COMPUTER CONCEPTS

tutorialspoint
SIMPLY EASY LEARNING

About the Tutorial

Course on Computer Concepts is a basic tutorial on computer literacy. This tutorial enables the learner to use computer for basic things like sending and receiving emails, browsing internet, preparing databases, making presentations, etc. This course also helps to prepare candidates for NIELIT CCC examination.

Audience

This tutorial is designed on Course on Computer Concepts (CCC) which covers the entire updated syllabus prescribed by NIELIT. It comprises eight chapters on the fundamental concepts of computer. Each chapter provides clear idea of computer concepts in detail with the help of real time applications and screenshots. The language used in the entire tutorial is quite simple and easy to understand. The tutorial starts with basic concepts of computer and then explains about Microsoft Word, Excel and PowerPoint of MS office 2013 version. In the fifth and sixth chapters, it covers knowledge about Internet usage in our day-to-day life. The application of digital financial services is discussed in the last chapter which describes the usage of internet facility in financial sectors. So anyone who wants to get basic to intermediate level knowledge on the above topics are the targeted audience for this tutorial.

Prerequisites

To be able to follow this tutorial, you do not need any prior knowledge on computers. It is a basic course which starts from the fundamentals. One having basic knowledge and understanding of English language can easily complete this tutorial.

Copyright & Disclaimer

Table of Contents

1. Computer Concepts — Introduction to Computer

In today's world, we use computers for all our tasks. Our day-to-day activities: paying bills, buying groceries, using social media, seeking entertainment, working from home, communicating with a friend, etc., can all be done using a computer. So it is important not only to know how to use a computer, but also to understand the components of a computer and what they do.

This topic explains all concepts related to computer in detail, from origin to end. The idea of computer literacy is also discussed, which includes the definition and functions of a computer. You learn about the components of a computer, the concept of hardware and software, representation of data/information, the concept of data processing and applications of IECT.

What is a Computer?

A **computer** is an electronic device that accepts data from the user, processes it, produces results, displays them to the users, and stores the results for future usage.

Data is a collection of unorganized facts & figures and does not provide any further information regarding patterns, context, etc. Hence data means "unstructured facts and figures".

Information is a structured data i.e. organized meaningful and processed data. To process the data and convert into information, a computer is used.

Functions of Computers

A computer performs the following functions:

Receiving Input
Data is fed into computer through various input devices like keyboard, mouse, digital pens, etc. Input can also be fed through devices like CD-ROM, pen drive, scanner, etc.

Processing the information
Operations on the input data are carried out based on the instructions provided in the programs.

Storing the information
After processing, the information gets stored in the primary or secondary storage area.

Producing output
The processed information and other details are communicated to the outside world through output devices like monitor, printer, etc.

History of Computers

The history of the computer dates back to several years. There are five prominent generations of computers. Each generation has witnessed several technological advances

which change the functionality of the computers. This results in more compact, powerful, robust systems which are less expensive. The brief history of computers is discussed below:

First Generation (1940-1956)
The first generation computers had the following features and components:

Hardware
The hardware used in the first generation of computers was: **Vacuum Tubes** and **Punch Cards.**

Features
Following are the features of first generation computers:

- It supported machine language.
- It had slow performance
- It occupied large size due to the use of vacuum tubes.
- It had a poor storage capacity.
- It consumed a lot of electricity and generated a lot of heat.

Memory
The memory was of 4000 bits.

Data Input
The input was only provided through hard-wired programs in the computer, mostly through punched cards and paper tapes.

Examples
The examples of first generation computers are:
- ENIAC
- UNIVACTBM 701

Second Generation (1956-1963)

Several advancements in the first-gen computers led to the development of second generation computers. Following are various changes in features and components of second generation computers:

Hardware
The hardware used in the second generation of computers were:

- Transistors
- Magnetic Tapes

Features
It had features like:

- Batch operating system
- Faster and smaller in size

- Reliable and energy efficient than the previous generation
- Less costly than the previous generation

Memory
The capacity of the memory was 32,000 bits.

Data Input
The input was provided through punched cards.

Examples
The examples of second generation computers are:

- Honeywell 400
- CDC 1604
- IBM 7030

Third Generation (1964-1971)

Following are the various components and features of the third generation computers:

Hardware
The hardware used in the third generation of computers were:

- Integrated Circuits made from semi-conductor materials
- Large capacity disks and magnetic tapes

Features
The features of the third generation computers are:

- Supports time-sharing OS
- Faster, smaller, more reliable and cheaper than the previous generations
- Easy to access

Memory
The capacity of the memory was 128,000 bits.

Data Input
The input was provided through keyboards and monitors.

Examples
The examples of third generation computers are:
- IBM 360/370
- CDC 6600
- PDP 8/11

Fourth Generation (1972-2010)

Fourth generation computers have the following components and features:

Hardware

The Hardware used in the fourth generation of computers were:

- ICs with Very Large Scale Integration (VLSI) technology
- Semiconductor memory
- Magnetic tapes and Floppy

Features

It supports features like:

- Multiprocessing & distributed OS
- Object-oriented high level programs supported
- Small & easy to use; hand-held computers have evolved
- No external cooling required & affordable
- This generation saw the development of networks and the internet
- It saw the development of new trends in GUIs and mouse

Memory

The capacity of the memory was 100 million bits.

Data Input

The input was provided through improved hand held devices, keyboard and mouse.

Examples

The examples of fourth generation computers are:

- Apple II
- VAX 9000
- CRAY 1 (super computers)

Fifth Generation (2010-Present)

These are the modern and advanced computers. Significant changes in the components and operations have made fifth generation computers handy and more reliable than the previous generations.

Hardware

The Hardware used in the fifth generation of computers are:

- Integrated Circuits with VLSI and Nano technology
- Large capacity hard disk with RAID support
- Powerful servers, Internet, Cluster computing

Features

It supports features like:

- Powerful, cheap, reliable and easy to use.

- Portable and faster due to use of parallel processors and Super Large Scale Integrated Circuits.
- Rapid software development is possible.

Memory

The capacity of the memory is unlimited.

Data Input

The input is provided through CDROM, Optical Disk and other touch and voice sensitive input devices.

Examples

The examples of fifth generation computers are:

- IBM
- Pentium
- PARAM

Characteristics of Computer System

The characteristics of the computer system are as follows:
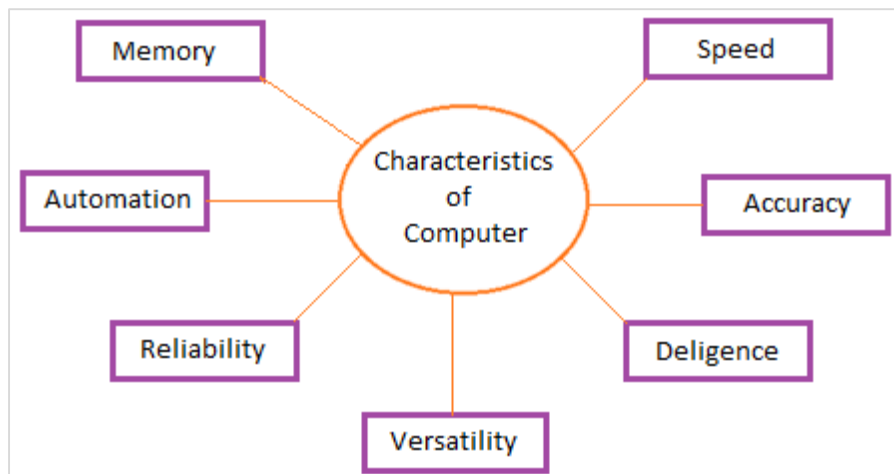
Speed

A computer works with much higher speed and accuracy compared to humans while performing mathematical calculations. Computers can process millions (1,000,000) of instructions per second. The time taken by computers for their operations is microseconds and nanoseconds.

Accuracy

Computers perform calculations with 100% accuracy. Errors may occur due to data inconsistency or inaccuracy.

Diligence

A computer can perform millions of tasks or calculations with the same consistency and accuracy. It doesn't feel any fatigue or lack of concentration. Its memory also makes it superior to that of human beings.

Versatility

Versatility refers to the capability of a computer to perform different kinds of works with same accuracy and efficiency.

Reliability

A computer is reliable as it gives consistent result for similar set of data i.e., if we give same set of input any number of times, we will get the same result.

Automation

Computer performs all the tasks automatically i.e. it performs tasks without manual intervention.

Memory

A computer has built-in memory called primary memory where it stores data. Secondary storage are removable devices such as CDs, pen drives, etc., which are also used to store data.

Basic Applications of Computer

Computers play a role in every field of life. They are used in homes, business, educational institutions, research organizations, medical field, government offices, entertainment, etc.

Home

Computers are used at homes for several purposes like online bill payment, watching movies or shows at home, home tutoring, social media access, playing games, internet access, etc. They provide communication through electronic mail. They help to avail work from home facility for corporate employees. Computers help the student community to avail online educational support.

Medical Field

Computers are used in hospitals to maintain a database of patients' history, diagnosis, X-rays, live monitoring of patients, etc. Surgeons nowadays use robotic surgical devices to perform delicate operations, and conduct surgeries remotely. Virtual reality technologies are also used for training purposes. It also helps to monitor the fetus inside the mother's womb.

Entertainment

Computers help to watch movies online, play games online; act as a virtual entertainer in playing games, listening to music, etc. MIDI instruments greatly help people in the entertainment industry in recording music with artificial instruments. Videos can be fed from computers to full screen televisions. Photo editors are available with fabulous features.

Industry

Computers are used to perform several tasks in industries like managing inventory, designing purpose, creating virtual sample products, interior designing, video conferencing, etc. Online marketing has seen a great revolution in its ability to sell various products to inaccessible corners like interior or rural areas. Stock markets have seen phenomenal participation from different levels of people through the use of computers.

Education

Computers are used in education sector through online classes, online examinations, referring e-books, online tutoring, etc. They help in increased use of audio-visual aids in the education field.

Government

In government sectors, computers are used in data processing, maintaining a database of citizens and supporting a paperless environment. The country's defense organizations have greatly benefitted from computers in their use for missile development, satellites, rocket launches, etc.

Banking

In the banking sector, computers are used to store details of customers and conduct transactions, such as withdrawal and deposit of money through ATMs. Banks have reduced manual errors and expenses to a great extent through extensive use of computers.

Business

Nowadays, computers are totally integrated into business. The main objective of business is transaction processing, which involves transactions with suppliers, employees or customers. Computers can make these transactions easy and accurate. People can analyze investments, sales, expenses, markets and other aspects of business using computers.

Training

Many organizations use computer-based training to train their employees, to save money and improve performance. Video conferencing through computers allows saving of time and travelling costs by being able to connect people in various locations.
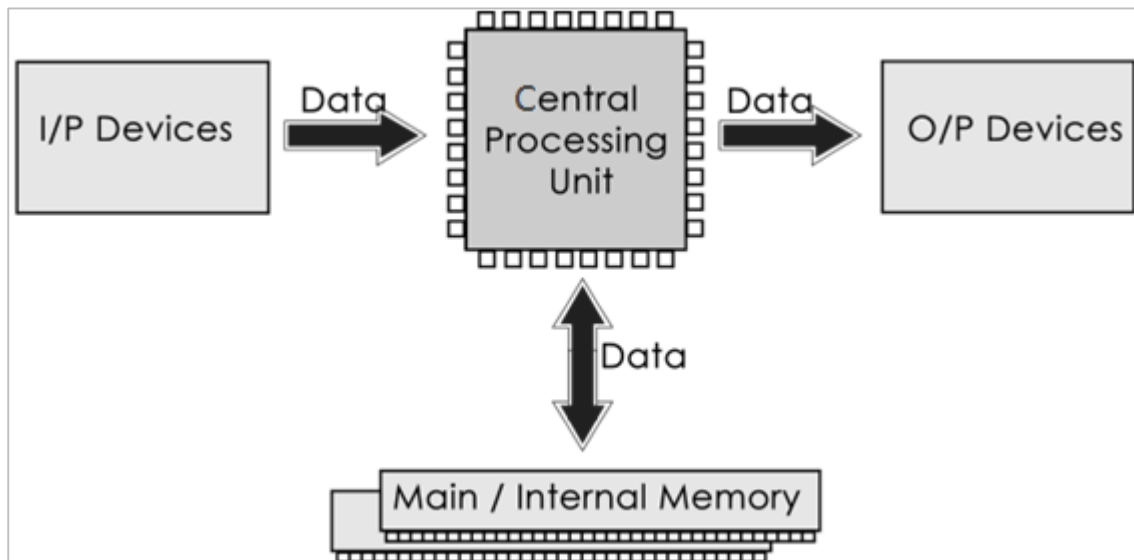
Arts

Computers are extensively used in dance, photography, arts and culture. The fluid movement of dance can be shown live via animation. Photos can be digitized using computers.

Science and Engineering

Computers with high performance are used to stimulate dynamic process in Science and Engineering. Supercomputers have numerous applications in area of Research and Development (R&D). Topographic images can be created through computers. Scientists use computers to plot and analyze data to have a better understanding of earthquakes.

Components of Computer System

Computer systems consist of three components as shown in below image: **Central Processing Unit, Input devices** and **Output devices**. Input devices provide data input to processor, which processes data and generates useful information that's displayed to the user through output devices. This is stored in computer's memory.

Central Processing Unit

The Central Processing Unit (CPU) is called "the brain of computer" as it controls operation of all parts of computer. It consists of two components: Arithmetic Logic Unit (ALU), and Control Unit.
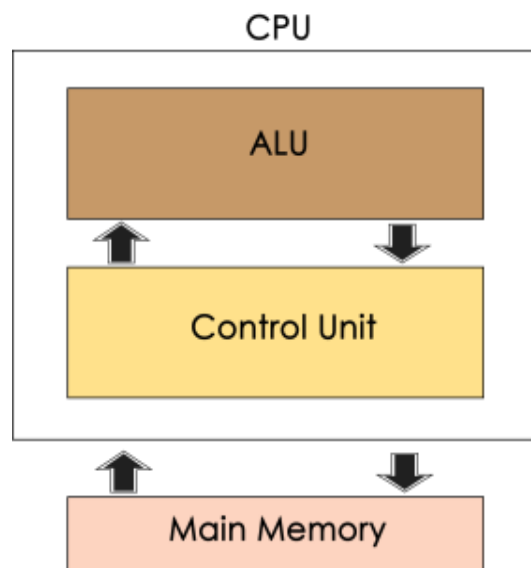
Arithmetic Logic Unit (ALU)

Data entered into computer is sent to RAM, from where it is then sent to ALU, where rest of data processing takes place. All types of processing, such as comparisons, decision-

making and processing of non-numeric information takes place here and once again data is moved to RAM.

Control Unit

As name indicates, this part of CPU extracts instructions, performs execution, maintains and directs operations of entire system.

Functions of Control Unit

Control unit performs following functions:

- It controls all activities of computer
- Supervises flow of data within CPU
- Directs flow of data within CPU
- Transfers data to Arithmetic and Logic Unit
- Transfers results to memory
- Fetches results from memory to output devices

Memory Unit

This is unit in which data and instructions given to computer as well as results given by computer are stored. Unit of memory is "Byte".

1 Byte = 8 Bits

Input Devices – Keyboard and Mouse

Input devices help to get input or data from user. Some of input devices are:

Name	Characteristics	Image
Keyboard	The keyboard was first peripheral device to be used with computers. It helps to input text and numbers into computer. It consists of 104 keys and 12 functional keys.	
Mouse	A mouse is an input device which is also called as pointing device because it helps to point data on screen. It also helps to select, highlight content and drag-drop controls.	

Other Input Devices

There are few other input devices which help to feed data to the computer. They are as follows:

Input Devices	Characteristics	Image
Trackballs	A trackball is also a pointing device which will work like a mouse. It is mainly used for gaming and entertainment purpose.	
Digital Pens	A digital pen is another input device which is mostly used with tablets, PDAs, etc. A digital pen is also called as a Stylus which helps to write or draw data over pad.	
Scanners	Scanners transform printed material and photographs into a digital representation. After scanning of printed material, page is represented in memory as an array of pixels.	
Barcode readers	Barcode reader helps to read information which is printed as bars in back of goods or items. Barcode readers are most widely used input devices which we can see in most of products in our day to day life.	

	Voice recognition system interprets or receives dictation or spoken commands to authorize user.	
Voice Recognition System		
Touch screen	A touch screen is an input device which uses sensors to sense touch of users to get input data.	

Output Devices

Output devices help to display output to user. Some of output devices are:

Output Devices	Characteristics	Image
Monitor	A monitor is most common type of output device. It is also called as "Visual Display Unit". The inputs given by keyboard or any other input devices will get displayed on monitor. Cathode Ray Tube (CRT) and Flat panel display monitors are commonly used monitors.	
Printers	Printers are most common type of output devices which are used to take a hard copy of any digital document. The two types of printers are impact and non-impact printers. Non-impact printers such as laser and inkjet printers are less noisy, more	

|		
	reliable and faster and also offer high quality compared to impact printers.	
Sound Systems	Sound systems are output devices which are used to get multimedia content such as voice, music, etc., as output. Some of examples of sound systems are speakers, headphones, and microphones.	

Computer Memory

Computer memory refers to storage area where data is stored. It is of two types:

- Primary Memory
- Secondary Memory

Primary Memory

Primary memory is the main memory of computer present in motherboard. Primary memory is of two types as shown in the image below.
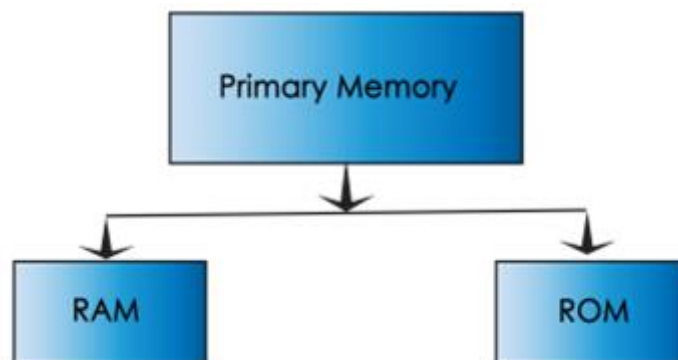
Random Access Memory

RAM is referred as temporary memory, in which, information stored is lost once computer is turned off. It is a volatile memory. Instructions written in this memory can be modified; hence it is also known as programmable memory. The two types of RAM are **Static RAM** (faster and costlier) and **Dynamic RAM**.

Functions of RAM are as follows:

- It stores data till it gets processed.

- It stores instructions for data processing.

- It acts as a working space where data processing takes place and intermediate results are stored.

- It stores processed data/results before it is sent to output devices.

Read Only Memory

ROM is referred as permanent memory, in which information stored is available even if computer is turned off. Instructions stored in this memory can only be read and cannot be modified. Mostly ROM has a start-up instruction which is executed every time when computer is switched on. Types of ROM are PROM (Programmable Read Only Memory), EPROM (Erasable PROM), EEPROM (Electrically Erasable PROM) and flash memory.

The below table jots down the major differences between RAM and ROM:

S. No	RAM	ROM
1	It is volatile memory.	It is non-volatile memory.
2	The contents are temporary; data is lost when electricity supply is lost.	The contents are permanent; data is not lost even when power is switched off.
3	Available in small storage capacity.	Available in high storage capacity.
4	Processing speed is high.	Processing speed is low.

| 5	User-defined programs can be stored.	Generally, operating system supporting programs can be stored.
6	Cost is very high.	Cost effective.
7	It is of two types, SRAM and DRAM.	It comes in different types such as PROM, EPROM, EEPROM and flash memory.

Secondary Memory

Sometimes when data to be processed is large, it cannot fit in primary memory as it is limited, in such cases, we use supplement memory or secondary memory. Secondary memory helps to store information permanently and is non-volatile. Examples of secondary storage memory are compact disk, floppy disk, pen drive, external hard drive, etc.

Concept of Hardware and Software

The concept of hardware and software is explained in detail below:

Hardware

The term hardware refers to mechanical device that makes up computer. Computer hardware consists of interconnected electronic devices that we can use to control computer's operation, input and output. Examples of hardware are CPU, keyboard, mouse, hard disk, etc.
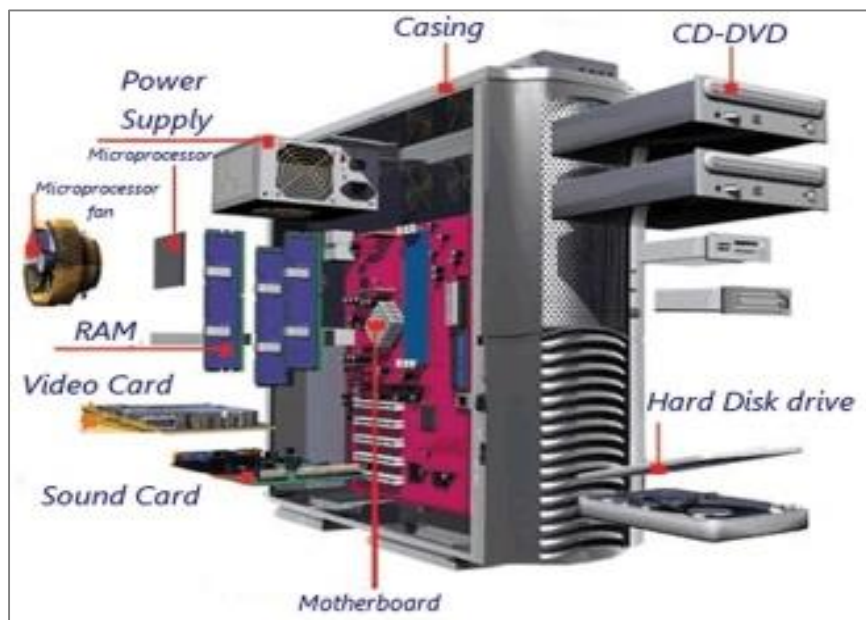
Hardware Components

Computer hardware is a collection of several components working together. Some parts are essential and others are added advantages. Computer hardware is made up of CPU and peripherals as shown in image below.

14
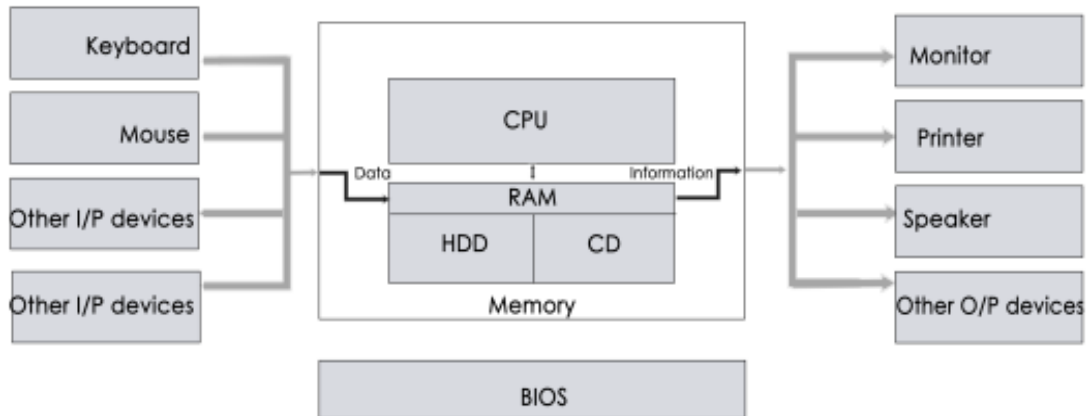
Software

A set of instructions that drives computer to do stipulated tasks is called a program. Software instructions are programmed in a computer language, translated into machine language, and executed by computer. Software can be categorized into two types:

- System software
- Application software

System Software

System software operates directly on hardware devices of computer. It provides a platform to run an application. It provides and supports user functionality. Examples of system software include operating systems such as Windows, Linux, Unix, etc.

Application Software

An application software is designed for benefit of users to perform one or more tasks. Examples of application software include Microsoft Word, Excel, PowerPoint, Oracle, etc.

Differences between Software and Hardware are sorted out below:

S. No	Software	Hardware
1	It is a collection of programs to bring computer hardware system into operation.	It includes physical components of computer system.
2	It includes numbers, alphabets, alphanumeric symbols, identifiers, keywords, etc.	It consists of electronic components like ICs, diodes, registers, crystals, boards, insulators, etc.
3	Software products evolve by adding new features to existing programs to support hardware.	Hardware design is based on architectural decisions to make it work over a range of environmental conditions and time.
4	It will vary as per computer and its built-in functions and programming language.	It is mostly constructed for all types of computer systems.
5	It is designed and developed by experienced programmers in high-level language.	The hardware can understand only low-level language or machine language.
6	It is represented in any high-level language such as BASIC, COBOL, C, C++, JAVA, etc.	The hardware works only on binary codes 1's and 0's.

7	The software is categorized as operating system, utilities, language processor, application software, etc.	The hardware consists of input devices, output devices, memory, etc.

Programming Languages

A **program** is a set of instructions that help computer to perform tasks. This set of instructions is also called as scripts. Programs are executed by processor whereas scripts are interpreted. The languages that are used to write a program or set of instructions are called "**Programming languages**". Programming languages are broadly categorized into three types:

- Machine level language
- Assembly level language
- High-level language

Machine Level Language

Machine language is lowest level of programming language. It handles binary data i.e. **0's** and **1's**. It directly interacts with system. Machine language is difficult for human beings to understand as it comprises combination of 0's and 1's. There is software which translate programs into machine level language. Examples include operating systems like Linux, UNIX, Windows, etc. In this language, there is no need of compilers and interpreters for conversion and hence the time consumption is less. However, it is not portable and non-readable to humans.

$$0001111100001010101$$
$$0011100111001101010$$
$$0101010101010000000$$
$$1010101010101010101$$
$$1010100000111110000$$
$$1010101000111000101$$
$$1010101010010100100$$

Assembly Level Language

Assembly language is a middle-level language. It consists of a set of instructions in a specific format called **commands**. It uses symbols to represent field of instructions. It is very close to machine level language. The computer should have assembler to translate assembly level program to machine level program. Examples include ADA, PASCAL, etc. It is in human-readable format and takes lesser time to write a program and debug it. However, it is a machine dependent language.

```
Assembly Language        Machine Code
SUB AX, BX               001010111000011
MOV CX, AX               100010111001000
MOV DX, 0                101110100000000000000000
```

High-level Language

High-level language uses format or language that is most familiar to users. The instructions in this language are called **codes** or **scripts**. The computer needs a compiler and interpreter to convert high-level language program to machine level language. Examples include C++, Python, Java, etc. It is easy to write a program using high level language and is less time-consuming. Debugging is also easy and is a human-readable language. Main disadvantages of this are that it takes lot of time for execution and occupies more space when compared to Assembly- or Machine-level languages. Following is a simple example for a high level language:

```
if age<18
{
    printf("You are not eligible to vote");
}
else
{
printf("You are eligible to vote");
}
```

Representation of Data/Information

Computer does not understand human language. Any data, viz., letters, symbols, pictures, audio, videos, etc., fed to computer should be converted to machine language first. Computers represent data in the following three forms:

Number System

We are introduced to concept of numbers from a very early age. To a computer, everything is a number, i.e., alphabets, pictures, sounds, etc., are numbers. Number system is categorized into four types:

- Binary number system consists of only two values, either 0 or 1.
- Octal number system represents values in 8 digits.
- Decimal number system represents values in 10 digits.
- Hexadecimal number system represents values in 16 digits.

Number System		
System	**Base**	**Digits**

Binary	2	0 1
Octal	8	0 1 2 3 4 5 6 7
Decimal	10	0 1 2 3 4 5 6 7 8 9
Hexadecimal	16	0 1 2 3 4 5 6 7 8 9 A B C D E F

Bits and Bytes

Bits - A bit is a smallest possible unit of data that a computer can recognize or use. Computer usually uses bits in groups.

Bytes - group of eight bits is called a byte. Half a byte is called a nibble.
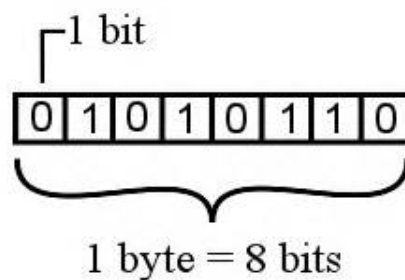
The following table shows conversion of Bits and Bytes:

Byte Value	Bit Value
1 Byte	8 Bits
1024 Bytes	1 Kilobyte
1024 Kilobytes	1 Megabyte
1024 Megabytes	1 Gigabyte
1024 Gigabytes	1 Terabyte
1024 Terabytes	1 Petabyte
1024 Petabytes	1 Exabyte
1024 Exabytes	1 Zettabyte
1024 Zettabytes	1 Yottabyte
1024 Yottabytes	1 Brontobyte
1024 Brontobytes	1 Geopbytes

Text Code

Text code is format used commonly to represent alphabets, punctuation marks and other symbols. Four most popular text code systems are:

- EBCDIC

- ASCII
- Extended ASCII
- Unicode

EBCDIC

Extended Binary Coded Decimal Interchange Code is an 8-bit code that defines 256 symbols. Given below is the EBCDIC **Tabular column**

Special characters	EBCDIC	Alphabetic	EBCDIC
		A	11000001
<	01001011	B	11000010
(	01001100	C	11000011
+	01001101	D	11000100
/	01001110	E	11000101
&	01010000	F	11000110
:	01111011	G	11000111
#	01111011	H	11001000
@	01111100	I	11001001
'	01111101	J	11010001
=	01111110	K	11010010
"	01111111	L	11010011
,	01101011	M	11010100
%	01101100	N	11010101
-	01101101	O	11010110
>	01101110	P	11010111

ASCII

American Standard Code for Information Interchange is an 8-bit code that specifies character values from 0 to 127.

ASCII Tabular column

ASCII Code	Decimal Value	Character
0000 0000	0	Null prompt
0000 0001	1	Start of heading
0000 0010	2	Start of text
0000 0011	3	End of text
0000 0100	4	End of transmit
0000 0101	5	Enquiry
0000 0110	6	Acknowledge
0000 0111	7	Audible bell
0000 1000	8	Backspace
0000 1001	9	Horizontal tab
0000 1010	10	Line Feed

Extended ASCII

Extended American Standard Code for Information Interchange is an 8-bit code that specifies character values from 128 to 255.

Extended ASCII Tabular column

Char	Code	Char	Code	Char	Code	Char
Ą	161	˘	162	Ł	163	˘
Š	169	Ş	170	Ť	171	Ź
ą	177	˛	178	ł	179	´
š	185	ş	186	ť'	187	ź
-	193	Â	194	Ă	195	Ä

Unicode

Unicode Worldwide Character Standard uses 4 to 32 bits to represent letters, numbers and symbol.

Unicode Tabular Column

Char	UTF-16	UTF-8
A	0041	41
c	0063	63
ö	00F6	C3 86
亜	4E9C	E4 BA 9C
𝄞	D834 DD1E	F0 9D 84 9E

Data processing

Data processing is a process of converting raw facts or data into a meaningful information.

Stages of Data Processing

Data processing consists of following 6 stages:
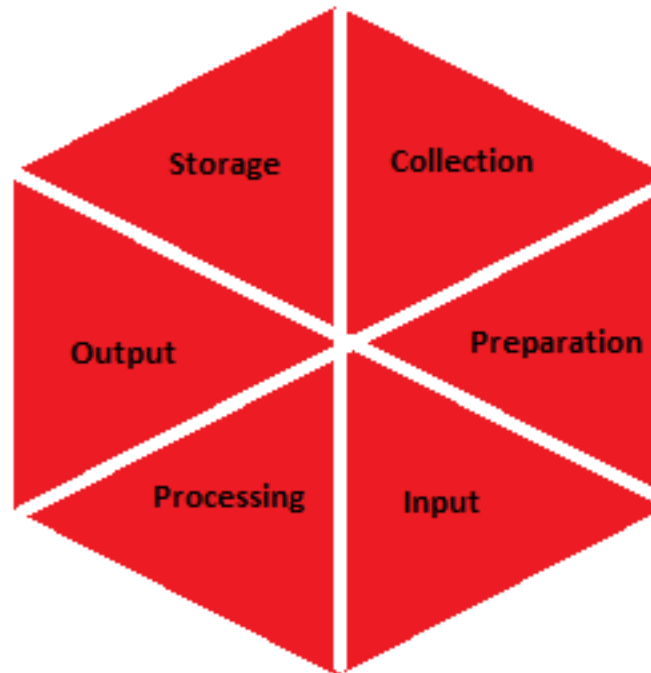
Collection

Collection of data refers to gathering of data. The data gathered should be defined and accurate.

Preparation

Preparation is a process of constructing a dataset of data from different sources for future use in processing step of cycle.

Input

Input refers to supply of data for processing. It can be fed into computer through any of input devices like keyboard, scanner, mouse, etc.

Processing

The process refers to concept of an actual execution of instructions. In this stage, raw facts or data is converted to meaningful information.

Output and Interpretation

In this process, output will be displayed to user in form of text, audio, video, etc. Interpretation of output provides meaningful information to user.

Storage

In this process, we can store data, instruction and information in permanent memory for future reference.

Applications of IECT

IECT stands for Information Electronics and Communication Technology. The applications of IECT are as follows:

- E-governance

- Multimedia and Entertainment

E-governance

Electronic governance is application of Information Electronics and Communication Technology in running an effective governance system for people. Communication refers to sharing of information between parties like common people, government, business, etc. Almost every government sector has changed to IECT like rail reservation system, gas subsidy disbursal, etc.
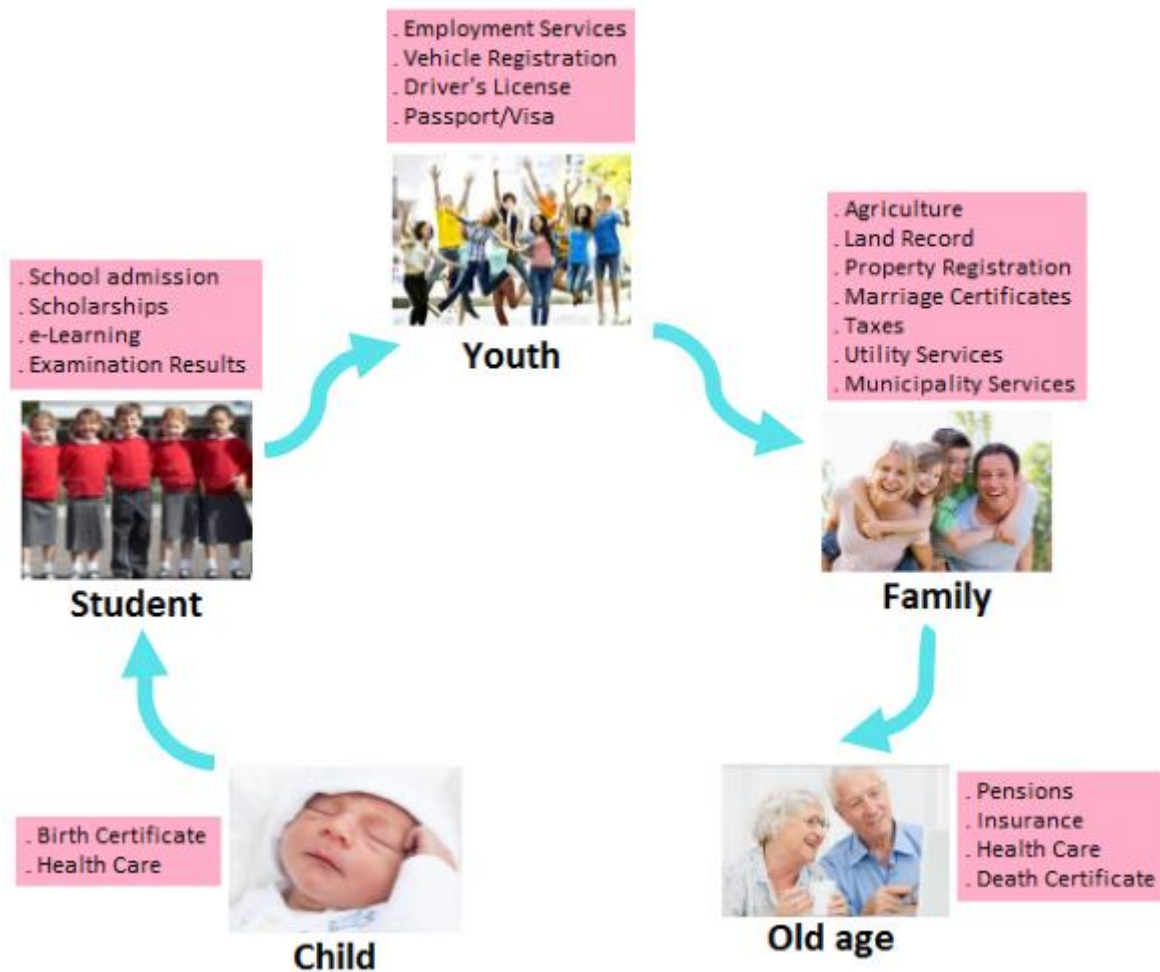
Multimedia and Entertainment

Multimedia refers to combination of text, audio, video, graphics, animation, etc. It is one of applications of IECT. Multimedia is used to improve quality of presentation by incorporating information sharing, usage of graphics and animation, motion capture, etc.
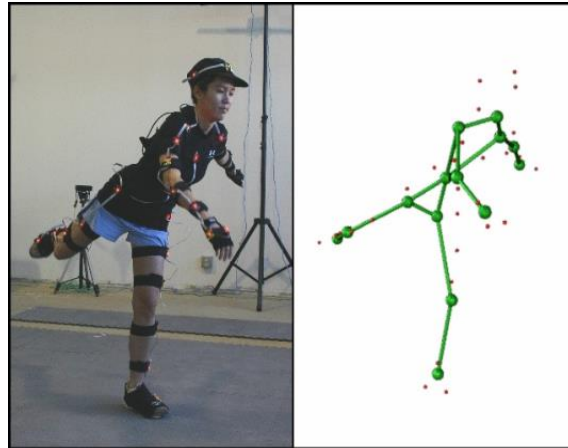
Summary

In this chapter, we discussed different components of a computer, and familiarized ourselves with concept of hardware and software, representation of data/information, concept of data processing, and applications of IECT.

2. Computer Concepts — Introduction to GUI based Operating System

Personal computer has advanced a lot in a short period of time, and much of the advancement is due to ongoing progresses in operating systems. Evolution of operating systems had made PCs easier to use and understand, flexible and reliable. This chapter is the study of primary operating systems currently used in personal computers and network servers, and their basic features.

This topic presents a broad survey of concepts and terminologies related to operating systems like: Basics of operating system, user interface, basic settings of operating system, file & directory management, and types of files.

Basics of Operating System

Operating System

Operating system is a software that controls system's hardware and interacts with user and application software.

In short, an operating system is computer's chief control program.

Functions of Operating System

The operating system performs the following functions:

- It offers a user interface.
- Loads program into computer's memory.
- Coordinates how program works with hardware and other software.
- Manages how information is stored and retrieved from the disk.
- Saves contents of file on to disk.
- Reads contents of file from disk to memory.
- Sends document to the printer and activates the printer.
- Provides resources that copy or move data from one document to another, or from one program to another.
- Allocates RAM among the running programs.
- Recognizes keystrokes or mouse clicks and displayes characters or graphics on the screen.

Types of Operating System

There are four types of operating systems:

- Real-time operating system
- Single-User/Single-Tasking operating system
- Single-User/Multitasking operating system
- Multi-User/Multitasking operating system

Real-time operating system

Real-time operating system is designed to run real-time applications. It can be both single- and multi-tasking. Examples include Abbasi, AMX RTOS, etc.

Advantages

- It works very fast.
- It is time saving, as it need not be loaded from memory.
- Since it is very small, it occupies less space in memory.

Single-User/Single-Tasking OS

An operating system that allows a single user to perform only one task at a time is called a Single-User Single-Tasking Operating System. Functions like printing a document, downloading images, etc., can be performed only one at a time. Examples include MS-DOS, Palm OS, etc.

Advantages

- This operating system occupies less space in memory.

Disadvantages

- It can perform only a single task at a time.

Single-User/Multitasking OS

An operating system that allows a single user to perform more than one task at a time is called Single-User Multitasking Operating System. Examples include Microsoft Windows and Macintosh OS.
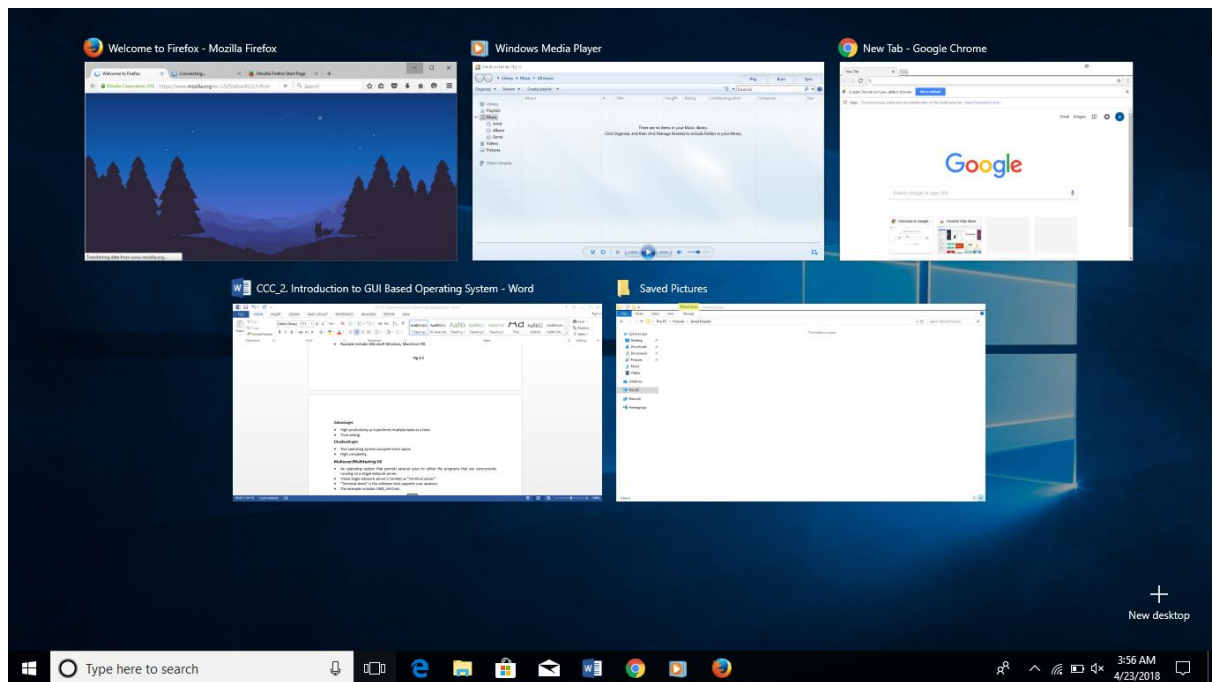
Advantages

- It is time saving as it performs multiple tasks at a time yielding high productivity.

Disadvantages

- This operating system is highly complex and occupies more space.

Multiuser/Multitasking OS

It is an operating system that permits several users to utilize the programs that are concurrently running on a single network server. The single network server is termed as "Terminal server". "Terminal client" is a software that supports user sessions. Examples include UNIX, MVS, etc.
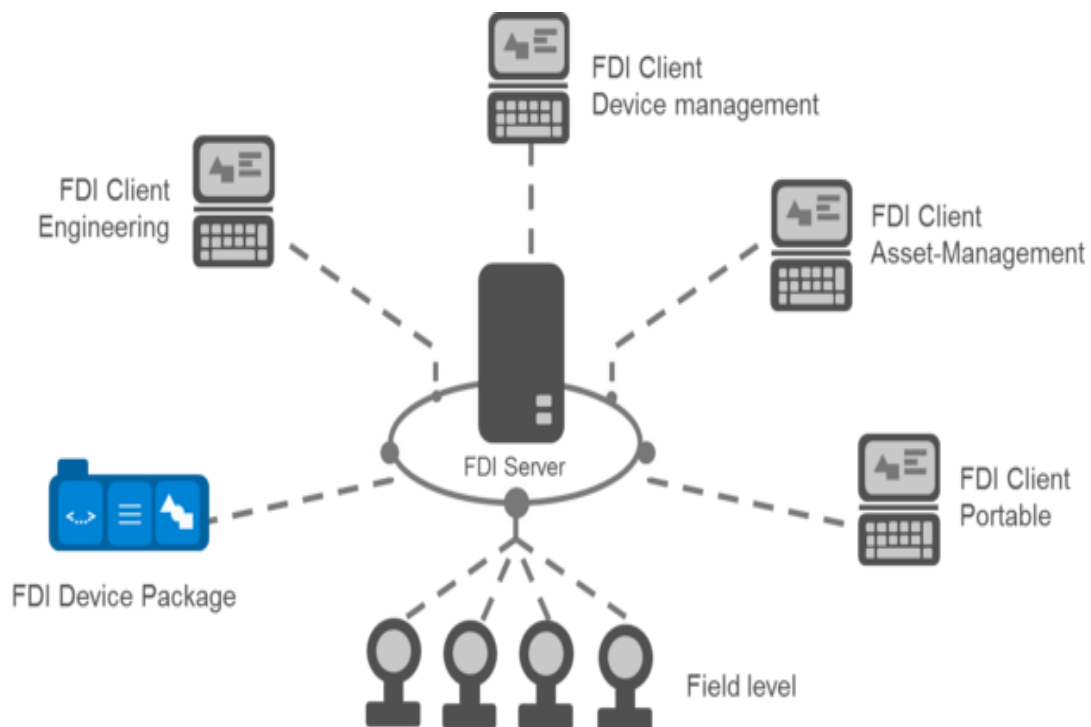
Advantages

- It is highly productive as it performs multiple tasks at a time.
- It is time saving as we don't have to make changes in many desktops, instead can make changes only to the server.

Disadvantages

- If the connection to the server is broken, user cannot perform any task on the client as it is connected to that server.

Basics of Popular Operating Systems (Windows, LINUX)

We shall discuss about the basic of Operating Systems in this section:

Windows Operating System

Windows operating system is developed by Microsoft Corporation. It provides Graphical User Interface (GUI), multitasking capability to users. It also provides virtual memory management and several peripheral devices. According to statistics, about 90% of computers have migrated to Windows operating system.
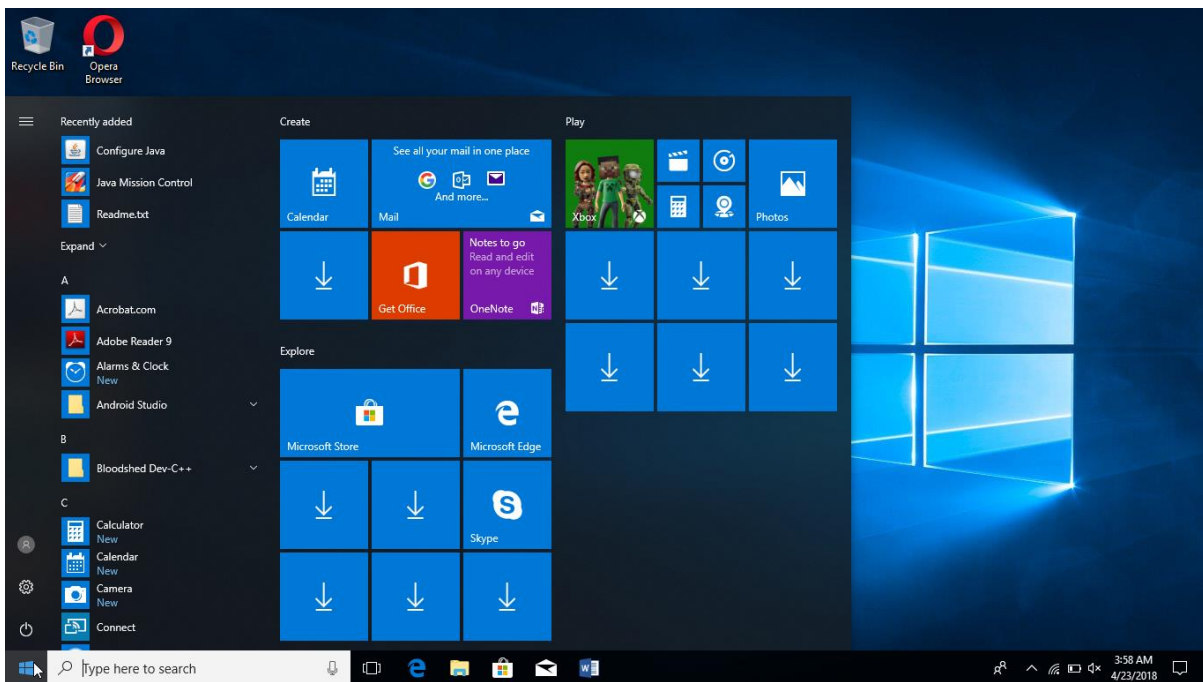
Versions of Windows Operating System

Windows Server Version	Code Name	Launch Date	Kernel Version	CPU Speed	Min Disk	Min Memory
Windows for Workgroups 3.1	Sparta	Oct-92	3.1	25 MHz	10.5 MB	3 MB
Windows for Workgroups 3.1	Snowball	Nov-93	3.11	25 MHz	10.5 MB	3 MB
Windows for NT 3.1 Advanced Server	NT OS/2	Aug-93	NT 3.10	25 MHz	90 MB	16 MB

Windows for NT 3.5 Server	Daytona	Sep-94	NT 3.5	25 MHz	90 MB	16 MB
Windows for NT 3.51 Server	Daytona	Jun-95	NT 3.51	25 MHz	90 MB	16 MB
Windows for NT 4 Server	Cairo	Jul-96	NT 4.0	33 MHz	150 MB	32 MB
Windows 2000 Server	Janus	Feb-00	NT 5.0	133 MHz	1000 MB	128 MB
Windows Server 2003	Whistler	Apr-03	NT 5.2	400 MHz	1500 MB	512 MB
Windows Server 2003 R2	R2	Mar-06	NT 5.2	400 MHz	1500 MB	512 MB
Windows Server 2008	Longhorn	Feb-08	NT 6.0	1000MHz	20,000MB	512 MB
Windows Server 2008 R2	Server 7	Oct-09	NT 6.1	1400MHz	32,000MB	512 MB
Windows Server 2012	Server 8	Sep-12	NT 6.2	1400MHz	32,000MB	512 MB
Windows Server 2012 R2	Blue	Oct-13	NT 6.3	1400MHz	32,000MB	512 MB
Windows Server 2016	Redstone	Sep-16	NT 10.0	1400MHz	32,000MB	512 MB

Linux Operating System

Linux is a multitasking operating system that supports various users and numerous tasks. It is open source, i.e., code for Linux is available for free of cost. Linux can run on any computer and support almost any type of application. Linux uses command-line interface. It also supports windows based GUI environment, called "shells". The most popular Linux vendors are Red Hat and Novell. Some of the Linux versions include Ubuntu, Fedora, Linux Mint, etc.

User Interface

While working with a computer, we use a set of items on screen called "user interface". In simple terms, it acts as an interface between user and software application or program. It accepts inputs from input devices like keyboard, mouse and displays output to computer monitor.
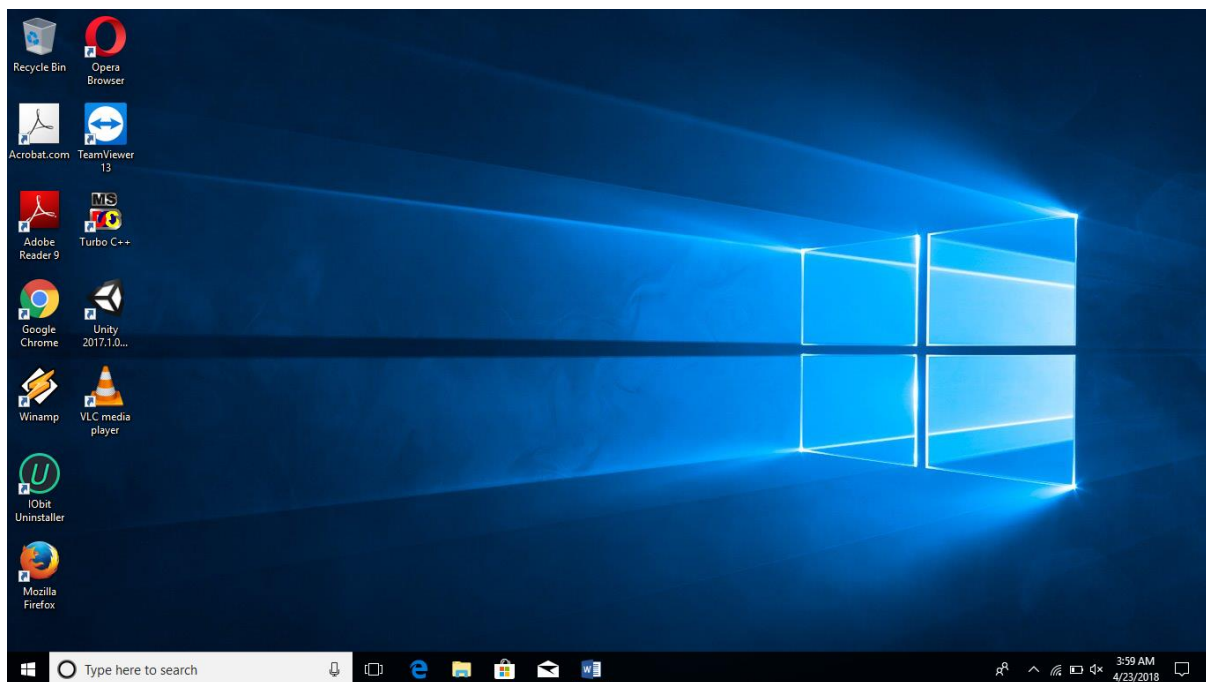
Task Bar

- Task bar appears at bottom of the Windows desktop.
- It is used to launch and manage programs.
- It also shows icons of currently running programs.

31
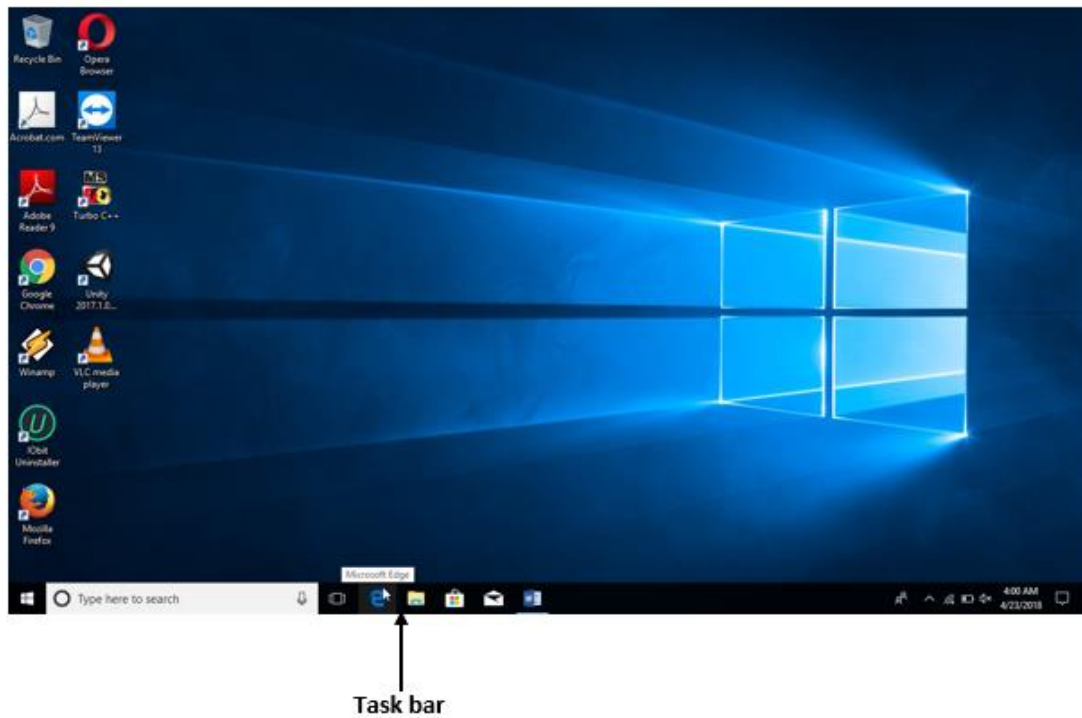
Task bar

Components of task bar

A task bar consists of following three components:

- Start menu
- Quick launch bar
- Notification area

Start Menu

Start menu contains shortcuts for launching programs and opening folders on computer.

Start menu

Quick Launch Bar

It is a special section at left end of task bar where we can add icons to quickly start programs.

Quick launch bar

33

Notification Area

Notification area displays icons for system and program features. It also displays system volume and a clock.
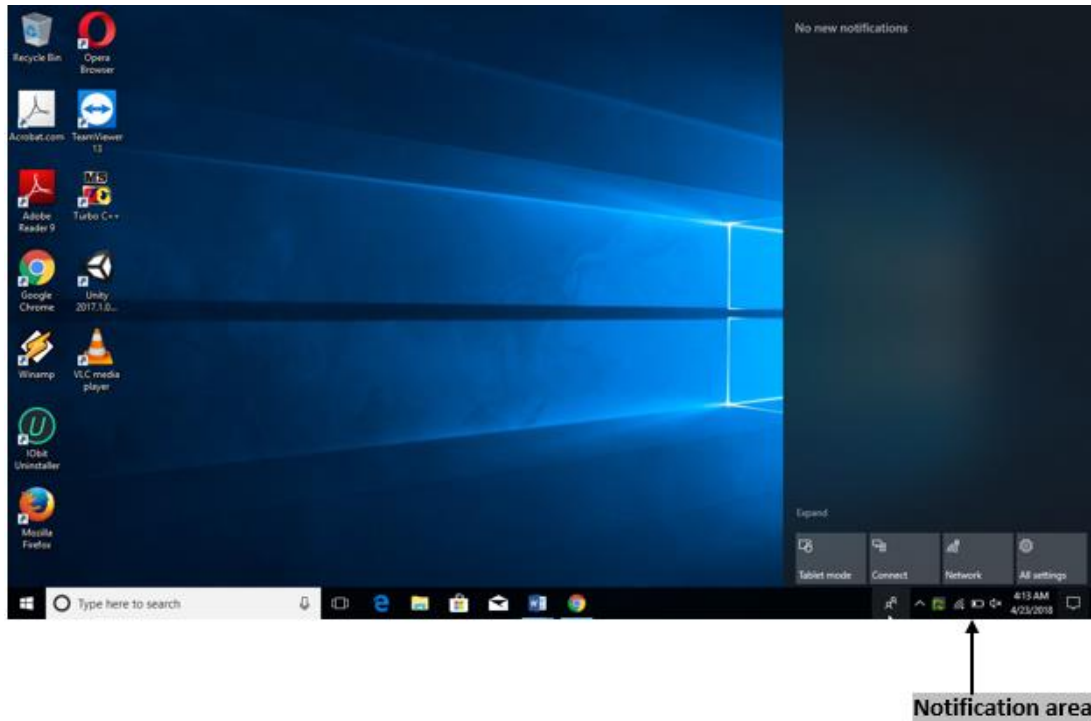
Icons

A small pictogram displayed on the desktop is called an "icon". It represents links to the resources on PC or network. Icons actually are tiny graphical symbols that represent programs, files, folders, printers, documents, etc. Icons are also called as "shortcuts". Using mouse pointer, we can click the icon and then corresponding resource will be launched.

Start Menu

Start menu consists of shortcuts for launching programs and folders. It also consists a list of most recently used documents and provides 'search' option and supports 'help' feature.

Launching Start Menu

- Start menu can be set in motion by clicking (⊞ Win) windows button on a keyboard.
- It can also be launched by pressing CTRL+ESC on a keyboard.
- By clicking on the visual Start button, it can be launched.

Visual start button

Running an Application

The operating system offers an interface between programs and user, as well as programs and other computer resources such as memory, printer and other programs.
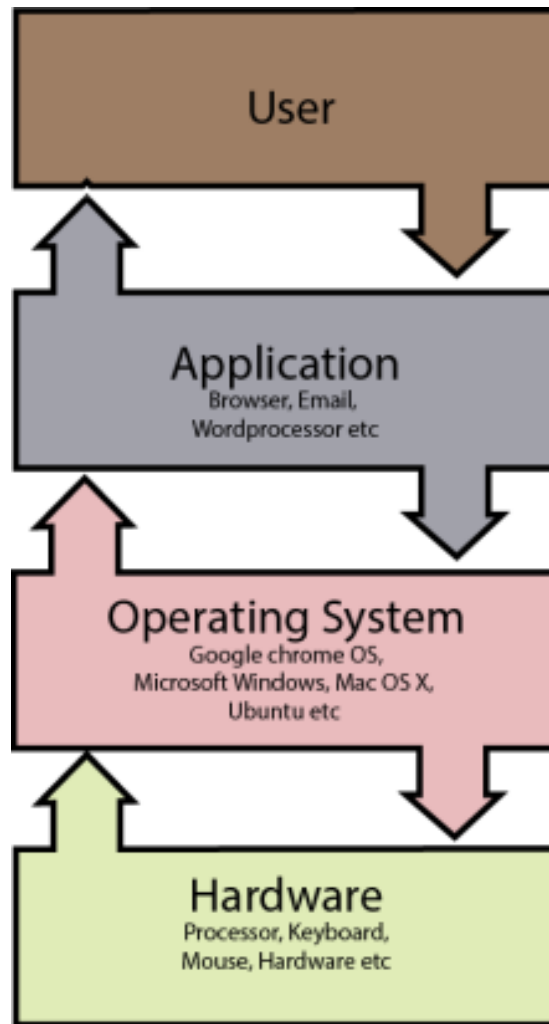
Fig 2.13

Process

- **Step 1:** Application sends request to operating system.
- **Step 2:** On encountering the request from an application, operating system sends a response to requested service.

Operating System Simple Setting

We will learn different settings in Operating System:

Changing System Date and Time

We can set system date and time in three ways given below:

Step 1: One way is to just click the clock on task bar and perform **Step 4** and **Step 5.**

Go to clock

Step 2: Another alternate way is to go to the "**Control Panel"** from Start menu and select "**Clock, Language and Region",** and select "**Date and Time"** and perform **Step 4** and **Step 5.**

In search bar. Enter control panel

Select control panel

Select change date, time or number formats option
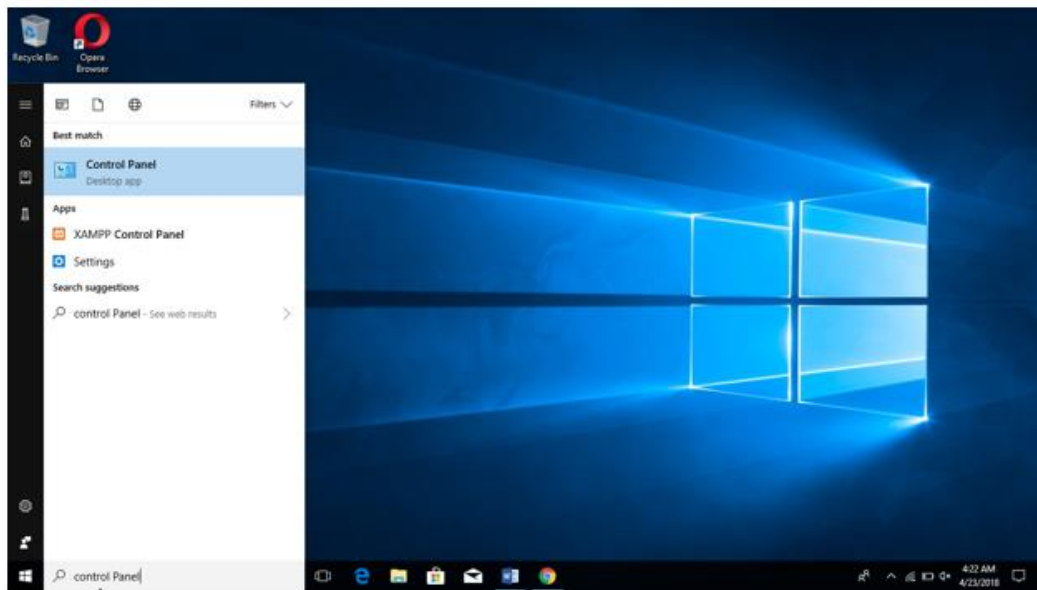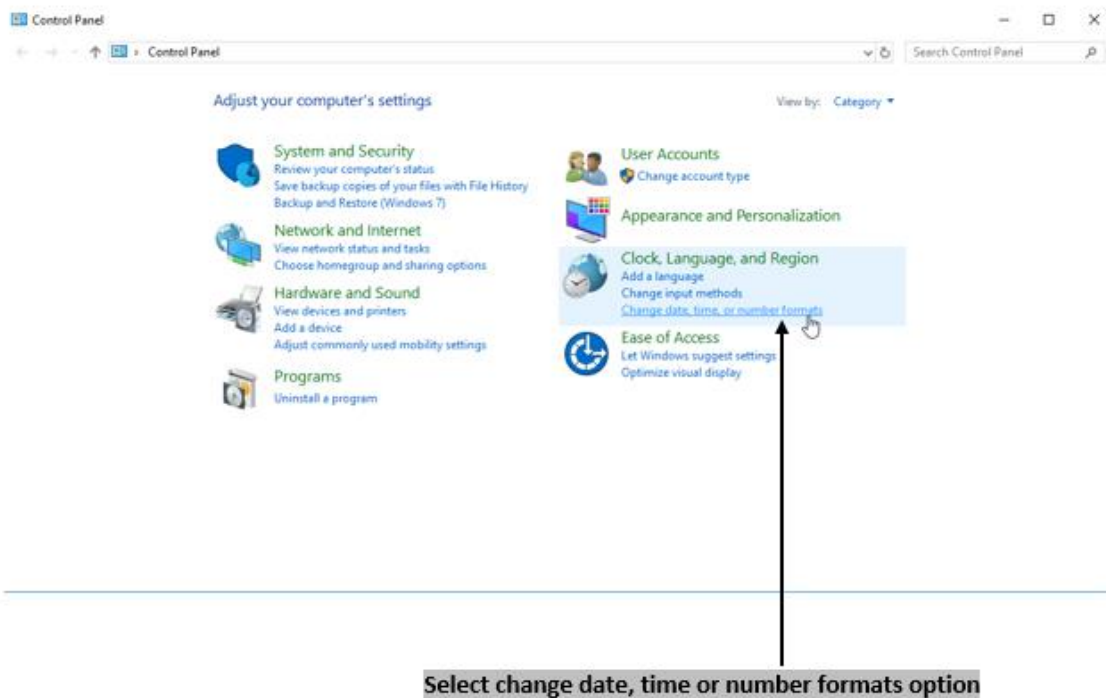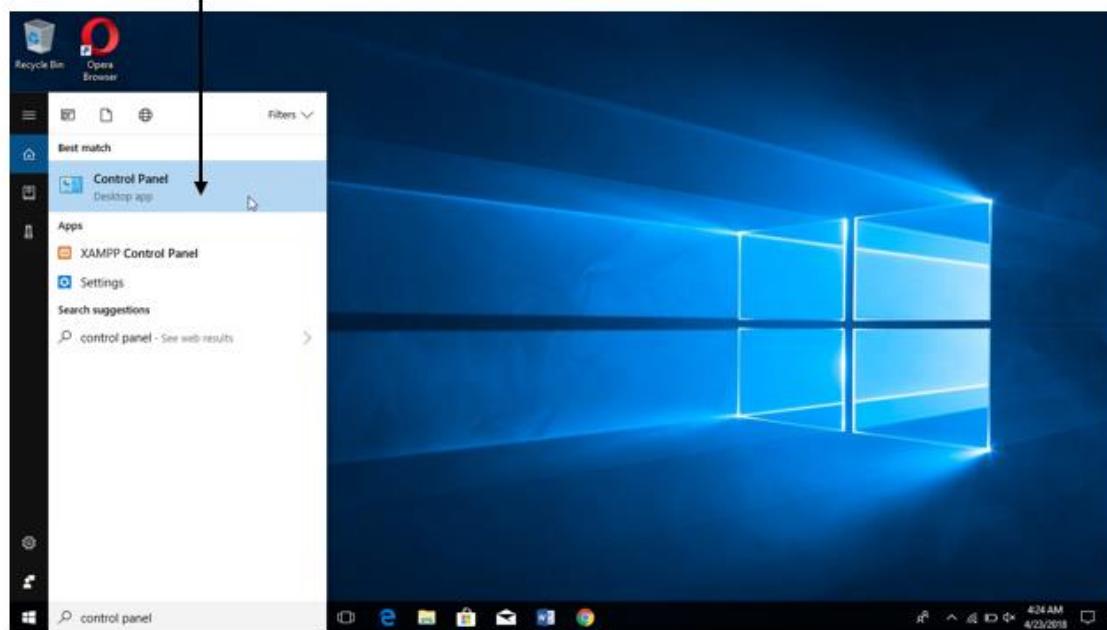
Step 3: In the window displayed, select "**Change date and time**"
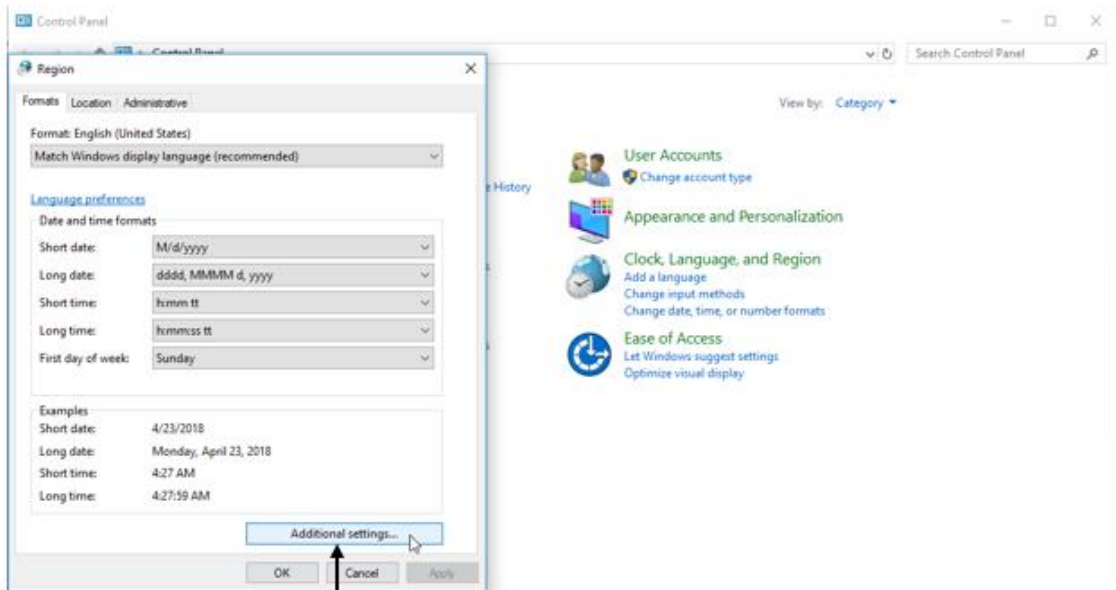
Select additional settings

Step 4: Set corresponding date and time, and finally press "**OK**" button.

