column. You may want to sort a table to put names in alphabetical order. Or, maybe you want to sort data by Amount from smallest to largest or largest to smallest.

To Sort the data follow the steps mentioned below.

- Select the Column by which you want to sort data.
- Choose Data Tab » Sort Below dialog appears.




Excel Tutorial - Excel
Sort
Column to sort
Team Piccolo Monthly Expenditure
Employee January February March April
Goma Alfred 40000 40000 30000 80000
Kabir Yusuf Bashir 50000 30000 60000 40000
Peter Iliya 30000 70000 90000 10000
Umar Grema 70000 80000 30000 50000
190000 220000 210000 180000


Excel Tutorial - Excel
Team Piccolo Monthly Expenditure
Employee January February March April Total Tax
Goma Alfred 40000 40000 30000 80000 230000
Kabir Yusuf Bashir 50000 30000 60000 40000 120000
Peter Iliya 30000 70000 90000 10000 110000
Umar Grema 70000 80000 30000 50000 200000
190000 220000 210000 180000 660000
Sorted record

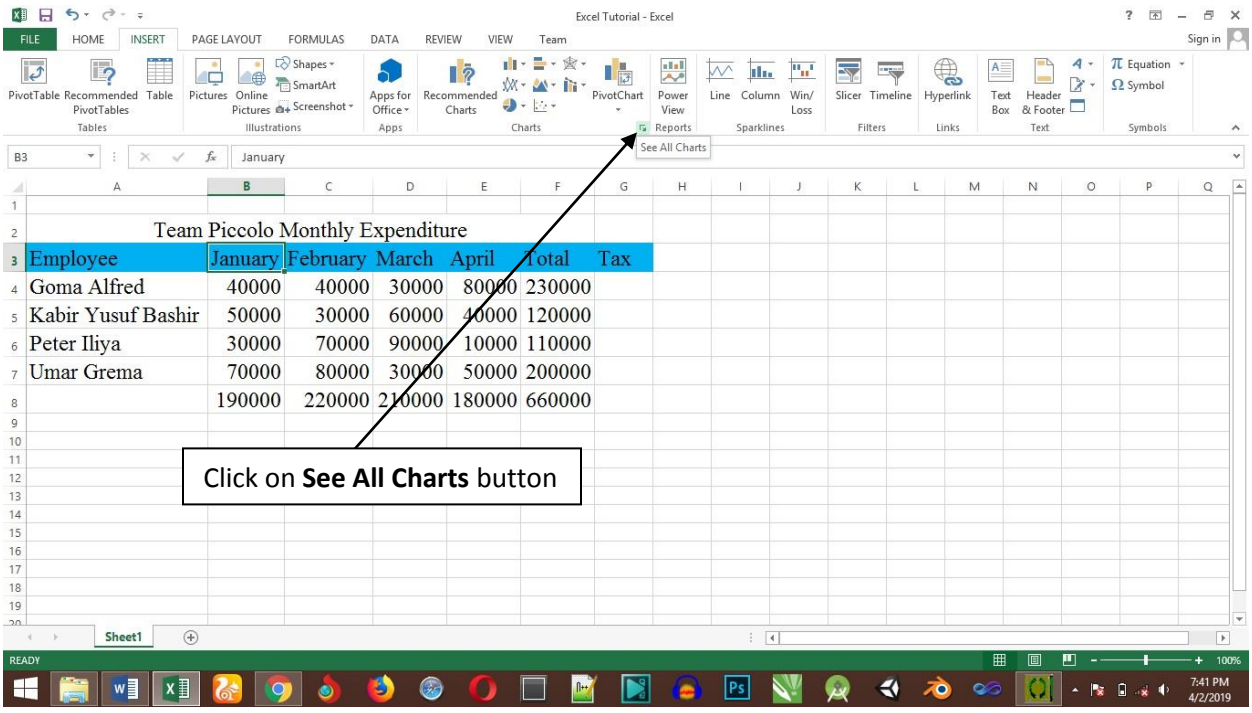
## Charts in Microsoft Excel

A chart is a visual representation of numeric values. Charts (also known as graphs) have been an integral part of spreadsheets. Charts generated by early spreadsheet products were quite crude, but thy have improved significantly over the years. Excel provides you with the tools to create a wide variety of highly customizable charts. Displaying data in a well-conceived chart can make your numbers more understandable. Because a chart presents a picture, charts are particularly useful for summarizing a series of numbers and their interrelationships.

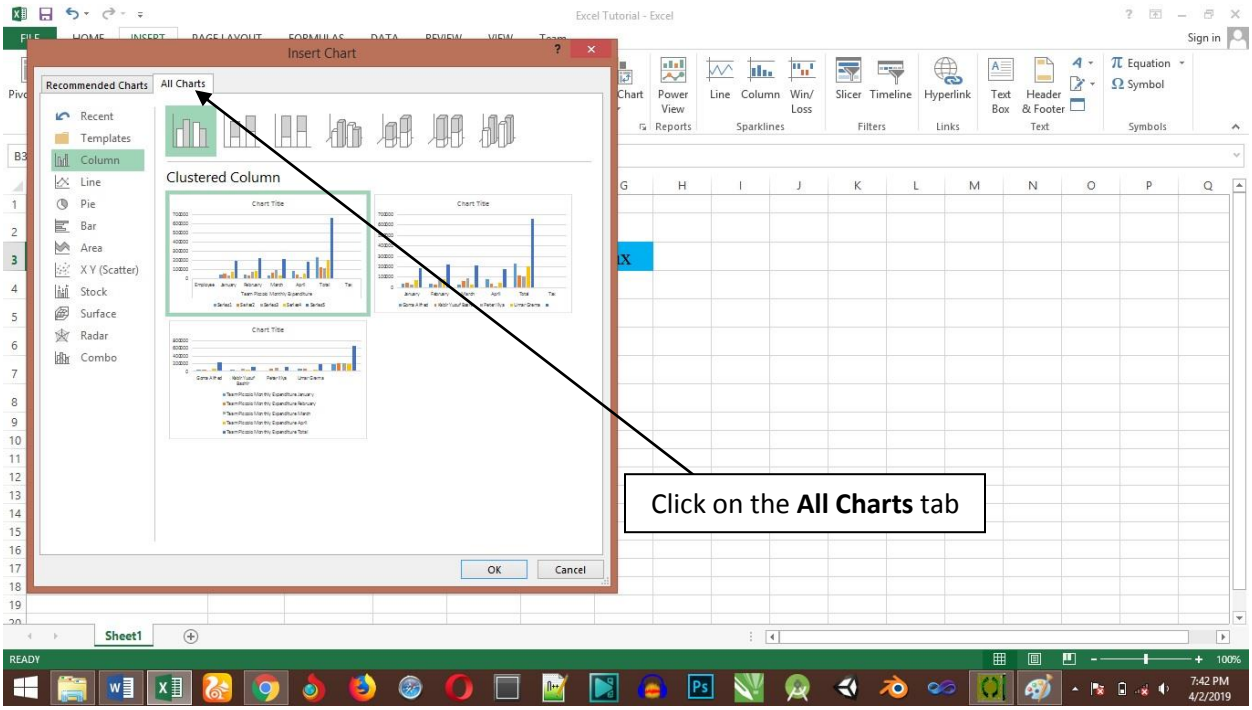
### Types of Chart in Microsoft Excel

There are various chart types available in MS Excel, to view the various charts in Microsoft Excel, follow the steps below:

### Step1:



**Step 2:**



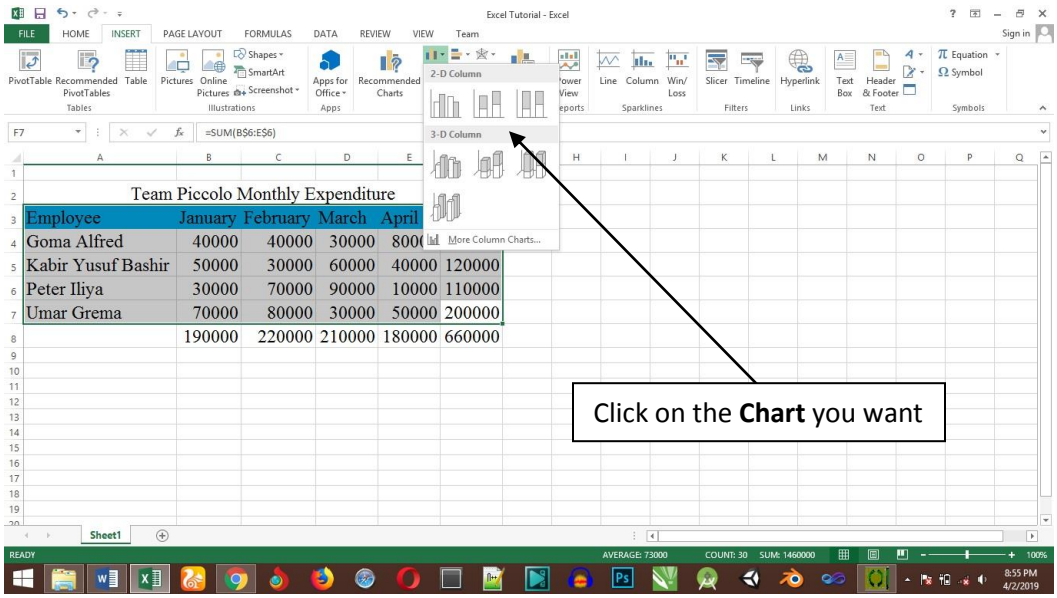

- **Column**: Column chart shows data changes over a period of time or illustrates comparisons among items.
- **Bar**: A bar chart illustrates comparisons among individual items.
- **Pie**: A pie chart shows the size of items that make up a data series, proportional to the sum of the items. It always shows only one data series and is useful when you want to emphasize a significant element in the data.
- **Line**: A line chart shows trends in data at equal intervals.
- **Area**: An area chart emphasizes the magnitude of change over time.
- **X Y Scatter**: An xy (scatter) chart shows the relationships among the numeric values in several data series, or plots two groups of numbers as one series of xy coordinates.
- **Stock**: This chart type is most often used for stock price data, but can also be used for scientific data (for example, to indicate temperature changes).
- **Surface**: A surface chart is useful when you want to find the optimum combinations between two sets of data. As in a topographic map, colors and patterns indicate areas that are in the same range of values.

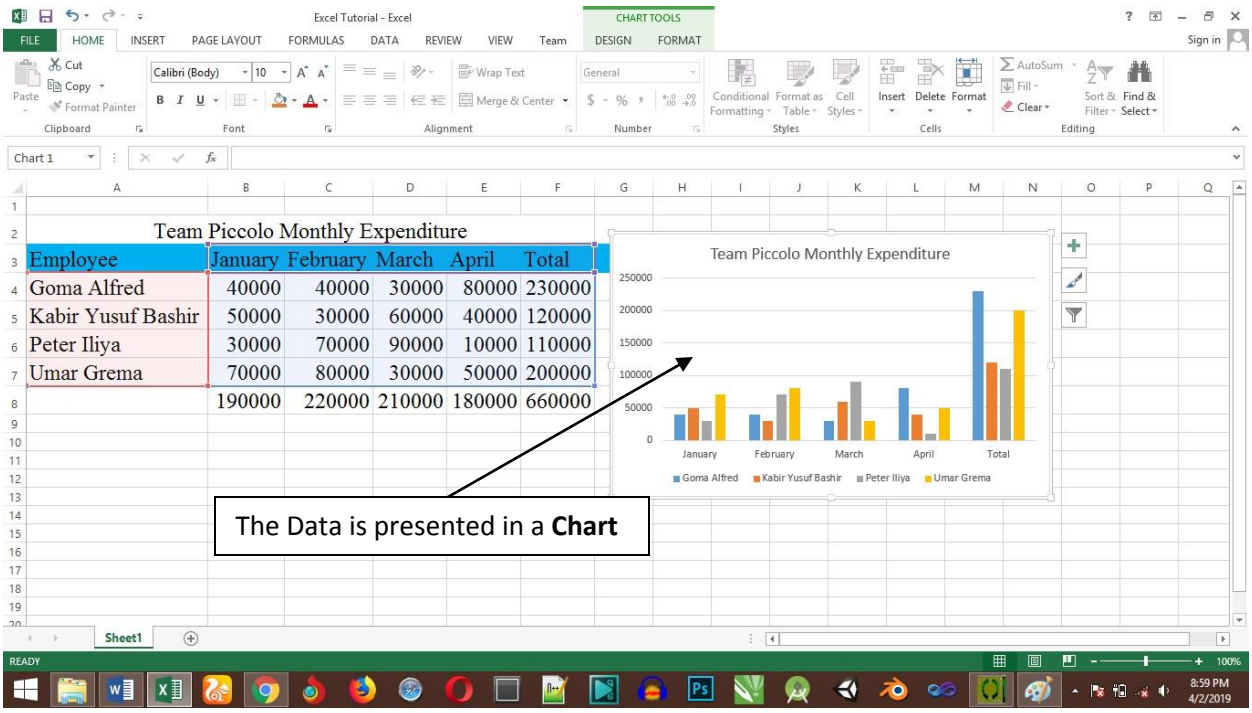
- **Doughnut**: Like a pie chart, a doughnut chart shows the relationship of parts to a whole; however, it can contain more than one data series.
- **Bubble**: Data that is arranged in columns on a worksheet, so that x values are listed in the first column and corresponding y values and bubble size values are listed in adjacent columns, can be plotted in a bubble chart.
- **Radar**: A radar chart compares the aggregate values of a number of data series.

**Creating Chart in Microsoft Excel**

To create charts for the data by below mentioned steps:

- Select the data for which you want to create the chart.
- Choose **Insert Tab » Select the chart or click on the Chart group** to see various chart types.
- Select the chart of your choice and click OK to generate the chart.

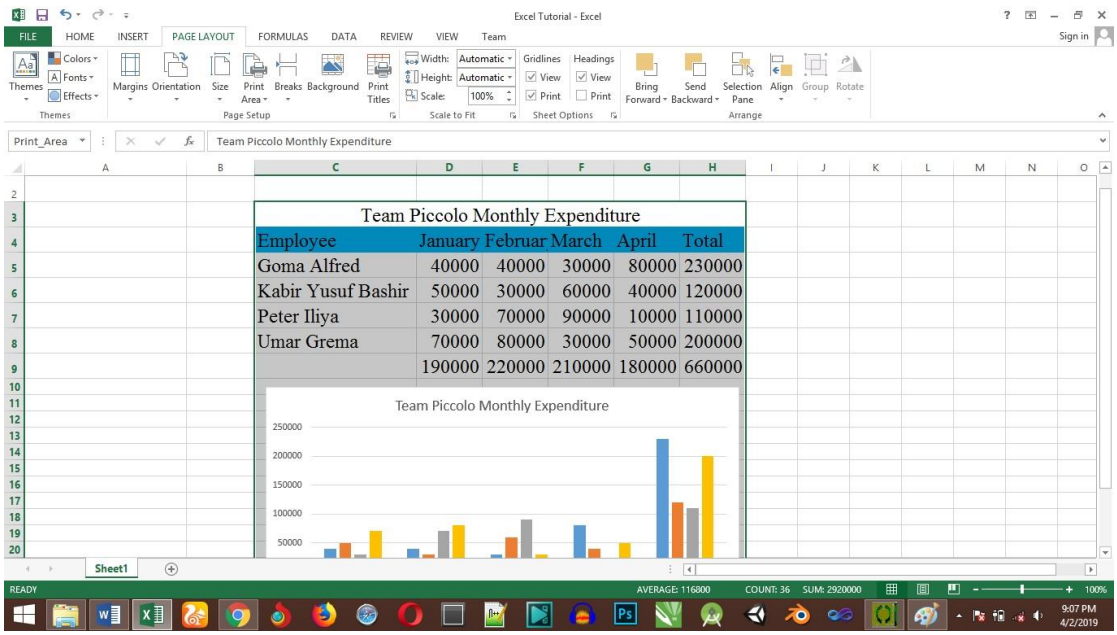




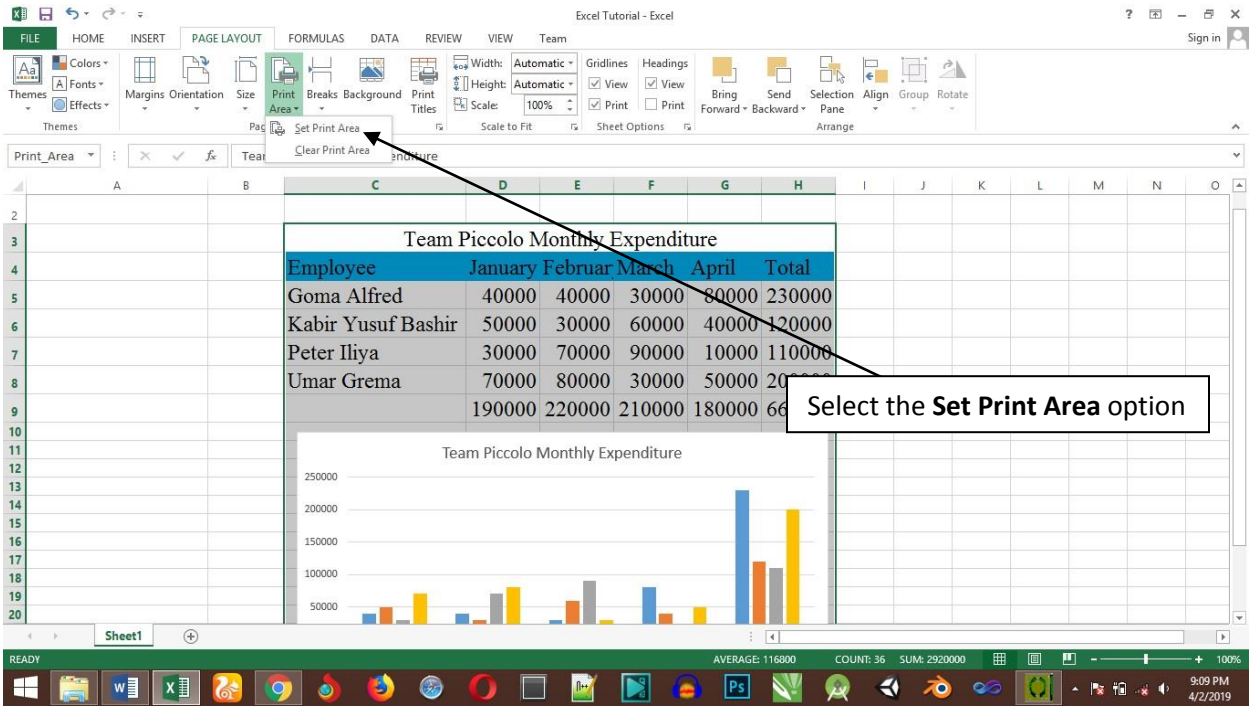

## Printing a Worksheet in Microsoft Excel

Sometimes, you may need to print only a specific part of your worksheet and not the whole worksheet, to print a particular part of your worksheet, follow the steps below:

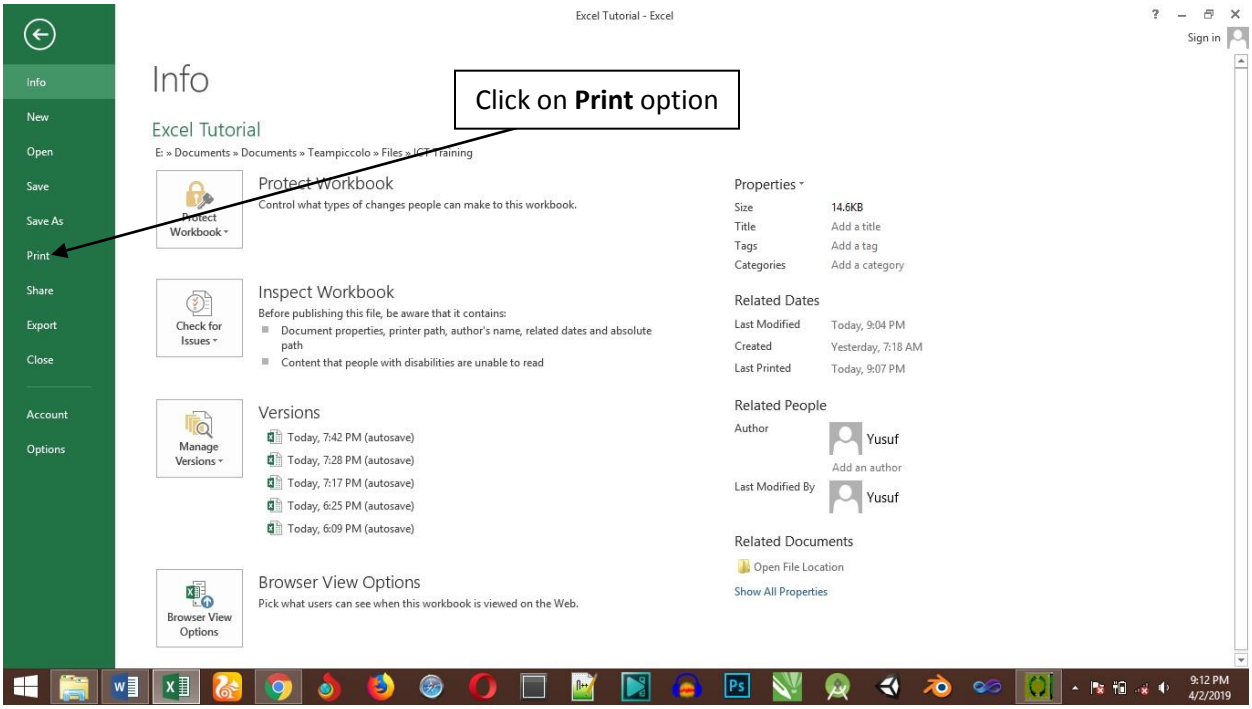
**Step 1:** Select the area you want to print



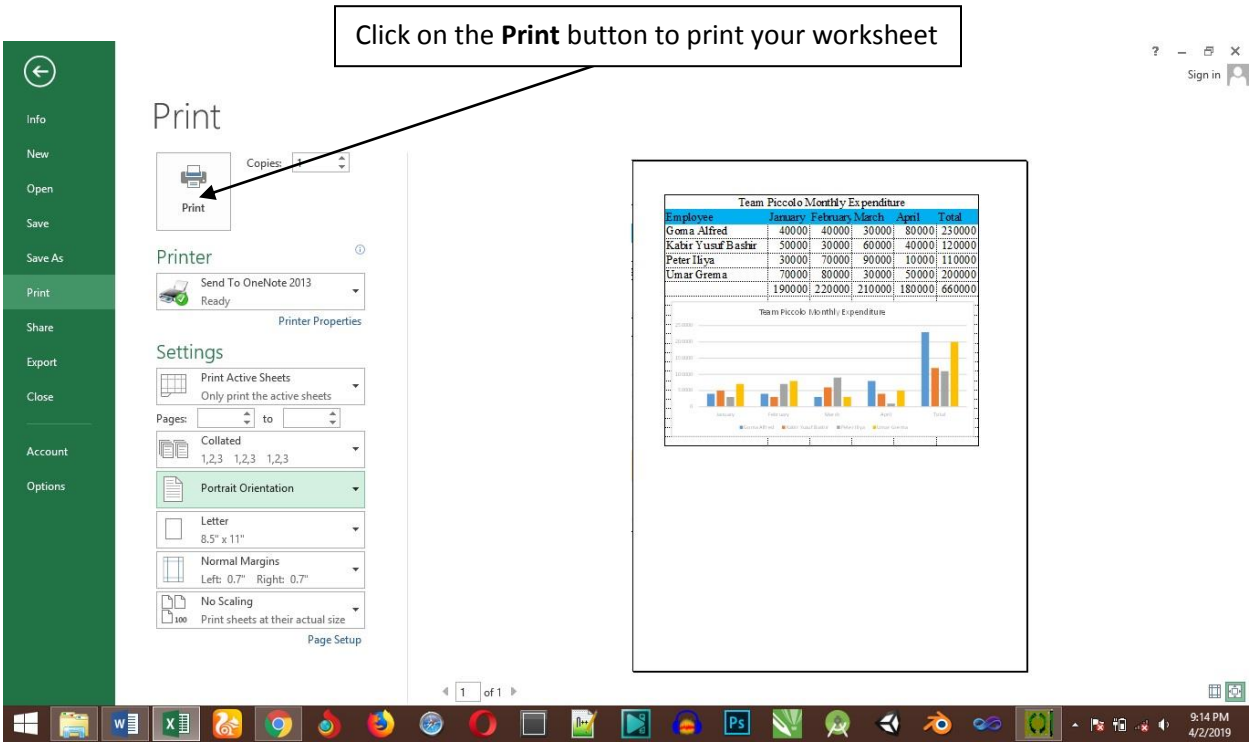
**Step 2:**




**Step 3:** Click on the **file Tab**



**Step 4:**


Click on the **Print** button to print your worksheet
Info
New
Open
Save
Save As
Print
Share
Export
Close
Account
Options
Print
Copies:
Print
Printer
Send To OneNote 2013
Ready
Printer Properties
Settings
Print Active Sheets
Only print the active sheets
Pages:
to
Collated
1,2,3 1,2,3 1,2,3
Portrait Orientation
Letter
8.5" x 11"
Normal Margins
Left: 0.7" Right: 0.7"
No Scaling
Print sheets at their actual size
Page Setup
Sign in
Team Piccolo Monthly Expenditure
Employee January February March April Total
Goma Alfred 40000 40000 30000 80000 230000
Kabir Yusuf Bashir 50000 30000 60000 40000 120000
Peter Iliya 30000 70000 90000 10000 110000
Umar Grema 70000 80000 30000 50000 200000
190000 220000 210000 180000 660000
Team Piccolo Monthly Expenditure
1 of 1
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## References


1. https://www.tutorialspoint.com/excel/
2. https://www.tutorialspoint.com/excel/excel_explore_window.htm
3. https://www.tutorialspoint.com/excel/excel_entering_values.htm
4. https://www.tutorialspoint.com/excel/excel_save_workbook.htm
5. https://www.tutorialspoint.com/excel/excel_create_worksheet.htm
6. https://www.tutorialspoint.com/excel/excel_copy_worksheet.htm
7. https://www.tutorialspoint.com/excel/excel_delete_worksheet.htm
8. https://www.tutorialspoint.com/excel/excel_close_workbook.htm
9. https://www.tutorialspoint.com/excel/excel_insert_data.htm
10. https://www.tutorialspoint.com/excel/excel_select_data.htm
11. https://www.tutorialspoint.com/excel/excel_delete_data.htm
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22. https://www.tutorialspoint.com/excel/excel_sheet_options.htm
23. https://www.tutorialspoint.com/excel/excel_page_orientation.htm
24. https://www.tutorialspoint.com/excel/excel_header_and_footer.htm
25. https://www.tutorialspoint.com/excel/excel_creating_formulas.htm

26. https://www.tutorialspoint.com/excel/excel_copying_formulas.htm
27. https://www.tutorialspoint.com/excel/excel_formula_reference.htm
28. https://www.tutorialspoint.com/excel/excel_using_functions.htm
29. https://www.tutorialspoint.com/excel/excel_bultin_functions.htm
30. https://www.tutorialspoint.com/excel/excel_data_filtering.htm
31. https://www.tutorialspoint.com/excel/excel_data_sorting.htm
32. https://www.tutorialspoint.com/excel/excel_simple_charts.htm

## Microsoft Access

Microsoft Access is a Database Management System (DBMS) from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software development tools. It is a part of the Microsoft Office suite of applications, included in the professional and higher editions. This is an introductory tutorial that covers the basics of MS Access.

Microsoft Access is a Database Management System (DBMS) from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software development tools. It is a member of the Microsoft Office suite of applications, included in the professional and higher editions.

- Microsoft Access is just one part of Microsoft's overall data management product strategy.
- It stores data in its own format based on the Access Jet Database Engine.
- Like relational databases, Microsoft Access also allows you to link related information easily. For example, customer and order data. However, Access 2013 also complements other database products because it has several powerful connectivity features.
- It can also import or link directly to data stored in other applications and databases.
- As its name implies, Access can work directly with data from other sources, including many popular PC database programs, with many SQL (Structured Query Language) databases on the desktop, on servers, on minicomputers, or on mainframes, and with data stored on Internet or intranet web servers.
- Access can also understand and use a wide variety of other data formats, including many other database file structures.
- You can export data to and import data from word processing files, spreadsheets, or database files directly.
- Access can work with most popular databases that support the Open Database Connectivity (ODBC) standard, including SQL Server, Oracle, and DB2.
- Software developers can use Microsoft Access to develop application software.

Microsoft Access stores information which is called a database. To use MS Access, you will need to follow these four steps −

- **Database Creation**: Create your Microsoft Access database and specify what kind of data you will be storing.

- **Data Input**: After your database is created, the data of every business day can be entered into the Access database.
- **Query**: This is a fancy term to basically describe the process of retrieving information from the database.
- **Report** (optional): Information from the database is organized in a nice presentation that can be printed in an Access Report.

## Microsoft Access Architecture

- Access calls anything that can have a name an object. Within an Access desktop database, the main objects are tables, queries, forms, reports, macros, data macros, and modules.
- If you have worked with other database systems on desktop computers, you might have seen the term database used to refer to only those files in which you store data.
- But, in Access, a desktop database (.accdb) also includes all the major objects related to the stored data, including objects you define to automate the use of your data.

Microsoft Access has the look and feel of other Microsoft Office products as far as its layout and navigational aspects are concerned, but MS Access is a database and, more specifically, a relational database.

- Before MS Access 2007, the file extension was ***.mdb**, but in MS Access 2007 the extension has been changed to ***.accdb** extension.
- Early versions of Access cannot read accdb extensions but MS Access 2007 and later versions can read and change earlier versions of Access.
- An Access desktop database (.accdb or .mdb) is a fully functional RDBMS.
- It provides all the data definition, data manipulation, and data control features that you need to manage large volumes of data.
- You can use an Access desktop database (.accdb or .mdb) either as a standalone RDBMS on a single workstation or in a shared client/server mode across a network.
- A desktop database can also act as the data source for data displayed on webpages on your company intranet.
- When you build an application with an Access desktop database, Access is the RDBMS.

## Data Definition

Let us now understand what Data Definition is −

- In document or a spreadsheet, you generally have complete freedom to define the contents of the document or each cell in the spreadsheet.
- In a document, you can include paragraphs of text, a table, a chart, or multiple columns of data displayed with multiple fonts.
- In spreadsheet, you can have text data at the top to define a column header for printing or display, and you might have various numeric formats within the same column, depending on the function of the row.
- An RDBMS allows you to define the kind of data you have and how the data should be stored.
- You can also usually define rules that the RDBMS can use to ensure the integrity of your data.
- For example, a validation rule might ensure that the user can't accidentally store alphabetic characters in a field that should contain a number.

## Data Manipulation

Working with data in RDBMS is very different from working with data in a word processing or spreadsheet program.

- In a word processing document, you can include tabular data and perform a limited set of functions on the data in the document.
- You can also search for text strings in the original document and, with ActiveX controls, include tables, charts, or pictures from other applications.
- In a spreadsheet, some cells contain functions that determine the result you want, and in other cells, you enter the data that provides the source information for the functions.

  An RDBMS provides you many ways to work with your data. For example,

- You can search a single table for information or request a complex search across several related tables.
- You can update a single field or many records with a single command.
- You can write programs that use RDBMS commands to fetch data that you want to display and allow the user to update the data.

Access uses the powerful SQL database language to process data in your tables. Using SQL, you can define the set of information that you need to solve a particular problem, including data from perhaps many tables.

## Data Control

Spreadsheets and word processing documents are great for solving single-user problems, but they are difficult to use when more than one person needs to share the data.

- When you need to share your information with others, RDBMS gives you the flexibility to allow multiple users to read or update your data.
- An RDBMS that is designed to allow data sharing also provides features to ensure that no two people can change the same data at the same time.
- The best systems also allow you to group changes (which is also known as transaction) so that either all the changes or none of the changes appear in your data.
- You might also want to be sure that no one else can view any part of the order until you have entered all of it.
- Because you can share your Access data with other users, you might need to set some restrictions on what various users are allowed to see or update.

## Microsoft Access Objects

MS Access uses “objects" to help the user list and organize information, as well as prepare specially designed reports. When you create a database, Access offers you Tables, Queries, Forms, Reports, Macros, and Modules. Databases in Access are composed of many objects but the following are the major objects −

- Tables
- Queries
- Forms
- Reports

Together, these objects allow you to enter, store, analyze, and compile your data. Here is a summary of the major objects in an Access database;

**Tables**

Table is an object that is used to define and store data. When you create a new table, Access asks you to define fields which is also known as column headings.

- Each field must have a unique name, and data type.

- Tables contain fields or columns that store different kinds of data, such as a name or an address, and records or rows that collect all the information about a particular instance of the subject, such as all the information about a customer or employee etc.
- You can define a primary key, one or more fields that have a unique value for each record, and one or more indexes on each table to help retrieve your data more quickly.

**Query**

An object that provides a custom view of data from one or more tables. Queries are a way of searching for and compiling data from one or more tables.

- Running a query is like asking a detailed question of your database.
- When you build a query in Access, you are defining specific search conditions to find exactly the data you want.
- In Access, you can use the graphical query by example facility or you can write Structured Query Language (SQL) statements to create your queries.
- You can define queries to Select, Update, Insert, or Delete data.
- You can also define queries that create new tables from data in one or more existing tables.

**Form**

**Form** is an object in a desktop database designed primarily for data input or display or for control of application execution. You use forms to customize the presentation of data that your application extracts from queries or tables.

- Forms are used for entering, modifying, and viewing records.
- The reason forms are used so often is that they are an easy way to guide people toward entering data correctly.
- When you enter information into a form in Access, the data goes exactly where the database designer wants it to go in one or more related tables.

**Report**

Report is an object in desktop databases designed for formatting, calculating, printing, and summarizing selected data.

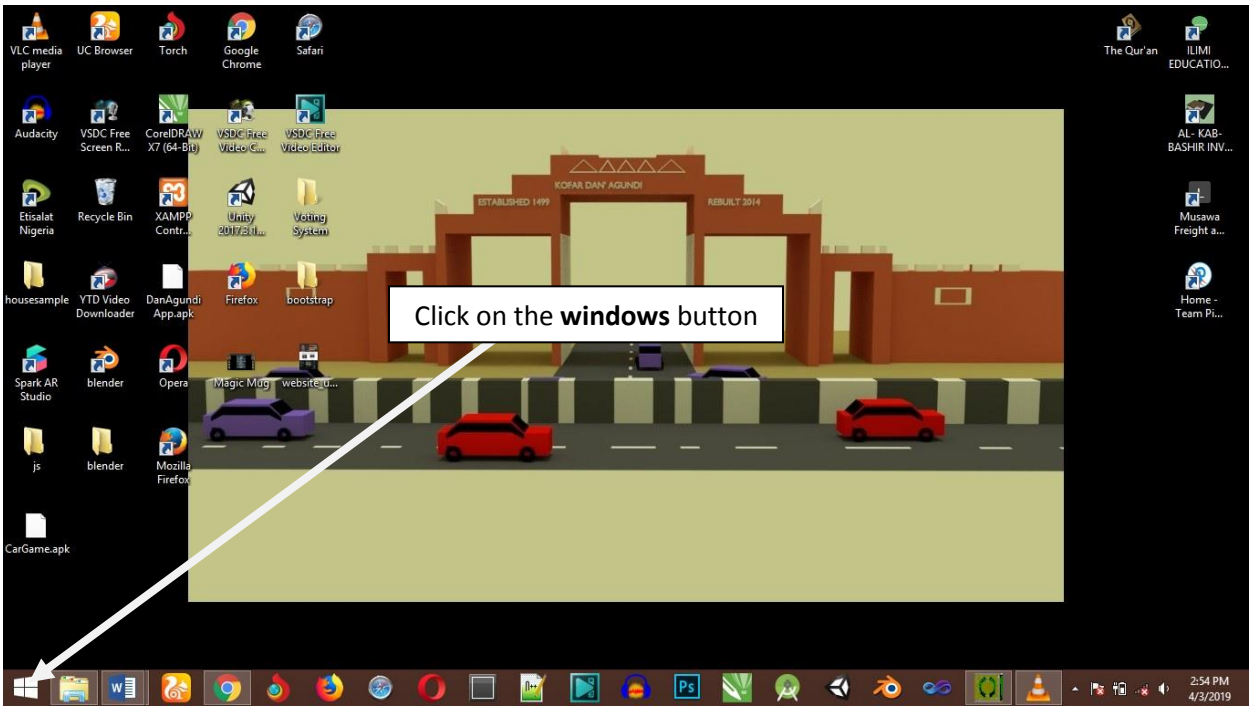
- You can view a report on your screen before you print it.
- If forms are for input purposes, then reports are for output.

- Anything you plan to print deserves a report, whether it is a list of names and addresses, a financial summary for a period, or a set of mailing labels.
- Reports are useful because they allow you to present components of your database in an easy-to-read format.
- You can even customize a report's appearance to make it visually appealing.
- Access offers you the ability to create a report from any table or query.

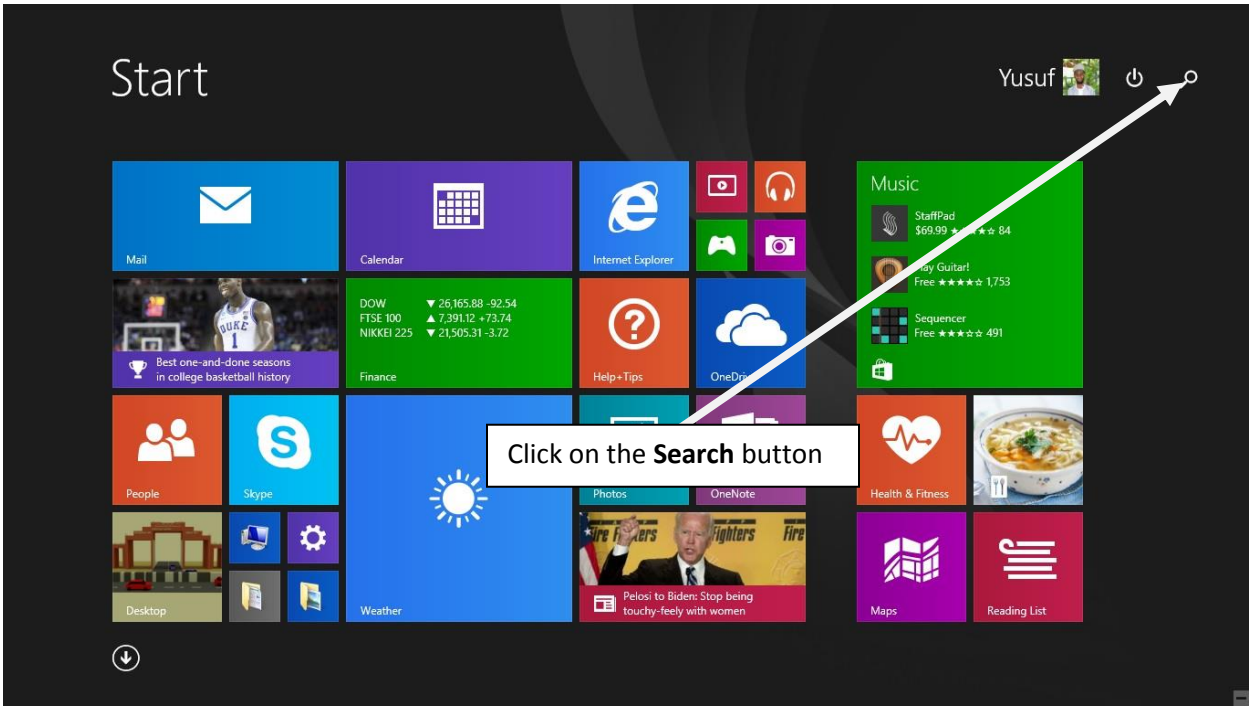
## Getting Started with Microsoft Access

In this section, we will discuss how to get started with **Microsoft Access**. We will understand how to start a **Microsoft Access** application in simple steps. Assuming you have **Microsoft Excel** installed in your PC, to start the application, follow these steps –

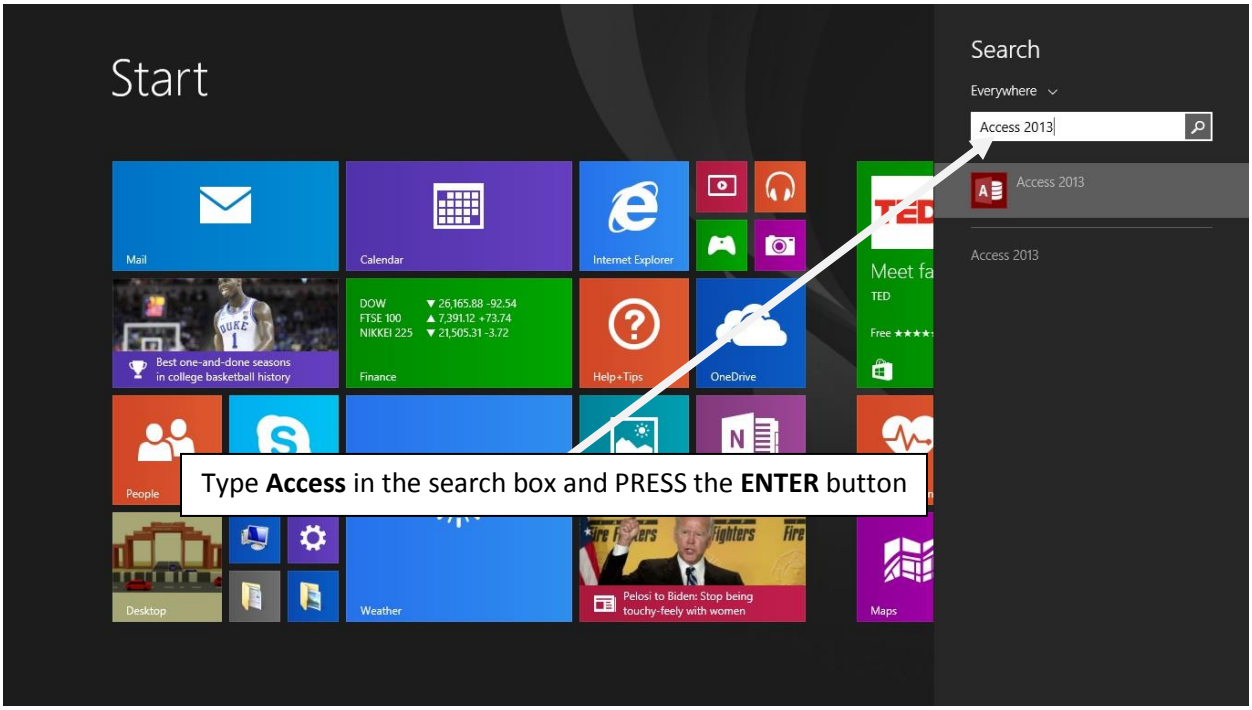
**Step 1:**



**Step 2:**

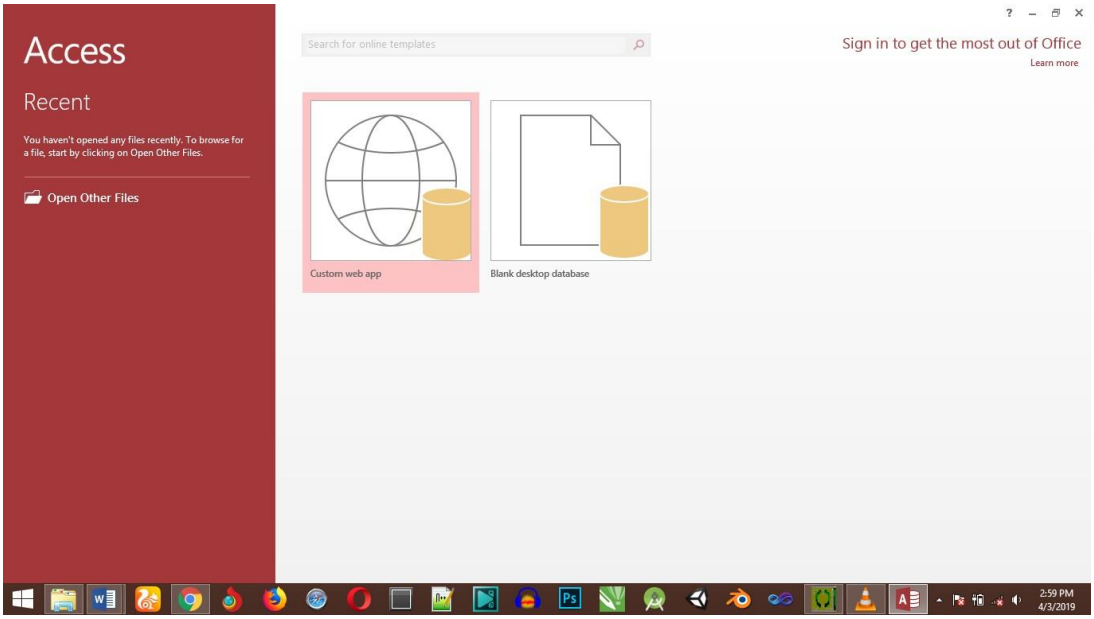



**Step 3:**




**NB: I have installed Microsoft Access 2013 on my PC, the procedure will work on both later and earlier version of Microsoft Access.**

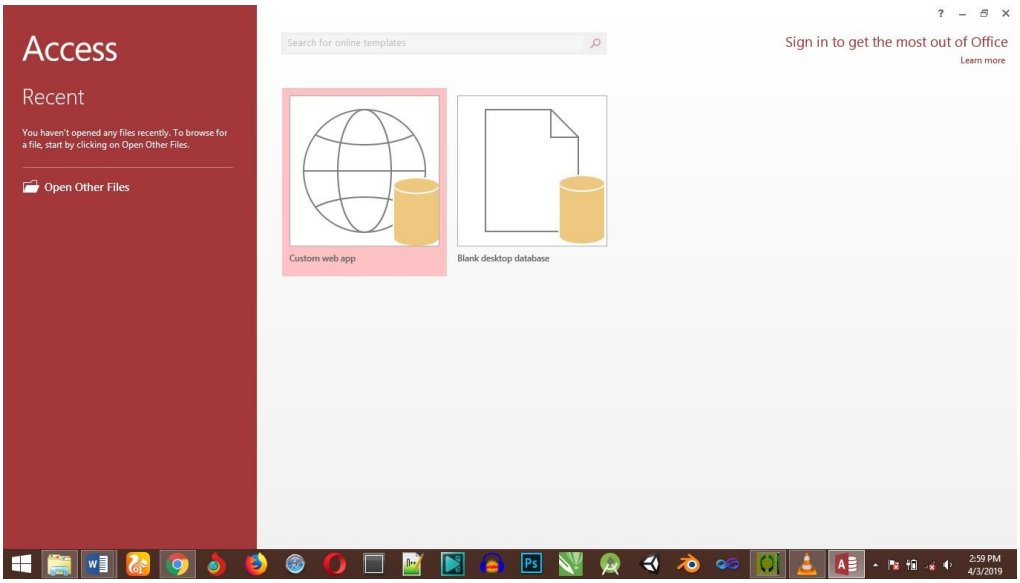
**Step 4:** We have successfully opened Microsoft Access.



