JIWAJI UNIVERSITY GWALIOR

SELF LEARNING MATERIAL

FOR

B.SC. 3 YEAR FOUNDATION COURSE

PAPER 3: BASIC OF COMPUTER & INFORMATION TECHNOLOGY

PAPER CODE: 303

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UNIT-1

INTRODUCTION OF COMPUTER

Functionalities of a Computer

If we look at it in a very broad sense, any digital computer carries out the following five functions −

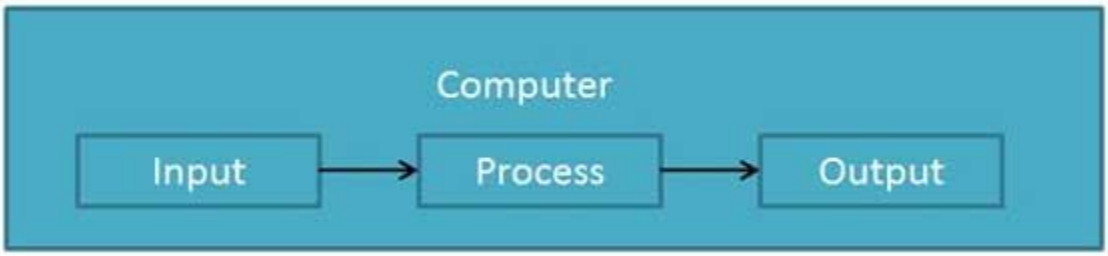
Step 1 − Takes data as input.

Step 2 − Stores the data/instructions in its memory and uses them as required.

Step 3 − Processes the data and converts it into useful information.

Step 4 − Generates the output.

Step 5 − Controls all the above four steps.



Advantages of Computers

Following are certain advantages of computers.

High Speed

- Computer is a very fast device.
- It is capable of performing calculation of very large amount of data.
- The computer has units of speed in microsecond, nanosecond, and even the picosecond.
- It can perform millions of calculations in a few seconds as compared to man who will spend many months to perform the same task.

Accuracy

- In addition to being very fast, computers are very accurate.
- The calculations are 100% error free.

- Computers perform all jobs with 100% accuracy provided that the input is correct.

Storage Capability

- Memory is a very important characteristic of computers.
- A computer has much more storage capacity than human beings.
- It can store large amount of data.
- It can store any type of data such as images, videos, text, audio, etc.

Diligence

- Unlike human beings, a computer is free from monotony, tiredness, and lack of concentration.
- It can work continuously without any error and boredom.
- It can perform repeated tasks with the same speed and accuracy.

Versatility

- A computer is a very versatile machine.
- A computer is very flexible in performing the jobs to be done.
- This machine can be used to solve the problems related to various fields.
- At one instance, it may be solving a complex scientific problem and the very next moment it may be playing a card game.

Reliability

- A computer is a reliable machine.
- Modern electronic components have long lives.
- Computers are designed to make maintenance easy.

Automation

- Computer is an automatic machine.
- Automation is the ability to perform a given task automatically. Once the computer receives a program i.e., the program is stored in the computer memory, then the program and instruction can control the program execution without human interaction.

Reduction in Paper Work and Cost

- The use of computers for data processing in an organization leads to reduction in paper work and results in speeding up the process.

- As data in electronic files can be retrieved as and when required, the problem of maintenance of large number of paper files gets reduced.
- Though the initial investment for installing a computer is high, it substantially reduces the cost of each of its transaction.

Disadvantages of Computers

Following are certain disadvantages of computers.

No I.Q.

- A computer is a machine that has no intelligence to perform any task.
- Each instruction has to be given to the computer.
- A computer cannot take any decision on its own.

Dependency

- It functions as per the user's instruction, thus it is fully dependent on humans.

Environment

- The operating environment of the computer should be dust free and suitable.

No Feeling

- Computers have no feelings or emotions.
- It cannot make judgment based on feeling, taste, experience, and knowledge unlike humans.

Computer - Applications

application of computers in various fields.

Business

A computer has high speed of calculation, diligence, accuracy, reliability, or versatility which has made it an integrated part in all business organizations.

Computer is used in business organizations for –

- Payroll calculations
- Budgeting
- Sales analysis
- Financial forecasting
- Managing employee database
- Maintenance of stocks, etc.

Banking

Today, banking is almost totally dependent on computers.

Banks provide the following facilities –

- Online accounting facility, which includes checking current balance, making deposits and overdrafts, checking interest charges, shares, and trustee records.
- ATM machines which are completely automated are making it even easier for customers to deal with banks.

Insurance

Insurance companies are keeping all records up-to-date with the help of computers. Insurance companies, finance houses, and stock broking firms are widely using computers for their concerns.

Insurance companies are maintaining a database of all clients with information showing –

- Procedure to continue with policies
- Starting date of the policies
- Next due installment of a policy
- Maturity date
- Interests due
- Survival benefits
- Bonus

Education

The computer helps in providing a lot of facilities in the education system.

- The computer provides a tool in the education system known as CBE (Computer Based Education).
- CBE involves control, delivery, and evaluation of learning.
- Computer education is rapidly increasing the graph of number of computer students.
- There are a number of methods in which educational institutions can use a computer to educate the students.

- It is used to prepare a database about performance of a student and analysis is carried out on this basis.

Marketing

In marketing, uses of the computer are following –

- **Advertising** – With computers, advertising professionals create art and graphics, write and revise copy, and print and disseminate ads with the goal of selling more products.
- **Home Shopping** – Home shopping has been made possible through the use of computerized catalogues that provide access to product information and permit direct entry of orders to be filled by the customers.

Healthcare

Computers have become an important part in hospitals, labs, and dispensaries. They are being used in hospitals to keep the record of patients and medicines. It is also used in scanning and diagnosing different diseases. ECG, EEG, ultrasounds and CT scans, etc. are also done by computerized machines.

Following are some major fields of health care in which computers are used.

- **Diagnostic System** – Computers are used to collect data and identify the cause of illness.
- **Lab-diagnostic System** – All tests can be done and the reports are prepared by computer.
- **Patient Monitoring System** – These are used to check the patient's signs for abnormality such as in Cardiac Arrest, ECG, etc.
- **Pharma Information System** – Computer is used to check drug labels, expiry dates, harmful side effects, etc.
- **Surgery** – Nowadays, computers are also used in performing surgery.

Engineering Design

Computers are widely used for Engineering purpose.

One of the major areas is CAD (Computer Aided Design) that provides creation and modification of images. Some of the fields are –

- **Structural Engineering** – Requires stress and strain analysis for design of ships, buildings, budgets, airplanes, etc.
- **Industrial Engineering** – Computers deal with design, implementation, and improvement of integrated systems of people, materials, and equipment.
- **Architectural Engineering** – Computers help in planning towns, designing buildings, determining a range of buildings on a site using both 2D and 3D drawings.

Military

Computers are largely used in defence. Modern tanks, missiles, weapons, etc. Military also employs computerized control systems. Some military areas where a computer has been used are –

- Missile Control
- Military Communication
- Military Operation and Planning
- Smart Weapons

Communication

Communication is a way to convey a message, an idea, a picture, or speech that is received and understood clearly and correctly by the person for whom it is meant. Some main areas in this category are –

- E-mail
- Chatting
- Usenet
- FTP
- Telnet
- Video-conferencing

Government

Computers play an important role in government services. Some major fields in this category are –

- Budgets

- Sales tax department
- Income tax department
- Computation of male/female ratio
- Computerization of voters lists
- Computerization of PAN card
- Weather forecasting

Computer - Generations

Generation in computer terminology is a change in technology a computer is/was being used. Initially, the generation term was used to distinguish between varying hardware technologies. Nowadays, generation includes both hardware and software, which together make up an entire computer system.

There are five computer generations known till date. Each generation has been discussed in detail along with their time period and characteristics. In the following table, approximate dates against each generation has been mentioned, which are normally accepted.

Following are the main five generations of computers.

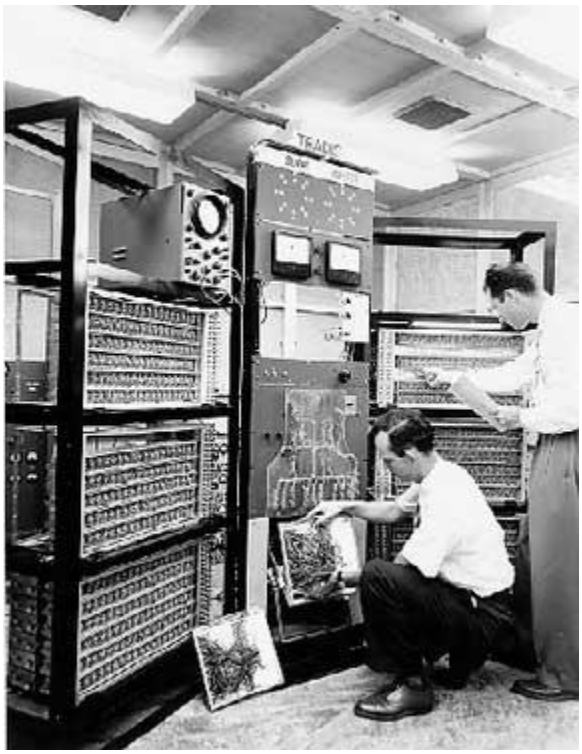
S.No	Generation & Description
1	**First Generation** The period of first generation: 1946-1959. Vacuum tube based.
2	**Second Generation** The period of second generation: 1959-1965. Transistor based.
3	**Third Generation** The period of third generation: 1965-1971. Integrated Circuit based.
4	**Fourth Generation** The period of fourth generation: 1971-1980. VLSI microprocessor based.

5	**Fifth Generation** The period of fifth generation: 1980-onwards. ULSI microprocessor based.

First Generation

The period of first generation was from 1946-1959. The computers of first generation used vacuum tubes as the basic components for memory and circuitry for CPU (Central Processing Unit). These tubes, like electric bulbs, produced a lot of heat and the installations used to fuse frequently. Therefore, they were very expensive and only large organizations were able to afford it.

In this generation, mainly batch processing operating system was used. Punch cards, paper tape, and magnetic tape was used as input and output devices. The computers in this generation used machine code as the programming language.



The main features of the first generation are –

- Vacuum tube technology

- Unreliable
- Supported machine language only
- Very costly
- Generated a lot of heat
- Slow input and output devices
- Huge size
- Need of AC
- Non-portable
- Consumed a lot of electricity

Some computers of this generation were –

- ENIAC
- EDVAC
- UNIVAC
- IBM-701
- IBM-650

Second Generation

The period of second generation was from 1959-1965. In this generation, transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first generation machines made of vacuum tubes. In this generation, magnetic cores were used as the primary memory and magnetic tape and magnetic disks as secondary storage devices.

In this generation, assembly language and high-level programming languages like FORTRAN, COBOL were used. The computers used batch processing and multiprogramming operating system.

The main features of second generation are –

- Use of transistors
- Reliable in comparison to first generation computers
- Smaller size as compared to first generation computers
- Generated less heat as compared to first generation computers
- Consumed less electricity as compared to first generation computers
- Faster than first generation computers
- Still very costly
- AC required
- Supported machine and assembly languages

Some computers of this generation were –

- IBM 1620
- IBM 7094
- CDC 1604
- CDC 3600
- UNIVAC 1108

Third Generation

The period of third generation was from 1965-1971. The computers of third generation used Integrated Circuits (ICs) in place of transistors. A single IC has many transistors, resistors, and capacitors along with the associated circuitry.

The IC was invented by Jack Kilby. This development made computers smaller in size, reliable, and efficient. In this generation remote processing, time-sharing, multiprogramming operating system were used. High-level languages (FORTRAN-II TO IV, COBOL, PASCAL PL/1, BASIC, ALGOL-68 etc.) were used during this generation.

The main features of third generation are –

- IC used
- More reliable in comparison to previous two generations
- Smaller size
- Generated less heat
- Faster
- Lesser maintenance
- Costly
- AC required

- Consumed lesser electricity
- Supported high-level language

Some computers of this generation were –

- IBM-360 series
- Honeywell-6000 series
- PDP (Personal Data Processor)
- IBM-370/168
- TDC-316

Fourth Generation

The period of fourth generation was from 1971-1980. Computers of fourth generation used Very Large Scale Integrated (VLSI) circuits. VLSI circuits having about 5000 transistors and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fourth generation.

Fourth generation computers became more powerful, compact, reliable, and affordable. As a result, it gave rise to Personal Computer (PC) revolution. In this generation, time sharing, real time networks, distributed operating system were used. All the high-level languages like C, C++, DBASE etc., were used in this generation.

The main features of fourth generation are –

- VLSI technology used
- Very cheap
- Portable and reliable
- Use of PCs
- Very small size
- Pipeline processing
- No AC required
- Concept of internet was introduced
- Great developments in the fields of networks
- Computers became easily available

Some computers of this generation were –

- DEC 10
- STAR 1000

- PDP 11
- CRAY-1(Super Computer)
- CRAY-X-MP(Super Computer)

Fifth Generation

The period of fifth generation is 1980-till date. In the fifth generation, VLSI technology became ULSI (Ultra Large Scale Integration) technology, resulting in the production of microprocessor chips having ten million electronic components.

This generation is based on parallel processing hardware and AI (Artificial Intelligence) software. AI is an emerging branch in computer science, which interprets the means and method of making computers think like human beings. All the high-level languages like C and C++, Java, .Net etc., are used in this generation.

AI includes –

- Robotics
- Neural Networks

- Game Playing
- Development of expert systems to make decisions in real-life situations
- Natural language understanding and generation

The main features of fifth generation are –

- ULSI technology
- Development of true artificial intelligence
- Development of Natural language processing
- Advancement in Parallel Processing
- Advancement in Superconductor technology
- More user-friendly interfaces with multimedia features
- Availability of very powerful and compact computers at cheaper rates

Some computer types of this generation are –

- Desktop
- Laptop
- NoteBook
- UltraBook
- ChromeBook

Types of Computer

Computers can be broadly classified by their speed and computing power.

S.No.	Type	Specifications
1	PC (Personal Computer)	It is a single user computer system having moderately powerful microprocessor
2	Workstation	It is also a single user computer system, similar to personal computer however has a more powerful microprocessor.

3	Mini Computer	It is a multi-user computer system, capable of supporting hundreds of users simultaneously.
4	Main Frame	It is a multi-user computer system, capable of supporting hundreds of users simultaneously. Software technology is different from minicomputer.
5	Supercomputer	It is an extremely fast computer, which can execute hundreds of millions of instructions per second.

PC (Personal Computer)

A PC can be defined as a small, relatively inexpensive computer designed for an individual user. PCs are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip. Businesses use personal computers for word processing, accounting, desktop publishing, and for running spreadsheet and database management applications. At home, the most popular use for personal computers is playing games and surfing the Internet.

Although personal computers are designed as single-user systems, these systems are normally linked together to form a network. In terms of power, now-a-days high-end models of the Macintosh and PC offer the same computing power and graphics capability as low-end workstations by Sun Microsystems, Hewlett-Packard, and Dell.

Workstation

Workstation is a computer used for engineering applications (CAD/CAM), desktop publishing, software development, and other such types of applications which require a moderate amount of computing power and relatively high quality graphics capabilities.

Workstations generally come with a large, high-resolution graphics screen, large amount of RAM, inbuilt network support, and a graphical user interface. Most workstations also have mass storage device such as a disk drive, but a special type of workstation, called diskless workstation, comes without a disk drive.

Common operating systems for workstations are UNIX and Windows NT. Like PC, workstations are also single-user computers like PC but are typically linked together to form a local-area network, although they can also be used as stand-alone systems.

Minicomputer

It is a midsize multi-processing system capable of supporting up to 250 users simultaneously.

Mainframe

Mainframe is very large in size and is an expensive computer capable of supporting hundreds or even thousands of users simultaneously. Mainframe executes many programs concurrently and supports many simultaneous execution of programs.

Supercomputer

Supercomputers are one of the fastest computers currently available. Supercomputers are very expensive and are employed for specialized applications that require immense amount of mathematical calculations (number crunching).

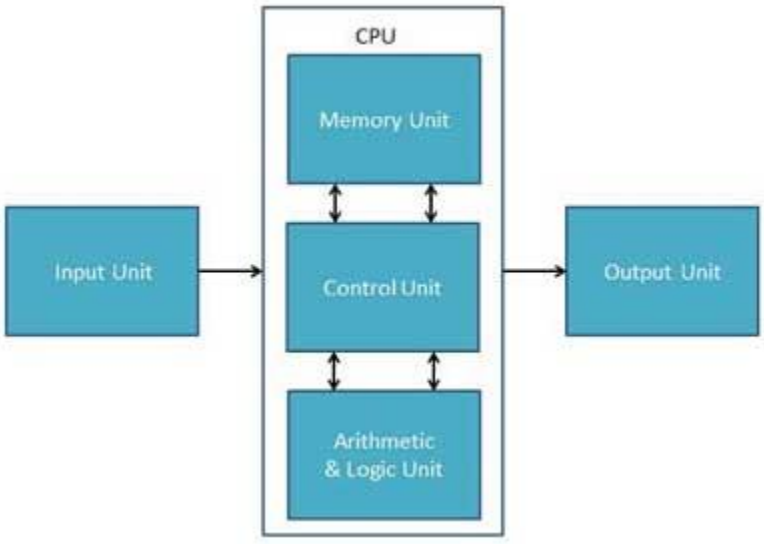
For example, weather forecasting, scientific simulations, (animated) graphics, fluid dynamic calculations, nuclear energy research, electronic design, and analysis of geological data (e.g. in petrochemical prospecting).

Components of Computer

All types of computers follow the same basic logical structure and perform the following five basic operations for converting raw input data into information useful to their users.

S.No.	Operation	Description
1	Take Input	The process of entering data and instructions into the computer system.

2	Store Data	Saving data and instructions so that they are available for processing as and when required.
3	Processing Data	Performing arithmetic, and logical operations on data in order to convert them into useful information.
4	Output Information	The process of producing useful information or results for the user, such as a printed report or visual display.
5	Control the workflow	Directs the manner and sequence in which all of the above operations are performed.



Input Unit

This unit contains devices with the help of which we enter data into the computer. This unit creates a link between the user and the computer. The input devices translate the information into a form understandable by the computer.

CPU (Central Processing Unit)

CPU is considered as the brain of the computer. CPU performs all types of data processing operations. It stores data, intermediate results, and

instructions (program). It controls the operation of all parts of the computer.

CPU itself has the following three components –

- ALU (Arithmetic Logic Unit)
- Memory Unit
- Control Unit

Output Unit

The output unit consists of devices with the help of which we get the information from the computer. This unit is a link between the computer and the users. Output devices translate the computer's output into a form understandable by the users.

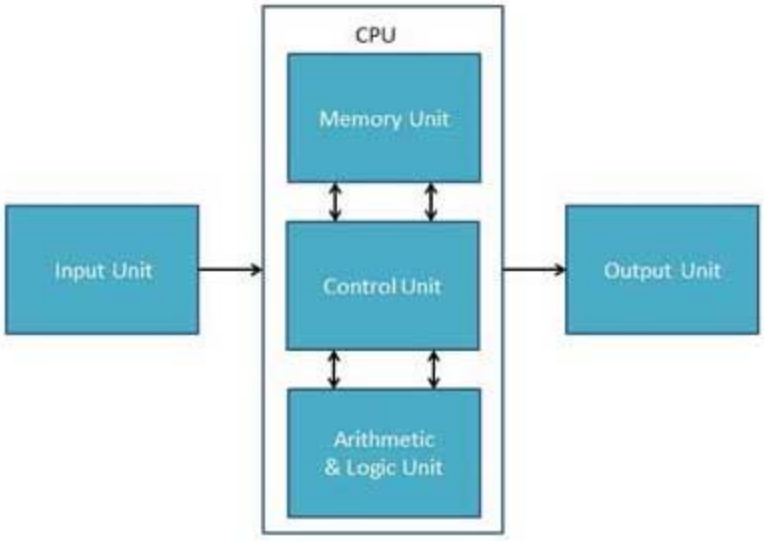
CPU(Central Processing Unit)

Central Processing Unit (CPU) consists of the following features –

- CPU is considered as the brain of the computer.
- CPU performs all types of data processing operations.
- It stores data, intermediate results, and instructions (program).
- It controls the operation of all parts of the computer.

CPU itself has following three components.

- Memory or Storage Unit
- Control Unit
- ALU(Arithmetic Logic Unit)



Memory or Storage Unit

This unit can store instructions, data, and intermediate results. This unit supplies information to other units of the computer when needed. It is also known as internal storage unit or the main memory or the primary storage or Random Access Memory (RAM).

Its size affects speed, power, and capability. Primary memory and secondary memory are two types of memories in the computer. Functions of the memory unit are –

- It stores all the data and the instructions required for processing.
- It stores intermediate results of processing.
- It stores the final results of processing before these results are released to an output device.
- All inputs and outputs are transmitted through the main memory.

Control Unit

This unit controls the operations of all parts of the computer but does not carry out any actual data processing operations.

Functions of this unit are –

- It is responsible for controlling the transfer of data and instructions among other units of a computer.
- It manages and coordinates all the units of the computer.
- It obtains the instructions from the memory, interprets them, and directs the operation of the computer.
- It communicates with Input/Output devices for transfer of data or results from storage.
- It does not process or store data.

ALU (Arithmetic Logic Unit)

This unit consists of two subsections namely,

- Arithmetic Section
- Logic Section

Arithmetic Section

Function of arithmetic section is to perform arithmetic operations like addition, subtraction, multiplication, and division. All complex operations are done by making repetitive use of the above operations.

Logic Section

Function of logic section is to perform logic operations such as comparing, selecting, matching, and merging of data.

Input Devices

Following are some of the important input devices which are used in a computer –

- Keyboard
- Mouse
- Joy Stick
- Light pen
- Track Ball

- Scanner
- Graphic Tablet
- Microphone
- Magnetic Ink Card Reader(MICR)
- Optical Character Reader(OCR)
- Bar Code Reader
- Optical Mark Reader(OMR)

Keyboard

Keyboard is the most common and very popular input device which helps to input data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions.

Keyboards are of two sizes 84 keys or 101/102 keys, but now keyboards with 104 keys or 108 keys are also available for Windows and Internet.

The keys on the keyboard are as follows –

S.No	Keys & Description
1	**Typing Keys**

	These keys include the letter keys (A-Z) and digit keys (09) which generally give the same layout as that of typewriters.
2	**Numeric Keypad** It is used to enter the numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most adding machines and calculators.
3	**Function Keys** The twelve function keys are present on the keyboard which are arranged in a row at the top of the keyboard. Each function key has a unique meaning and is used for some specific purpose.
4	**Control keys** These keys provide cursor and screen control. It includes four directional arrow keys. Control keys also include Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).
5	**Special Purpose Keys** Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen.

Mouse

Mouse is the most popular pointing device. It is a very famous cursor-control device having a small palm size box with a round ball at its base, which senses the movement of the mouse and sends corresponding signals to the CPU when the mouse buttons are pressed.

Generally, it has two buttons called the left and the right button and a wheel is present between the buttons. A mouse can be used to control the

position of the cursor on the screen, but it cannot be used to enter text into the computer.

Advantages

- Easy to use
- Not very expensive
- Moves the cursor faster than the arrow keys of the keyboard.

Joystick

Joystick is also a pointing device, which is used to move the cursor position on a monitor screen. It is a stick having a spherical ball at its both lower and upper ends. The lower spherical ball moves in a socket. The joystick can be moved in all four directions.

The function of the joystick is similar to that of a mouse. It is mainly used in Computer Aided Designing (CAD) and playing computer games.

Light Pen

Light pen is a pointing device similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen. It consists of a photocell and an optical system placed in a small tube.

When the tip of a light pen is moved over the monitor screen and the pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

Track Ball

Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on the ball, the pointer can be moved.

Since the whole device is not moved, a track ball requires less space than a mouse. A track ball comes in various shapes like a ball, a button, or a square.

Scanner

Scanner is an input device, which works more like a photocopy machine. It is used when some information is available on paper and it is to be transferred to the hard disk of the computer for further manipulation.

Scanner captures images from the source which are then converted into a digital form that can be stored on the disk. These images can be edited before they are printed.

Digitizer

Digitizer is an input device which converts analog information into digital form. Digitizer can convert a signal from the television or camera into a series of numbers that could be stored in a computer. They can be used by the computer to create a picture of whatever the camera had been pointed at.

Digitizer is also known as Tablet or Graphics Tablet as it converts graphics and pictorial data into binary inputs. A graphic tablet as digitizer is used for fine works of drawing and image manipulation applications.

Microphone

Microphone is an input device to input sound that is then stored in a digital form.

The microphone is used for various applications such as adding sound to a multimedia presentation or for mixing music.

Magnetic Ink Card Reader (MICR)

MICR input device is generally used in banks as there are large number of cheques to be processed every day. The bank's code number and cheque

number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable.

This reading process is called Magnetic Ink Character Recognition (MICR). The main advantages of MICR is that it is fast and less error prone.

Optical Character Reader (OCR)

OCR is an input device used to read a printed text.

OCR scans the text optically, character by character, converts them into a machine readable code, and stores the text on the system memory.

Bar Code Readers

Bar Code Reader is a device used for reading bar coded data (data in the form of light and dark lines). Bar coded data is generally used in labelling goods, numbering the books, etc. It may be a handheld scanner or may be embedded in a stationary scanner.

Bar Code Reader scans a bar code image, converts it into an alphanumeric value, which is then fed to the computer that the bar code reader is connected to.

Optical Mark Reader (OMR)

OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked.

It is specially used for checking the answer sheets of examinations having multiple choice questions.

Output Devices

Following are some of the important output devices used in a computer.

- Monitors
- Graphic Plotter
- Printer

Monitors

Monitors, commonly called as **Visual Display Unit** (VDU), are the main output device of a computer. It forms images from tiny dots, called pixels that are arranged in a rectangular form. The sharpness of the image depends upon the number of pixels.

There are two kinds of viewing screen used for monitors.

- Cathode-Ray Tube (CRT)
- Flat-Panel Display

Cathode-Ray Tube (CRT) Monitor

The CRT display is made up of small picture elements called pixels. The smaller the pixels, the better the image clarity or resolution. It takes more than one illuminated pixel to form a whole character, such as the letter ‘e’ in the word help.

A finite number of characters can be displayed on a screen at once. The screen can be divided into a series of character boxes - fixed location on the screen where a standard character can be placed. Most screens are capable of displaying 80 characters of data horizontally and 25 lines vertically.

There are some disadvantages of CRT –

- Large in Size
- High power consumption

Flat-Panel Display Monitor

The flat-panel display refers to a class of video devices that have reduced volume, weight and power requirement in comparison to the CRT. You can hang them on walls or wear them on your wrists. Current uses of flat-panel displays include calculators, video games, monitors, laptop computer, and graphics display.

The flat-panel display is divided into two categories –

- **Emissive Displays** – Emissive displays are devices that convert electrical energy into light. For example, plasma panel and LED (Light-Emitting Diodes).
- **Non-Emissive Displays** – Non-emissive displays use optical effects to convert sunlight or light from some other source into graphics patterns. For example, LCD (Liquid-Crystal Device).

Printers

Printer is an output device, which is used to print information on paper.

There are two types of printers –

- Impact Printers
- Non-Impact Printers

Impact Printers

Impact printers print the characters by striking them on the ribbon, which is then pressed on the paper.

Characteristics of Impact Printers are the following –

- Very low consumable costs
- Very noisy
- Useful for bulk printing due to low cost

- There is physical contact with the paper to produce an image

These printers are of two types –

- Character printers
- Line printers

Character Printers

Character printers are the printers which print one character at a time.

These are further divided into two types:

- Dot Matrix Printer(DMP)
- Daisy Wheel

Dot Matrix Printer

In the market, one of the most popular printers is Dot Matrix Printer. These printers are popular because of their ease of printing and economical price. Each character printed is in the form of pattern of dots and head consists of a Matrix of Pins of size (5*7, 7*9, 9*7 or 9*9) which come out to form a character which is why it is called Dot Matrix Printer.

Advantages

- Inexpensive

- Widely Used
- Other language characters can be printed

Disadvantages

- Slow Speed
- Poor Quality

Daisy Wheel

Head is lying on a wheel and pins corresponding to characters are like petals of Daisy (flower) which is why it is called Daisy Wheel Printer. These printers are generally used for word-processing in offices that require a few letters to be sent here and there with very nice quality.

Advantages

- More reliable than DMP
- Better quality
- Fonts of character can be easily changed

Disadvantages

- Slower than DMP
- Noisy
- More expensive than DMP

Line Printers

Line printers are the printers which print one line at a time.

These are of two types –

- Drum Printer
- Chain Printer

Drum Printer

This printer is like a drum in shape hence it is called drum printer. The surface of the drum is divided into a number of tracks. Total tracks are equal to the size of the paper, i.e. for a paper width of 132 characters, drum will have 132 tracks. A character set is embossed on the track. Different character sets available in the market are 48 character set, 64 and 96 characters set. One rotation of drum prints one line. Drum printers are fast in speed and can print 300 to 2000 lines per minute.

Advantages

- Very high speed

Disadvantages

- Very expensive
- Characters fonts cannot be changed

Chain Printer

In this printer, a chain of character sets is used, hence it is called Chain Printer. A standard character set may have 48, 64, or 96 characters.

Advantages

- Character fonts can easily be changed.
- Different languages can be used with the same printer.

Disadvantages

- Noisy

Non-impact Printers

Non-impact printers print the characters without using the ribbon. These printers print a complete page at a time, thus they are also called as Page Printers.

These printers are of two types –

- Laser Printers
- Inkjet Printers

Characteristics of Non-impact Printers

- Faster than impact printers
- They are not noisy
- High quality
- Supports many fonts and different character size

Laser Printers

These are non-impact page printers. They use laser lights to produce the dots needed to form the characters to be printed on a page.

Advantages

- Very high speed
- Very high quality output
- Good graphics quality
- Supports many fonts and different character size

Disadvantages

- Expensive
- Cannot be used to produce multiple copies of a document in a single printing

Inkjet Printers

Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.

They make less noise because no hammering is done and these have many styles of printing modes available. Color printing is also possible. Some models of Inkjet printers can produce multiple copies of printing also.

Advantages

- High quality printing
- More reliable

Disadvantages

- Expensive as the cost per page is high
- Slow as compared to laser printer

Computer - Memory

A memory is just like a human brain. It is used to store data and instructions. Computer memory is the storage space in the computer, where data is to be processed and instructions required for processing are stored. The memory is divided into large number of small parts called cells. Each location or cell has a unique address, which varies from zero to memory size minus one. For example, if the computer has 64k words, then this memory unit has 64 * 1024 = 65536 memory locations. The address of these locations varies from 0 to 65535.

Memory is primarily of three types –

- Cache Memory
- Primary Memory/Main Memory
- Secondary Memory

Cache Memory

Cache memory is a very high speed semiconductor memory which can speed up the CPU. It acts as a buffer between the CPU and the main memory. It is used to hold those parts of data and program which are most frequently used by the CPU. The parts of data and programs are transferred from the disk to cache memory by the operating system, from where the CPU can access them.

Advantages

The advantages of cache memory are as follows –

- Cache memory is faster than main memory.
- It consumes less access time as compared to main memory.
- It stores the program that can be executed within a short period of time.

- It stores data for temporary use.

Disadvantages

The disadvantages of cache memory are as follows –

- Cache memory has limited capacity.
- It is very expensive.

Primary Memory (Main Memory)

Primary memory holds only those data and instructions on which the computer is currently working. It has a limited capacity and data is lost when power is switched off. It is generally made up of semiconductor device. These memories are not as fast as registers. The data and instruction required to be processed resides in the main memory. It is divided into two subcategories RAM and ROM.

Characteristics of Main Memory

- These are semiconductor memories.
- It is known as the main memory.
- Usually volatile memory.
- Data is lost in case power is switched off.
- It is the working memory of the computer.

- Faster than secondary memories.
- A computer cannot run without the primary memory.

Secondary Memory

This type of memory is also known as external memory or non-volatile. It is slower than the main memory. These are used for storing data/information permanently. CPU directly does not access these memories, instead they are accessed via input-output routines. The contents of secondary memories are first transferred to the main memory, and then the CPU can access it. For example, disk, CD-ROM, DVD, etc.

Characteristics of Secondary Memory

- These are magnetic and optical memories.
- It is known as the backup memory.
- It is a non-volatile memory.
- Data is permanently stored even if power is switched off.
- It is used for storage of data in a computer.
- Computer may run without the secondary memory.
- Slower than primary memories.

Random Access Memory

RAM (Random Access Memory) is the internal memory of the CPU for storing data, program, and program result. It is a read/write memory which

stores data until the machine is working. As soon as the machine is switched off, data is erased.

Access time in RAM is independent of the address, that is, each storage location inside the memory is as easy to reach as other locations and takes the same amount of time. Data in the RAM can be accessed randomly but it is very expensive.

RAM is volatile, i.e. data stored in it is lost when we switch off the computer or if there is a power failure. Hence, a backup Uninterruptible Power System (UPS) is often used with computers. RAM is small, both in terms of its physical size and in the amount of data it can hold.

RAM is of two types –

- Static RAM (SRAM)
- Dynamic RAM (DRAM)

Static RAM (SRAM)

The word **static** indicates that the memory retains its contents as long as power is being supplied. However, data is lost when the power gets down due to volatile nature. SRAM chips use a matrix of 6-transistors and no capacitors. Transistors do not require power to prevent leakage, so SRAM need not be refreshed on a regular basis.

There is extra space in the matrix, hence SRAM uses more chips than DRAM for the same amount of storage space, making the manufacturing costs higher. SRAM is thus used as cache memory and has very fast access.

Characteristic of Static RAM

- Long life
- No need to refresh
- Faster
- Used as cache memory
- Large size
- Expensive
- High power consumption

Dynamic RAM (DRAM)

DRAM, unlike SRAM, must be continually **refreshed** in order to maintain the data. This is done by placing the memory on a refresh circuit that rewrites the data several hundred times per second. DRAM is used for most system memory as it is cheap and small. All DRAMs are made up of memory cells, which are composed of one capacitor and one transistor.

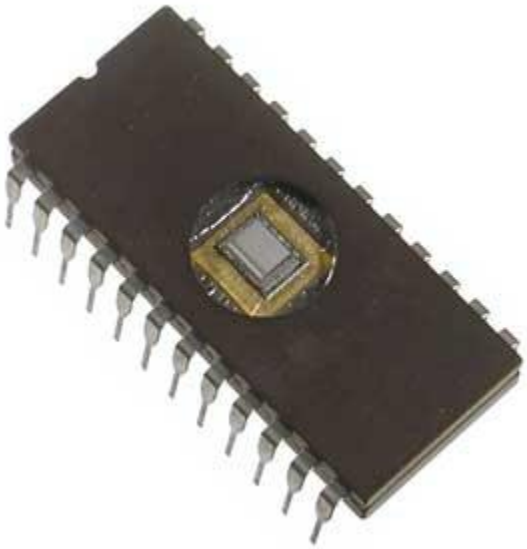
Characteristics of Dynamic RAM

- Short data lifetime
- Needs to be refreshed continuously
- Slower as compared to SRAM
- Used as RAM
- Smaller in size
- Less expensive
- Less power consumption

Read Only Memory

ROM stands for **Read Only Memory**. The memory from which we can only read but cannot write on it. This type of memory is non-volatile. The

information is stored permanently in such memories during manufacture. A ROM stores such instructions that are required to start a computer. This operation is referred to as **bootstrap**. ROM chips are not only used in the computer but also in other electronic items like washing machine and microwave oven.



Let us now discuss the various types of ROMs and their characteristics.

MROM (Masked ROM)

The very first ROMs were hard-wired devices that contained a pre-programmed set of data or instructions. These kind of ROMs are known as masked ROMs, which are inexpensive.

PROM (Programmable Read Only Memory)

PROM is read-only memory that can be modified only once by a user. The user buys a blank PROM and enters the desired contents using a PROM program. Inside the PROM chip, there are small fuses which are burnt open during programming. It can be programmed only once and is not erasable.

EPROM (Erasable and Programmable Read Only Memory)

EPROM can be erased by exposing it to ultra-violet light for a duration of up to 40 minutes. Usually, an EPROM eraser achieves this function. During programming, an electrical charge is trapped in an insulated gate region. The charge is retained for more than 10 years because the charge has no leakage path. For erasing this charge, ultra-violet light is passed through a quartz crystal window (lid). This exposure to ultra-violet light dissipates the charge. During normal use, the quartz lid is sealed with a sticker.

EEPROM (Electrically Erasable and Programmable Read Only Memory)

EEPROM is programmed and erased electrically. It can be erased and reprogrammed about ten thousand times. Both erasing and programming take about 4 to 10 ms (millisecond). In EEPROM, any location can be selectively erased and programmed. EEPROMs can be erased one byte at a time, rather than erasing the entire chip. Hence, the process of reprogramming is flexible but slow.

Advantages of ROM

The advantages of ROM are as follows –

- Non-volatile in nature
- Cannot be accidentally changed
- Cheaper than RAMs
- Easy to test
- More reliable than RAMs
- Static and do not require refreshing
- Contents are always known and can be verified

Computer - Motherboard

The motherboard serves as a single platform to connect all of the parts of a computer together. It connects the CPU, memory, hard drives, optical drives, video card, sound card, and other ports and expansion cards directly or via cables. It can be considered as the backbone of a computer.

Features of Motherboard

A motherboard comes with following features –

- Motherboard varies greatly in supporting various types of components.
- Motherboard supports a single type of CPU and few types of memories.
- Video cards, hard disks, sound cards have to be compatible with the motherboard to function properly.
- Motherboards, cases, and power supplies must be compatible to work properly together.

Popular Manufacturers

Following are the popular manufacturers of the motherboard.

- Intel
- ASUS

- AOpen
- ABIT
- Biostar
- Gigabyte
- MSI

Description of Motherboard

The motherboard is mounted inside the case and is securely attached via small screws through pre-drilled holes. Motherboard contains ports to connect all of the internal components. It provides a single socket for CPU, whereas for memory, normally one or more slots are available. Motherboards provide ports to attach the floppy drive, hard drive, and optical drives via ribbon cables. Motherboard carries fans and a special port designed for power supply.

There is a peripheral card slot in front of the motherboard using which video cards, sound cards, and other expansion cards can be connected to the motherboard.

On the left side, motherboards carry a number of ports to connect the monitor, printer, mouse, keyboard, speaker, and network cables. Motherboards also provide USB ports, which allow compatible devices to be connected in plug-in/plug-out fashion. For example, pen drive, digital cameras, etc.

Memory Units

Memory unit is the amount of data that can be stored in the storage unit. This storage capacity is expressed in terms of Bytes.

The following table explains the main memory storage units –

S.No.	Unit & Description
1	**Bit (Binary Digit)** A binary digit is logical 0 and 1 representing a passive or an active state

	of a component in an electric circuit.
2	**Nibble** A group of 4 bits is called nibble.
3	**Byte** A group of 8 bits is called byte. A byte is the smallest unit, which can represent a data item or a character.
4	**Word** A computer word, like a byte, is a group of fixed number of bits processed as a unit, which varies from computer to computer but is fixed for each computer. The length of a computer word is called word-size or word length. It may be as small as 8 bits or may be as long as 96 bits. A computer stores the information in the form of computer words.

The following table lists some higher storage units –

S.No.	Unit & Description
1	**Kilobyte (KB)** 1 KB = 1024 Bytes
2	**Megabyte (MB)** 1 MB = 1024 KB
3	**GigaByte (GB)** 1 GB = 1024 MB

4	**TeraByte (TB)** 1 TB = 1024 GB
5	**PetaByte (PB)** 1 PB = 1024 TB

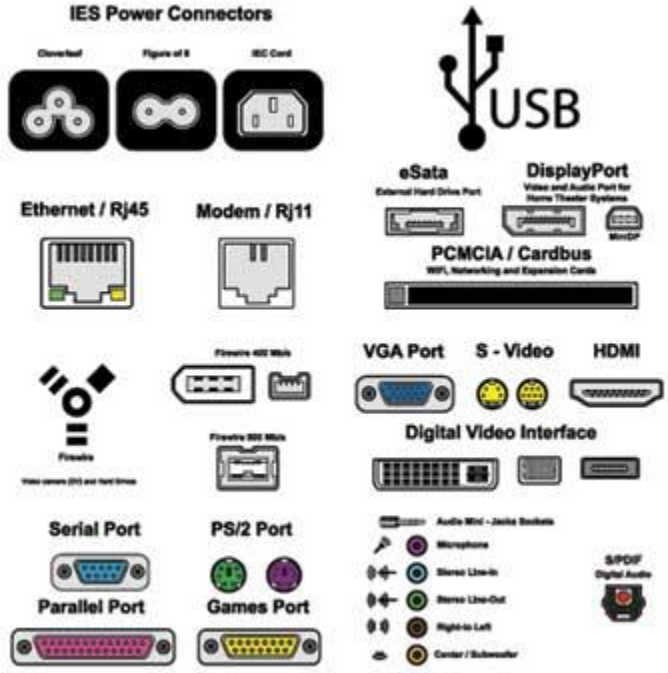
Ports

A port is a physical docking point using which an external device can be connected to the computer. It can also be programmatic docking point through which information flows from a program to the computer or over the Internet.

Characteristics of Ports

A port has the following characteristics –

- External devices are connected to a computer using cables and ports.
- Ports are slots on the motherboard into which a cable of external device is plugged in.
- Examples of external devices attached via ports are the mouse, keyboard, monitor, microphone, speakers, etc.



Let us now discuss a few important types of ports –

Serial Port

- Used for external modems and older computer mouse
- Two versions: 9 pin, 25 pin model
- Data travels at 115 kilobits per second

Parallel Port

- Used for scanners and printers
- Also called printer port
- 25 pin model
- IEEE 1284-compliant Centronics port

PS/2 Port

- Used for old computer keyboard and mouse
- Also called mouse port

- Most of the old computers provide two PS/2 port, each for the mouse and keyboard
- IEEE 1284-compliant Centronics port

Universal Serial Bus (or USB) Port

- It can connect all kinds of external USB devices such as external hard disk, printer, scanner, mouse, keyboard, etc.
- It was introduced in 1997.
- Most of the computers provide two USB ports as minimum.
- Data travels at 12 megabits per seconds.
- USB compliant devices can get power from a USB port.

VGA Port

- Connects monitor to a computer's video card.
- It has 15 holes.
- Similar to the serial port connector. However, serial port connector has pins, VGA port has holes.

Power Connector

- Three-pronged plug.
- Connects to the computer's power cable that plugs into a power bar or wall socket.

Firewire Port

- Transfers large amount of data at very fast speed.
- Connects camcorders and video equipment to the computer.
- Data travels at 400 to 800 megabits per seconds.
- Invented by Apple.
- It has three variants: 4-Pin FireWire 400 connector, 6-Pin FireWire 400 connector, and 9-Pin FireWire 800 connector.

Modem Port

- Connects a PC's modem to the telephone network.

Ethernet Port

- Connects to a network and high speed Internet.
- Connects the network cable to a computer.
- This port resides on an Ethernet Card.
- Data travels at 10 megabits to 1000 megabits per seconds depending upon the network bandwidth.

Game Port

- Connect a joystick to a PC
- Now replaced by USB

Digital Video Interface, DVI port

- Connects Flat panel LCD monitor to the computer's high-end video graphic cards.
- Very popular among video card manufacturers.

Sockets

- Sockets connect the microphone and speakers to the sound card of the computer.

Computer - Hardware

Hardware represents the physical and tangible components of a computer, i.e. the components that can be seen and touched.

Examples of Hardware are the following –

- **Input devices** – keyboard, mouse, etc.
- **Output devices** – printer, monitor, etc.
- **Secondary storage devices** – Hard disk, CD, DVD, etc.

- **Internal components** – CPU, motherboard, RAM, etc.

Relationship between Hardware and Software

- Hardware and software are mutually dependent on each other. Both of them must work together to make a computer produce a useful output.
- Software cannot be utilized without supporting hardware.
- Hardware without a set of programs to operate upon cannot be utilized and is useless.
- To get a particular job done on the computer, relevant software should be loaded into the hardware.
- Hardware is a one-time expense.
- Software development is very expensive and is a continuing expense.
- Different software applications can be loaded on a hardware to run different jobs.
- A software acts as an interface between the user and the hardware.

- If the hardware is the 'heart' of a computer system, then the software is its 'soul'. Both are complementary to each other.

Computer - Software

Software is a set of programs, which is designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem.

There are two types of software –

- System Software
- Application Software

System Software

The system software is a collection of programs designed to operate, control, and extend the processing capabilities of the computer itself. System software is generally prepared by the computer manufacturers. These software products comprise of programs written in low-level languages, which interact with the hardware at a very basic level. System software serves as the interface between the hardware and the end users.

Some examples of system software are Operating System, Compilers, Interpreter, Assemblers, etc.

Here is a list of some of the most prominent features of a system software –

- Close to the system
- Fast in speed
- Difficult to design

- Difficult to understand
- Less interactive
- Smaller in size
- Difficult to manipulate
- Generally written in low-level language

Application Software

Application software products are designed to satisfy a particular need of a particular environment. All software applications prepared in the computer lab can come under the category of Application software.

Application software may consist of a single program, such as Microsoft's notepad for writing and editing a simple text. It may also consist of a collection of programs, often called a software package, which work together to accomplish a task, such as a spreadsheet package.

Examples of Application software are the following –

- Payroll Software
- Student Record Software
- Inventory Management Software
- Income Tax Software
- Railways Reservation Software
- Microsoft Office Suite Software
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint

Features of application software are as follows –

- Close to the user
- Easy to design
- More interactive
- Slow in speed
- Generally written in high-level language
- Easy to understand
- Easy to manipulate and use
- Bigger in size and requires large storage space

Operating System

The Operating System is a program with the following features –

- An operating system is a program that acts as an interface between the software and the computer hardware.
- It is an integrated set of specialized programs used to manage overall resources and operations of the computer.
- It is a specialized software that controls and monitors the execution of all other programs that reside in the computer, including application programs and other system software.

Objectives of Operating System

The objectives of the operating system are –

- To make the computer system convenient to use in an efficient manner.
- To hide the details of the hardware resources from the users.
- To provide users a convenient interface to use the computer system.
- To act as an intermediary between the hardware and its users, making it easier for the users to access and use other resources.
- To manage the resources of a computer system.
- To keep track of who is using which resource, granting resource requests, and mediating conflicting requests from different programs and users.
- To provide efficient and fair sharing of resources among users and programs.

Characteristics of Operating System

Here is a list of some of the most prominent characteristic features of Operating Systems –

- **Memory Management** – Keeps track of the primary memory, i.e. what part of it is in use by whom, what part is not in use, etc. and allocates the memory when a process or program requests it.
- **Processor Management** – Allocates the processor (CPU) to a process and deallocates the processor when it is no longer required.
- **Device Management** – Keeps track of all the devices. This is also called I/O controller that decides which process gets the device, when, and for how much time.
- **File Management** – Allocates and de-allocates the resources and decides who gets the resources.
- **Security** – Prevents unauthorized access to programs and data by means of passwords and other similar techniques.
- **Job Accounting** – Keeps track of time and resources used by various jobs and/or users.
- **Control Over System Performance** – Records delays between the request for a service and from the system.
- **Interaction with the Operators** – Interaction may take place via the console of the computer in the form of instructions. The Operating System acknowledges the same, does the corresponding action, and informs the operation by a display screen.
- **Error-detecting Aids** – Production of dumps, traces, error messages, and other debugging and error-detecting methods.
- **Coordination Between Other Software and Users** – Coordination and assignment of compilers, interpreters, assemblers, and other software to the various users of the computer systems.

Disk Operating System – MS Dos Commands

What is Operating System?

Here, you will find the set of DOS commands, with the help of them, you can work with MS DOS. Operating system is the interface b/w user and h/w. it is the most commonly used system software, it manages the basic operation of a computer. These operations include booting the computer, Manage of all computer resources (all H/w parts).
Thus we can define an O.S. as a master system of programs that manages the overall operations of the computer. O.S. Can be divided into two categories on the basis of the number of users at a time, as follows:-
1. Single User O.S.
2. Multi User O.S.

Single User O.S.:
In this case, only one user can work on computer at a time. These O.S. are suitable for personal computers. Used at homes.
Eg. Windows Xp, Windows 98, Ms- DOS etc
Multi User O.S.:
In Multi User O.S. Environment many users can work on the computer at a time. These are suitable for organizations and educational institutions.
Eg. Windows 2000, Windows NT, Linux, Unix

Operating system as a User Interface:-
There are mainly two types of O.S. as a user interface, these are following:
· Graphical User Interface (GUI)
· Command User Interface (CUI)
Graphical User Interface:-
The GUI allows the user to select the desired option with the help of graphical images. This type of interface uses both images and menu to select commands ar initiate different operations. Generally these graphical images are called Icons, which are small pictorial figures representing different tasks, Procedures and programs.

Command User Interface:- CUI can help the user to interact or communicate with the computer through different commands. In this type of Interface the user has to memorize so many commands or to refer book for different commands. It also takes time to type each commands.

What is MS DOS (Microsoft Disk Operating System)?

DOS stands for ***DISK OPERATING SYSTEM*** It is one of the most commonly used O.S. in a single user environment. It runs mainly on personal computers made by different companies, such as Compaq, IBM, HP.
There are two O.S. referred as DOS.
1.) MS DOS (Microsoft Disk Operating System)
2.) PC DOS (Personal Computer Disk Operating System)

*List of all **DOS Commands.***

*1) **Date** Command*

This command is used to change or/and display current system date.

```
C:\>DATE /t
Sun 03/04/2012

C:\>DATE
The current date is: Sun 03/04/2012
Enter the new date: (mm-dd-yy) 04-05-2013
```

*2) **TIME** Command*

This command is used to change or/and display current system time.

```
C:\>TIME /t
02:48 AM

C:\>TIME
The current time is:  2:48:47.32
Enter the new time: 06:10:00
```

*3) **VER** Command*

This command is used to display the window's version.

```
C:\>ver
Microsoft Windows [Version 6.1.7600]
```

*4) **VOL** Command*

This command is used to display the disk volume level or serial number.

```
C:\>vol d:
Volume in drive D is SOFTWARE
Volume Serial Number is 147C-DA89
```

*5) **LABEL** Command*

This command is used to create, update and delete the serial number of particular disk.

```
C:\>LABEL D:
Volume in drive D: is SOFTWARE
Volume Serial Number is 147C-DA89
Volume label (32 characters, ENTER for none)? IMP_DOCUMENTS
```

*6) **ECHO** Command*

This command is used to display message on command screen, and also turn on/off command-echoing.

```
Command syntax is :
C:\> ECHO [ON|OFF]
C:\> ECHO [MESSAGE]

C:\>ECHO "https://www.includehelp.com"
"https://www.includehelp.com"

C:\>ECHO OFF
```

```
DATE/T
Sun 03/04/2012

ECHO ON
C:\>
```

*7) **PROMPT** Command*

This command is used to change the command prompt.

Switches:

```
$A - & (Ampersand)
$B  - | (pipe)
$C - ( (Left parenthesis)
$D - Current date
$E  - Escape code (ASCII code 27)
$F - ) (Right parenthesis)
$G - > (greater-than sign)
$H - Backspace (erases previous character)
$L - < (less-than sign)
$N - Current drive
$P - Current drive and path
$Q - = (equal sign)
$S  - (space)
$T - Current time
$$ - $ dollar sign
```

```
C:\>prompt "includehelp.com"

"includehelp.com"DATE/t
Sun 03/04/2012

"includehelp.com"PROMPT $p$g

C:\>
```

*8) **TITLE** Command*

This command is used to change the title of MS DOS screen.

```
C:\>TITLE includehelp.com
```

*9) **MKDIR/MD** Command*

MKDIR/MD command is used to create directory in particular drive.

```
Command syntax is :
C:\> MKDIR [drive]:\[Directory_Name]
C:\> MKDIR [Directory_Name]
* If you do not enter path [drive or directory],
directory will make in current working drive/directory.

1. C:\>MKDIR D:\Tutorial
2. C:\>MKDIR Tutorial
3. C:\>MKDIR D:\Folder1\Folder2\Folder3
```

Explanation

1. Directory will create into D: drive
2. Directory will create into C: drive.
3. You can also create directories using sub-direcories, here 3 directories will be created . Folder1 will be created in D: drive then Folder2 will be in Folder1 and Folder3 will be in Folder2.

*10) **CHDIR/CD** Command*

CHDIR/CD command is used to change current working direcory.

```
Command syntax is :
C:\> CHDIR [drive]:\[Directory_Name]
C:\> CHDIR [Directory_Name]
```

*11) **CD.. and CD** Command*

CD.. command is used to exit from current working directory.
CD command is used to exit from all directories and reaches to current drive.

```
Command syntax is :
```

```
[Current_working_drive\direcotries..\> CD..
[Current_working_drive\direcotries..\> CD\

1.    C:\>d:
2.    d:\>cd tutorial
3.    d:\Tutorial>cd..
4.    d:\>cd folder1\folder2\folder3
5.    d:\Folder1\Folder2\Folder3>cd\
6.    d:\>cd folder1\folder2
7.    d:\Folder1\Folder2>cd\
8.    d:\>
```

Explanation

1: Change current drive C: to D: drive.
2: Open tutorial directory .
3: Current working dir. is"D:\tutorial> ", **CD..** - exit from tutorial directory.
4: Open folder3 directory. (folder3 exits in "D:\folder1\folder2" *No need to write D:\ because current working directory is D:*).
5: Current working directory is "folder3". **CD** - exit from all directories.
6: Open folder2 directory .(folder2 is exists in "D:\folder1").
7: Current working directory is "folder2". **CD** - exit from all directories.

*12) **COPY CON***

COPY CON command is used to create a text file.

```
Command syntax is :
C:\>COPY CON [file_name]
Your text will goes here....
^Z (CTRL+Z) OR F6 .. (to save file)

C:\>COPY CON about_us.txt
includehelp.com provides online tutorials .
^Z
C:\>
```

*13) **TYPE** Command*

TYPE command is used to display file.

```
Command syntax is :
C:\> TYPE [FILE_PATH]

C:\>TYPE about_us.txt
includehelp.com provides online tutorials .
C:\>
```

*14) **EDIT** Command*

EDIT command is used to open DOS Editor to create,display, modify files.
Switches
/B - To open black and white mode.
/R - To open file in read only mode.

```
Command syntax is :

C:\>EDIT [/B|/R] [FILE_PATH]

1. C:\>Edit
2. C:\>Edit/B about_us.txt
3. C:\>Edit/R about_us.txt
4. C:\>Edit about_us.txt
```

Explanation

1: Opens DOS Editor.
2: Opens about_us.txt file in black and white dos editor.
3: Opens about_us.txt file in read only mode.
4: Open about_us.txt file in colored screen.

*15) **DIR** Command*

DIR command is used to displays a list of files and subdirectories in a directory.

Switches

```
/A  Attribute wise filtering ..
        R : Read only files.
        D : Directories only.
```

```
        H : Hidden items only.
        S : System files only.
        -D: Files only
/B  Uses bare format (no heading information or summary).
/C  Display the thousand separator in file sizes. This is
the default.
    Use /-C to disable display of separator.
/D  Same as wide but files are list sorted by column.
/L  Uses lowercase.
/N  New long list format where filenames are on the far
right.
/O  List by files in sorted order.)
        S: Size wise sorting.
        N: Name wise.
        D: Date wise.
        E: Extension wise sorting.

/P  Pauses after each screenful of information.
/Q  Display the owner of the file.
/S  Displays files in specified directory and all
subdirectories.
/T  Control what time field displayed or used for sorting
timefield        C Creation,
A Last Access,
W Last Written
/W  Uses wide list format.
```

Command syntax is :

DIR [drive:][path][filename] [/A[[:]attributes]] [/B] [/C] [/D] [/L]...

```
1)  C:\> DIR D:
    (display all directories and files of d: drive).
2)  Using "A" attribute:-
    C:\> DIR/AD D:
    (display direcotries (folders) only of d: drive).
    C:\> DIR/A-D D:
    (display only files of d: drive).
    C:\> DIR/AH D:
    (display all hidden items of d: drive).
3)  C:\> DIR/A-D/AR D:
    (display all files(only) with read only property).
```

Using wild characters:

1) To find all .txt (text) file from d:\folder1

C:\>DIR D:\folder1*.txt

2) To display all .docx (ms word files) starting with "A" filename.

C:\>DIR D:\folder1\A*.docx

3) To display all files of E: drive starting with "A" but third charcter of file name must be "C" (of any type/extension).

C:\>DIR D:\A?C*.*

4) To display all files with all extenstions of E:\.

C:\>DIR E:*.*

*16) **TREE** Command*

This command is used to display files and sub directories of particular directory.

Switches

F : Displays the name of the files in each folder.

A : Use ASCII instead of extended characters.

Command syntax is :

```
C:\>TREE/[SWITCH] [DRIVE:]\[DIRECTORY]

C:\>TREE D:\test
Folder PATH listing for volume iHelp's  Personal Data
Volume serial number is 00000002 147C:DA89
D:\TEST
├───folder1
├───folder2
│   └───SubFolder1
│       ├───SubFolderA
│       └───SubFolderB
└───folder3

C:\>
```

```
C:\>TREE/F D:\test
Folder PATH listing for volume iHelp's  Personal Data
Volume serial number is 00000002 147C:DA89
D:\TEST
|   file1.txt
|   file2.txt
|
├───folder1
├───folder2
|   |   file-A.txt
|   |   file-B.txt
|   |
|   └───SubFolder1
|       |   t.txt
|       |
|       ├───SubFolderA
|       └───SubFolderB
└───folder3

C:\>
```

17) ***DEL/ERASE*** *Command*

DEL/ERASE command is used to delete one or more than one file at a time.

```
Command syntax is :
C:\> Del [/Switch] [File Path]
```

Following switches can be use with this command.

1. /P : Display the confirmation message.
2. /F : Force deleting of read only files.
3. /A : Select file to delete based on attributes :
    - S : System files
    - R : read only files
    - H : Hidden files
    - A : ready for archiving

```
C:\>ERASE/P D:\includehelp.txt
```

```
D:\includehelp.txt, Delete (Y/N)? y
```

Explanation : above command will delete includehelp.txt file from D:\ drive, with confirmation message "D:\includehelp.txt, Delete (Y/N) ? " Press Y to delete..

```
1)    C:\> Del MyFile.Txt
2)    C:\> Del/AH *.jpg
3)    C:\> Del D:\Ram\Shyam\F1.Doc
```

Explanation

1) Delete MyFile.txt from C drive.
2) Delete all hidden files with extension .jpg(JPEG image files).
3) Delete F1.Doc from D:\Ram\Shyam folder..

*18) **RM/RMDIR** Command*

This command is used to removes (deletes) a directory (folder).

```
Command syntax is :
C:\> RD [/Switch] [Path]
```

Following switches can be use with this command.

- /S : Removes all directories and files in the specified directory in addition to the directory itself. Used to remove a directory tree.
- /Q : Quiet mode, do not ask if ok to remove a directory tree with /S.

```
1.    C:\>TREE d:\examples
2.    Folder PATH listing for volume Mike's  Personal Data
3.    Volume serial number is 00000002 147C:DA89
4.    D:\EXAMPLES
5.    ├───include
6.    │   └───Debug
7.    └───loop_Ex

8.    C:\>RD/S d:\examples
9.    d:\examples, Are you sure (Y/N)? y
```

```
10.   C:\>
```

Explanation

1. Command to display d:\examples directory.
8. Command to delete d:\examples directory.
9. Confirmation message to delete ...

*19) **SHUTDOWN** Command*

Shutdown command is used to shuts down the window.

Switches

/S Shuts down the window. /F Forcely shut down the window. /C Display dialog with comment and then shutdown. /T Shutdown time in XX seconds. /A Abort the shutdown command. /I To displai GUI window for remote shutdown.

```
1) C:\> SHUTDOWN -S
2) C:\> SHUTDOWN -F
3) C:\> SHUTDOWN -S -C "Windows is shutting down due to
virus.."
4) C:\> SHUTDOWN -S -T 30
5) C:\> SHUTDOWN -A
6) C:\> SHUTDOWN -I
```

What is BOOTing ?

When the computer is switched on, the firmware program in Read Only Memory(ROM) also called Basic Input-Output System(BIOS) reads programs and data i.e. Operating System and loads it into memory (RAM). This process is known Bootstrapping(Booting). The OS once loaded takes control of the computer, handles user interaction and executes application programs.

Booting Sequence

During Booting process, computer loads the operating system into its memory. DOS booting involves reading following files into memory namely IO.SYS, MSDOS.SYS, and COMMAND COM. The Basic Input/Output Program (IO.SYS): This program

provides interface between the hardware devices and software of the system. It takes care of the keyboard input, character output to monitor, output to printer and time of the day. The File and Disk Manager Program (MSDOS.SYS) : It contains the file management and the disk buffering management capabilities. It keeps track of all the disk access of an application program and remains permanently in memory. The Command Processor (COMMAND.COM) : It is also called command interpreter. It is the program that displays the system prompt and handles user interface by executing the command typed in by the user using keyboard.

The CONFIG.SYS file : This file contains reference to device drivers which are loaded when OS takes control of the computer. This device drivers are required for configuring operating system for running special devices.

The AUTOEXEC.BAT file : This is a special batch program that is automatically executed when the system is started. It can be used to define keys, define the path that MS-DOS uses to find files, display messages on the screen etc. It will be executed only if it exists in the root directory or the diskette from which the system is loaded. Each time the system is started, MS-DOS executes the commands stored in AUTOEXEC.BAT file. One can run it without restarting the system by typing AUTOEXEC at the command prompt.

Disk/Drives :

The user can store data or programs on secondary storage devices called Hard disk or Floppy disk. Physically disks store data by recording any pattern of magnetic changes on using a tiny read-write head that moves over the surface. Disk is divided into sectors and tracks. The first two characters of alphabet (a: or b:) are reserved for Floppy disks, Hard disks are identified by characters (c:) or (d:), the next character in the sequence is assigned to Compact Disk (CD-ROM) drive further the network drives connected to the system are assigned the remaining characters.

Windows Basic Concepts

Windows Basics

Terminology | Mouse Clicks | Menus | File Extensions | Hardware

New to Computers?

Fears related to “new” technology are nothing recent. *The First Tech Support Guy*is a humorous spoof on our discomfort with *anything* new.

Introduction to Windows Basics

This page discusses basic *Microsoft Windows* terminology and how to perform some basic Windows tasks. This page is not exhaustive, and will be developed as the need arises.

Currently supported versions of Windows range from a focus on keyboard & mouse to the more recent emphasis on touch screens. Some of the content is legacy and may not apply to the version of Windows you're running.

Helpful Outside Resources

A good introductory magazine would be a great resource, since it will have more pictures and diagrams than I have placed here (and costs much less than a book). Tech books have a short shelf life and therefore are more expensive than novels.

Be sure any material you purchase covers the version of Windows you're using. Get something that you understand yet will teach you new concepts.

Conventions Used on this Page

I'll use the term *default* to refer to the standard options enabled when Windows is installed without customization. If your computer is older or slower, I'd suggest removing any extras.

Computer Basics — General Concepts & Terminology contains a description of many of the general terms used when describing computers and their operation that may not be fully explained on this page.

Return to top

Windows Terminology

The images on this page were mostly taken from Windows 7 and may look different than your computer. However, they will serve to introduce you to the general concepts.

Starting with Windows 8, the touch-screen is emphasized which means less reliance on a mouse and keyboard and more like the experience with a tablet or smart phone.

Windows 10 is a mobile-first, cloud-first touch-based operating system that *can* use a mouse for navigation. As such, it is moving away from the traditional Windows interfaces and precepts. The user has far less control over this version of Windows than any prior version.

Common Windows Items

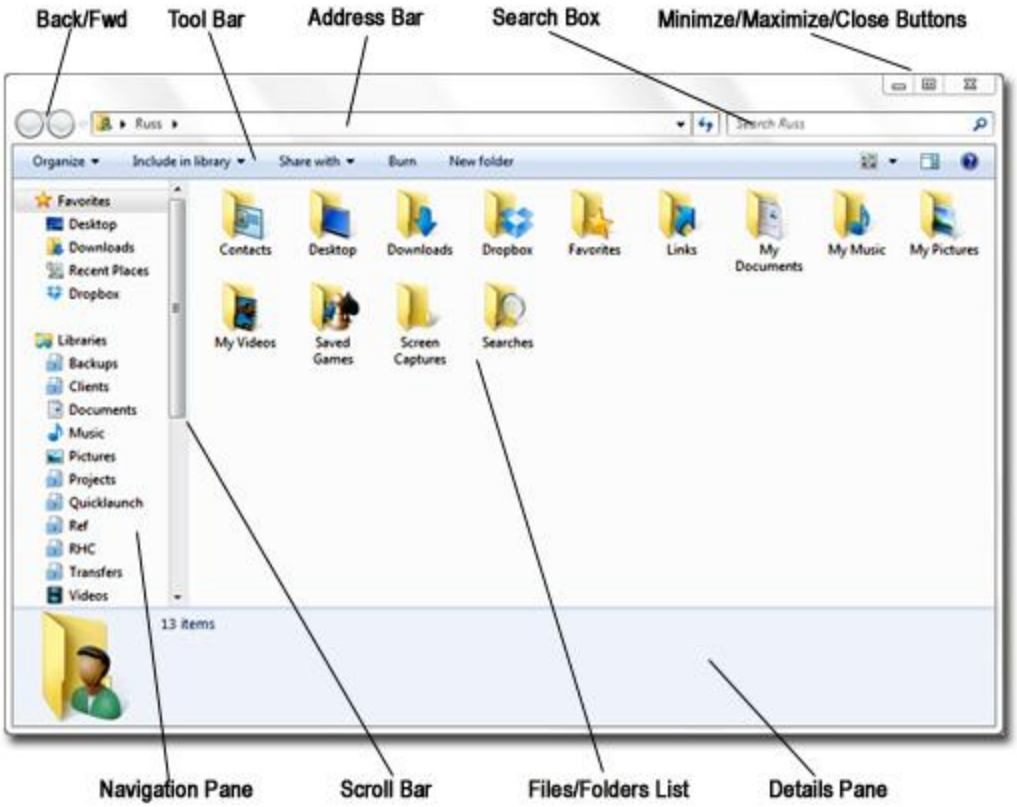
The following are just some of the terms used to describe the Windows desktop you are likely to run into. Most are indicated in the diagram below the list:

- **Desktop** refers to the background of your screen on which the various programs run. Think of your computer screen as your electronic desk.
- **Icons** are those small pictures on the desktop and inside folders that represent various programs and sometimes folders.
- **Folders** are containers that can contain icons, programs, data or other folders (sub-folders). The default folder icon looks like a Manila file folder but the look varies with different Windows versions.
- **Title bar** refers to the bar at the top of an open window that will tell you what the folder/window is (the title) and contains the minimize, maximize and close buttons. You can also use the title bar to move a window around.
- **Cursor** is the graphic which indicates where the mouse is and what sort of action it is performing. The cursor will change from the default arrow to various shapes according to the purpose it is serving at the time. For instance, it may form an I-beam shape when you are selecting text in a document or a double-arrow when you are resizing a window.
- **Task bar** refers to the bar usually at the bottom of your Windows screen (it can be moved) with the Start Button on the left and the clock on the right.
- The **Scroll Bar** appears when there is more information in the window than can be displayed. This is usually a vertical scroll bar, but a horizontal scroll bar may display if the width of the window is too narrow. In some cases, Windows 10 hides scroll bars until you hover over them.
- The **Address Bar** allows you to navigate up and down a series of windows by double-clicking on a folder. The folder with the Back/Fwd Buttons in Windows 7 would allow you to return to the previous folder.

While this list is based upon Windows, other operating systems like Mac and Linuxuse a lot of the same terminology.

The Window

The window (from which the term "Windows" is derived) has various elements. The most common are labelled in the Windows 7 diagram below:



This folder is one of the optional desktop folders called the User Files. Some of these folders are not standard in Windows 7 such as Dropbox and Screen Captures.

- The **Navigation Pane** provides quick links to various folders and locations on your computer.
- The **Title Bar** contains no text although it still provides the method for moving the folder.
- **My Documents** contains most of your user documents and files (except for music, pictures and videos).
- The **Address Bar** has a *bread crumb* menu. Clicking on any of the listed items (shown here as *" • Russ • "*) takes you to that folder. Clicking behind the address transforms it into the `C:\Users\Russ\` format.
    - A longer address example would be *" • Russ • Pictures • Family • "* which would transforms into `C:\Users\Russ\Pictures\Family`.
    - Clicking on *Pictures* would take you back to the Pictures folder.
    - Clicking on *Russ* would take you to the folder shown in the diagram above.

Windows 10's navigation pane and other features are different as are the menu items included but the basic principles are the same.

WINDOWS 7 CONTROL PANEL FEATURES

Windows 7 Control Panel

In the Windows 7 Control Panel Tutorial we will only cover the features that a senior or beginner computer user would be interested in. The Control panel is full of tools to change the way Windows looks and behaves.

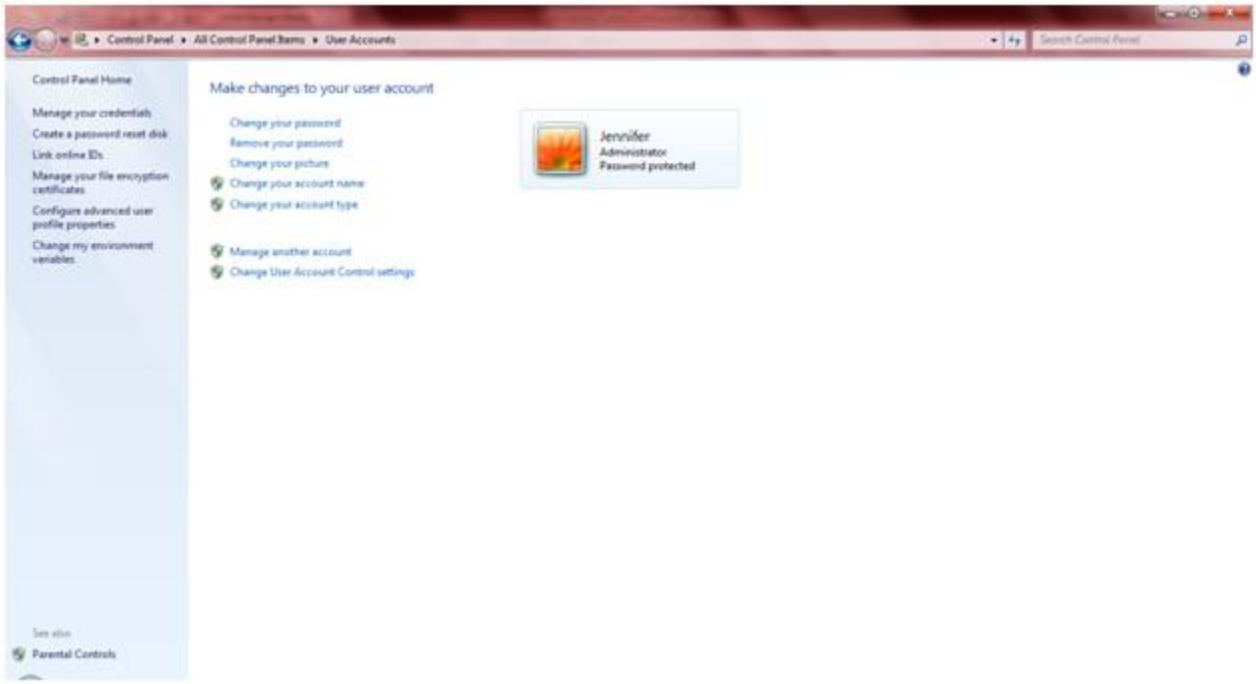
We will cover the topics of User Accounts and Family Safety, appearance and Personalization, and printers and Keyboard. You can click on any of these topics to jump ahead.

We are going to start with User Accounts. To open the Control Panel Click on the windows logo in the lower left corner then click Control Panel in the right hand column. This will open the control panel window.

User Accounts is a place where you can add or delete users, change a password or password protect your user account, Change the picture by your name when you log on or change the way you log on and off, or set parental controls

User Accounts is a beneficial tool because it allows each user of the computer to have their own look and feel for the Windows Desktop, customize their own favorites on the web and have their own My Documents Folder. This is also great for Parents to monitor their children's computer usage.

All of the link options in the control panel are alphabetized. Click on the User Account link and we will get started.



When the user Account Window opens you will see the three options.

We will start by having a little fun with the picture that appears by our name when we log on. Click on Change your picture link.

In this window you can change the picture that appears next to your name in the Start Menu and when you log on. Browse through the pictures and pick your favorite one then

click on it. If you have a favorite picture that does not appear in the list of default pictures click on the Browse for more pictures link and a window will open for you to choose one of your personal pictures.

If you made any changes click on the Change Picture button. If no changes were made click on Cancel and it will take you to the user account window.

Now we will go through one by one to learn more about making changes to a user account. You do not have to make any changes to your computer but I would like you to get a feel for all of the windows in case you need to make changes in the future.

Click on Change your password

If your account is currently password protected and you would like to change the password you would enter the information in each text box and the Change Password button at the bottom. Click Cancel if you have not made any changes and you will return to the Make changes to your user account window.

Click on the Remove your password link.

If you computer is currently password protected you can type your current password into the text box and click the Remove Password button and you will no longer need a password

to log into your computer. Click Cancel if you did not make and changes to return to the Make changes to your user account window.

Click on the Change your account name link

If you have a grandchild or child that no longer uses your computer or you purchased a used computer from someone you can put your name here or type the name of someone else that would use that account. If you did not make any Changes click cancel to return to the User Accounts Window.

Next click on the Change your account type link.

If you are doing this tutorial with your account you are probably set up as the administrator. As the administrator you can access all programs and files and install programs on the computer. If you are set up as a Standard User you might not be able to install certain programs. You will still be able to change your own password, picture and desktop settings.

You cannot change an account to a Standard user if they are set up as an administrator and there is only one administrator account. You would need to create another administrator account before changing an administrator to a Standard user.

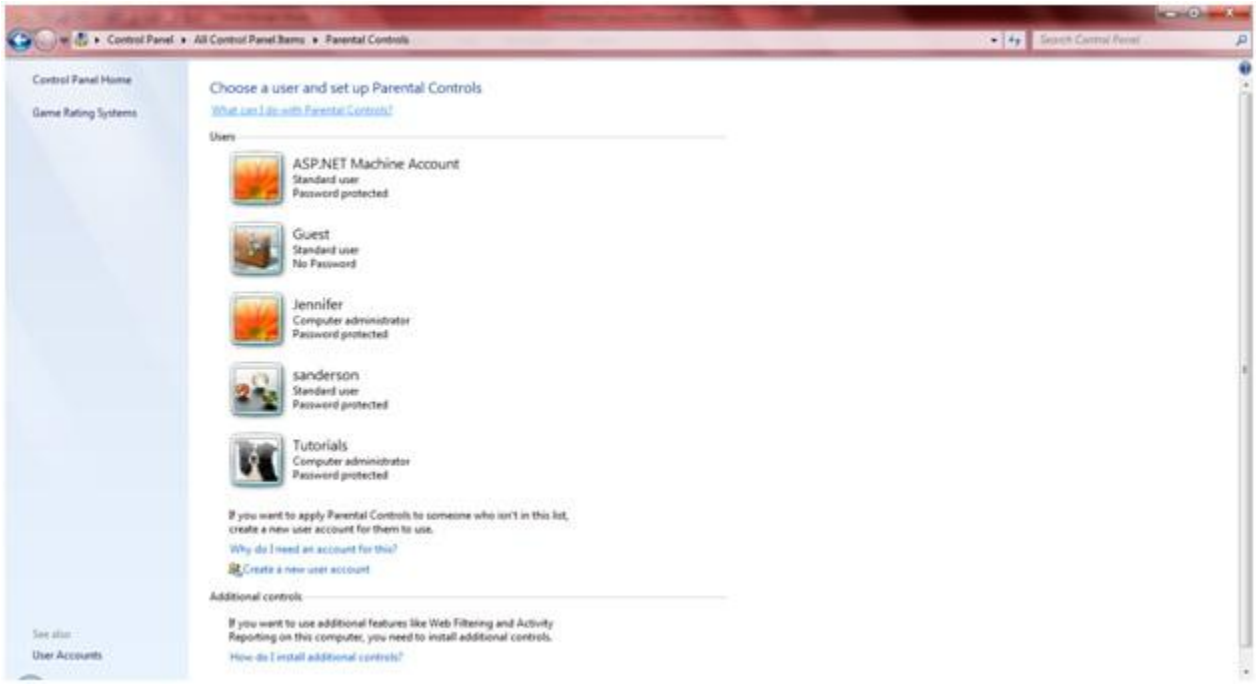
If you made any changes click the cancel button to return to the user accounts window.

To switch to another account on the computer and make the same changes or create a new account you would click the Manage Another Account link.

Click on the Create new account link. Enter the User's name and select what type of user you would like them to be then click Create New Account.

If you did not create a new account click cancel to return to the Manage Accounts Window.

Now we will move onto Parental Controls. Having 2 small children this is one of my favorite features of Windows 7. Parental Controls helps you to manage you children's computer usage, set limits on access to the web, the hours they can log on to the computer, and which games they can play. Click on the setup Parental controls link at the bottom of the window.



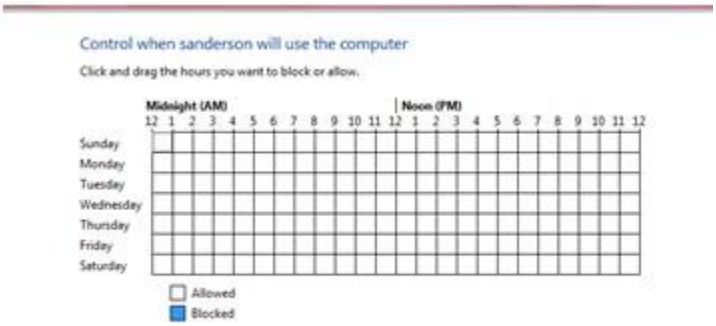
When the Parental Control Window Opens Click on a user that is not an administrator.

In the Parental Control Setup Window Click On, enforce current settings under Parental Controls. This will allow changes to be made to the three options under Window Settings.

The links that are currently off in the sample will take you to the same location at the Windows Setting links. They are just to let you know what controls have been set.

Click on Time limits. In the time limit window click on blocks of time in the grid to block the selected user from logging onto the computer during the set times.

Click OK to save the changes or cancel to discard and return to the parental control window.



Under Windows Settings click Games. Click the Set game ratings link.

The Windows 7 Games window allows the parent to either allow or block any games from being played, block games with a specific rating, and block games by a specific name.

To block any games from being played click the no button under Can (user Name) play games?

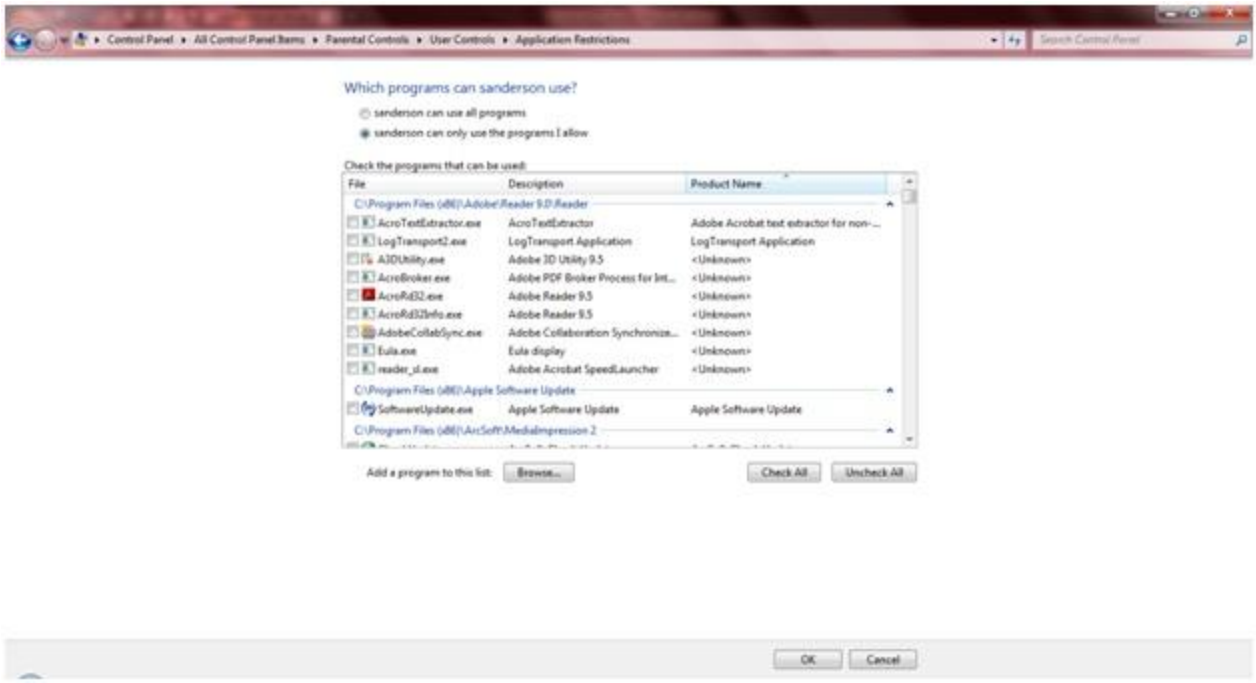
If the user is allowed to play games but you want to control the rating click Set games ratings under Block (or allow) games by rating or content.

The first selection you can make is to allow or block games that do not have a rating. Click either Allow games with no rating or Block games with no rating. Then read each rating under Which ratings are ok for (user name) to play? Then choose the types of games the user will be allowed to play. The selection you choose and everything above it will be allowed. If the Rating is below what you selected that game will be blocked from play.

Use the scroll bar to move down the window to see more options to block games containing certain content. Scroll down through the list and place a check mark on any content you would like to block. Any game containing a marked content will be blocked regardless of the rating.

Click OK if you made any changes or Cancel to return to the Parental Control Game settings and OK again to return to the main Parental Control window.

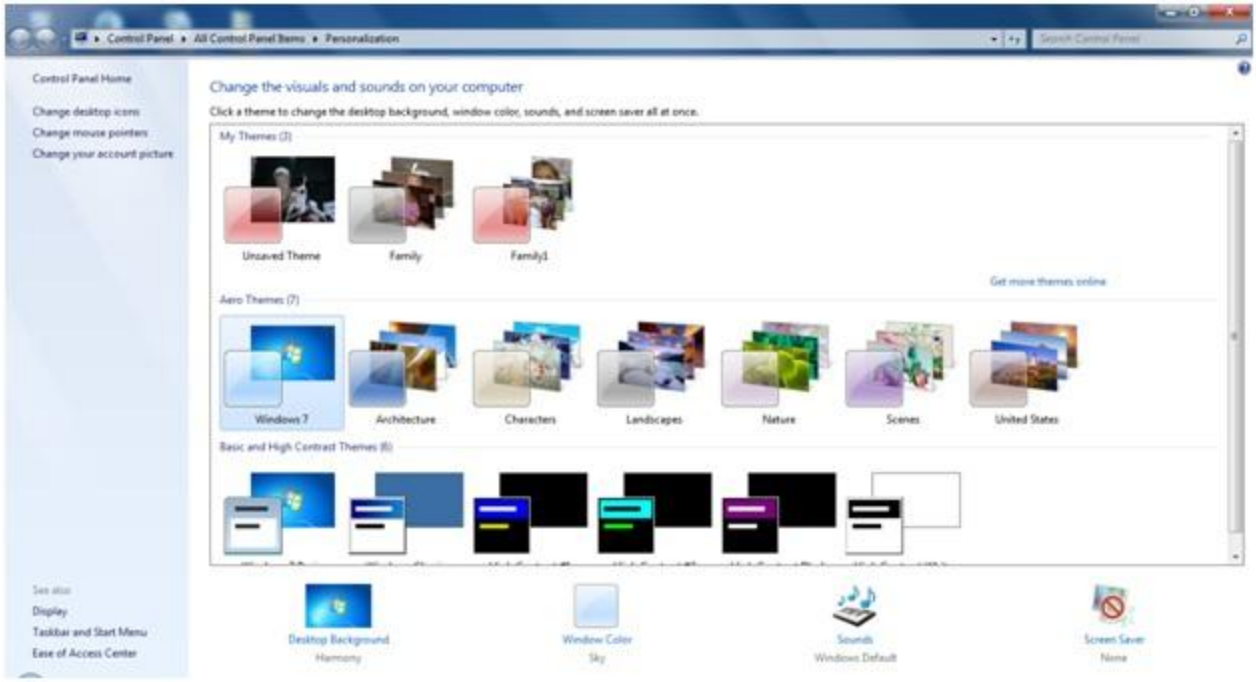
The last option is allow and block specific programs. Click on Block or Allow specific programs link.



When the Block or allow specific programs window opens click on (user name) can only use the programs I allow button. It will take a minute for all the programs to load in the box below.

When the program list is populated scroll through the list with the down arrow on the right of the box and check the box next to each program the user will be allowed to use. After you have finished checking the programs click OK to return to Parental Controls or if no changes were made click Cancel.

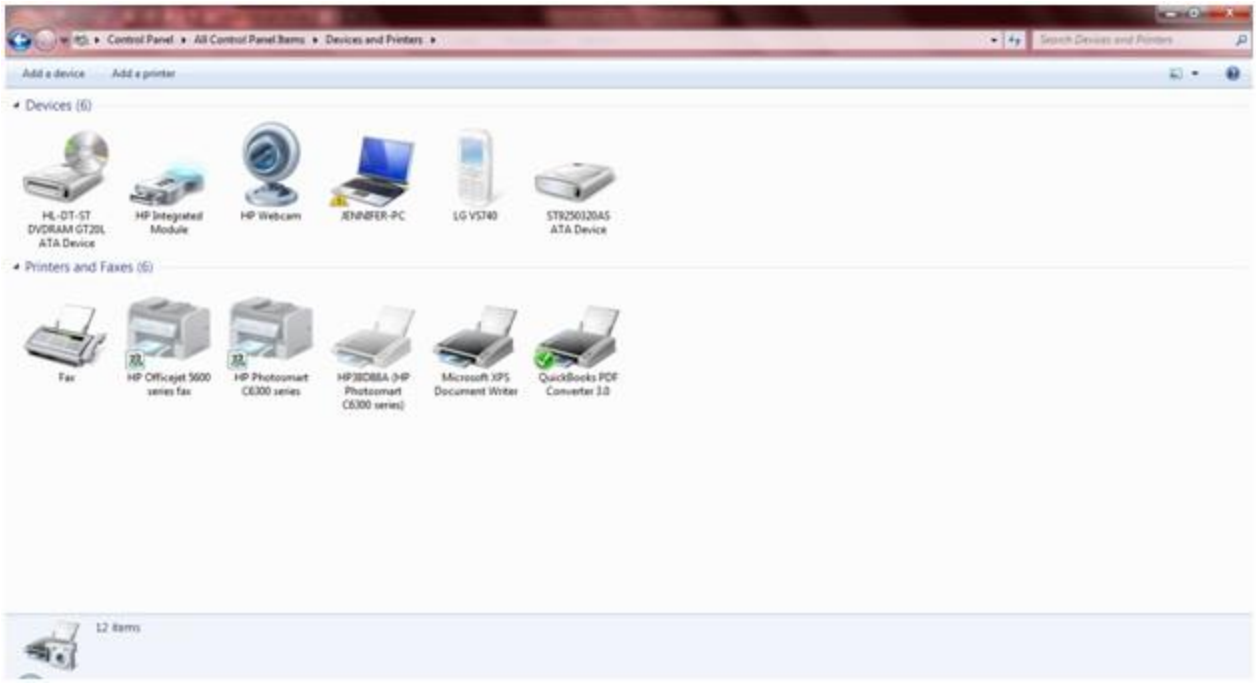
Now reopen the control panel. Click on the Personalization link.



Notice the links in this window look familiar. We have already covered these in the Windows 7 Desktop Tutorial. This is just another way to get to the same options. Please feel free to click each link to see if you recognize the windows

When you are finished exploring the Personalization window click the back arrow in the upper left corner to return to the control panel.

Click on the devices and printers link in the main control panel window. Printers have never been one of my favorite topics. There are so many different brands and types of printers, and they all install and work differently. The best advice I can give you is to follow the instructions that came with your printer for easy installation.



The Printers Window will open. This window gives you all the information you need to know about the printers and devices you currently have installed on your computer. This window will provide a list of each device or printer. To get more information on any item in the list double click to open the properties window for that item.

The Printers Window will tell you the name of your printer. When you place your mouse over a printer if there is any number other than 0 in the documents column or under the printer name there are print jobs that are either in the process of being printed or are stuck in the print queue.

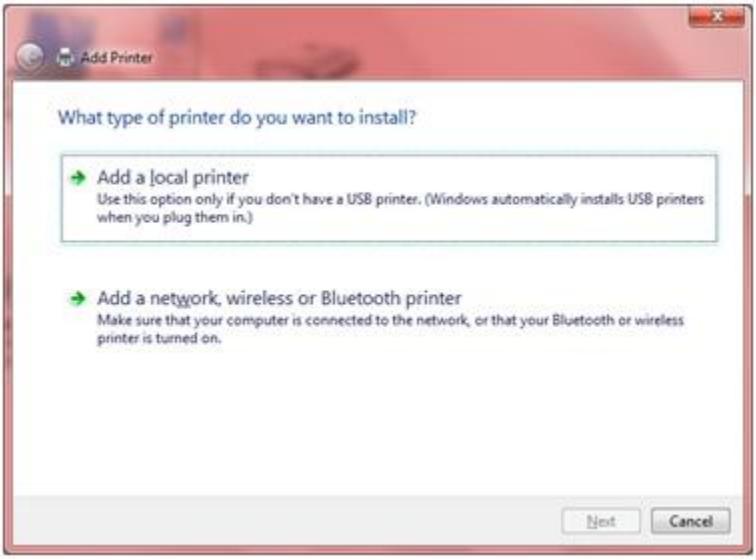
Double click on one of your printers to view the window with the list of print jobs and options to change print settings.

If you are having printer trouble this is the window you need to be in to see what is going on. Most of the time you have a print job stuck in the queue and it needs to be deleted before you can print another document or re-print the current document.

To delete a document out of the print queue click on see what is printing then click the print job to select it and press the delete key on your keyboard. Sometimes you are able to restart the print job to make it work. To restart a print job you select the print job you want and click document in the top tool bar. Then click restart.

Click the x in the upper right corner to return to the Printers window.

The last topic on printers I want to cover is Add a printer. Click on the add a printer link in the top toolbar.



This will open the Add Printer wizard. You can follow this wizard to install a printer. I am not going to go into detail here because every printer is different. If you have specific questions you can email me and I will send you an individual tutorial specified toward the precise brand of printer you are installing.

Click the Cancel button to go back to the Printers window. Then click the upper left back arrow to return to the printer window.

Once you are back to the Control panel click on the Keyboard icon link.

Control Panel In Windows 8

Windows 8/8.1 doesn't provide a Control Panel icon on desktop or on other visible area. But this menu still exists and it is the main dashboard to access and edit the settings for your Windows computer.

METHOD 1: WINDOWS + X

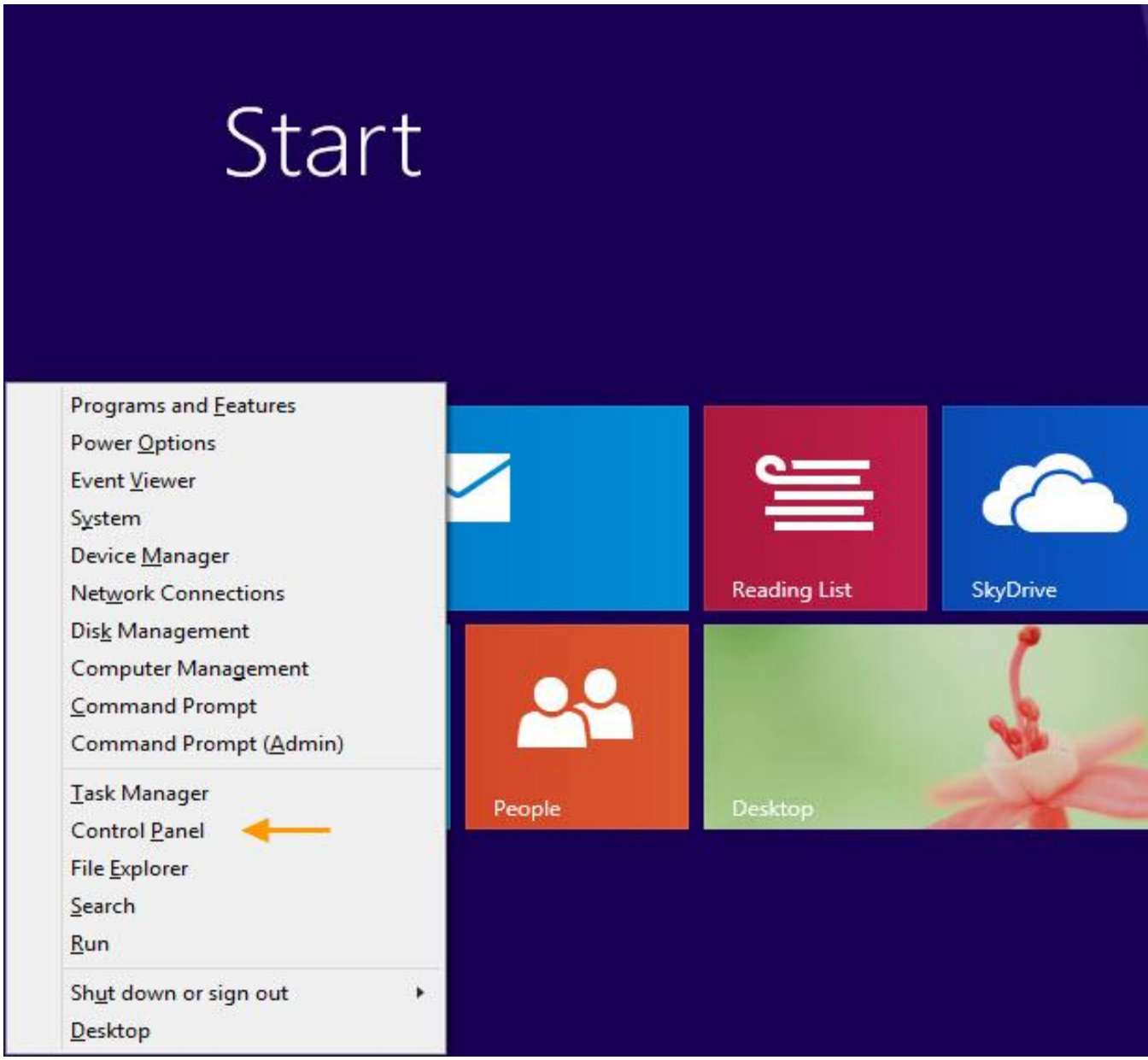
This method works for both desktop modes: Metro and classic.

1 Press Windows + X

Press Windows + X keys in the same time. This will open a new menu and there you can select the Control Panel.

2 Access Control Panel

Now you can click on the Control Panel link.



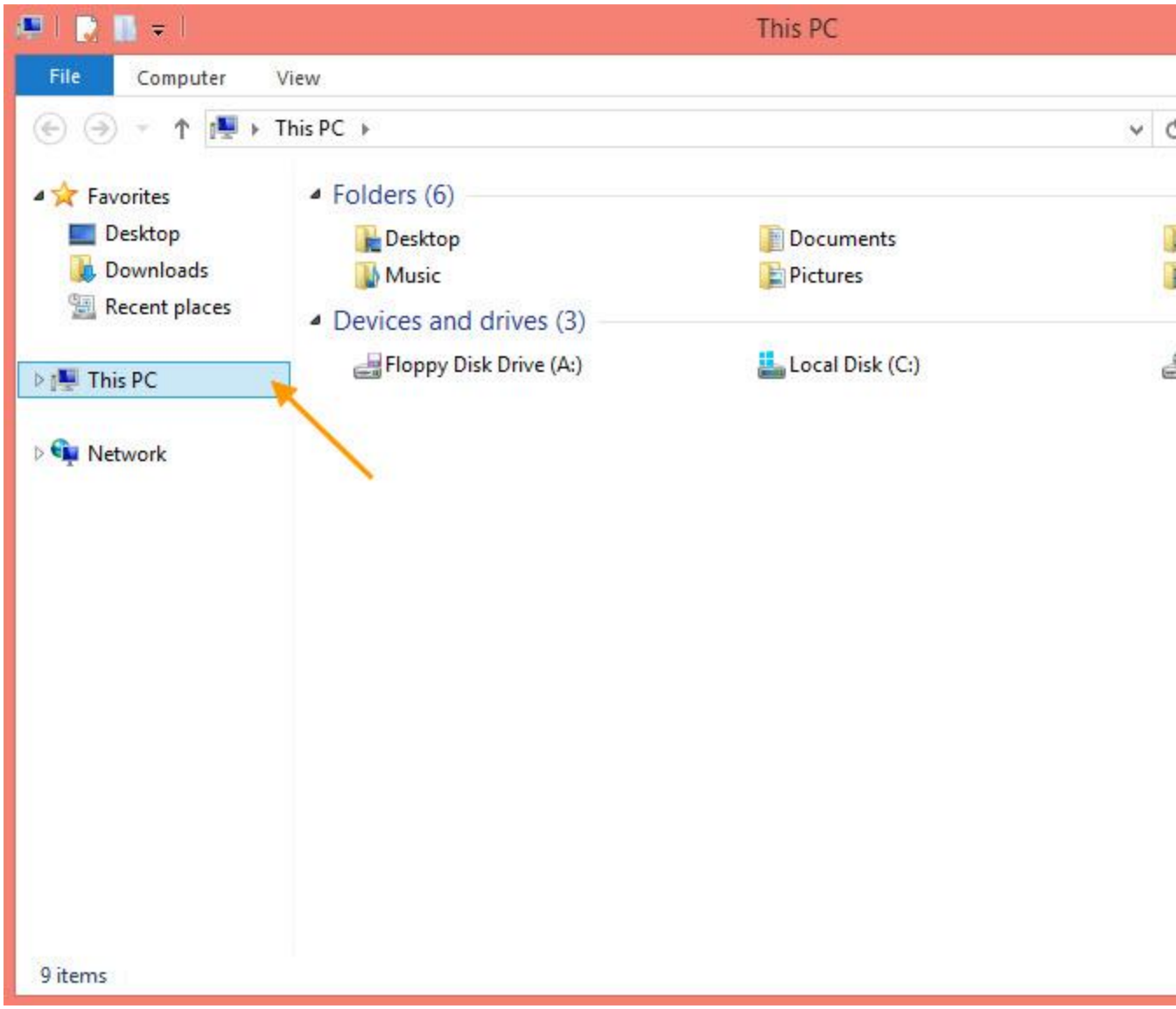
METHOD 2: USING WINDOWS EXPLORER

1 Press Windows + E

Press **Windows + E** keys.

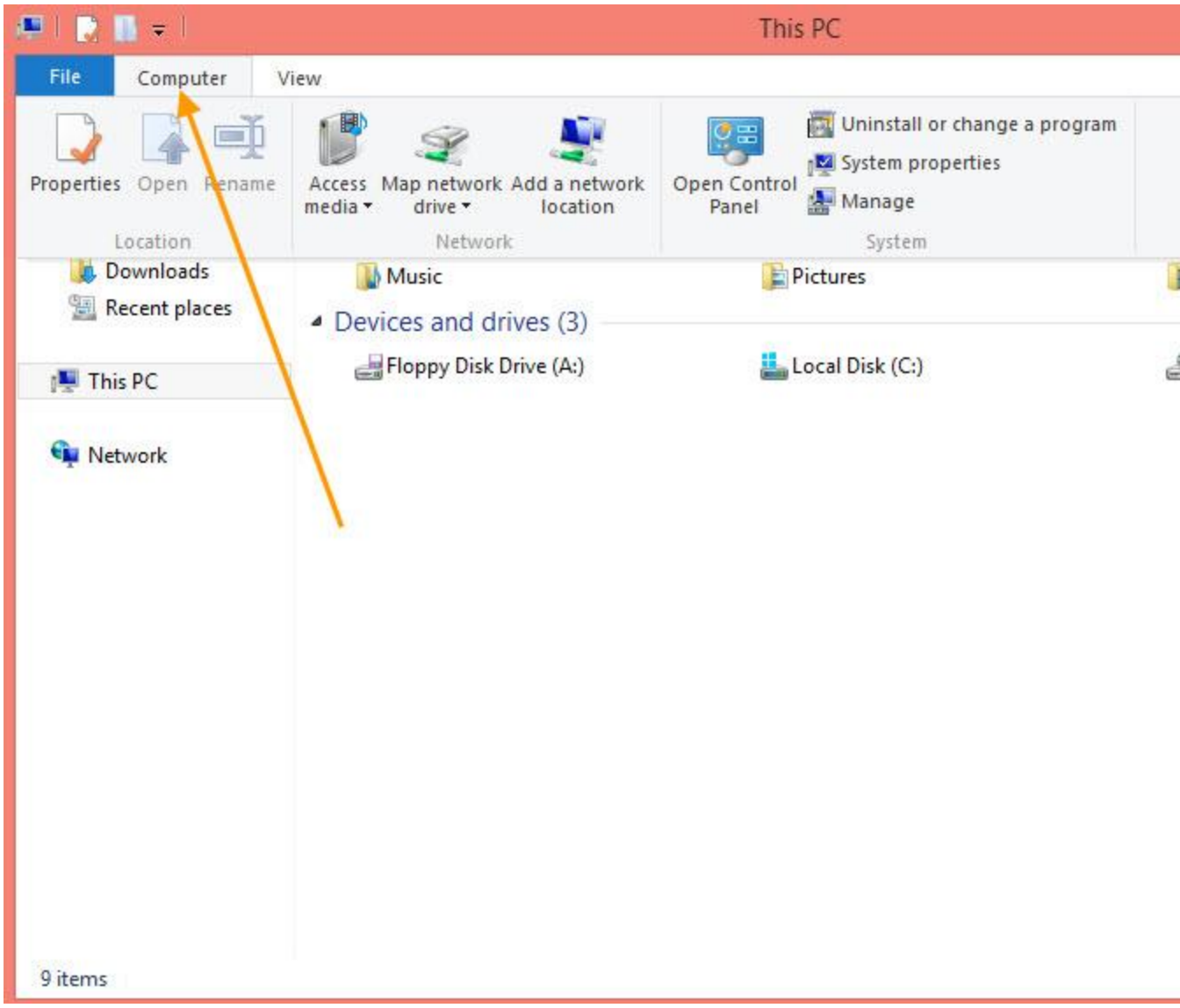
2 This PC

Then click on **This PC**



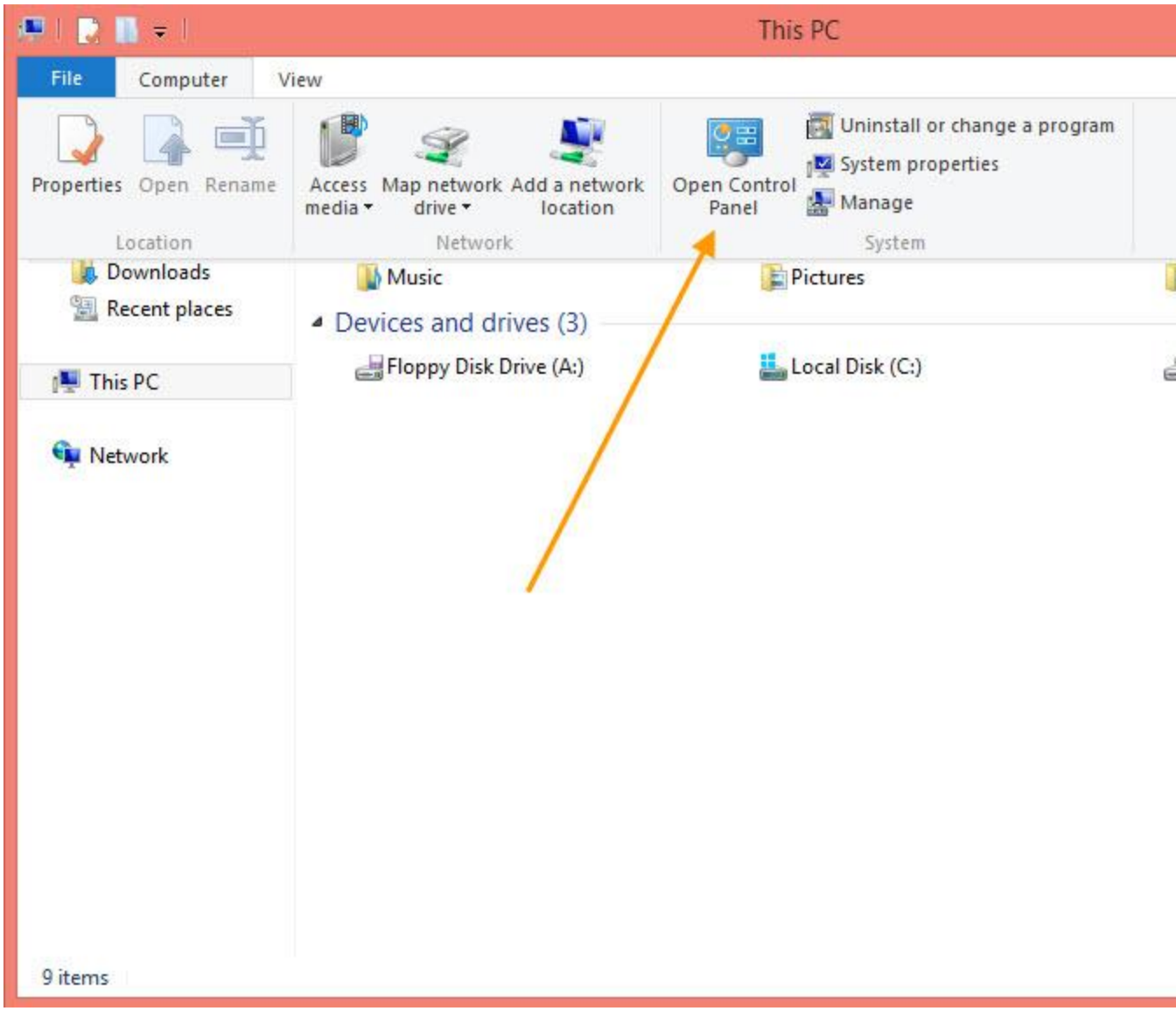
3 Go to Computer

Then click on the **Computer** tab.