Change the date

Press ok
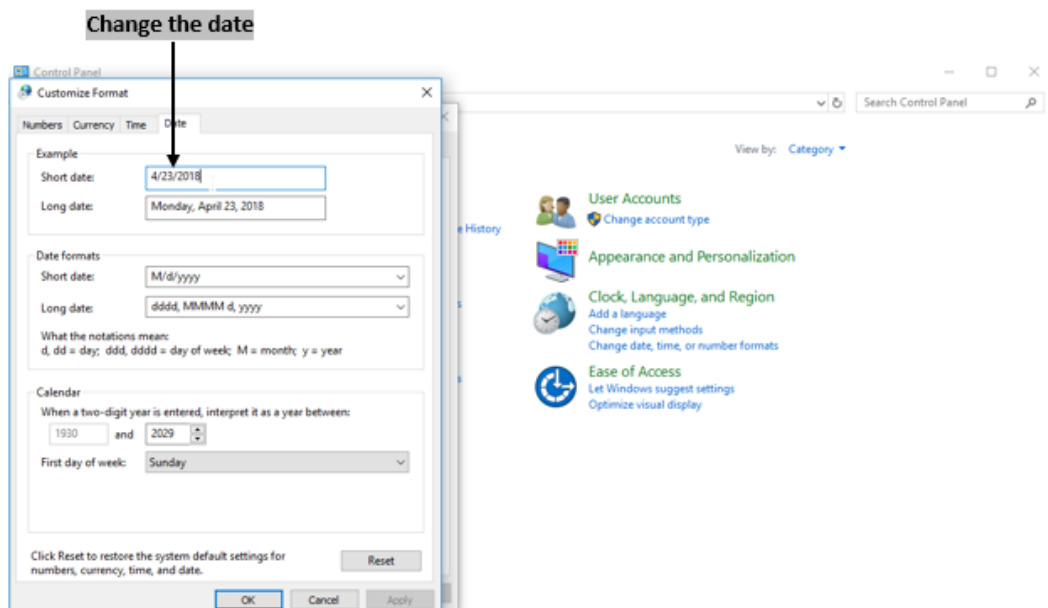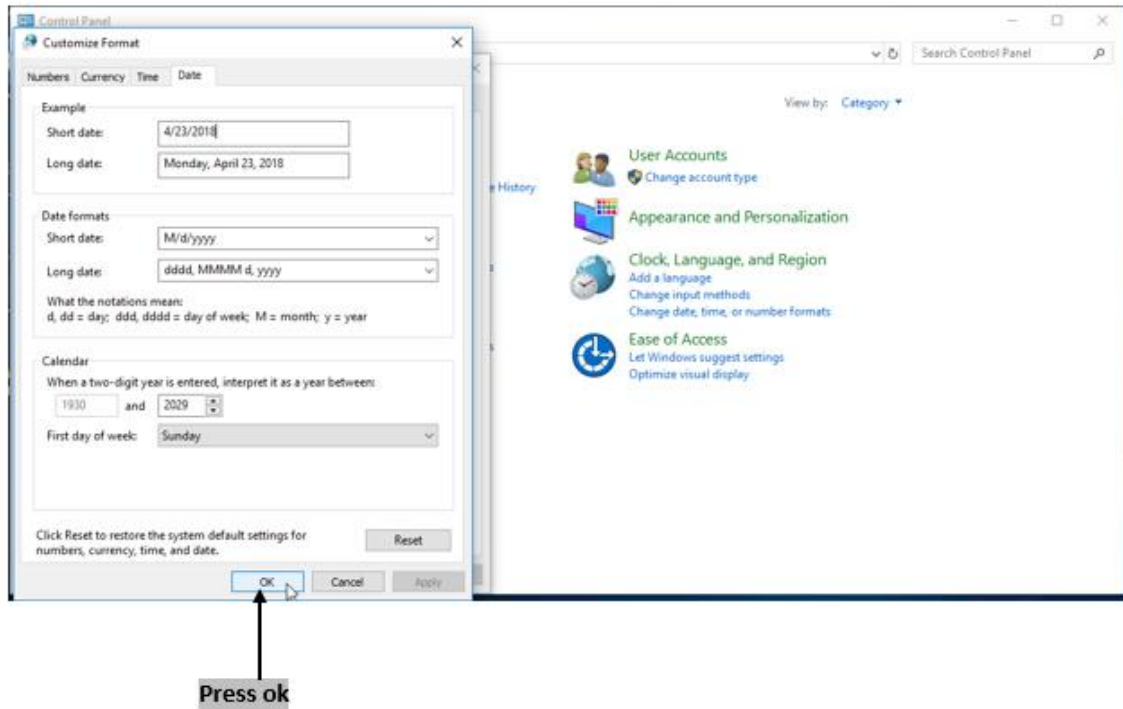
Changing Display Properties

Display properties include Desktop Background, Text, Window Color, Sounds, Screensaver, etc. To change these display properties, we have to perform the following steps.

Step 1: Right click on desktop and select "**Personalize"** from displaying options.
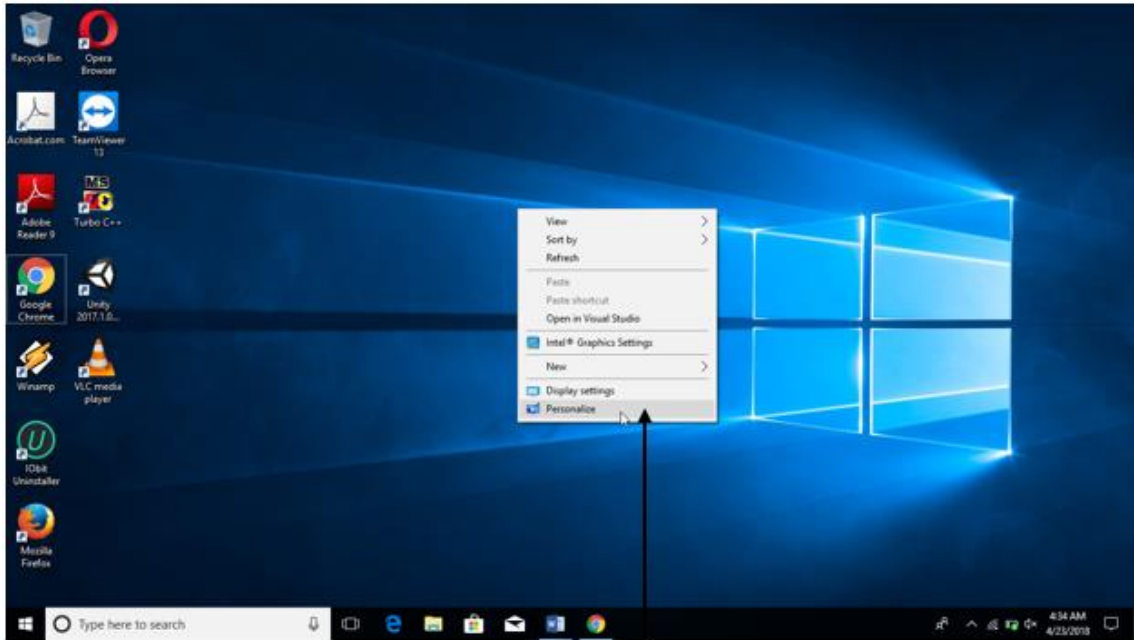
Right click on desktop and select personalize

Step 2: From the displayed window, select desired action, like changing the background/themes/resolution, and press "**Save Changes**" button.

Change display settings from here

Choose background picture from here
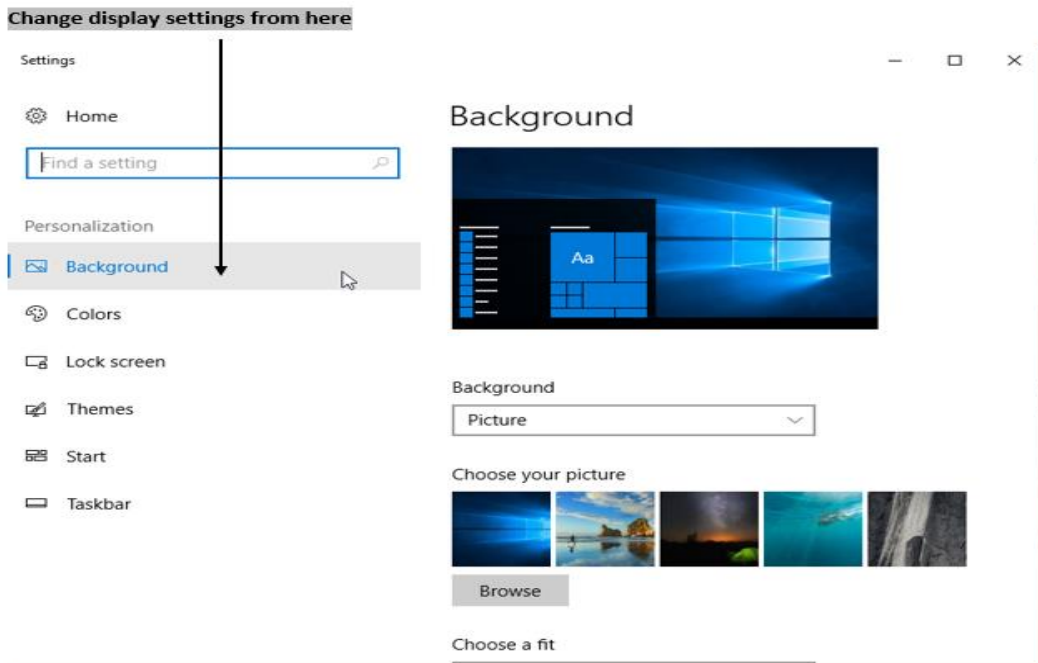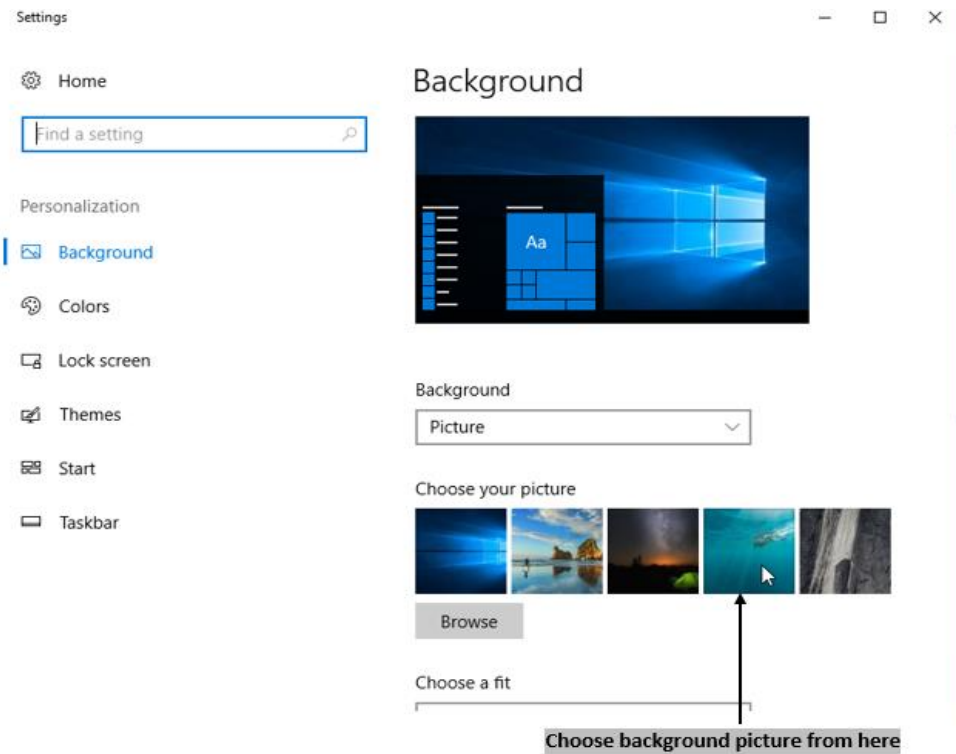
Step 3: Alternate way is to go to the **"Control Panel"** from Start menu and select "**Appearance and Personalization**" and select display you want from the listed options and save changes.

In search bar. Enter control panel
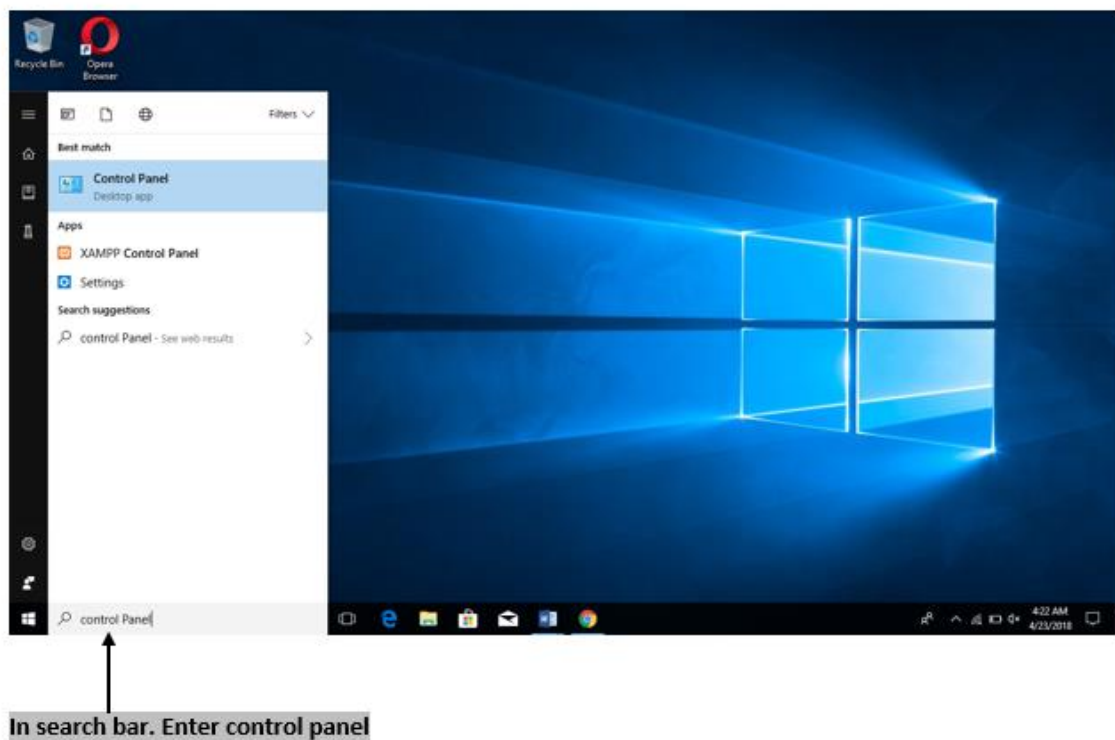
Select control panel

Select appearance and personalization
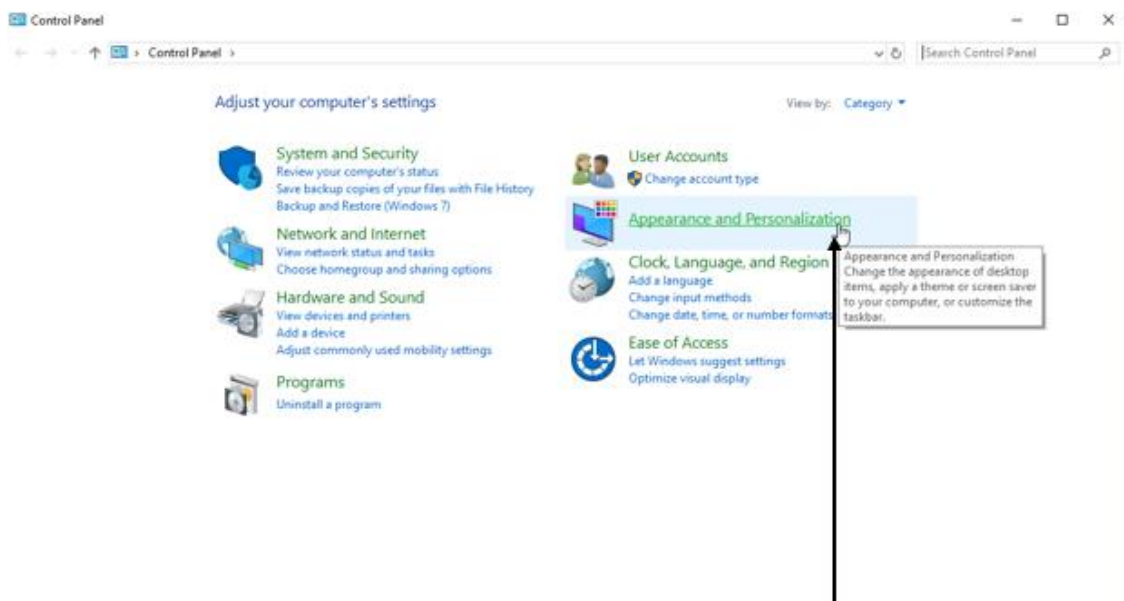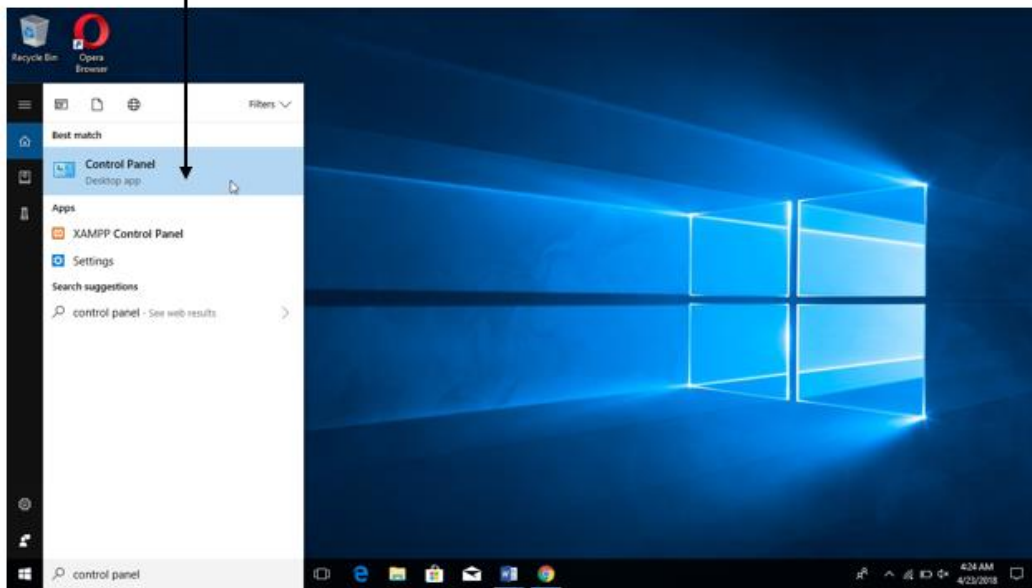
Go to taskbar and navigation
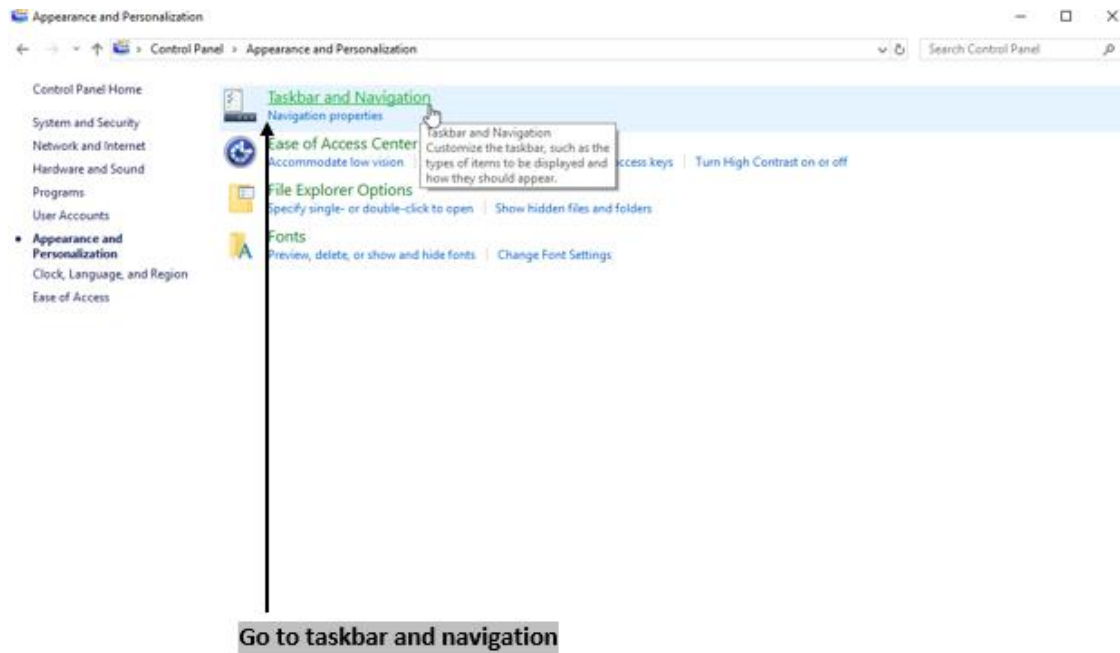
Choose any of the personalization option
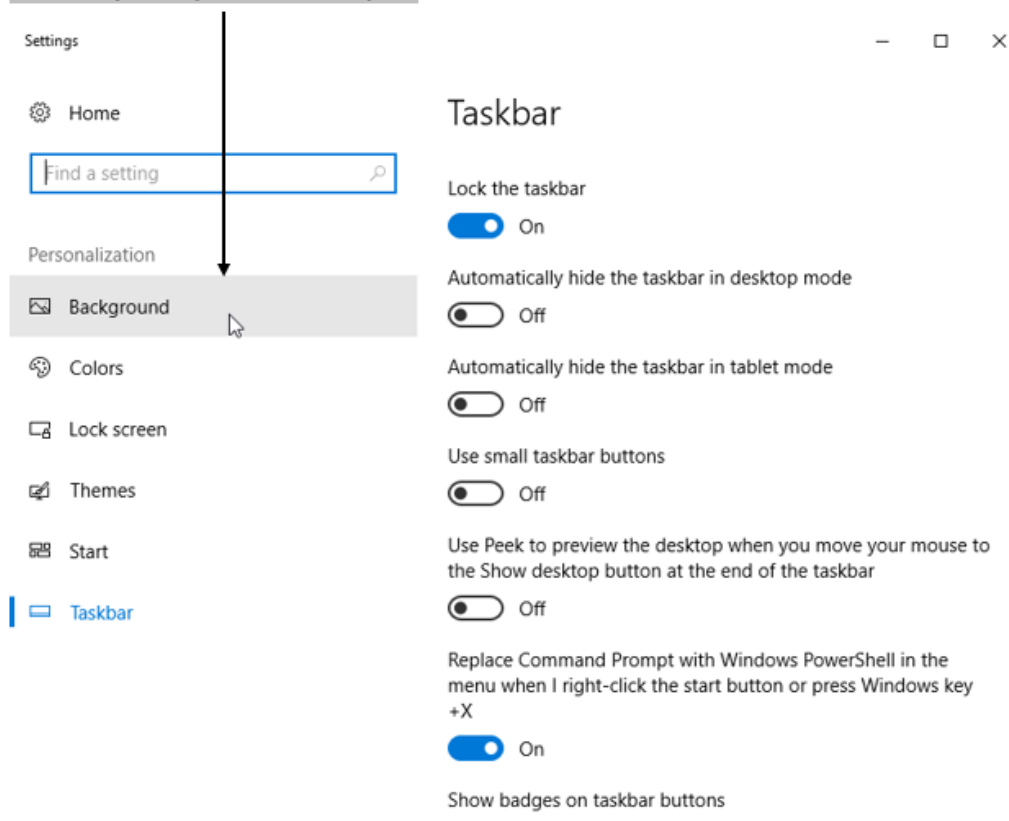
To Add or Remove a Windows Component

In order to add or remove Windows component, follow the below steps:

Step 1: Type "add or remove programs" in the search box and select "**Add or Remove Programs**" under control panel and follow **Step 3** and **Step 4.**
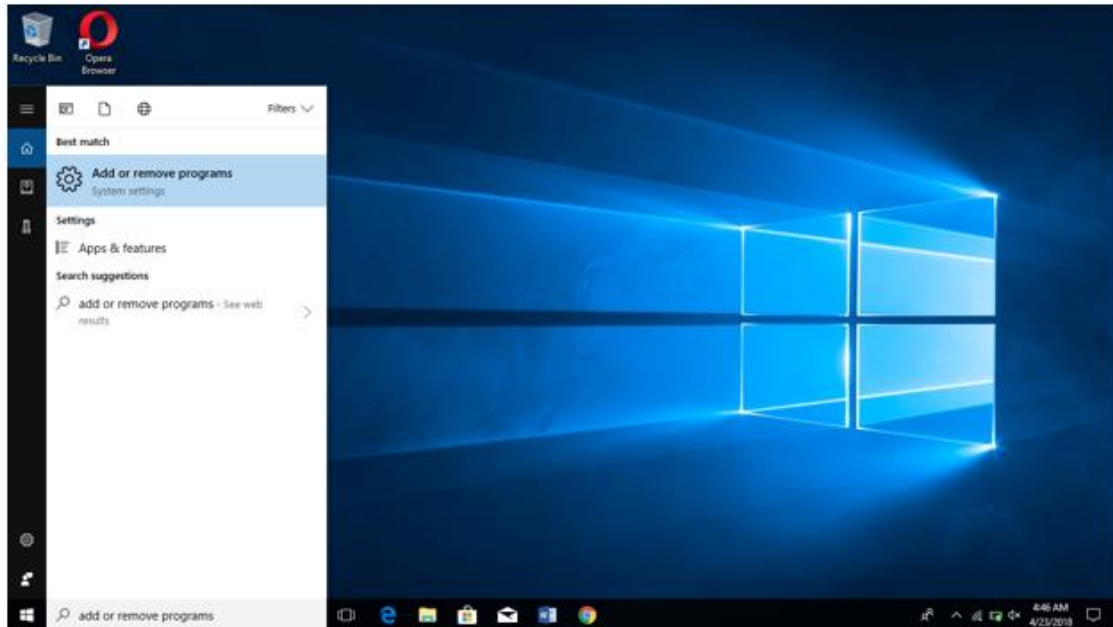
Enter add or remove programs in the search bar

Step 2: Alternate way is to select "**Control Panel**" from start menu and select "**Uninstall a Program**" from "**Program**" and follow **Step 3** and **Step 4.**

In search bar. Enter control panel

Select control panel

Select uninstall a program
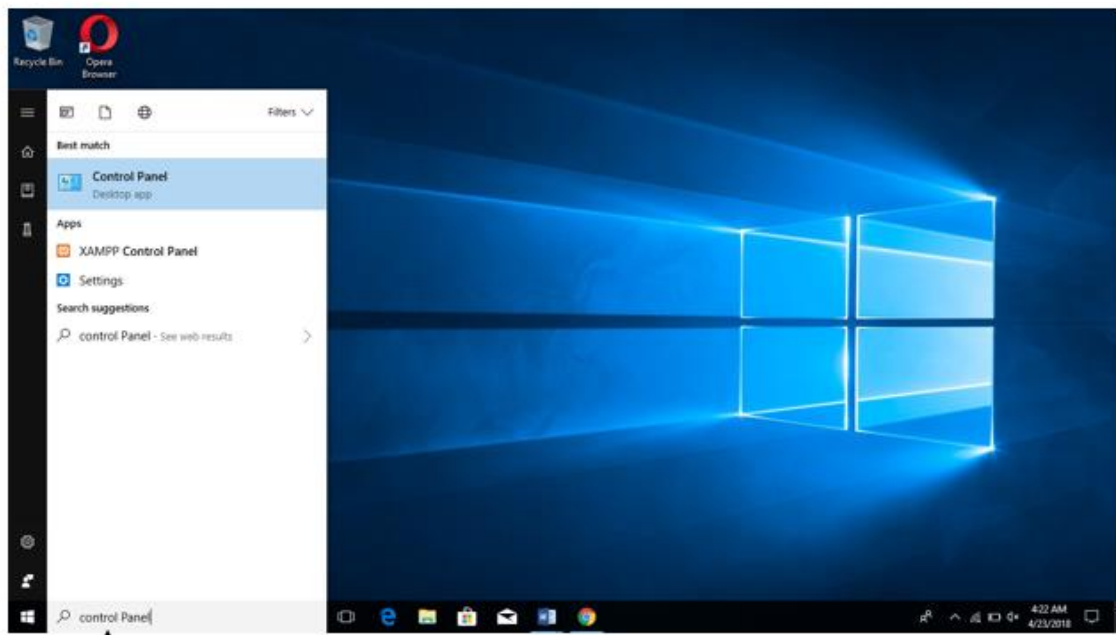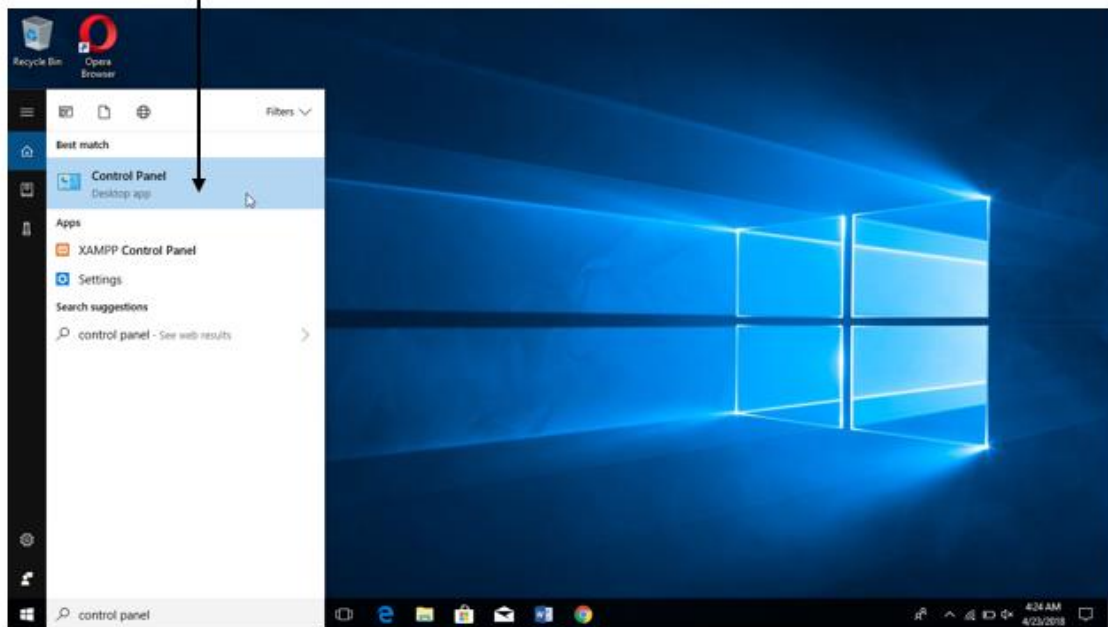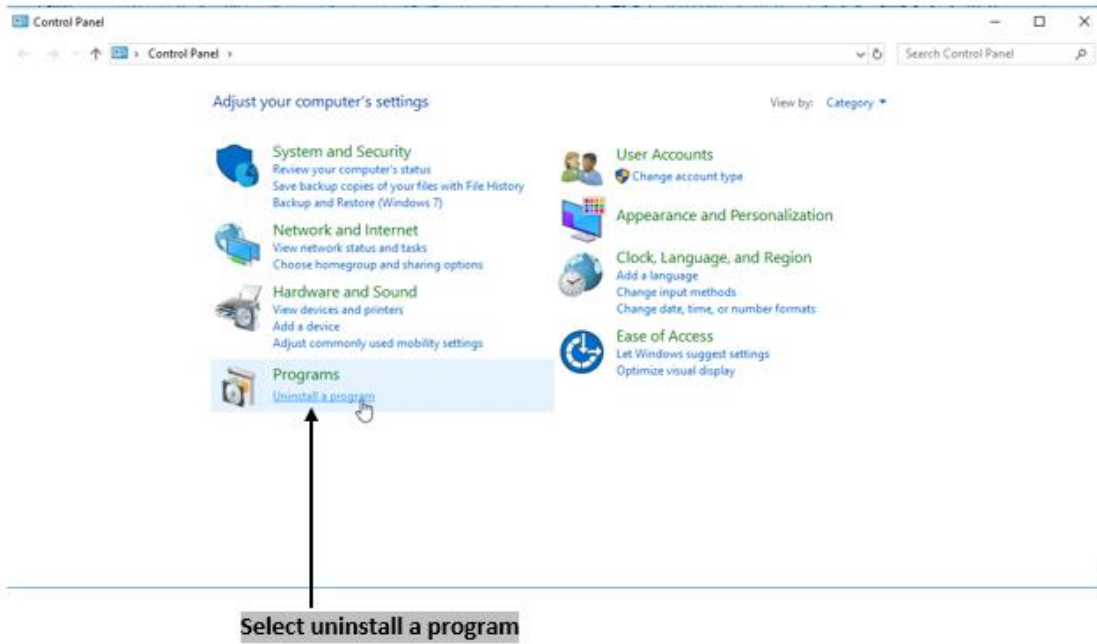
Step 3: Click "**Turn Windows features on or off**" on left side of programs and features window.
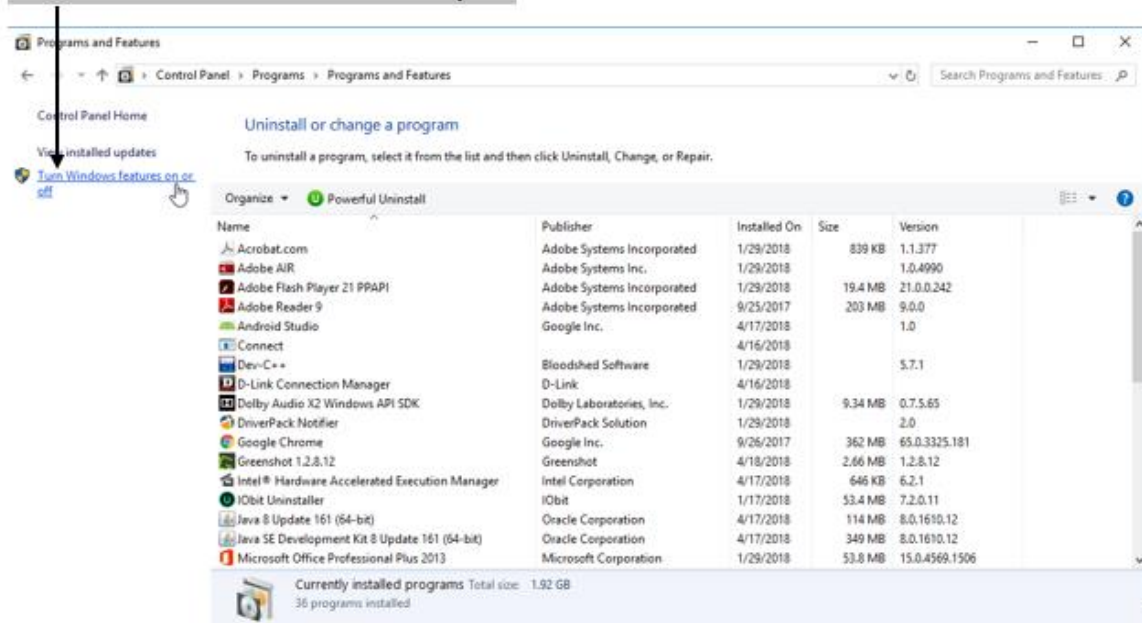
Step 4: From window displayed, add or remove the program you want, and click **"OK"** button.
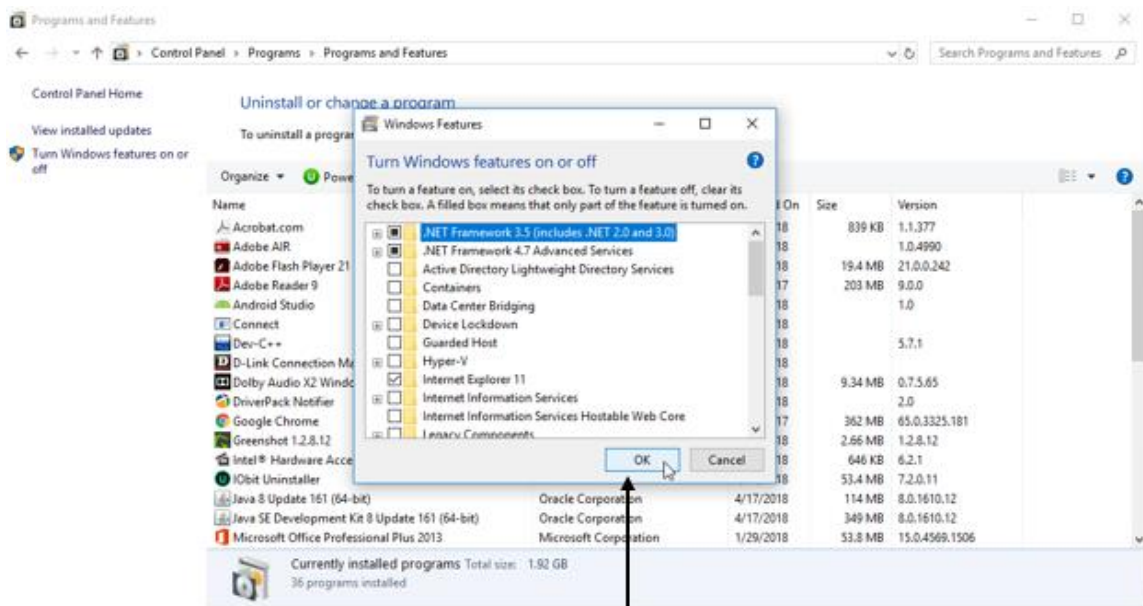
Add or remove programs and select ok

Changing Mouse Properties

Properties of the mouse can be changed by following steps below:

Step 1: Go to "**Control Panel**" from start menu.

In search bar. Enter control panel

Select control panel
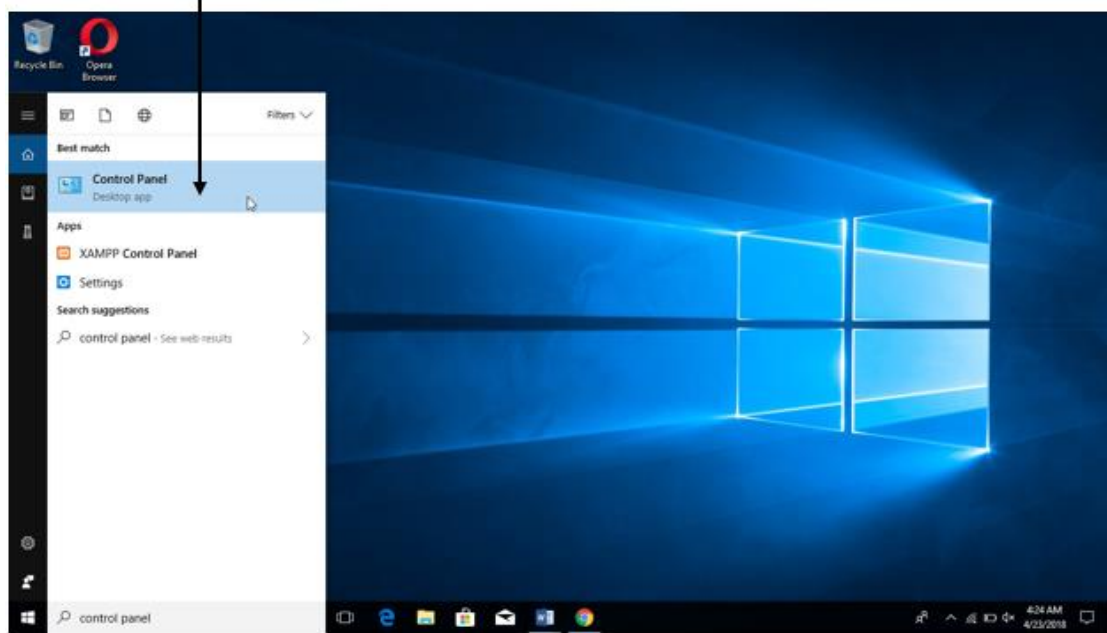
Step 2: Select "**Hardware and Sound**" and select "**Device and Printers**" from the listed options.

Select hardware and sound
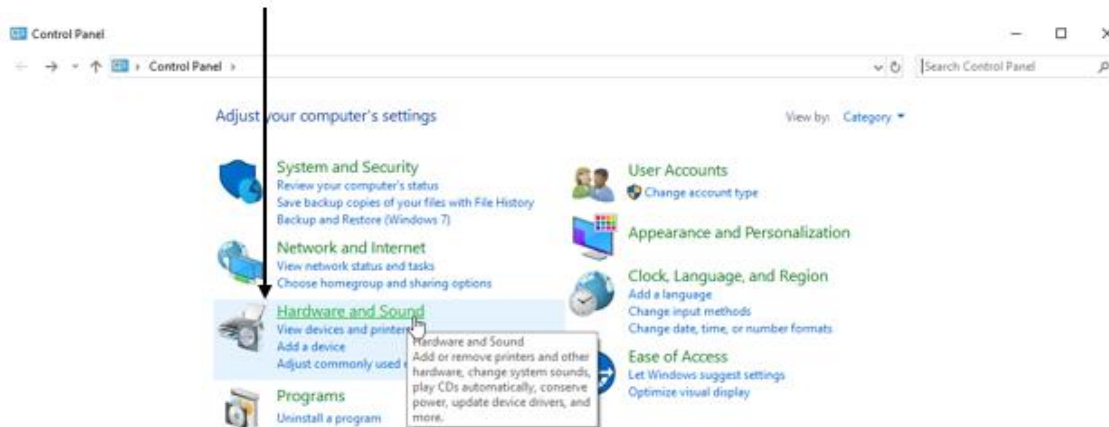
Select mouse under devices and printers
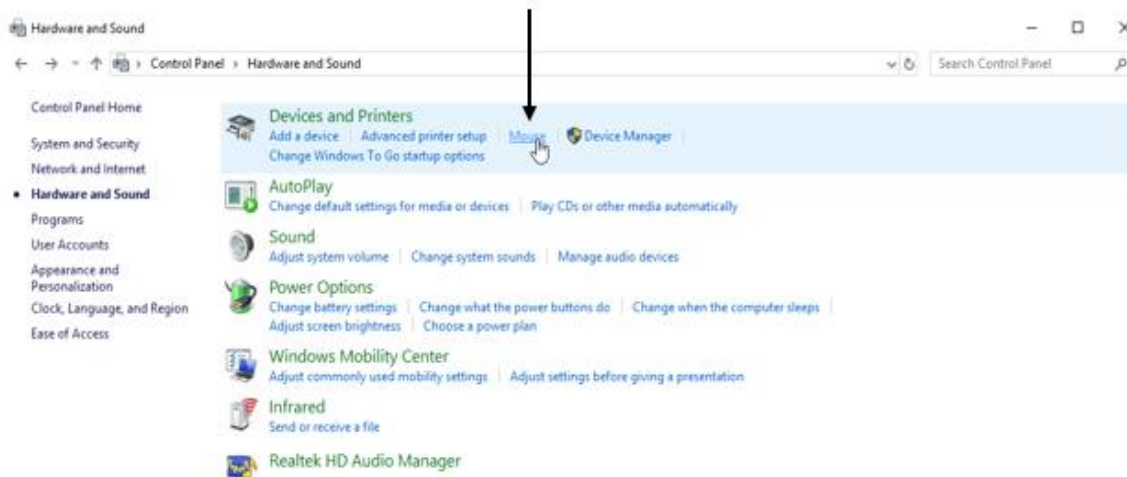
Step 3: Click on "**Mouse**" under **Devices and Printers**, and change any of the following properties and "**Apply**" changes.

> ➤ **Button -** Changes primary and secondary button and double-click speed.
> ➤ **Pointer -** Changes image seen during specific window operation.
> ➤ **Pointer Options -** Changes precision of pointer, speed and visibility of long or short pointer.
> ➤ **Wheels -** Changes horizontal and vertical scrolling.
> ➤ **Hardware -** Helps to view properties of mouse.
> ➤ **Device Setting -** Required only if we are using the laptop.
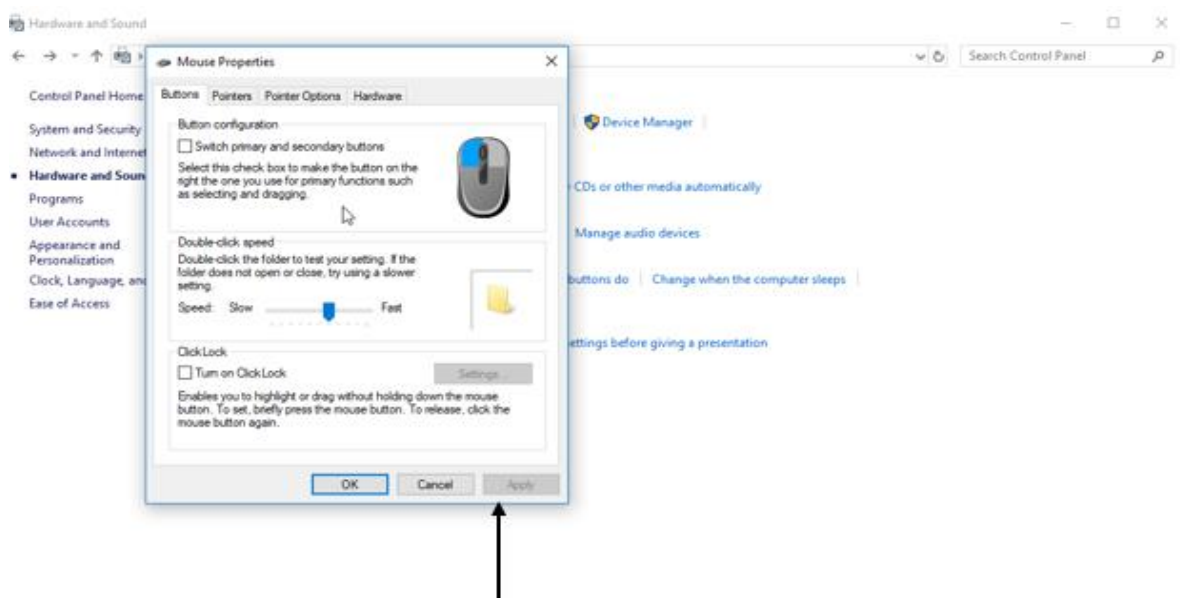
Make the desired changes and select apply

Adding and Removing Printers

To add or remove printers we have to execute following steps:

Step 1: Go to "**Control Panel"** from start menu.
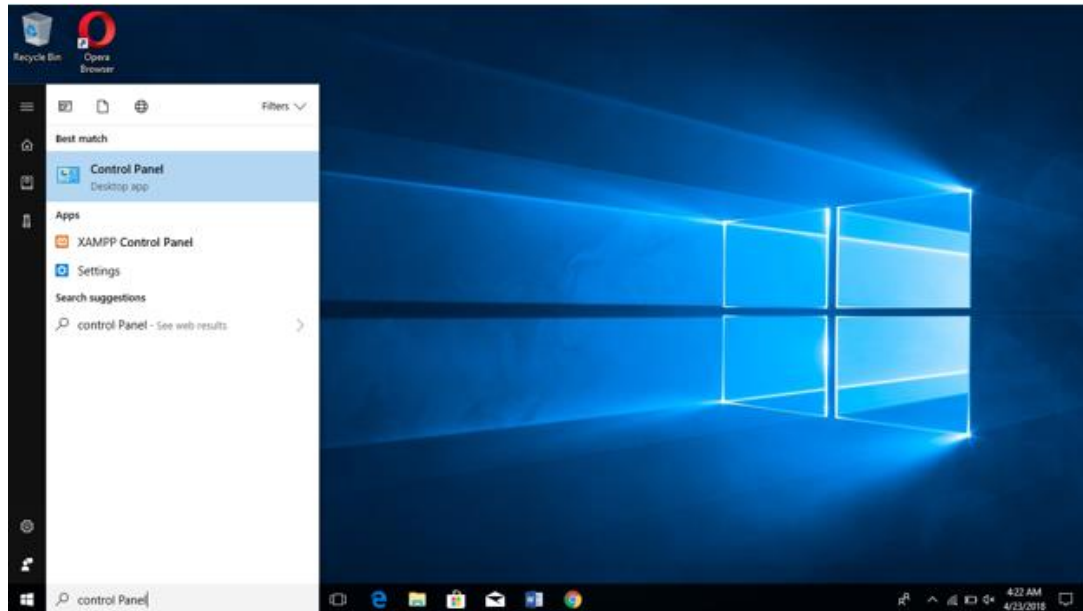
In search bar. Enter control panel

Select control panel

Step 2: Select "**Hardware and Sound**" and select "**Device and Printers**" from the listed options.

Select hardware and sound

Select advance printer setup
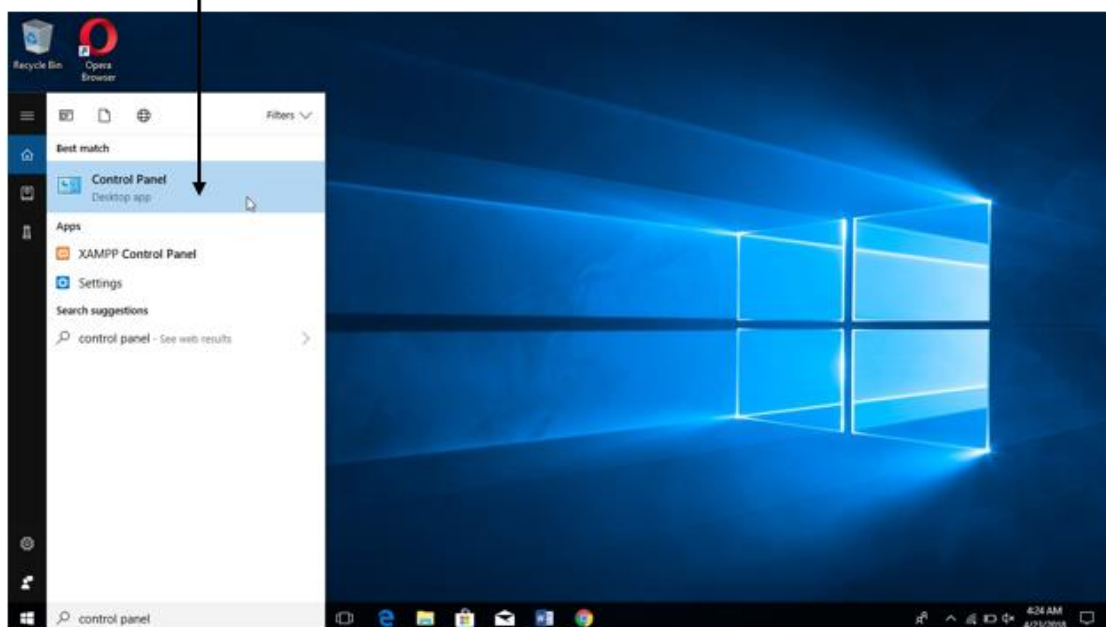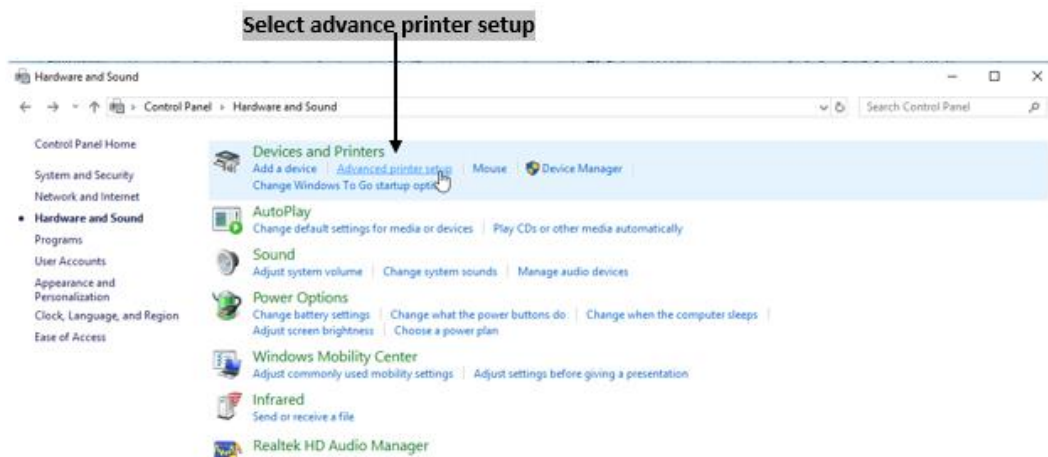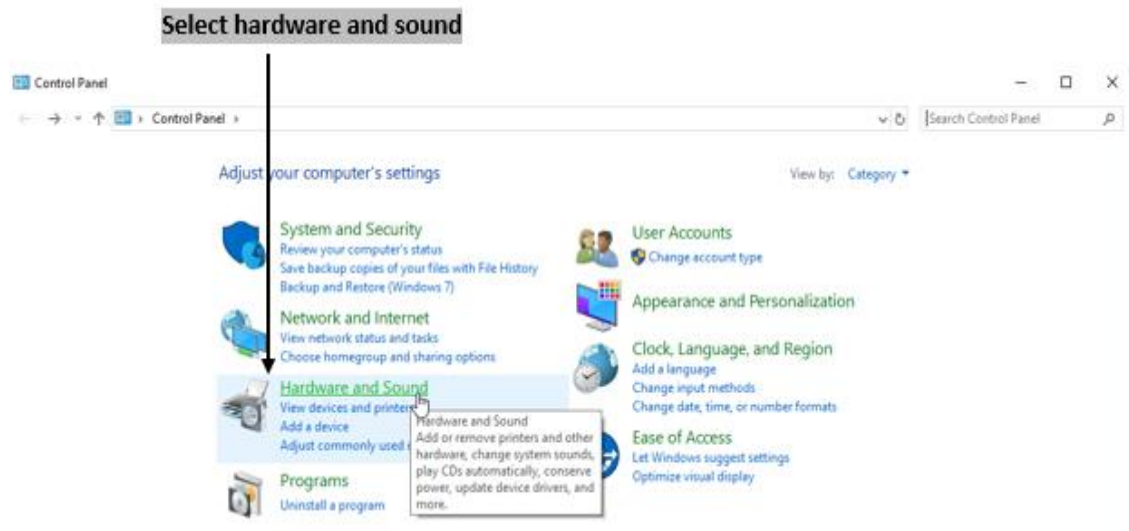
Step 3: Now under "**Devices and Printers**", we can add a printer using "**Add a Printer**" tab at top of the window.

Select the device. If you don't find your device, select this
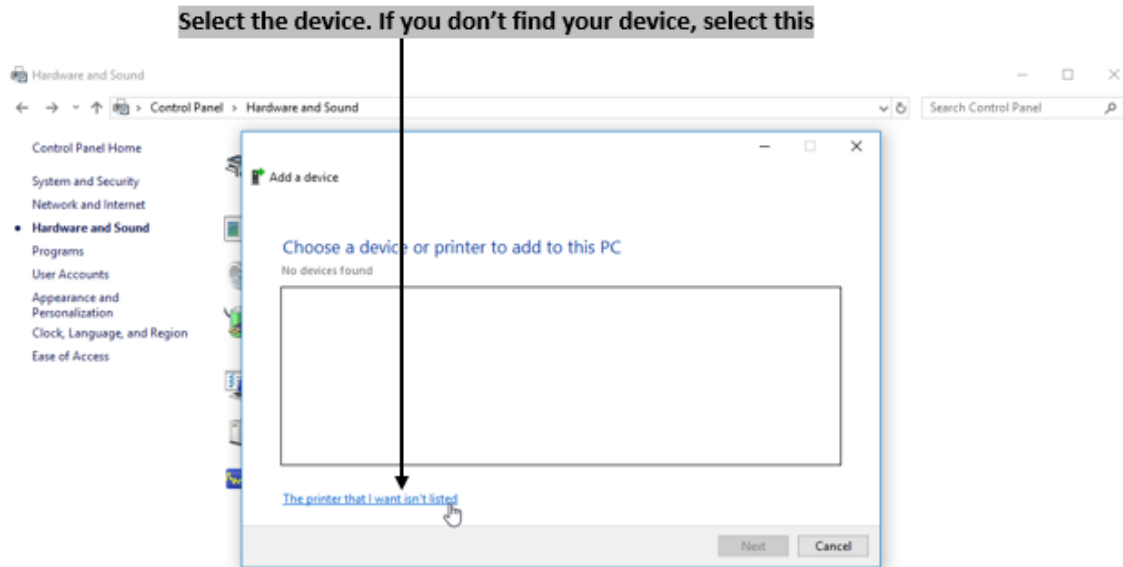
Step 4: To remove a printer, "**Right Click"** by placing the cursor on printer you want to remove, and select "**Remove Device**" from popped up menu.

File and Directory Management

Here, we will learn the concepts of File and Directory Management:

File

File is nothing but a collection of information. The information can be of numbers, characters, graphs, images, etc. Every file should be stored under a unique name for its future reference. Every file should be saved along with an extension. Some of the extensions and their description are given below:

Extension	Description
.avi	Microsoft videos for Windows movie
.dbf	dbase II, III, IV data file
.doc(x)	Microsoft word for windows
.gif	Graphics Interchange Format
.htm	Hypertext Markup Language
.html	Hypertext Markup Language
.jpg	JPEG graphics file
.mpg	MPEG video file

53

.mid	MIDI music file
.mov	QuickTime movie

Representation

File should be represented in address bar along with path of the file, filename and extension.

```
For example: C:\Windows\system32\Hello.html

In which C:\Windows\system32→path

              Hello→filename

              .html→extension.
```

Directory Management

Directory is a place/area/location where a set of file(s) will be stored. It is a folder which contains details about files, file size and time when they are created and last modified. The different types of directories are discussed below:

Root Directory

Root Directory is created when we start formatting the disk and start putting files on it. In this, we can create new directories called "sub-directories". Root directory is the highest level directory and is seen when booting a system.

Subdirectory

Subdirectory is a directory inside root directory, in turn, it can have another sub-directory in it.

File Management System

The file management system is a software which is used to create, delete, modify and control access and save files.
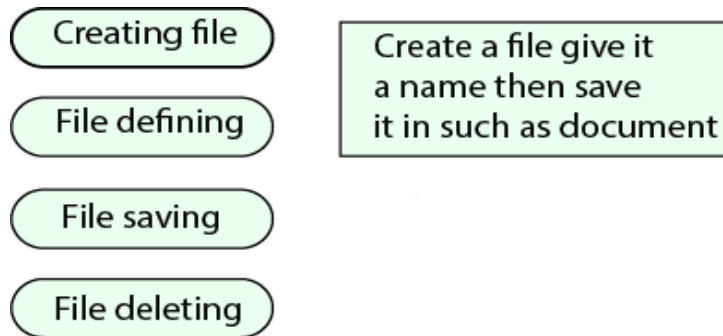
Fig 2.45

Responsibilities of File Management System

The responsibilities of File Management System are as follows:

Operation

This provides user to work with or manipulate the files. Manipulation includes open, close, save, copy, delete, move, rename, share, etc.

Security

By supporting authorization, it restricts unauthorized user to log into system and access files. Username and password are required for authorization purpose. It supports file encryption feature and asks for authorization to access those encrypted files.

Integrity

In support of integrity, file management system will keep track of data manipulations like deletion, modification, addition of data, etc. If the data gets modified, deleted or added, then those changes should be reflected in all the files.

Storage

This allocates memory for storing files, deallocates memory of deleted or unused files and maintains backups.

Types of Files

Files in the operating system are of following types:

Ordinary files

Ordinary files help to store information like text, graphics, images, etc. These files are used to store information fed by the user. Examples of ordinary files include a notepad, paint, programming applications, etc.

Directory files

Directory files are nothing but a place/area/location where details of files are stored. It contains details about file names, ownership, file size and time when they are created and last modified.

Device files

Device files are also called as special files. They are created by operating system which act as a mediator between the operating system and hardware like printers, plotters, etc., and are stored under a sub-directory, "/dev".

FIFO files

FIFO files act as an input/output channel between processes. As the name indicates, it maintains order of request and response to files by user or any other device.

Summary

This topic had given a detailed description of operating system, user interface, changing simple settings in the operating system, files & directory management and types of files.

3. Computer Concepts — Elements of Word Processing

Microsoft Word is a popular word processing software. It helps in arranging written text in a proper format and giving it a systematic look. This formatted look facilitates easier reading. It provides spell-check options, formatting functions like cut-copy-paste, and spots grammatical errors on a real-time basis. It also helps in saving and storing documents.

It's also used to add images, preview the complete text before printing it; organize the data into lists and then summarize, compare and present the data graphically. It allows the header and footer to display descriptive information, and to produce personalized letters through mail. This software is used to create, format and edit any document. It allows us to share the resources such as clip arts, drawing tools, etc. available to all office programs,

In this chapter, you will learn about Concepts related to MS Word in detail. You will know about Word Processing Basics, Opening and Closing the Document, Text Creation and Manipulation, Formatting Text, and Table Manipulation.