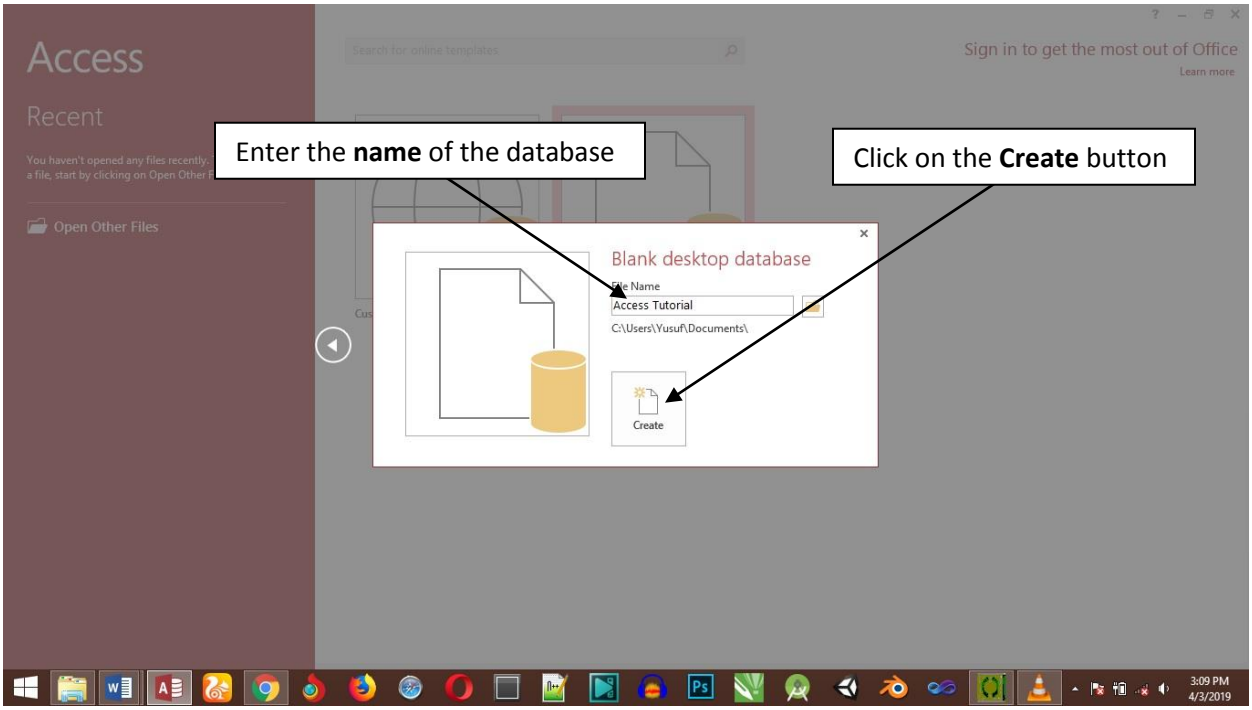

## Microsoft Access - Create Database

You can search for database templates online but sometimes editing a database template to suit your requirement maybe hectic compare to creating a database from scratch. To create a Database in Microsoft Access, follow the steps below:

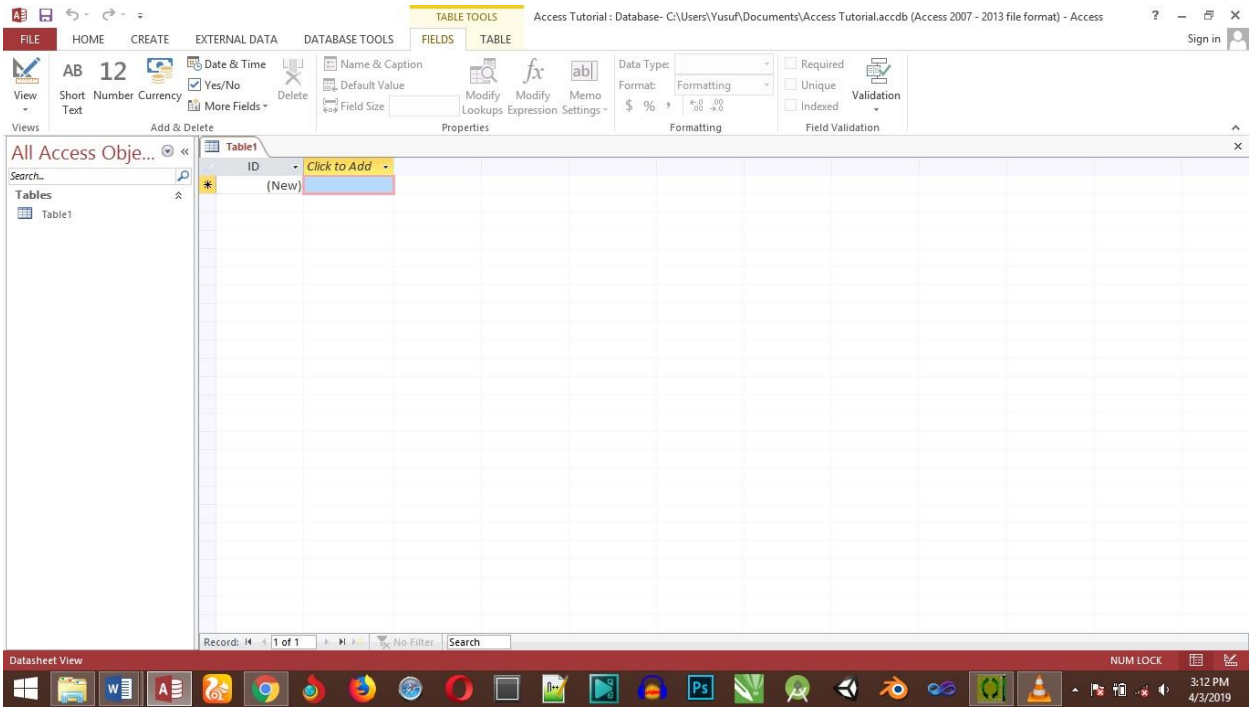
**Step 1:** Start by opening Microsoft Access.



**Step 2:** Select Blank desktop database. Enter the name and click the Create button.




**Step 3**: Access will create a new blank database and will open up the table which is also completely blank.



## Microsoft Access – Data Types

Every field in a table has properties and these properties define the field's characteristics and behavior. The most important property for a field is its data type. A field's data type determines what kind of data it can store. MS Access supports different types of data, each with a specific purpose.

- The data type determines the kind of the values that users can store in any given field.
- Each field can store data consisting of only a single data type.

Here are some of the most common data types you will find used in a typical Microsoft Access database.

| Type of Data | Description | Size |
|---|---|---|
| Short Text | Text or combinations of text and numbers, including numbers that do not require calculating (e.g. phone numbers). | Up to 255 characters. |
| Long Text | Lengthy text or combinations of text and numbers. | Up to 63, 999 characters. |
| Number | Numeric data used in mathematical calculations. | 1, 2, 4, or 8 bytes (16 bytes if set to Replication ID). |
| Date/Time | Date and time values for the years 100 through 9999. | 8 bytes |
| Currency | Currency values and numeric data used in mathematical calculations involving data with one to four decimal places. | 8 bytes |

| | | |
|---|---|---|
| AutoNumber | A unique sequential (incremented by 1) number or random number assigned by Microsoft Access whenever a new record is added to a table. | 4 bytes (16 bytes if set to Replication ID). |
| Yes/No | Yes and No values and fields that contain only one of two values (Yes/No, True/False, or On/Off). | 1 bit. |

- If you use previous versions of Access, you will notice a difference for two of those data types.
- In Access 2013, we now have two data types — short text and long text. In previous versions of Access these data types were called text and memo.
- The text field is referred to as short text and your memo field is now called long text.

Here are some of the other more specialized data types, you can choose from in Access.

| Data Types | Description | Size |
|---|---|---|
| Attachment | Files, such as digital photos. Multiple files can be attached per record. This data type is not available in earlier versions of Access. | Up to about 2 GB. |
| OLE objects | OLE objects can store pictures, audio, video, or other BLOBs (Binary Large Objects) | Up to about 2 GB. |
| Hyperlink | Text or combinations of text and numbers stored as text and used as a hyperlink address. | Up to 8,192 (each part of a Hyperlink data type can contain up to 2048 characters). |
| Lookup Wizard | The Lookup Wizard entry in the Data Type column in the Design view is not actually a data type. When you | Dependent on the data type of the lookup field. |

| | | |
|---|---|---|
| | choose this entry, a wizard starts to help you define either a simple or complex lookup field.<br><br>A simple lookup field uses the contents of another table or a value list to validate the contents of a single value per row. A complex lookup field allows you to store multiple values of the same data type in each row. | |
| Calculated | You can create an expression that uses data from one or more fields. You can designate different result data types from the expression. | You can create an expression that uses data from one or more fields. You can designate different result data types from the expression. |

These are all the different data types that you can choose from when creating fields in a Microsoft Access table.

## Microsoft Access – Create Tables

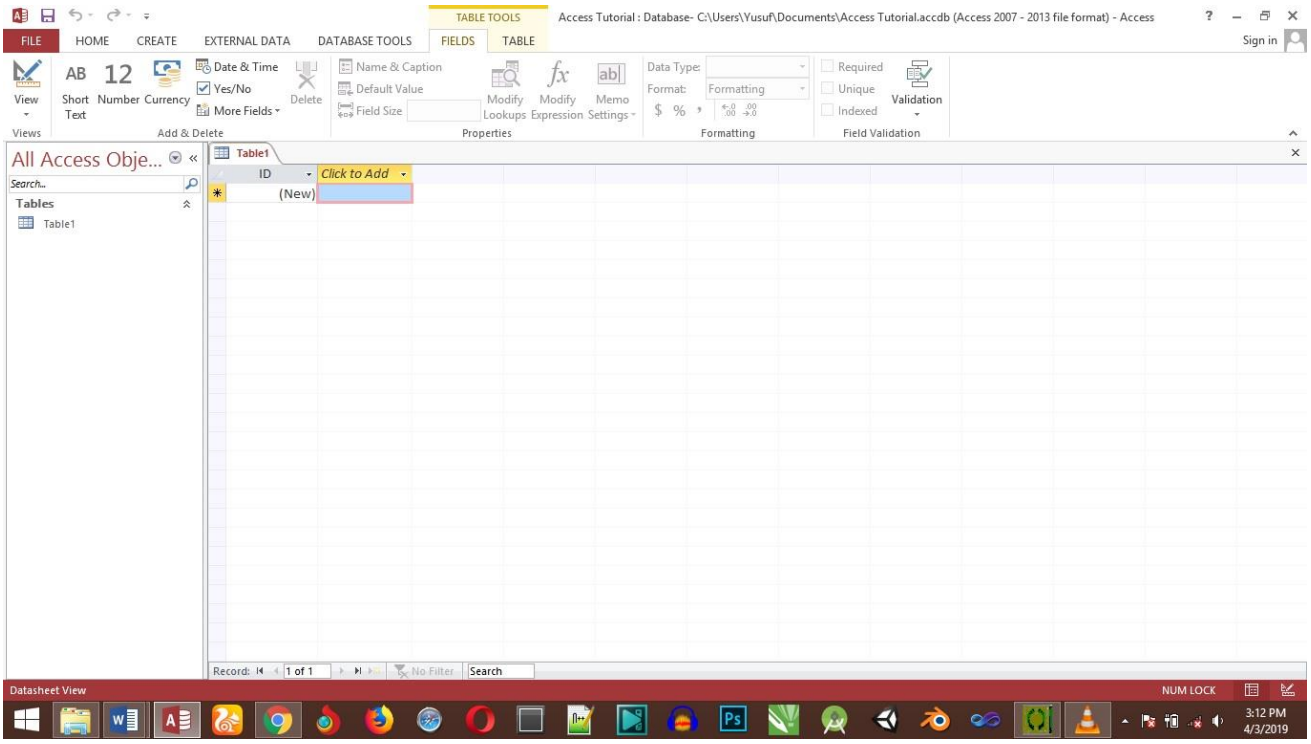
When you create a database, you store your data in tables. Because other database objects depend so heavily on tables, you should always start your design of a database by creating all of its tables and then creating any other object. Before you create tables, carefully consider your requirements and determine all the tables that you need.

Let us try and create the first table that will store the basic contact information concerning the employees in Team Piccolo as shown in the following table −

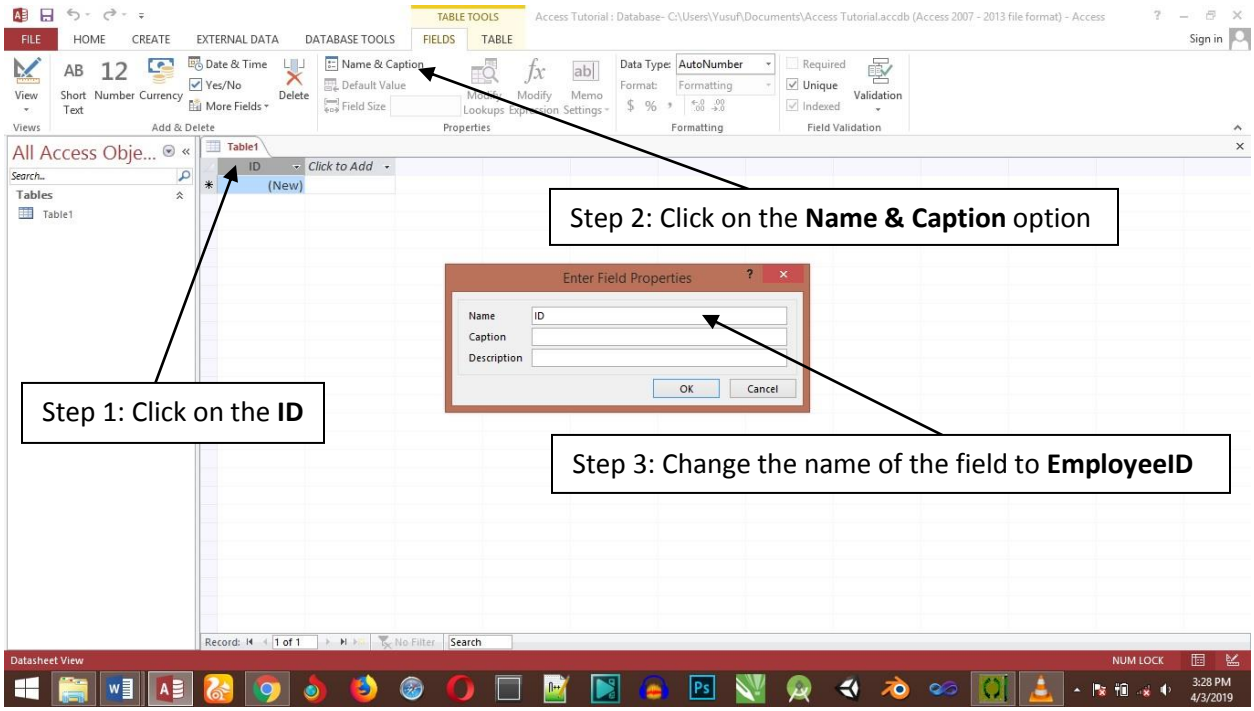
| Field Name | Data Type |
|---|---|
| EmployeeID | AutoNumber |
| FirstName | Short Text |
| LastName | Short Text |

| | |
|---|---|
| Address | Short Text |
| City | Short Text |
| State | Short Text |
| Phone | Short Text |

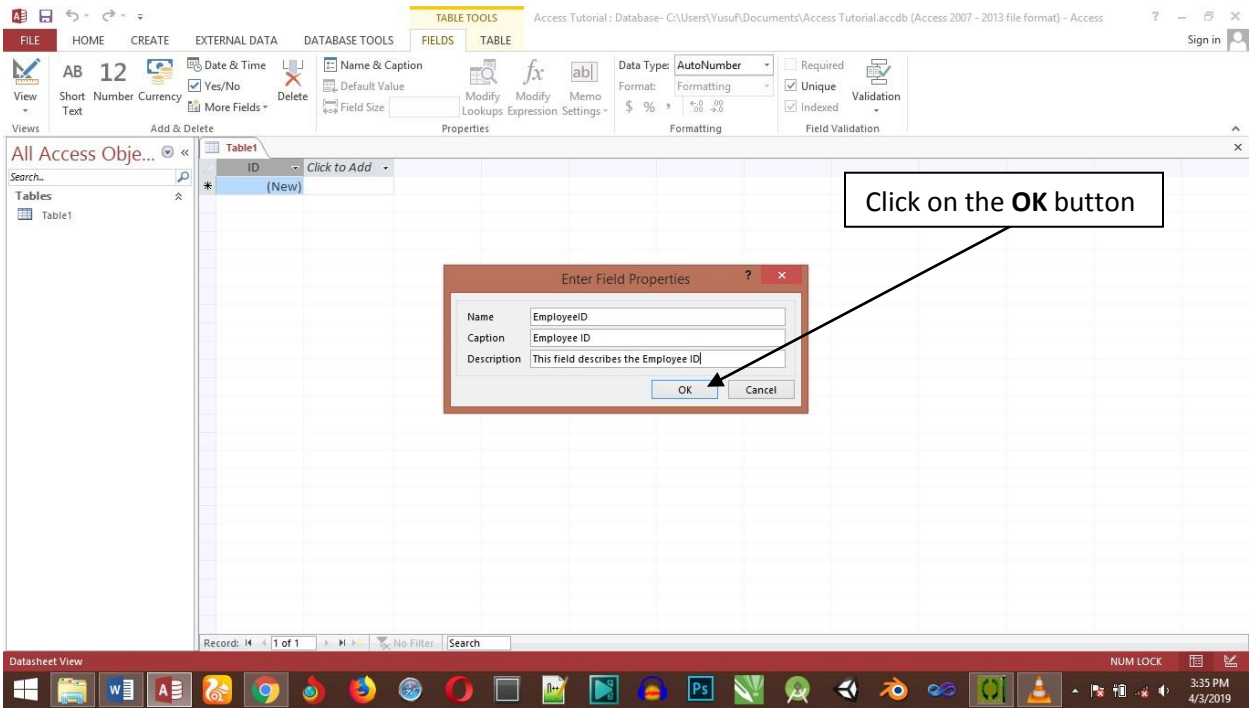
**Step 1:** Open the database we created earlier.



**Step 2:** Let us now go to the **Field tab** and you will see that it is also automatically created. The **ID** which is an AutoNumber field acts as our unique identifier and is the **primary key** for this table. The ID field has already been created and we now want to rename it to suit our conditions. This is an Employee table and this will be the unique identifier for our employees. **Click on ID field.**

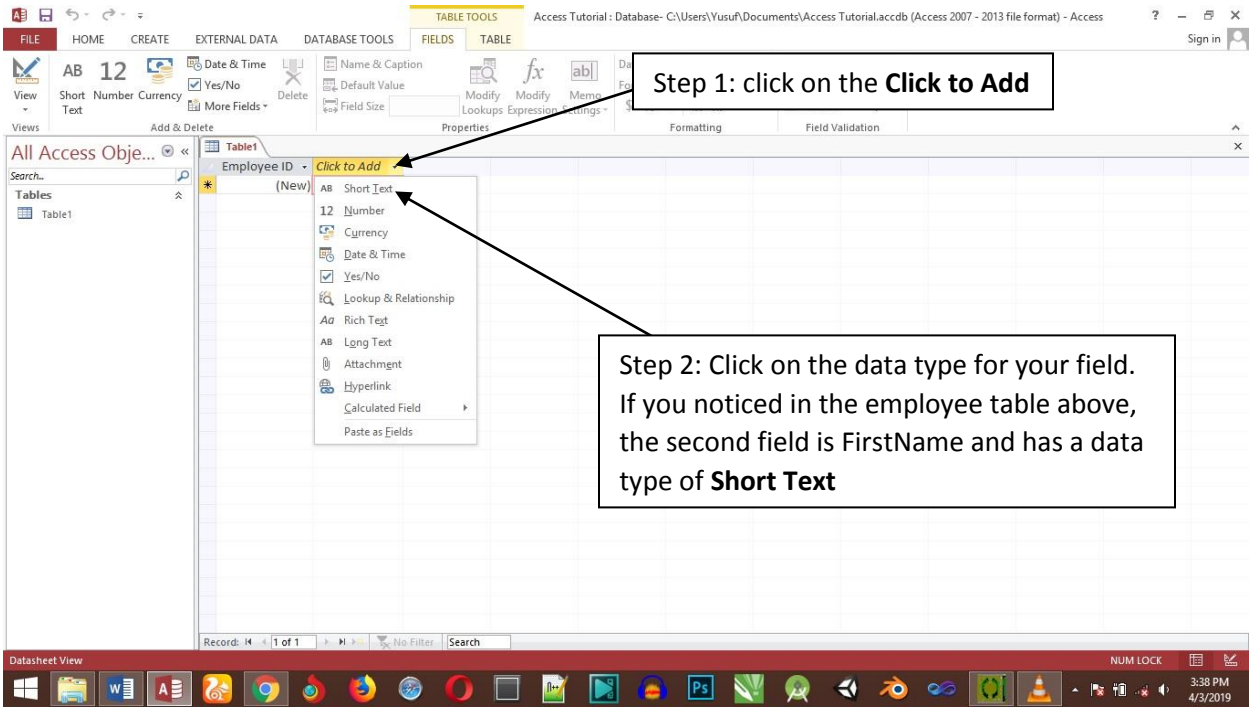


**Step 3:**

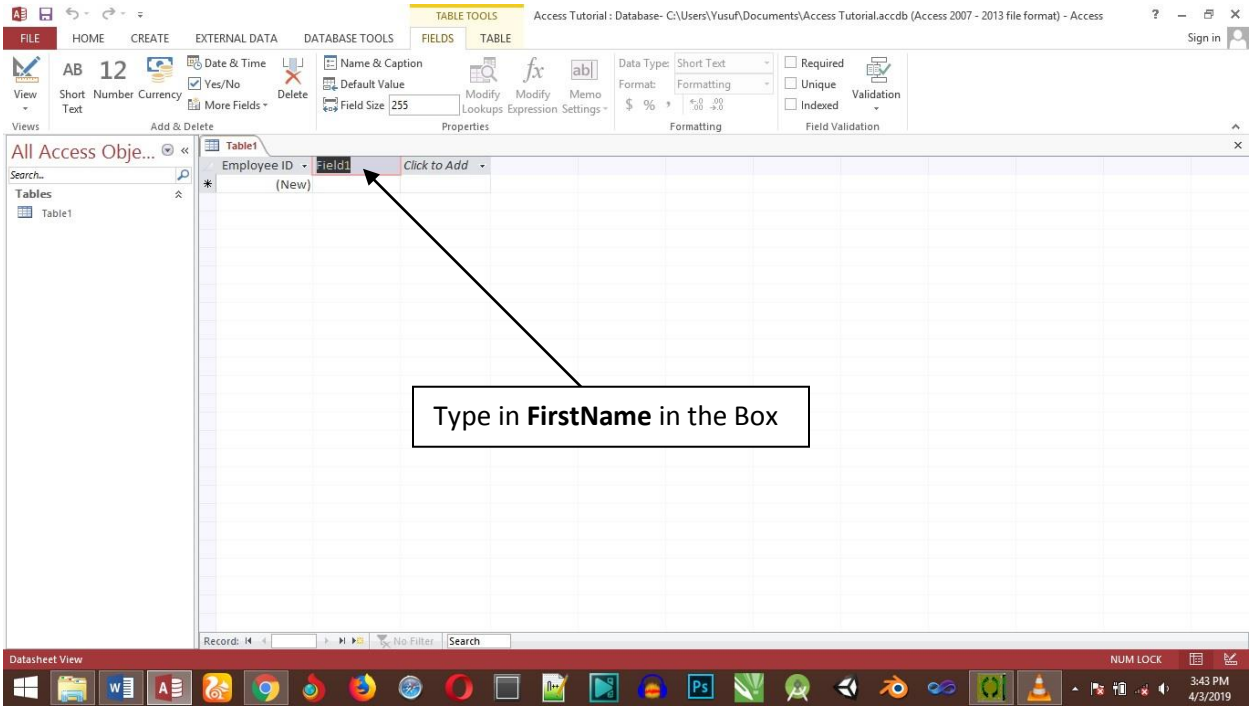



We now have our employee ID field with the caption Employee ID. This is automatically set to auto number so we don't really need to change the data type.

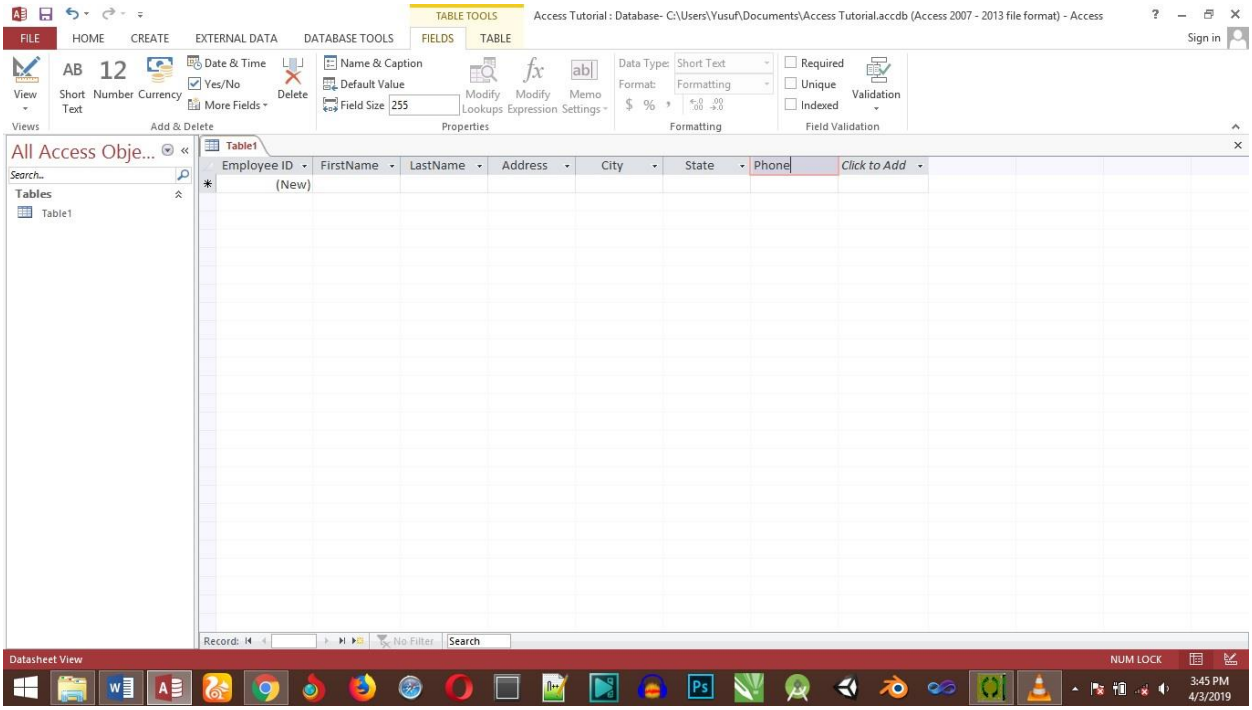
**Step 4:** Let us now add the rest of the **fields** by clicking on **click to add**.



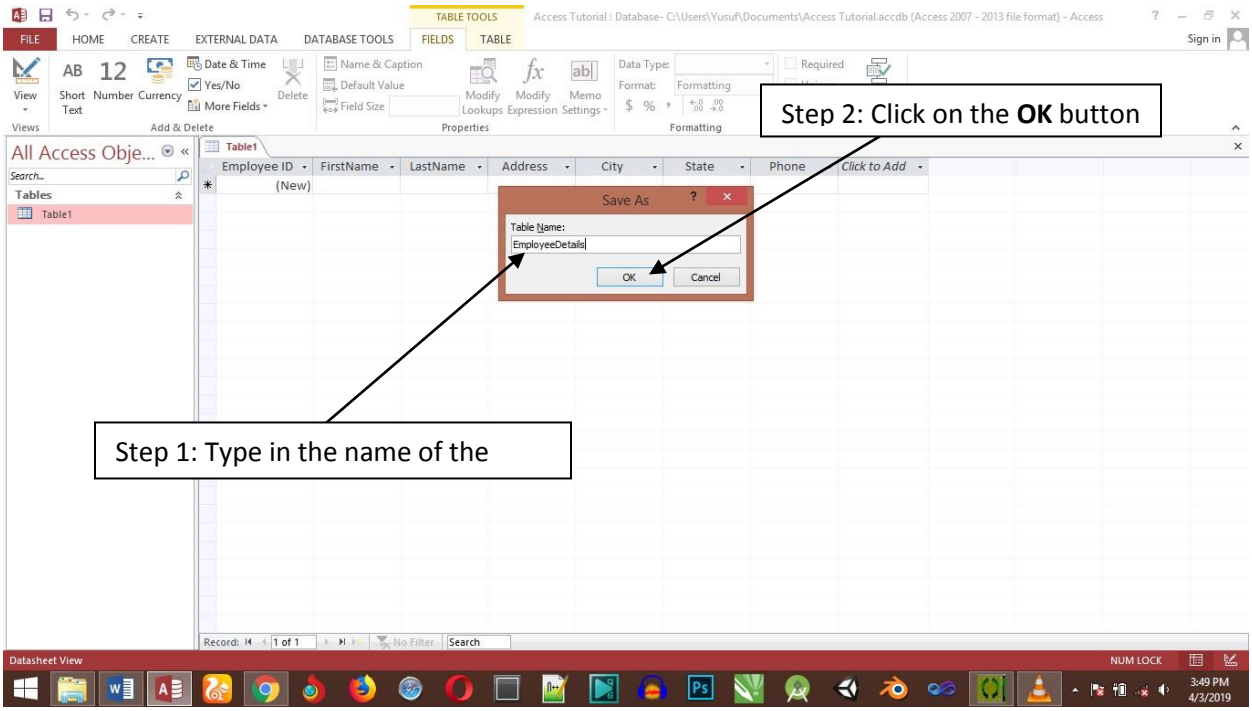
**Step 5:**



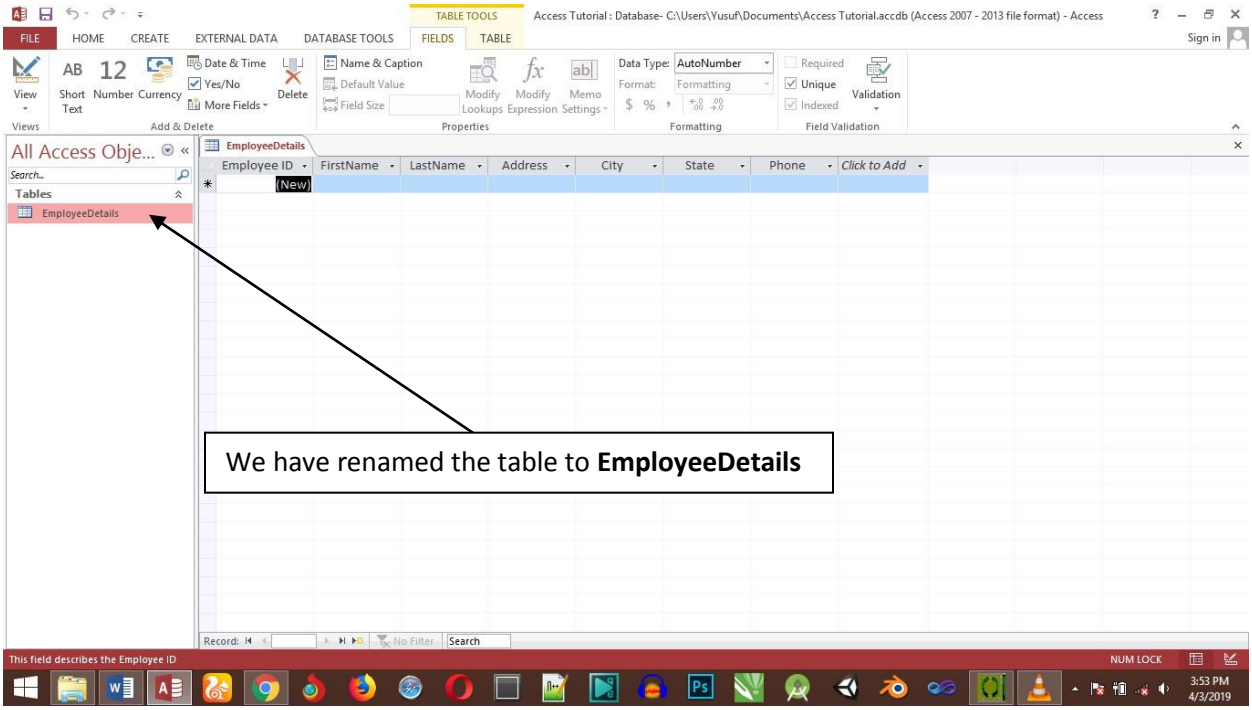

**Step 6:** Follow the procedures from step 4 to step 5 to create the rest of the fields.



**Step 7:** After you have created all the fields, hold the **CTRL + S** button on your keyboard to save your table.



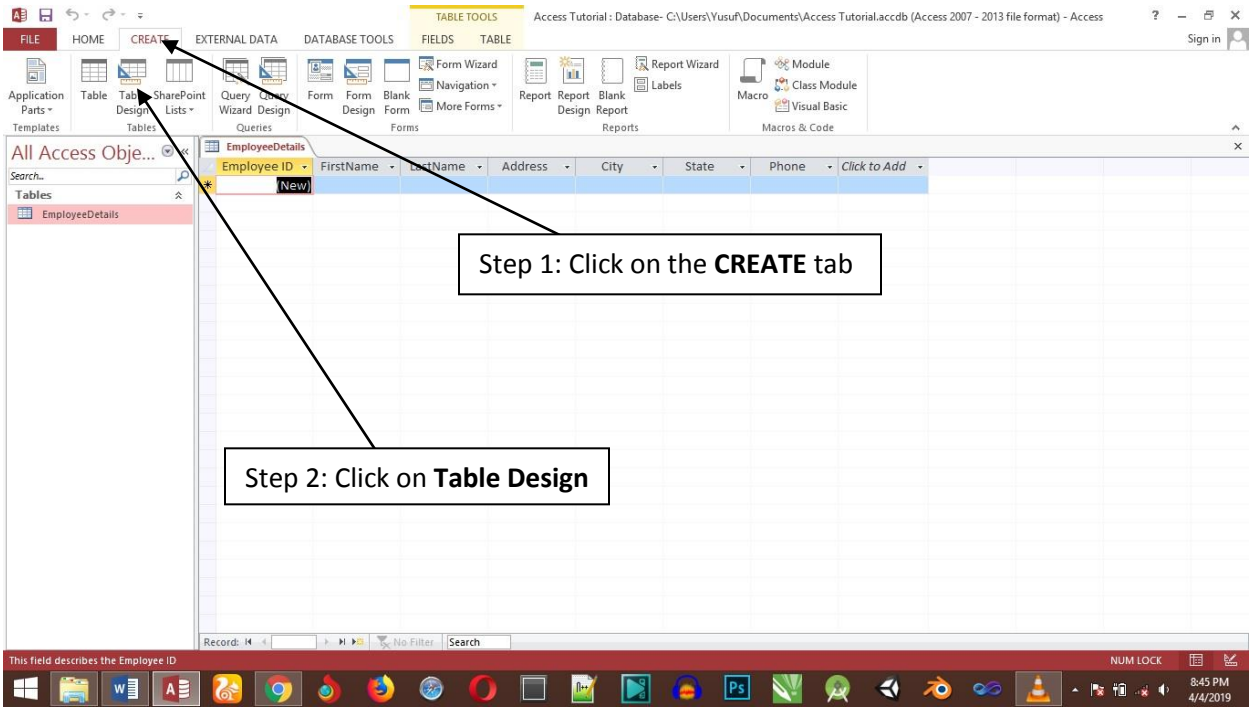

**Step 8:**



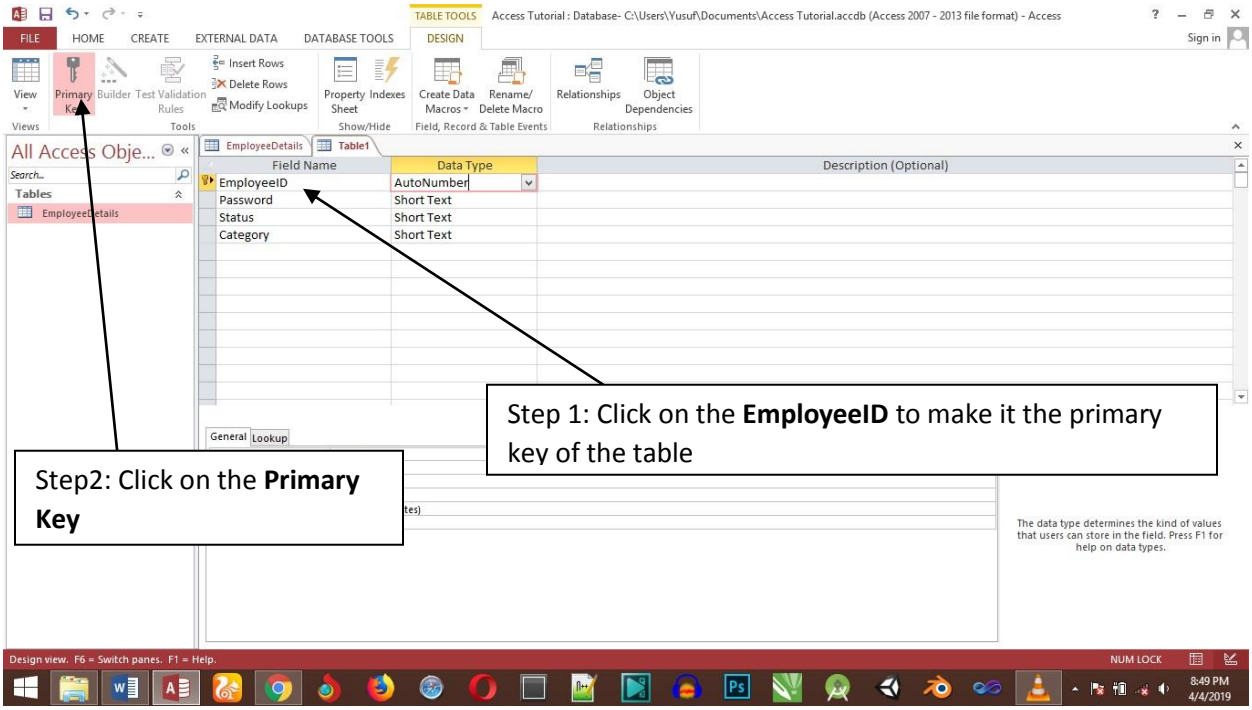
As we have already created one table using **Datasheet View**. We will now create another table using the **Table Design View**. We will be creating the following fields in this table. This table will store the **employee login details**.

| Field Name | Data Type |
|---|---|
| EmployeeID | AutoNumber |
| Password | Short Text |
| Status | Short Text |
| Category | Short Text |

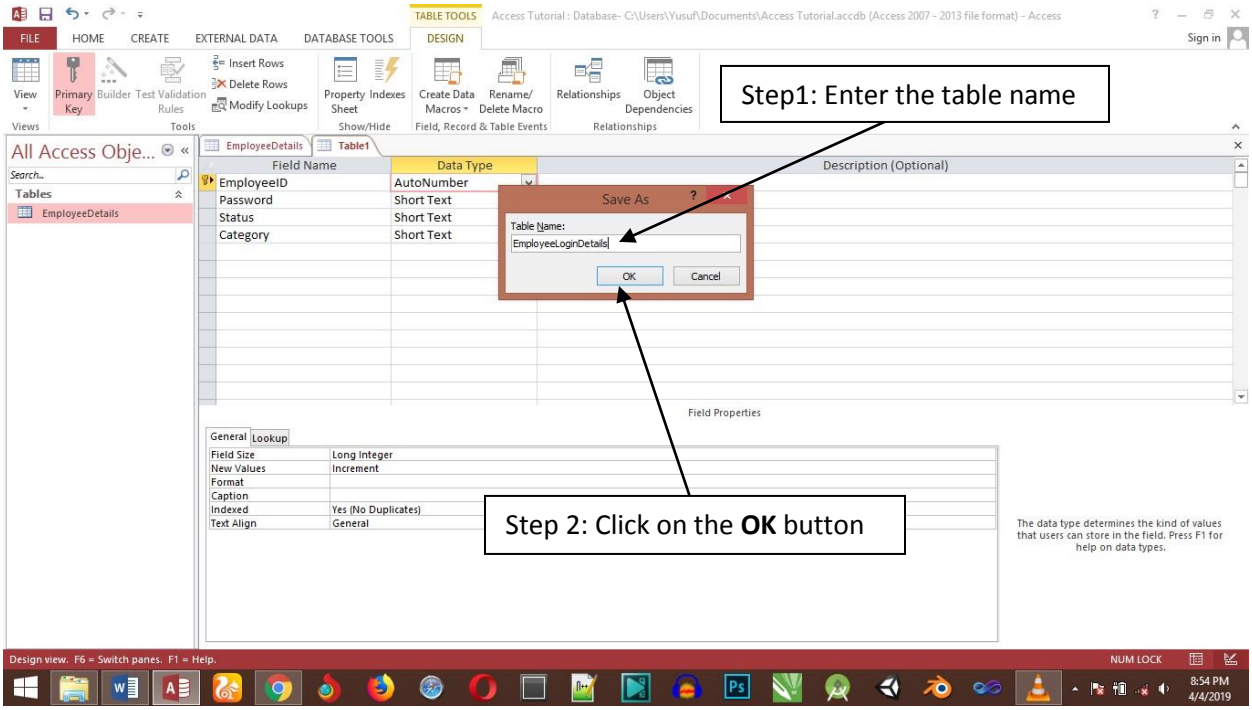
**Step 1:**



**Step 2:** Create your fields as in the screenshot below:




**Step 3:** Save the table by holding the **CNTRL + S** buttons on your keyboard.



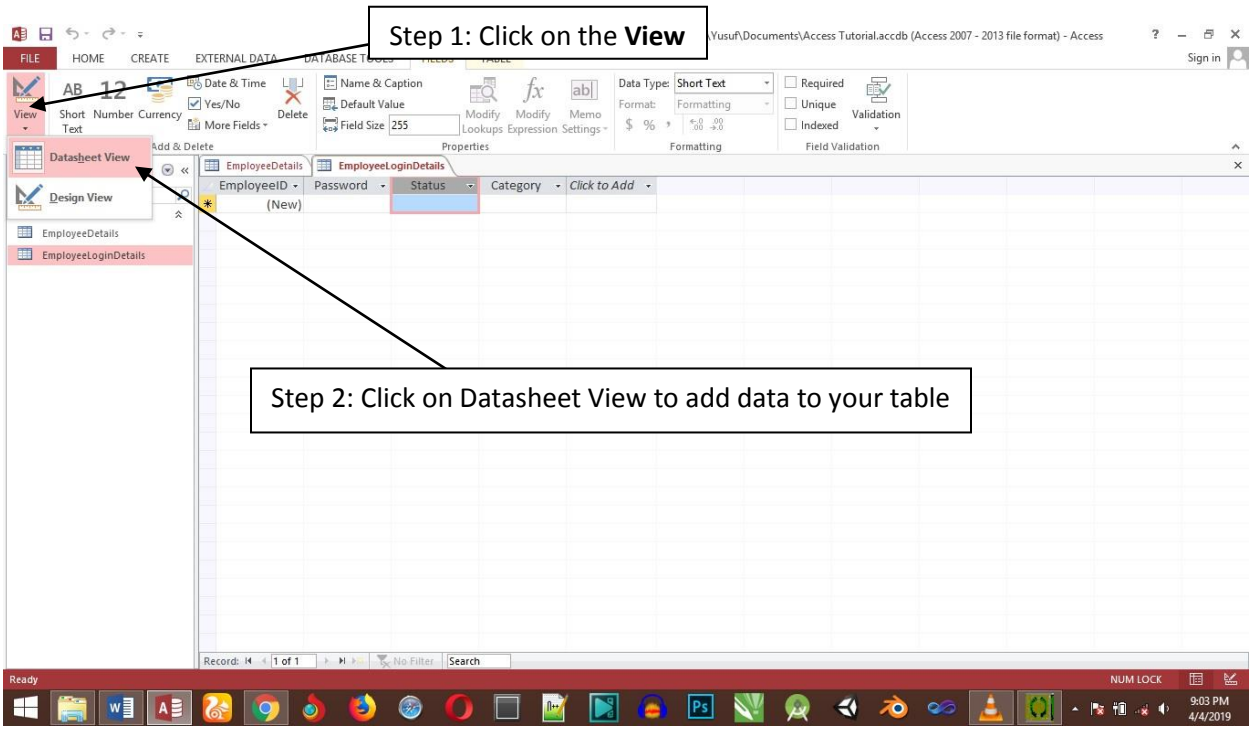
## Microsoft Access - Adding Data

An Access database is not a file in the same sense as a Microsoft Office Word document or a Microsoft Office PowerPoint are. Instead, an Access database is a collection of objects like tables, forms, reports, queries etc. that must work together for a database to function properly. We have now created two tables with all of the fields and field properties necessary in our database. To view, change, insert, or delete data in a table within Access, you can use the table's Datasheet View.

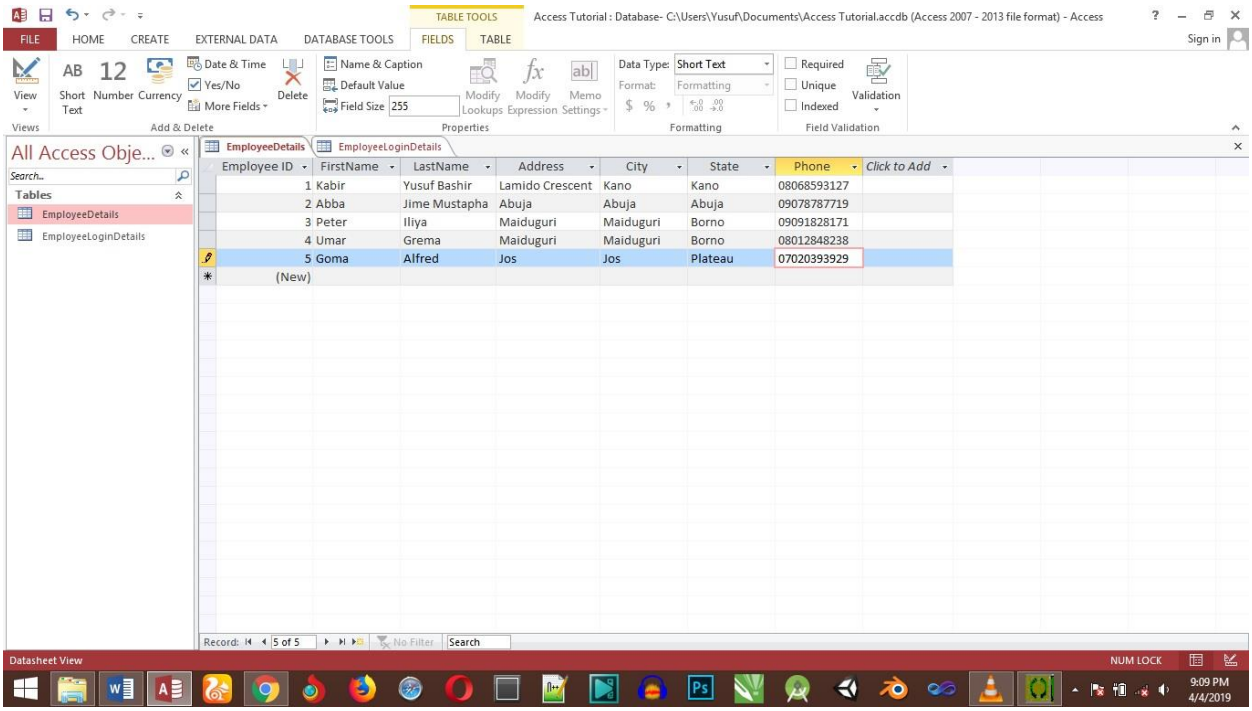
- A datasheet is a simple way to look at your data in rows and columns without any special formatting.
- Whenever you create a new web table, Access automatically creates two views that you can start using immediately for data entry.
- A table open in Datasheet View resembles an Excel worksheet, and you can type or paste data into one or more fields.
- You do not need to explicitly save your data. Access commits your changes to the table when you move the cursor to a new field in the same row, or when you move the cursor to another row.
- By default, the fields in an Access database are set to accept a specific type of data, such as text or numbers. You must enter the type of data that the field is set to accept. If you don't, Access displays an error message −

Let us add some data into the tables we have created.

**Step 1:**




**Step 2:** Add some data to your tables.

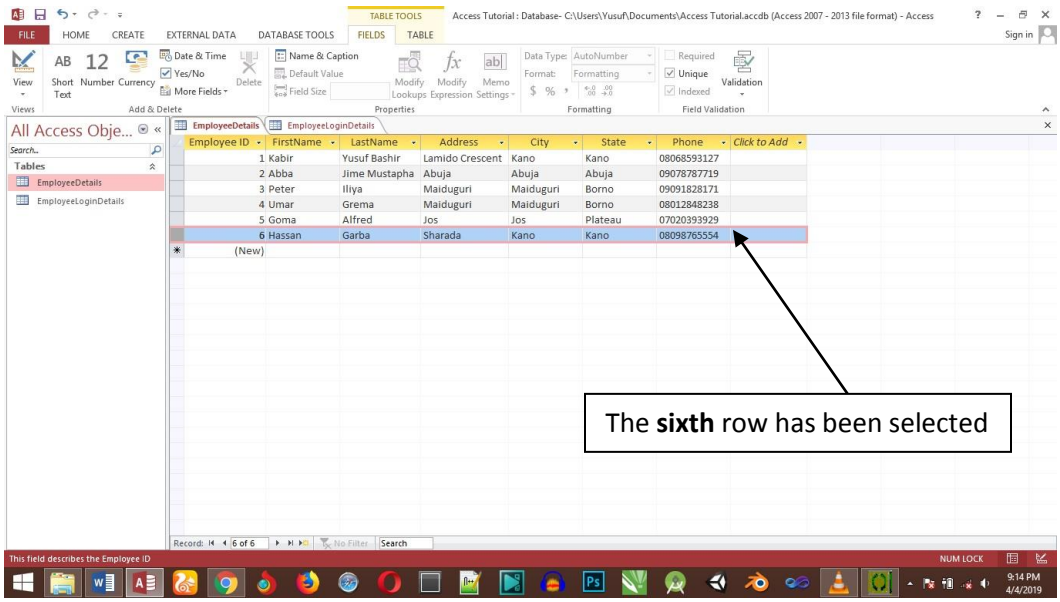


| Employee ID | FirstName | LastName | Address | City | State | Phone |
|---|---|---|---|---|---|---|
| 1 | Kabir | Yusuf Bashir | Lamido Crescent | Kano | Kano | 08068593127 |
| 2 | Abba | Jime Mustapha | Abuja | Abuja | Abuja | 09078787719 |
| 3 | Peter | Iliya | Maiduguri | Maiduguri | Borno | 09091828171 |
| 4 | Umar | Grema | Maiduguri | Maiduguri | Borno | 08012848238 |
| 5 | Goma | Alfred | Jos | Jos | Plateau | 07020393929 |

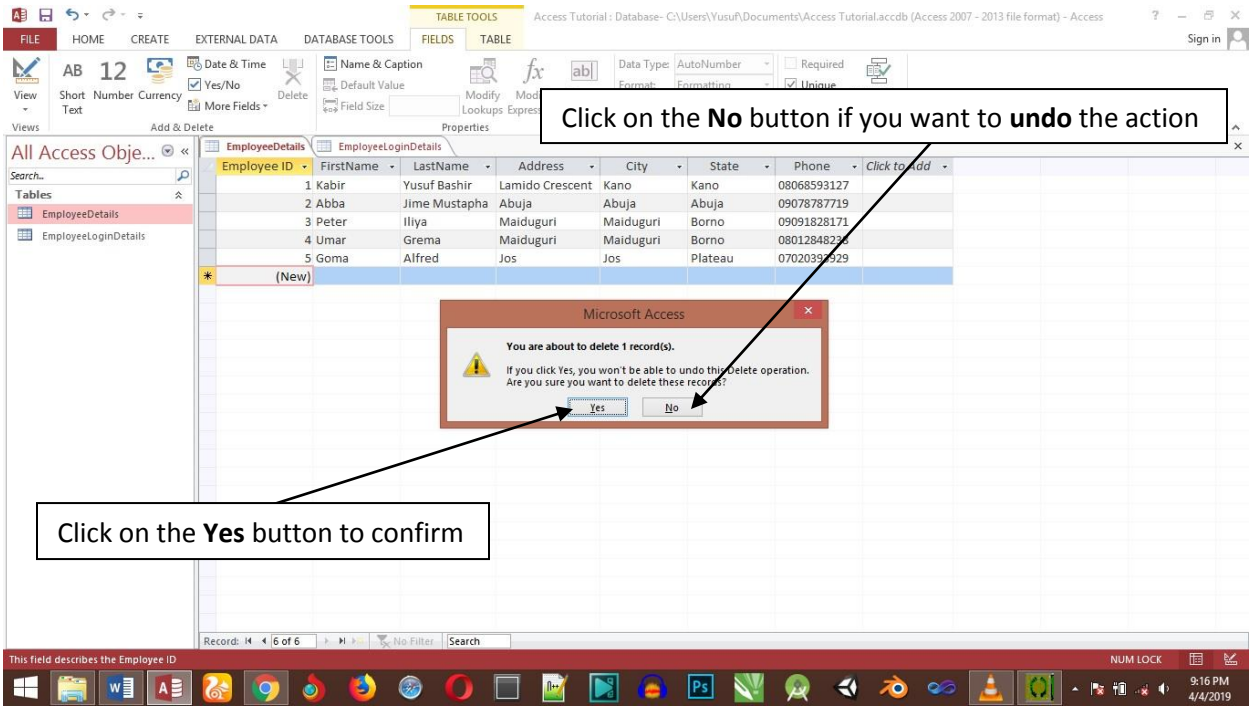
## Microsoft Access – Deleting Data

If you want to delete any data you need to select the entire row first as shown in the following screenshot.