4 Go to Control Panel

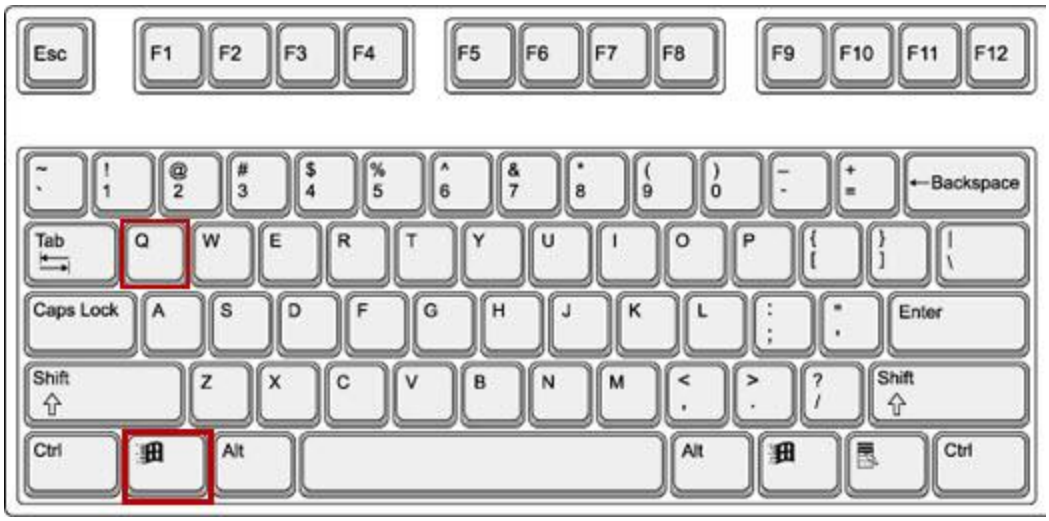
Then click on **Open Control Panel**.



METHOD 3: SEARCH IT

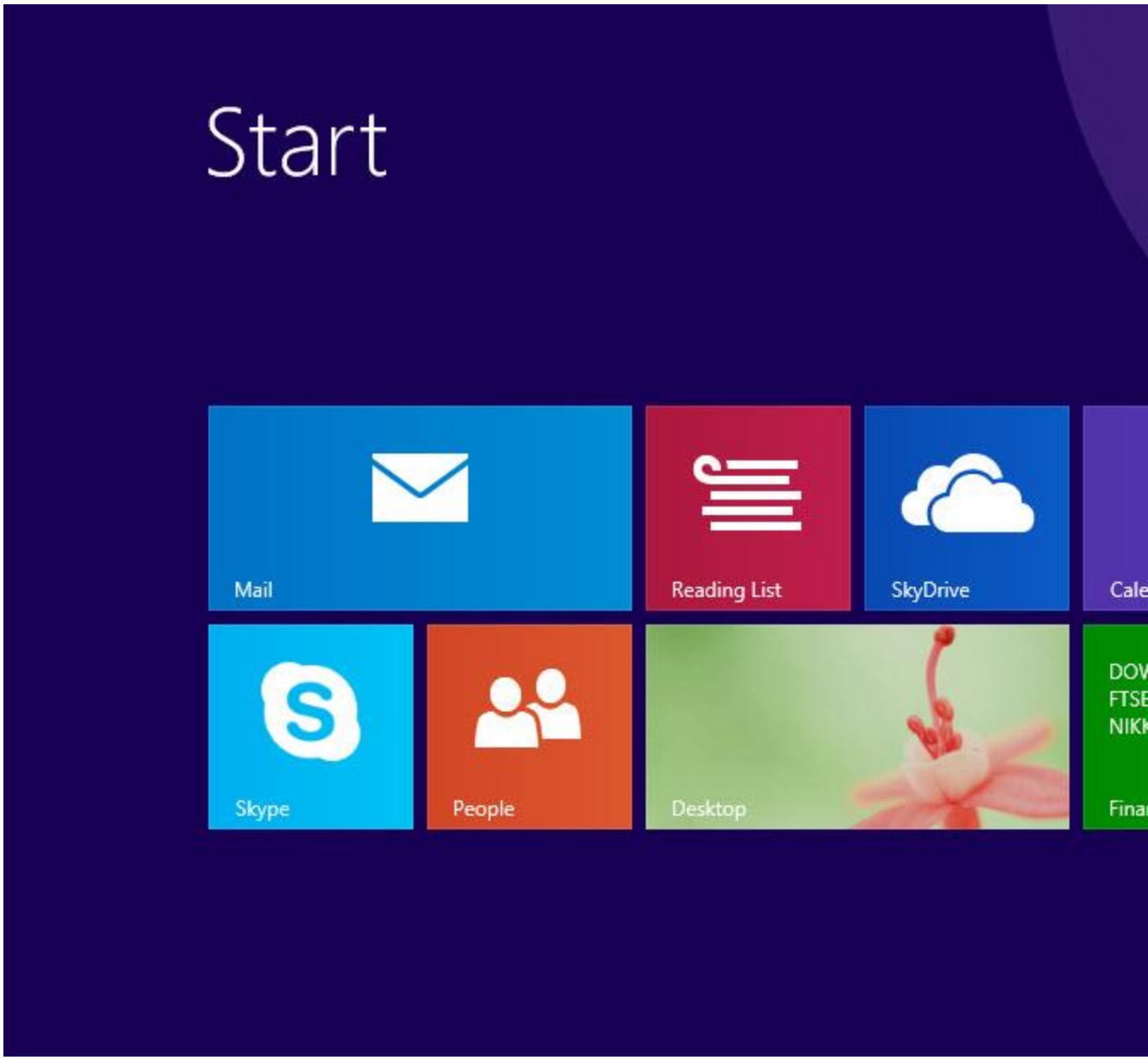
1 Open the Search menu

Press **Windows + Q** keys in the same time.

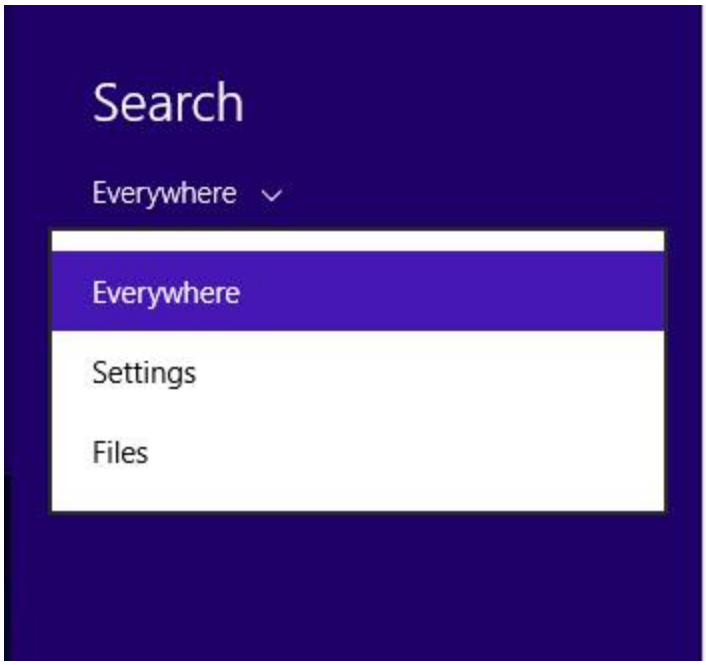


2 Search it

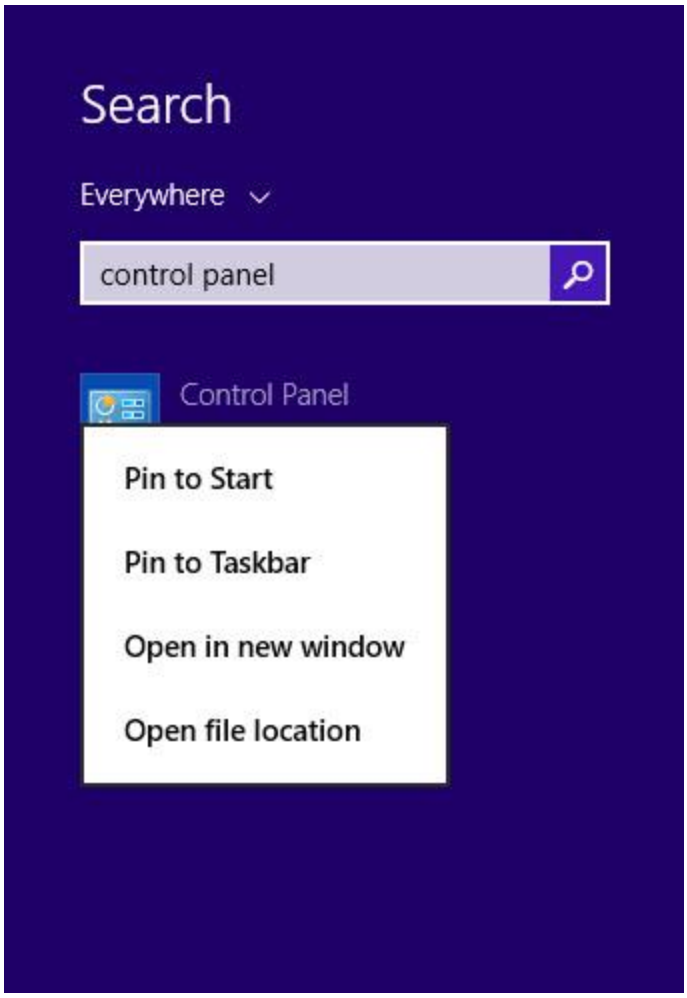
Then search for **Control Panel**.



Note: Make sure that *Everywhere* is selected.

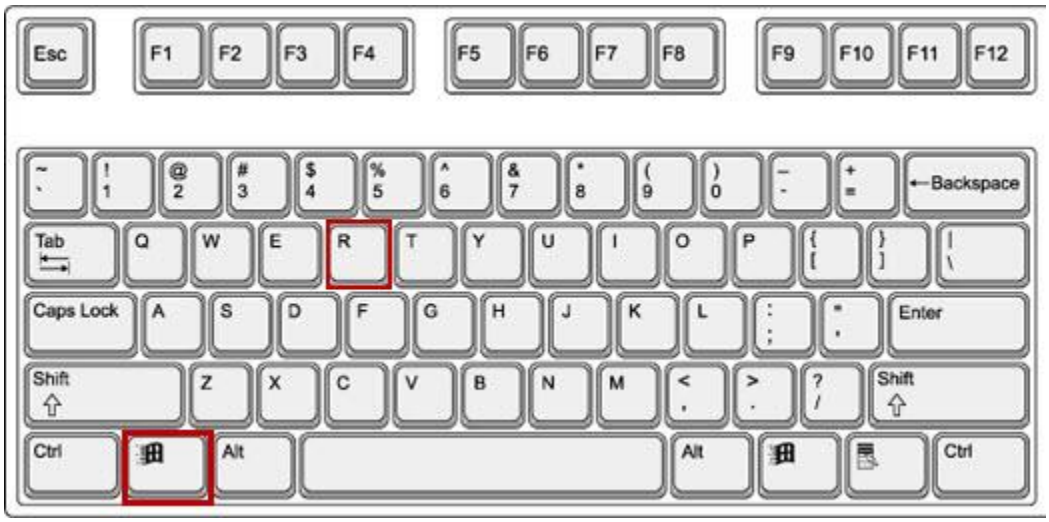


Tip: if you right click on Control Panel icon, you can *Pin* it to taskbar and you will always have it in the bottom of the screen.



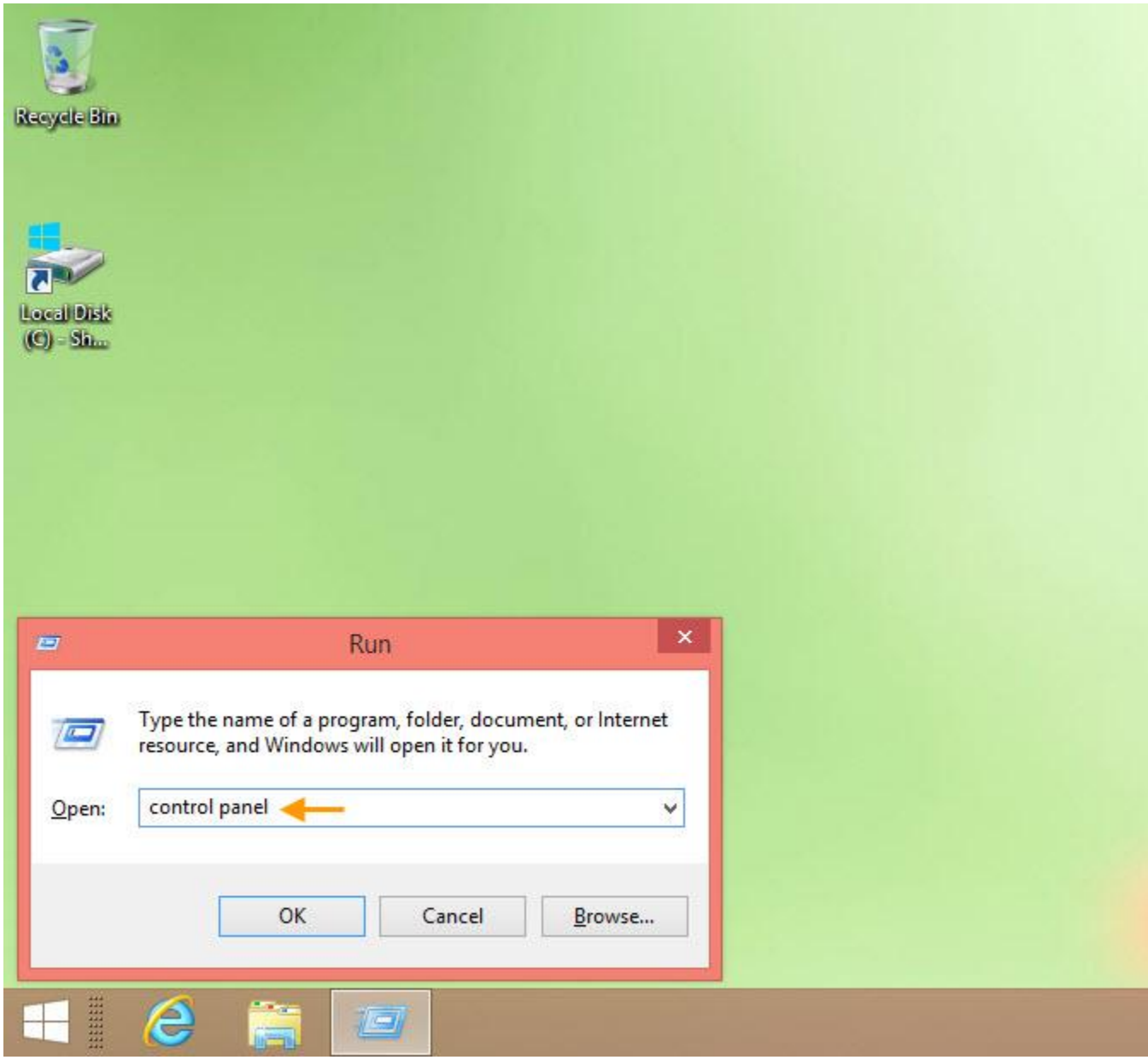
METHOD 4: RUN MENU

1 Press Windows + R

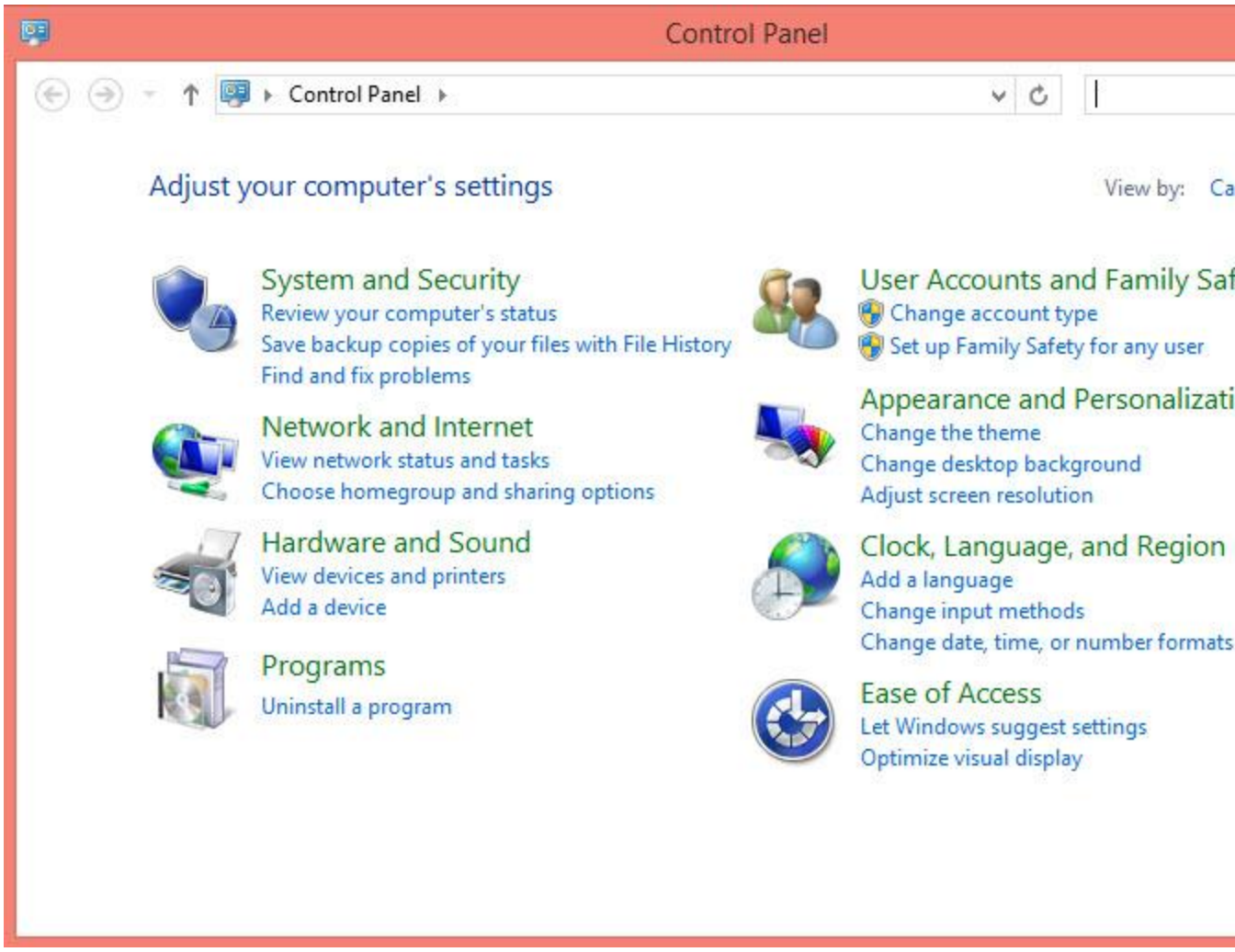


2 Search it

Then type **control panel**, then hit Enter or press Ok.



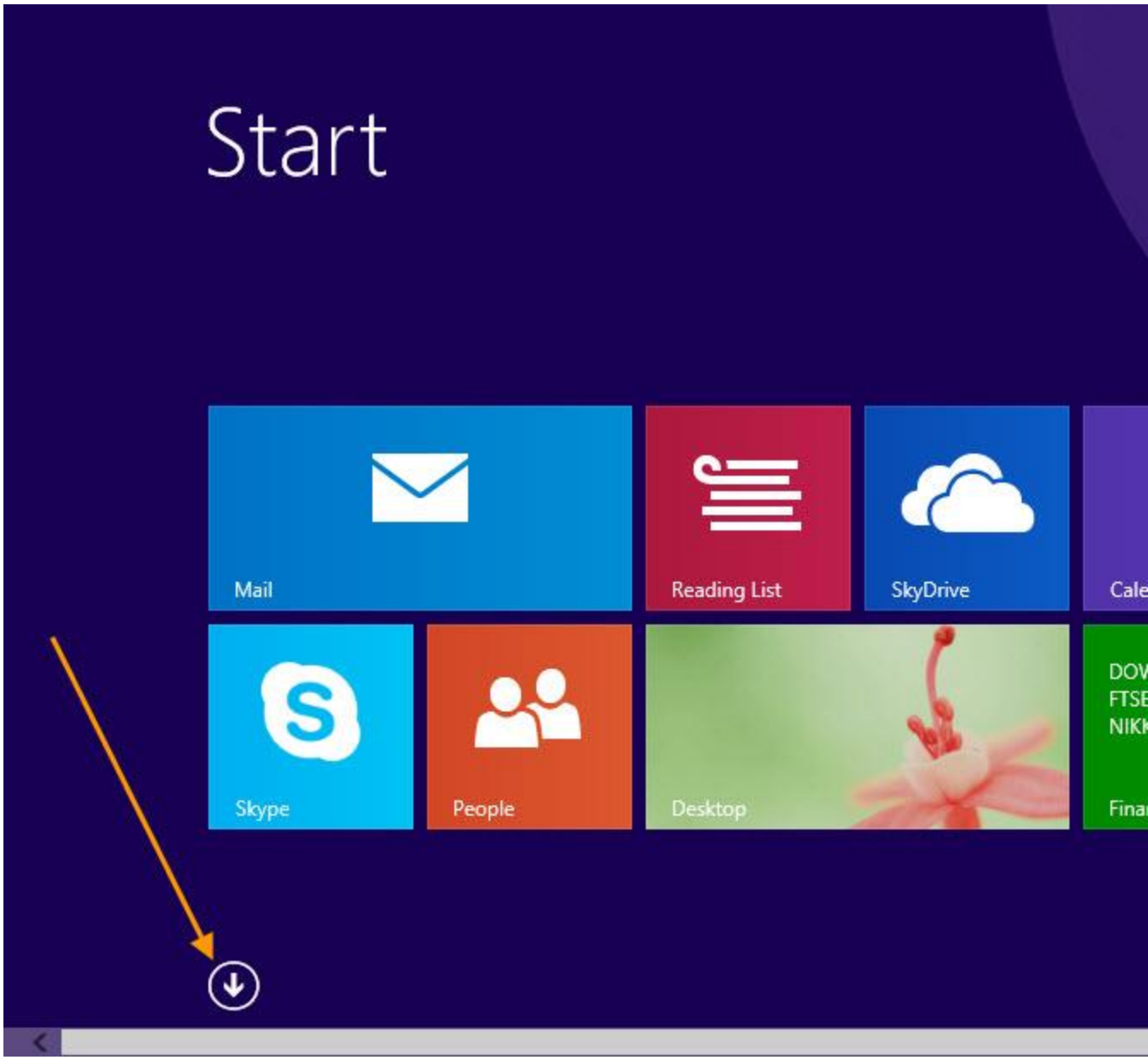
The Control Panel is now visible.



METHOD 5: THROUGH METRO INTERFACE

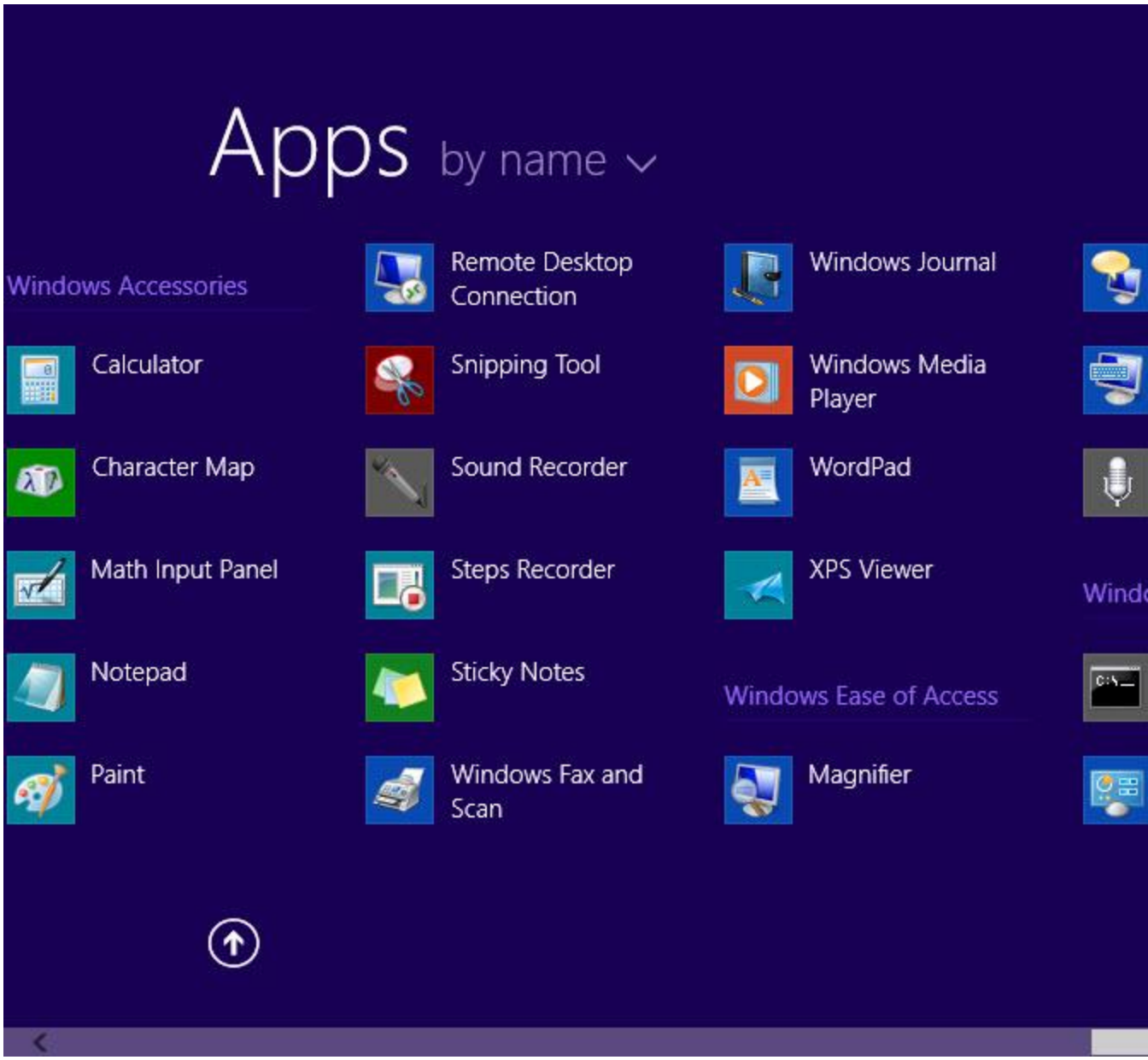
1 Go to Apps view

Move the mouse down (to bottom-left) until an arrow will appear. Then click on this arrow.

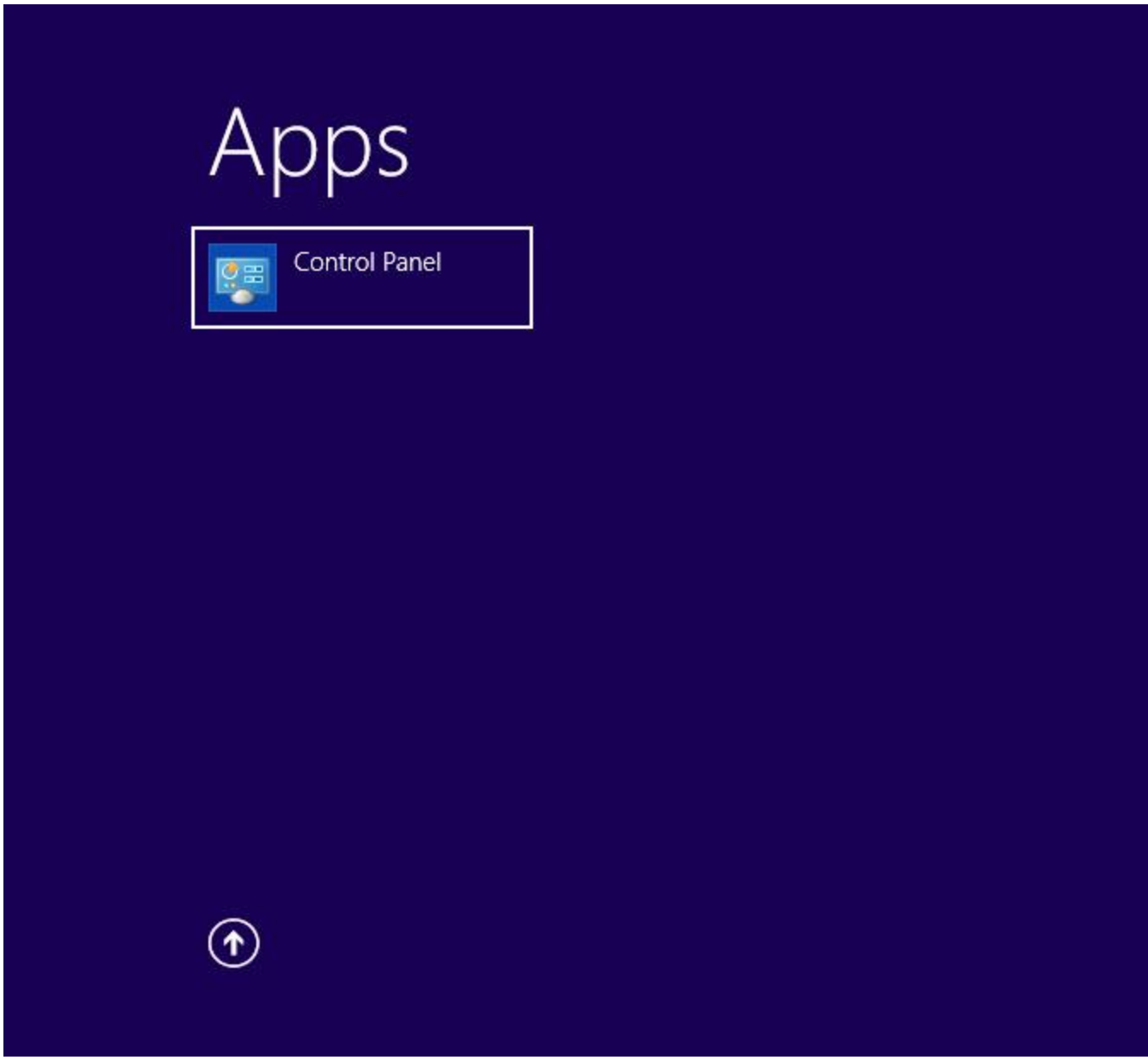


2 Go to Control panel

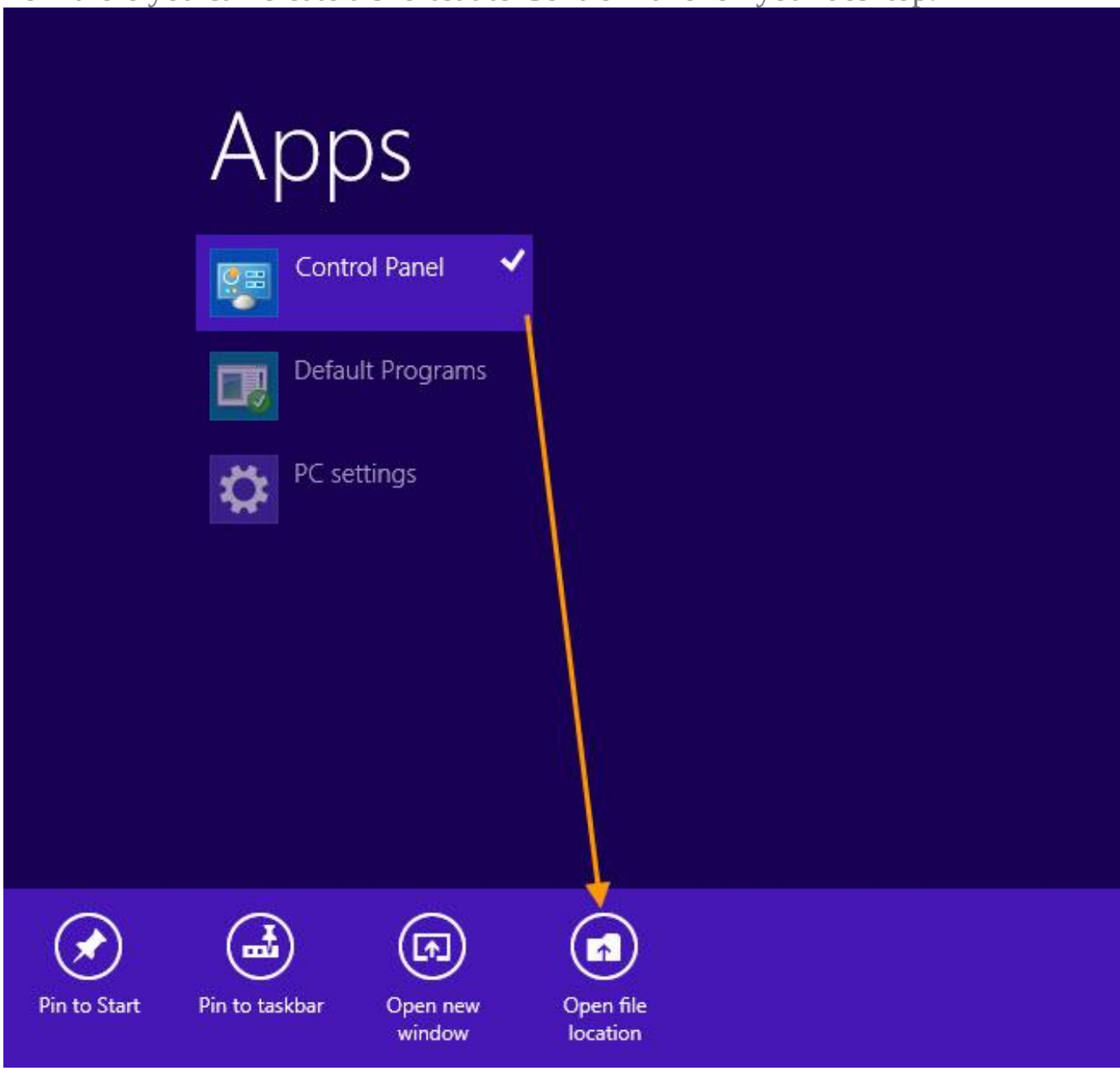
Then, a new window will appear, with different applications and buttons. You can swipe to the right (yes, there are more items to the right) and click on **Control Panel**.



Alternatively, you can search for it in the search bar.


Apps
Control Panel

Tip: if you **right click**, then you can click on *Open File Location* and from there you can create a shortcut to Control Panel on your desktop.



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UNIT-2

MS WORD

Step 1 – Click the **Start** button.

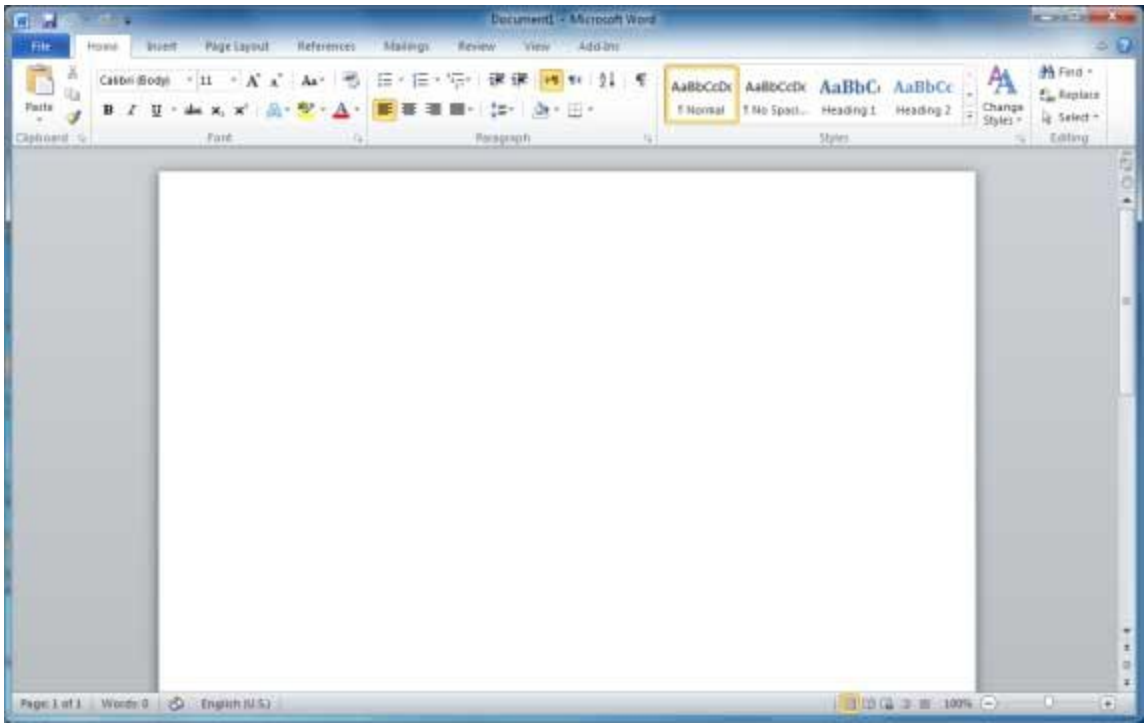
Step 2 – Click the **All Programs** option from the menu.

Step 3 – Search for **Microsoft Office** from the submenu and click it.

Step 4 – Search for **Microsoft Word 2010** from the submenu and click it.

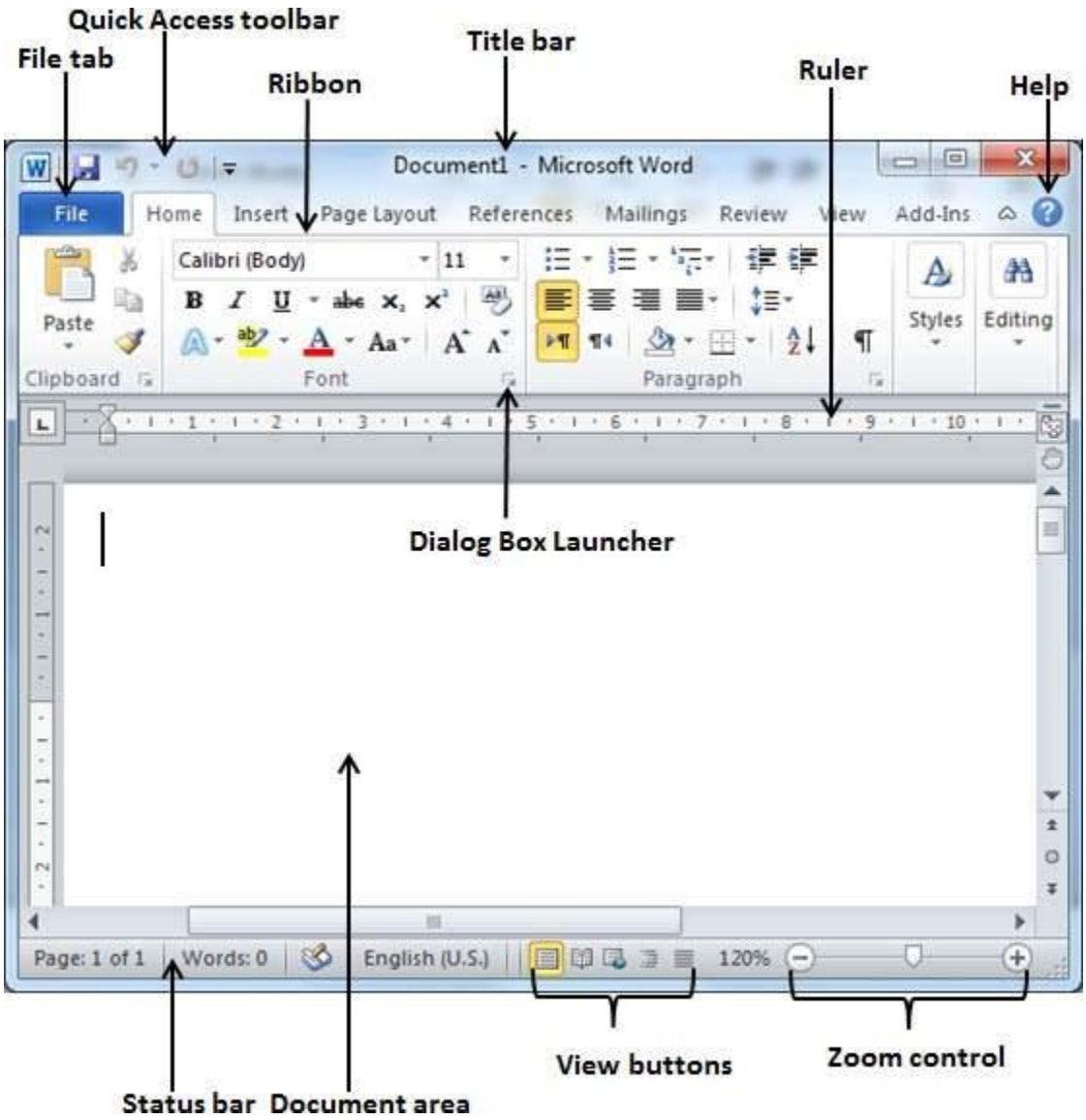
Microsoft Word 2010

This will launch the Microsoft Word 2010 application and you will see the following window.



Explore Window in Word 2010

how to explore Window in Word 2010. Following is the basic window which you get when you start the Word application. Let us understand the various important parts of this window..



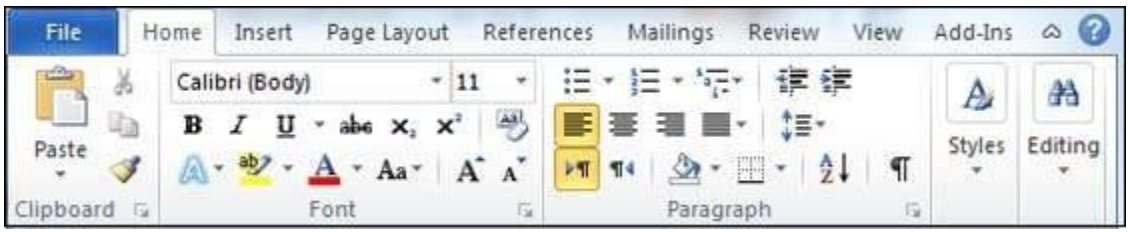
File Tab

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 mostfrequently 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.

Rulers

Word has two rulers - a horizontal ruler and a vertical ruler. The horizontal ruler appears just beneath the Ribbon and is used to set margins and tab stops. The vertical ruler appears on the left edge of the Word window and is used to gauge the vertical position of elements on the page.

Help

The **Help Icon** can be used to get word related help anytime you like. This provides nice tutorial on various subjects related to word.

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 Buttons

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.

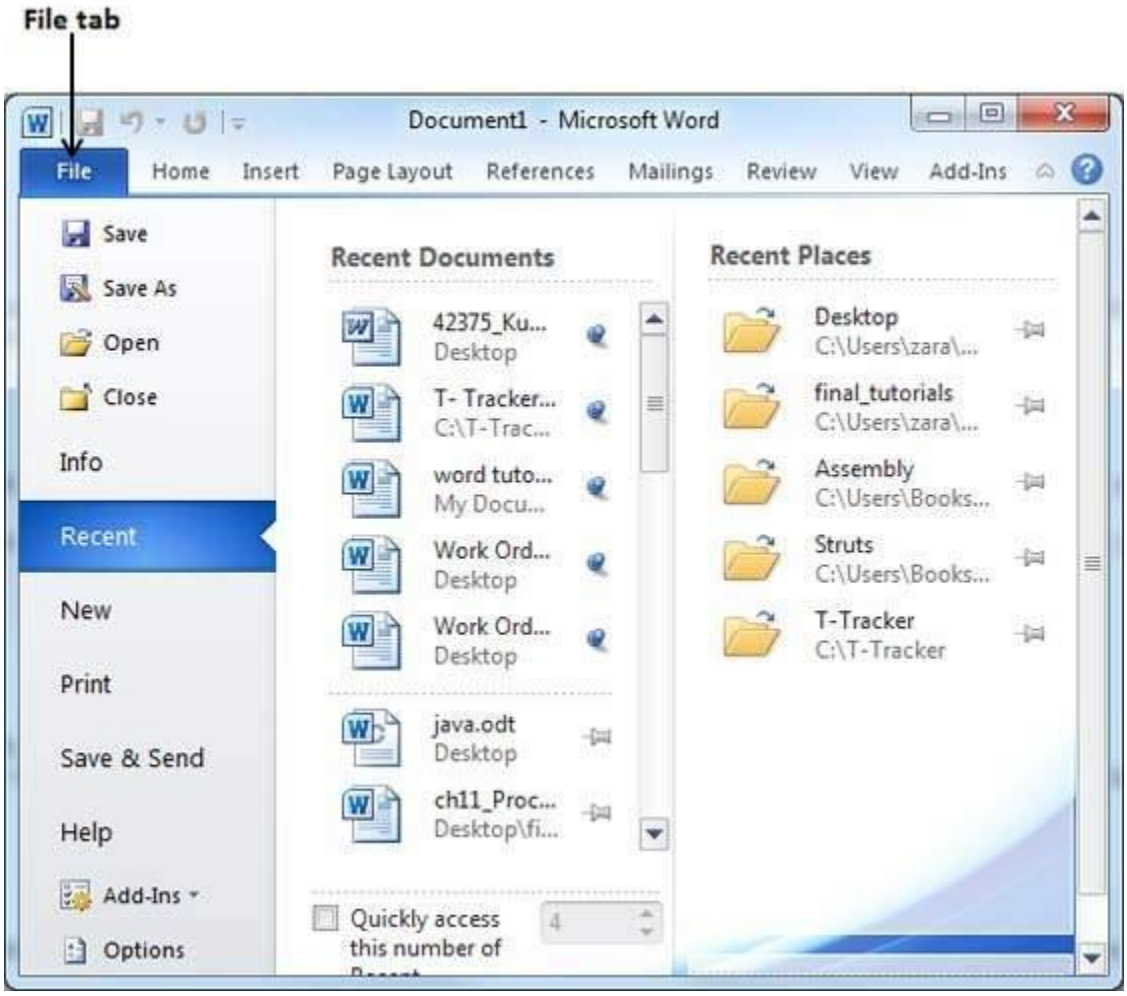
You can configure the status bar by right-clicking anywhere on it and by selecting or deselecting options from the provided list.

Dialog Box Launcher

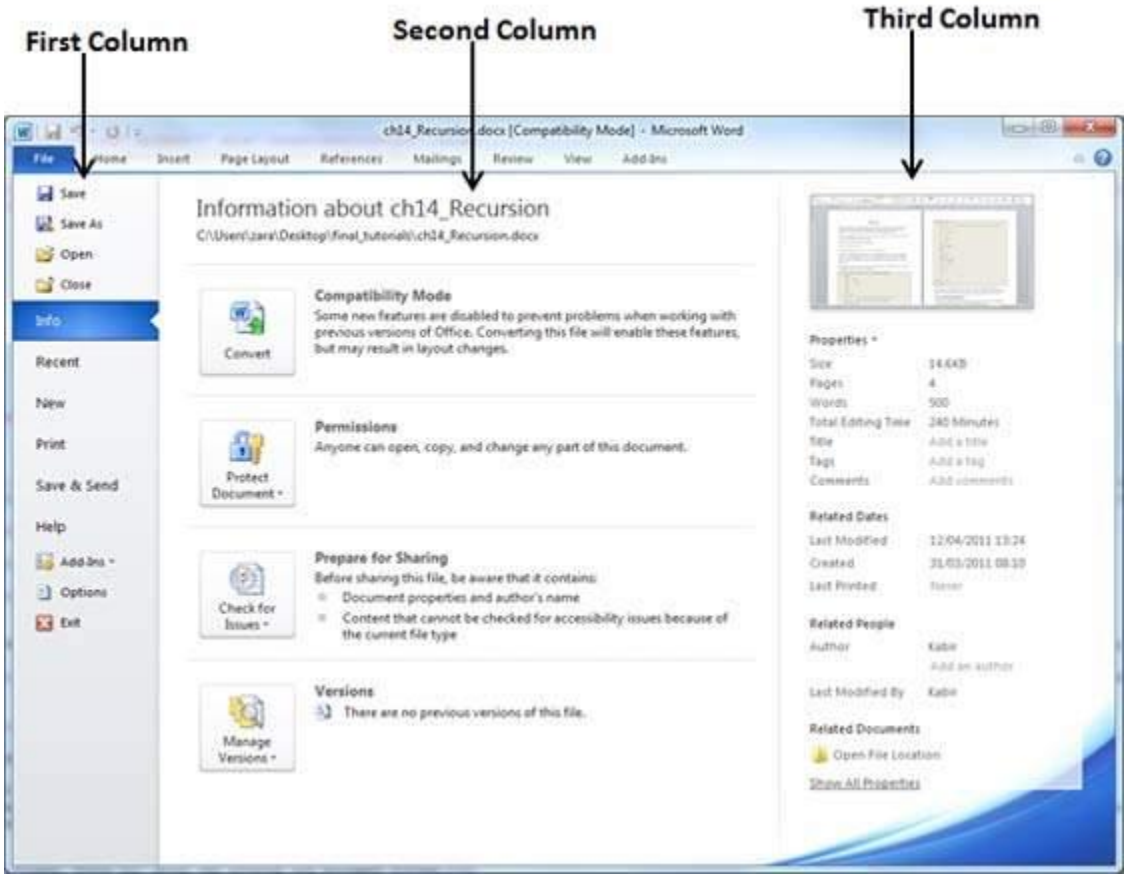
This appears as very small arrow in the lower-right corner of many groups on the Ribbon. Clicking this button opens a dialog box or task pane that provides more options about the group.

Backstage View in Word 2010

Getting to the Backstage View is easy: Just click the **File tab**, located in the upper-left corner of the Word Ribbon. If you already do not have any opened document, then you will see a window listing down all the recently opened documents as follows –



If you already have an opened document, then it will display a window showing detail about the opened document as shown below. Backstage view shows three columns when you select most of the available options in the first column.



The first column of the backstage view will have following options –

S.No	Option & Description
1	**Save** If an existing document is opened, it will be saved as is, otherwise it will display a dialogue box asking for the document name.
2	**Save As** A dialogue box will be displayed asking for document name and

	document type, by default it will save in word 2010 format with extension **.docx**.
3	**Open** This option is used to open an existing word document.
4	**Close** This option is used to close an open document.
5	**Info** This option displays information about the opened document.
6	**Recent** This option lists down all the recently opened documents
7	**New** This option is used to open a new document.
8	**Print** This option is used to print an open document.
9	**Save & Send** This option will save an open document and will display options to send the document using email, etc.
10	**Help** This option is used to get the required help about Word 2010.
11	**Options**

	This option is used to set various option related to Word 2010.
12	**Exit** Use this option to close the document and exit.

Document Information

When you click the **Info** option available in the first column, it displays the following information in the second column of the backstage view –

- **Compatibility Mode** – If the document is not a native **Word 2007/2010** document, a **Convert** button appears here, enabling you to easily update its format. Otherwise, this category does not appear.
- **Permissions** – You can use this option to protect your word document. You can set a password so that nobody can open your document, or you can lock the document so that nobody can edit your document.
- **Prepare for Sharing** – This section highlights important information you should know about your document before you send it to others, such as a record of the edits you made as you developed the document.
- **Versions** – If the document has been saved several times, you may be able to access the previous versions of it from this section.

Document Properties

When you click the **Info** option available in the first column, it displays various properties in the third column of the backstage view. These properties include the document size, the number of pages in the document, the total number of words in the document, the name of the author etc.

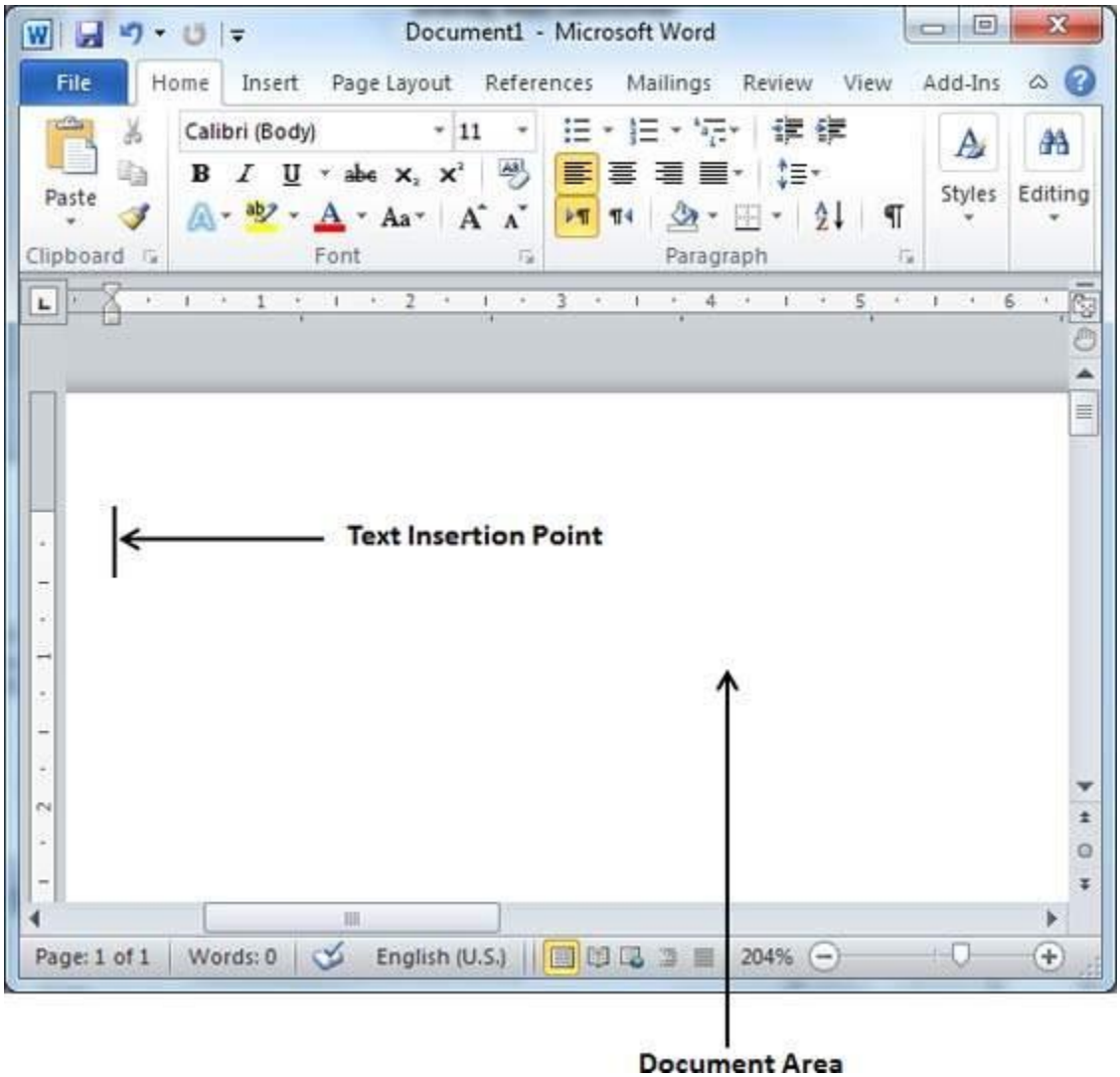
You can also edit various properties by clicking on the property value and if the property is editable, then it will display a text box where you can add your text like title, tags, comments, Author.

Exit Backstage View

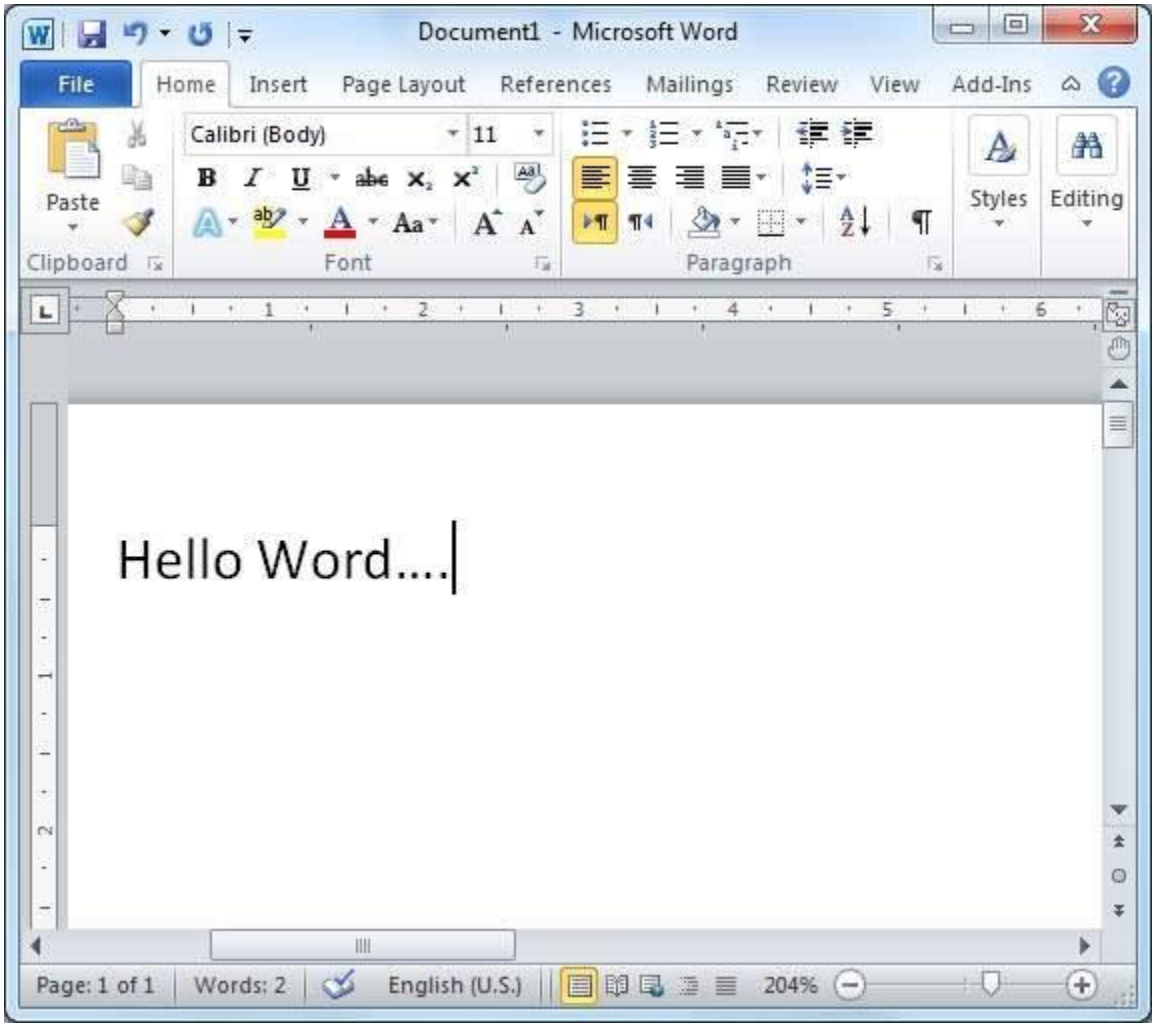
It is simple to exit from the Backstage View. Either click on the **File tab** or press the Esc button on the keyboard to go back to the working mode of Word.

Entering Text - Microsoft Word 2010

let us discuss how to enter text with Microsoft Word 2010. Let us see how easy it is to enter text in a Word document. We assume you know that when you start Word, it displays a new document by default as shown below –



Document area is the area where you type your text. The flashing vertical bar is called the insertion point and it represents the location where the text will appear when you type. keep the cursor at the text insertion point and start typing the text. We typed only two words "Hello Word" as shown below. The text appears to the left of the insertion point as you type –



The following are the two important points that will help you while typing –

- You do not need to press Enter to start a new line. As the insertion point reaches the end of the line, Word automatically starts a new one. You will need to press Enter, to add a new paragraph.
- When you want to add more than one space between words, use the Tab key instead of the spacebar. This way you can properly align text by using the proportional fonts.

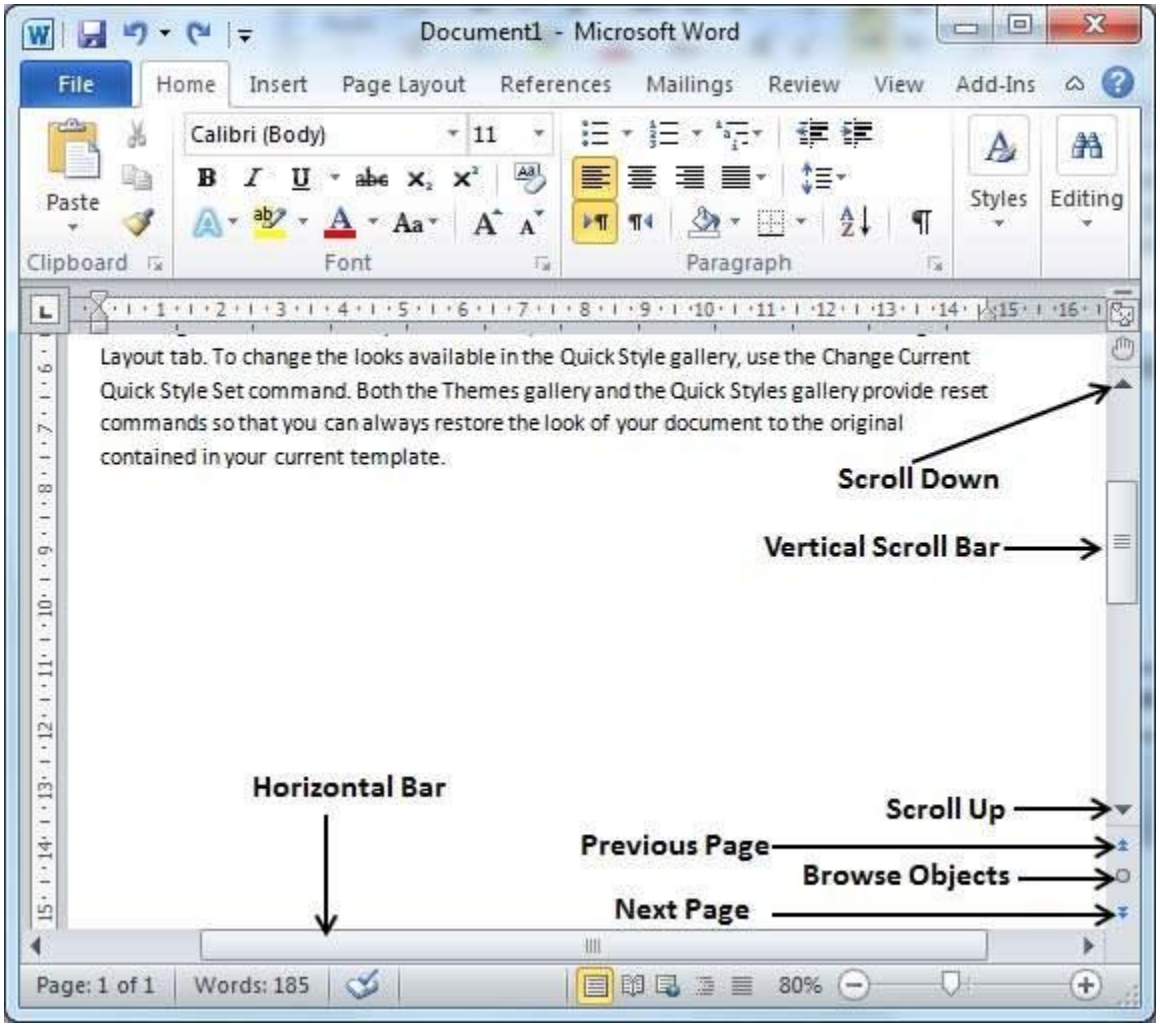
Move Around in Word 2010

we will discuss how to move around in Word 2010. Word provides a number of ways to move around a document using the mouse and the keyboard.

To begin with, let us create some sample text. To create a sample text, there is a short cut available. Open a new document and type =**rand()** and press Enter. Word will create the following content for you –

Moving with Mouse

You can easily move the insertion point by clicking in your text anywhere on the screen. There may be instances when a document is big and you cannot see a place where you want to move. Here, you will have to use the scroll bars, as shown in the following screenshot –



You can scroll through your document by rolling your mouse wheel, which is equivalent to clicking the up-arrow or down-arrow buttons in the scroll bar.

Moving with Scroll Bars

As shown in the above screenshot, there are two scroll bars: one for moving vertically within the document, and one for moving horizontally. Using the vertical scroll bar, you may –

- Move upward by one line by clicking the upward-pointing scroll arrow.
- Move downward by one line by clicking the downward-pointing scroll arrow.
- Move one next page, using the next page button (footnote).
- Move one previous page, using the previous page button (footnote).

- Use the **Browse Object** button to move through the document, going from one chosen object to the next.

Moving with Keyboard

The following keyboard commands, used for moving around your document, also move the insertion point –

Keystroke	Where the Insertion Point Moves
→	Forward one character
←	Back one character
↑	Up one line
↓	Down one line
PageUp	To the previous screen
PageDown	To the next screen
Home	To the beginning of the current line
End	To the end of the current line

You can move word by word or paragraph by paragraph. You would have to hold down the Ctrl key while pressing an arrow key, which moves the insertion point as described here –

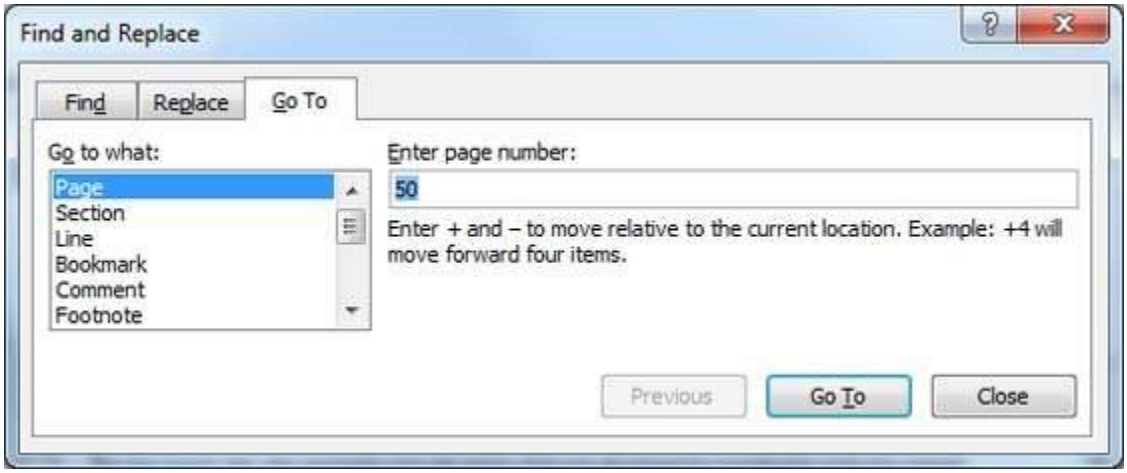
Key Combination	Where the Insertion Point Moves
Ctrl + →	To the next word
Ctrl + ←	To the previous word
Ctrl + ↑	To the start of the previous paragraph
Ctrl + ↓	To the start of the next paragraph
Ctrl + PageUp	To the previous browse object
Ctrl + PageDown	To the next browse object

Ctrl + Home	To the beginning of the document
Ctrl + End	To the end of the document
Shift + F5	To the last place you changed in your document.

Moving with Go To Command

Press the **F5** key to use the **Go To** command. This will display a dialogue box where you will have various options to reach to a particular page.

Normally, we use the page number, the line number or the section number to go directly to a particular page and finally press the **Go To** button.

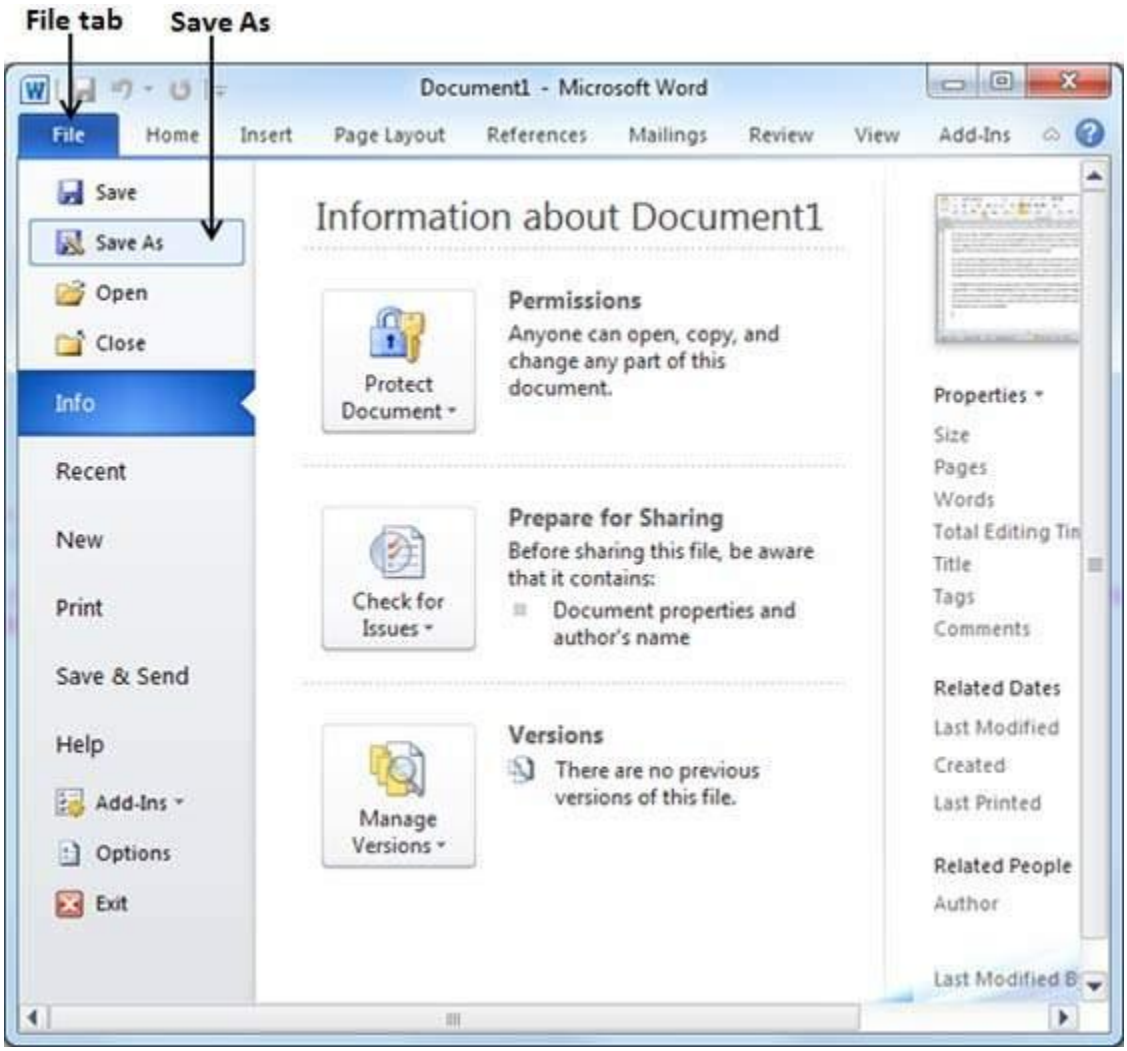


Save Document in Word 2010

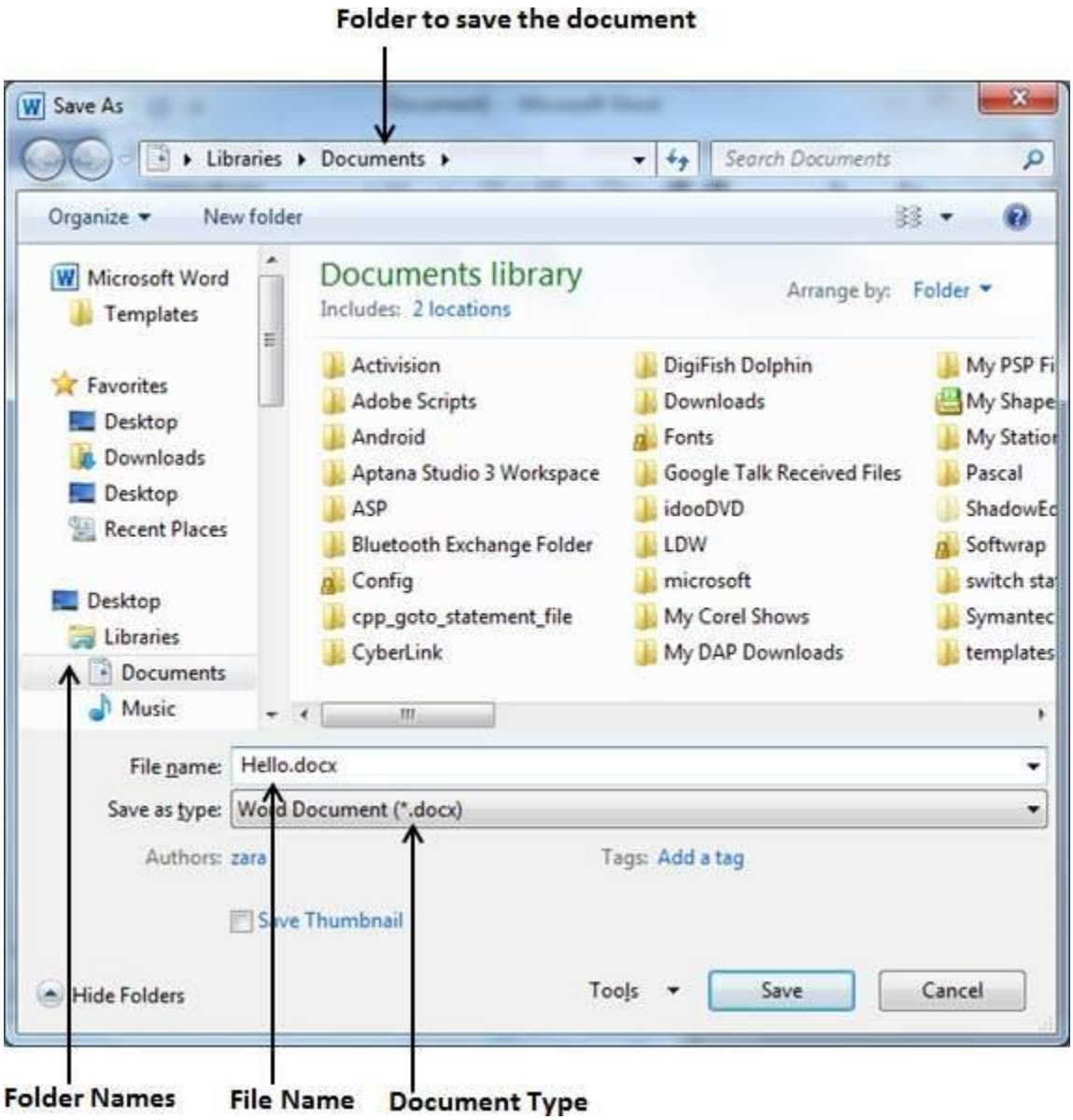
Saving New Document

Once you are done with typing in your new Word document, it is time to save your document to avoid losing work you have done on a Word document. Following are the steps to save an edited Word document –

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



Step 2 – Select a folder where you will like to save the document, Enter the file name which you want to give to your document and Select the **Save As** option, by default it is the **.docx** format.



Step 3 – Finally, click on the **Save** button and your document will be saved with the entered name in the selected folder.

Saving New Changes

There may be an instance when you open an existing document and edit it partially or completely, or an instance where you may like to save the changes in between editing of the document. If you want to save this document with the same name, then you can use either of the following simple options –

- Just press the **Ctrl + S** keys to save the changes.
- Optionally you can click on the floppy icon available at the top left corner and just above the **File tab**. This option will also help you save the changes.
- You can also use the third method to save the changes, which is the **Save** option available just above the **Save As** option as shown in the above screenshot.

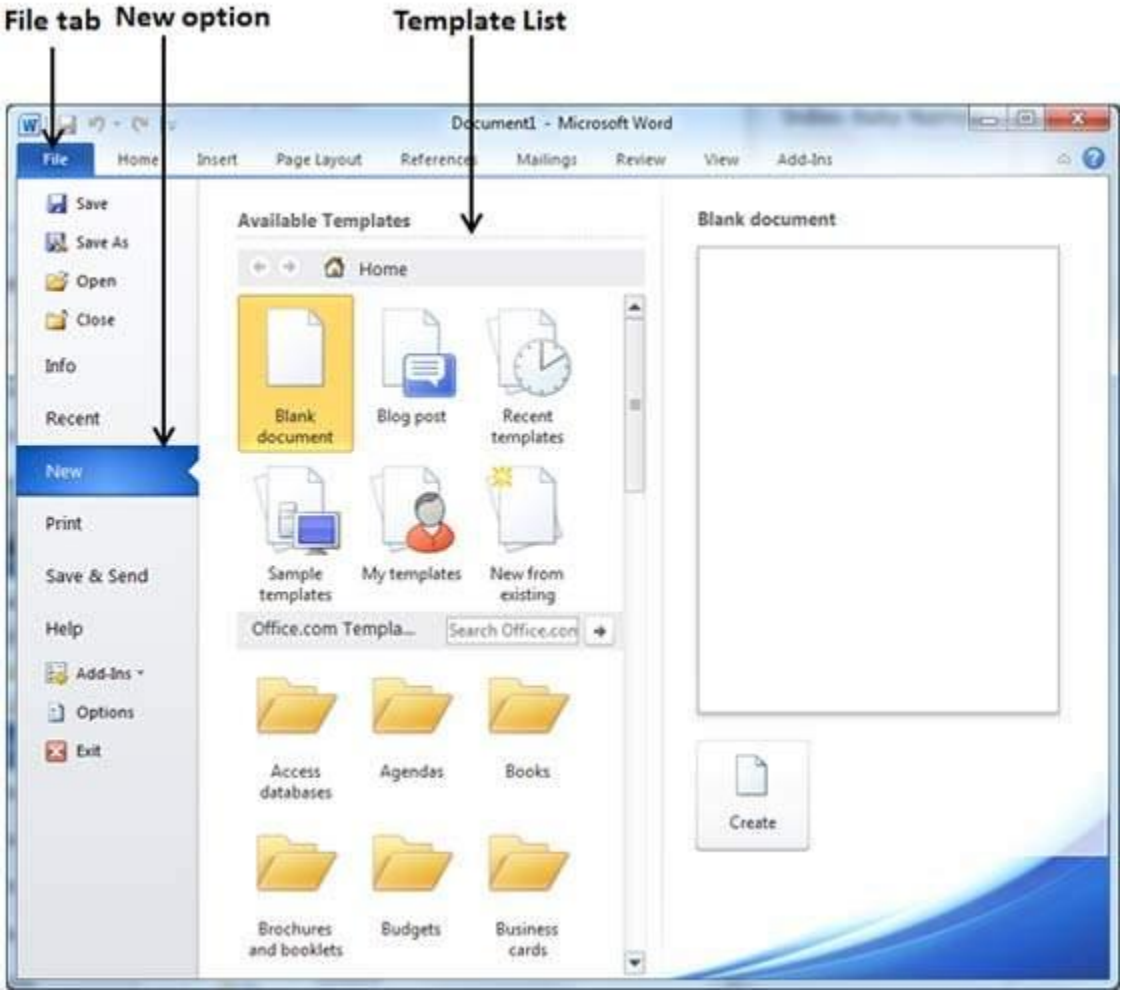
If your document is new and it was never saved so far, then with either of the three options, Word will display a dialogue box to let you select a folder, and enter the document name as explained in case of saving new document.

Opening a Document in Word 2010

Opening New Document

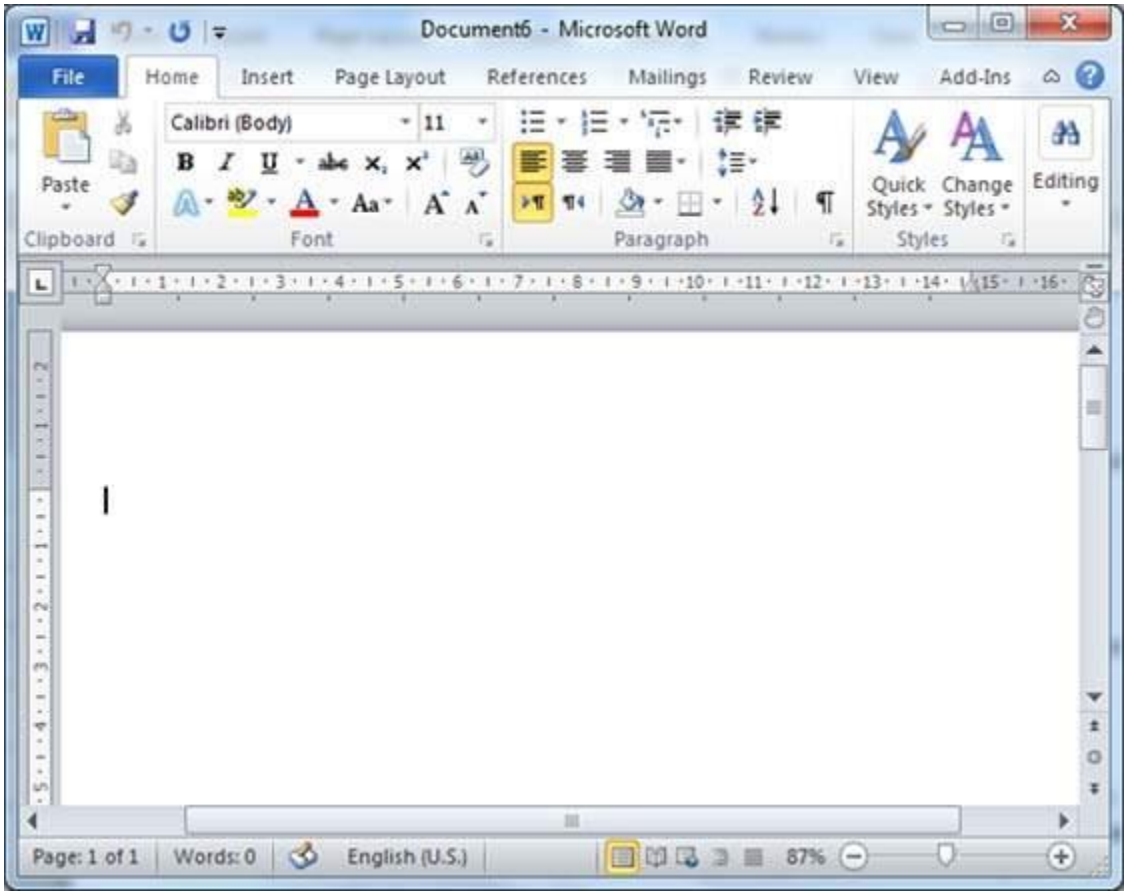
A new, blank document always opens when you start Microsoft Word. Suppose you want to start another new document while you are working on another document, or you closed an already opened document and want to start a new document. Here are the steps to open a new document –

Step 1 – Click the **File tab** and select the **New** option.



Step 2 – When you select the **New** option from the first column, it will display a list of templates in the second column. Double-click on the **Blank document**; this is the first option in the template list. We will discuss the other templates available in the list in the following chapters.

You should have your blank document as shown below. The document is now ready for you to start typing your text.

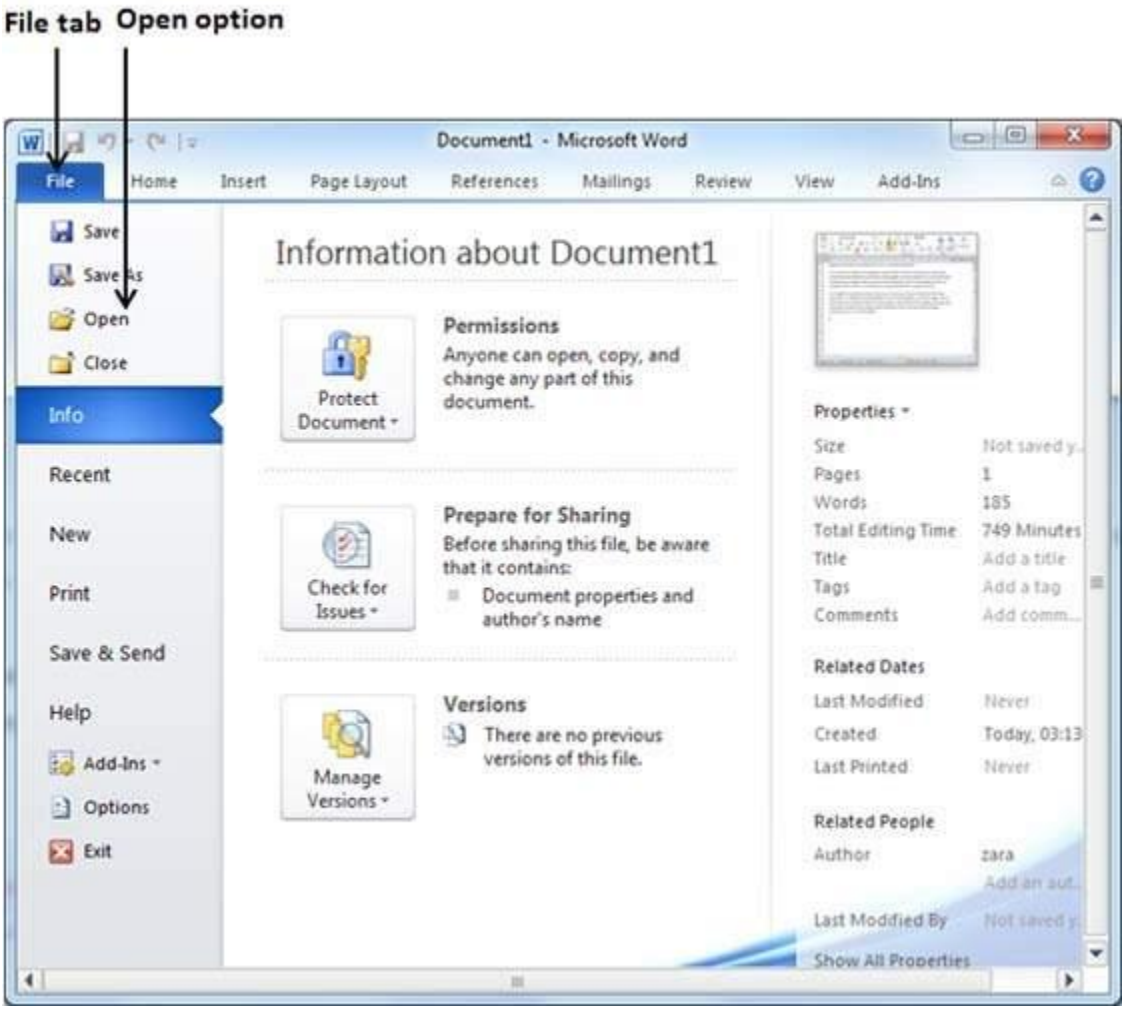


You can use a shortcut to open a blank document anytime. Try using the **Ctrl + N** keys and you will see a new blank document similar to the one in the above screenshot.

Opening Existing Document

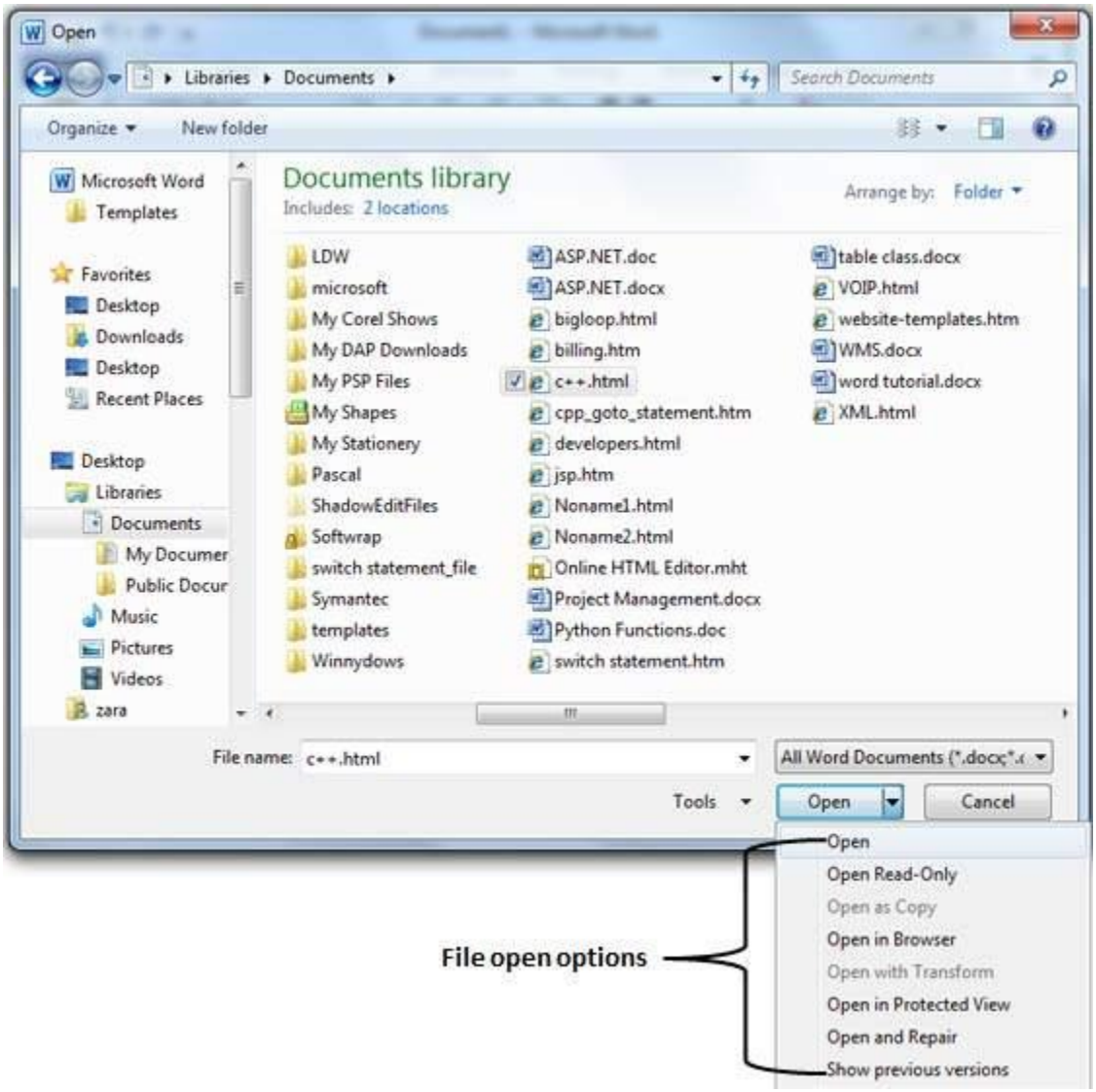
There may be a situation when you open an existing document and edit it partially or completely. Follow the steps given below to open an existing document –

Step 1 – Click the **File tab** and select the **Open** option.



Step 2 – This will display the following file **Open dialog box**. This lets you navigate through different folders and files, and also lets you select a file which you want to open.

Step 3 – Finally, locate and select a file which you want to open and click the small triangle available on the **Open** button to open the file. You will have different options to open the file, but simply use the **Open** option.

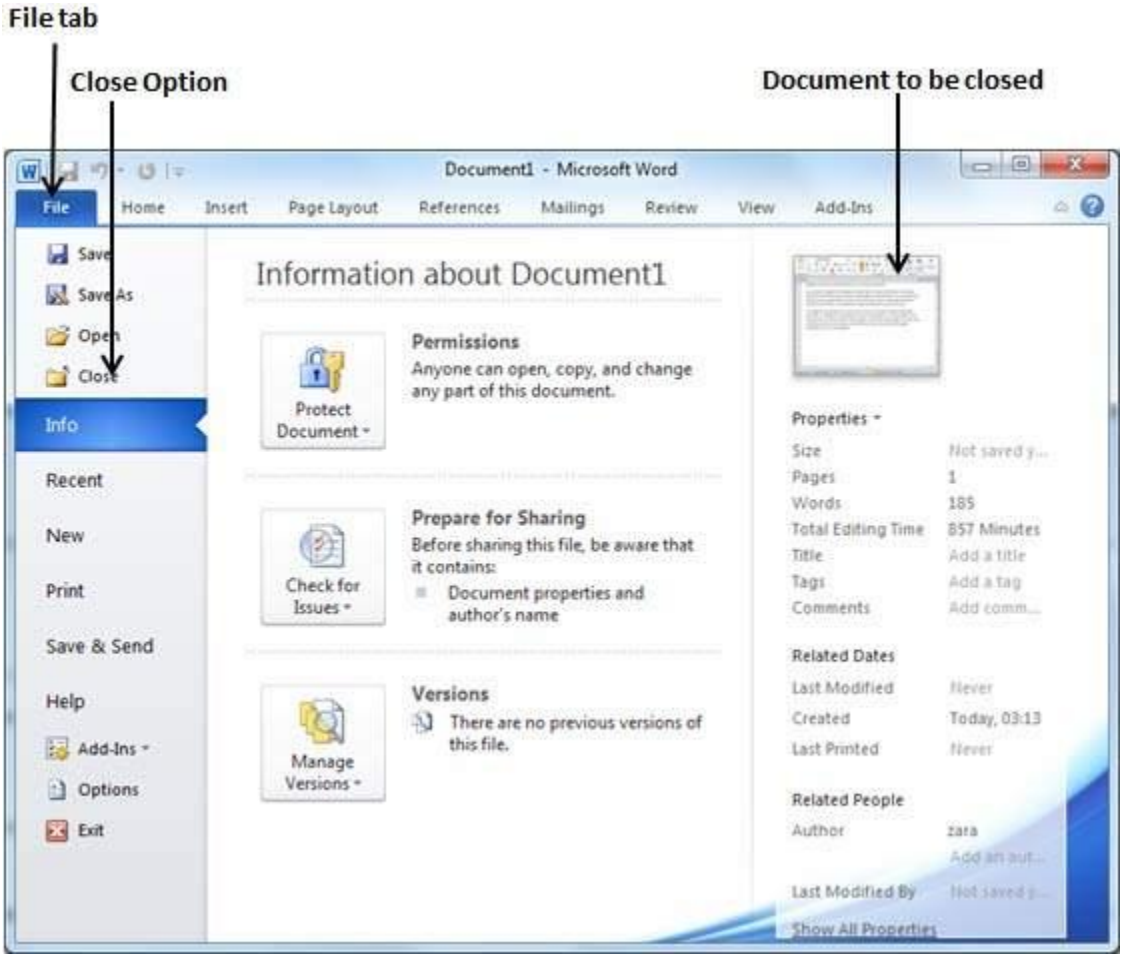


This will open your selected file. You can use the **Open Read-Only** option if you are willing just to read the file and you have no intention to modify, i.e., edit the file. Other options can be used for advanced usage.

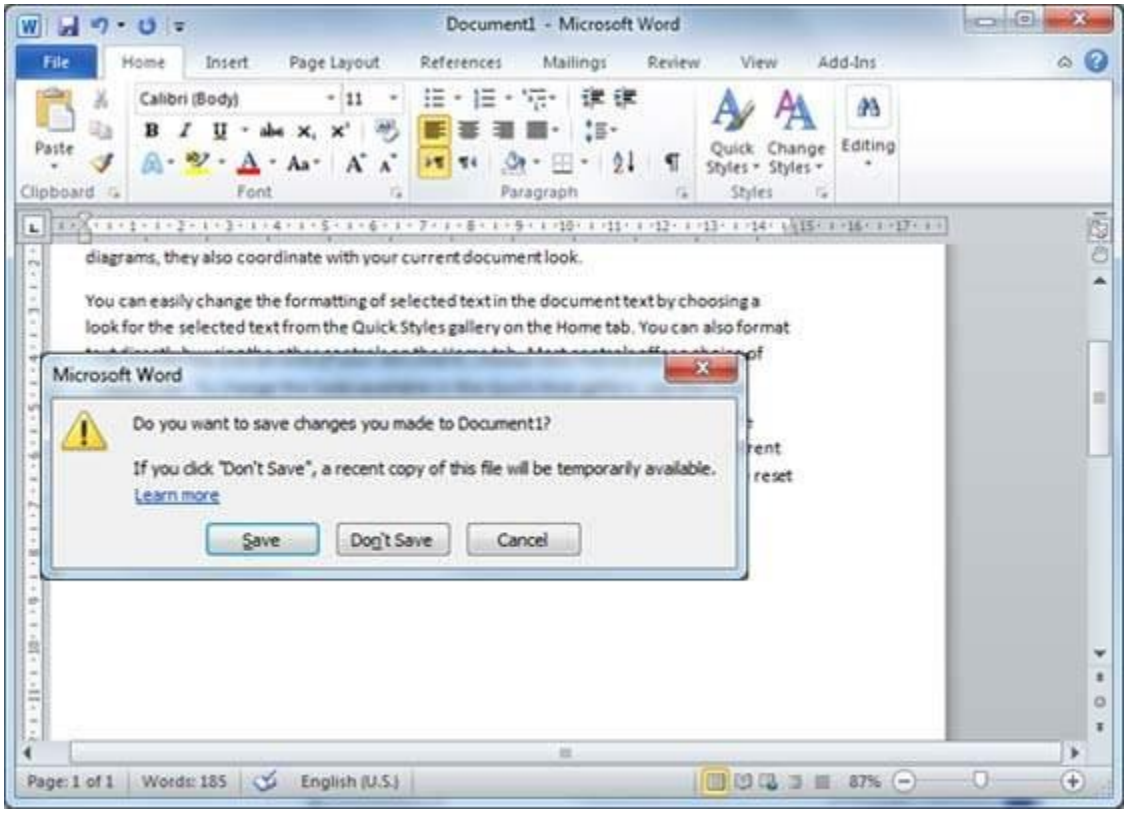
Closing a Document in Word 2010

When you finish working with a document, you will proceed to close the document. Closing a document removes it from your computer screen and if you had other documents open, Word displays the last document you used otherwise, you see a blank Word window. Here are simple steps to close an opened document –

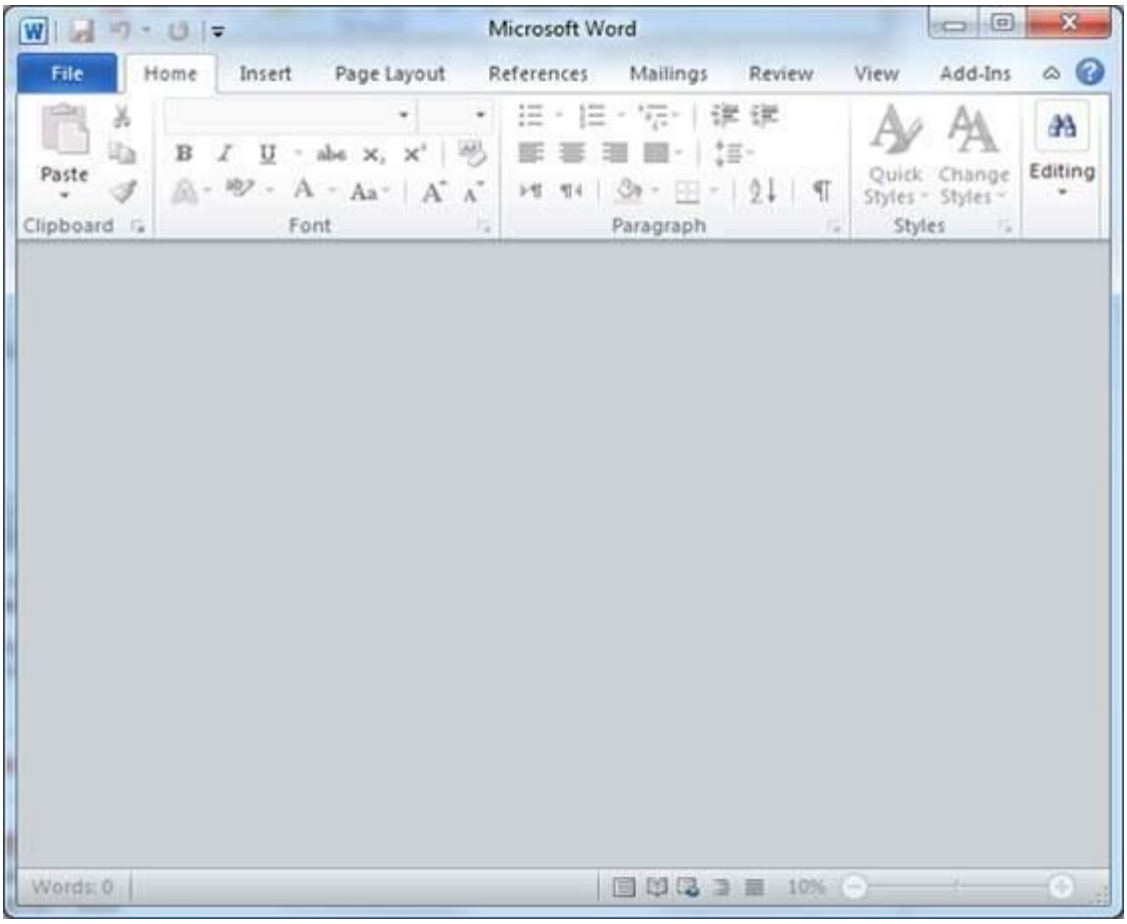
Step 1 – Click the **File tab** and select the **Close** option.