Basics of Word Processing

Word processor is used to manipulate text documents. It is an application program that creates web pages, letters, and reports.
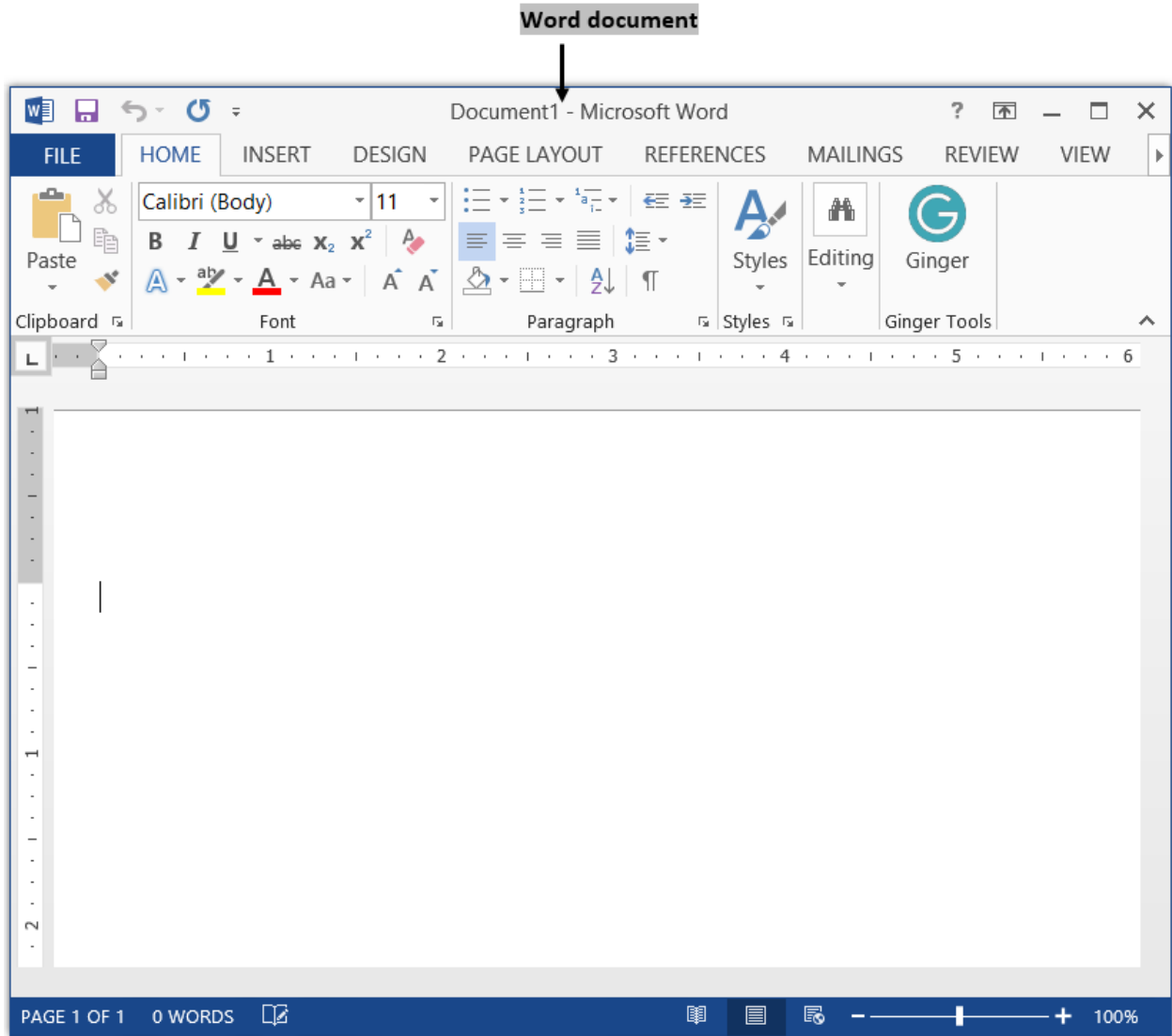
Word document

Opening Word Processing Package

Word processing package is mostly used in offices on microcomputers. To open a new document, click on "**Start**" button and go to "**All Programs**" and click on "**Microsoft Word**".
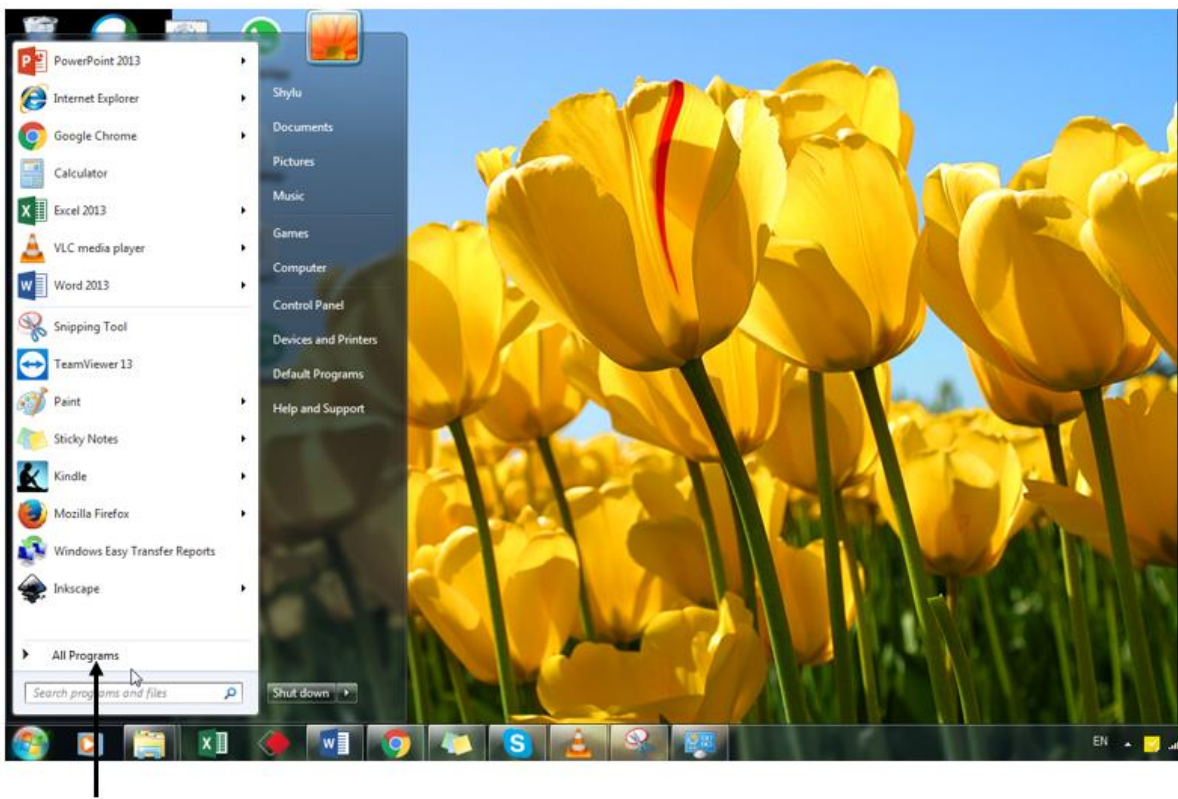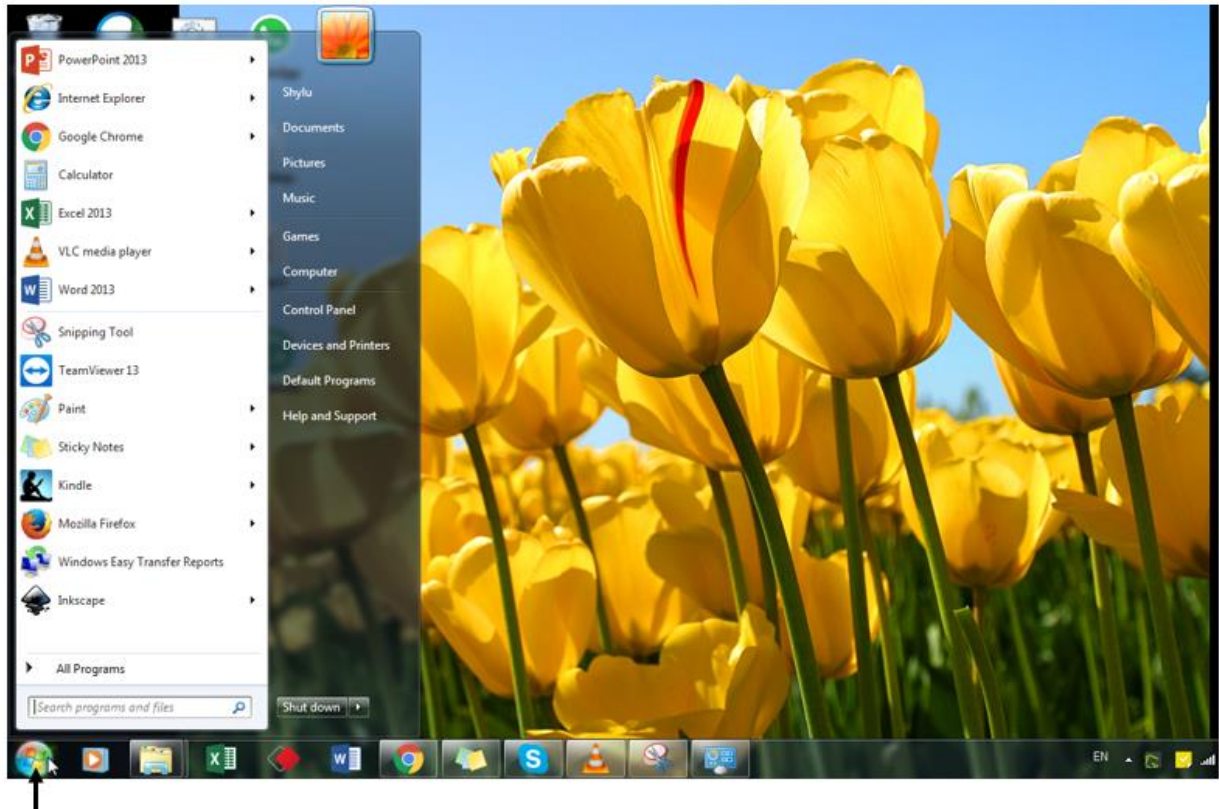
Go to All programs
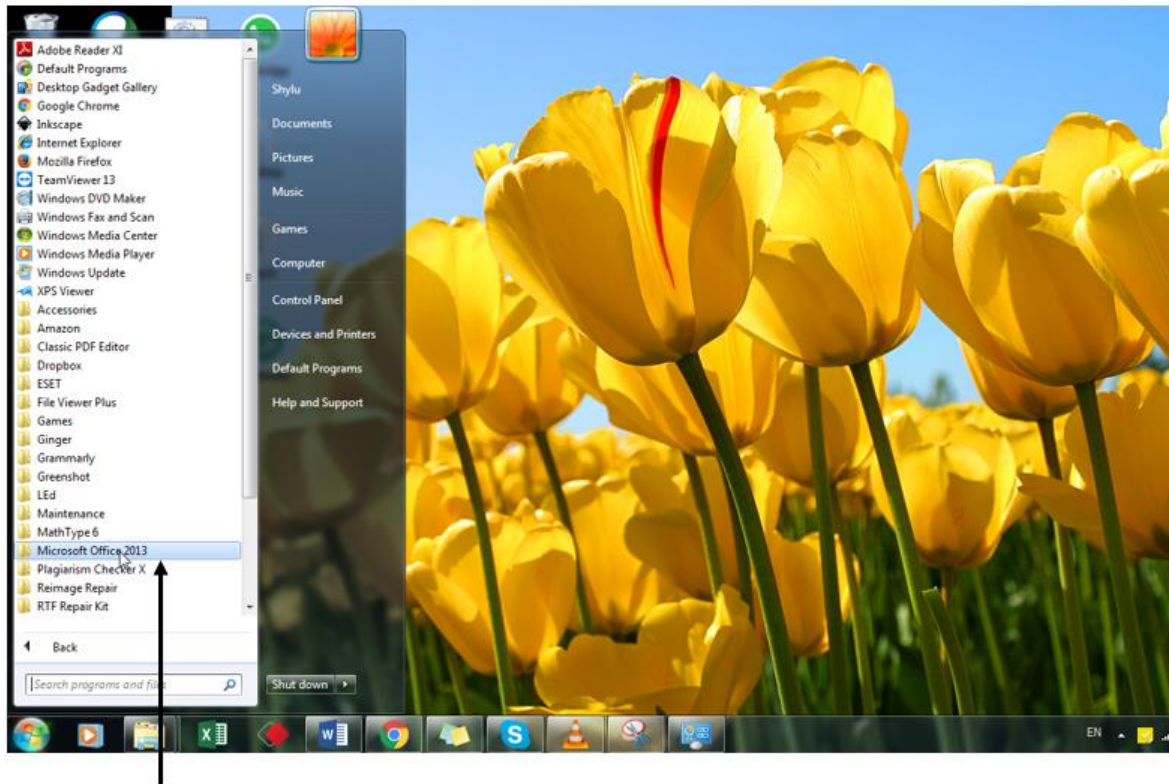
Go to Microsoft Office 2013

Menu Bar

A menu bar is located below the title bar. A menu bar is an application window to furnish application or window-specific menus. Menu bar has File Menu along with Home, Insert, Design, Page Layout, References, Mailings, Review, And View.

File - It has options such as, Save, Save As, Open a New Document, Print, etc.

Home - It has icons to change Font Size, Style, Alignment, Borders, etc.

Insert - It has icons to insert Table, Shapes, Chart, Pictures, Screenshot, Header, Footer, etc.

Design - It has icons to change Themes, Colors, Fonts, Effects, Page Borders, etc.

Page Layout - It has icons to set Margins, Orientation, Size, Breaks, Indent etc.

References - It has icons to Add Text, Update A Table, Insert Footnote, Index.

Mailings - It has icons to start Mail Merge, Add Labels, Envelopes, etc.

Review - It has icons for Spelling And Grammar Check, Thesaurus, Word Count, Comments, Tracking, etc.

View - It has icons like: Zoom, Print Layout, Switch Windows, Split, etc.

You may use a particular menu to give an instruction to the software. Place mouse over menu option and click left mouse button to open drop-down menu. You can use left and right arrows on your keyboard to move left and right across menu bar option. Up and down arrow keys can be used to scroll drop-down menu.
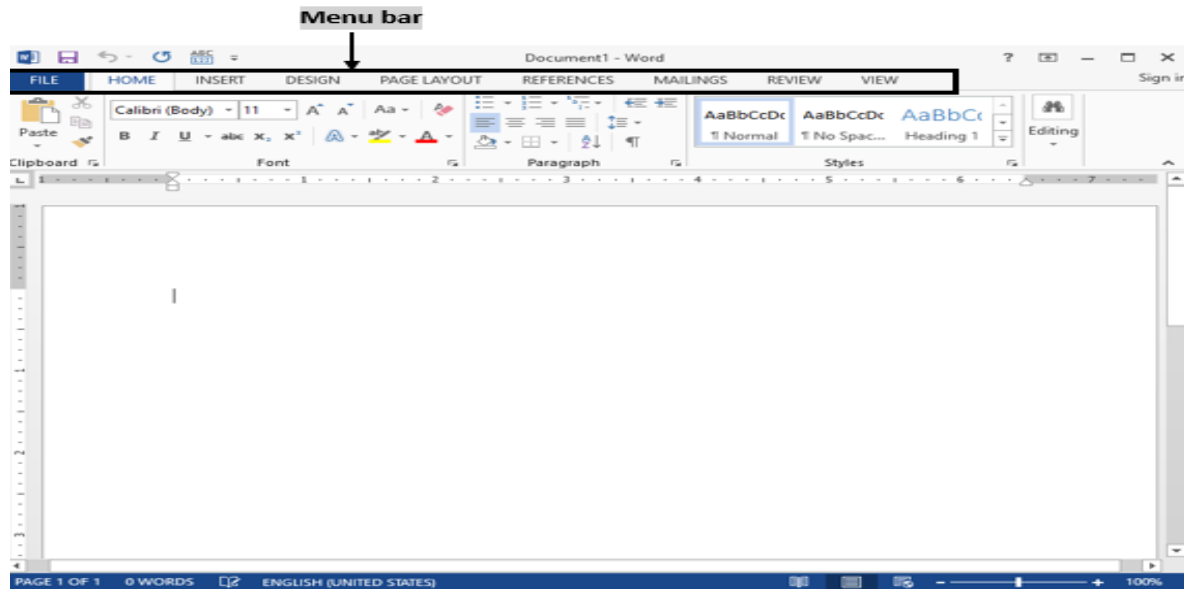
Using Help menu

Help menu → By clicking this button, you can get help for any information you need. Help button is located at the top right corner of window. It looks like a question mark, "**?**". Shortcut key for help menu is **F1**.
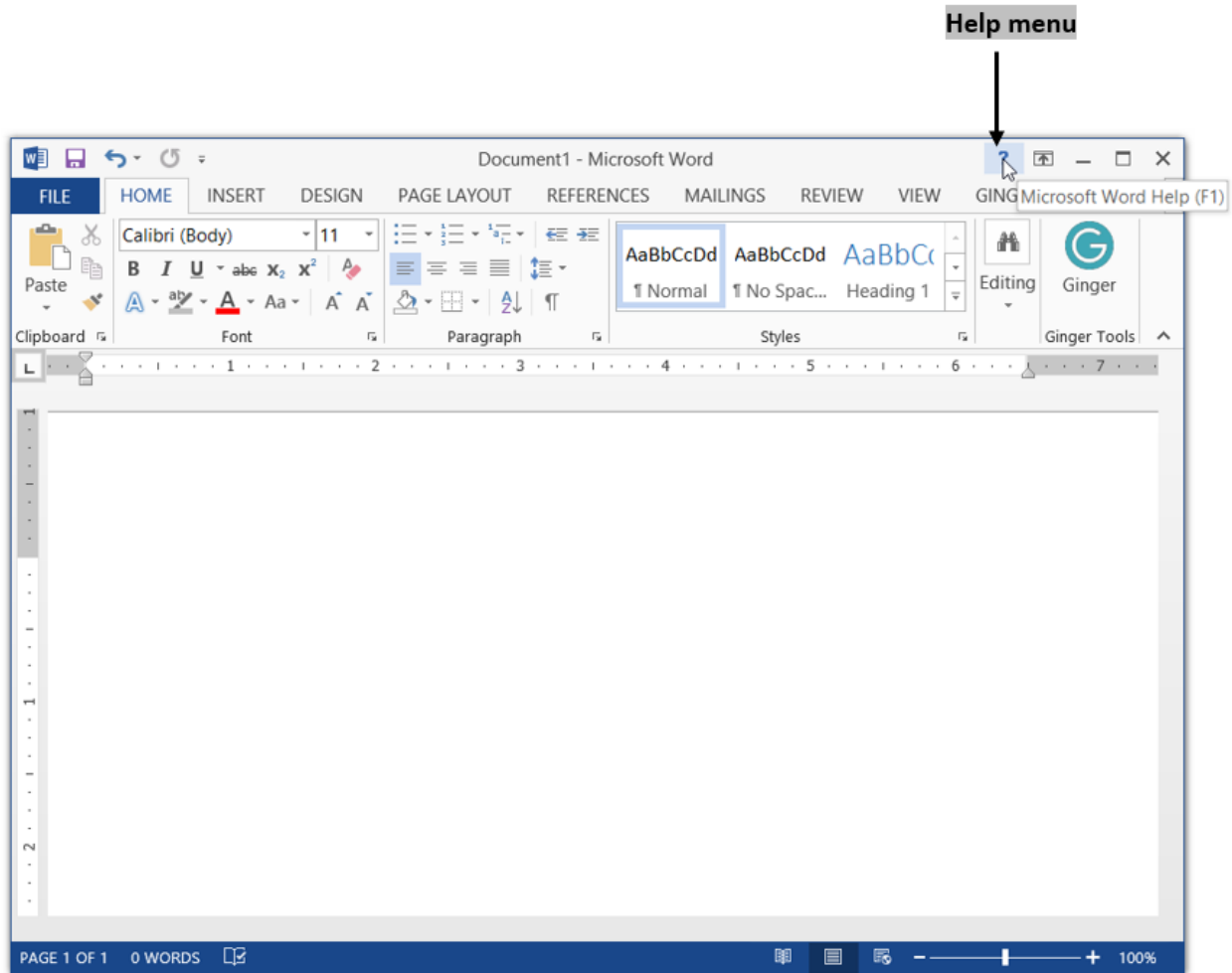
Using Icons below Menu Bar

The bar located below menu bar is the toolbar. Toolbar provides shortcuts to menu commands. It has icons which represent commonly used functions.

→ to save a file.

→ to print current file.

→ to check for page orientation before the document gets printed.

→ to check spelling, grammar and writing style.

→ to remove selected word or sentence from the document.

→ to copiy selected word or sentence from the document.

→ to paste content from the clipboard.

→ to reverse the last command. Shortcut key for undo is "Ctrl + Z"

→ to redo last command. Shortcut key for Redo is "Ctrl + Y"

→ to set borders to content.

→to insert a single table or more tables as required into the document.

→to change number of columns in the document.

→ to change font color.

→ to change font style.
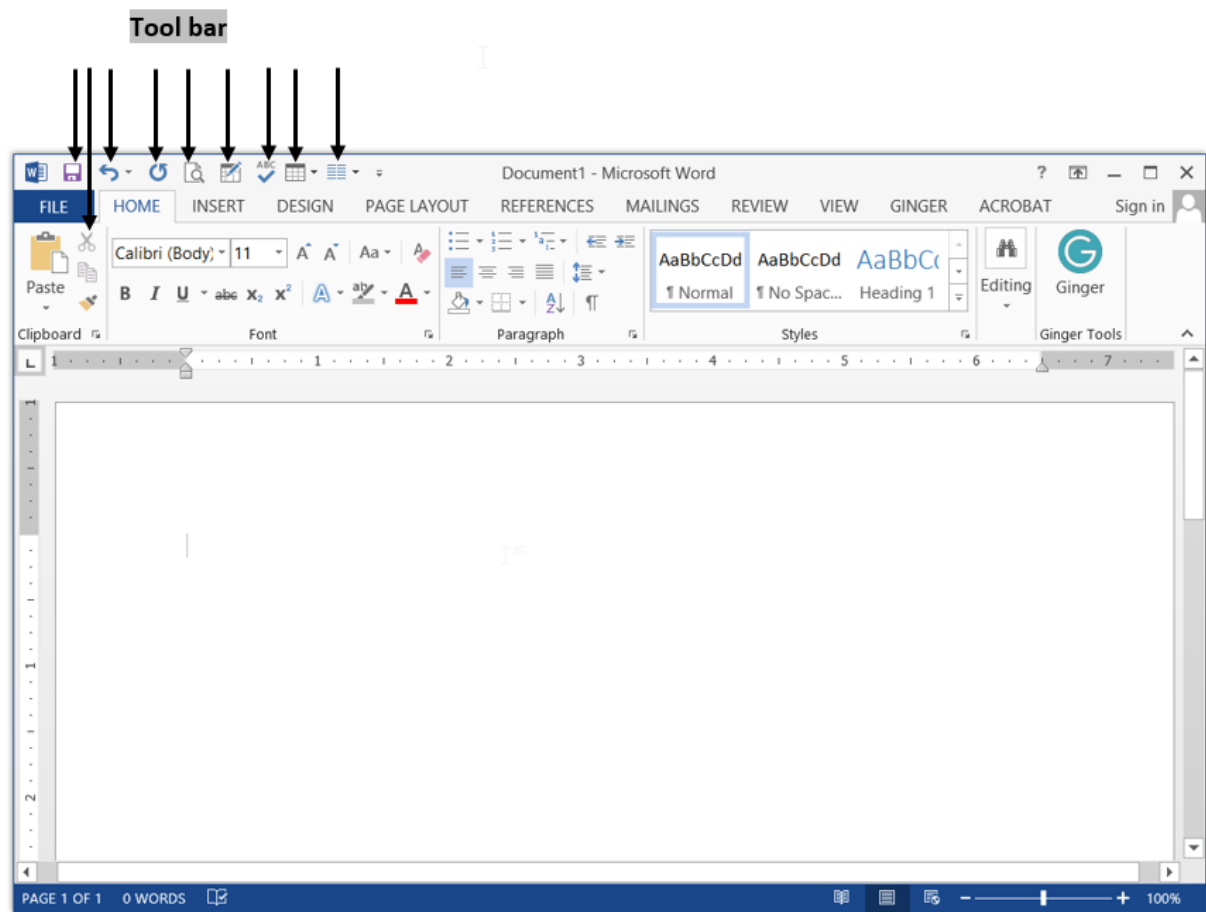
Opening and Closing Documents

Word automatically starts with a blank page. For opening a new file, click on "New".

- To close a document, click "X" in the upper right corner of window.
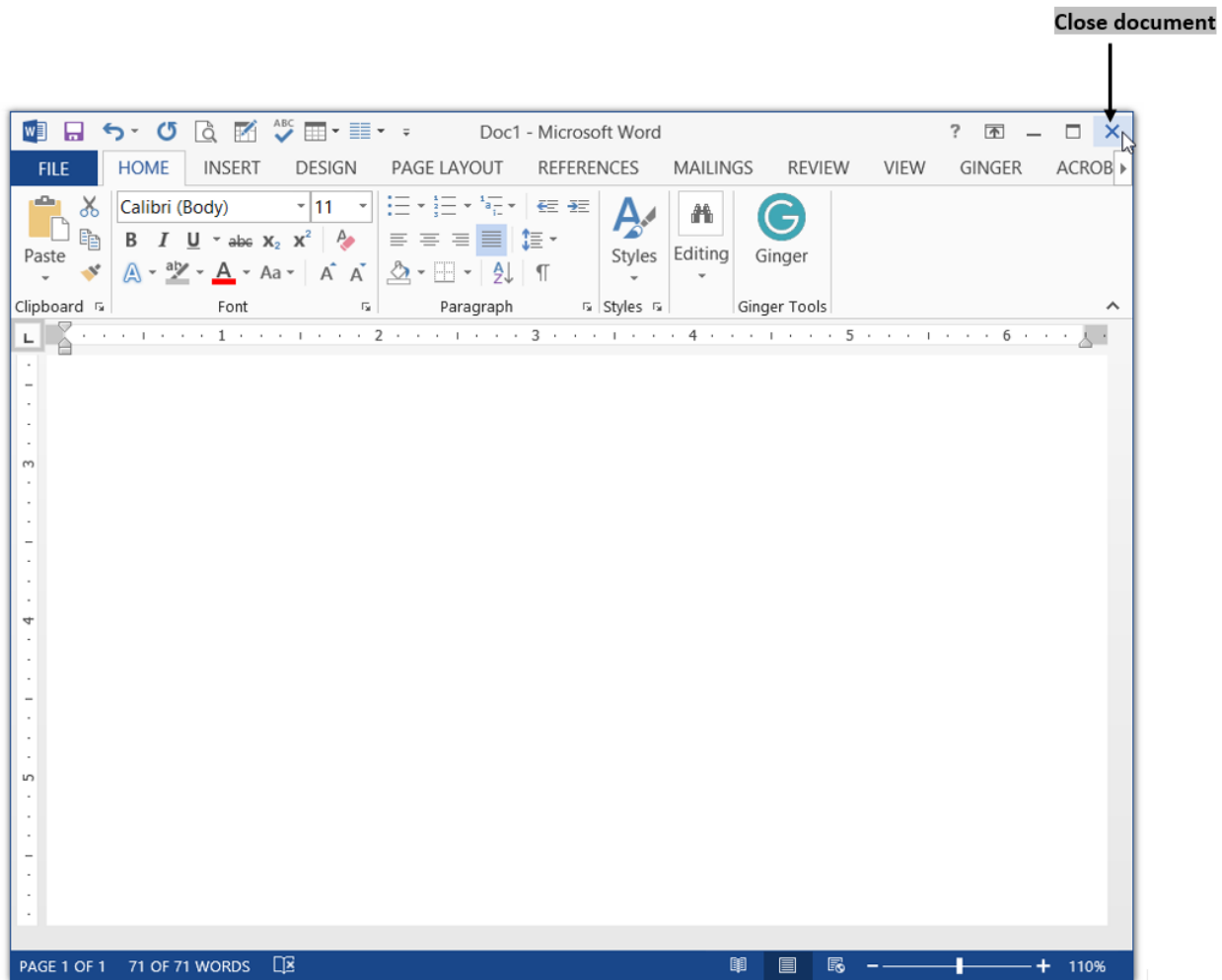
Opening the document

To open an already existing document, follow the below steps.

- Click on the "**File → Open**".
- From the window opened, select a file you want to open and double click on it or just right-click and select "**open"**.
- Shortcut key is **Ctrl + O**.

Go to FILE

Select Open

Right click and select Open
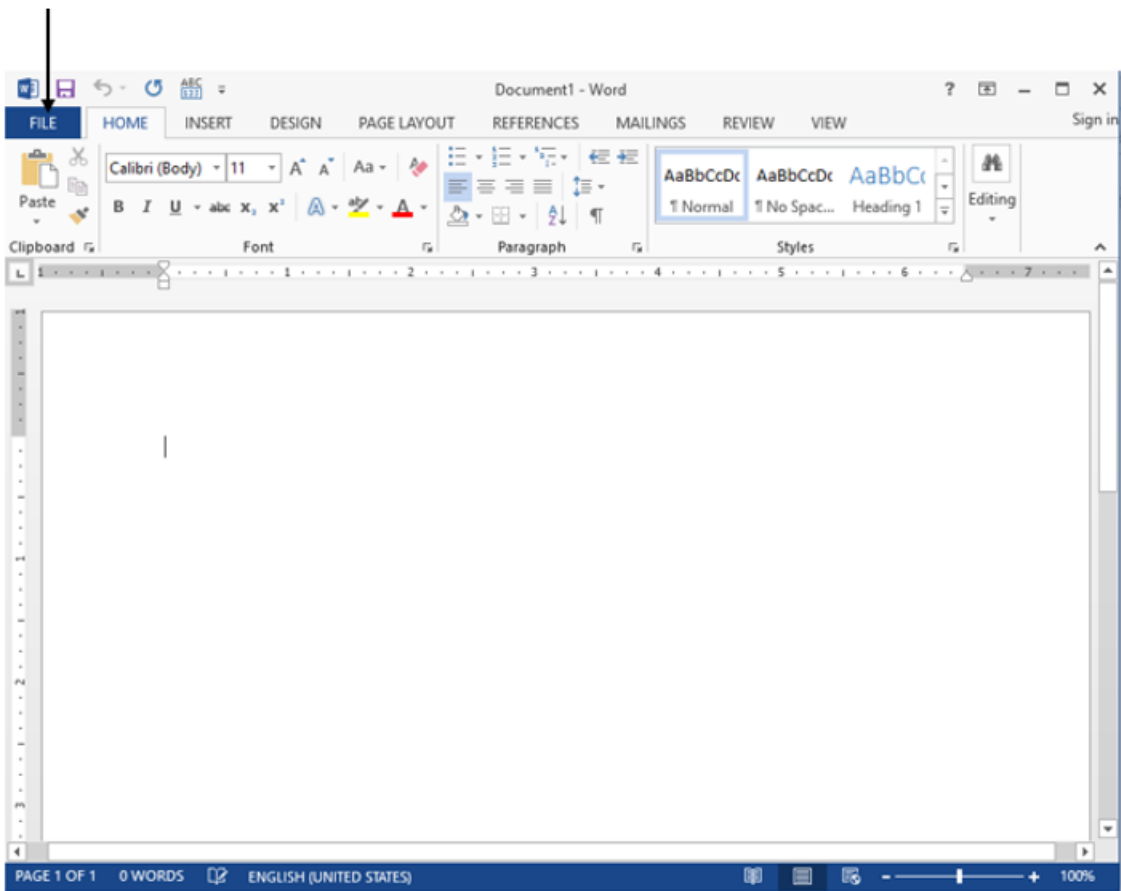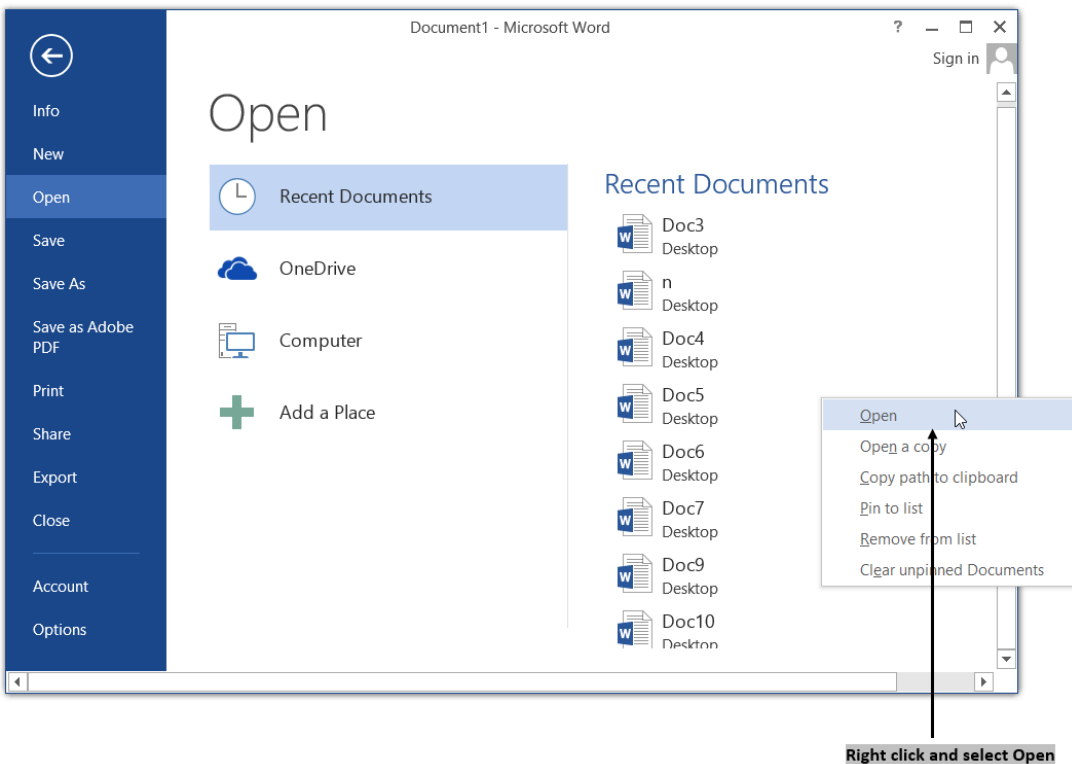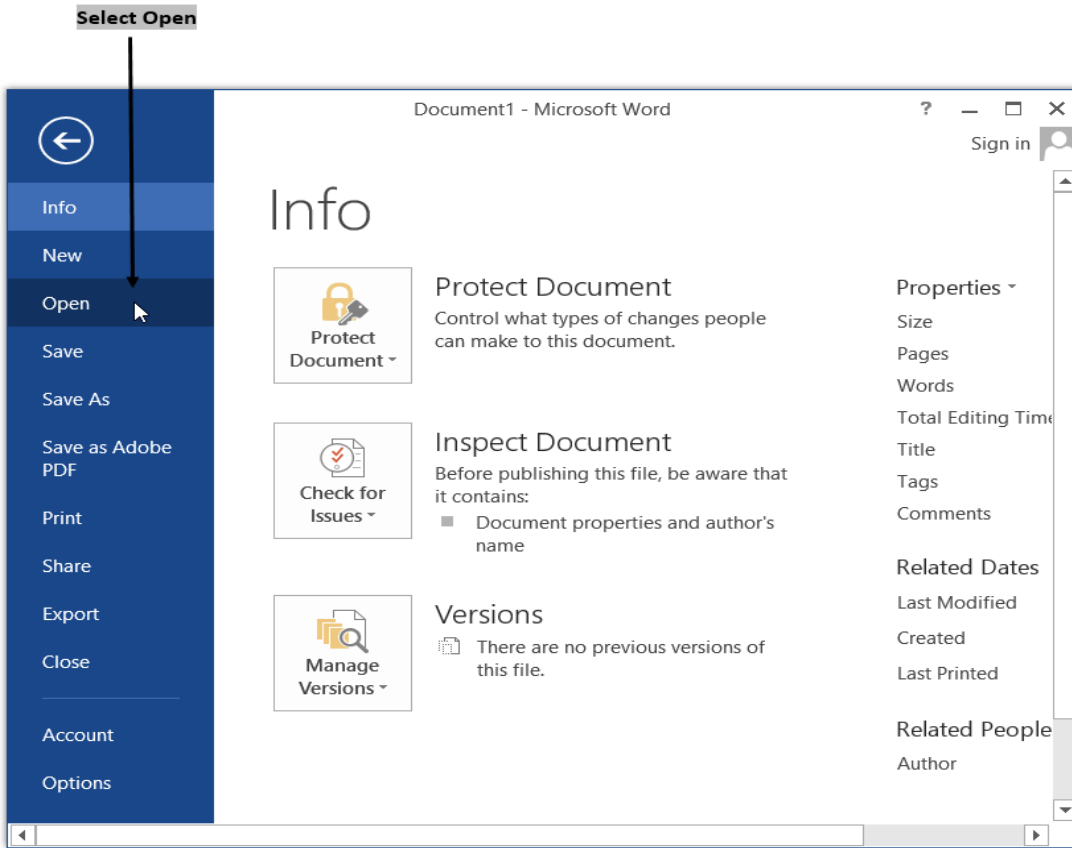
Save and Save As

After finishing our work, we must save the document permanently, as it is useful for future reference.

- As RAM is a temporary storage memory, we must save our file on the hard disk.
- To save a document, go to "**File**" menu and select "**Save**" option
- Shortcut key is **"Ctrl + S".**
- Then the file gets saved under a default name.

Go to FILE

Select Save

Select the location
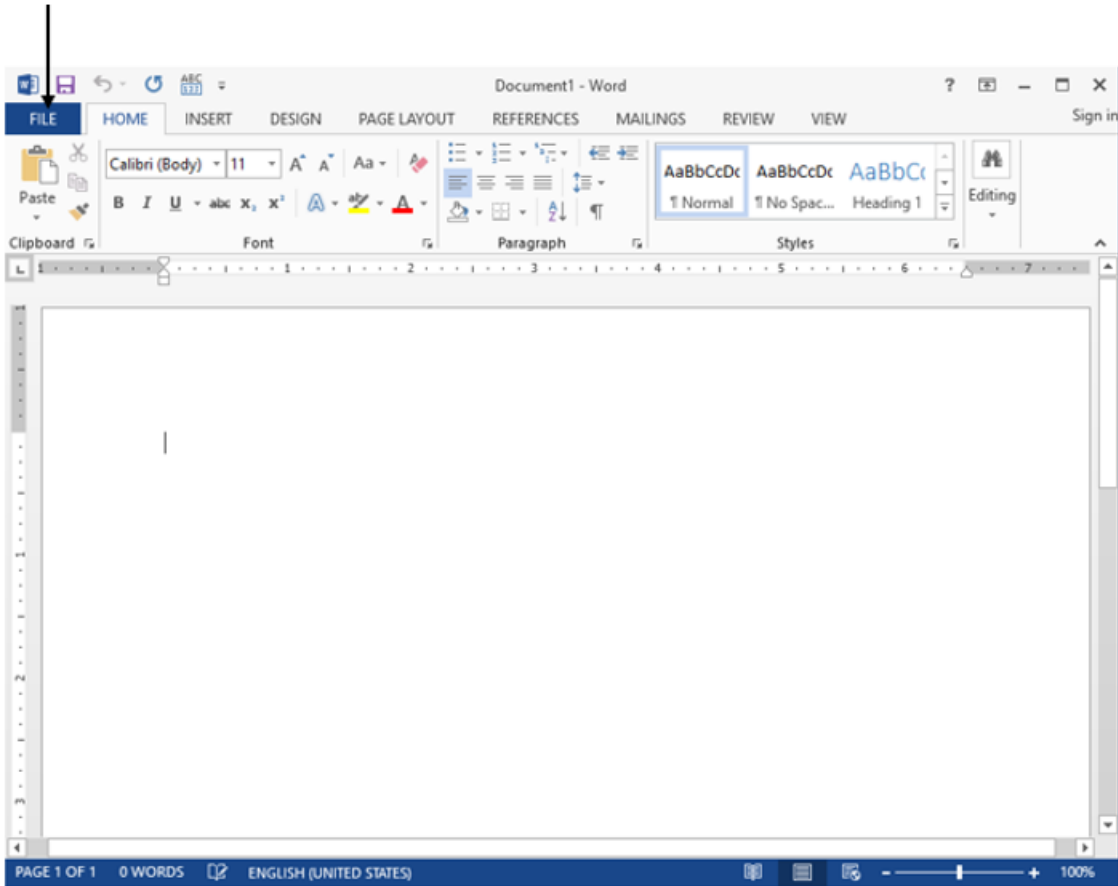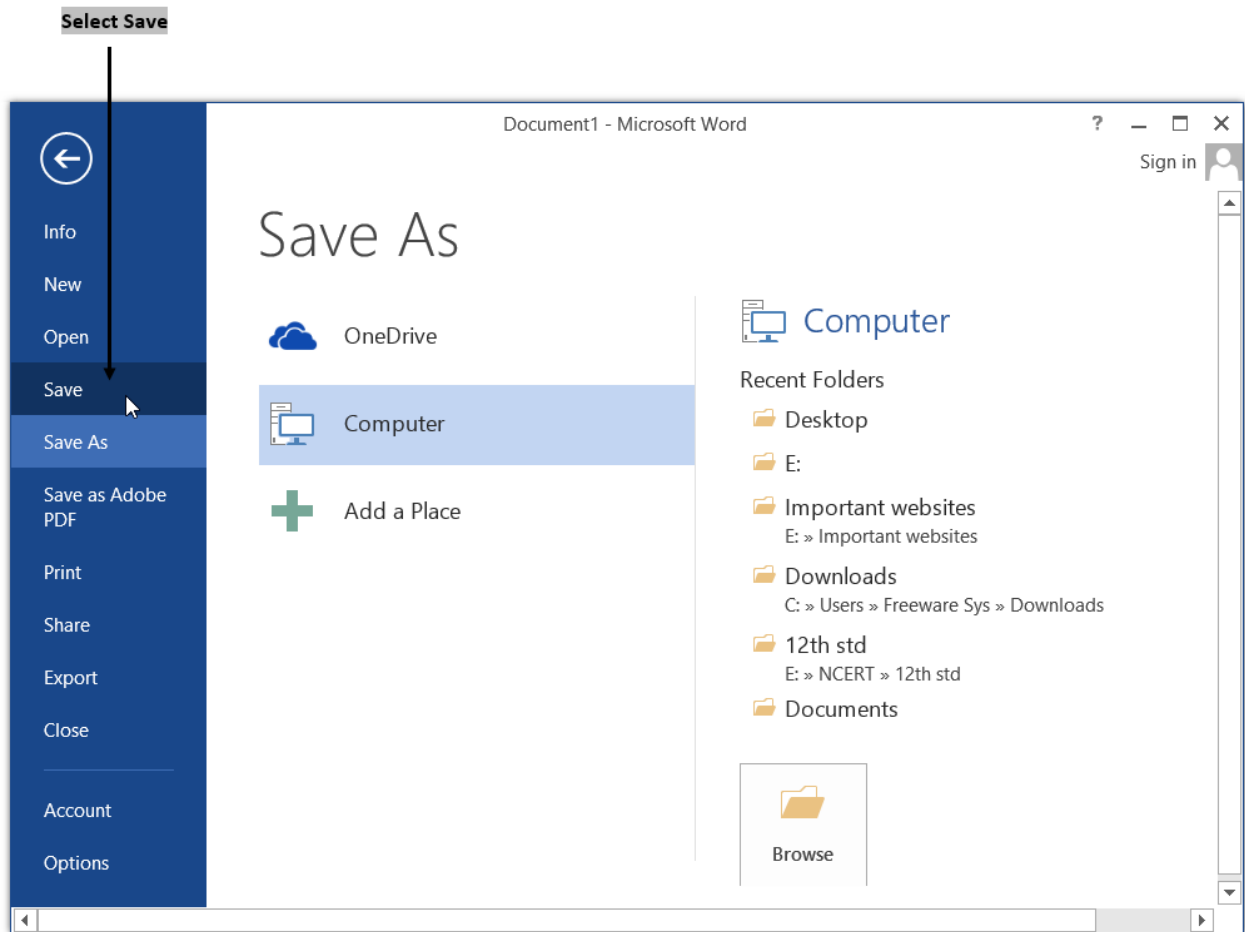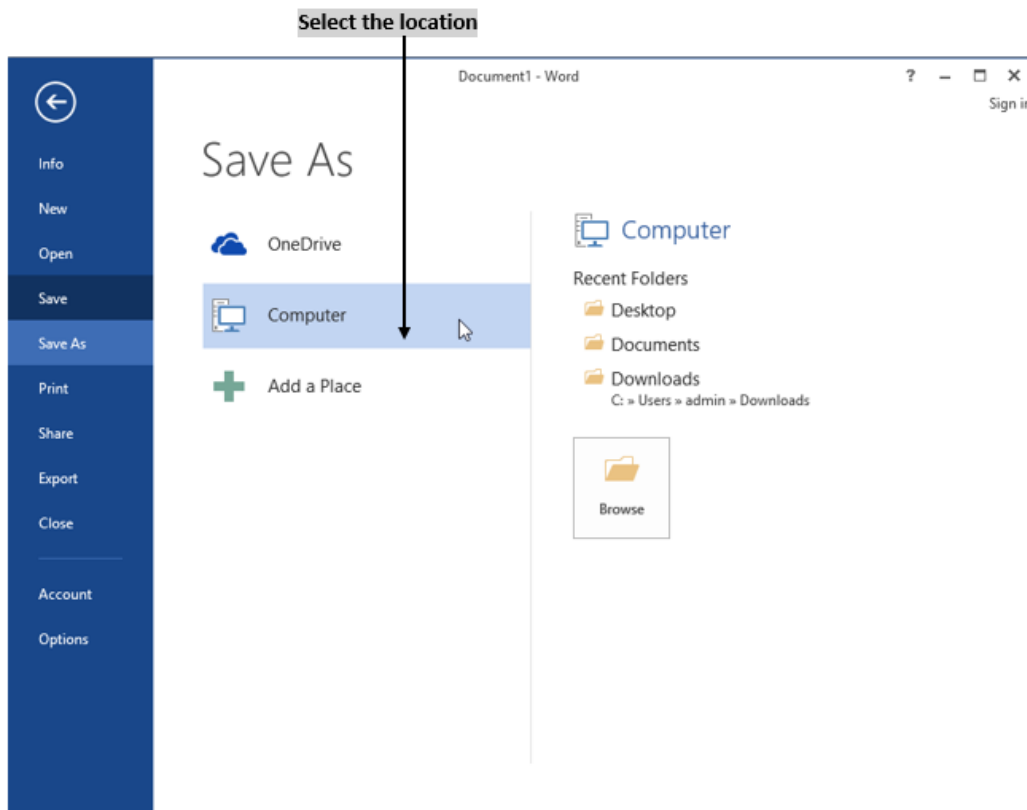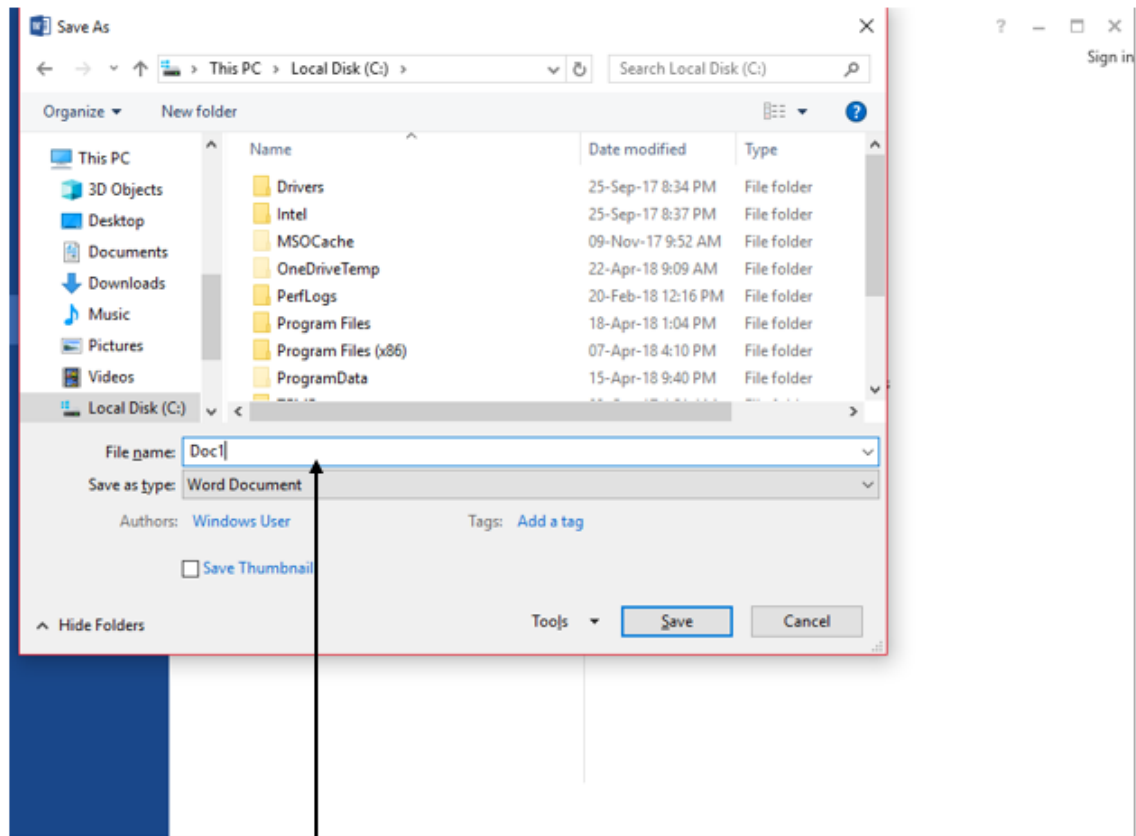
Enter the file name

Select save
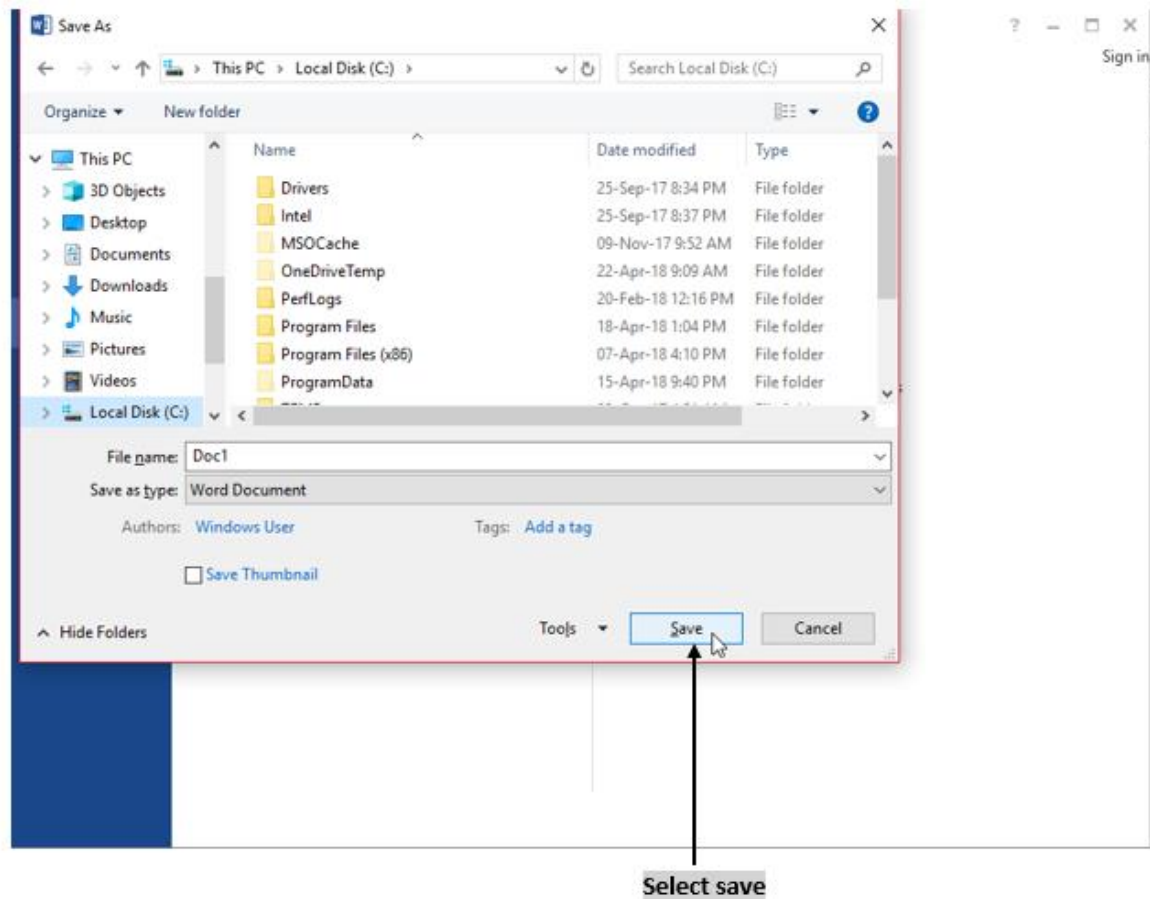
Save As option is used to rename a file.

- If you want to save your document in another location with same or different name, you can use "Save As" option.
- The shortcut key for Save As is "**F12**".
- To use Save As option in a document, follow the below steps:
  - ✓ Go to File menu
  - ✓ Click Save As
  - ✓ Select the drive where you want to save the document.
  - ✓ Then type any Name in the File Name box at the bottom of dialog box.
  - ✓ Then click Save option.

Go to FILE

Select Save As

Select the location
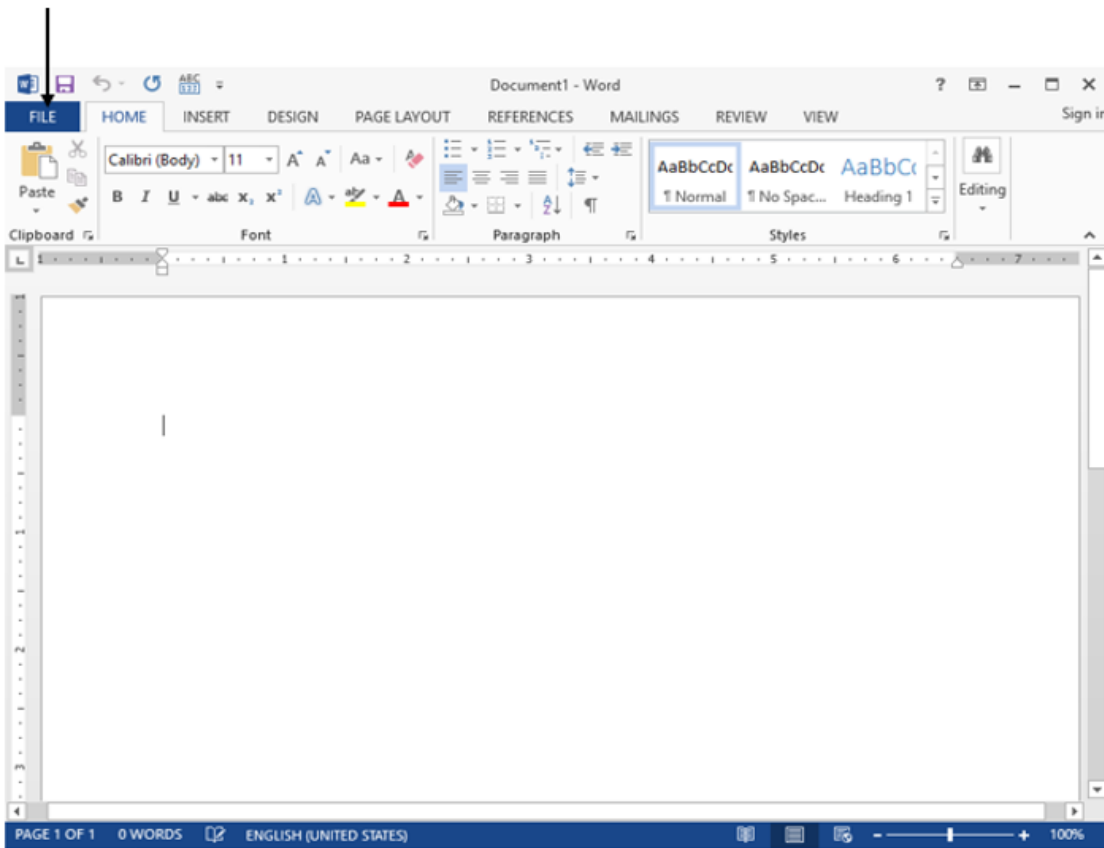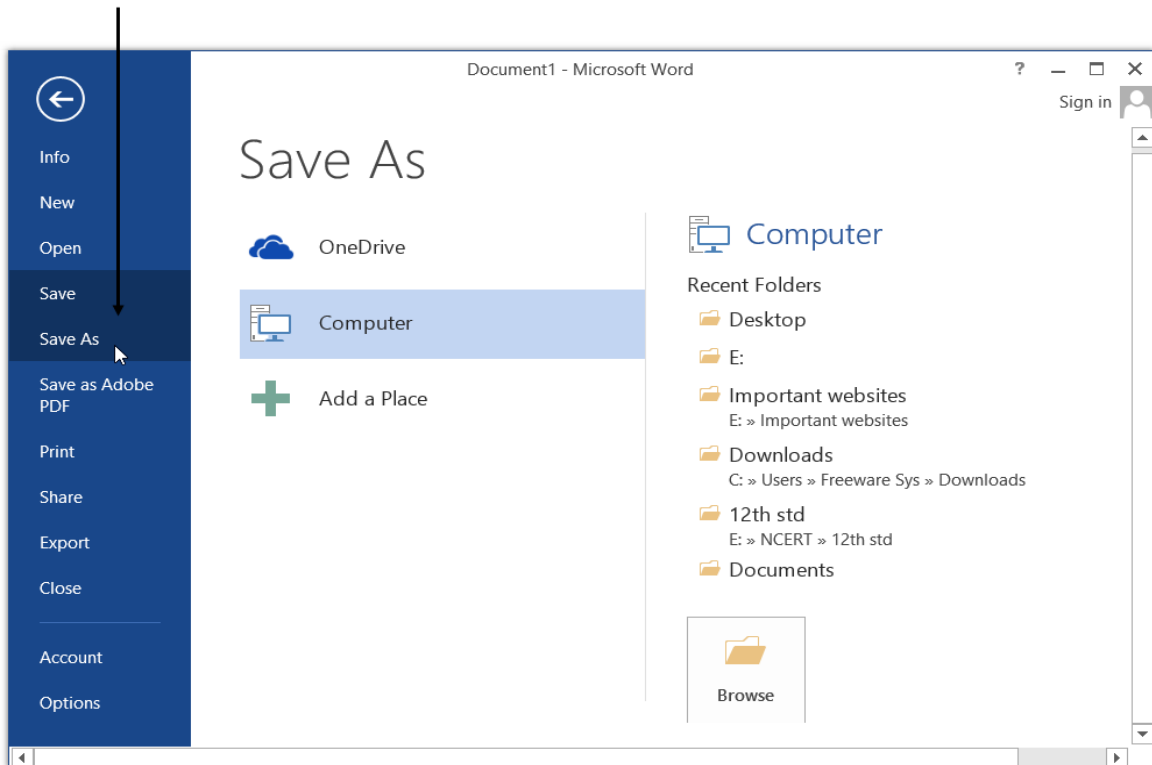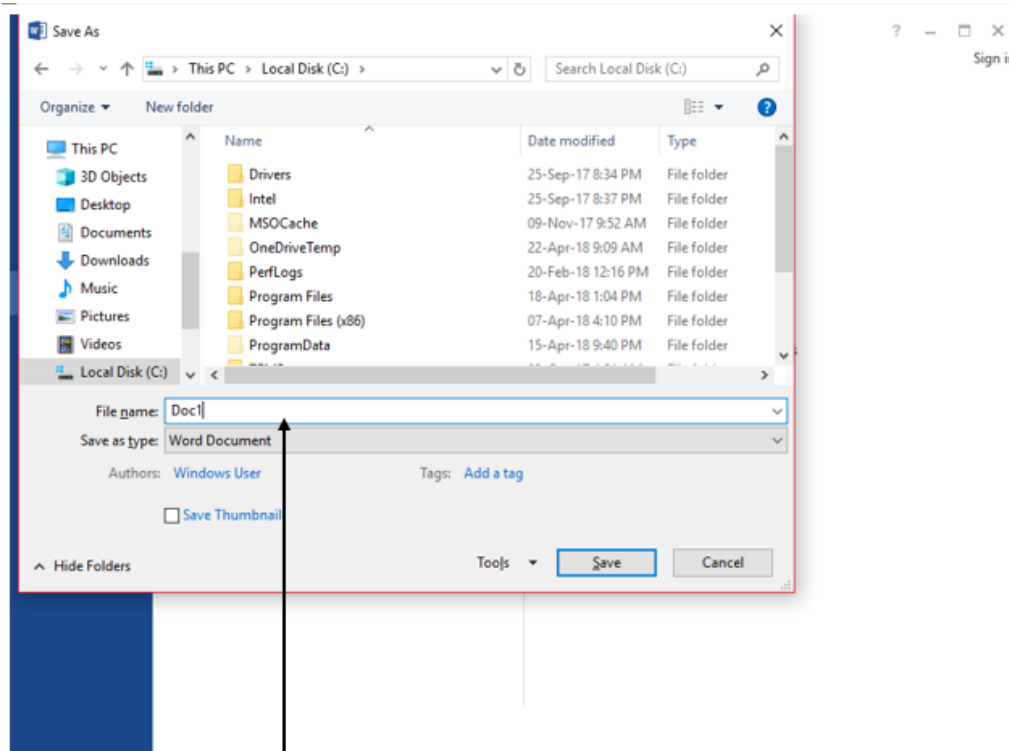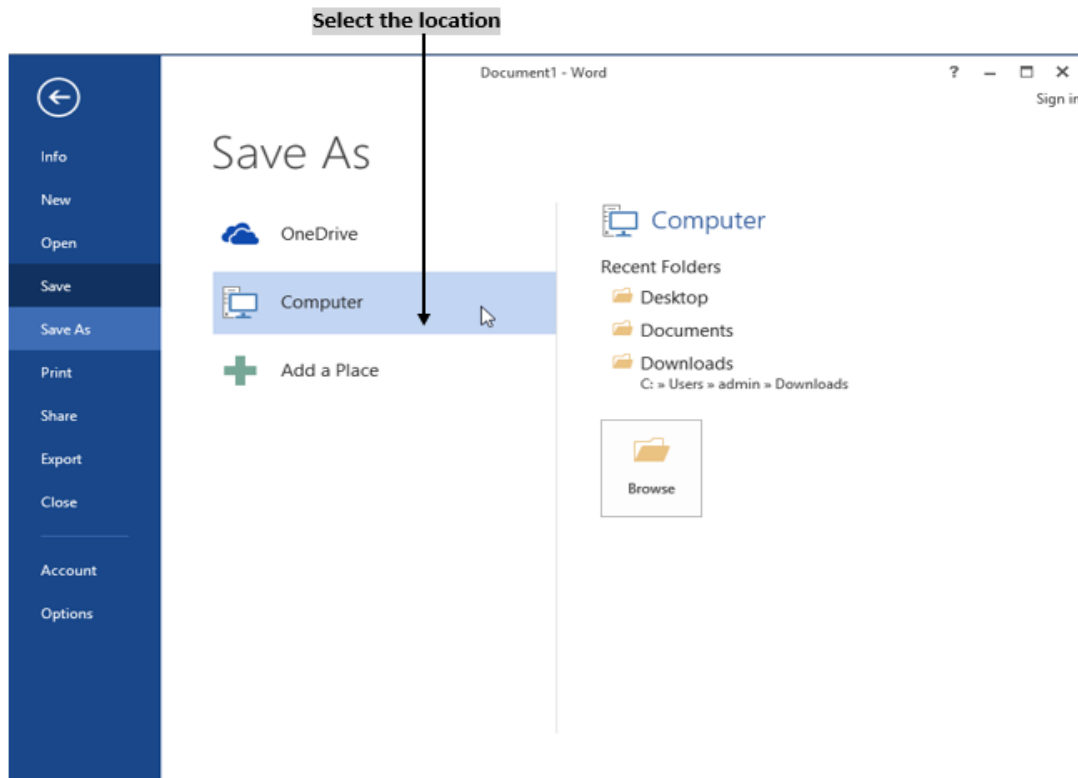
Enter the file name
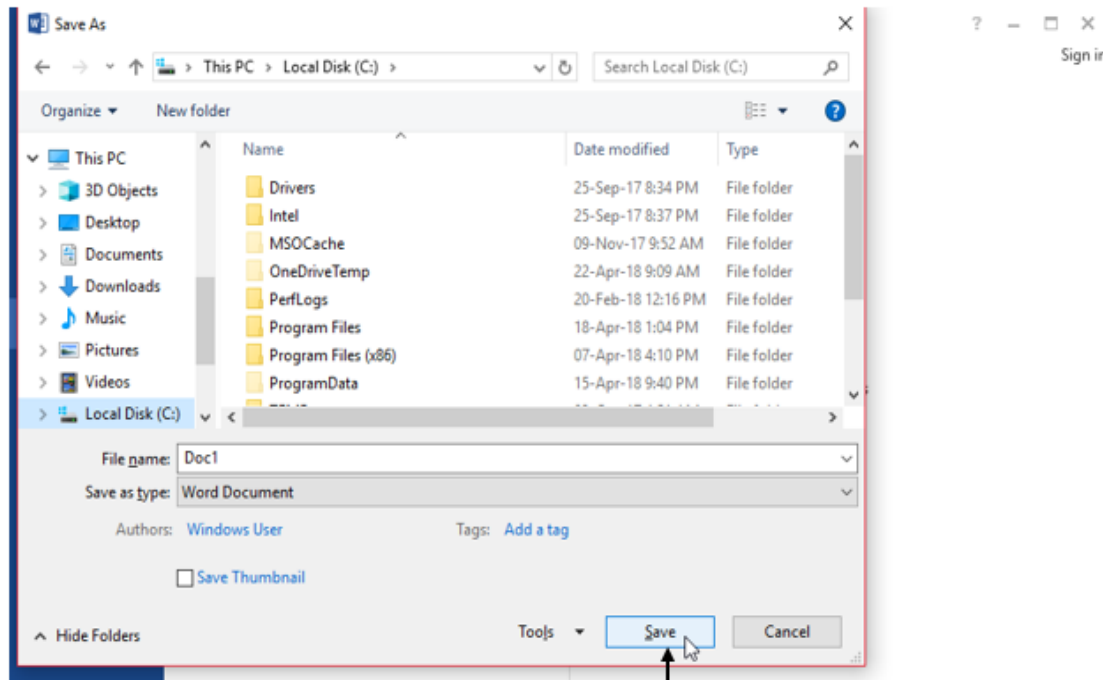
Page Setup

- Parameters defined by the user help in determining how a printed page will appear.
- Those parameters include everything from size, margins, page orientation, and quality of print. Page setup options are usually available in "**Page Layout**" menu.
- Unless you open an existing document, Word always opens a blank document using the present formatting defaults.
- You can use these defaults or customize the setting for features such as Margins, Paper Size, And Layout Through The Page Setup Option.
- To change settings, click page setup menu.
- Margins icon will be displayed in page setup window.
- Click on any of the up or down arrows to increase the top, bottom, left or right margins as per your requirement.
- You can also set the position of header and footer.
- To change the orientation of a page, choose either landscape or portrait.

- By clicking the respective icons, you can also make paper source and layout changes under layout, you can also set margins for headers and footers.