**Step 1:**




**Step 2:** Click on the **DELETE** button on your keyboard.



## Microsoft Access – Query Data

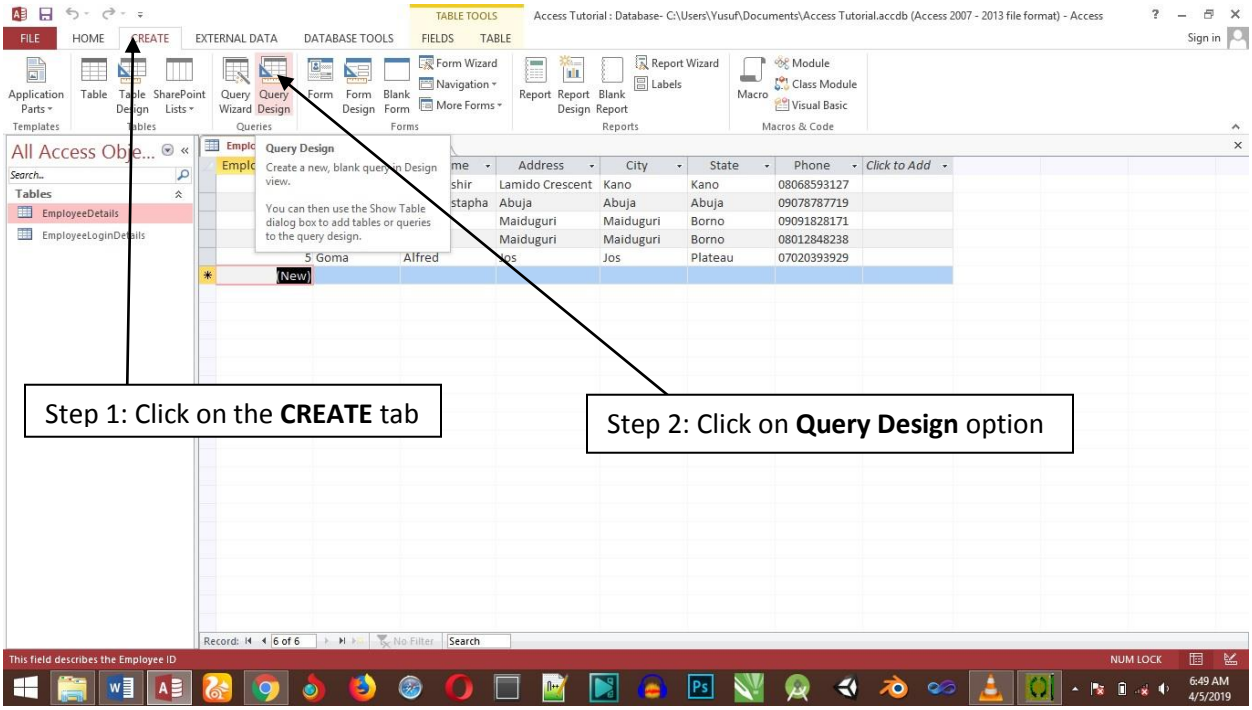
A query is a request for data results, and for action on data. You can use a query to answer a simple question, to perform calculations, to combine data from different tables, or even to add, change, or delete table data.

- As tables grow in size they can have hundreds of thousands of records, which makes it impossible for the user to pick out specific records from that table.
- With a query you can apply a filter to the table's data, so that you only get the information that you want.
- Queries that you use to retrieve data from a table or to make calculations are called select queries.
- Queries that add, change, or delete data are called action queries.
- You can also use a query to supply data for a form or report.
- In a well-designed database, the data that you want to present by using a form or report is often located in several different tables.
- The tricky part of queries is that you must understand how to construct one before you can actually use them.

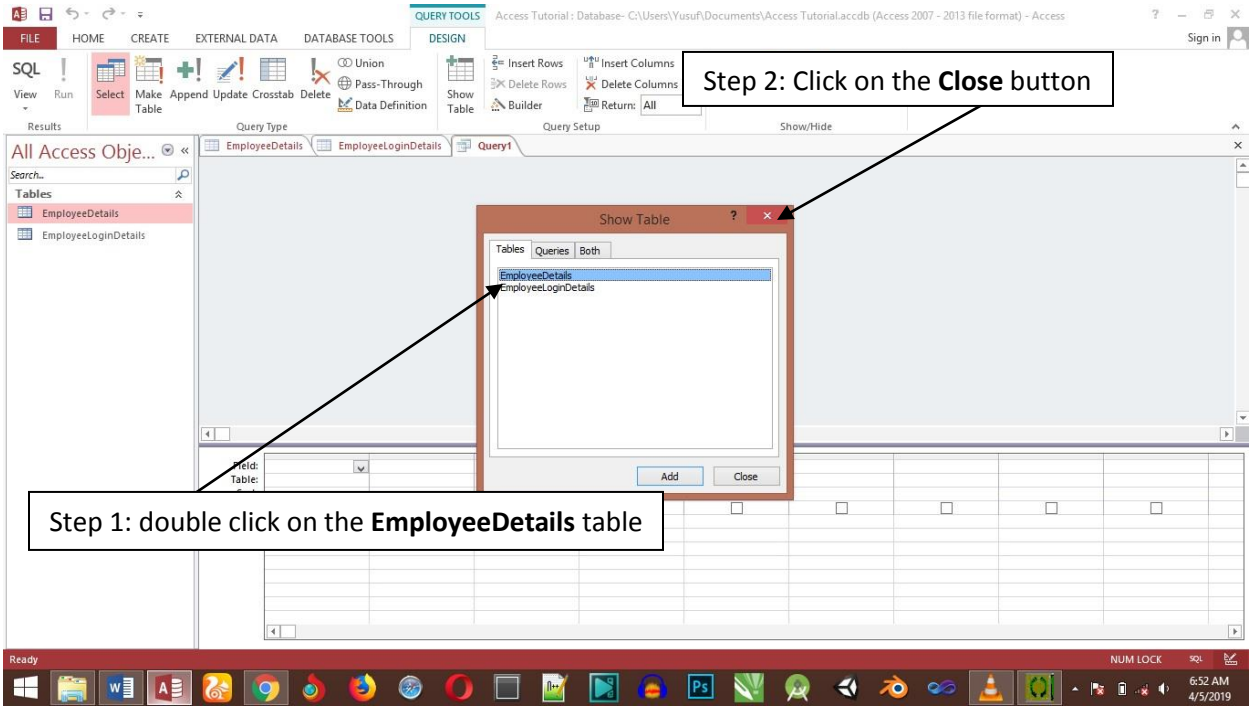
**Create Select Query**

If you want to review data from only certain fields in a table, or review data from multiple tables simultaneously or maybe just see the database on certain criteria, you can use the **Select** query. Let us now look into a simple example in which we will create a simple query which will retrieve information from **EmployeeDetails** table. Open the database and click on the **Create** tab.

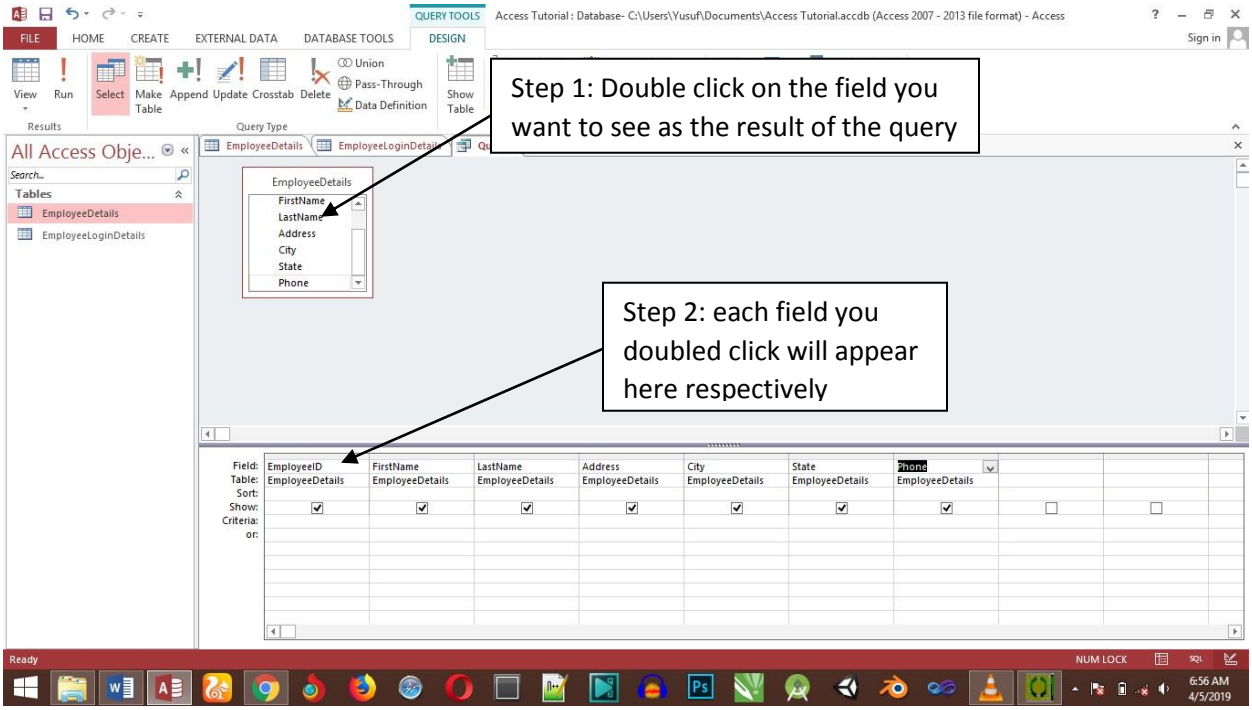
**Step 1:**



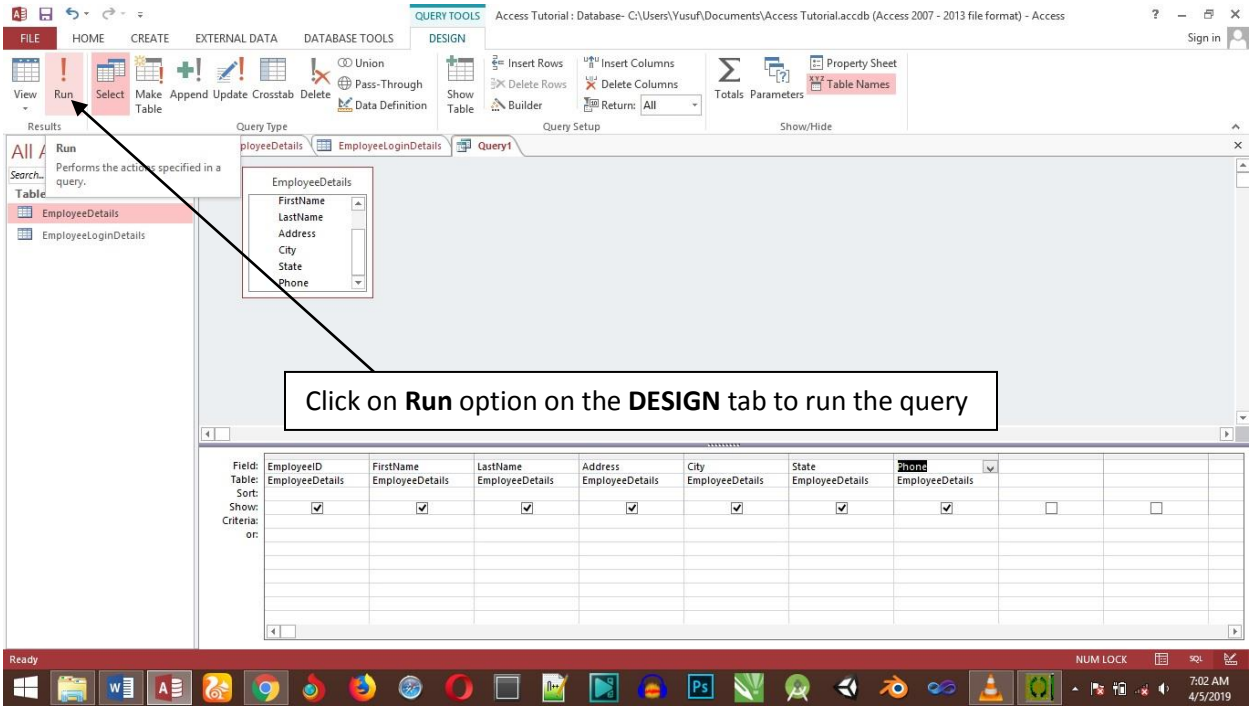

**Step 2:** Double click on the **EmployeeDetails** table.



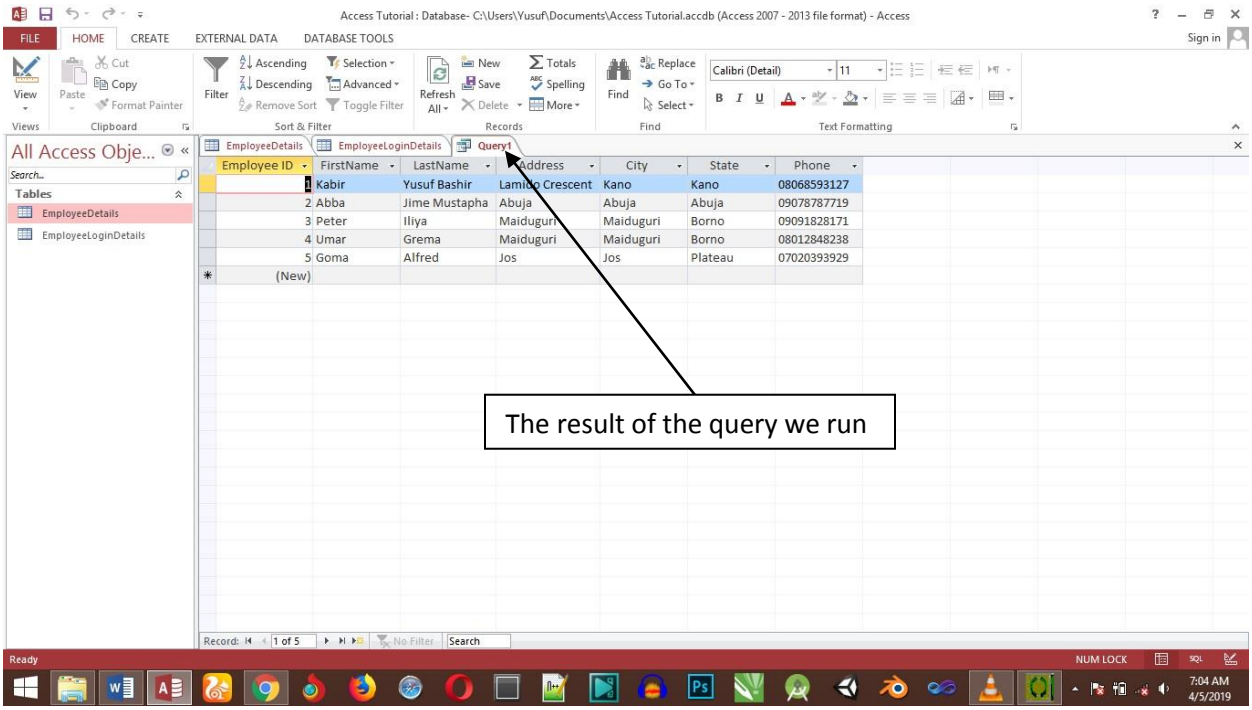
**Step 3:** Double click field you want to see as the result of the query.




**Step 4:**



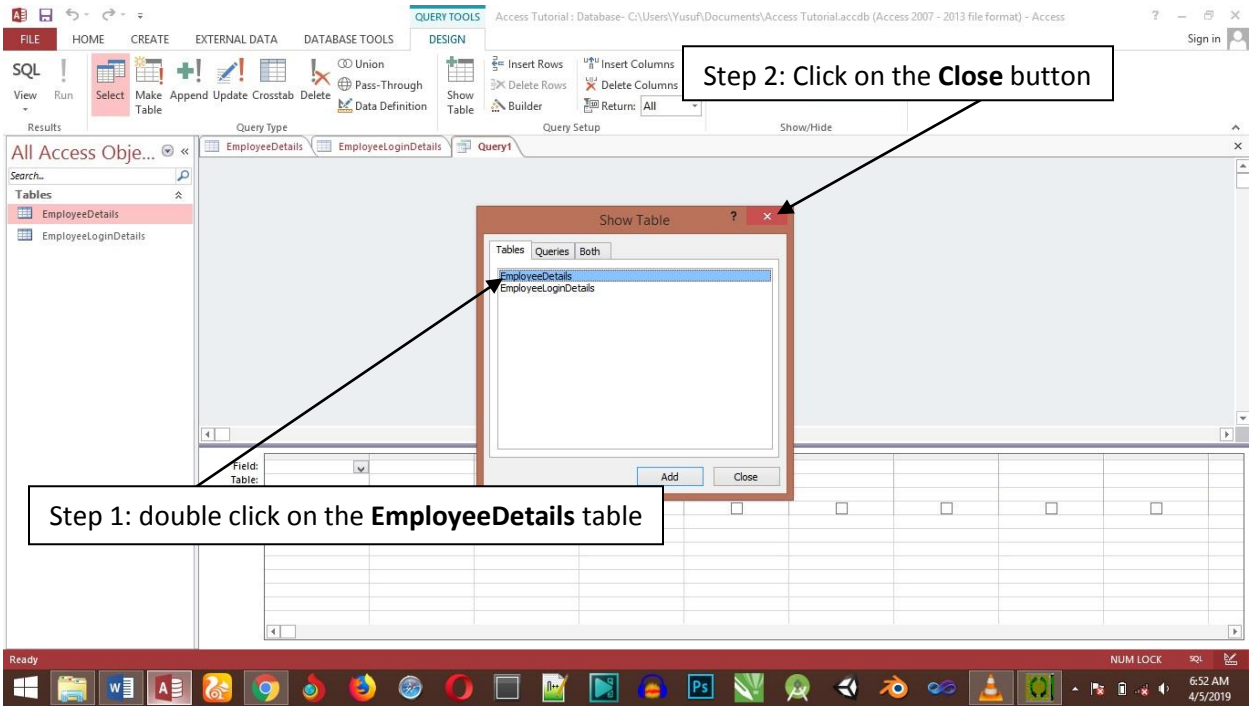
**Step 5:**


Access Tutorial : Database- C:\Users\Yusuf\Documents\Access Tutorial.accdb (Access 2007 - 2013 file format) - Access
FILE
HOME
CREATE
EXTERNAL DATA
DATABASE TOOLS
Sign in
All Access Obje...
Search...
Tables
EmployeeDetails
EmployeeLoginDetails
EmployeeDetails
EmployeeLoginDetails
Query1
Employee ID
FirstName
LastName
Address
City
State
Phone
1 Kabir Yusuf Bashir Lamido Crescent Kano Kano 08068593127
2 Abba Jime Mustapha Abuja Abuja Abuja 09078787719
3 Peter Iliya Maiduguri Maiduguri Borno 09091828171
4 Umar Grema Maiduguri Maiduguri Borno 08012848238
5 Goma Alfred Jos Jos Plateau 07020393929
(New)
The result of the query we run
Record: 1 of 5
No Filter
Search
Ready
NUM LOCK
7:04 AM
4/5/2019

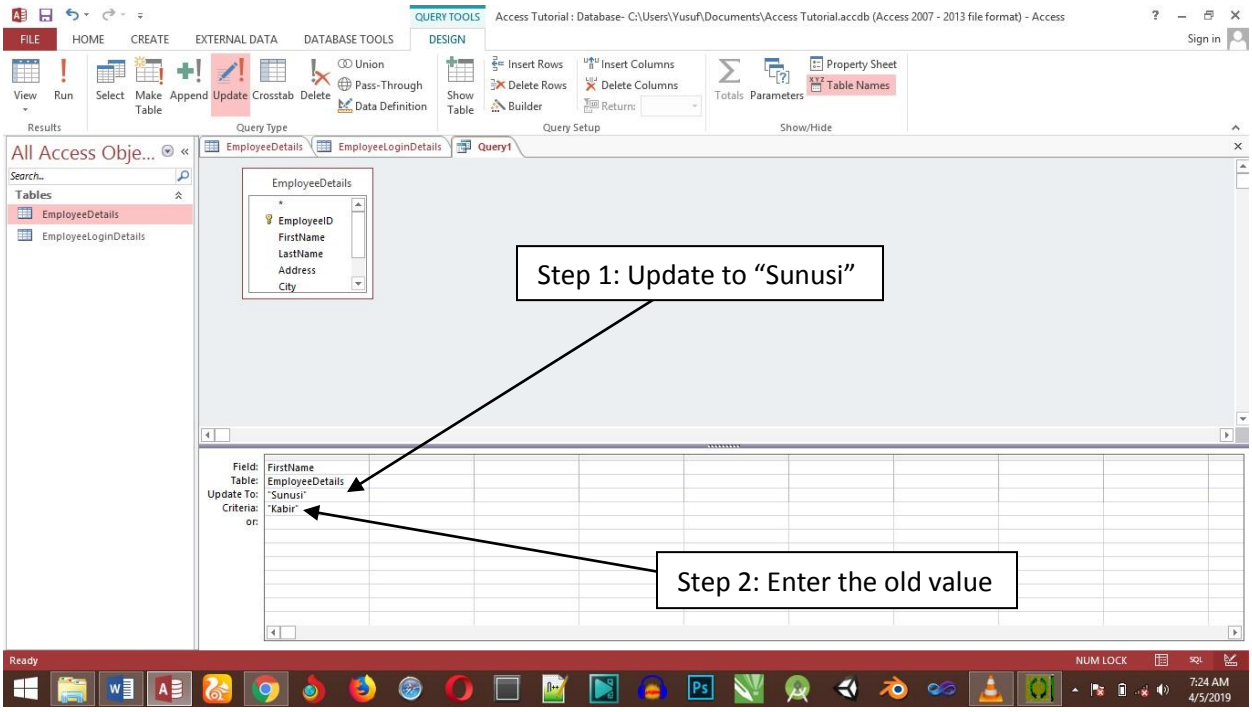
**Create an Update Query**

You can use an **Update Query** to change the data in your tables, and you can use an update query to enter criteria to specify which rows should be updated. An update query provides you an opportunity to review the updated data before you perform the update. Let us go to the Create tab again and click Query Design.

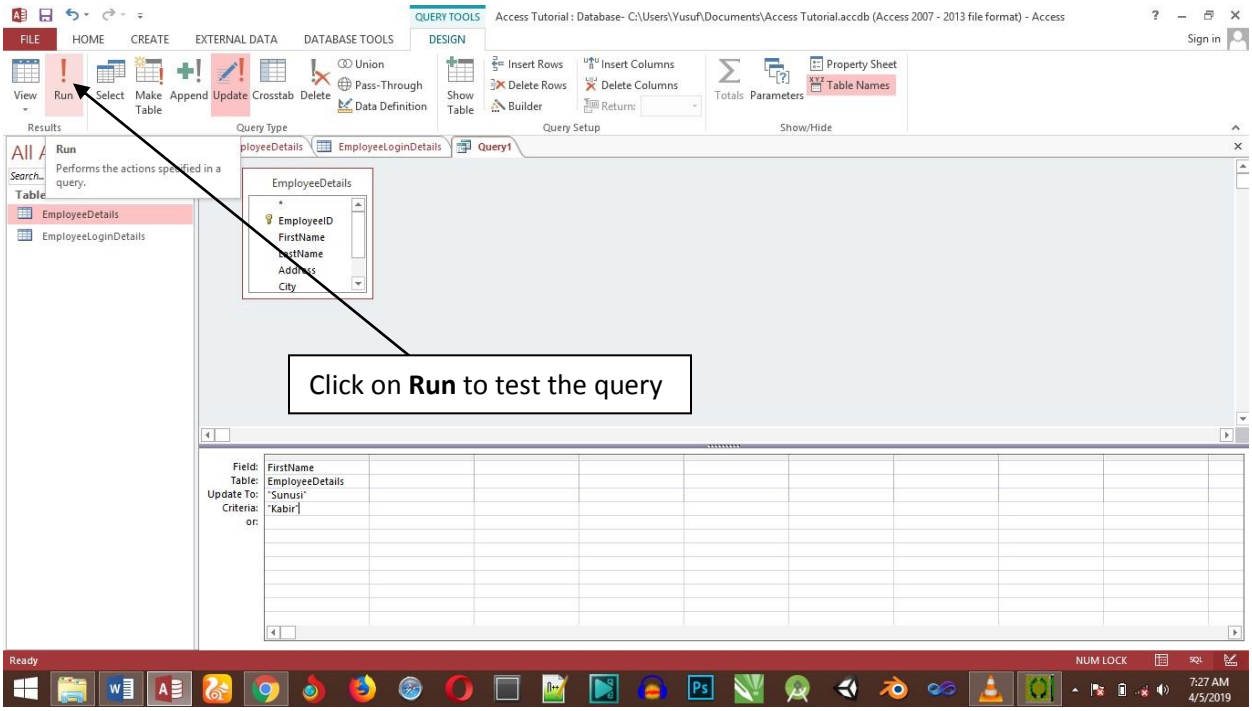
**Step 1:**



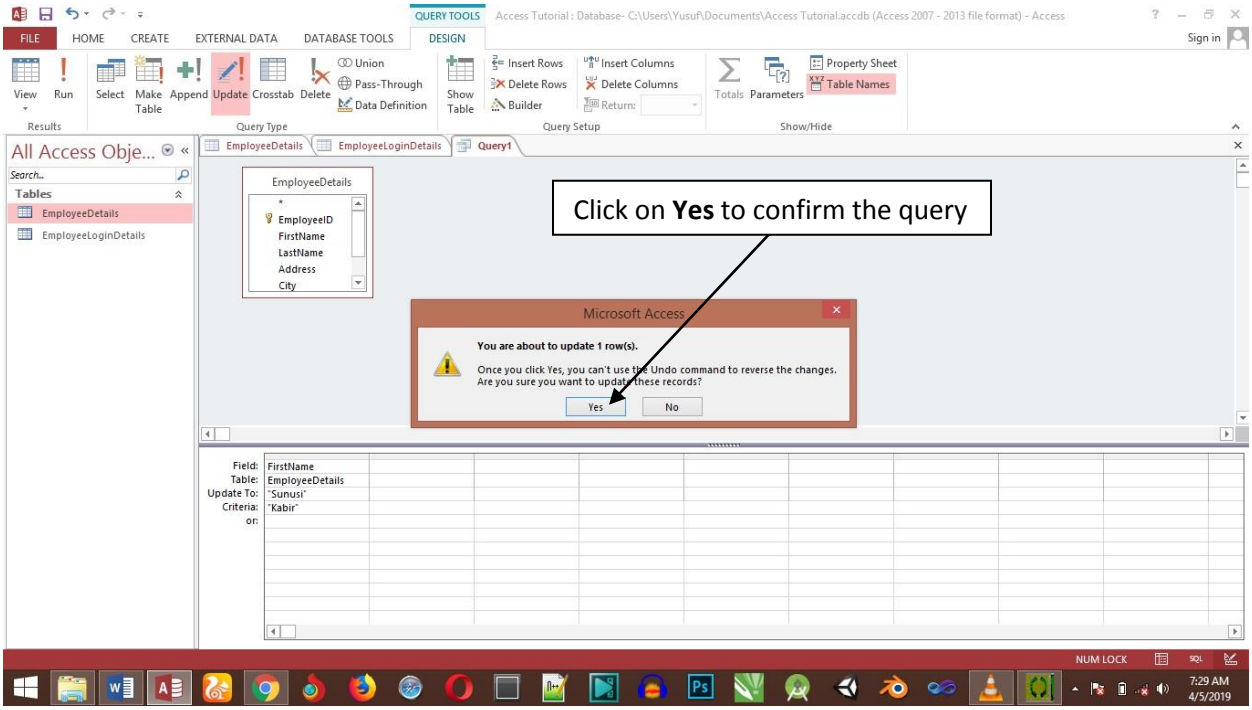
**Step 2:** On the **Design** tab, in the Query Type group, click **Update** and double-click on the field in which you want to update the value. Let us say we want to update the FirstName of "**Kabir**" to "**Sunusi**".



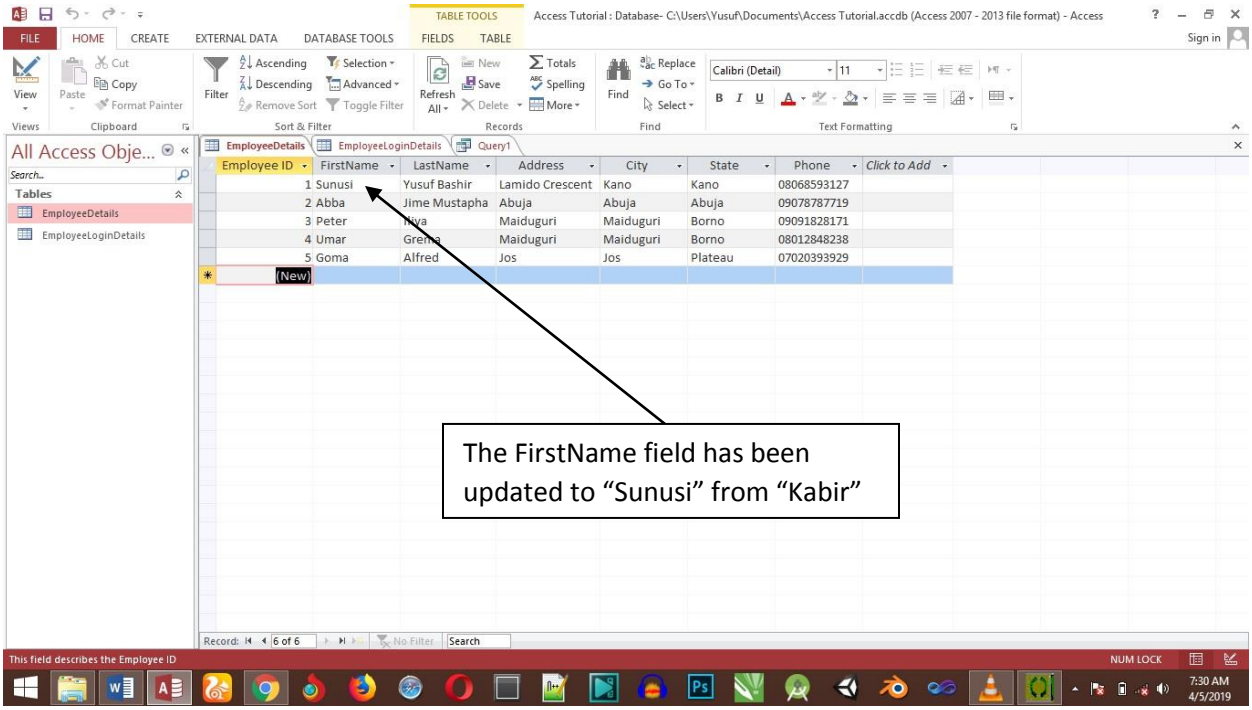

**Step 3:**



**Step 4:**


Click on **Yes** to confirm the query
Microsoft Access
You are about to update 1 row(s).
Once you click Yes, you can't use the Undo command to reverse the changes.
Are you sure you want to update these records?
Yes
No

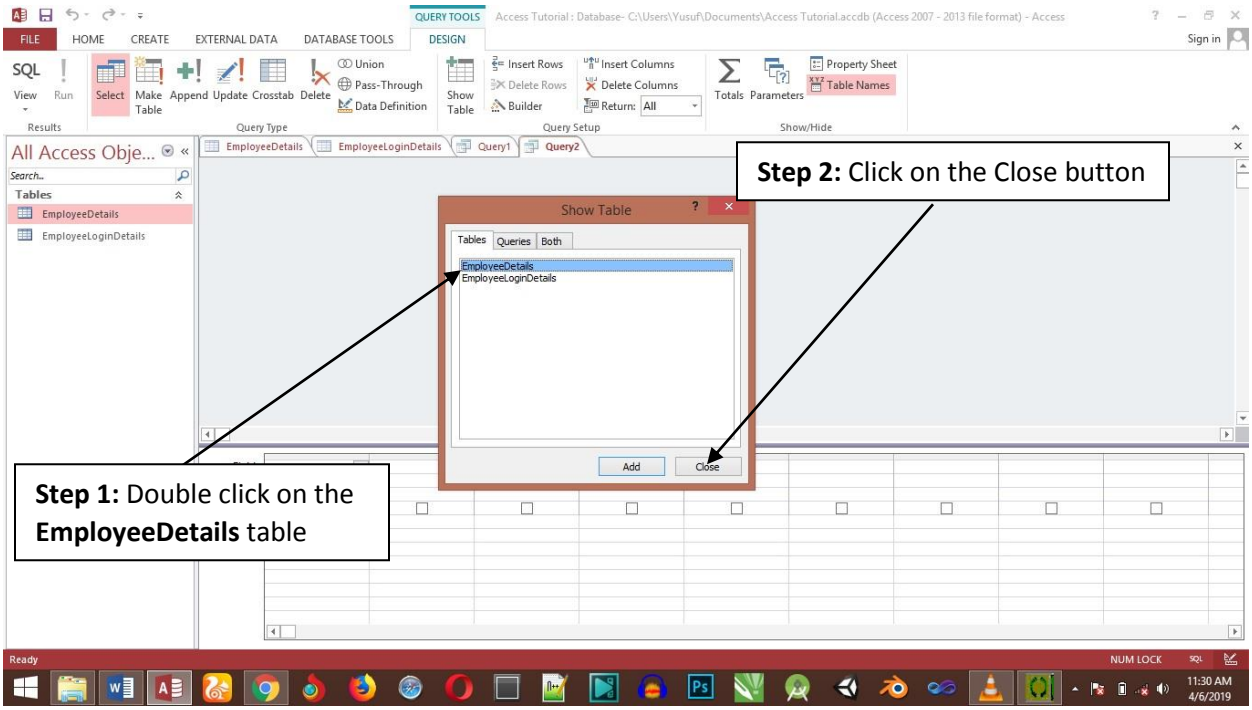
**Step 5:**


The FirstName field has been updated to “Sunusi” from “Kabir”

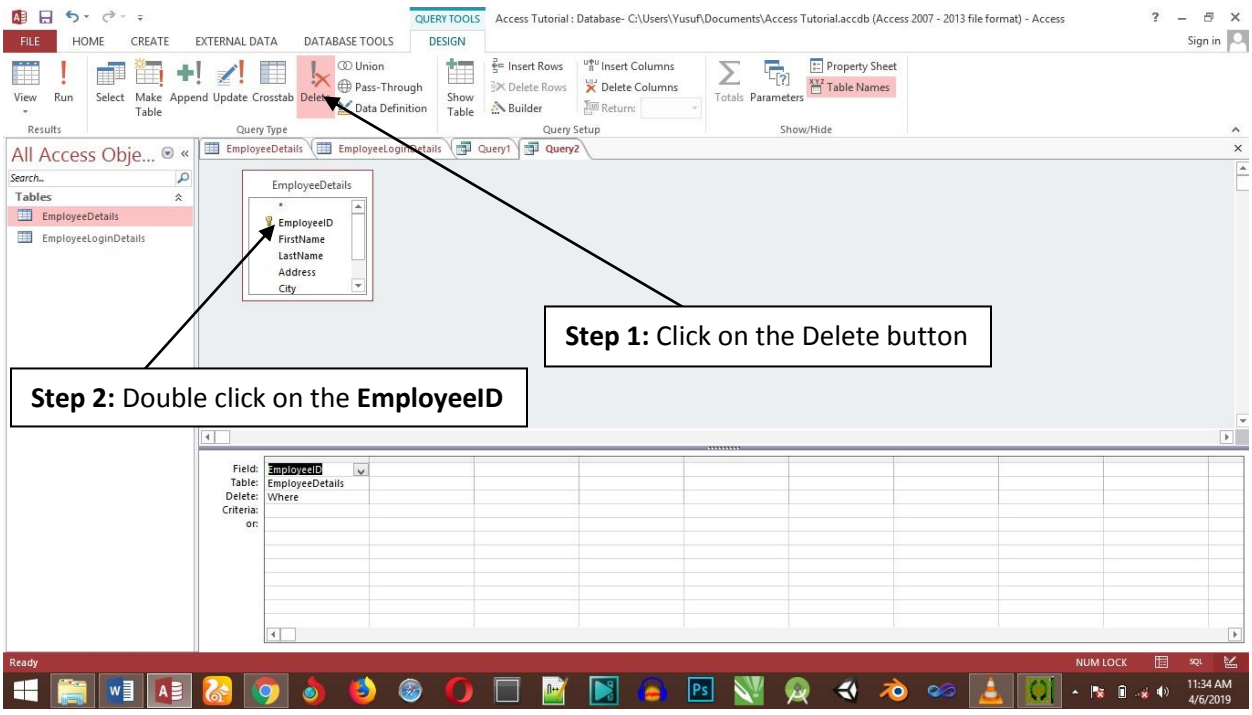
## Create a Delete Query

You can use a **delete query** to delete data from your tables, and you can use a delete query to enter criteria to specify which rows should be deleted. A Delete Query provides you an opportunity to review the rows that will be deleted before you perform the deletion. Let us go to the **Create** tab again and click **Query Design**.

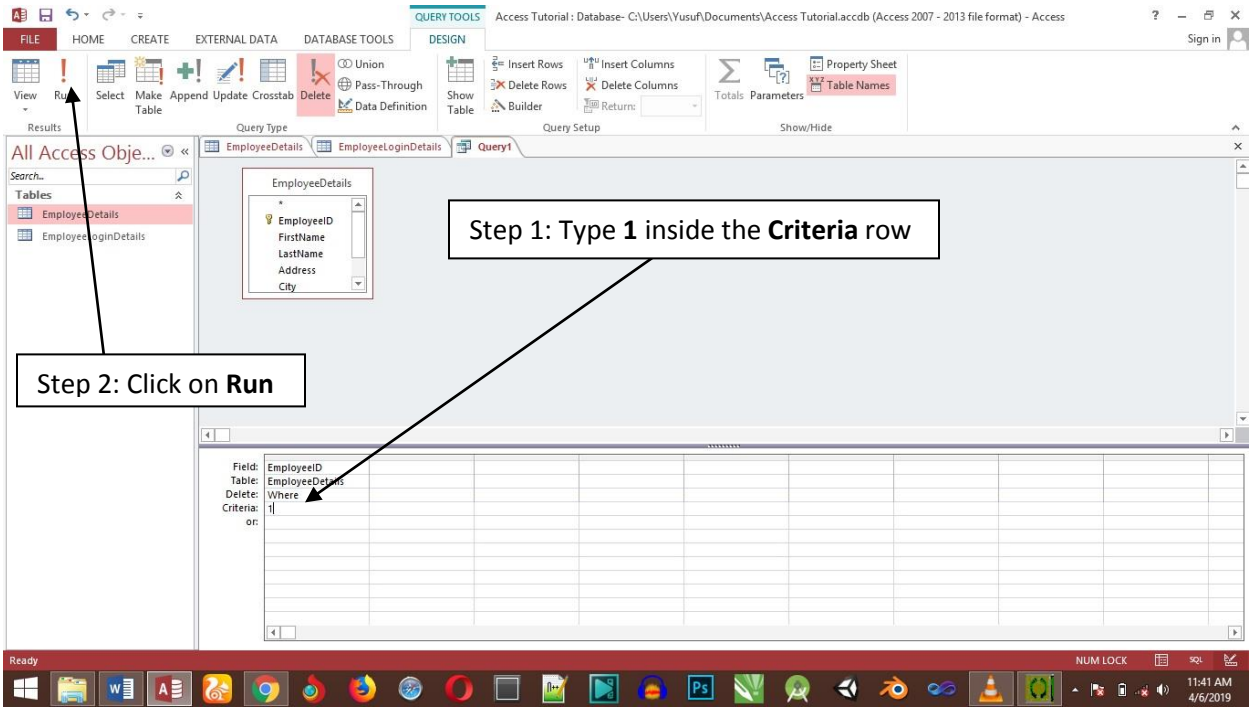
### Step 1:



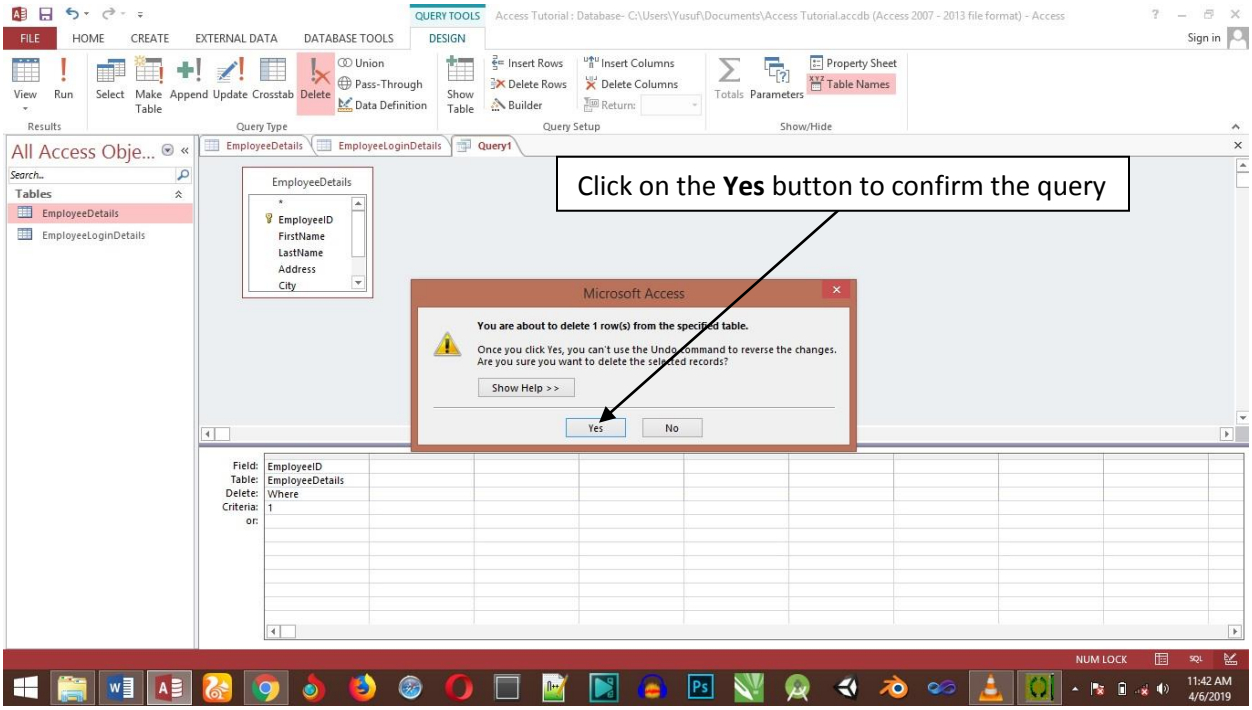
**Step 2:** On the **Design** tab, in the **Query Type** group, click **Delete** and double-click on the **EmployeeID**.



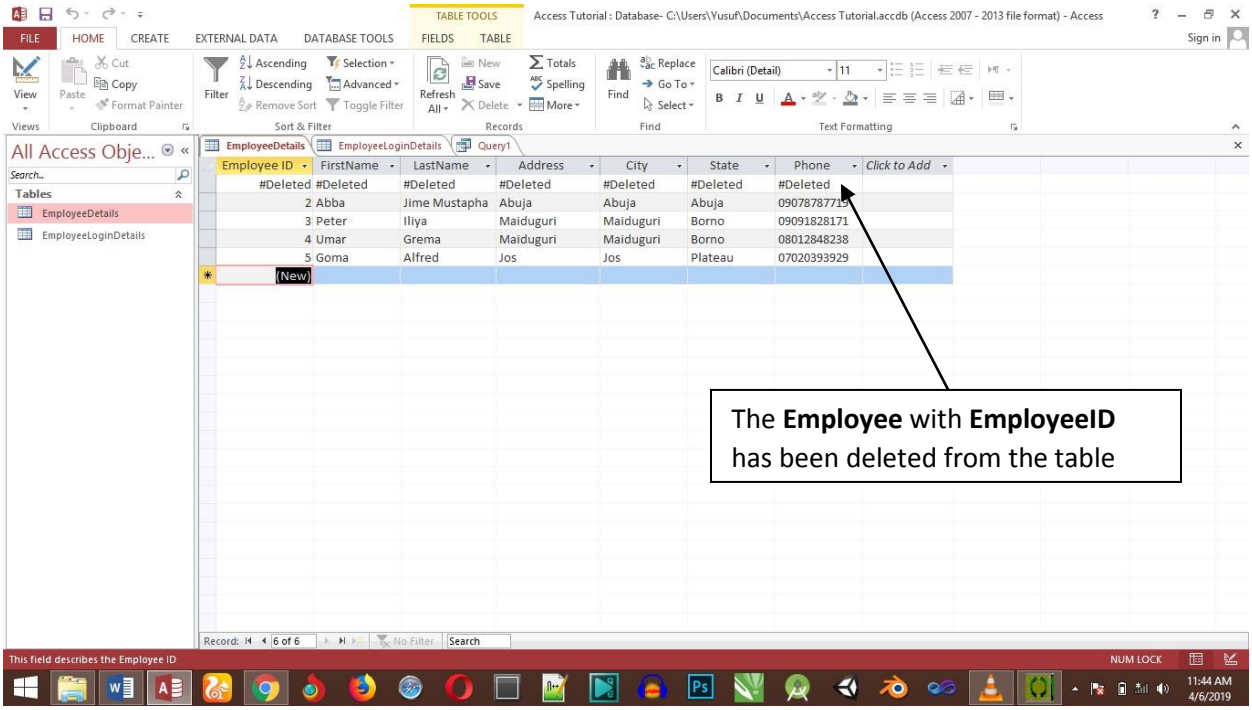

**Step 3:** In the Criteria row of the Design Grid, type **1**. Here we want to delete an employee whose **EmployeeID** is **1**.



**Step 4:**


Click on the **Yes** button to confirm the query
Microsoft Access
You are about to delete 1 row(s) from the specified table.
Once you click Yes, you can't use the Undo command to reverse the changes.
Are you sure you want to delete the selected records?
Show Help >>
Yes
No

**Step 5:**


The **Employee** with **EmployeeID** has been deleted from the table

## Microsoft Access – Normalization

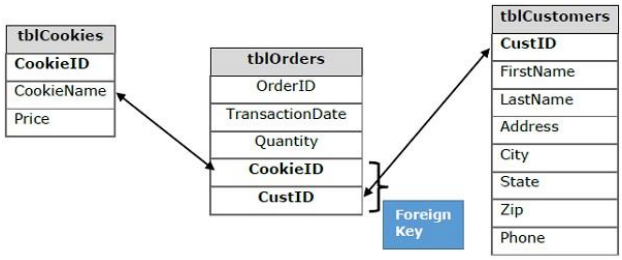
Database normalization, or simply normalization, is the process of organizing columns (attributes) and tables (relations) of a relational database to minimize data redundancy. It is the process of splitting data across multiple tables to improve overall performance, integrity and longevity.

- Normalization is the process of organizing data in a database.
- This includes creating tables and establishing relationships between those tables according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency.

Let us now look into the following table which contains data, but the problem is that this data is quite redundant which increases the chances of typo and inconsistent phrasing during data entry.

| CustID | Name | Address | Cookie | Quantity | Price | Total |
|---|---|---|---|---|---|---|
| 1 | Sunusi Yusuf | No 1 Garko avenue off Lamido Crescent | Chocolate Chip | 5 | 200.00 | 1000.00 |
| 2 | Goma Alfred | 1234 Plateau Estate Jos | Choc Chip | 3 | 150.00 | 450.00 |
| 3 | Manusr Terrang | 12 Main St., Adamawa Yola | Chocolate Chip | 5 | 200.00 | 1000.00 |

To solve this problem, we need to restructure our data and break it down into multiple tables to eliminate some of those redundancy as shown in the following three tables.



Here, we have one table for Customers, the 2nd one is for Orders and the 3rdone is for Cookies.

The problem here is that just by splitting the data in multiple tables will not help to tell how data from one table relates to data in another table. To connect data in multiple tables, we have to add foreign keys to the **Orders** table.

**Defining Relationship**

A relationship works by matching data in key columns usually columns with the same name in both the tables. In most cases, the relationship matches the primary key from one table, which provides a unique identifier for each row, with an entry in the foreign key in the other table. There are three types of relationships between tables. The type of relationship that is created depends on how the related columns are defined.

Let us now look into the three types of relationships −

**One-to-Many Relationship**

A one-to-many relationship is the most common type of relationship. In this type of relationship, a row in table A can have many matching rows in table B, but a row in table B can have only one matching row in table A.

For example, the Customers and Orders tables have a one-to-many relationship: each customer can place many orders, but each order comes from only one customer.

**Many-to-Many Relationship**

In a many-to-many relationship, a row in table A can have many matching rows in table B, and vice versa.