Step 2 – When you select the **Close** option and if the document is not saved before closing, it will display the following Warning box asking whether the document should be saved or not.



Step 3 – To save the changes, click **Save**, otherwise click **Don't Save**. To go back to the document, click **Cancel**. This will close the document and if you have other documents open, Word displays the last document you used, otherwise, you see a blank Word window as shown below –



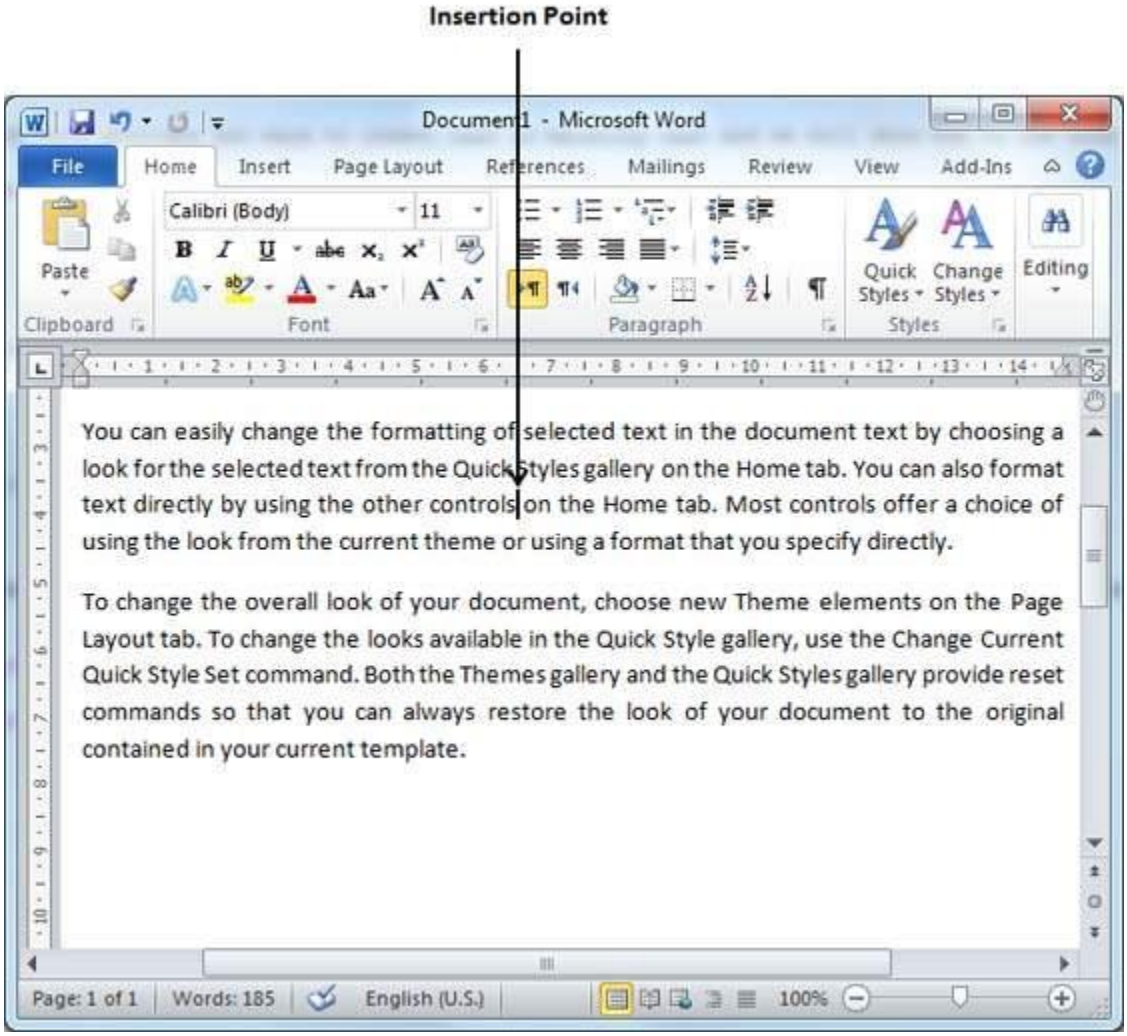
Insert Text in Word 2010

Many times it is required to go back and insert additional text in an existing line. Microsoft Word provides two ways to insert text in existing text and we will show how to use both the methods of inserting text –

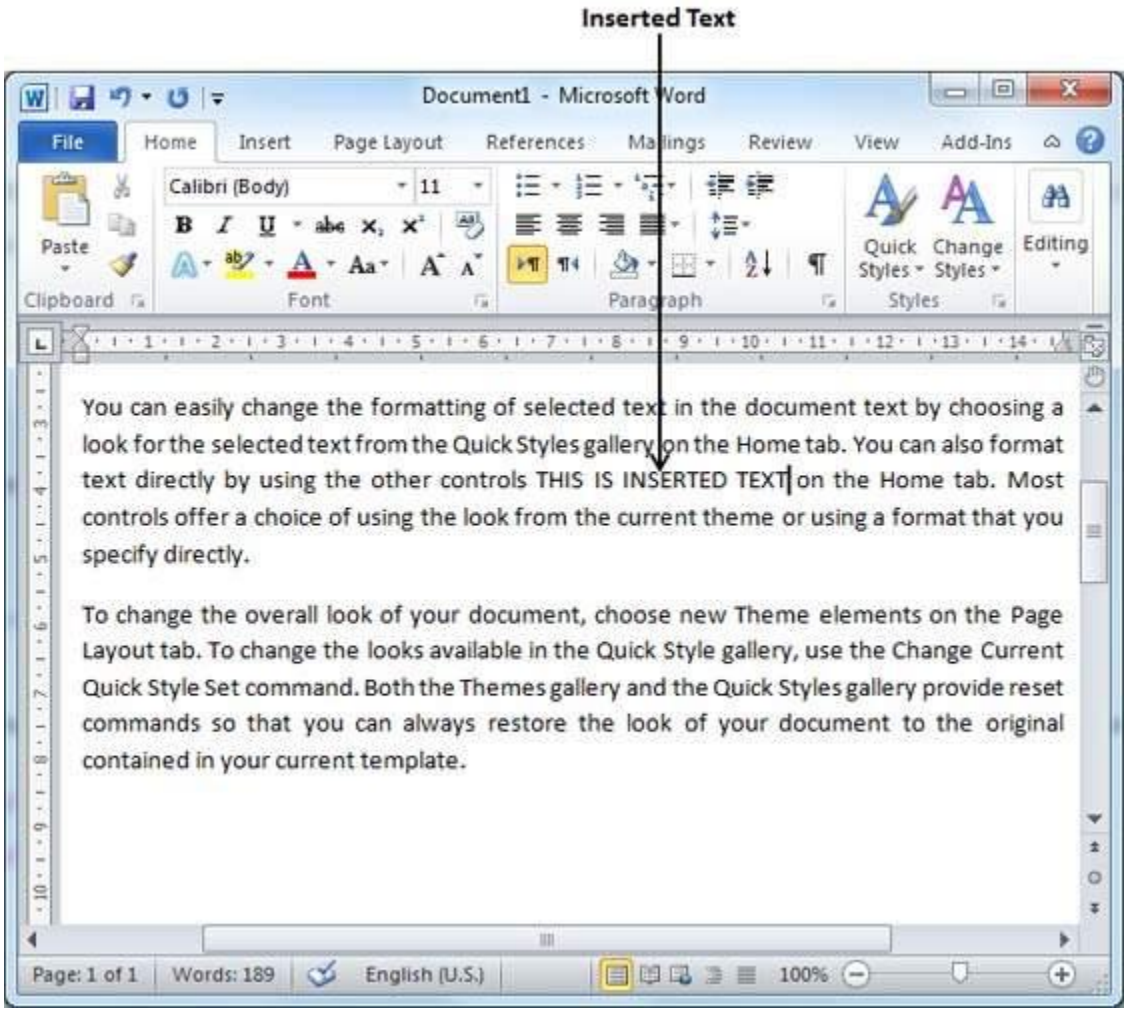
Insert and Add Text

First we will see how inserted text will be added into the existing content without replacing any existing content.

Step 1 – Click the location where you wish to insert text; you can also use the keyboard arrows to locate the place where the text needs to be inserted.



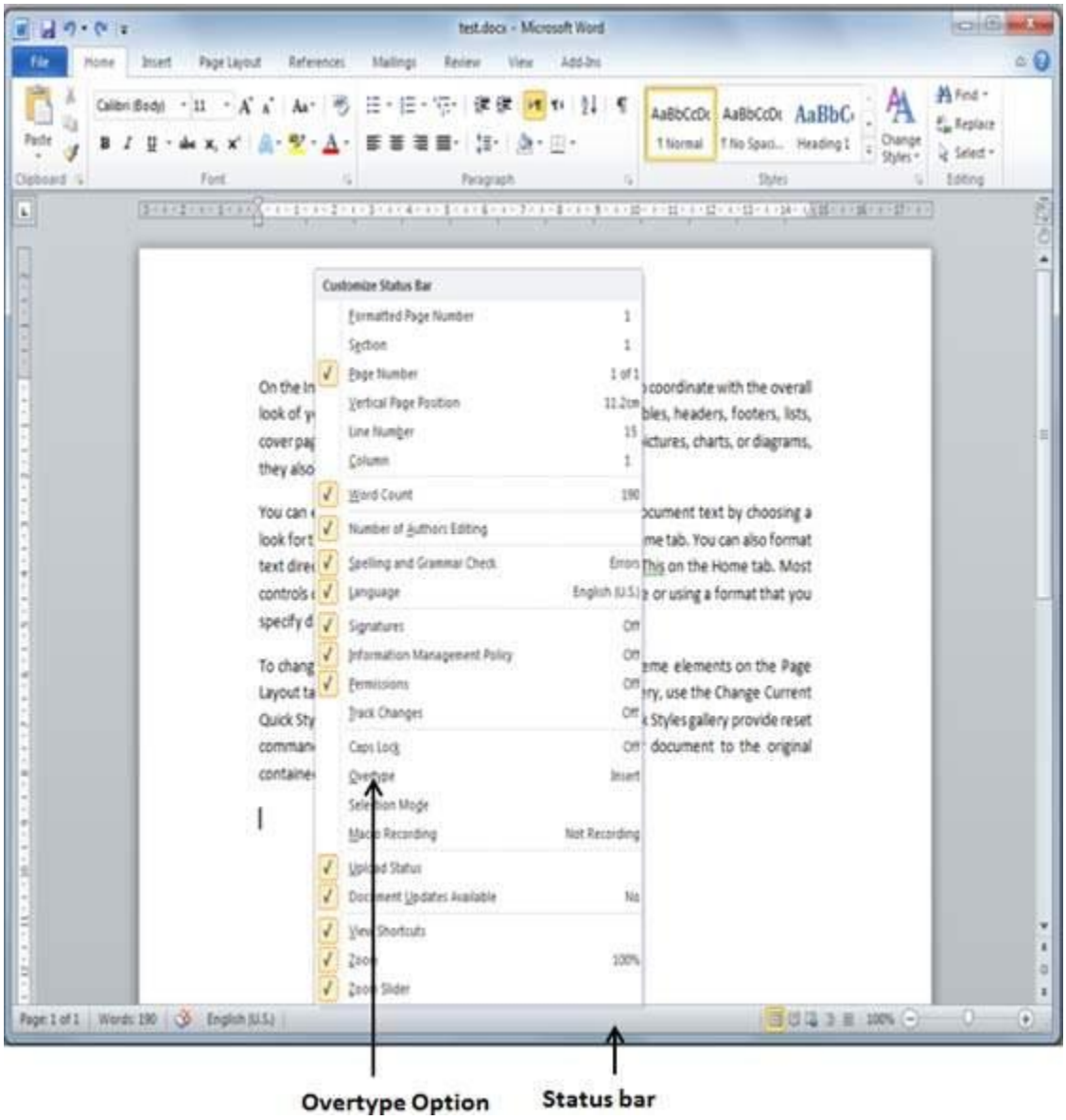
Step 2 – Start typing the text that needs to be inserted. Word inserts the text to the left of the insertion point, moving the existing text to the right



Insert and Replace Text

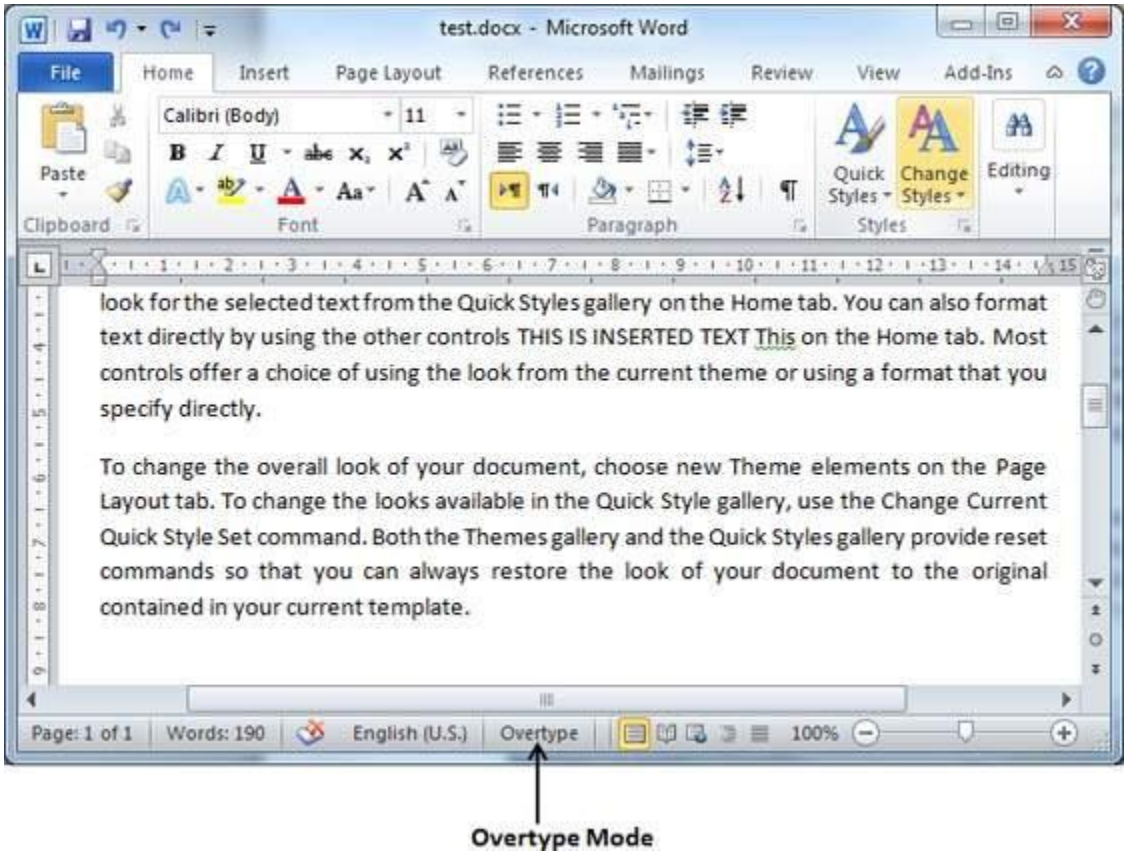
In the Insertion mode, text will be added into the existing content but same time it will over write all the content which comes in its way.

Step 1 – Right-click the status bar and select the **Overtype** option from the displayed menu.

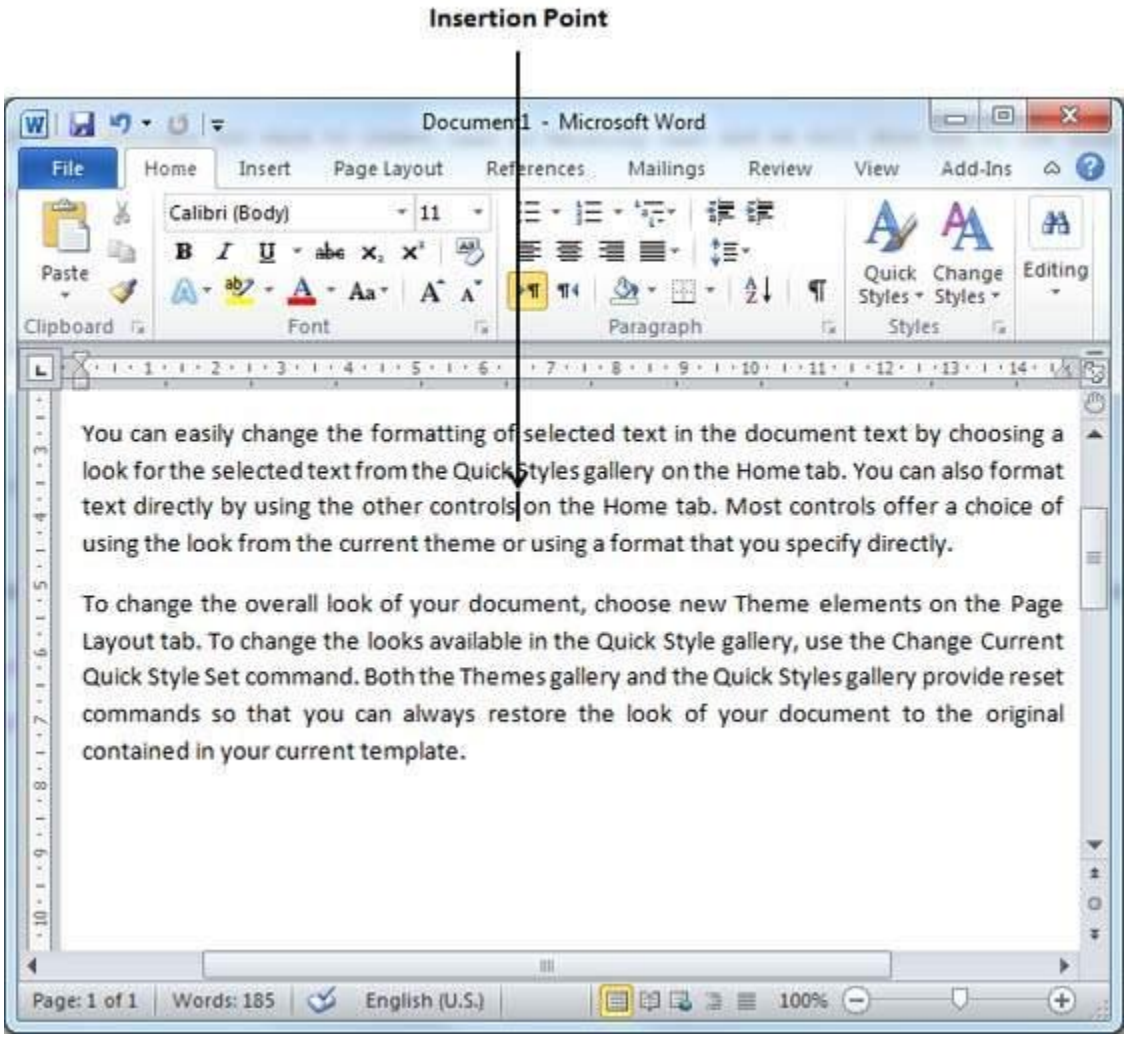


When you select the **Overtype** option, the status bar will show the **insert** mode as shown below –

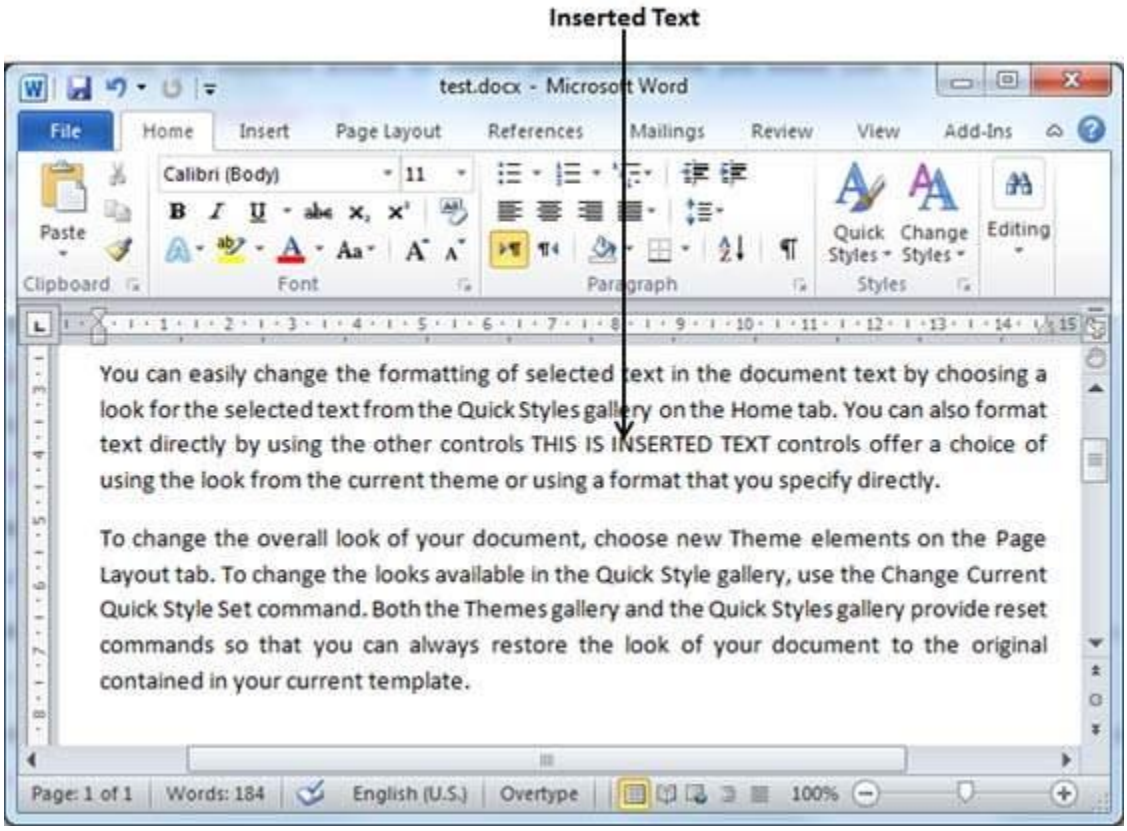
Step 2 – Click on the **Insert** text available at the status bar and it will switch to the **Overtype** mode as shown below –



Step 3 – Now click the location where the text needs to be inserted or you can use the keyboard arrows to locate the place where the text needs to be inserted.



Step 4 – Start typing the text that needs to be inserted. Word will replace the existing text with the newly typed text without moving the position of the exiting test.



Note – Microsoft Word 2010 disabled the functionality of the **Insert** key and it does nothing, so you will have to follow-up with the above mentioned procedure to turn-on or turn-off the Insert mode.

Select Text in Word 2010

Selecting a text is one of the most important skills required while editing a word document. You can perform various operations on a selected text; you can delete the selected text, copy it, move it, apply formatting to it, change its capitalization, etc.

The most common method of selecting a text is to click and drag the mouse over the text you want to select. Following table lists down a few other simple methods that will help you in selecting text in different scenarios –

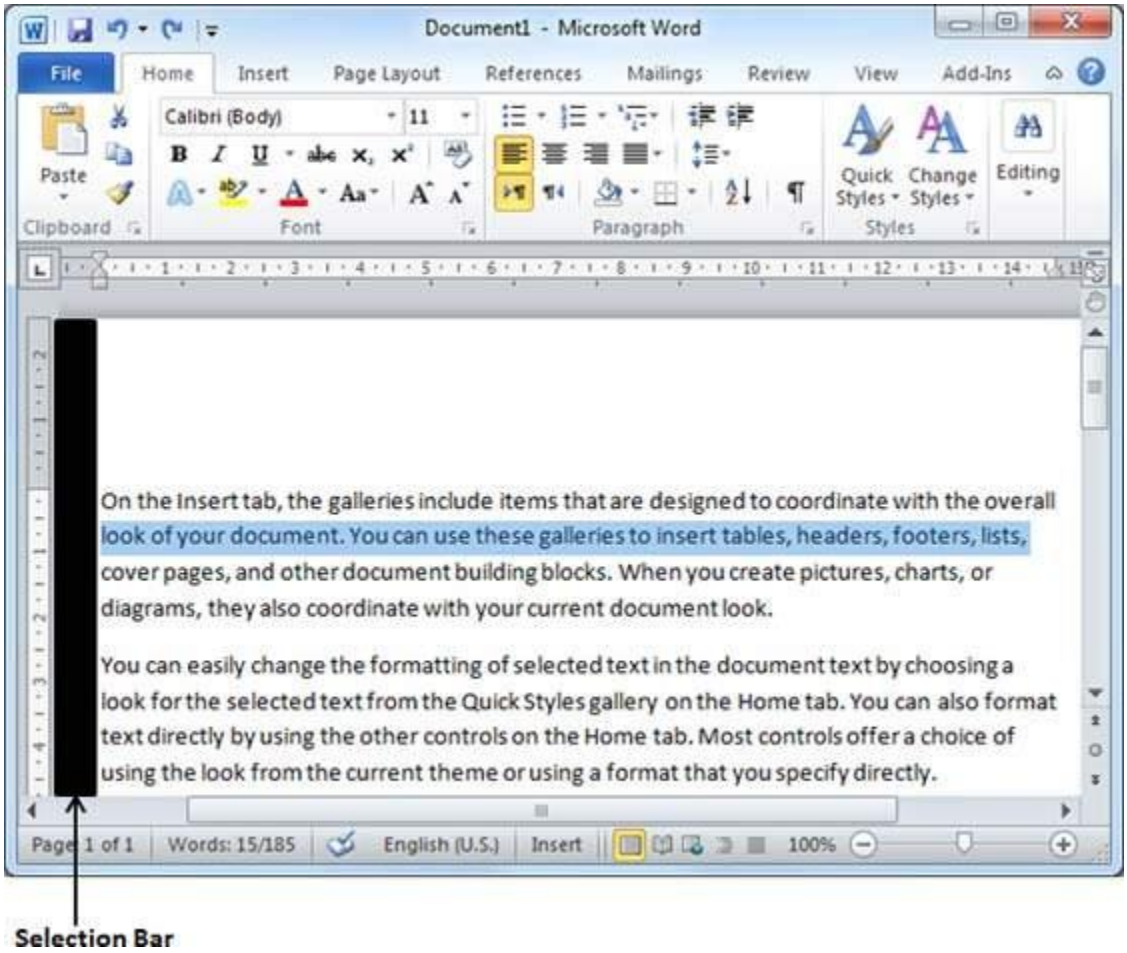
S.No	Component & Selection Method
1	**Selecting text between two points**

	Click at the start of the block of text, hold down **Shift**, and click at the end of the block.
2	**Selecting a single word** Double-click anywhere on the word you want to select.
3	**Selecting a paragraph** Triple-click anywhere on the paragraph you want to select.
4	**Selecting a sentence** Hold down the **Ctrl** key and click anywhere in the sentence you want to select.
5	**Selecting a column of text** Hold down Alt, click and hold the mouse button, and drag over the column you want to select.

Note that only one part of the document can be in the selected state. If you have one portion of the document in selected state and as soon as you try to select any other part of the document, previous part will automatically be de-selected.

Using the Selection Bar

The black shaded area in the following screen shot is called the **selection bar**. When you bring your cursor in this area, it turns into a rightward-pointing arrow.



You can use the selection bar to select the various components of a document as described in the following table –

S.No	Component & Selection Method
1	**Selecting a line** Bring your mouse in the selection bar area and click in front of the line you want to select.
2	**Selecting a paragraph** Bring your mouse in the selection bar area and double click in front of the paragraph you want to select.

3	**Selecting the document** Bring your mouse in the selection bar area and triple-click.

Using the Keyboard

Keyboard provides very good support when you want to select various components of the document as described in the following table –

S.No	Key & Selection Method Selecting Text
1	**Ctrl + A** Press **Ctrl + A** keys to select the entire document.
2	**Shift** Keep pressing the **Shift** key and use any of the arrow keys to select the portion of text.
3	**F8** Press **F8** and then use any of the arrows keys to select the portion of text.
4	**Ctrl + Shift + F8** Press **Ctrl + Shift + F8** and then use any of the arrows keys to select column of the text.

Delete Text in Word 2010

It is very common to delete text and retype the content in your Word document. You might type something you did not want to type or there is something extra which is not required in the document. Regardless of the reason, Word offers you various ways of deleting the text in partial or complete content of the document.

Using Backspace & Delete Keys

The most basic deletion technique is to delete characters one at a time by pressing either the backspace key or the delete key. Following table describes how you can delete single character or a whole word by using either of these two keys –

S.No	Keys & Deletion Methods
1	**Backspace** Keep the insertion point just after the character you want to delete and press the **Backspace** key. Word deletes the character immediately to the left of the insertion point.
2	**Ctrl + Backspace** Keep the insertion point just after the word you want to delete and press **Ctrl + Backspace** key. Word deletes the whole word immediately to the left of the insertion point.
3	**Delete** Keep the insertion point just before the character you want to delete and press the **Delete** key. Word deletes the character immediately to the right of the insertion point.
4	**Ctrl + Delete** Keep the insertion point just before the word you want to delete and press **Ctrl + Delete** key. Word deletes the word immediately to the right of the insertion point.

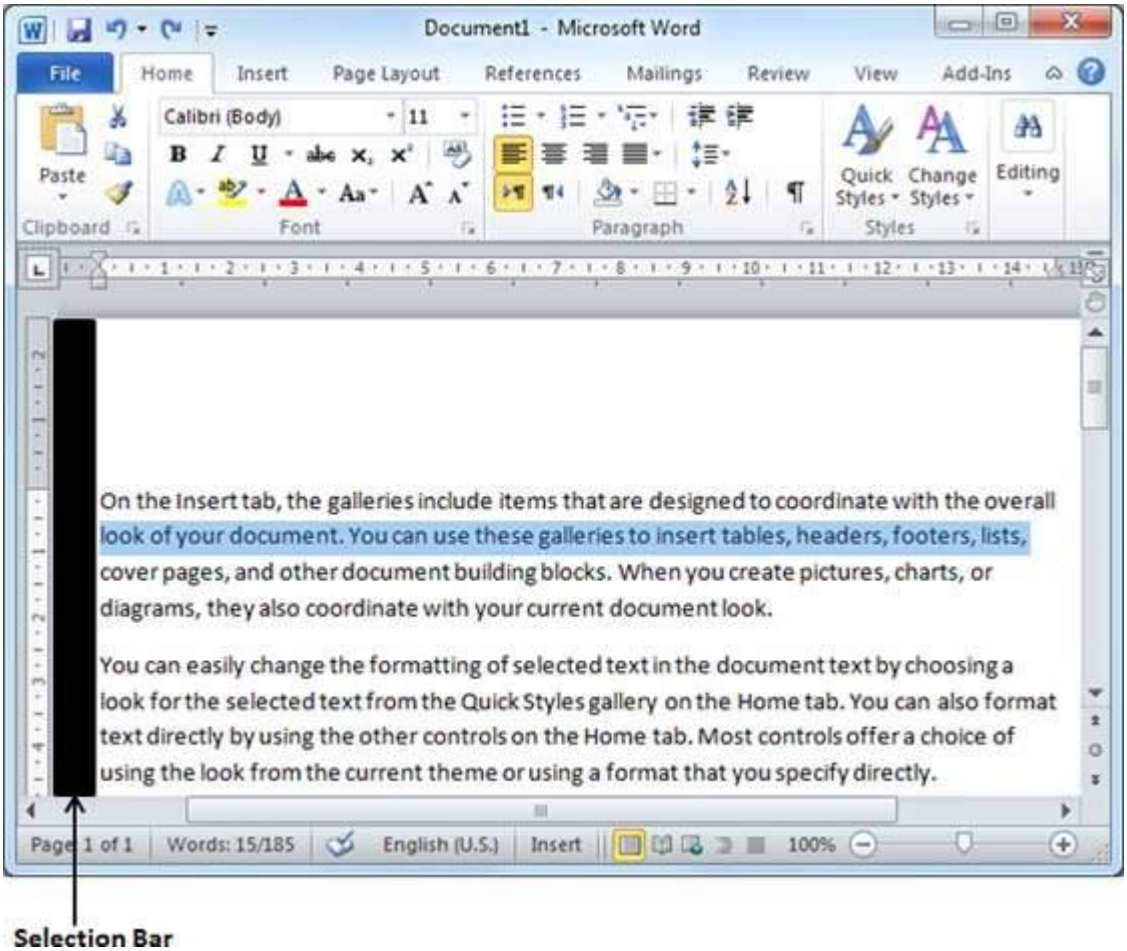
Using Selection Method

You have learnt how to select various parts of a Word document. You can make use of that learning to delete those selected parts as described in the following table –

S.No	Component Selection & Delete Methods
1	**Deleting text between two points** Click at the start of the block of text, hold down the **Shift** key, and click at the end of the block to select the portion of text and finally press either the **Backspace** key or the **Delete** key.
2	**Deleting a single word** Double-click anywhere on the word you want to delete and finally press either the **Backspace** key or the **Delete** key.
3	**Deleting a paragraph** Triple-click anywhere on the paragraph you want to delete and finally press either the **Backspace** key or the **Delete** key.
4	**Deleting a sentence** Hold down the **Ctrl** key and click anywhere in the sentence you want to delete and finally press either the **Backspace** or the **Delete** key.
5	**Deleting a column of text** Hold down the **Alt** key, click and hold the mouse button, and drag over the column you want to delete and finally press either the **Backspace** key or the **Delete** key.
6	**Deleting a line** Bring your mouse in the selection bar area and click in front of the line you want to delete and finally press either the **Backspace** key or the **Delete** key.
7	**Deleting entire document content**

	Press **Ctrl + A** keys to delete the entire document and finally press either the **Backspace** key or the **Delete** key.

Note – The black shaded area in the following screen shot is called the **selection bar**. When you bring your cursor in this area, it turns into a rightward-pointing arrow.

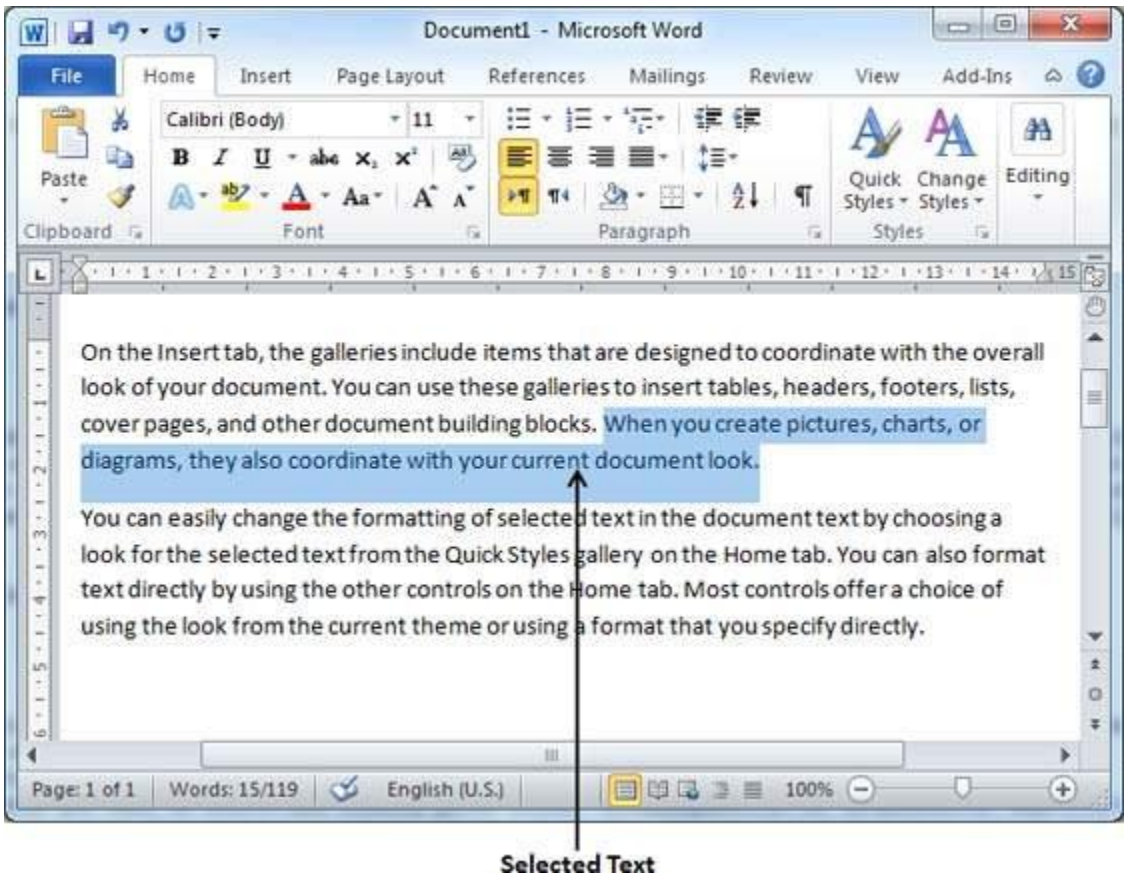


Move Text in Word 2010

At times, it is required to move a text from one location to another location in the same document or in any another document. You can move text from one location in a document to another by using the drag-and-drop technique with the help of mouse. This tutorial will teach you how to use the drag and drop technique to move text.

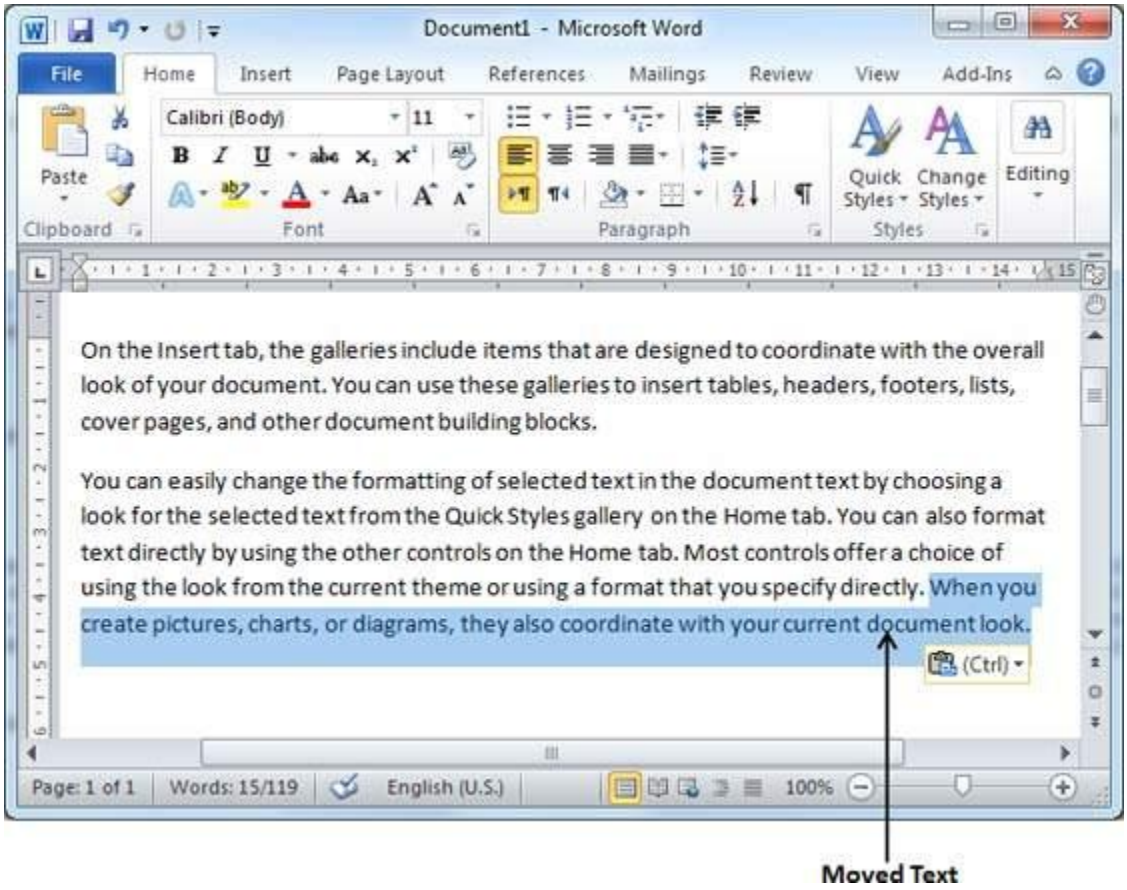
Move within the same document

Step 1 – Select a portion of the text using any of the text selection methods.



Step 2 – Now take your mouse pointer over the selected text and hold the left button of the mouse and keep holding it while moving around the document.

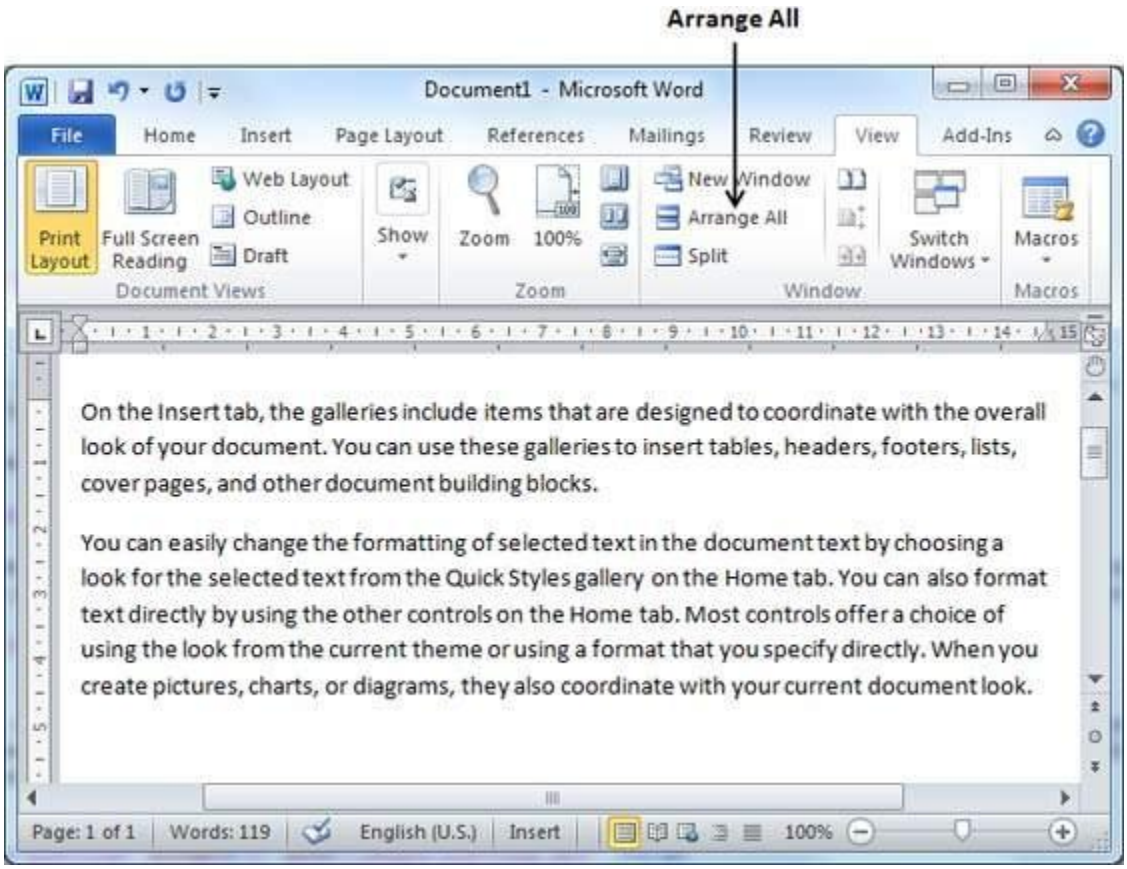
Step 3 – Take your mouse pointer to the place where you want to move the selected text and release the mouse button. You will see that the selected text is moved to the desired location.



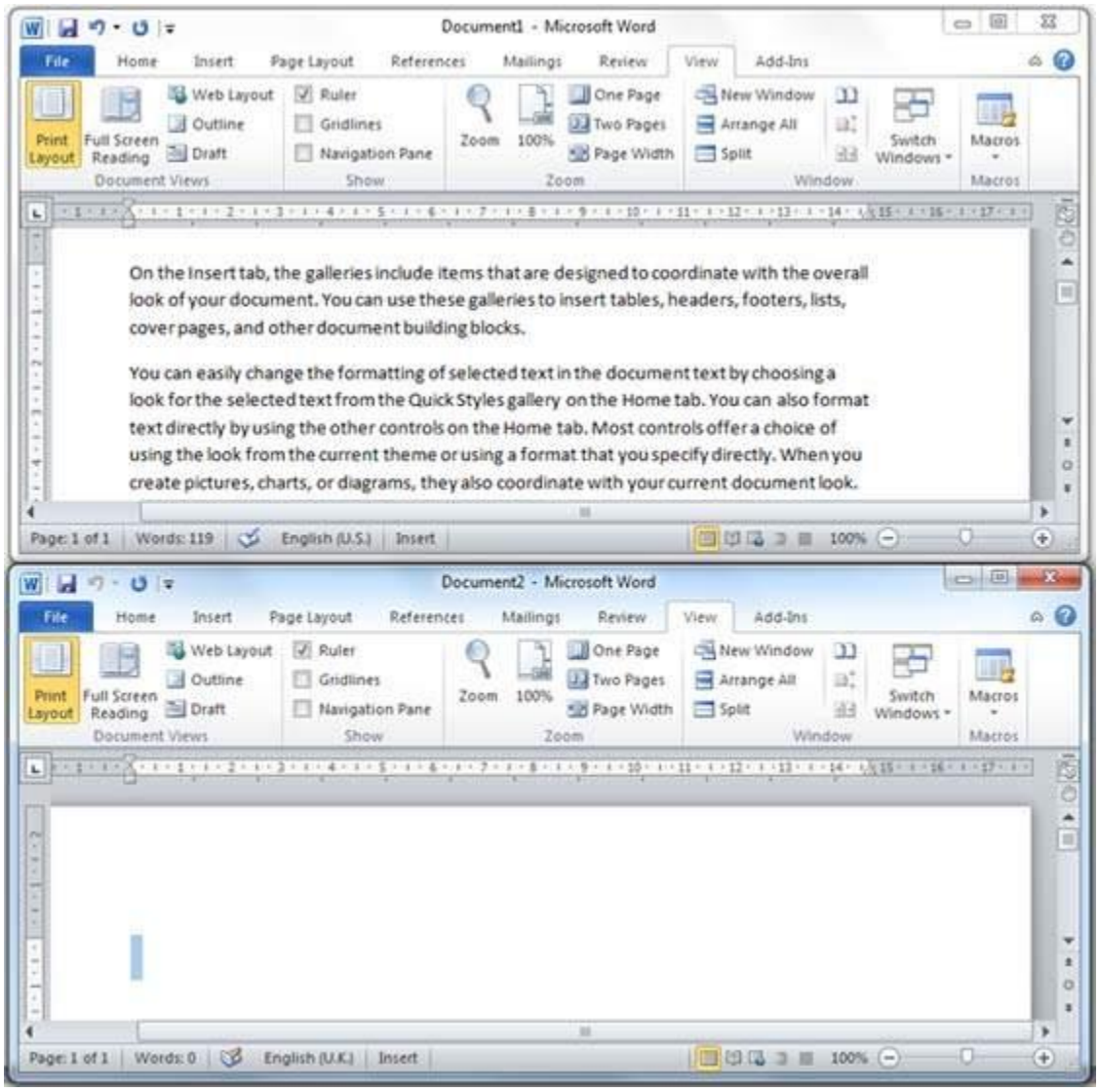
Move within different documents

You can move the selected text from one document to another document. Following are some simple steps which will help you in moving text from one document to another document.

Step 1 – Keep both the documents opened and to ensure that both documents are visible, click the **Arrange All** button on the **View tab** on the Ribbon.



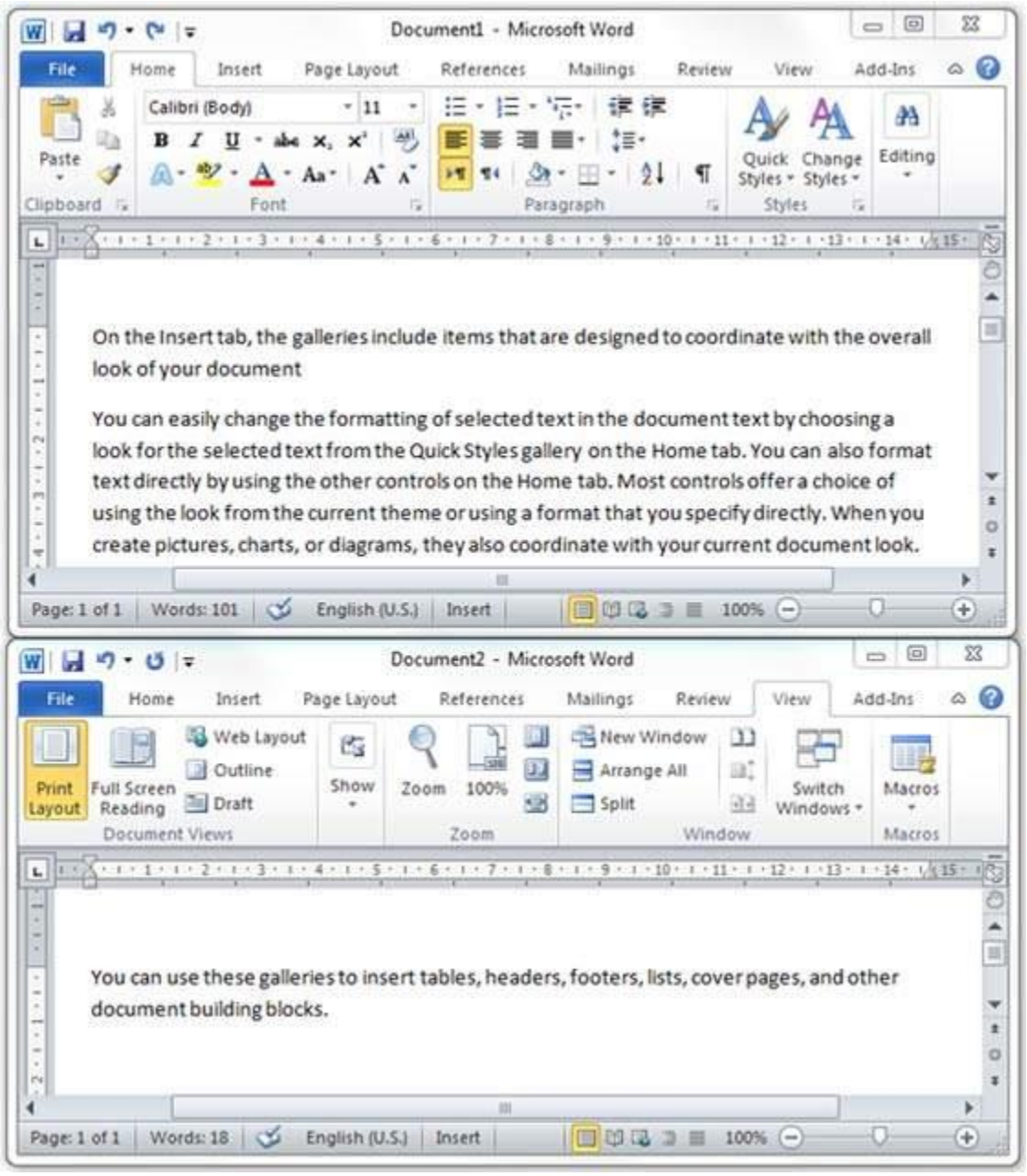
This will display both the documents as shown below –



Step 2 – Now, select a portion of the text using any of the text selection methods.

Step 3 – Take your mouse pointer over the selected text and hold the left button of the mouse and keep holding it while moving around the document.

Step 4 – Take your mouse pointer at the place in the second document where you want to move the selected text and release the mouse button. You will see that the selected text is moved to the desired location in the second document.



Note – In case you have more than two documents, you can use the **Alt + Tab** keys to switch through the different documents and select the desired destination document.

Copy & Paste in Word 2010

In the previous chapter, we understood how we can select the desired text and move it to any other location in the same document or in any other

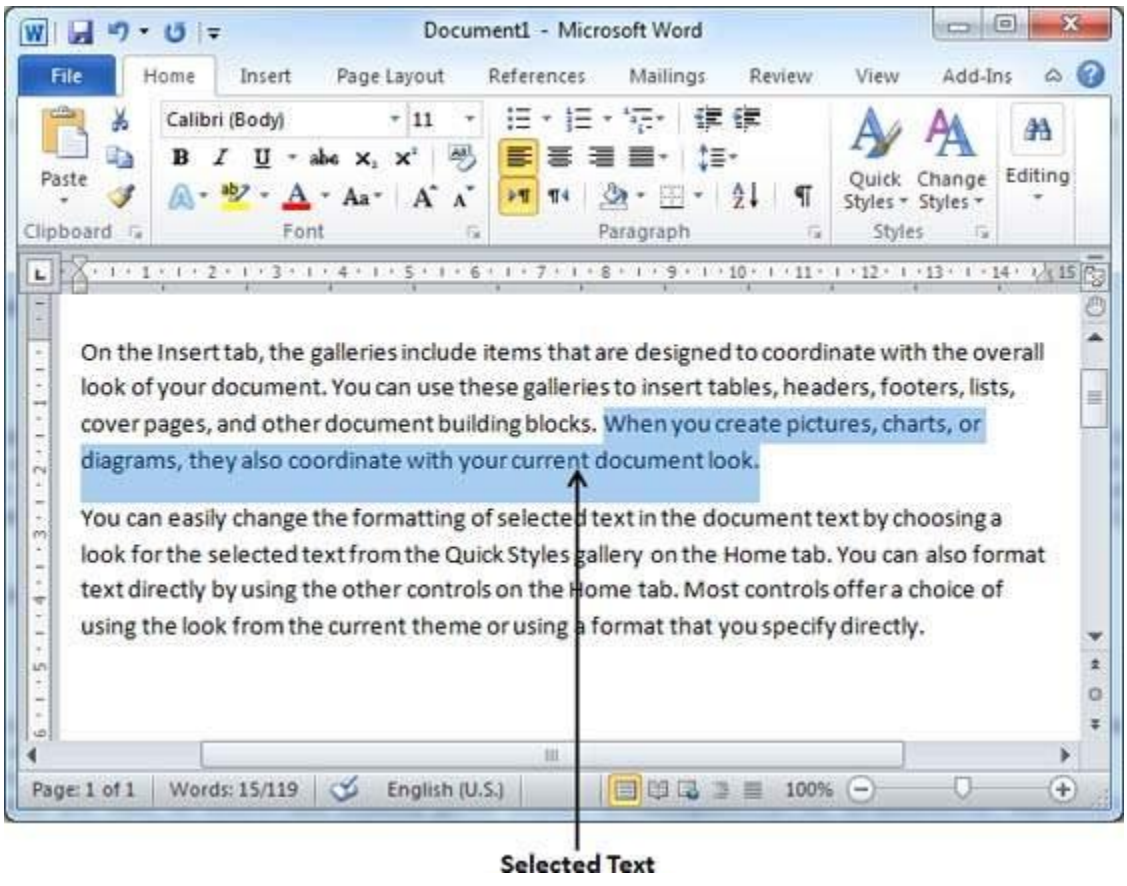
document. This tutorial will teach you how to use copy, cut and paste techniques to duplicate a text leaving the original text intact or removing the original text completely.

To use **copy and paste** or **cut and paste** operations, Word makes use of a temporary memory which is called the **clipboard**. When you copy or cut a text, it stay on the clipboard temporarily and in the second step you can paste this content at the desired location.

Copy & Paste Operation

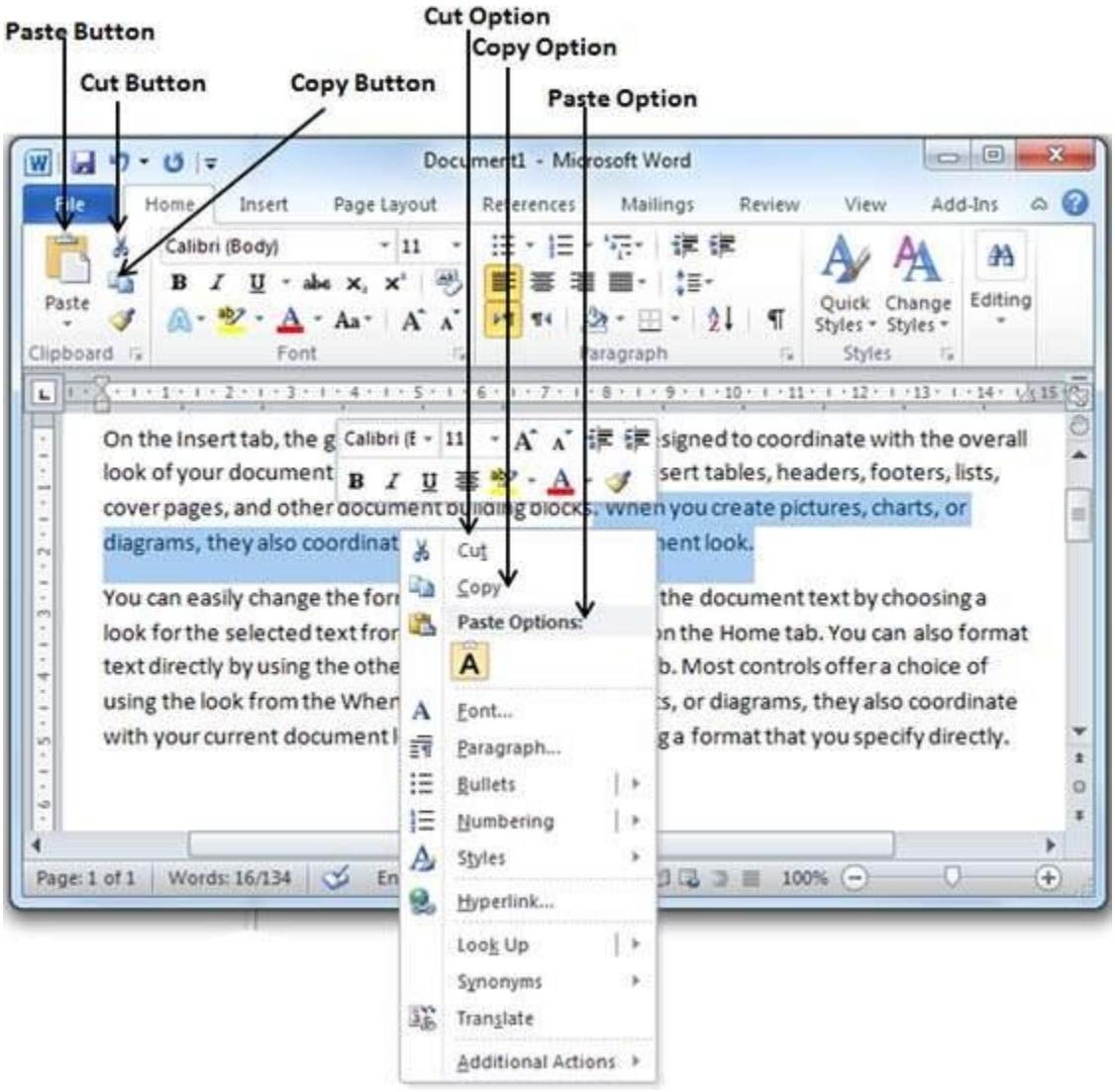
The **Copy** operation will just copy the content from its original place and create a duplicate copy of the content at the desired location without deleting the text from it's the original location. Following is the procedure to copy the content in word –

Step 1 – Select a portion of the text using any of the text selection methods.



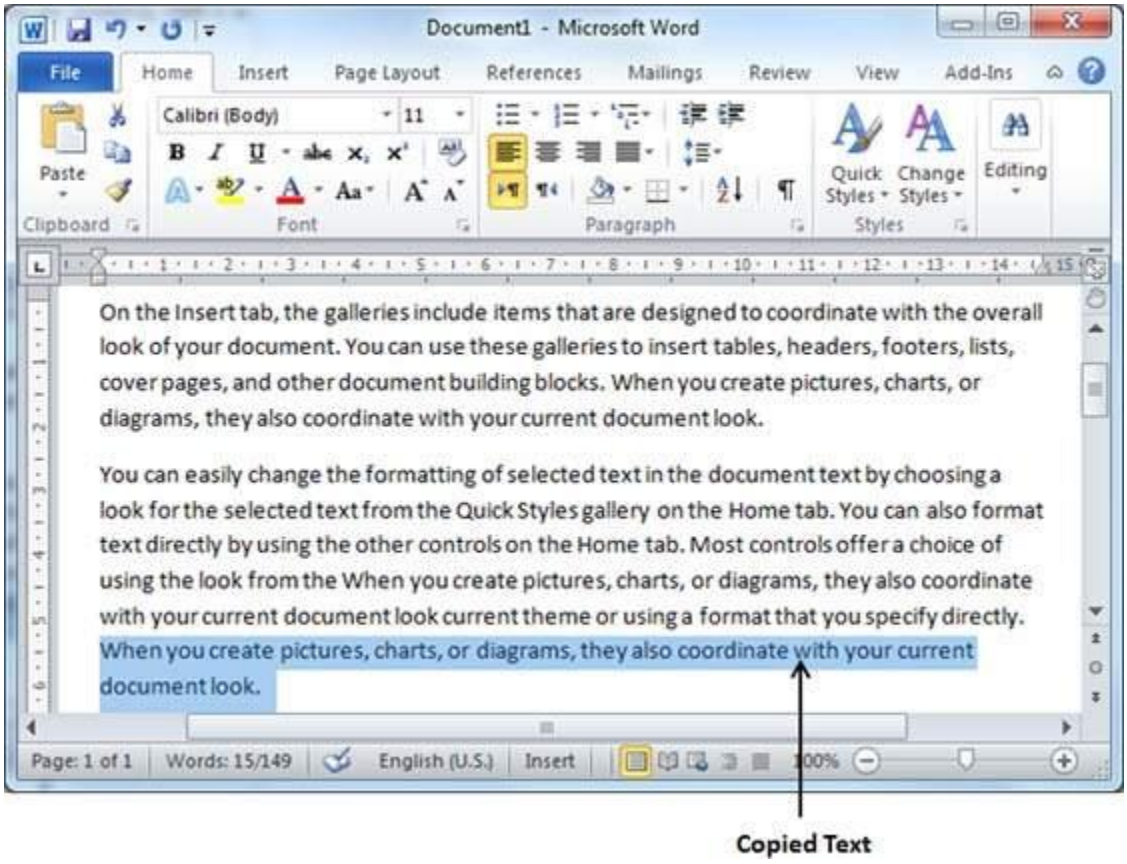
Step 2 – You have various options available to copy the selected text in clipboard. You can make use of any one of the options –

- **Using Right-Click** – When you right-click on the selected text, it will display the **copy** option, click this option to copy the selected content in clipboard.
- **Using Ribbon Copy Button** – After selecting text, you can use the copy button available at the ribbon to copy the selected content in clipboard.
- **Using Ctrl + c Keys** – After selecting a text, just press **Ctrl + c** keys to copy the selected content in clipboard.



Step 3 – Finally click at the place where you want to copy the selected text and use either of these two simple options –

- **Using Ribbon Paste Button** – Just click the Paste button available at the ribbon to paste the copied content at the desired location.
- **Using Ctrl + v Keys** – This is simplest way of pasting the content. Just press **Ctrl + v** keys to paste the content at the new location.

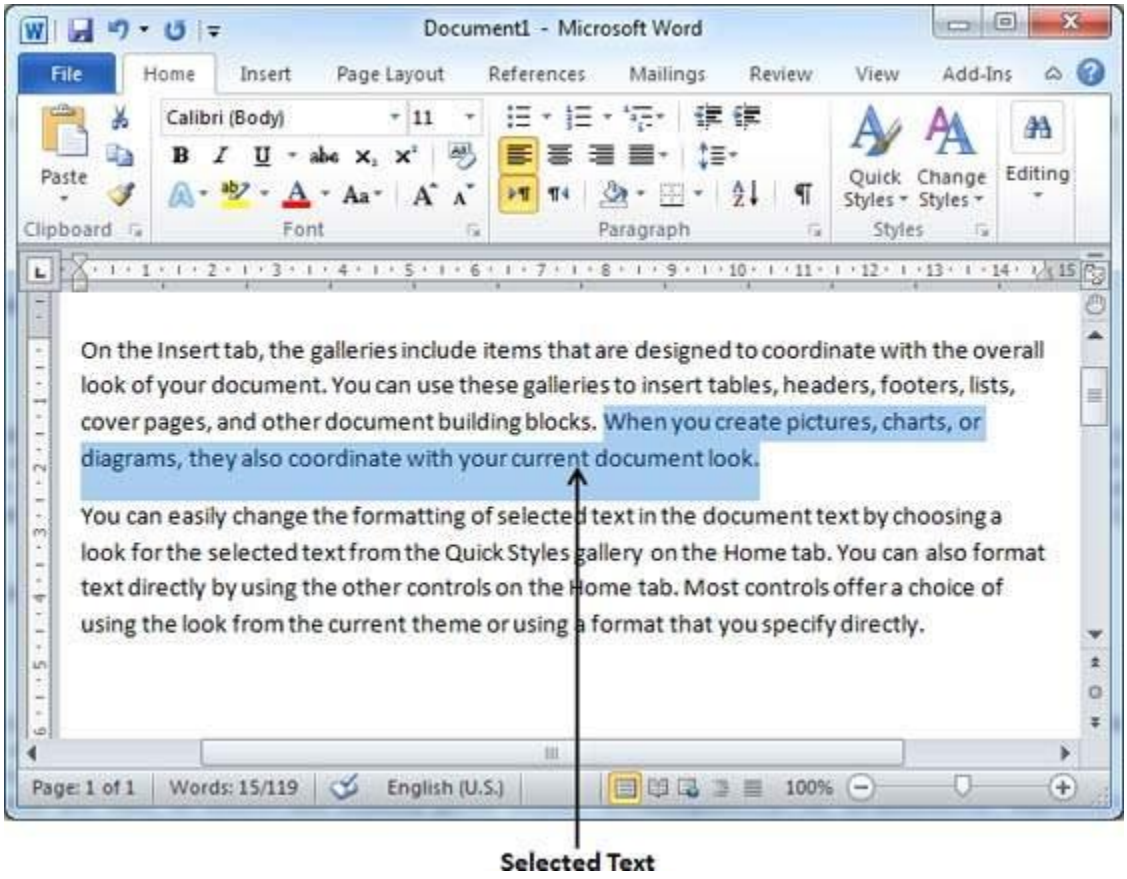


Note – You can repeat the **Paste** operation as many times as you like to paste the same content.

Cut & Paste Operation

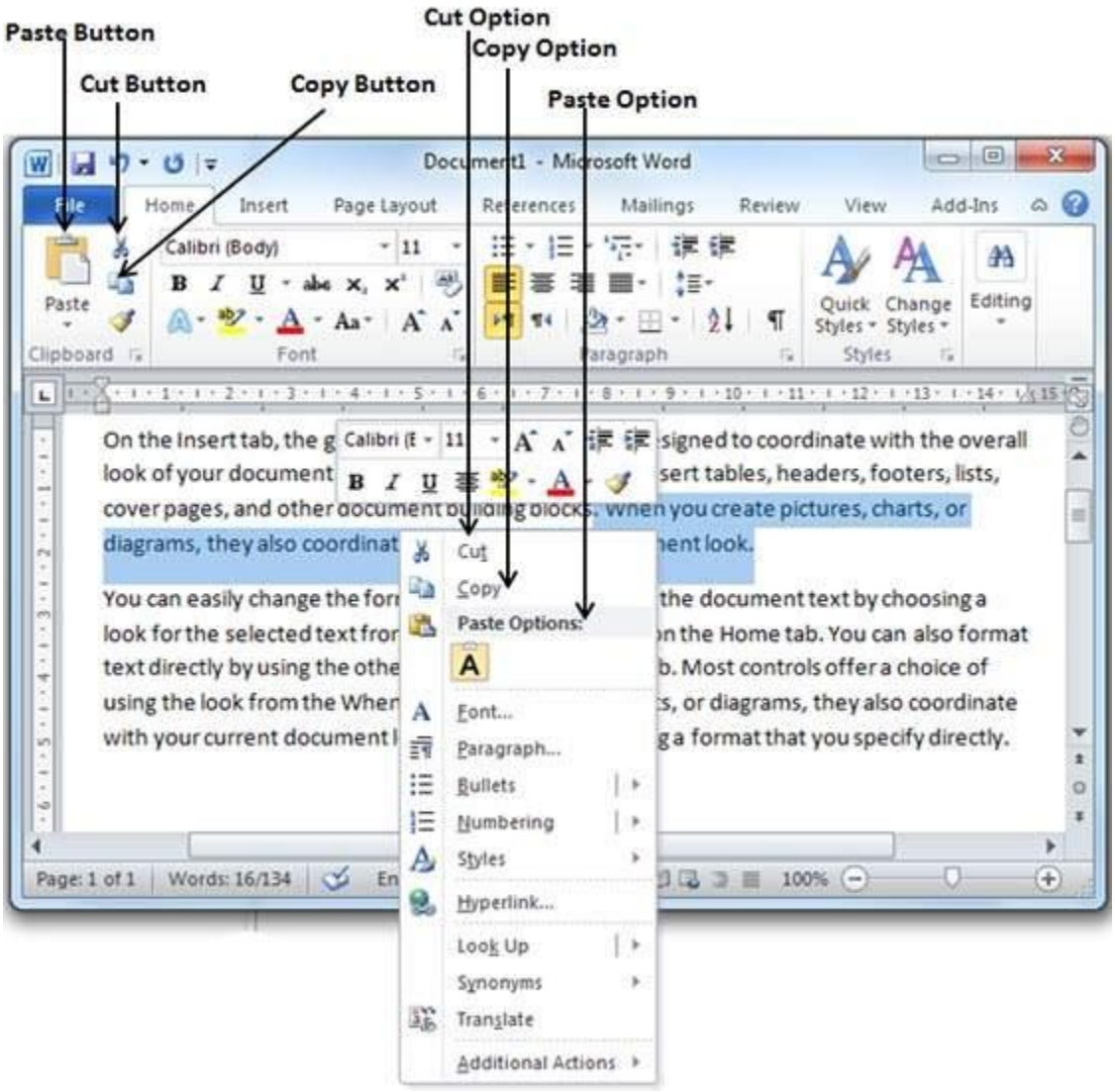
The Cut operation will cut the content from its original place and move the content from its original location to a new desired location. Following is the procedure to move the content in word –

Step 1 – Select a portion of the text using any of the text selection methods.



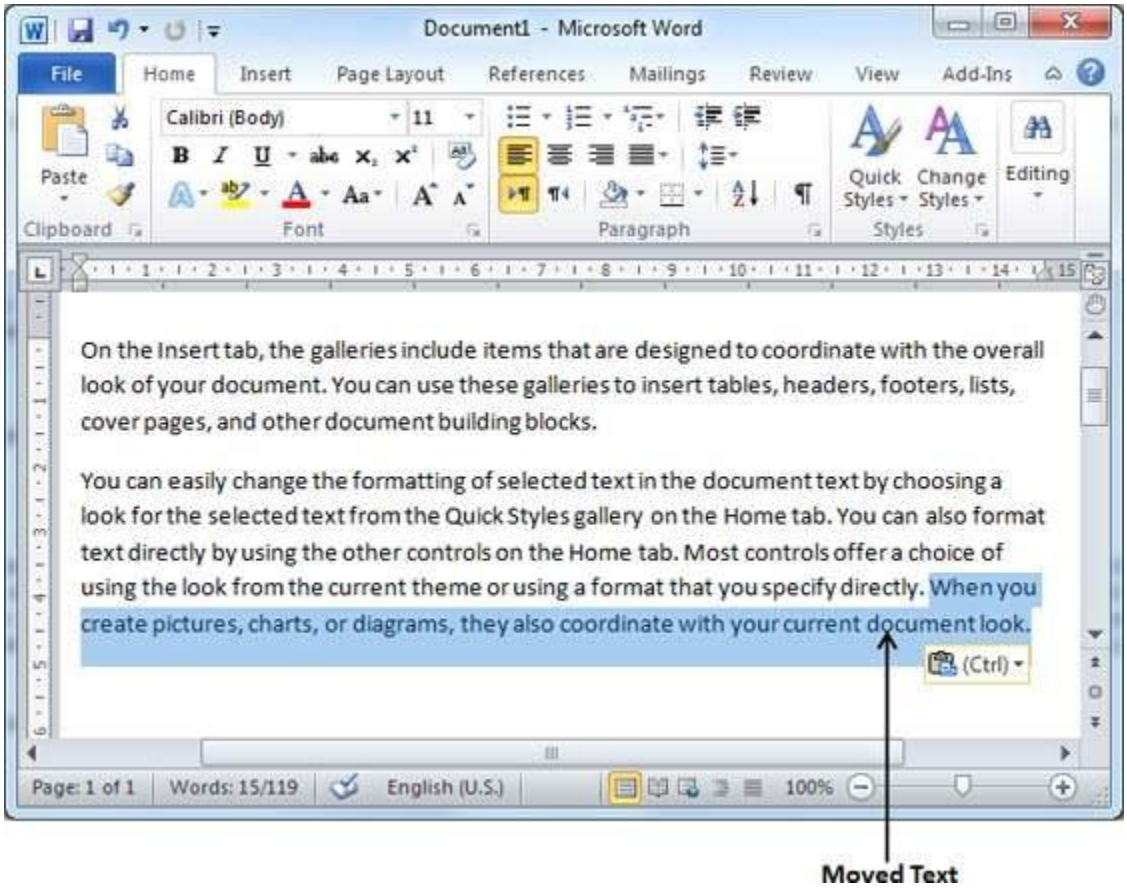
Step 2 – Now, you have various options available to cut the selected text and put it in the clipboard. You can make use of one of the options –

- **Using Right-Click** – If right-click on the selected portion of text, it will display **cut** option, just click this option to cut the selected content and keep it in clipboard.
- **Using Ribbon Cut Button** – After selecting a portion of text, you can use cut button available at the ribbon to cut the selected content and keep it in clipboard.
- **Using Ctrl + x Keys** – After selecting a portion of text, just press **Ctrl + x** keys to cut the selected content and keep it in clipboard.



Step 3 – Finally, click at the place where you want to move the selected text and use either of these two simple options –

- **Using Ribbon Paste Button** – Just click the **Paste** button available at the ribbon to paste the content at the new location.
- **Using Ctrl + v Keys** – This is simplest way of pasting the content. Just press **Ctrl + v** keys to paste the content at the new location.



Note – You can repeat the **Paste** operation as many times as you like to paste the same content.

Copy, Cut & Paste in different documents

You can use the same procedure that we discussed above to **copy and paste** or **cut and paste** content from one document to another document. This is very simple, just copy or cut the desired content from one document and go into another document where you want to paste the content and use mentioned step to paste the content.

You can use the **Alt + Tab** keys to switch through the different documents and select the desired destination document.

Find & Replace in Word 2010

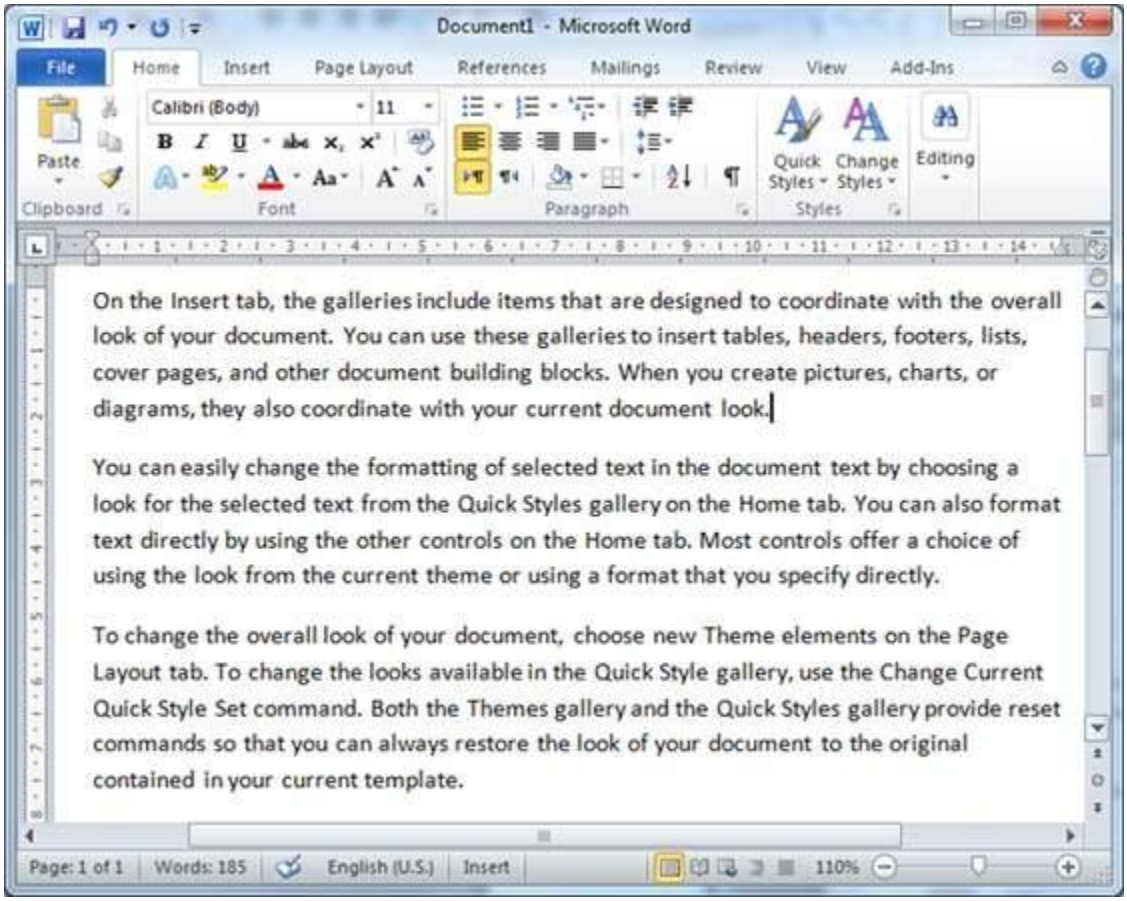
While working on editing a document you come across a situation very frequently when you want to search a particular word in your document and

many times you will be willing to replace this word with another word at a few or all the places throughout the document. Here, we will understand how to find a word or phrase in a word document and how to replace an existing word with any other word using simple steps.

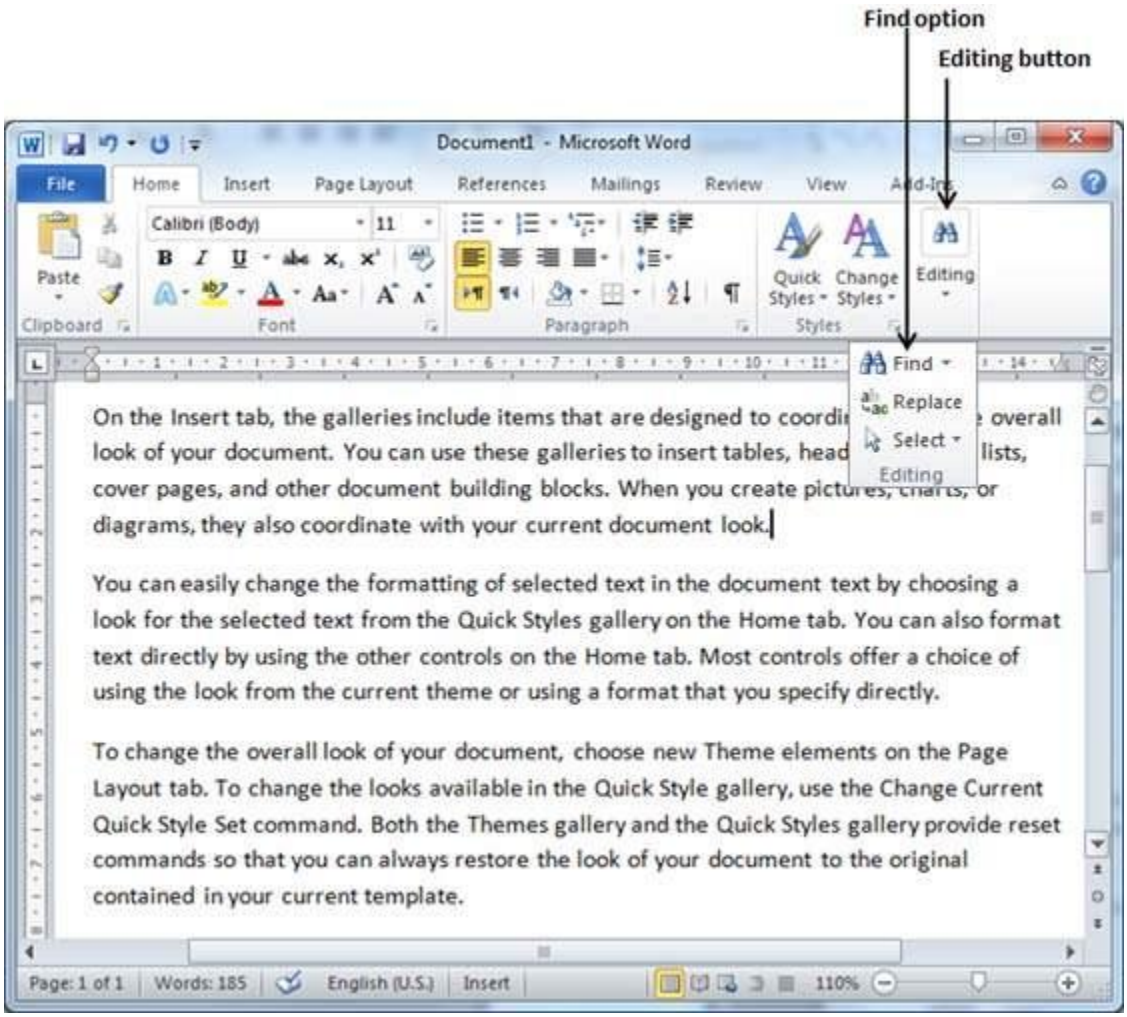
Find Command

The **Find** command enables you to locate specific text in your document. Following are the steps to find a word **document** in the following screen –

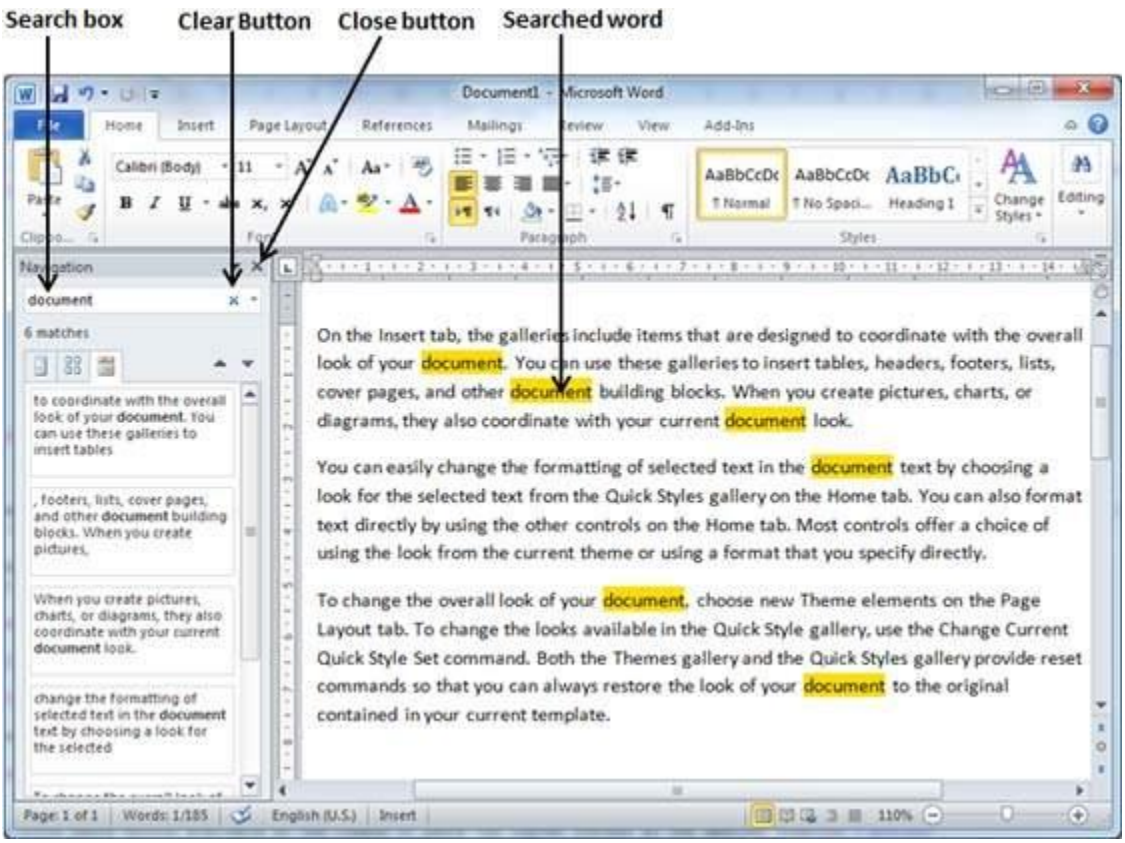
Step 1 – Let us work out on a sample text available in our Word document. Just type =**rand()** and press Enter; the following screen will appear –



Step 2 – Click the **Find option** in the **Editing group** on the Home tab or press **Ctrl + F** to launch the Navigation pane –

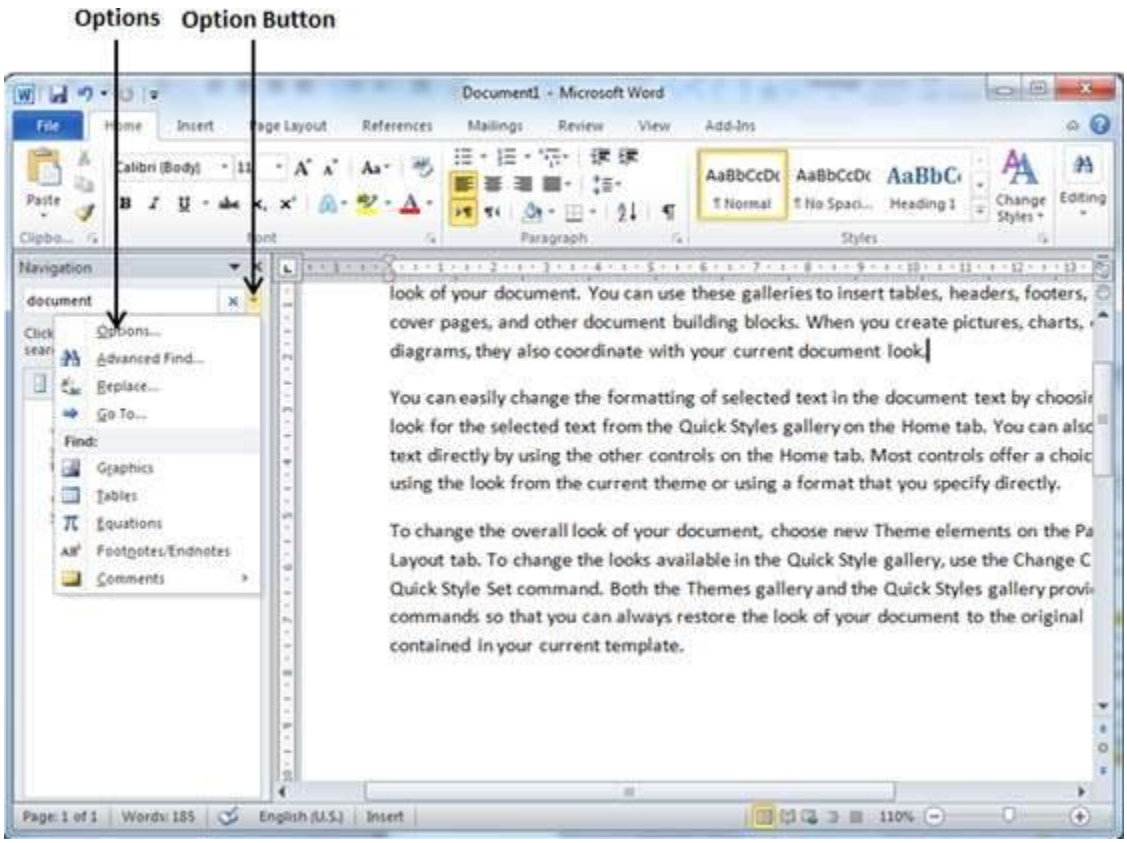


Step 3 – Enter a word which you want to search in the Search box, as soon as you finish typing, Word searches for the text you entered and displays the results in the navigation pane and highlights the word in the document as in the following screenshot –



Step 4 – You can click the **clear button (X)** to clear the search and results and perform another search.

Step 5 – You can use further options while searching for a word. Click the **option button** to display the options menu and then click the **Options** option; this will display a list of options. You can select the options like **match case** to perform case-sensitive search.

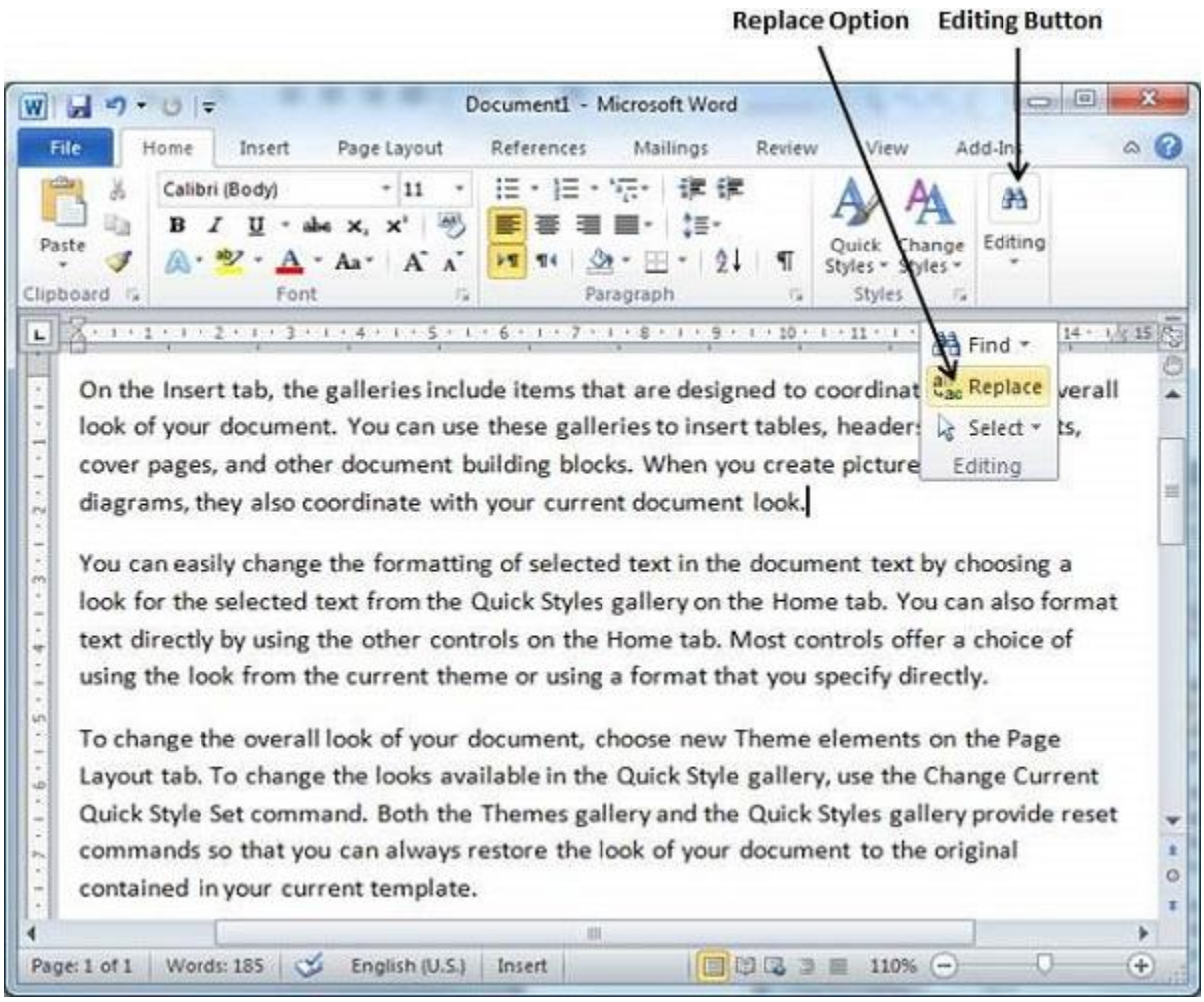


Step 6 – Finally, if you are done with the Search operation, you can click the **close button (X)** to close the Navigation Pane.

Find & Replace Operation

We assume you are an expert in searching a word or phrase in a word document as explained above. This section will teach you how you can replace an existing word in your document. Following are the simple steps –

Step 1 – Click the **Replace option** in the **Editing group** on the Home tab or press **Ctrl + H** to launch the **Find and Replace** dialog box shown in Step 2 –



Step 2 – Type a word which you want to search. You can also replace the word using the **Find and Replace** dialog box as in the following screenshot –

Step 3 – Click the **Replace** button available on the **Find and Replace** dialog box and you will see the first occurrence of the searched word would be replaced with the replace with word. Clicking again on **Replace** button would replace next occurrence of the searched word. If you will click **Replace All** button then it would replace all the found words in one go. You can also use **Find Next** button just to search the next occurence and later you can use **Replace** button to replace the found word.

Step 4 – You can use **More >>** button available on the dialog box to use more options and to make your search more specific like case sensitive search or searching for whole word only etc.

Step 5 – Finally, if you are done with the Find and Replace operation, you can click the **Close (X)** or **Cancel** button of the dialog box to close the box.

Spell Check in Word 2010

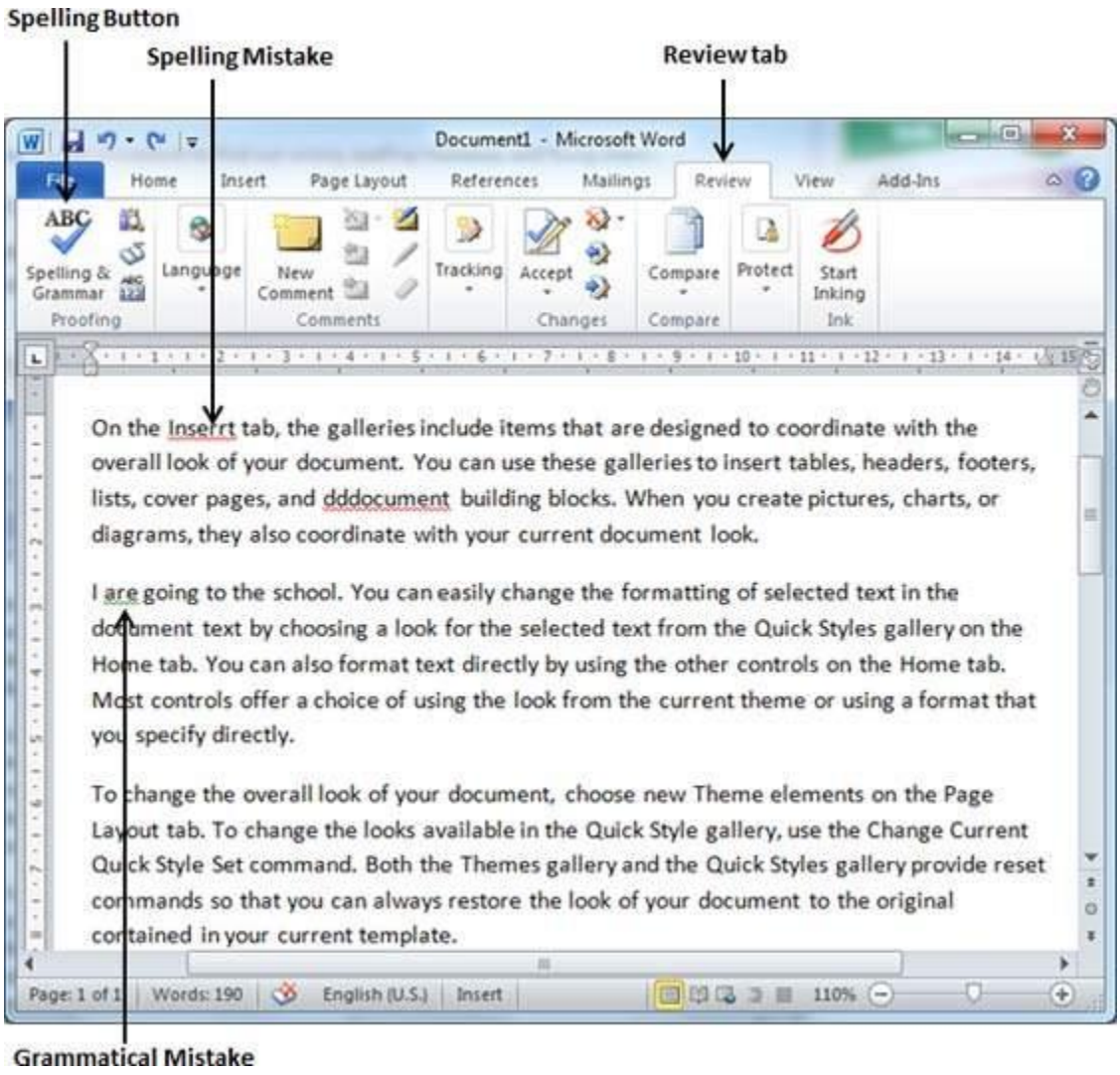
Microsoft Word provides a decent Spelling and Grammar Checker which enables you to search for and correct all spelling and grammar mistakes in your document. Word is intelligent enough to identify misspelled or misused, as well as grammar errors and underlines them as follows.

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

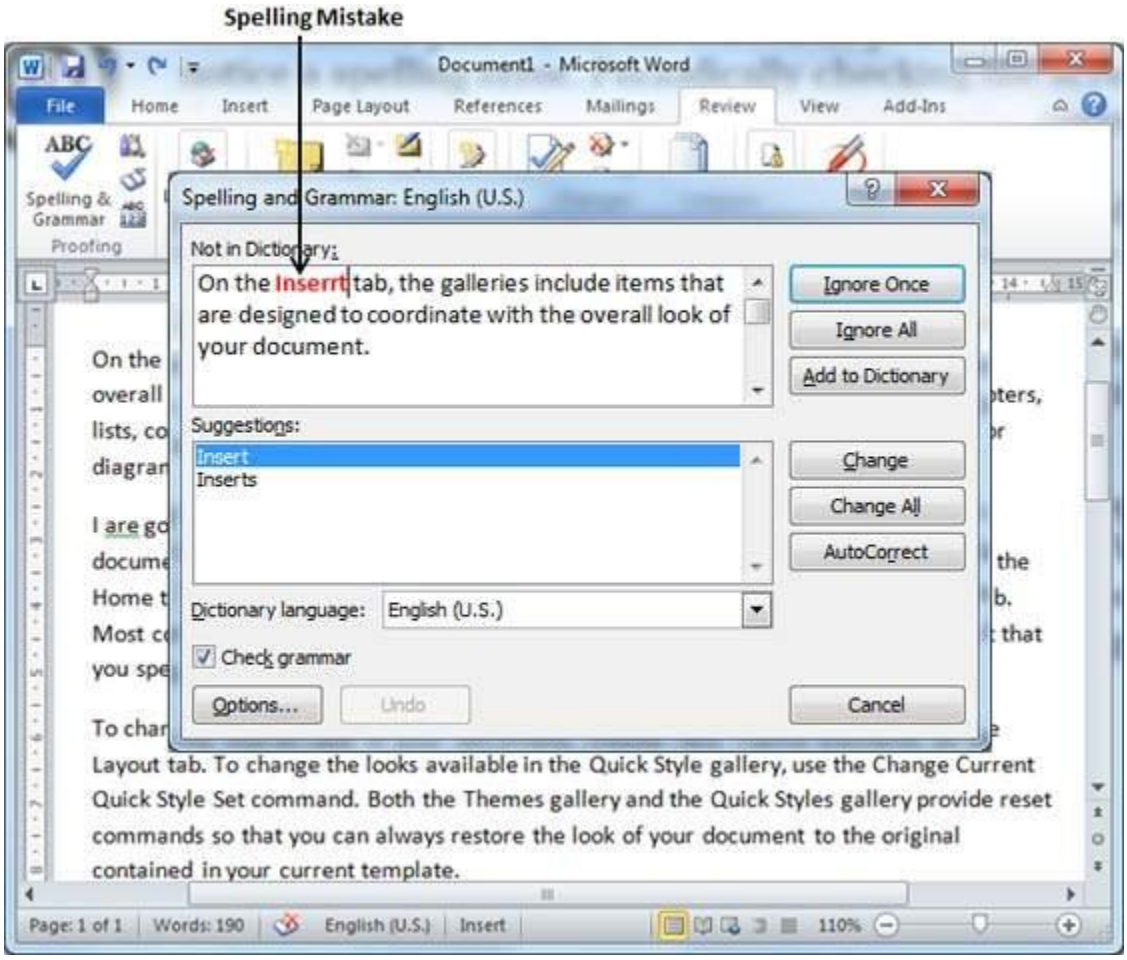
Check Spelling and Grammar using Review tab

Here is the simple procedure to find out the spelling mistakes and fix them –

Step 1 – Click the Review tab and then click the **Spelling & Grammar** button.



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 –



Now you have following options to fix the spelling mistakes –

- **Ignore** – If you are willing to ignore a word, then click this button and Word ignores the word throughout the document.
- **Ignore All** – Like Ignore, but this ignores all occurrences of the same misspelling, not just once but throughout the document.
- **Add to Dictionary** – Choose **Add to Dictionary** to add the word to the Word spelling dictionary.
- **Change** – This will change the wrong word using the suggested correct word.
- **Change All** – Like Change, but this changes all occurrences of the same misspelling, not just once but throughout the document.