Page Setup menu
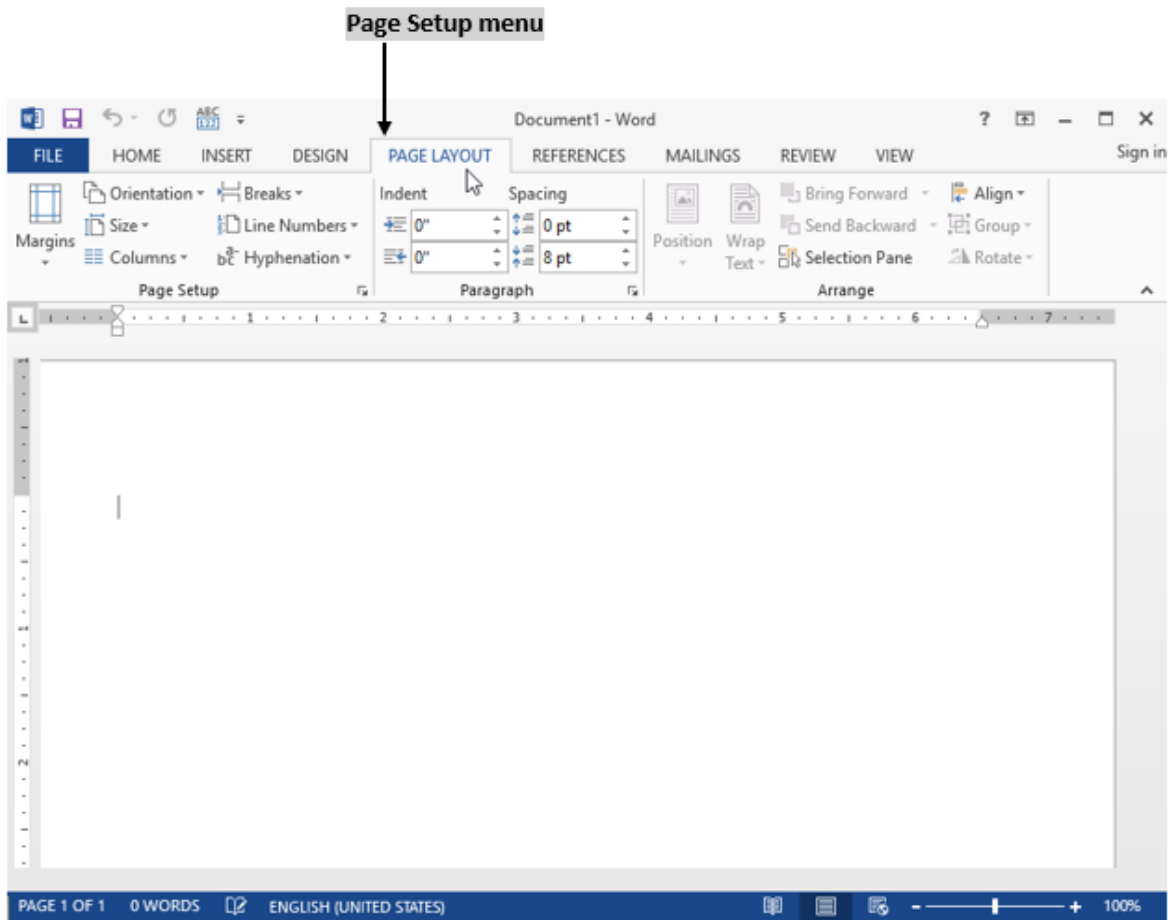
Print Preview

- This option is used to view the page or make adjustments before any document gets printed.
- By using print preview, you can discover any errors that may exist in the document or fix the layout before printing, which can save ink/toner and paper.
- For printing, you may specify the number of copies you want and the pages you want.
- Shortcut key for printing is "Alt + F and Press W and then V" or Ctrl + P.

Go to FILE
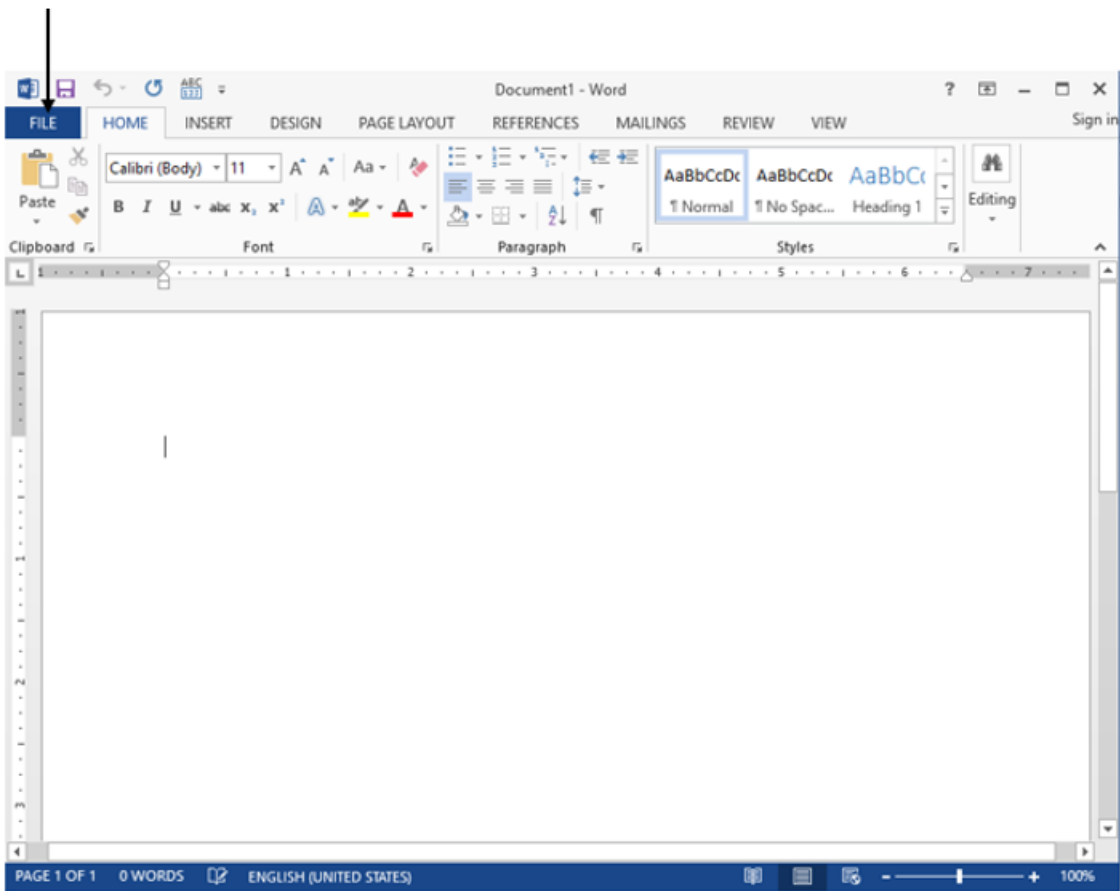
Select Print

Print preview
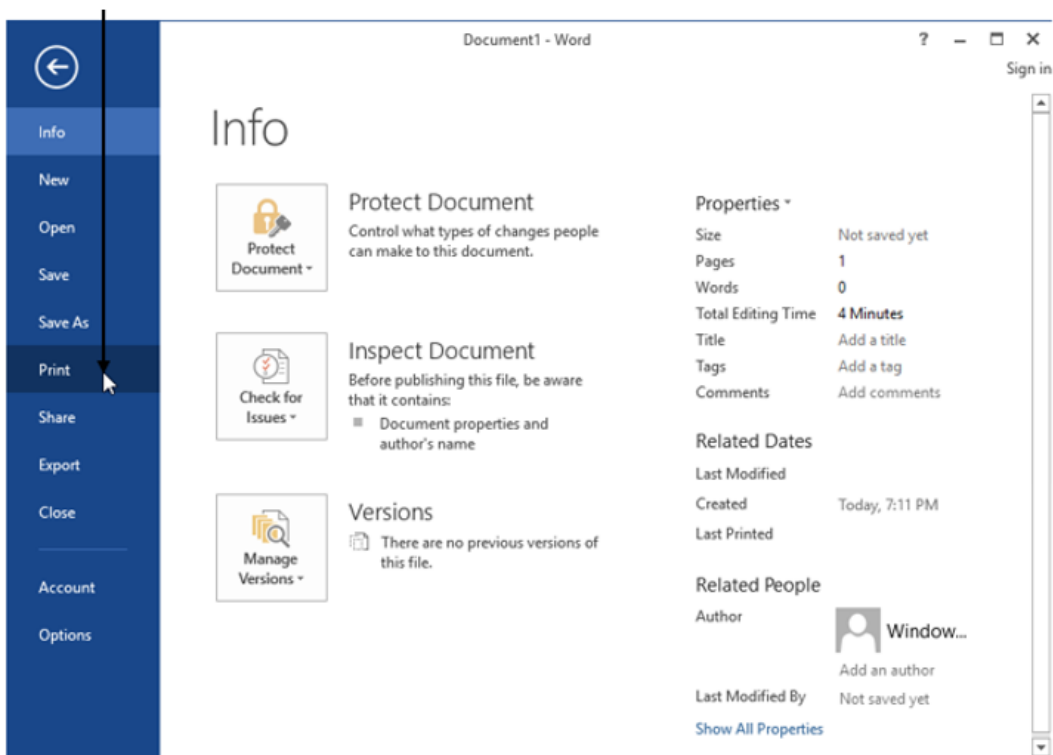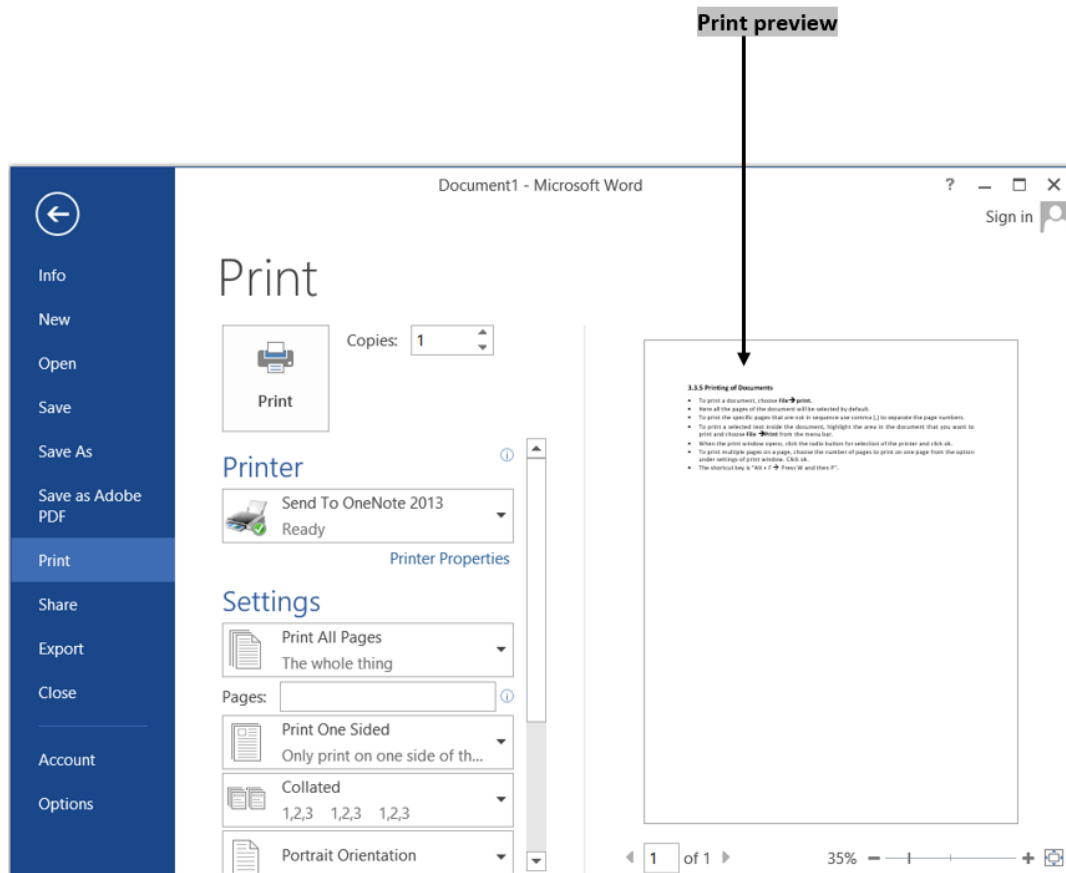
Printing of Documents

- To print a document, choose **File → print.**
- Here all the pages of a document will be selected by default.
- To print specific pages that are not in sequence, use comma (,) to separate page numbers.
- To print a selected text inside the document, highlight the area in document that you want to print and choose **File → Print** from menu bar.
- When print window opens, click on radio button to select printer and click ok.
- To print multiple pages on a page, choose the number of pages to print on one page from the 'Settings' of print window. Then click ok.
- Shortcut key is "Alt + F → Press W and then P".

Go to file
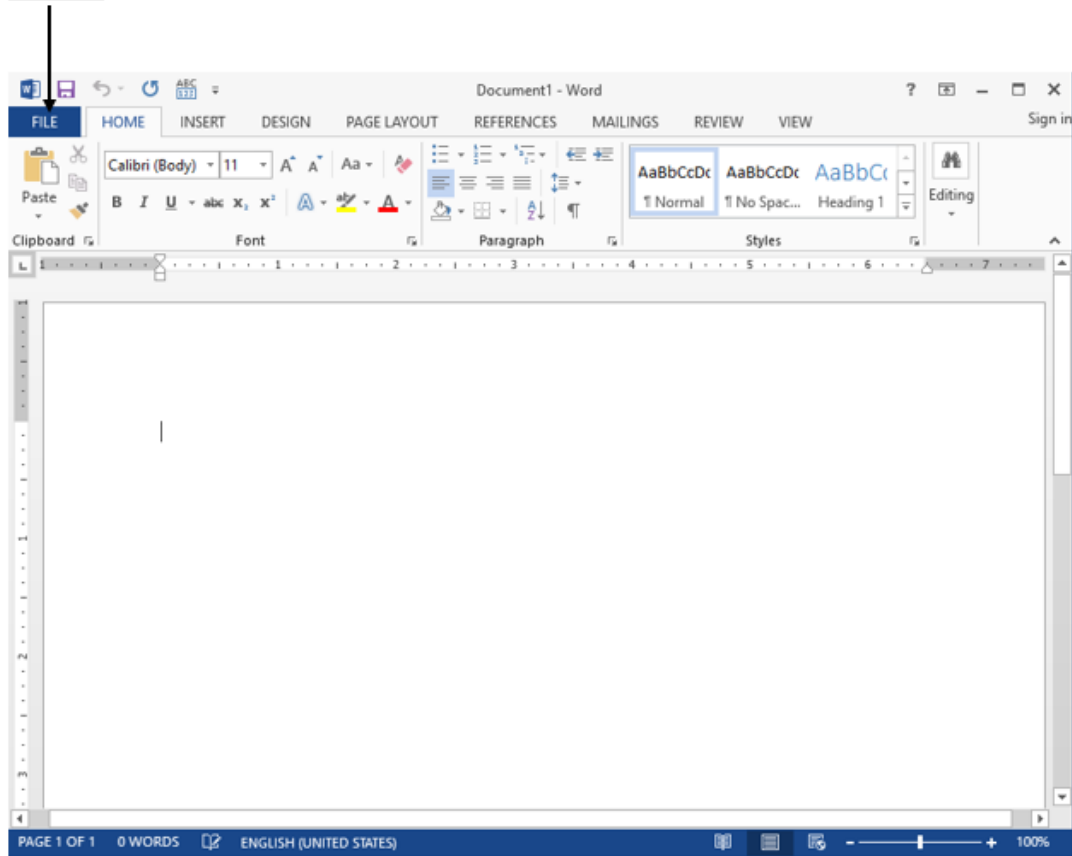
Select print

Click to print
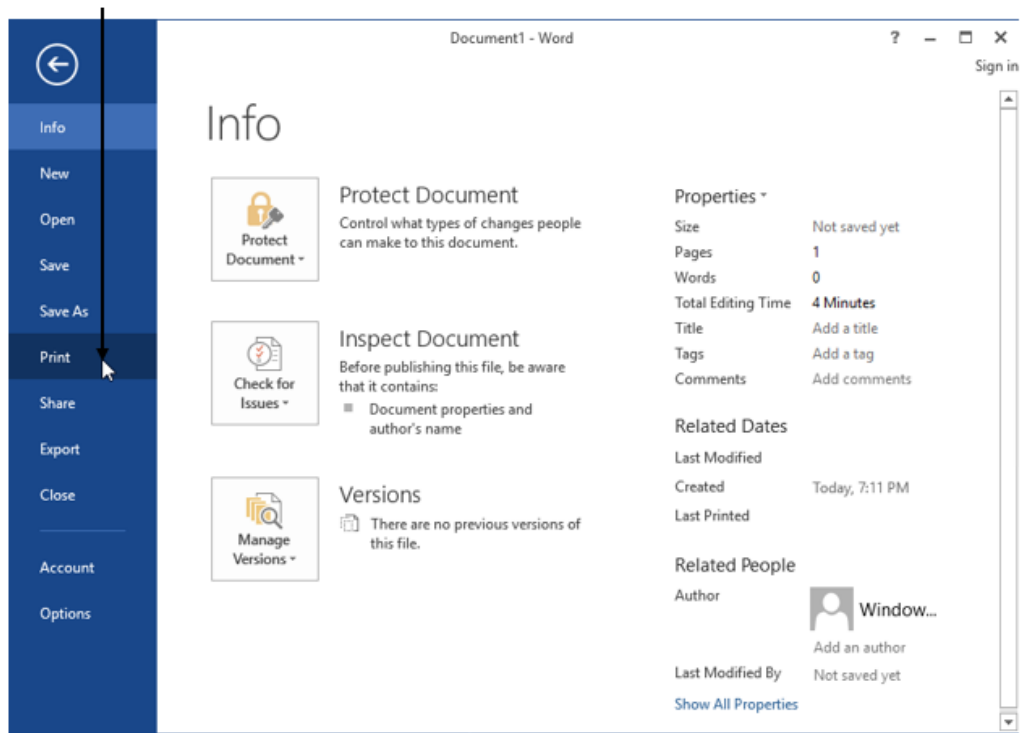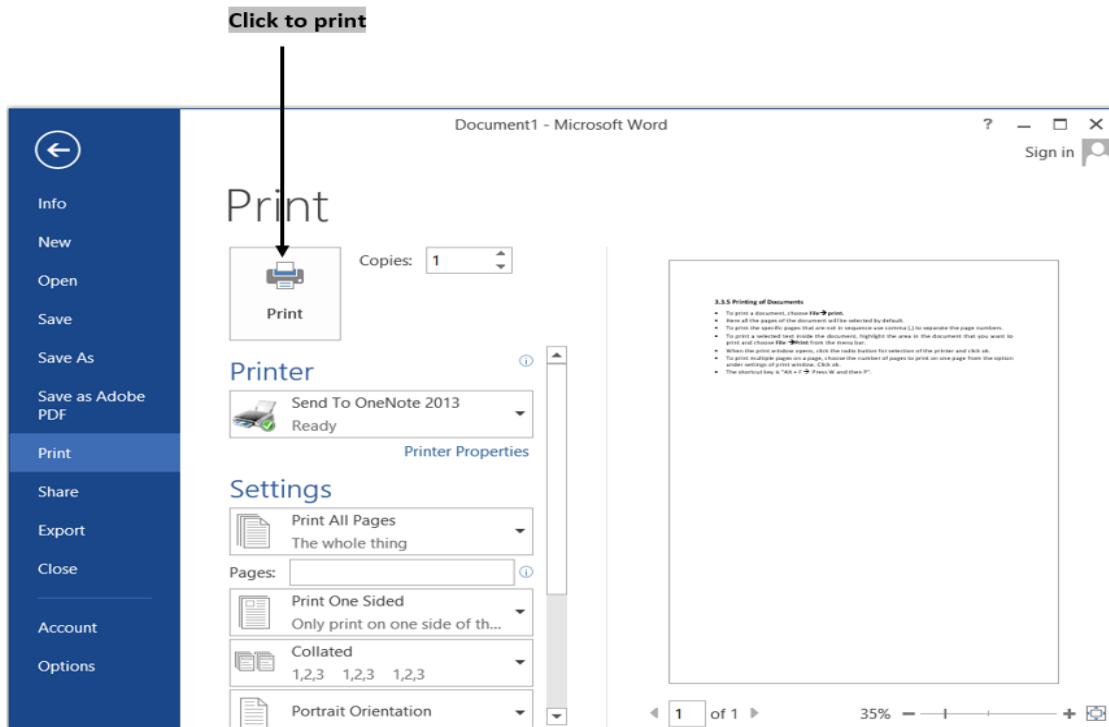
Text Creation and Manipulation

- There are several kinds of word documents, such as blank documents that starts from scratch, templates, web pages, reports, etc.
- A template is helpful in reusing format of a document.
- Manipulation of text includes cut, copy, paste, or moving text to any location.

Document Creation

- Click **start → All programs → Microsoft Office → Click Microsoft Office 2013 → Word 2013**. Word will open a blank document.
- Another way to create a document is to choose **File → New** from the menu bar and select the document type. **Press Ctrl + N** on the keyboard. This menu allows you to open a blank document, a template or an existing document.
- To enter text in blank document, just start typing. The blinking I-Beam (Cursor), positioned at the top of window, will show exactly where your text begins. As you type, word will automatically wrap text to the next line. If you have finished typing on a line and would like to move to the next blank line, press enter.
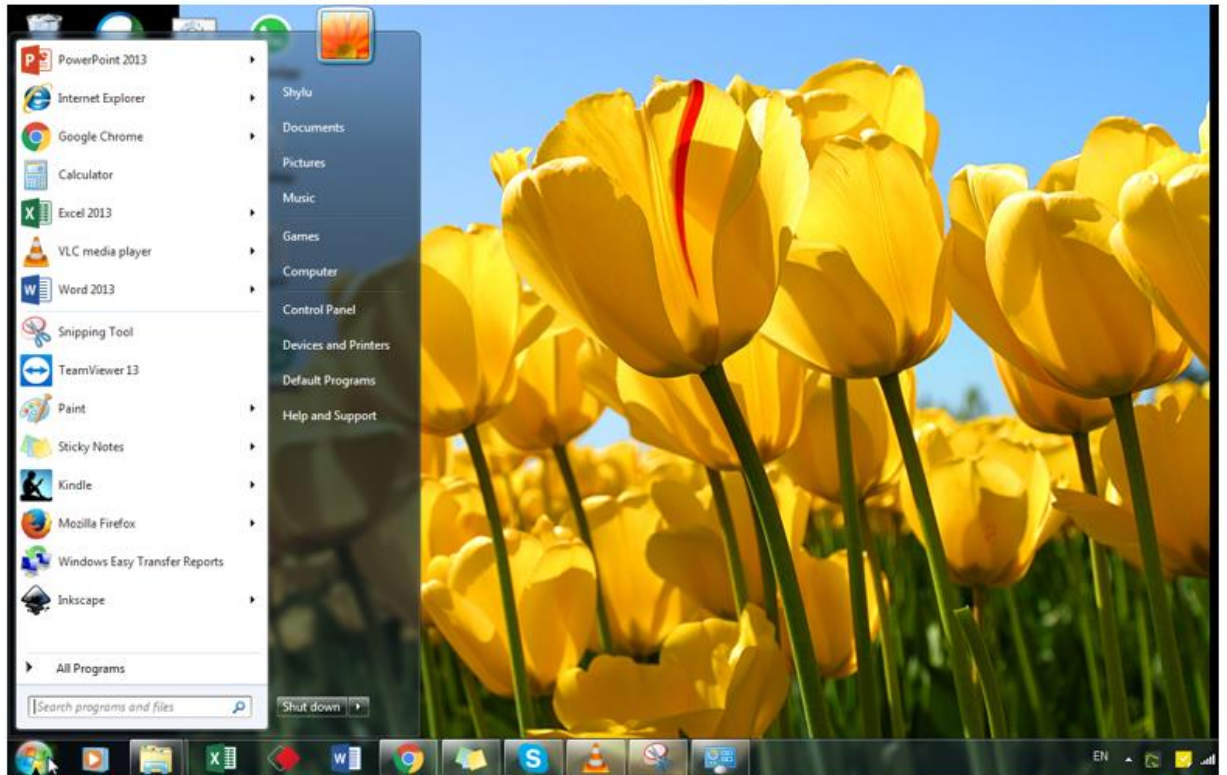
Click Start button
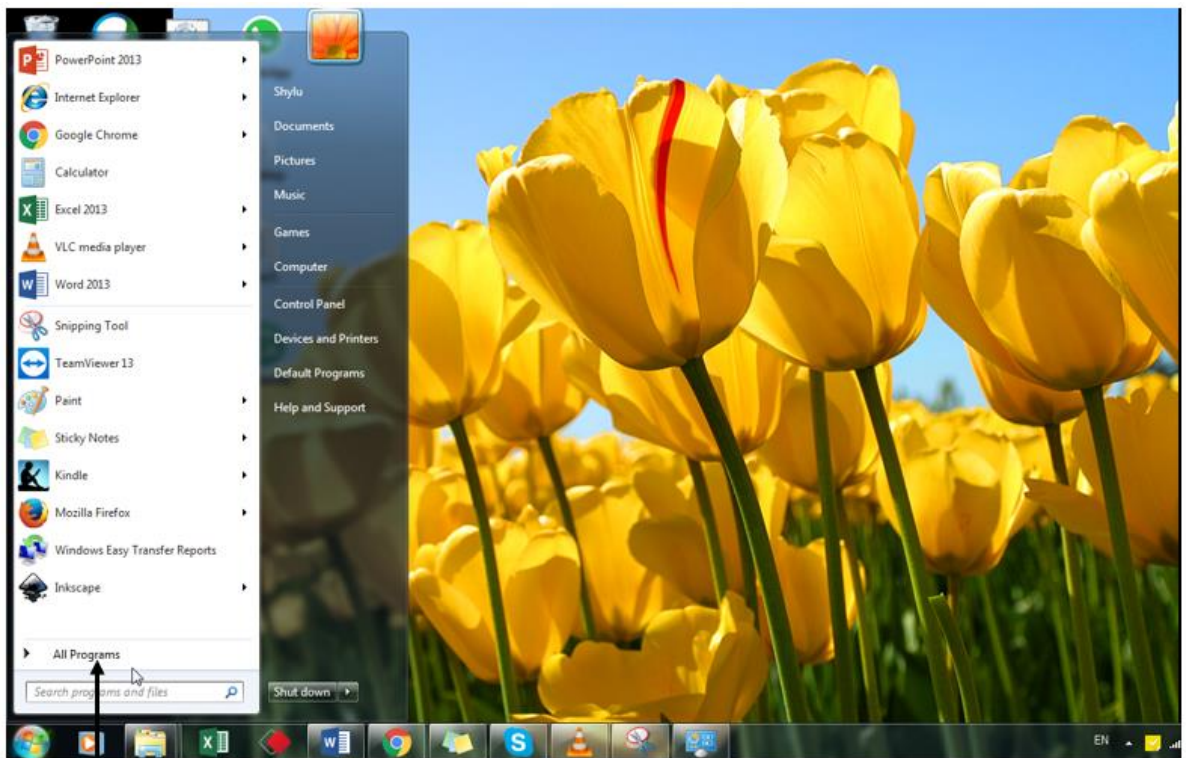
Go to All programs

Go to Microsoft Office 2013

Go to file
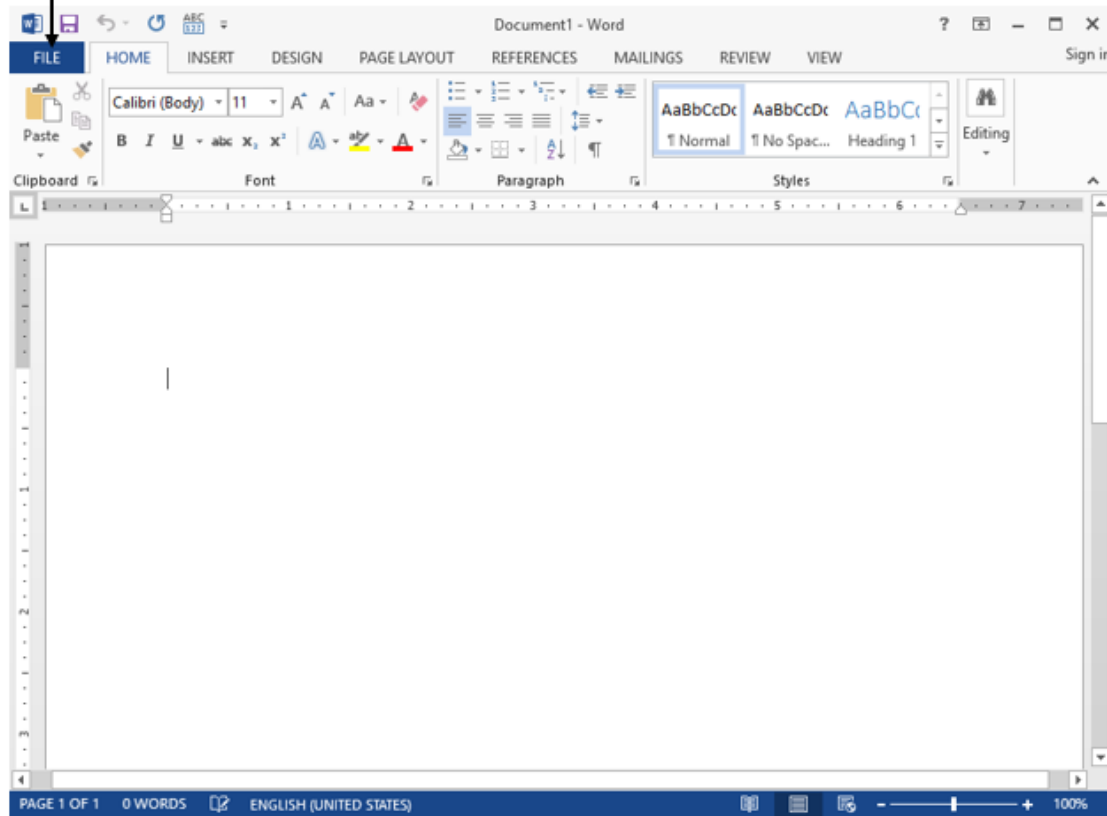
Select new
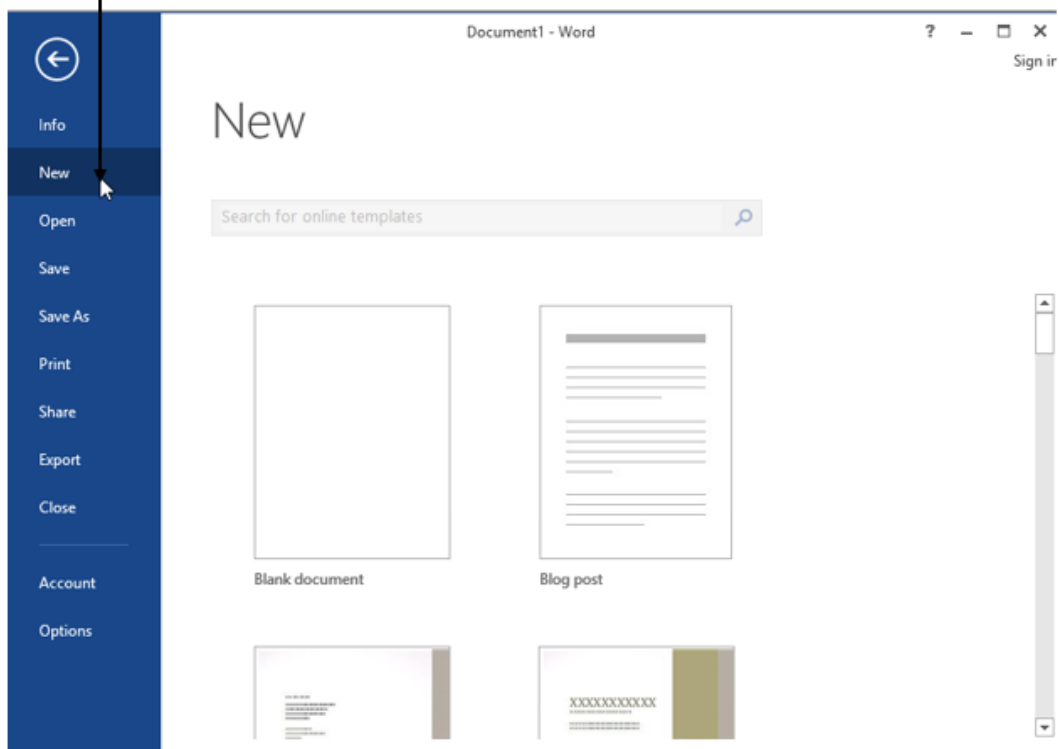
Select blank document
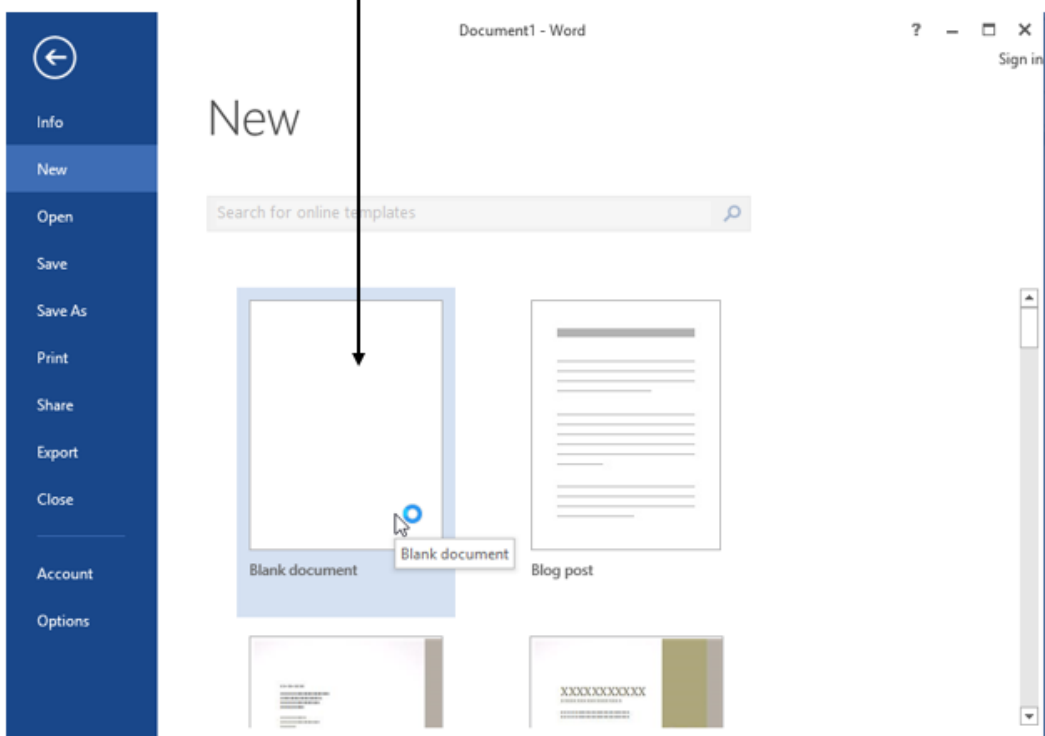
Editing Text

- Modifying existing text in an old document or entering new text in an existing document is known as editing of the text.
- Editing text can be done by three options: "Find", "Replace", "Select".
    1. **Find** → To find a word in a document.
    2. **Replace** → To replace existing word with a new word.
    3. **Select** → To select a word or sentence.

Select find
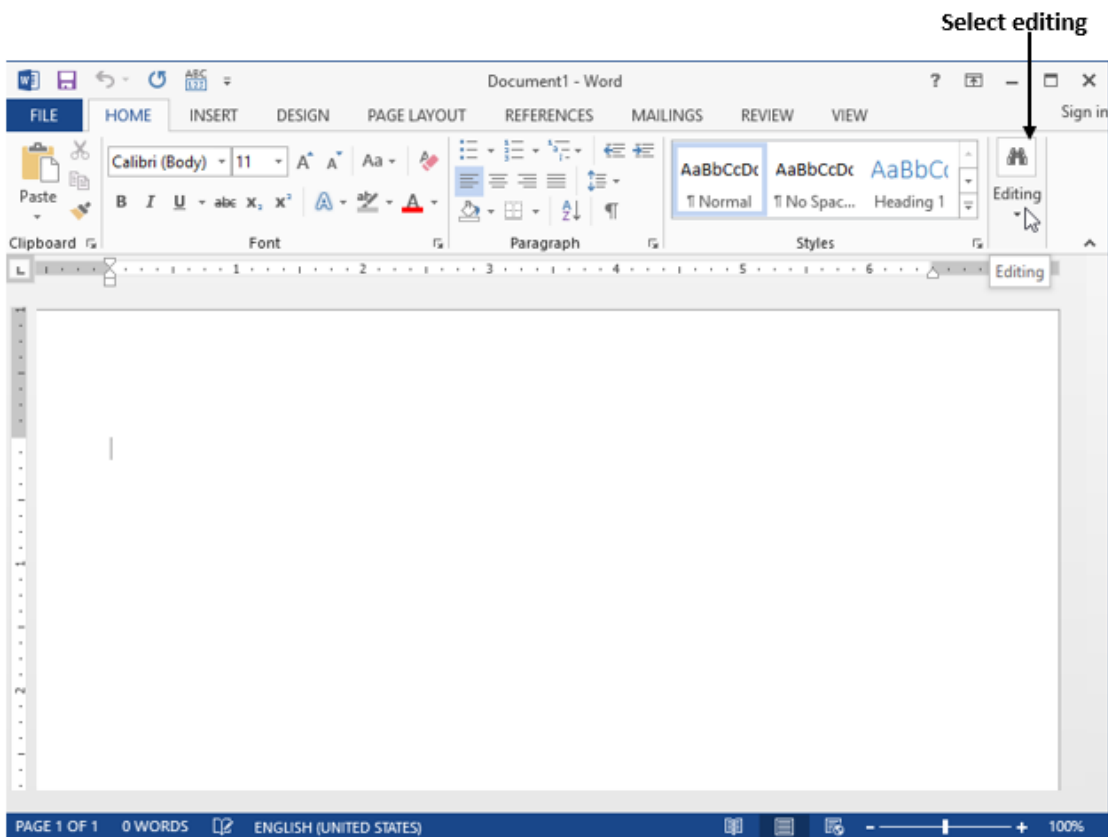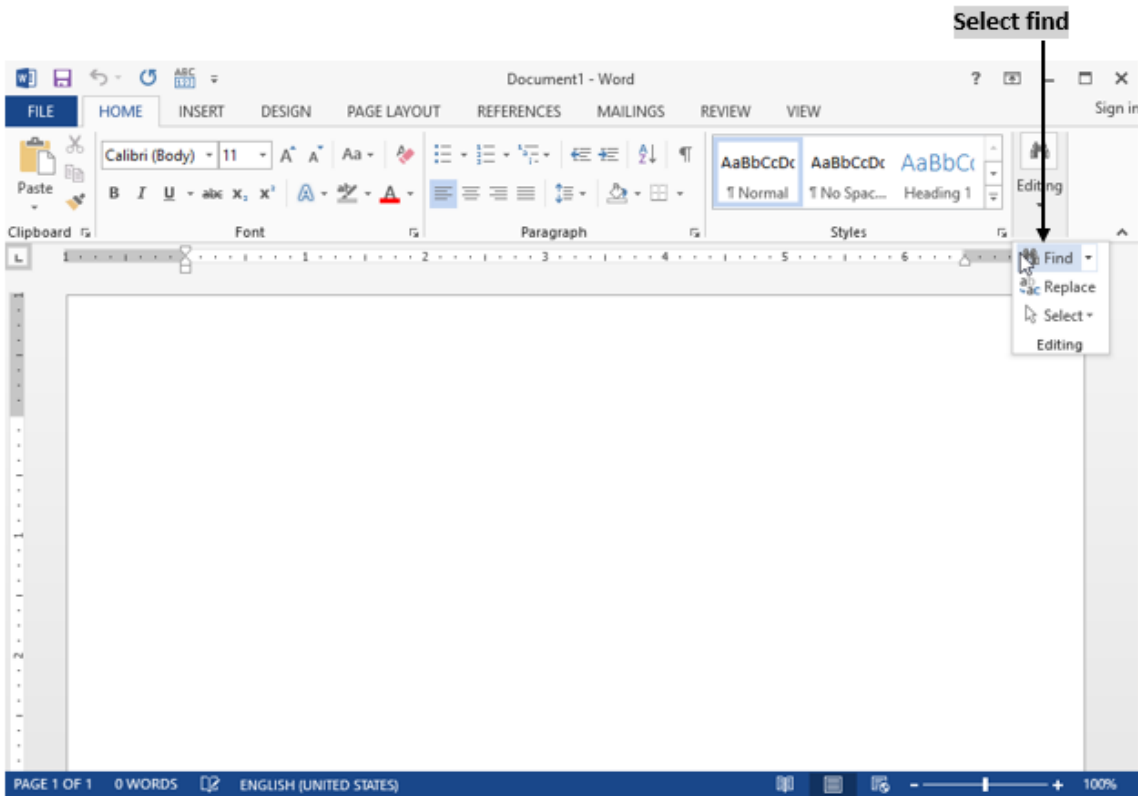
Enter the phrase to be searched

tutorialspoint
SIMPLYEASYLEARNING
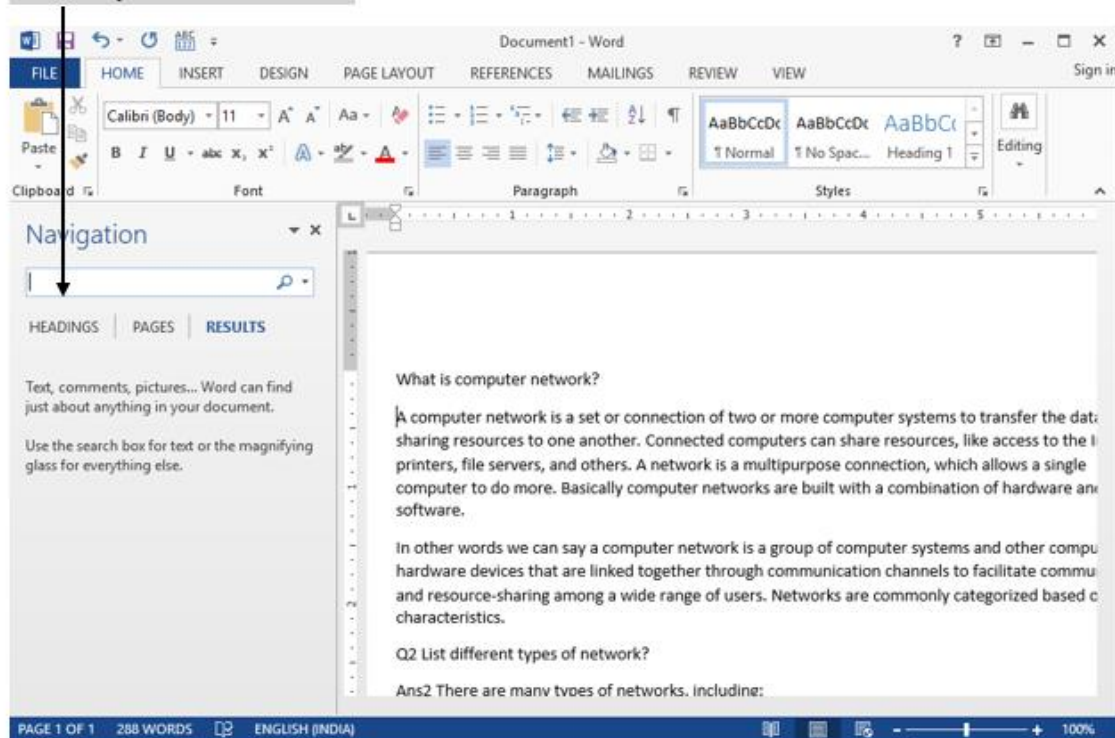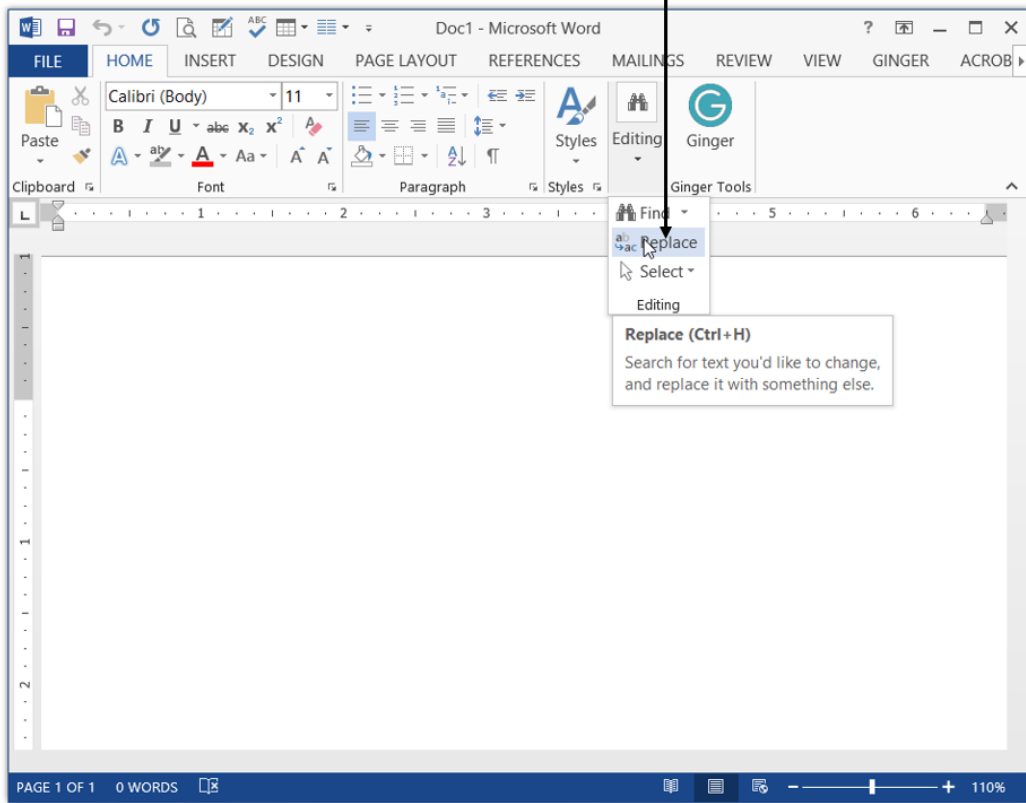
Select Replace

Replace one name to another name
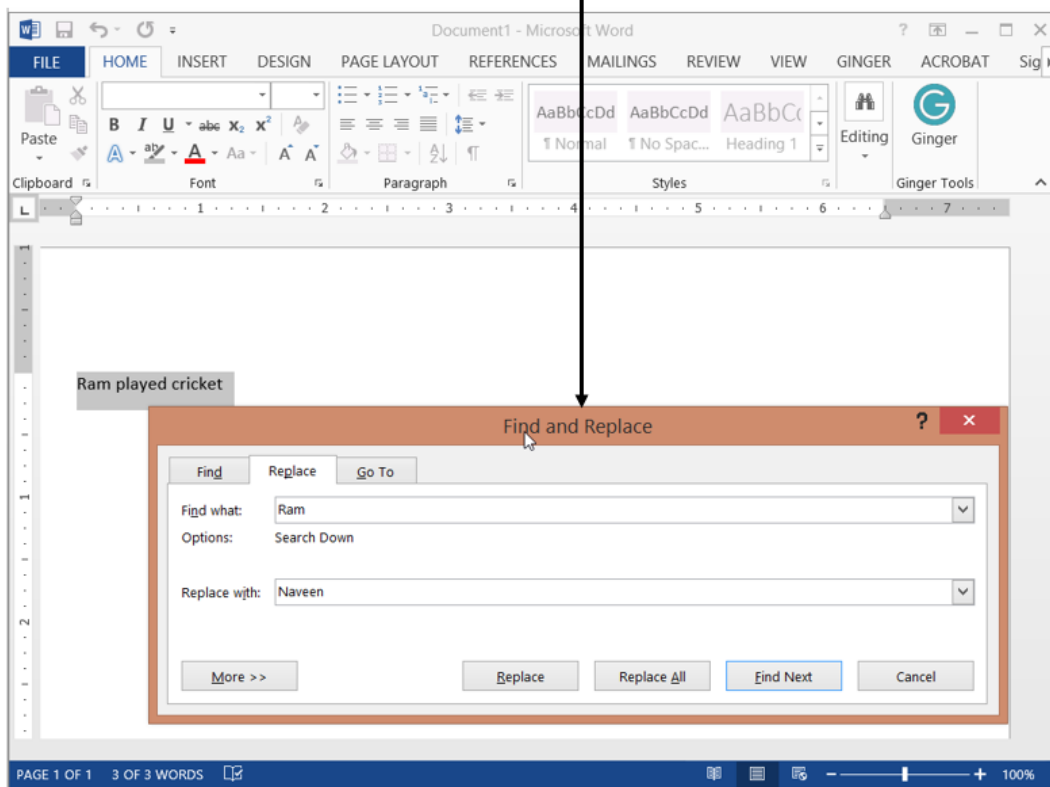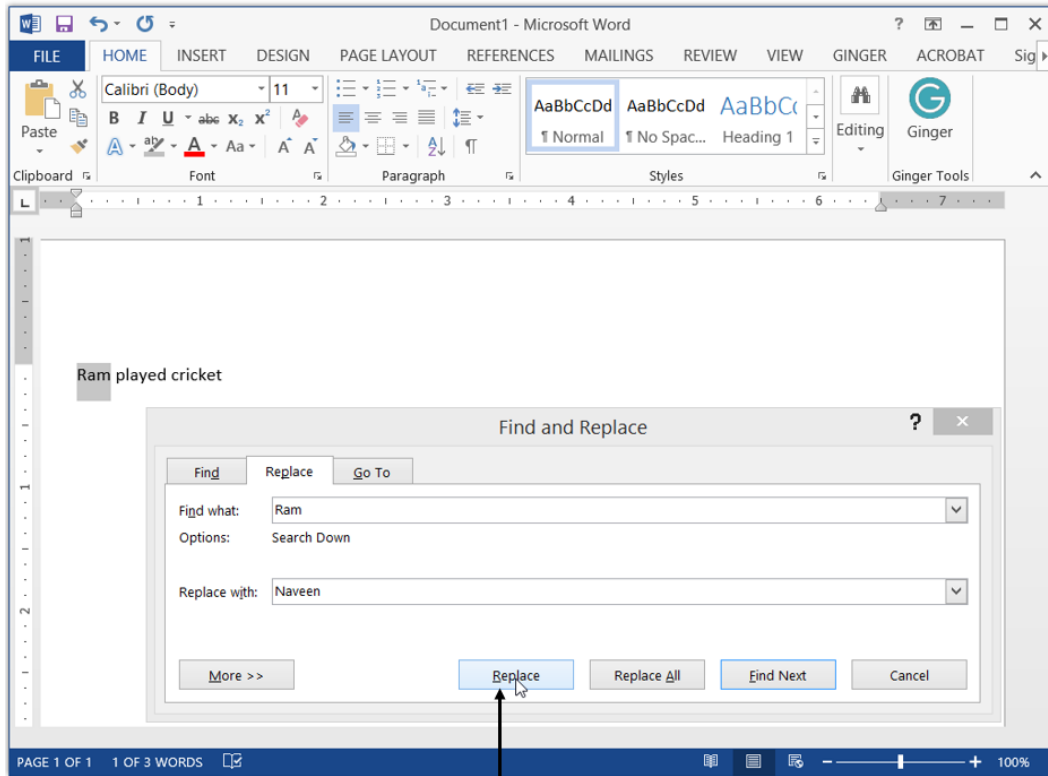
Click to Replace

Ram is replaced by Naveen

Click to Select
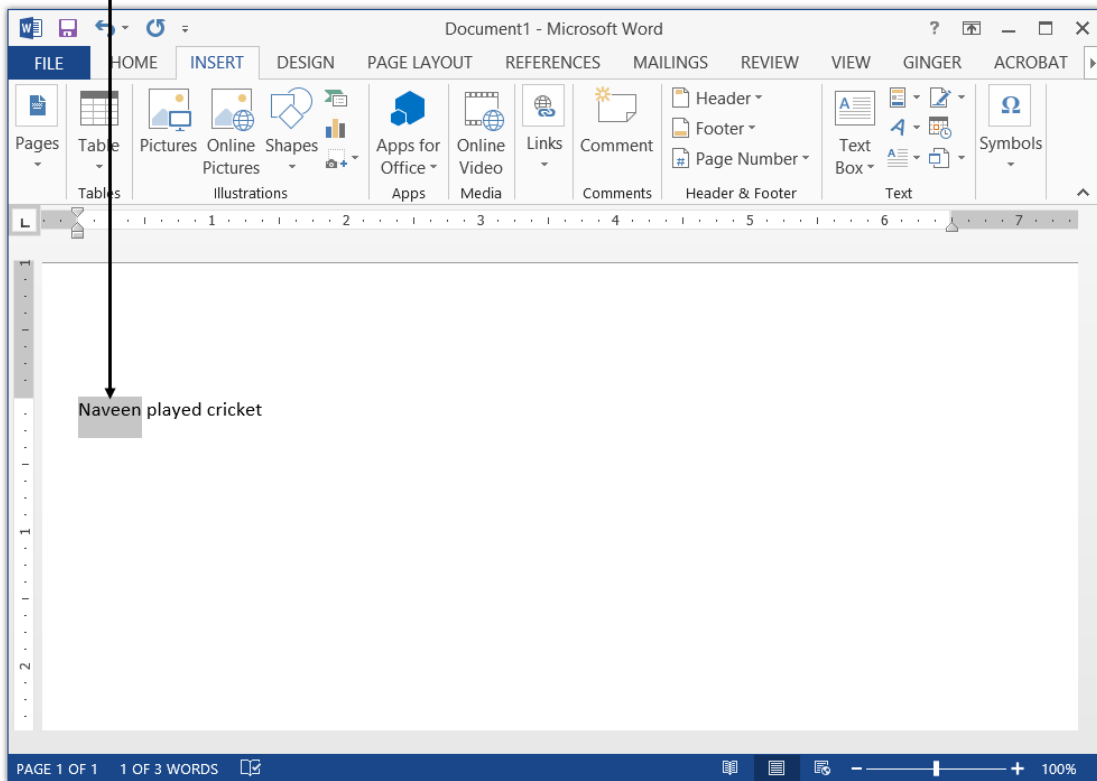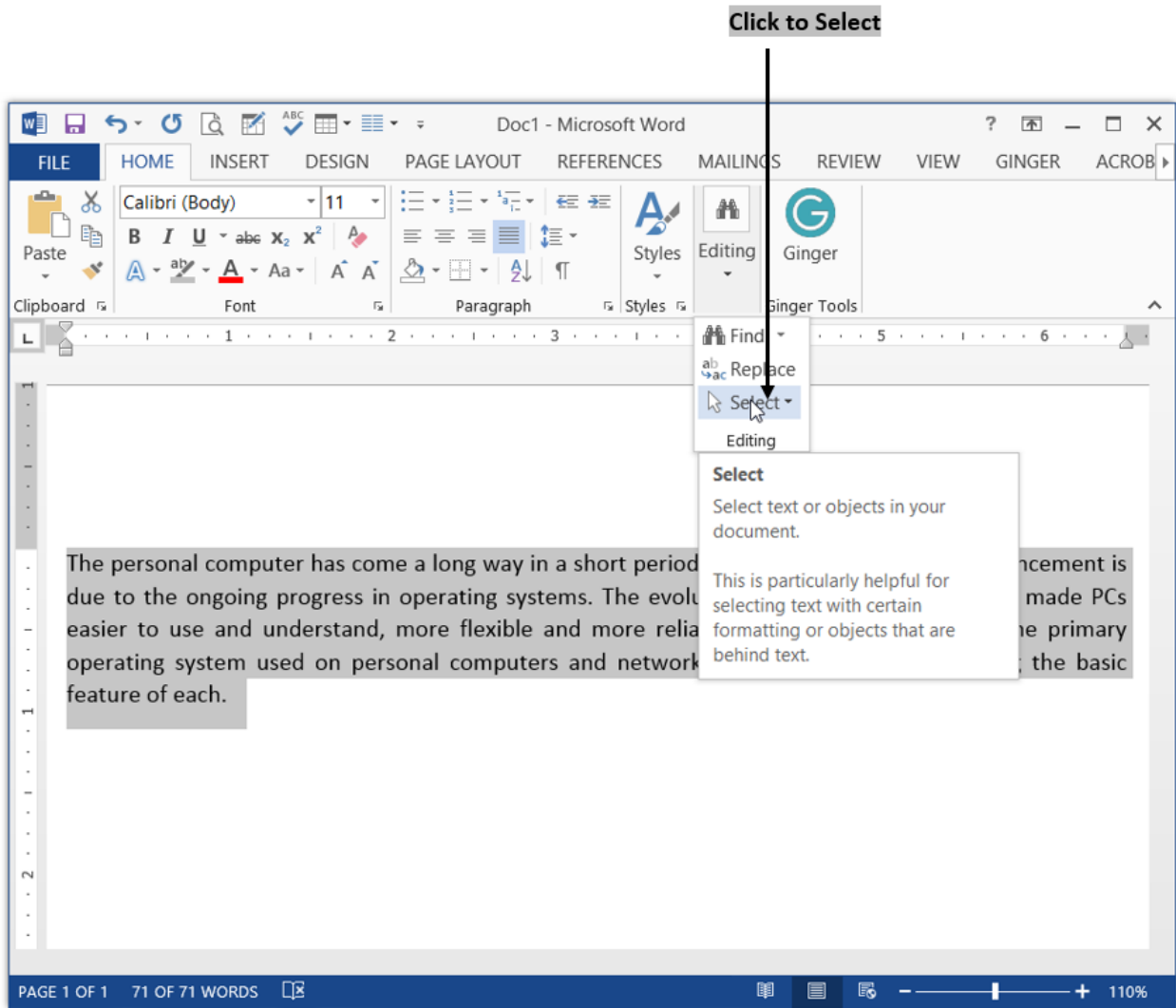
Text Selection

- Document is built up by typing one character at a time. While editing and formatting, words, lines, paragraphs, or sometimes the whole document can be selected.
- Once a part of text in a document is selected, changes can be made to that text.
- The selected text can be moved, copied and changed to italic, bold or underline.
- Font and color of the text can also be changed.
- Both mouse and keyboard can be used to select the text.
- Using mouse, text can be selected by either double-clicking or by clicking and dragging.
- Using keyboard, text can be selected by pressing the shift key + arrow keys.
- To select the entire page, use shortcut, **"Ctrl + A".**
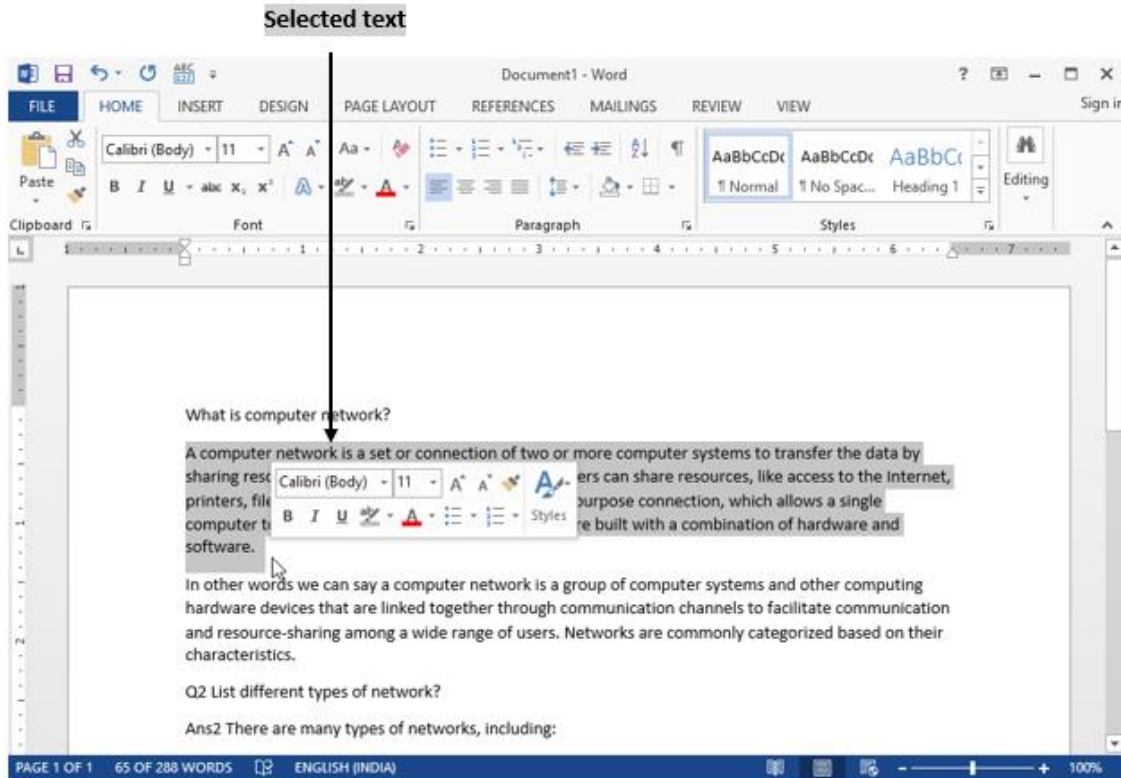
Cut, Copy and Paste

In this section, we shall learn how to use cut, copy and paste functions in Word.