You create such a relationship by defining a third table, called a **junction table**, whose primary key consists of the foreign keys from both table A and table B.

For example, the Customers table and the Cookies table have a many-to-many relationship that is defined by a one-to-many relationship from each of these tables to the Orders table.

**One-to-One Relationship**

In a one-to-one relationship, a row in table A can have no more than one matching row in table B, and vice versa. A one-to-one relationship is created if both the related columns are primary keys or have unique constraints.

This type of relationship is not common because most information related in this way would be all in one table. You might use a one-to-one relationship to −

- Divide a table into many columns.
- Isolate part of a table for security reasons.
- Store data that is short-lived and could be easily deleted by simply deleting the table.
- Store information that applies only to a subset of the main table.

**Microsoft Access – Creating Relationship**

One of the goals of good database design is to remove data redundancy.

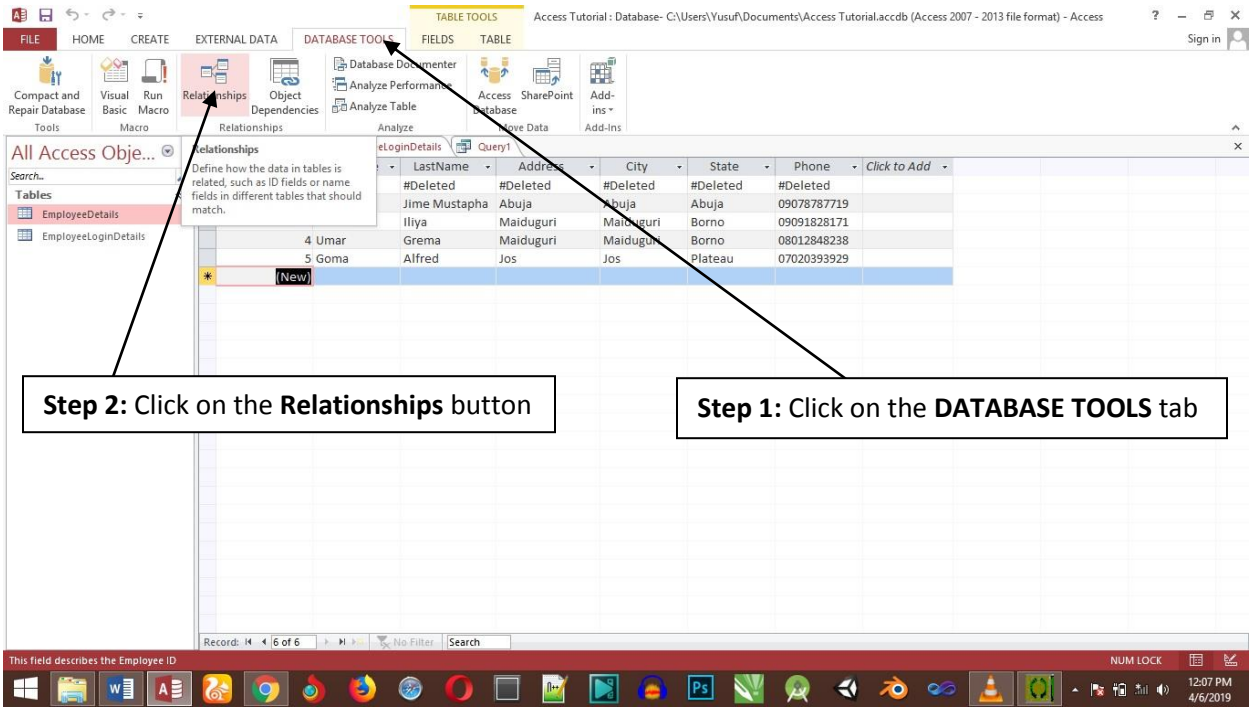
- To achieve that goal, you divide your data into many subject-based tables so that each fact is represented only once.
- To do this, all the common fields which are related to each other are placed in one table.
- To do this step correctly, you must first understand the relationship between your tables, and then specify these relationships in your Access database.

MS Access uses table relationships to join tables when you need to use them in a database object. There are several reasons why you should create table relationships before you create other database objects, such as forms, queries, macros, and reports.

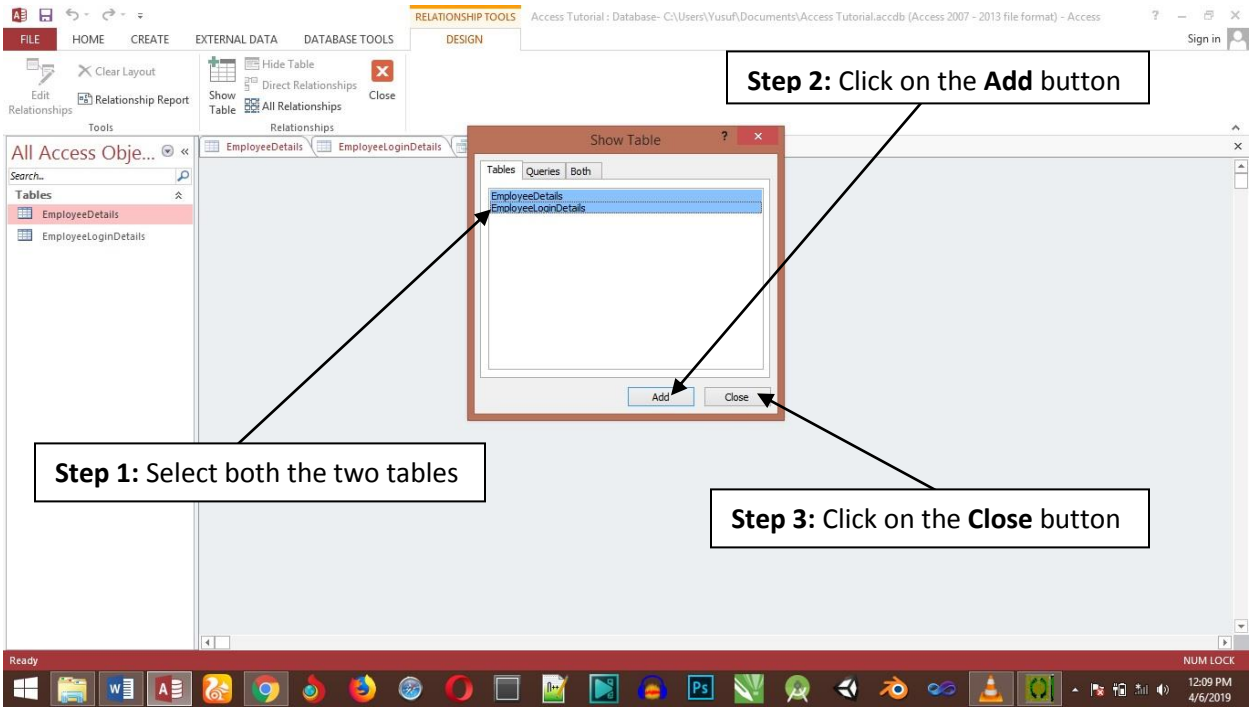
- To work with records from more than one table, you often must create a query that joins the tables.
- The query works by matching the values in the primary key field of the first table with a foreign key field in the second table.
- When you design a form or report, MS Access uses the information it gathers from the table relationships you have already defined to present you with informed choices and to prepopulate property settings with appropriate default values.
- When you design a database, you divide your information into tables, each of which has a primary key and then add foreign keys to related tables that reference those primary keys.
- These foreign **key-primary key pairings** form the basis for table relationships and multi-table queries.

Let us try to create a relationship between the **EmployeeDetails** table and **EmployeeLoginDetails** table.

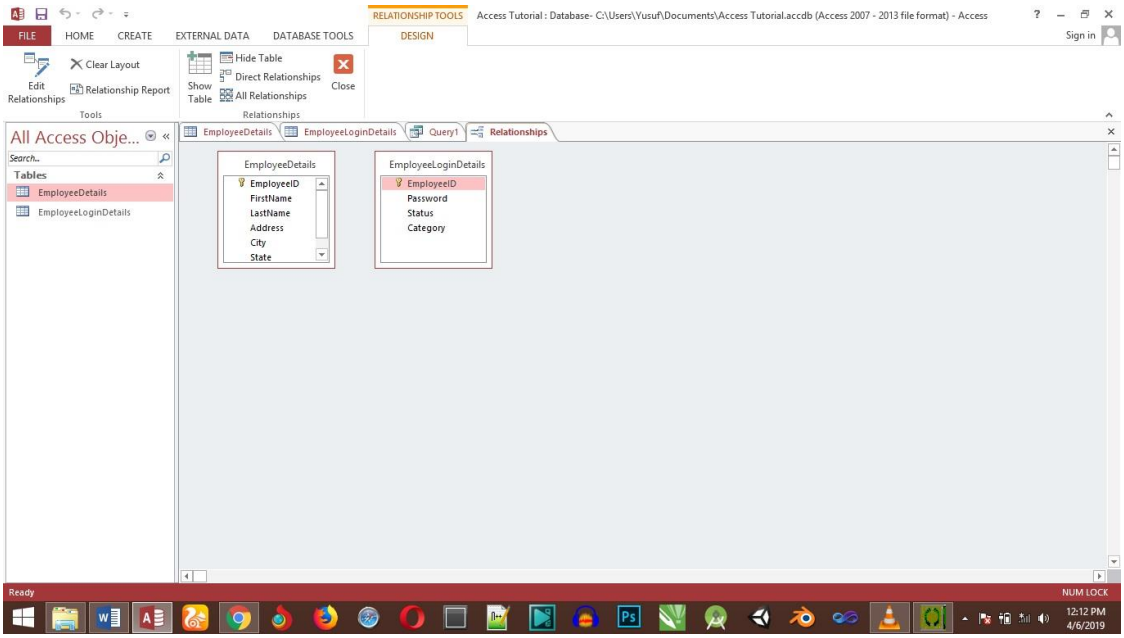
**Step 1:**



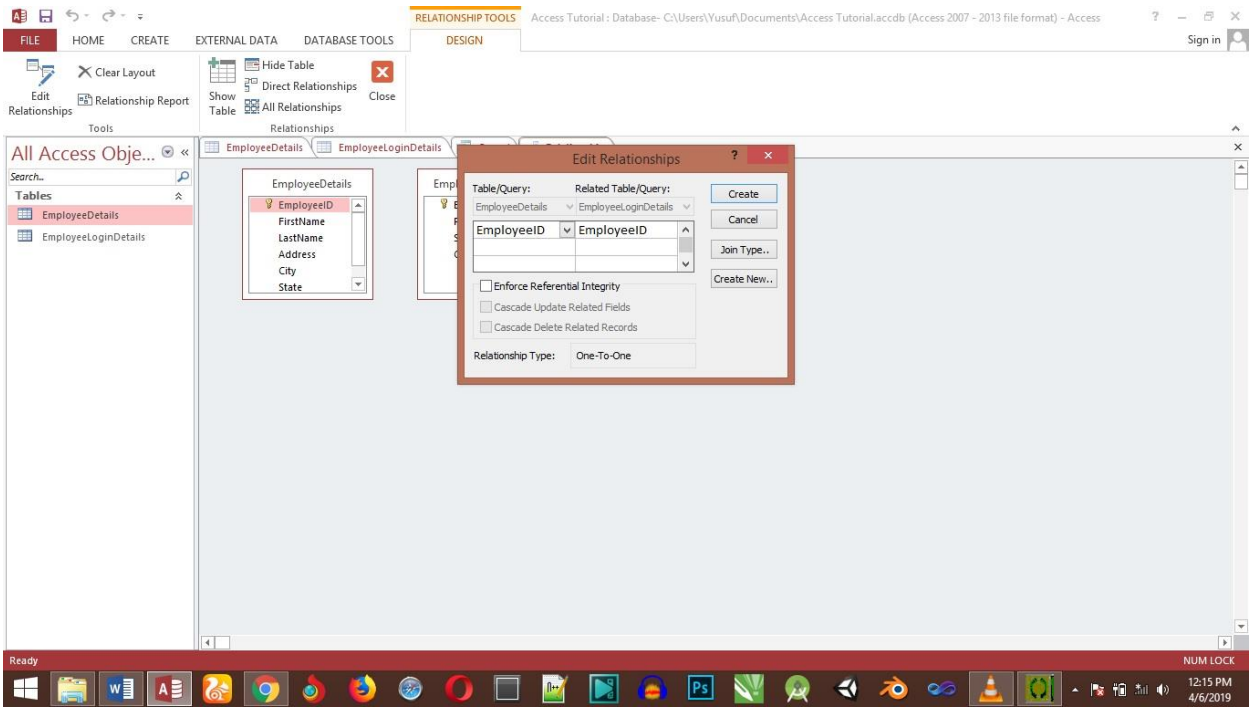

**Step 2:**



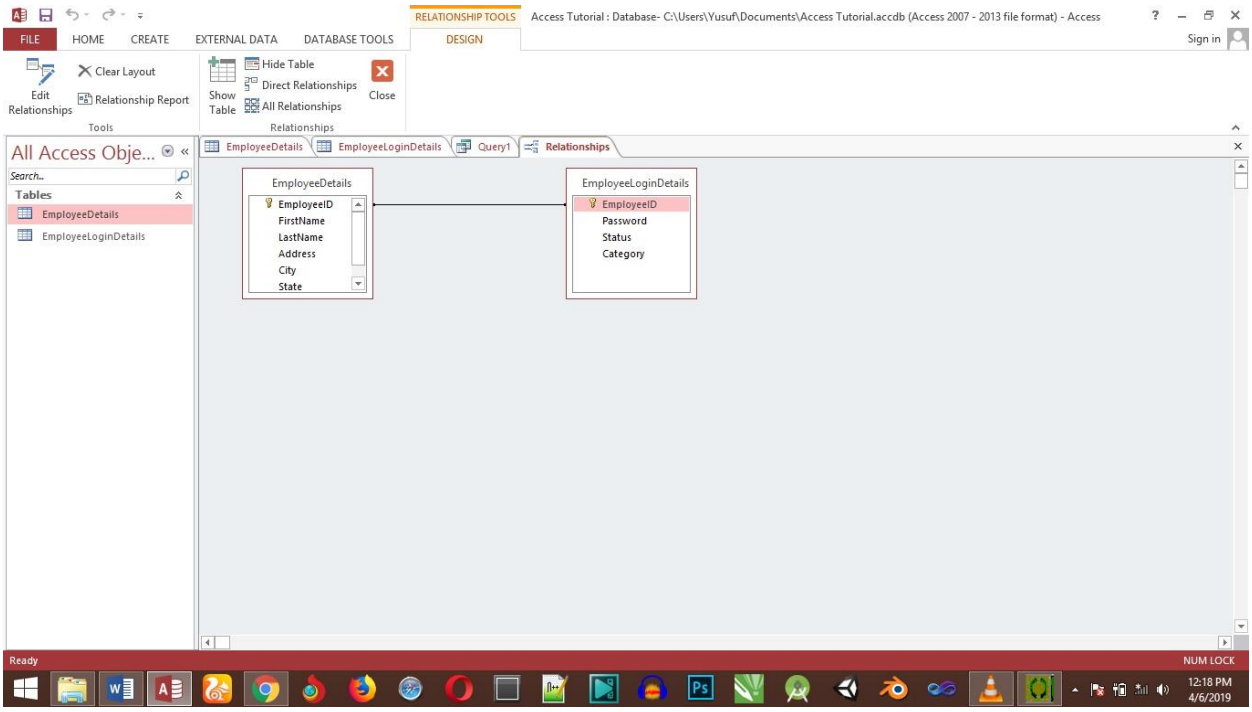
**Step 3:**




**Step 4:** To create a relationship between these two tables, use the mouse, and click and hold the **EmployeeID** field from **EmployeeDetails table** and drag and drop that field on the field we want to relate by hovering the mouse right over **EmployeeID** from **EmployeeLoginDetails**. When you release your mouse button, Access will then open the following window −



**Step 5:** The above window relates EmployeeID of **EmployeeDetails** table to EmployeeID of **EmployeeLoginDetails**. Let us now click on the **Create** button and now these two tables are related.




The relationship is now saved automatically and there's no real need to click on the Save button. Now that we have the most basic of relationships created, let us now go to the table side to see what has happened with this relationship.

## Microsoft Access – Forms

**Forms** in Access are like display cases in stores that make it easier to view or get the items that you want. Since forms are objects through which you or other users can add, edit, or display the data stored in your Access desktop database, the design of your form is an important aspect. There's a lot you can do design-wise with forms in Microsoft Access. You can create two basic types of forms −

- Bound forms
- Unbound forms

### Bound Forms

Let us now understand what **Bound Forms** are −

- Bound forms are connected to some underlying data source such as a table, query, or SQL statement.
- Bound forms are what people typically think of when they think of the purpose of a form.
- Forms are to be filled out or used to enter or edit data in a database.
- Examples of bound forms will typically be what users use to enter, view or edit data in a database.

### Unbound Forms

Let us look into Unbound Forms −

- These forms are not connected to an underlying record or data source.
- Unbound forms could be dialog boxes, switch boards, or navigation forms.
- In other words, unbound forms are typically used to navigate or interact with the database at large, as opposed to the data itself.

### Types of Bound Forms

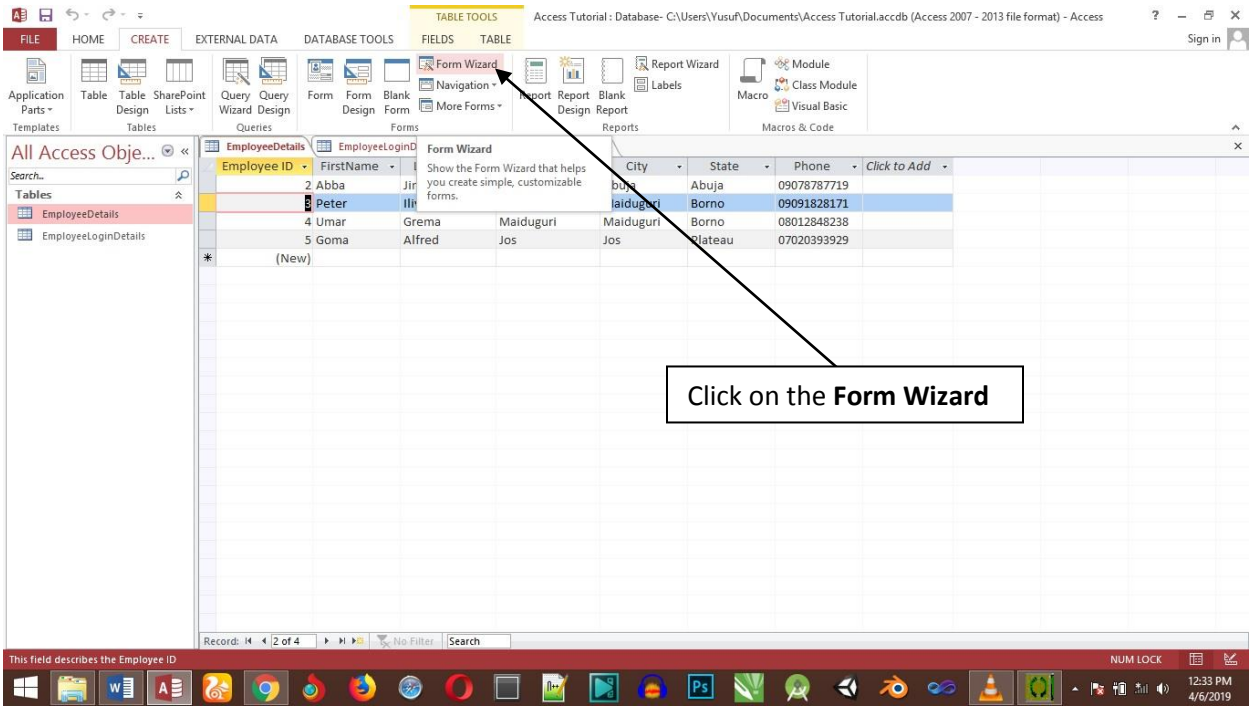
There are many types of bound forms you can create in Access. Let us understand the types –

- **Single Item Form**: This is the most popular one and this is where the records are displayed — one record at a time.
- **Multiple Item Form**: This displays multiple records at a time from that bound data source.

- **Split Form**: The form is divided into halves, either vertically or horizontally. One half displays a single item or record, and the other half displays a list or provides a datasheet view of multiple records from the underlying data source.

**Creating Forms**

There are a few methods you can use to create forms in Access. For this, open your Database and go to the **Create tab**. In the Forms group, in the upper right-hand corner you will see the Form Wizard button.

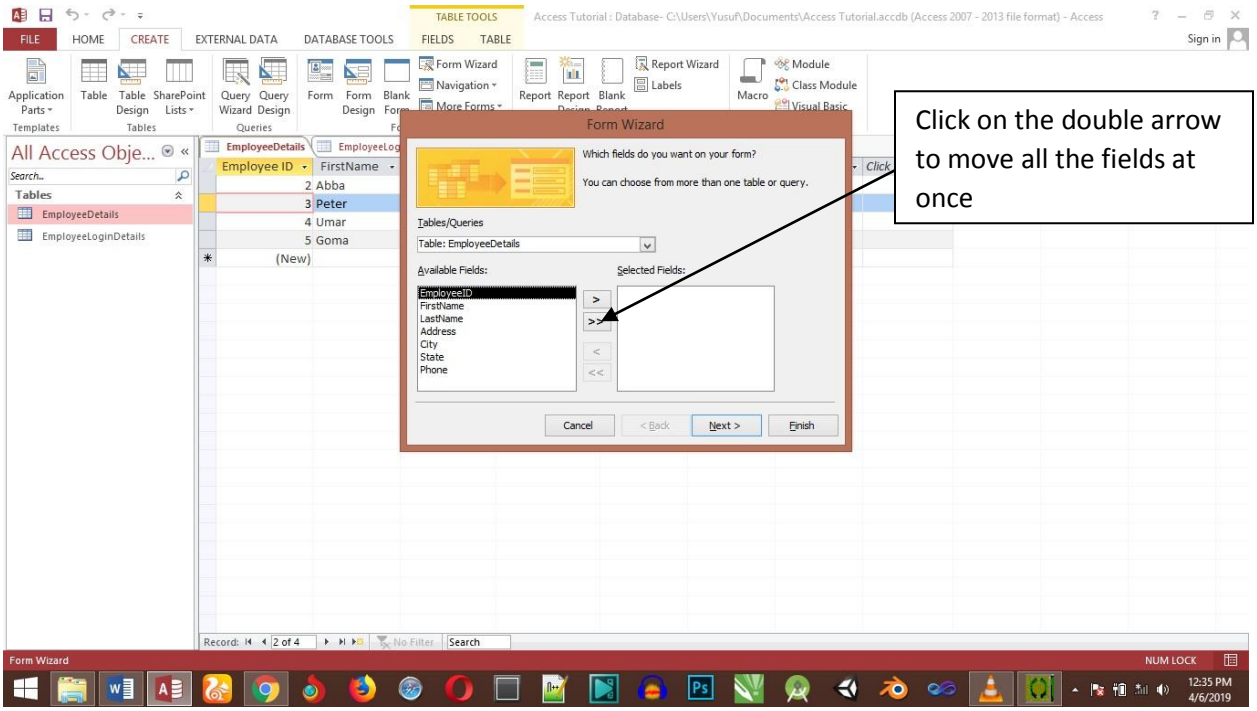



**Click on that button to launch the Form Wizard.**

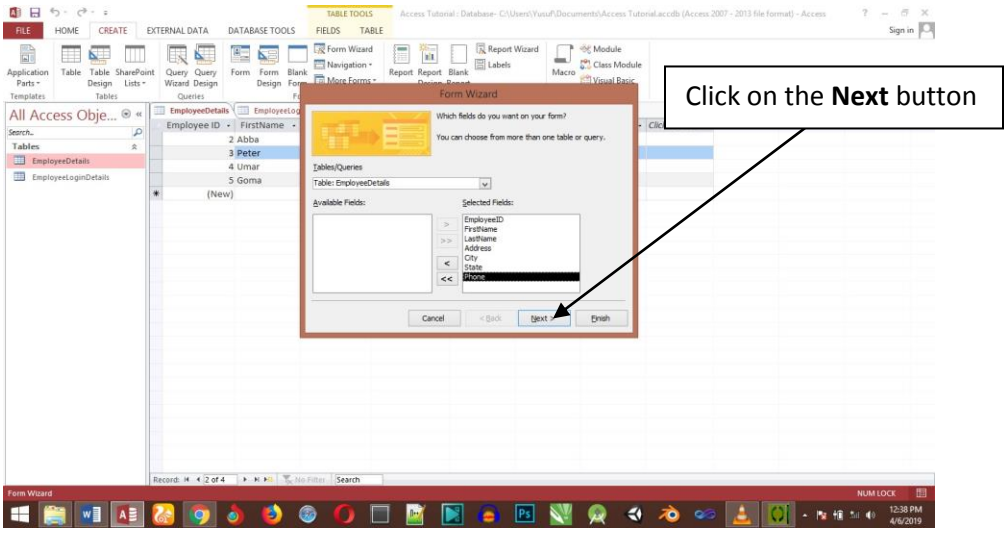
On this first screen in the wizard, you can select fields that you want to display on your form, and you can choose from fields from more than one table or a query.

Let us assume we want to simply have a quick form that we are going to use for data entry for our employee information.

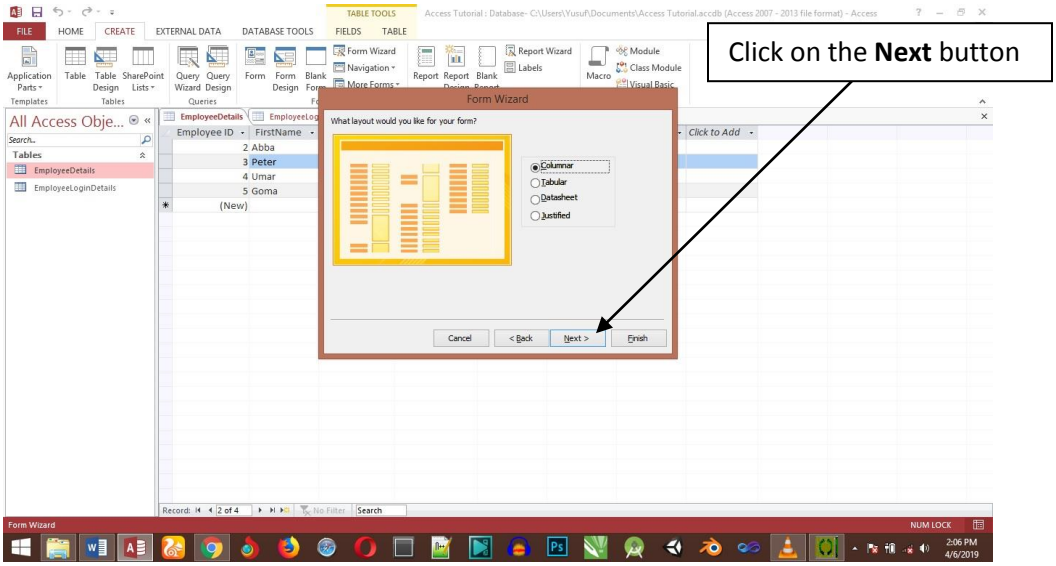
**Step 1:** From **Tables/Queries** drop-down list, select **EmployeeDetails** table. Click on the double arrow to move all the fields at once.




**Step 2:**

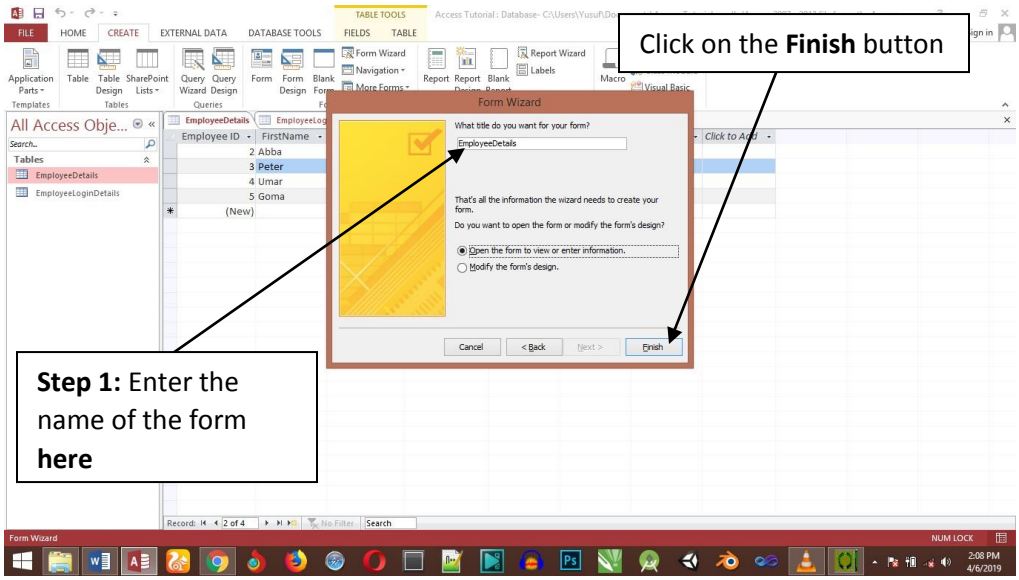


**Step 3:** The following screen in the Form Wizard will ask for the layout that we would like for our form. We have **columnar, tabular, datasheet and justified** layouts. We will choose the columnar layout here and then click the **Next**.

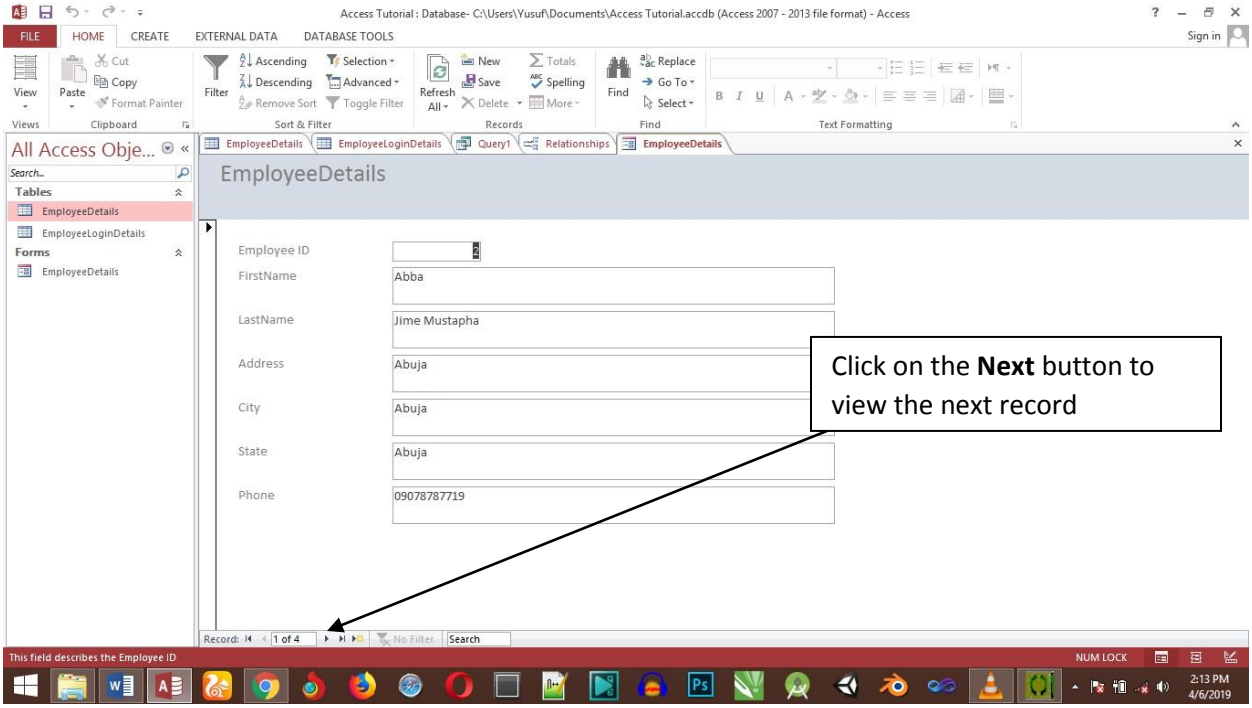



**Step 4:** In the following screen, we need to give a title for our form. Let us call it **EmployeeDetails**.

Once you have given your form a title, you can open the form to see what that form looks like, or you can begin entering information into your table. Or you can choose the option to modify the form's design. Let us choose the first option to **open the form to view or enter information** and click **Finish**.



**Step 5:** Now, take a look at the following screenshot. This is what your form looks like. This is a single item form, meaning one record is displayed at a time and further down you can see the navigation buttons, which is telling us that this is displaying the record 1 of 4. If you click on that button then, it will move to the next record.



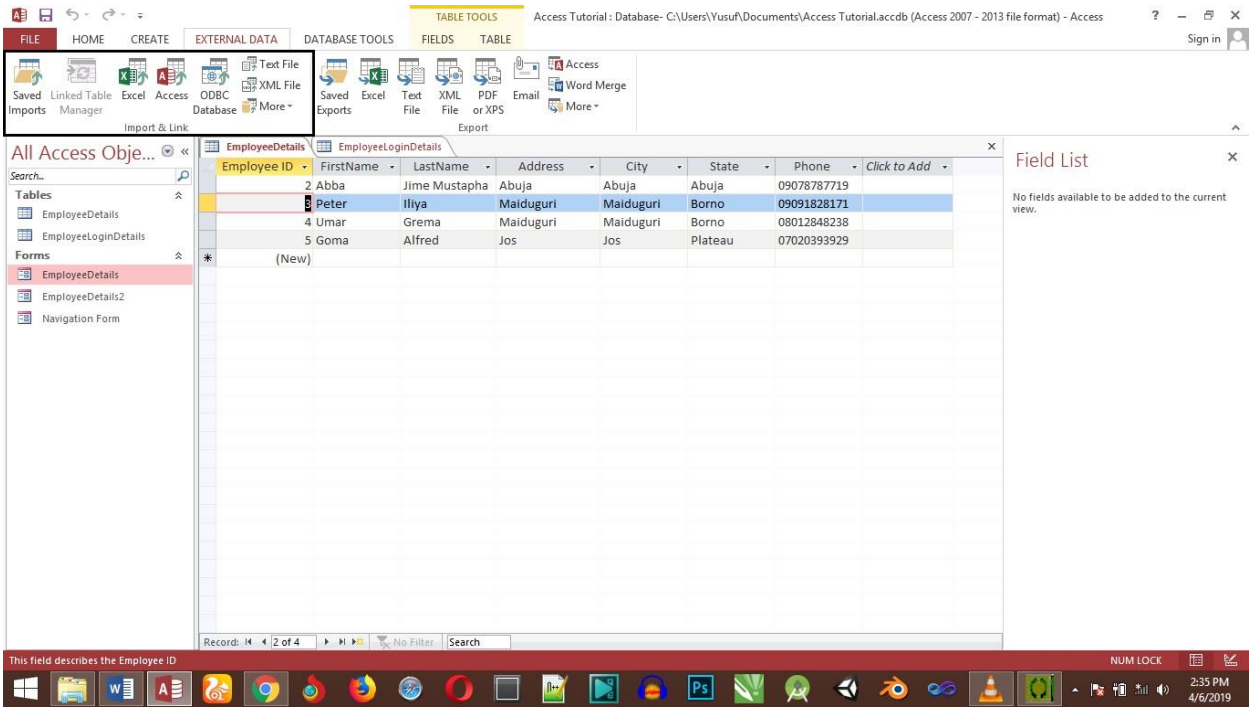
## Microsoft Access – Data Import

Normally data is stored in various formats, files, and locations, which makes it hard to get and use it. If you have data in a spreadsheet, a SharePoint list, or some other format, you can import it into an Access database with just a few steps, making it much more, easily available in Access.

- The Save As command is generally used to save a document in another format, so that you can open it in another program.
- In Access you can't use the Save As command in the same way, you can save Access objects as other Access objects, but you cannot save an Access database as a spreadsheet file.
- To save Access as a spreadsheet file, you will need to use the import feature on the External Data tab.

**Different Types of Data Access Can Import**

To understand what kind of data you can import in the Access data, let us open your database and go to the External Data tab.



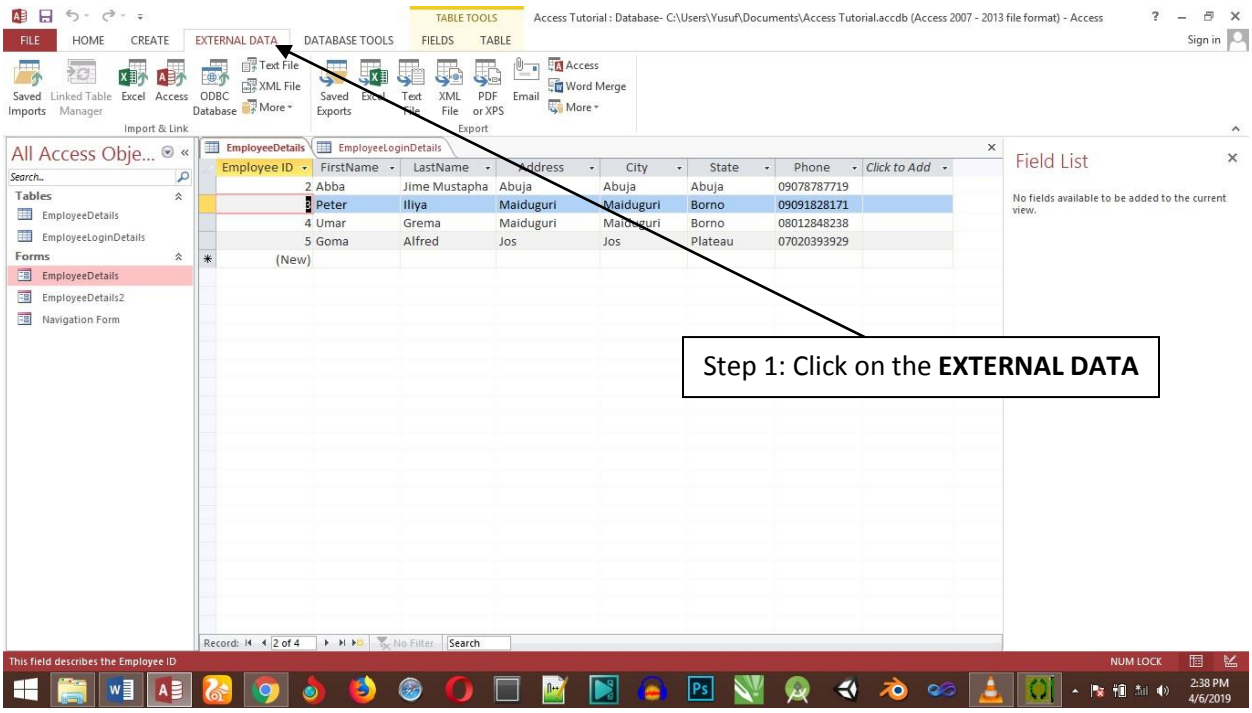

In the import & Link group, you can see the different kind of options available for data import in Access. Following are the most commonly used data import formats.

- Microsoft Office Excel

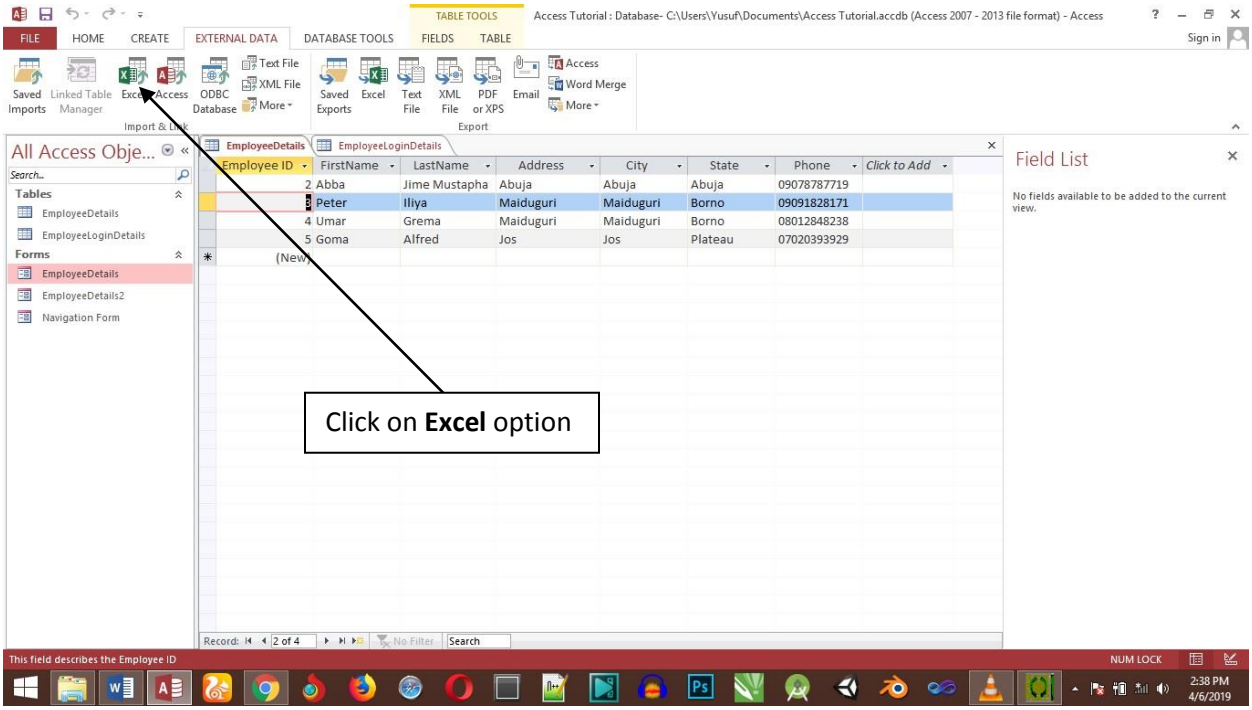
- Microsoft Office Access
- ODBC Databases (For example, SQL Server)
- Text files (delimited or fixed-width)
- XML Files

To import the data in Access, we first need to open the Access database and then go to the External Data tab as in the following screenshot.

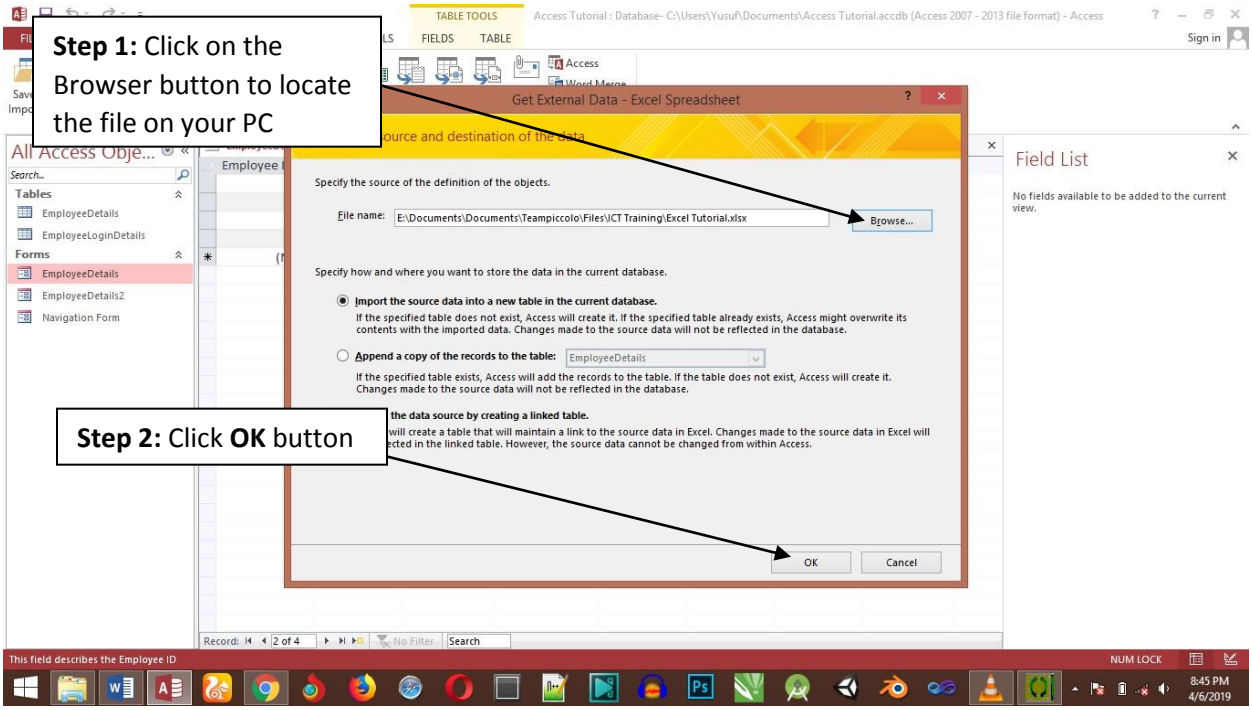
**Step 1:**



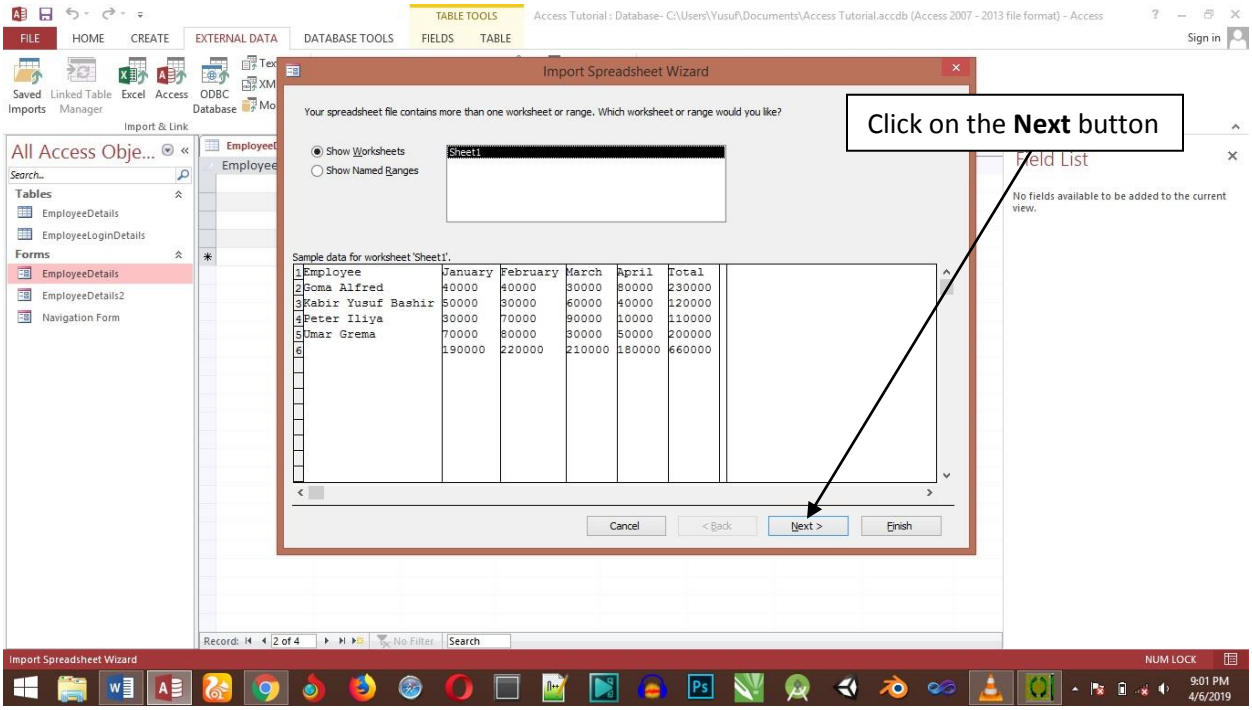
**Step 2:** Let try to import an **Excel Spreadsheet**



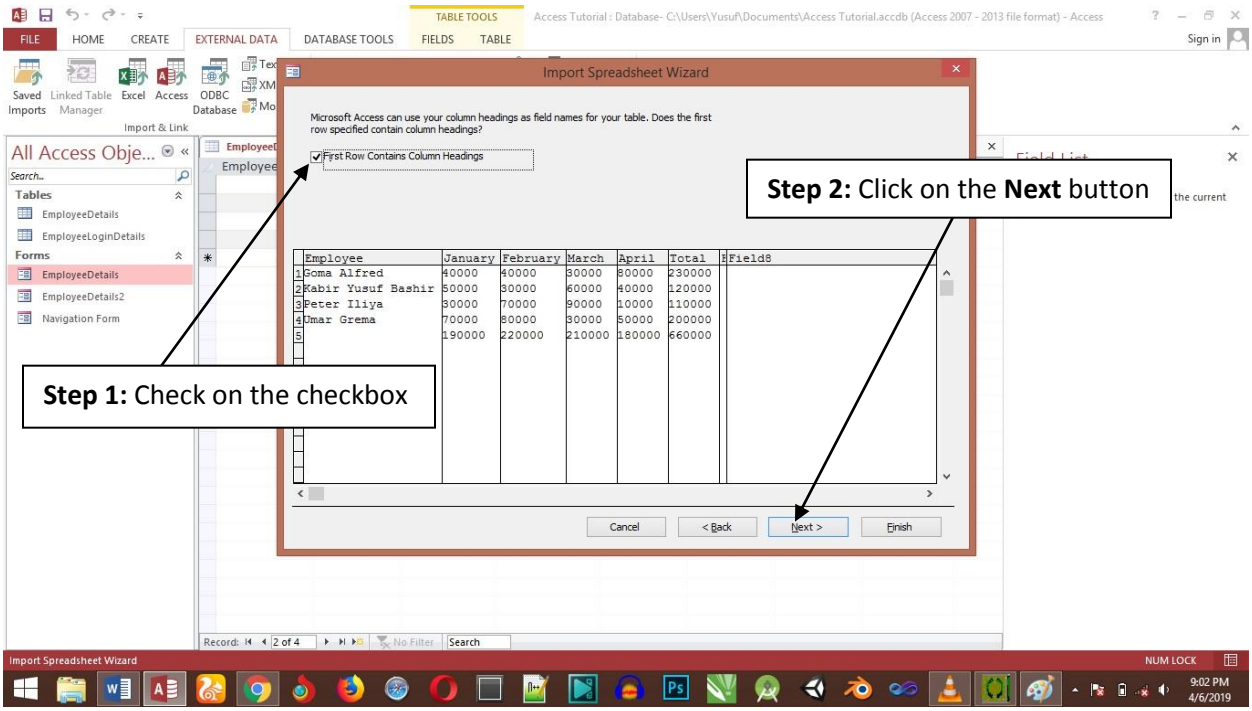

**Step 3:** Browse the Excel file from which you want to import data and the then we have different options to store data. Let us select the first option and click **Ok**.