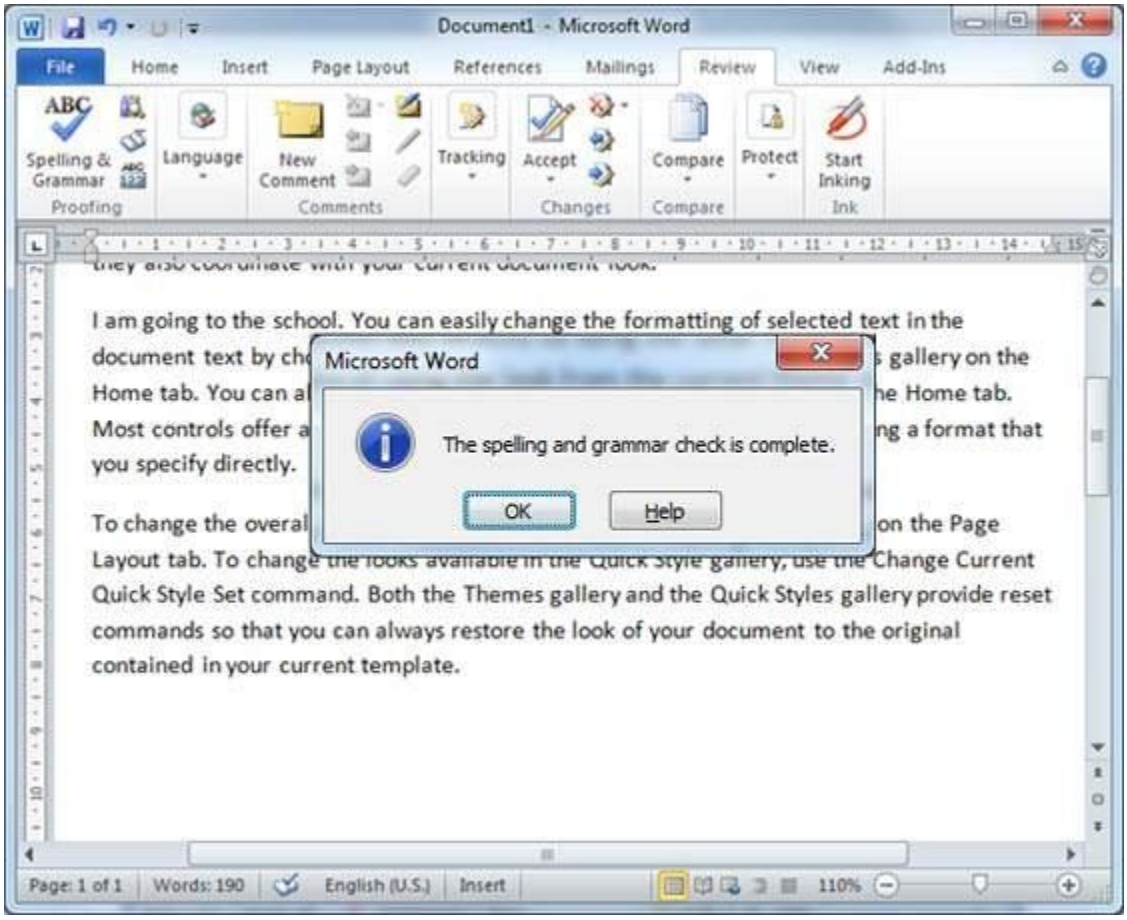
- **AutoCorrect** – If you select a suggestion, Word creates an **AutoCorrect** entry that automatically corrects this spelling error from now on.

Following are the different options in case you have grammatical mistake –

- **Next Sentence** – You can click Next Sentence to direct the grammar checker to skip ahead to the next sentence.
- **Explain** – The grammar checker displays a description of the rule that caused the sentence to be flagged as a possible error.
- **Options** – This will open the Word Options dialog box to allow you to change the behavior of the grammar checker or spelling options.
- **Undo** – This will undo the last grammar changed.

Step 3 – Select one of the given suggestions you want to use and click the **Change** option to fix the spelling or grammar mistake and repeat the step to fix all the spelling or grammar mistake.

Step 4 – Word displays a dialog box when it finishes checking for spelling and grammar mistakes, finally Click **OK**.



Check Spelling and Grammar using Right Click

If you will right-click the mouse button over a misspelled word, then it will show you the correct suggestions and the above mentioned options to fix the spelling or grammar mistake. Try it yourself.

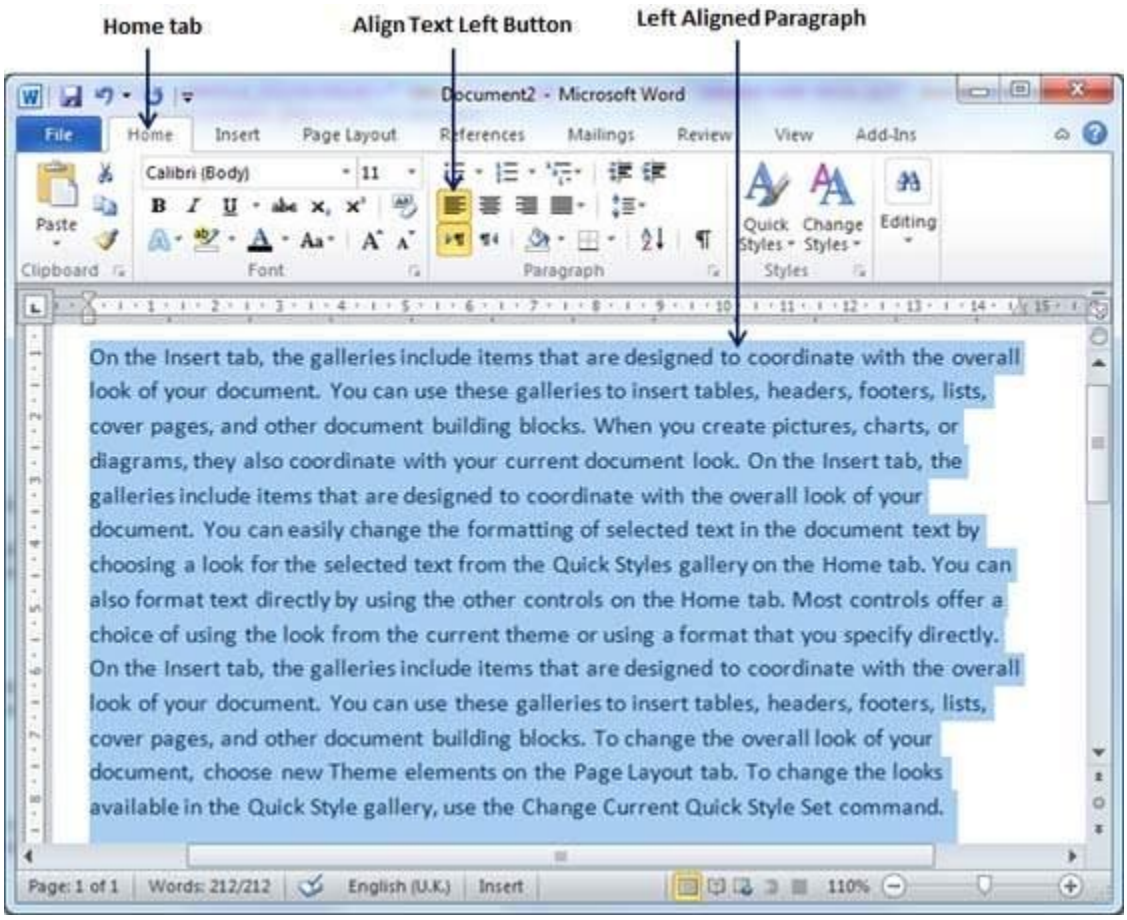
Text Alignments in Word 2010

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

Left-Aligned Text

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.

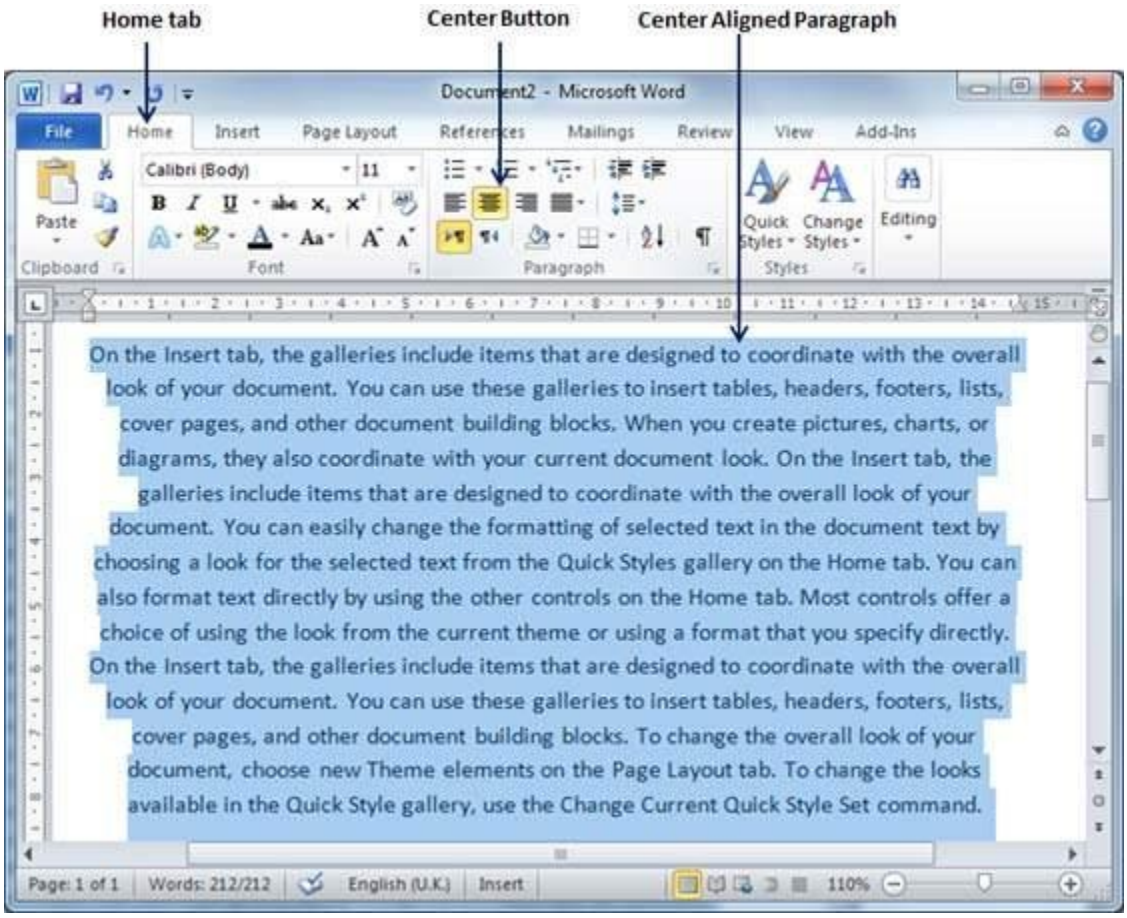
Step 1 – Click anywhere on the paragraph you want to align and click the **Align Text Left** button available on the **Home tab** or simply press the **Ctrl + L** keys.



Center Aligned Text

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 Text

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.

When you click the **Justify** button, it displays four options, justify, justify low, justify high and justify medium. You need to select only the justify option. The difference between these options is that low justify creates little space between two words, medium creates a more space than low justify and high creates maximum space between two words to justify the text.

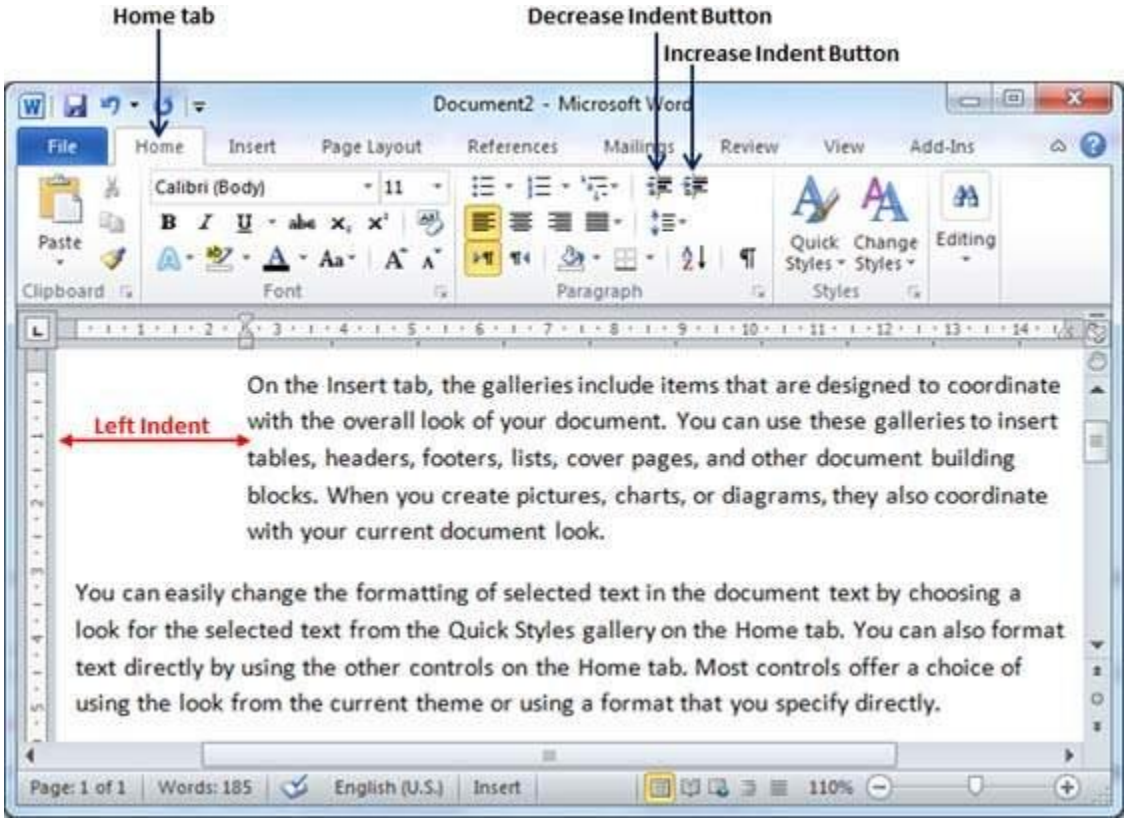
Indent Paragraphs in Word 2010

As you know the margin settings determine the blank space that appears on each side of a paragraph. You can indent paragraphs in your document from the left margin, the right margin, or both the margins. This chapter will teach you how to indent your paragraphs with or without the first line of the paragraphs.

Left Indentation

Left indentation means to move the left edge of the paragraph inward towards the center of the paragraph. Let us use the following steps to create left indentation.

Step 1 – Click anywhere on the paragraph you want to indent left and click the **Increase Indent** button available on the **Home tab** or simply press the **Ctrl + M** keys. You can click multiple times to create deeper indentation.



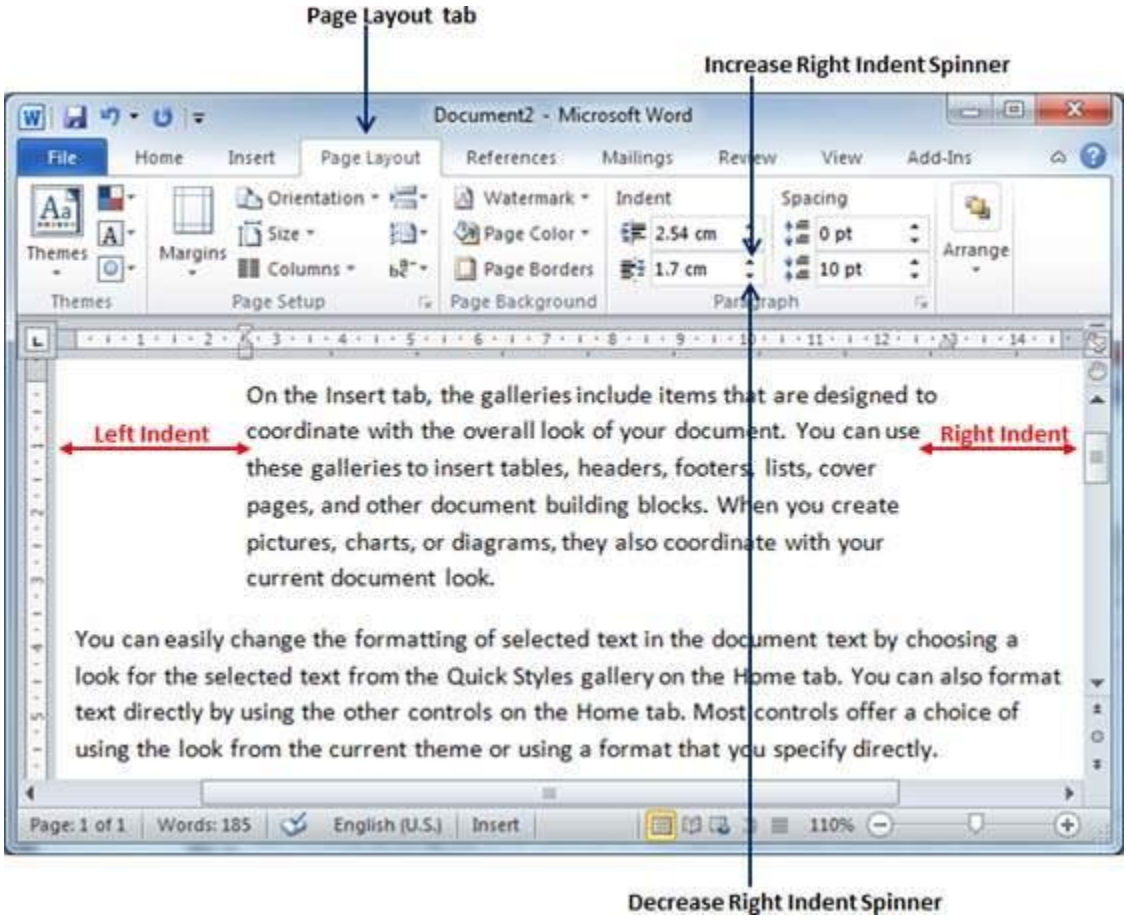
Step 2 – You can remove left indentation by clicking the **Decrease Indent** button available on **Home tab** or simply press **Ctrl + Shift+ M** keys. You can click multiple times to remove deeper indentation.

You can also use the **Paragraph Dialog** Box to set left and right indentations. We will see this dialog box in the last section of this chapter.

Right Indentation

Right indentation means to move the right edge of the paragraph inward towards the center of the paragraph. Let us use the following steps to create right indentation.

Step 1 – Click anywhere on the paragraph you want to indent and then click on the Increase Right Indent spinner available on the Page Layout tab. You can click on the spinner multiple times to create deeper indentation. You can use the Left Indent spinners as well to set left indentation from the same place.



Step 2 – You can remove right indentation by clicking the **Decrease Right Indent** spinner in the opposite direction.

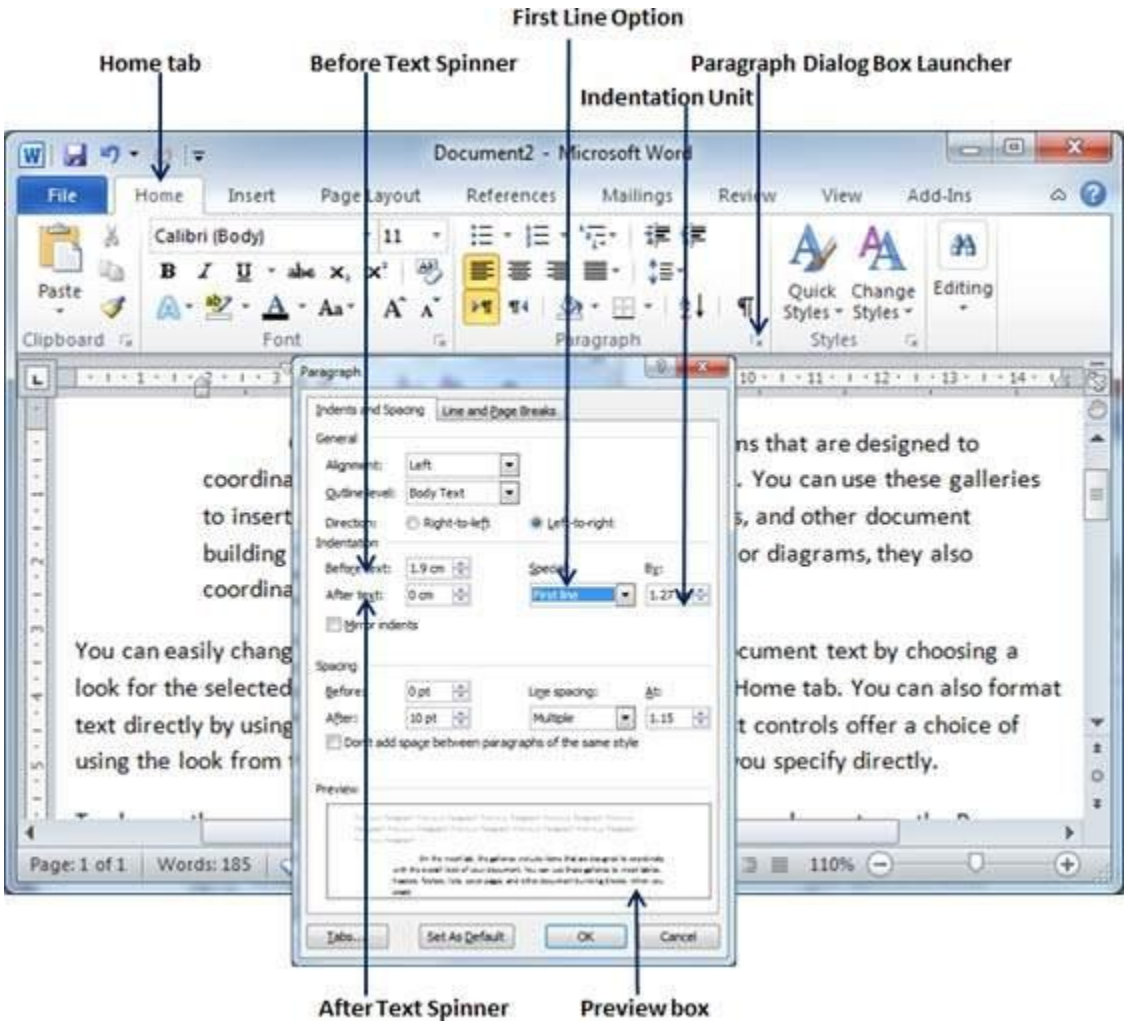
You can also use the **Paragraph Dialog Box** to set the left and the right indentations. We will see this dialog box in the next section.

First Line Indentation

You can move the left side of the first line of a paragraph inward toward the center. Let us see the procedure to perform first line indentation.

Step 1 – Click anywhere on the paragraph you want to indent right and click the **Paragraph Dialog Box** launcher available on the **Home tab**.

Step 2 – Click the **Before Text** spinner to set left indentation and select the **First Line Option** to move the left side of the first line of a paragraph inward toward the center. You can control the movement by setting the **Indentation Unit**. A preview box will give only the idea and not the indentation status.

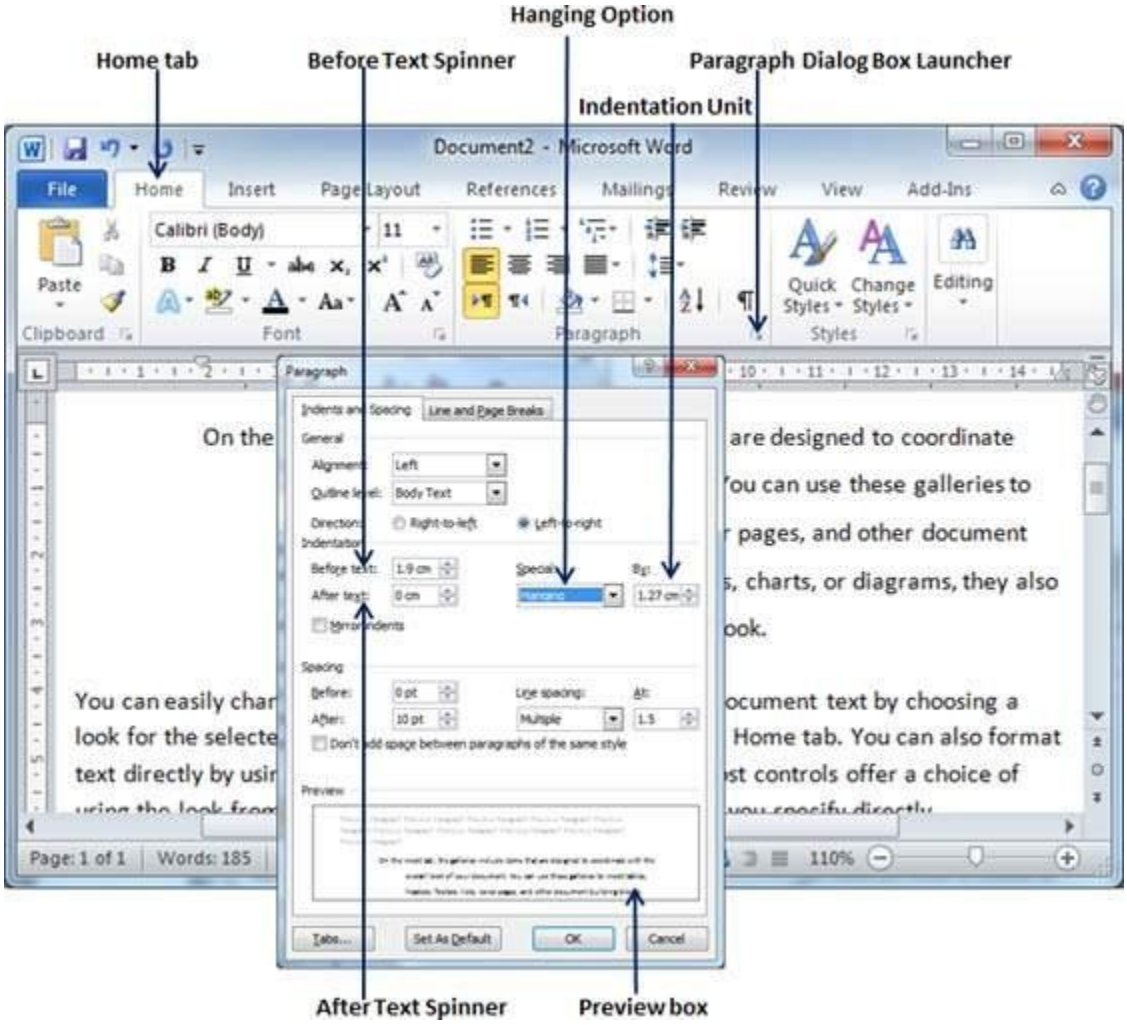


Hanging Indentation

You can move the left side of the first line of a paragraph leftward, away from the center which is called the **hanging indentation**. Let us see the procedure to perform hanging indentation.

Step 1 – Click anywhere on the paragraph you want to indent right and click the **Paragraph Dialog Box** launcher available on the **Home tab**.

Step 2 – Click the **Before Text** spinner to set left indentation and select **Hanging Option** to move the left side of the first line of a paragraph leftward, away from the center. You can control the movement by setting the **Indentation Unit**. A preview box will give only the idea and not the indentation status.



You can use the **After Text** spinner to set the right indentation. You can try it yourself.

Borders and Shades in Word 2010

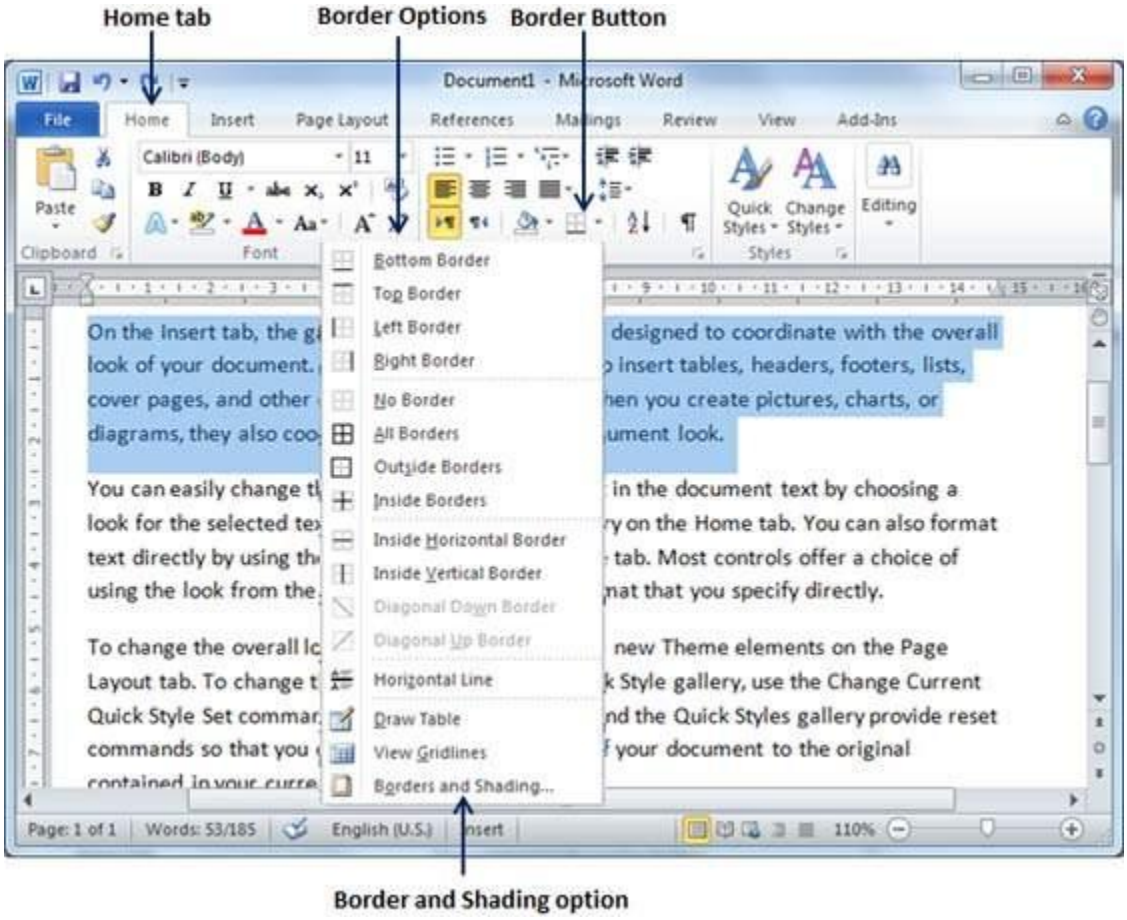
Microsoft Word allows you to place a border on any or all of the four sides of selected text, paragraphs, and pages. You can also add different shades to the space occupied by the selected text, paragraphs, and pages. This chapter will teach you how to add any of the borders (left, right, top or bottom)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

Add Borders to Text

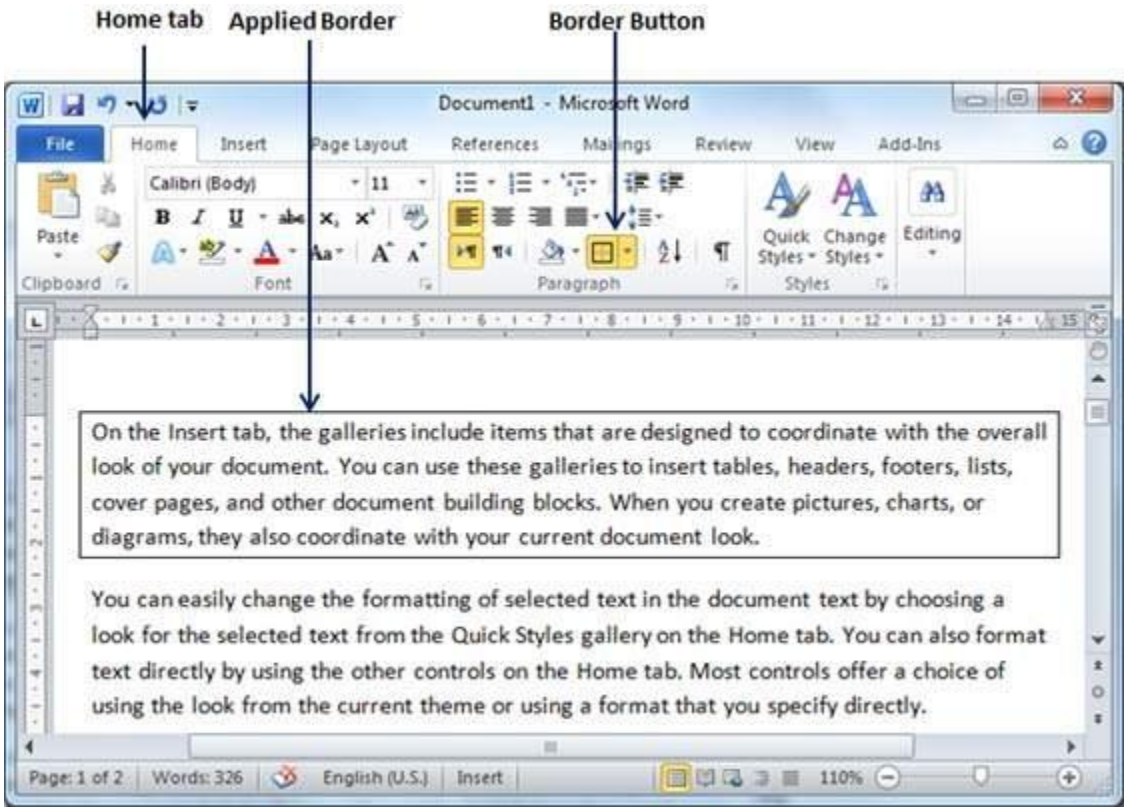
Following are the simple steps to add border to any text or paragraph.

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.



Step 3 – Try to add different borders like left, right top or bottom by selecting different options from the border options.



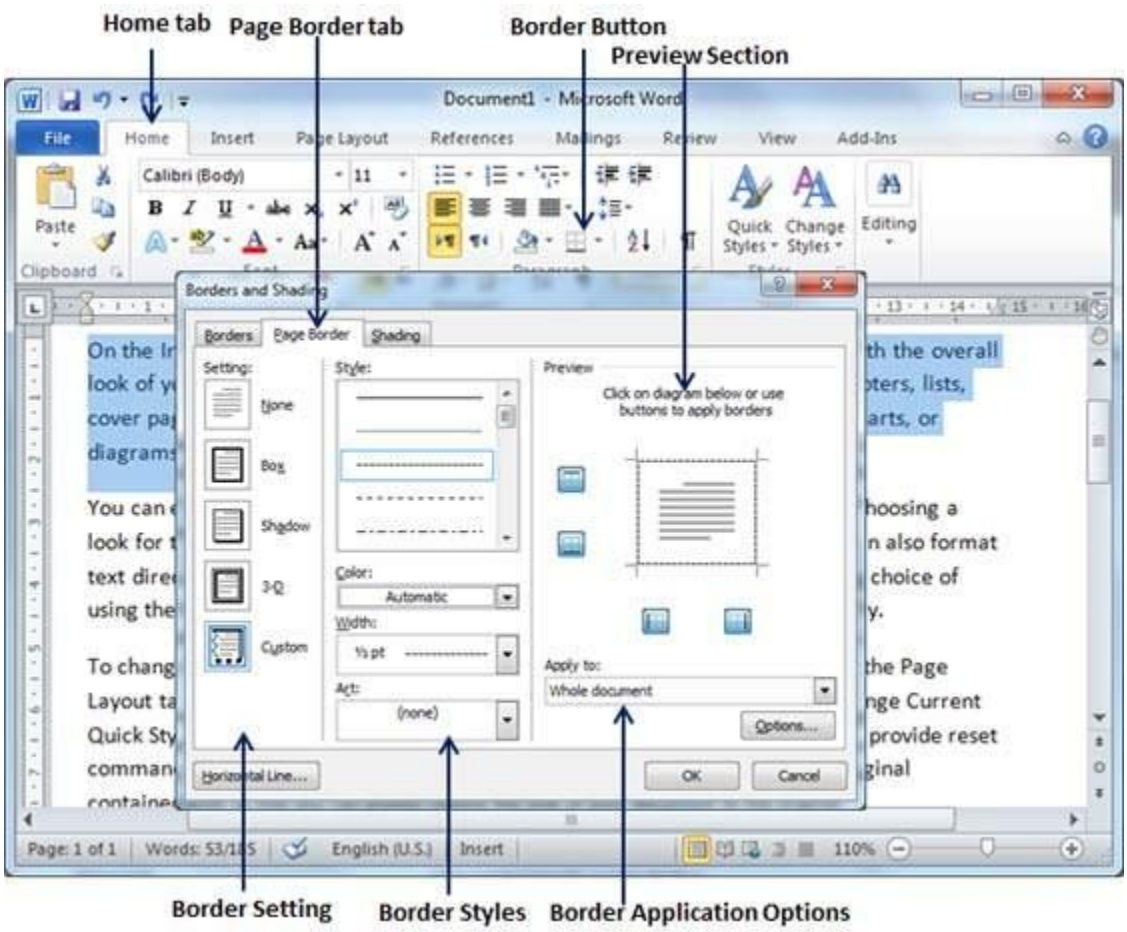
Step 4 – To delete the existing border, simply select the **No Border** option from the border options.

Note – You can add a horizontal line by selecting the **Horizontal Line** option from the border options. Otherwise type --- (three hyphens) and press **ENTER**. A single, light horizontal line will be created between the left and the right margins.

Add Borders to Page

You can add borders of your choice to word pages by following the steps given below.

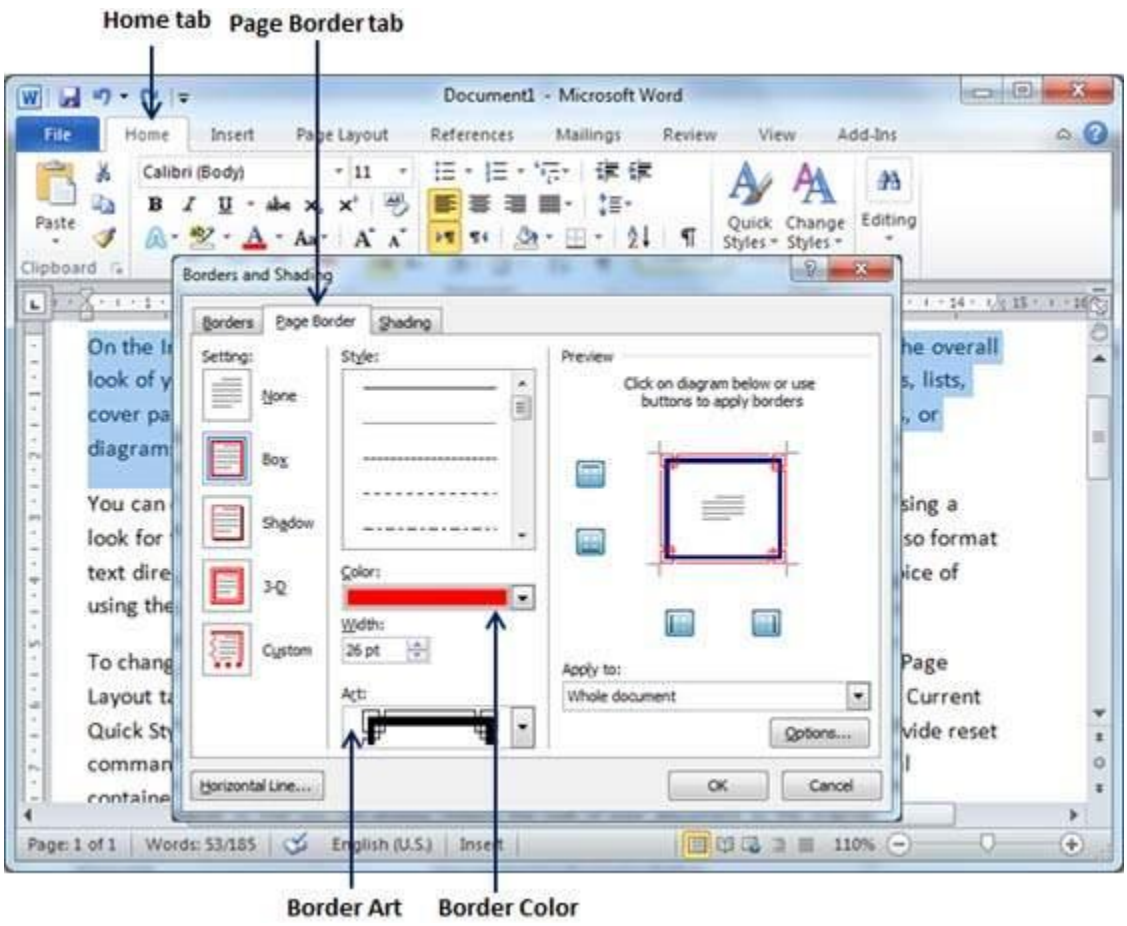
Step 1 – Click the **Border Button** to display a list of options to put a border. Select the **Border and Shading** option available at the bottom of the list of options as shown in the above screenshot. This will display a **Border and Shading** dialog box. This dialog box can be used to set borders and shading around a selected text or page borders.



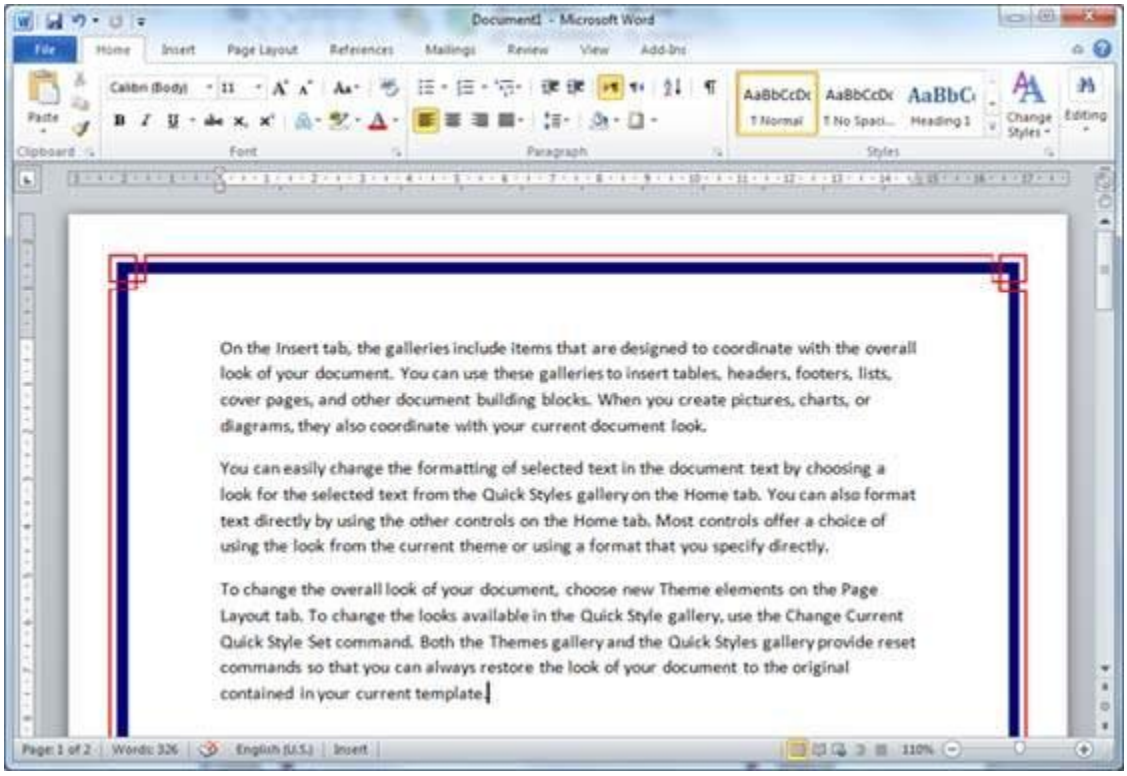
Step 2 – Click the **Page Border** tab which will display a list of border settings, styles and options whether this border should be applied to the whole document or just one page or the first page.

Step 3 – You can use the **Preview** section to disable or enable left, right, top or bottom borders of the page. Follow the instruction given in the preview section itself.

Step 4 – You can customize your border by setting its color, width by using different art available under the style section.



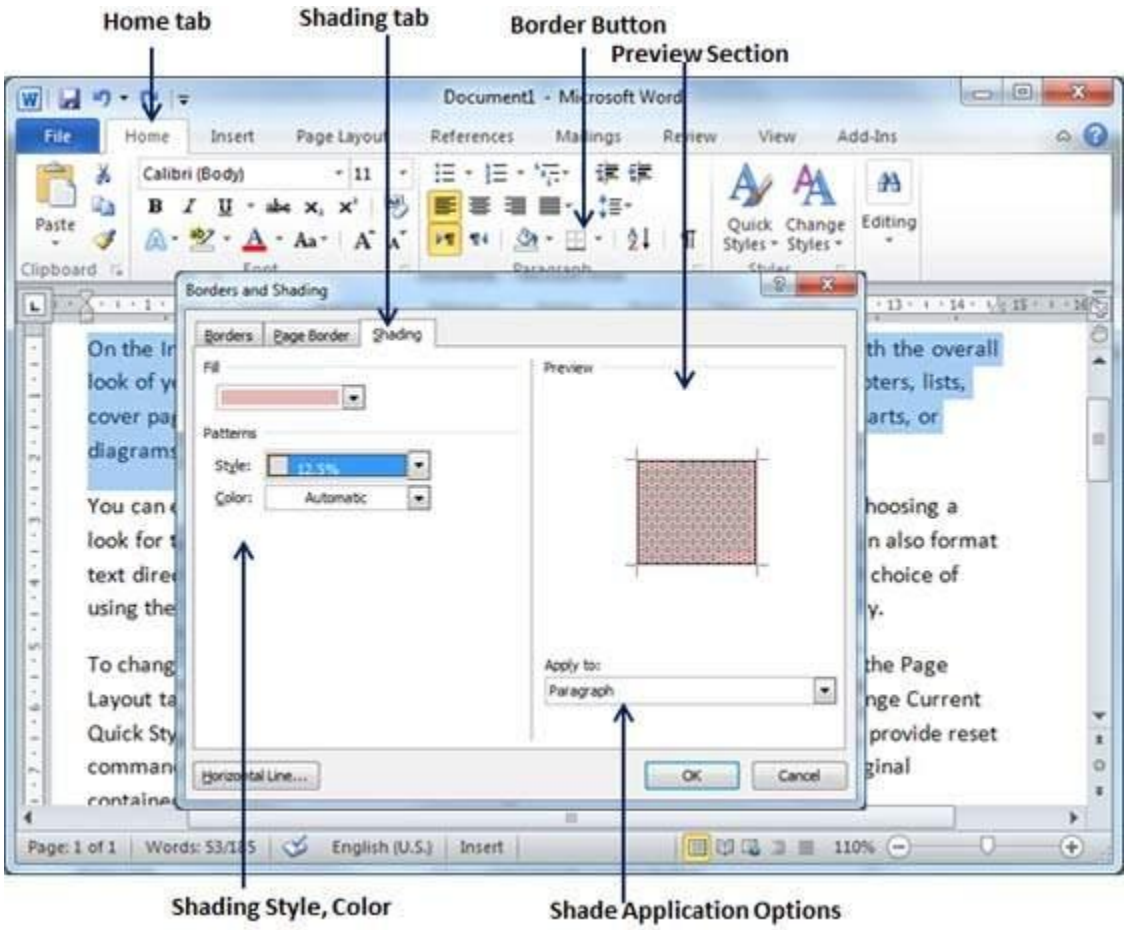
You can have similar or even better borders as given below.



Add Shades to Text

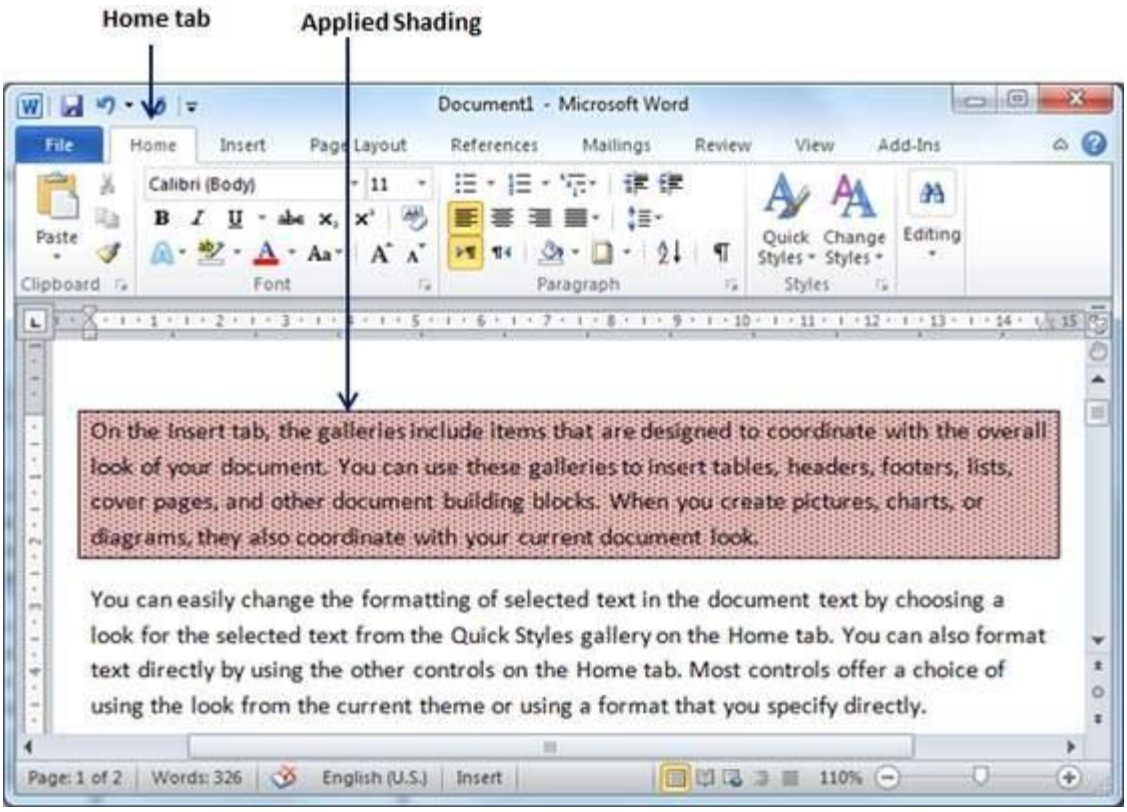
The following steps will help you understand how to add shades on a selected portion of text or a paragraph(s).

Step 1 – Click the **Border Button** to display a list of options to put a border. Select the **Border and Shading** option available at the bottom of the list of options as shown in the above screenshot. This will display a **Border and Shading** dialog box. This dialog box can be used to set borders and shading around a selected portion of text or page borders.



Step 2 – Click the **Shading** tab; this tab will display the options to select **fill, color** and **style** and whether this border should be applied to a paragraph or a portion of text.

Step 3 – You can use the **Preview** section to have an idea about the expected result. Once you are done, click the **OK** button to apply the result.



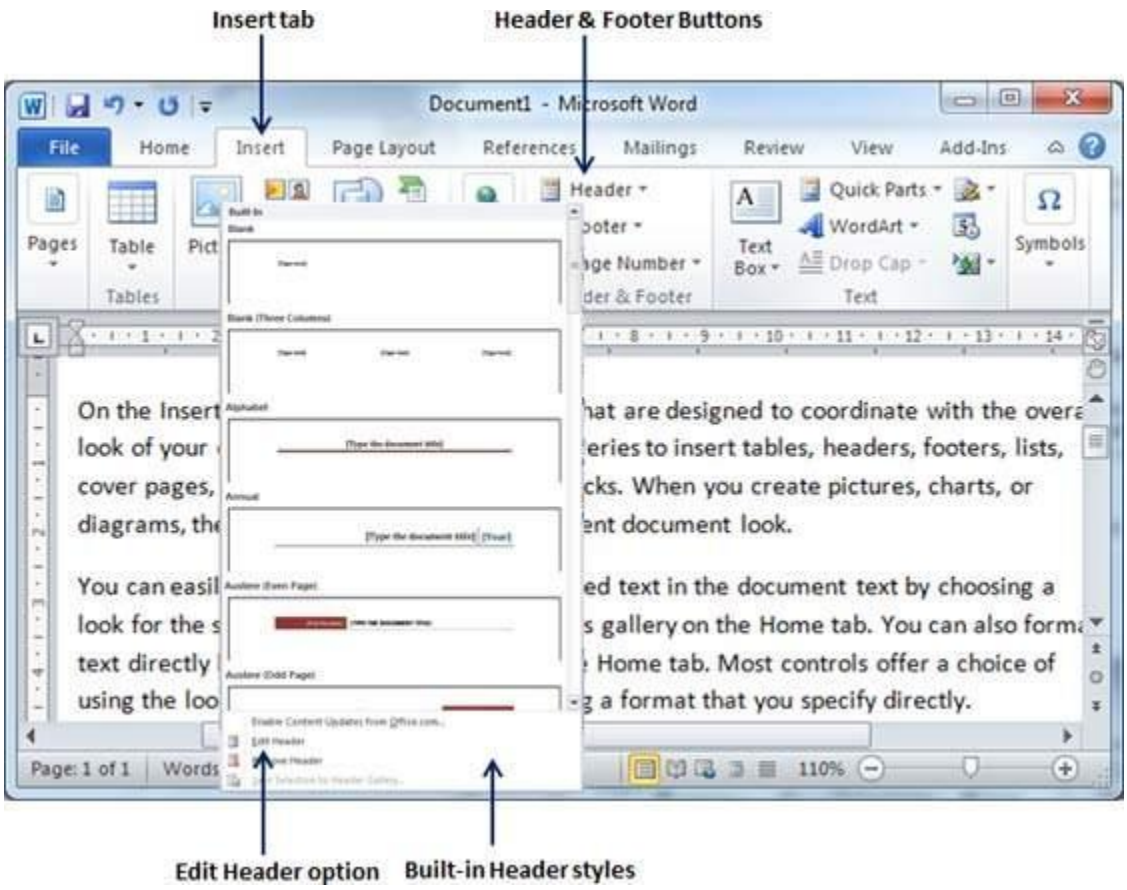
Header and Footer in Word 2010

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.

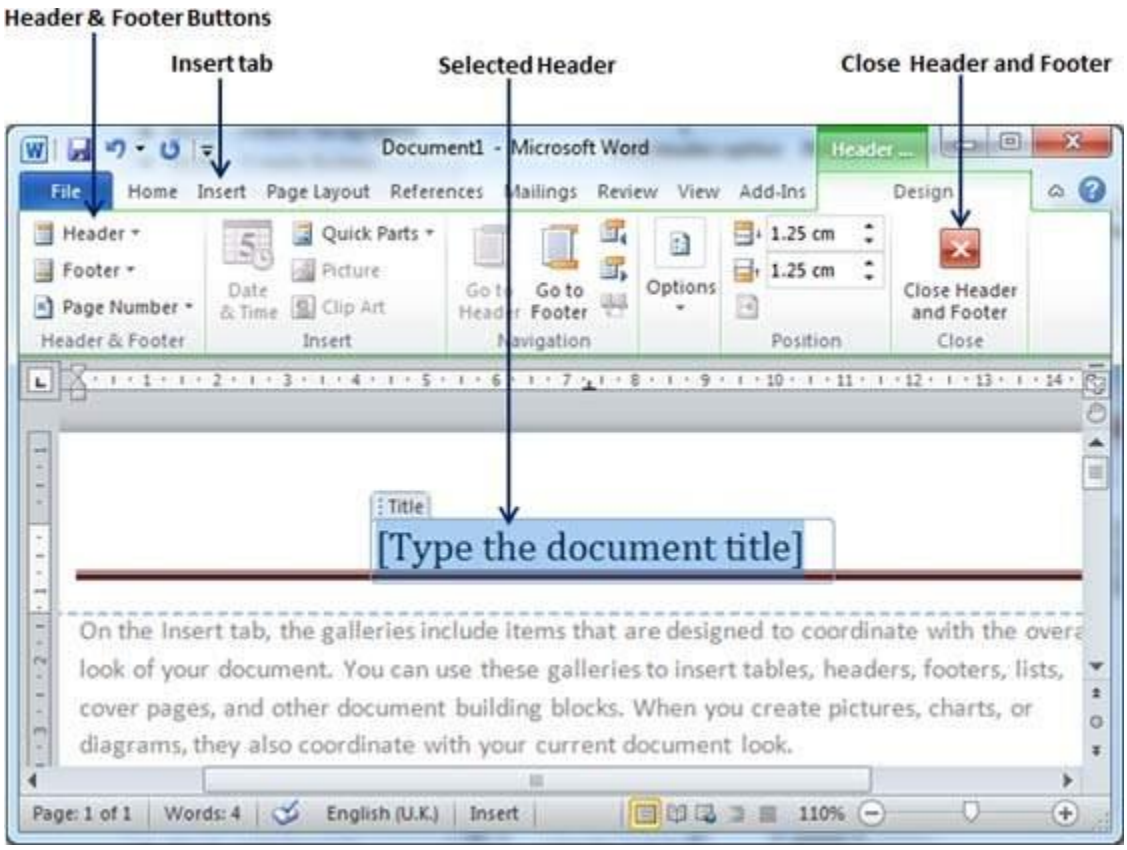
Add Header and Footer

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

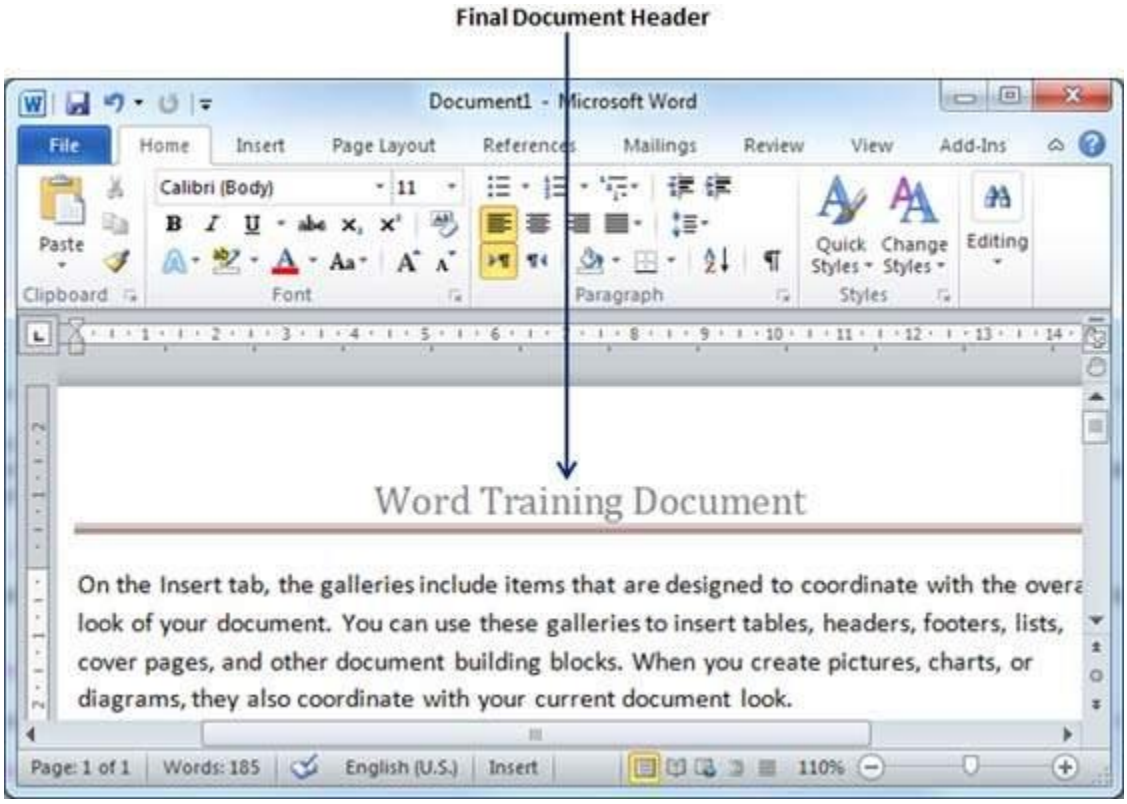
Step 1 – Click the **Insert tab**, and click either the **Header button** or the **Footer button** that which needs to be added first. Assume you are going to add Header; when you click the **Header button** it will display a list of built-in Headers from where you can choose any of the headers by simply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



Step 2 – Once you select any of the headers, it will be applied to the document in editable mode and the text in your document will appear dimmed, **Header and Footer buttons** appear on the Ribbon and a **Close Header and Footer** button will also appear at the top-right corner.



Step 3 – Finally, you can type your information whatever you want to have in your document header and once you are done, click **Close Header and Footer** to come out of the header insertion mode. You will see the final result as follows.

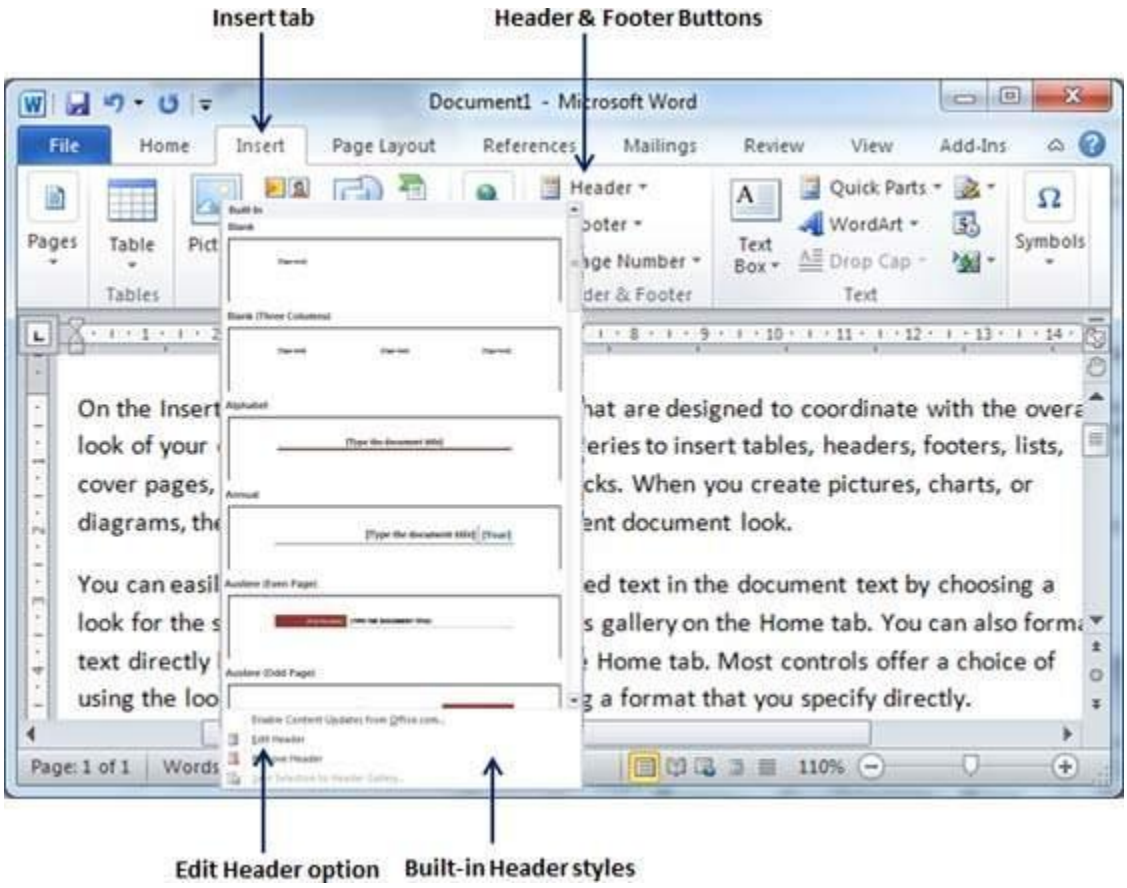


You can follow a similar procedure to add footer in your document.

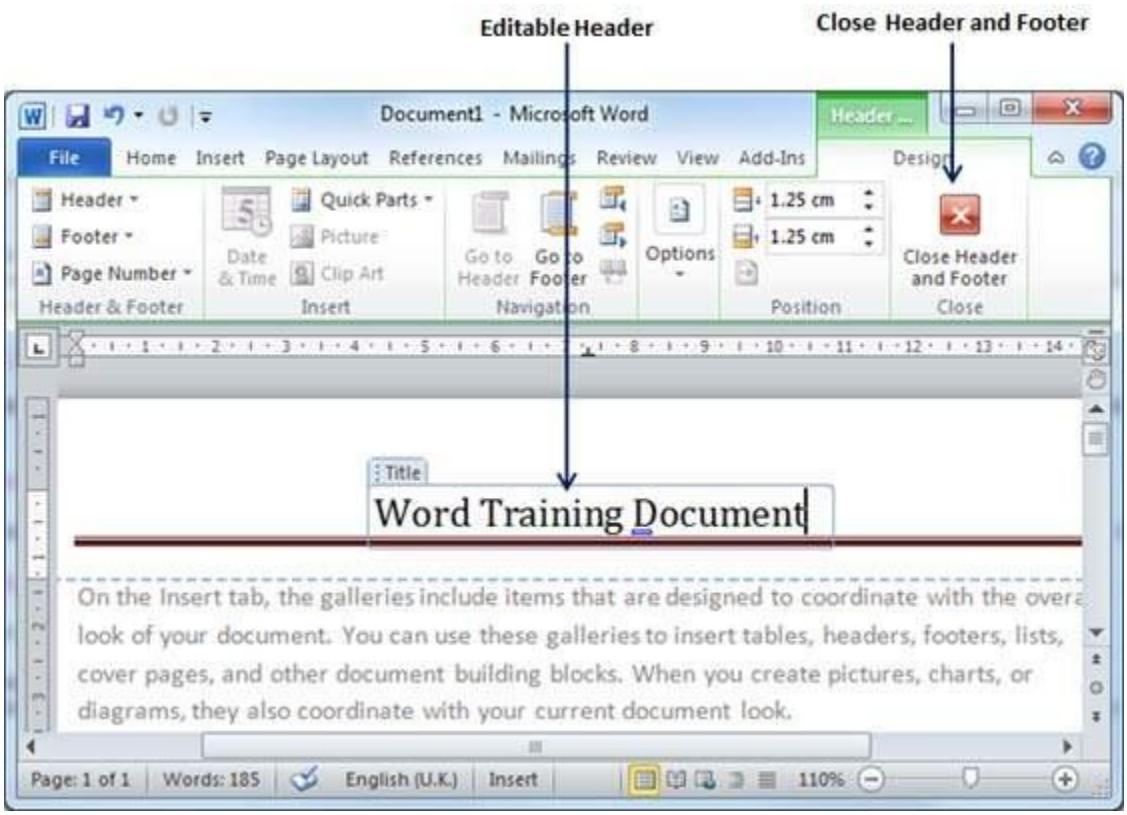
Edit Header and Footer

The following steps will help you understand how to edit the existing header or footer of your document.

Step 1 – Click the **Insert tab**, and click either the **Header button** or **Footer button** or whatever you want to edit. Assume you are going to edit the Header, so when you click the **Header button** it will display a list of options including the **Edit Header** option.



Step 2 – Click on the Edit Header option and Word will display the editable header as shown in the following screenshot.



Step 3 – Now you can edit your document header and once you are done, click **Close Header and Footer** to come out of the edit header mode.

You can follow a similar procedure to edit the footer in your document.

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UNIT-4

MS Powerpoint

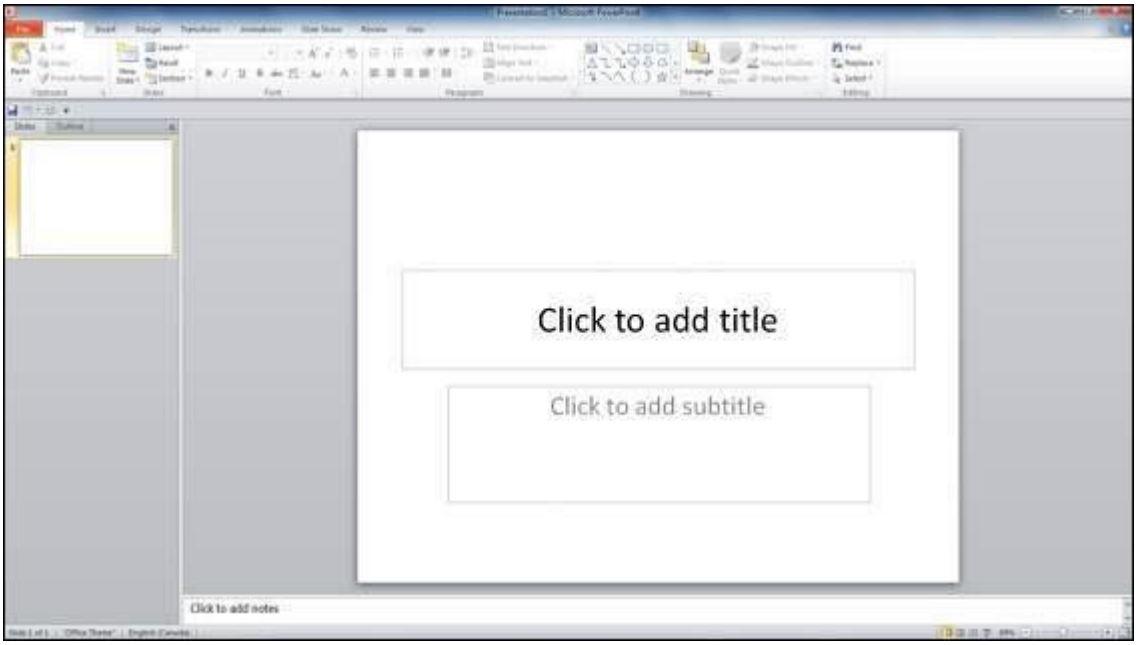
Step 1 – Click the **Start** button.

Step 2 – Click **All Programs** option from the menu.

Step 3 – Search for **Microsoft Office** from the sub menu and click it.

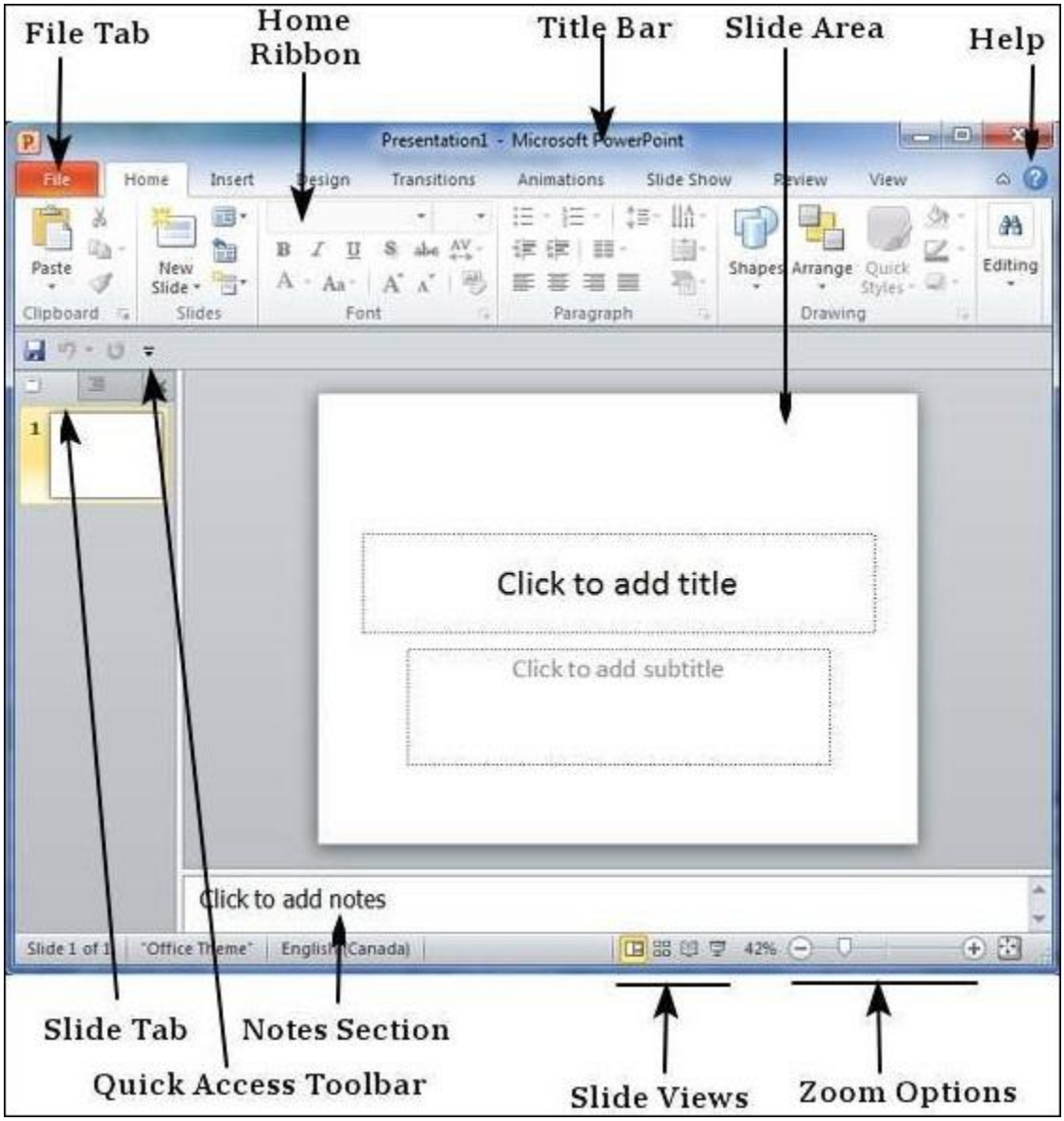
Step 4 – Search for **Microsoft PowerPoint 2010** from the submenu and click it.

This will launch the Microsoft PowerPoint 2010 application and you will see the following presentation window.



The following screenshot shows the various areas in a standard PowerPoint file.

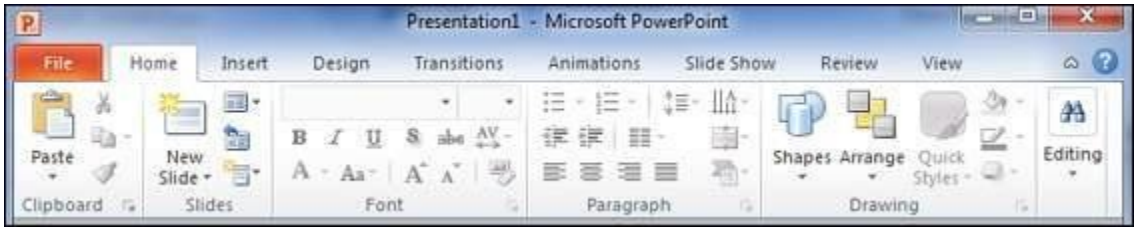
It is important to familiarize yourself with these areas as it makes learning and using PowerPoint easier.



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**, **Page Layout** 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

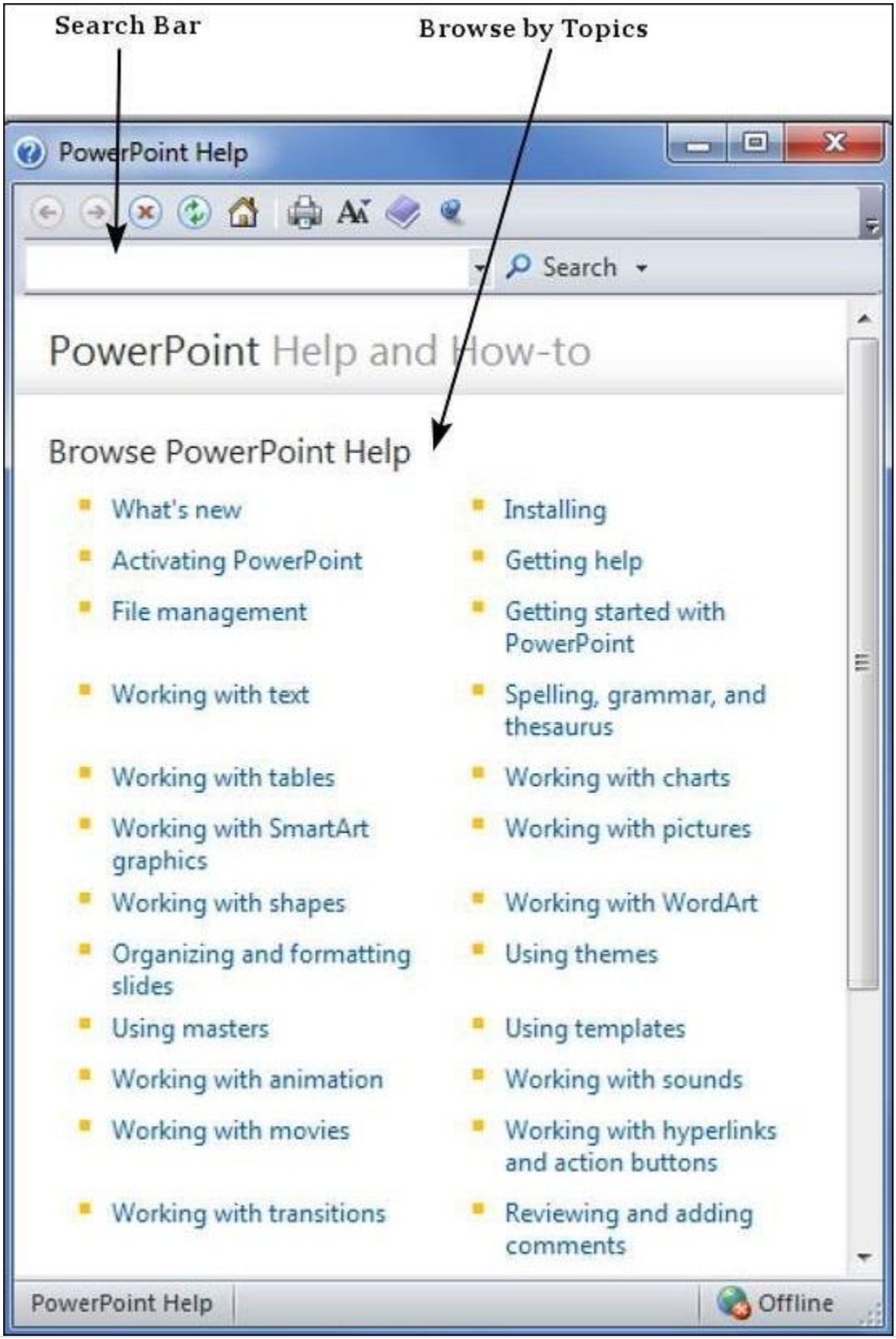
This is the top section of the window. It shows the name of the file followed by the name of the program which in this case is Microsoft PowerPoint.

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.

Help

The Help Icon can be used to get PowerPoint related help anytime you need. Clicking on the "**?**" opens the PowerPoint Help window where you have a list of common topics to browse from. You can also search for specific topics from the search bar at the top.


Search Bar
Browse by Topics
PowerPoint Help
Search
PowerPoint Help and How-to
Browse PowerPoint Help
What's new
Installing
Activating PowerPoint
Getting help
File management
Getting started with PowerPoint
Working with text
Spelling, grammar, and thesaurus
Working with tables
Working with charts
Working with SmartArt graphics
Working with pictures
Working with shapes
Working with WordArt
Organizing and formatting slides
Using themes
Using masters
Using templates
Working with animation
Working with sounds
Working with movies
Working with hyperlinks and action buttons
Working with transitions
Reviewing and adding comments
PowerPoint Help
Offline

Zoom Options

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 Views

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.

Quick Access Toolbar

The Quick Access Toolbar is located just under the ribbon. This toolbar offers a convenient place to group the most commonly used commands in PowerPoint. You can customize this toolbar to suit your needs.

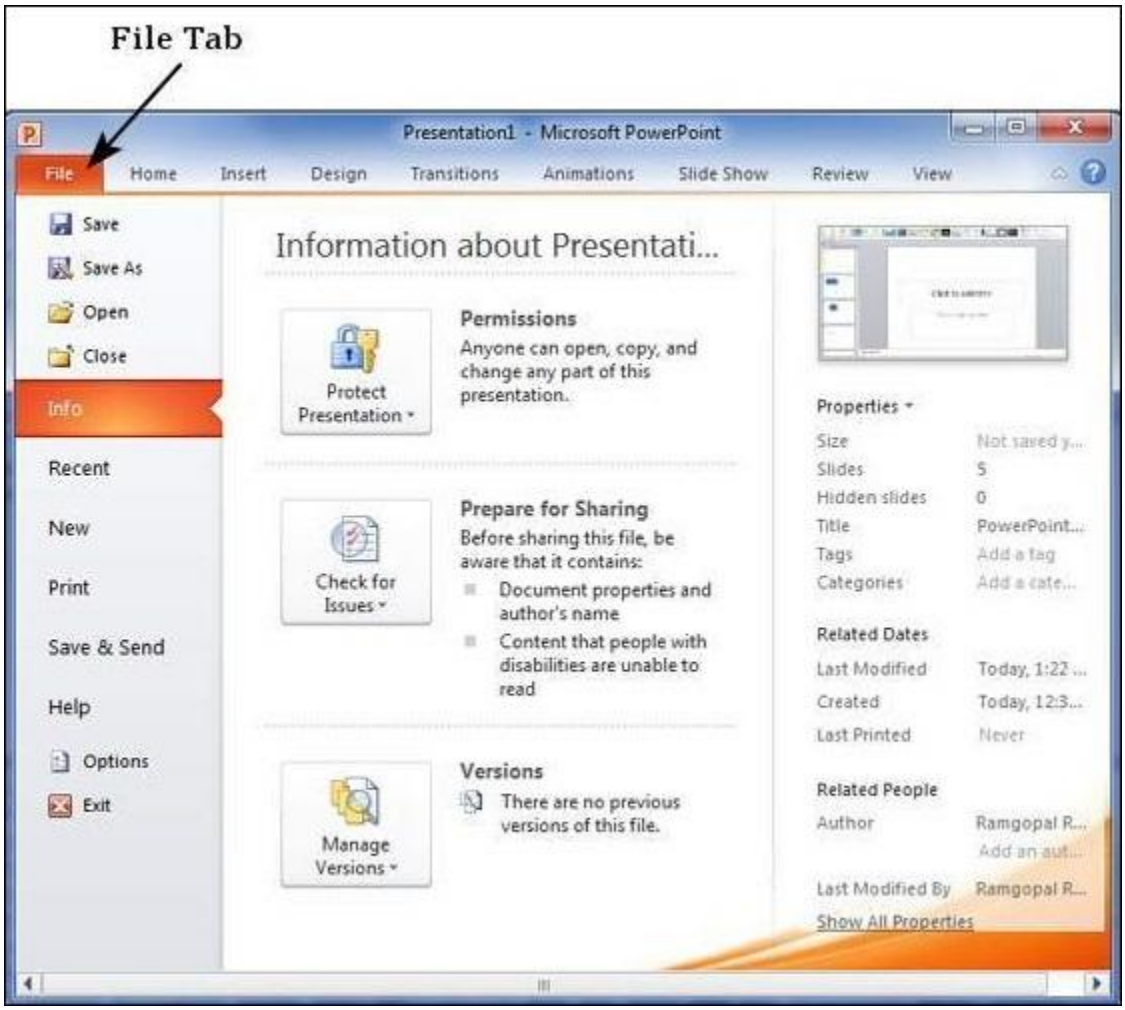
Slide Tab

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.

n Office 2010, Microsoft replaced the traditional file menu with the new **Backstage** view. This view not only offers all the menu items under the file menu, but additional details which makes management of your files a lot easier.

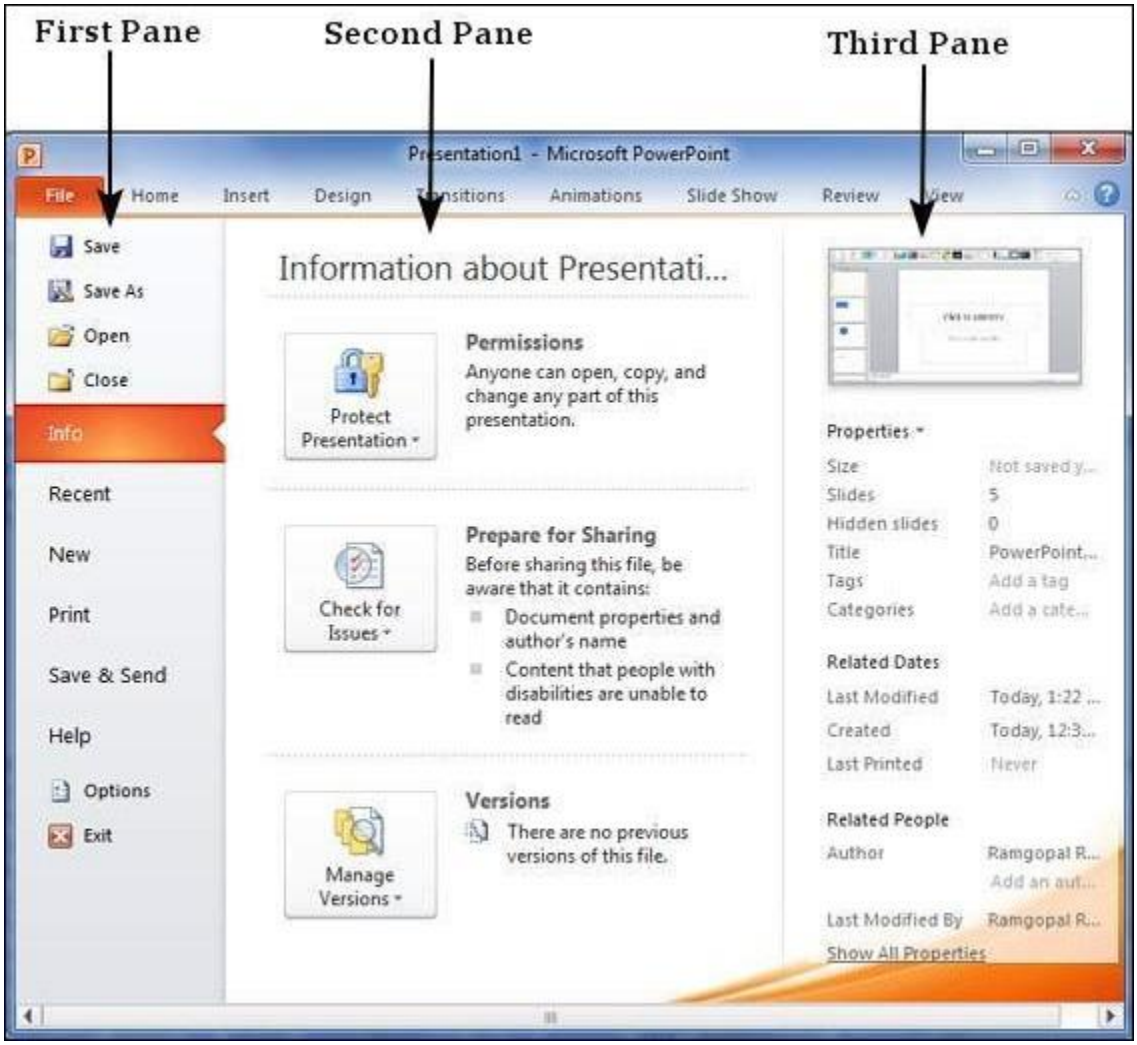
Accessing Backstage View

You can access the Backstage view simply by clicking on the File tab. You can exit this view by clicking on any tab (including the File tab again). You can also press the '**Esc**' button on the keyboard.



Organization of Backstage View

The backstage view has three sections or panes.



- **First Pane** – This is the commands pane which consists of all the commands you would typically find in the file menu of older versions. You also have the **Options** menu which lets you edit the options on the program like customizing the ribbon.

Various commands under the first pane are described in the table below –

S.No	Command & Description
1	**Save** This allows you to save a new file or an existing file in standard format. If you are working on a previously saved file this will save the new changes in the same file format. If you are working on a

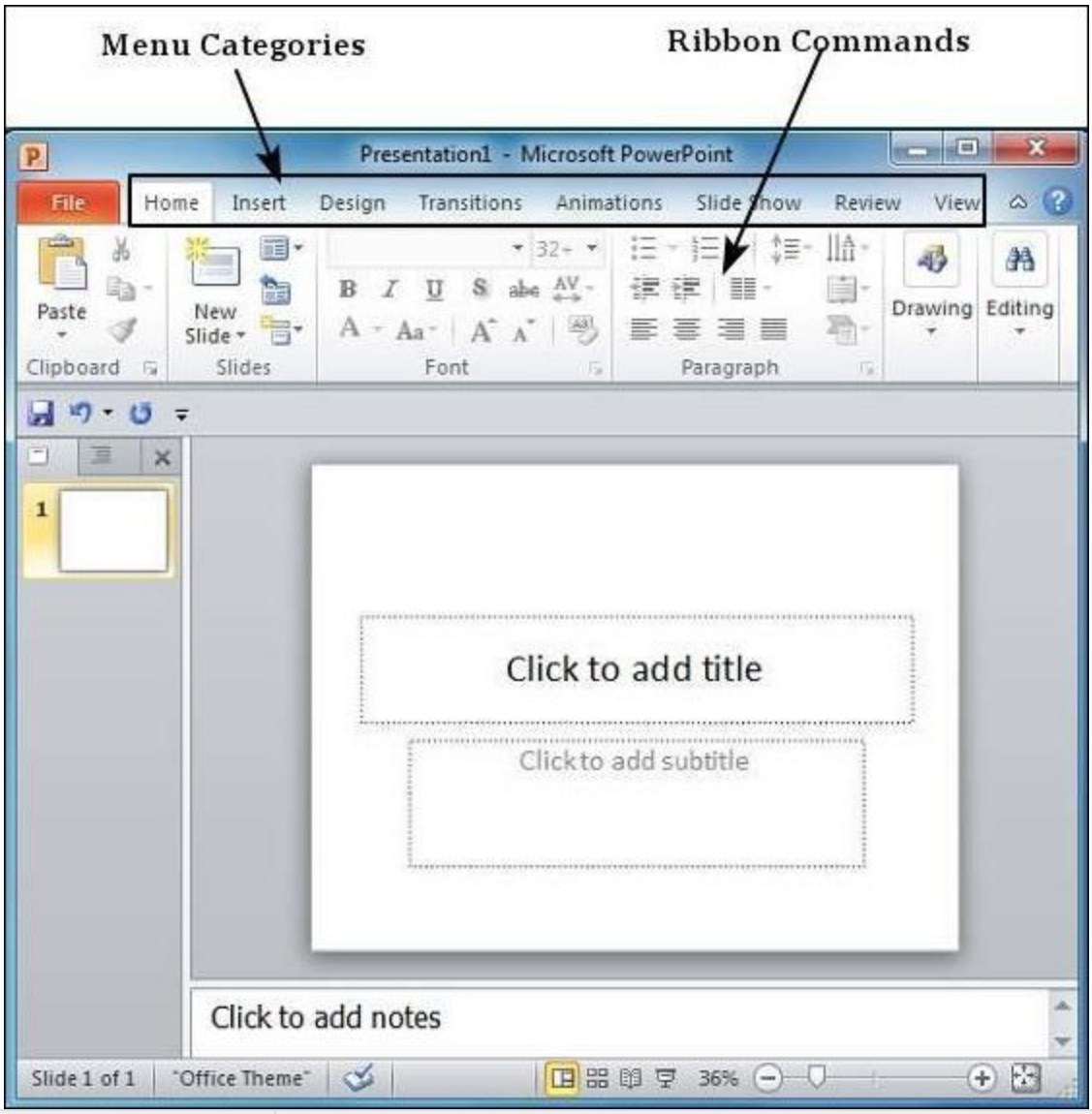
	new file, this command would be similar to the Save As command.
2	**Save As** Allows you to specify the file name and the file type before saving the file.
3	**Open** Allows you to open new PowerPoint files.
4	**Close** Allows you to close an existing file.
5	**Info** Displays the information about the current file.
6	**Recent** Lists series of recently viewed or edited PowerPoint files.
7	**New** Allows you to create a new file using blank or pre-defined templates.
8	**Print** Allows you to select the printer settings and print the presentation.
9	**Save & Send** Allows you to share your presentation with larger audience via emails, web, cloud services, etc.

10	**Help** Provides access to PowerPoint Help.
11	**Options** Allows you to set various options related to PowerPoint program.
12	**Exit** Closes the presentation and exits the program.

- **Second Pane** – This is the subcommands pane. This will list all the commands related to the main command you choose in the first pane. For example, if you select Print in the first pane, you get to choose the printer and adjust the print settings in the second pane.
- **Third Pane** – This is the preview or file information page. Depending on the command and the subcommand you select, this pane will either display the properties of the file or give you a preview of the file.

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.



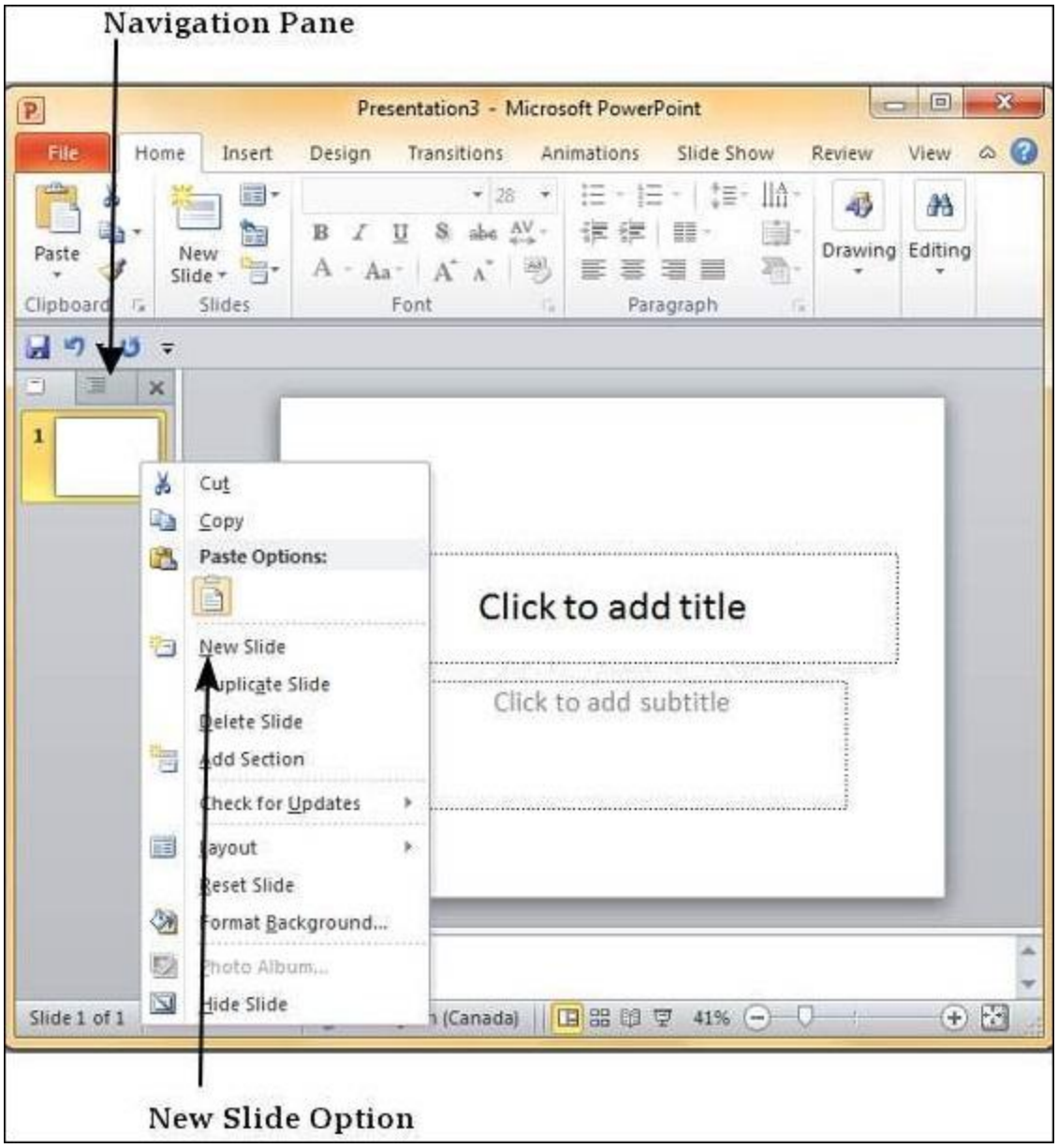
Menu Category	Ribbon Commands
Home	Clipboard functions, manipulating slides, fonts, paragraph settings, drawing objects and editing functions.
Insert	Insert tables, pictures, images, shapes, charts, special texts, multimedia and symbols.
Design	Slide setup, slide orientation, presentation themes and

	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.

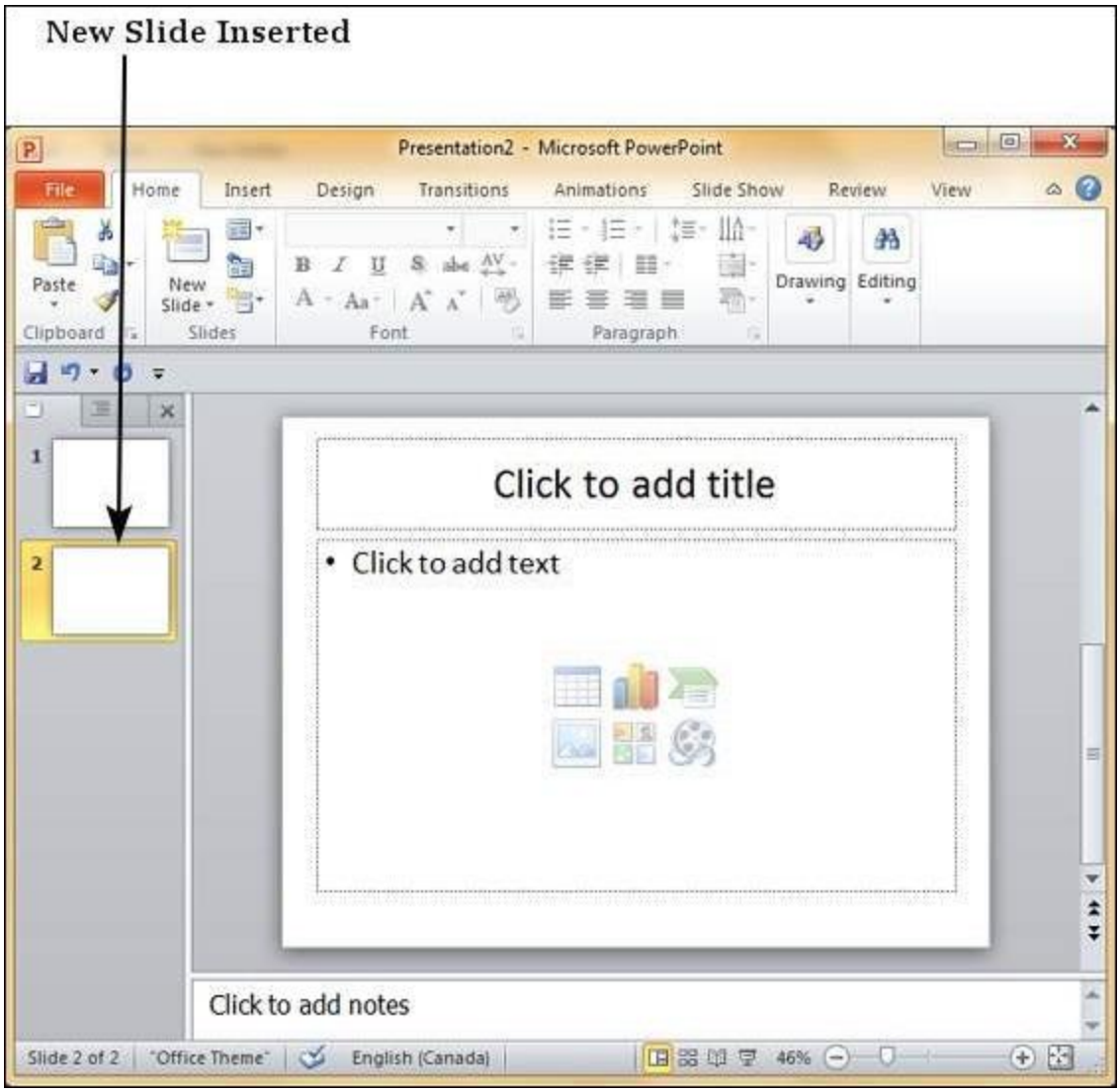
Besides these depending on the objects selected in the slide, there are other menu tabs that get enabled.

Add New Slides in Powerpoint

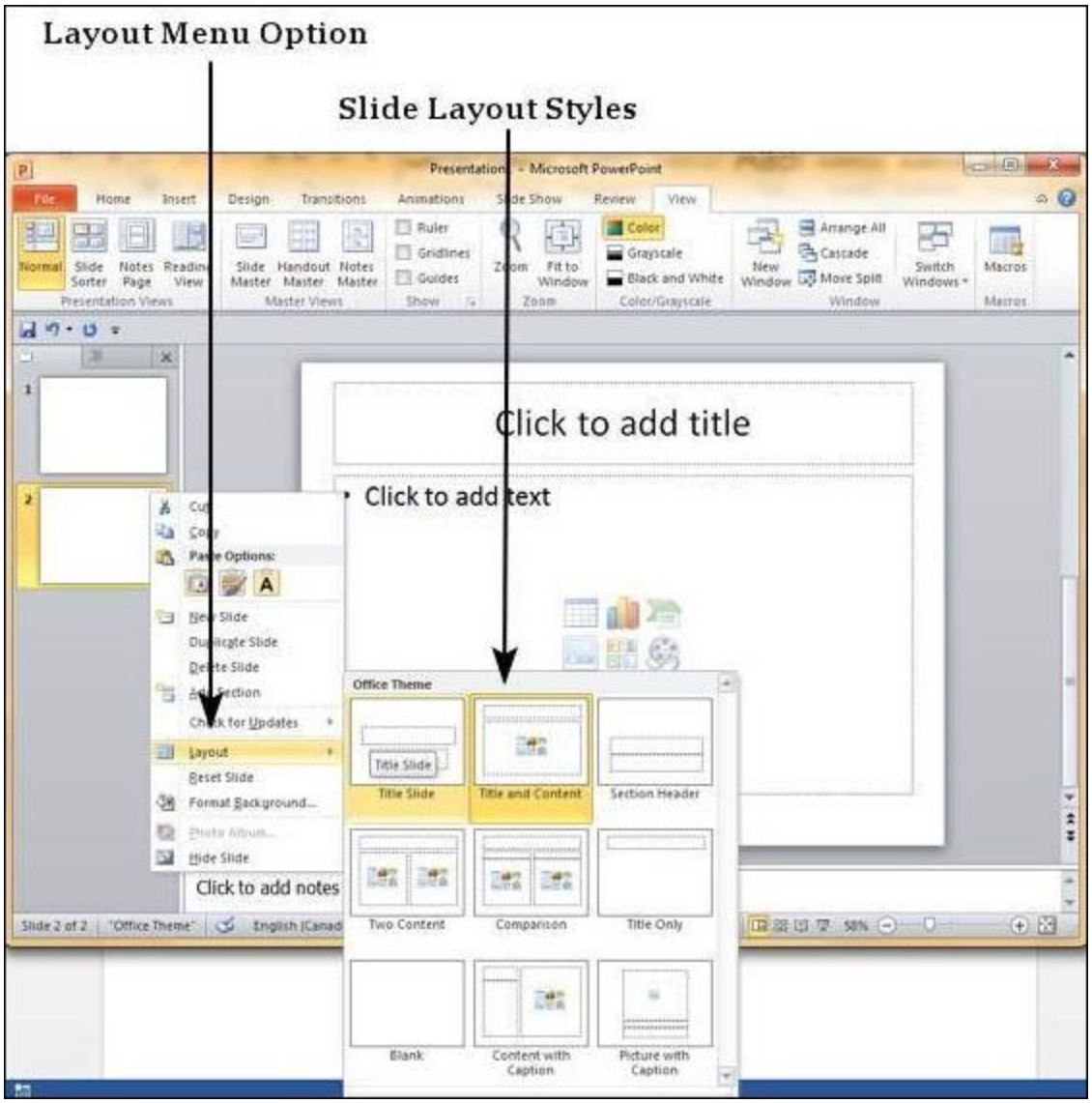
Step 1 – Right-click in the **Navigation Pane** under any existing slide and click on the **New Slide** option.