Cut

- Deleting unnecessary data from a document is called cutting.
- In Microsoft Word, you can cut text from one area of a document and paste that text anywhere in the document.
- After you cut the text, it gets stored in the clipboard.
- If you want to cut any text or word from a document, it is advisable to highlight the word first.
- To cut, **Right Click→Cut**.
- The shortcut key is **"Ctrl + X".**

Select the text

Right click and select cut

tutorialspoint
SIMPLYEASYLEARNING
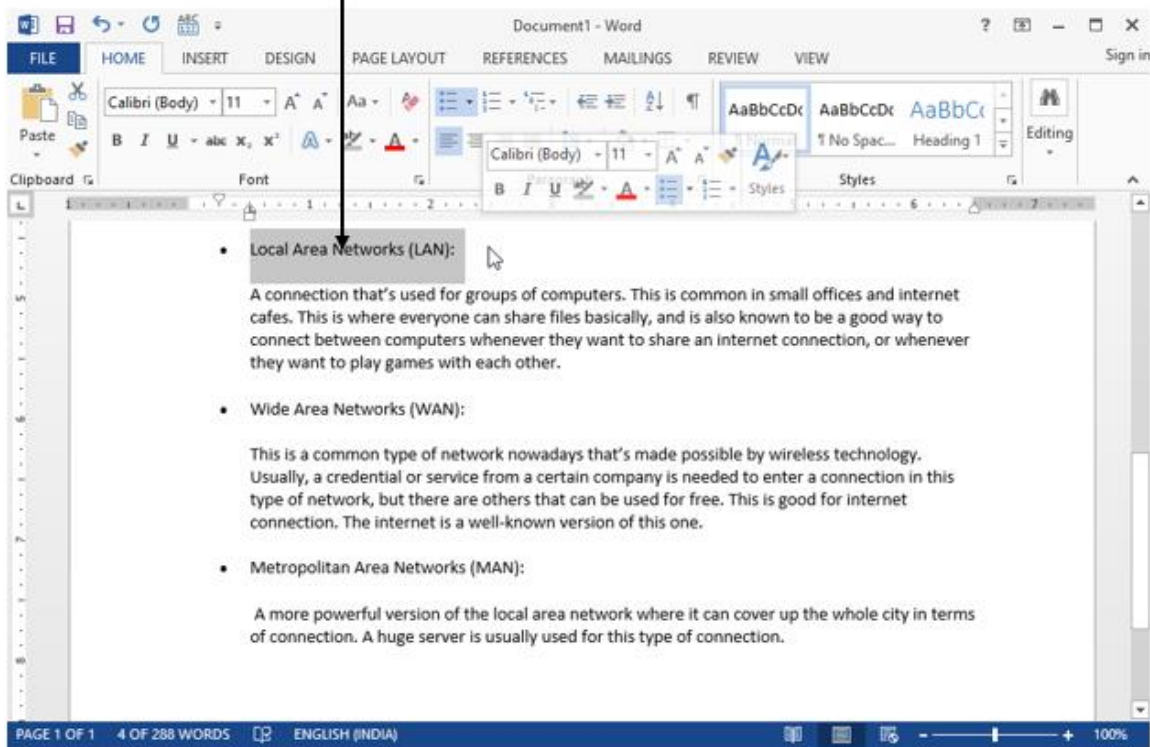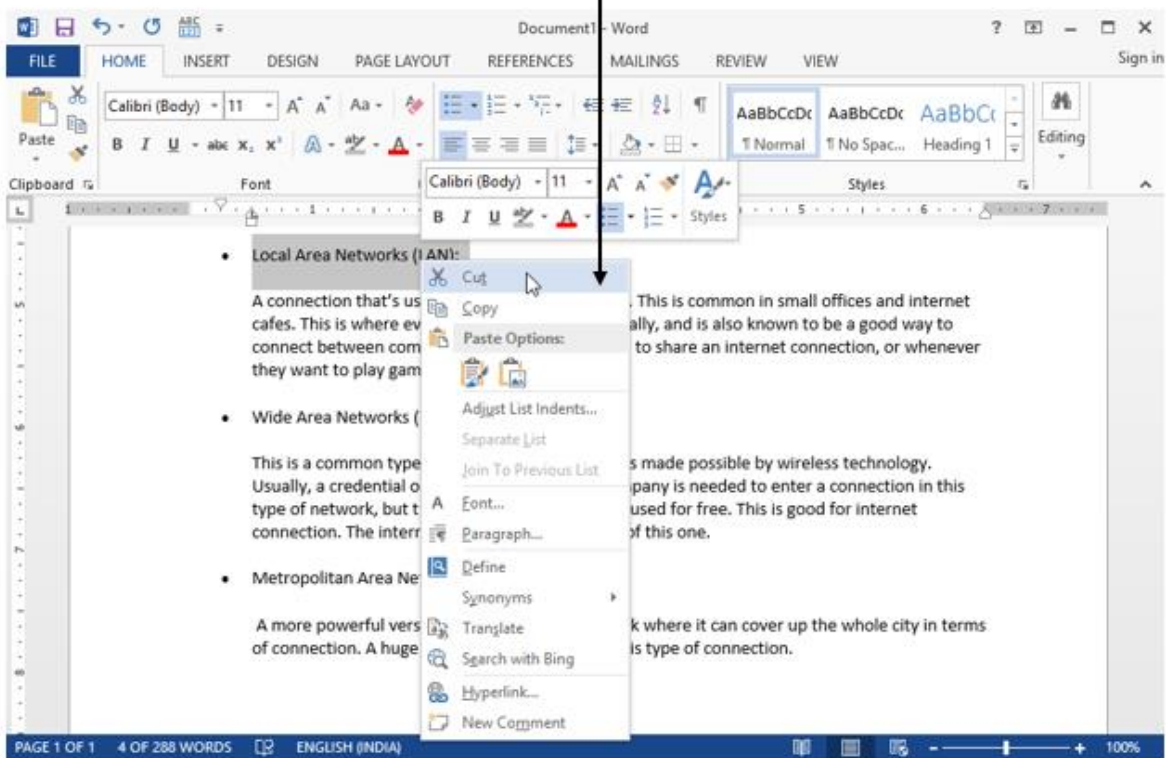
Copy

- **Copy** option can be used when we need to retype the same text as it reduces time and effort.
- By using copy option, you can copy the text from one location to another.
- Information stored on the clipboard stays there until new information is either cut or copied.
- Each time you use cut or copy, you replace the old information on the clipboard with the information you just cut or copied.
- To copy, **Right Click → Copy**.
- The shortcut key is "**Ctrl + C".**

Right click and select copy
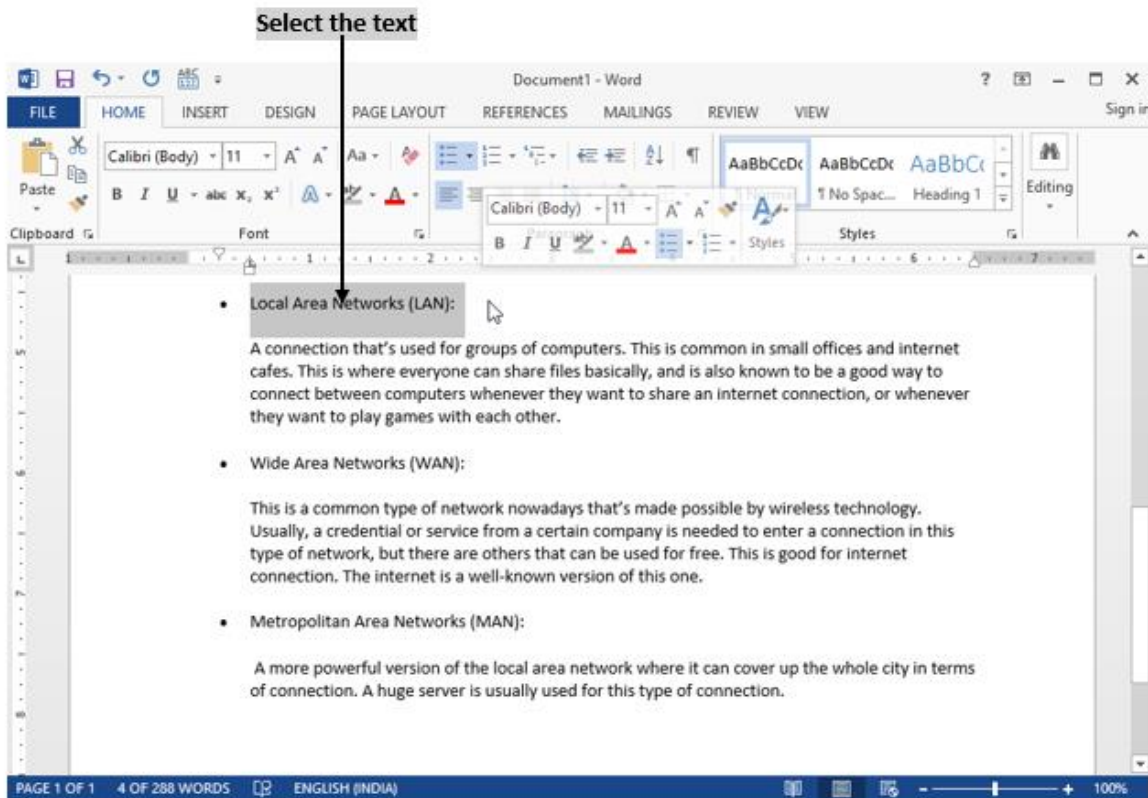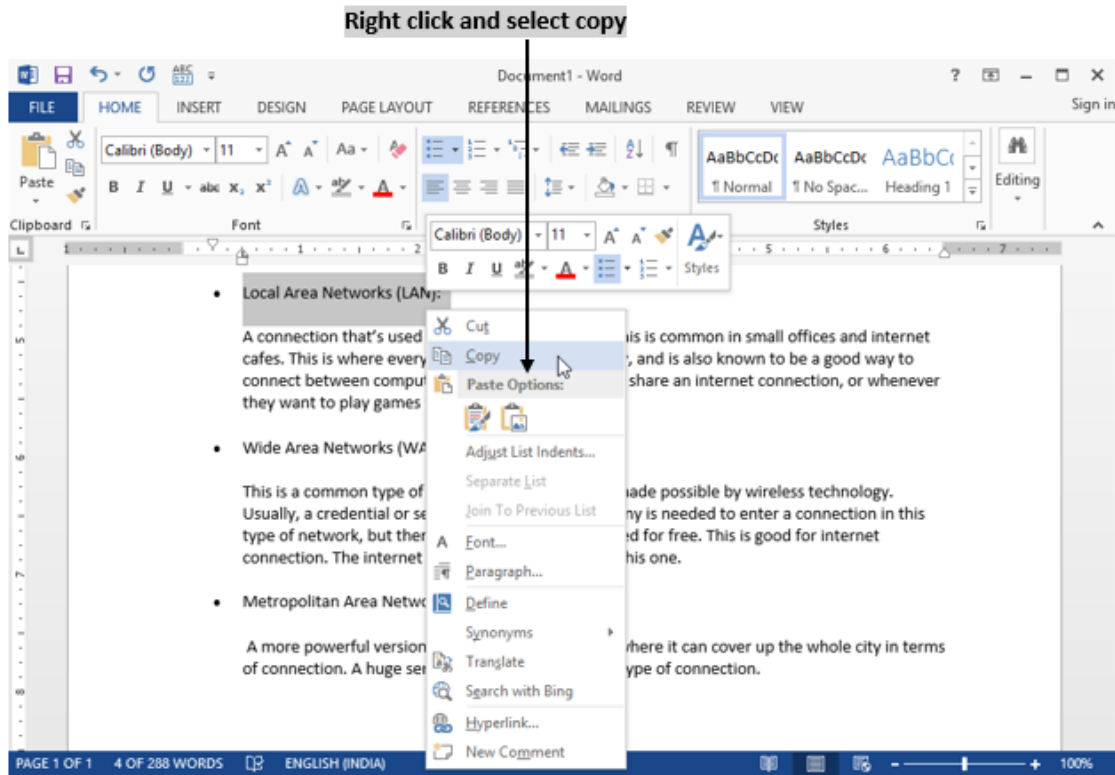
Paste

- Select your text and then copy it..
- Use mouse to move the cursor to desired position to paste the copied text.
- Click paste to insert the copied text in its new place.
- You can paste clipboard information as often as you like.
- To paste, **Right Click→ Paste**.
- The shortcut key is "**Ctrl + V".**

Select paste
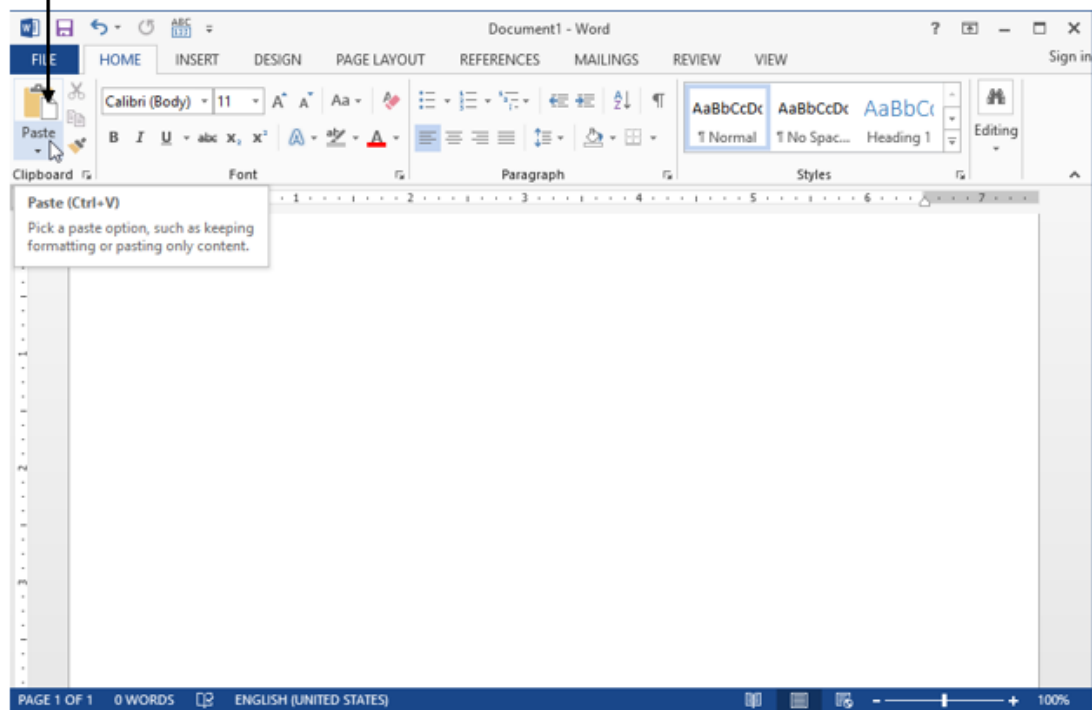
Font and Size selection

- To change size of font in the file or document, first select the text you want to change.
- If you want to select all the text from document, click **"Ctrl + A"**
- From home menu, click font size option.
- You can also change style of the font using "**Font Style**" feature.

Right click and select font
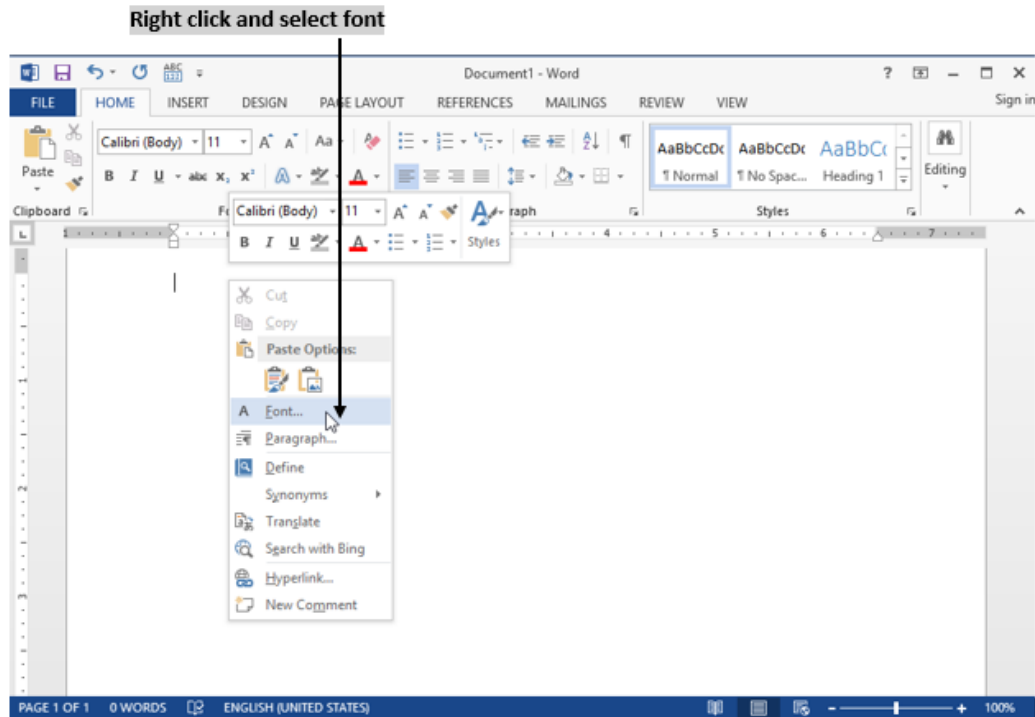
Alignment of Text

- You can align text to Left, Right, Center and Justify.
- By default, the content always appears to the left side of document.
- Alignment can be done by using mouse or keyboard shortcuts.
- For center alignment, click to "center align" icon or use shortcut key "**Ctrl + E**".
- For right alignment, click to "right align" icon or use shortcut key "**Ctrl + R**".
- For left alignment, click to "left align" icon or use shortcut key "**Ctrl + L**"
- If you click on "justify" it will align with respect to both left and right margins. The shortcut key used here is "**Ctrl + J**".

Center alignment
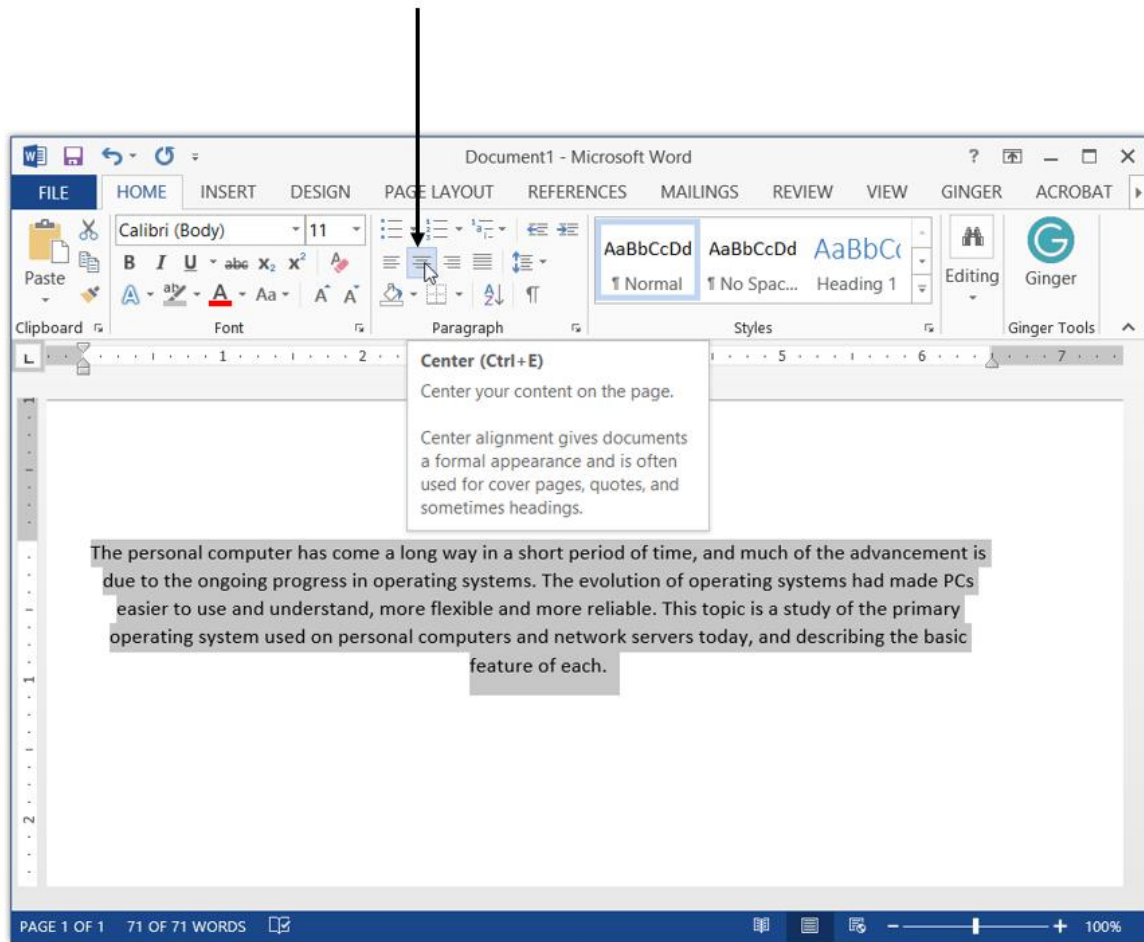
Right alignment
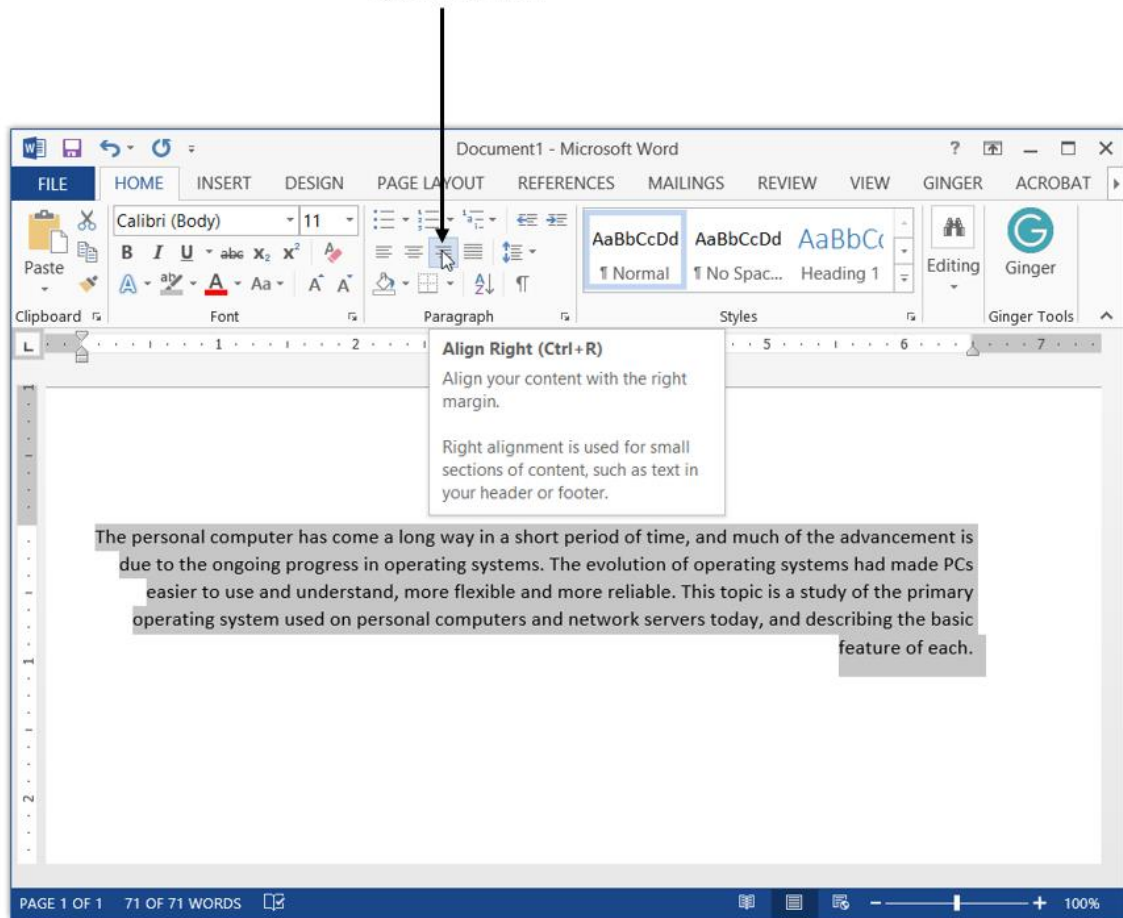
Left alignment
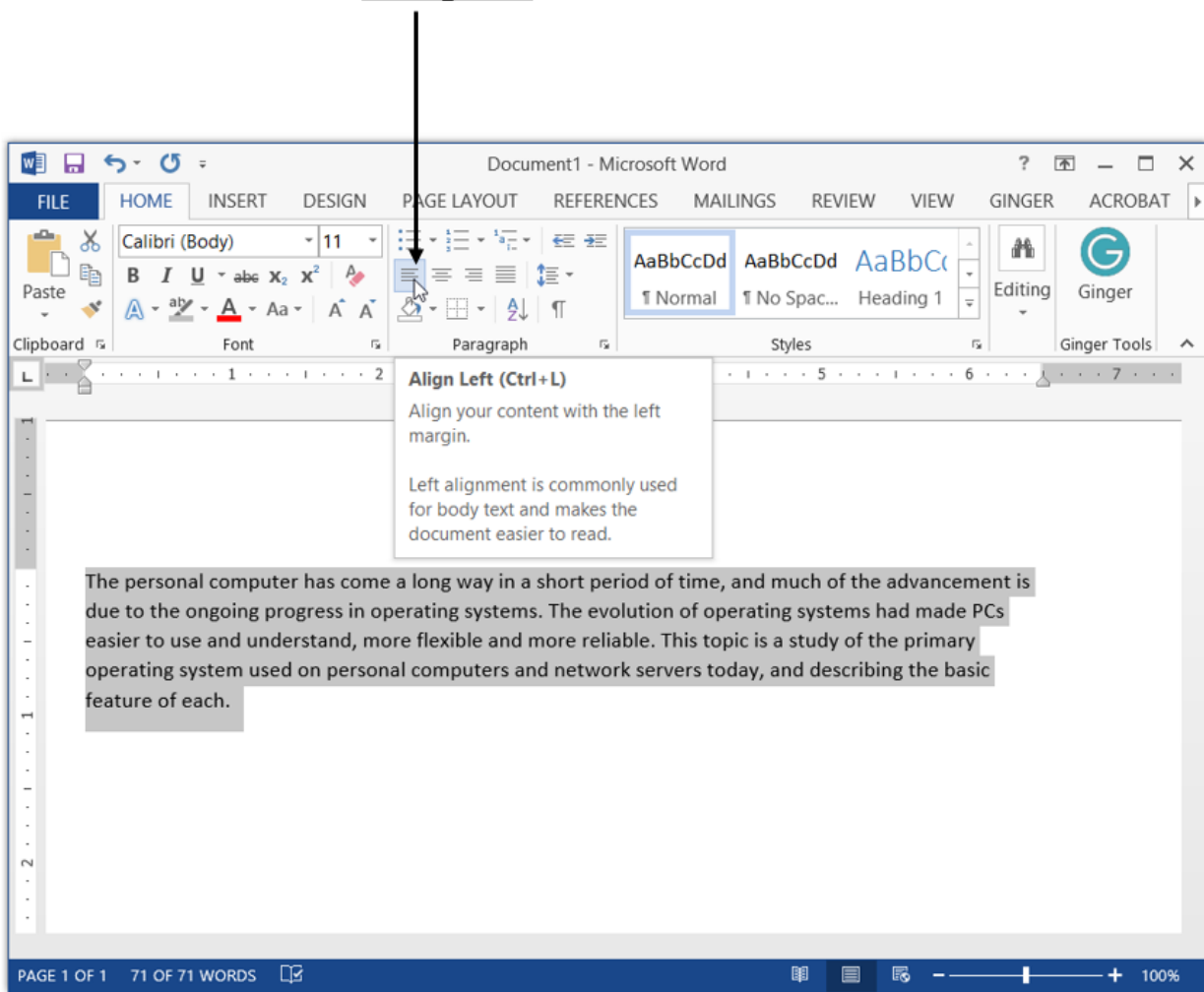
Justify alignment
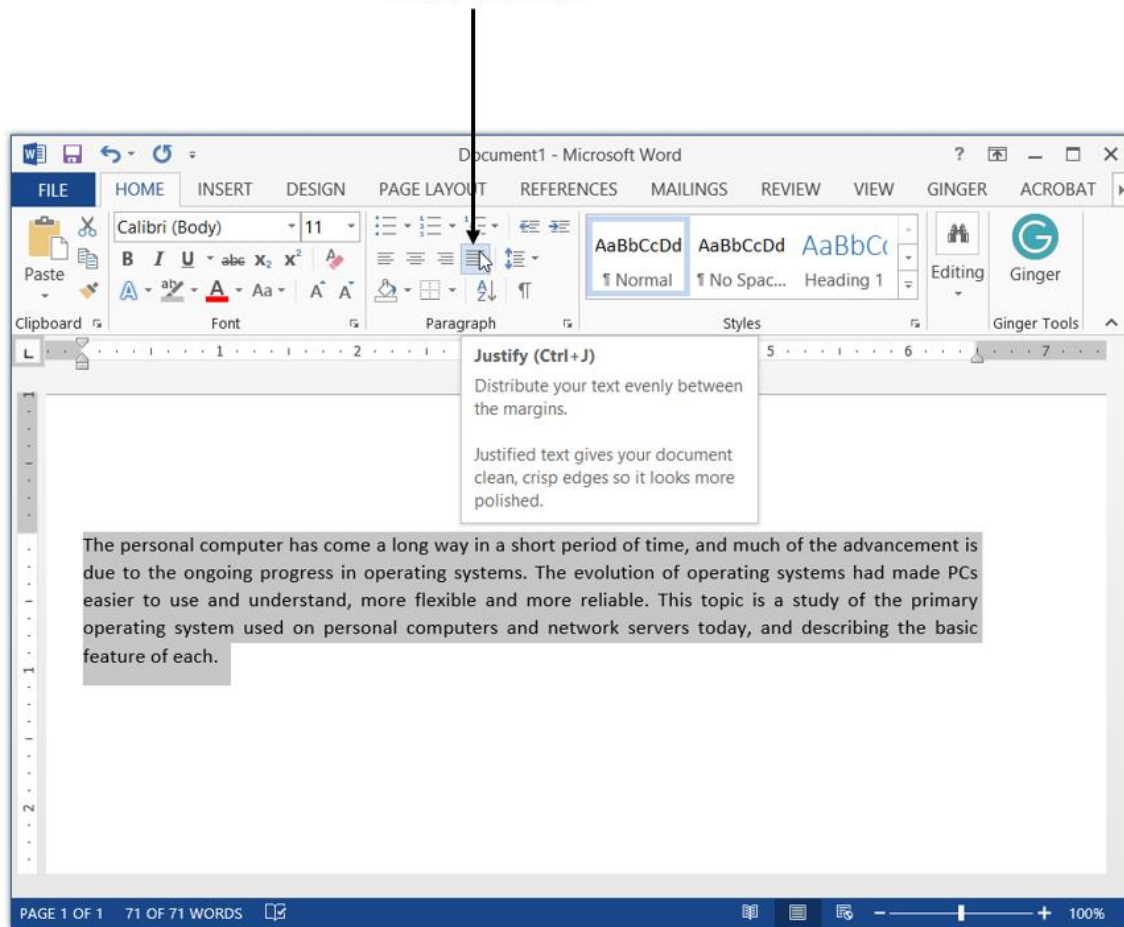
Formatting Text

- A font refers to set of characteristics that characters of Word support.
- The process of formatting a document includes controlling the appearance of text and layout of text on page.
- Character formatting includes settings that control attributes of individual text character such as Fonts, Font Size And Type Style.

Text formatting icons
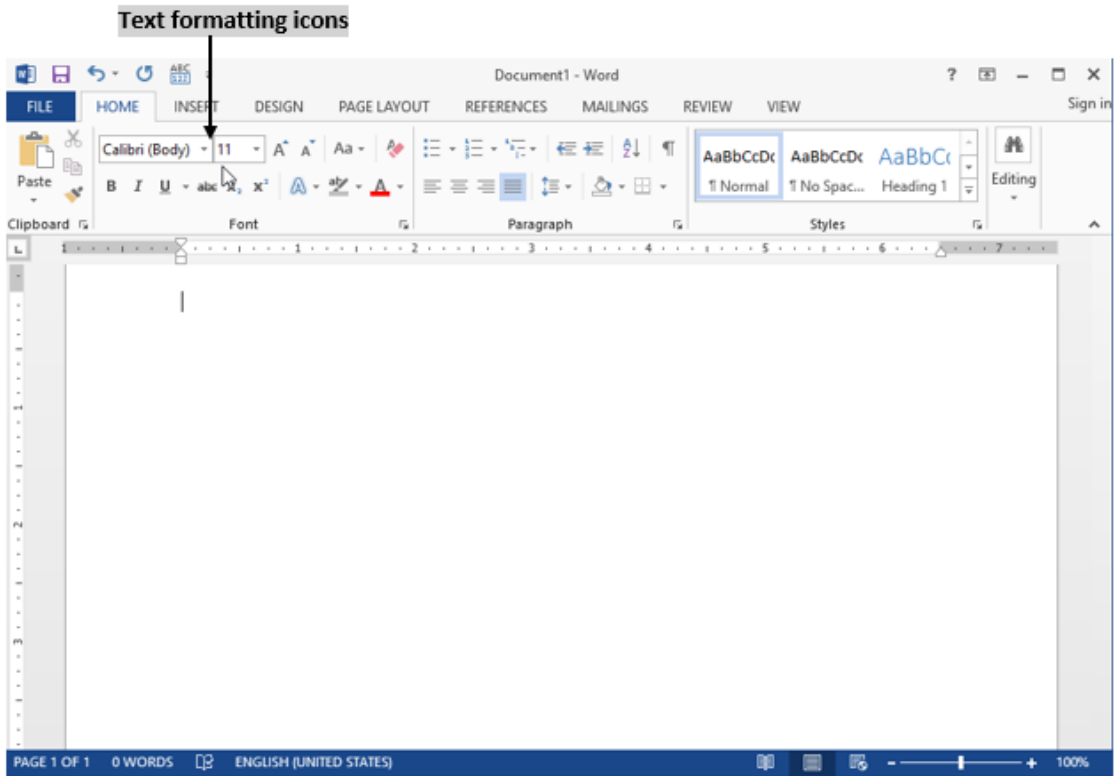
Paragraph Indenting

- Indentation improves the readability of document.
- Options for indentation includes Left, Right, Center And Justify.

Paragraph indentation

Indentation icon on tool bar
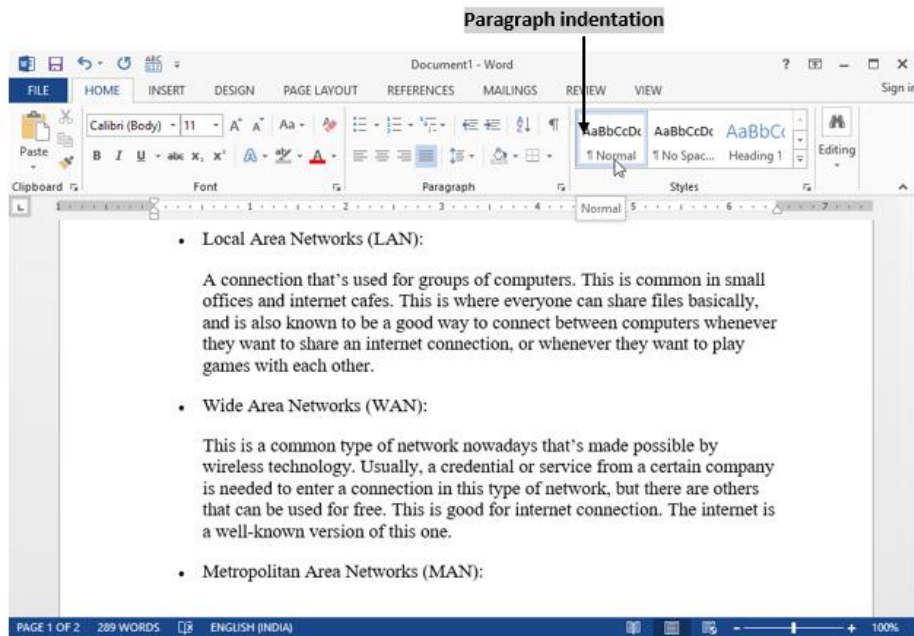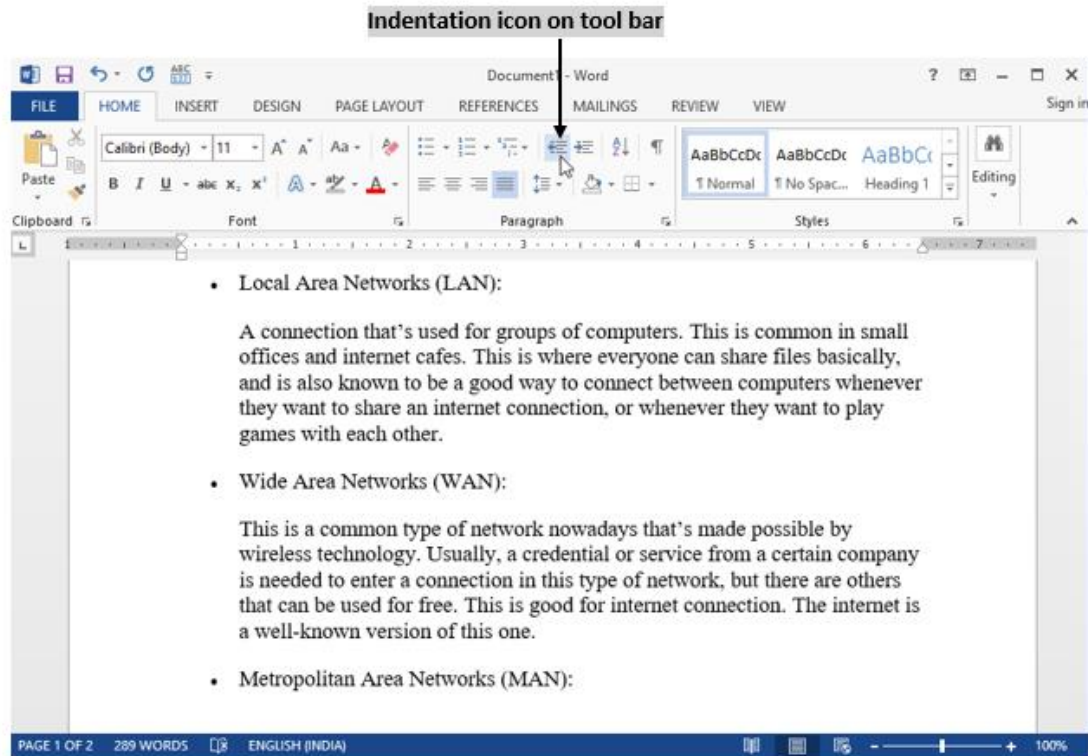
Bullets and Numbering

- Bullets and numbering are used to list important points and messages.

- When a document is in the form of long paragraphs, reader may not be able to quickly notice important points or message. Bullets and numbering emphasize lists of things.

- To list points or topics in a document, bullets are used.

- Numbered list works well for directions or other points.

- While typing a document, details should be given step-by-step for easy understanding. MS Word's feature "**Bullets and Numbering**" fulfils this purpose.

- You can either use the word defaults for bullets and numbers or can define your own list.

Select bullets
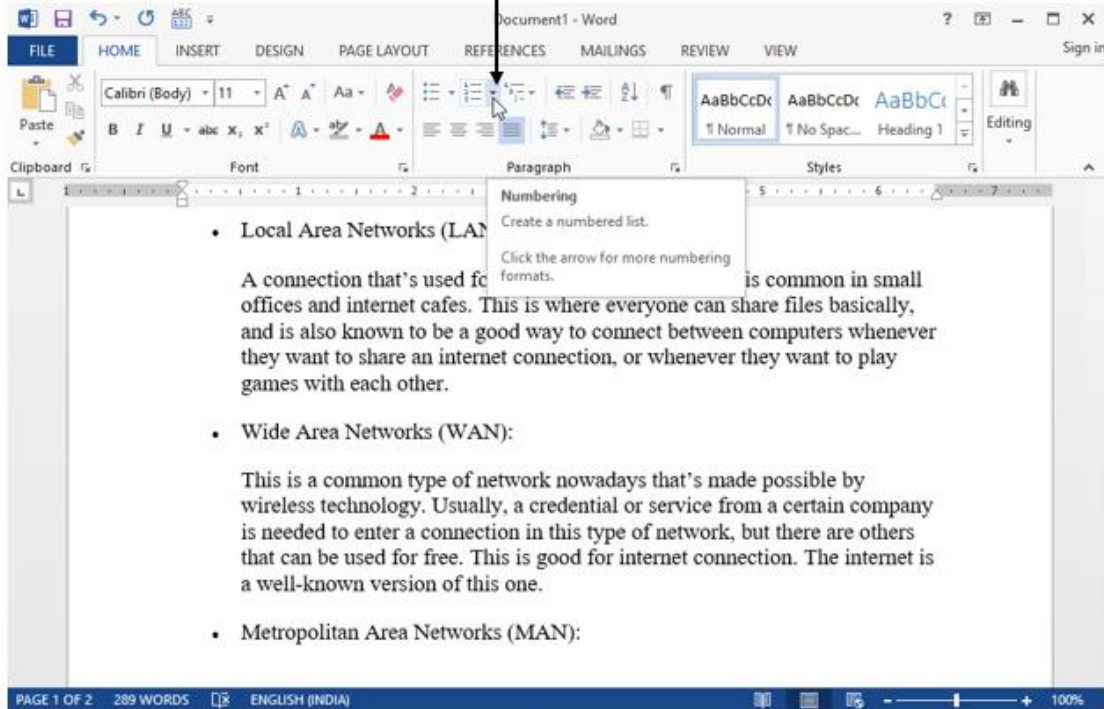
Choose from the list of bullet types
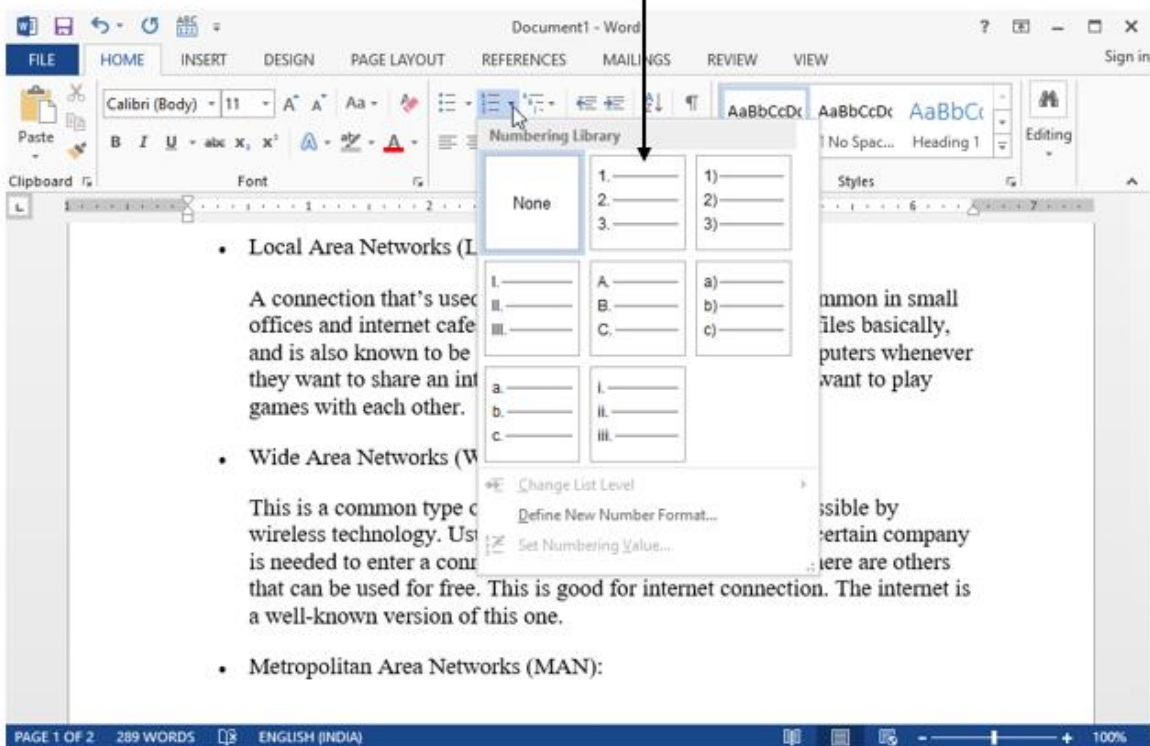
Changing Case

We usually type content of documents in different forms such as Lower case, Upper case, Sentence case, etc.

- **Sentence Case** → First character of the sentence is capitalized.
- **Lower Case** → Entire selected text will change to small letters.
- **Upper Case** → Entire selected text will change to capital letters.
- **Title Case** → First character of each word begins with a capital letter.
- **Toggle Case** → It changes lowercase to uppercase and vice-versa.

Choose the type of case
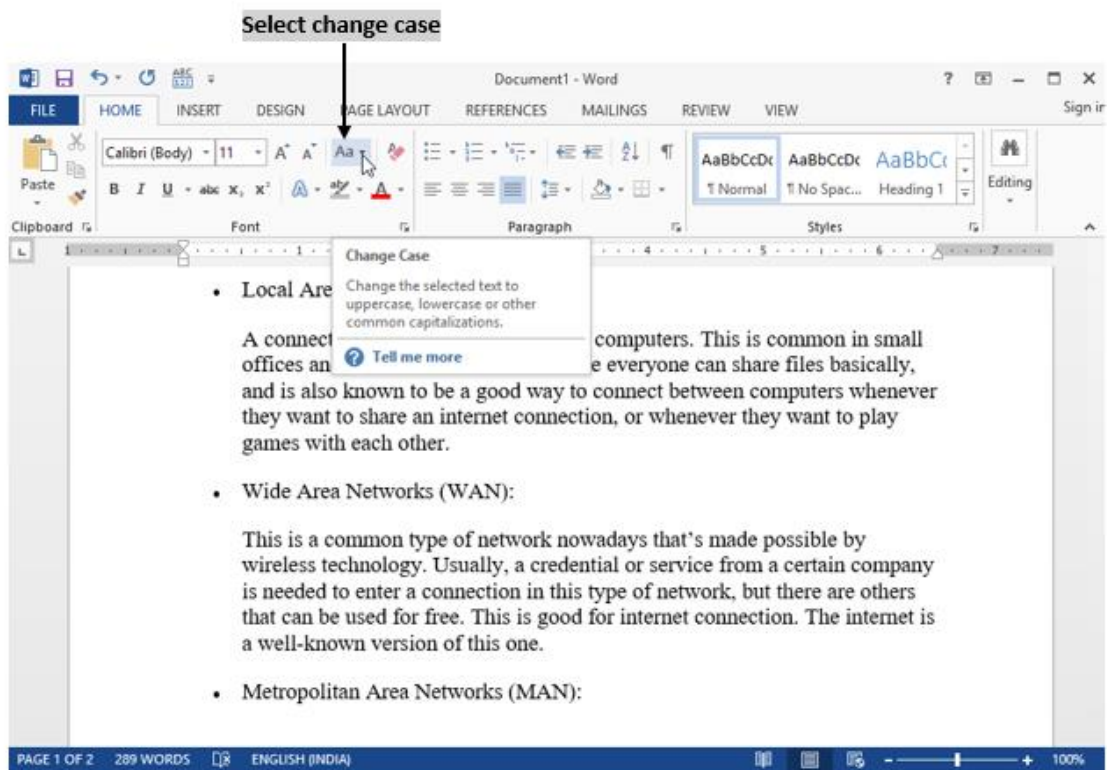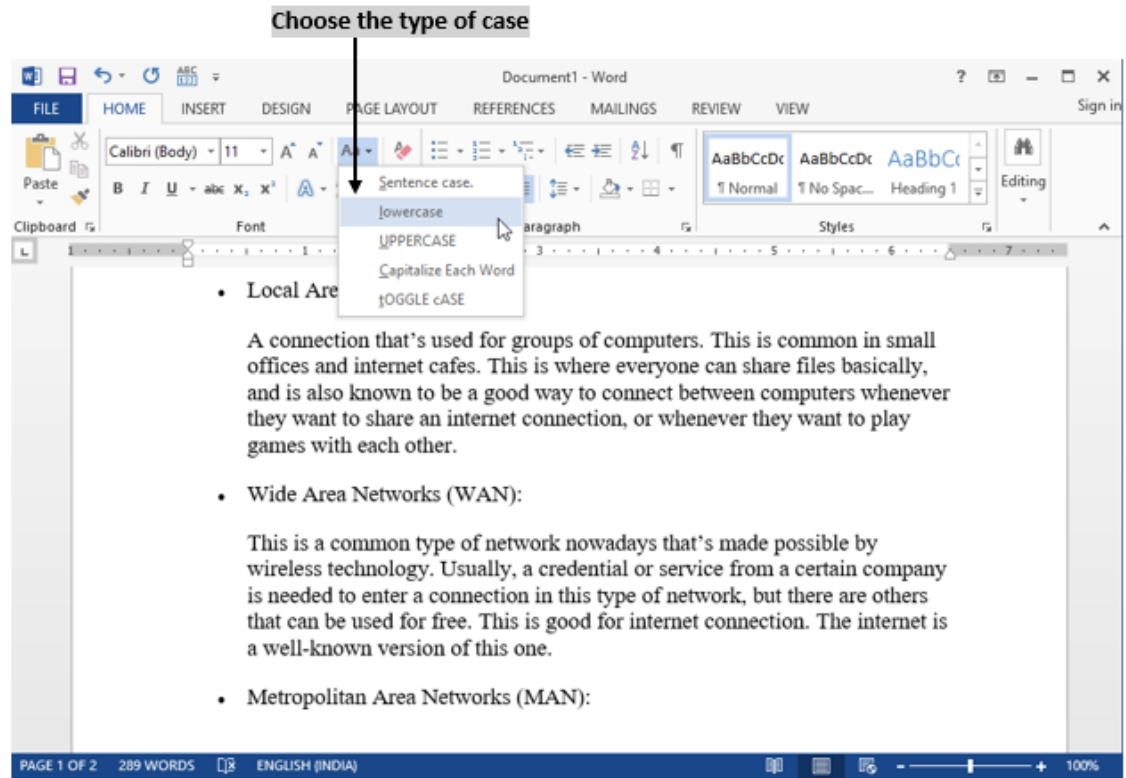
Table Manipulation

Manipulation of table includes drawing a table, changing cell width and height, alignment of text in the cell, deletion/insertion of rows and columns, and borders and shading.

Draw Table

Tables can be easily inserted at any point of the document. A table is a simple way to arrange lengthy lists. You can use tables to format all parts of your documents into rows and columns. Rows and columns can be added or deleted either at the beginning, end or in the middle of table. For inserting a table, simply click on "Tables" icon on Insert menu. Tables can be formatted to any size, and number of rows and columns can be added as per requirement. Table formatting toolbar contains numerous icons which can be used for different functions related to tables. Spin arrows in the columns and rows help to select a row or a column.

Select table
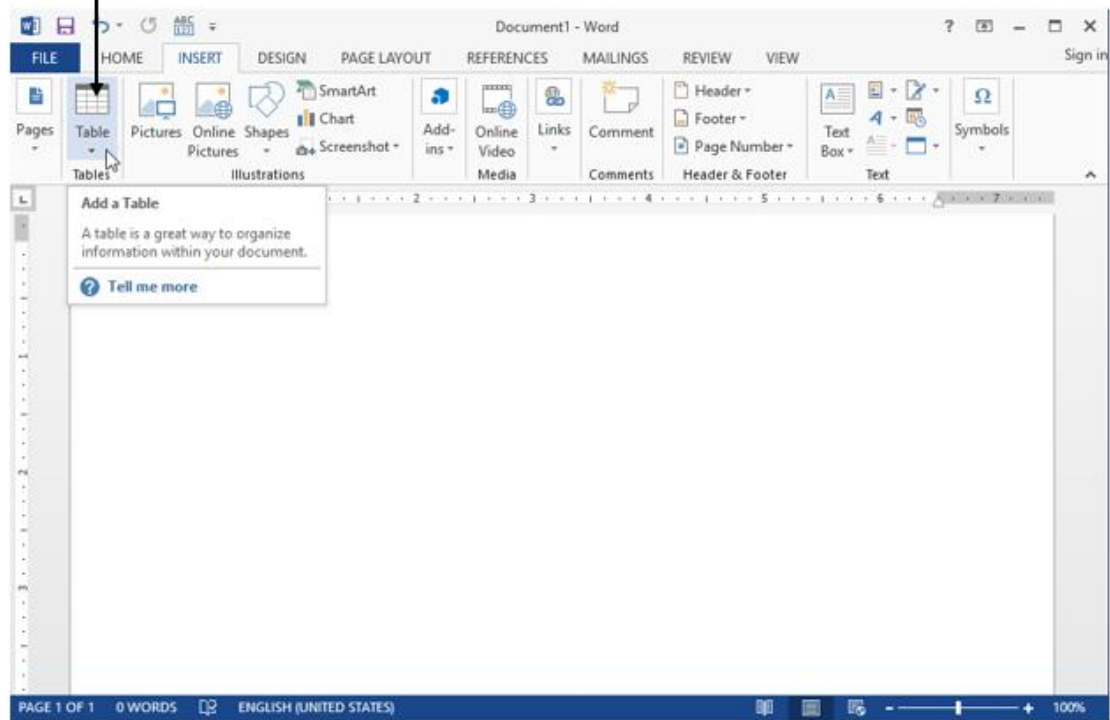
Select rows and columns
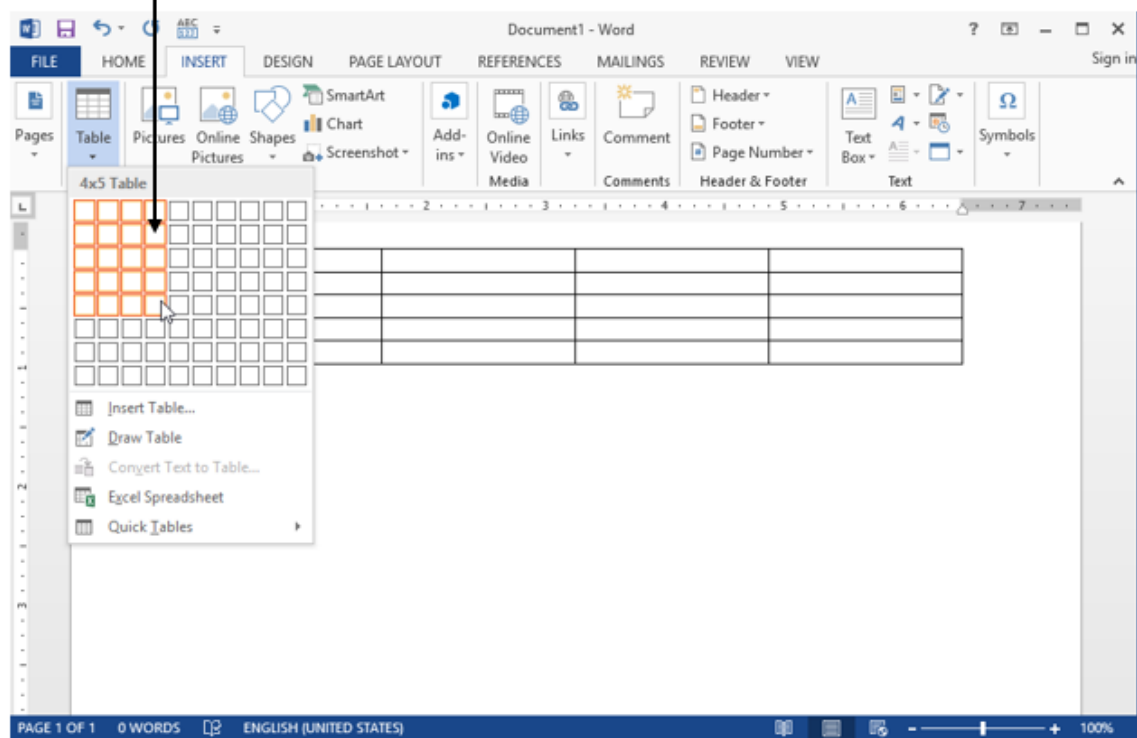
Changing cell width and height

- When we create a table, all columns may have equal width or may have different widths depending upon the usage.
- If you want to change column widths, **"Ruler"** or table properties from the table menu can be used.
- By using "**Ruler"** you may change the row border and size.
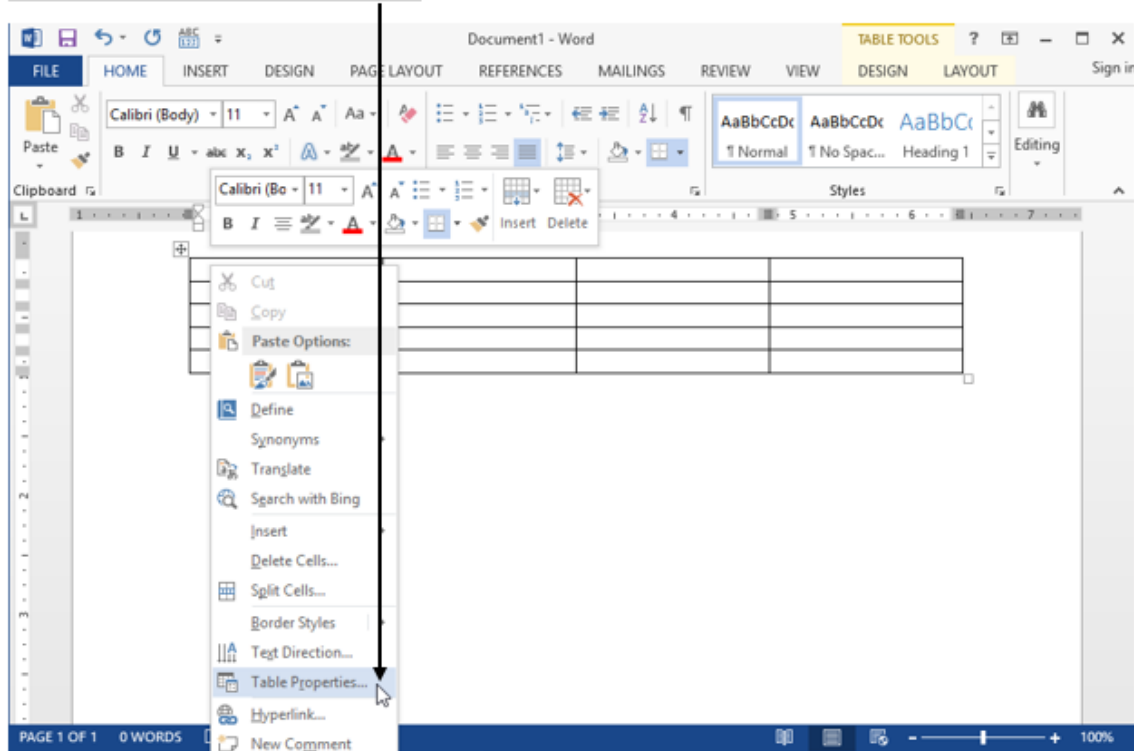
Change the width and row by checking preferred width
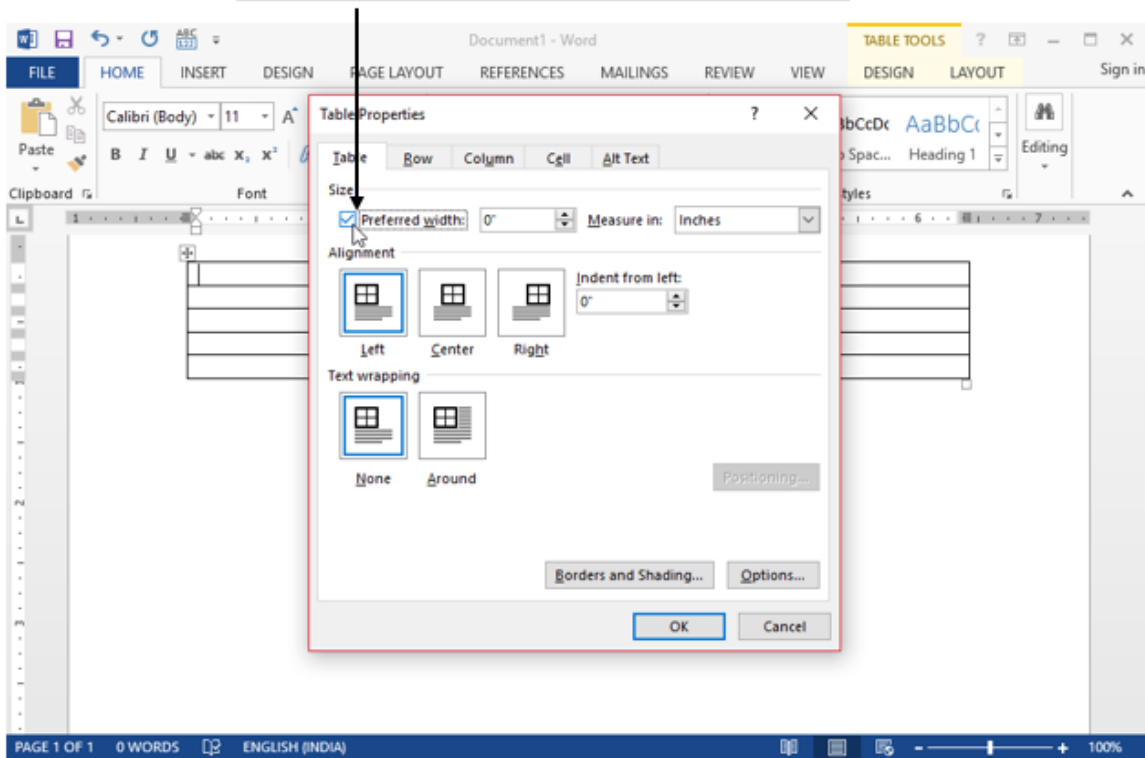
Alignment of Text in a cell

- Select one or more cells in table, and click table layout menu.
- Under Alignment, click Align, and then select corresponding option.

Select the cells

Select alignment

Select the type of alignment
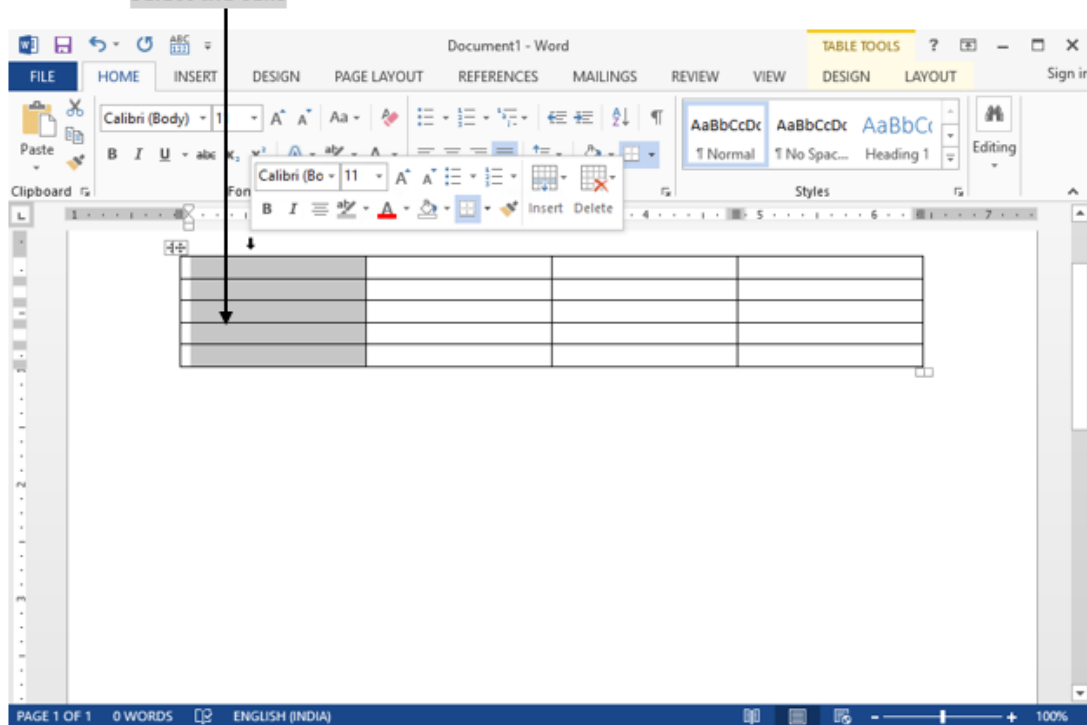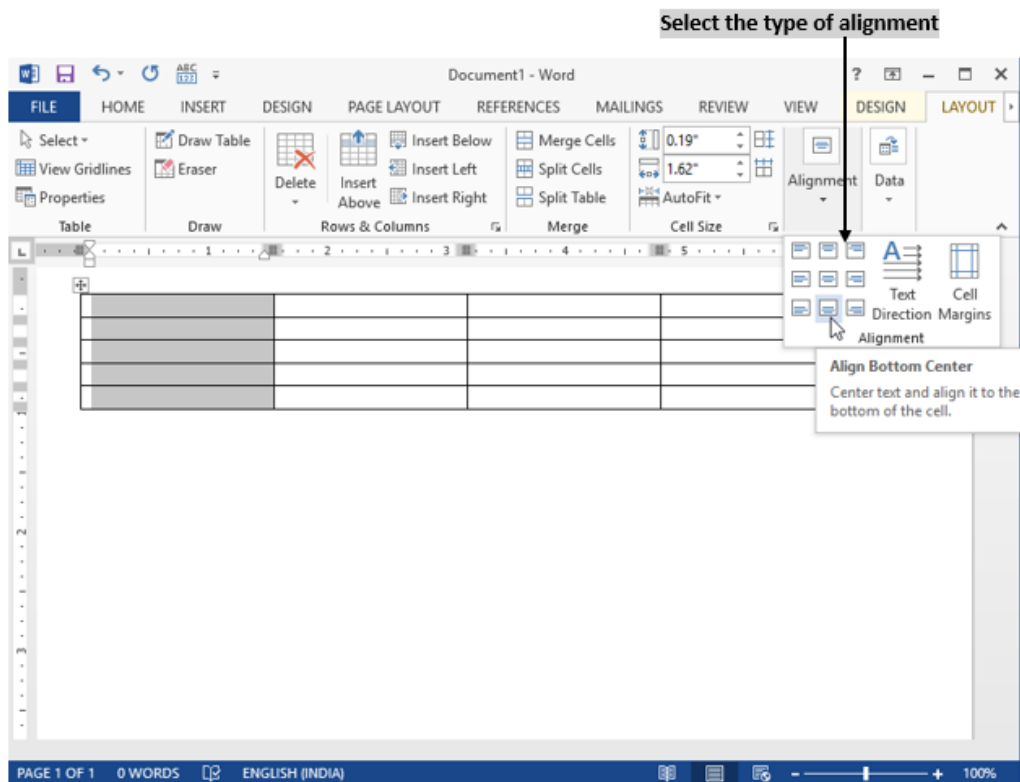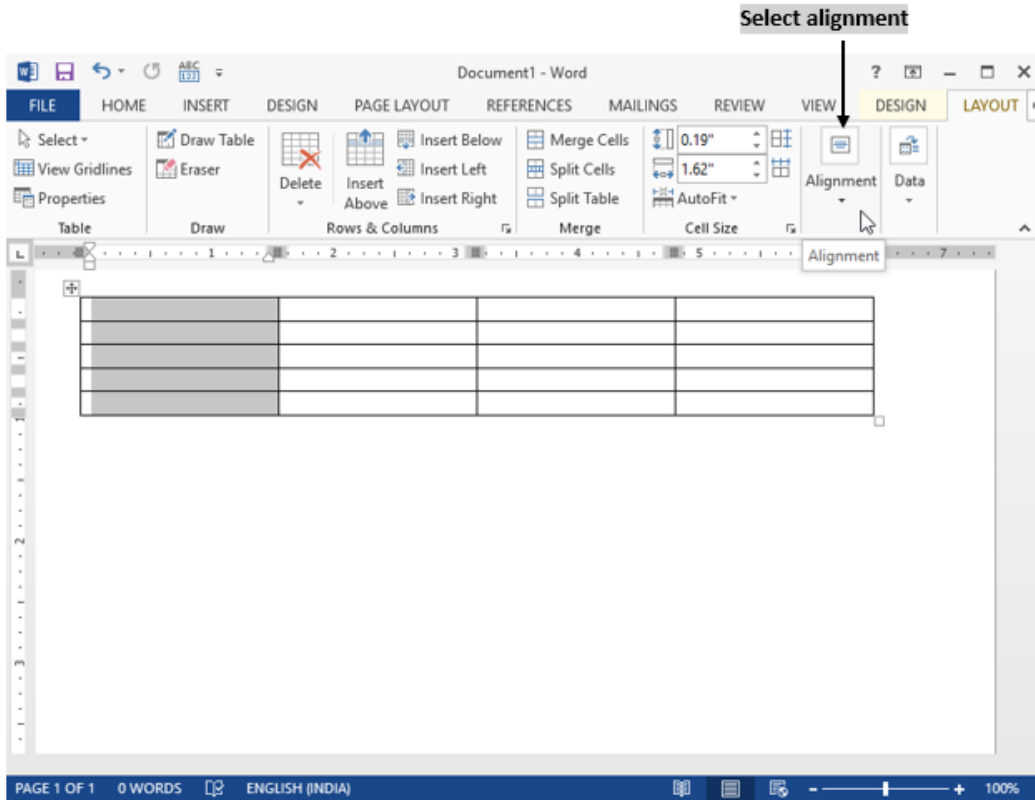
Delete/Insertion of Row and Column

For inserting rows and columns into an existing table, position cursor either before or after the spot where you want to insert.