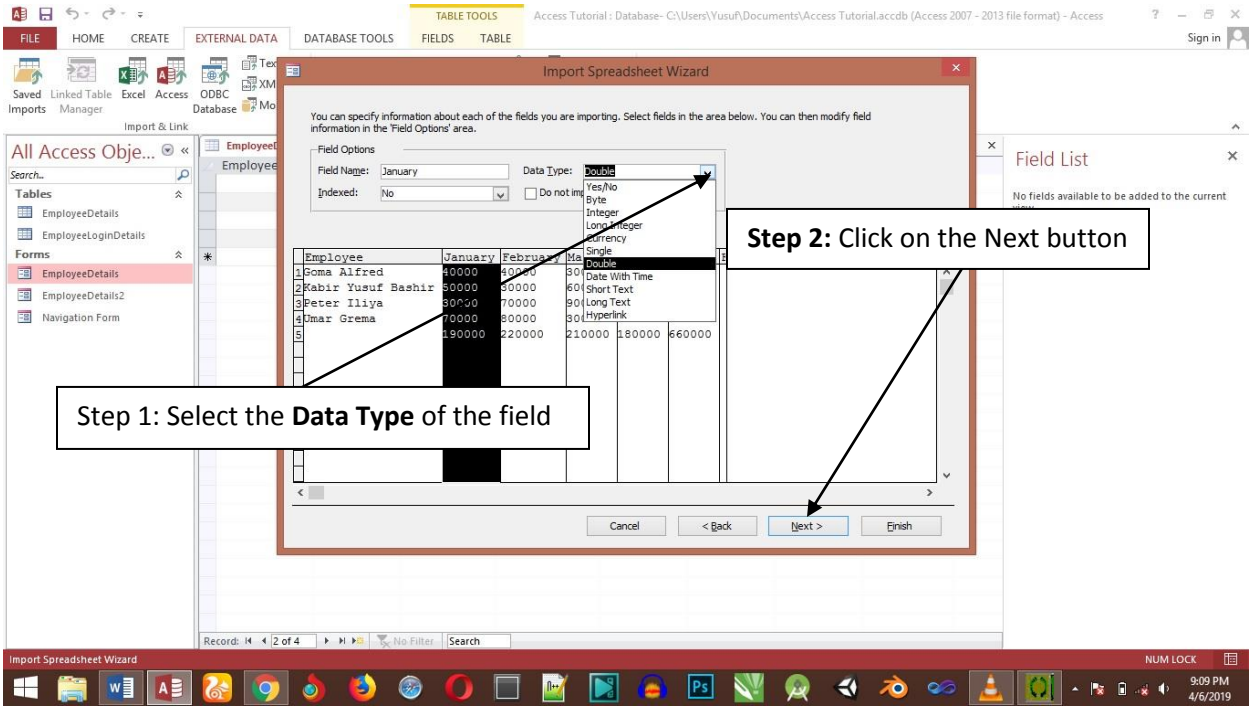
**Step 4:** Here you will see the preview of your data. Now, click the **Next**.



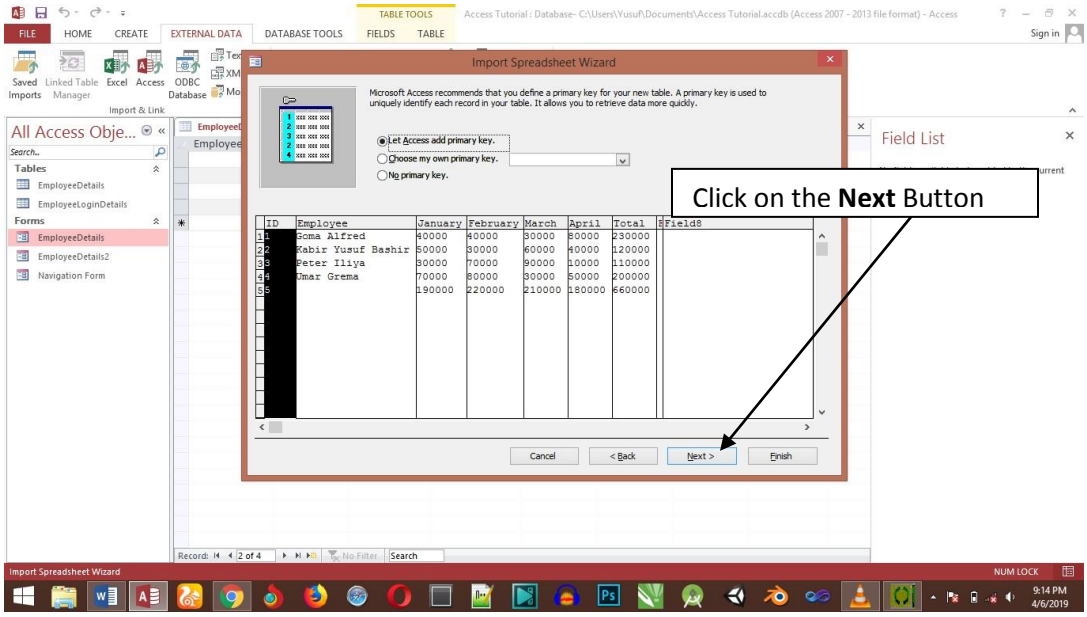

**Step 5:** In the Preview, you can now see that the first row contains the column headings. Let us now check the check box and click the **Next.**



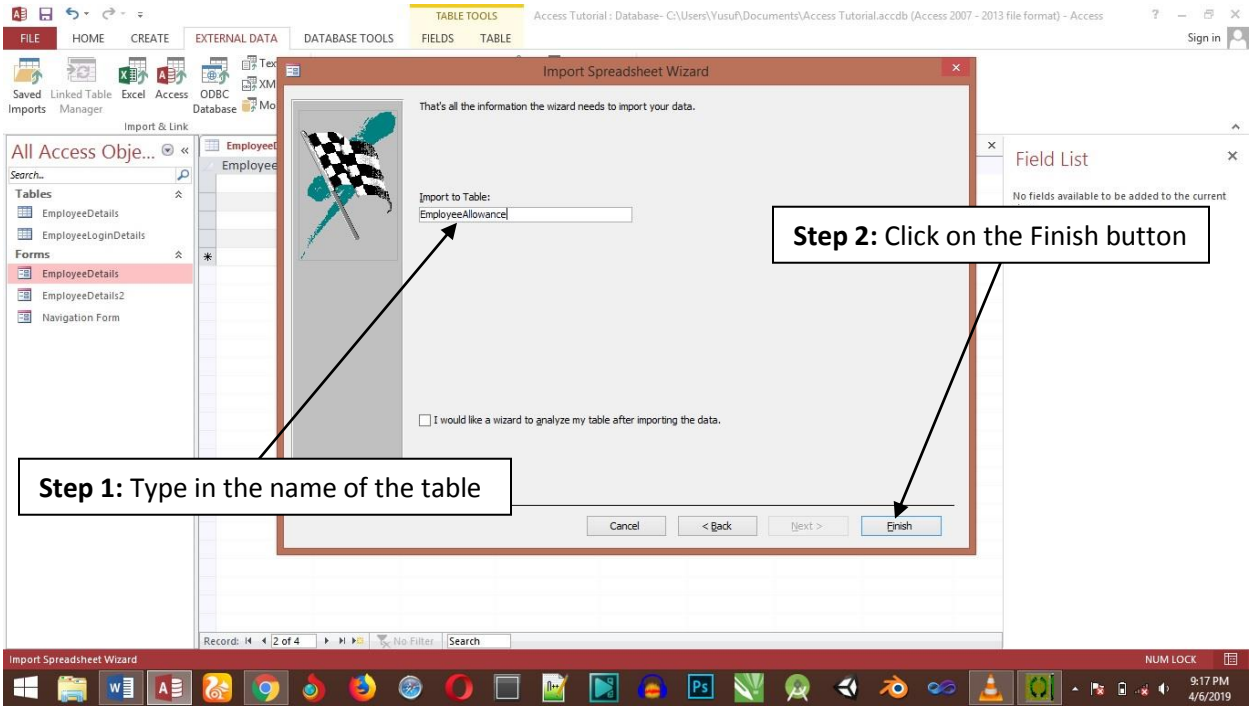
**Step 6:** You will now see a dialog box where you can set the data type for each column/field. If you don't want to import any field, just check the check box which says do not import field. Once you are done with the **Employee** field, just click on the **January** field, then the next field respectively.



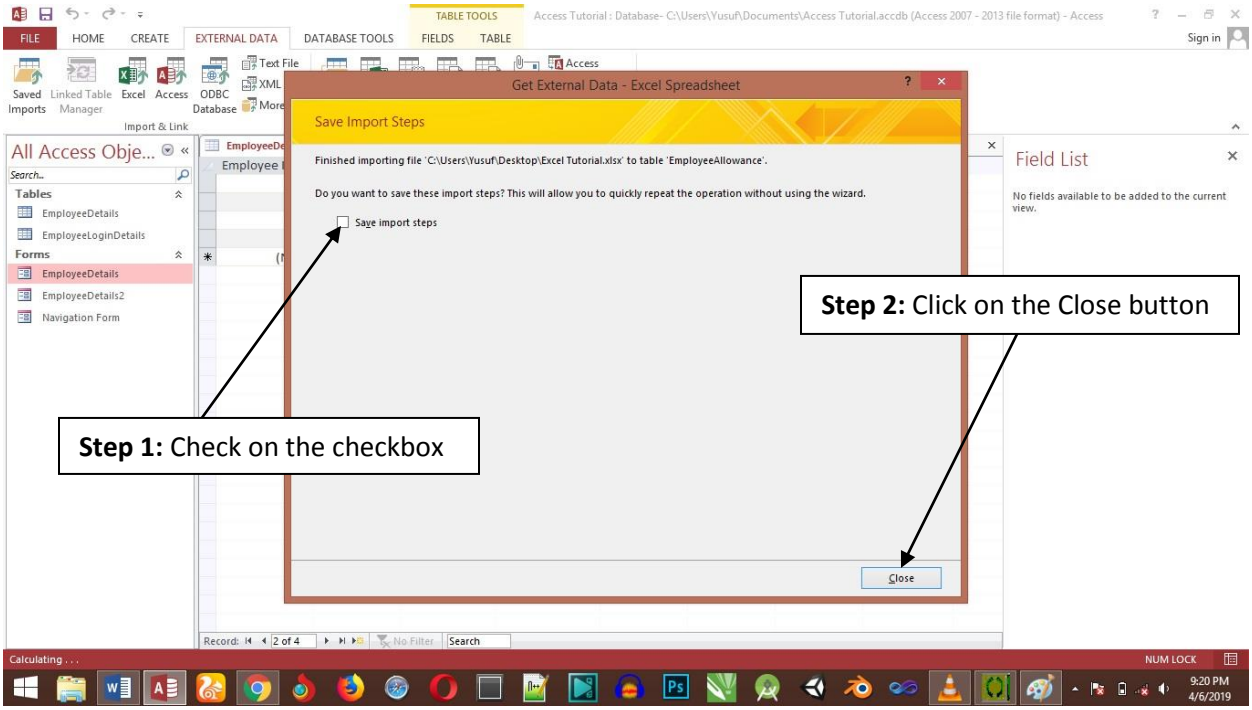

**Step 7:** Here are the different options for primary key. Let us select the first option and click the Next.



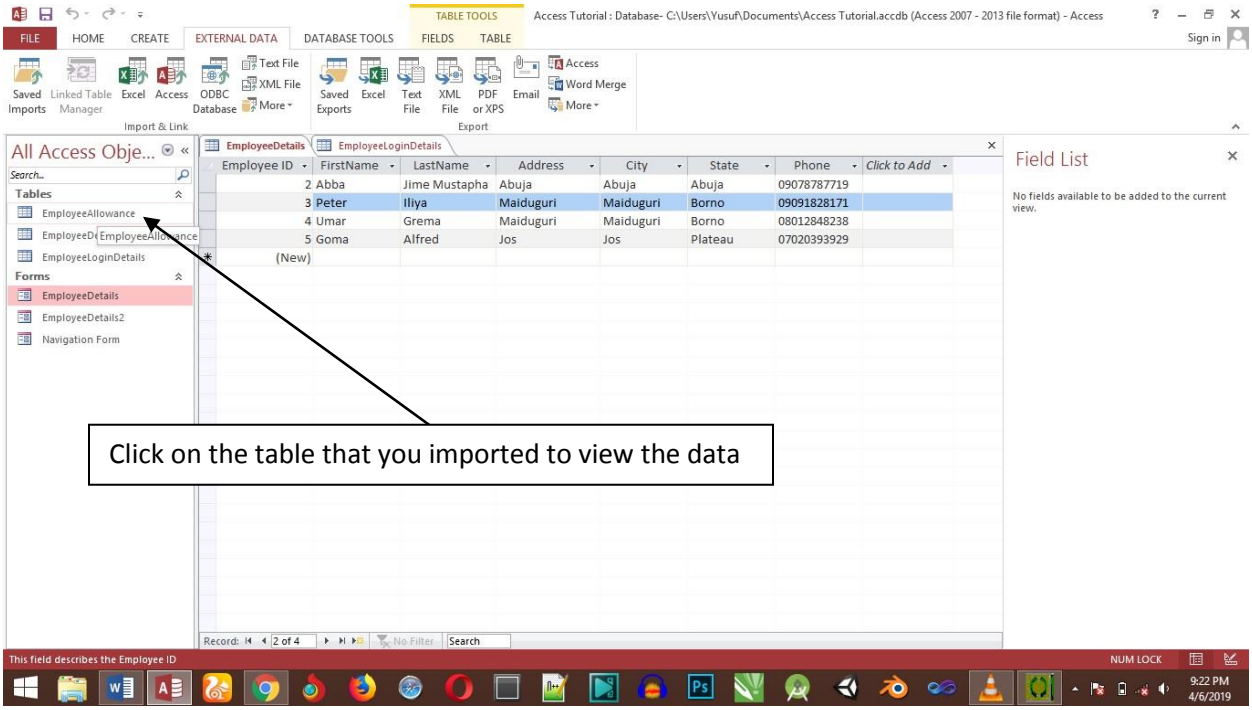
**Step 8:** In the last dialog box, you can enter the table name of your choice and click Finish.



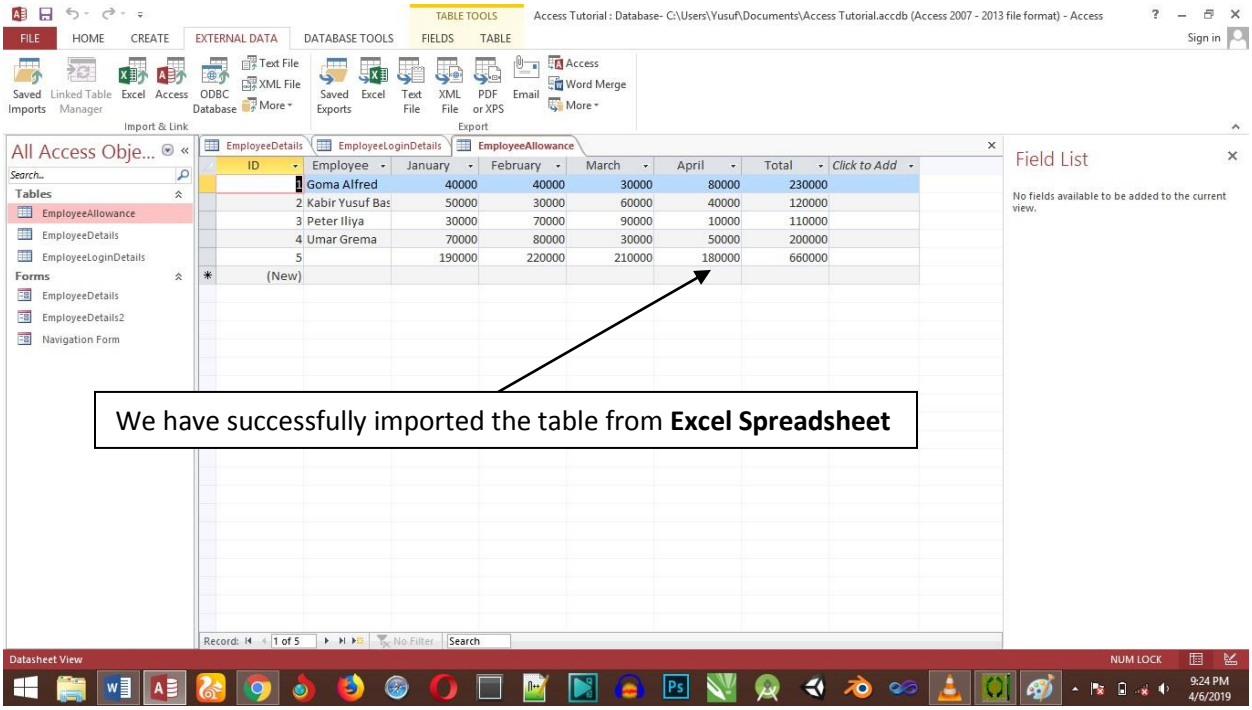

**Step 9:** If you want to save all these steps, then check the checkbox and close the dialog box.



## Step 10:




## Step 11:

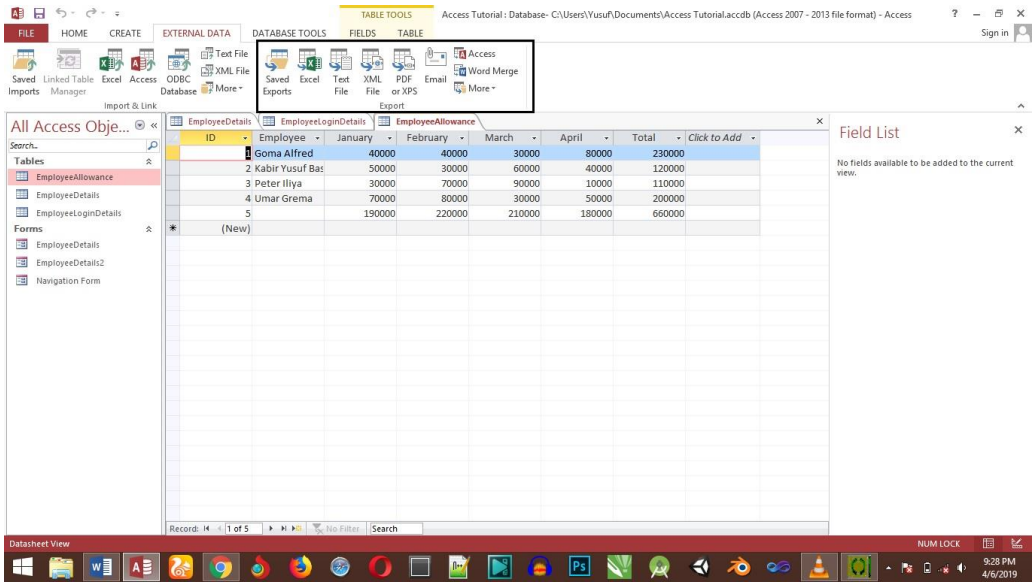


## Microsoft Access – Data Export

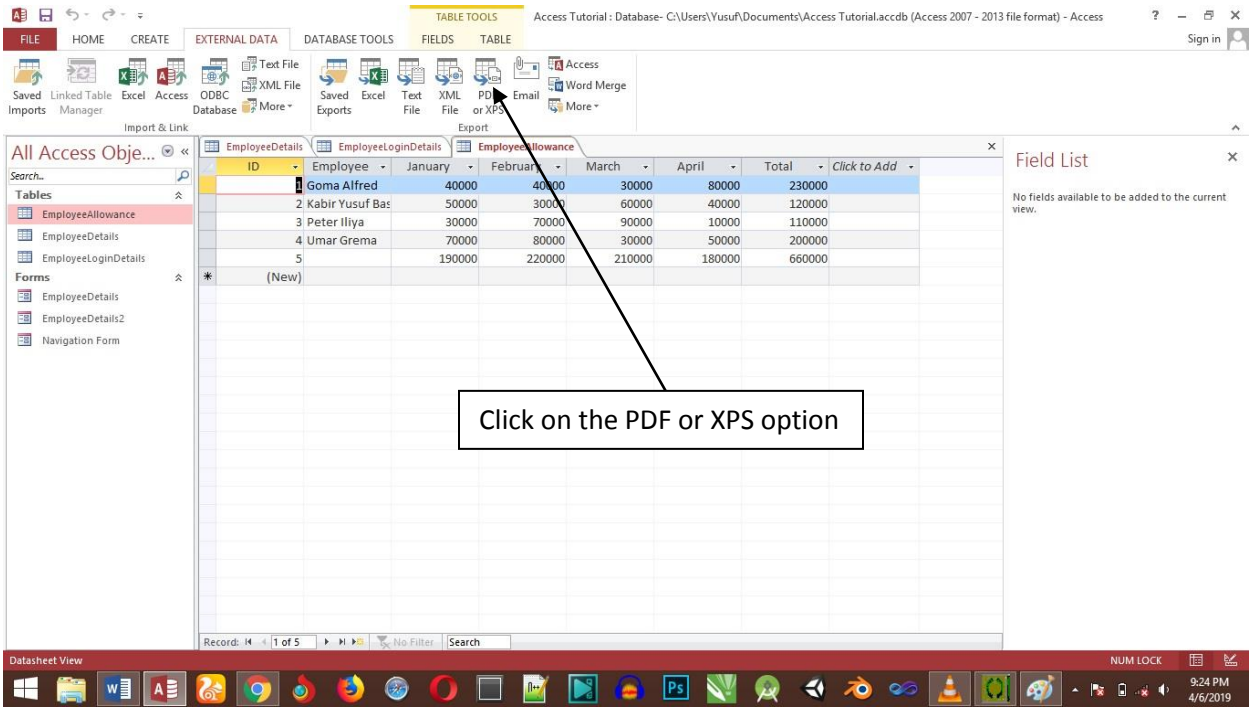
Data export is actually the opposite of importing data. In importing data, we bring data from other formats in Access, while in exporting we save the data in other formats.

To understand what kind of data you can export from Access data, let us open your database and go to the External Data tab.

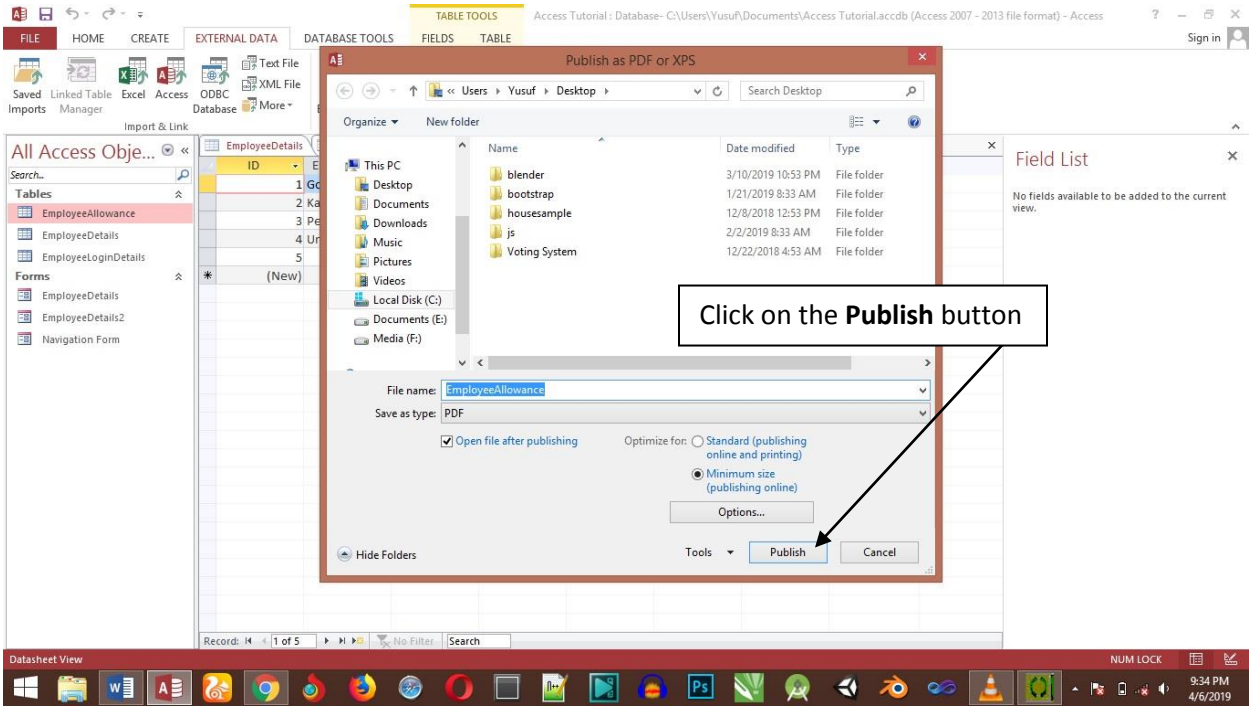
**Step 1:**



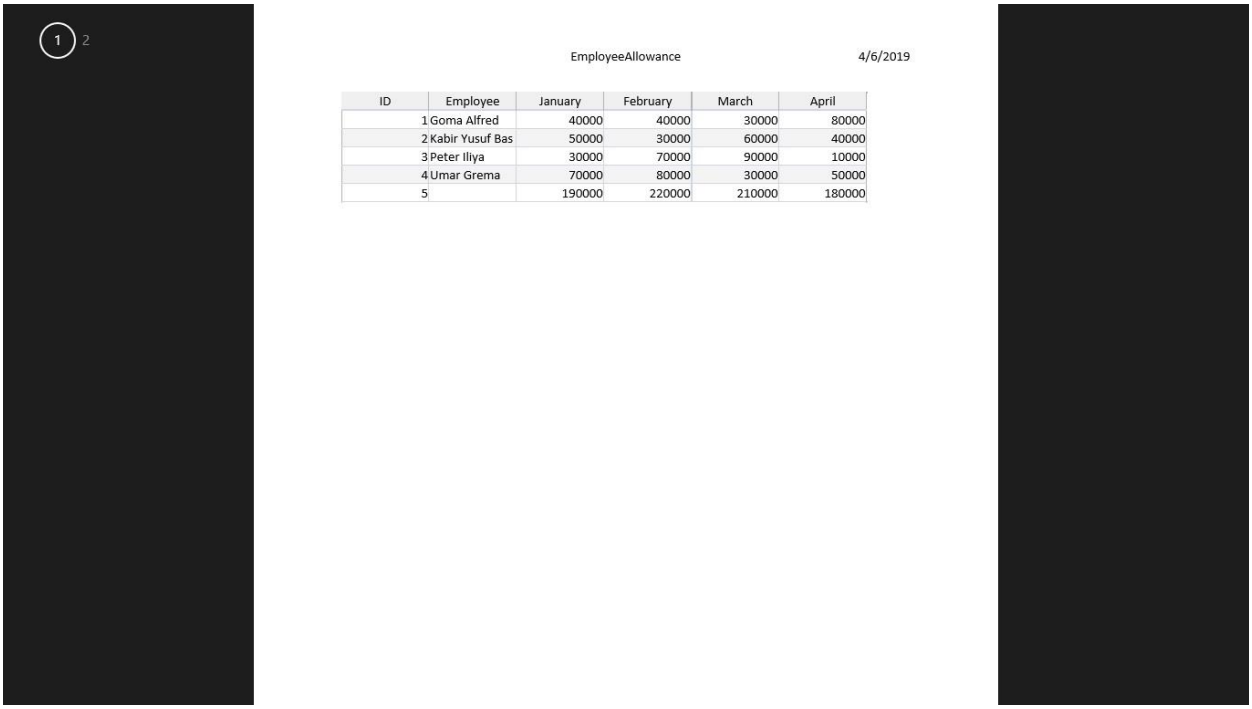

**Step 2:** Let us try to export the **EmployeeAllowance** table to PDF



**Step 3:** Choose the location where you want to store the PDF file.




**Step 4:** We have successfully exported the **EmployeeAllowance** table to PDF format



EmployeeAllowance 4/6/2019

| ID | Employee | January | February | March | April |
|---|---|---|---|---|---|
| 1 | Goma Alfred | 40000 | 40000 | 30000 | 80000 |
| 2 | Kabir Yusuf Bas | 50000 | 30000 | 60000 | 40000 |
| 3 | Peter Iliya | 30000 | 70000 | 90000 | 10000 |
| 4 | Umar Grema | 70000 | 80000 | 30000 | 50000 |
| 5 | | 190000 | 220000 | 210000 | 180000 |

## References


1. https://www.tutorialspoint.com/ms_access/ms_access_overview.htm
2. https://www.tutorialspoint.com/ms_access/ms_access_rdbms.htm
3. https://www.tutorialspoint.com/ms_access/ms_access_objects.htm
4. https://www.tutorialspoint.com/ms_access/ms_access_create_database.htm
5. https://www.tutorialspoint.com/ms_access/ms_access_data_types.htm
6. https://www.tutorialspoint.com/ms_access/ms_access_create_tables.htm
7. https://www.tutorialspoint.com/ms_access/ms_access_adding_data.htm
8. https://www.tutorialspoint.com/ms_access/ms_access_query_data.htm
9. https://www.tutorialspoint.com/ms_access/ms_access_create_queries.htm
10. https://www.tutorialspoint.com/ms_access/ms_access_relating_data.htm
11. https://www.tutorialspoint.com/ms_access/ms_access_create_relationships.htm
12. https://www.tutorialspoint.com/ms_access/ms_access_create_form.htm
13. https://www.tutorialspoint.com/ms_access/ms_access_data_import.htm
14. https://www.tutorialspoint.com/ms_access/ms_access_data_export.htm

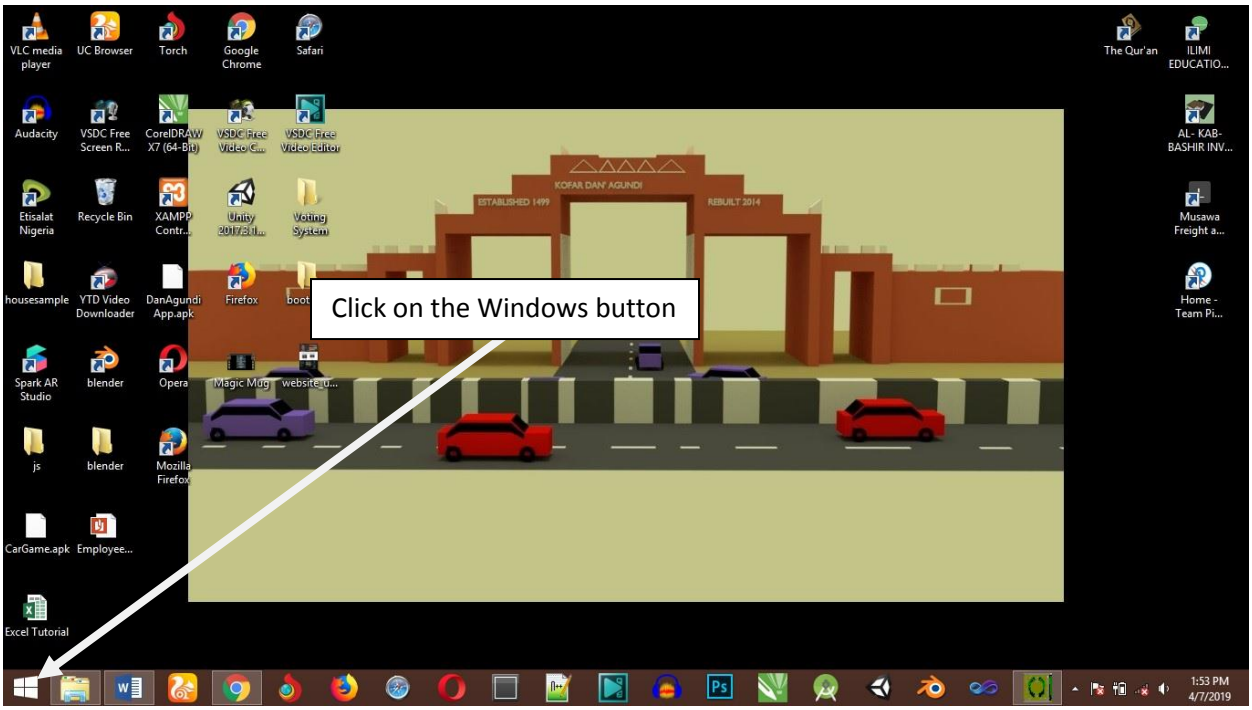
## CorelDraw

CorelDraw is one of the most popular and powerful graphics programs and gives designers a most rewarding and enjoyable work experience. It is built and designed to meet the day-to-day demands of working designers.

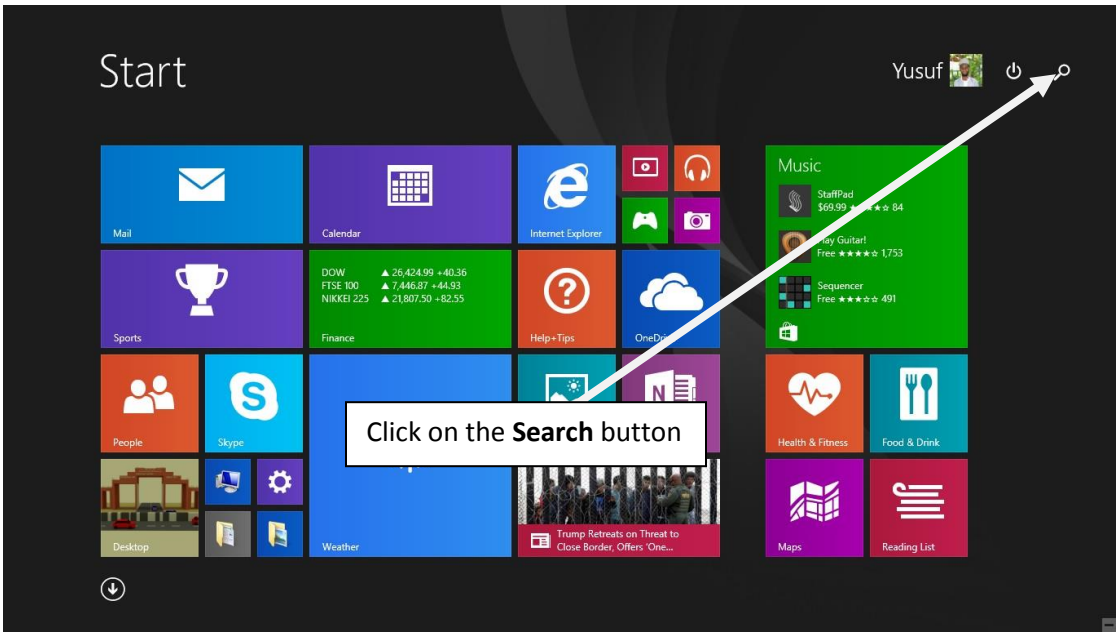
CorelDraw software is available in the market and once loaded onto the computer, you can get started with your designing work.

## Getting Started with CorelDraw

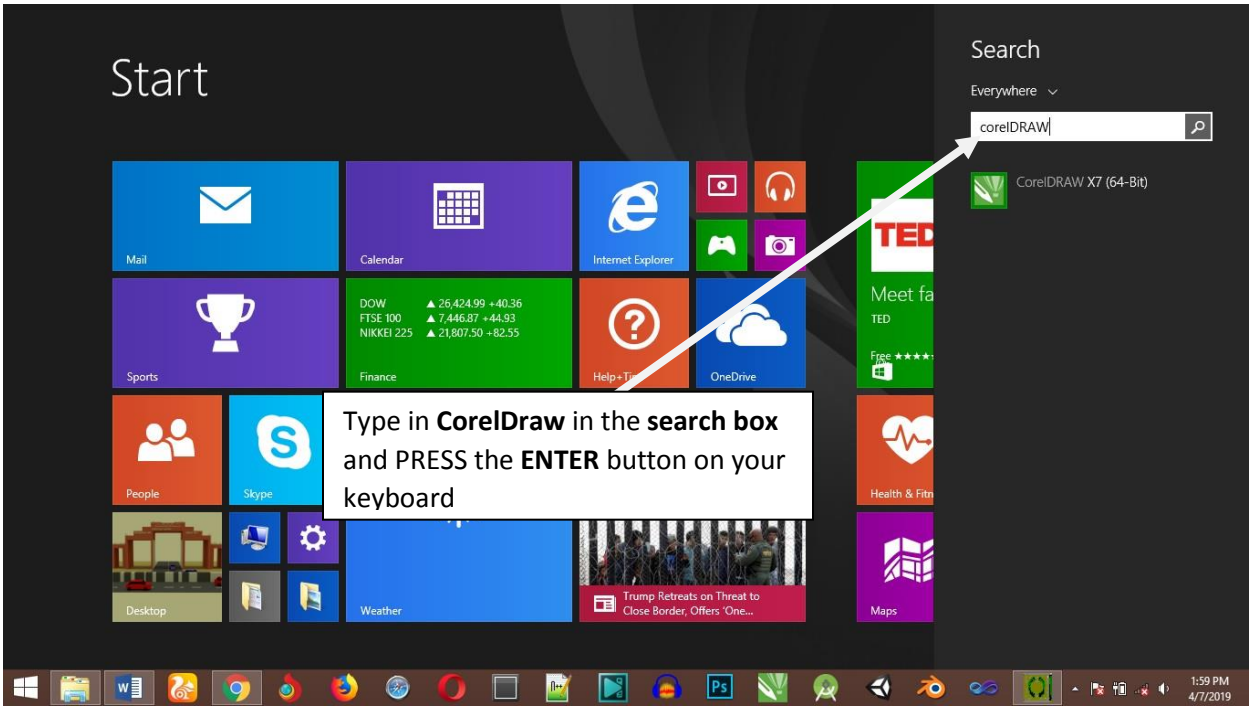
**Step 1:**



**Step 2:**

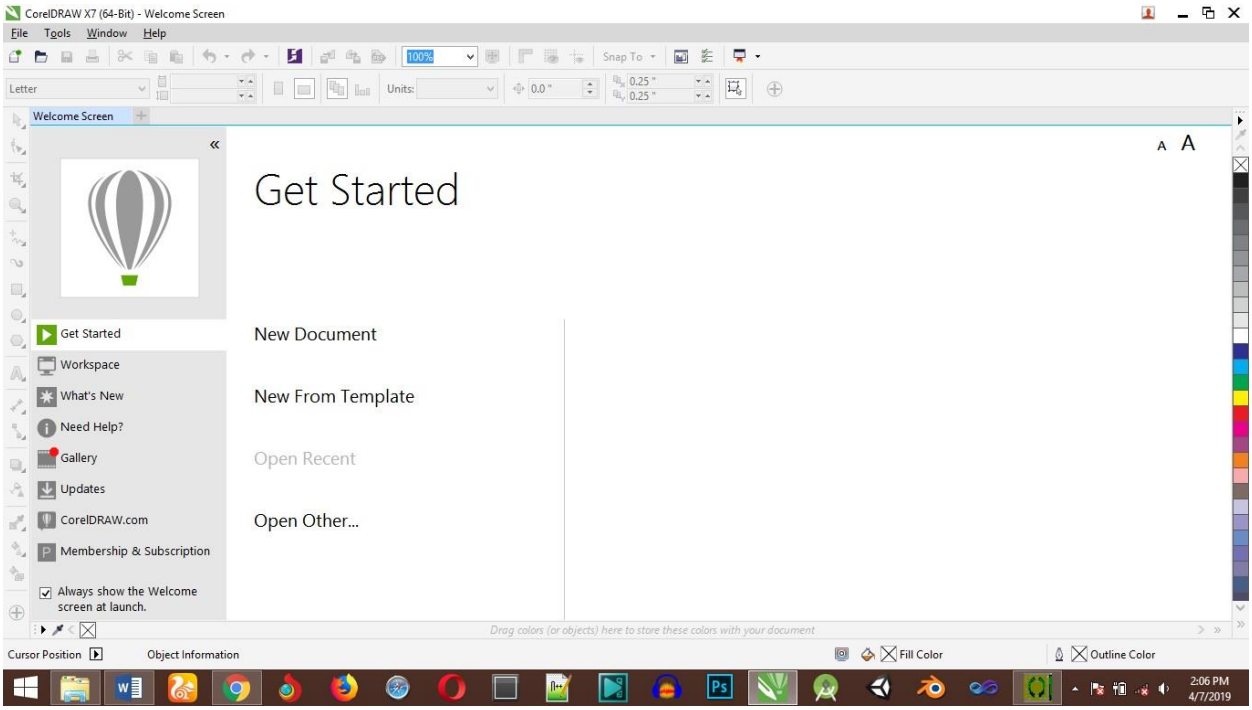



**Step 3:**




**NB: I have installed CorelDraw X7 on my PC, the steps above will work for both earlier and later previous of CorelDRAW.**

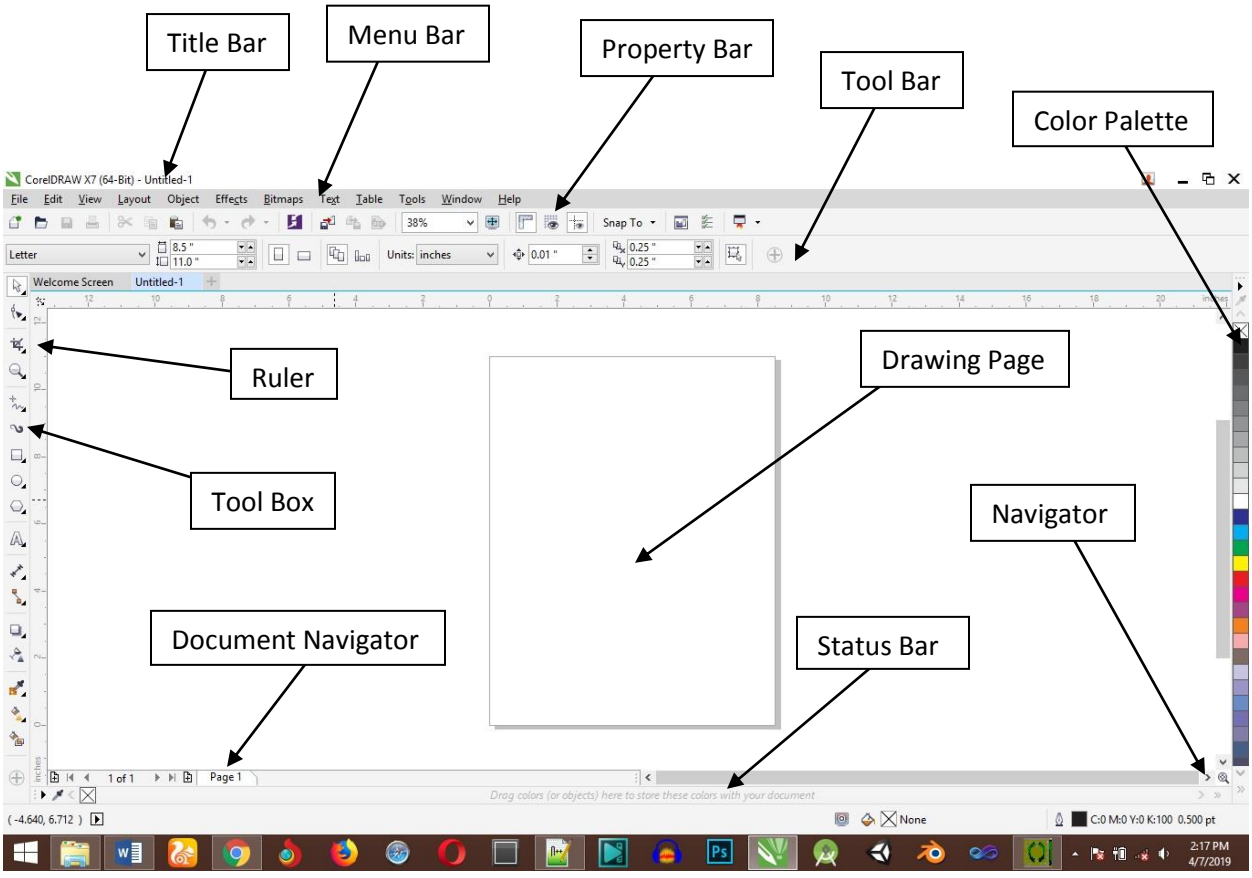
**Step 4:** We have successfully started CorelDraw.