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



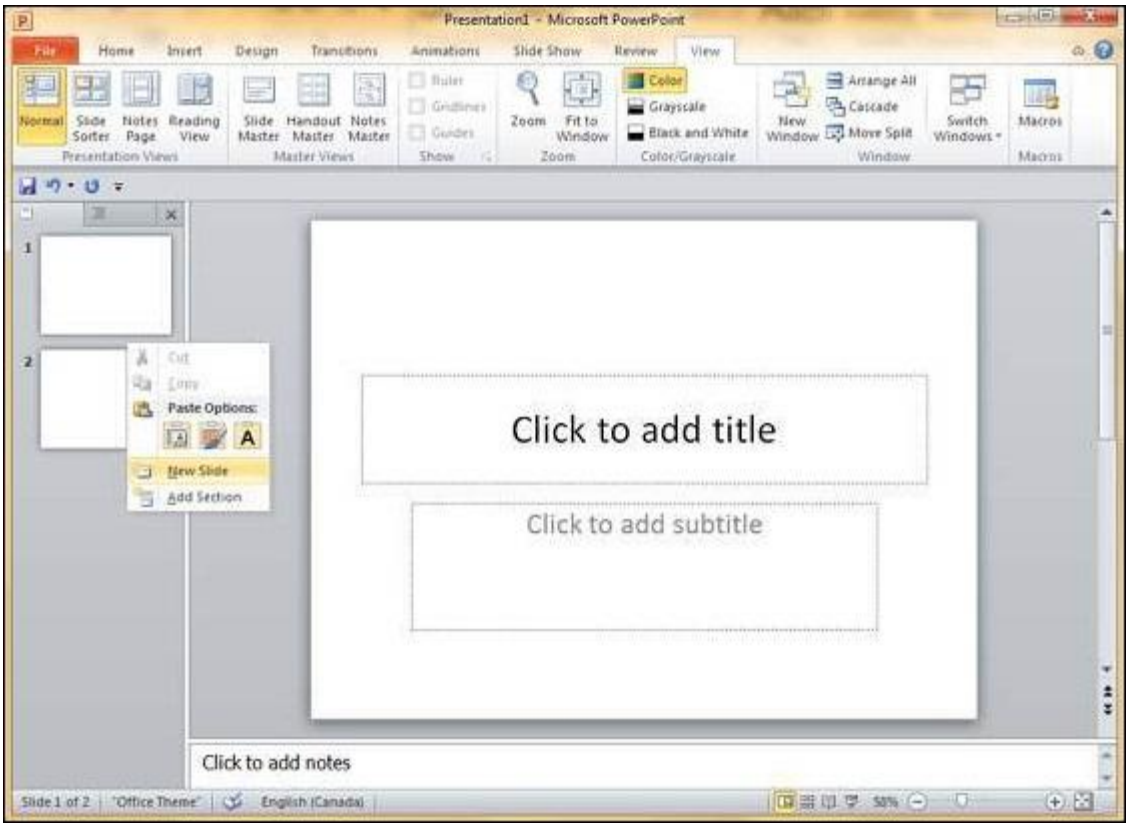
Step 3 – To change the slide layout, right-click on the newly inserted slide and go to the **Layout** option where you can choose from the existing layout styles available to you.



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.



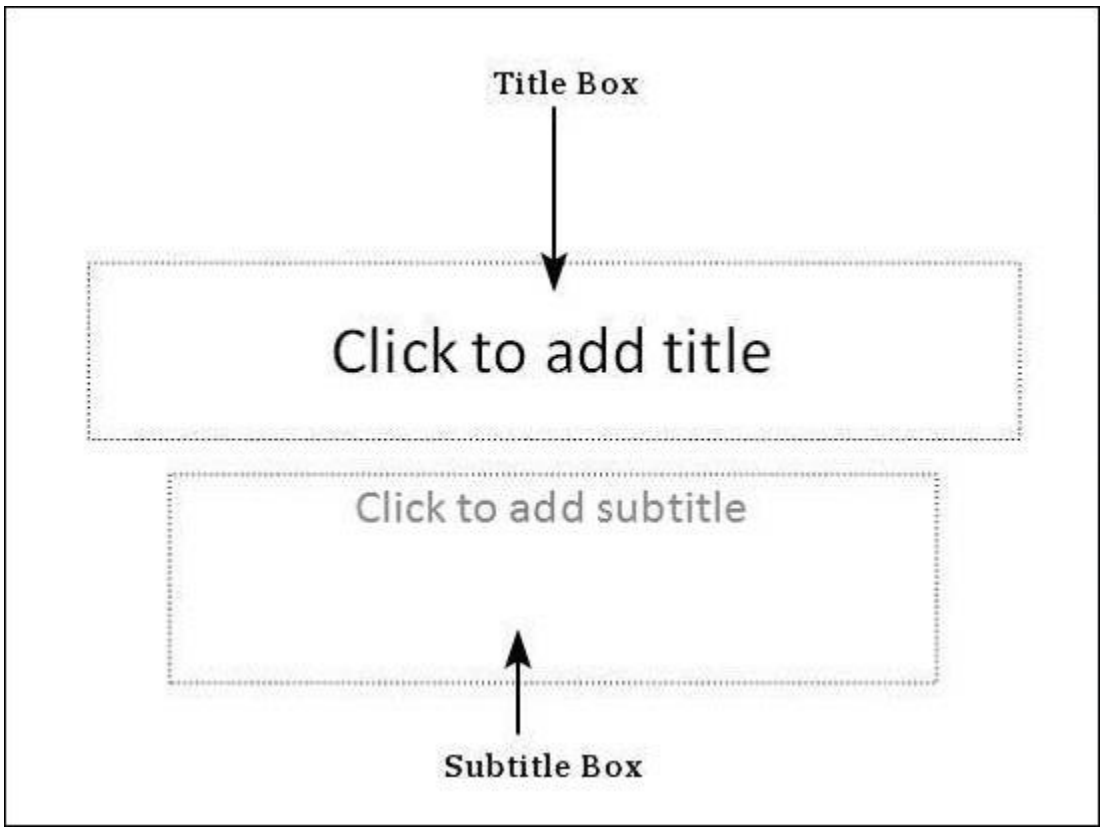
Adding Text in Boxes in Powerpoint

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**".

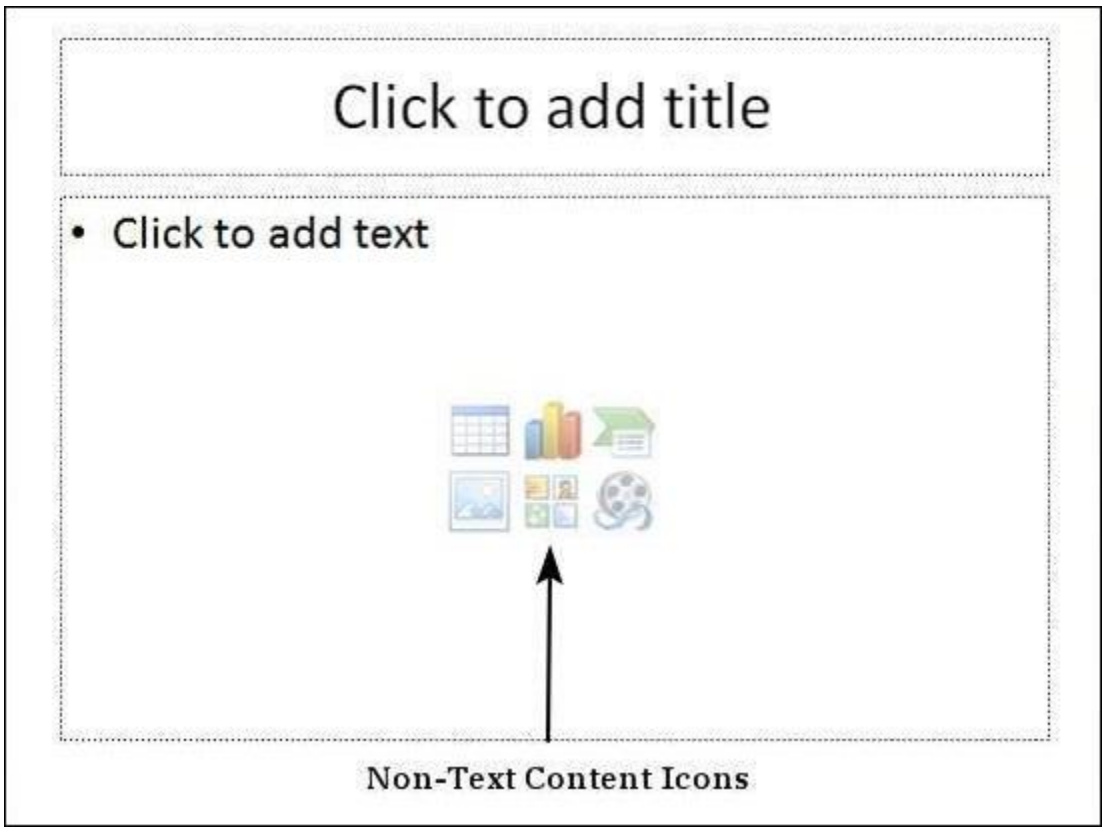


Subtitle Box

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.



Text Only Box

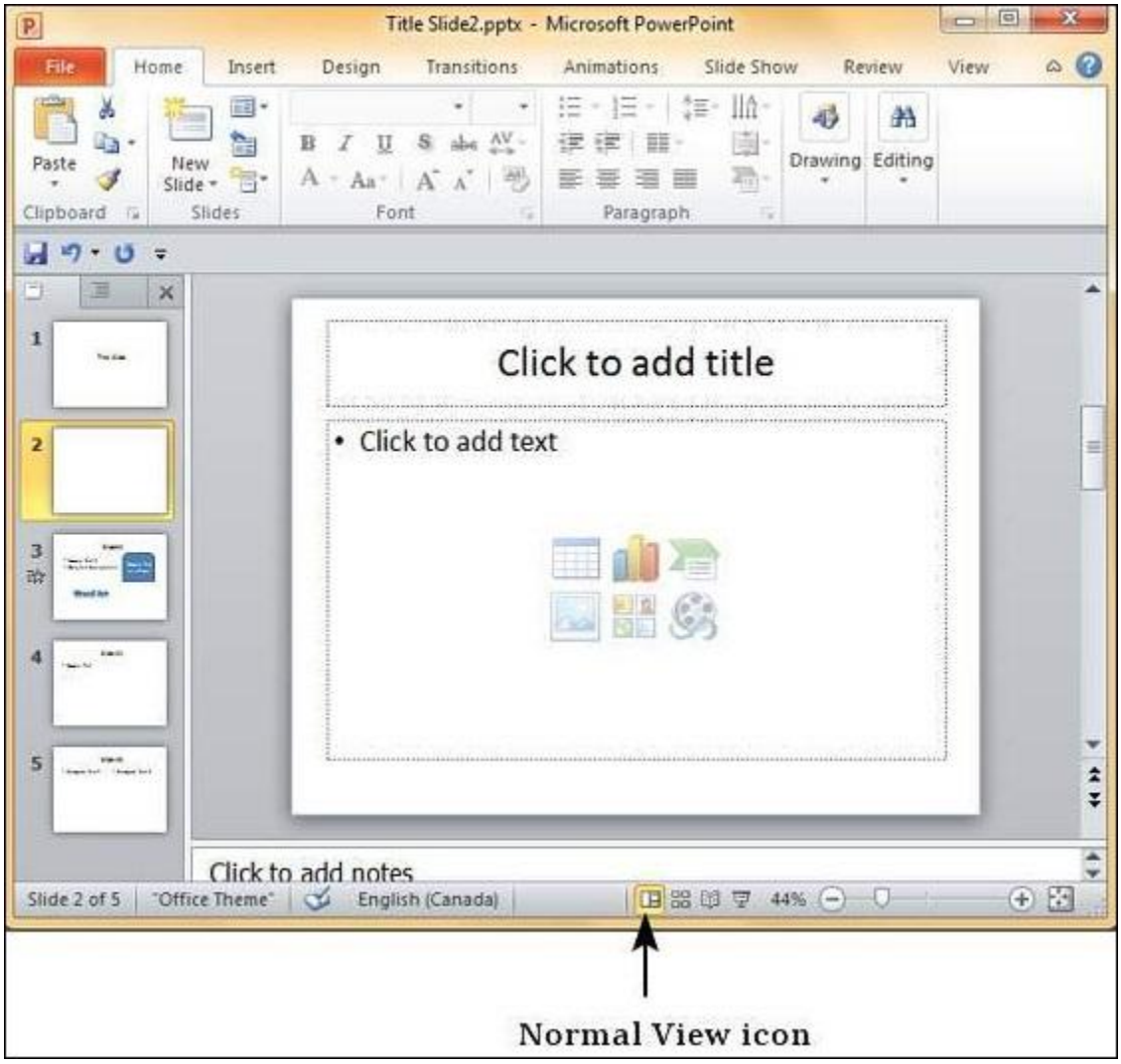
This is not a default content box available in PowerPoint, but you can create it using Slide Master, if required. This is also indicated by "**Click to add text**". The only difference between the **Text Only Box** and the **Content Box** is that the former only supports text in the content area.

Deleting Existing Slide in Powerpoint

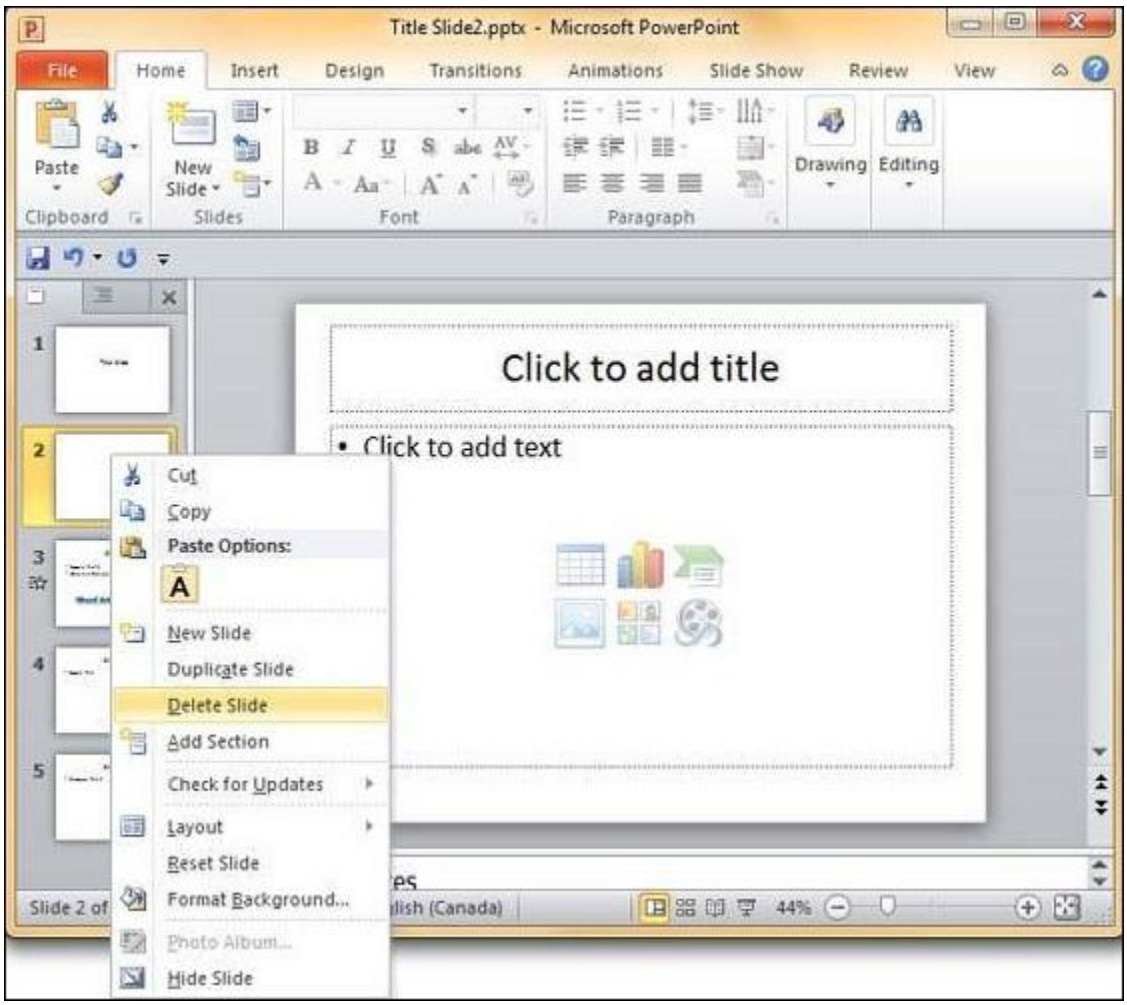
There are times while building a slide deck, you may need to delete some slides. This can be done easily from PowerPoint. You can delete the slides from the **Normal** view as well as the **Slide Sorter** view. In each view, you can delete the slides in two ways.

Deleting from Normal View

Step 1 – Go to the Normal view.



Step 2 – Right-click on the slide to be deleted and select the **Delete Slide** option.

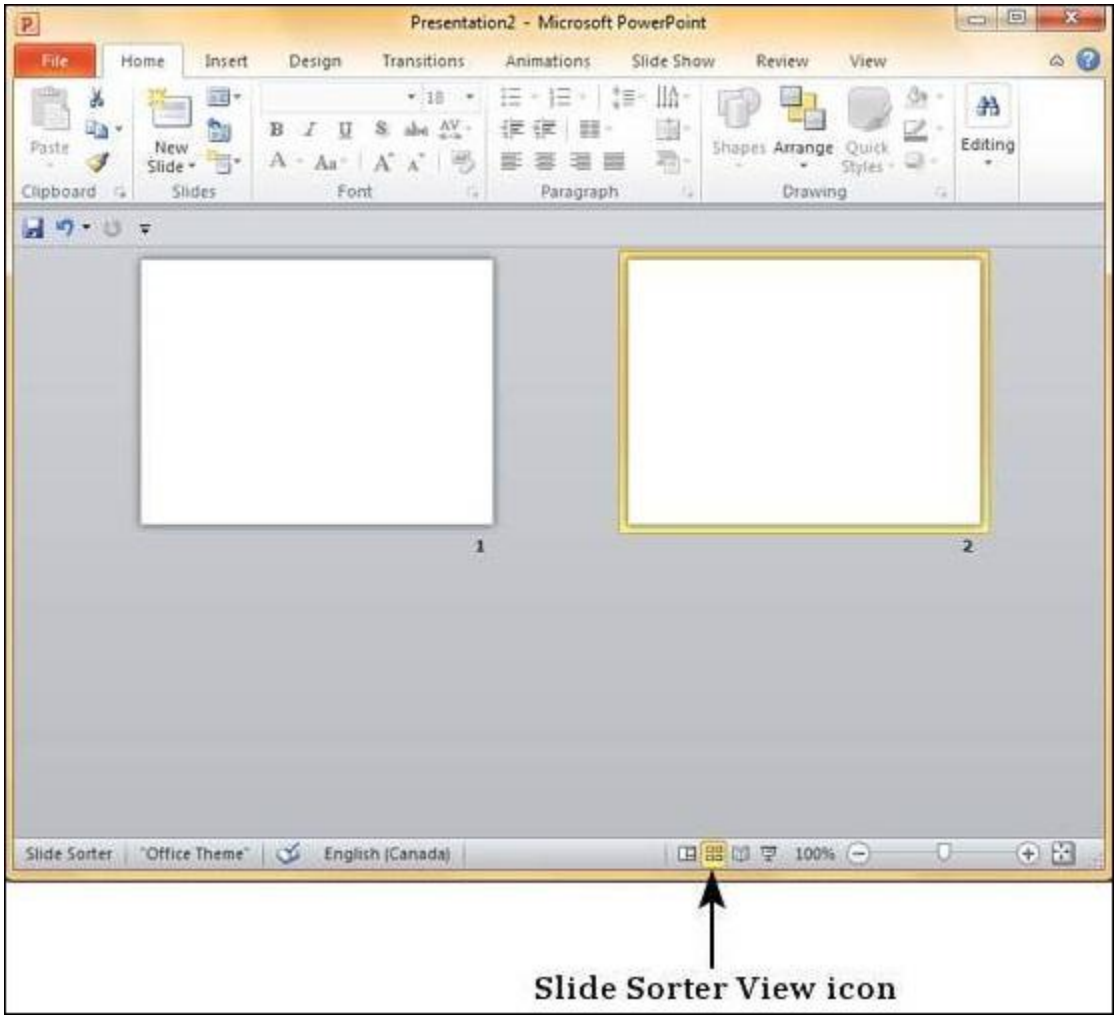


Alternately, you can select the slide and press the **Delete** button on your key board.

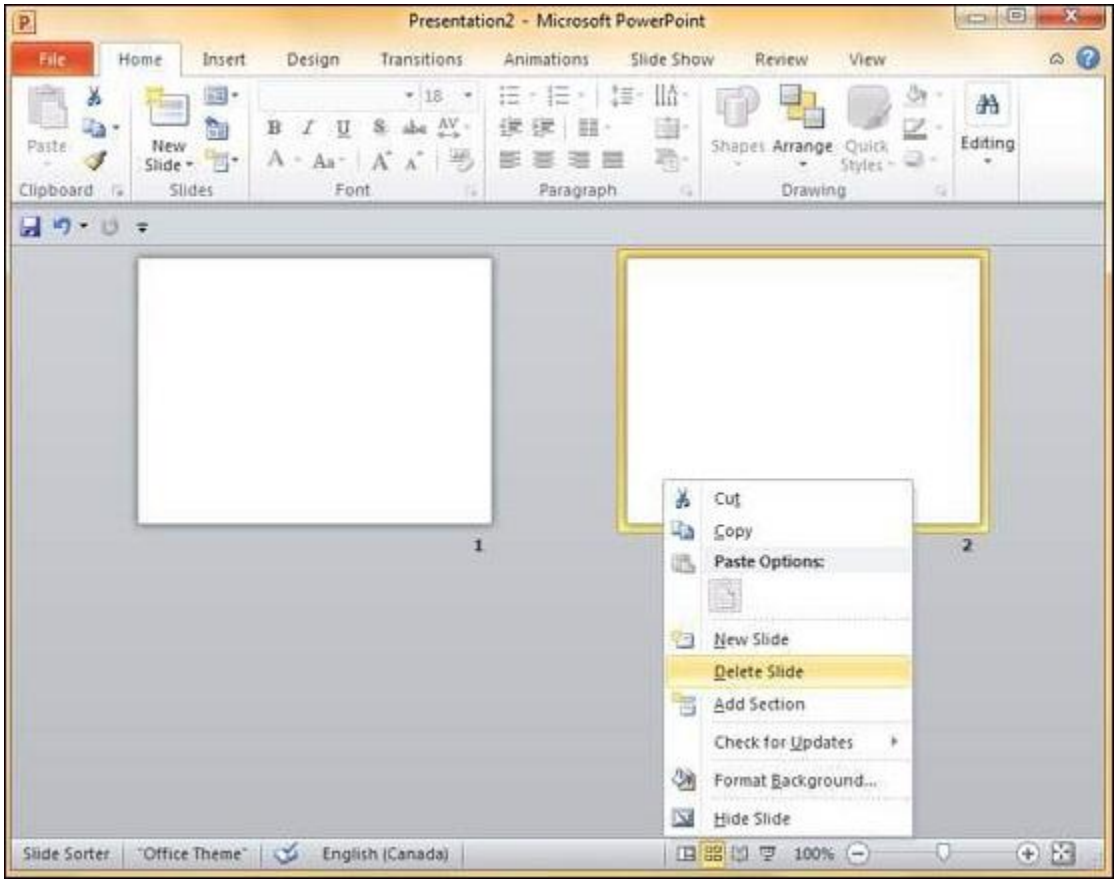
Deleting from Slide Sorter View

Let us now understand how to deleted slides from the Slide Sorter View.

Step 1 – Go to the Slide Sorter view.



Step 2 – Right-click on the slide to be deleted and select the **Delete Slide** option.



Alternately, you can select the slide and press the **Delete** button on your key board.

Rearranging Slides in Powerpoint

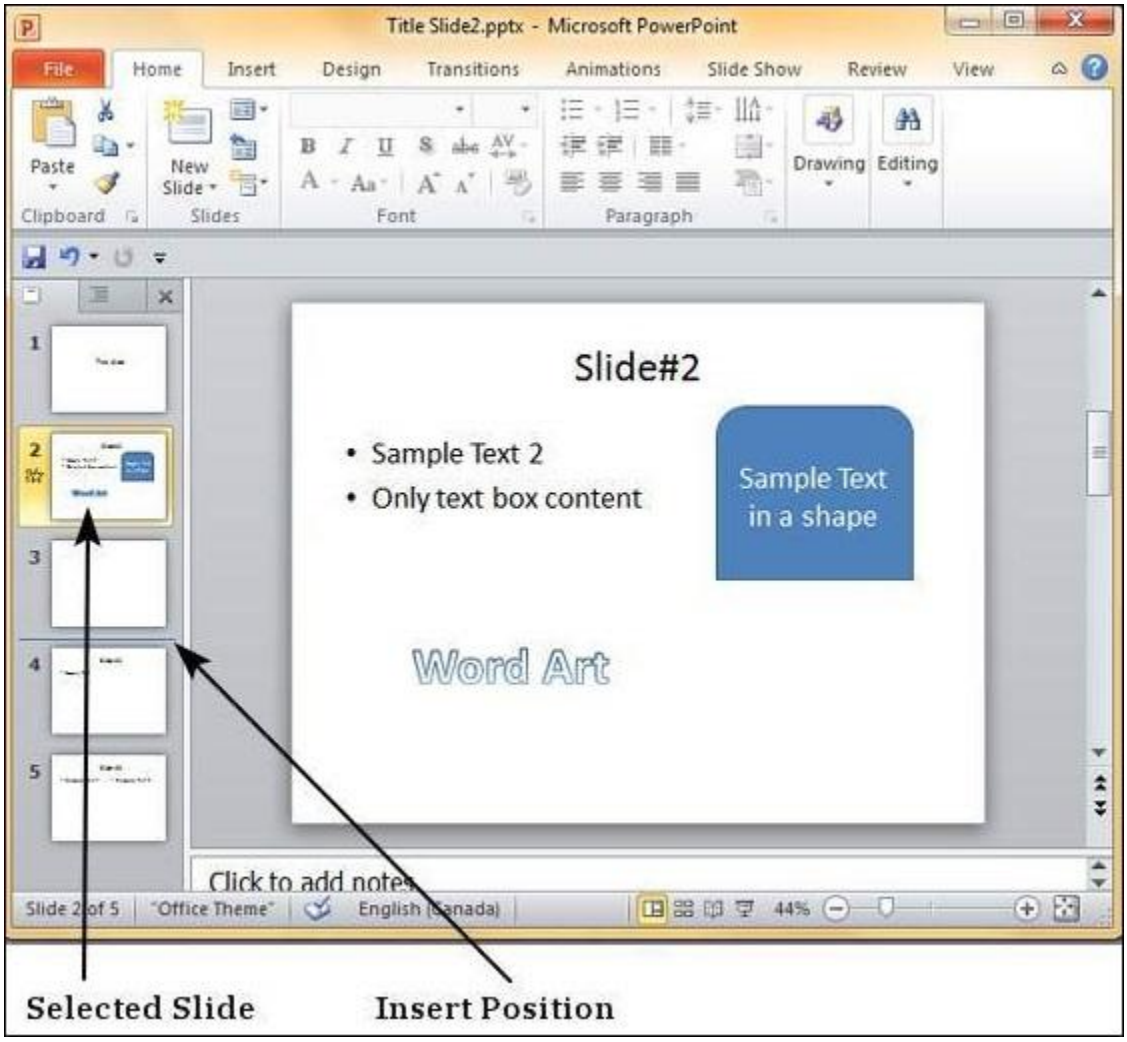
Rearranging slides is important when it comes to organizing the overall presentation flow. While it is vital that you get the right content in every slide, it is equally important that you are able to present them in a format that makes it easier for the audience to understand the content too; most times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

You can rearrange slides from two views in PowerPoint - **Normal View** and **Slide Sorter View**. Given below are the steps to rearrange slides from different views.

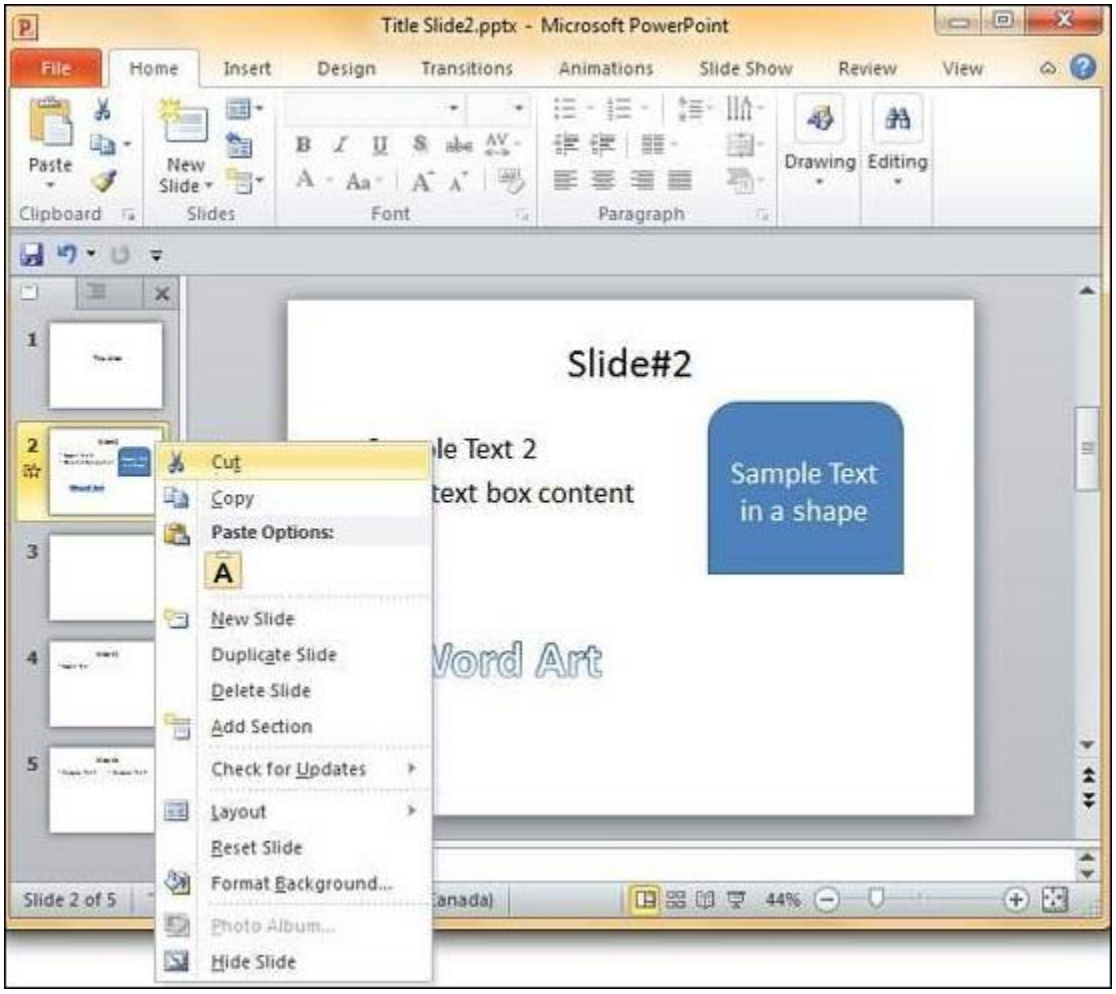
Normal View

Step 1 – Select the slide to be moved.

Step 2 – 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.



Step 3 – 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.


Title Slide2.pptx - Microsoft PowerPoint
File
Home
Insert
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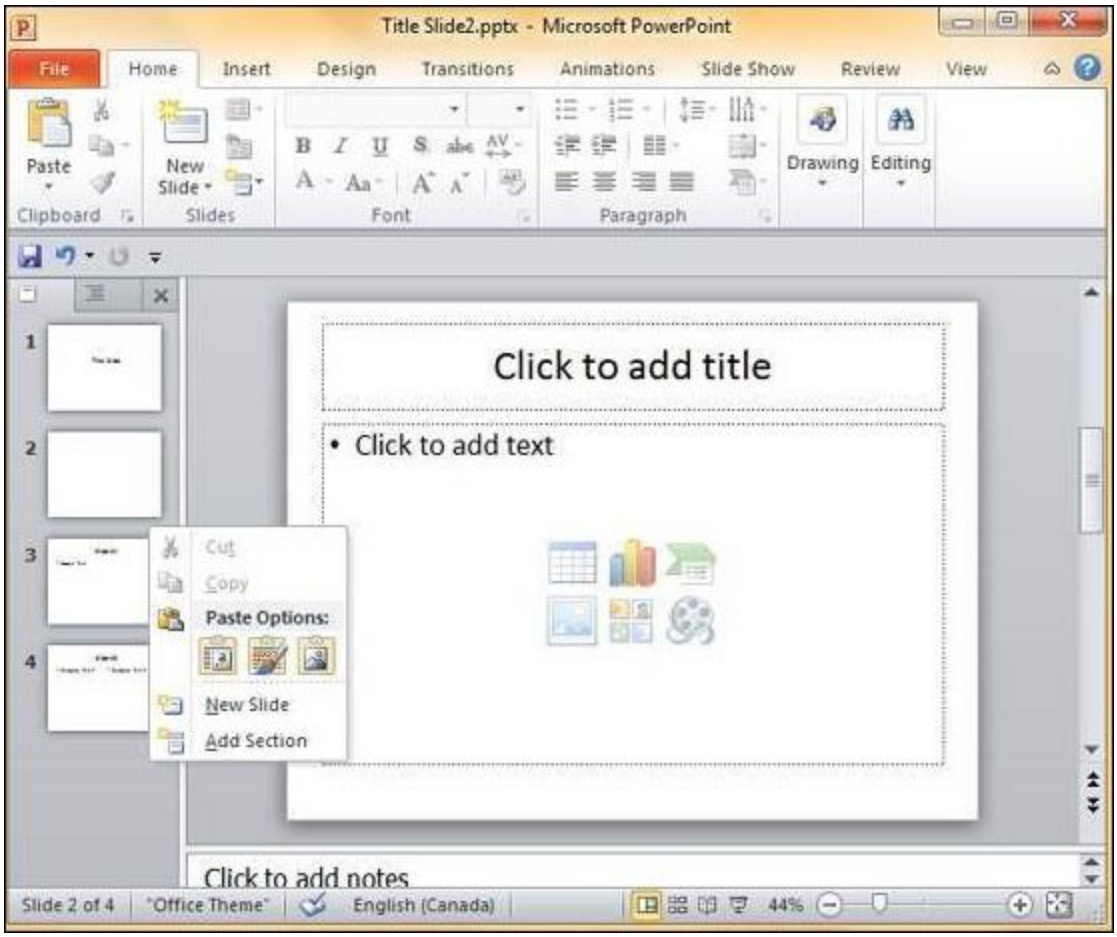
Transitions
Animations
Slide Show
Review
View
Paste
Clipboard
New Slide
Slides
Font
Paragraph
Drawing
Editing
Slide#2
Sample Text in a shape
Cut
Copy
Paste Options:
New Slide
Duplicate Slide
Delete Slide
Add Section
Check for Updates
Layout
Reset Slide
Format Background...
Photo Album...
Hide Slide
Slide 2 of 5
44%

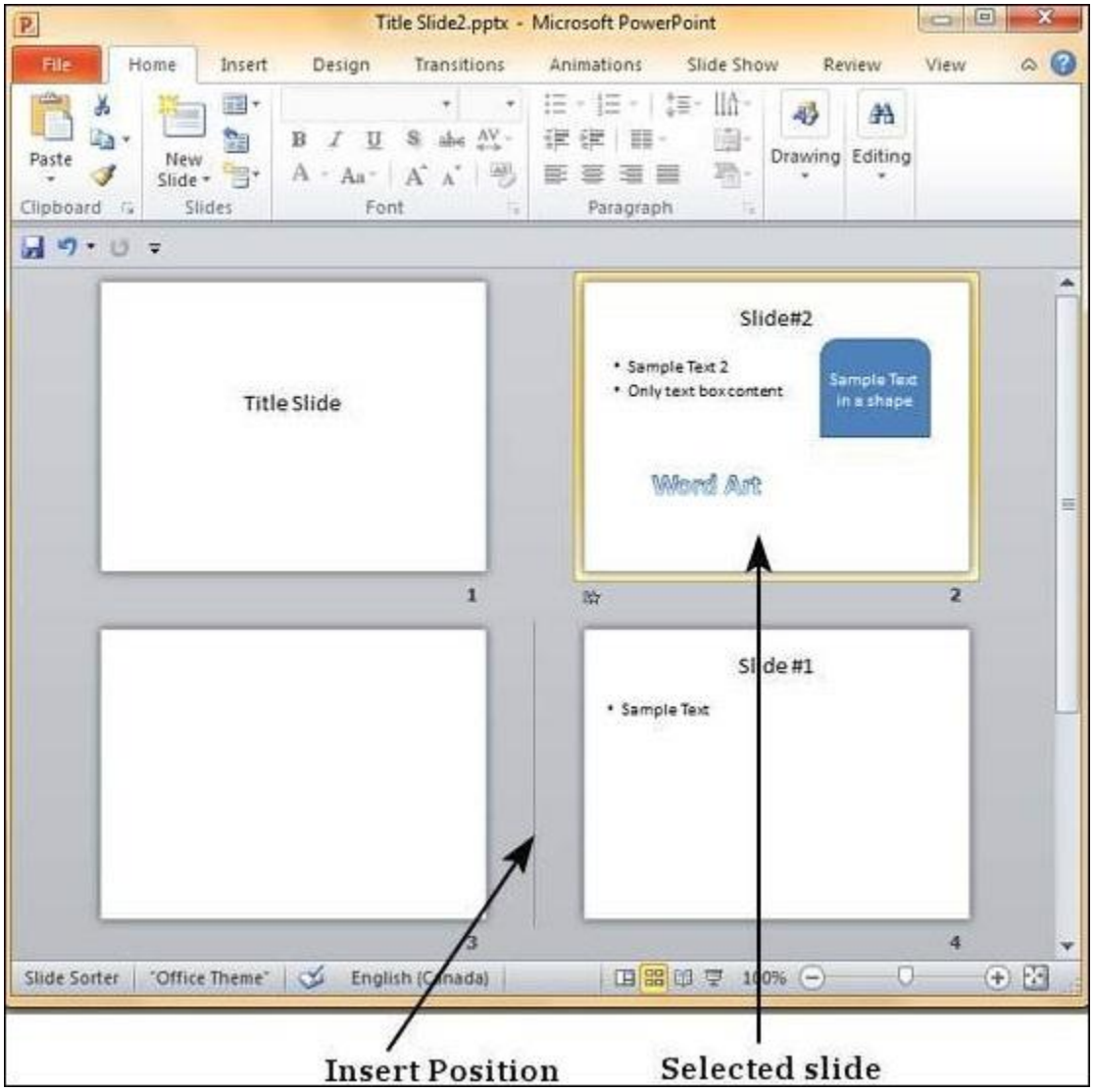


Slide Sorter View

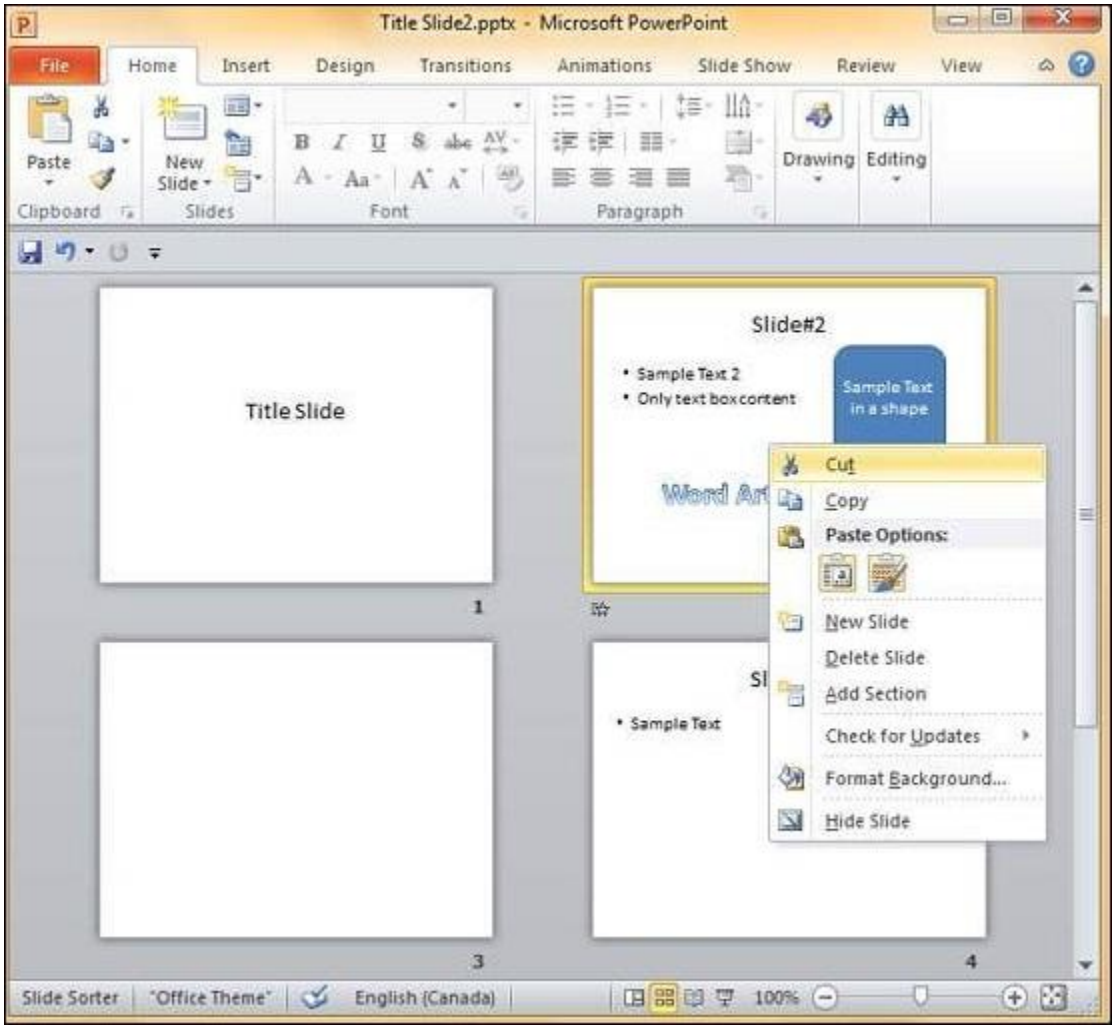
Let us now understand how the Slide Sorter View works.

Step 1 – Select the slide to be moved.

Step 2 – 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.



Step 3 – 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.


Title Slide2.pptx - Microsoft PowerPoint
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Slide Show
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Paste
New Slide
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Slides
Font
Paragraph
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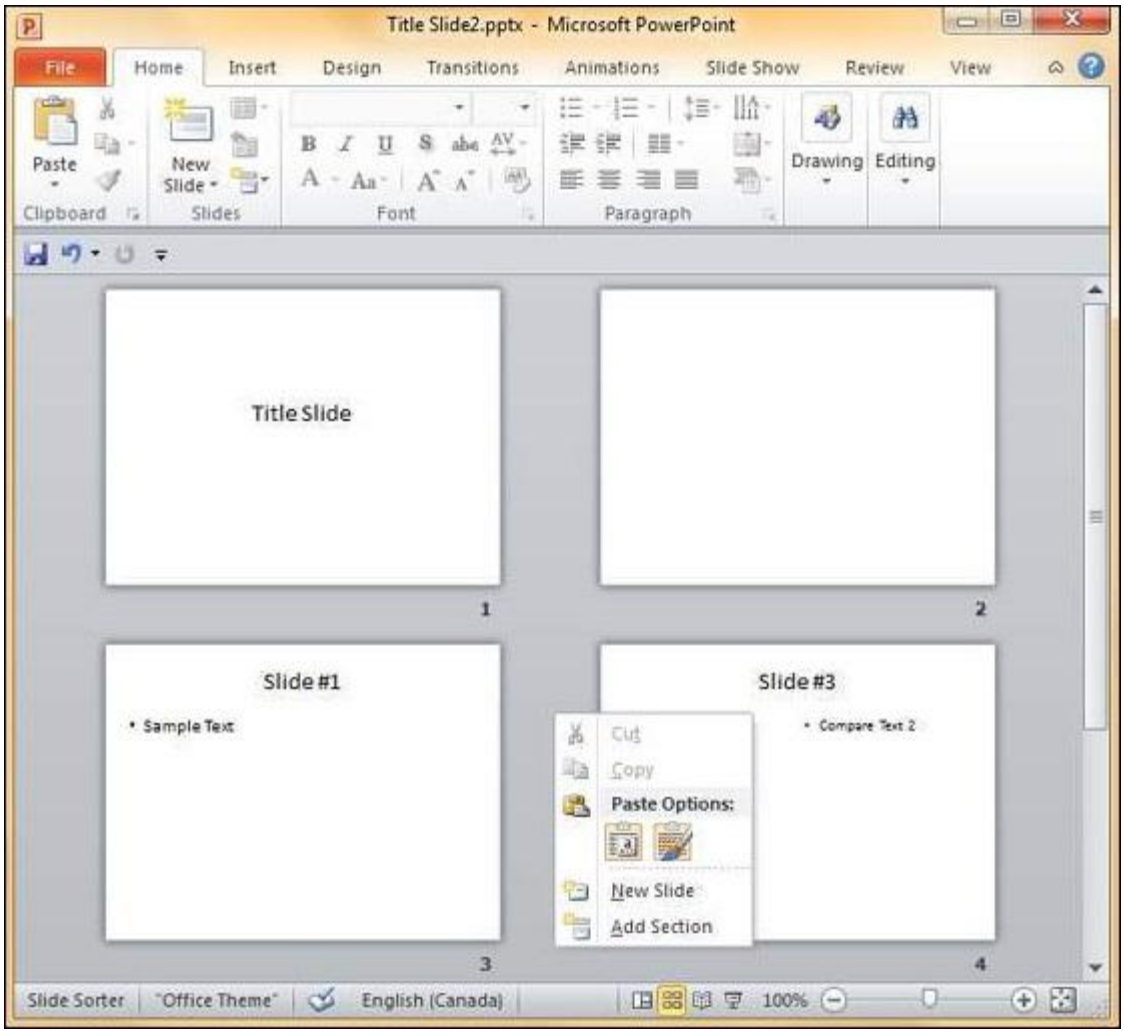
Editing
Title Slide
1
Slide#2
Sample Text 2
Only text box content
Sample Text in a shape
Word Art
Cut
Copy
Paste Options:
New Slide
Delete Slide
Add Section
Check for Updates
Format Background...
Hide Slide
Sample Text
3
4
Slide Sorter
"Office Theme"
English (Canada)
100%

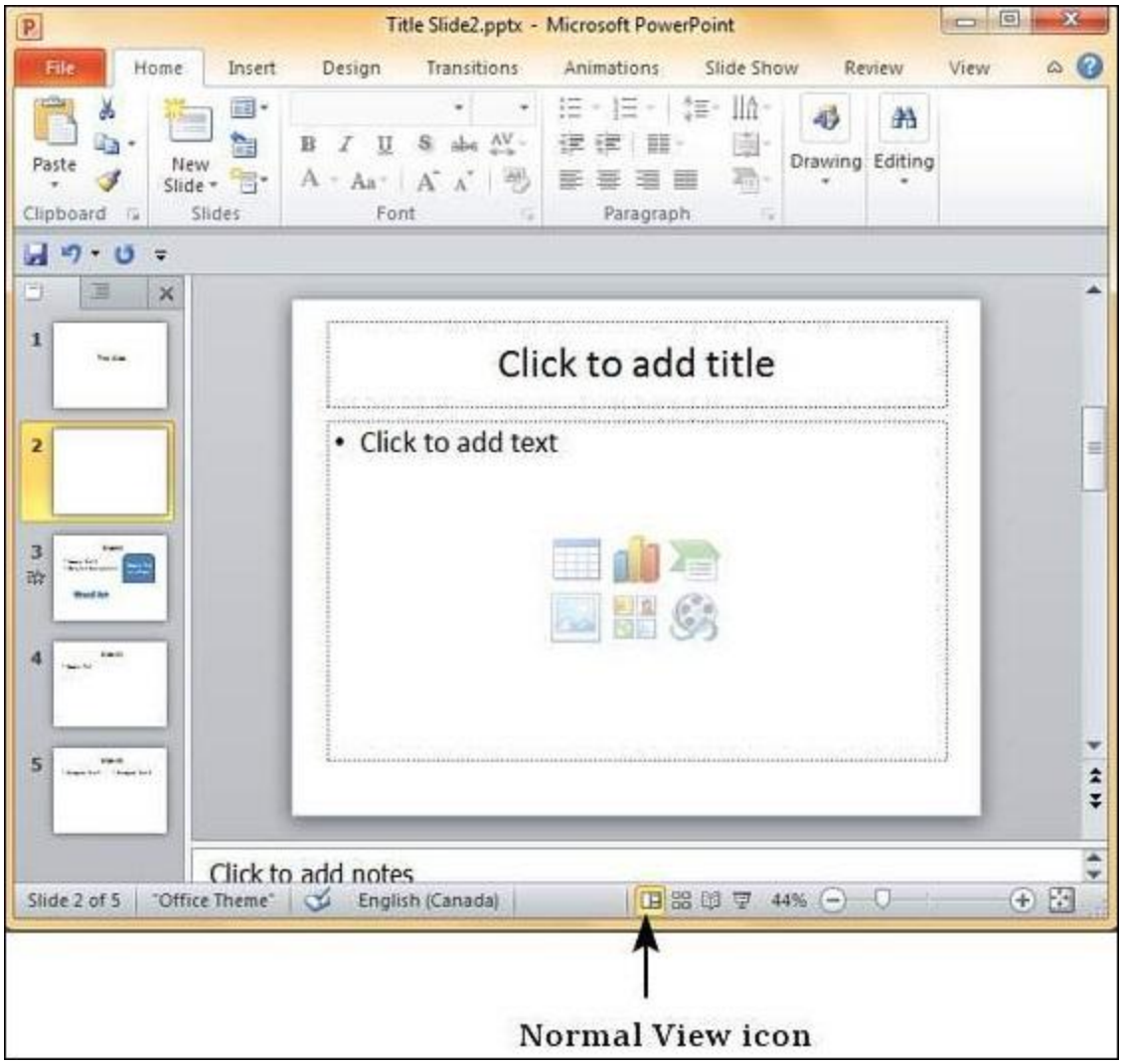


Adding Slide Notes Powerpoint

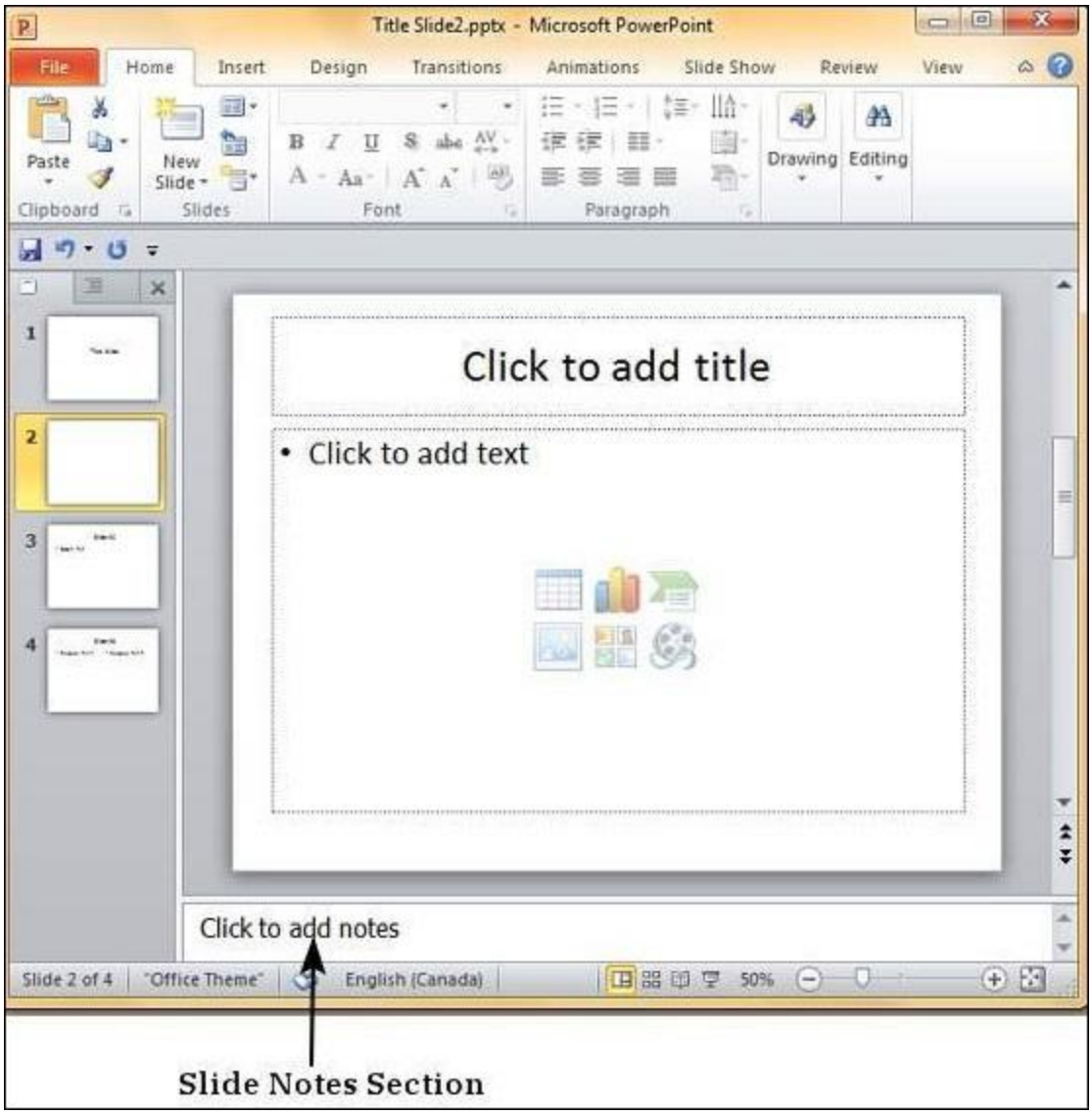
Slide notes can be very useful tools for presentation. These notes are not displayed on the screen in the **Slideshow** mode, but the presenter can see them so they can prepare well to present the slides. Depending on your Print settings, you can also print the slide notes along with the slides.

This chapter will show you how to add slide notes to an existing presentation.

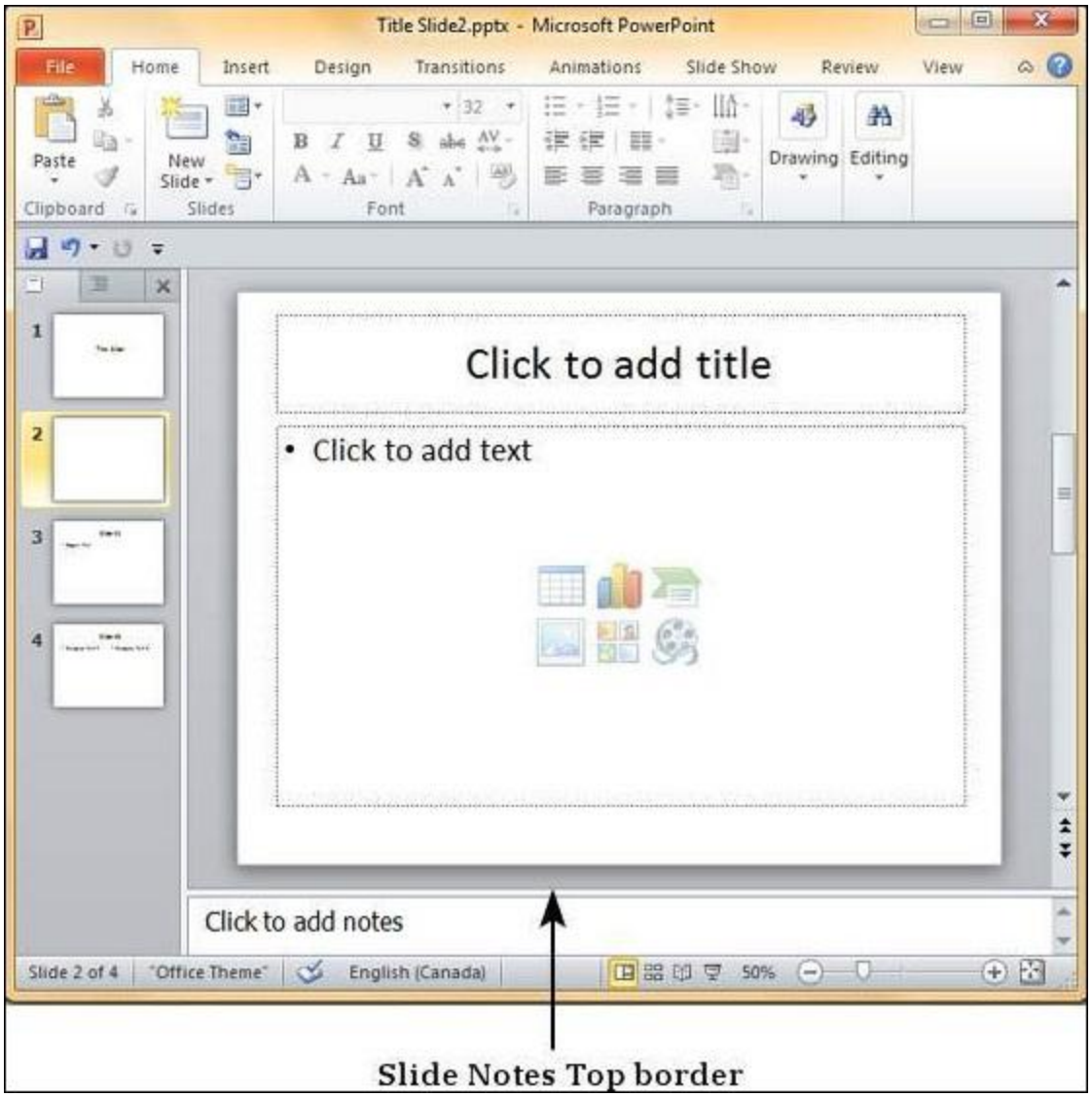
Step 1 – To locate the slide notes, set the view in **Normal** mode.



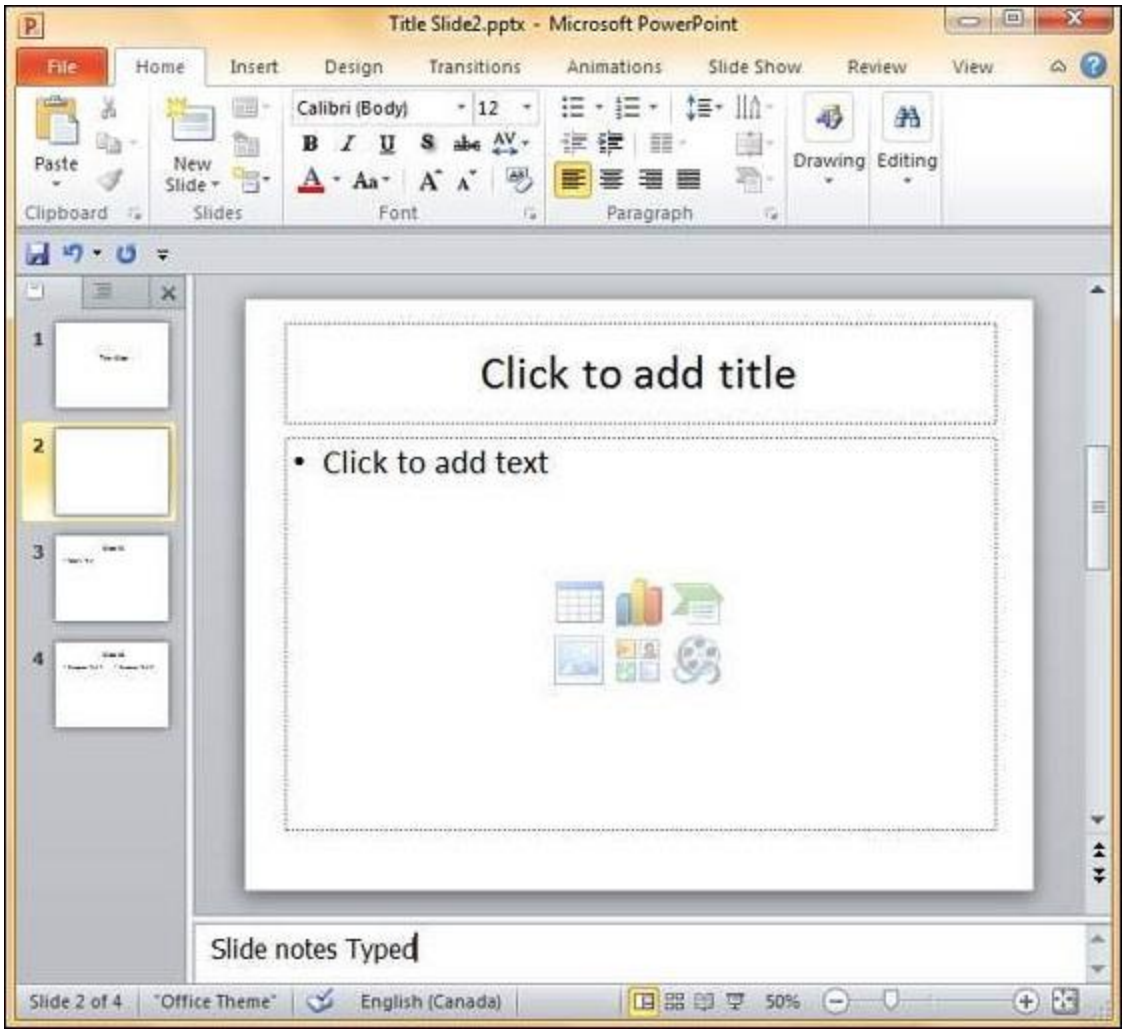
Step 2 – The Slide Notes section is indicated by "**Click to add notes**".



Step 3 – You can click on the top border and drag the section to increase its size to make it easier to type.

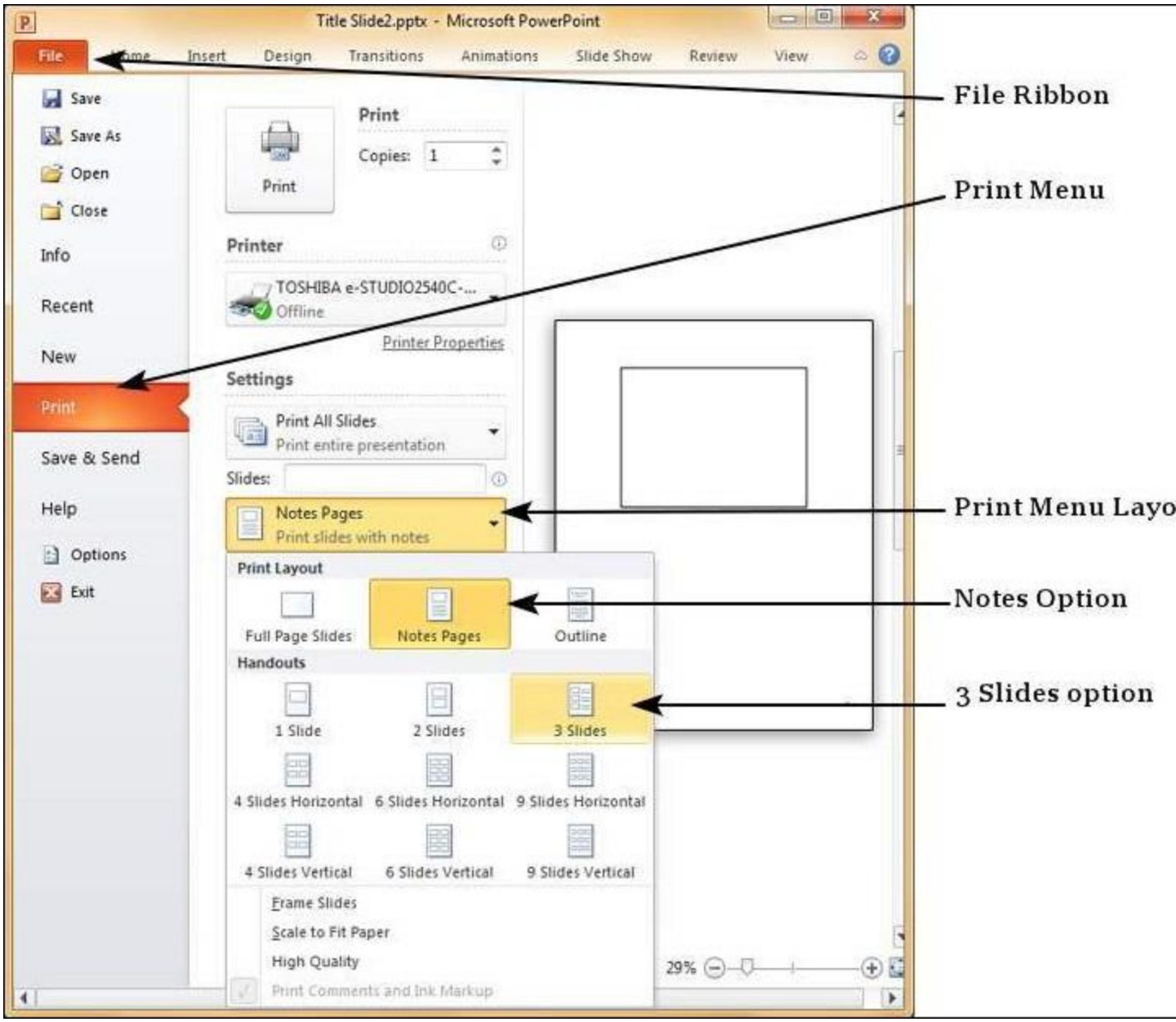


Step 4 – Type your text in this section as slide notes.



You can only use bullets, numbering and alignment functions in the Slide Notes section. All other functions can be selected, but can be applied only to the selected slide, not the notes.

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.

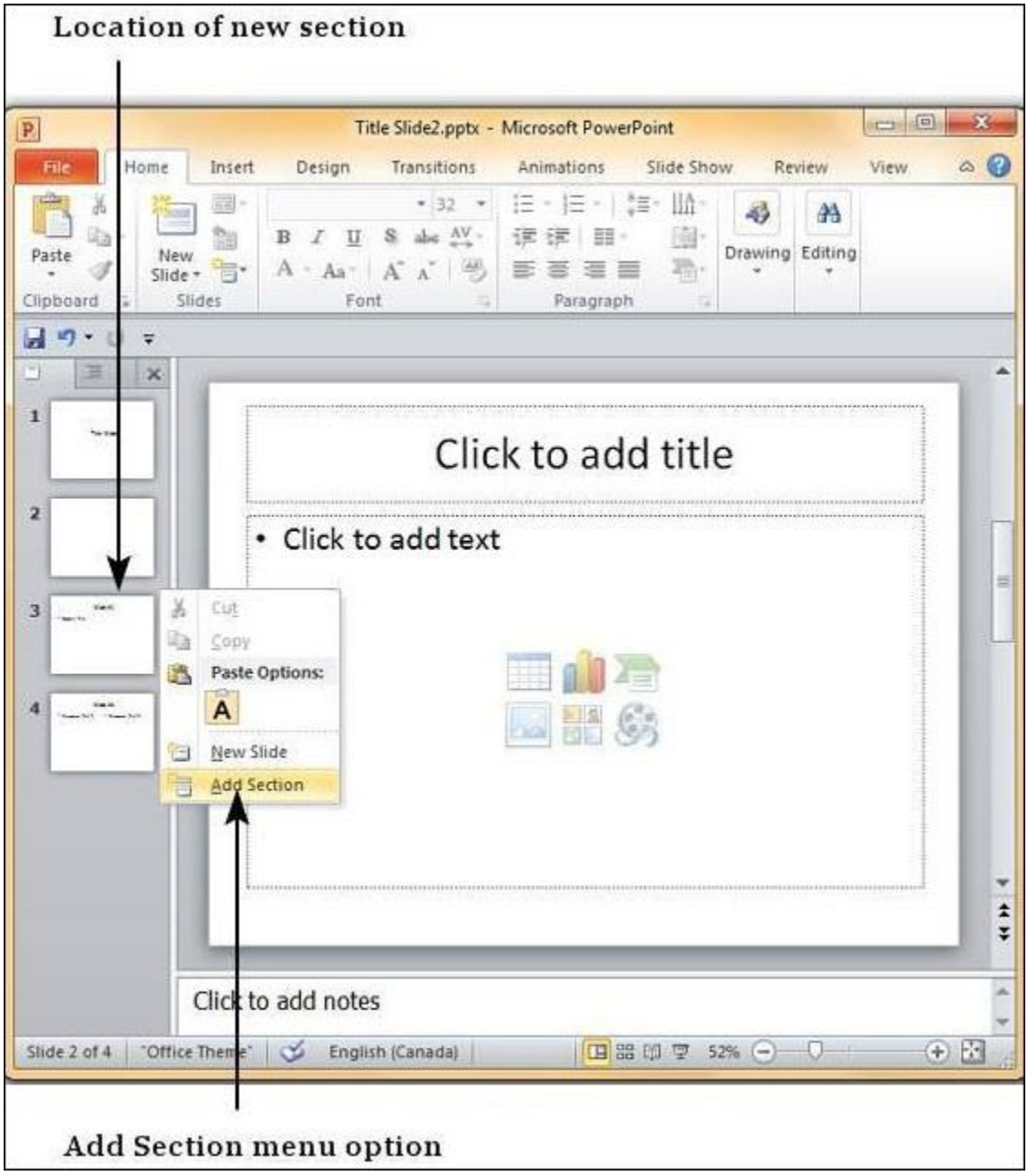


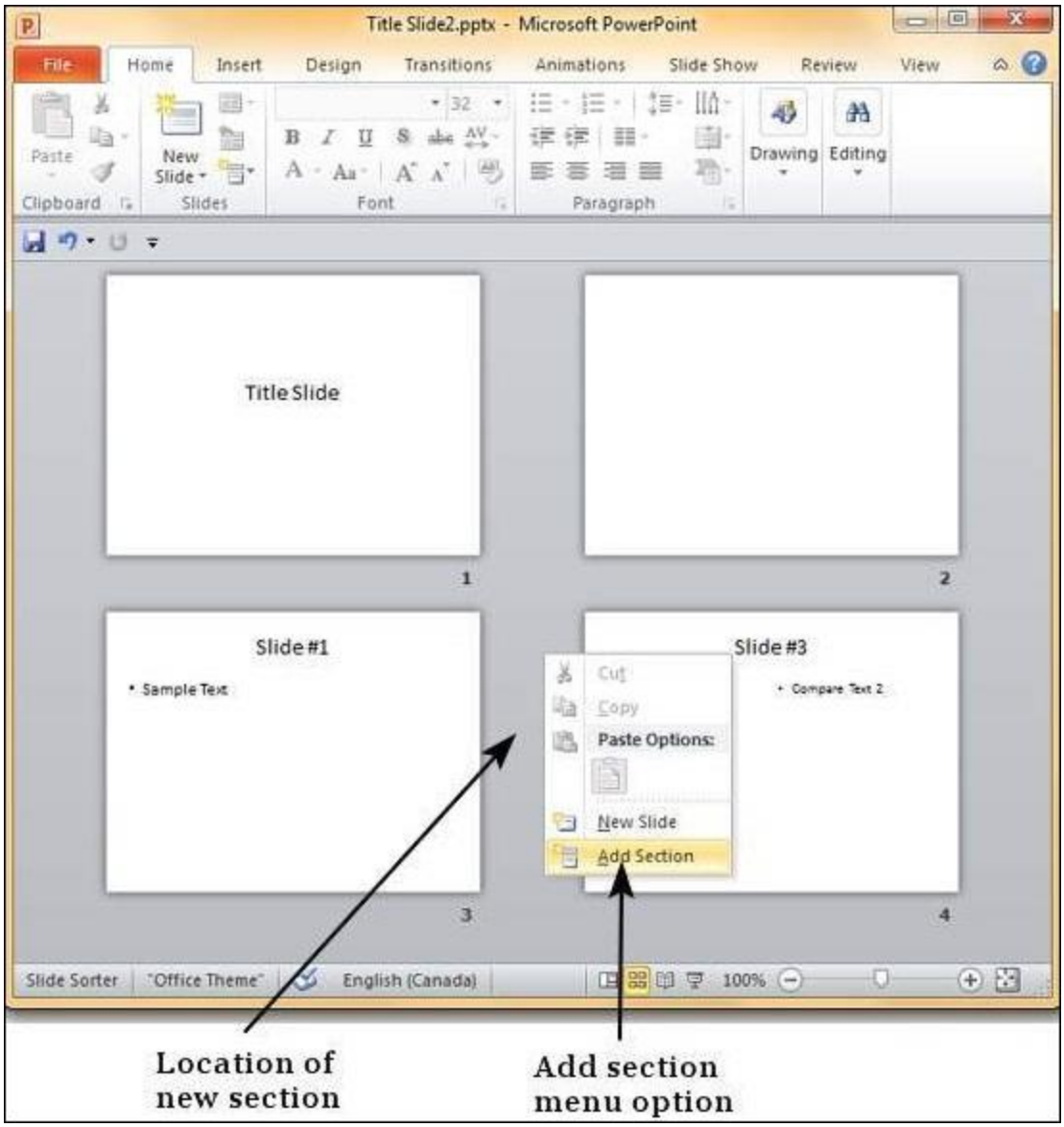
Managing Sections in Powerpoint

Creating Sections

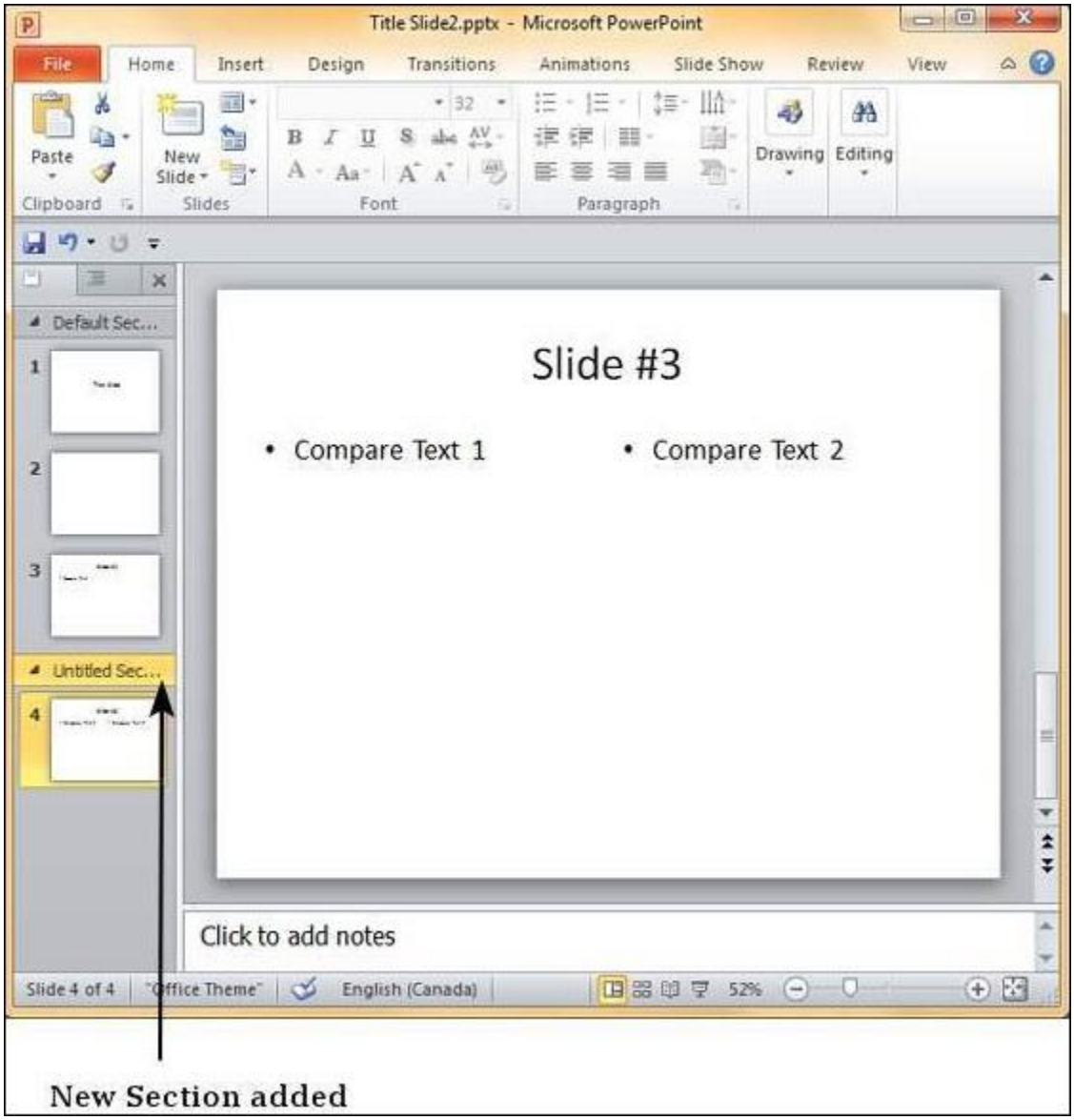
The steps to create a new section are as follows. You can execute these steps from the Normal view or the Slide Sorter view.

Step 1 – In the **Normal** view or the **Slide Sorter** view, right-click at the position where you want to add the section and select **add section**.


Location of new section
Title Slide2.pptx - Microsoft PowerPoint
File
Home
Insert
Design
Transitions
Animations
Slide Show
Review
View
Paste
New Slide
Clipboard
Slides
Font
Paragraph
Drawing
Editing
Click to add title
• Click to add text
Cut
Copy
Paste Options:
New Slide
Add Section
Click to add notes
Slide 2 of 4
"Office Theme"
English (Canada)
52%
Add Section menu option



Step 2 – The new section gets added to the presentation with all the subsequent slides being included in this section.


Title Slide2.pptx - Microsoft PowerPoint
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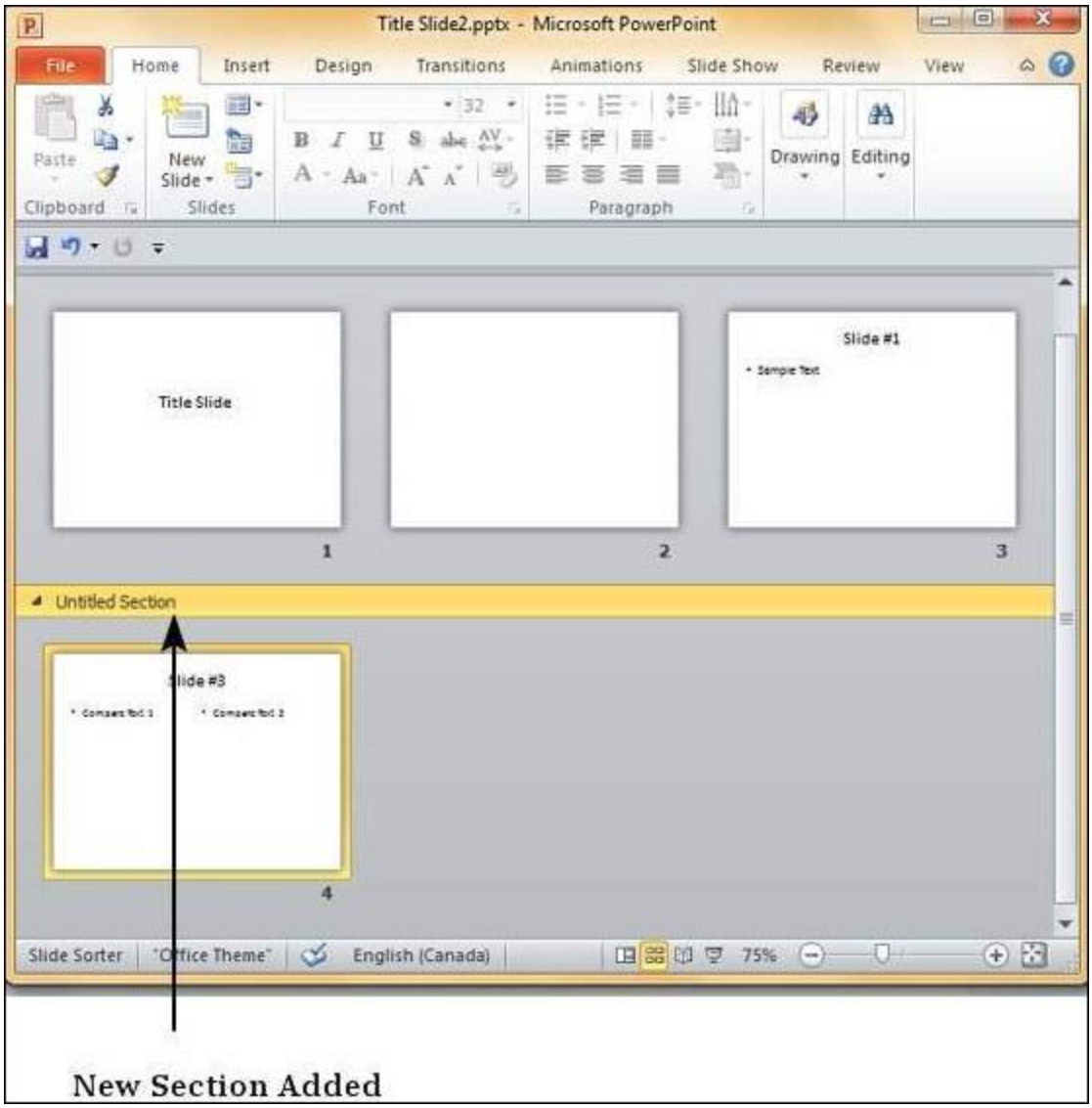
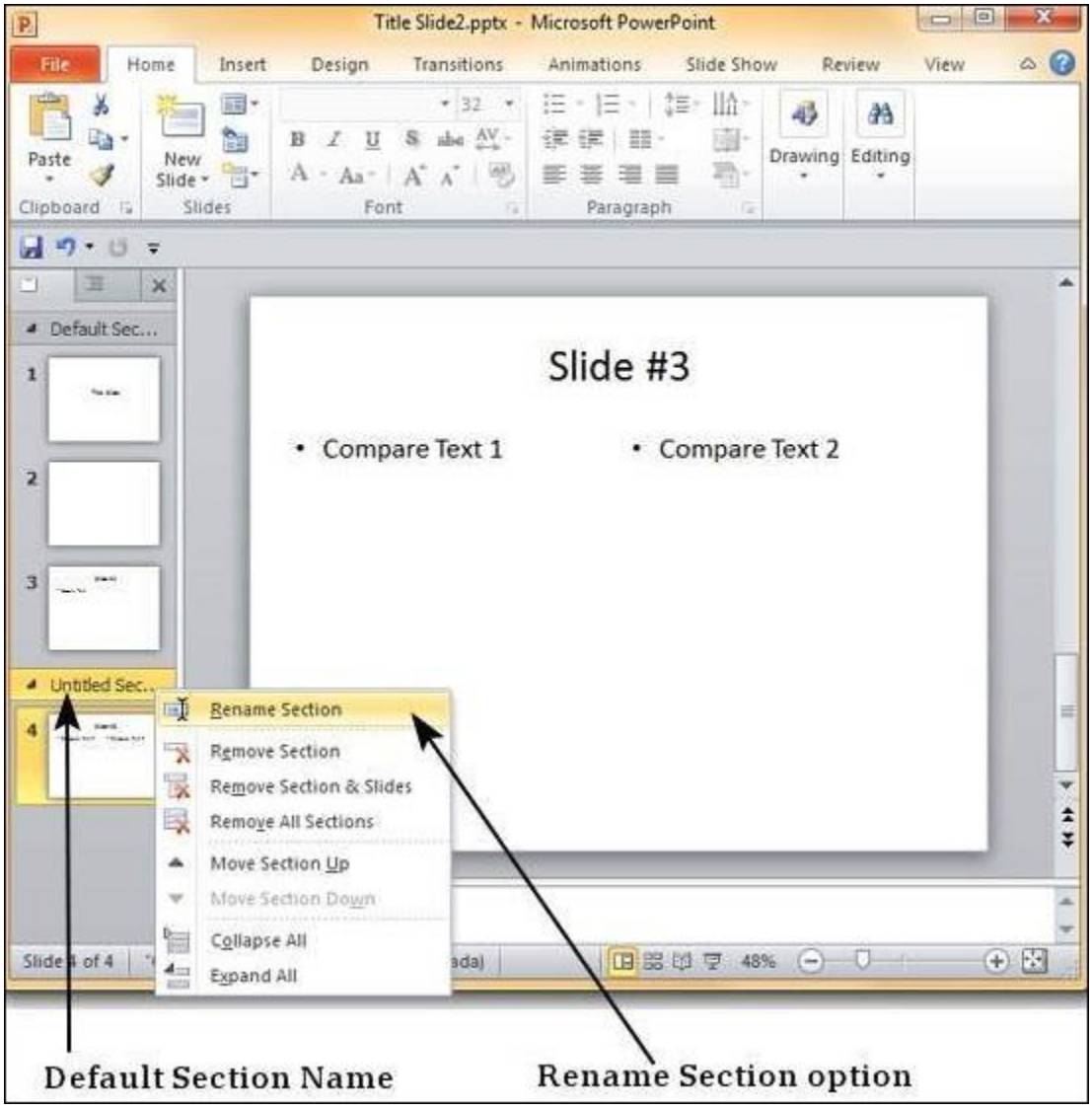
Transitions
Animations
Slide Show
Review
View
Paste
New Slide
Clipboard
Slides
Font
Paragraph
Drawing
Editing
Default Sec...
Untitled Sec...
Slide #3
• Compare Text 1
• Compare Text 2
Click to add notes
Slide 4 of 4
"Office Theme"
English (Canada)
52%
New Section added



Step 3 – By default, the new section is named "**Untitled Section**" but you can change the section name. Right-click on the section and select "**Rename Section**".


Title Slide2.pptx - Microsoft PowerPoint
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Animations
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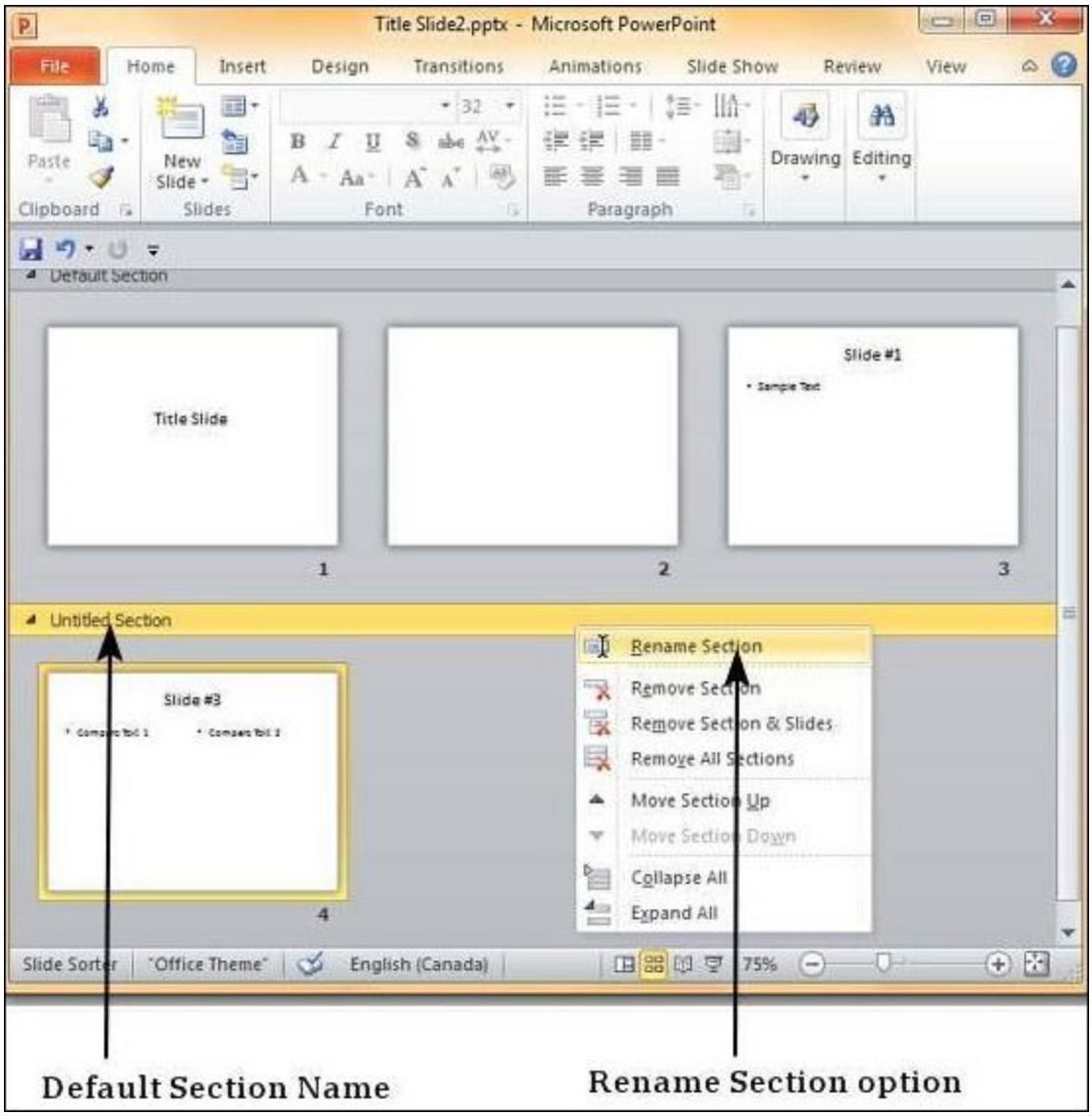
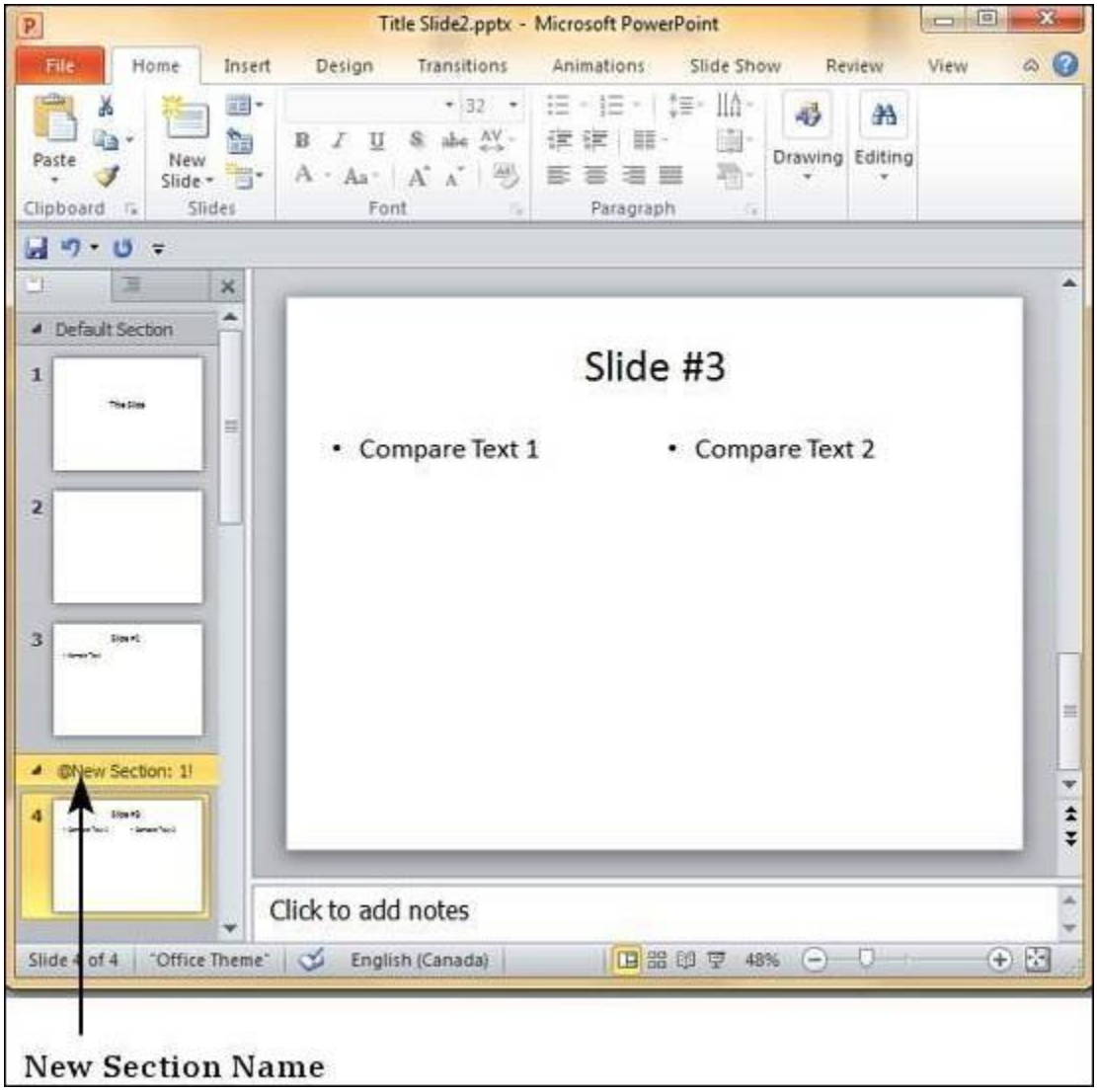
Paste
New Slide
Clipboard
Slides
Font
Paragraph
Drawing
Editing
Default Sec...
Slide #3
Compare Text 1
Compare Text 2
Untitled Sec...
Rename Section
Remove Section
Remove Section & Slides
Remove All Sections
Move Section Up
Move Section Down
Collapse All
Expand All
48%
Default Section Name
Rename Section option



Step 4 – In the **Rename Section** dialog box, enter the new section name. This accepts all the characters including alphabets, numbers, special characters, punctuations, etc.

Step 5 – Click on the "**Rename**" button on the dialog to rename the section.