Right-click mouse button to →Insert/Delete.
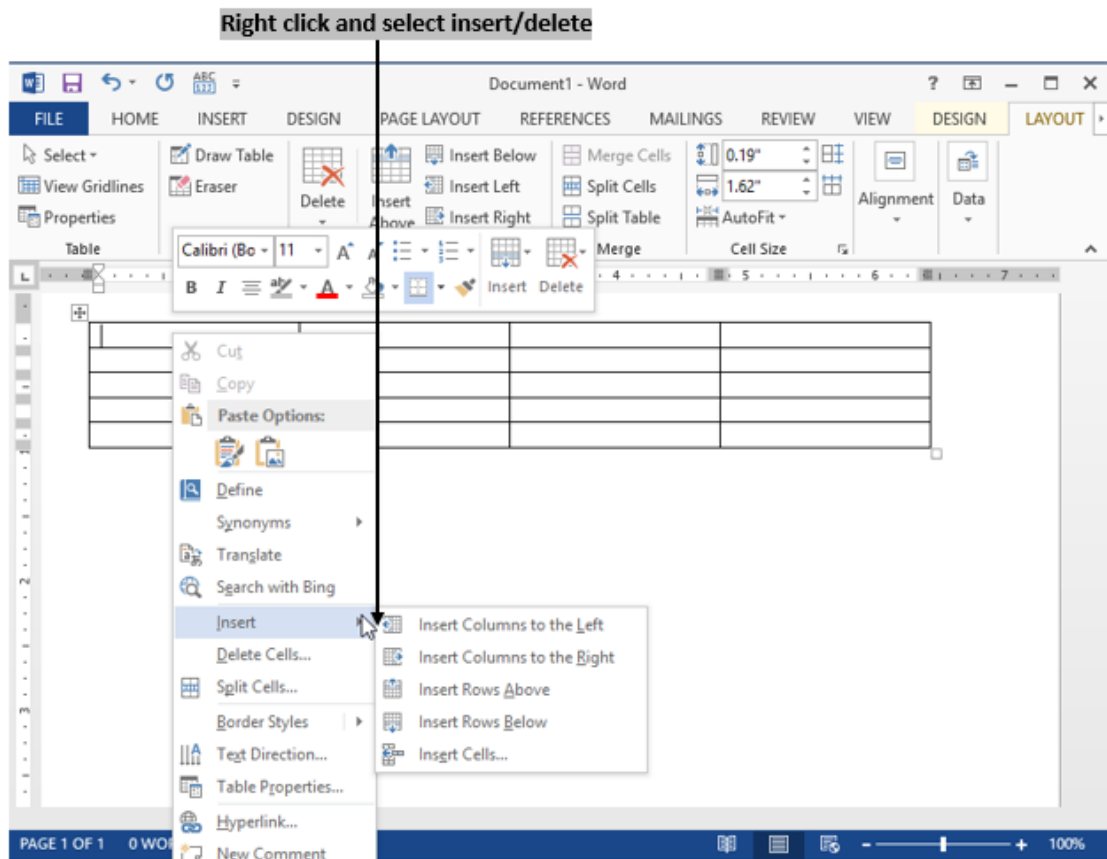
Inserting a column to the right

After finishing the table, in case you need to insert a column on the right-hand side of a particular column in the table, you may use the following steps:

1. Place cursor where you want to insert a column in the table.
2. Right-click on mouse button → Insert column to right.

Right click and select insert columns to the right
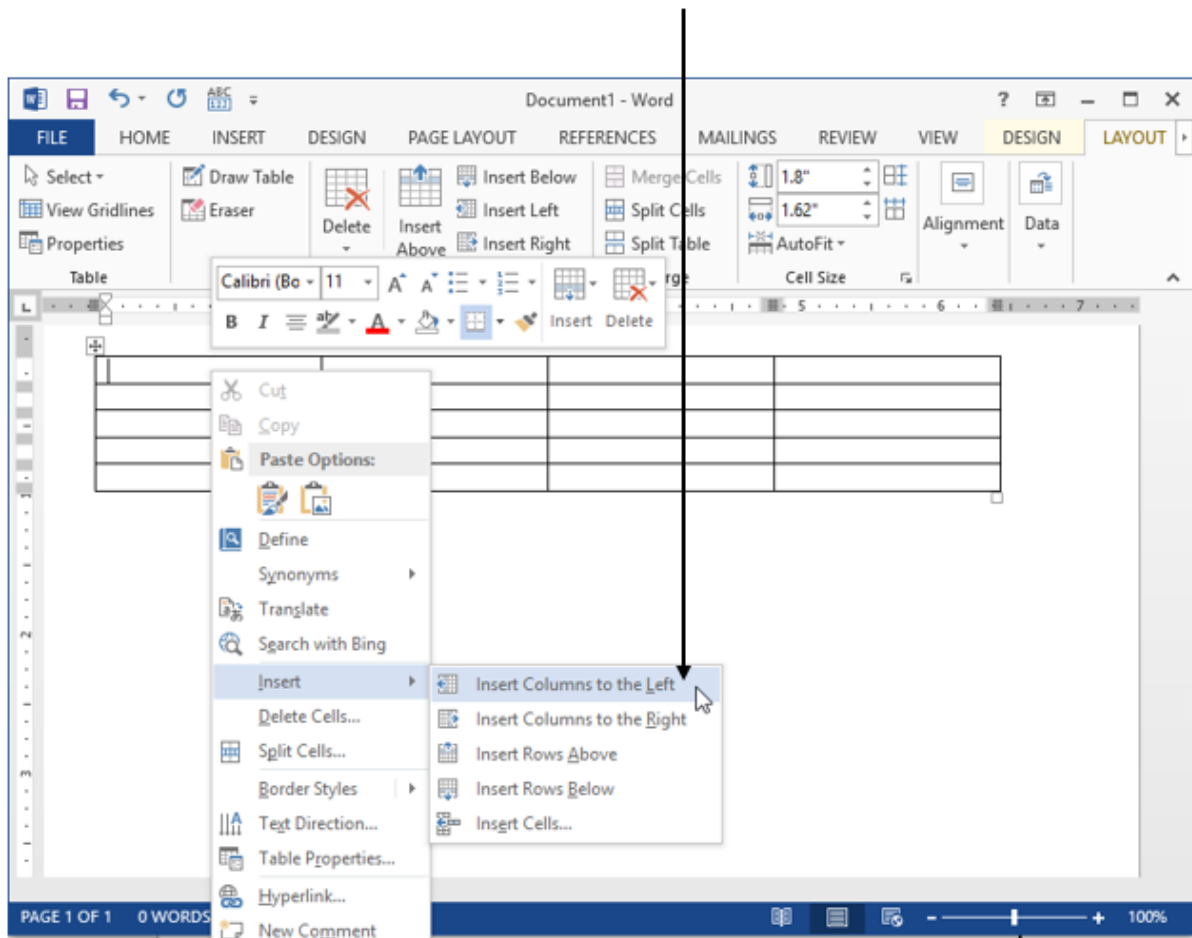
Insert rows above

After finishing the table, in case you want to insert a row in the top of a particular row in table you may use the following steps:

1. Place cursor where you want to insert a row in the table.
2. Right-click on the mouse button→ Insert row above.
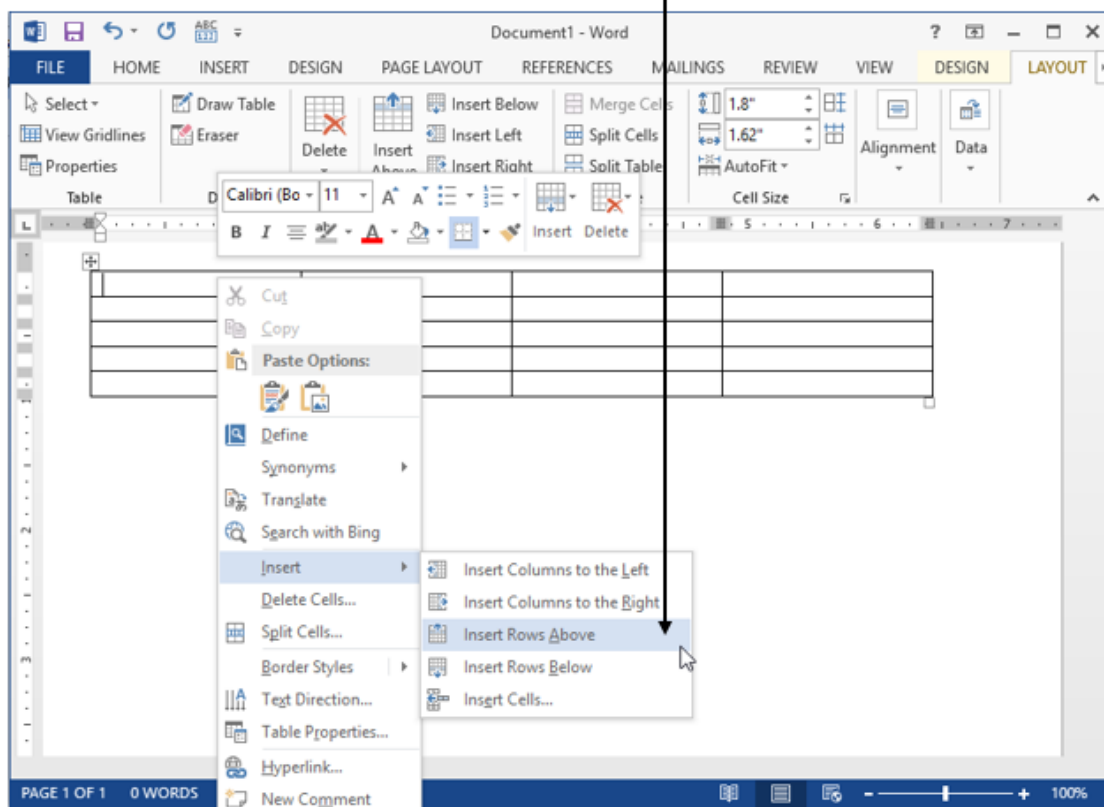
Insert rows below

After finishing the table, in case you want to insert a row in the bottom of a particular row in the table, you may use the following steps:

1. Place cursor where you want to insert a row in the table.
2. Right-click mouse button → Insert row below.

Right click and select insert rows below
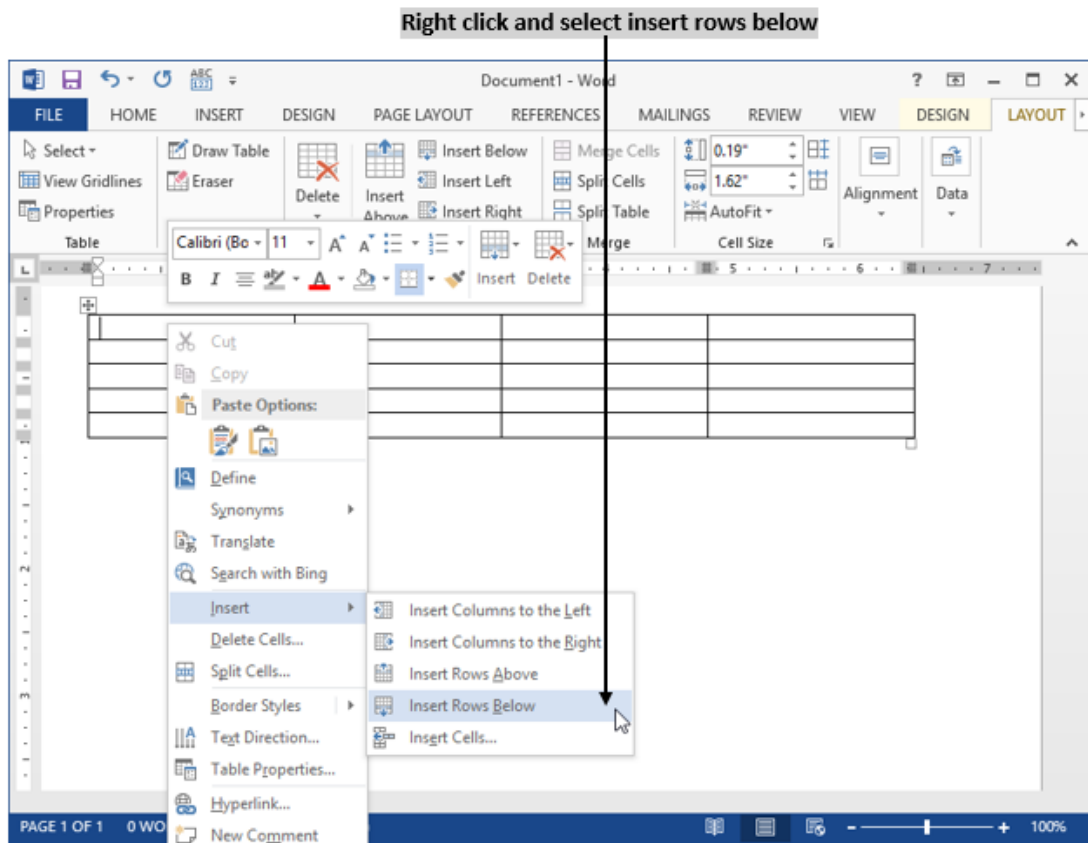
Delete Column

If you want to delete particular columns in a table, use the following steps:

1. Select the column which you want to delete.
2. Right-click mouse button→ delete cells → delete column.
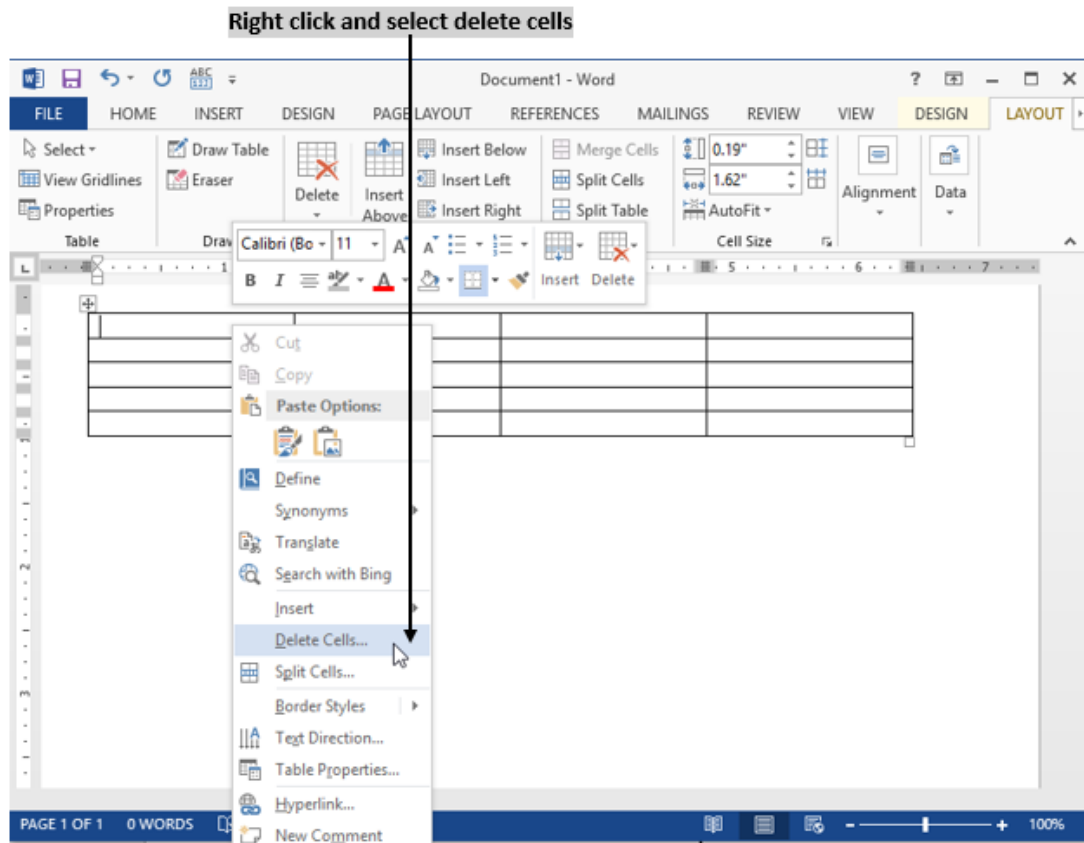
Right click and select delete cells

Delete Rows

If you want to delete particular rows in a table, use the following steps:

1. Select the row which you want to delete.
2. Right-click **Mouse Button→ Delete Cells → Delete Row.**

Right click and select delete cells

Select delete entire row
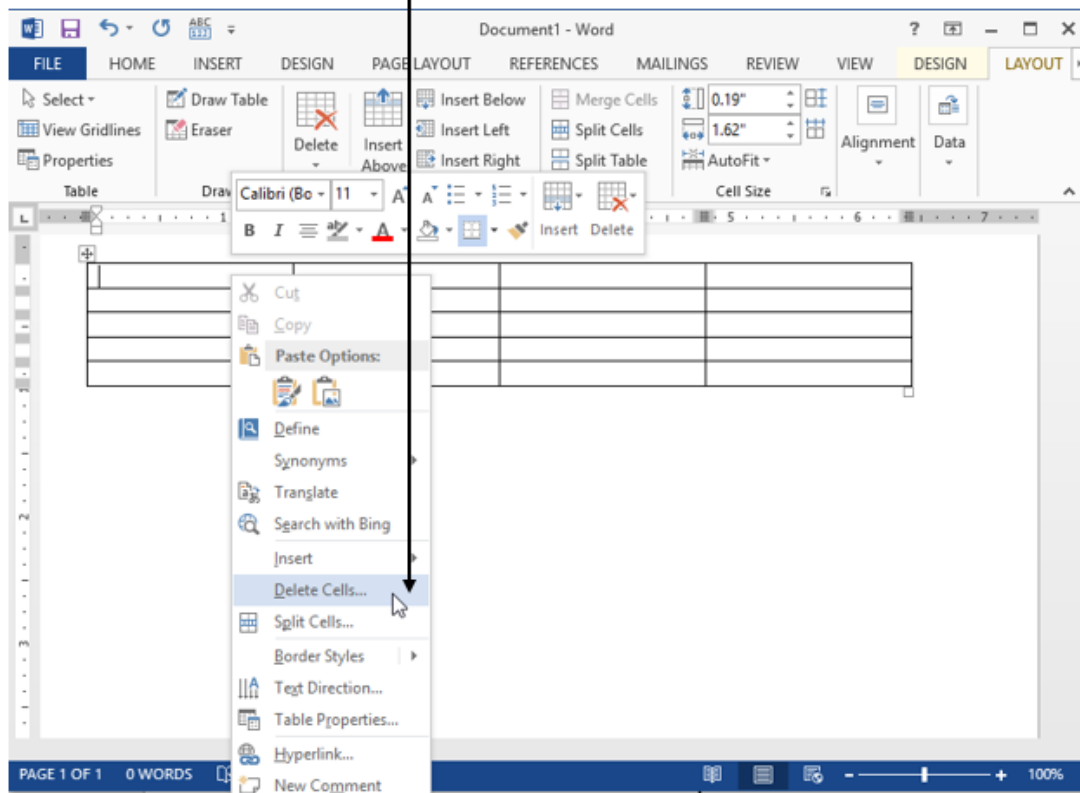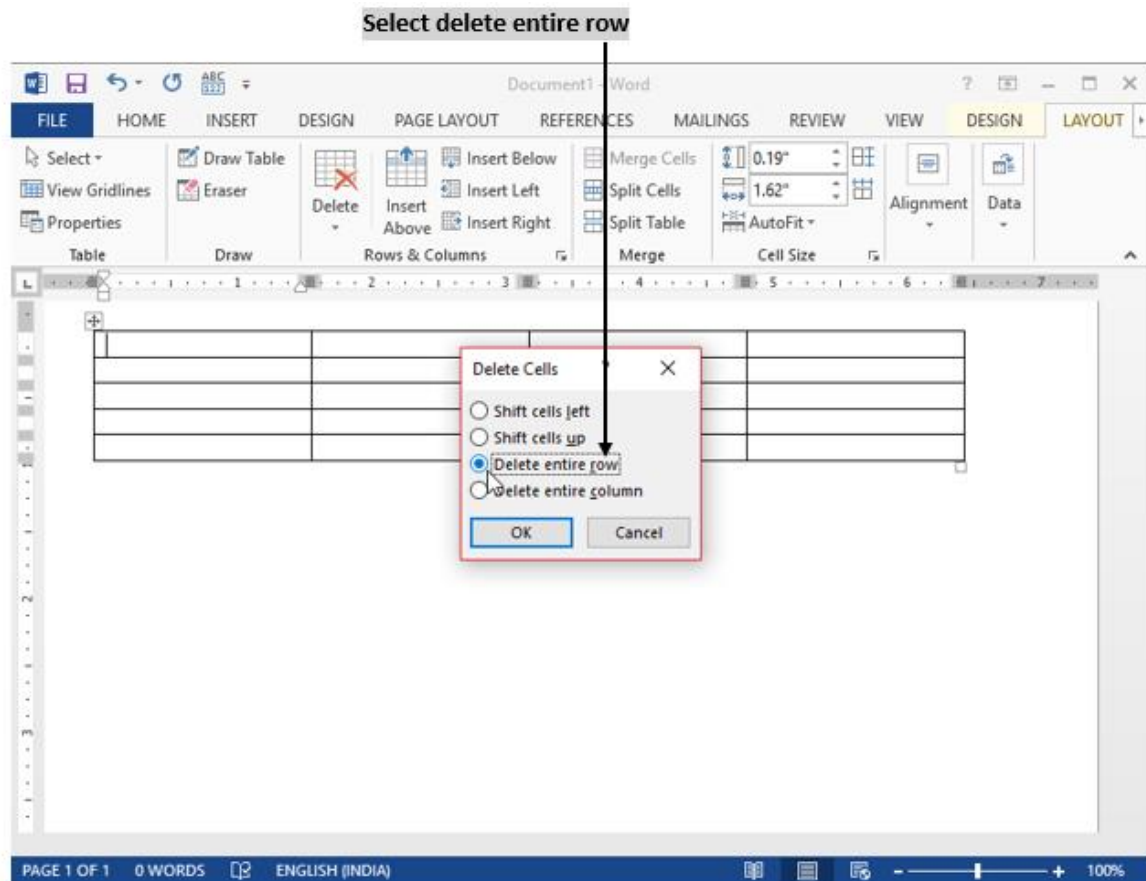
Border and Shading

- Borders and shading is used to decorate a text.
- Select the text for which you need to apply borders or shading.
- Click home menu.
- Move to borders and shading icon.
- From the open window, select border style, width you want and click ok button.

Select borders
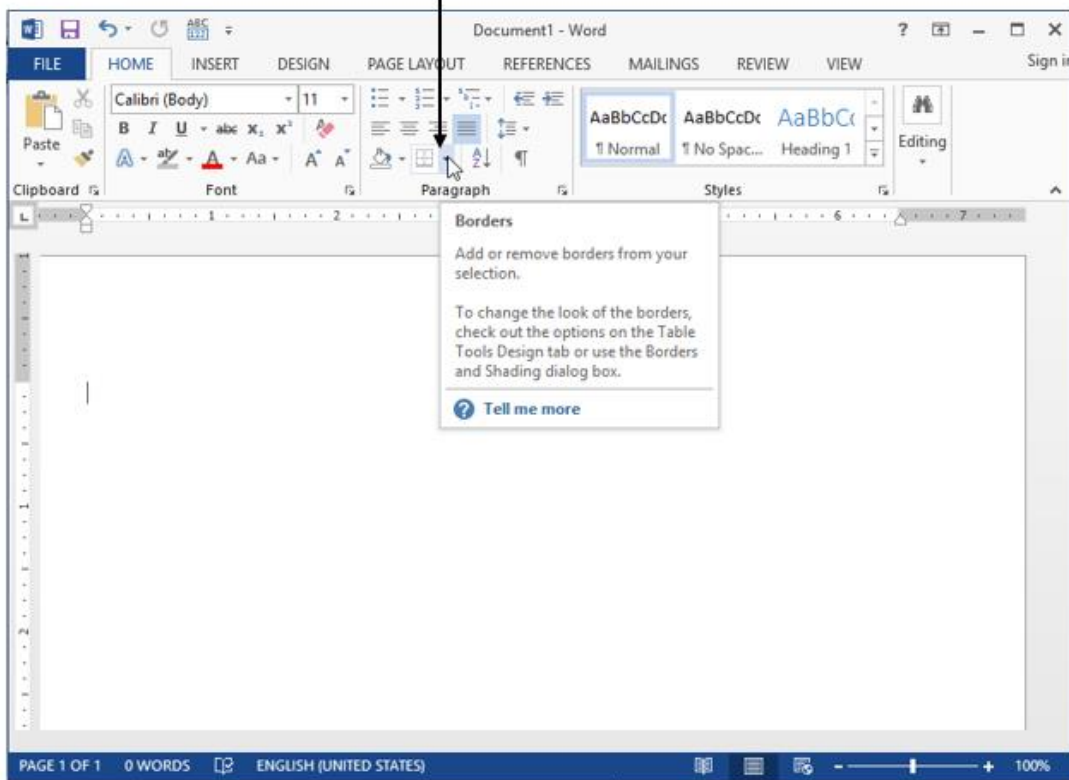
Select borders and shading

Select the desired settings
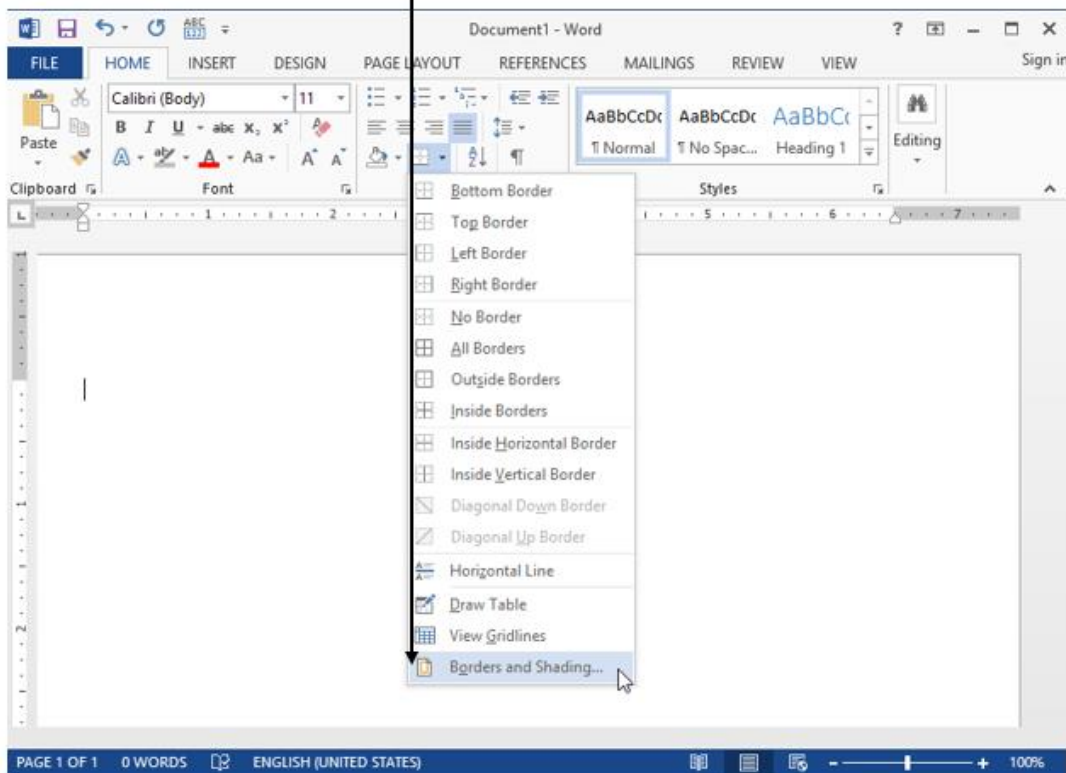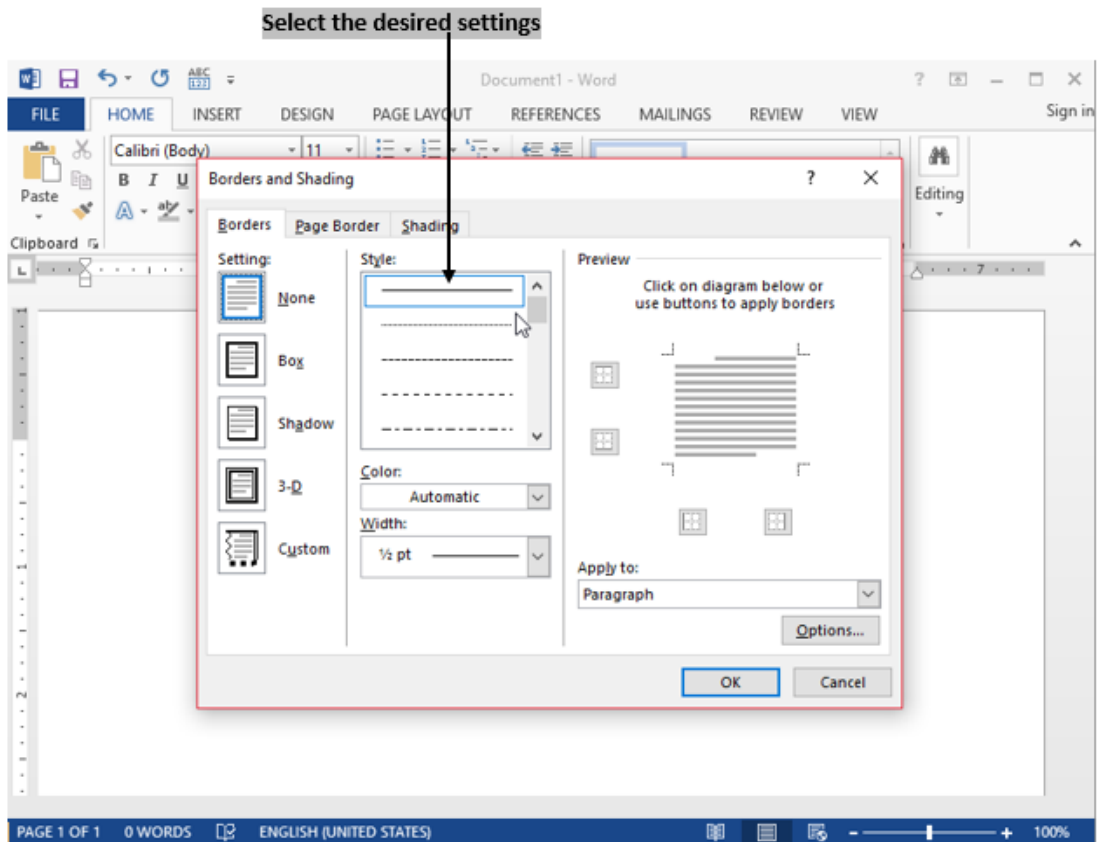
Summary

This topic provides us with a clear idea about components of word processing basics, opening and closing the documents, text creation and manipulation, formatting the text, table manipulation, etc.

4. Computer Concepts — Spread Sheet

Microsoft Excel is a spreadsheet application which is used to create and manage lists of information. Excel allows to enter, edit, manage and analyze large amount of data in a worksheet and create colorful charts and graphs. It uses formulae to calculate and analyze data. It helps to combine a series of commands using **"Macros",** thus saving time. At higher levels, you can use it as a complete development tool catering to many complex requirements.

Elements of Electronic Spread Sheet

In this section, we shall learn the topics explaining the entire concepts related to spread sheet in detail, i.e., Elements of an electronic spread sheet, manipulation of cells, functions and charts.

Opening a Spread Sheet

To open a spreadsheet, we have to click on "**Start**" button and go to "**All Programs**" and click on "**Excel**".

Click Start button

Go to All programs
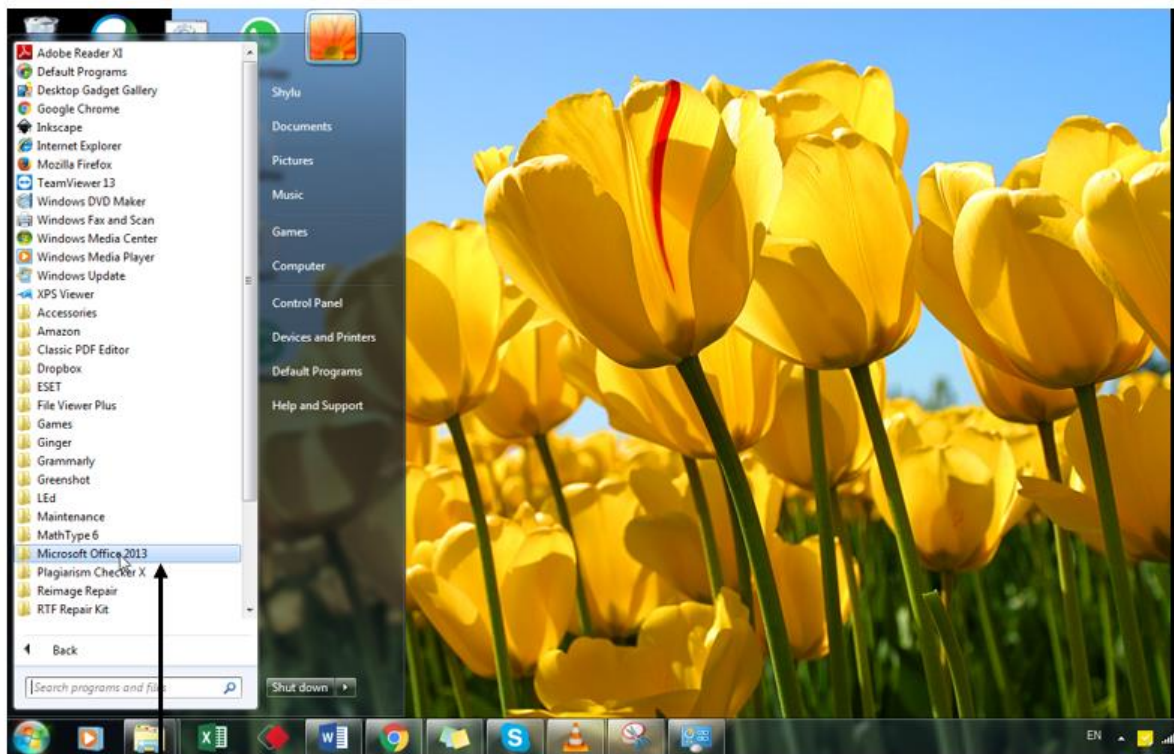
Go to Microsoft Office 2013

Opening an existing worksheet

To open an existing document, go to file menu, **File → Open → Recent workbooks**.
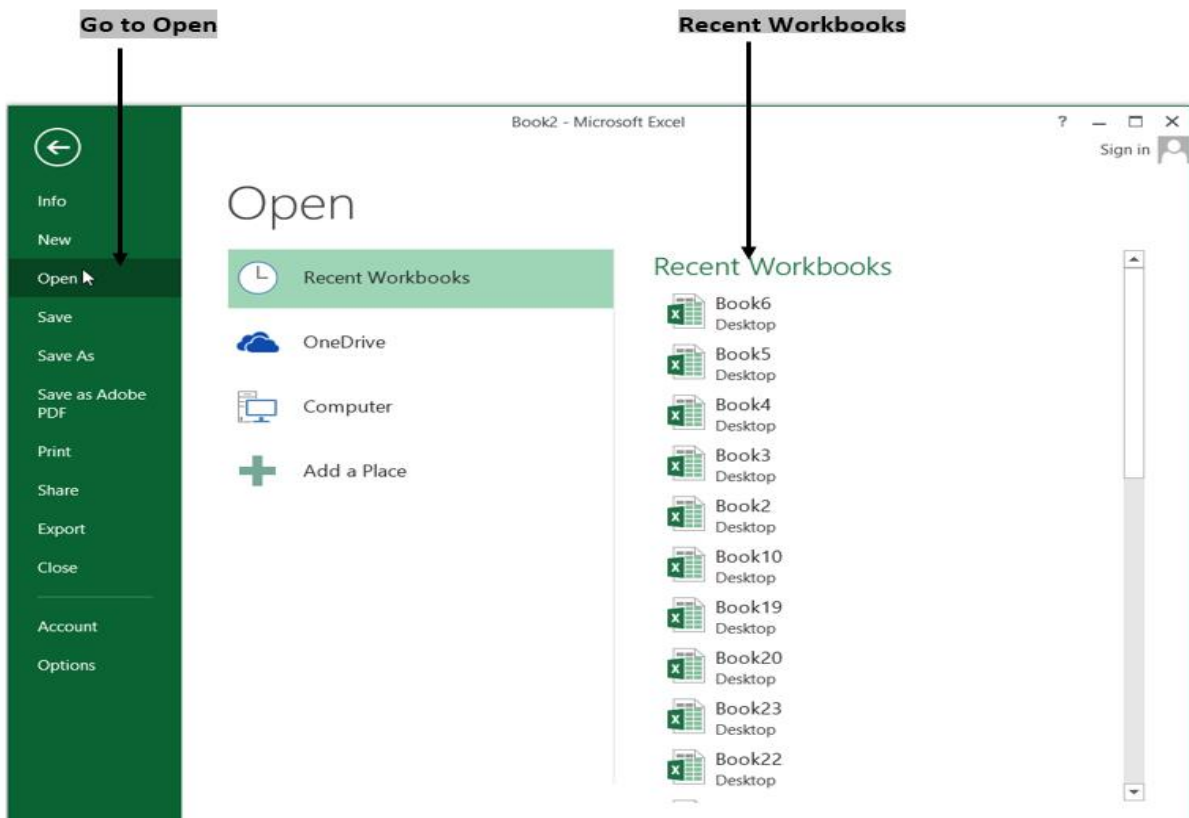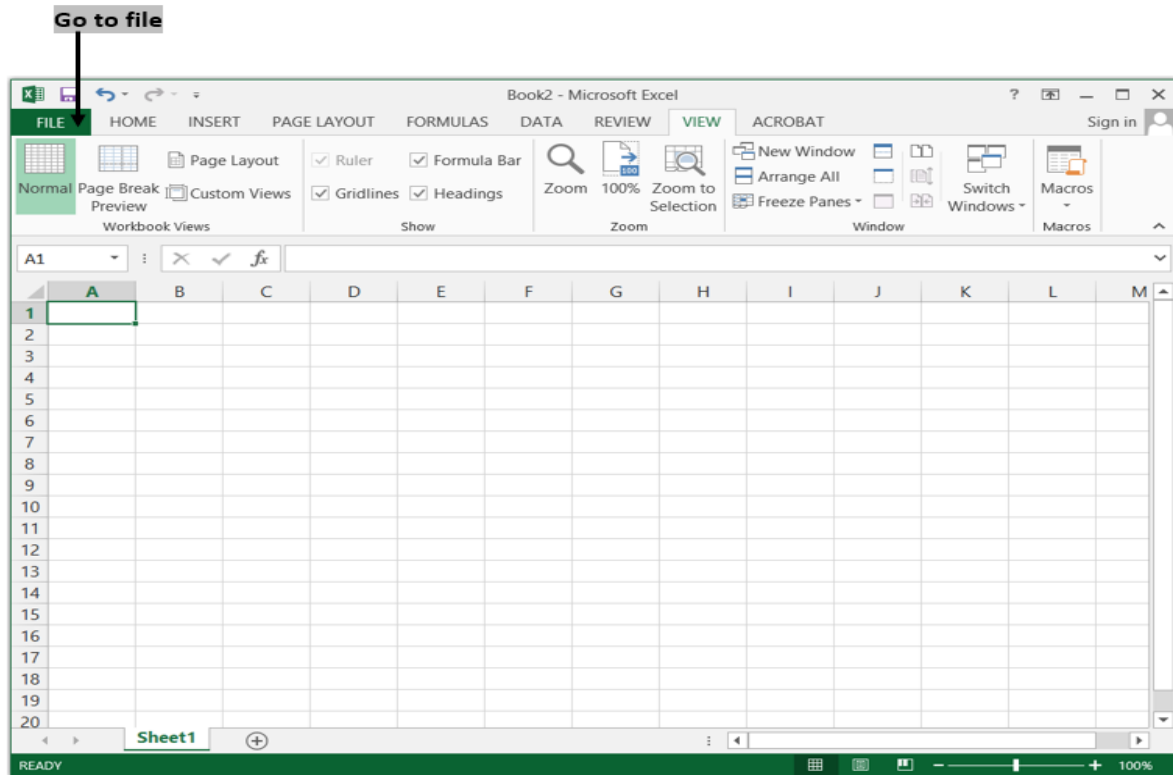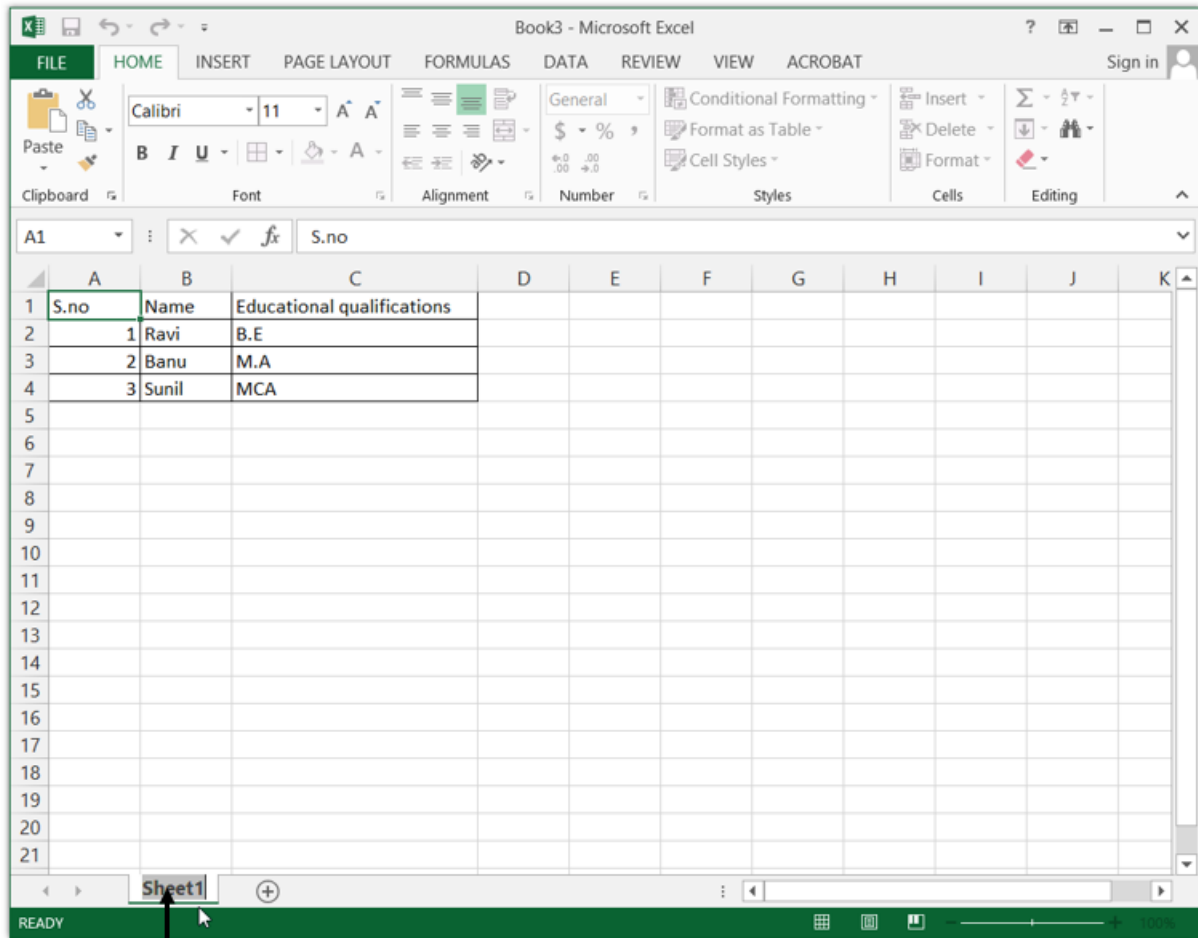
Renaming a work sheet

Every sheet is given a name by default as sheet 1, sheet 2, etc. It is necessary to customize the name according to user reference. To change this name, right click on sheet tab that is to be renamed. Name in the sheet tab gets highlighted and can be edited.
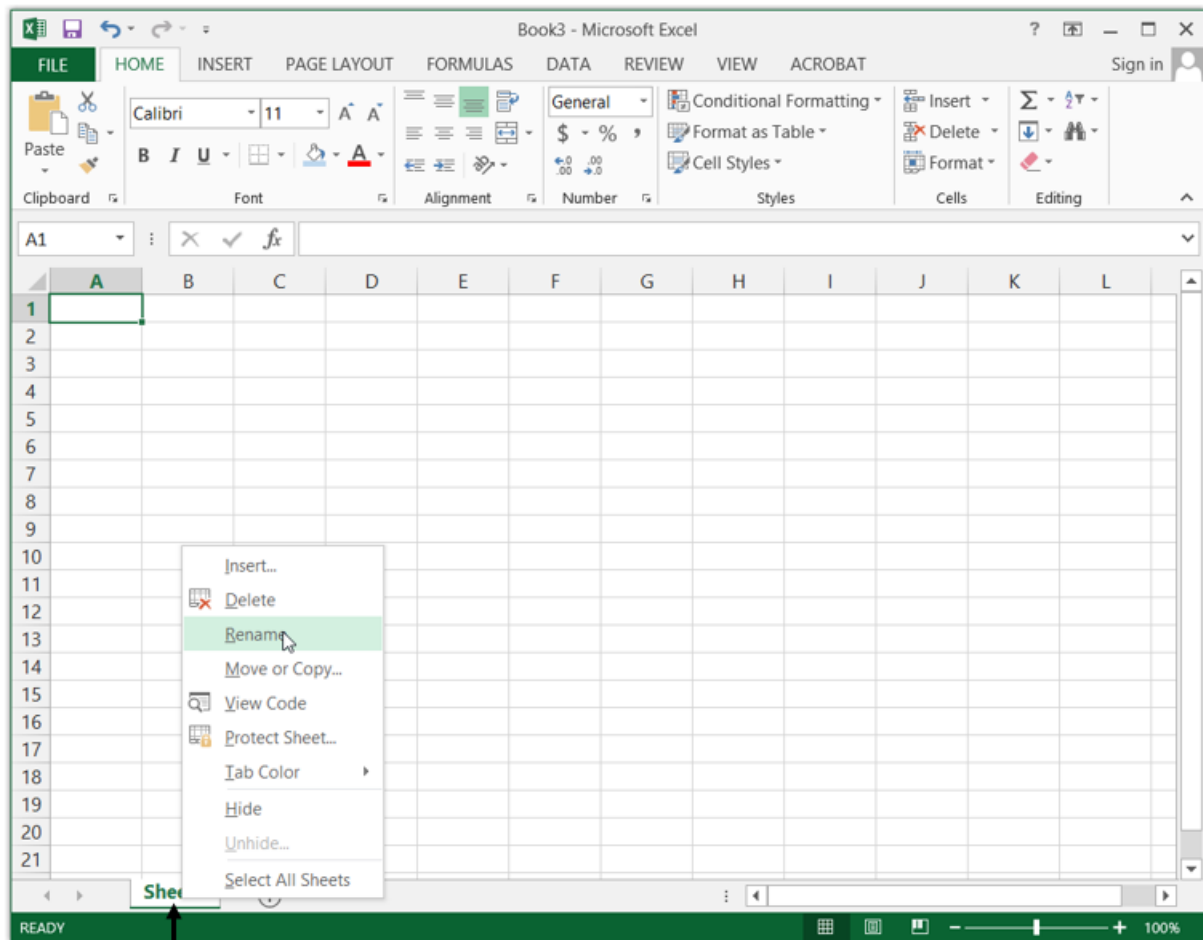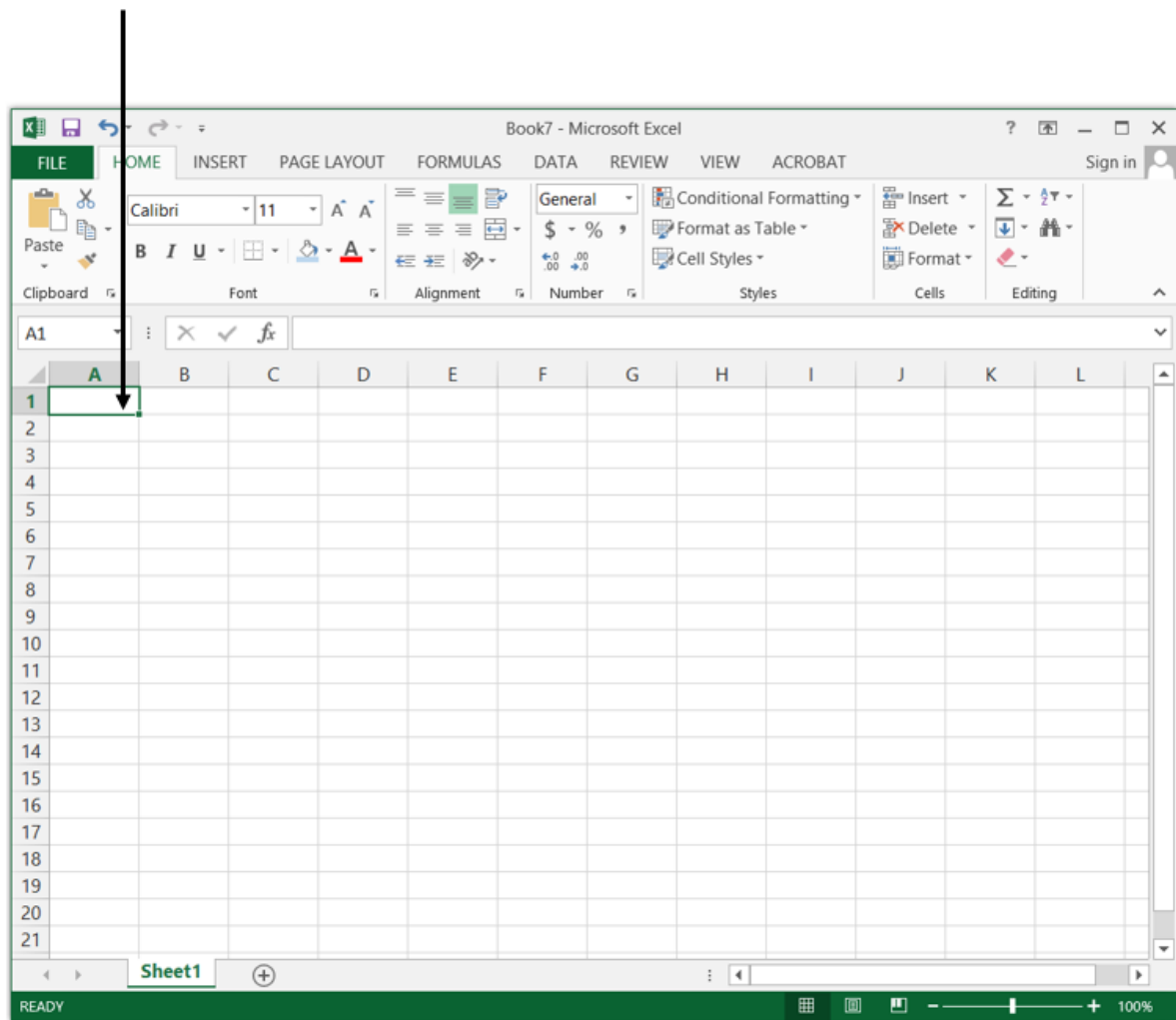

Right Click and Select Rename

Edit here

Organization of worksheet

Spreadsheet is made up of number of books. Each book contains number of columns and rows. Rows and columns are made of many cells. The cell pointer in cell A1 is as shown the below:

Cell Pointer

Cell Address

Cell is a small unit in the worksheet which is used to store data. A cell is refered by its column and row number.

Example

Cell B followed by row 6 is called as B6. Each cell in worksheet has a unique address. Using arrow keys in the keyboard, we can move from one cell to another cell.

Cell address
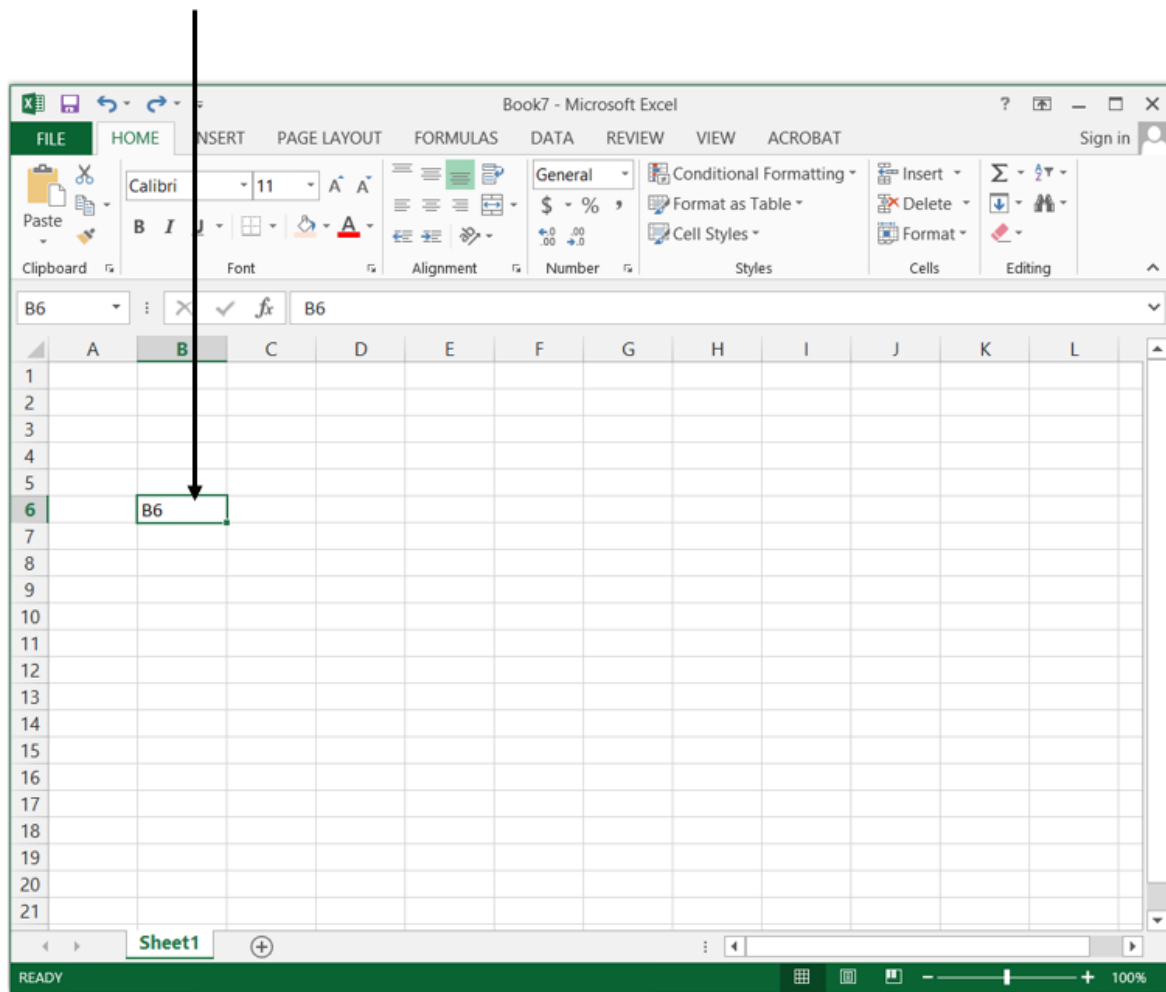
Title bar

Title bar displays the name of excel worksheet. It appears at the top of all window programs. By default, excel opens with the name Book 1.

Tittle bar
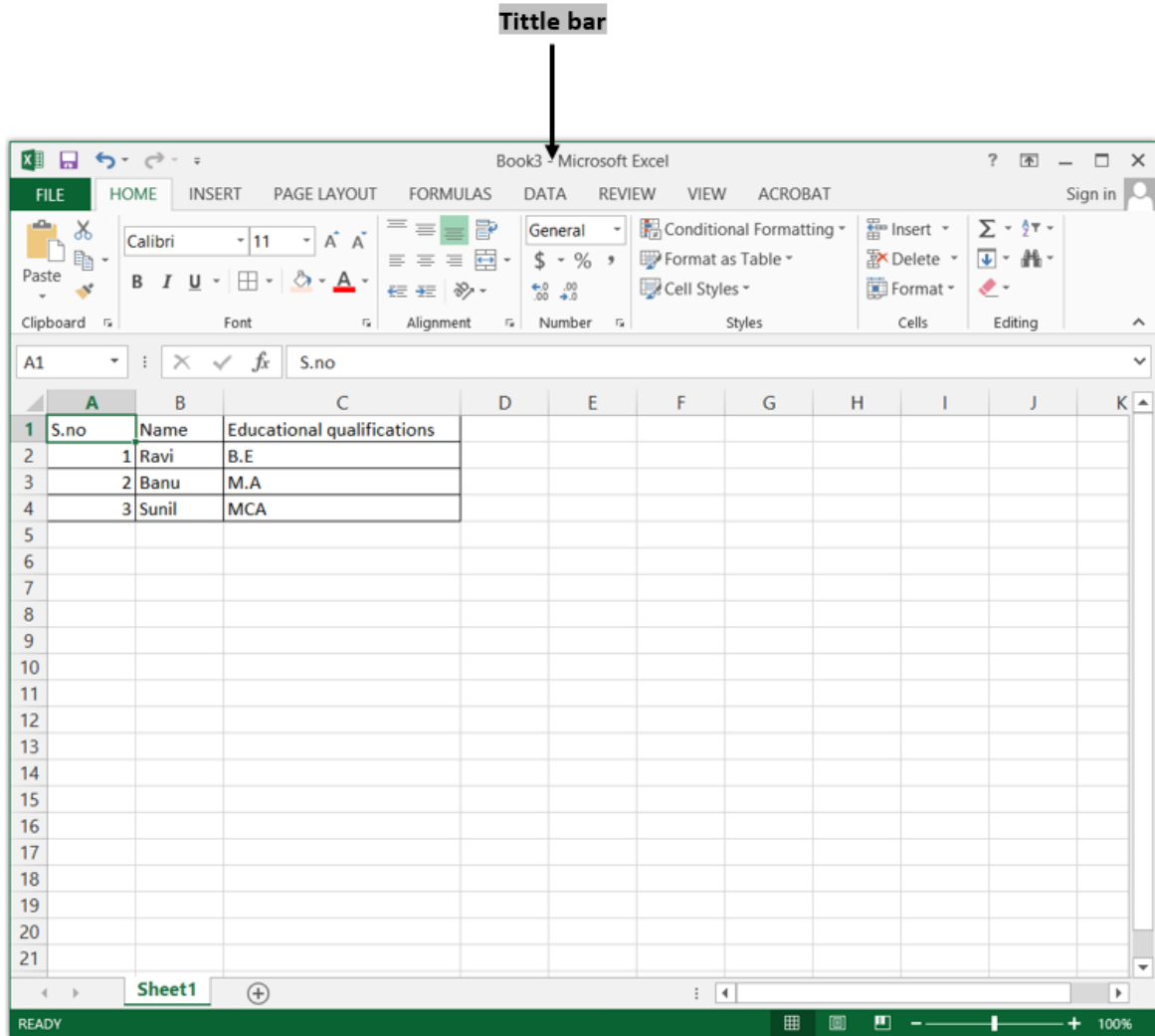
Menu bar

Menu bar is located directly below the title bar. It displays a list of menus that can be used to give commands to excel. Clicking on a menu bar displays a drop down menu of icons. You can move across the menu bar and scroll down menus with your mouse by highlighting one of the menu items and using arrow keys on your keyboard.

- **File -** It has options such as: save, save as, open a new document, print, etc.
- **Home** - It has icons to change font size, style, alignment, borders, etc.
- **Insert** - It has icons to insert table, chart, pictures, screenshot, header, footer, etc.
- **Page Layout** - It has icons to set margins, orientation, size, breaks, indent, etc.
- **Formulas** - It has insert function, auto sum, date and time, lookup and reference, etc.
- **Data** - It has icons to import data from web, from access, refresh all, from other sources, etc.
- **Review** - It has icons for spelling and grammar check, thesaurus, word count, etc.
- **View** - It has icons to zoom, print layout, switch windows, split, etc.

Menu bar
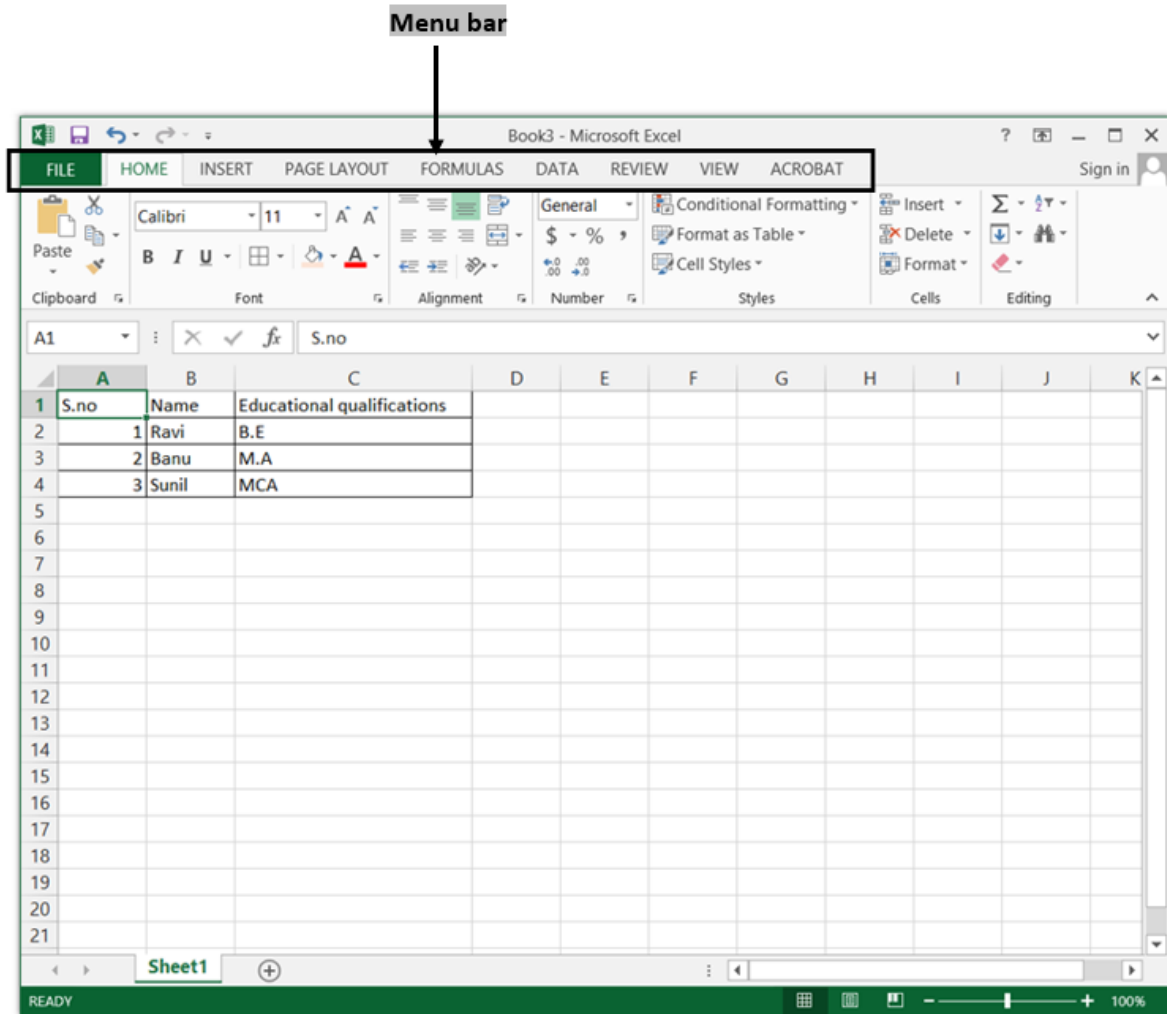
Formula bar

Cell content can be edited directly in the cells or in formula bar. If cell contains a formula, it will be displayed here. If there is no formula, then content of the cell is displayed. Formula bar allows you to view, enter and delete data in a selected cell.