## CorelDraw Window

The various window components in CorelDraw are:

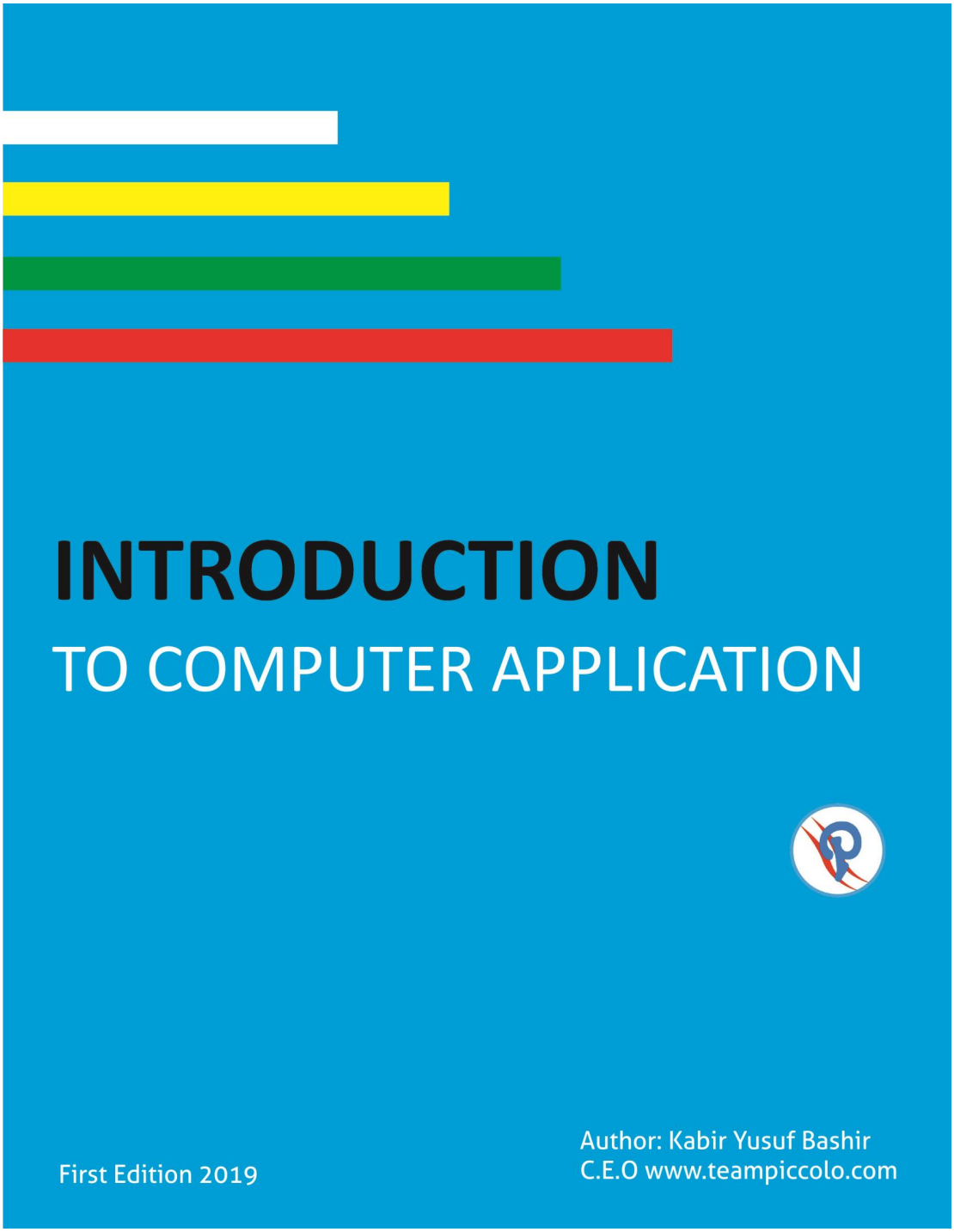
- Title bar
- Menu bar
- Property bar
- Tool bar (Standard)
- Tool box
- Rulers
- Drawing Page
- Drawing Window
- Color Palette
- Status bar
- Document navigator
- Navigator



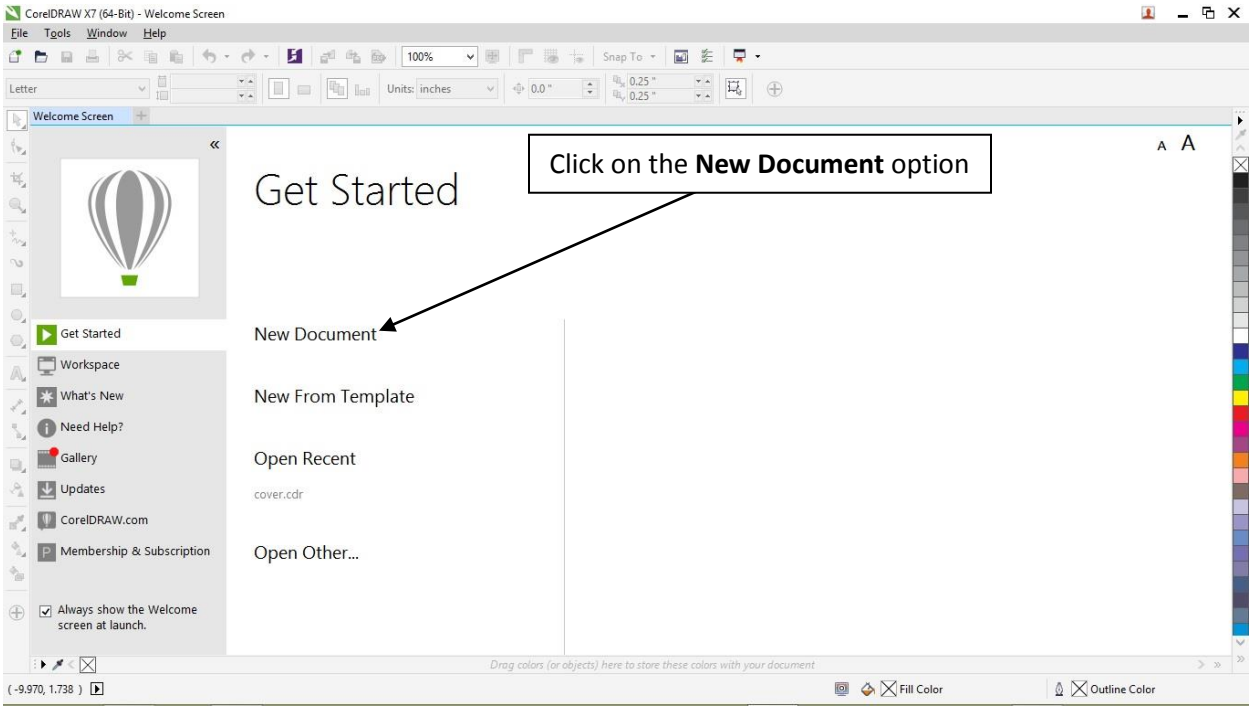
## Designing a Book Cover

In the section above, we explored the CorelDraw window. In this section we are going to design a **book cover.**

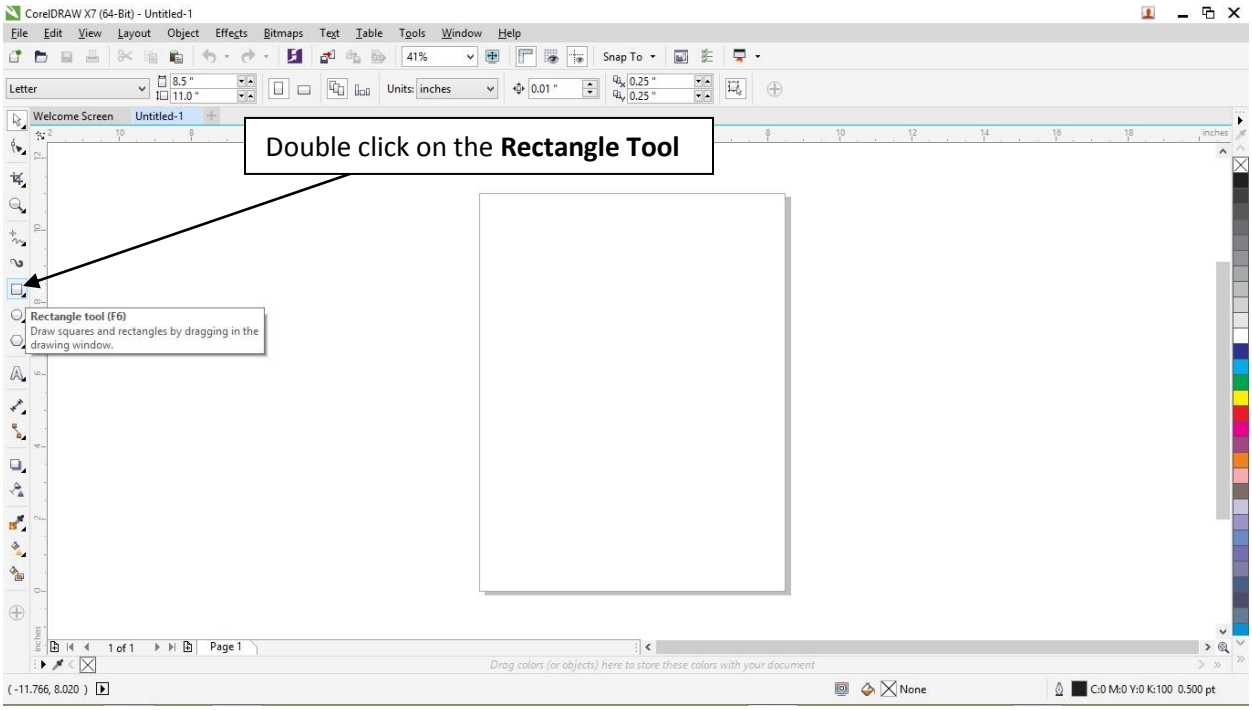
In the steps below, we will be designing the book cover of this book:



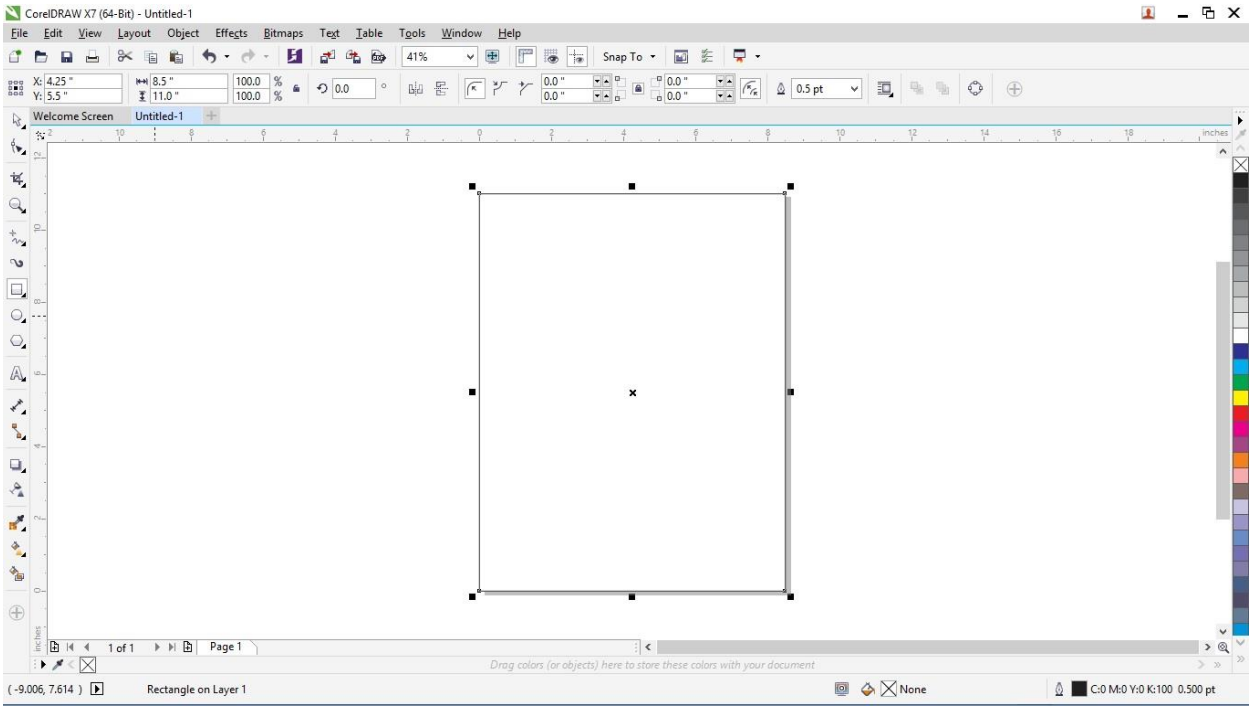
**Step 1:** Open your CorelDraw application.



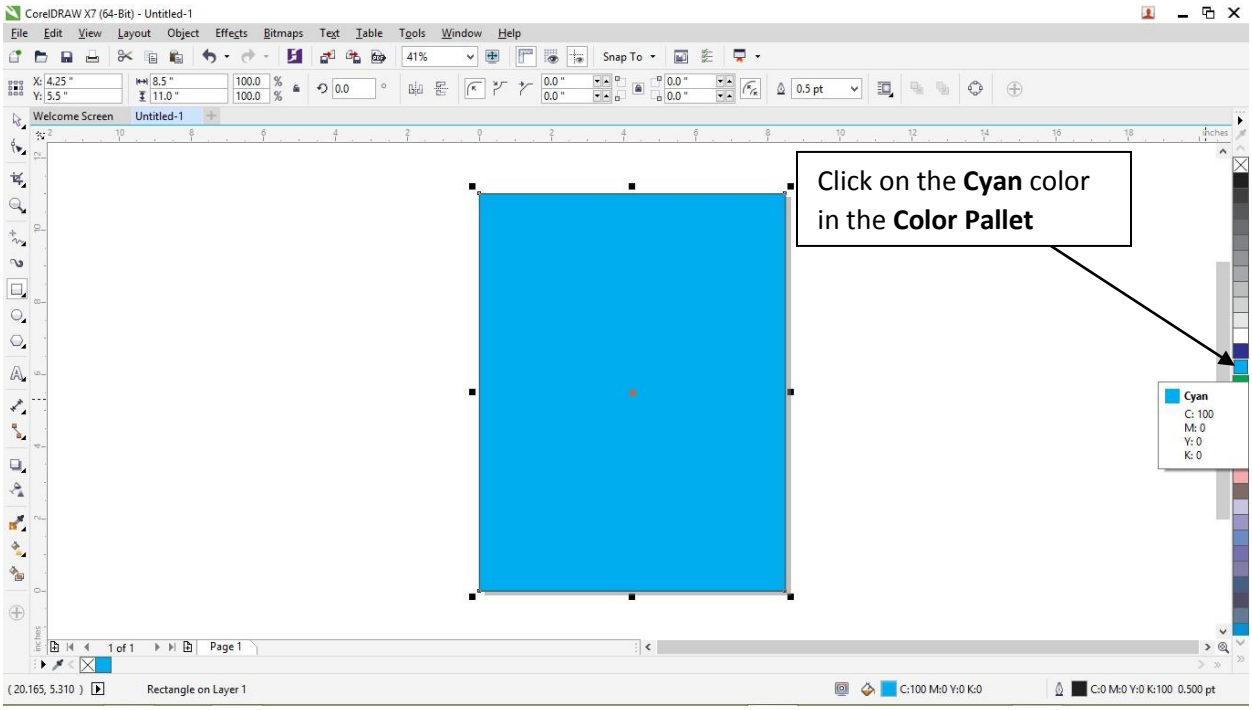

**Step 2:**



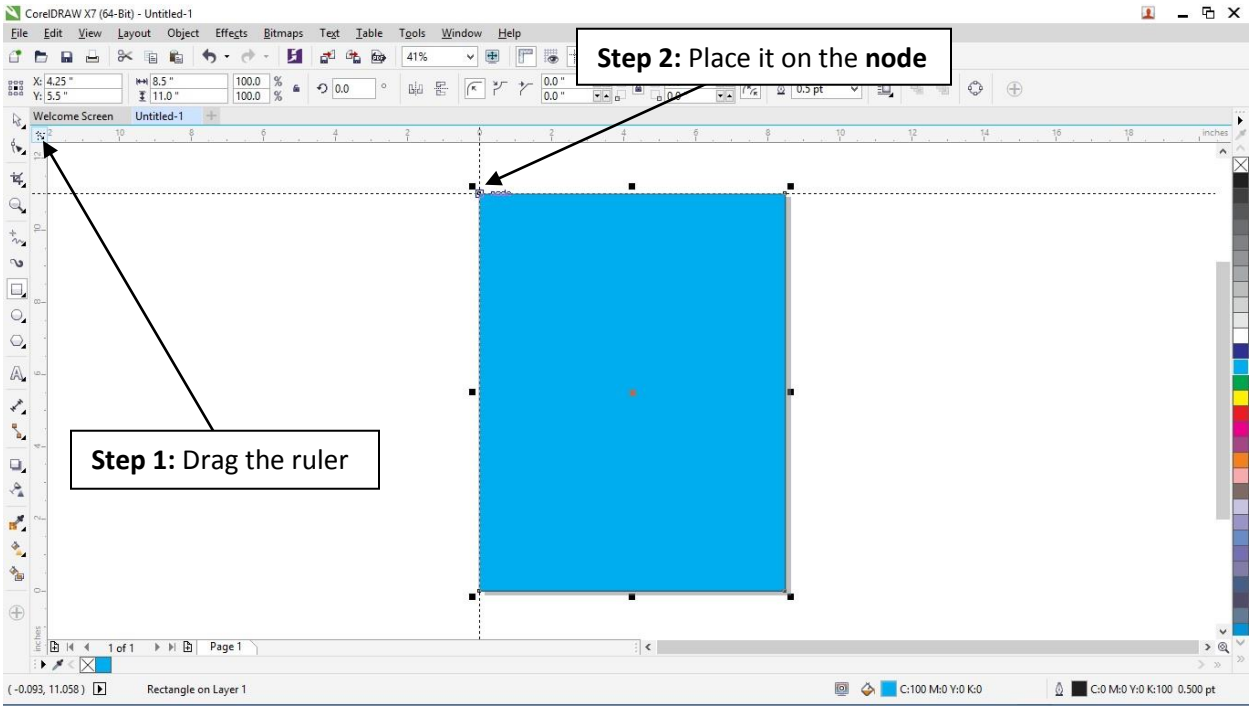
## Step 3:


CorelDRAW X7 (64-Bit) - Untitled-1
File Edit View Layout Object Effects Bitmaps Text Table Tools Window Help
Welcome Screen
Untitled-1
Page 1
Drag colors (or objects) here to store these colors with your document
Rectangle on Layer 1
None
C:0 M:0 Y:0 K:100 0.500 pt

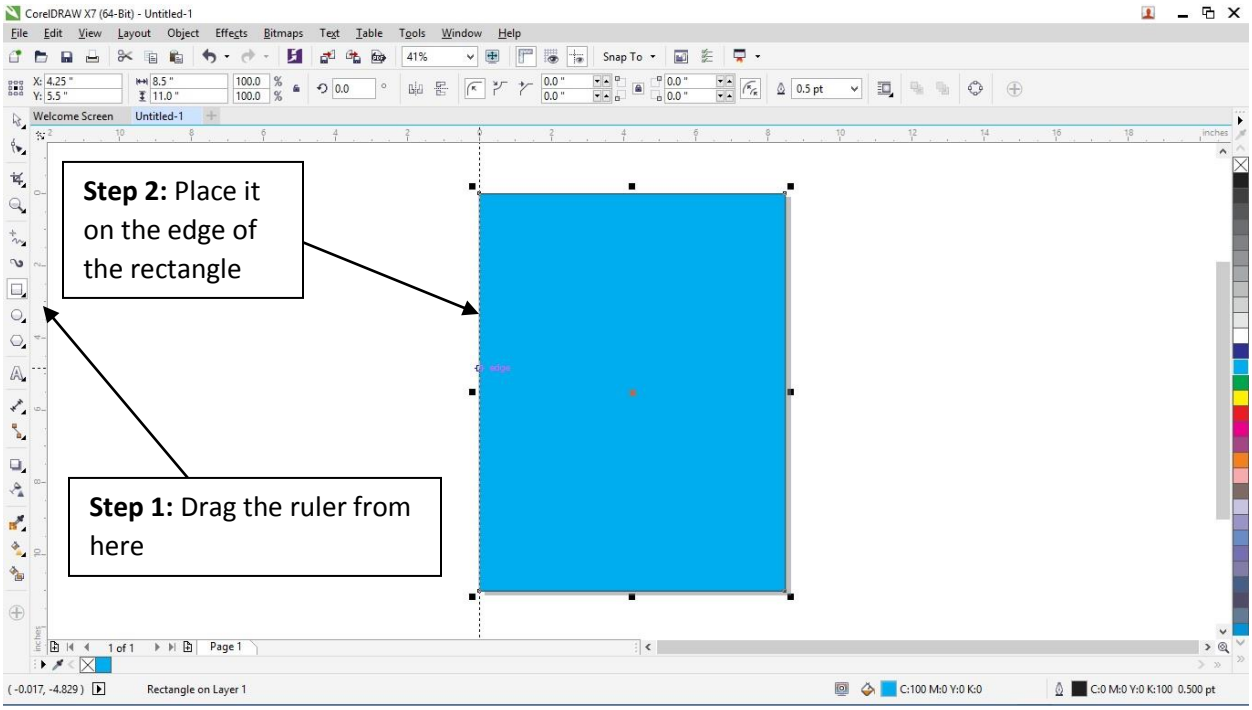
## Step 4:


CorelDRAW X7 (64-Bit) - Untitled-1
Welcome Screen
Untitled-1
Click on the **Cyan** color in the **Color Pallet**
Cyan
C: 100
M: 0
Y: 0
K: 0
Page 1
Rectangle on Layer 1
C:100 M:0 Y:0 K:0
C:0 M:0 Y:0 K:100 0.500 pt

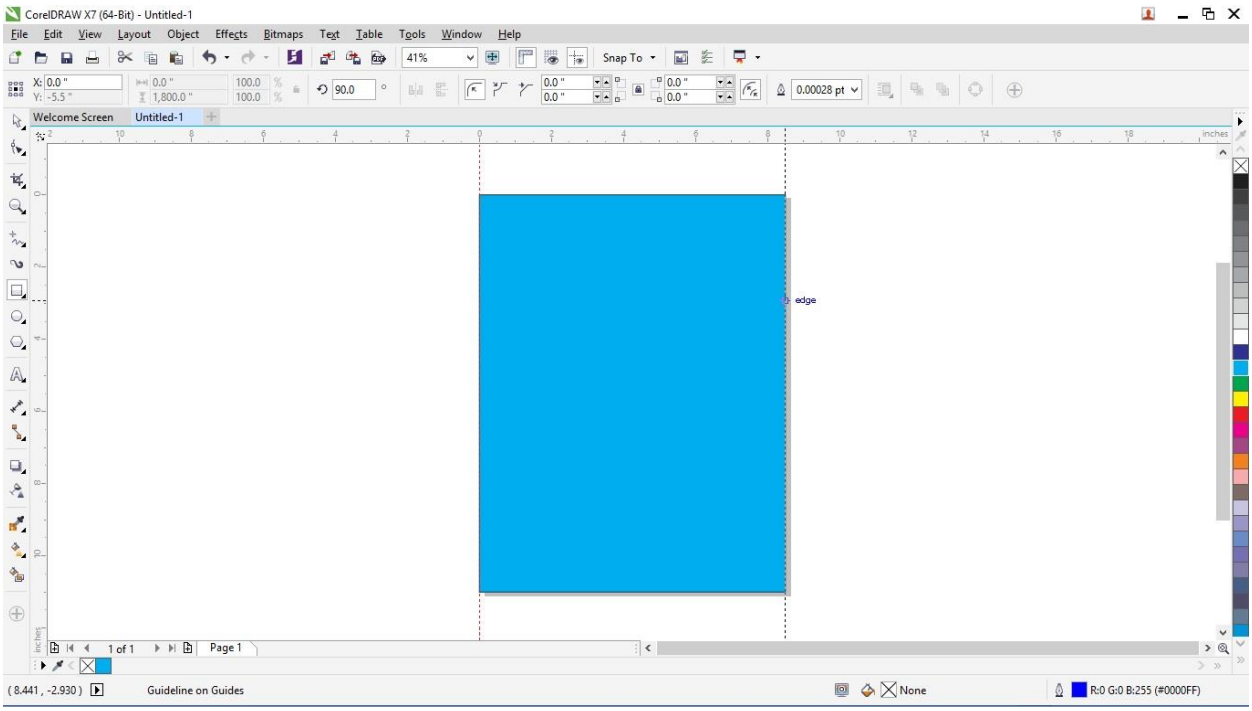
**Step 5:**



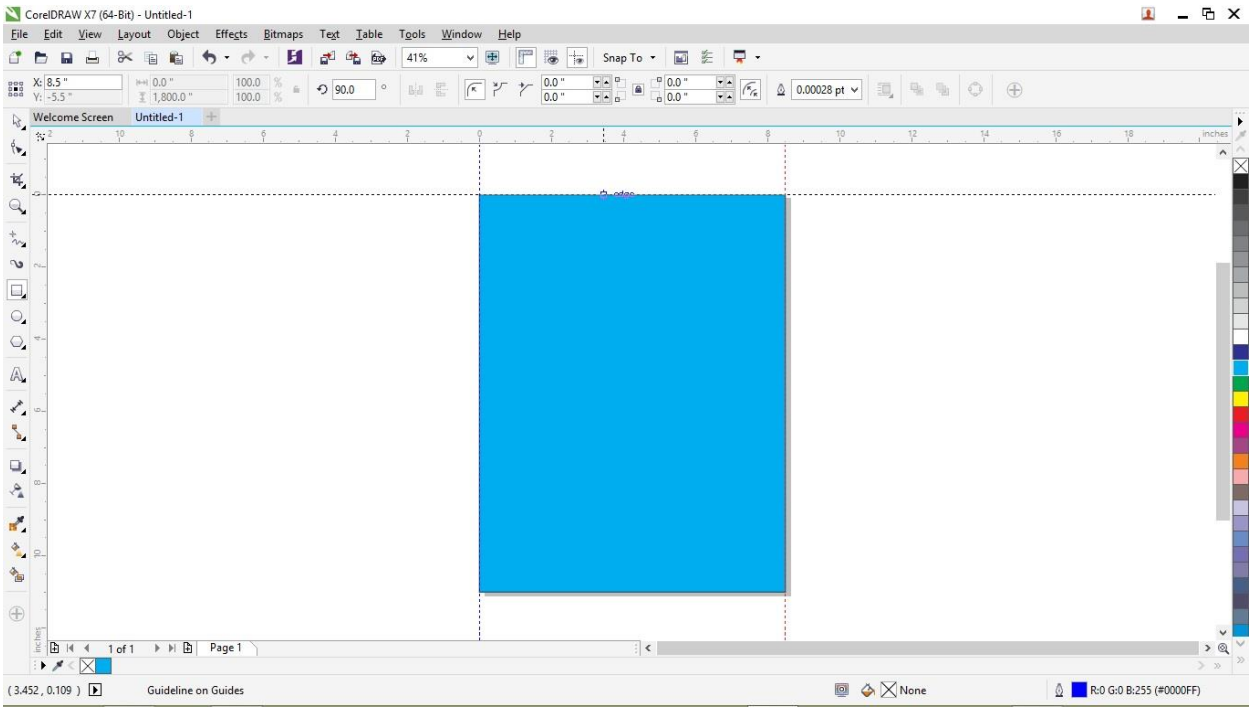

**Step 6:** Drag the ruler from the LHS and place it on the LHS edge of your rectangle.



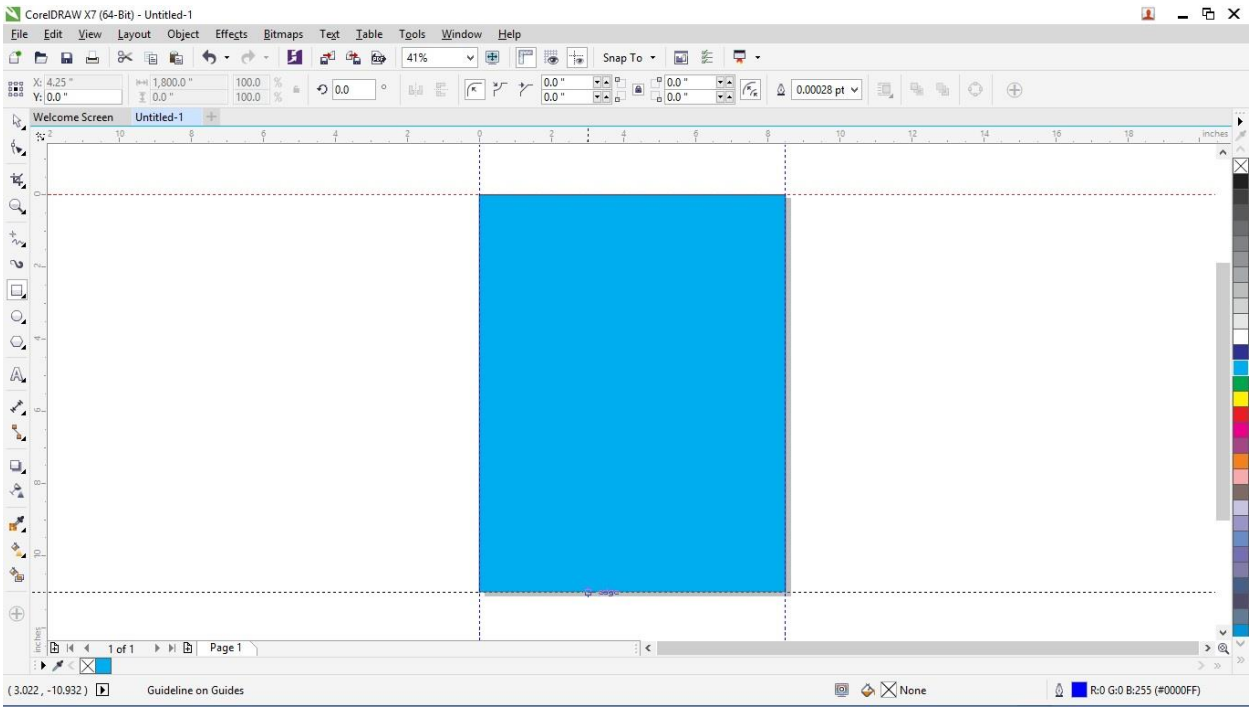
**Step 7:** Repeat the same procedure by dragging the ruler from the LHS to the RHS of the edge of the rectangle.



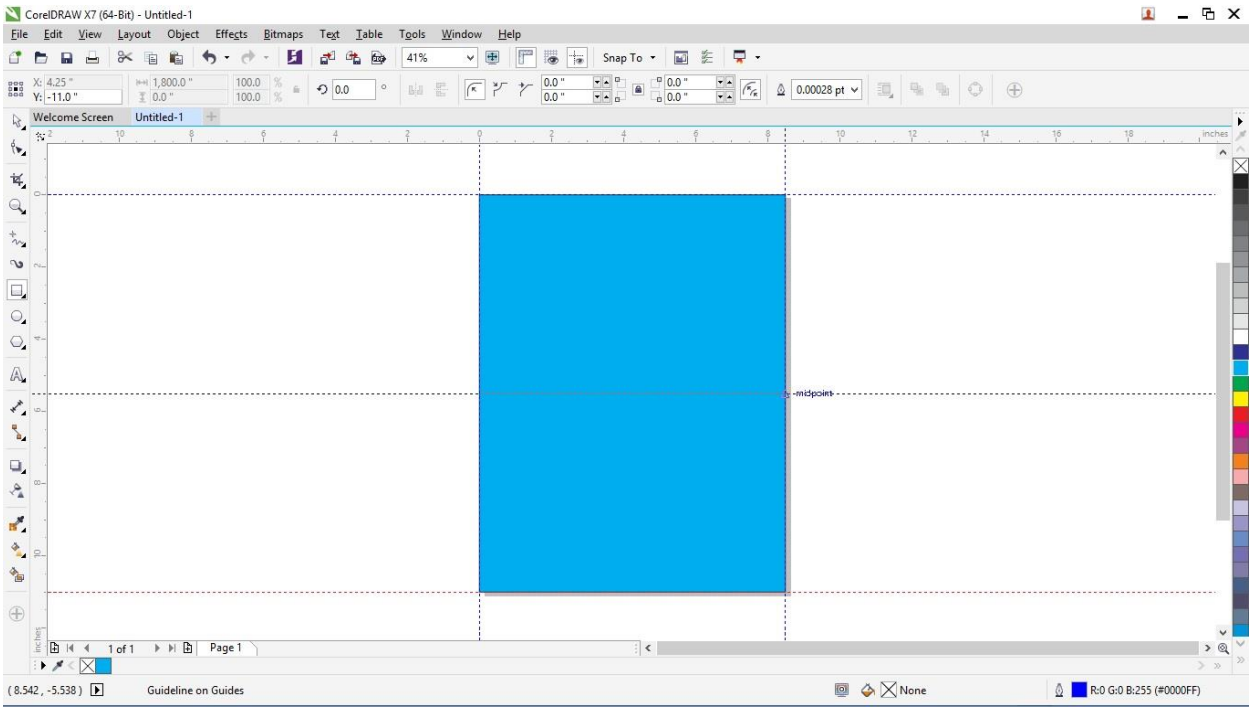

**Step 8:** Drag the ruler from the top and place it on the top of the rectangle.



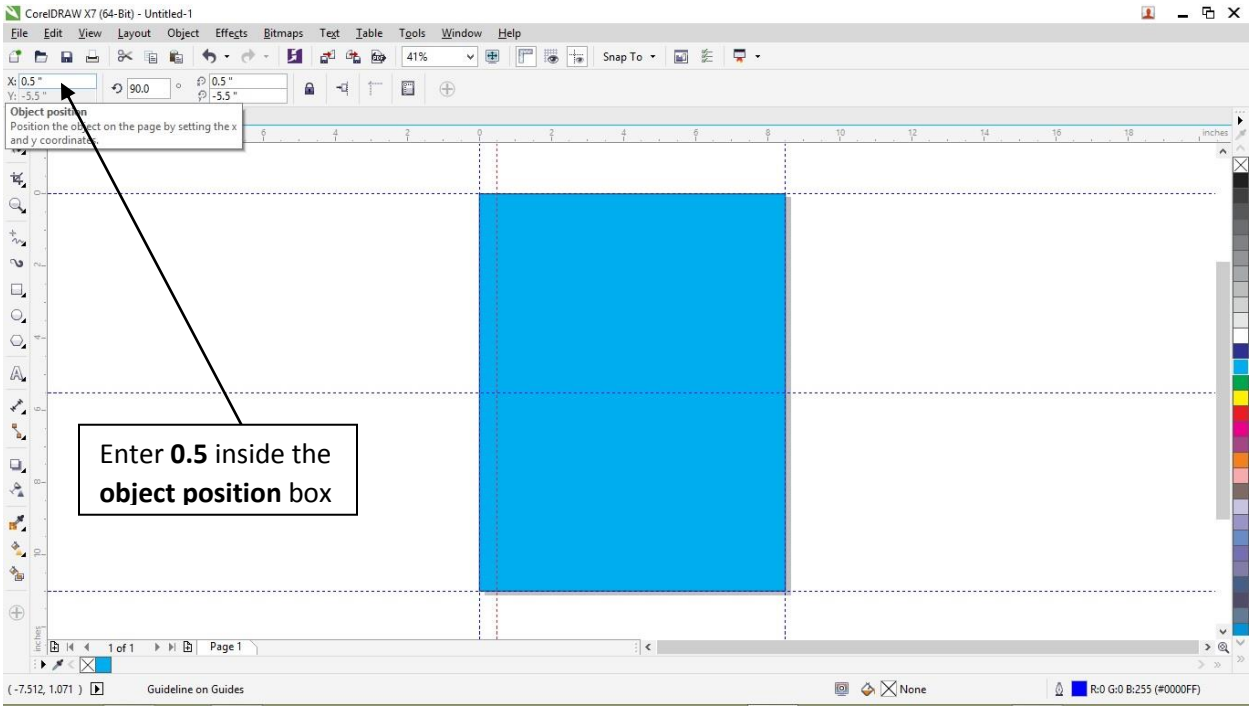
**Step 9:** Repeat the same procedure by dragging the ruler from the top and place at the bottom of the rectangle.



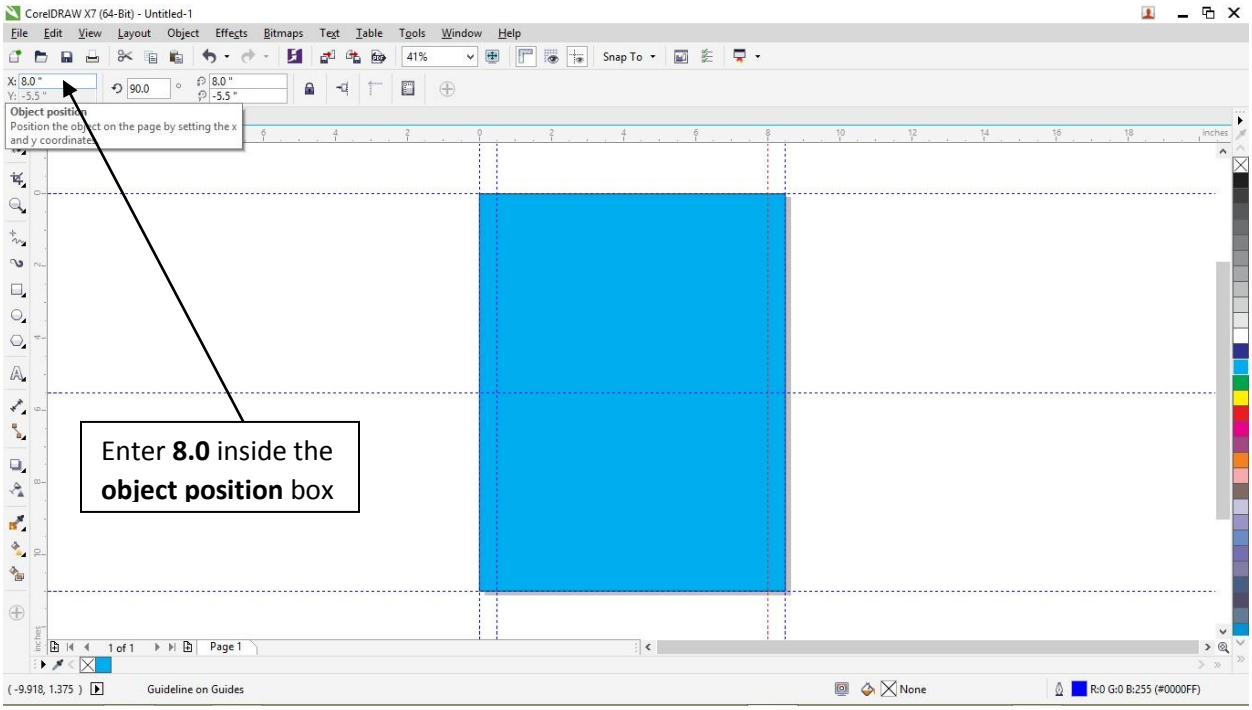

**Step 10:** Drag the ruler from the top and place it on the midpoint of the rectangle.



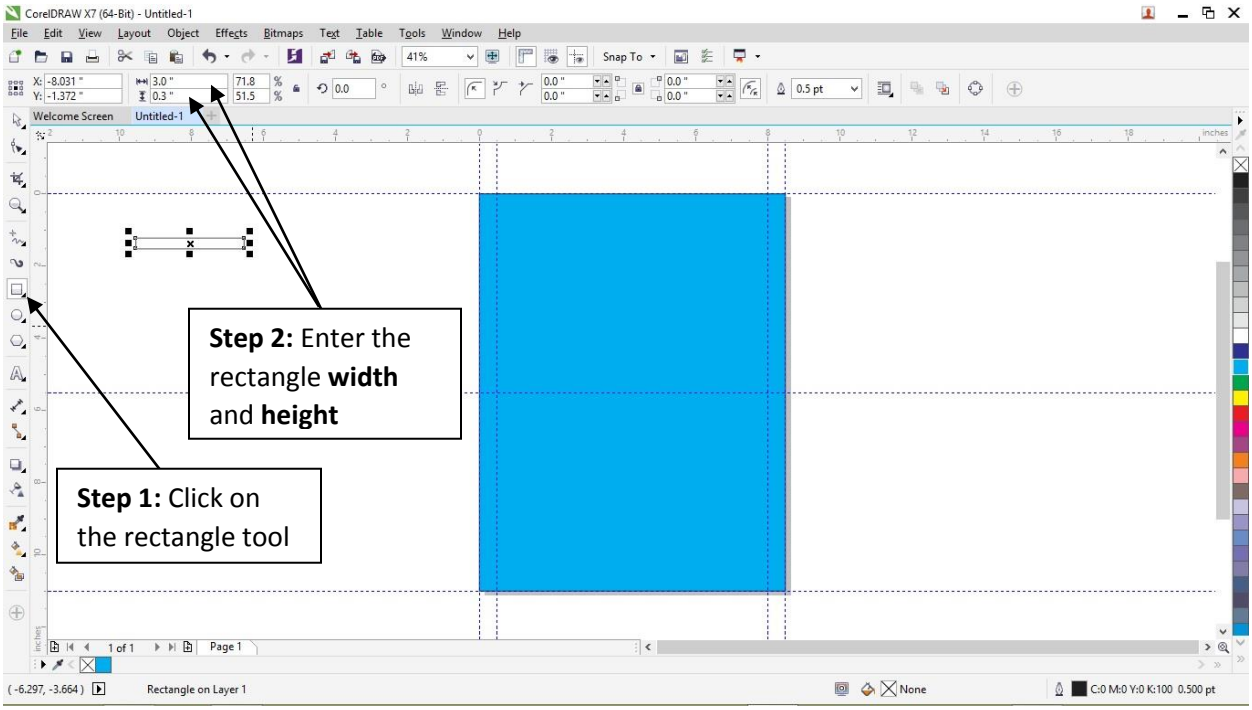
**Step 11:** Drag the ruler from the LHS and place it **0.5 inches** on the rectangle.



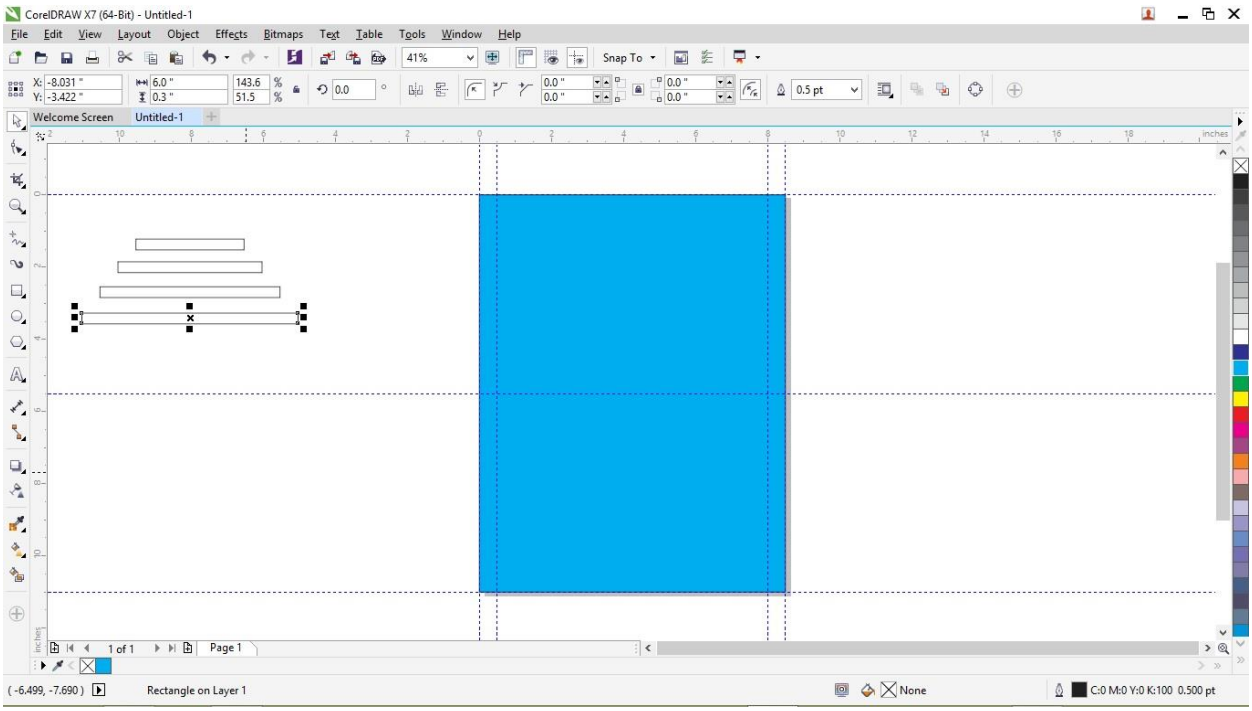

**Step 12:** Repeat same procedure and place it **8.0 inches** on the rectangle.



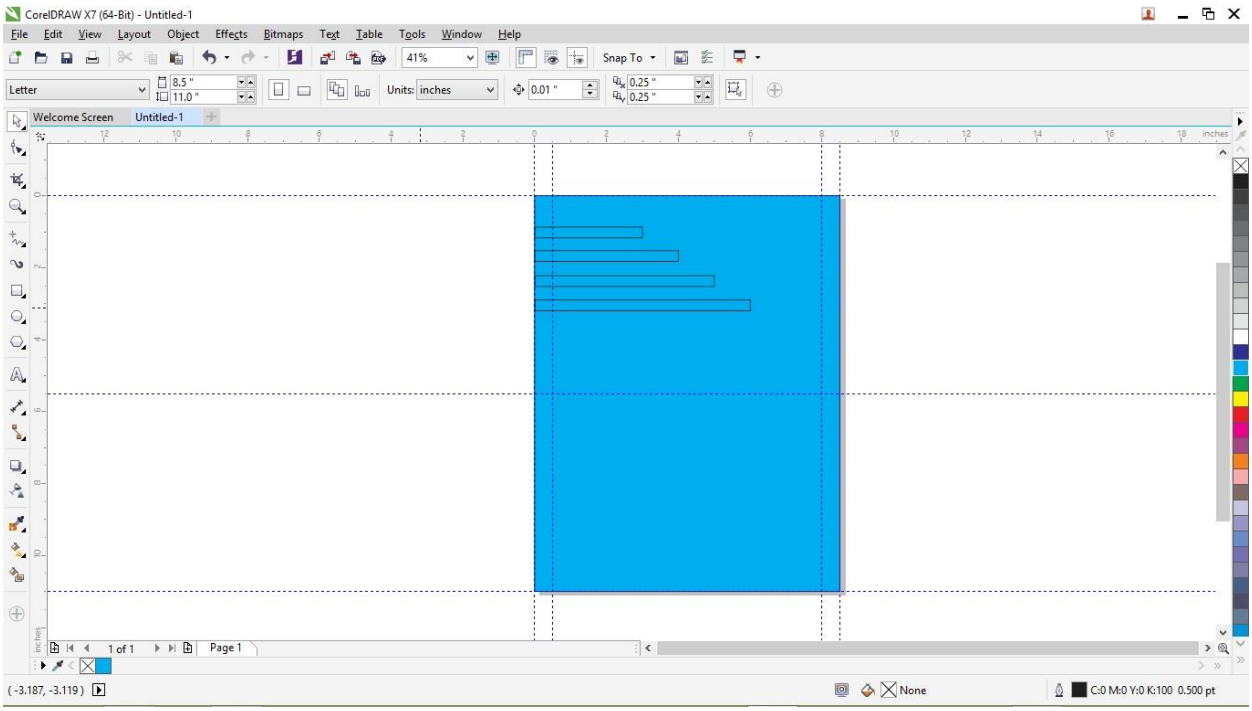
**Step 13:** Create a new rectangle with size **3.0 by 0.3 inches**



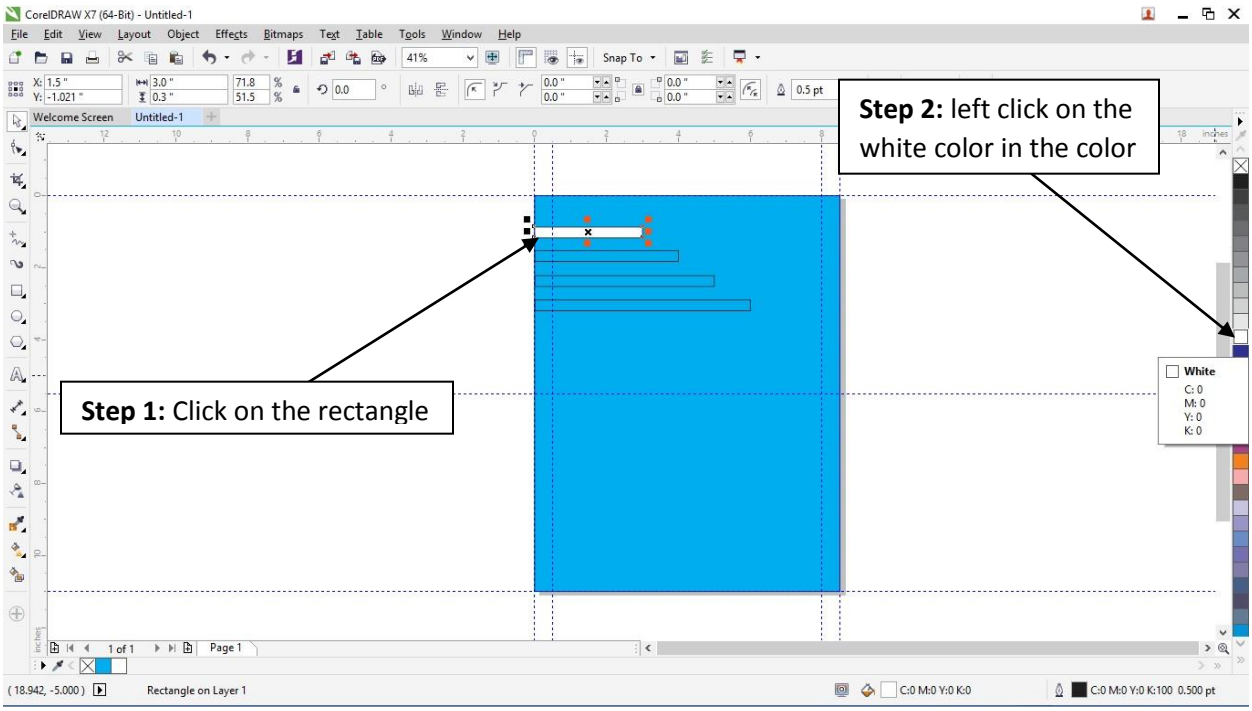

**Step 14:** follow the same procedure above and create three (3) extra rectangles with sizes **4.0 by 0.3 inches**, **5.0 by 0.3 inches, and 6.0 by 0.3 inches** respectively.