Title Slide2.pptx - Microsoft PowerPoint
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Animations
Slide Show
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View
Paste
New Slide
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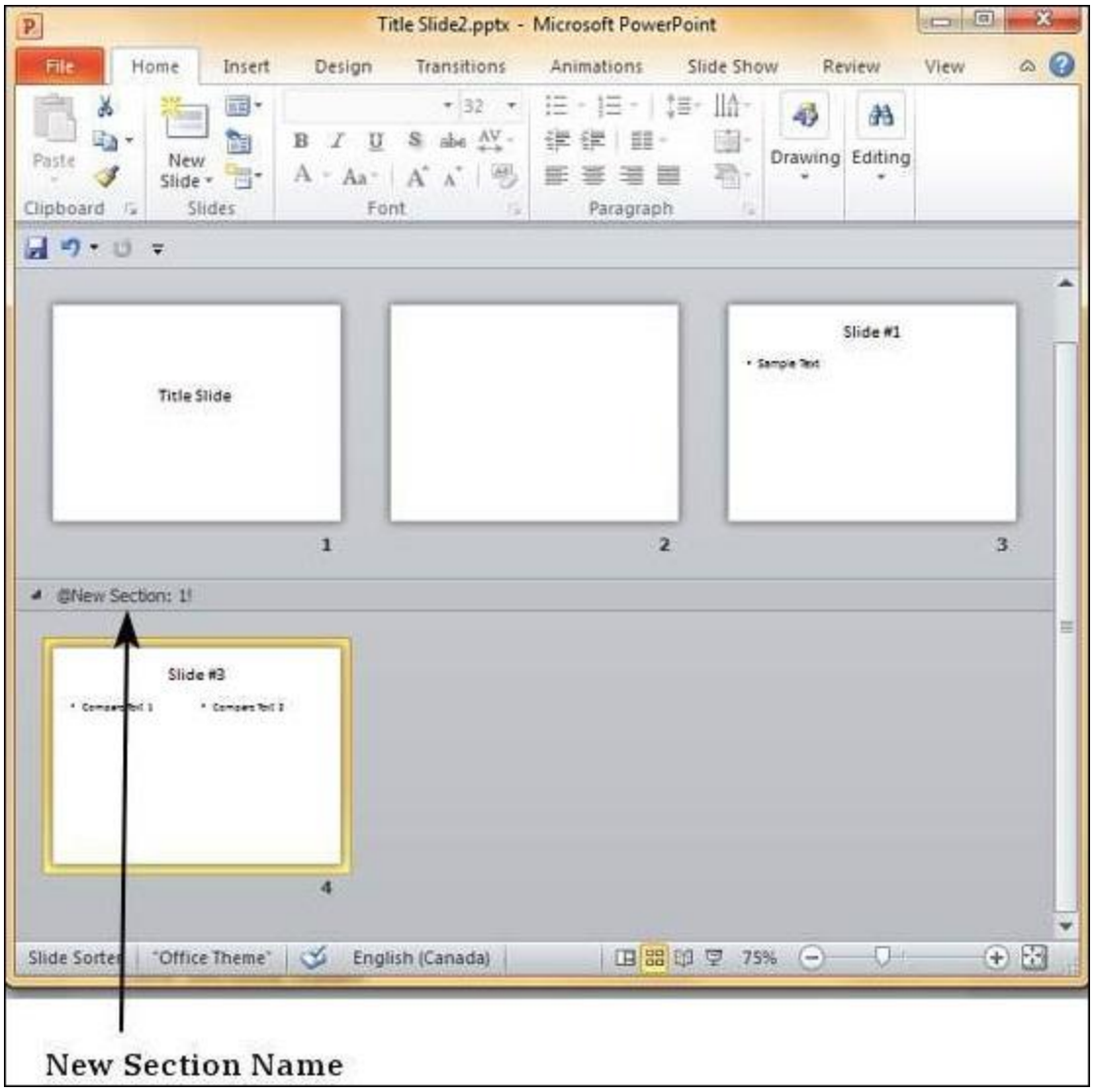
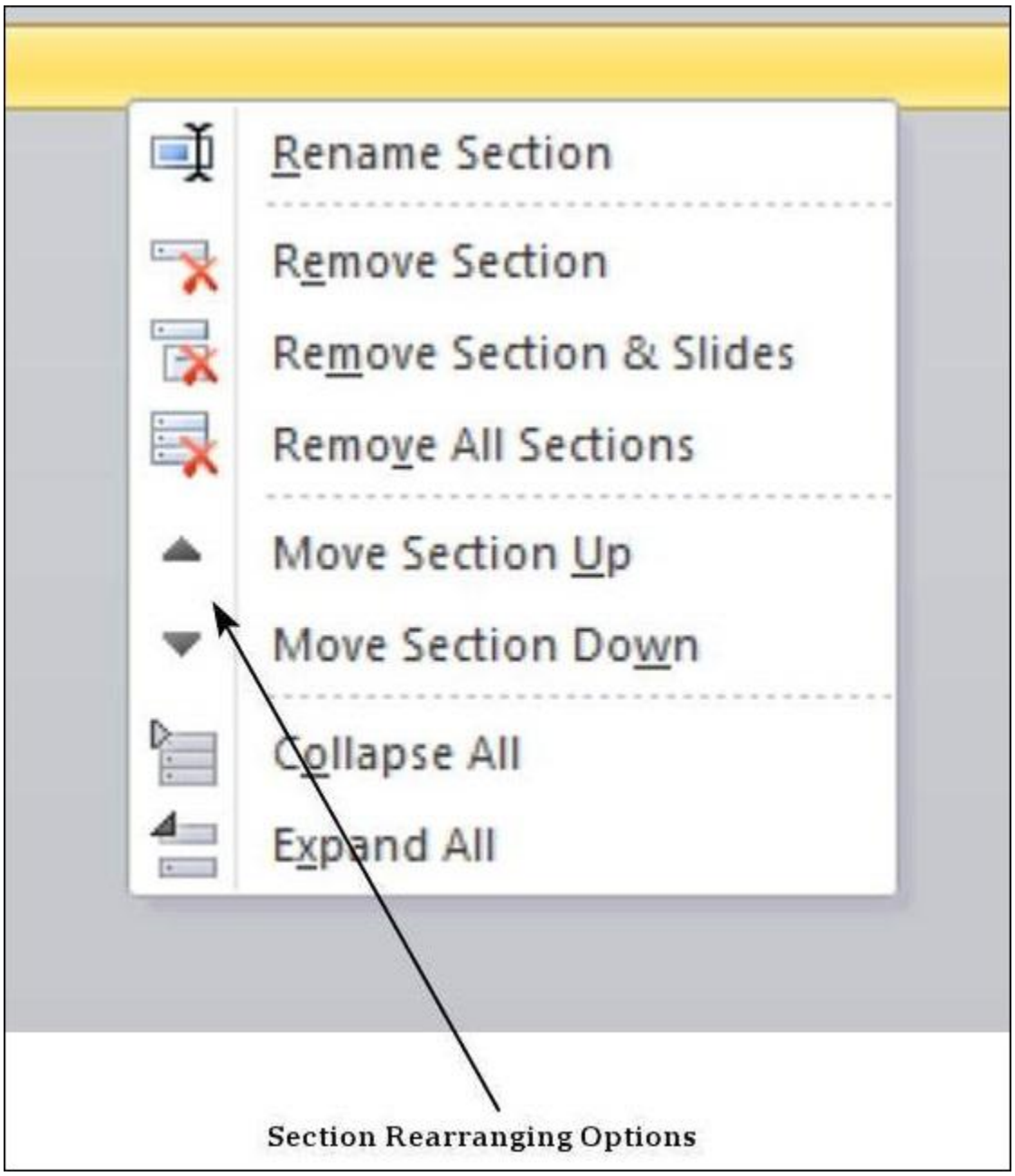
Slides
Font
Paragraph
Drawing
Editing
Default Section
1
2
3
@New Section: 1!
4
Slide #3
• Compare Text 1
• Compare Text 2
Click to add notes
Slide 4 of 4
"Office Theme"
English (Canada)
48%
New Section Name

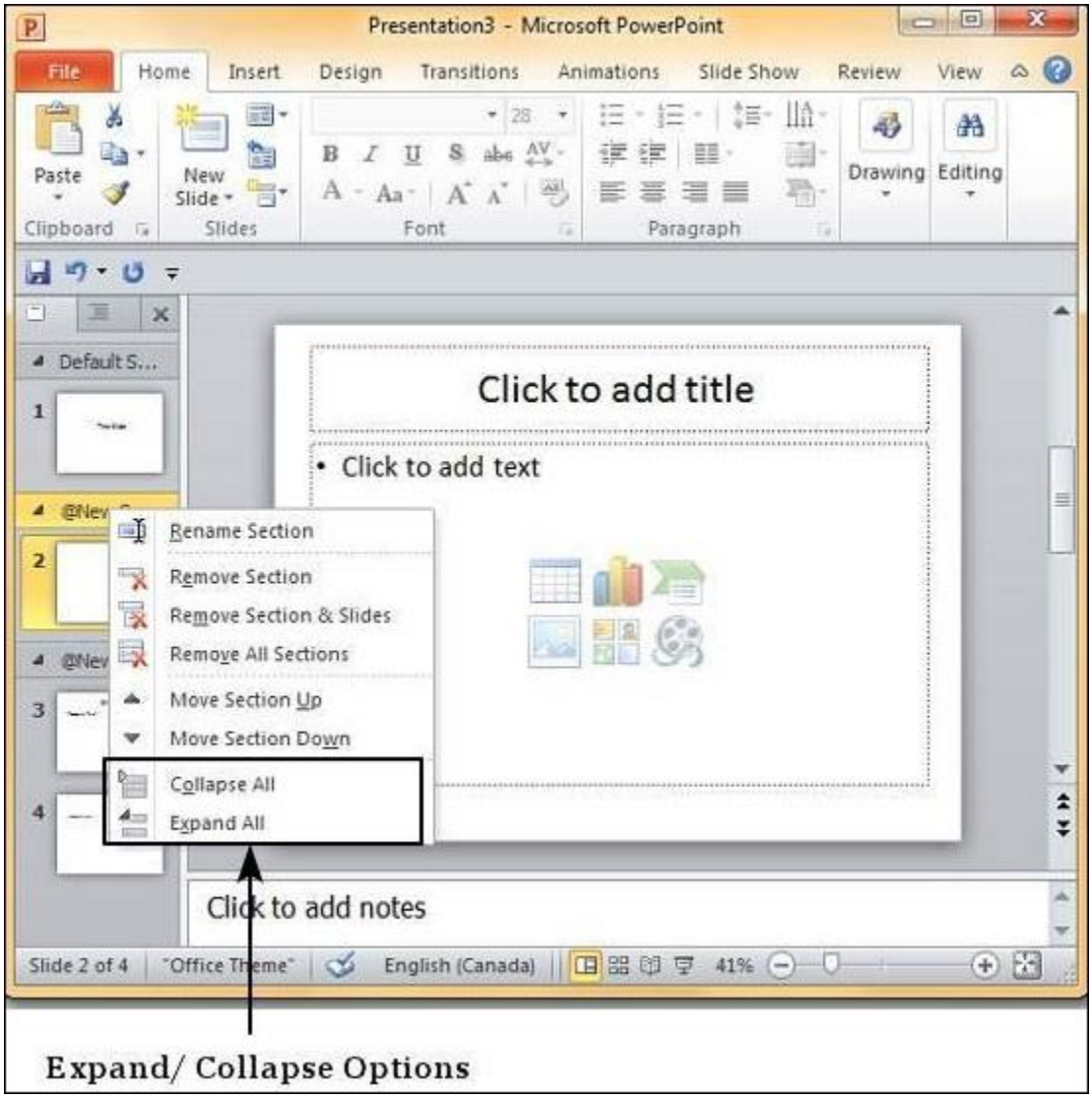


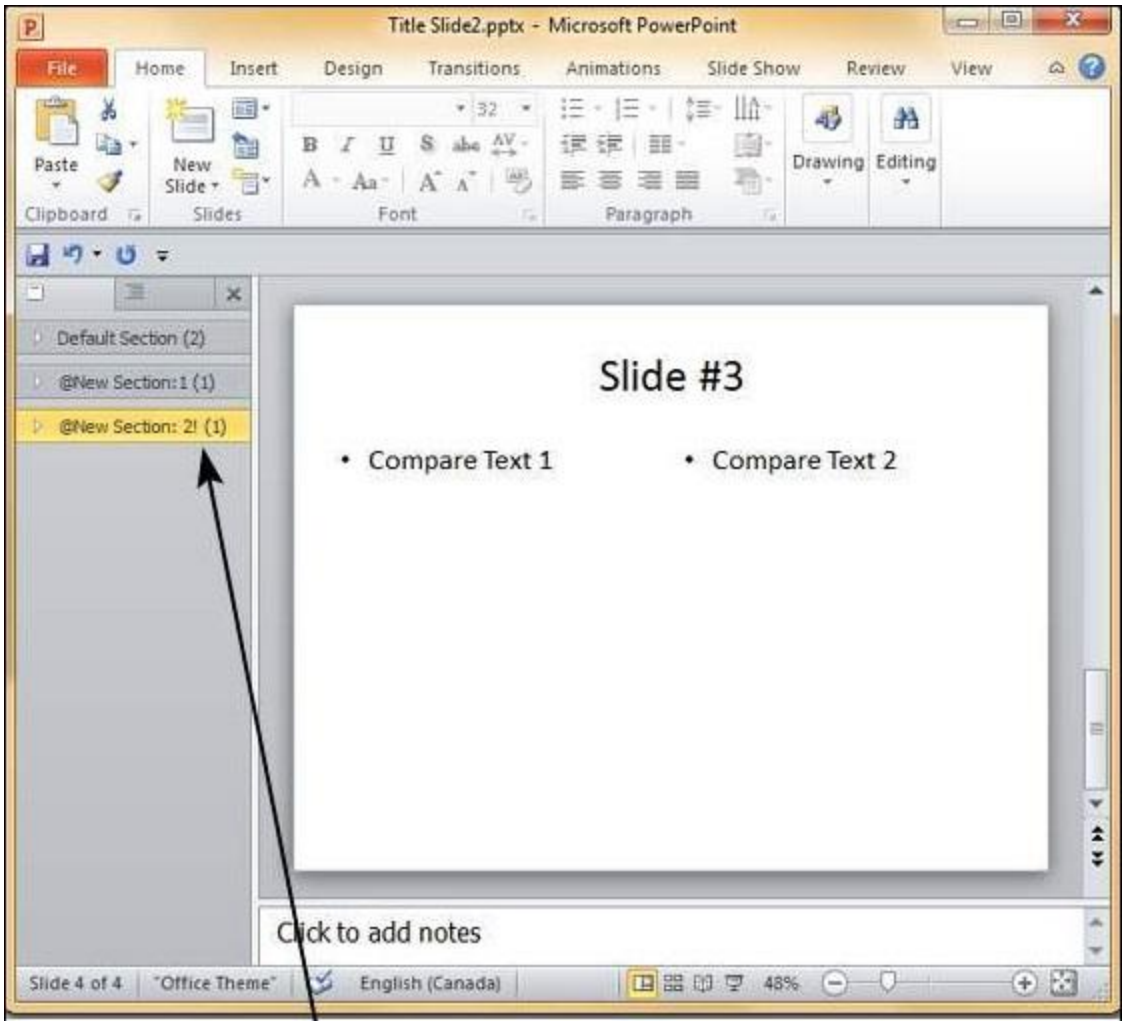
Rearranging Sections

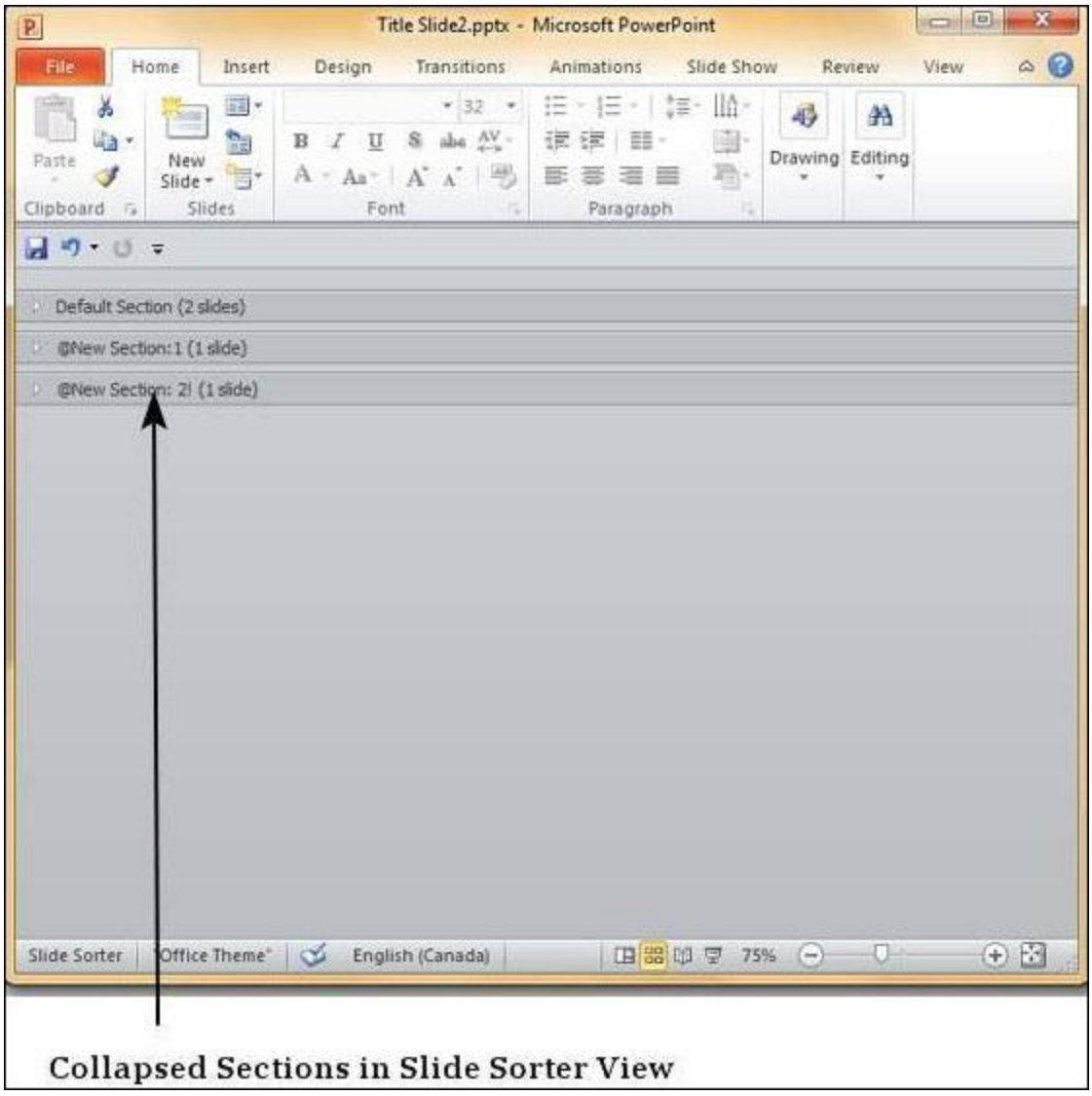
One of the advantages of sections is that you can not only group slides together, but also rearrange them as one set. Instead of having to move each slide individually, you can move the entire section. Just like rearranging slides you can drag and move the sections. Alternately, you can right-click on the section and move it up or down as shown below.



If there are many slides to work with, you can collapse them so you view just the sections. This makes rearranging them less confusing too.


Presentation3 - Microsoft PowerPoint
File
Home
Insert
Design
Transitions
Animations
Slide Show
Review
View
Paste
New Slide
Clipboard
Slides
Font
Paragraph
Drawing
Editing
Default S...
Click to add title
Click to add text
Rename Section
Remove Section
Remove Section & Slides
Remove All Sections
Move Section Up
Move Section Down
Collapse All
Expand All
Click to add notes
Slide 2 of 4
"Office Theme"
English (Canada)
41%
Expand/ Collapse Options

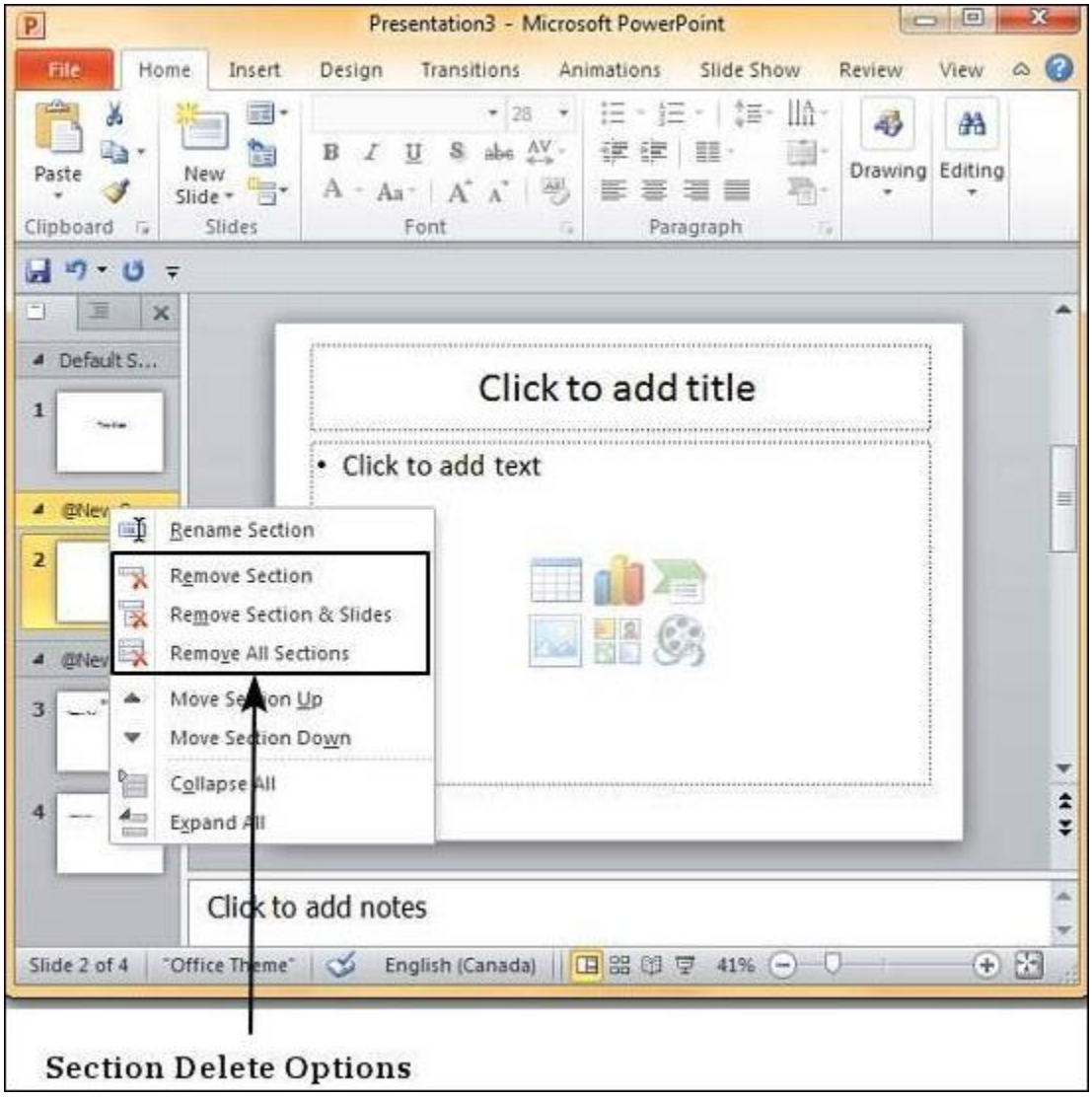

Title Slide2.pptx - Microsoft PowerPoint
File
Home
Insert
Design
Transitions
Animations
Slide Show
Review
View
Paste
New Slide
Clipboard
Slides
Font
Paragraph
Drawing
Editing
Default Section (2)
@New Section: 1 (1)
@New Section: 2! (1)
Slide #3
• Compare Text 1
• Compare Text 2
Click to add notes
Slide 4 of 4
"Office Theme"
English (Canada)
48%
Collapsed Sections in Normal view



Collapsed Sections in Slide Sorter View

Deleting Sections

PowerPoint 2010 provides three options to delete sections. The table below explains the function of each option.



Section Delete Options

S.No	Delete Option & Description
1	**Remove Section** Deletes the selected section and merges slides with the previous section.
2	**Remove Section & Slide** Deletes the selected section and all the slides in the section.

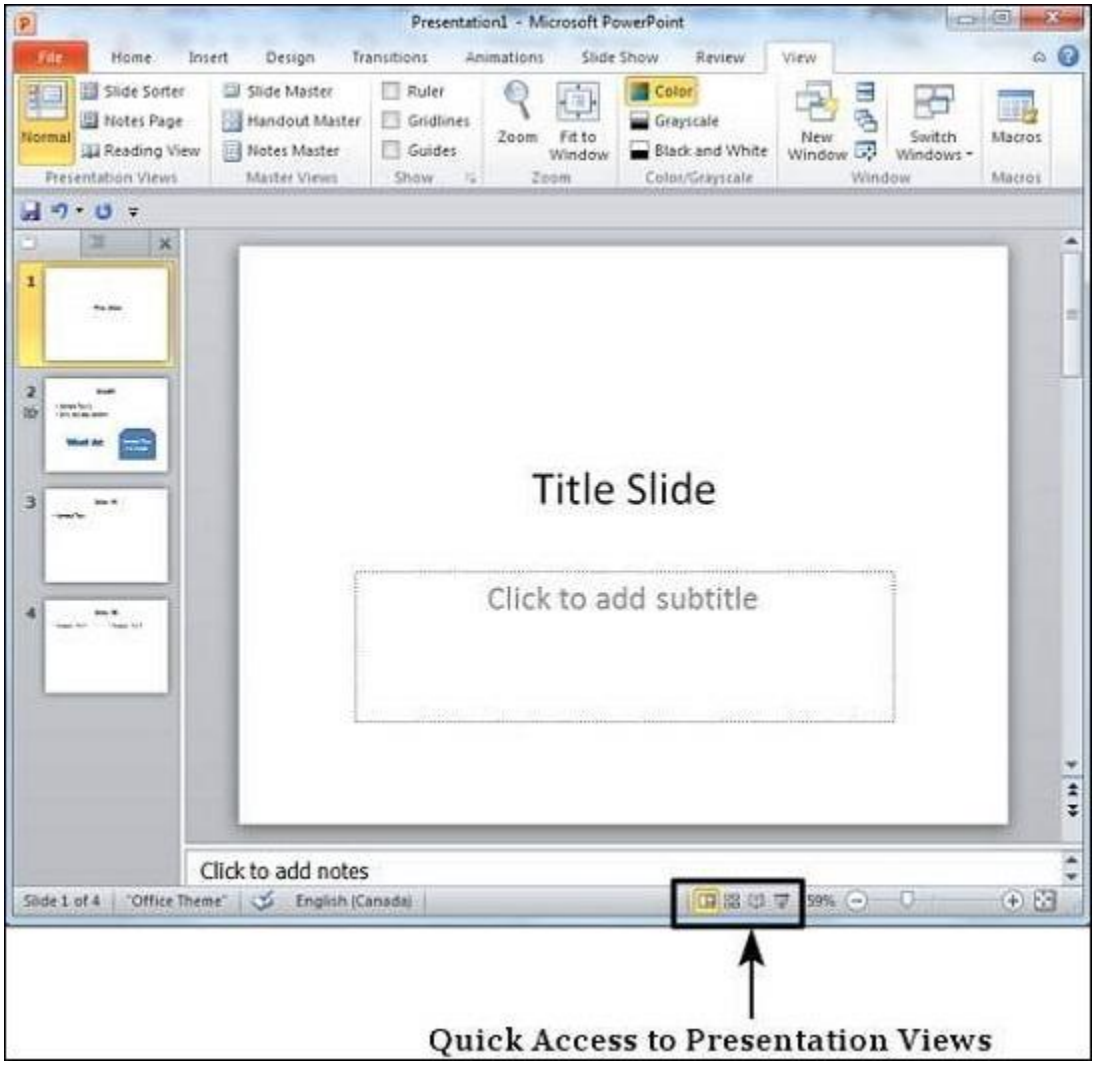
3	**Remove All Sections** Deletes all the sections and merges all the slides into a presentation without sections.

Presentation Views in Powerpoint

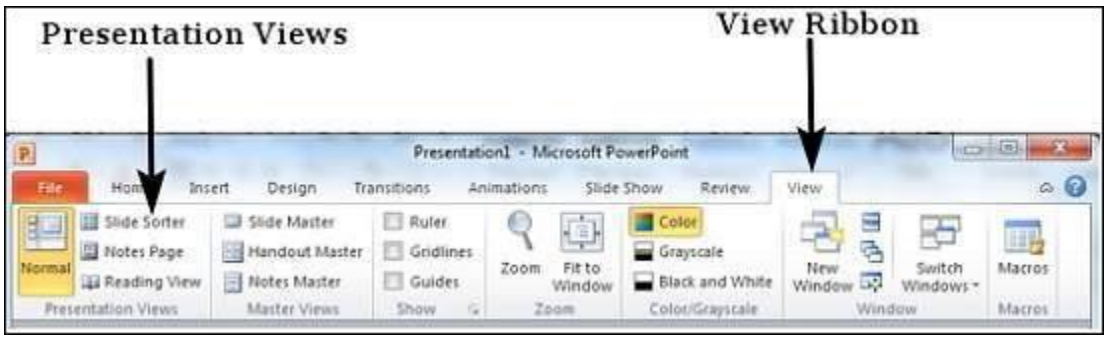
PowerPoint supports multiple views to allow users to gain the maximum from the features available in the program. Each view supports a different set of functions and is designed accordingly.

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.



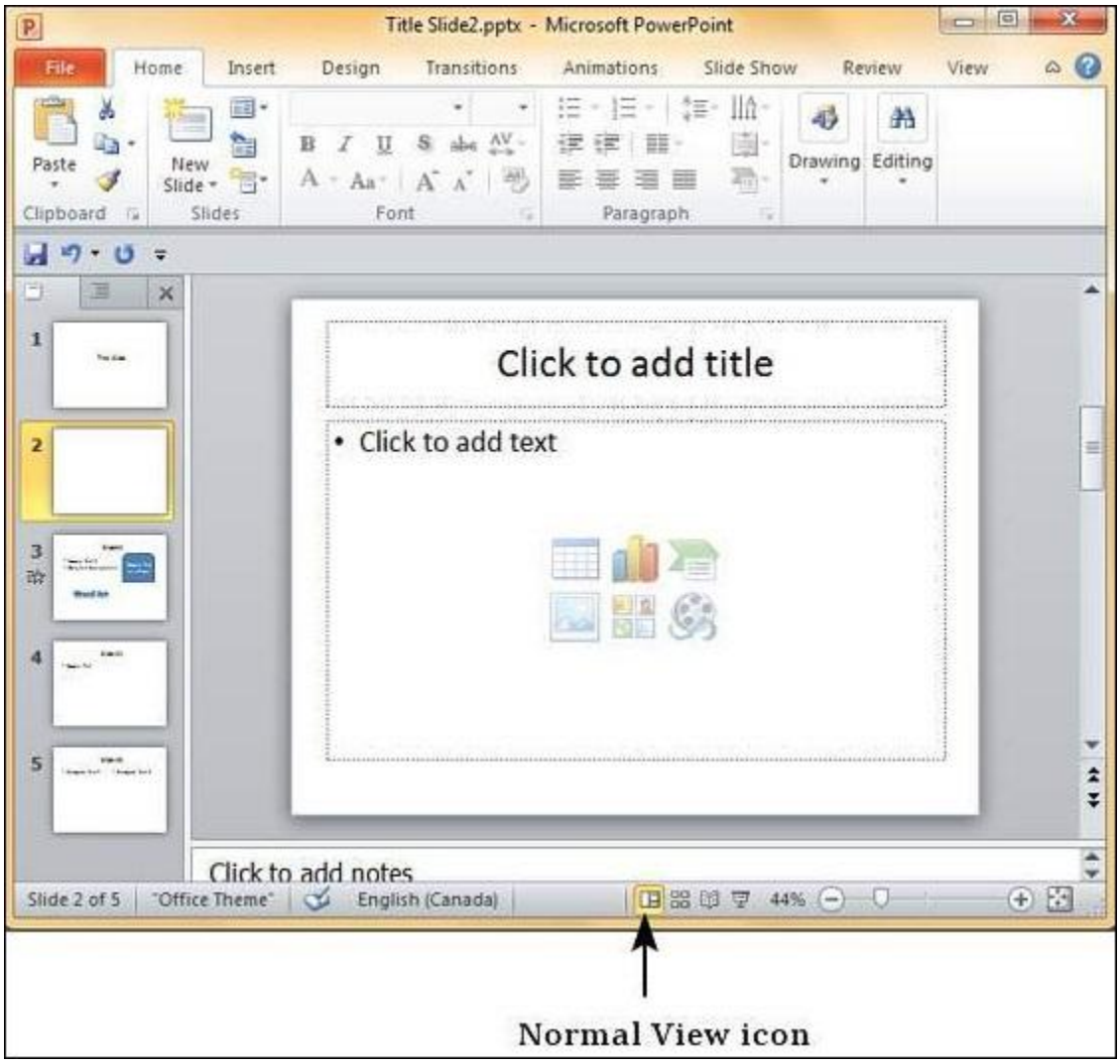
- Views can also be accessed from the **Presentation Views** section in the View ribbon



Here is a short description of the various views and their features.

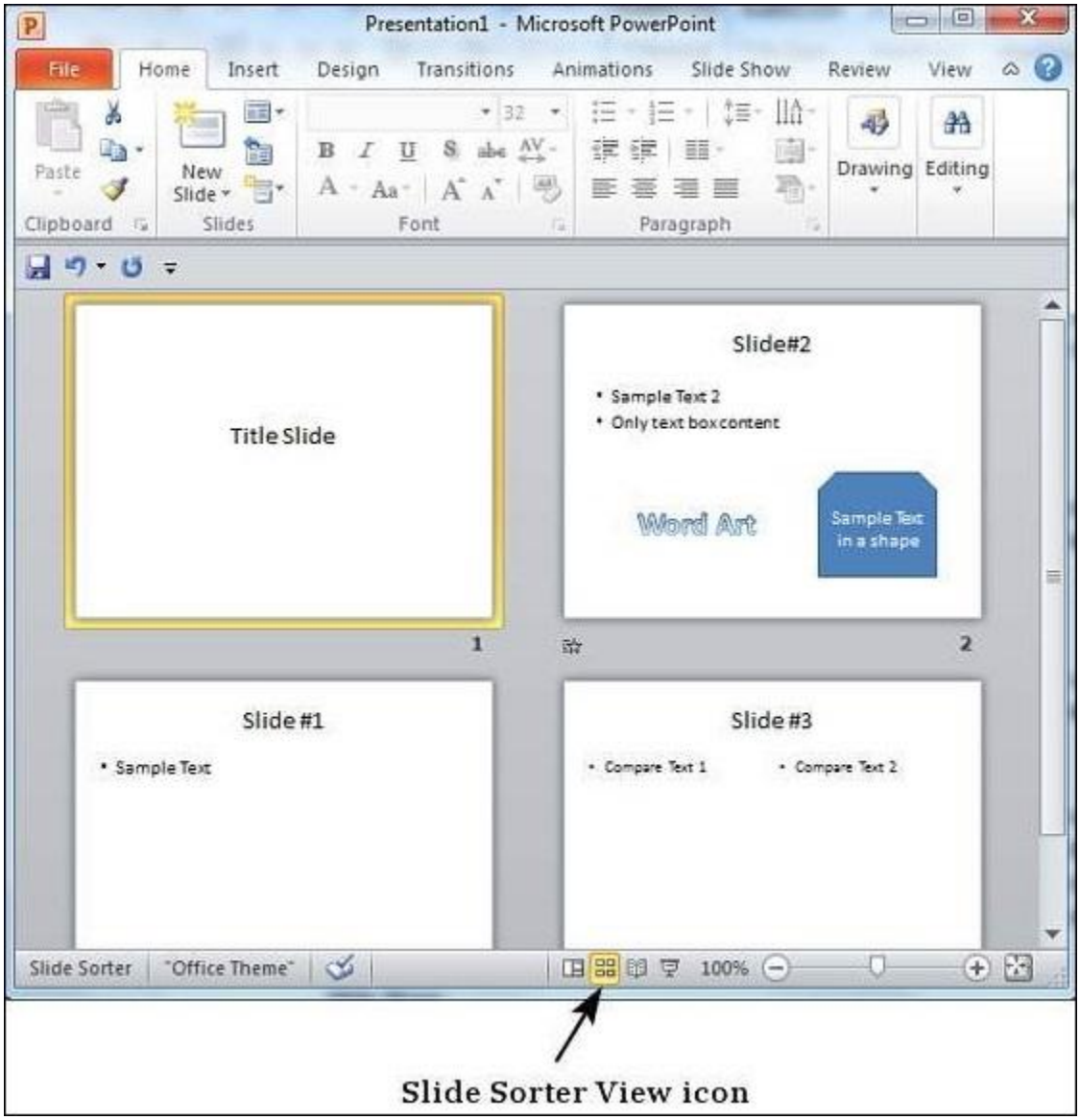
Normal View

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.



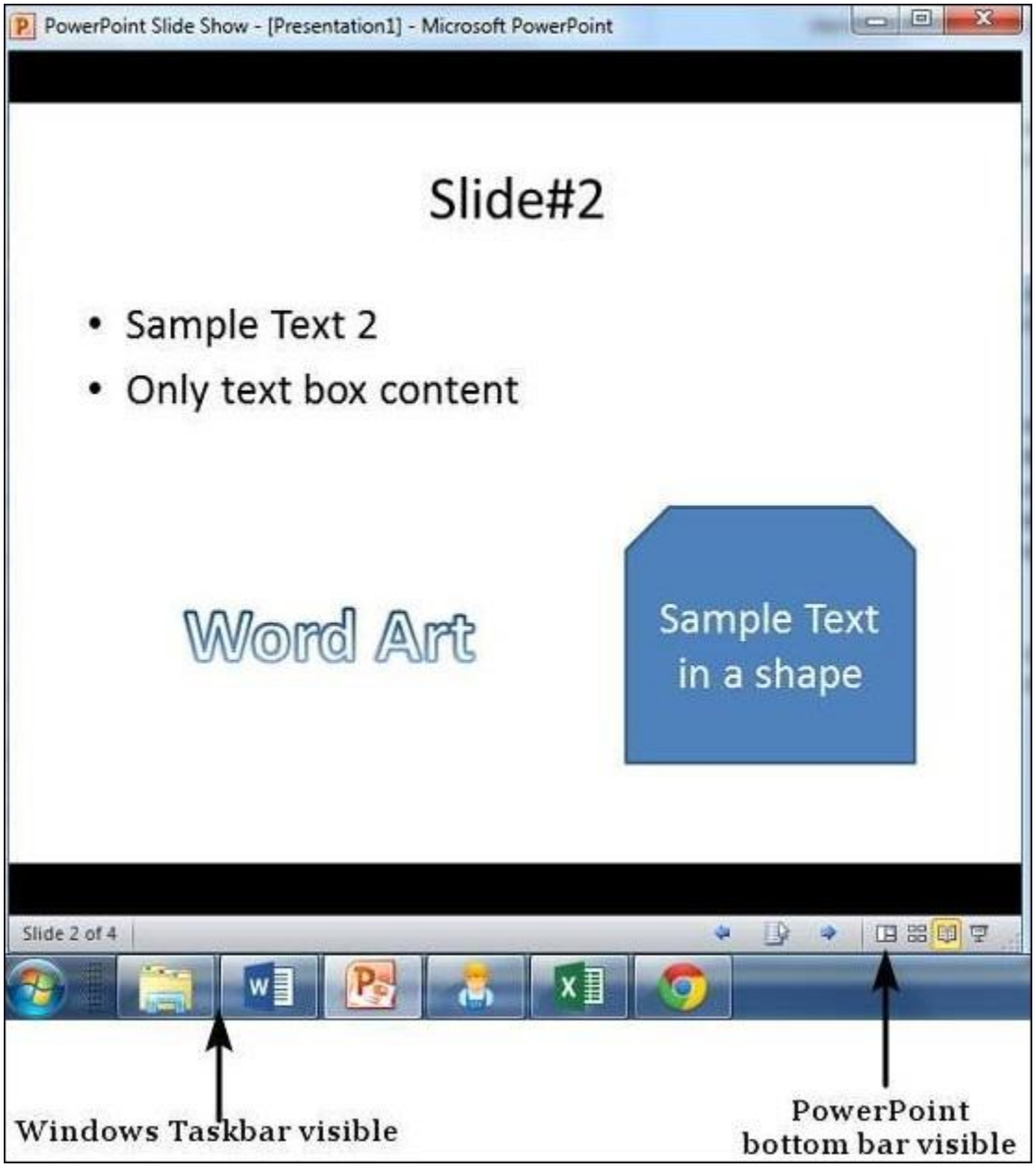
Slide Sorter View

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.



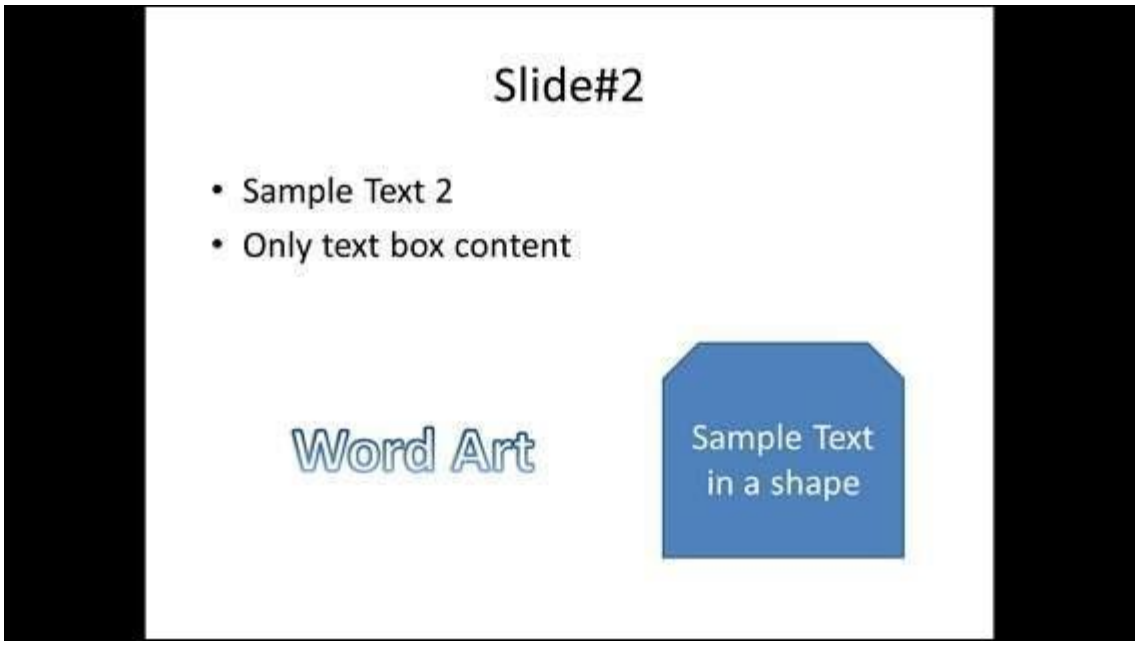
Reading View

This view is new to 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.



SlidesShow

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



Getting Started with Excel

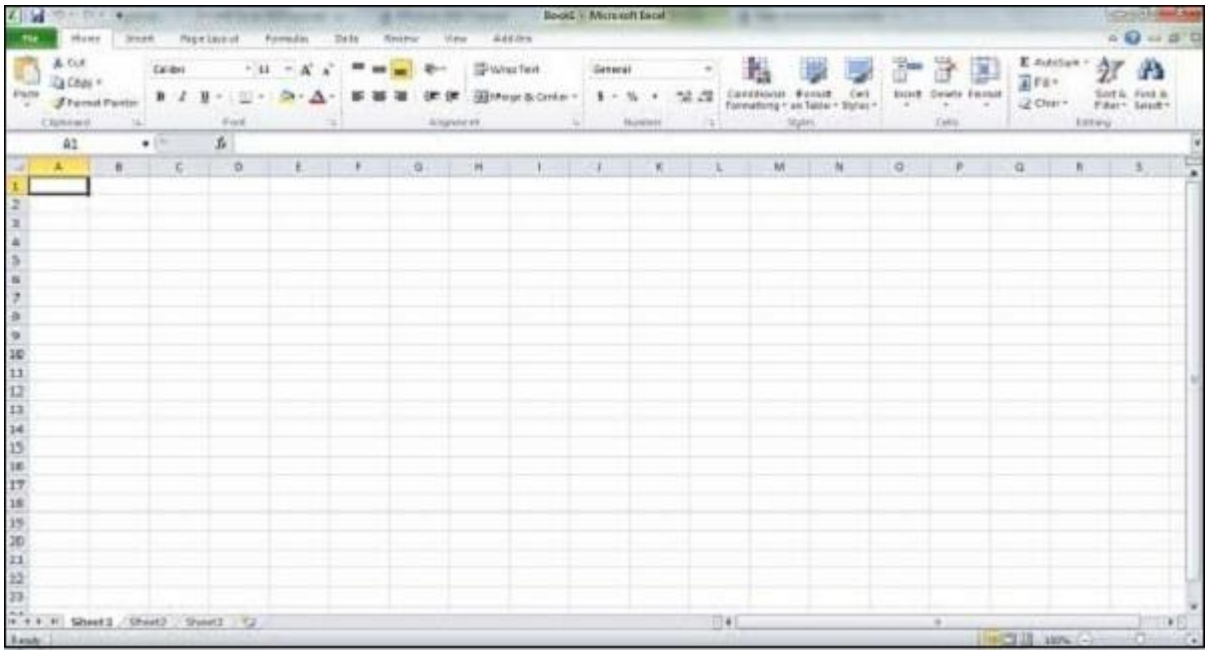
Step 1 – Click on the **Start** button.

Step 2 – Click on **All Programs** option from the menu.

Step 3 – Search for **Microsoft Office** from the sub menu and click it.

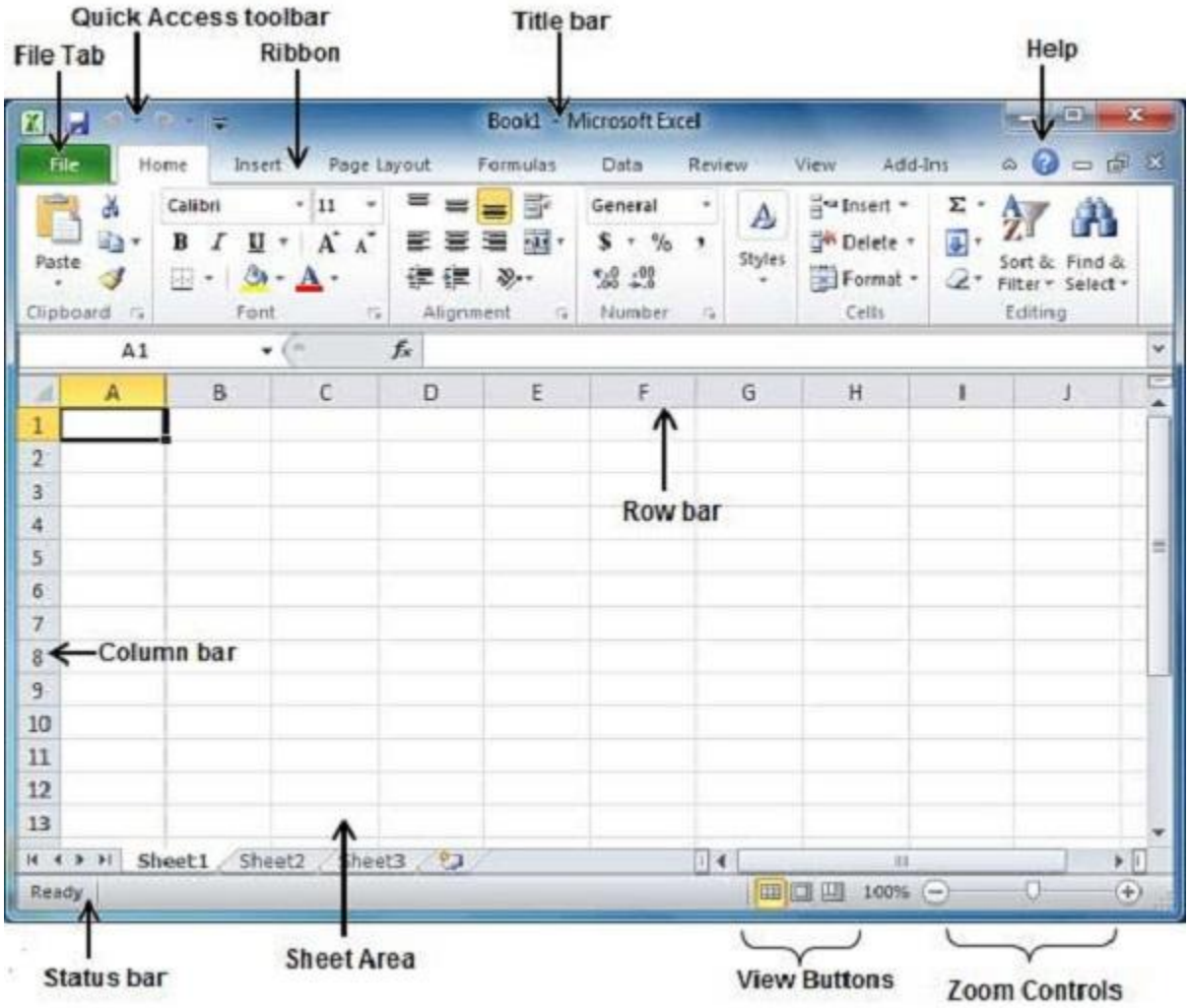
Step 4 – Search for **Microsoft Excel 2010** from the submenu and click it.

This will launch the Microsoft Excel 2010 application and you will see the following excel window.



Explore Window in Excel

The following basic window appears when you start the excel application. Let us now understand the various important parts of this window.



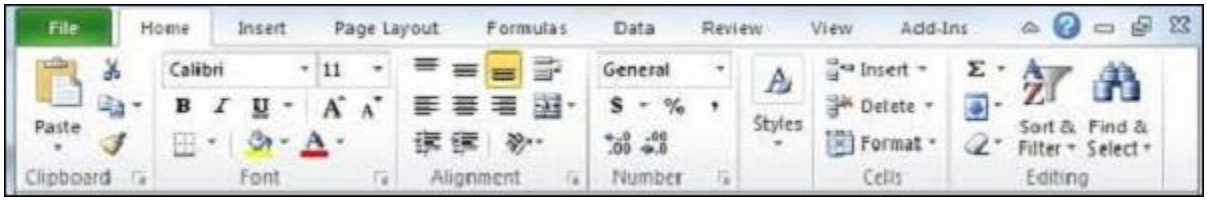
File Tab

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.

Quick Access Toolbar

You will find this toolbar just above the **File tab** and its purpose is to provide a convenient resting place for the Excel's most frequently used commands. You can customize this toolbar based on your comfort.

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.

Help

The **Help Icon** can be used to get excel related help anytime you like. This provides nice tutorial on various subjects related to excel.

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 Buttons

The group of three buttons located to the left of the Zoom control, near the bottom of the screen, lets you switch among excel's 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.

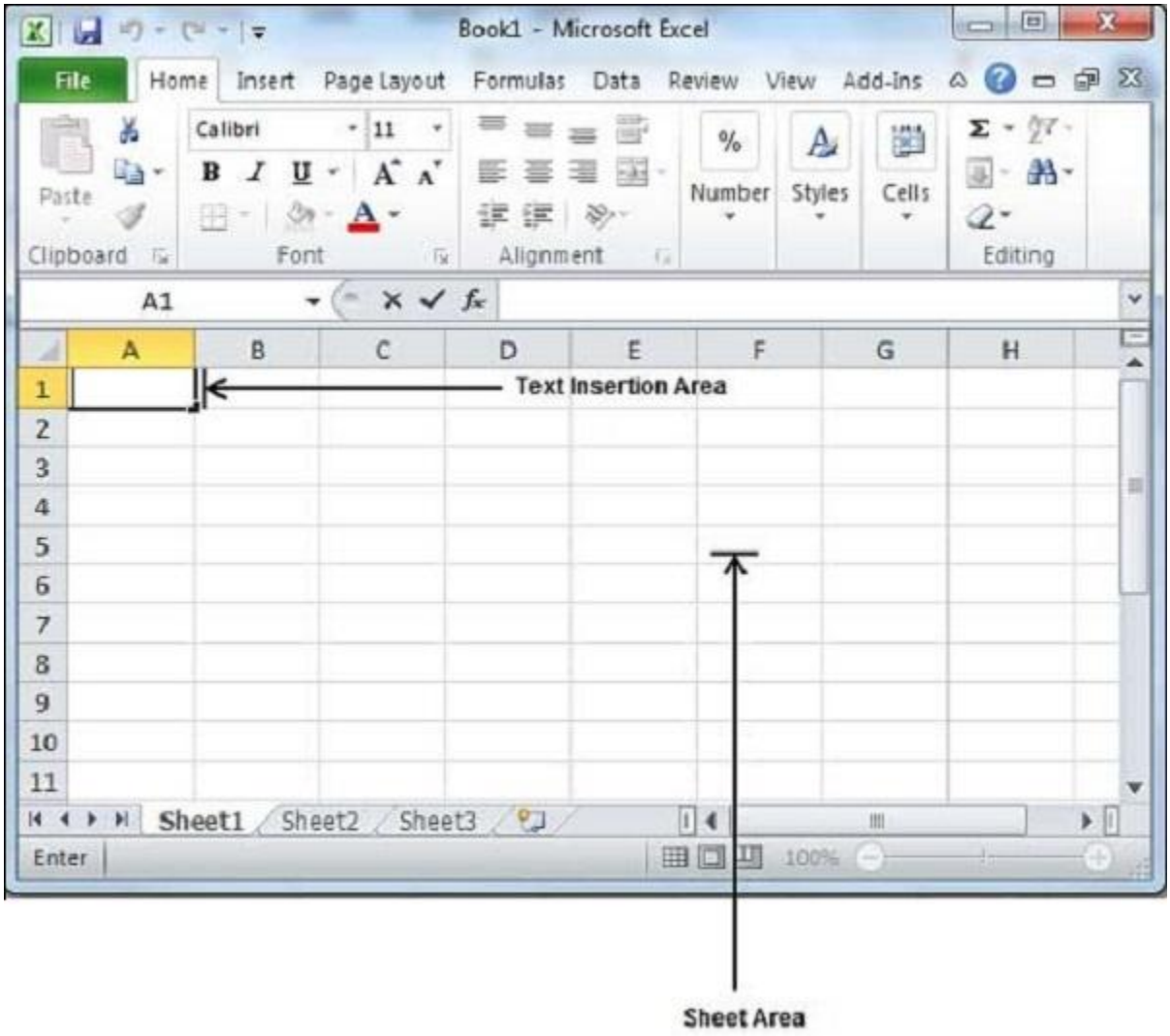
You can configure the status bar by right-clicking anywhere on it and by selecting or deselecting options from the provided list.

Dialog Box Launcher

This appears as a very small arrow in the lower-right corner of many groups on the Ribbon. Clicking this button opens a dialog box or task pane that provides more options about the group.

Entering Values in Excel

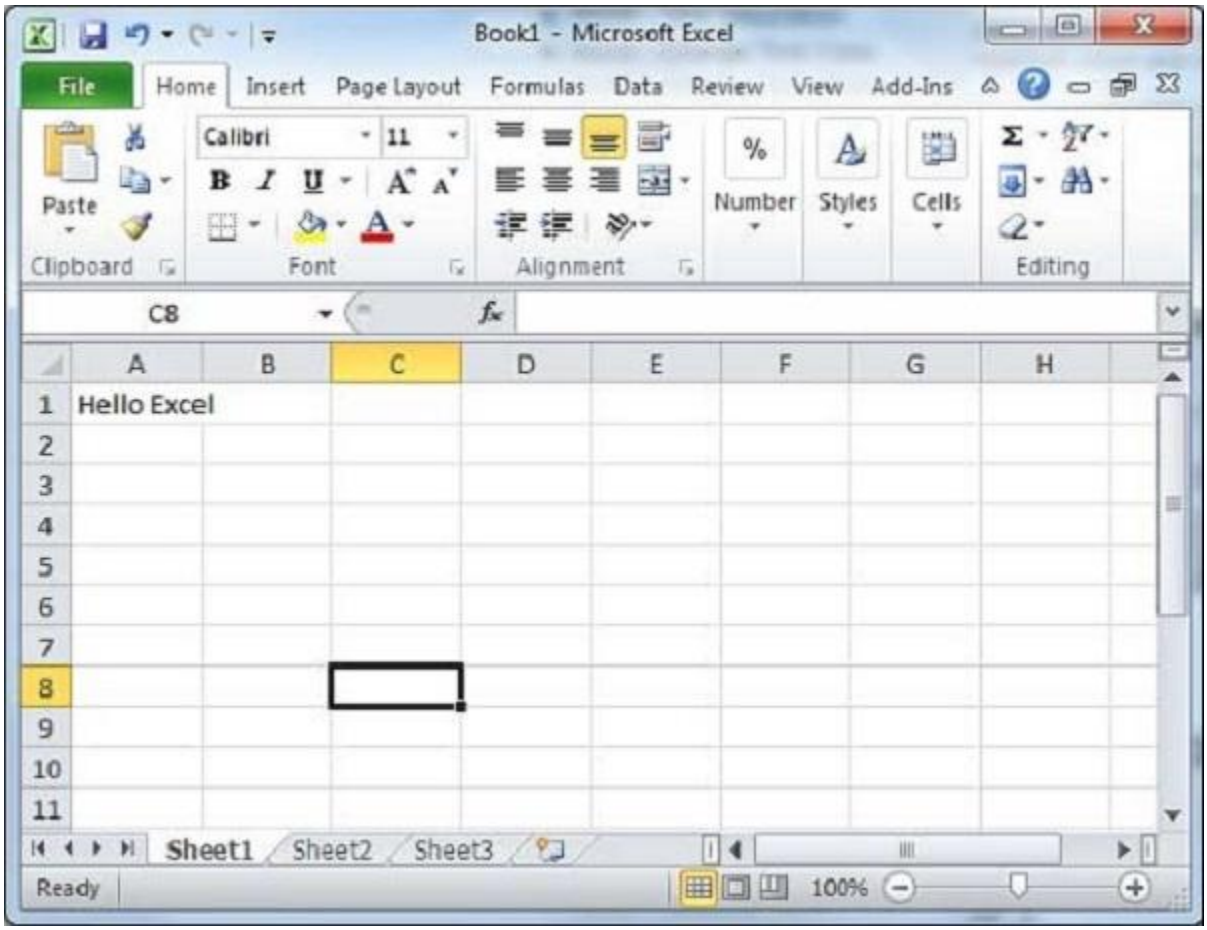
Entering values in excel sheet is a child's play and this chapter shows how to enter values in an excel sheet. A new sheet is displayed by default when you open an excel sheet as shown in the below screen shot.



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 "Hello Excel" as shown below. The text appears to the left of the insertion point as you type.



There are following three important points, which would help you while typing –

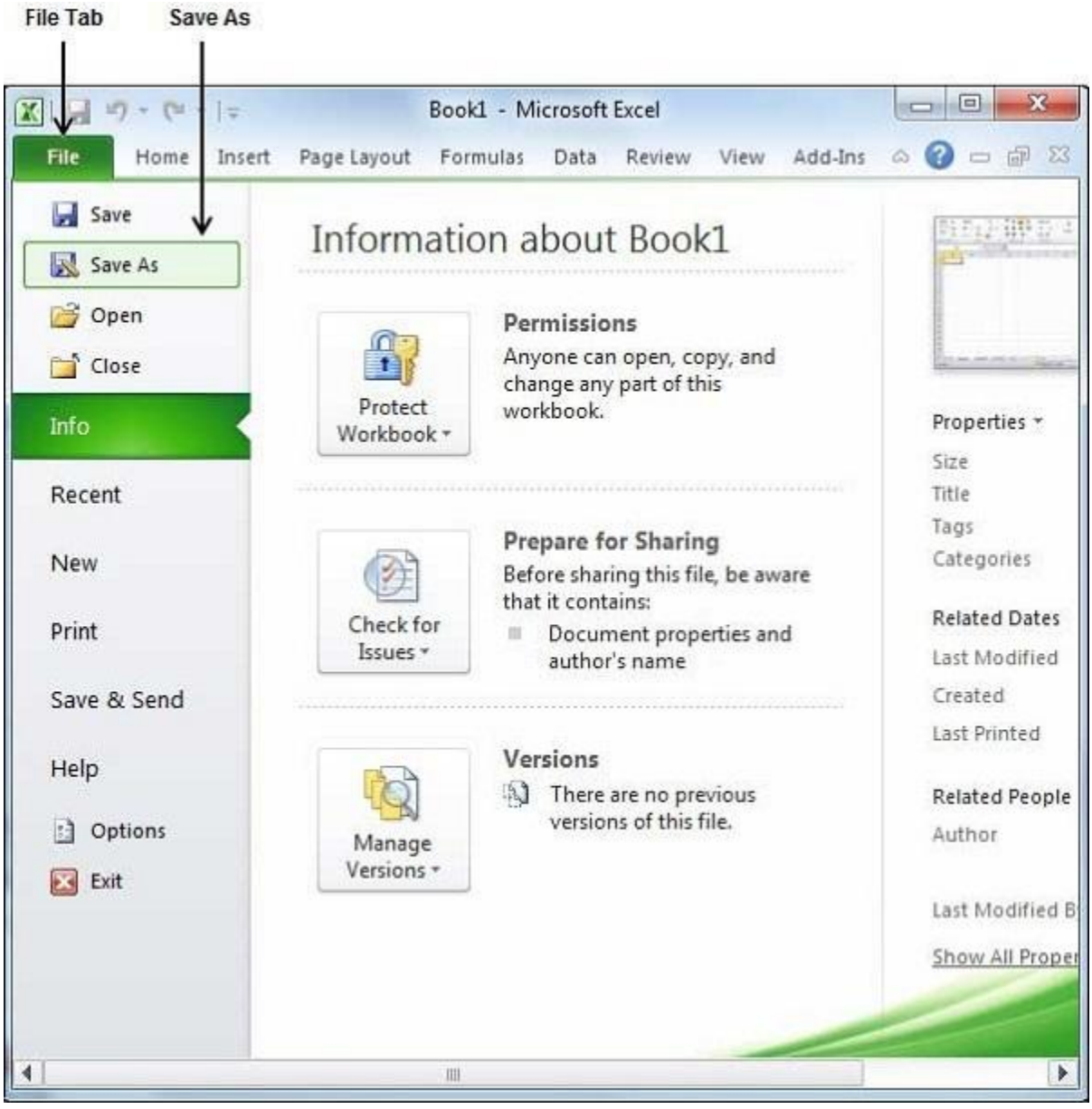
- Press Tab to go to next column.
- Press Enter to go to next row.
- Press Alt + Enter to enter a new line in the same column.

Save Workbook in Excel

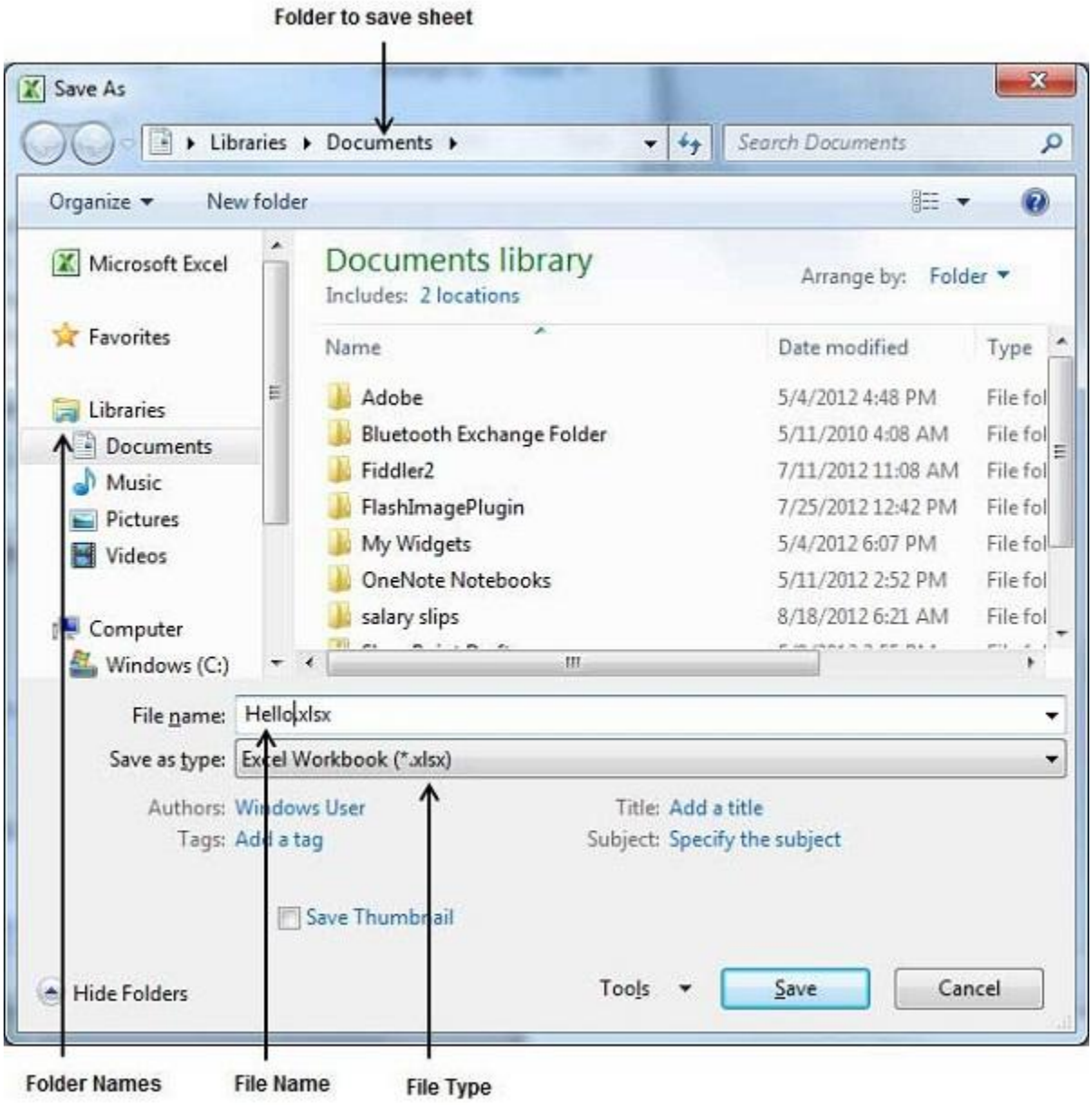
Saving New Sheet

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 Select a Save as type, by default it is **.xlsx** format.



Step 3 – Finally, click on **Save** button and your sheet will be saved with the entered name in the selected folder.

Saving New Changes

There may be a situation when you open an existing sheet and edit it partially or completely, or even you would like to save the changes in between editing of the sheet. If you want to save this sheet with the same name, then you can use either of the following simple options –

- Just press **Ctrl + S** keys to save the changes.
- Optionally, you can click on the floppy icon available at the top left corner and just above the **File tab**. This option will also save the changes.
- You can also use third method to save the changes, which is the **Save** option available just above the **Save As** option as shown in the above screen capture.

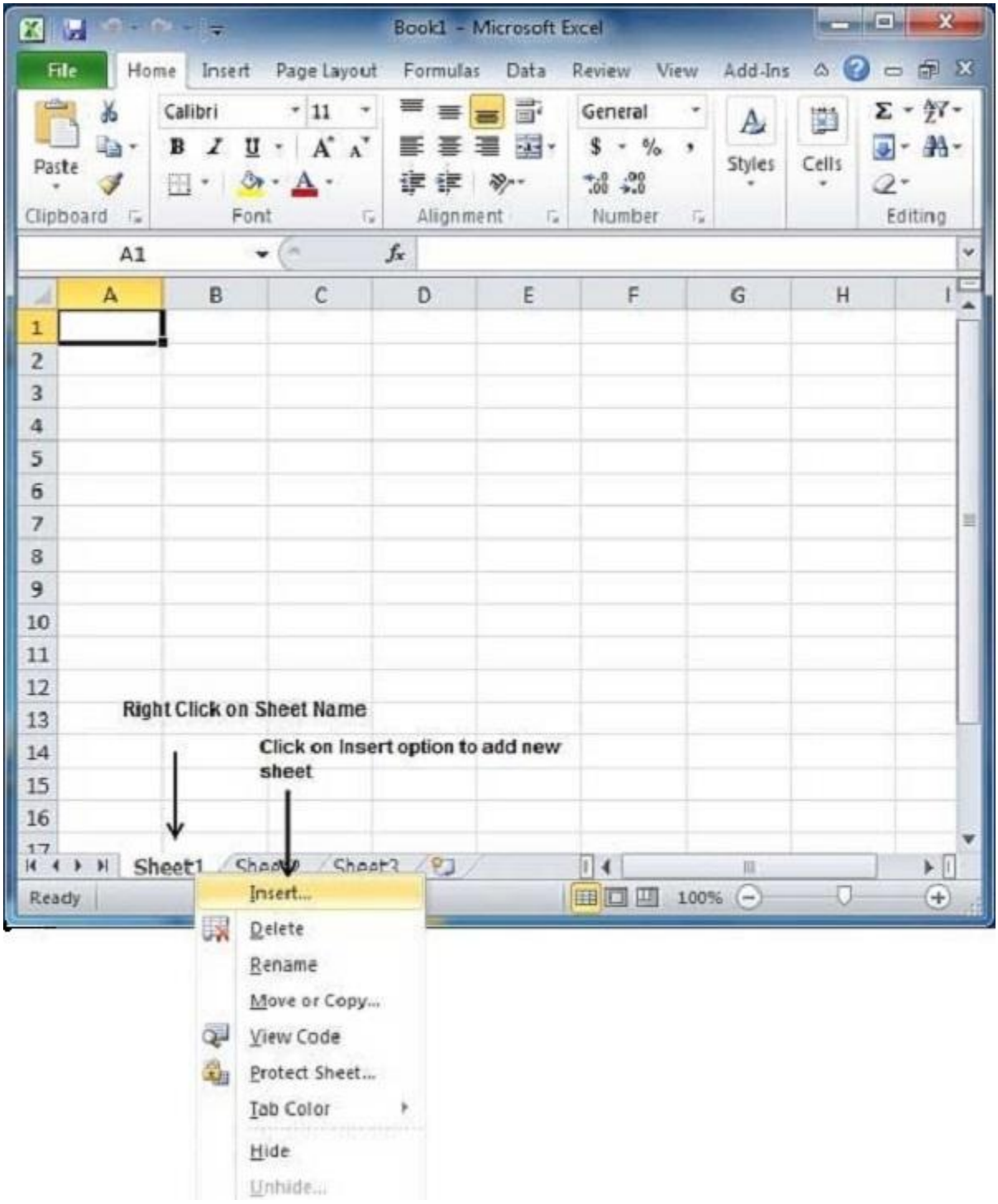
If your sheet is new and it was never saved so far, then with either of the three options, word would display you a dialogue box to let you select a folder, and enter sheet name as explained in case of saving new sheet.

Create Worksheet in Excel

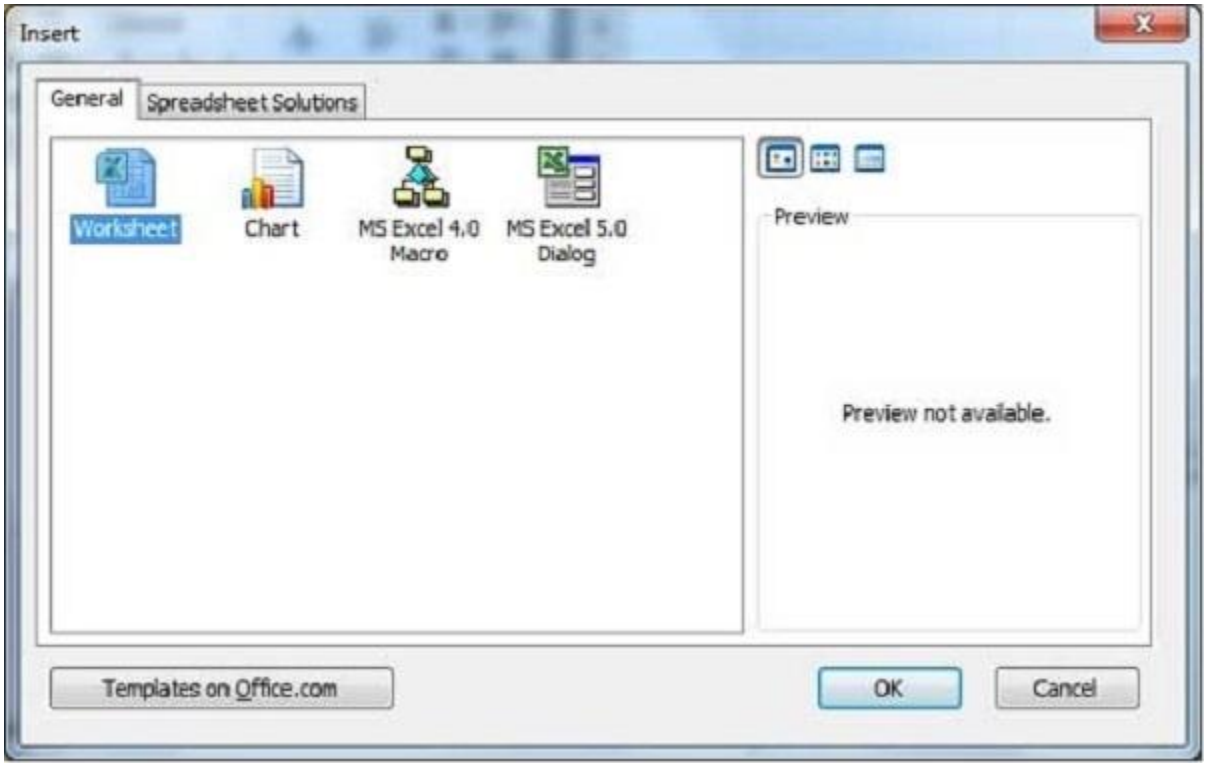
Creating New Worksheet

Three new blank sheets always open when you start Microsoft Excel. Below steps 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.

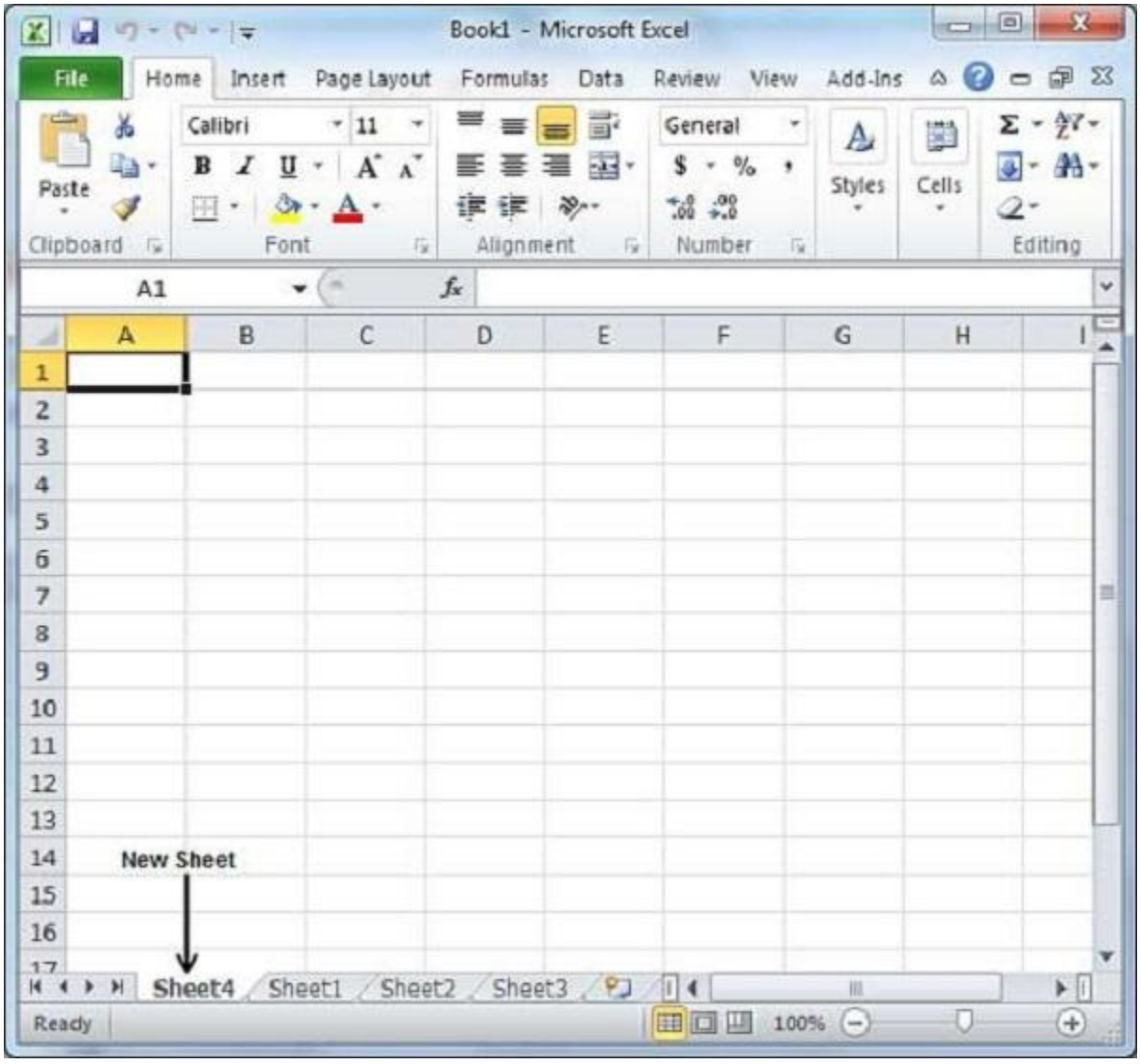
Step 1 – Right Click the **Sheet Name** and select **Insert** option.



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.



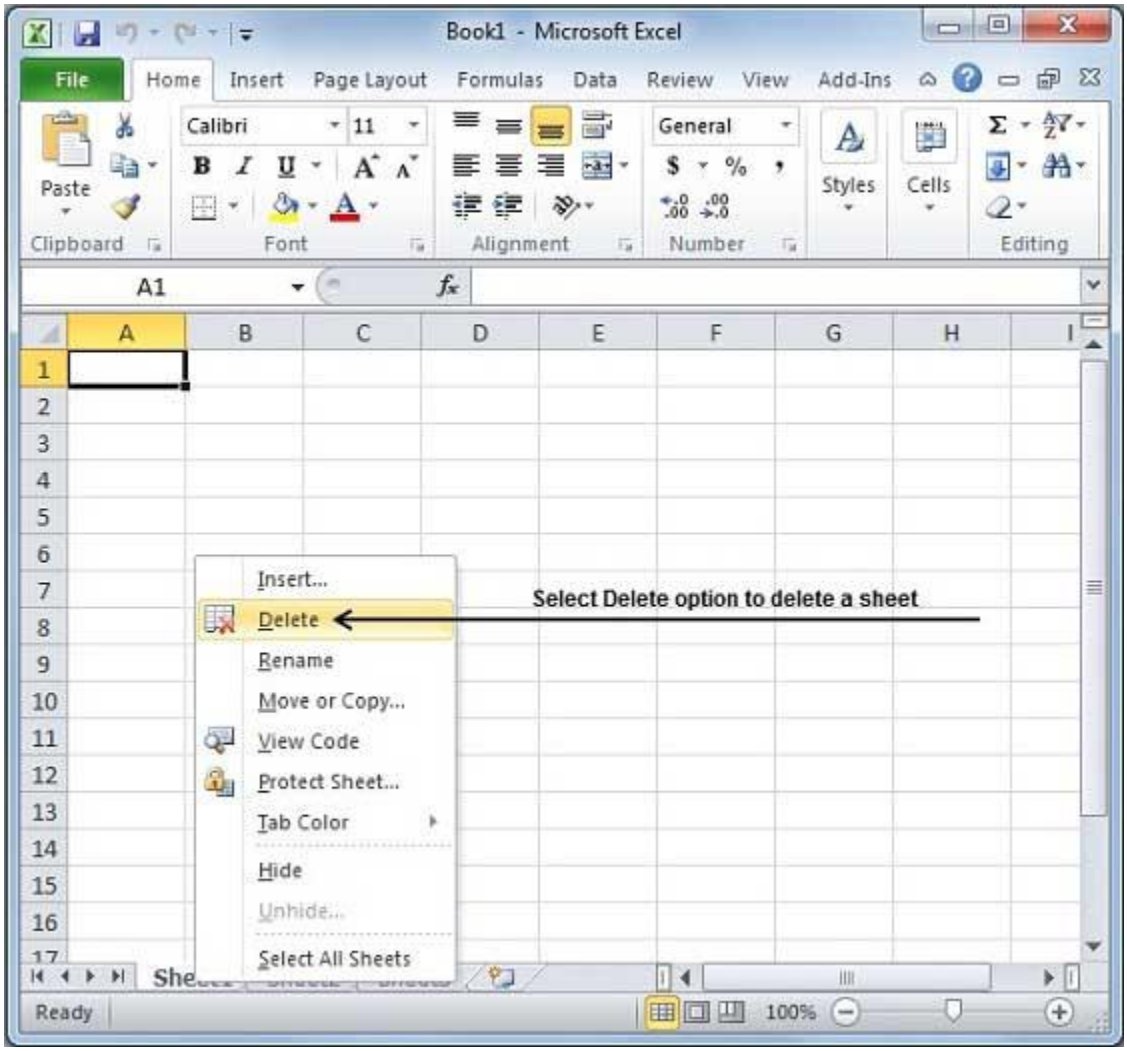
You can use a short cut to create a blank sheet anytime. Try using the **Shift+F11** keys and you will see a new blank sheet similar to the above sheet is opened.

Delete Worksheet in Excel

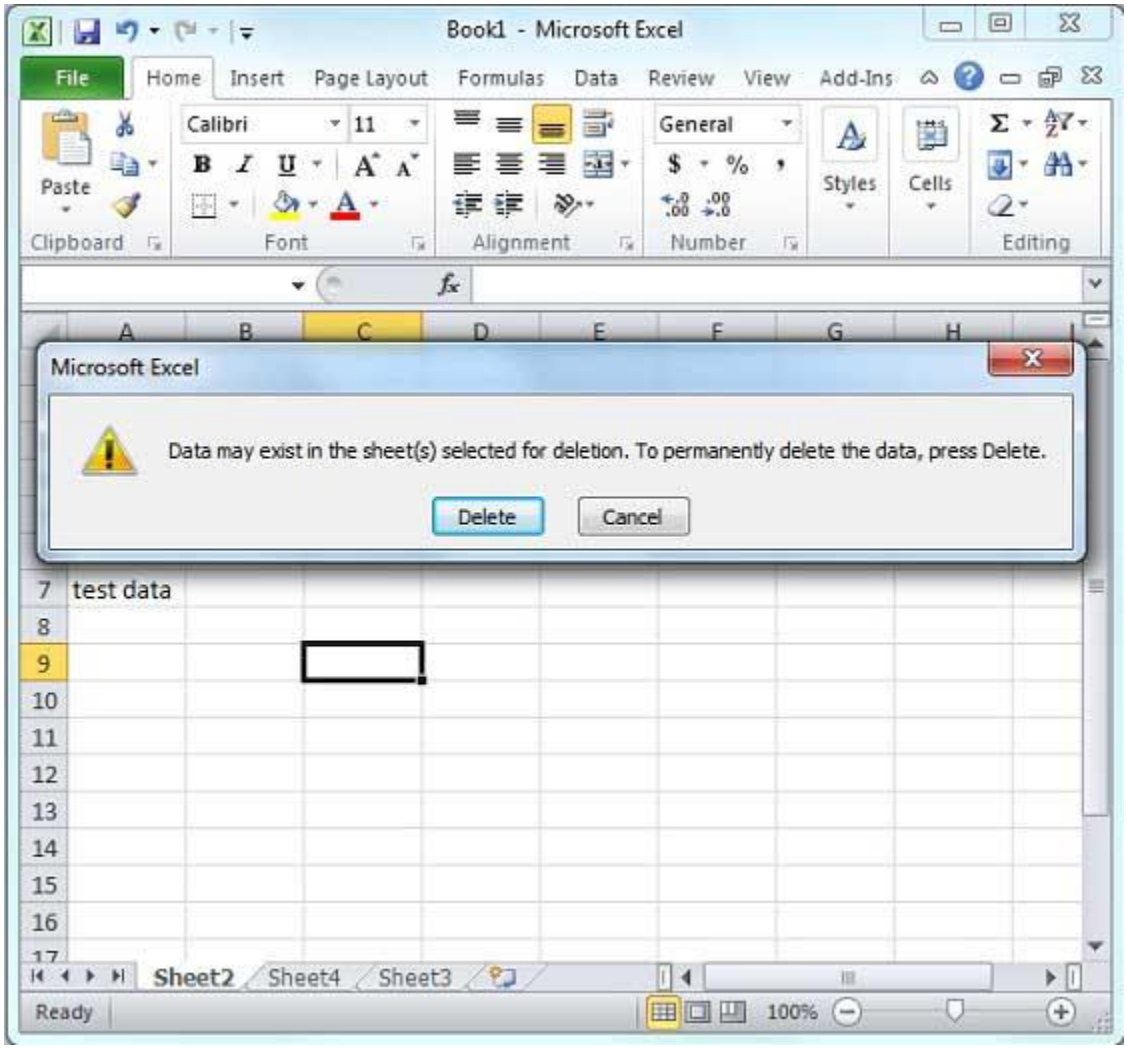
Delete Worksheet

Here is the step to delete a worksheet.

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



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



Press the **Delete** Button.

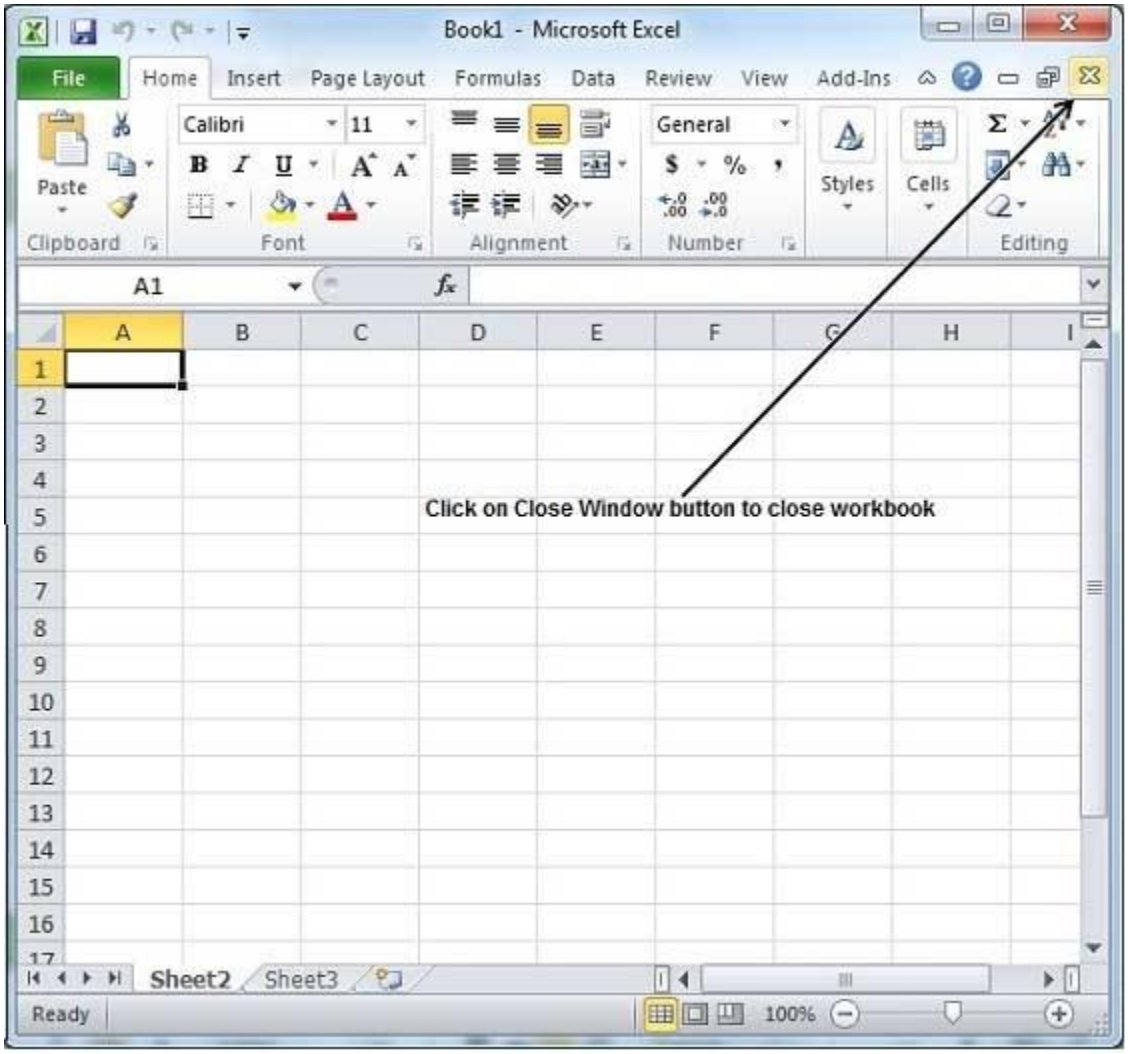
Now your worksheet will get deleted.

Close Workbook in Excel

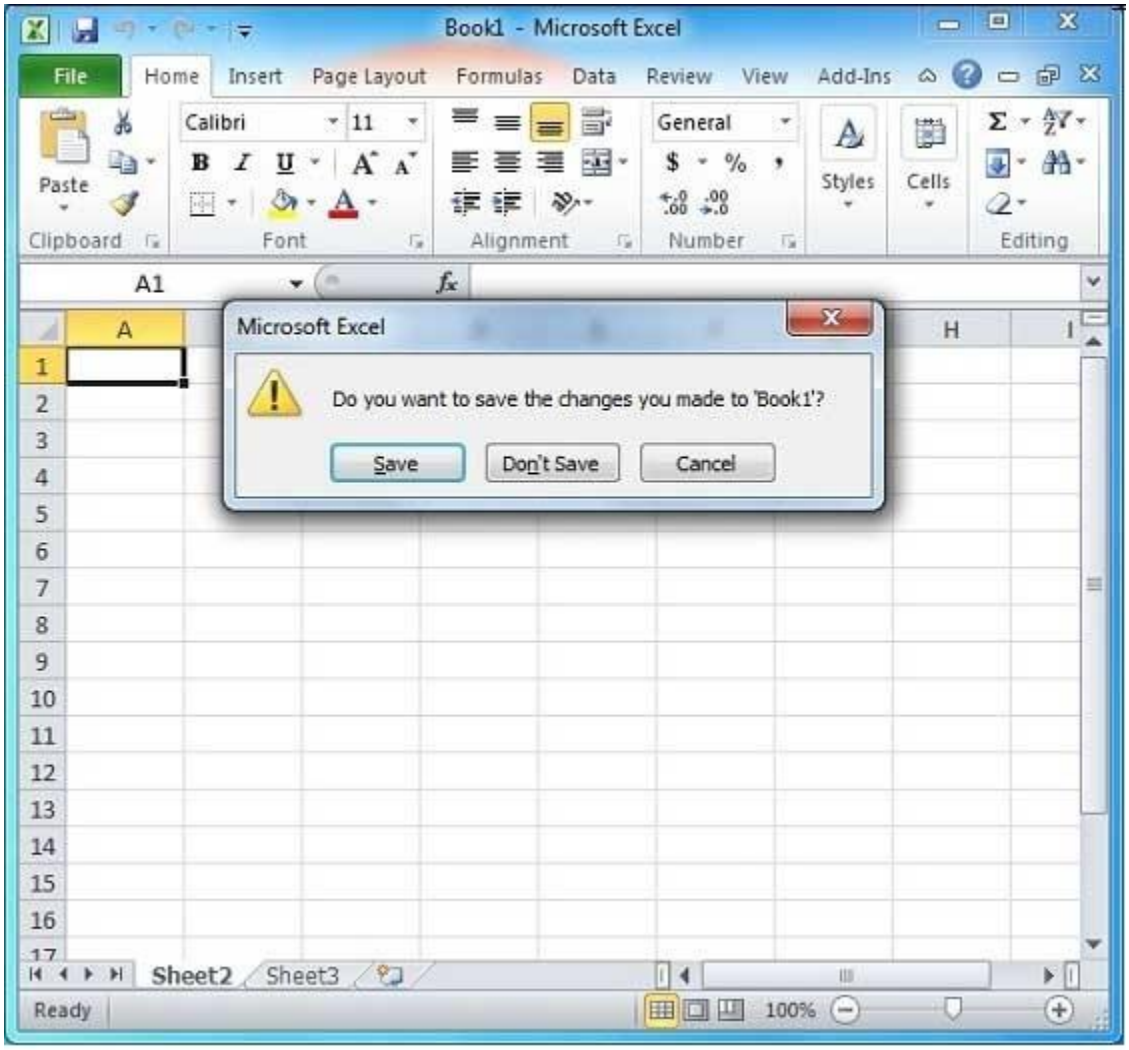
Close Workbook

Here are the steps to close a workbook.

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



You'll see a confirmation message to save the workbook.



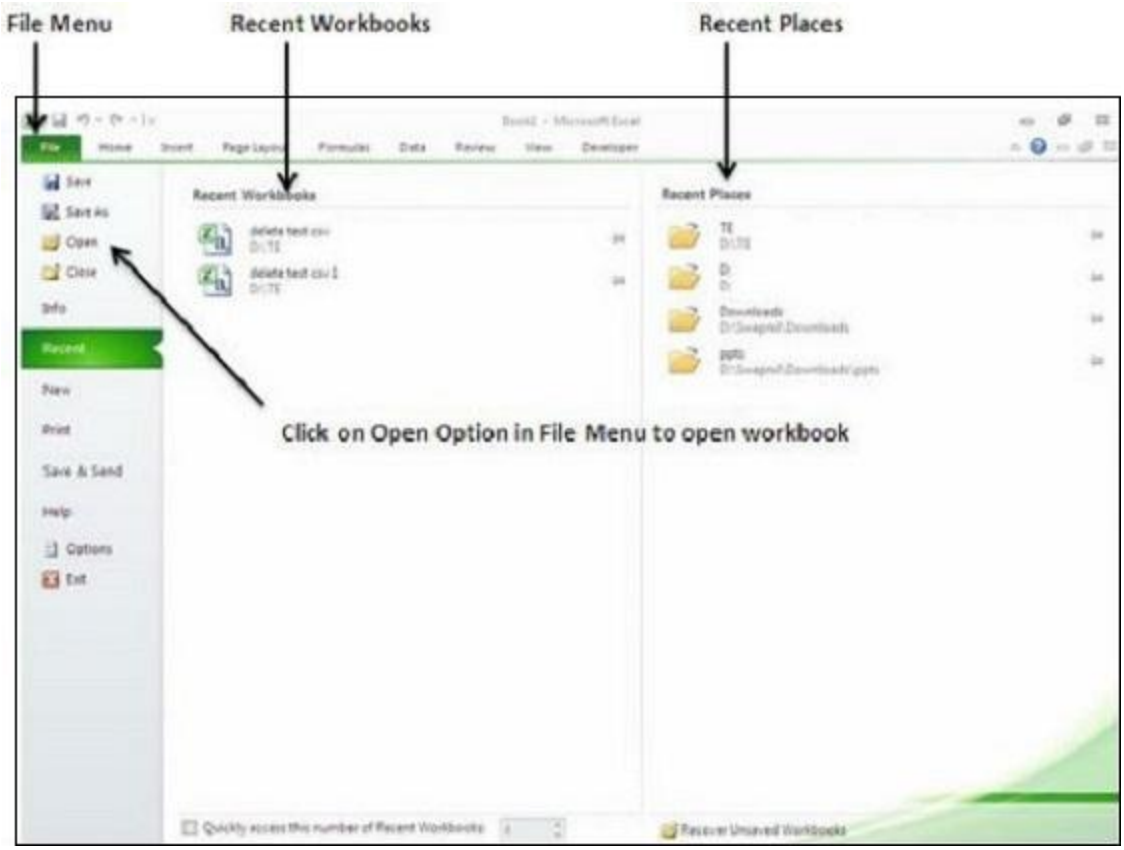
Step 2 – Press the **Save** Button to save the workbook as we did in MS Excel - Save Workbook

Open Workbook in Excel

Let us see how to open workbook from excel in the below mentioned steps.

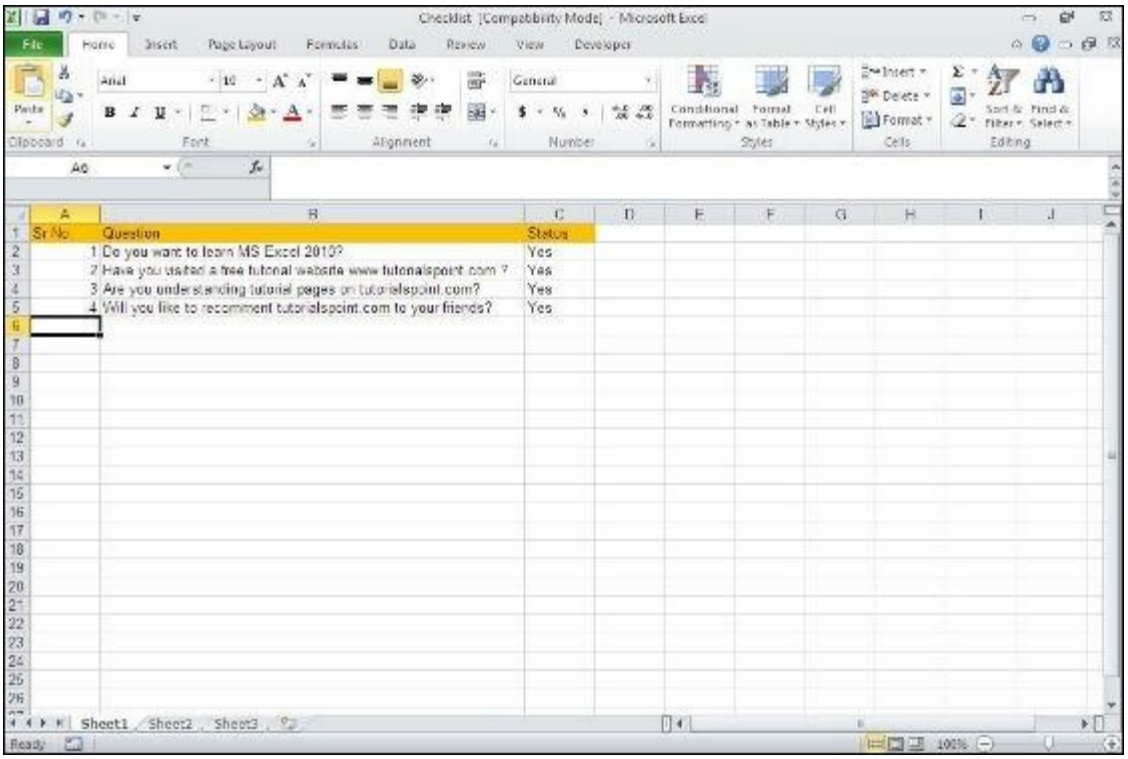
Step 1 – Click the **File Menu** as shown below. You can see the **Open option** in **File Menu.**

There are two more columns Recent workbooks and Recent places, where you can see the recently opened workbooks and the recent places from where workbooks are opened.



Step 2 – Clicking the **Open Option** will open the browse dialog as shown below. Browse the directory and find the file you need to open.

Step 3 – Once you select the workbook your workbook will be opened as below –

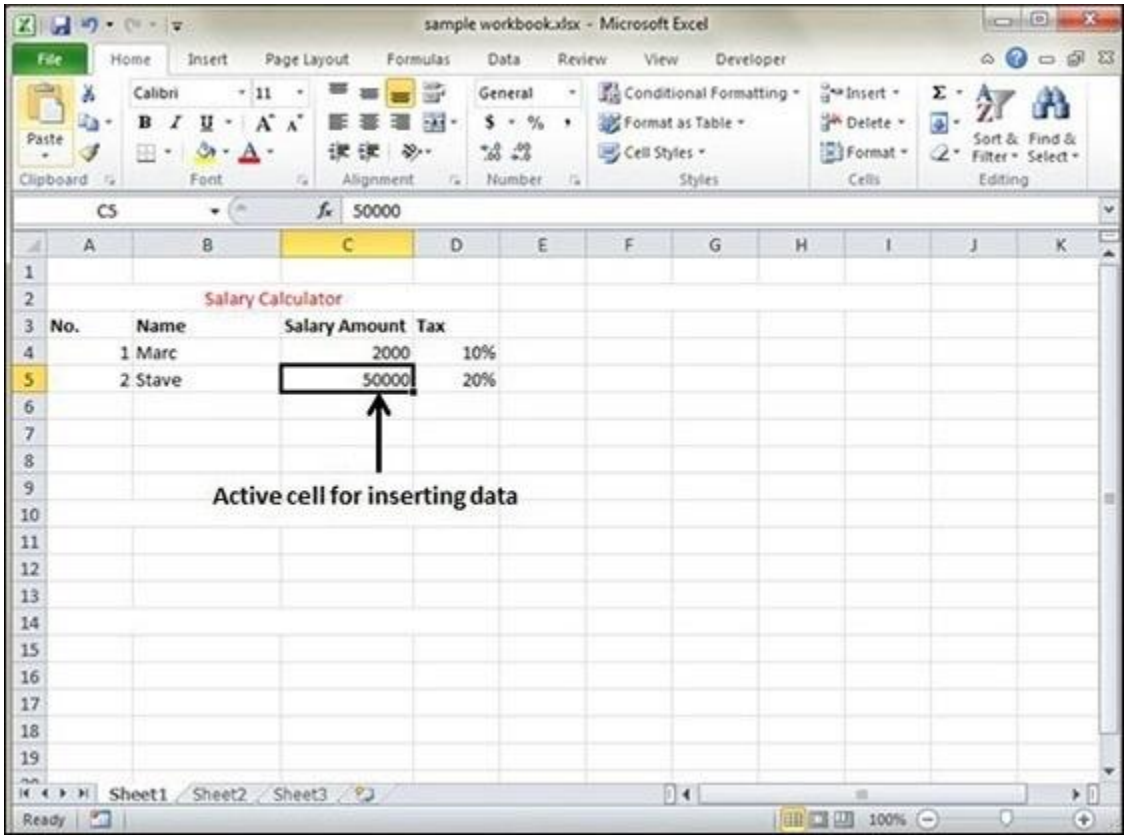


Insert Data in Excel

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

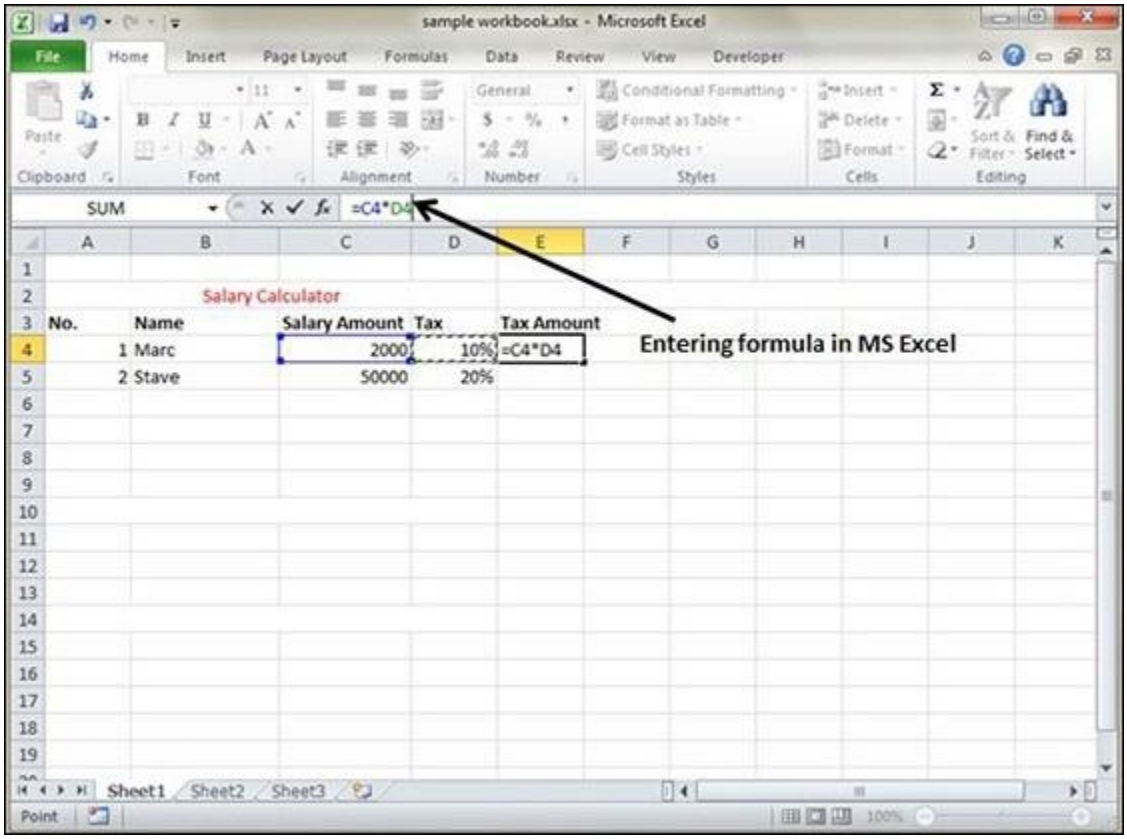
Inserting Data

For **inserting data** in **MS Excel,** just activate the cell type text or number and press enter or Navigation keys.



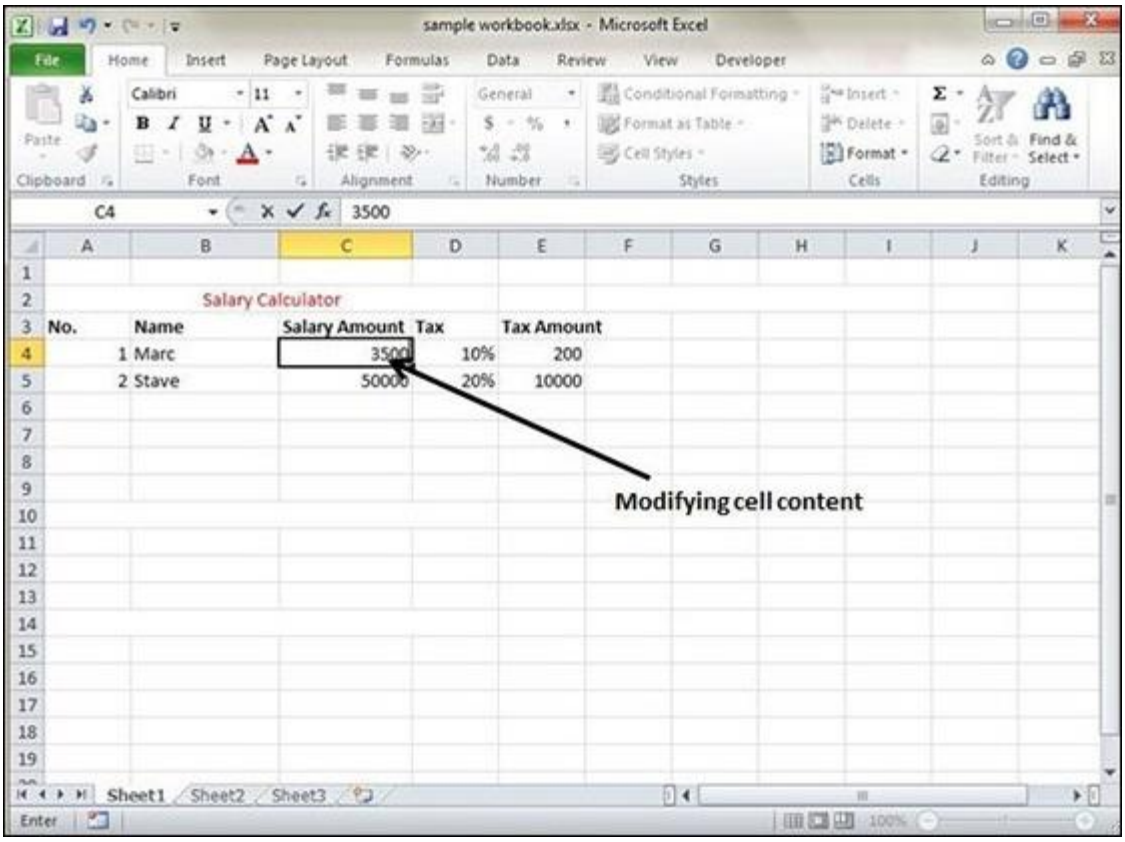
Inserting Formula

For inserting formula in MS Excel go to the formula bar, enter the formula and then press enter or navigation key. See the screen-shot below to understand it.



Modifying Cell Content

For modifying the cell content just activate the cell, enter a new value and then press enter or navigation key to see the changes. See the screen-shot below to understand it.

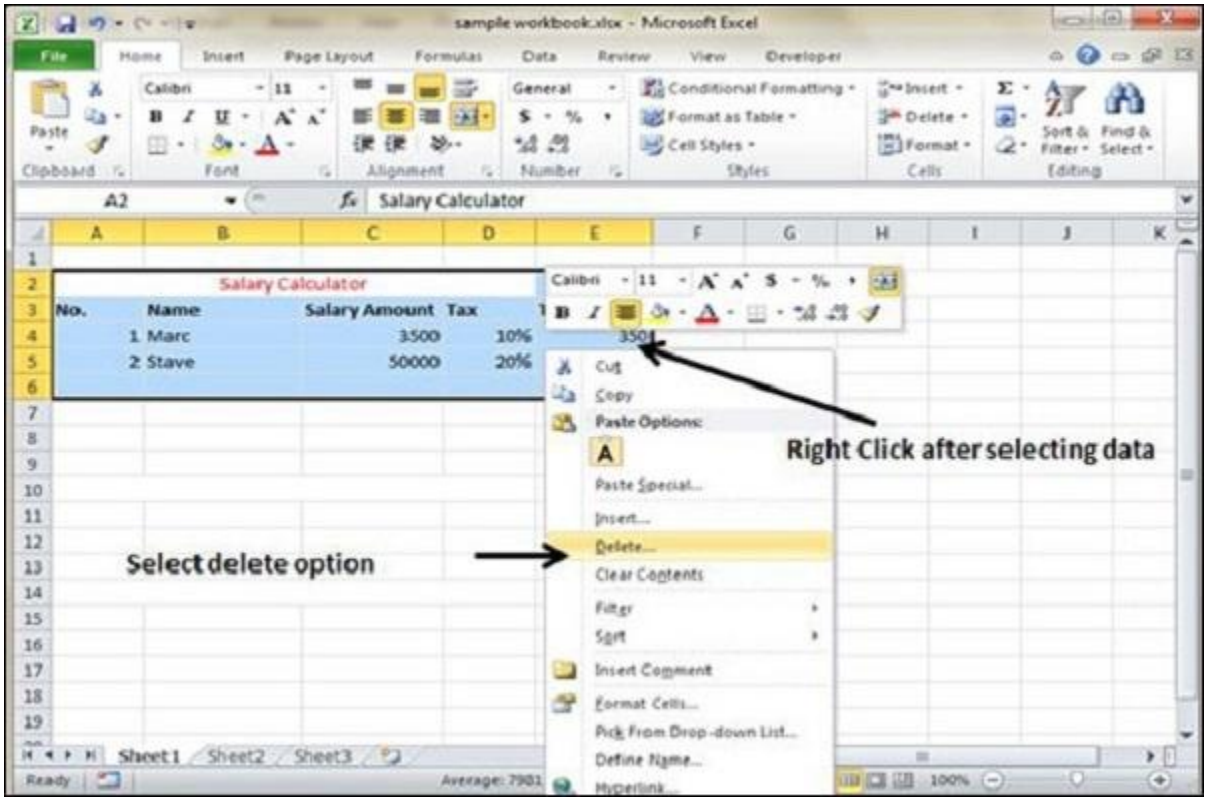


Delete Data in Excel

MS Excel provides various ways of deleting data in the sheet. Let us see those ways.