Formula bar
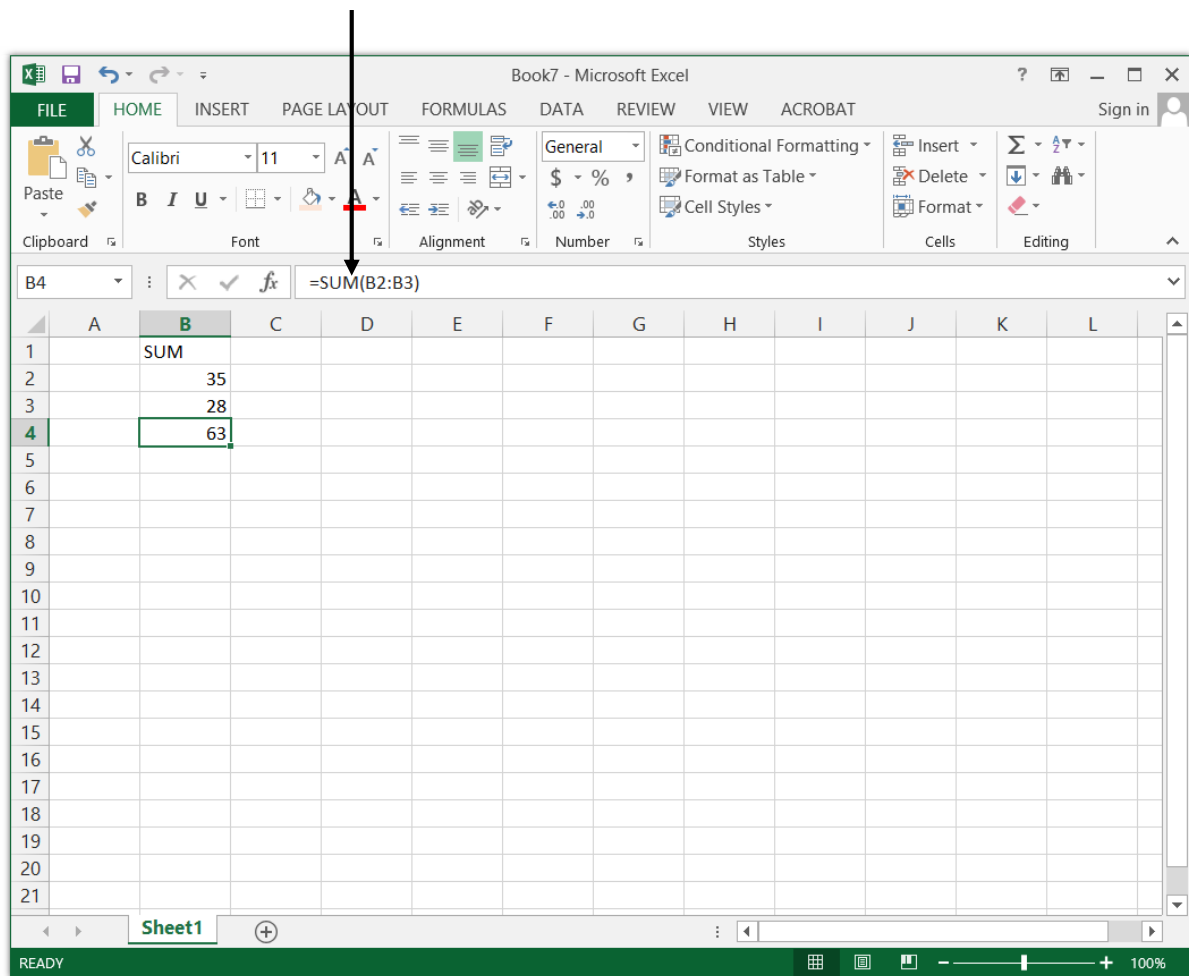
Mathematical formula appears in the formula bar when a cell that includes a formula is selected in the worksheet. In the below example, formula to calculate average grades is in cell E5. When E5 is selected, formula appears in the formula bar.
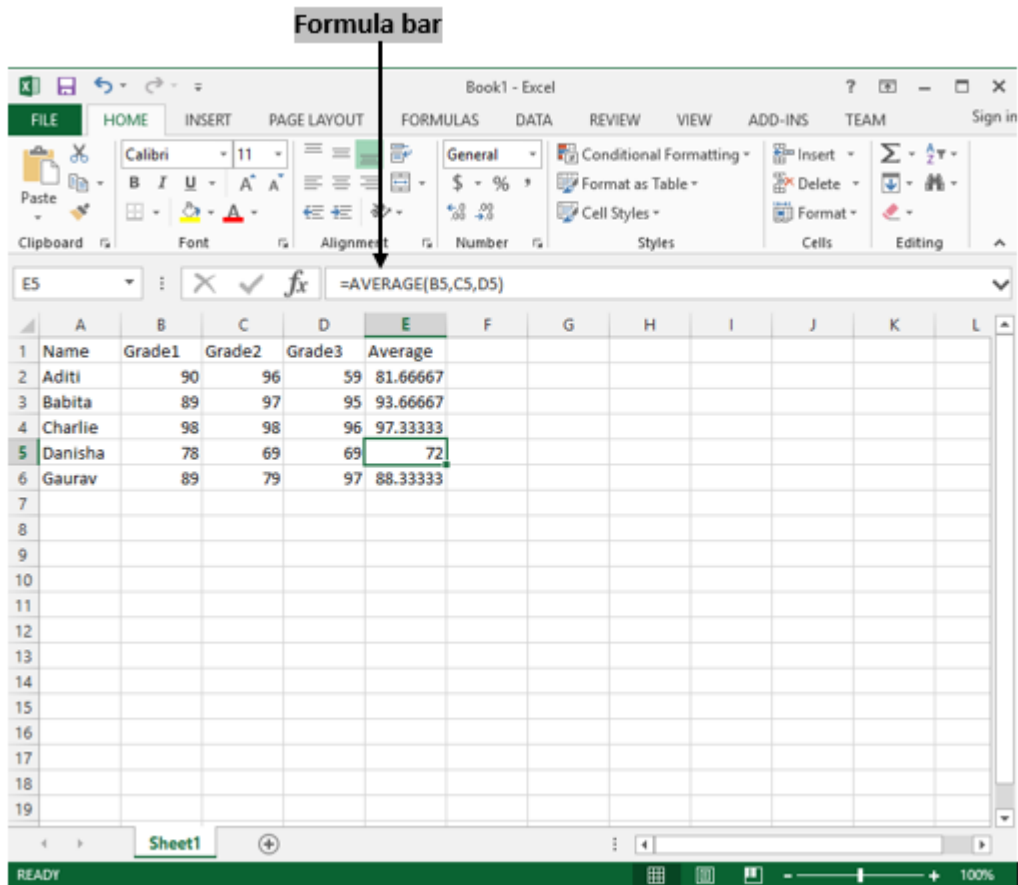
Printing a Spread Sheet

Printing is creating a hard copy of any content. A spreadsheet can be printed by selecting **File → Print** option. Shortcut to print is **"Ctrl + P".**
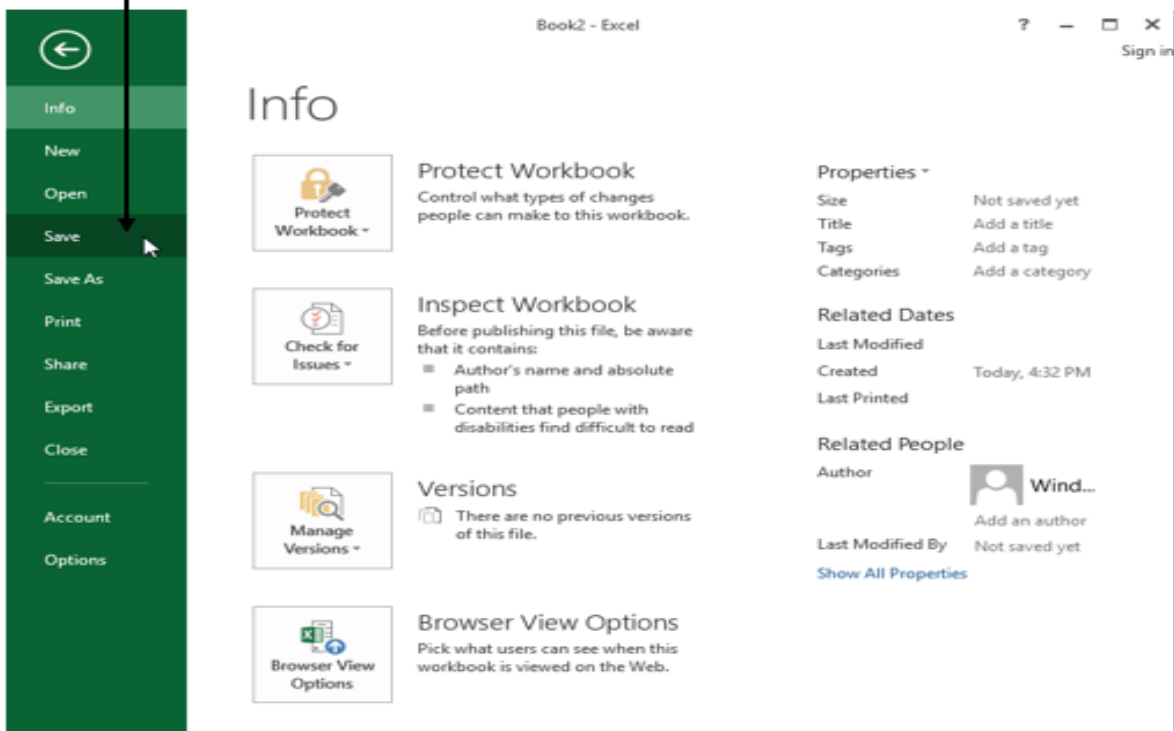
Go to file
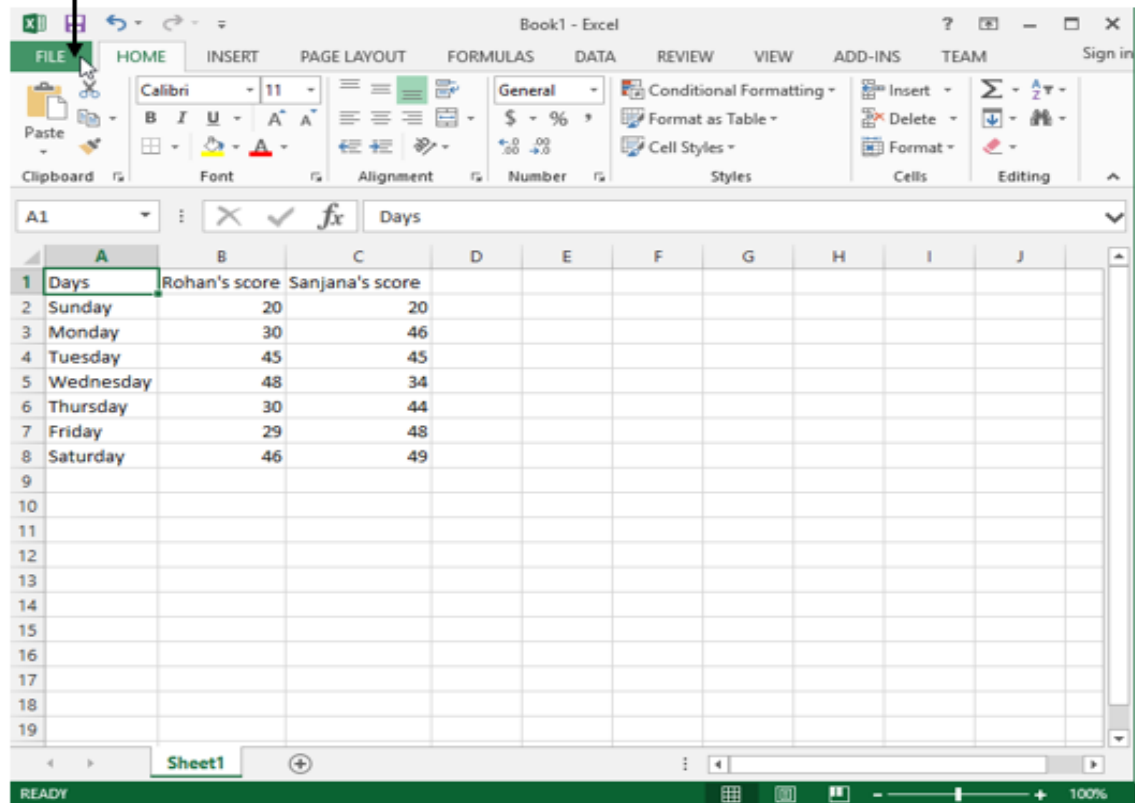
Go to print
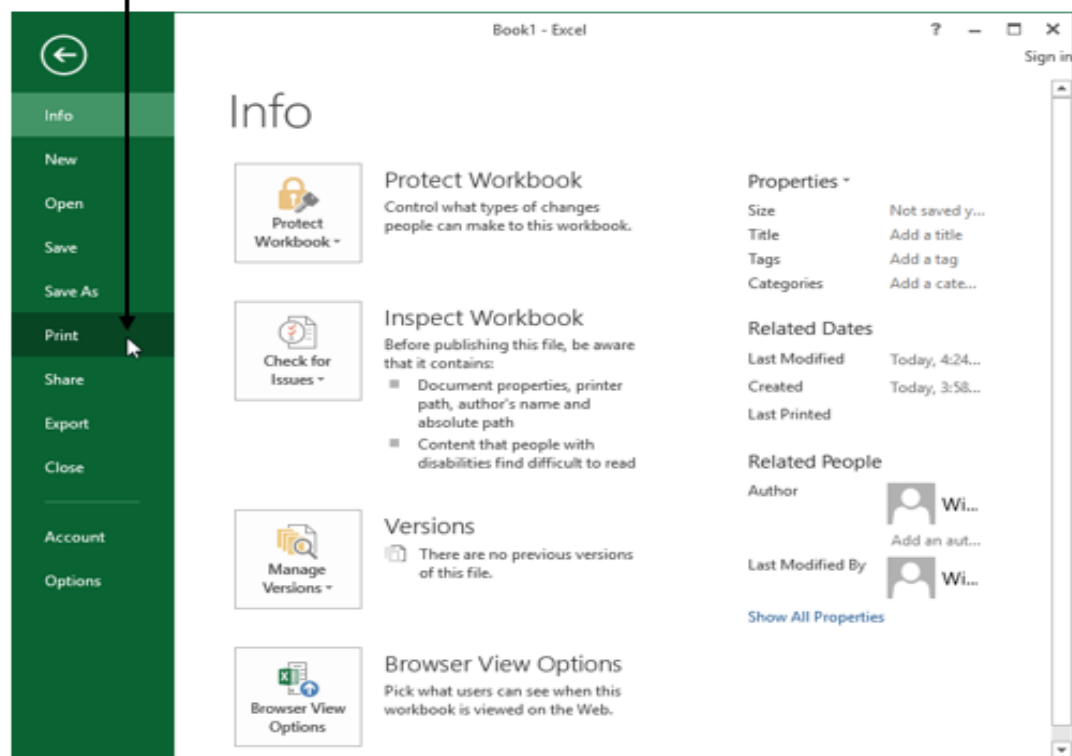
Saving Workbooks

After typing our content in excel worksheet, we must save the worksheet for future use. Shortcut key to save is **"Ctrl + S"**. The process of saving consists of following steps:
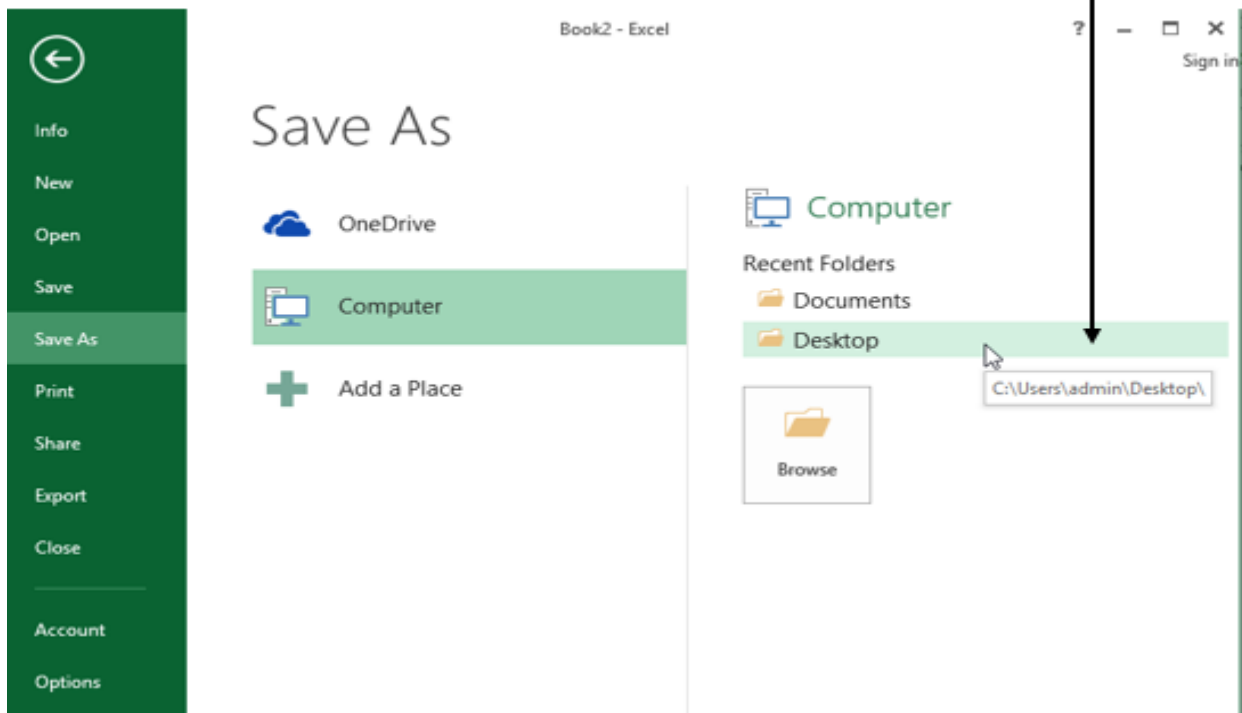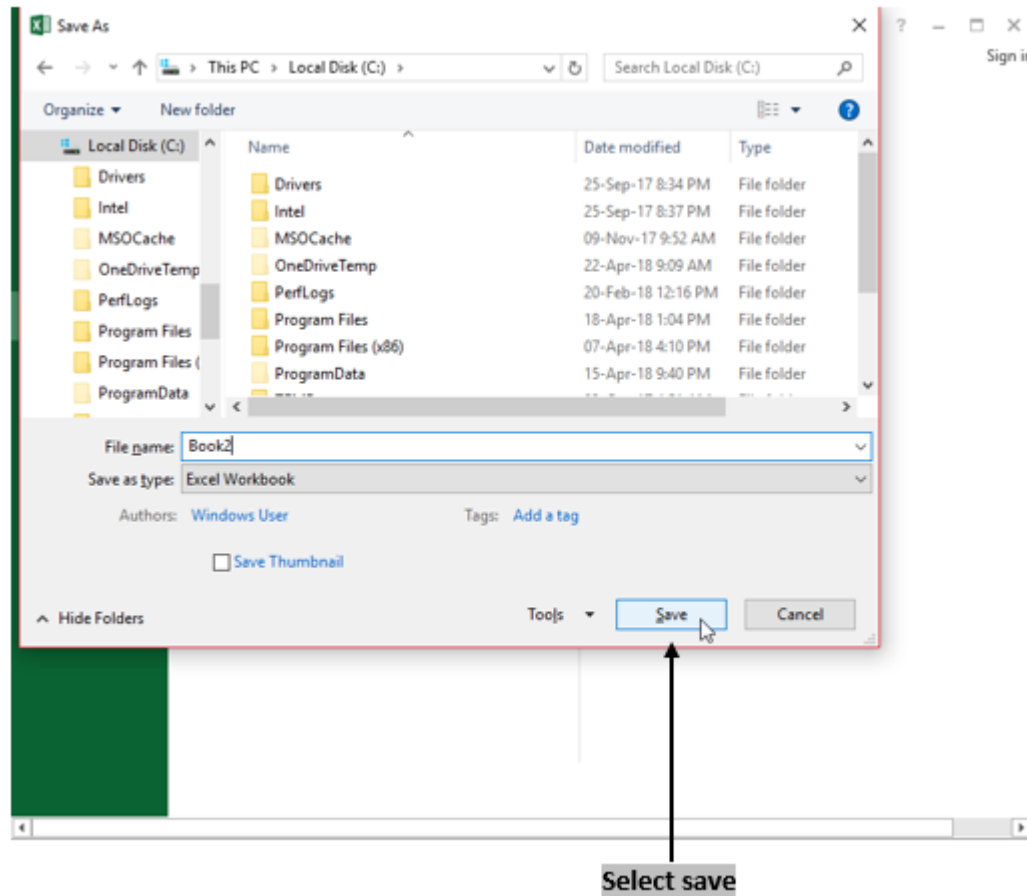
1.   Click File menu.
2.   Click Save option from sub menu.
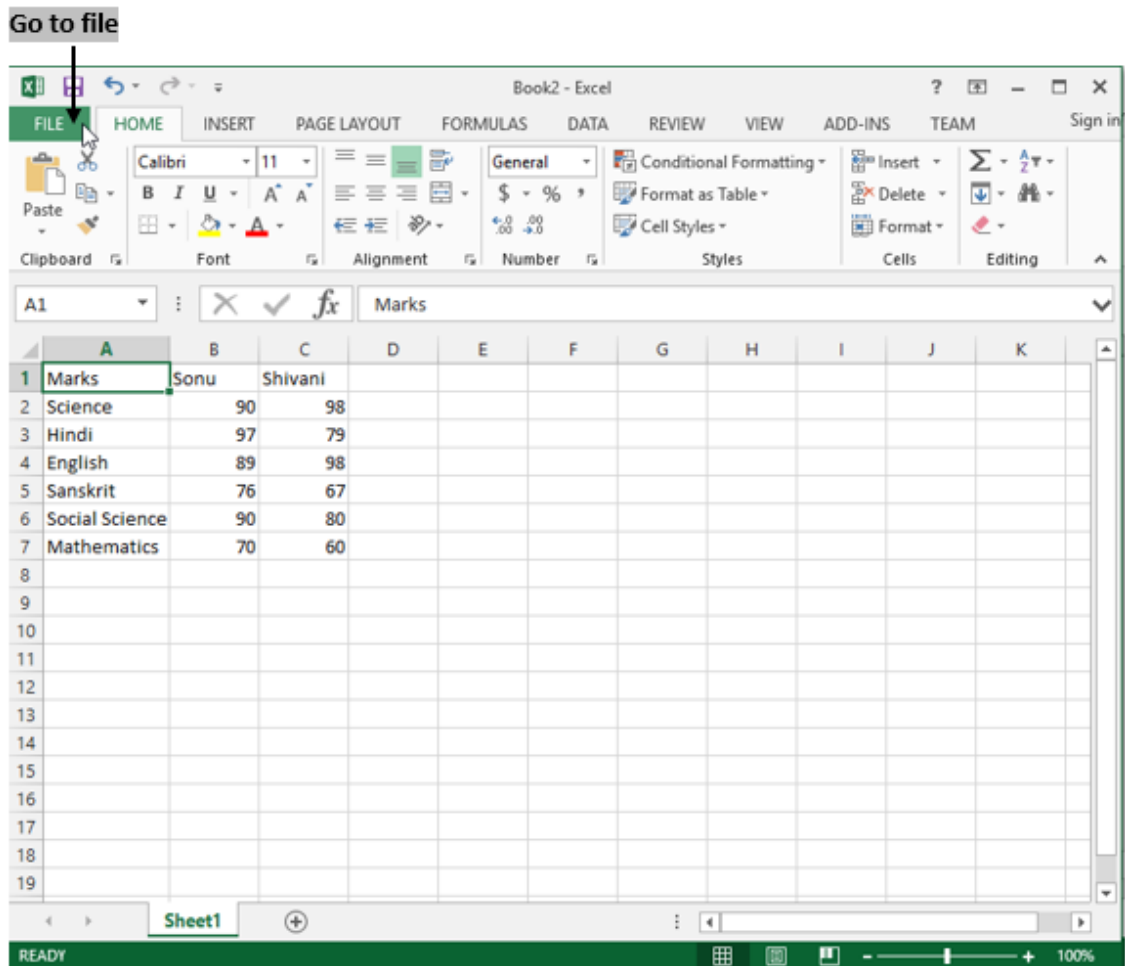
Go to save

Select the location

Select save

Manipulation of Cells

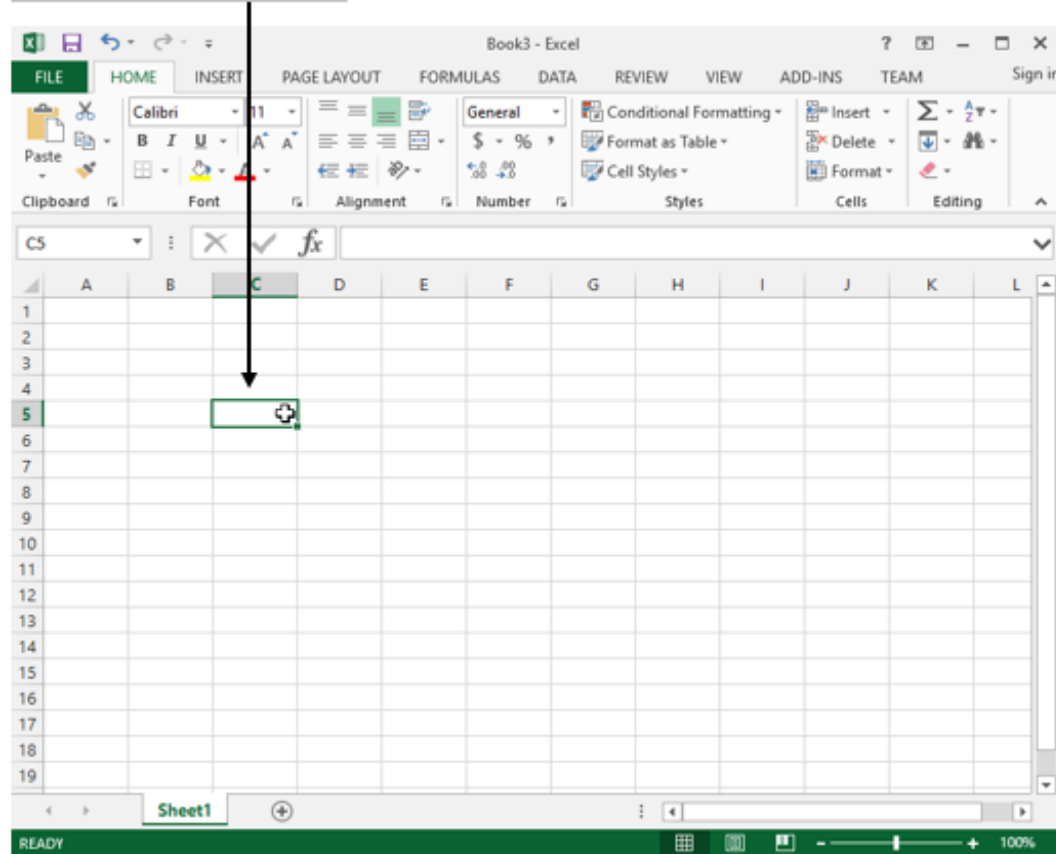Manipulation of cells is entering and modifying the contents of the cells.

Entering Text, Numbers and Dates

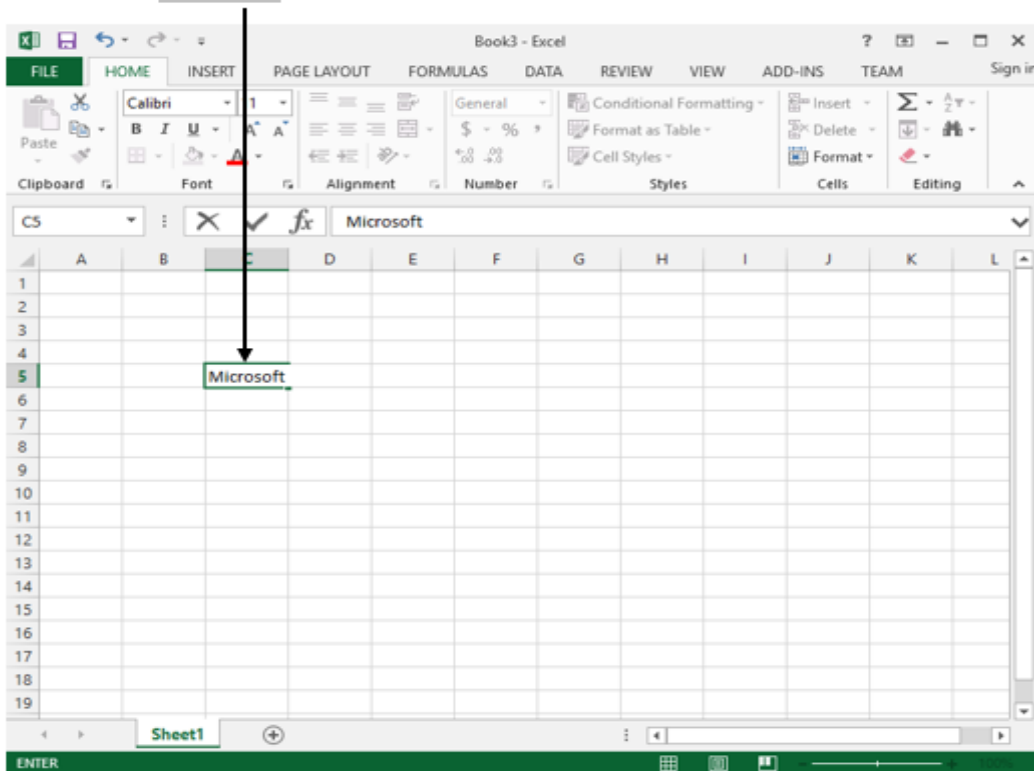In this topic, we are going to learn how to enter text.

1. Place cursor in the cell where you want to enter text.
2. Type the contents or texts in that cell.

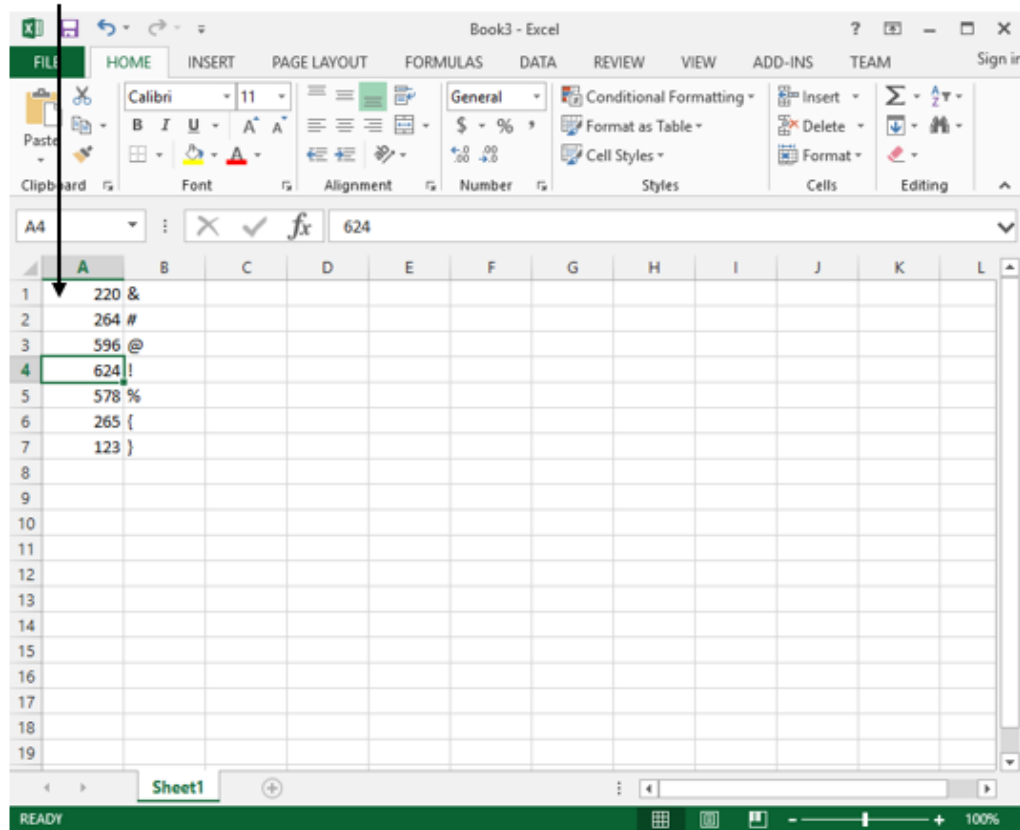**Place the cursor on the cell**

Enter text

Numbers

Num Lock (to "on" or "off" Number keypad) can be used to make data entry easy. To enter numeric values in the spreadsheet, follow the below steps:

1. Open a new worksheet.
2. Enter the number you would like to add.
3. Fill the complete numeric data in different cells.
4. Press Esc when you have completed entering your data.

Dates

Returns the sequential serial number that represents a particular date. Cell format remains normal before function gets entered in the cell. Result is formatted as a date, once the function gets executed.
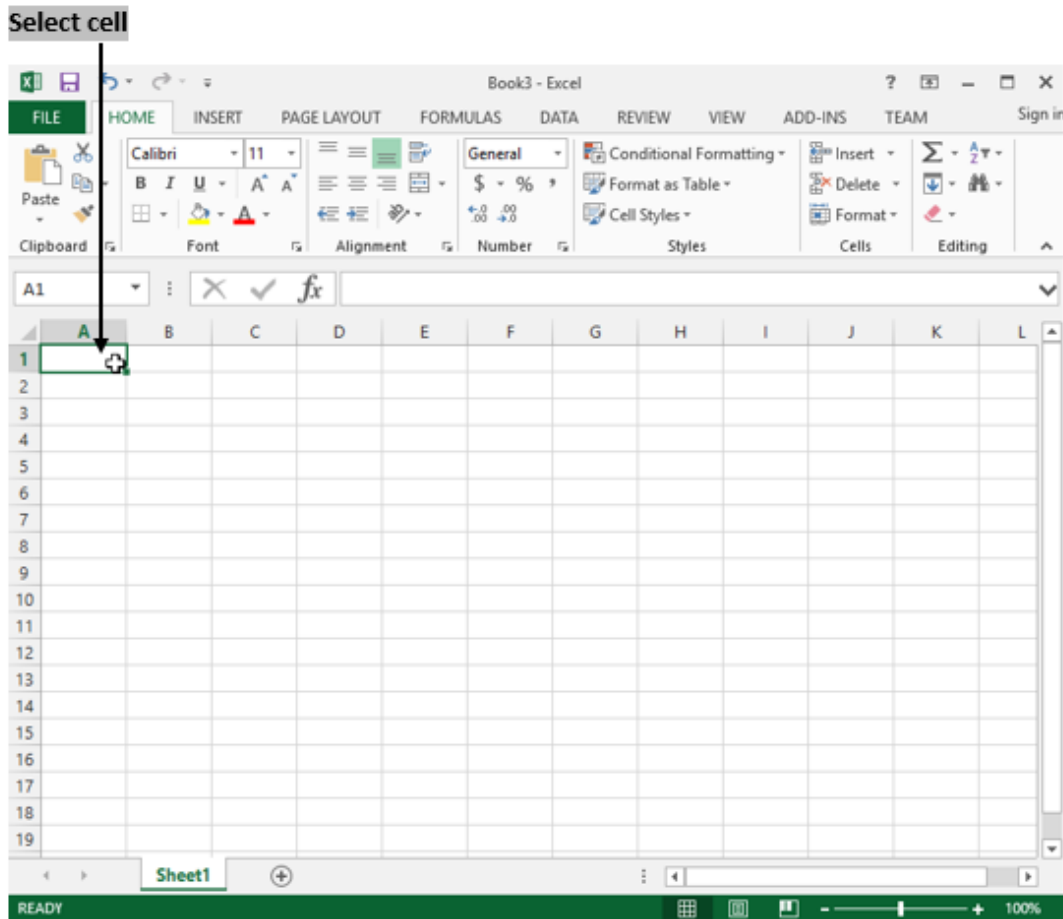
Syntax

```
DATE (year, month, date)
```

Example

```
=DATE (2018,4,18)
```
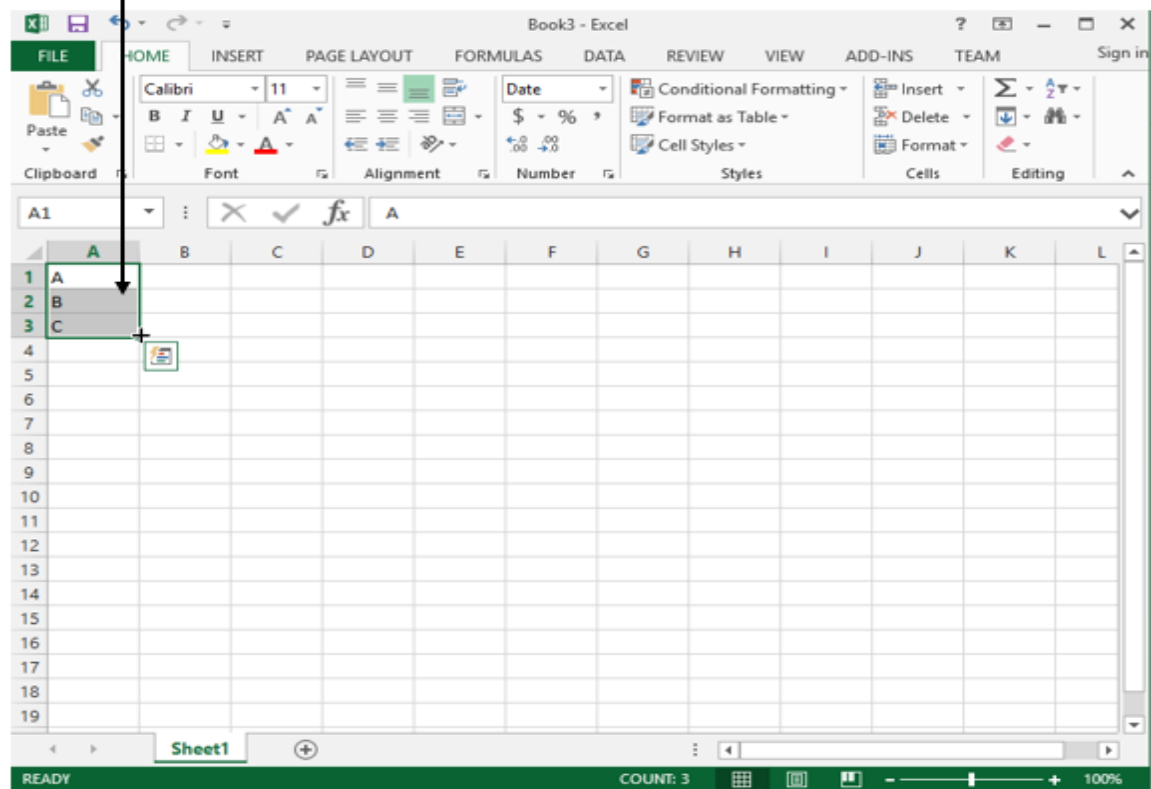
Output

```
18/4/2018
```

Select cell

Creating Text, Number and Date Series

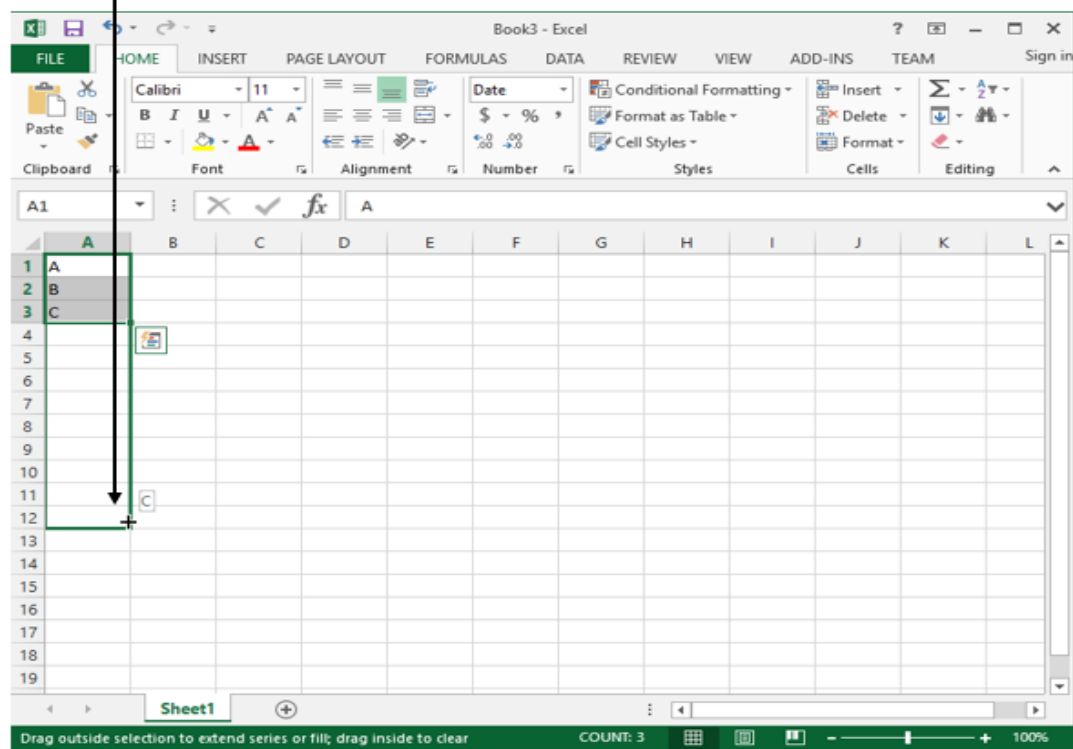Here, we will look into creating text, number and data series:
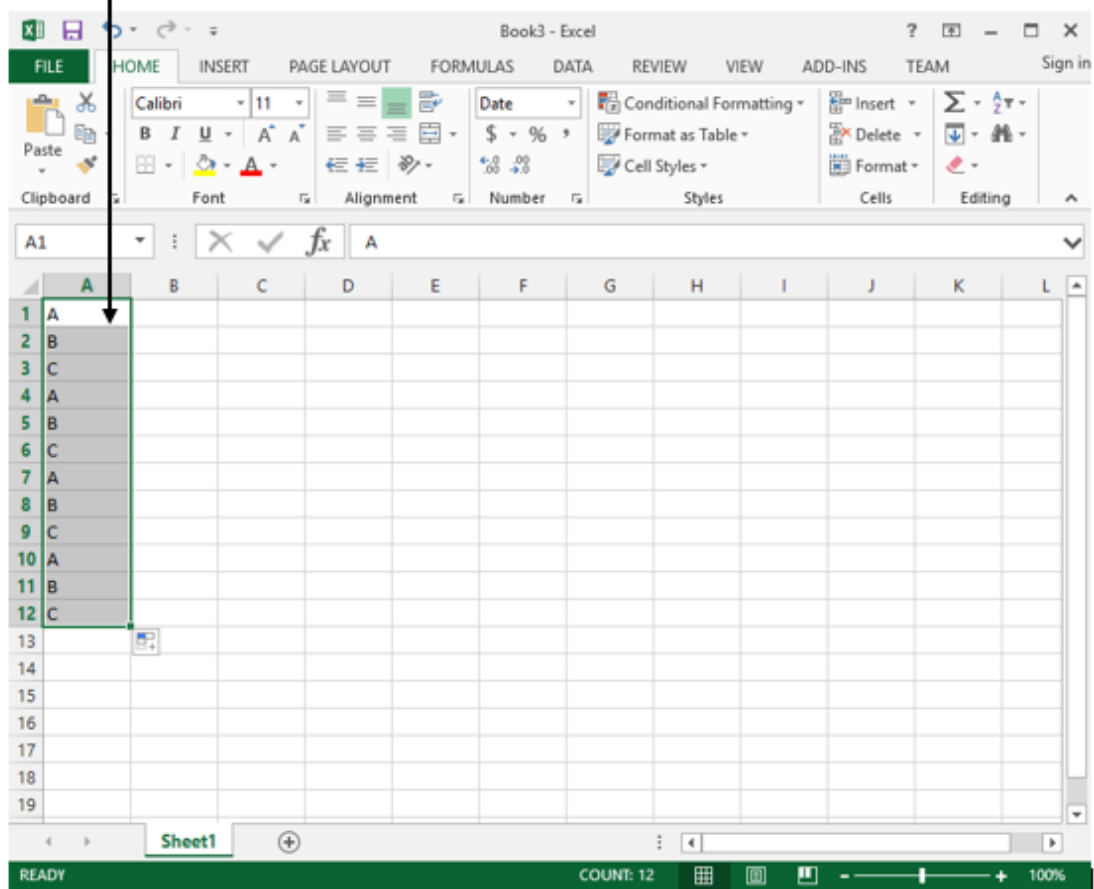
Creating Text Series

- Select the cell that contains starting text.
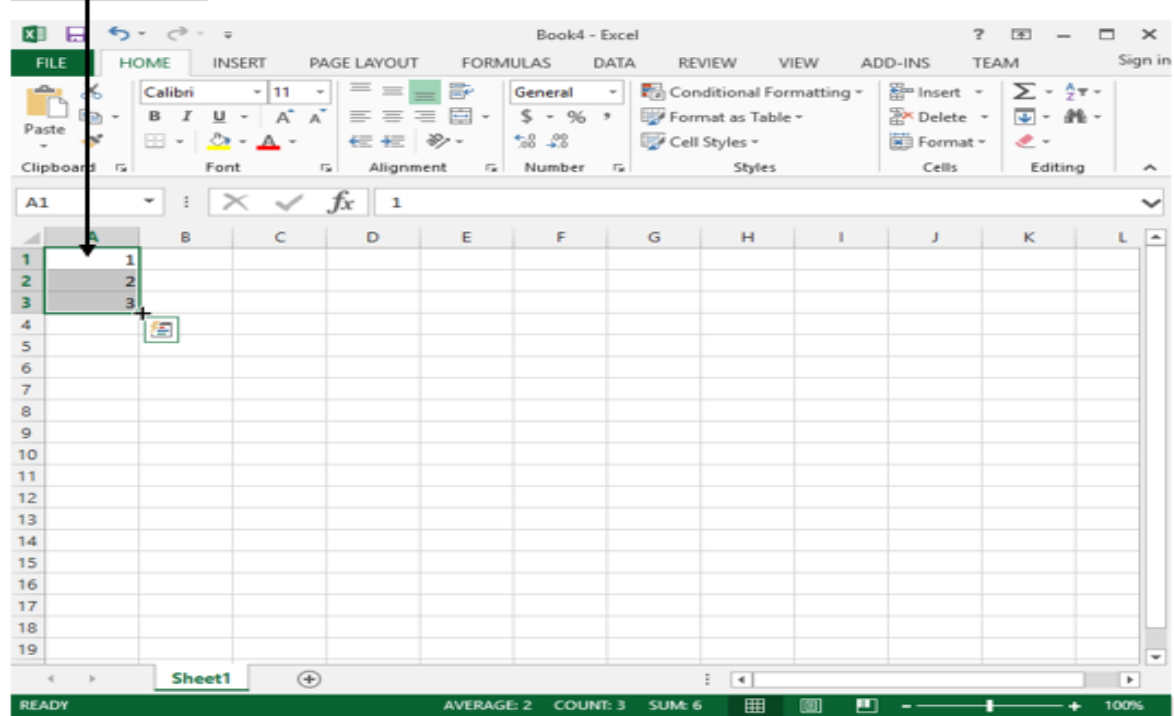- Then drag fill handle (+) over the cell where you want to fill text.
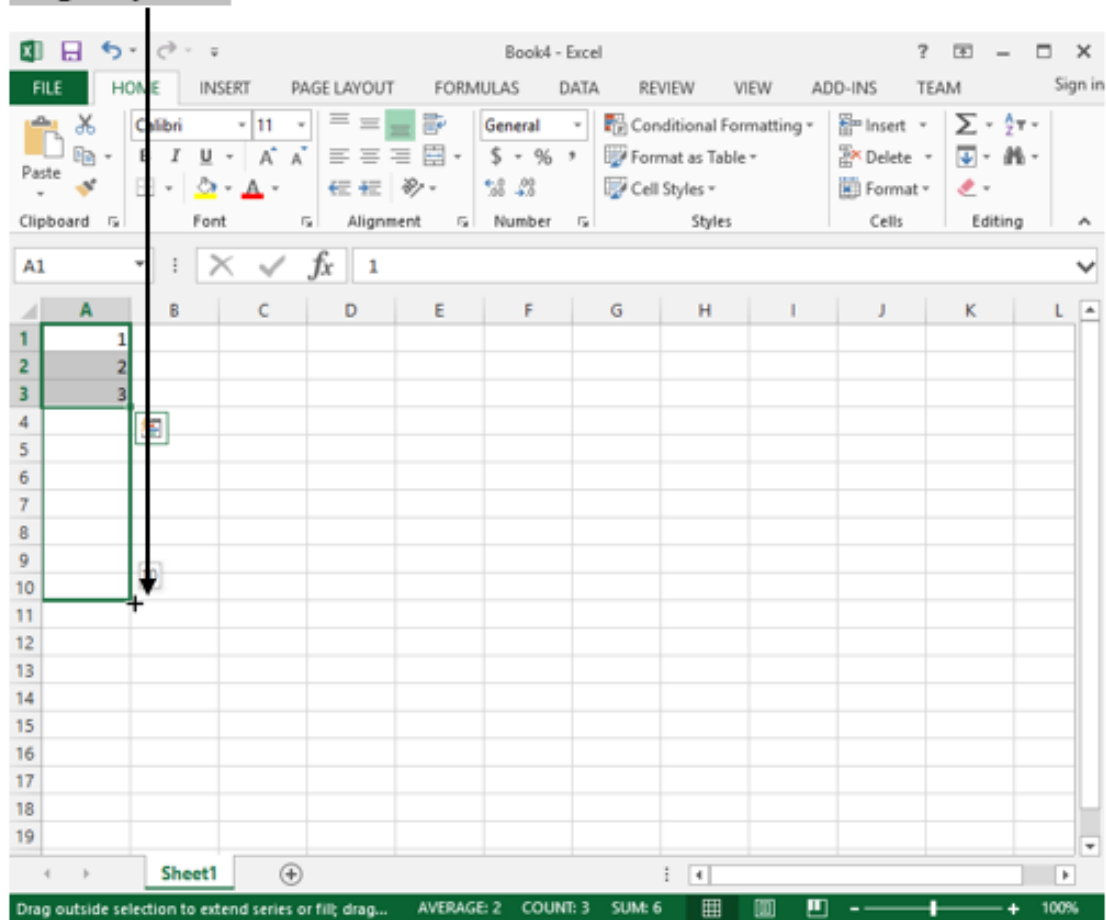
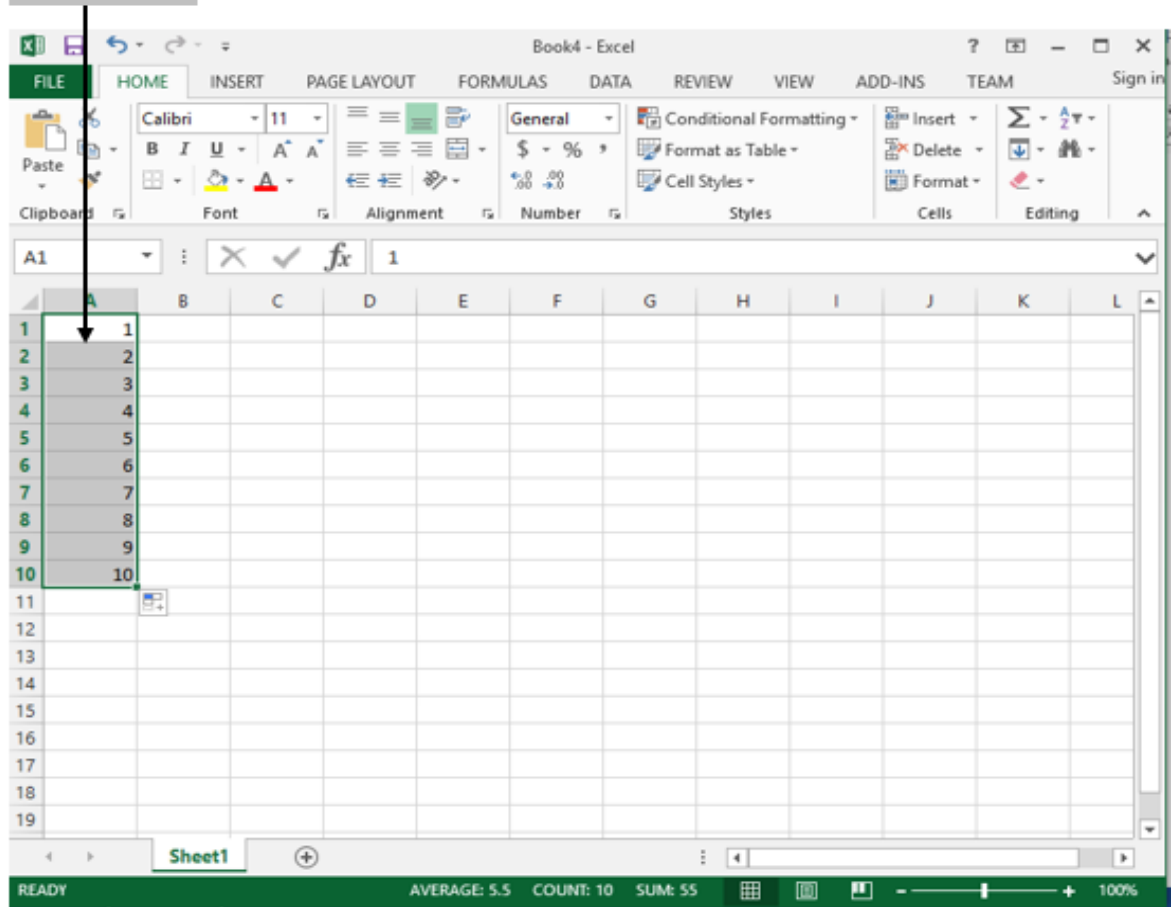**Select the cells**

Drag the pointer

Text series

Creating Number Series

- Open a new excel sheet.
- Select the cell that contains starting number.
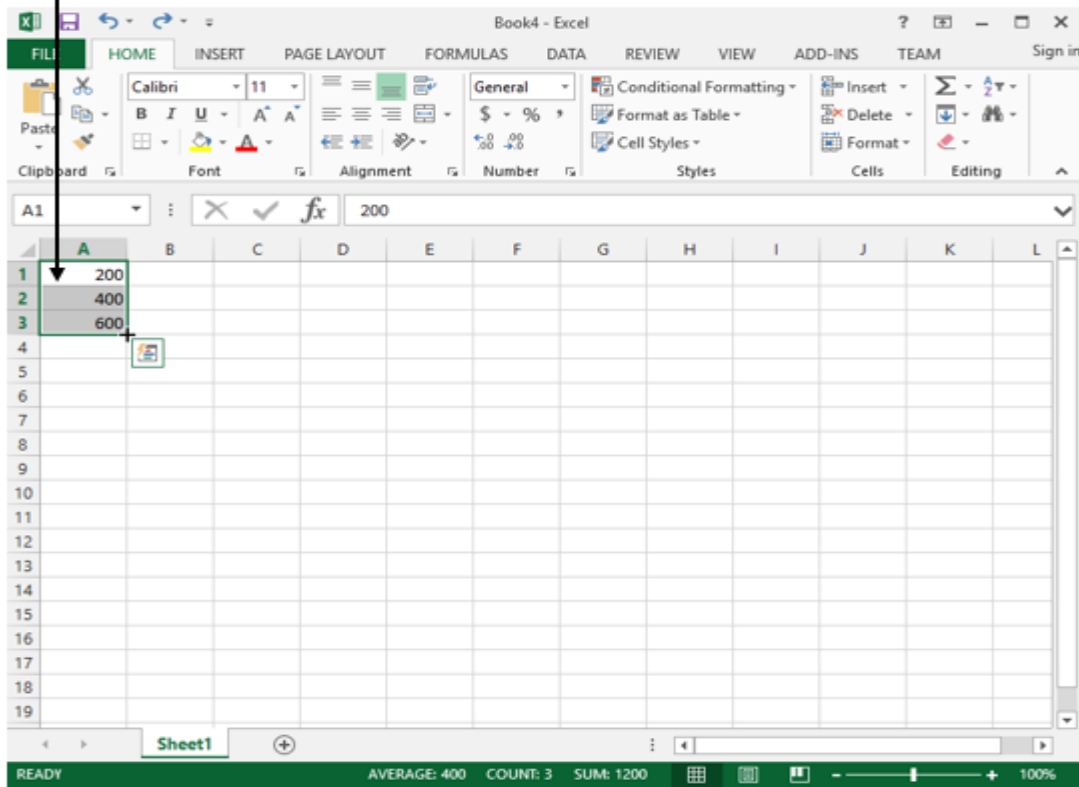- Then drag fill handle (+) over the cell where you want to fill number.

Select the cells

Drag the pointer

Number series

Example

Select cells

Drag the pointer

Number series

Creating Dates Series

- Returns the sequential serial number that represents a particular date.
- Select the cell that contains starting date.
- Then drag fill handle (+) over the cell where you want to fill date.

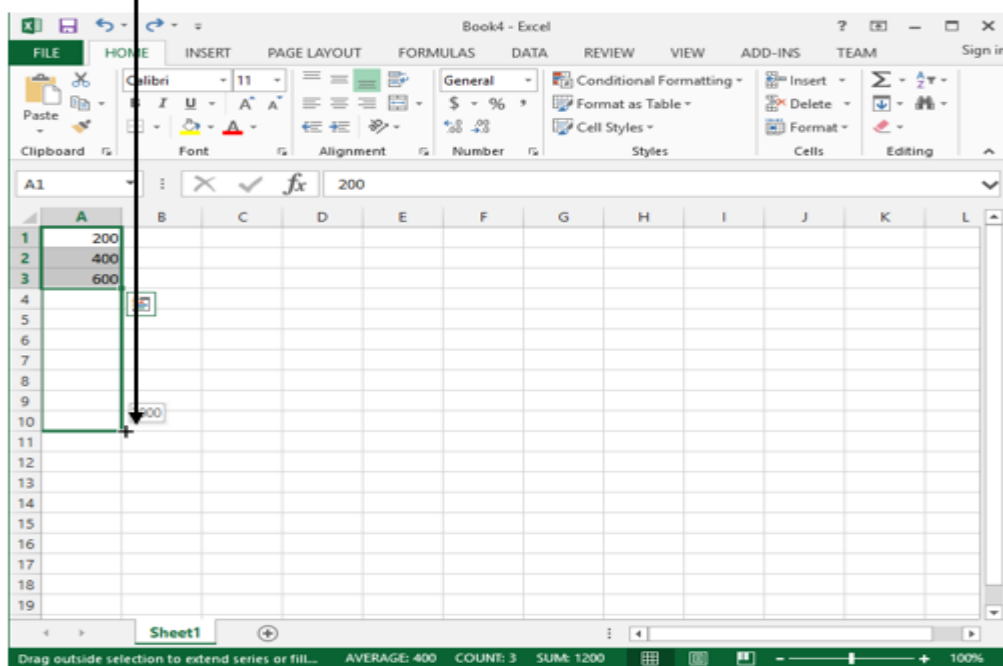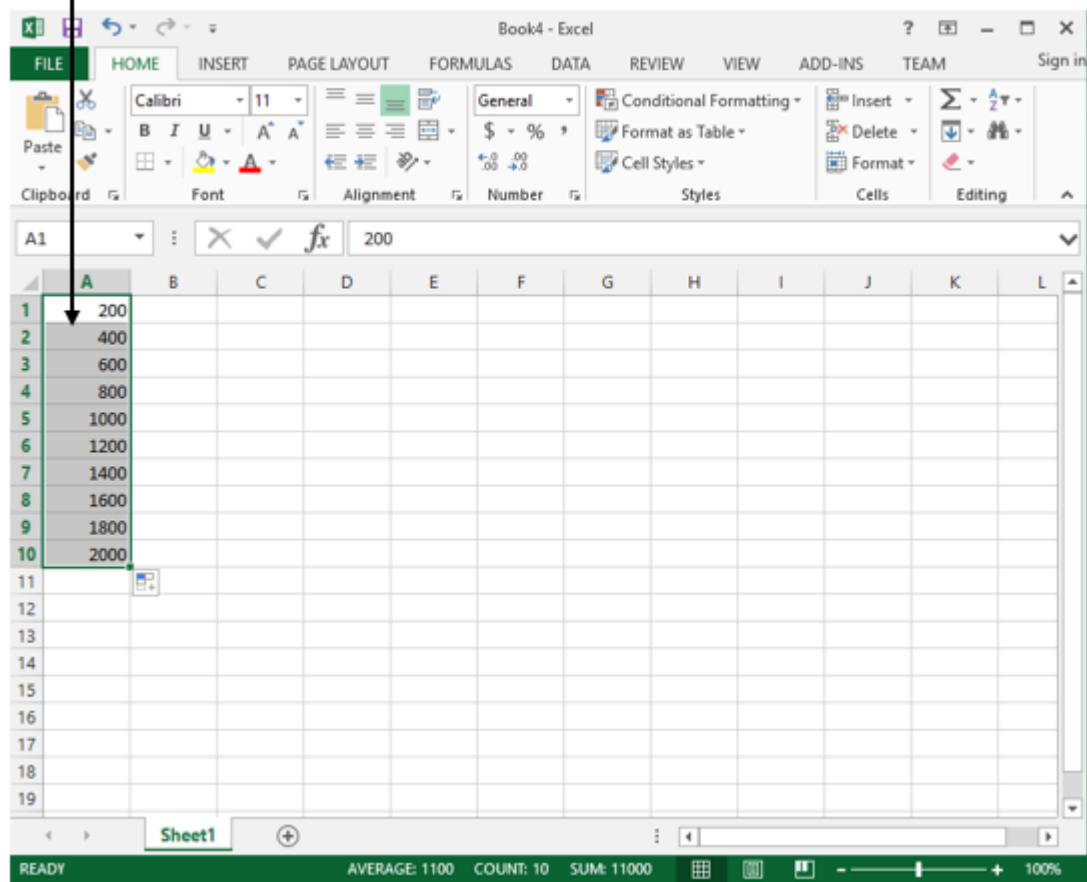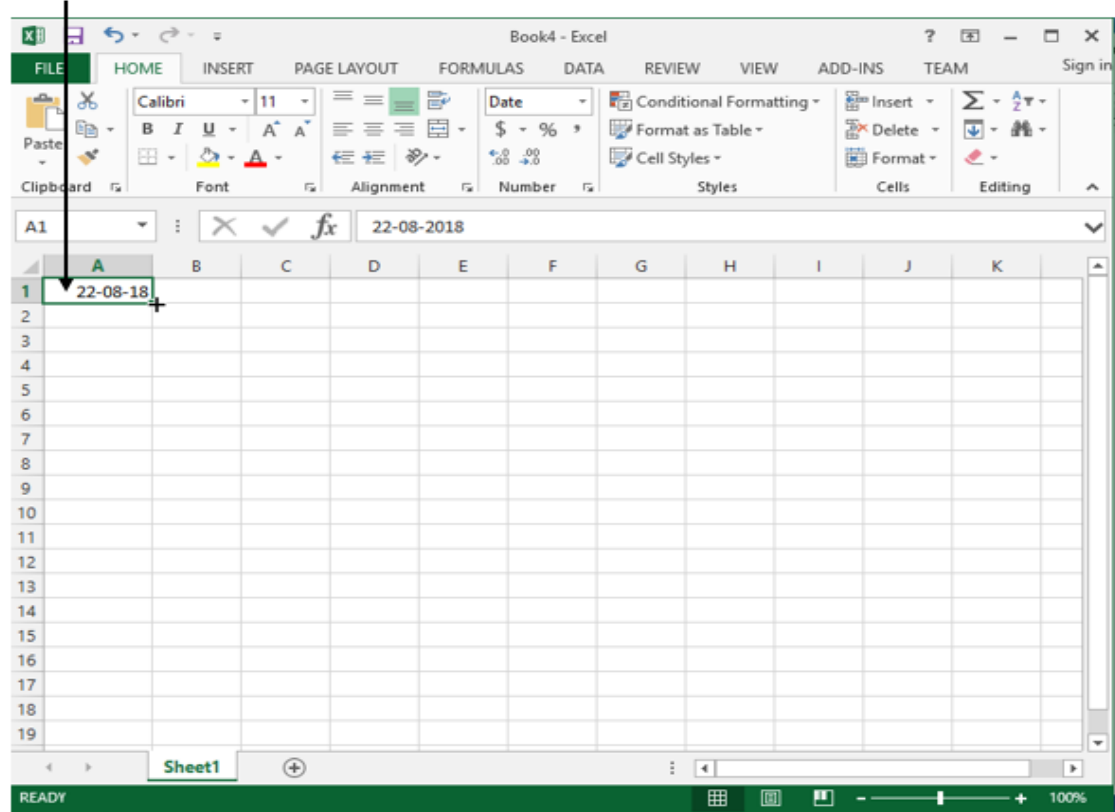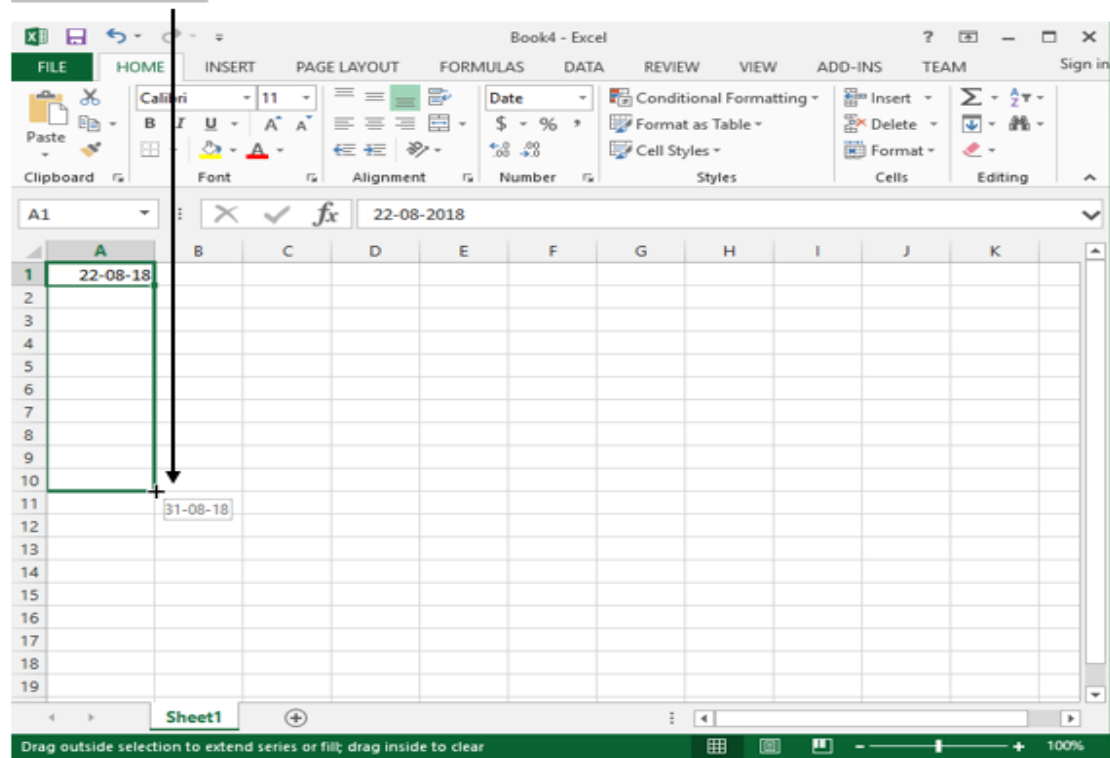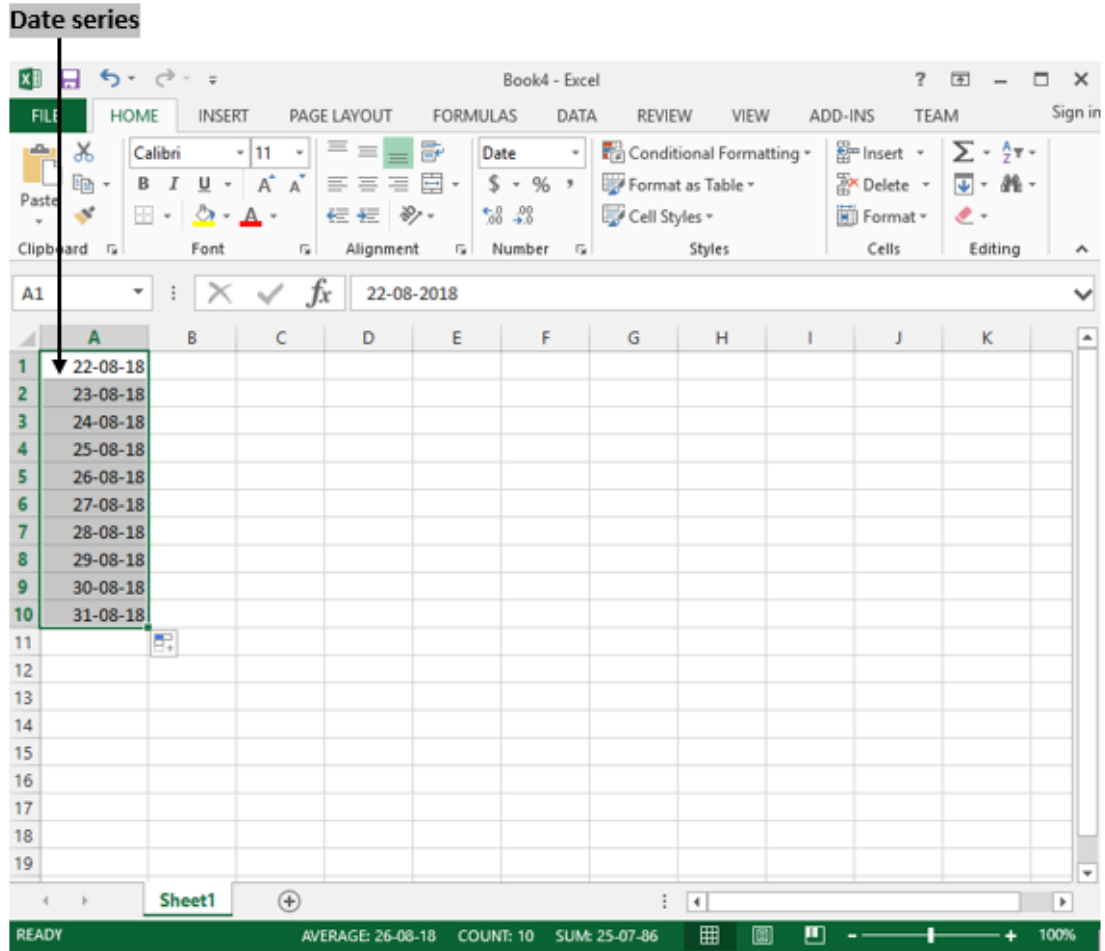**Select the cell**

Drag the pointer

Date series

Editing Worksheet Data

Modifying or adding text or using cut, copy, paste operations to an existing document is known as editing.