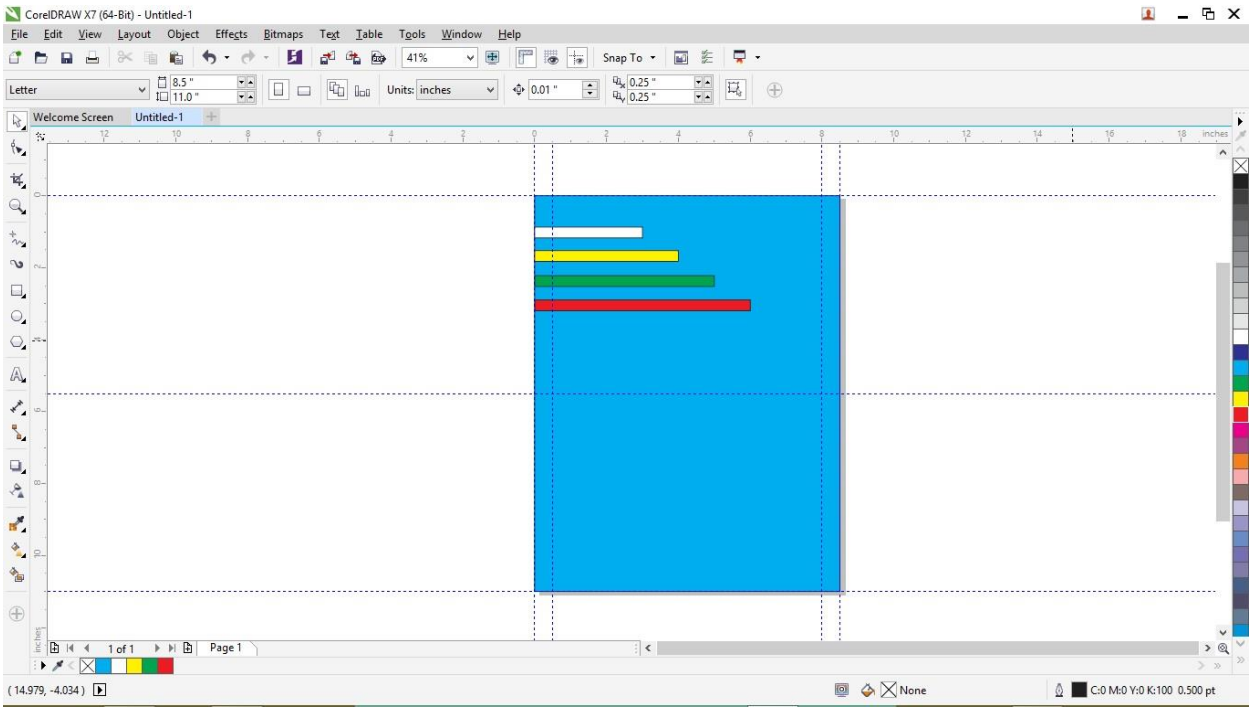
**Step 15:** Drag the rectangles we created and place them on the main rectangle as in the screenshot below:



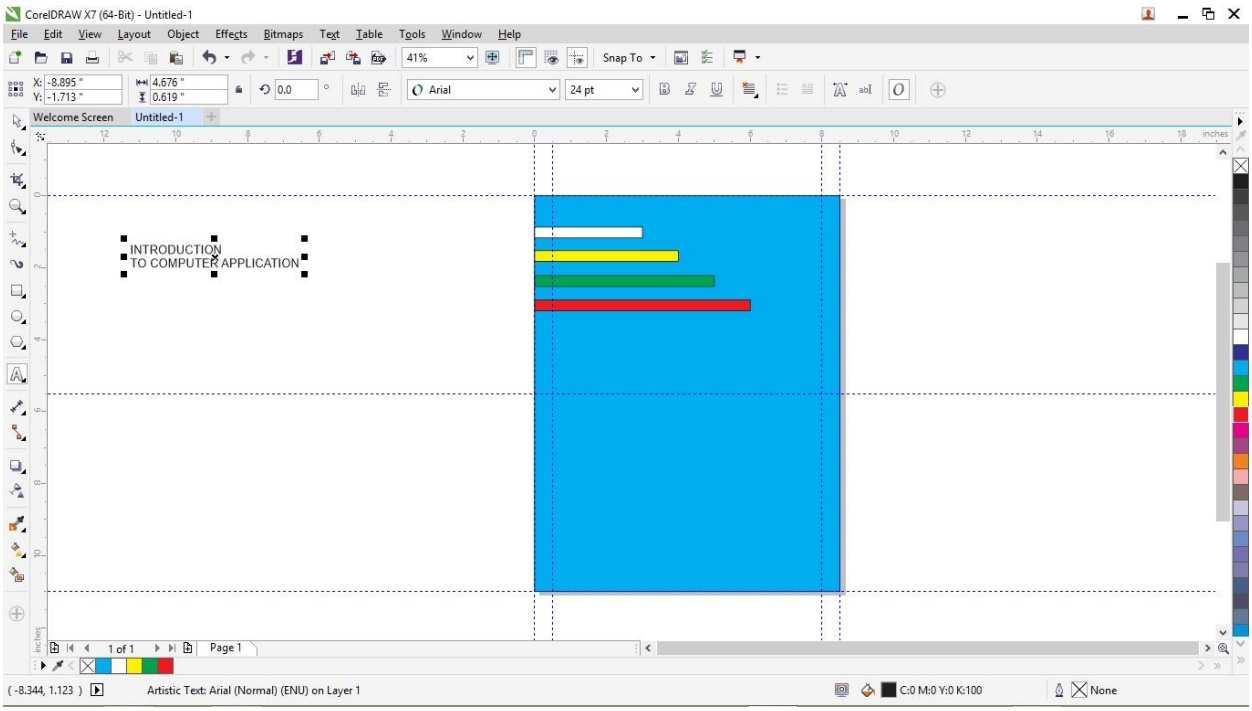

**Step 16:** Click on the first rectangle and left click on the white color in the color palette.



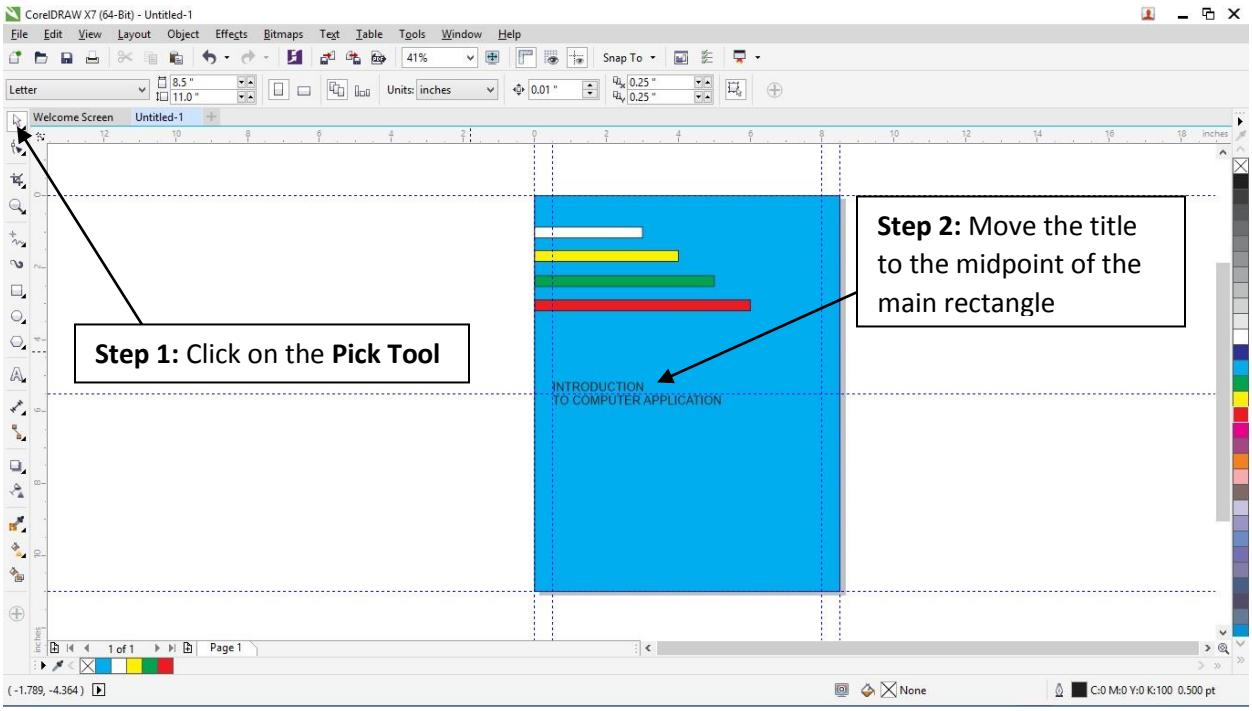
**Step 17:** follow the same procedure and apply the color to the rest of the rectangle as shown in the screenshot below:



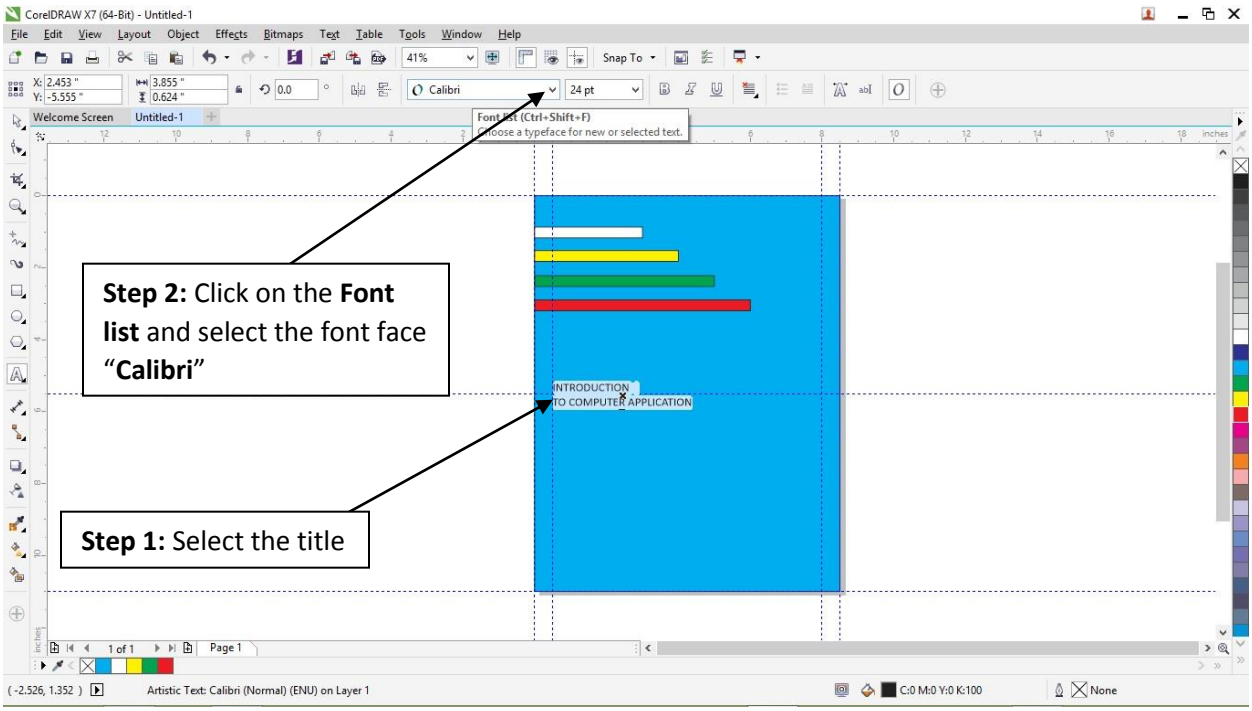

**Step 18:** we are through with the rectangles. Click on the **Text Tool,** we want to write the book title. Type INTRODUCTION TO COMPUTER APPLICATION



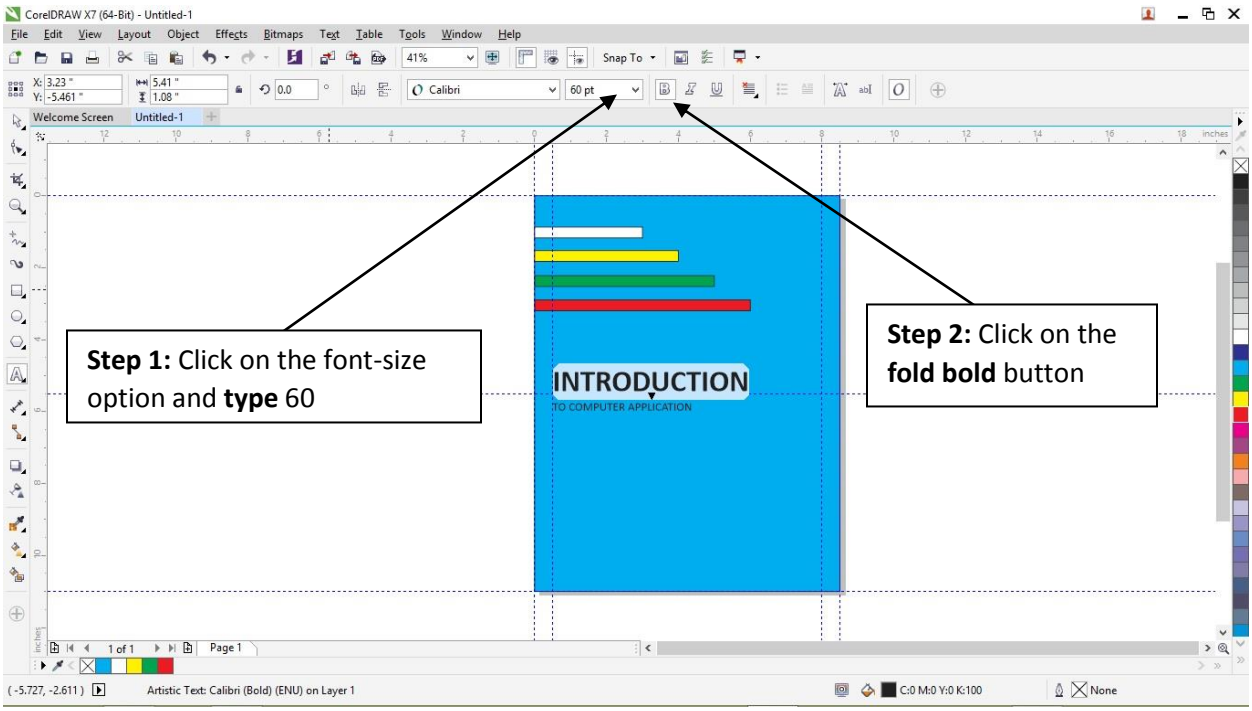
**Step 19:** Click on the pick tool and move the title of the book to the midpoint of the main rectangle as shown below in the screenshot below:



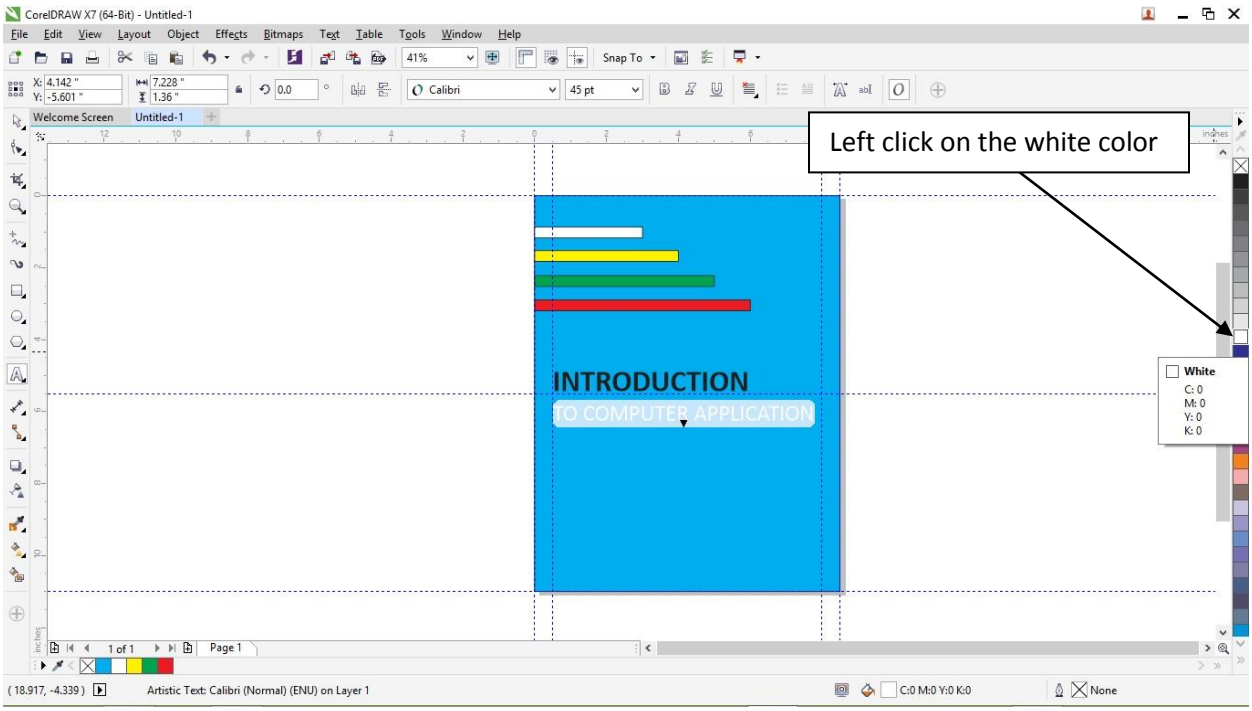

**Step 20:** Change the font type and font size of the title.



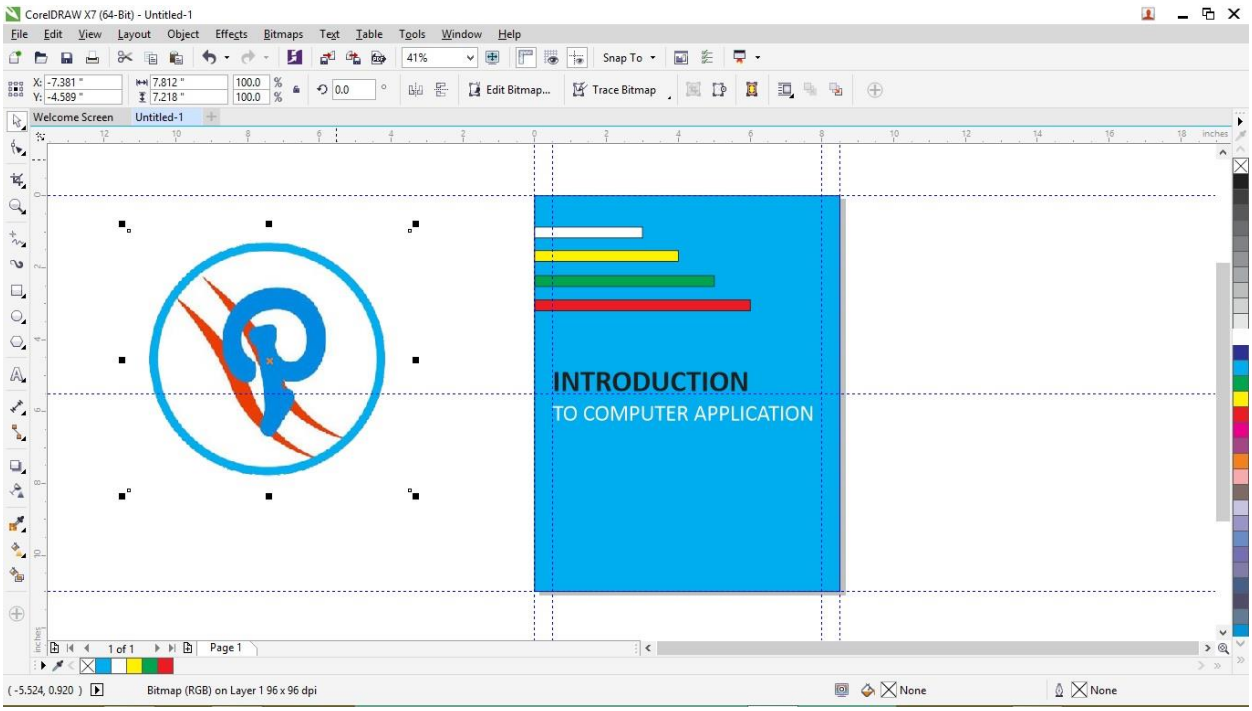
**Step 21:** Select the **INTRODUCTION** part of the title and increase the **font size** to **60px** and font-style to **bold**.



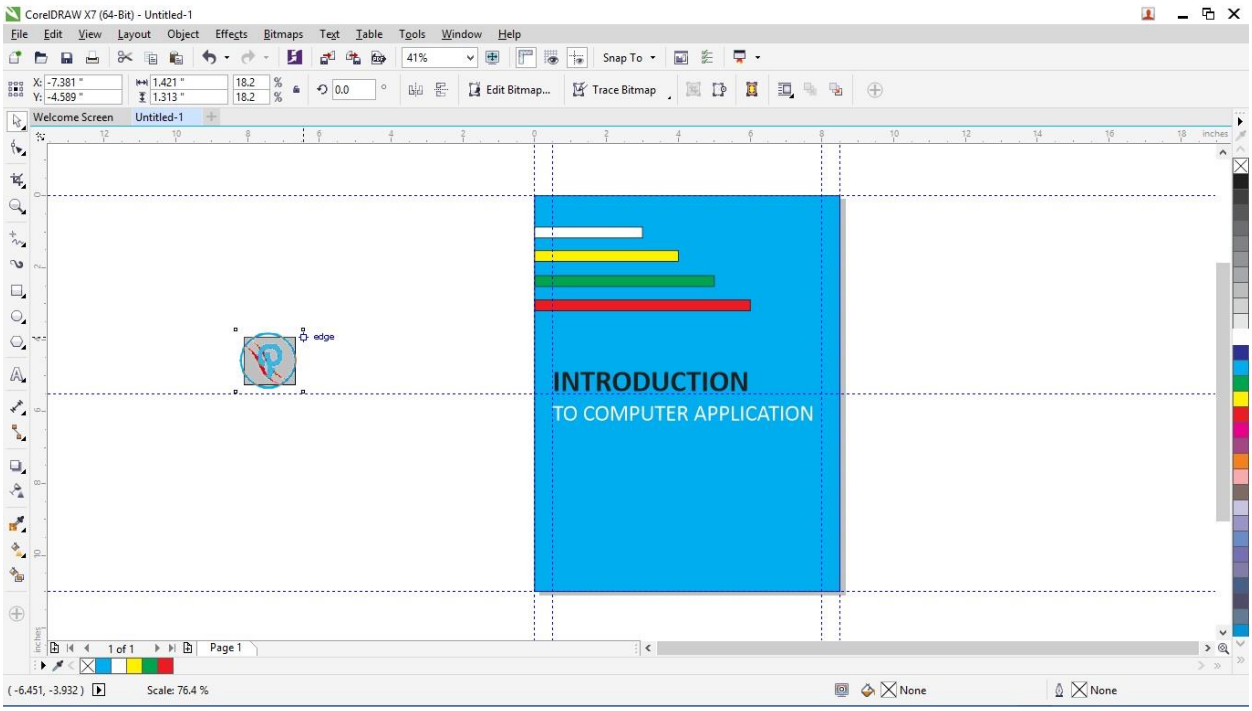

**Step 22:** Select the **TO COMPUTER APPLICATION** part of the title; increase the **font size** to **45px** and change the font-color to **white.**



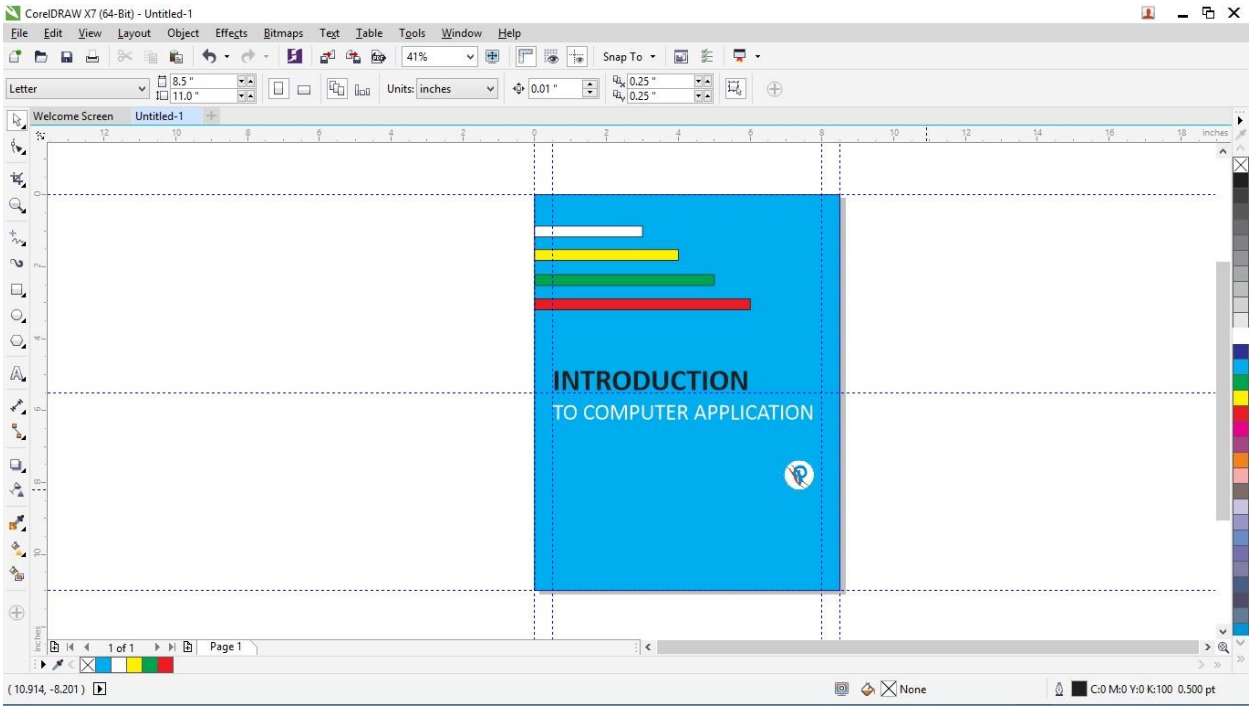
**Step 23:** now bring the company logo into CorelDraw, drag the logo and drop it inside the CorelDraw window.



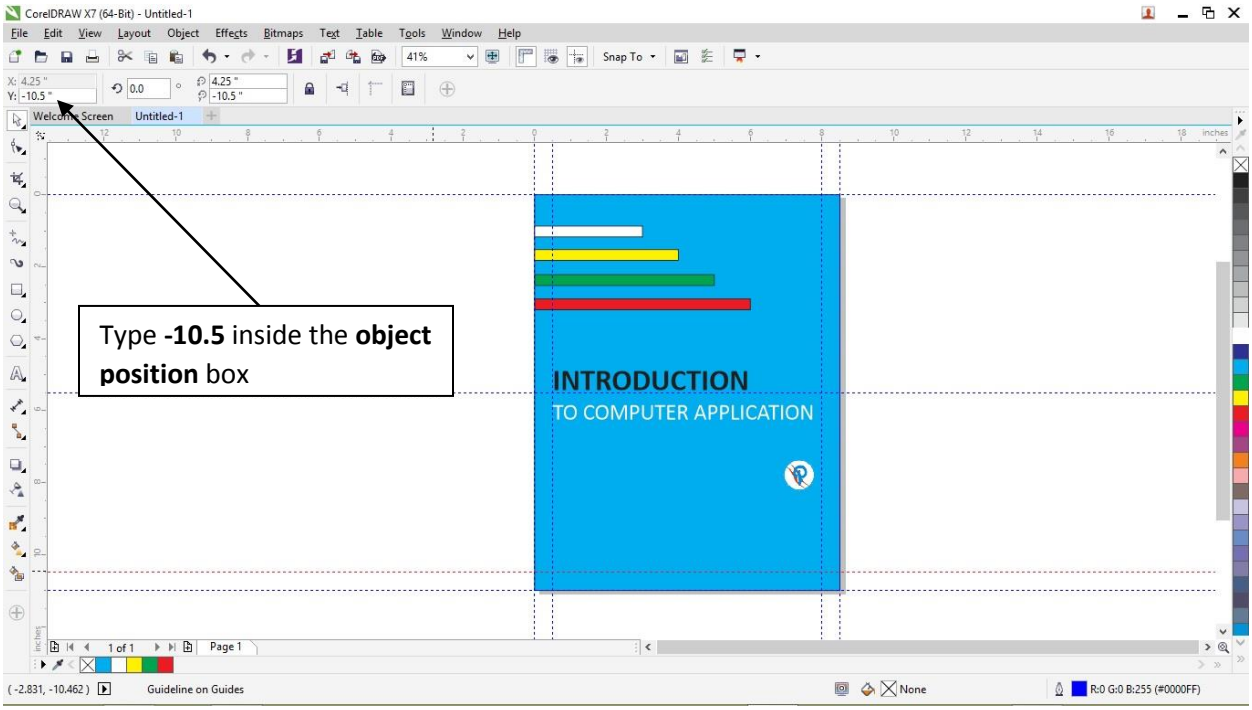

**Step 24:** resize the logo by holding the **SHIFT** button on your keyboard.



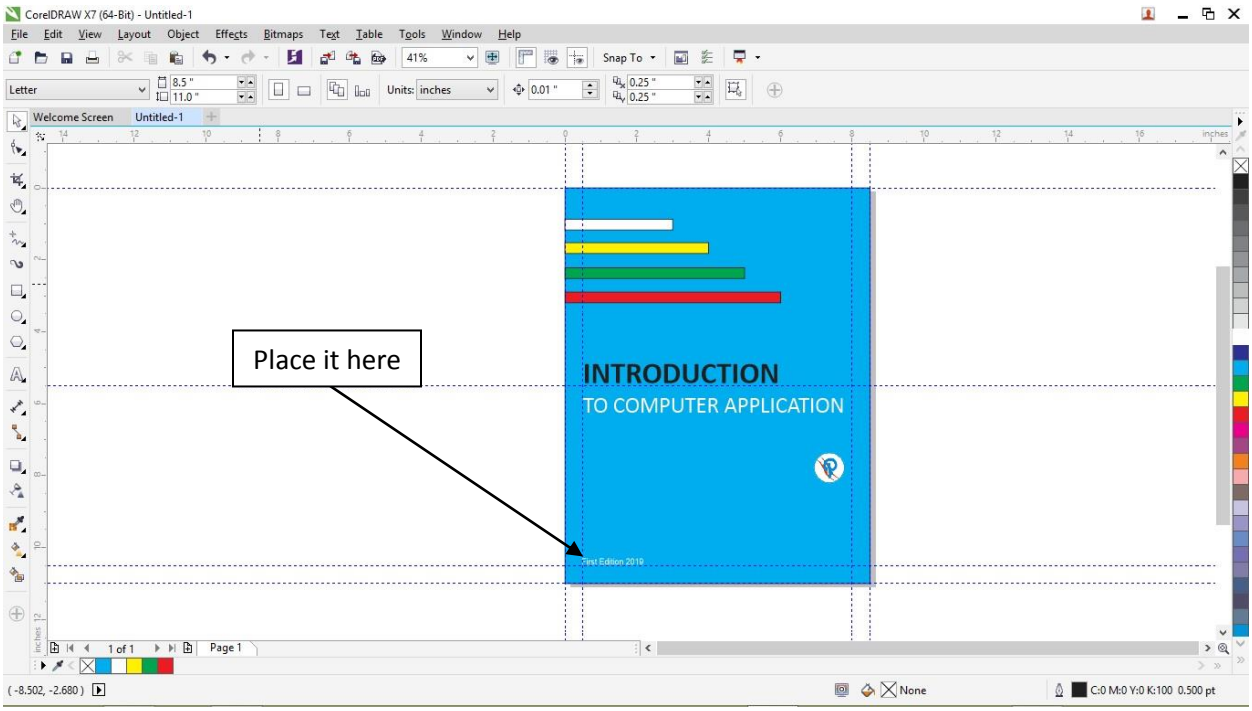
**Step 25:** place the logo towards the RHS of the main rectangle below the title of the book.



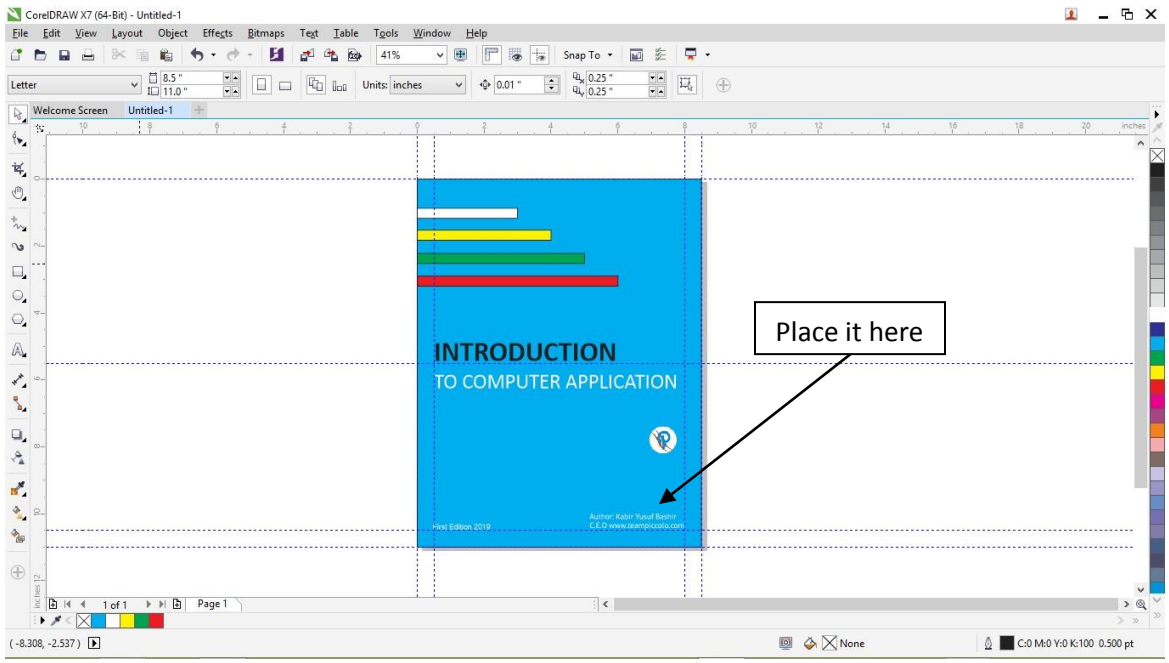

**Step 26:** Drag the ruler from the top and place it **-10.5 inches** from the bottom as shown below:



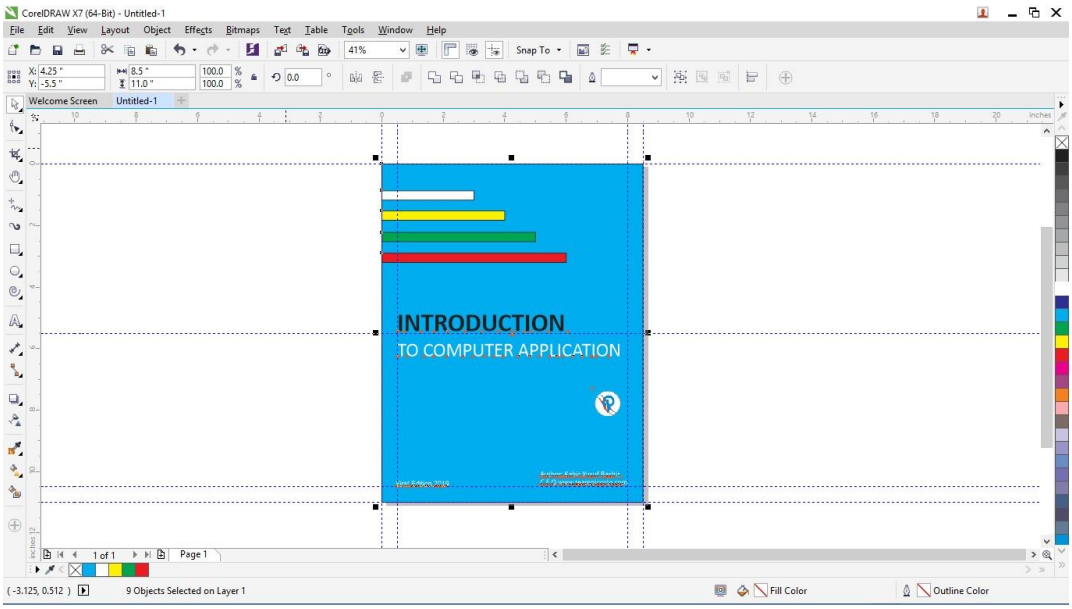
**Step 27:** Click on the **Text Tool** and write "**First Edition 2019**". Make the **font face** as "**Aller**", **font size** as **16px** and change the **font color** to **white**. Place it as in the screenshot below:



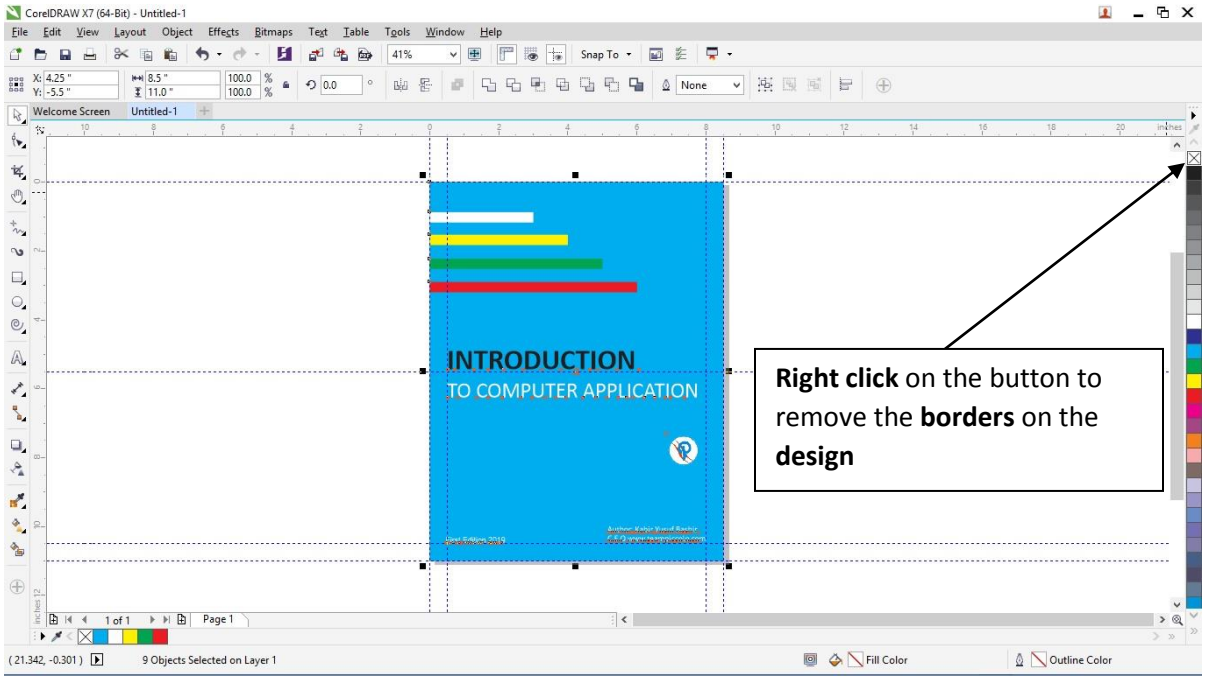

**Step 28:** Click on the **Text Tool** and write "**Author: Kabir Yusuf Bashir C.E.O www.teampiccolo.com**". Make the **font face** as "**Aller**", **font size** as **16px** and change the **font color** to **white**. Place it as in the screenshot below:



**Step 29:** We are almost through with the cover page design. Select the whole design as shown below. You can select the whole design by **holding** the **left button** on your **mouse** and dragging your mouse to cover the whole design.

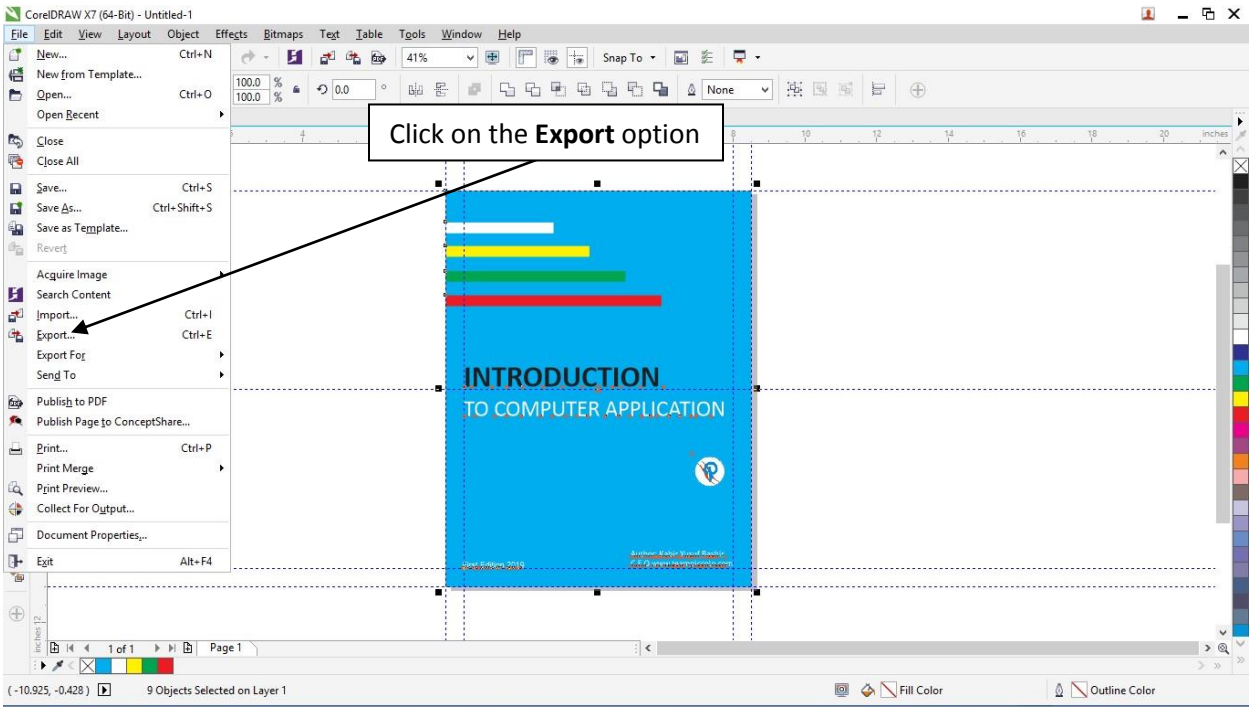



**Step 30:**

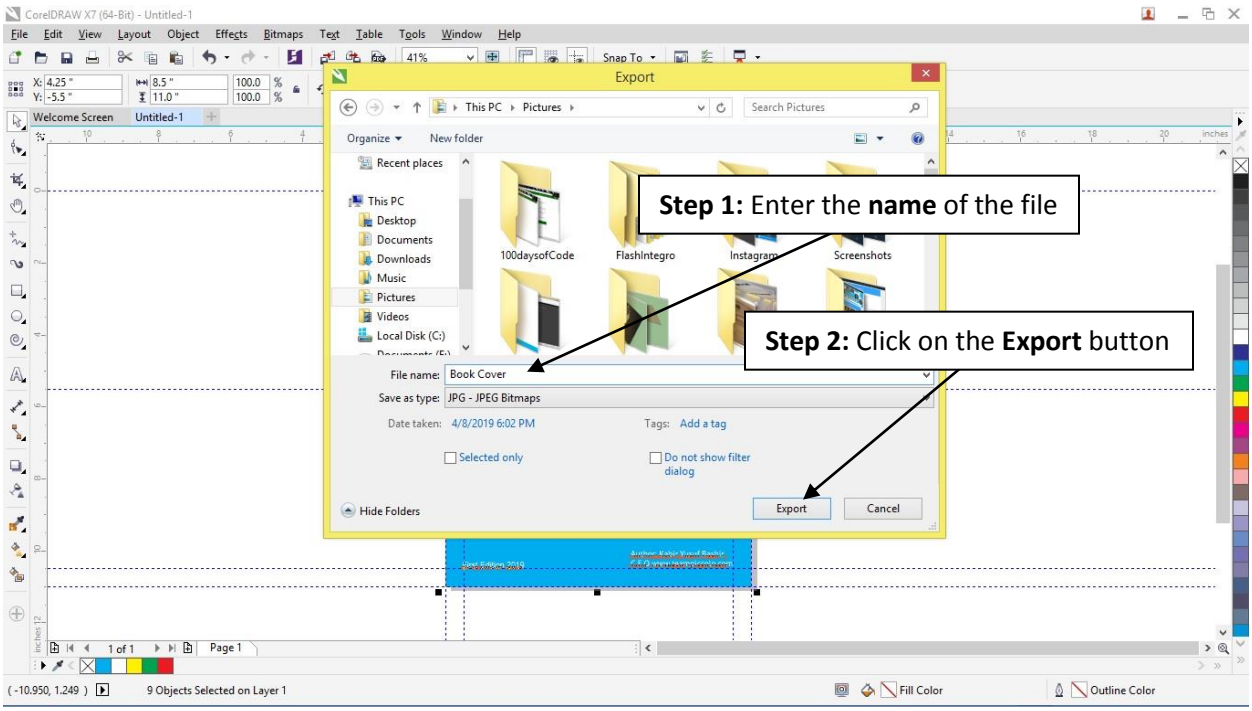



**NB: you can leave the border on your design but for the purpose of this design, we don't need the borders.**

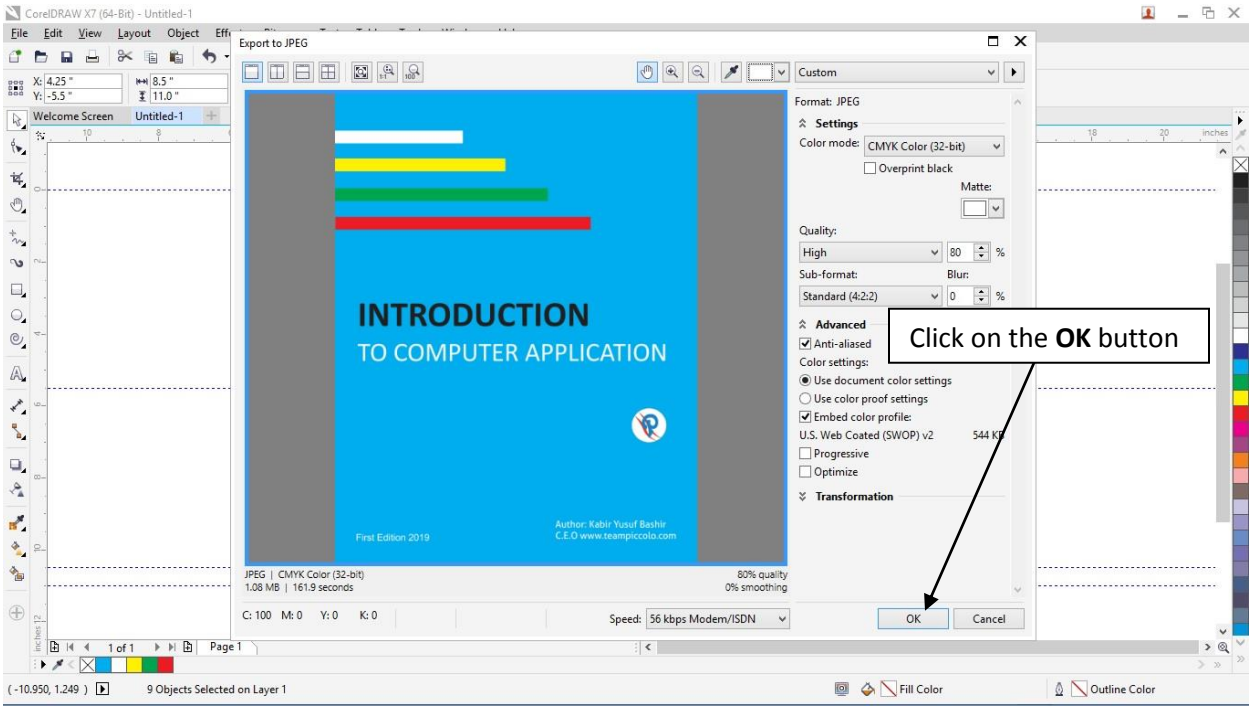
**Step 31:** We are done with the design, let us export the design to a JPEG format. Click on the file tab and select the **Export** option.



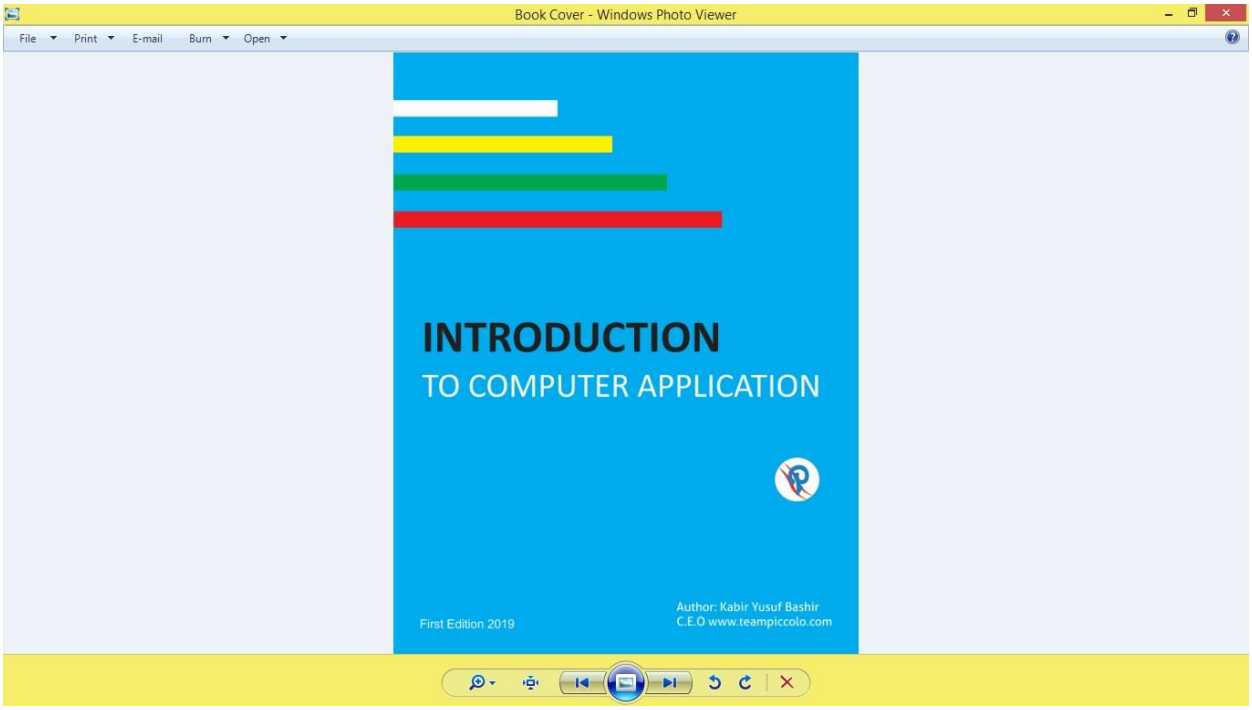

**Step 32:**



**Step 33:**




**Step 34:** Locate the file and try to view it.



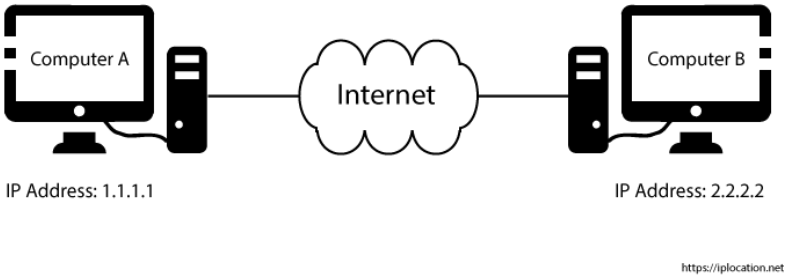
## References

1. http://eacharya.inflibnet.ac.in/data-server/eacharya-documents/53e0c6cbe413016f234436ed_INFIEP_8/121/ET/unit-1%20Lesson%201.pdf

# Chapter 4: The Internet

## What is an Internet?

The internet is a globally connected network system that uses TCP/IP to transmit data via various types of media. The internet is a network of global exchanges – including private, public, business, academic and government networks – connected by guided, wireless and fiber-optic technologies.