Delete with Mouse

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

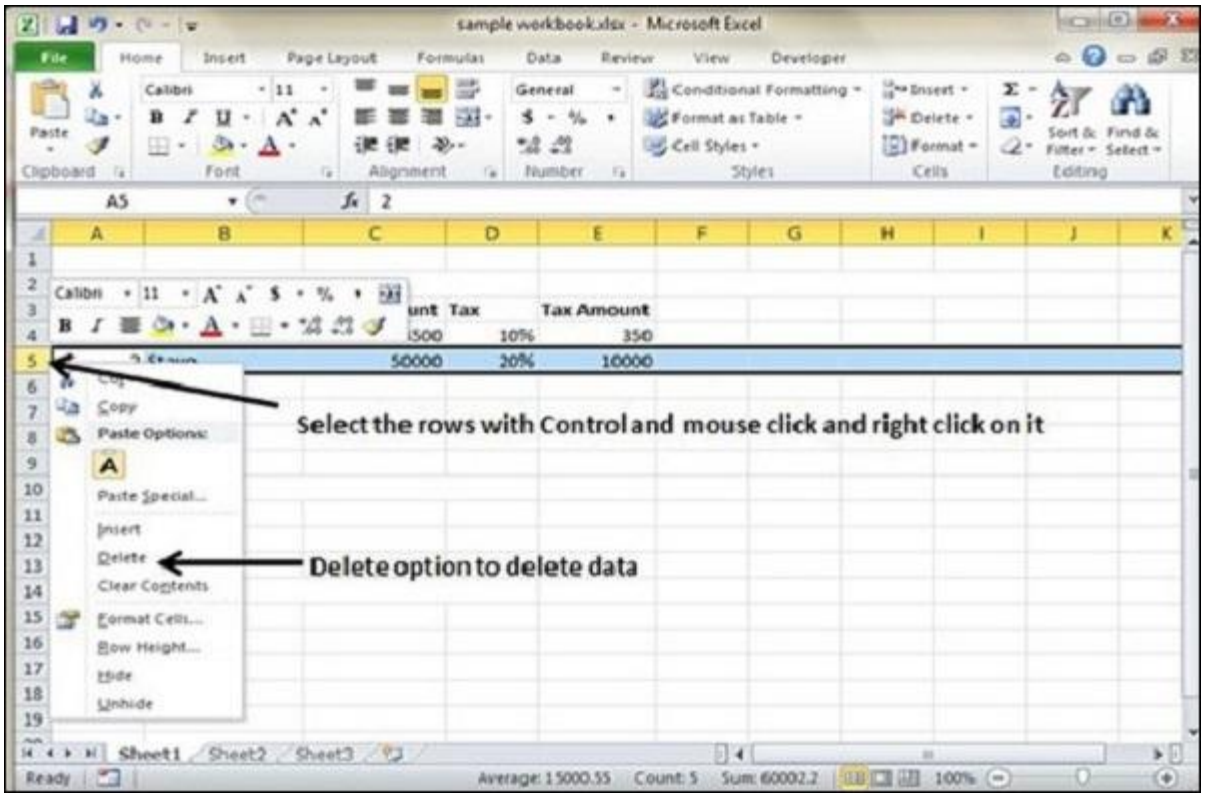


Delete with Delete Key

Select the data you want to delete. Press on the **Delete Button** from the keyboard, it will delete the data.

Selective Delete for Rows

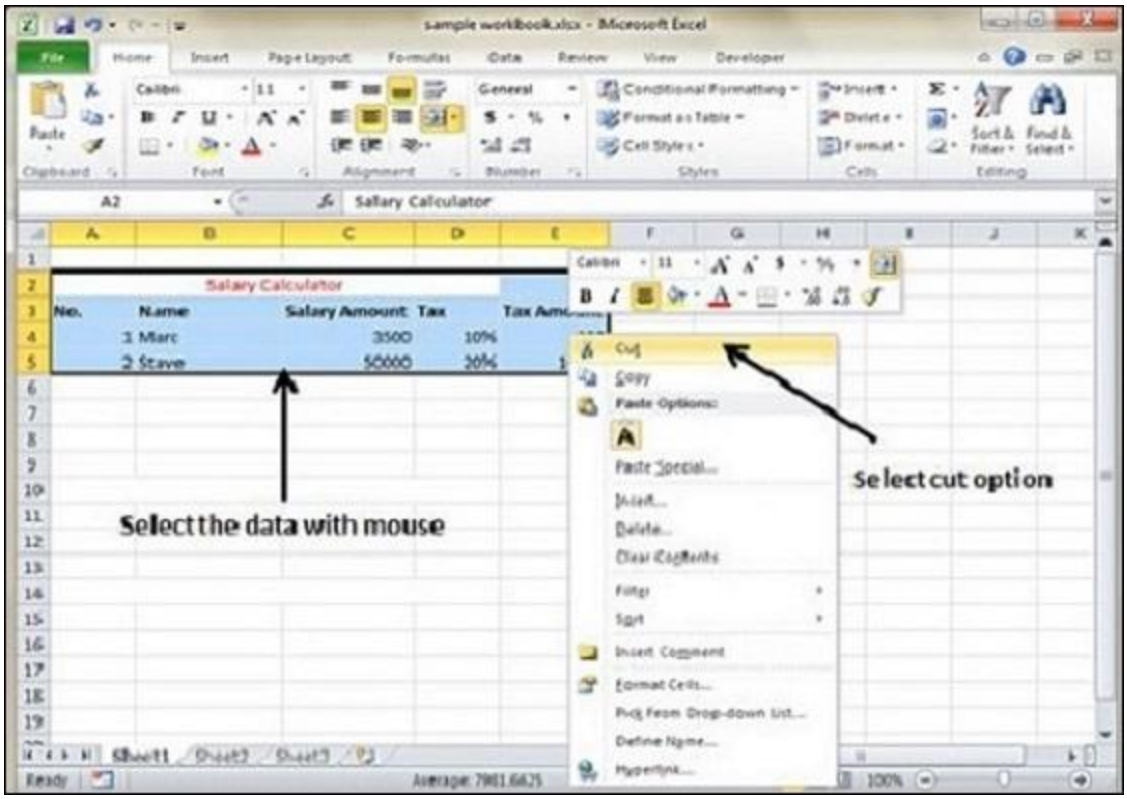
Select the rows, which you want to delete with **Mouse click + Control Key.** Then right click to show the various options. Select the **Delete option** to delete the selected rows.



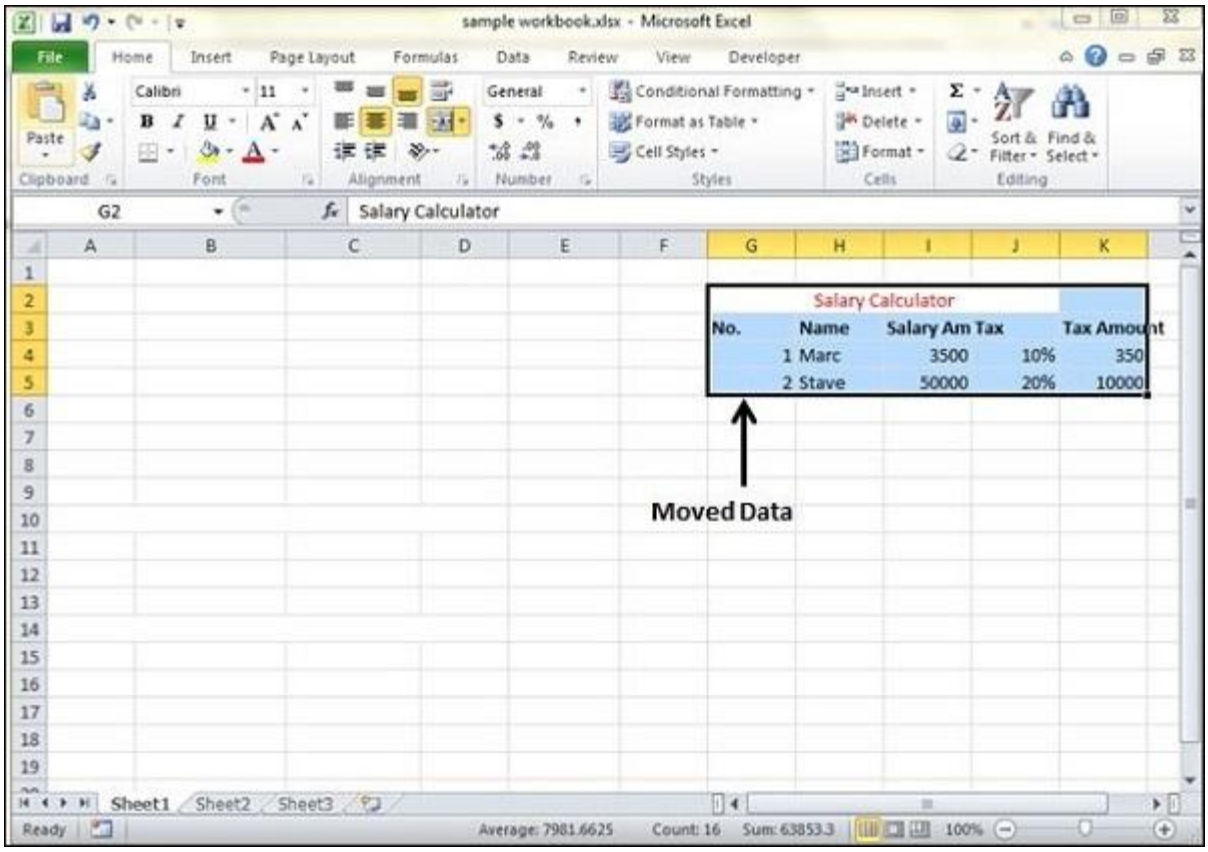
Move Data in Excel

Let us see how we can **Move Data** with **MS Excel**.

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.



Rows & Columns in Excel

Row and Column Basics

MS Excel is in tabular format consisting of rows and columns.

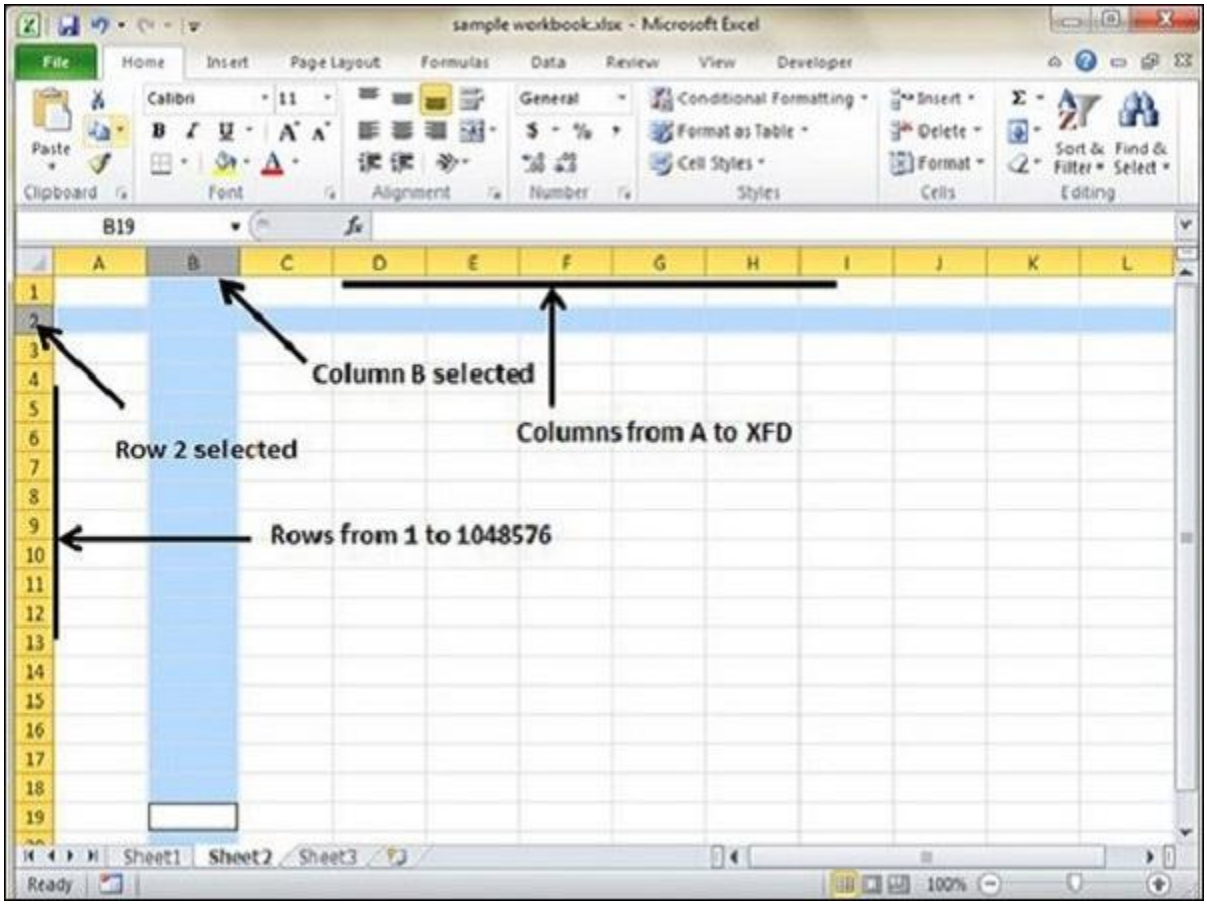
- Row runs horizontally while Column runs vertically.
- Each row is identified by row number, which runs vertically at the left side of the sheet.
- Each column is identified by column header, which runs horizontally at the top of the sheet.

For **MS Excel** 2010, Row numbers ranges from **1 to 1048576;** in total **1048576** rows, and Columns ranges from **A to XFD;** in total **16384** columns.

Navigation with Rows and Columns

Let us see how to move to the last row or the last column.

- You can go to the last row by clicking **Control + Down Navigation arrow.**
- You can go to the last column by clicking **Control + Right Navigation arrow.**

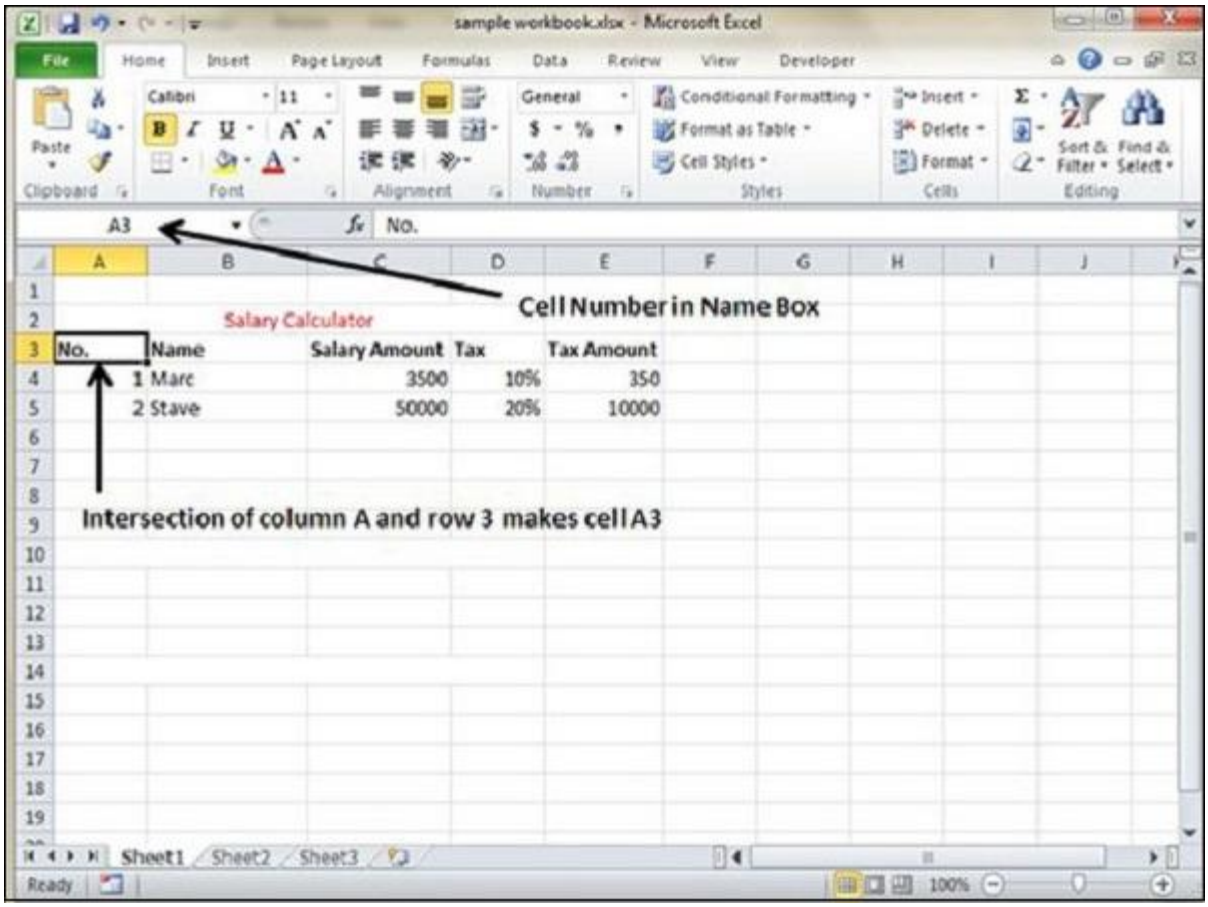


Cell Introduction

The intersection of rows and columns is called **cell**.

Cell is identified with **Combination of column header and row number**.

For example – A1, A2.

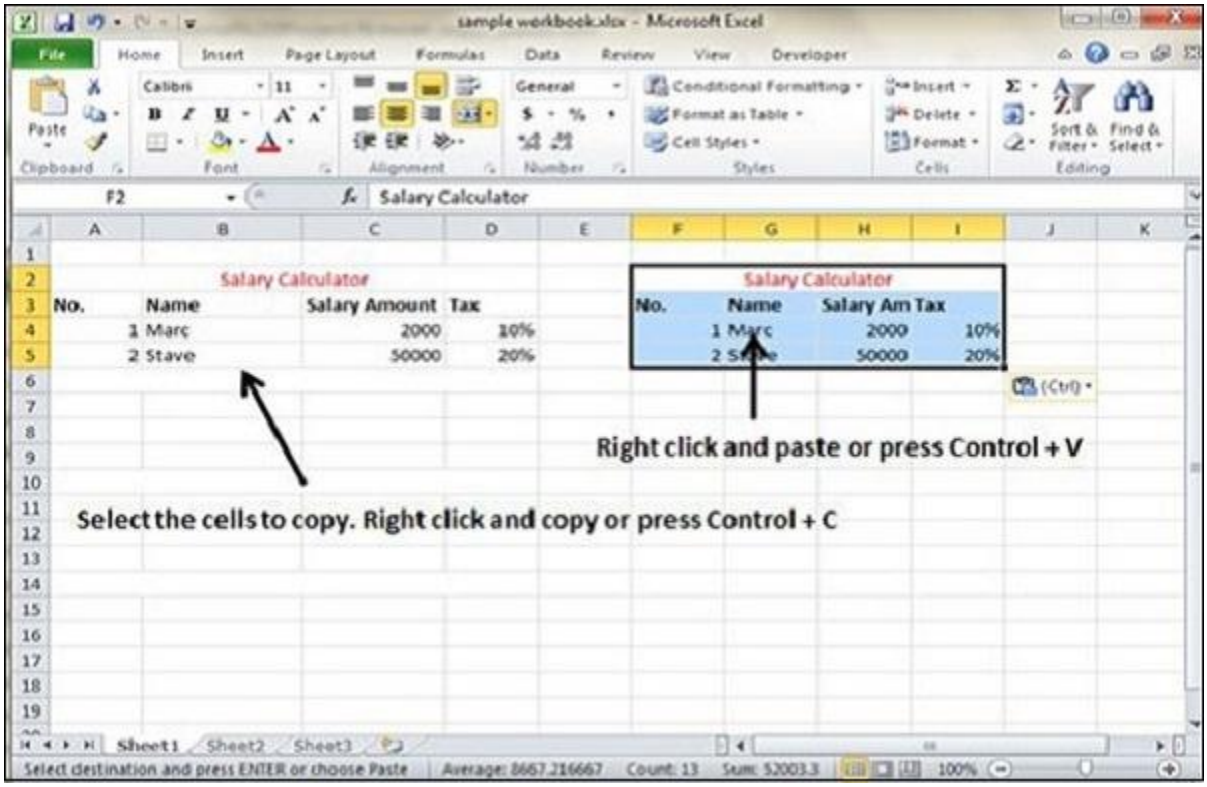


Copy & Paste in Excel

MS Excel provides **copy paste** option in different ways. The simplest method of copy paste is as below.

Copy Paste

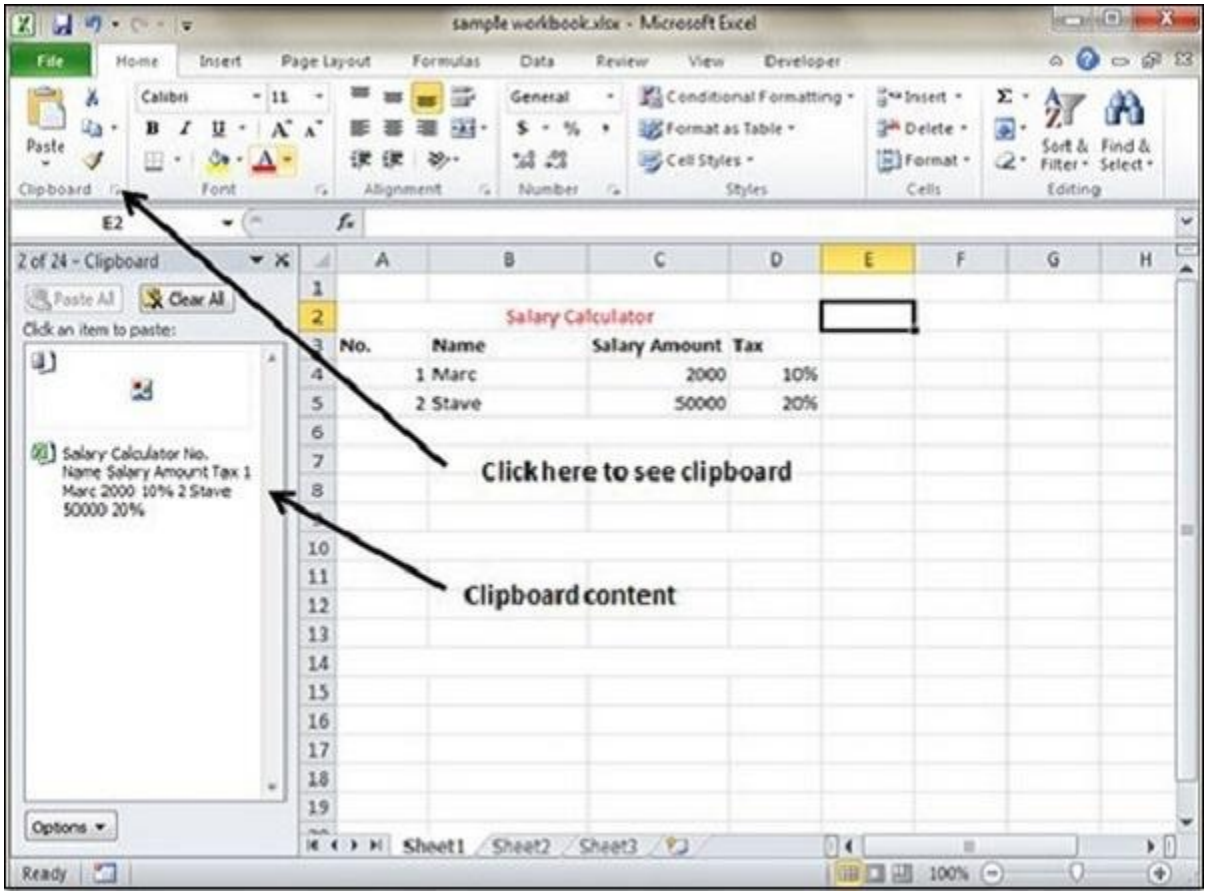
- To copy and paste, just select the cells you want to copy. Choose **copy option** after right click or press **Control + C**.
- Select the cell where you need to paste this copied content. Right click and select paste option or press **Control + V**.



In this case, **MS Excel** will copy everything such as values, formulas, Formats, Comments and validation. MS Excel will overwrite the content with paste. If you want to undo this, press **Control + Z** from the keyboard.

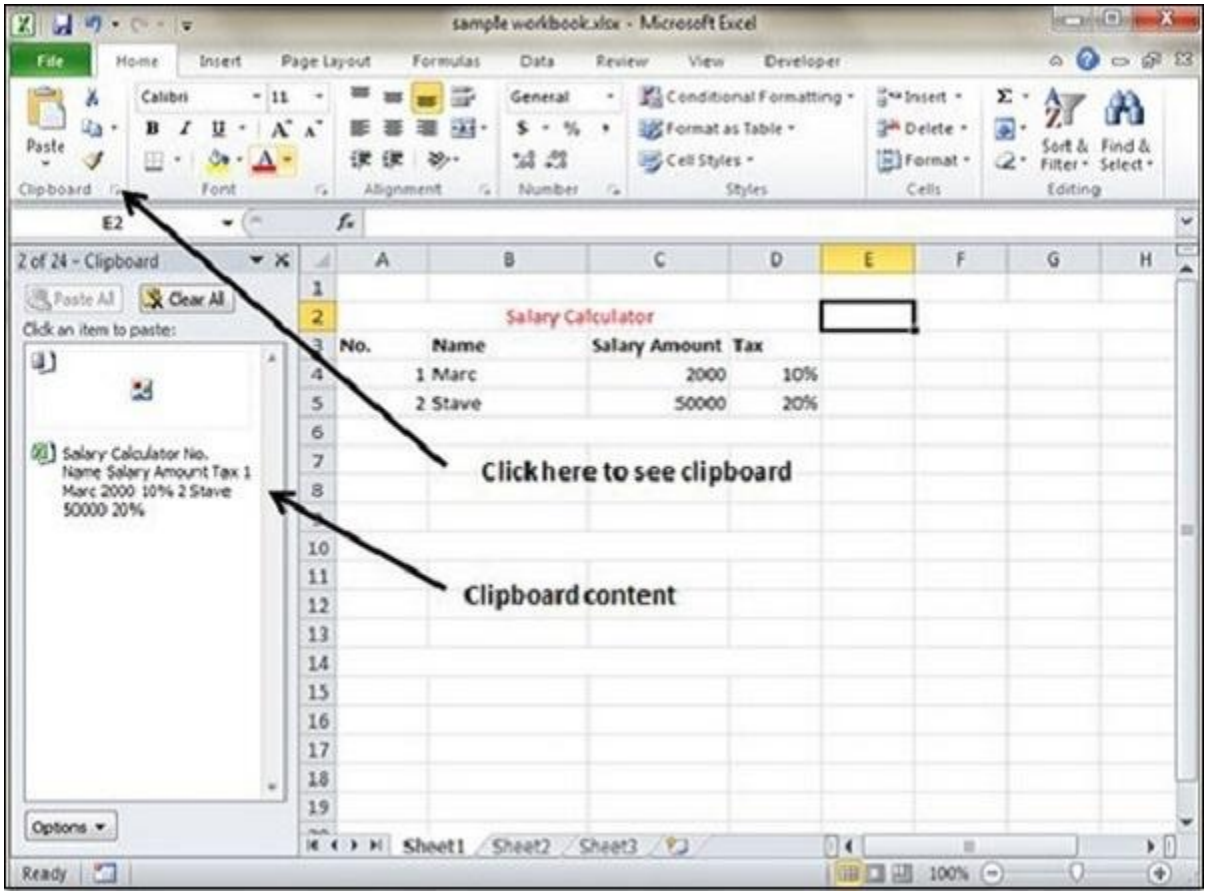
Copy Paste using Office Clipboard

When you copy data in MS Excel, it puts the copied content in Windows and Office Clipboard. You can view the clipboard content by **Home → Clipboard**. View the clipboard content. Select the cell where you need to paste. Click on paste, to paste the content.



Copy Paste in Special way

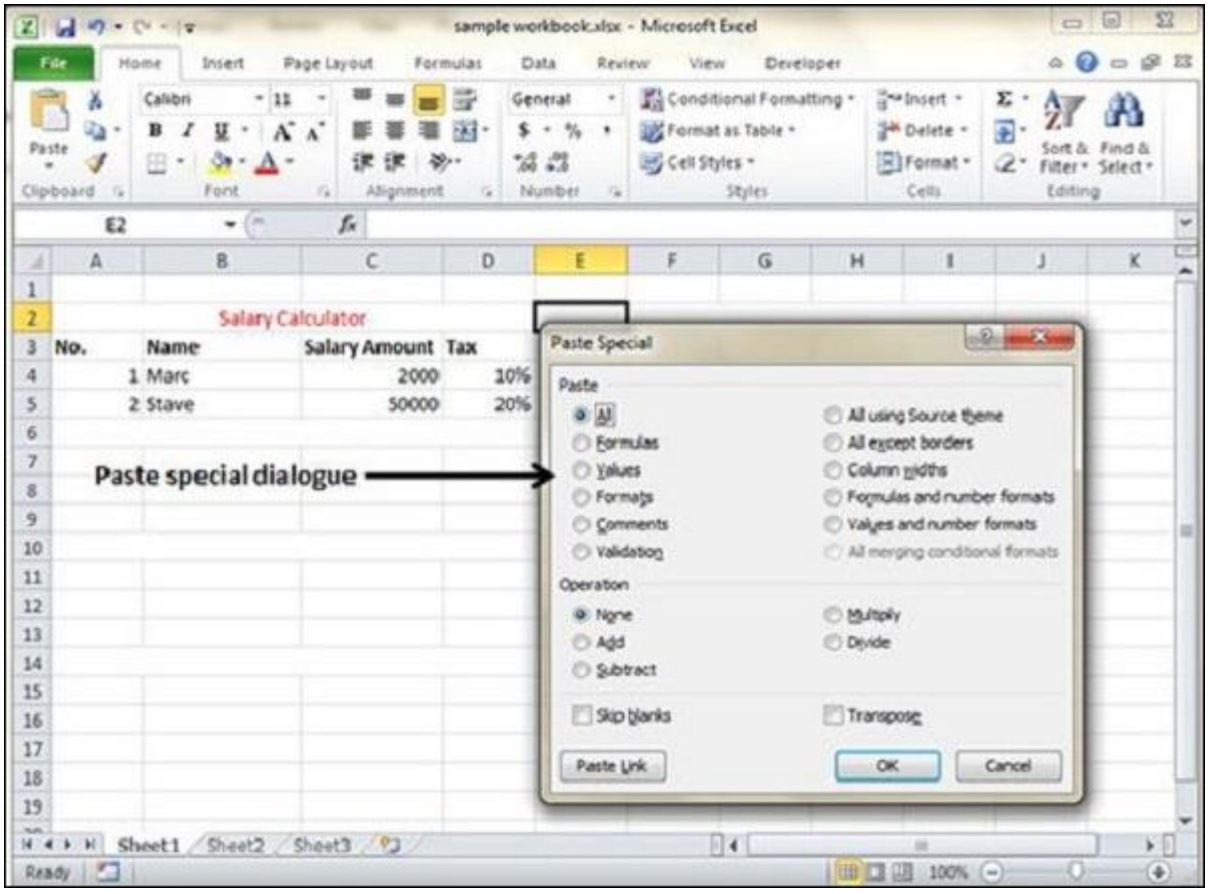
You may not want to copy everything in some cases. For example, you want to copy only Values or you want to copy only the formatting of cells. Select the paste special option as shown below.



Below are the various options available in paste special.

- **All** – Pastes the cell's contents, formats, and data validation from the Windows Clipboard.
- **Formulas** – Pastes formulas, but not formatting.
- **Values** – Pastes only values not the formulas.
- **Formats** – Pastes only the formatting of the source range.
- **Comments** – Pastes the comments with the respective cells.
- **Validation** – Pastes validation applied in the cells.
- **All using source theme** – Pastes formulas, and all formatting.
- **All except borders** – Pastes everything except borders that appear in the source range.

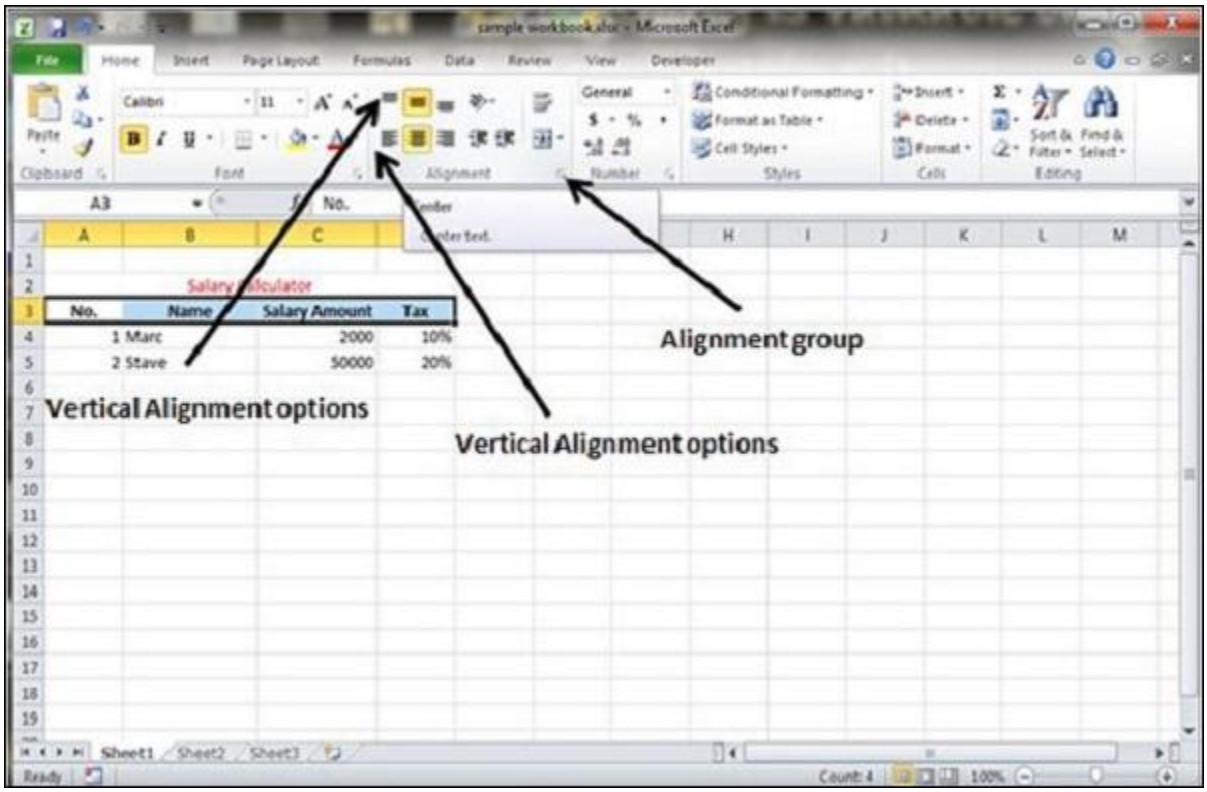
- **Column Width** – Pastes formulas, and also duplicates the column width of the copied cells.
- **Formulas & Number Formats** – Pastes formulas and number formatting only.
- **Values & Number Formats** – Pastes the results of formulas, plus the number.
- **Merge Conditional Formatting** – This icon is displayed only when the copied cells contain conditional formatting. When clicked, it merges the copied conditional formatting with any conditional formatting in the destination range.
- **Transpose** – Changes the orientation of the copied range. Rows become columns, and columns become rows. Any formulas in the copied range are adjusted so that they work properly when transposed.



Text Alignments in Excel

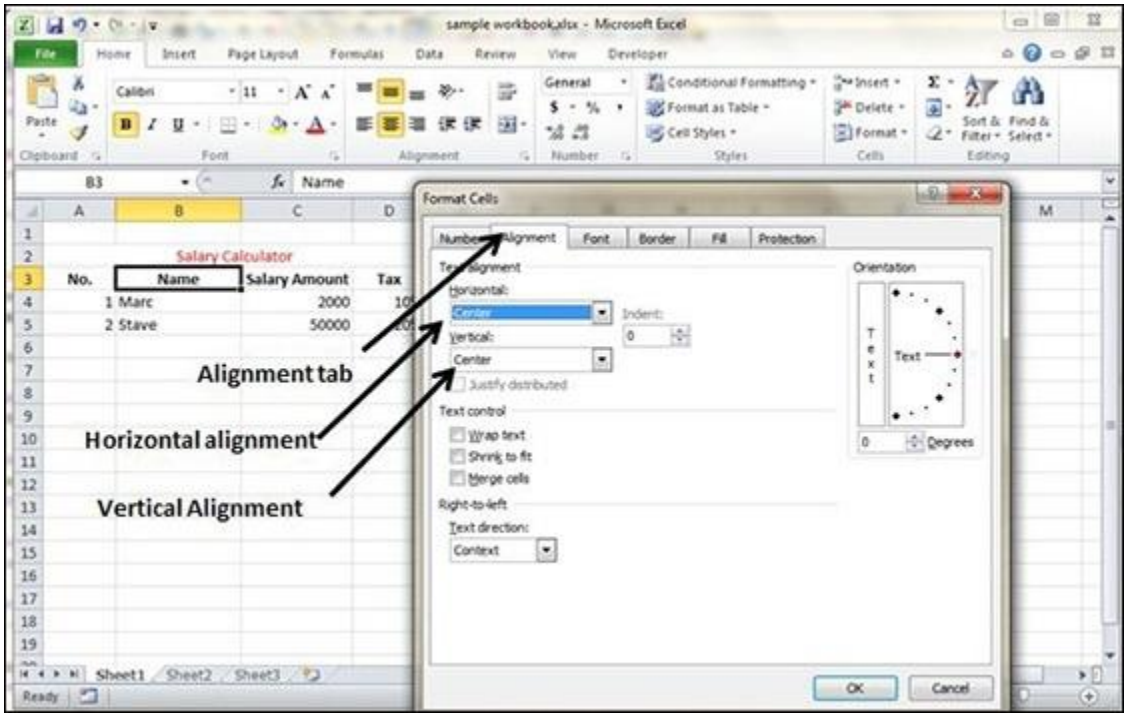
Change Alignment from Home Tab

You can change the Horizontal and vertical alignment of the cell. By default, Excel aligns numbers to the right and text to the left. Click on the available option in the Alignment group in Home tab to change alignment.



Change Alignment from Format Cells

Right click on the cell and choose format cell. In format cells dialogue, choose **Alignment Tab**. Select the available options from the Vertical alignment and Horizontal alignment options.



Exploring Alignment Options

1. Horizontal Alignment – You can set horizontal alignment to Left, Centre, Right, etc.

- **Left** – Aligns the cell contents to the left side of the cell.
- **Center** – Centers the cell contents in the cell.
- **Right** – Aligns the cell contents to the right side of the cell.
- **Fill** – Repeats the contents of the cell until the cell's width is filled.
- **Justify** – Justifies the text to the left and right of the cell. This option is applicable only if the cell is formatted as wrapped text and uses more than one line.

2. Vertical Alignment – You can set Vertical alignment to top, Middle, bottom, etc.

- **Top** Aligns the cell contents to the top of the cell.
- **Center** Centers the cell contents vertically in the cell.
- **Bottom** Aligns the cell contents to the bottom of the cell.

- **Justify** Justifies the text vertically in the cell; this option is applicable only if the cell is formatted as wrapped text and uses more than one line.

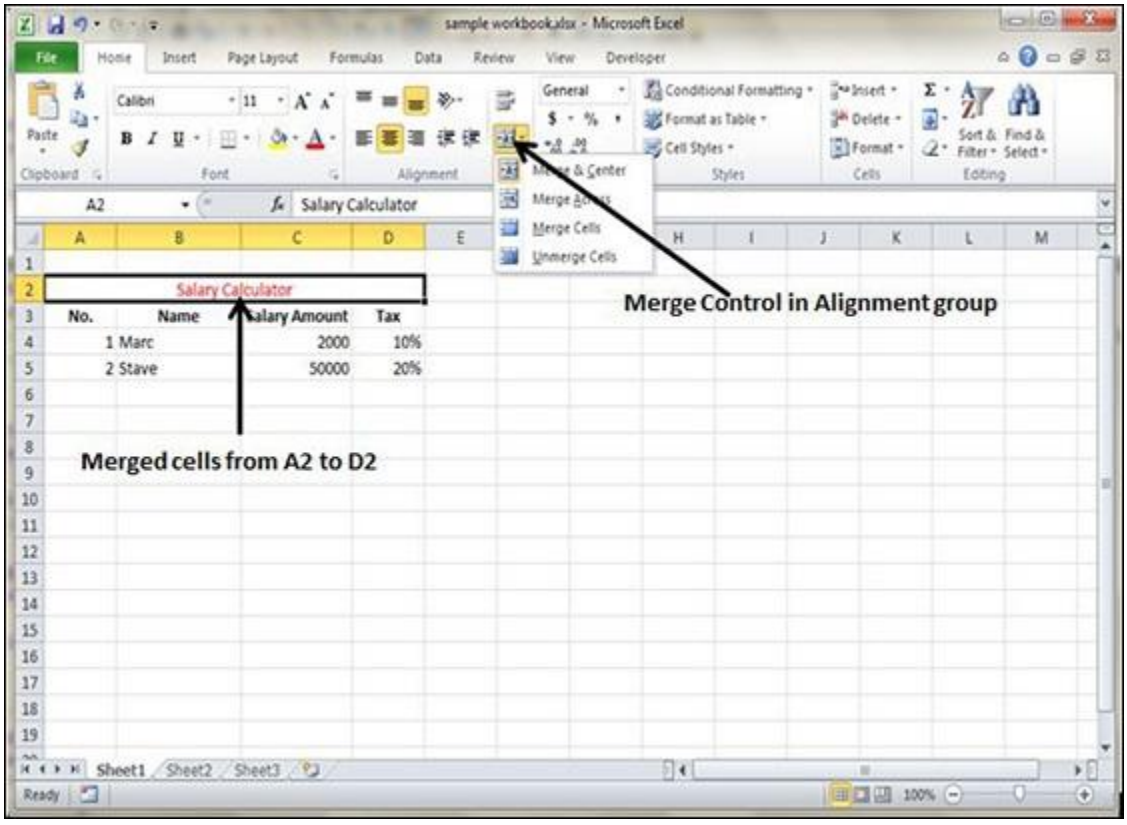
Merge & Wrap in Excel

Merge Cells

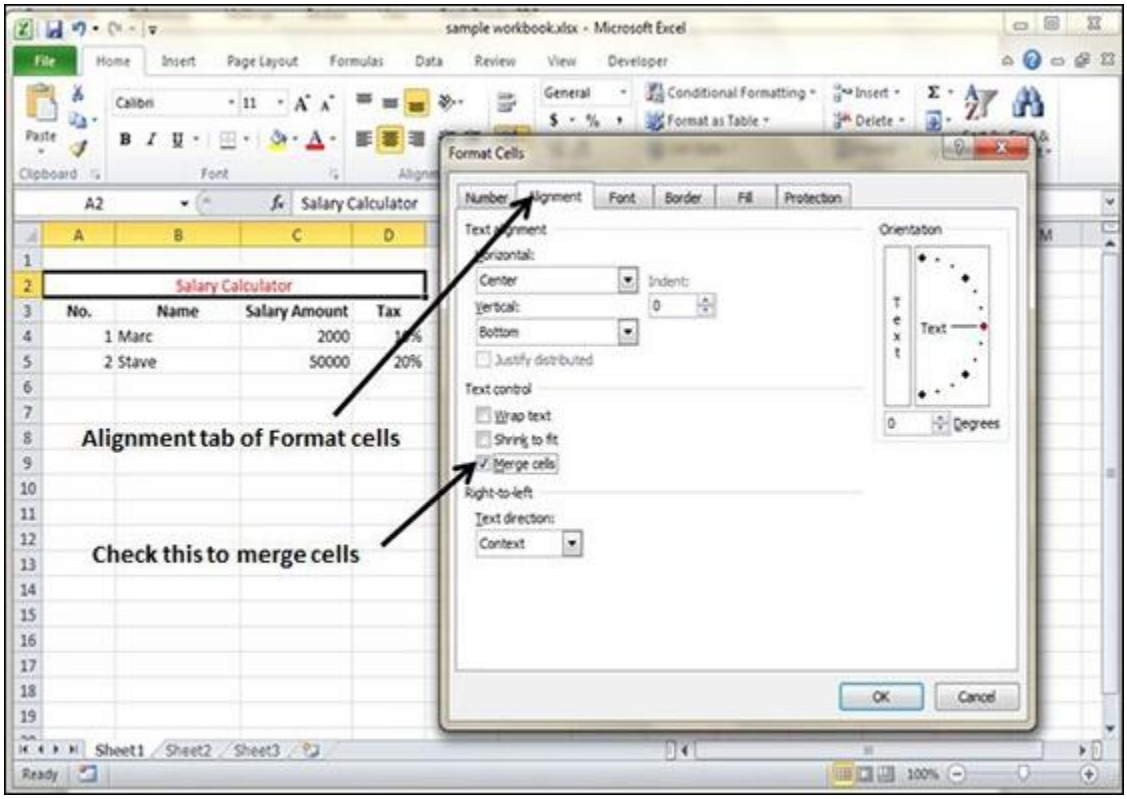
MS Excel enables you to merge two or more cells. When you merge cells, you don't combine the contents of the cells. Rather, you combine a group of cells into a single cell that occupies the same space.

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.



- Choose **Alignment tab** of the Format Cells dialogue box to merge the cells.



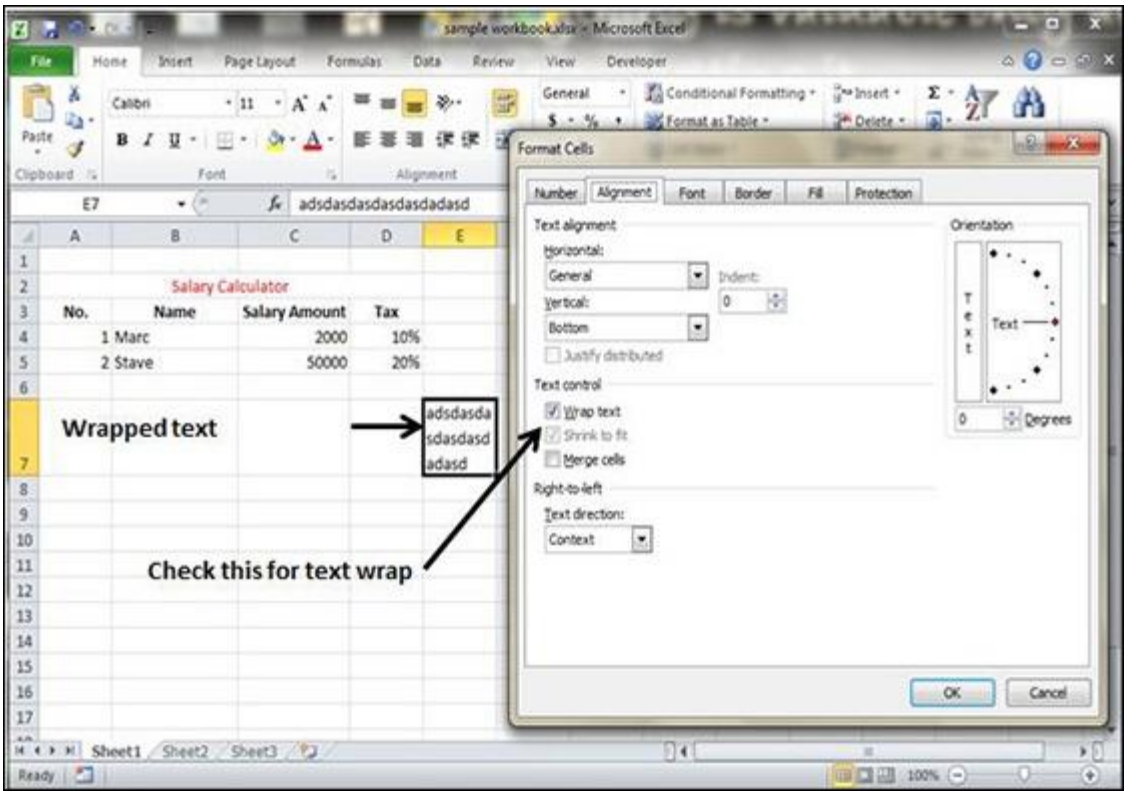
Additional Options

The **Home » Alignment group » Merge & Center control** contains a drop-down list with these additional options –

- **Merge Across** – When a multi-row range is selected, this command creates multiple merged cells — one for each row.
- **Merge Cells** – Merges the selected cells without applying the Center attribute.
- **Unmerge Cells** – Unmerges the selected cells.

Wrap Text and Shrink to Fit

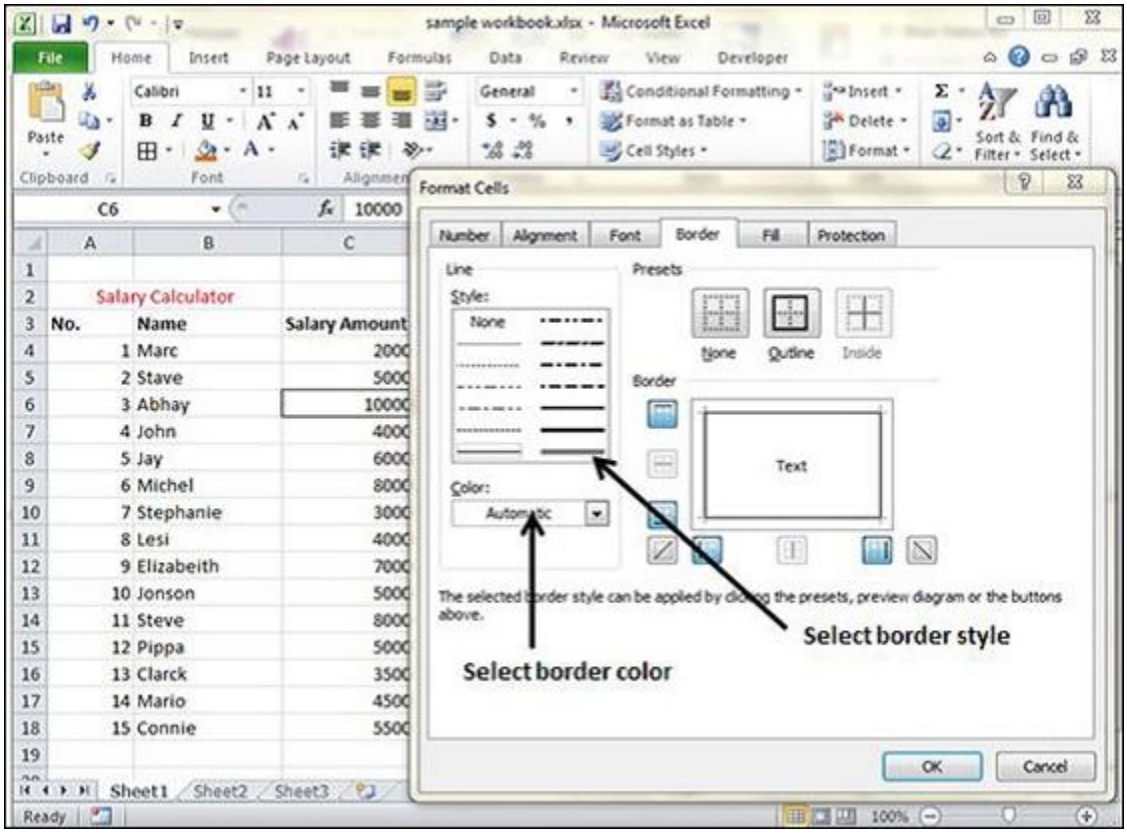
If the text is too wide to fit the column width but don't want that text to spill over into adjacent cells, you can use either the Wrap Text option or the Shrink to Fit option to accommodate that text.



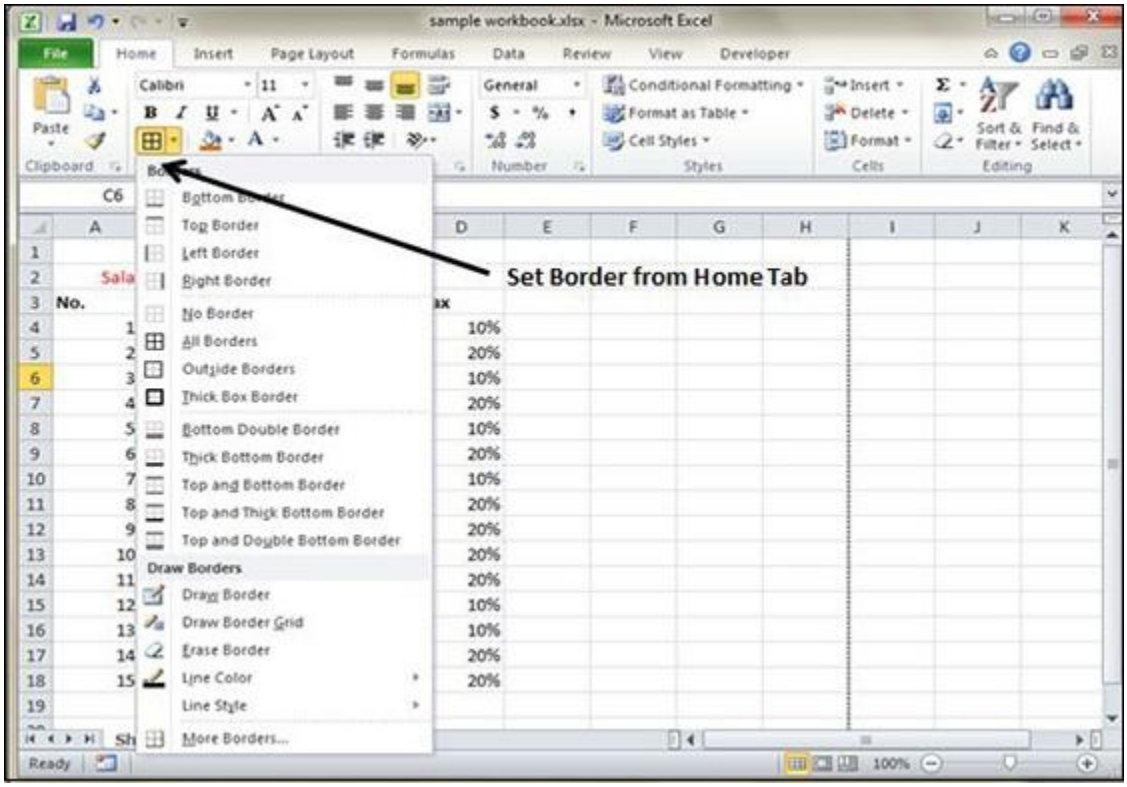
Borders and Shades in Excel

Apply Borders

MS Excel enables you to apply borders to the cells. For applying border, select the range of cells **Right Click » Format cells » Border Tab » Select the Border Style**.

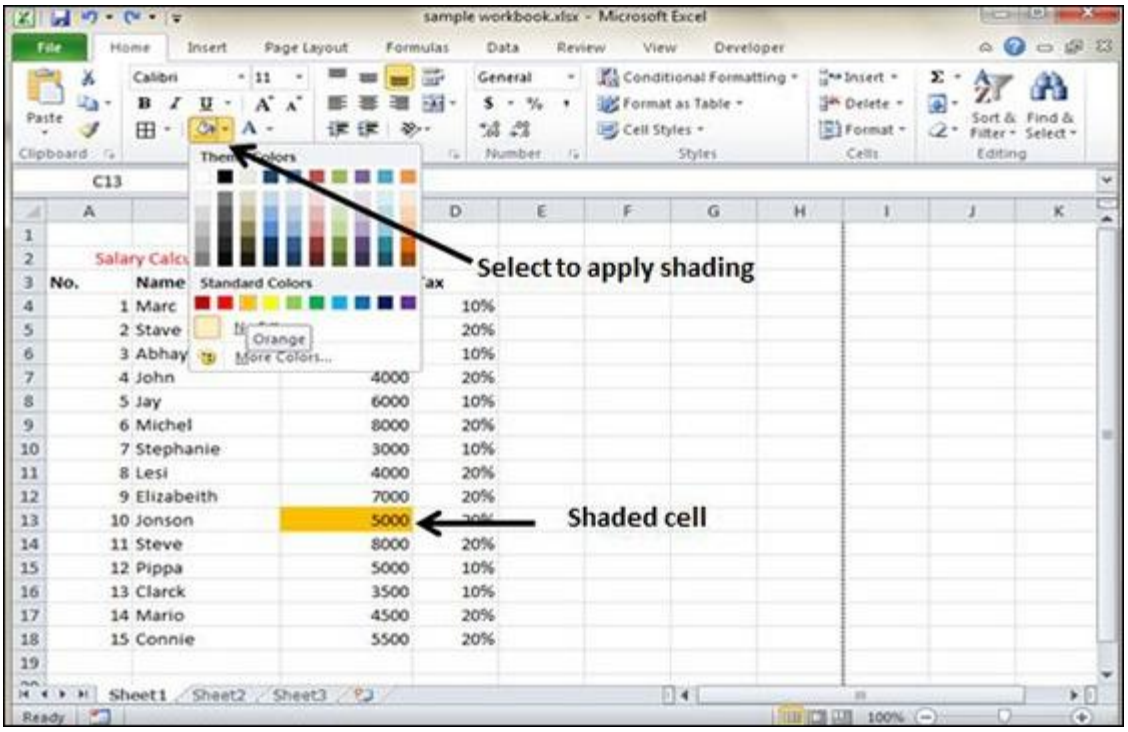


Then you can apply border by Home Tab » Font group » Apply Borders.



Apply Shading

You can add shading to the cell from the **Home tab » Font Group » Select the Color**.



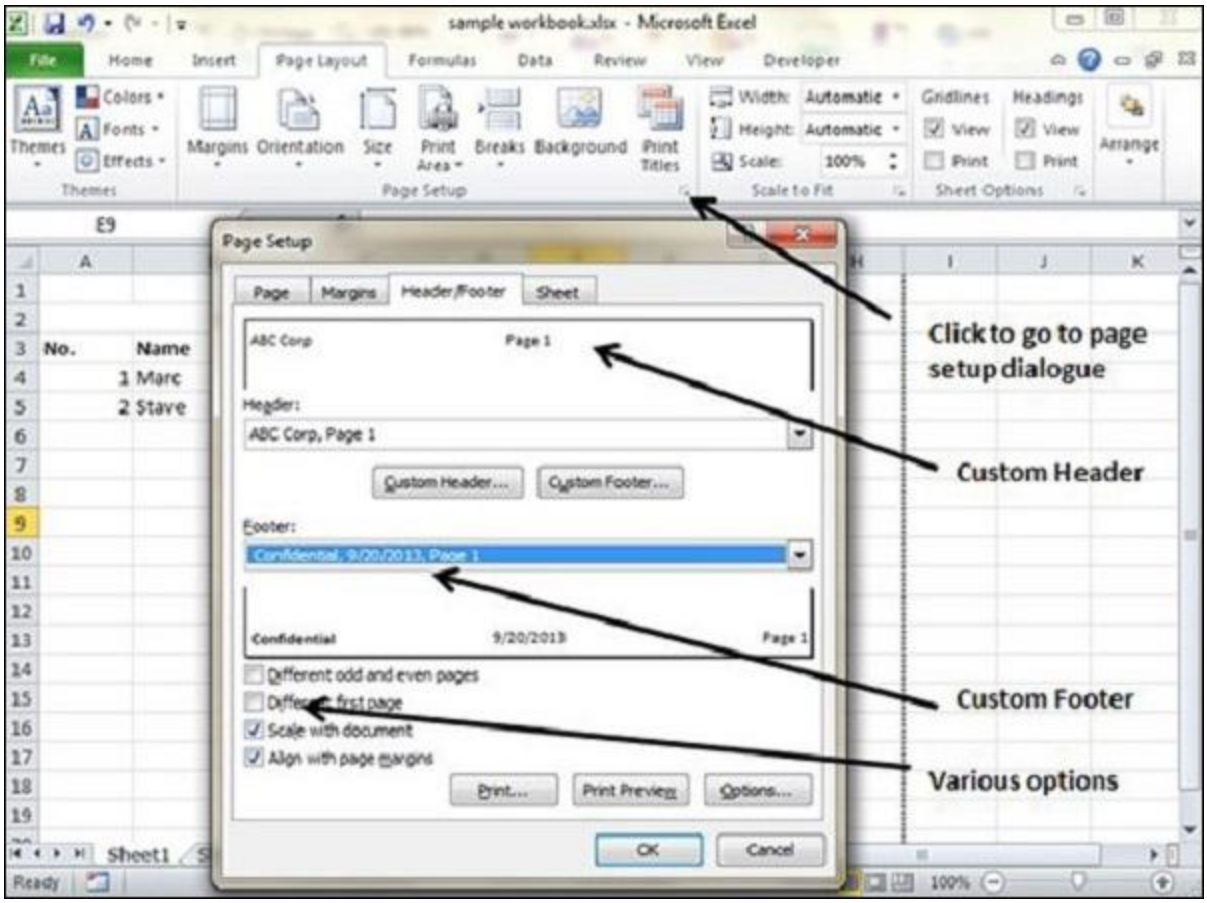
Header and Footer in Excel

Header and Footer

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.

Adding Header and Footer

- Choose Page Setup dialog box » Header or Footer tab.



You can choose the predefined header and footer or create your custom ones.

- **&[Page]** – Displays the page number.
- **&[Pages]** – Displays the total number of pages to be printed.
- **&[Date]** – Displays the current date.
- **&[Time]** – Displays the current time.
- **&[Path]&[File]** – Displays the workbook's complete path and filename.
- **&[File]** – Displays the workbook name.
- **&[Tab]** – Displays the sheet's name.

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.

Insert Page Break in Excel

Page Breaks

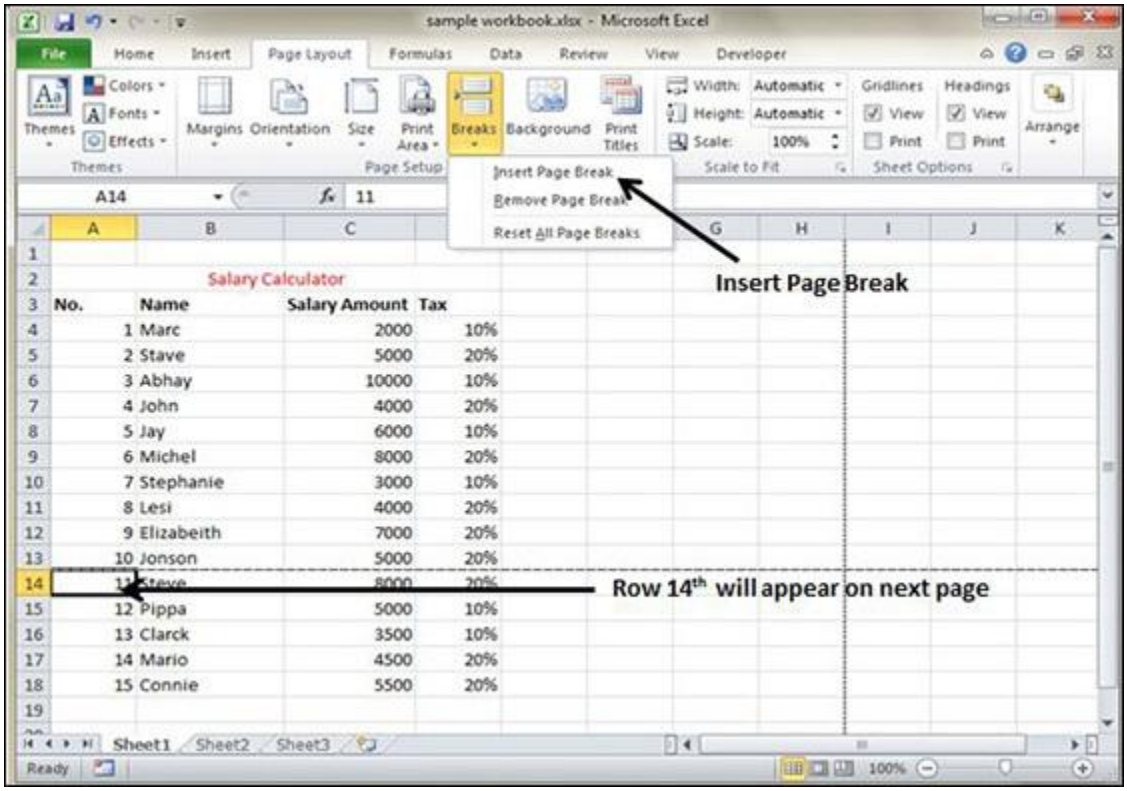
If you don’t want a row to print on a page by itself or you don't want a table header row to be the last line on a page. MS Excel gives you precise control over **page breaks**.

MS Excel handles page breaks automatically, but sometimes you may want to force a page break **either a vertical or a horizontal one**. so that the report prints the way you want.

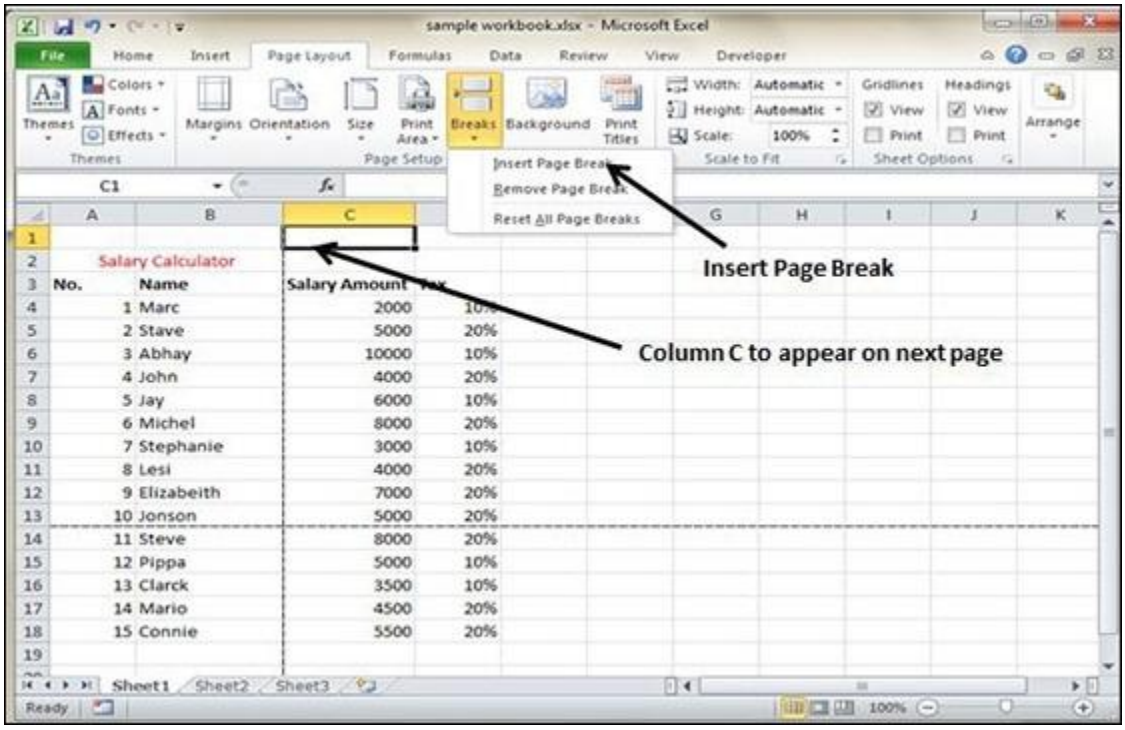
For example, if your worksheet consists of several distinct sections, you may want to print each section on a separate sheet of paper.

Inserting Page Breaks

Insert Horizontal Page Break – For example, if you want row 14 to be the first row of a new page, select cell A14. Then choose **Page Layout » Page Setup Group » Breaks » Insert Page Break**.



Insert vertical Page break – In this case, make sure to place the pointer in row 1. Choose **Page Layout » Page Setup » Breaks » Insert Page Break** to create the page break.



Removing Page Breaks

- **Remove a page break you've added** – Move the cell pointer to the first row beneath the manual page break and then choose Page Layout » Page Setup » Breaks » Remove Page Break.
- **Remove all manual page breaks** – Choose Page Layout » Page Setup » Breaks » Reset All Page Breaks.

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UNIT-5

INTERNET AND CYBER SECURITY

Introduction

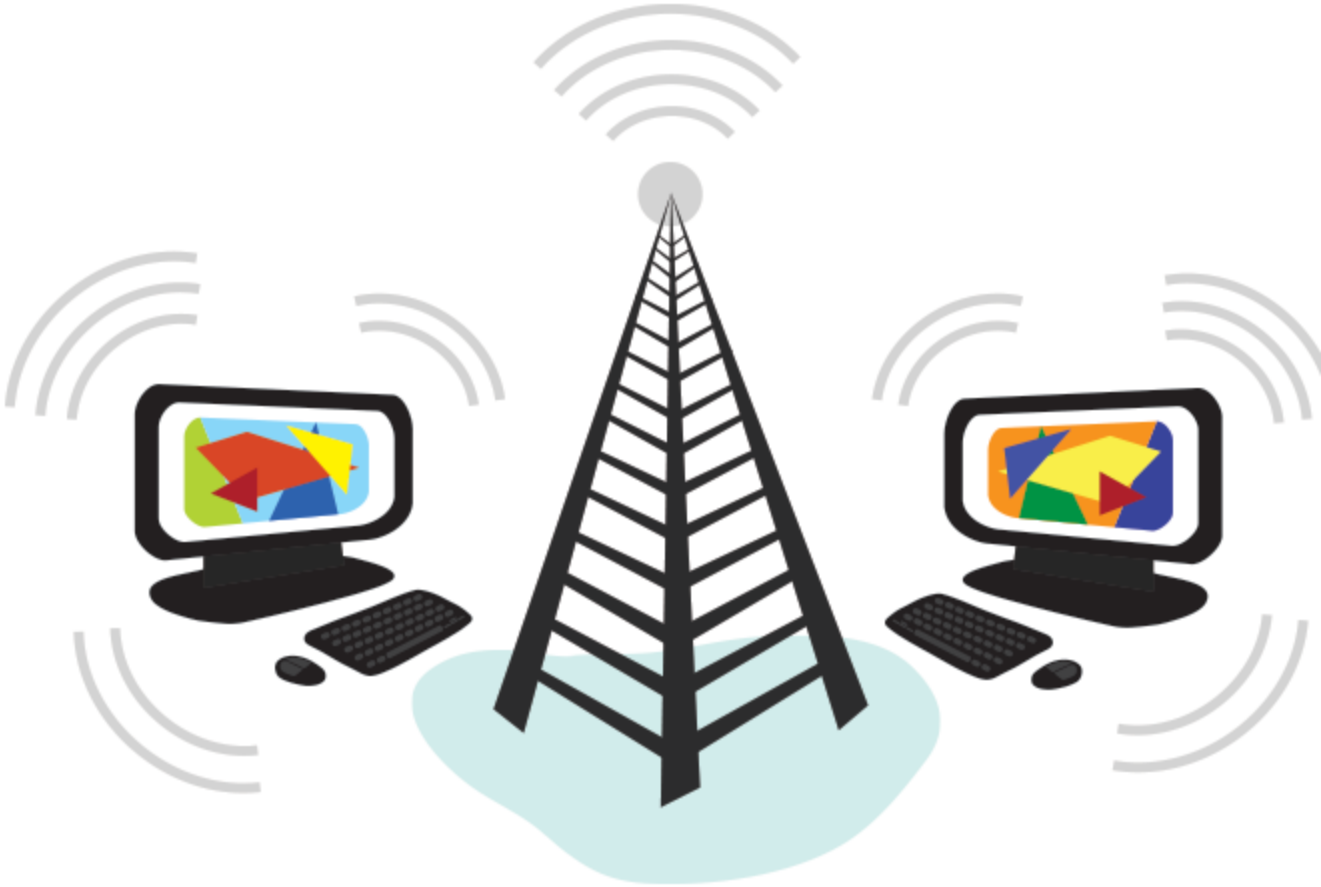
The **Internet** is an increasingly important part of everyday life for people around the world. But if you've never used the Internet before, all of this new information might feel a bit confusing at first.

Throughout this tutorial, we'll try to answer some basic questions you may have about the Internet and how it's used. When you're done, you'll have a good understanding of **how the Internet works**, how to **connect to the Internet**, and **how to browse the Web**.

What is the Internet?

The Internet is a **global network** of billions of computers and other electronic devices. With the Internet, it's possible to access almost any information, communicate with anyone else in the world, and do much more.

You can do all of this by connecting a computer to the Internet, which is also called**going online.** When someone says a computer is online, it's just another way of saying it's connected to the Internet.



What is the Web?

The **World Wide Web**—usually called the **Web** for short—is a collection of different **websites** you can access through the Internet. A **website** is made up of related text, images, and other resources. Websites can resemble other forms of media—like newspaper articles or television programs—or they can be interactive in a way that's unique to computers.

The purpose of a website can be almost anything: a news platform, an advertisement, an online library, a forum for sharing images, or an educational site like us!

Once you are connected to the Internet, you can access and view websites using a type of application called a **web browser**. Just keep in mind that the web browser itself is not the Internet; it only displays websites that are stored on the Internet.

How does the Internet work?

At this point you may be wondering, **how does the Internet work?** The exact answer is pretty complicated and would take a while to explain. Instead, let's look at some of the most important things you should know.

It's important to realize that the Internet is a global network of **physical cables**, which can include copper telephone wires, TV cables, and fiber optic cables.

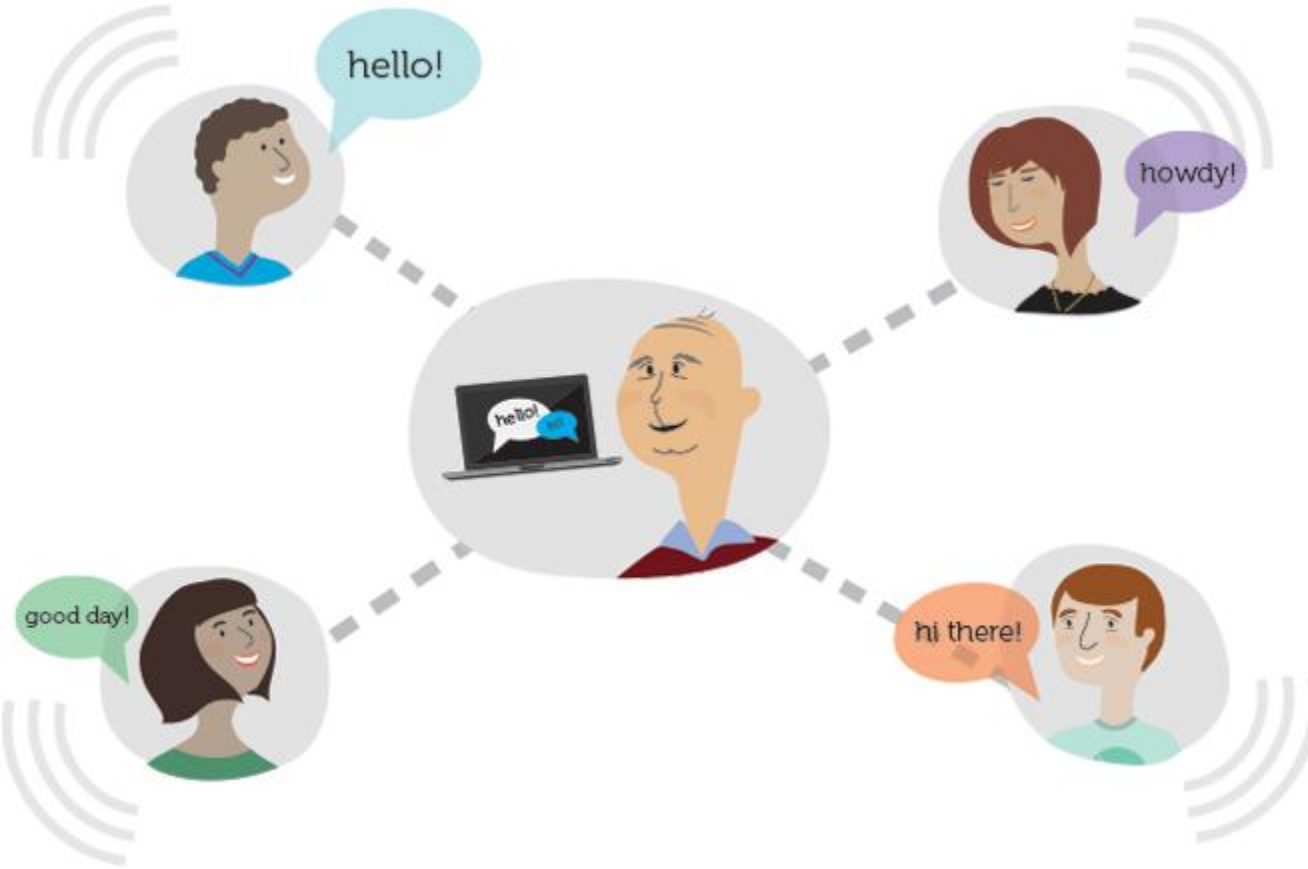
Even wireless connections like Wi-Fi and 3G/4G rely on these physical cables to access the Internet.

When you visit a website, your computer sends a request over these wires to a **server**. A server is where websites are stored, and it works a lot like your computer's hard drive. Once the request arrives, the server retrieves the website and sends the correct data back to your computer. What's amazing is that this all happens in just a few seconds!

Watch the video below from Tata Communications to learn more about how the Internet functions.

Other things you can do on the Internet

One of the best features of the Internet is the ability to communicate almost instantly with anyone in the world. **Email** is one of the oldest and most universal ways to communicate and share information on the Internet, and billions of people use it. **Social media** allows people to connect in a variety of ways and build communities online.



There are many other things you can do on the Internet. There are thousands of ways to keep up with news or **shop for anything** online. You can pay your bills, **manage your bank accounts**, meet new people, **watch TV**, or learn new skills. You can learn or do almost anything online.

Lesson 2: What Can You Do Online?

Introduction

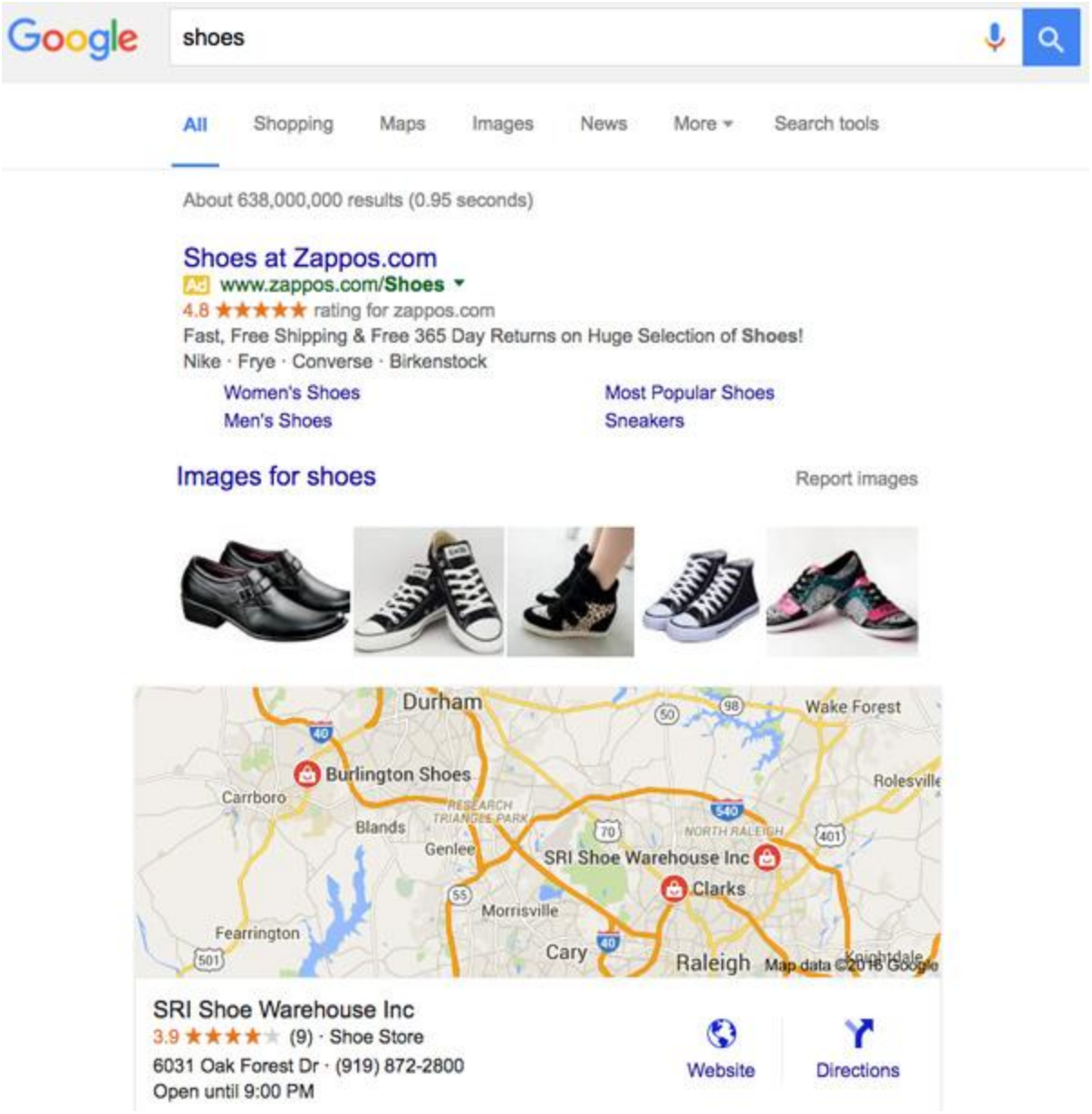
There's almost no limit to what you can do online. The Internet makes it possible to quickly find information, communicate with people around the world, manage your finances, shop from home, listen to music, watch videos,

and much, much more. Let's take a look at some of the ways the Internet is most commonly used today.

Finding information online

With billions of websites online today, there is **a lot** of information on the Internet. **Search engines** make this information easier to find. All you have to do is type one or more **keywords**, and the search engine will look for **relevant websites**.

For example, let's say you're looking for a new pair of shoes. You could use a search engine to learn about different types of shoes, get directions to a nearby shoe store, or even find out where to buy them online!

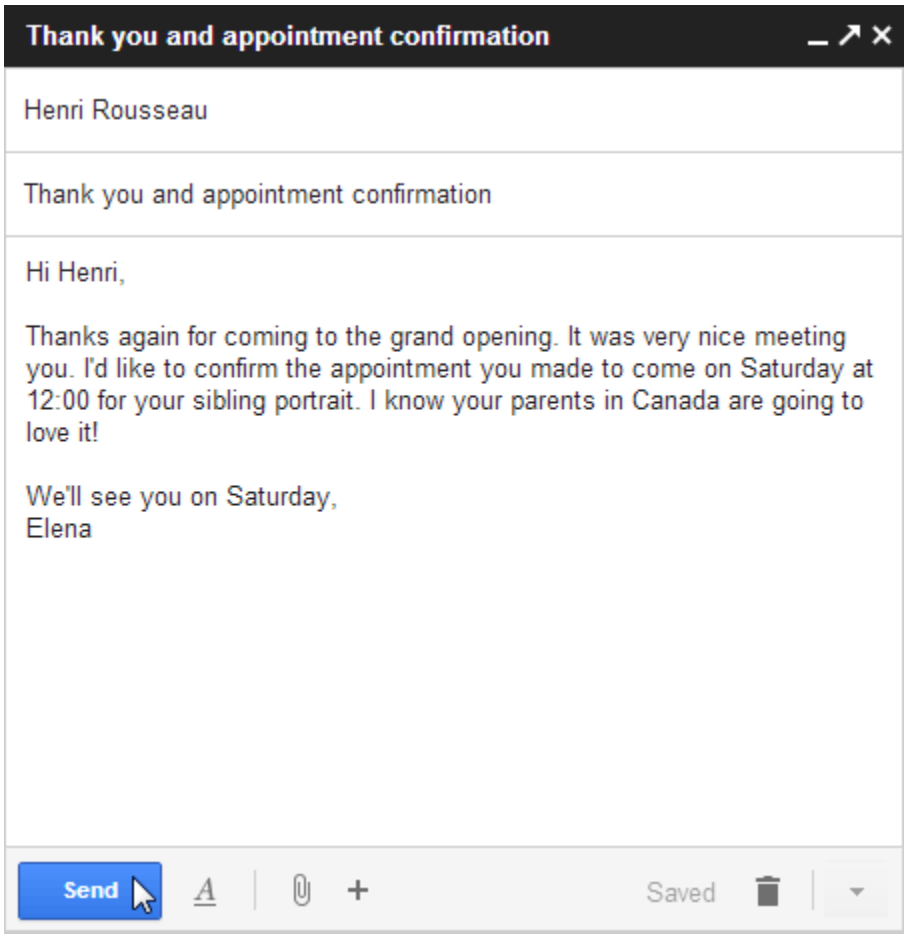


There are many different search engines you can use, but some of the most popular include **Google**, **Yahoo!**, and **Bing**.

Email

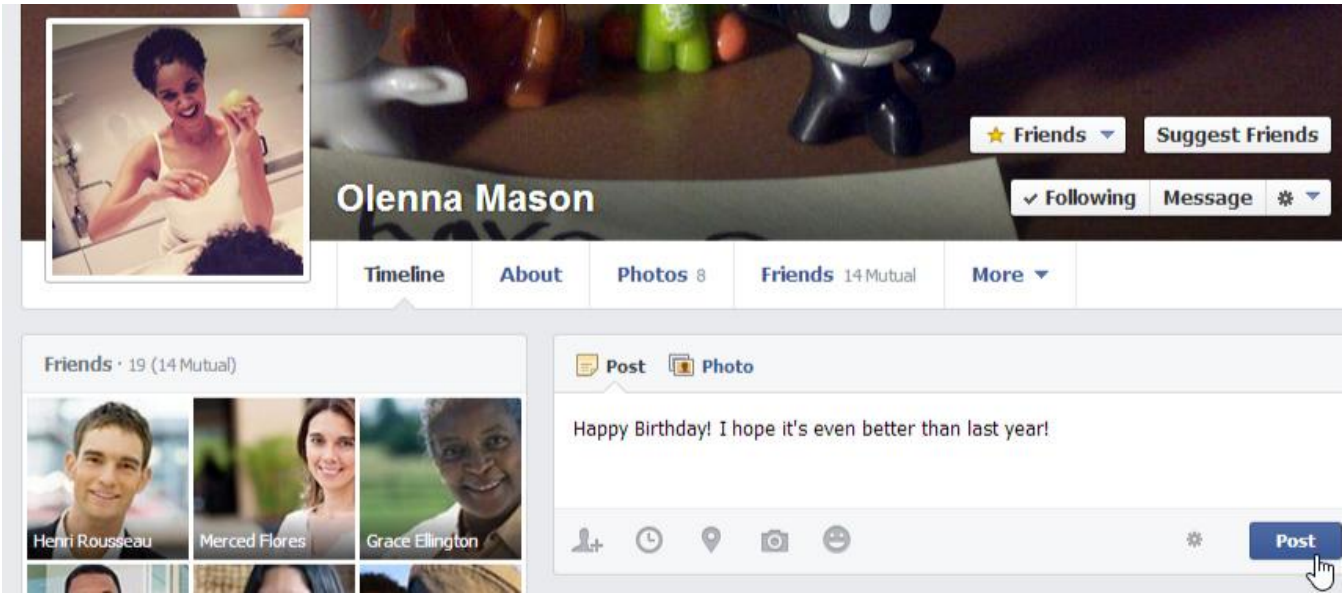
Short for electronic mail, **email** is a way to **send and receive messages** across the Internet. Almost everyone who uses the Internet has their own email

account, usually called an **email address**. This is because you'll need an email address to do just about anything online, from online banking to creating a Facebook account.



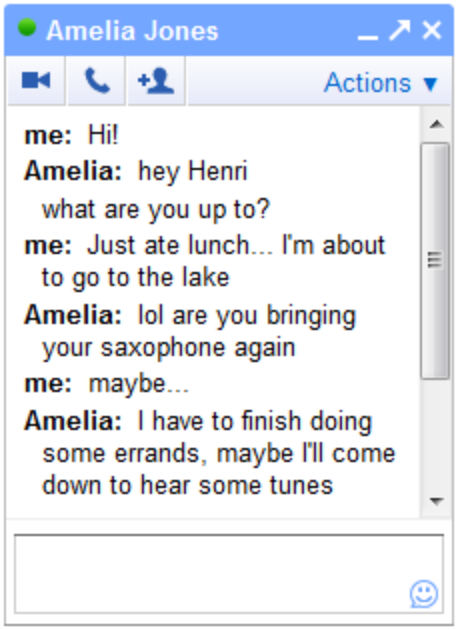
Social networking

Social networking websites are another way to **connect and share** with your family and friends online. Rather than sharing with just a few people over email, social networks make it easier to **connect** and **share** with many people at the same time. **Facebook** is the world's largest social networking site, with **more than 1 billion users** worldwide.



Chat and instant messaging

Chat and **instant messaging (IM)** are short messages sent and read **in real time**, allowing you to converse more quickly and easily than email. These are generally used when both (or all) people are online, so your message can be read immediately. By comparison, **emails** won't be seen until recipients check their inboxes.



Examples of instant messaging applications include **Yahoo Messenger** and **Google Hangouts**. Some sites, like **Gmail** and **Facebook**, even allow you to chat within your web browser.

Online media

There are many sites that allow you to **watch videos** and **listen to music**. For example, you can watch millions of videos on **YouTube** or listen to Internet radio on **Pandora**. Other services, like **Netflix** and **Hulu**, allow you to watch movies and TV shows. And if have a **set-top streaming box**, you can even watch them directly on your television instead of a computer screen.

Everyday tasks

You can also use the Internet to complete many **everyday tasks** and **errands**. For example, you can manage your bank account, pay your bills, and shop for just about anything. The main advantage here is **convenience**. Rather than going from place to place, you can do all of these tasks at home!

And a whole lot more!

Remember, these are just a few of the things you'll be able to do online. Keep working through this tutorial to learn more about connecting to the Internet and using the Web!

How do I connect to the Internet?

Once you've set up your computer, you may want to purchase **home Internet access** so you can send and receive email, browse the Web, stream videos, and more. You may even want to set up a **home wireless network**, commonly known as **Wi-Fi**, so you can connect multiple devices to the Internet at the same time.

Watch the video below to learn about connecting to the Internet.

Types of Internet service

The type of Internet service you choose will largely depend on which **Internet service providers** (ISPs) serve your area, along with the types of service they offer. Here are some common types of Internet service.

- **Dial-up**: This is generally the slowest type of Internet connection, and you should probably avoid it unless it is the only service available in your area. Dial-up Internet uses your **phone line**, so unless you have multiple phone lines you will not be able to use your landline and the Internet at the same time.
- **DSL**: DSL service uses a **broadband connection**, which makes it much faster than dial-up. DSL connects to the Internet **via a phone line** but does not require you to have a landline at home. And unlike dial-up, you'll be able to use the Internet and your phone line at the same time.

- **Cable**: Cable service connects to the Internet **via cable TV**, although you do not necessarily need to have cable TV in order to get it. It uses a broadband connection and can be faster than both dial-up and DSL service; however, it is only available where cable TV is available.
- **Satellite**: A satellite connection uses broadband but does not require cable or phone lines; it connects to the Internet **through satellites orbiting the Earth**. As a result, it can be used almost anywhere in the world, but the connection may be affected by weather patterns. Satellite connections are also usually slower than DSL or cable.
- **3G and 4G**: 3G and 4G service is most commonly used with mobile phones, and it connects **wirelessly** through your ISP's network. However, these types of connections aren't always as fast as DSL or cable. They will also **limit the amount of data** you can use each month, which isn't the case with most broadband plans.

Choosing an Internet service provider

Now that you know about the different types of Internet service, you can do some research to find out what ISPs are available in your area. If you're having trouble getting started, we recommend talking to friends, family members, and neighbors about the ISPs they use. This will usually give you a good idea of the types of Internet service available in your area.

Most ISPs offer several tiers of service with different Internet speeds, usually measured in **Mbps** (short for **megabits per second**). If you mainly want to use the Internet for **email** and **social networking**, a slower connection (around 2 to 5 Mbps) might be all you need. However, if you want to **download music** or **stream videos**, you'll want a faster connection (at least 5 Mbps or higher).

You'll also want to **consider the cost** of the service, including installation charges and monthly fees. Generally speaking, the faster the connection, the more expensive it will be per month.

Although **dial-up** has traditionally been the **least expensive** option, many ISPs have raised dial-up prices to be the **same as broadband**. This is intended to encourage people to switch to broadband. We do not recommend dial-up Internet unless it's your only option.

Hardware needed

Modem

Once you have your computer, you really don't need much additional hardware to connect to the Internet. The primary piece of hardware you need is a **modem**.

The type of Internet access you choose will determine the type of modem you need. **Dial-up** access uses a **telephone modem**, **DSL** service uses a **DSL modem**, **cable** access uses a **cable modem**, and **satellite** service uses a **satellite**

adapter. Your ISP may give you a modem—often for a fee—when you sign a contract, which helps ensure that you have the **right type** of modem. However, if you would prefer to shop for a **better** or **less expensive** modem, you can choose to buy one separately.

Router

A **router** is a hardware device that allows you to connect **several computers** and **other devices** to a single Internet connection, which is known as a **home network**. Many routers are **wireless**, which allows you to create a **home wireless network**, commonly known as a **Wi-Fi network**.

You **don't necessarily need to buy a router** to connect to the Internet. It's possible to connect your computer directly to your modem using an Ethernet cable. Also, many modems include a **built-in router**, so you have the option of creating a Wi-Fi network without buying extra hardware.

Setting up your Internet connection

Once you've chosen an ISP, most providers will **send a technician to your house** to turn on the connection. If not, you should be able to use the instructions provided by your ISP—or included with the modem—to set up your Internet connection.

After you have everything set up, you can open your **web browser** and begin using the Internet. If you have any problems with your Internet connection, you can call your ISP's **technical support** number.

Home networking

If you have multiple computers at home and want to use all of them to access the Internet, you may want to create a **home network**, also known as a **Wi-Fi network**. In a home network, all of your devices connect to your **router**, which is connected to the **modem**. This means everyone in your family can use the Internet **at the same time**.

Your ISP technician may be able to set up a home Wi-Fi network when installing your Internet service. If not, you can review our lesson on **How to Set Up a Wi-Fi Network** to learn more.

If you want to connect a computer that does not have built-in Wi-Fi connectivity, you can purchase a **Wi-Fi adapter** that plugs into your computer's USB port.

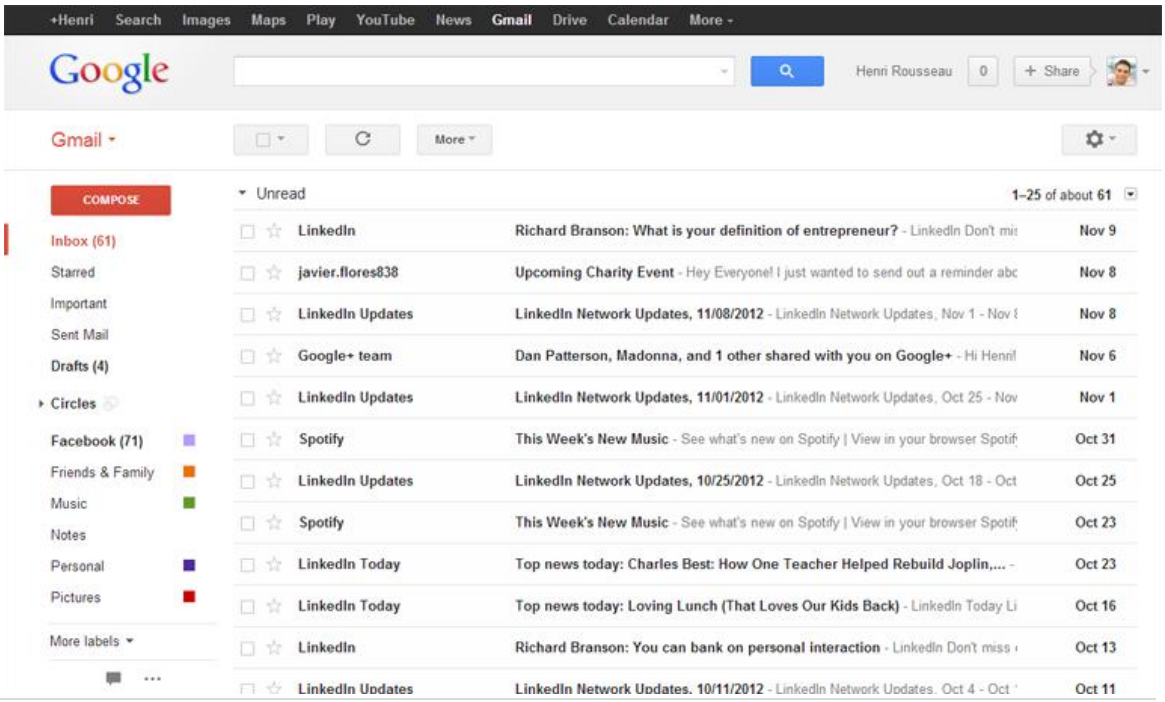
What is the cloud?

You may have heard people using terms like **the cloud**, **cloud computing**, or **cloud storage**. But what exactly is the cloud?

Simply put, the cloud is **the Internet**—more specifically, it's all of the things you can **access remotely** over the Internet. When something is **in the cloud**, it means it's stored on **Internet servers** instead of your computer's hard drive.

Why use the cloud?

Some of the main reasons to use the cloud are **convenience** and **reliability**. For example, if you've ever used a **web-based email service**, such as **Gmail** or **Yahoo! Mail**, you've already used the cloud. All of the emails in a web-based service are stored on servers rather than on your computer's hard drive. This means you can access your email from any computer with an Internet connection. It also means you'll be able to recover your emails if something happens to your computer.



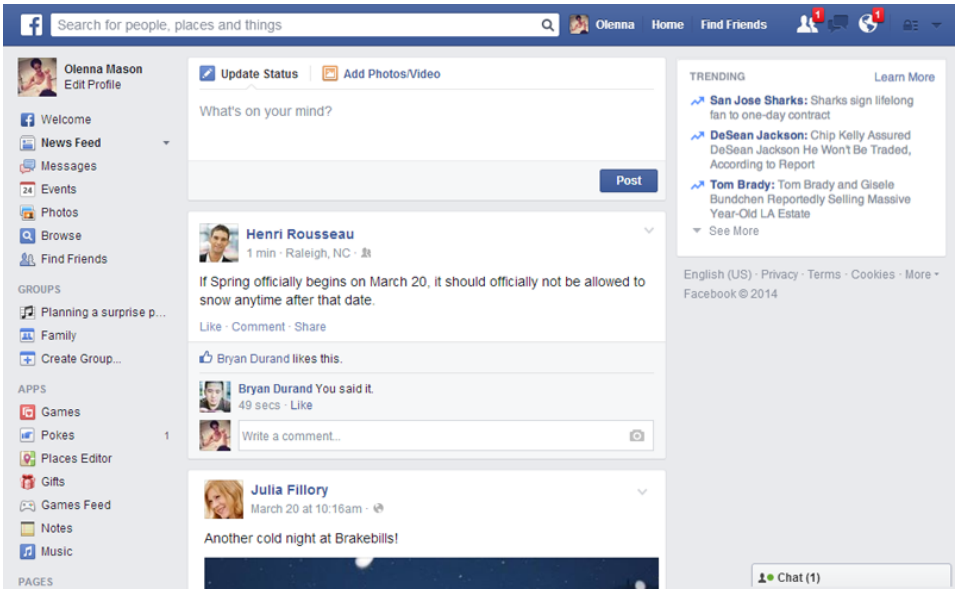
Let's look at some of the most common reasons to use the cloud.

- **File storage**: You can store all types of information in the cloud, including files and email. This means you can access these things from **any computer** or **mobile device** with an Internet connection, not just your home computer. **Dropbox** and **Google Drive** are some of the most popular cloud-based storage services.
- **File sharing**: The cloud makes it easy to **share files** with several people at the same time. For example, you could upload several photos to a cloud-based photo service like **Flickr** or **iCloud Photos**, then quickly share them with friends and family.
- **Backing up data**: You can also use the cloud to protect your files. Apps like **Mozy** and **Carbonite automatically back up your data** to the cloud. This way, if your computer ever is lost, stolen, or damaged, you'll still be able to recover these files from the cloud.

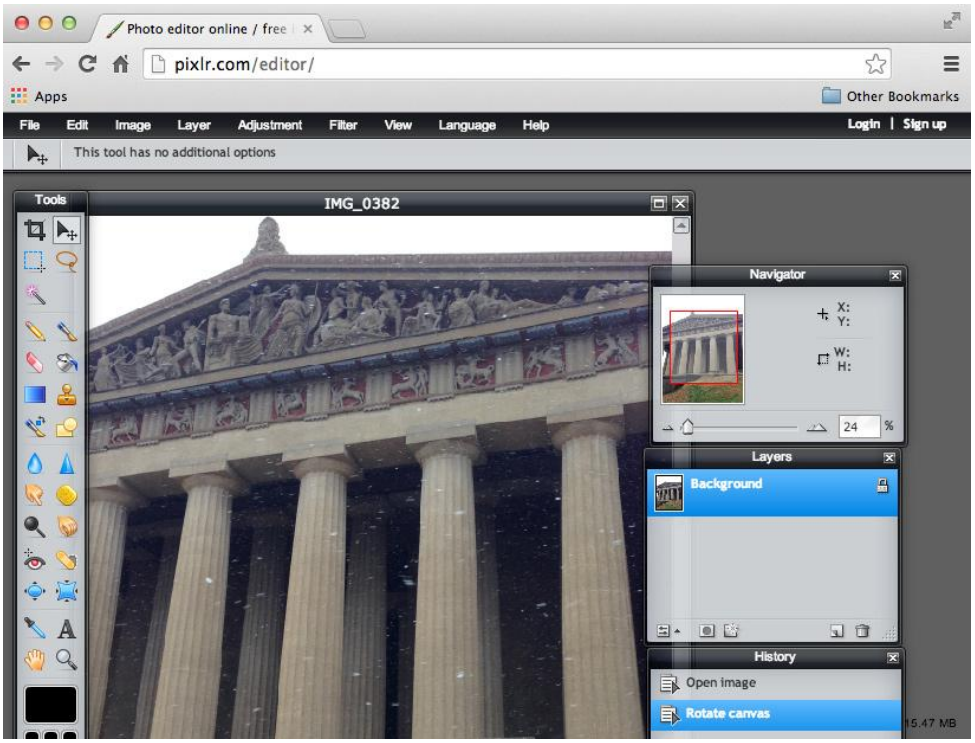
What is a web app?