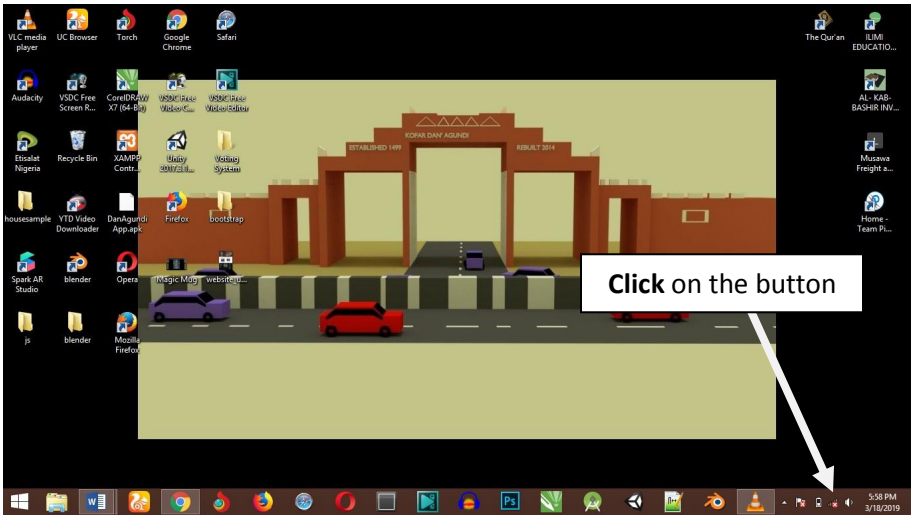

## How to Create an Email

### What is an Email?

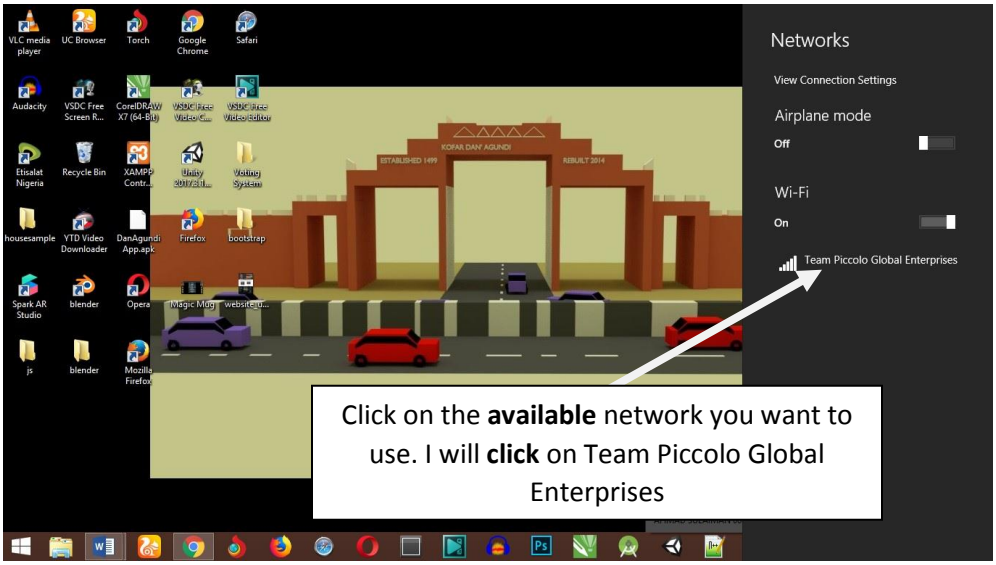
An **email address** identifies an email box to which email messages are delivered. Example of an email address: kabir.yusuf@teampiccolo.com

To **create an Email**, you must have an **Internet Connection**. To connect to an **Internet Connection**, follow the steps below:

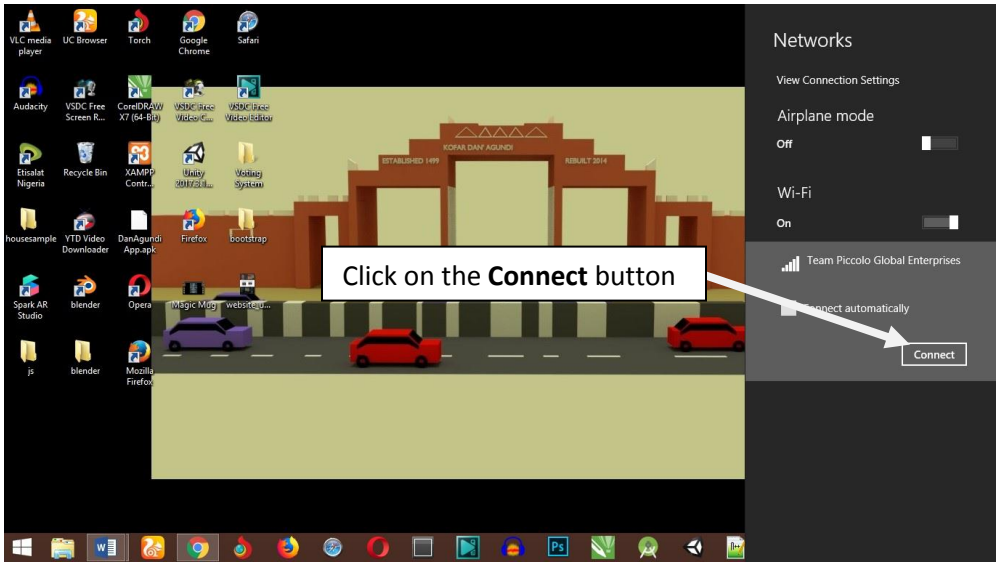
**Step 1**:



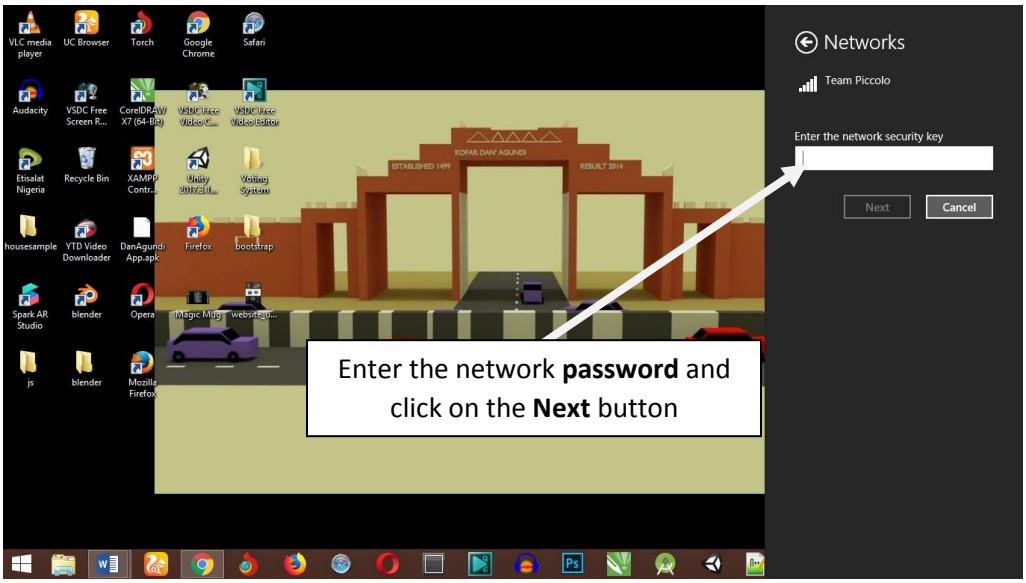
**Step 2:**


Networks
View Connection Settings
Airplane mode
Off
Wi-Fi
On
Team Piccolo Global Enterprises
Click on the **available** network you want to use. I will **click** on Team Piccolo Global Enterprises

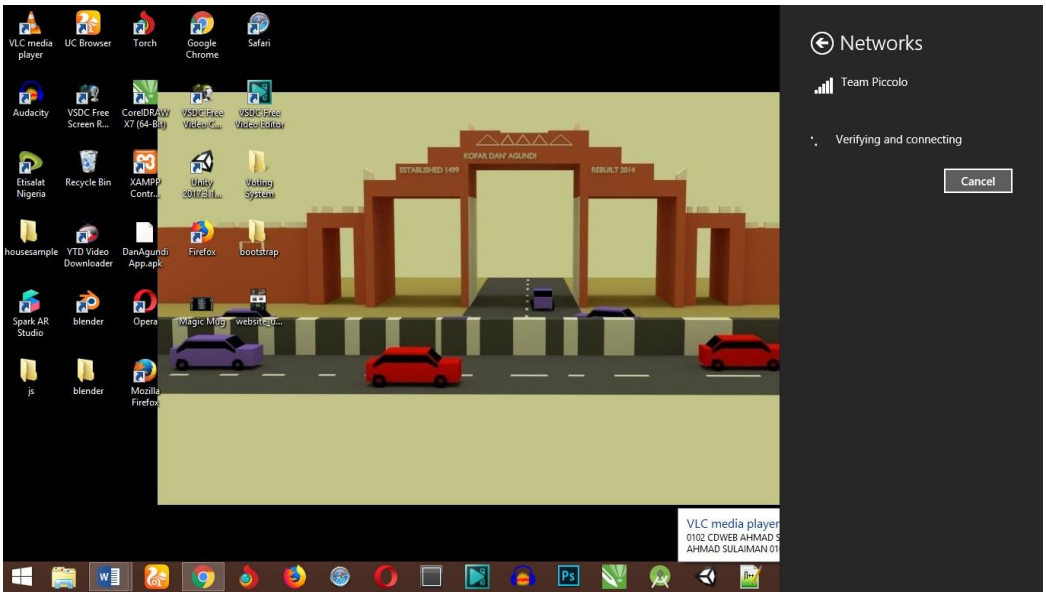
**Step 3:**


Networks
View Connection Settings
Airplane mode
Off
Wi-Fi
On
Team Piccolo Global Enterprises
Connect automatically
Connect
Click on the **Connect** button

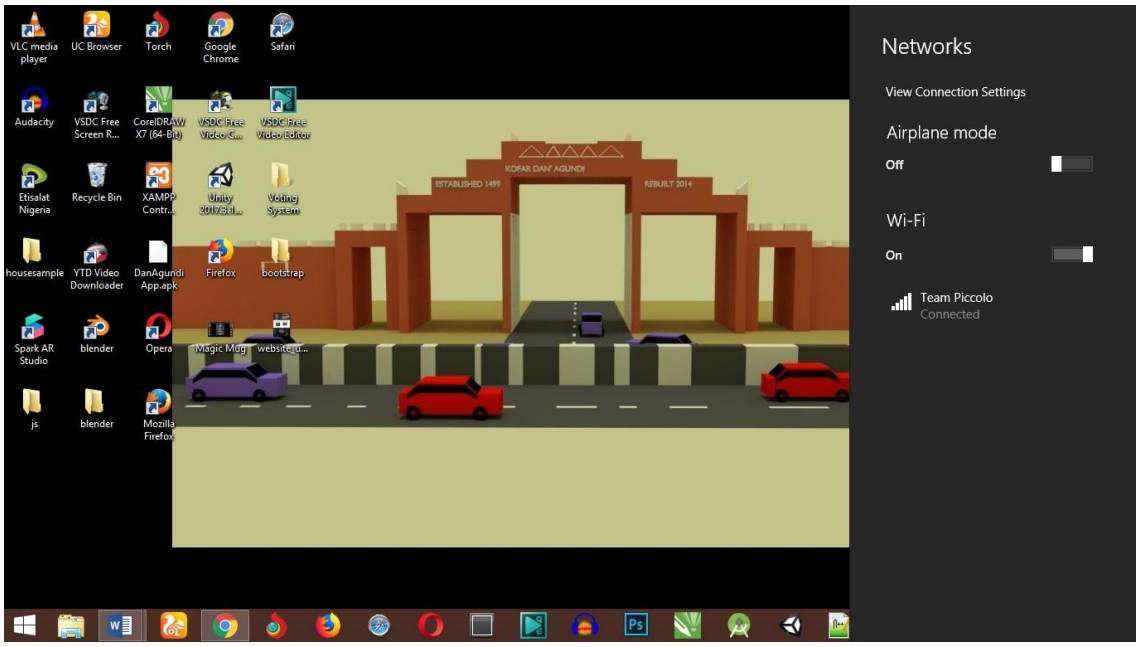
**Step 4:**


Networks
Team Piccolo
Enter the network security key
Next
Cancel
Enter the network **password** and click on the **Next** button

**Step 5:**


Networks
Team Piccolo
Verifying and connecting
Cancel
VLC media player

**Step 6:**

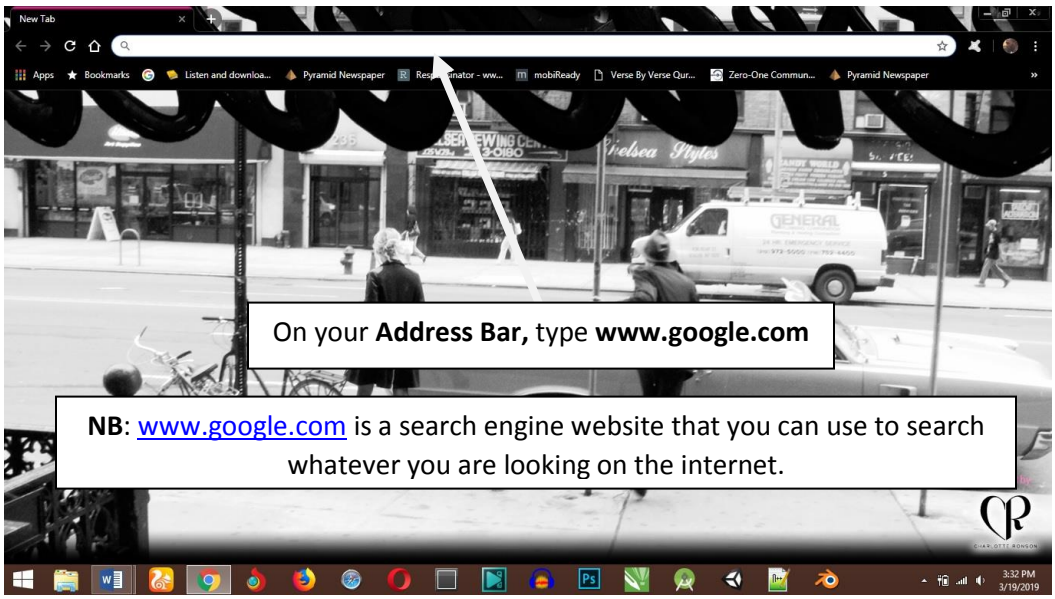



You are connected to the Internet. Choose your favorite web browser. A **web browser** is a software application for accessing information on the World Wide Web. Examples of browser include Google Chrome, Mozilla Firefox, Safari, Internet Explorer, Opera etc.

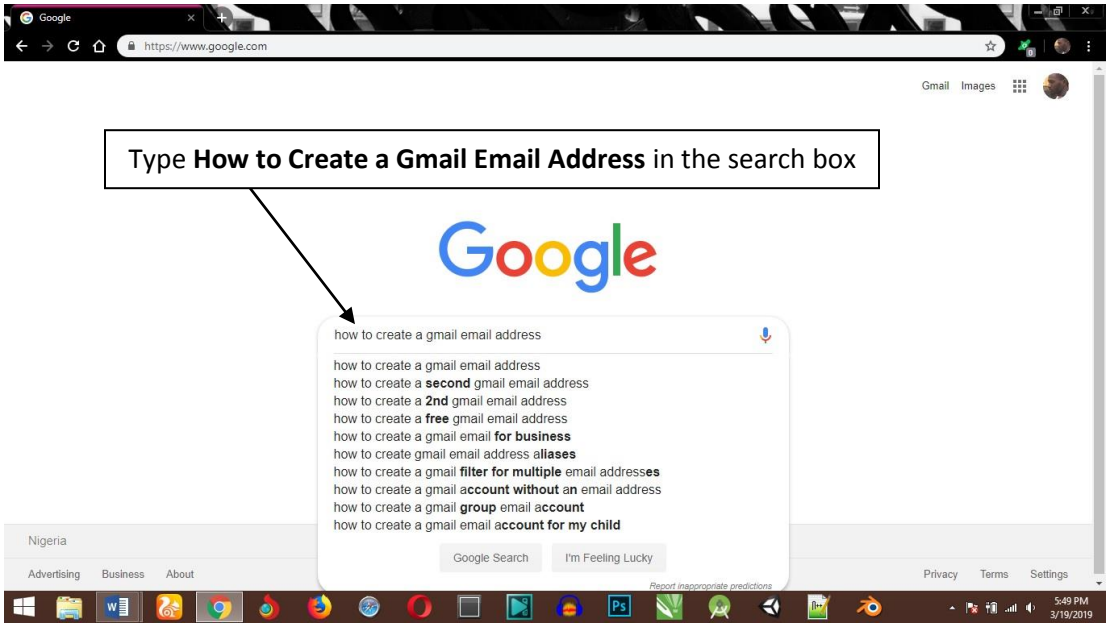
I will be using Google Chrome throughout this book. I will be explaining later on how to search and download on the Internet.

Now open your Google Chrome web browser and follow the following steps below:

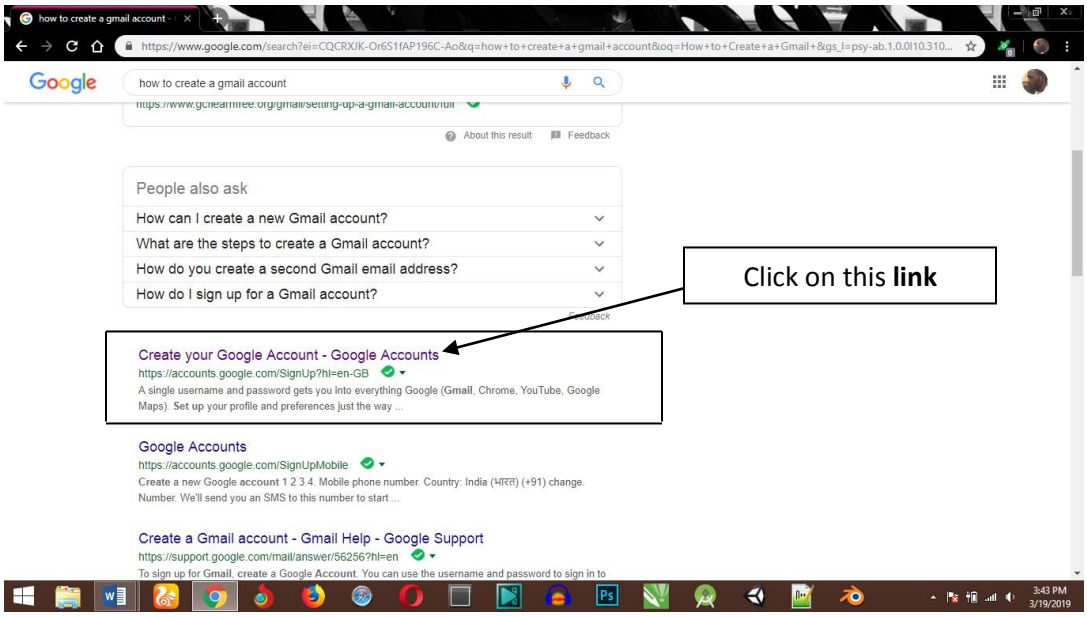
**Step 1:**



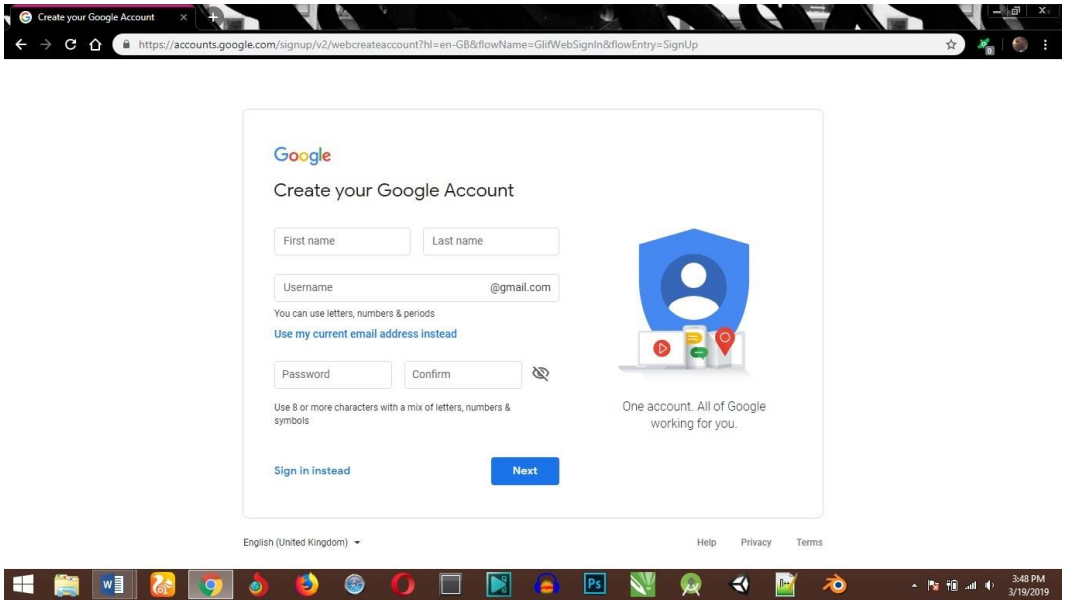
**Step 2:**


Type **How to Create a Gmail Email Address** in the search box
Google
how to create a gmail email address
how to create a gmail email address
how to create a **second** gmail email address
how to create a **2nd** gmail email address
how to create a **free** gmail email address
how to create a gmail email **for business**
how to create gmail email address a**liases**
how to create a gmail **filter for multiple** email addresse**s**
how to create a gmail **account without** a**n** email address
how to create a gmail **group** email a**ccount**
how to create a gmail email a**ccount for my child**
Google Search
I'm Feeling Lucky
Gmail
Images
Nigeria
Advertising
Business
About
Privacy
Terms
Settings

**Step 3:**

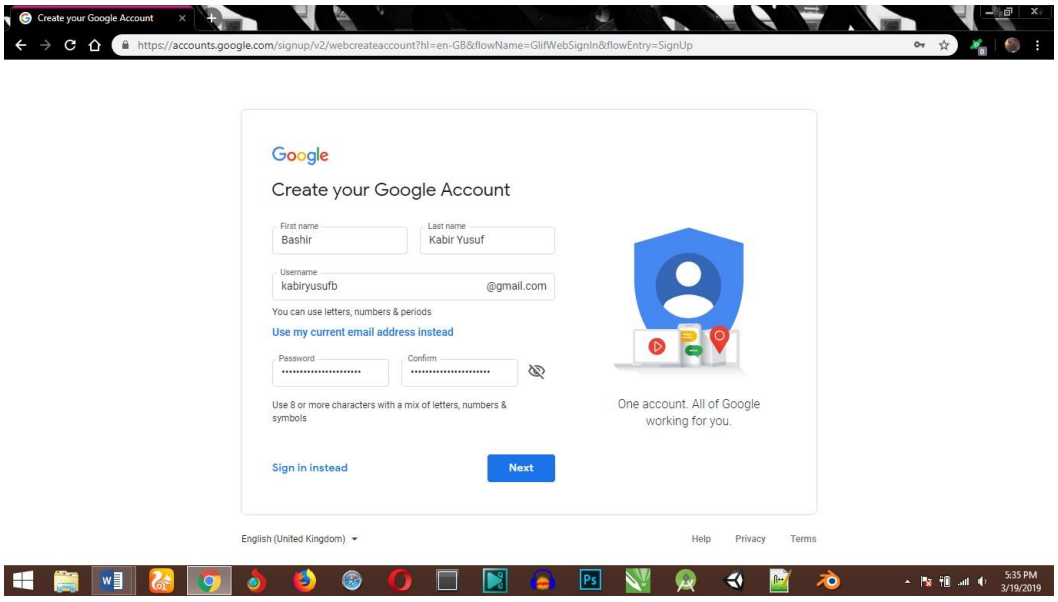

how to create a gmail account
People also ask
How can I create a new Gmail account?
What are the steps to create a Gmail account?
How do you create a second Gmail email address?
How do I sign up for a Gmail account?
Click on this **link**
Create your Google Account - Google Accounts
https://accounts.google.com/SignUp?hl=en-GB
A single username and password gets you into everything Google (Gmail, Chrome, YouTube, Google Maps). Set up your profile and preferences just the way ...
Google Accounts
https://accounts.google.com/SignUpMobile
Create a new Google account 1 2 3 4. Mobile phone number. Country: India (भारत) (+91) change. Number. We'll send you an SMS to this number to start ...
Create a Gmail account - Gmail Help - Google Support
https://support.google.com/mail/answer/56256?hl=en
To sign up for Gmail, create a Google Account. You can use the username and password to sign in to

**Step 4: Fill in the required fields below and Click on the NEXT button.**

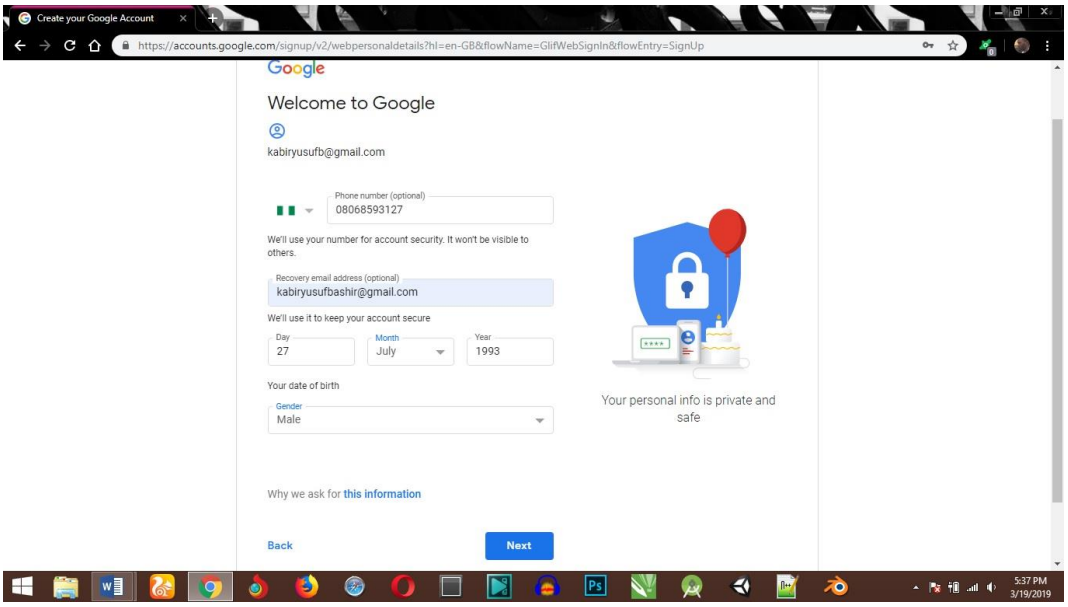



**NB: Choose a password that you can easily remember.**

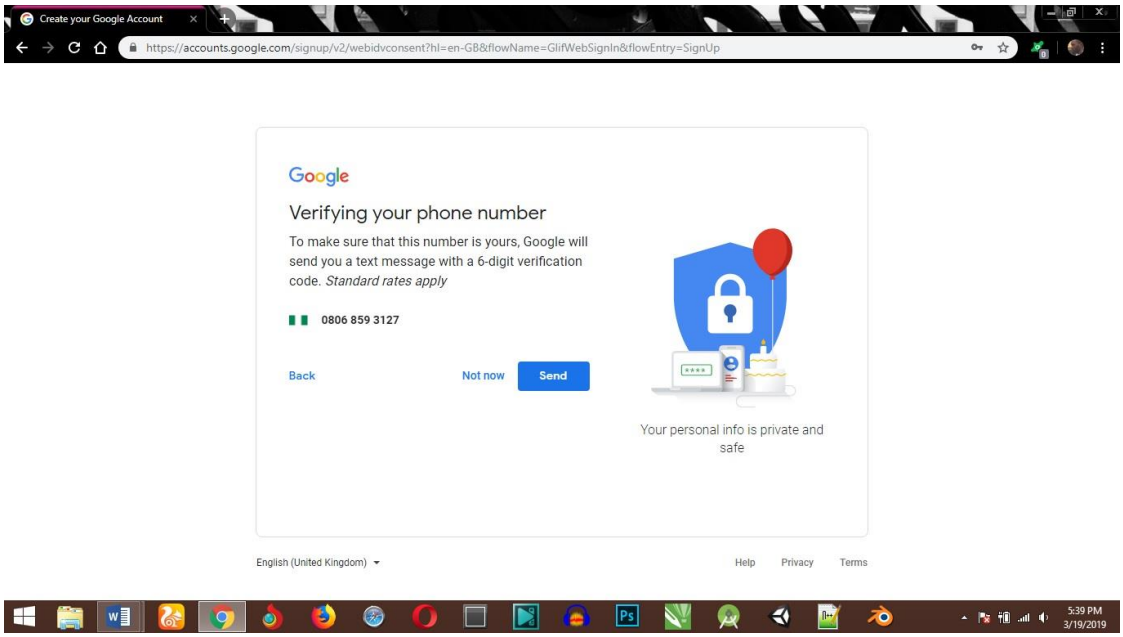
**Step 5:**



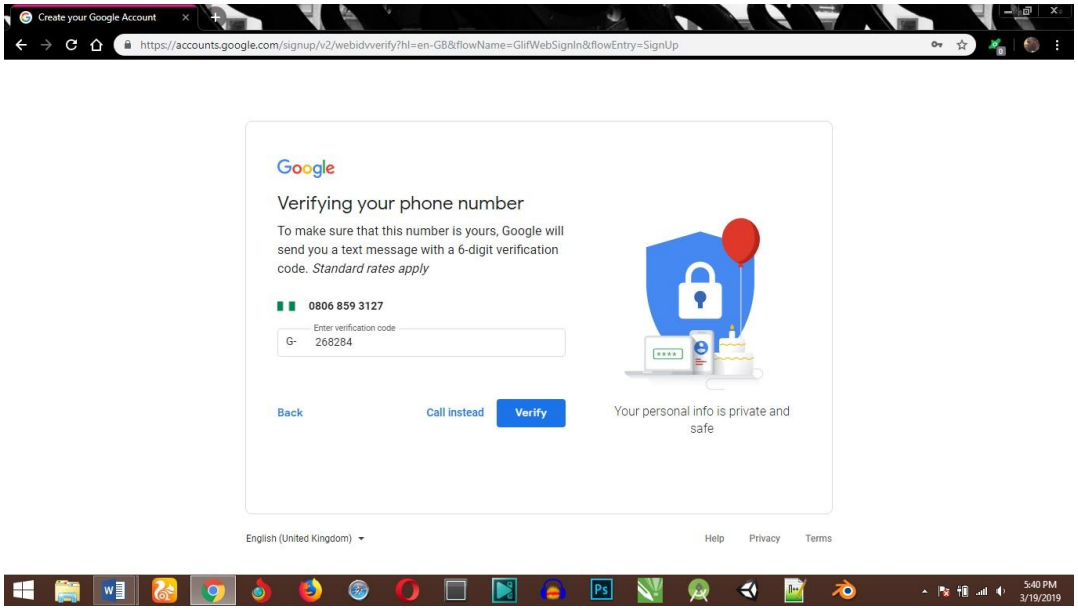
**Step 6: Fill in the required fields and Click on the NEXT button**



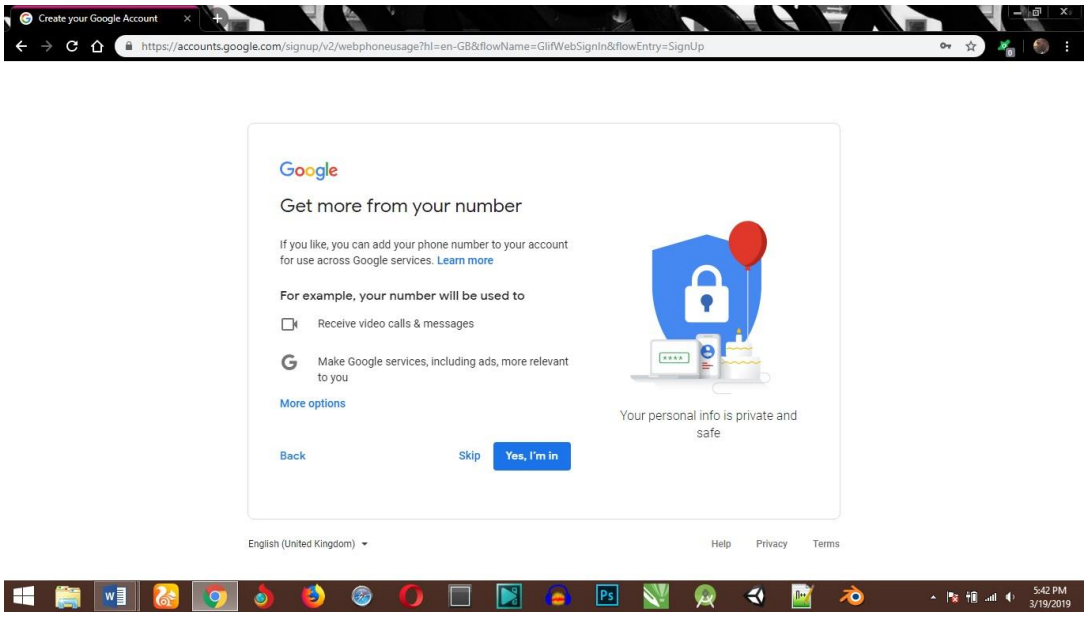

**Step 7: Click on the SEND button, a confirmation code will be sent to your Phone number you used in the screenshot above.**



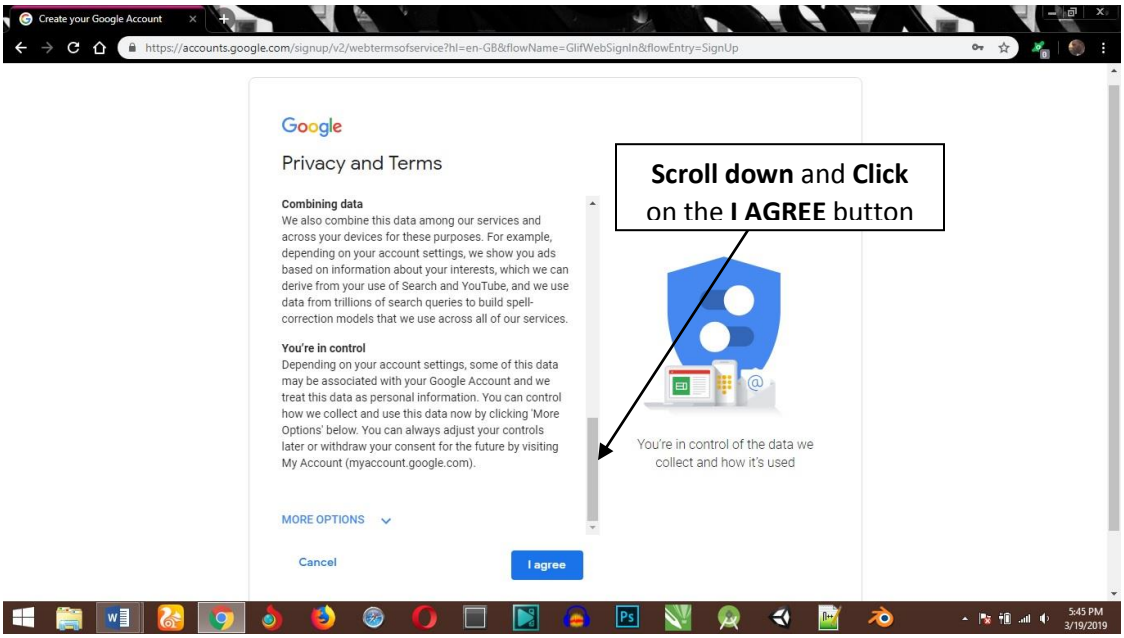
## Step 8: Click on the VERIFY button to verify your account



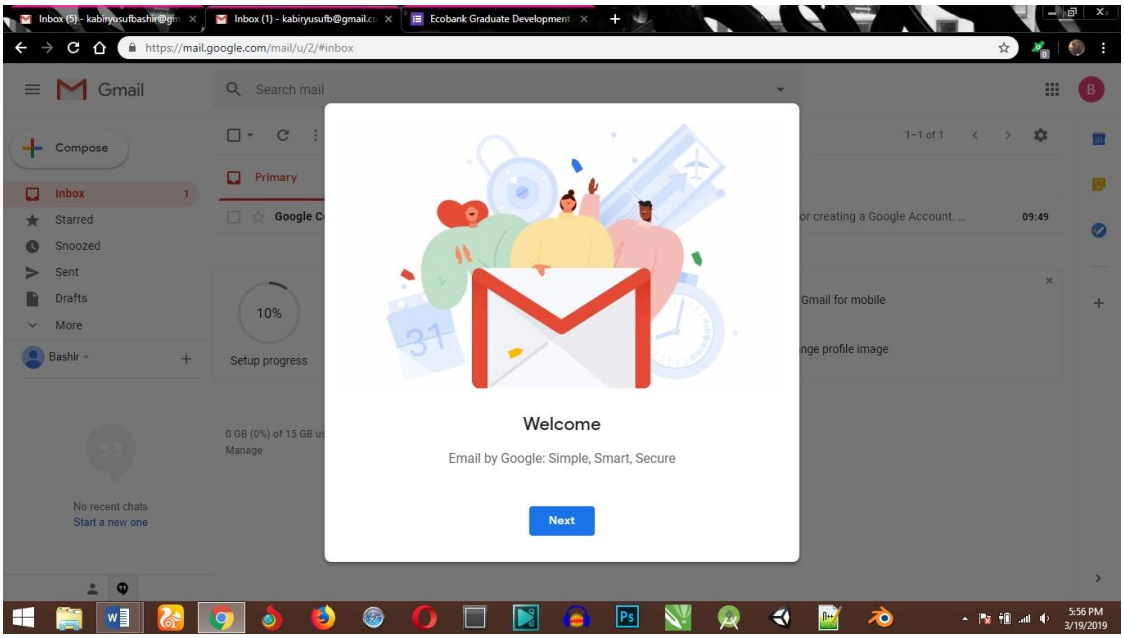

## Step 9: Click on the button "YES, I'M IN"



**Step 10:**




**Step 11: Click on the NEXT button to start using your GMAIL account.**




**Congratulations, you have successfully created your Gmail account.**

## Advanced research on the Internet

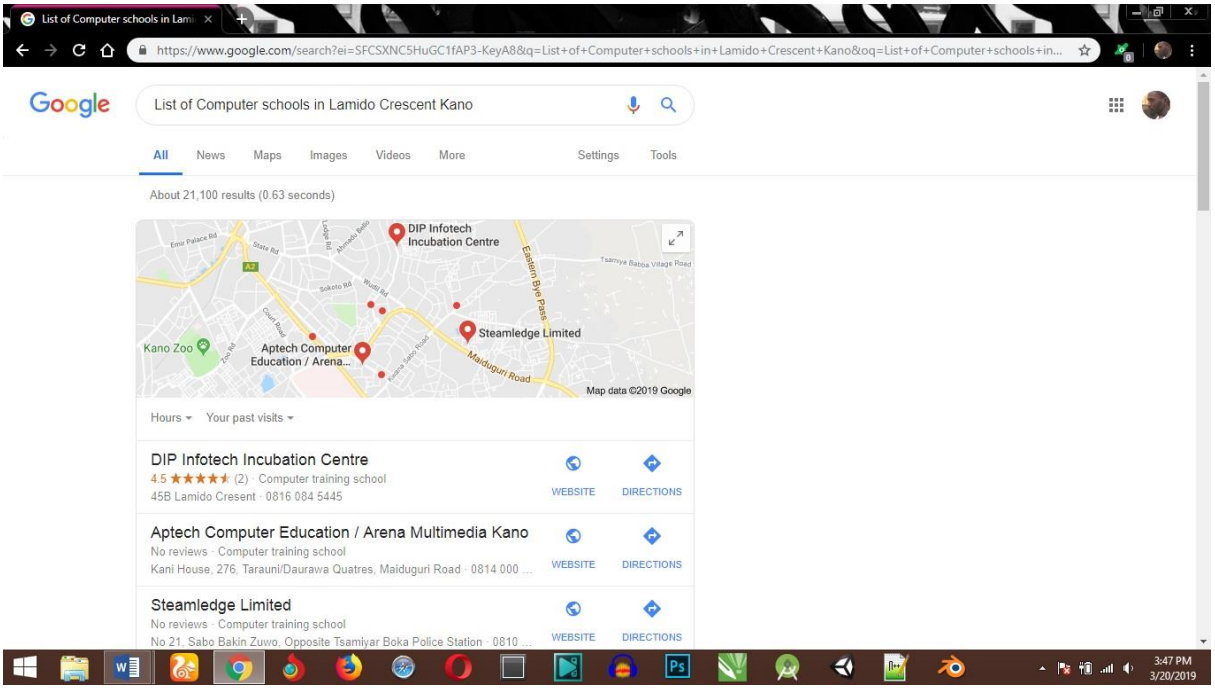
Researching the Internet is quite an easy task. Most people search the internet for one or more reasons. Some maybe an assignment given to them in the school by their chemistry teacher to find about a particular **element** in the periodic table or by their computer teacher to find the list of **computer schools** on Lamido Crescent.

The best way to search the Internet is to use a **search engine**. A **Search engine** is a service that allows Internet users to search for content via the World Wide Web (WWW). Examples of search engines:

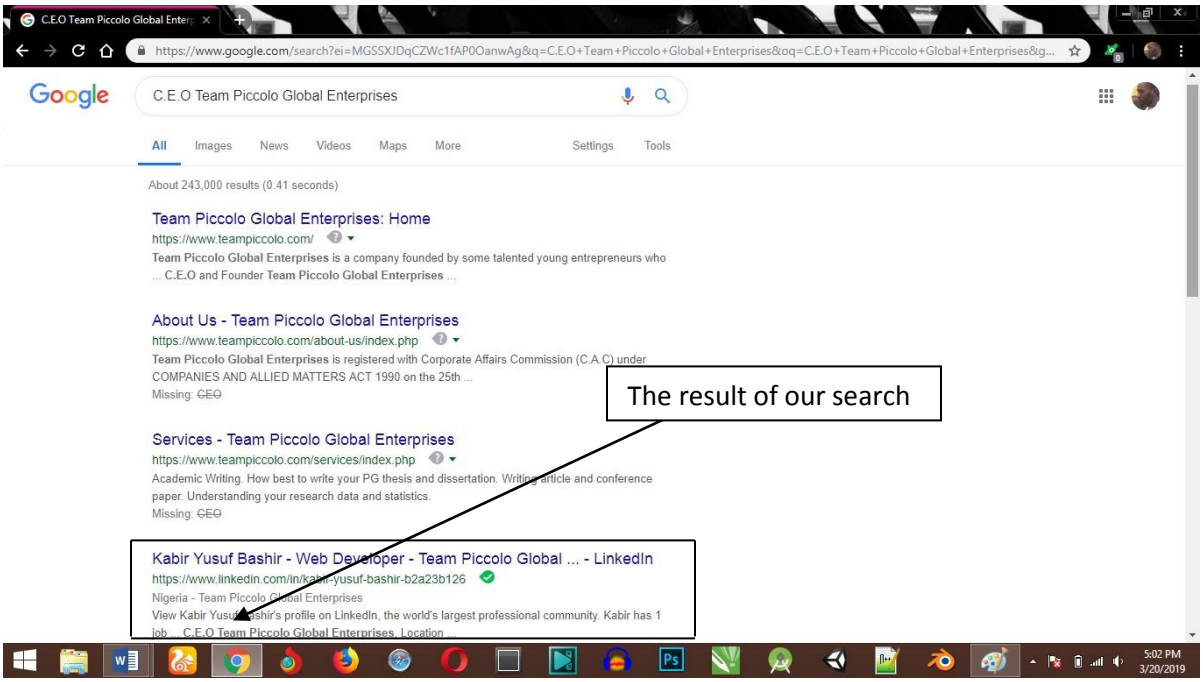
- Bing
- DuckDuckGo
- Wiki
- CC Search
- Gibiru
- Search Encrypt
- Yandex
- StartPage
- BoardReader
- Ecosia
- Google

**Google** is the most known search engine and the best. I will be using Google throughout this book.

Let us try to find out on Google some "**List of Computer Schools in Lamido Crescent Kano**". Open your browser and on your address bar type **www.google.com**




Or you attended a lecture presentation by the C.E.O (Chief Executive Officer) of **Team Piccolo Global Enterprises** on **Web Development** and you decide to **find out more about him.**



# System automation and its function to organizations

## What is System Automation?

Automated system operations (ASO) is the set of software and hardware that allows computer systems, network devices or machines to function without any manual intervention. ASOs allow computer systems to work without a human operator physically located at the site where the system is installed. Automated system operations are a part of the automatic system control where the processes are completely automated with the help of control loops and special logic.

**Advantages and Disadvantages of System Automations to Organizations**

**Advantages** commonly attributed to automation include

- Higher production rates and increased productivity,
- More efficient use of materials,
- Better product quality,
- Improved safety

Higher output and increased productivity have been two of the biggest reasons in justifying the use of automation. Despite the claims of high quality from good workmanship by humans, automated systems typically perform the manufacturing process with less variability than human workers, resulting in greater control and consistency of product quality. Also, increased process control makes more efficient use of materials, resulting in less scrap.

A main **disadvantage** often associated with automation, **worker displacement**. Despite the social benefits that might result from retraining displaced workers for other jobs, in almost all cases the worker whose job has been taken over by a machine undergoes a period of emotional stress. In addition to displacement from work, the worker may be displaced geographically. In order to find other work, an individual may have to relocate, which is another source of stress.

Other **disadvantages** of automated equipment include the high capital expenditure required to invest in automation (an automated system can cost millions of dollars to design, fabricate, and install), a higher level of maintenance needed than with a manually operated machine, and a generally lower degree of flexibility in terms of the possible products as compared with a manual system (even flexible automation is less flexible than humans, the most versatile machines of all).

Also there are potential risks that automation technology will ultimately subjugate rather than serve humankind. The risks include the possibility that workers will become slaves to automated machines, that the privacy of humans will be invaded by vast computer data

networks, that human error in the management of technology will somehow endanger civilization, and that society will become dependent on automation for its economic well-being.

These dangers aside, automation technology, if used wisely and effectively, can yield substantial opportunities for the future. There is an opportunity to relieve humans from repetitive, hazardous, and unpleasant labour in all forms. And there is an opportunity for future automation technologies to provide a growing social and economic environment in which humans can enjoy a higher standard of living and a better way of life.

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# CHAPTER 5 - Computer Diseases

## What is a Computer Virus?

A **computer virus**, much like a flu virus, is designed to spread from host to host and has the ability to replicate itself. Similarly, in the same way that flu viruses cannot reproduce without a host cell, computer viruses cannot reproduce and spread without programming such as a file or document.

In more technical terms, a **computer virus** is a type of malicious code or program written to alter the way a computer operates and is designed to spread from one computer to another. A virus operates by inserting or attaching itself to a legitimate program or document that supports macros in order to execute its code. In the process, a virus has the potential to cause unexpected or damaging effects, such as harming the system software by corrupting or destroying data.

### How does a computer virus attack?

Once a virus has successfully attached to a program, file, or document, the virus will lie dormant until circumstances cause the computer or device to execute its code. In order for a virus to infect your computer, you have to run the infected program, which in turn causes the virus code to be executed.

This means that a virus can remain dormant on your computer, without showing major signs or symptoms. However, once the virus infects your computer, the virus can infect other computers on the same network. Stealing passwords or data, logging keystrokes, corrupting files, spamming your email contacts, and even taking over your machine are just some of the devastating and irritating things a virus can do.

While some viruses can be playful in intent and effect, others can have profound and damaging effects. This includes erasing data or causing permanent damage to your hard disk. Worse yet, some viruses are designed with financial gains in mind.

### How do computer viruses spread?

In a constantly connected world, you can contract a computer virus in many ways, some more obvious than others. Viruses can be spread through email and text message attachments, Internet file downloads, and social media scam links. Your mobile devices and smartphones can become infected with mobile viruses through shady app downloads. Viruses can hide disguised as attachments of socially shareable content such as funny images, greeting cards, or audio and video files.

To avoid contact with a virus, it's important to exercise caution when surfing the web, downloading files, and opening links or attachments. To help stay safe, never download text or email attachments that you're not expecting, or files from websites you don't trust.

## What are the signs of a computer virus?

A computer virus attack can produce a variety of symptoms. Here are some of them:

- **Frequent pop-up windows.** Pop-ups might encourage you to visit unusual sites. Or they might prod you to download antivirus or other software programs.
- **Changes to your homepage.** Your usual homepage may change to another website, for instance. Plus, you may be unable to reset it.
- **Mass emails being sent from your email account.** A criminal may take control of your account or send emails in your name from another infected computer.
- **Frequent crashes.** A virus can inflict major damage on your hard drive. This may cause your device to freeze or crash. It may also prevent your device from coming back on.
- **Unusually slow computer performance.** A sudden change of processing speed could signal that your computer has a virus.
- **Unknown programs that start up when you turn on your computer.** You may become aware of the unfamiliar program when you start your computer. Or you might notice it by checking your computer's list of active applications.
- **Unusual activities like password changes.** This could prevent you from logging into your computer.

## What are the different types of computer viruses?

**Boot sector virus**: This type of virus can take control when you start — or boot — your computer. One way it can spread is by plugging an infected USB drive into your computer.

**Web scripting virus**: This type of virus exploits the code of web browsers and web pages. If you access such a web page, the virus can infect your computer.

**Browser hijacker**: This type of virus "hijacks" certain web browser functions, and you may be automatically directed to an unintended website.

**Resident virus**: This is a general term for any virus that inserts itself in a computer system's memory. A resident virus can execute anytime when an operating system loads.

**Direct action virus**: This type of virus comes into action when you execute a file containing a virus. Otherwise, it remains dormant.

**Polymorphic virus**: A polymorphic virus changes its code each time an infected file is executed. It does this to evade antivirus programs.

**File infector virus**: This common virus inserts malicious code into executable files — files used to perform certain functions or operations on a system.

**Multipartite virus**: This kind of virus infects and spreads in multiple ways. It can infect both program files and system sectors.

**Macro virus**: Macro viruses are written in the same macro language used for software applications. Such viruses spread when you open an infected document, often through email attachments.

## Anti-Virus Software

**Anti-Virus** software is a software utility that detects, prevents, and removes viruses, worms, and other malware from a computer.

Most **anti-virus** programs include an auto-update feature that permits the program to download profiles of new viruses, enabling the system to check for new threats. **Anti-virus** programs are essential utilities for any computer but the choice of which one is very important. One **Anti-Virus** program might find a certain virus or worm while another cannot, or vice-versa.

Anti-virus software is also known as an anti-virus program or a vaccine. Example of **Anti-Virus Software**:

- Norton
- BullGuard
- McAfee
- Panda
- Bitdenfender
- Kaspersky
- AVG
- Avast


## Prevention Against virus infection

How can you help protect your devices against computer viruses? Here are some of the things you can do to help keep your computer safe.

- Use a trusted antivirus product and keep it updated with the latest virus definitions.
- Avoid clicking on any pop-up advertisements.
- Always scan your email attachments before opening them.
- Always scan the files that you download using file sharing programs

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