Previously, we talked about how **desktop applications** allow you to perform tasks on your computer. But there are also **web applications**—or **web apps**—that run **in the cloud** and do not need to be installed on your computer. Many of the most popular sites on the Internet are actually web apps. You may have even used a web app without realizing it! Let's take a look at some popular web apps.

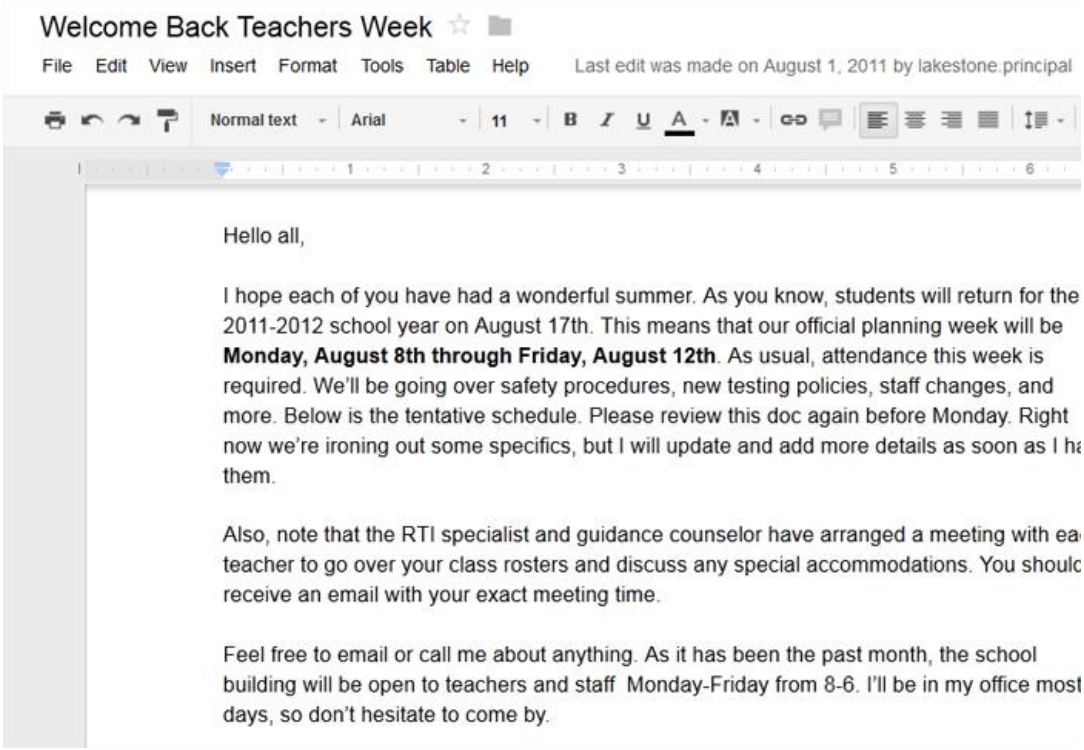
- **Facebook:** Facebook lets you create an online **profile** and interact with your **friends**. Profiles and conversations can be updated at any time, so Facebook uses web app technologies to **keep the information up to date**.



- **Pixlr**: Pixlr is an **image editing application** that runs in your web browser. Much like **Adobe Photoshop**, it includes many advanced features, like color correction and sharpening tools.



- **Google Docs:** Google Docs is an **office suite** that runs in your browser. Much like **Microsoft Office**, you can use it to create **documents**, **spreadsheets**, **presentations**, and more. And because the files are stored **in the cloud**, it's easy to **share** them with others.



URLs and the address bar

Each website has a unique address, called a **URL** (short for **Uniform Resource Locator**). It's like a street address that tells your browser where to go on the Internet. When you type a URL into the browser's **address bar** and press **Enter** on your keyboard, the browser will load the page associated with that URL.

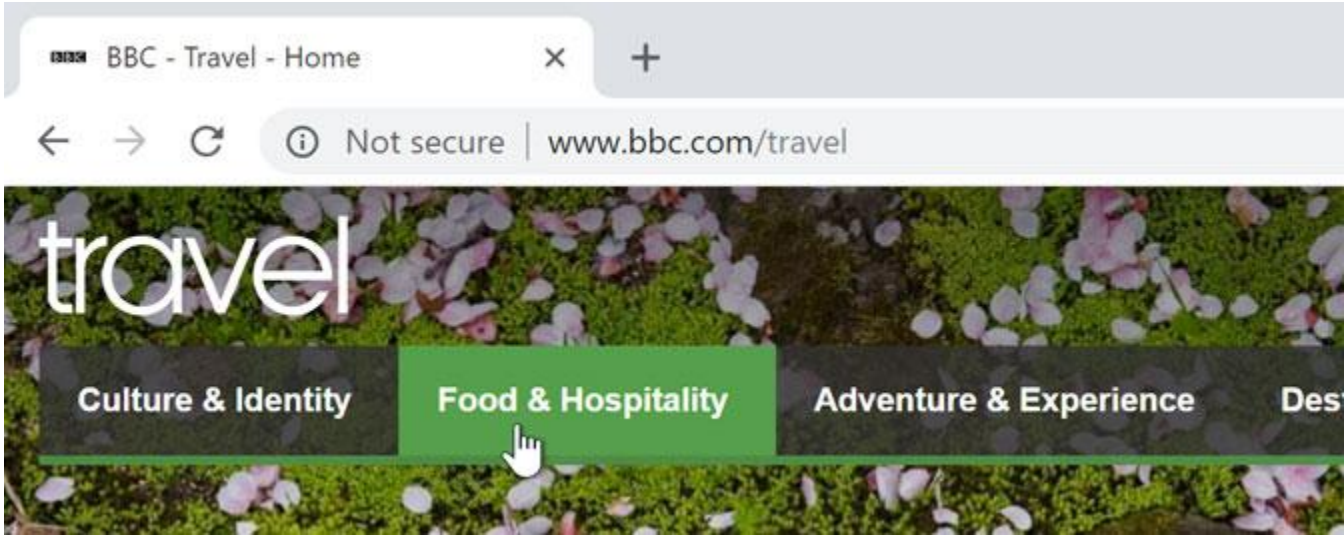
In the example below, we've typed **www.bbc.com/travel** into the address bar.

Links

Whenever you see a word or phrase on a website that's **blue** or **underlined in blue**, it's probably a **hyperlink**, or **link** for short. You might already know how links work, even if you've never thought about them much before. For example, try clicking the link below.

Hey, I'm a link! Click me!

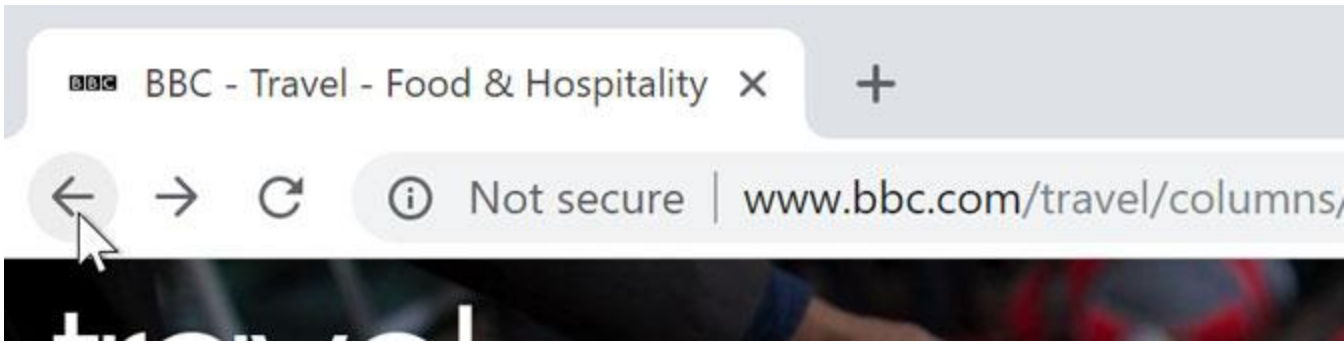
Links are used to **navigate the Web**. When you click a link, it will usually take you to a different webpage. You may also notice that your cursor changes into a **hand icon** whenever you hover over a link.



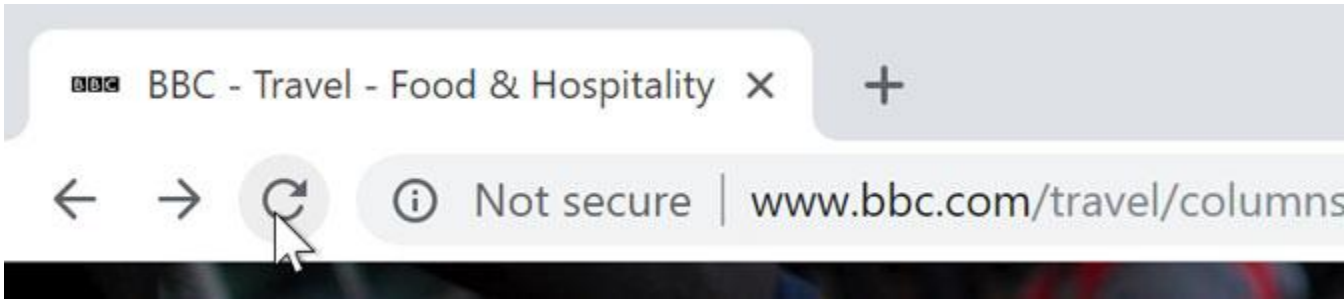
If you see this icon, it means you've found a link. You'll find other types of links this way too. For example, many websites actually use **images** as links, so you can just **click the image** to navigate to another page.

Navigation buttons

The **Back** and **Forward** buttons allow you to move through websites you've **recently viewed**. You can also click and hold either button to see your recent history.



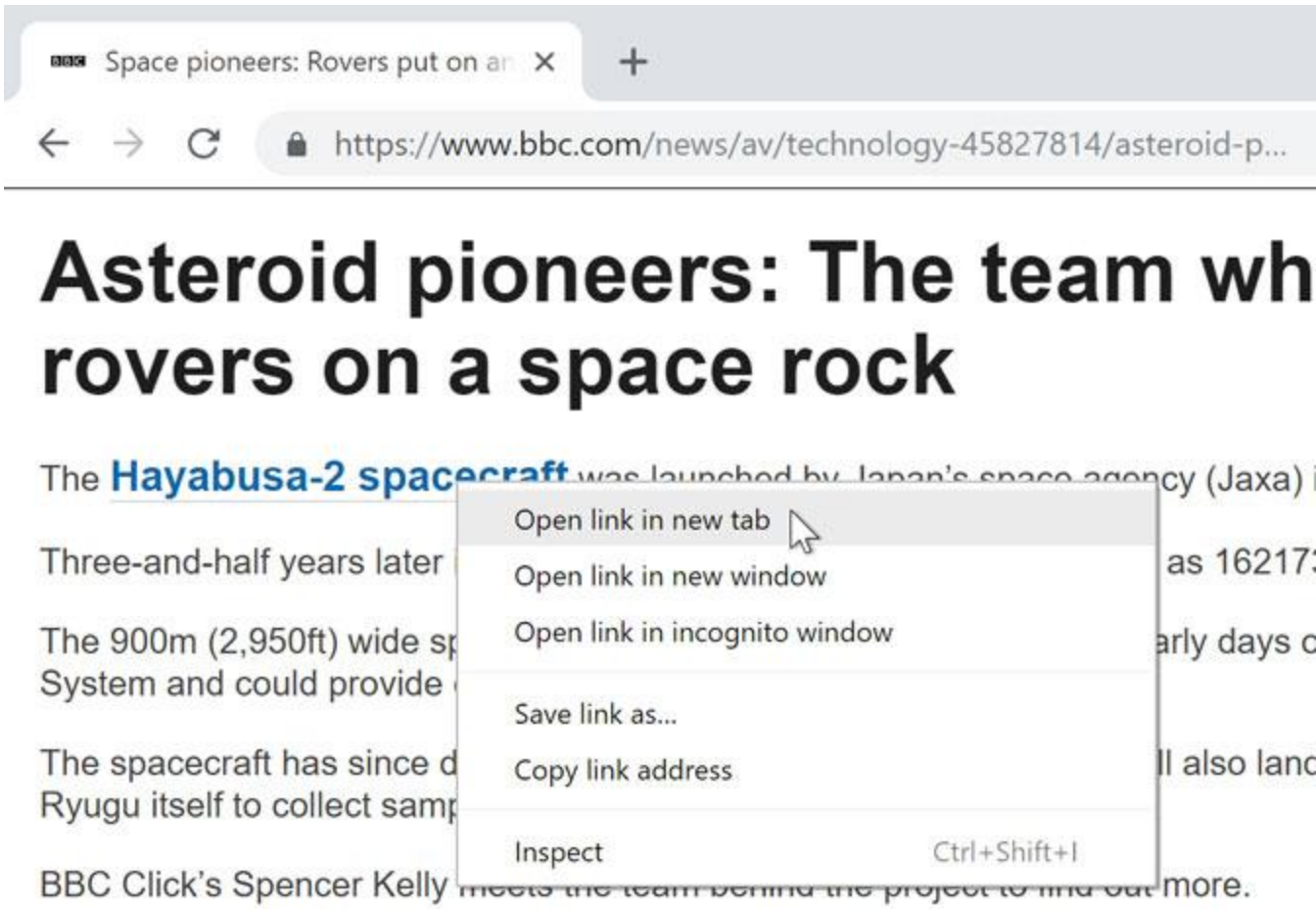
The **Refresh** button will **reload** the current page. If a website stops working, try using the Refresh button.



Tabbed browsing

Many browsers allow you to open links in a new **tab**. You can open as many links as you want, and they'll stay in the **same browser window** instead of cluttering your screen with multiple windows.

To open a link in a new tab, **right-click** the link and select **Open link in new tab** (the exact wording may vary from browser to browser).

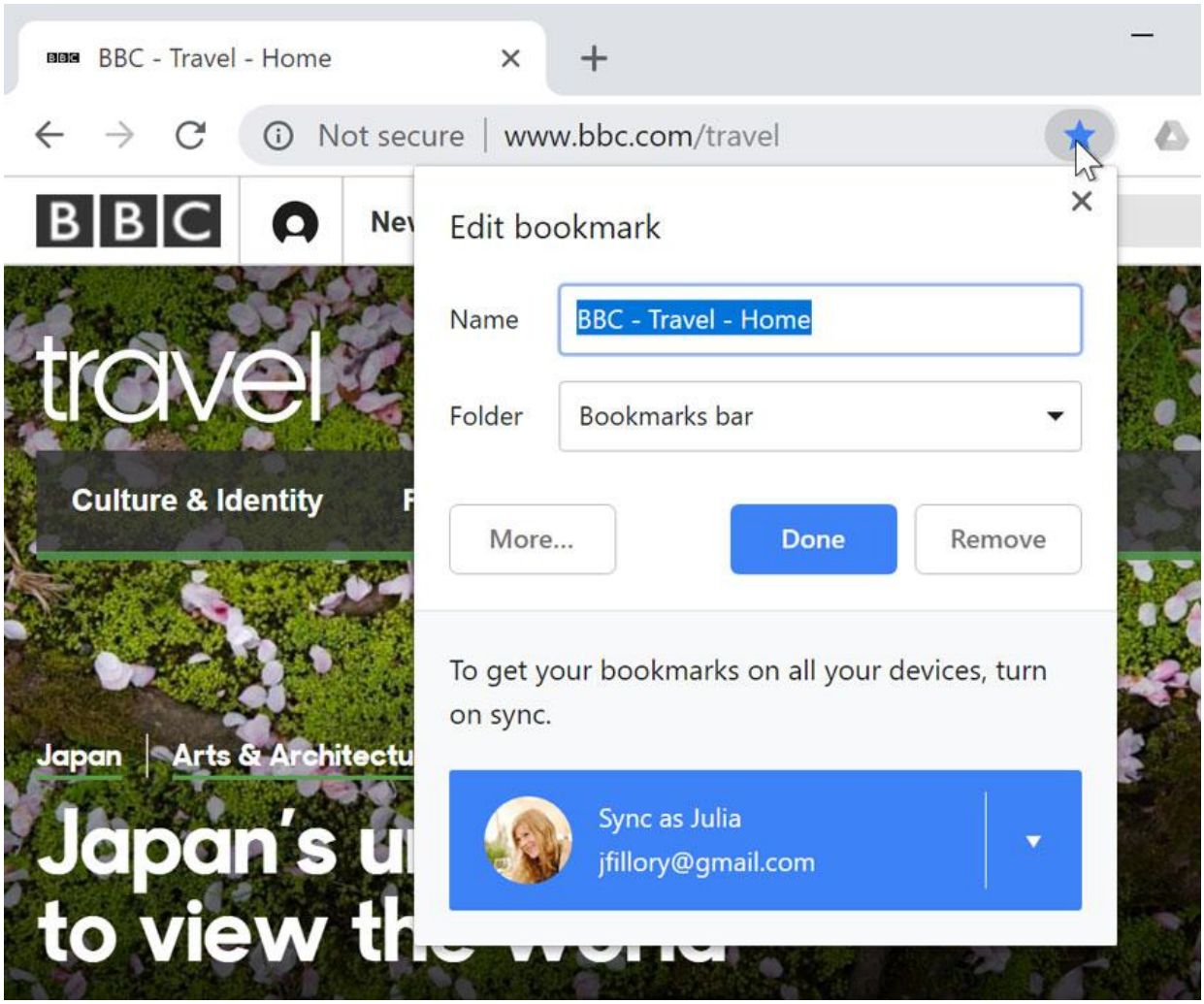


To **close** a tab, click the **X**.

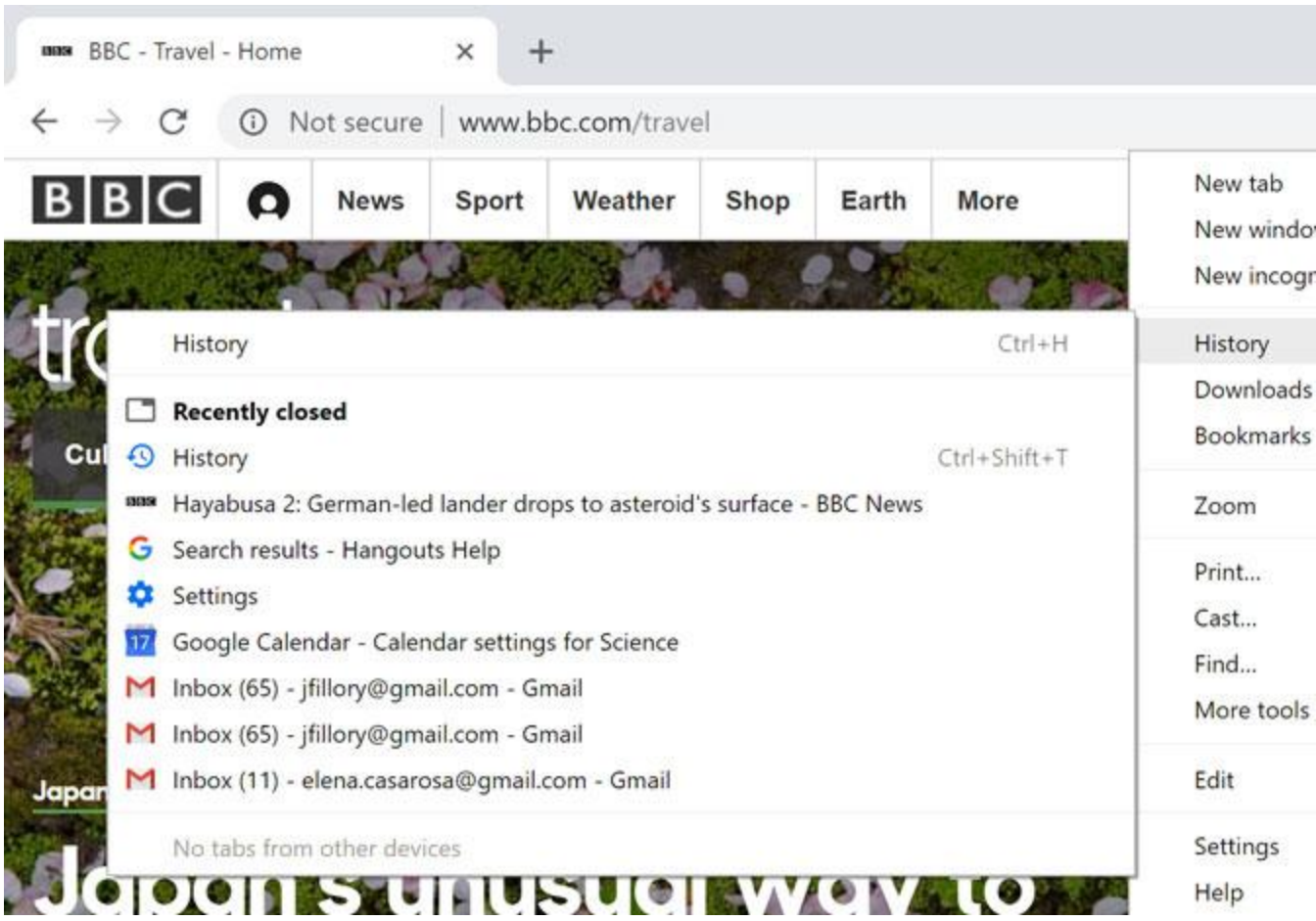
To create a **new blank tab**, click the button to the right of any open tabs.

Bookmarks and history

If you find a website you want to view later, it can be hard to memorize the exact web address. **Bookmarks**, also known as **favorites**, are a great way to save and organize specific websites so you can revisit them again and again. Simply locate and select the **Star** icon to bookmark the current website.



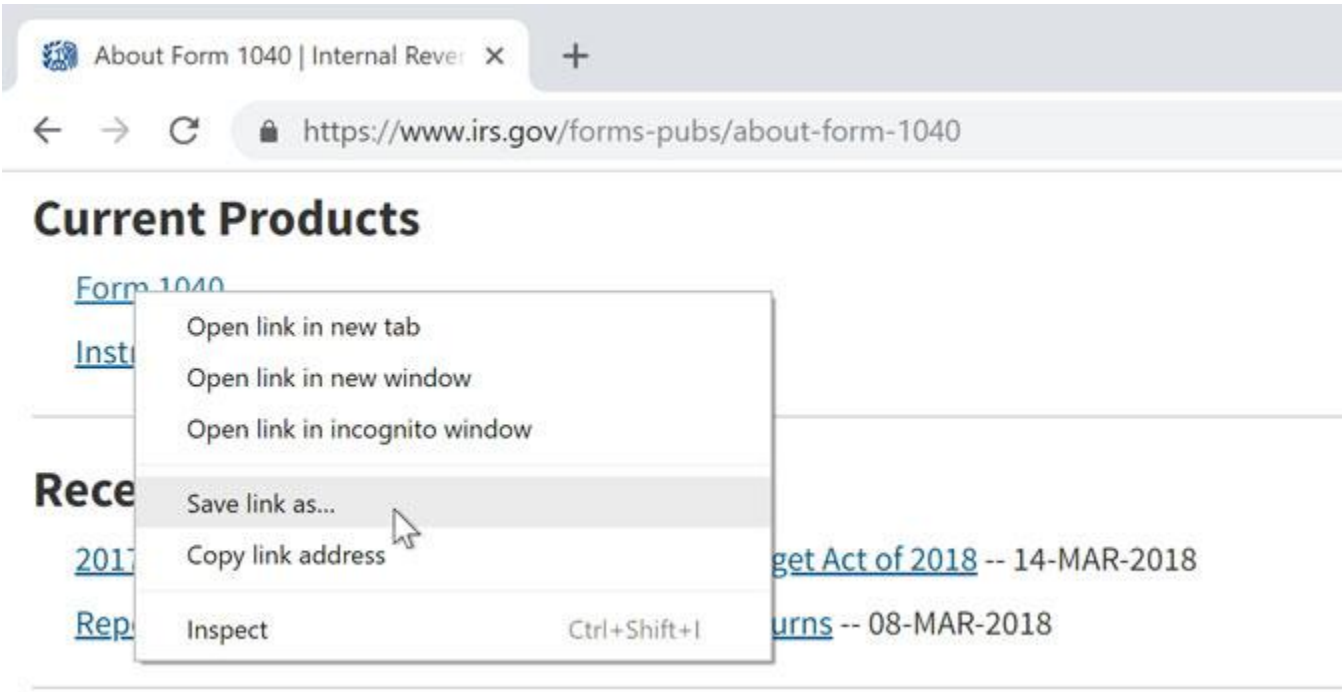
Your browser will also keep a history of every site you visit. This is another good way to find a site you visited previously. To view your history, open your browser settings—usually by clicking the icon in the upper-right corner—and select **History**.



Downloading files

Links don't always go to another website. In some cases, they point to a **file** that can be **downloaded**, or saved, to your computer.

If you click a link to a file, it may download automatically, but sometimes it just **opens within your browser** instead of downloading. To prevent it from opening in the browser, you can **right-click** the link and select **Save link as** (different browsers may use slightly different wording, like **Save target as**).

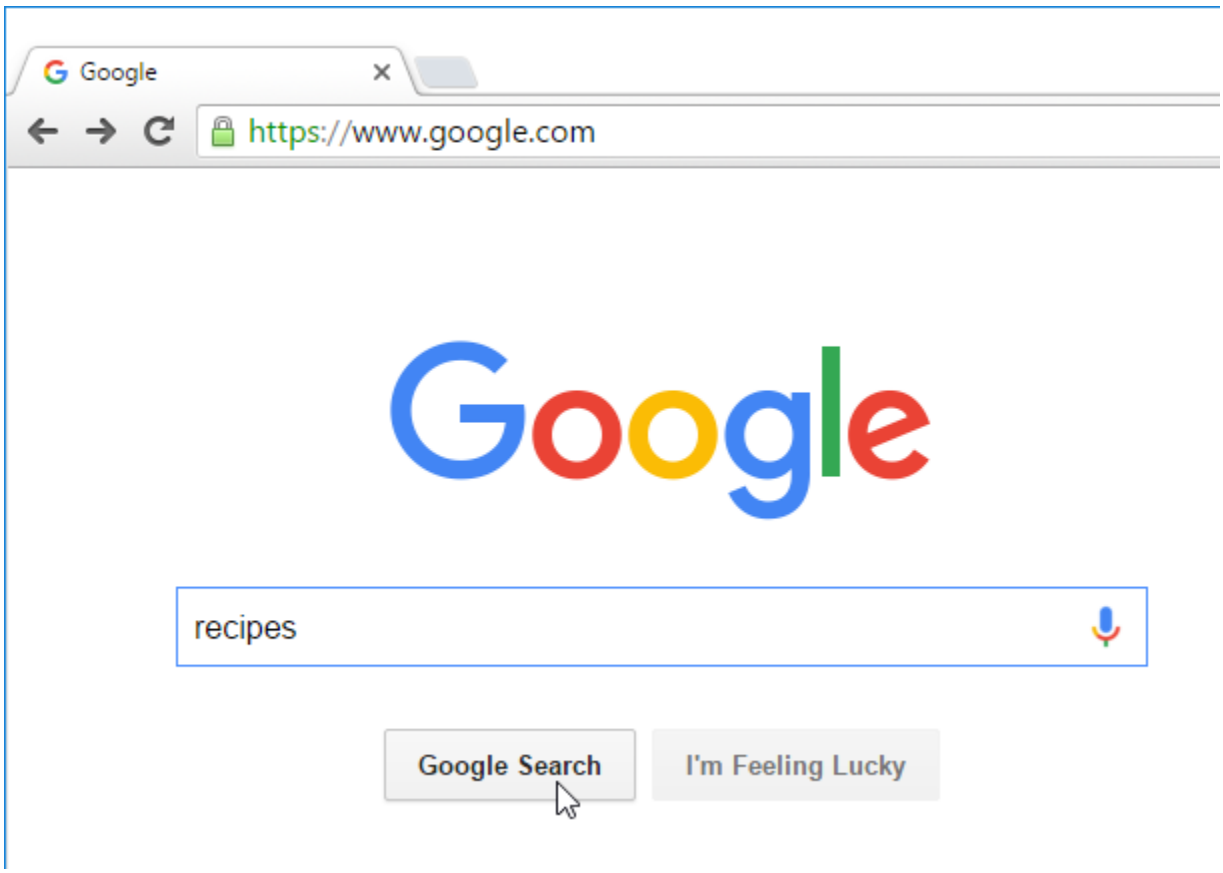


Using search engines

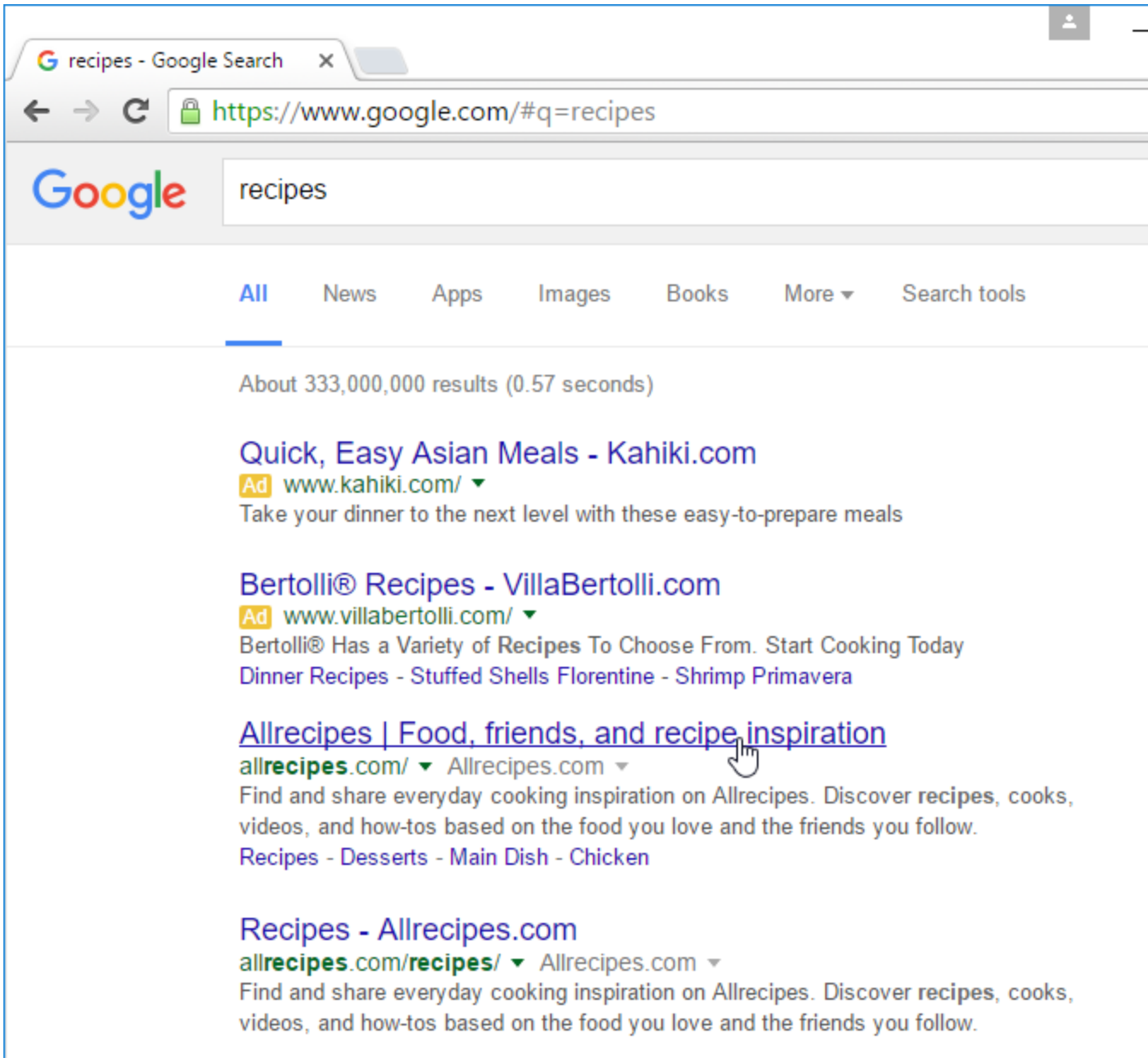
With billions of websites online today, there is **a lot** of information on the Internet. **Search engines** make this information easier to find. Let's look at the basics of using a search engine, as well as some techniques you can use to get **better search results**.

How to search the Web

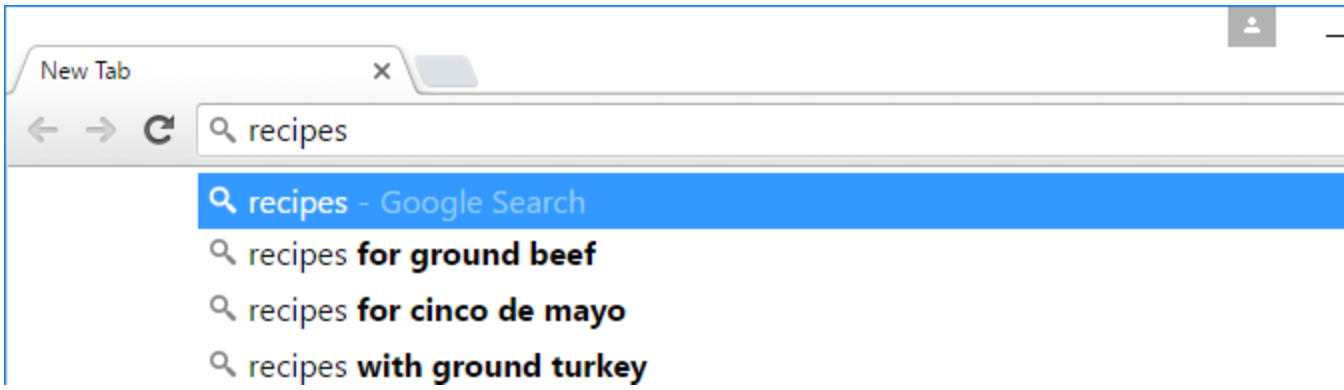
There are many different search engines you can use, but some of the most popular include **Google**, **Yahoo!**, and **Bing**. To perform a search, you'll need to navigate to a search engine in your web browser, type one or more **keywords**—also known as **search terms**—then press **Enter** on your keyboard. In this example, we'll search for **recipes**.



After you run a search, you'll see a list of **relevant websites** that match your search terms. These are commonly known as **search results**. If you see a site that looks interesting, you can click a link to open it. If the site doesn't have what you need, you can simply return to the results page to look for more options.



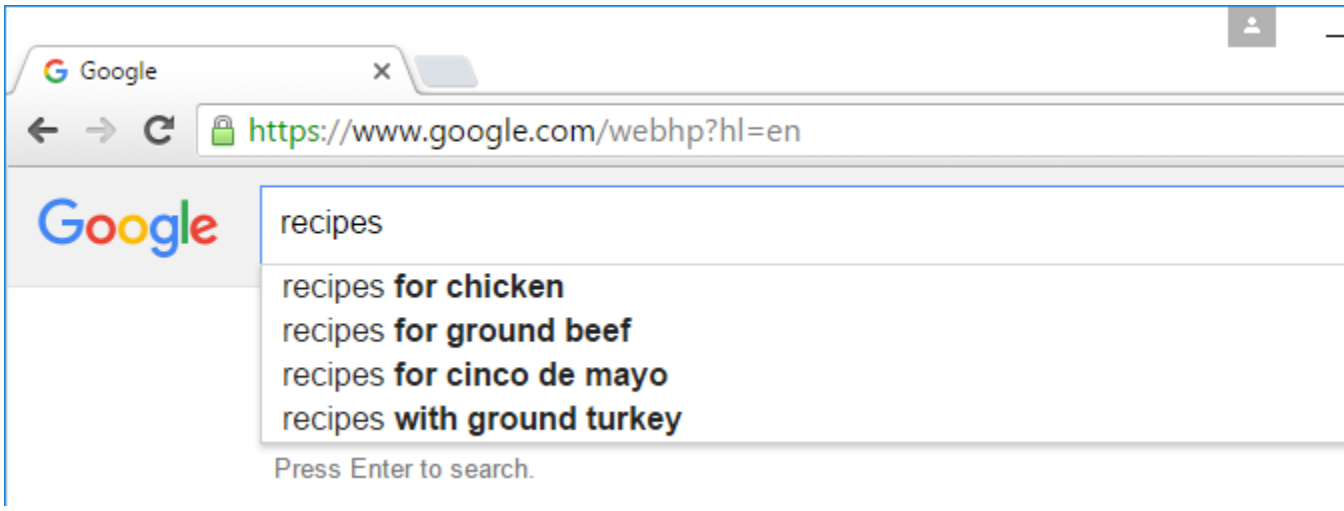
Most browsers also allow you to perform a web search directly from your **address bar**, although some have a separate **search bar** next to the address bar. Simply type your search terms and press **Enter** to run the search.



Search suggestions

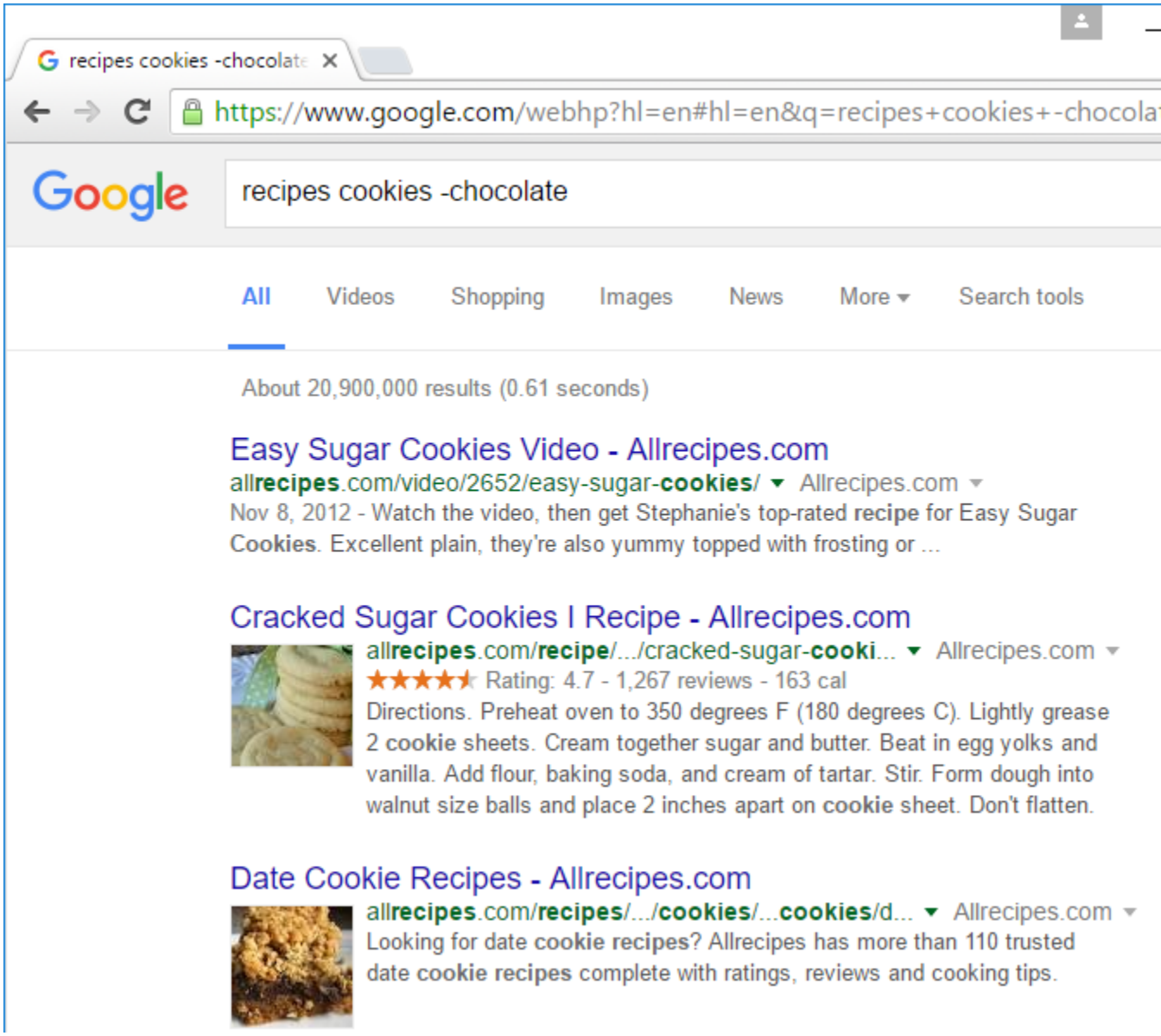
If you don't find what you're looking for on the first try, don't worry! Search engines are good at finding things online, but they're not perfect. You'll often need to **try different search terms** to find what you're looking for.

If you're having trouble thinking of new search terms, you can use **search suggestions** instead. These will usually appear as you're typing, and they're a great way to find new keywords you might not have tried otherwise. To use a search suggestion, you can click it with your mouse, or select it with the arrow keys on your keyboard.

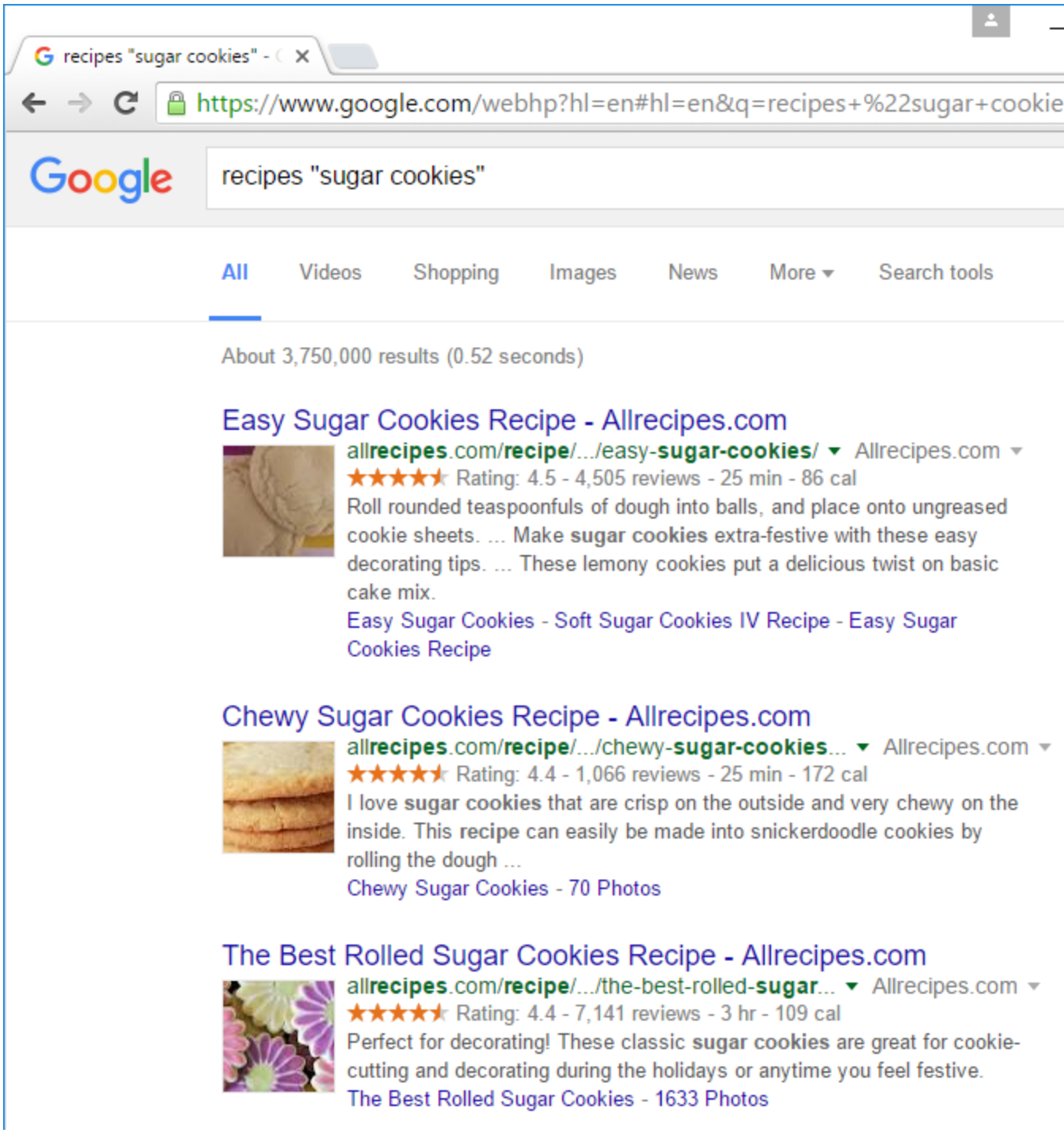


Refining your search

If you're still having trouble finding exactly what you need, you can use some special characters to help refine your search. For example, if you want to **exclude a word** from a search, you can type a **hyphen** (-) at the beginning of a word. So if you wanted to find cookie recipes that don't include chocolate, you could search for **recipes cookies -chocolate**.



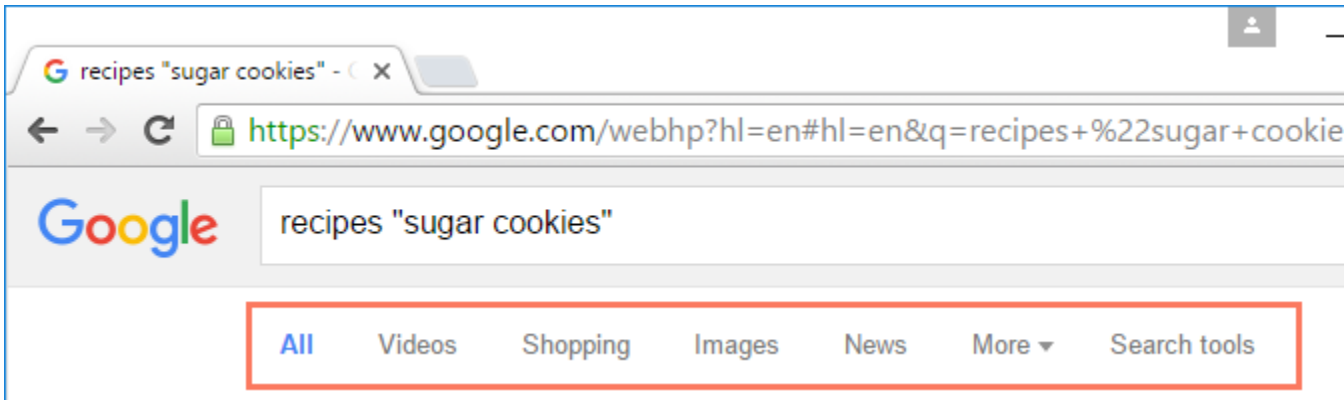
You can also search for **exact words** or **phrases** to narrow down your results even more. All you need to do is place **quotation marks** (" ") around the desired search terms. For example, if you search for **recipes "sugar cookies"**, your search results will only include recipes for sugar cookies, instead of any cookies that happen to use sugar as an ingredient.



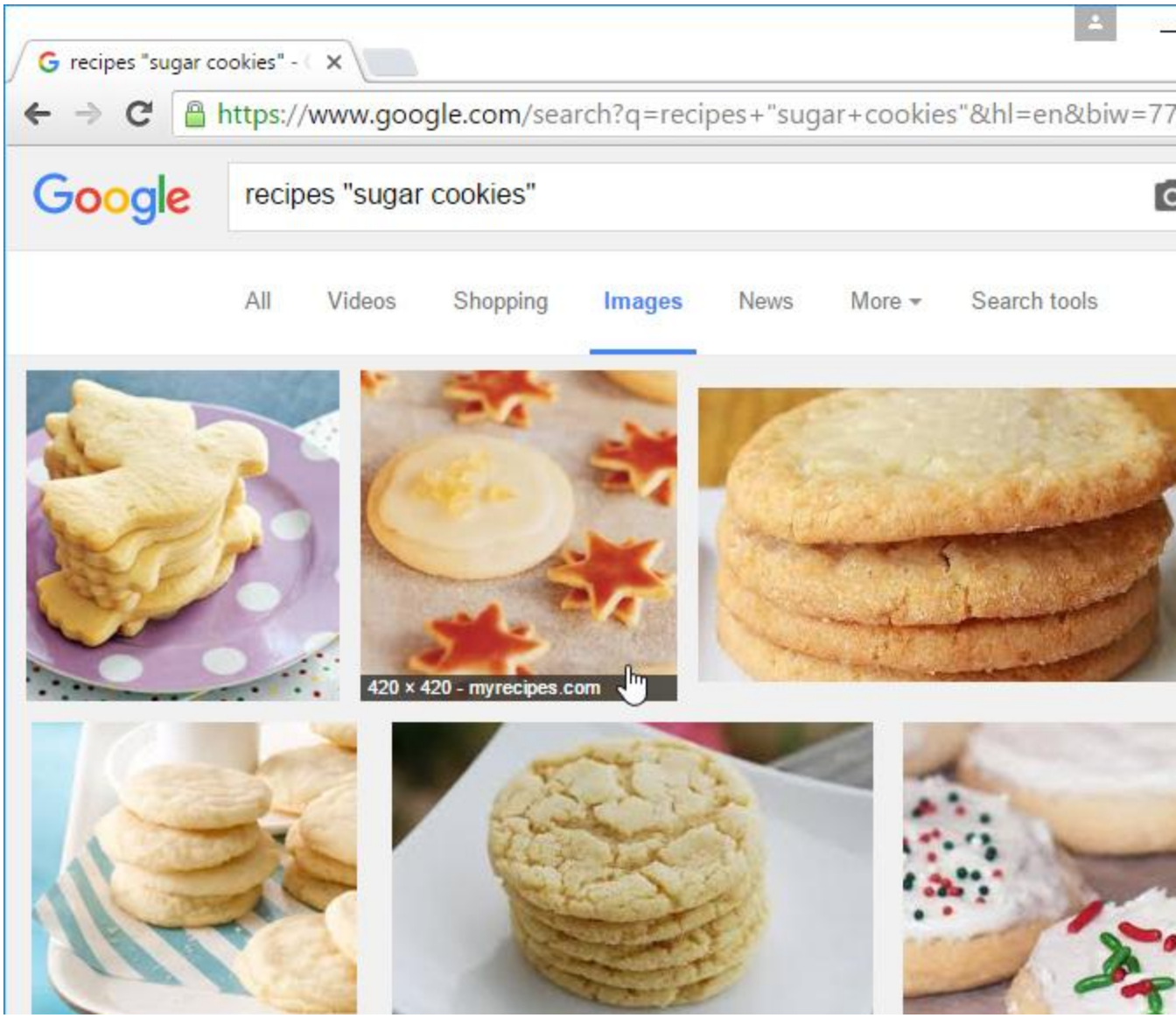
These techniques may come in handy in certain cases, but you probably won't need to use them with most searches. Search engines can usually figure out what you're looking for without these extra characters. We recommend trying a few different **search suggestions** before using this method.

Content-specific searches

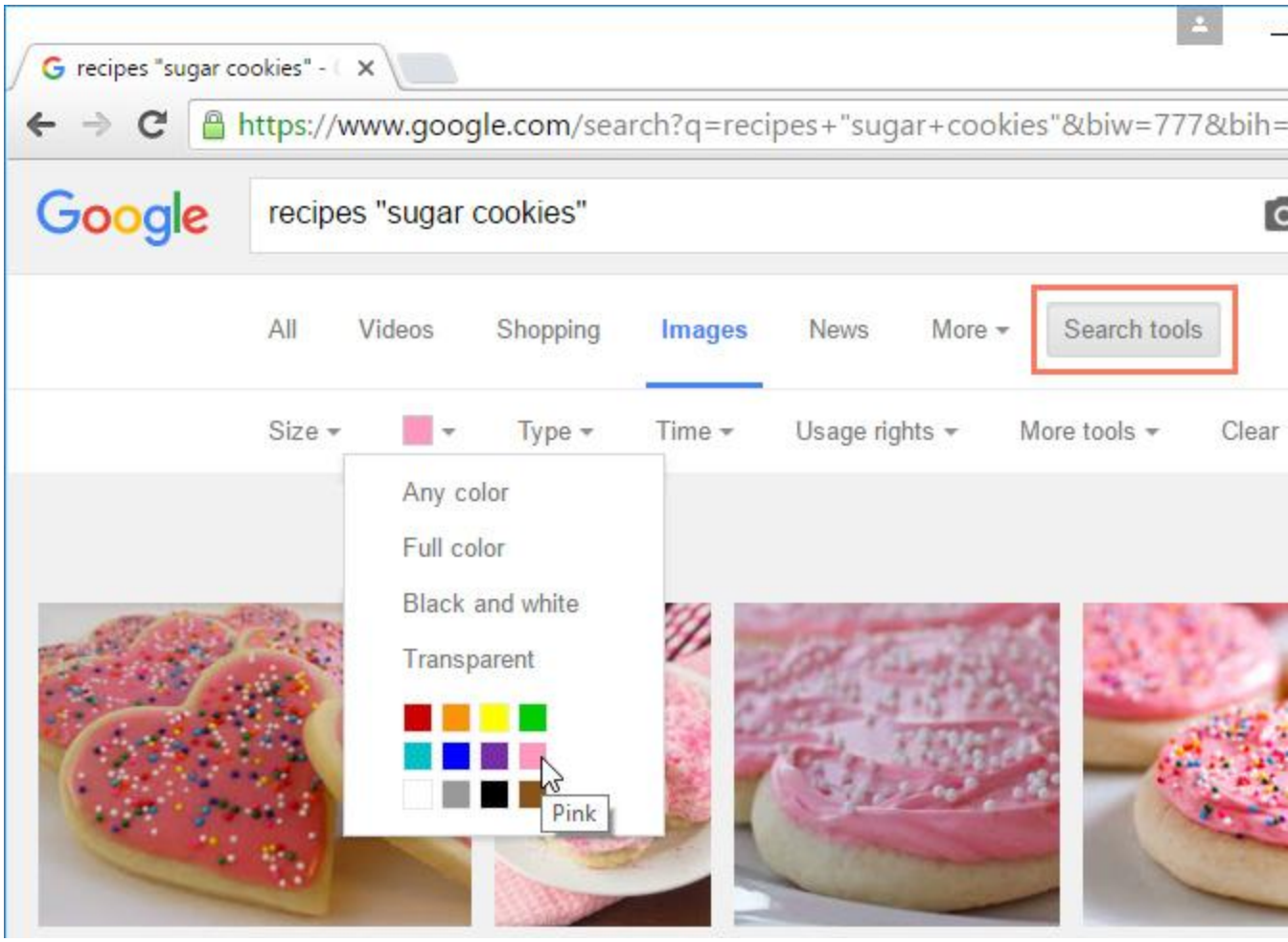
There may be times when you're looking for something more specific, like a **news article**, **picture**, or **video**. Most search engines have **links** at the top of the page that allow you to perform these unique searches.



In the example below, we've used the same search terms to look for **images** instead of websites. If you see an image you like, you can click to visit the website it originally came from.

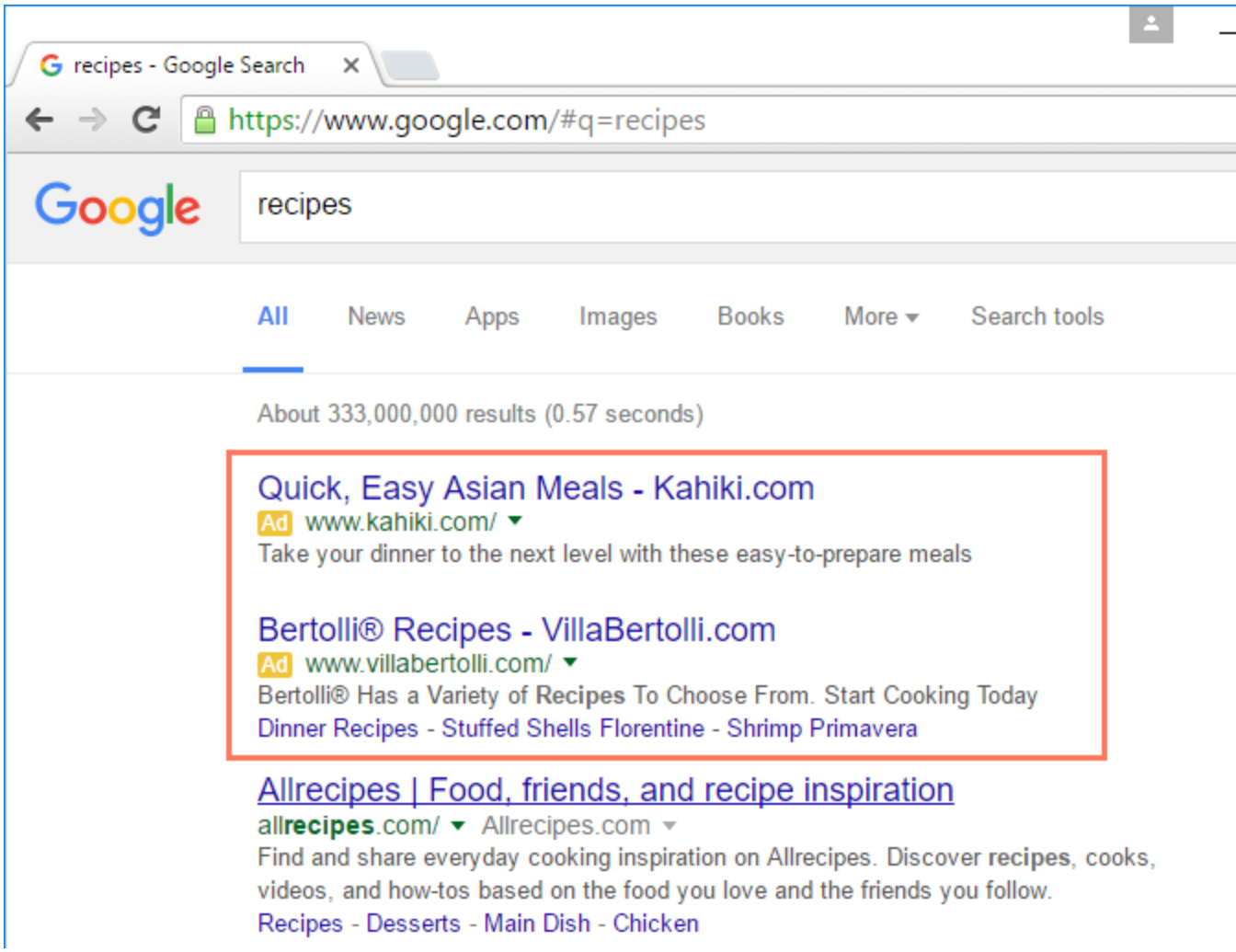


You can use the extra **search tools** to narrow down your results even more. These tools will change based on the type of content you're looking for, but in this example we can filter our images by **size**, **color**, **image type**, and more. So if you wanted to find cookies with pink frosting, you could search for images that are mostly pink.



Advertisements

One final thing to note: Most search engines include **advertisements** with search results. For example, you can see advertisements at the top of the search results below.



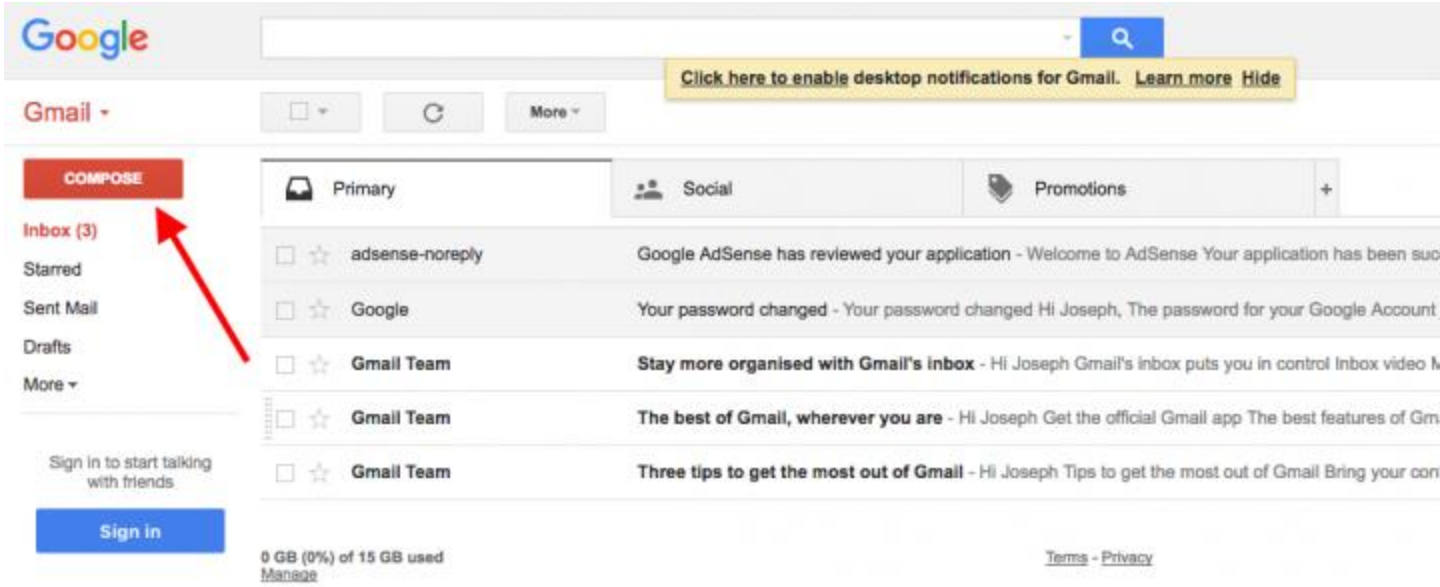
These ads are based on your search terms, and they often look similar to other search results. While they may be useful in some cases, it's usually more helpful to focus on the actual search results.

How to send an email

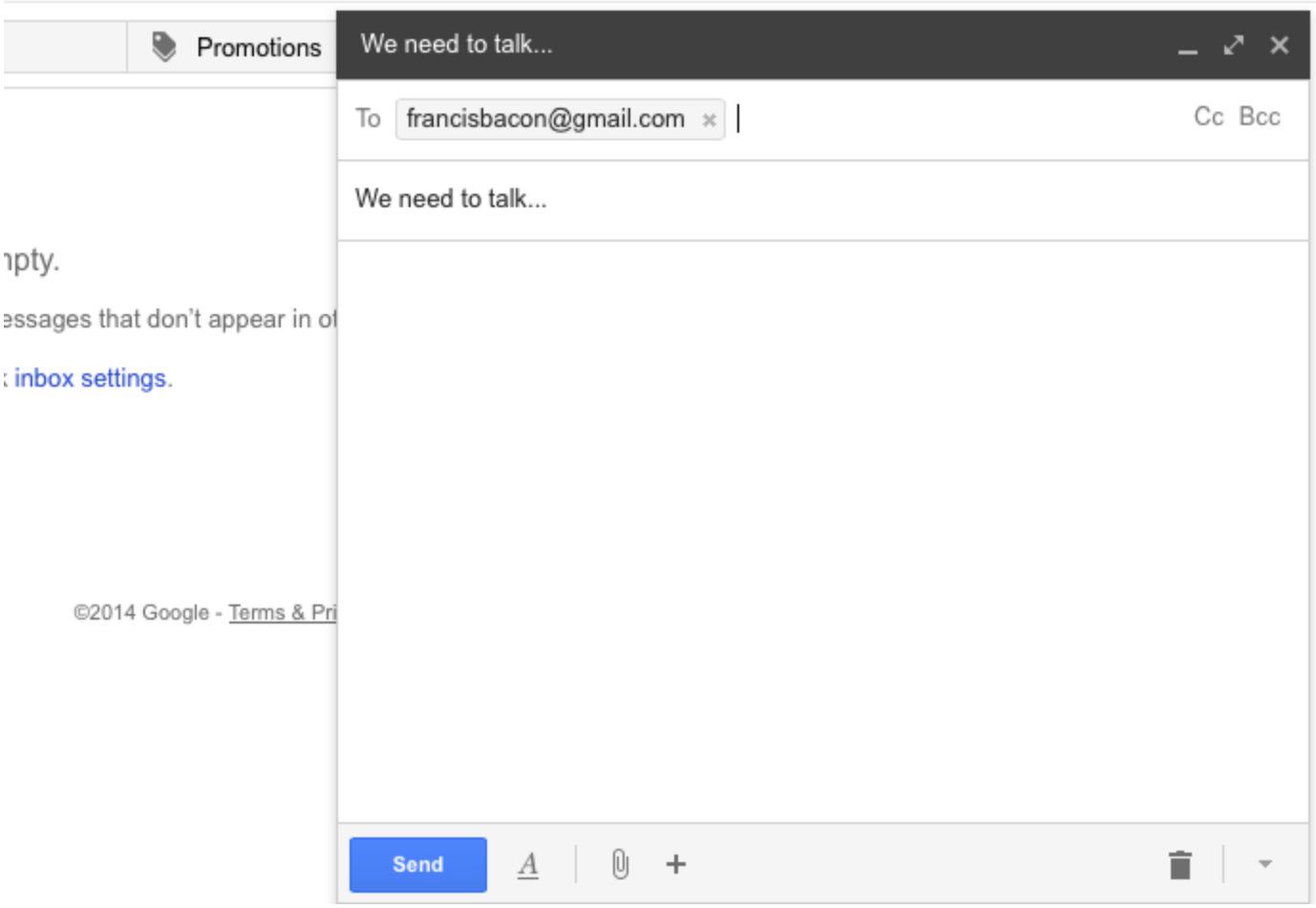
Follow these step-by-step instructions to send an email

Step 1: Log in to your Gmail account so that you are on the dashboard (main page) of your mail account.

Step 2: Click **Compose**.

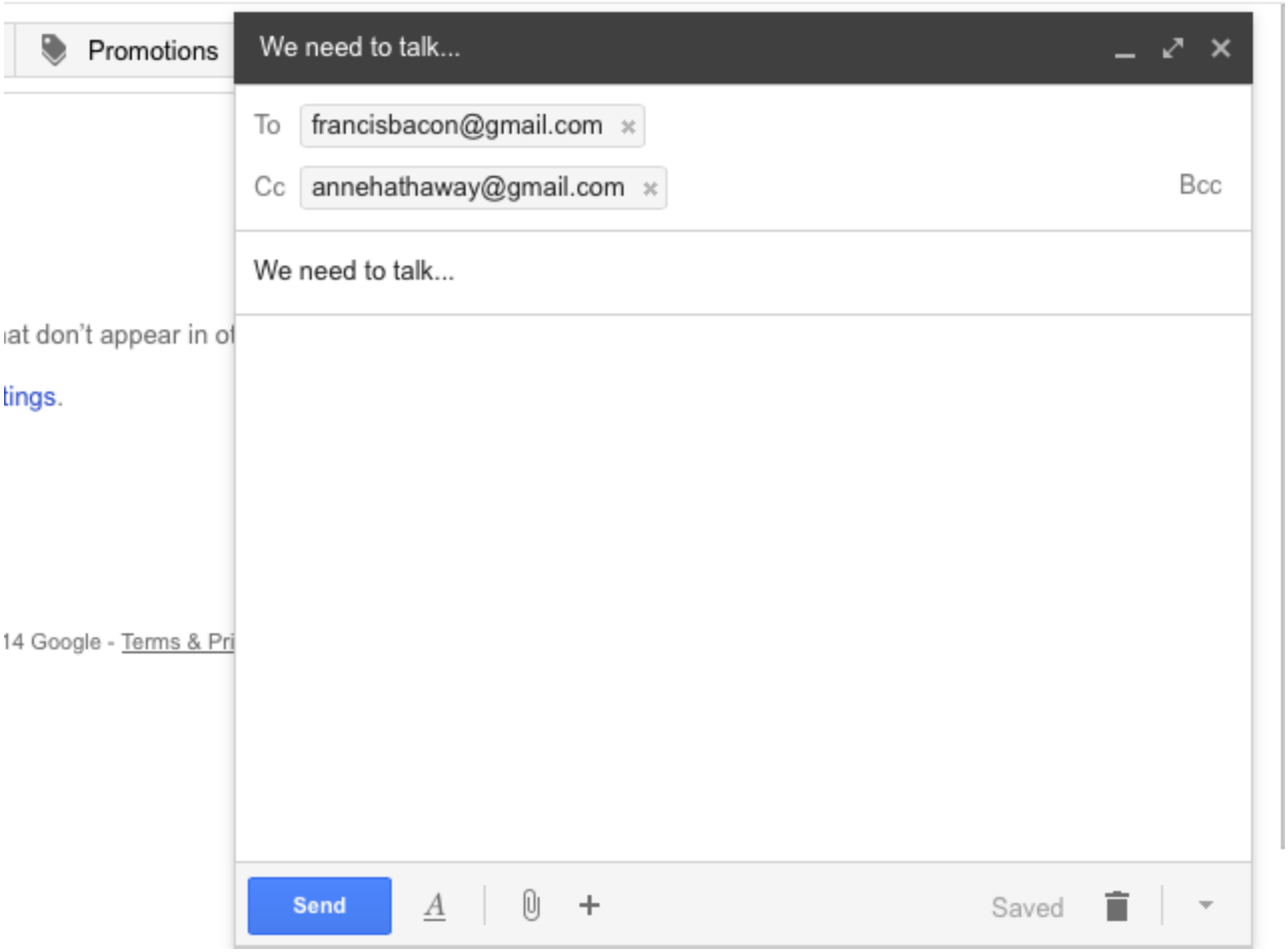


Step 3: A new blank email window will open up. In the 'To' box, type in the email address of the recipient.



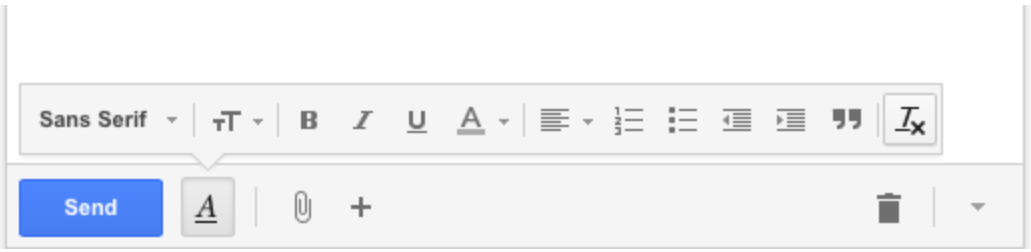
Step 4: You might want to include someone else in your email to ‘keep them in the loop’. You can do this by clicking **Cc** or **Bcc**, which will open another field. ‘Cc’ means ‘carbon copy’ and ‘Bcc’ means ‘blind carbon copy’. Adding an email address to the ‘Cc’ field means that that person will receive a copy of the email and all the other recipients will see their email address. If an email address is put into the 'Bcc’ field, the person will get a copy of the email but no other recipient will see that address.

If you are sending the same email to lots of different people, it’s a good idea to put all the email addresses in the ‘Bcc’ field to keep your ‘mailing list’ confidential. That way, there’s no chance that it could fall into the hands of a spammer or hacker.

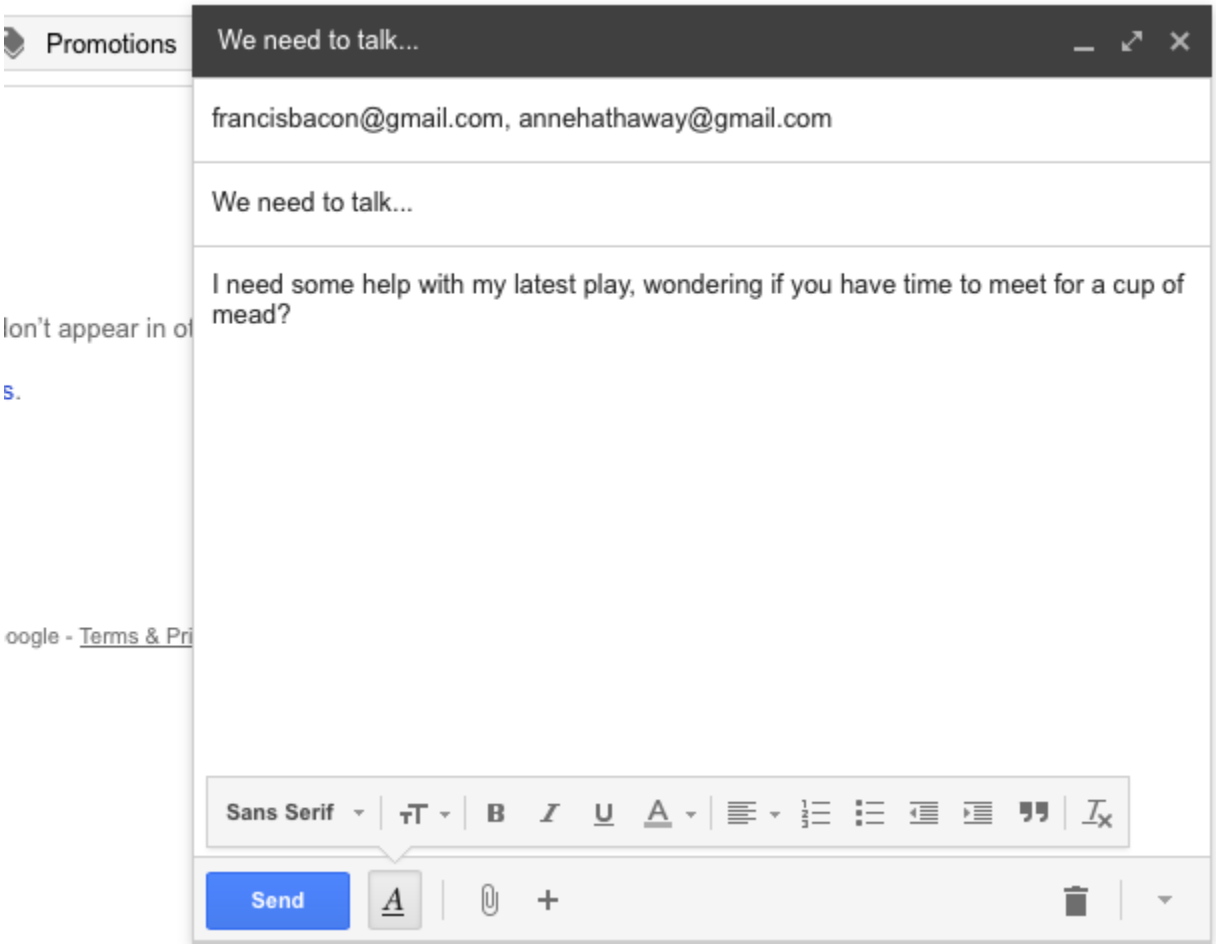


Step 5: The subject field allows you to give the recipient an idea of the topic of your email, like a heading. You don't have to put anything in the subject box, but it can help when viewing and sorting email.

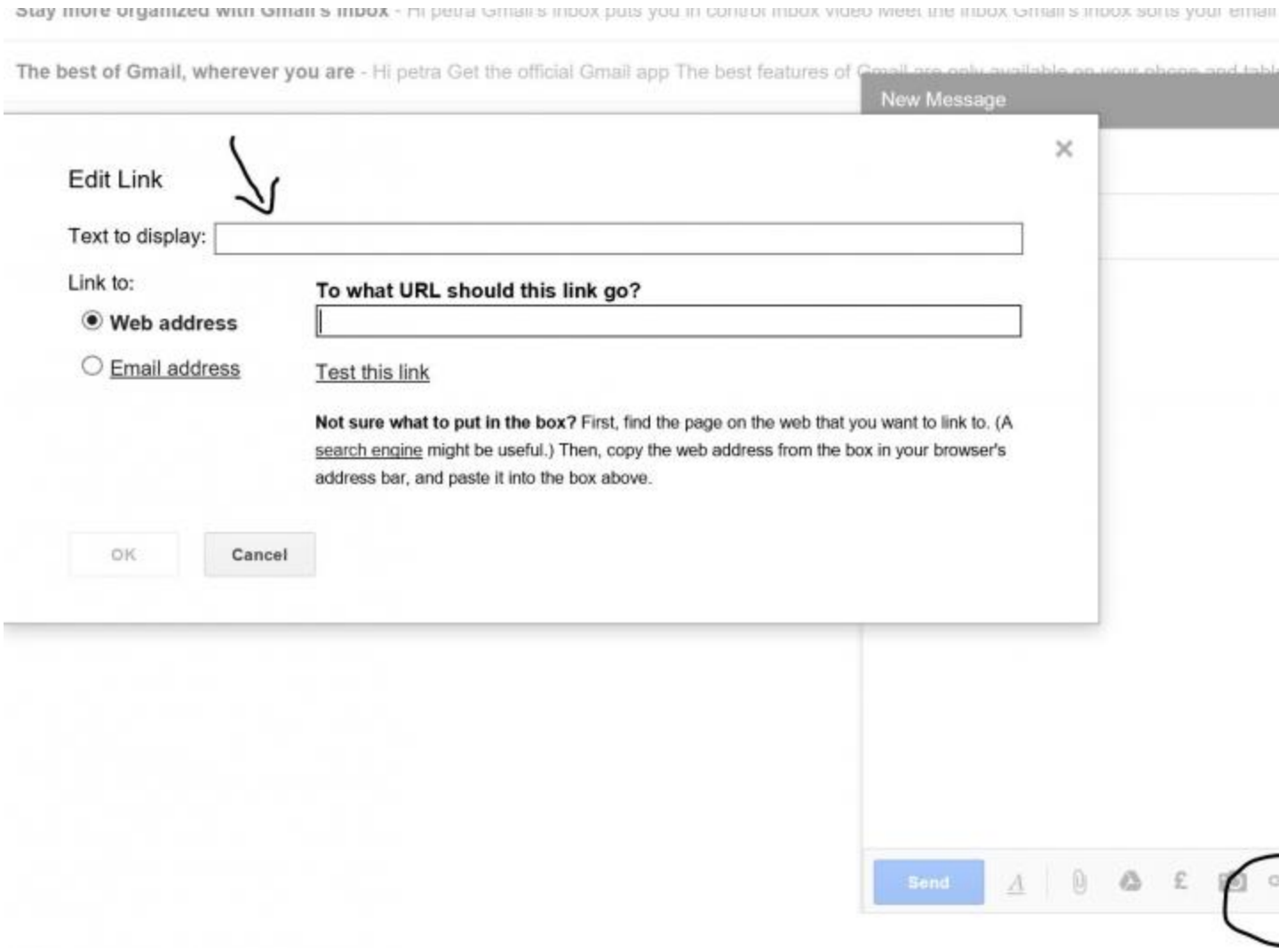
Step 6: Email text can be formatted in a similar way to text in a word document. You can change the font style, colour and size using the formatting icons. You can also create bullet points and check the spelling of your email. Choose your formatting from the menu shown.



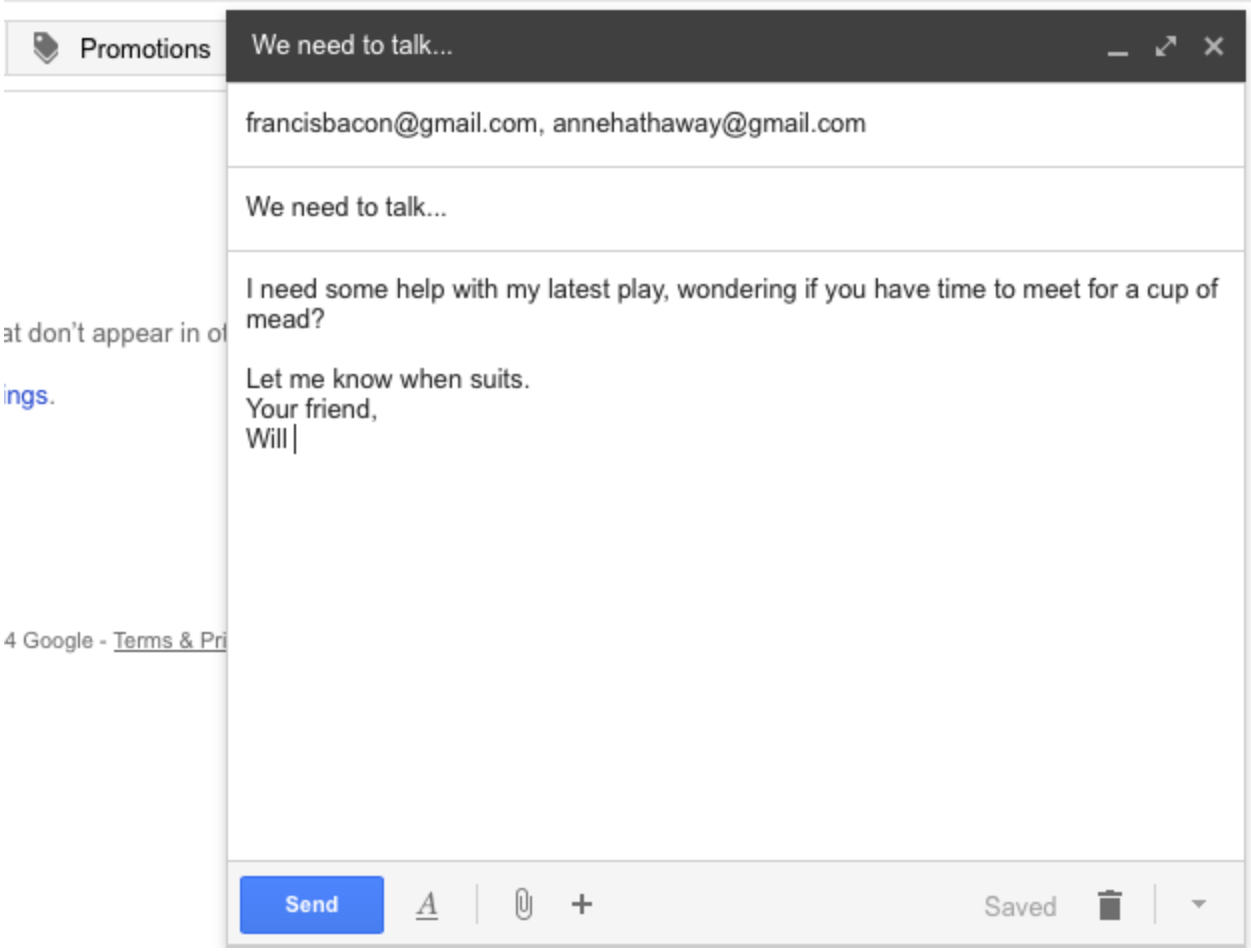
Step 7: Type your message in the main body field of your email.



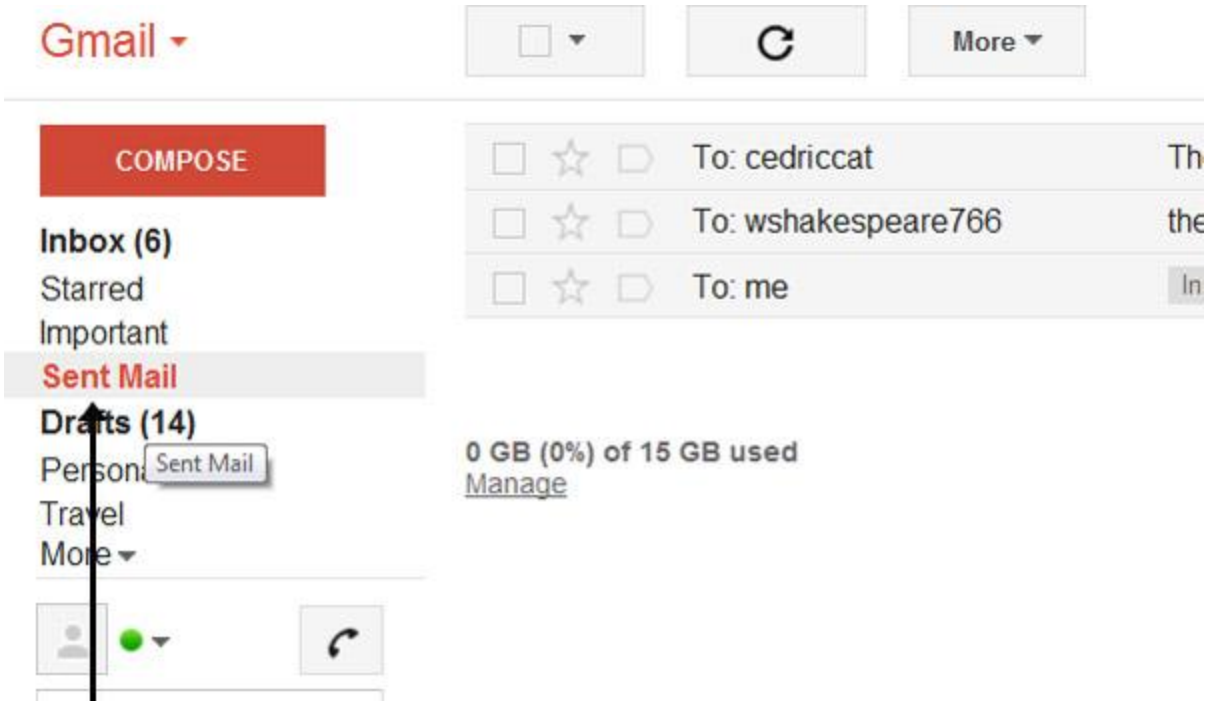
You can format your email using the options that are available on the toolbar. To add a link in the body of your email click on the insert link icon, then add the '**Text to display**' and then a web or email address, finally click **OK**.



Step 8: When you're happy with your email, click the blue **Send** button at the bottom of the compose window.



Step 9: The email you've sent will now be stored in the 'Sent Mail' folder on your Gmail dashboard. You may have to run your mouse pointer over the Inbox folder link to see the other folders.



Step 10: You may start an email but then decide to come back to it later rather then sending it straightaway. Gmail saves your drafts automatically. So you can simply close the email and the unfinished email will be saved to your 'Drafts' folder. When you decide that you're ready to send it, you can retrieve it from the 'Drafts' folder by clicking **Drafts** and then clicking the correct item in the 'Drafts' folder list. Finish the email and click **Send** as normal.

1. Different Virus Expressions

Virus

A computer virus is a piece of software that can 'infect' a computer, install itself and copy itself to other computers, without the users knowledge or permission. It usually attaches itself to other computer programs, data files, or the boot sector of a Hard drive.

Malware

Malware is short for **mal**icious soft**ware**. Malware is the name given to any type of software that could harm a computer system, interfere with and gather a user's data, or make the computer perform actions without the owner's knowledge or permission.

Trojan horse

A type of malware that uses malicious code to install software that seems ok, but is hidden to create back doors into a system typically causing loss or theft of data from an external source.

Worm

Unlike a virus, a worm, is a standalone piece of malicious software that replicates itself in order to spread to other computers. It often uses a computer network to spread itself, relying on security flaws on the target system to allow access.

Spyware

Spyware is software that aids in gathering information about a person or organization without their knowledge, they can monitor and log the activity performed on a target system, like log key strokes, or gather credit card and other information.

Adware

Adware is software which can automatically causes pop-up and banner adverts to be displayed in order to generate revenue for its author or publisher. A lot of freeware will use Adware but not always in a malicious way, if it was malicious, it would then be classed as spyware or malware.

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2. How Can a Computer Be Protected from Viruses?

- Install an anti-virus program and keep it up-to-date and regularly run scans.
- Install an anti-malware program to stop software installing without your knowledge.
- Never download and install software from the Internet unless you are certain it is from a trusted source.
- Don't open e-mail attachments unless you have scanned them first, even a picture can carry a virus.
- Don't trust cracked or hacked software as they often contain malware, Trojans.

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 f new viruses, enabling the system to check for new threats. Antivirus programs are essential utilities for any computer but the choice of which one is very important. One AV program might find a certain virus or worm while another cannot, or vice-versa.

Types of Antivirus Programs

Anybody who accesses the internet can benefit from knowing about various antivirus programs that enable you to stay safe while online. Accessing websites leaves the way open for unscrupulous people to infect your computer to secretly gather information or spy on what you do. By installing suitable software, you can prevent viruses from invading your home computer.

1. AVG

AVG is one of the most popular antivirus programs that can be obtained for free, and it's easy to download directly from the internet. In addition to not taking up a significant amount of space on a hard drive, it can also work with a number of different Windows operating systems. It incorporates both antivirus and antispyware abilities and works by scanning all the files on the computer at regular intervals. Additionally, it has the ability to quarantine virus files so that they cannot do any harm before they can be checked and deleted.

2. McAfee

McAfee VirusScan has been the second most popular antivirus program on the market for years, which has enabled the company to cement their position as a strong competitor to Symantec. It provides spyware and virus protection within one program, rather than separately as many other programs do. It is necessary to take out a subscription to use McAfee, but it will give you access to continuously updating virus protection.

3. Norton

There are a number of Norton antivirus programs available, all produced by Symantec. They have quickly proven themselves to be a market leader when it comes to computer system security, with their products available from a range of different electronics supply stores. Norton programs are used by the majority of computer users on the market, who pay an annual fee for a subscription service. Norton Anti-Virus and Norton Internet Security are software programs that search the computer regularly and delete any viruses that they find.

4. Kaspersky

Russian-developed Kaspersky is not the most popular of all the antivirus protection programs; many people have probably never heard of them. However, they still provide a very effective product for protection against viruses, spyware, and Trojans. Kaspersky Internet Security and Kaspersky Antivirus prevent problems that computers will encounter in the event that they become infected.

5. Ad Aware

This software by Lavasoft is another antivirus program that provides protection against a large number of cyber security threats that arise from using the Internet. They offer different levels of protection according to how much you want to spend in

a one-off payment for the program. In addition to finding and removing viruses and spyware that can detect key strokes and passwords, it will protect against Trojans. Advancements in anti-malware technology allow it to provide effective protection while not putting excessive pressure on the system in the process.

Definition of 'Cyber Security'

Definition: Cyber security or information technology security are the techniques of protecting computers, networks, programs and data from unauthorized access or attacks that are aimed for exploitation.

Description: Major areas covered in cyber security are:

1) Application Security

2) Information Security

3) Disaster recovery

4) Network Security

Application security encompasses measures or counter-measures that are taken during the development life-cycle to protect applications from threats that can come through flaws in the application design, development, deployment, upgrade or maintenance. Some basic techniques used for application security are: **a)** Input parameter validation, **b)** User/Role Authentication & Authorization, **c)** Session management, parameter manipulation & exception management, and **d)** Auditing and logging.

Information security protects information from unauthorized access to avoid identity theft and to protect privacy. Major techniques used to cover this are: **a)** Identification, authentication & authorization of user, **b)** Cryptography.

Disaster recovery planning is a process that includes performing risk assessment,

establishing priorities, developing recovery strategies in case of a disaster. Any business should have a concrete plan for disaster recovery to resume normal business operations as quickly as possible after a disaster.

Network security includes activities to protect the usability, reliability, integrity and safety of the network. Effective network security targets a variety of threats and stops them from entering or spreading on the network. Network security components include: **a)** Anti-virus and anti-spyware, **b)** Firewall, to block unauthorized access to your network, **c)** Intrusion prevention systems (IPS), to identify fast-spreading threats, such as zero-day or zero-hour attacks, and **d)** Virtual Private Networks (VPNs), to provide secure remote access.

Firewall :
Also known as a 'packet filter'. Basically, software which *monitors network traffic* and *connection attempts* into and out of a network or computer and determines whether or not to allow it to pass. Depending on the sophistication, this can be limited to simple IP/port combinations or do full content-aware scans.
A firewall can be thought of as a screen or sieve that categorically strains out potentially harmful data.

Antivirus:
A software which will find programs/files/software/etc that might compromise your computer, either by being executable or by exploiting a vulnerability in the program normally supposed to process them -- Rootkits, trojans, or other types of malware.

It detects these kinds of harmful programs that are already installed on your computer or about to be installed.

It can perform various protective measures (based on the security settings in the Anti-virus software) such as quarantine, permanent removal, fix, etc.,

It will also look for potentially harmful files that are downloaded from the internet or attached to an email and notifies/removes it to protect your computer.

Online Transactions Safe & Secure

1. Never use public Wi-Fi or a public computer for online transaction or money transfer

REUTERS

Never attempt an online transaction on a public Wi-Fi. They often have fewer security features than a private network. So always switch to your phone data.

If you have to do an emergency transaction on a public wifi out of emergency, be sure to change it ASAP.

2. Firewalls and Antivirus

If you don't have an antivirus app, get one -- ideally if it's a paid one. Put your antivirus on auto update. This will ensure that it’s updated all the time. There’s a new malware on the internet every day. An updated firewall will protect you from these.

Turn your firewall on. Firewalls often block sites that are malicious or suspicious. If your firewall blocks a certain website, be sure to avoid it.

3. Never reply to fraud emails and texts

Phishing or the attempt to gain your personal information generally over email or text is rampant. Your inbox is probably full of emails, claiming that you've won a contest or you've been credited a certain amount of money. Never open these emails. Never reply to them. Learn to identify such spam mail and ignore them, or if you have the time, delete them.

Writava Banerjee

Updated: Jun 19, 2018, 16:29 PM IST

FACEBOOK TWITTER REDDIT SAVE

We often come across reports where people lose money because their account got hacked or someone lost money due to an online fraud. Malware, viruses, phishing are common across the internet and the onus is on us to protect ourselves from them.

So here are a few tips you must follow to protect your money online:

1. Never use public Wi-Fi or a public computer for online transaction or money transfer

REUTERS

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DON'T MISS

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Manhattan
Internet
Play Store
Camera

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Next

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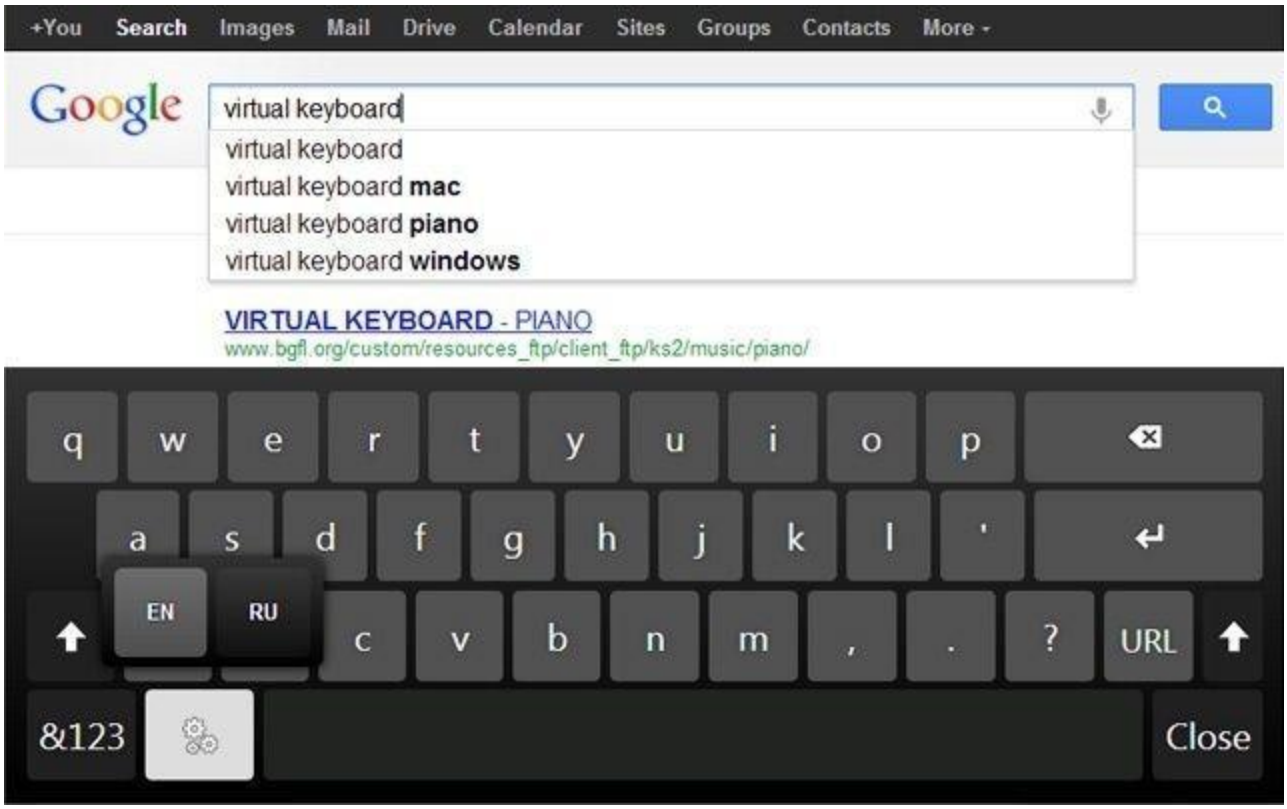
BCCL/REPRESENTATIVE IMAGE

4. Check for digital certificates

Always check for the digital certificates when using a third party payment method. Often you can see a symbol like VeriSign' on the window, and you can click on it to get information on the website's certification.

5. Prefer virtual keyboard

There are malware and viruses that can make a log of what you type on your keyboard. So it's advisable to use a virtual keyboard when doing an online transaction. Banks have an option for a virtual keyboard on their login pages. Use it.



CHROME STORE

6. Enable two-step verification

If your device doesn't have a mandatory two-step verification, make sure to turn it on. Two-step verification involves passing two security walls to perform an operation on your phone. For eg, Google's two-step verification ask you to verify yourself by asking you your password, pattern or fingerprint first and then they divert you to your bank's website.

7. Check if the connection is secure

Always check for the lock symbol on the address bar and check if 'https://' is in green. It means that the connection is secure. If it's yellow or red, never attempt an online transaction as it might make your information vulnerable.

8. Always track your online spending

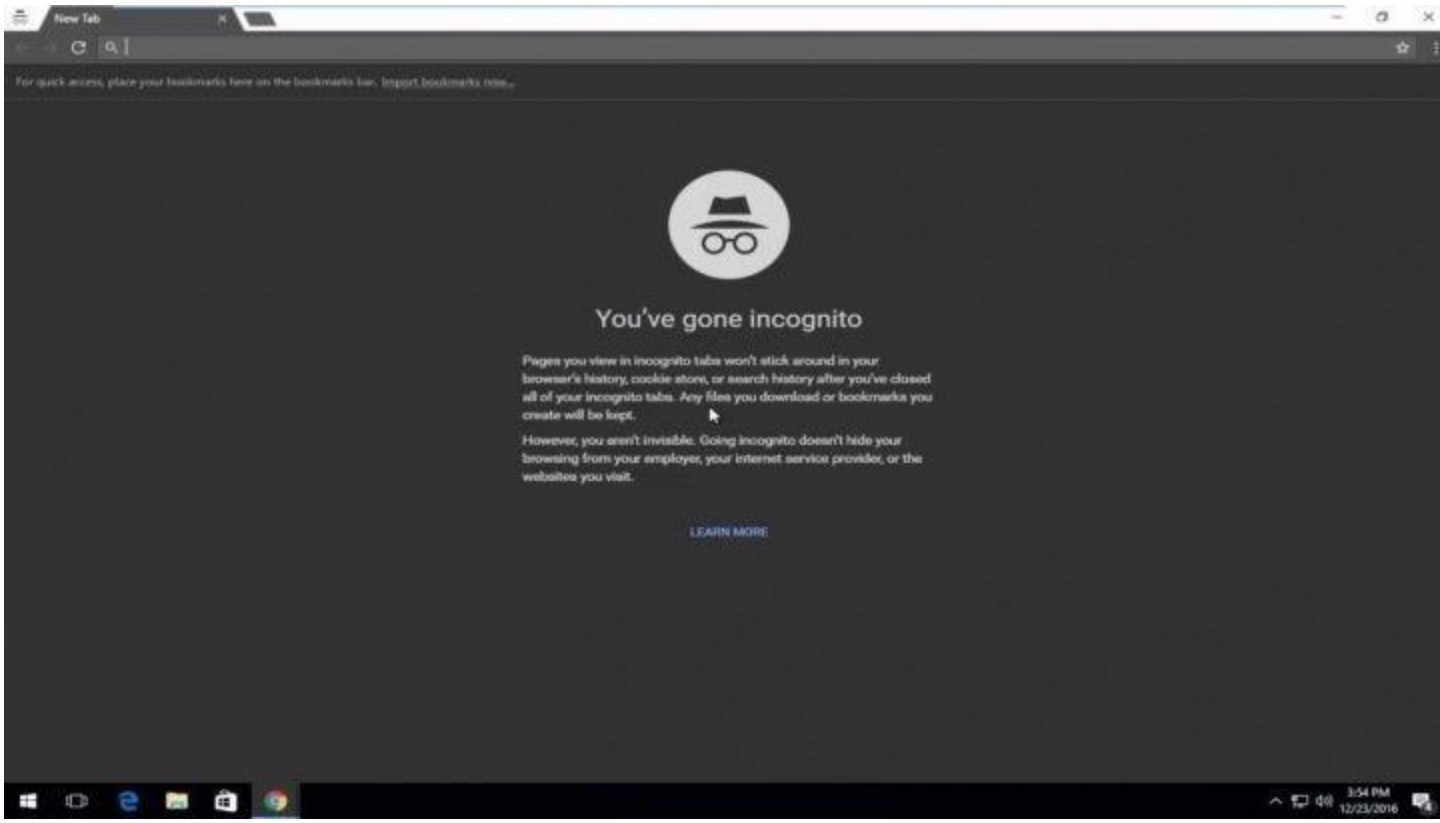
Keep track of your bank balance and how much you spend online. It's better to dedicate just one credit or debit card for online transactions. This

makes tracking your online spending easier. If you find any suspicious behaviour, check with your bank immediately.

BCCL/REPRESENTATIVE IMAGE

9. Private Browsing

Another way to protect your information is private browsing like the incognito mode on google chrome. Private browsing doesn't save passwords or create history and it clears all the cookies and cache data from your device.



YOUTUBE

10. Always mind your password

Protecting your password is extremely critical and there are several key points you must remember:

a) Never share your password with anyone, even your family members.

b) If you've written it down on a piece of paper, make sure to keep it safe. Writing your passwords anywhere is inadvisable, though.

c) Change your password often, preferably after 2-3 months.

d) Never keep the same password for all your accounts. If one of your accounts is hacked, your other accounts become extremely vulnerable.

e) Never allow browsers to save your password.

f) Make your passwords difficult to guess. Make a long password with alphanumeric characters and symbols. Make use of both uppercase and lowercase letters.

11. Don’t forget to log out

Never just leave your device without logging out of your account. Most banks now have a system, where they automatically log you out after a period of inactivity, but it’s better to do it yourselves.

Since most of our life is spent online, it’s out for everybody. Thus it’s critical to protect your information; money being one of them. No one likes losing their money, because it’s hard earned. So being careful will save you from losing it.

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