- To edit data in a worksheet, first open the worksheet by clicking on **File → Open.**
- Next, move cursor to the **cell**, which you want to edit.
- Note that content of the cell is displayed in formula bar as well.
- As you perform any operation, it is visible in the formula bar.

Cut

- Deleting unnecessary data from the cell is called cutting.
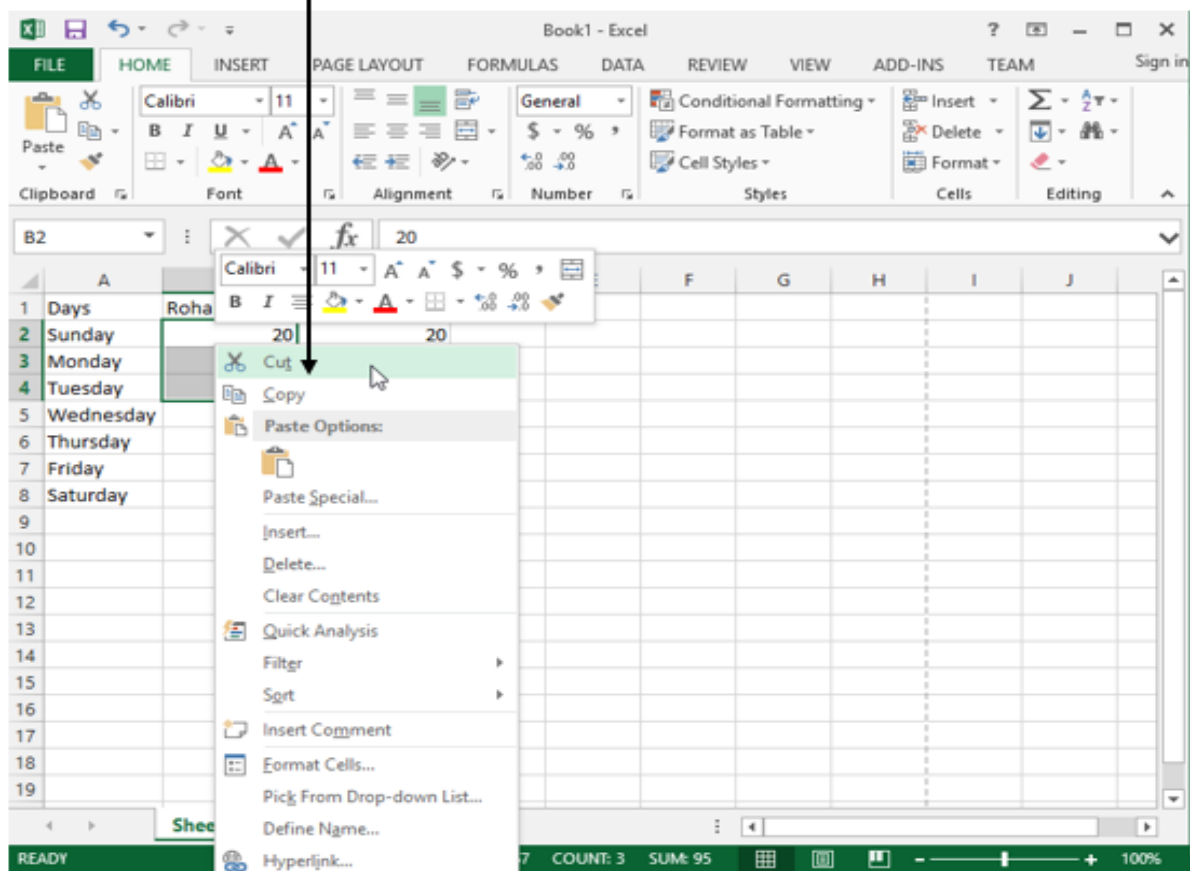- In Microsoft Excel, you can cut text from one area of a worksheet and save or paste that text anywhere.
- When you cut the text, it is stored on **clipboard**.
- If you want to cut any text or content from worksheet, first select the text or content which you want to cut.
- To cut, Right **Click → Cut**.
- The shortcut key is "**Ctrl + X**".

Select the cells

Right click and select cut

Copy

Instead of retyping the same text, **Copy** function is used which reduces time and effort. By using **copy** option, you can copy the text from one location to another. Information stored on clipboard stays there until new information is either cut or copied. When you execute cut or copy, you replace old information on the clipboard with whatever you have just cut or copied.

- To copy the content, **Right Click → Copy**.
- Shortcut key is "**Ctrl + C".**

Select the cells
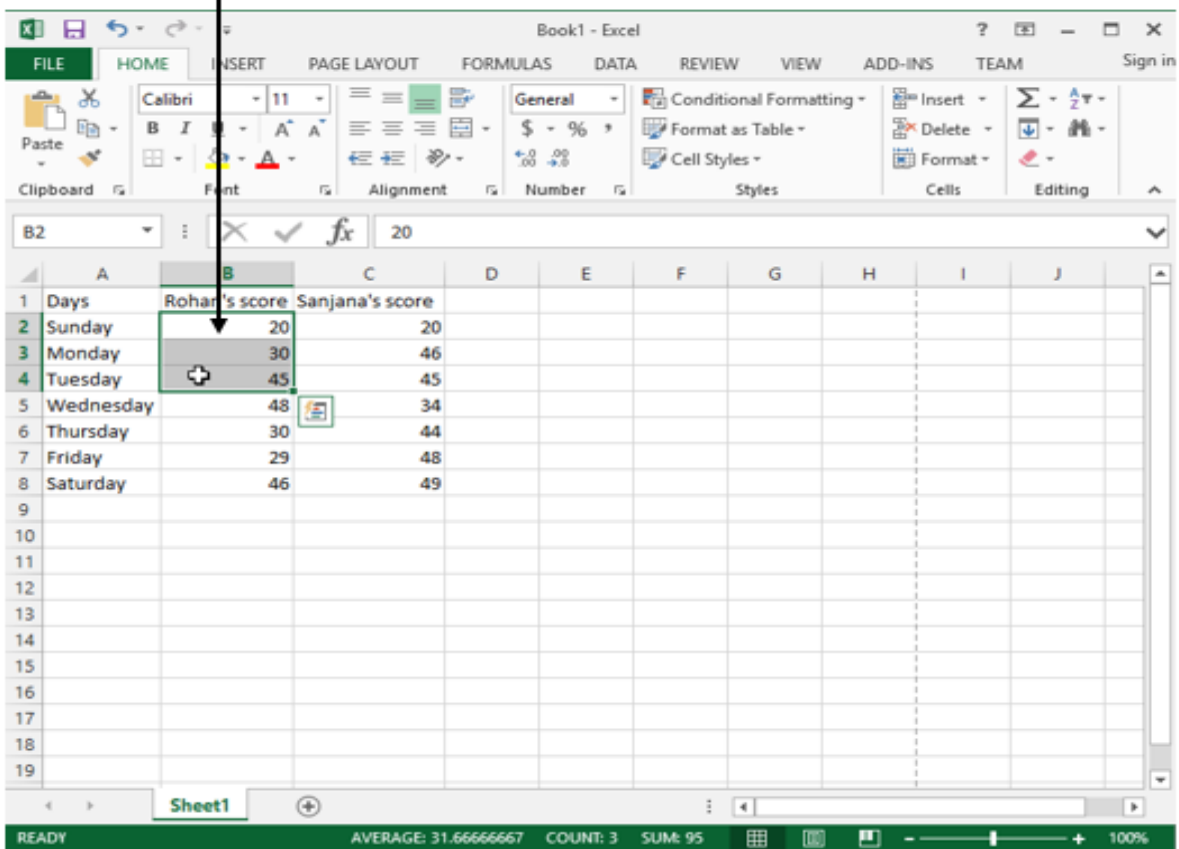
Right click and select copy
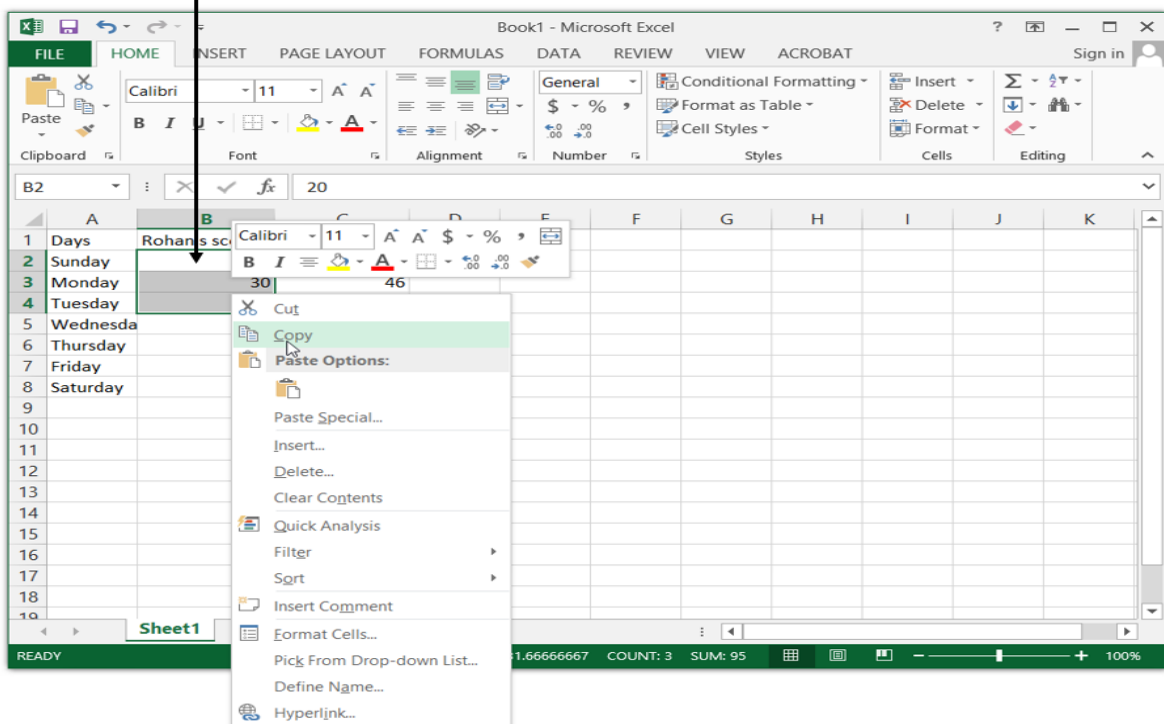
Paste

- Select your text to highlight it.
- First copy the text.
- Use mouse to move the cursor to desired position to paste the copied text.
- Click paste to insert the copied text in its new place.
- You can paste clipboard information as often as you like.
- To paste, **Right Click → Paste**.
- Shortcut key is "**Ctrl + V".**
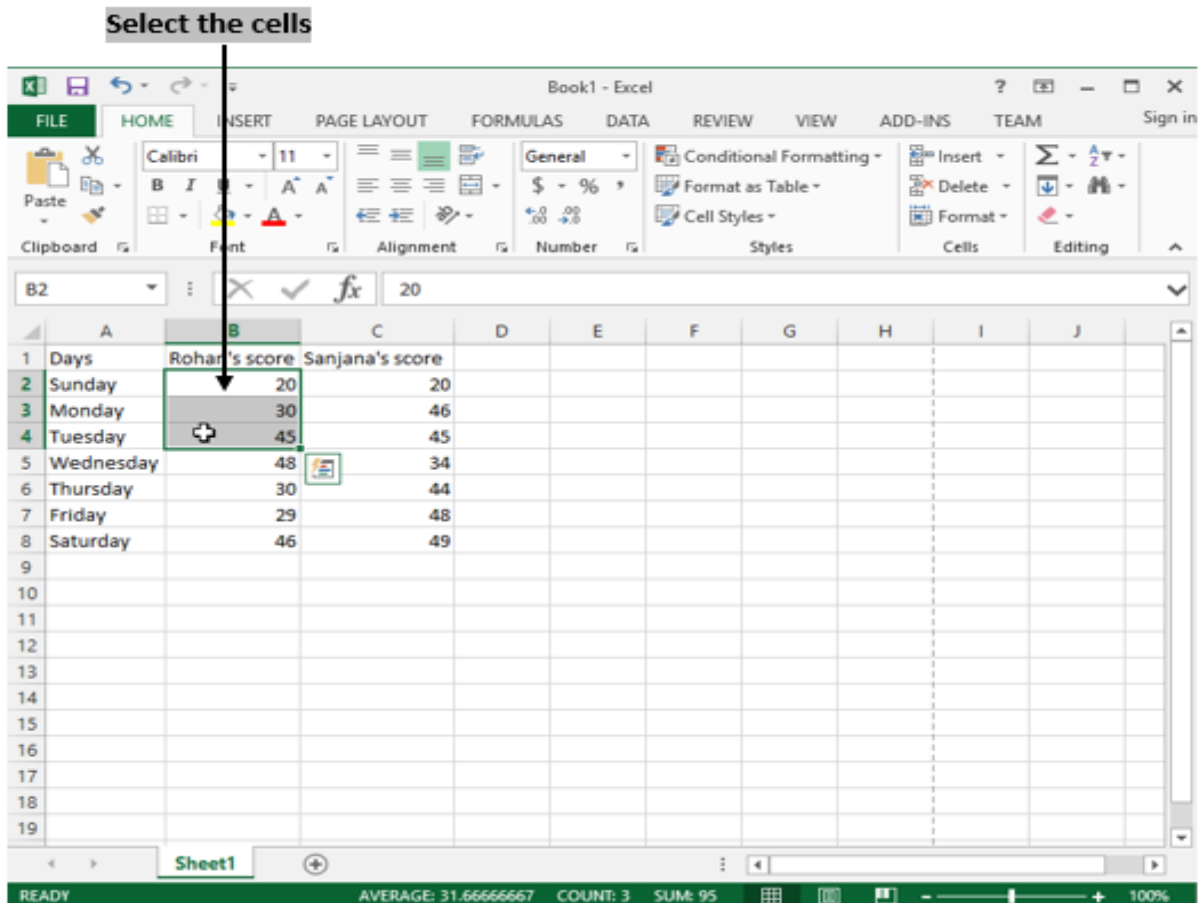
Right click and select copy
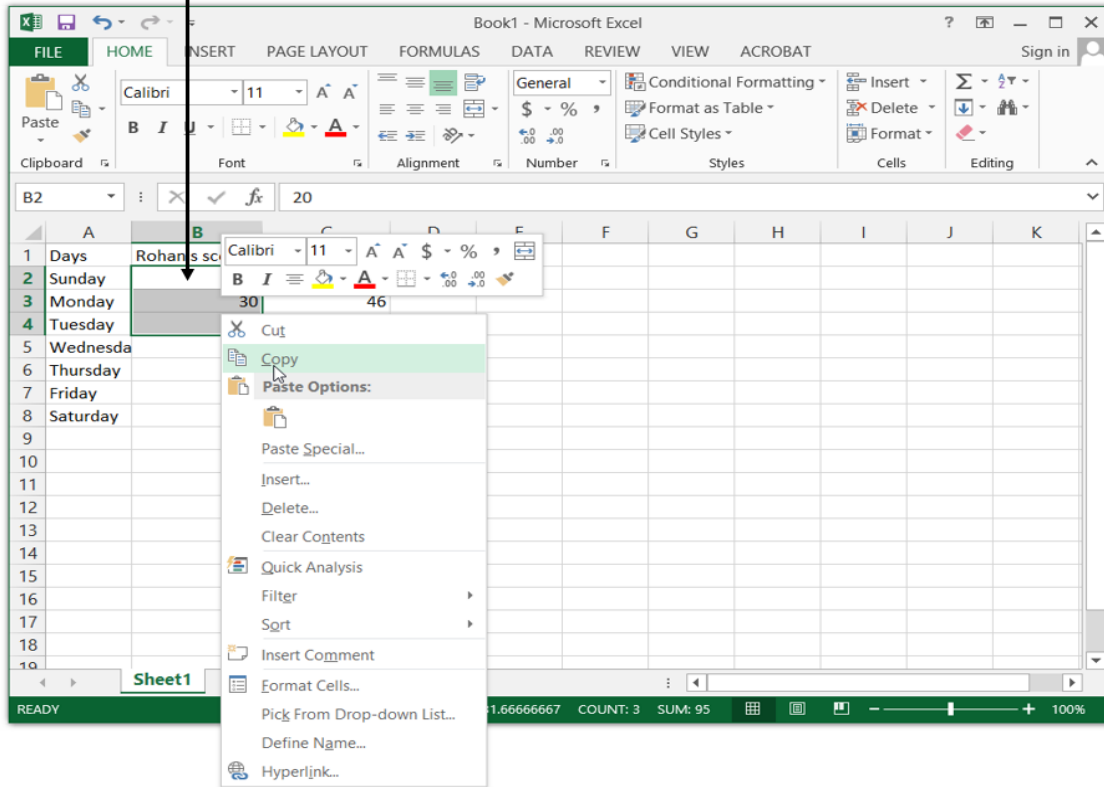
Select destination
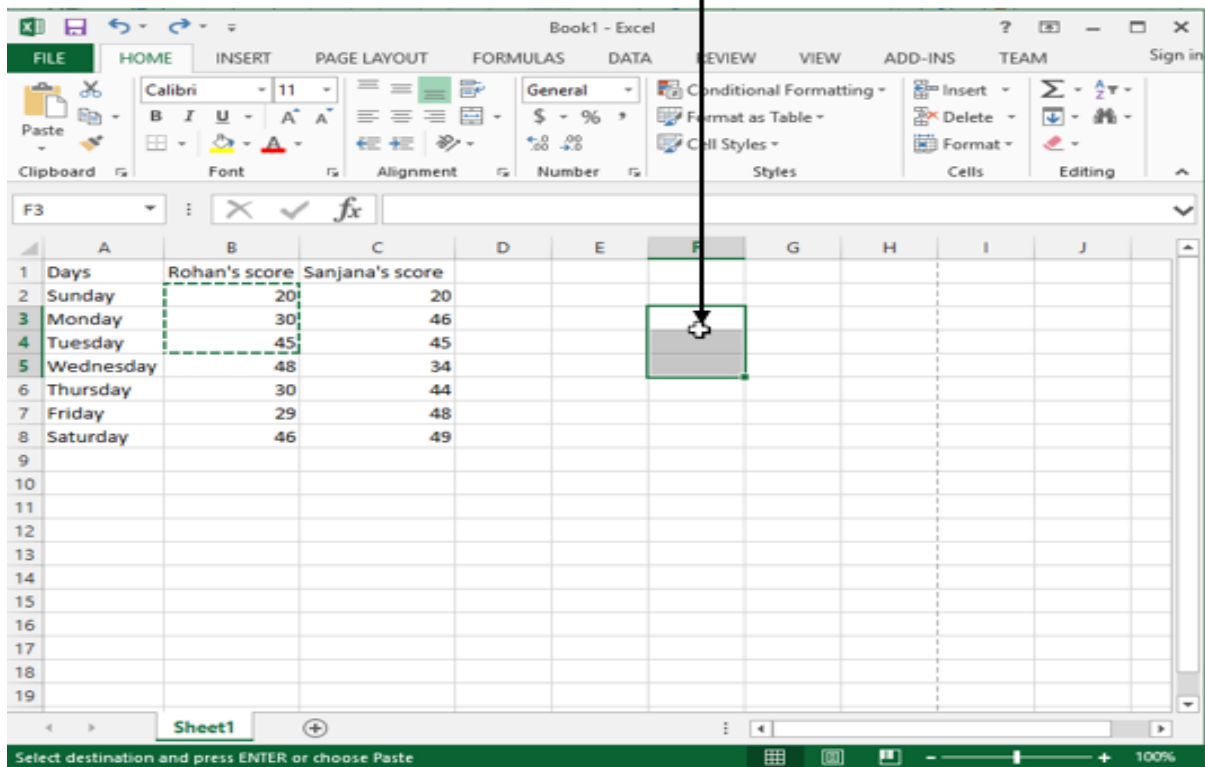
Select paste
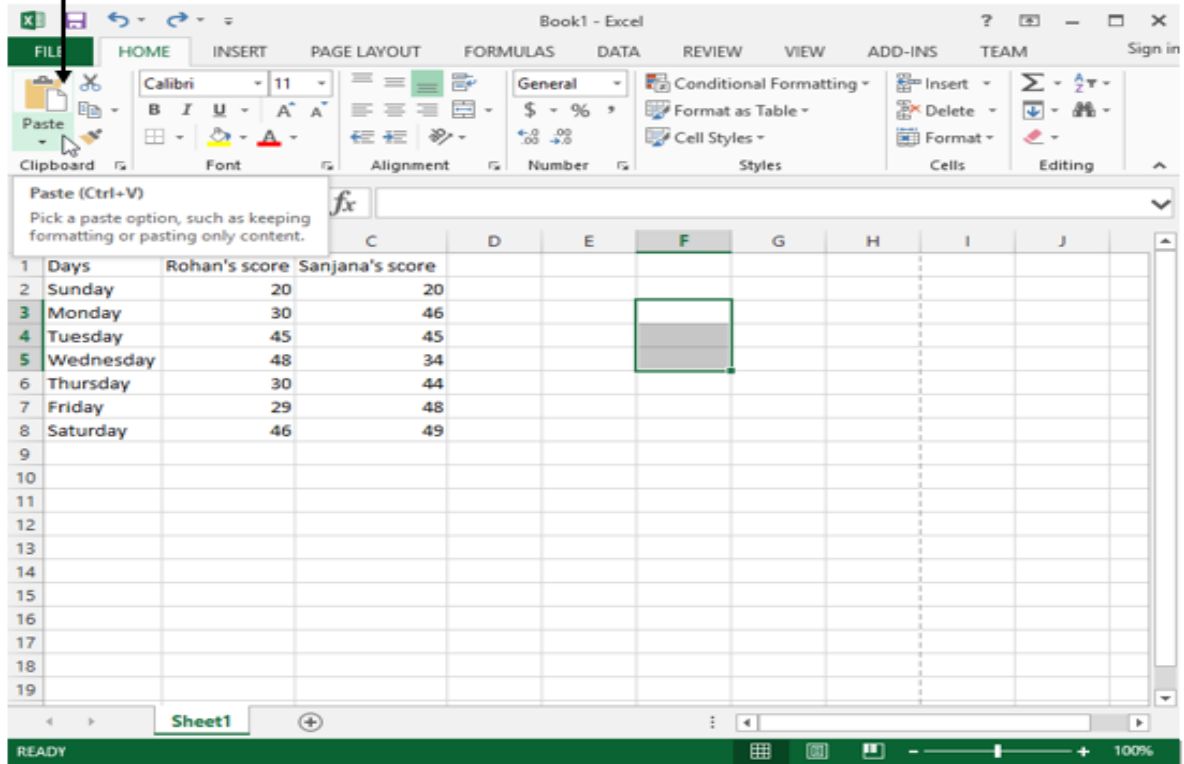
Text is pasted
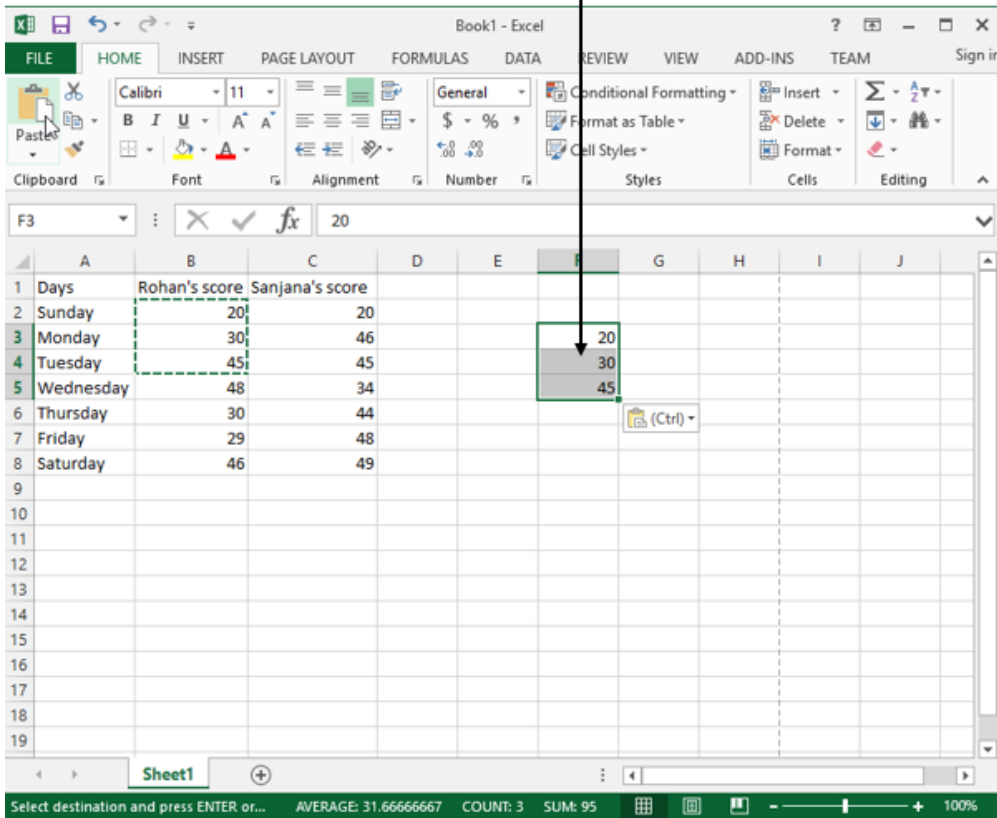
Inserting and Deleting Rows, and Column

- To insert and delete rows and columns in an existing table, **position the cursor** either **before/after/above the spot** where you want the insertion/deletion to be.
- **Right Click → Insert/Delete**.

Insert column to the left

After finishing our table, in case we want to insert a column on the left hand side of a particular column. We may use the following steps.

1. Place the cursor where you want to insert a column in the table.
2. **Right click → Insert column to left**.
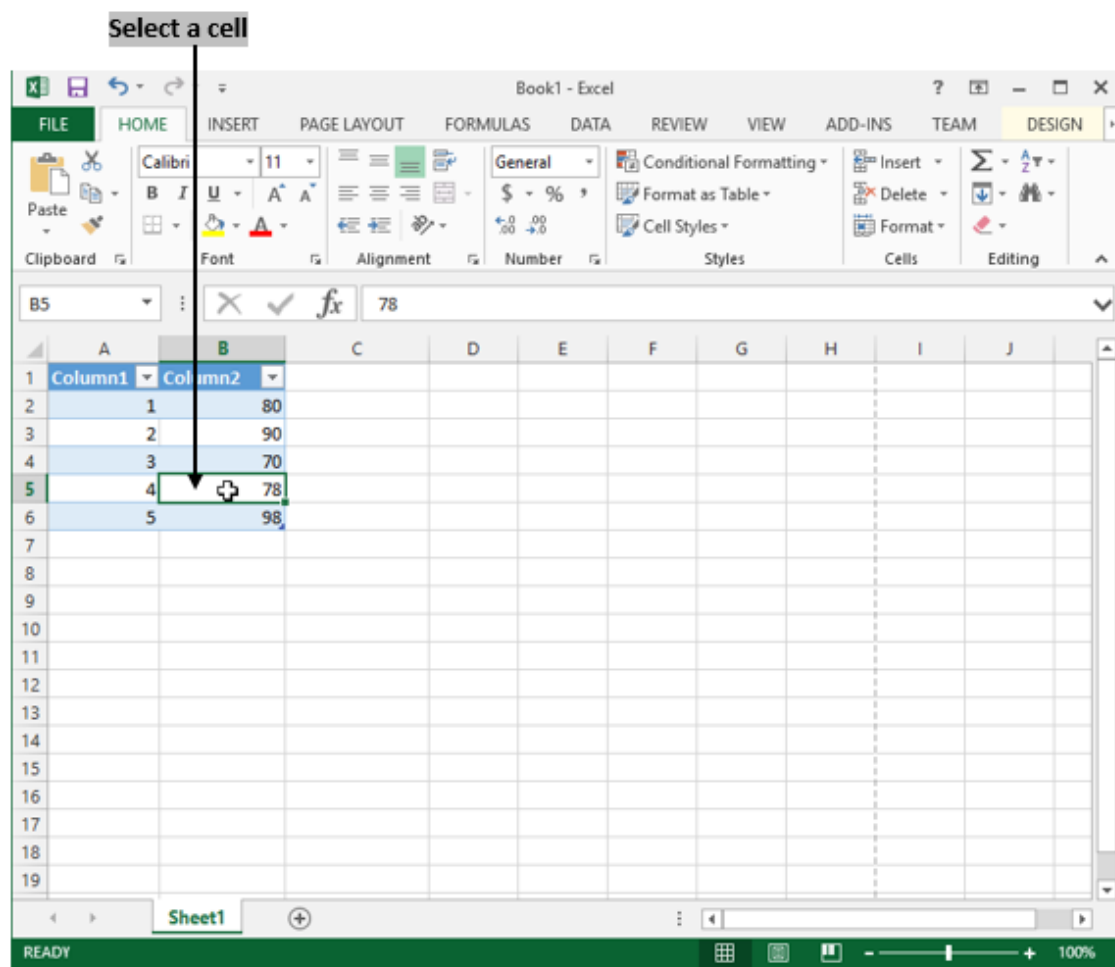
Right click and select insert
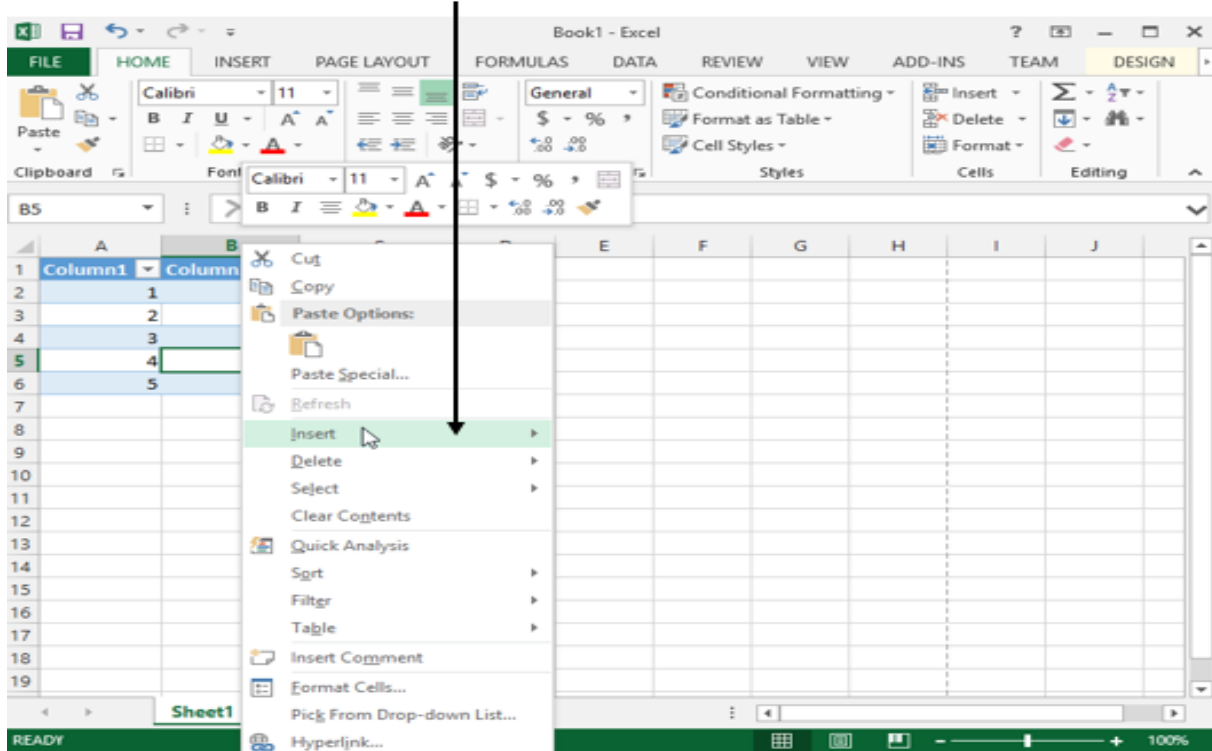
Select table columns to the left option
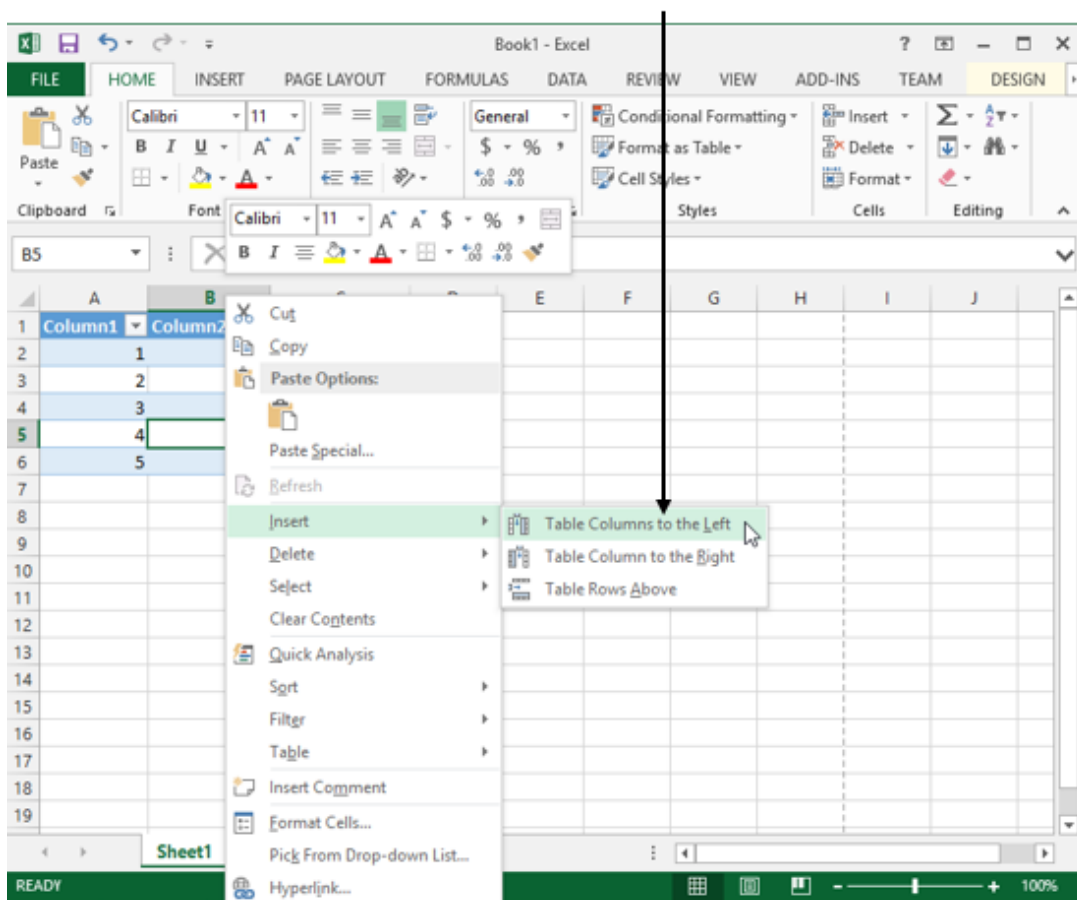
Column inserted to the left
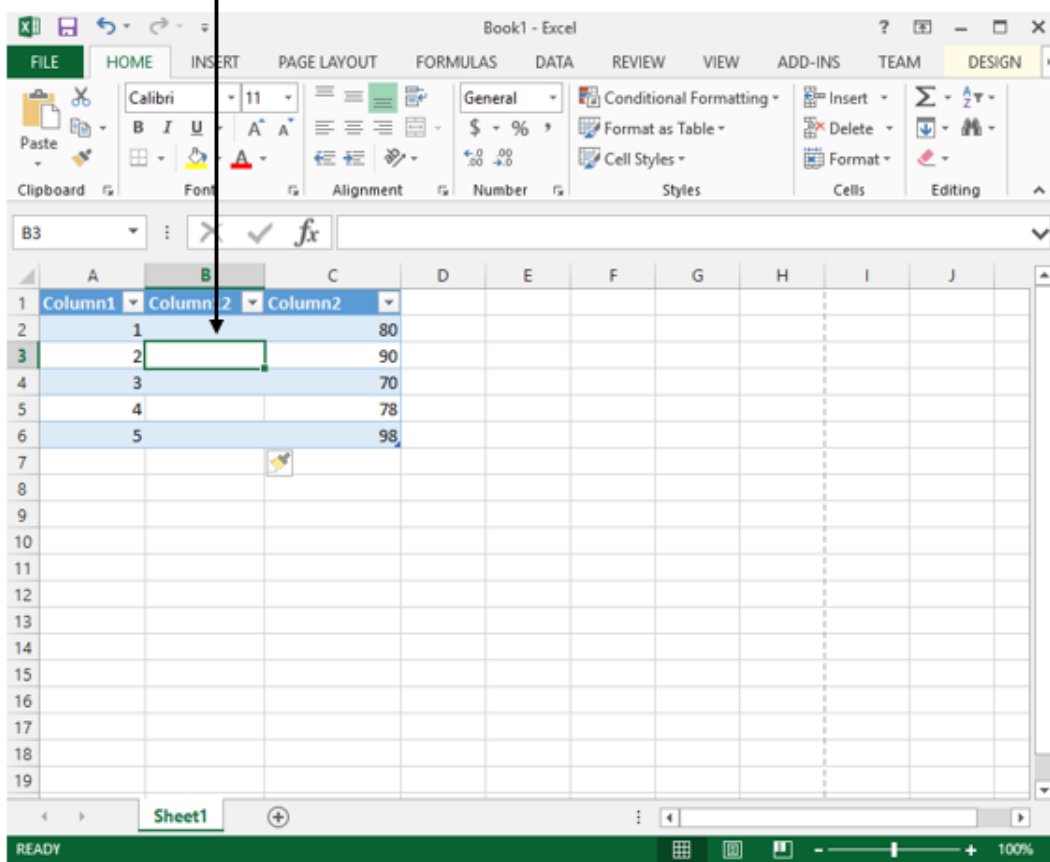
Insert column to the right

After finishing our table, in case, we want to insert a column on the right hand side of a particular column, follow below steps:

1. Place the cursor where you want to insert a column into the table.
2. **Right click → Insert column to right**.

Select a cell
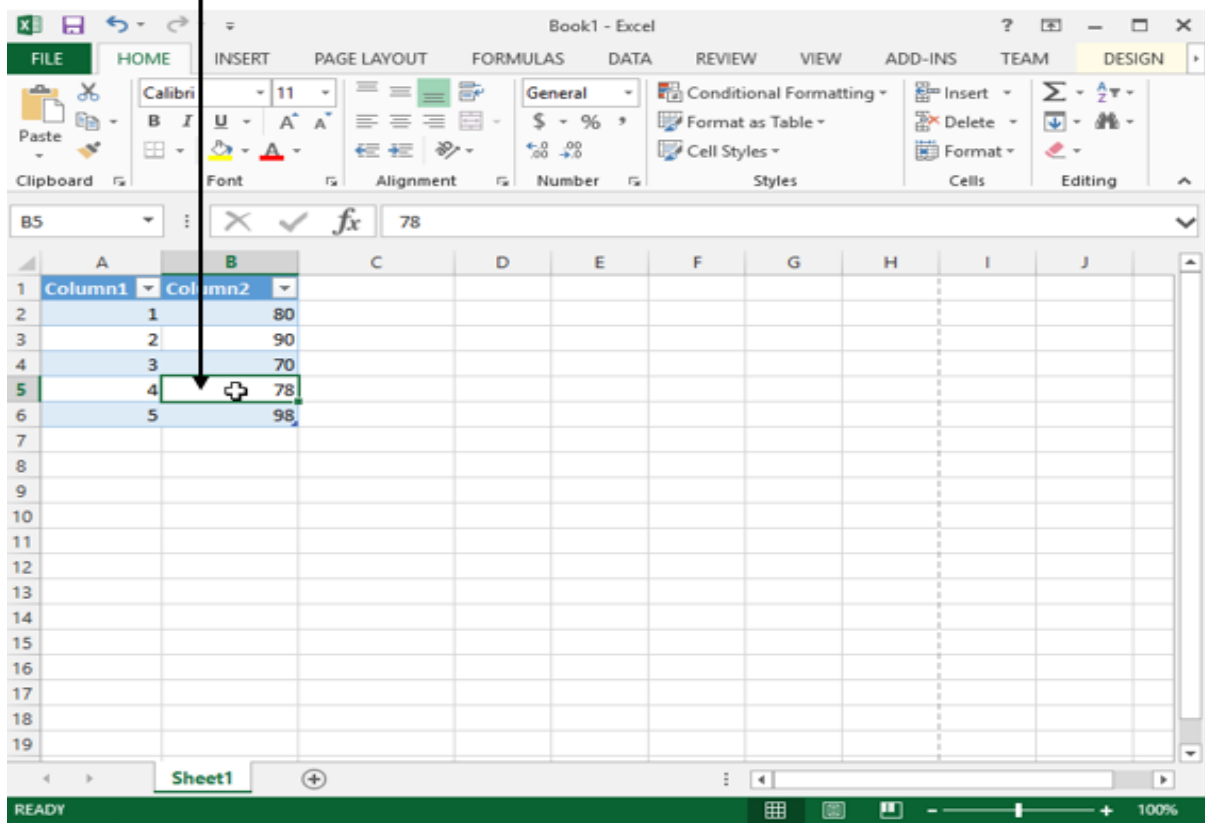
Right click and select insert
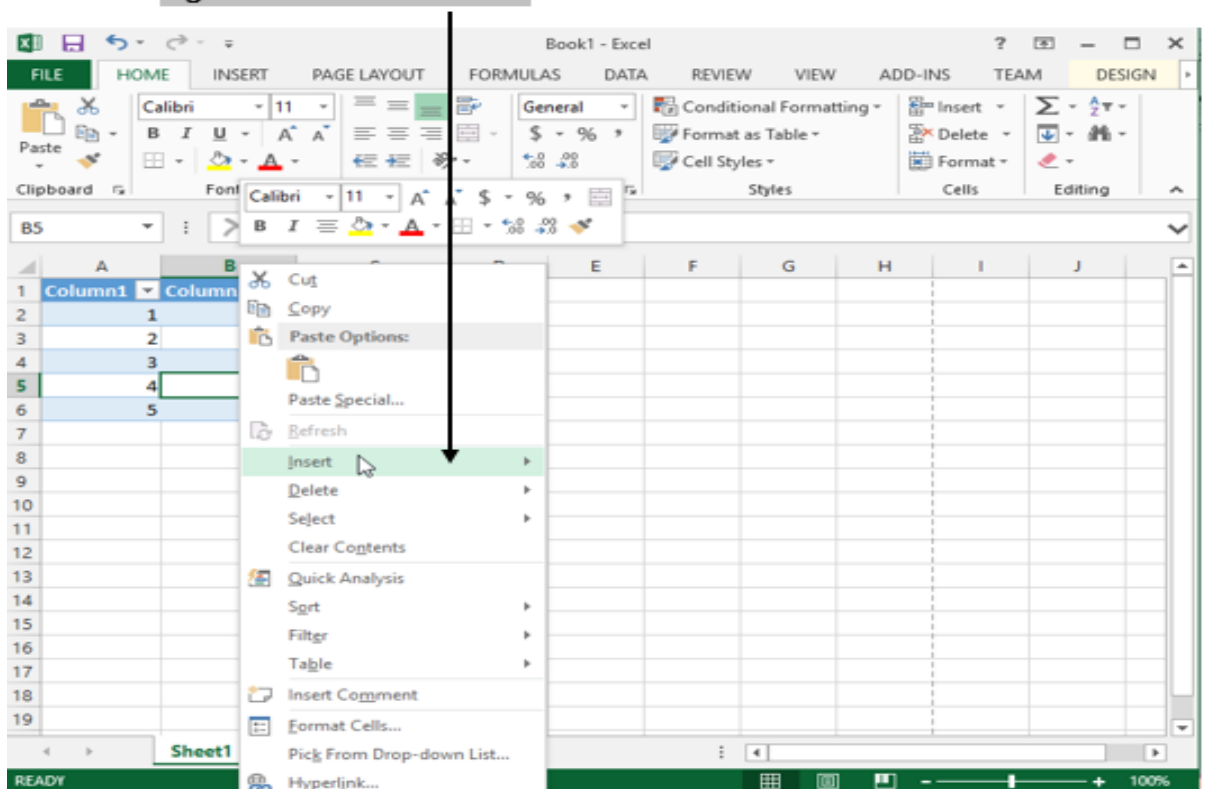
Select table column to the right option
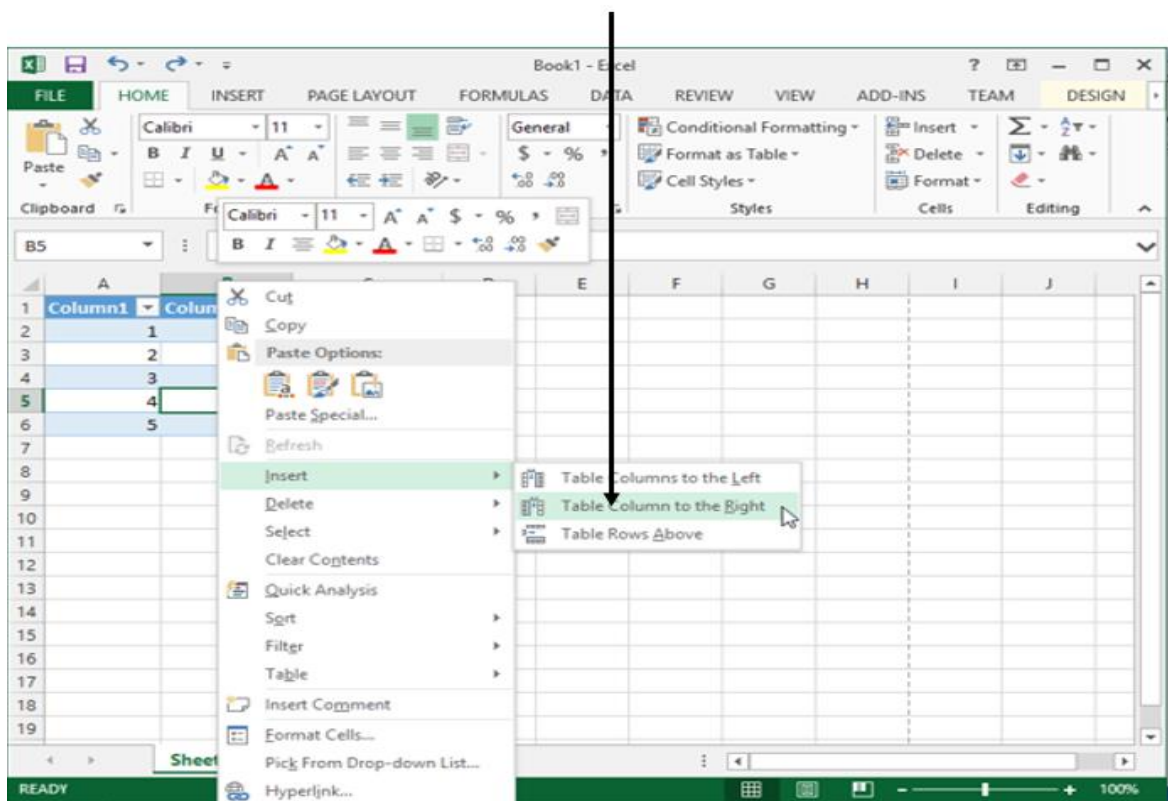
Rows above

- After finishing the table, in case we want to insert a row on top of a particular row, follow below steps:
    1. Place cursor where you want to insert a row into the table.
    2. **Right click → Insert row above**.

Delete Rows

If you want to delete particular rows in a table, use the following steps:

1. **Select** cells or rows you want to delete.
2. **Right click → Delete → Table Rows**.

Delete column

If you want to delete a particular column in a table, use the following steps:

1. **Select** column or cells you want to delete.
2. **Right click → Delete → Table Columns**.

Changing Cell Height and Width

When we create a table, all the columns may have equal column width or different widths. If you want to change the row height, simply select the row and right click. Then select the Row Height option.

Function and Charts

We shall learn how to use functions and charts in Microsoft Excel:

Using Formulas

You can use formulas to perform basic mathematical calculations, such as addition, subtraction, multiplication, and division of numbers. The following examples demonstrate how to use formulas to carry out mathematical calculations.

Addition

Addition helps to add two or more values. By using "=SUM(cell1+cell2)" formula, we can calculate the sum of values.

Examples

- Open a new worksheet.
- Move the cursor to cell A1.
- Write one value in cell A1 and another value in cell B1.
- Write "=SUM(A1+B1)" in cell C1 which will automatically get displayed in formula bar.
- Press Enter.
- Note that cell A1 has been added to cell B1 and the result is shown in cell C1.

Subtraction

Subtraction helps to subtract two or more values. By using "=SUM(cell1-cell2)" formula, we can calculate the difference between the values of cell 1 and cell 2.

Example

- Open a new worksheet.
- Move the cursor to cell A1.
- Write one value in cell A1 and another value in cell B1.
- Write "=SUM(A1-B1)" in cell C1 which will automatically get displayed in the formula bar.
- Press Enter.
- Note that cell B1 has been subtracted from cell A1 and the result is shown in cell C1.

Multiplication

Multiplication helps to multiply two or more values. By using "=SUM(cell1*cell2)" formula, we can calculate multiplication.

Examples

- Open a new worksheet.
- Move the cursor to cell A1.
- Write one value in cell A1 and another value in cell B1.
- Write "=SUM(A1*B1)" in cell C1 which will automatically get displayed in the formula bar.
- Press Enter.
- Note that cell A1 has been multiplied to cell B1 and the result is shown in cell C1.

Division

- Division helps to divide one value by another value.
- By using "=SUM(cell1/cell2)", formula we can perform division.

Examples

- Open a new worksheet.
- Move the cursor to cell A1.
- Write one value in A1 and another value in B1.
- Write "=SUM(A1/B1)" in cell C1 which will automatically get displayed in the formula bar.
- Press Enter.
- Note that cell A1 is divided by cell B1 and the result is shown in cell C1.

Function

- Microsoft Excel has a set of prewritten functions to perform a specific task.
- When using a function, remember the following steps:
  1. Use an equal (=) sign to begin a function.
  2. Specify the function name.
  3. Enclose arguments within parenthesis.
  4. Use a comma to separate arguments.
  5. Here is an example of a function, =POWER(number,power) or =POWER(cell1,cell2)

Chart

A chart is a graphical representation of worksheet data. Charts can make data interesting, attractive and easy to read and evaluate. They can also help you to analyze and compare data.

Creating a Chart

The easiest way to create charts in excel is by using the chart wizard. Chart wizard icon appears on the insert menu. Chart wizard is a program which consists of different types of charts; it helps user through the process of creation of charts. Icons or symbols present at the side of chart help to add or remove elements to the chart, change chart style and add a filter to the chart. After completing a chart, you can still make changes to it or just start from the beginning.

Getting Started with Chart Wizard

- The first stage in using chart wizard is to have a table of data.
- In excel, open a new worksheet, and enter data.
- Then you must select range of cells that you need in the chart.
- For example, with cursor in the top-left cell of the table (A1), select table by clicking and dragging cursor to the bottom right-hand cell (B7).

- Click Insert menu and select chart option.
- From chart types, select the type of chart that you would like to use.
- Excel has different types of Charts such as line charts, pie chart, area chart, pivot chart, etc.
- The selection of chart type is usually driven by the data, although there are no strict rules for determining the chart type you should use.
- But you should use the one which displays your data and conveys your message in the simplest way possible.

Example Program

We shall discuss an example to understand this concept:

Aim

To prepare a bar chart.

Procedure

- Click **Start** → **All program**s → **MS-Office** → **MS-Excel**.
- Insert a **table** in the worksheet.
- Select **Insert** → **Chart** icon.
- Select **column** option from chart type.
- In the title bar, Click on **chart title box** and type, population of metropolitan cities.

Result

The given database is created in excel worksheet using the bar chart.

Summary

This topic had given detailed description about the concepts of opening new and existing worksheets, renaming the work sheet, organizing spread sheet, printing spread sheet, saving workbooks, manipulation of cells, entering text, numbers and dates, creating text, number and date series, editing worksheet data, inserting and deleting rows & columns, changing cell height and width, using formulas, and creating a chart. This chapter also focused on cell address, numbers and text, title bar, menu bar, formula bar, and functions & charts.

# 5. Computer Concepts — Introduction to Internet, WWW and Web Browsers

Internet is a global communication system that links together thousands of individual networks. It allows exchange of information between two or more computers on a network.. Thus internet helps in transfer of messages through mail, chat, video & audio conference, etc. It has become mandatory for day-to-day activities: bills payment, online shopping and surfing, tutoring, working, communicating with peers, etc.

In this topic, we are going to discuss in detail about concepts like basics of computer networks, Local Area Network (LAN), Wide Area Network (WAN), concept of internet, basics of internet architecture, services on internet, World Wide Web and websites, communication on internet, internet services, preparing computer for internet access, ISPs and examples (Broadband/Dialup/Wi-Fi), internet access techniques, web browsing software, popular web browsing software, configuring web browser, search engines, popular search engines/search for content, accessing web browser, using favorites folder, downloading web pages and printing web pages.

Basics of Computer Networks

Computer network is an interconnection between two or more hosts/computers. The connectivity can be physical by using cables or virtual using wireless network. Different types of networks include LAN, WAN, MAN, etc., as shown below:
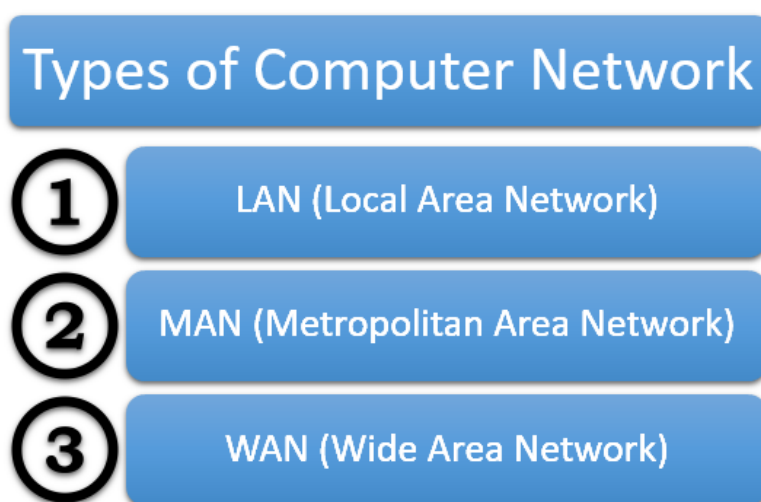
Local Area Network (LAN)

Local Area Network (LAN) provides data communication within shorter distance and connects several devices such as computers and printers. This type of network contains computers that are relatively closer and are physically connected with cables and wireless media. Any network that exists within a single building, or even a group of adjacent buildings, is considered as LAN. It is often used to connect separate LANs together so they can communicate and exchange data.
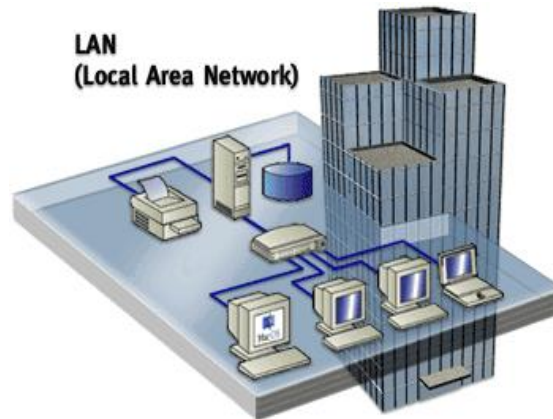
Wide Area Network (WAN)

Wide Area Network is connecting two or more LANs together, generally across a wide geographical area.

Example

A company may have its corporate headquarters and manufacturing plant located in one city and marketing office in another city. Each site needs resources, data and programs locally, but it also needs to share data with other sites. To accomplish this, the company can attach devices that connect over public utilities to create a WAN.
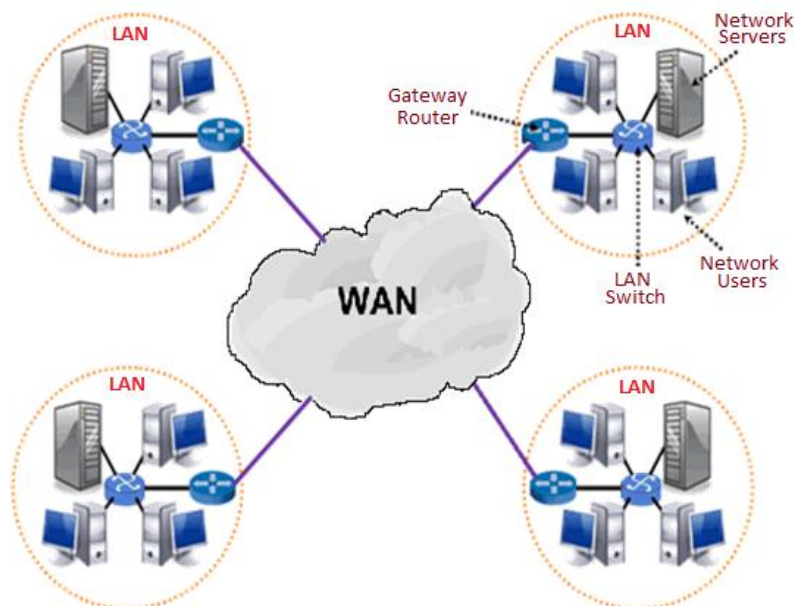
Metropolitan Area Network (MAN)

Metropolitan Area Network (MAN) is an extensive network that connects numerous corporate LANs together. Usually MANs are not owned by sole organization. Their communication devices and equipment are maintained by a group or single network provider that sells its networking services to corporate customers. MANs often take the

role of high-speed network that allows sharing of regional resources. MANs also can provide a mutual connection to other networks using a WAN link.
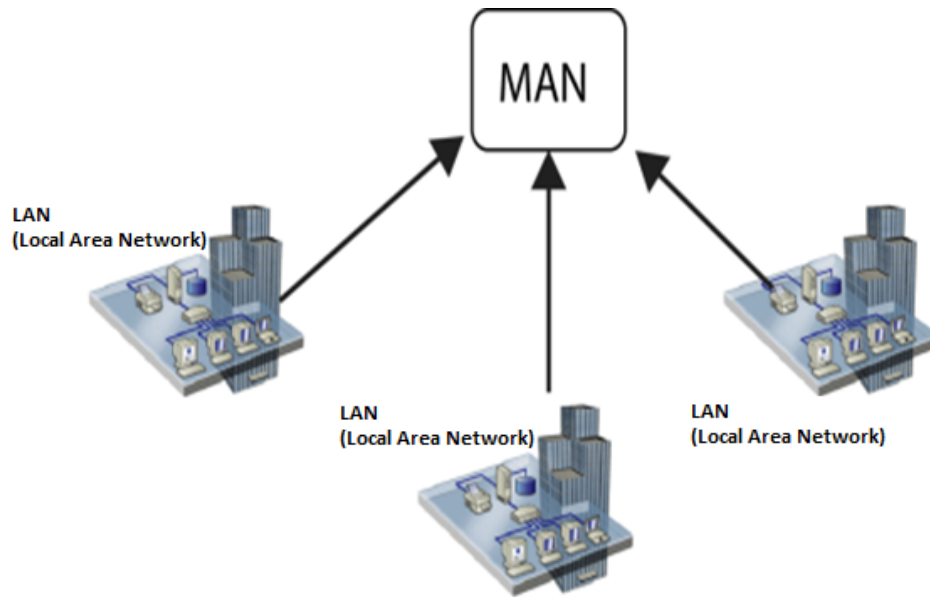
Internet

Internet is called the network of networks. It is a global communication system that links together thousands of individual networks. In other words, internet is a collection of interlinked computer networks, connected by copper wires, fiber-optic cables, wireless connections, etc. As a result, a computer can virtually connect to other computers in any network. These connections allow users to interchange messages, to communicate in real time (getting instant messages and responses), to share data and programs and to access limitless information.


Basics of Internet Architecture

Internet architecture is a meta-network, which refers to a congregation of thousands of distinct networks interacting with a common protocol. In simple terms, it is referred as an internetwork that is connected using protocols. Protocol used is TCP/IP. This protocol connects any two networks that differ in hardware, software and design.

160

Process

TCP/IP provides end to end transmission, i.e., each and every node on one network has the ability to communicate with any other node on the network.

Layers of Internet Architecture

Internet architecture consists of three layers:
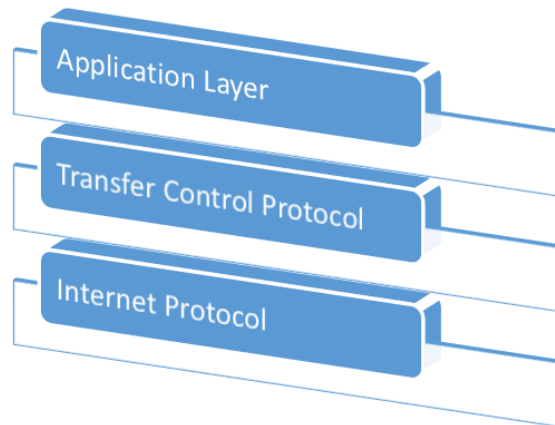
The three layers of internet

IP

In order to communicate, we need our data to be encapsulated as Internet Protocol (IP) packets. These IP packets travel across number of hosts in a network through routing to reach the destination. However IP does not support error detection and error recovery, and is incapable of detecting loss of packets.

TCP

TCP stands for "Transmission Control Protocol". It provides end to end transmission of data, i.e., from source to destination. It is a very complex protocol as it supports recovery of lost packets.

Application Protocol

Third layer in internet architecture is the application layer which has different protocols on which the internet services are built. Some of the examples of internet services include email (SMTP facilitates email feature), file transfer (FTP facilitates file transfer feature), etc.

Services on Internet

Internet acts as a carrier for numerous diverse services, each with its own distinctive features and purposes.

World Wide Web and Websites

World Wide Web is being used on internet right now. WWW is the name given to all resources of the internet, which you can access with a web browser. It was created as a

method for incorporating footnotes, figures and cross-references into online documents in the European Particle Physics Laboratory in Geneva, Switzerland in 1989. The web makers wanted to make a simple method to access documents that are stored on a network, without searching through indexes or directories of files, and without physically copying documents from one computer to another before viewing them. To do this, they made a way to "connect" documents that were stored in different locations on a single computer, or different computers on a network.

Terminologies related to WWW

Web documents can be linked together, and are called "Hypertext". Hypertext systems offer an easy approach to manage huge collections of data, which includes text files, pictures, sounds, movies and more. In a hypertext system, when you view a document or your computer screen, you can also access all the data that is linked to it. To support hypertext documents, web uses a protocol called "Hypertext Transfer Protocol" (HTTP). A hypertext document is a specially encoded file that uses "Hypertext Markup Language" (HTML). HTTP and Links are foundation for WWW. **Web page** is displayed in the web browser. It is a kind of word processing document which contains pictures, sounds and even movies along with text.

Websites

A collection of associated web pages is called "Website". Websites are housed on the web servers. Copying a page onto a server is called "publishing" the page, which is also called "posting or uploading".

Communication on Internet

We shall discuss how communication happens through the use of Internet in this section:

Email

Electronic mail or email is one of the key parts of e-revolution which is specially designed for communication purpose. Once you have an email account, you can start sending electronic messages to anyone if you have the recipient's email address. The format of an email address is **"username, @** symbol**, domain name (yahoo.com, gmail.com, etc.)**". For example: name@yahoo.com.

Internet Relay Chat (IRC)

IRC is a form of real-time internet chat or synchronous conferencing. It is mainly used for group communication in discussion forums called channels, also allows one-to-one communication via private message, and both chats and data transfers via Direct Client-to-Client protocol.

IRC client software is available for every operating system.

tutorialspoint
SIMPLYEASYLEARNING
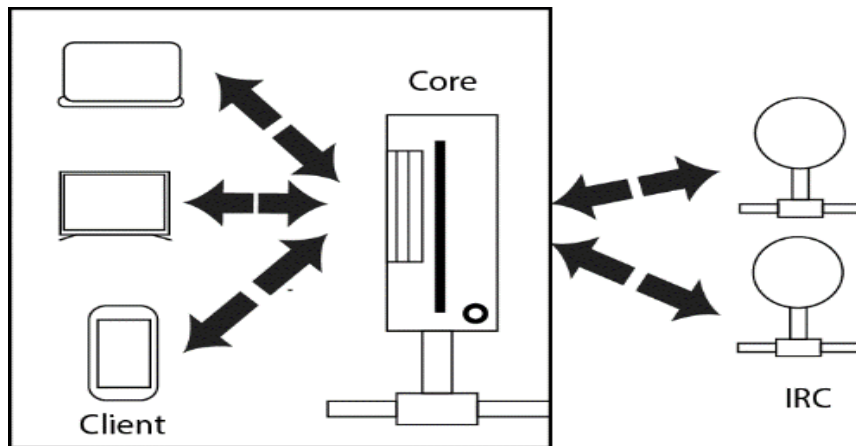
Video Conference

A video conference is a telecommunication technology, which permits two or more people in different locations to interact via mutual video or audio transmission simultaneously. It is also called visual collaboration and is a type of groupware. Video conferencing uses telecommunication technology to bring people at different sites together for a meeting/conversation. This can be as simple as a conversation between two people in private offices, or involves several sites with more than two people. It can also be used to share documents, computer displayed information, whiteboards, etc.

Voice Over Telephony (VOIP)

VOIP stands for voice over IP, where IP refers to the Internet Protocol which is a base for all internet communications. This phenomenon began as an optional mutual voice extension to some of the instant messaging systems that took off around the year 2000. In recent years, VOIP systems are easy to use and as convenient as a traditional telephone. Voice quality can still differ from call to call but is often equal to and can even beat the traditional calls.

Instant Messaging

Instant Messaging (IM) is a process of transferring real-time messages between users. It facilitates private chat room atmosphere. IM alerts users when some of their peers are online, so the users can start chatting with them.
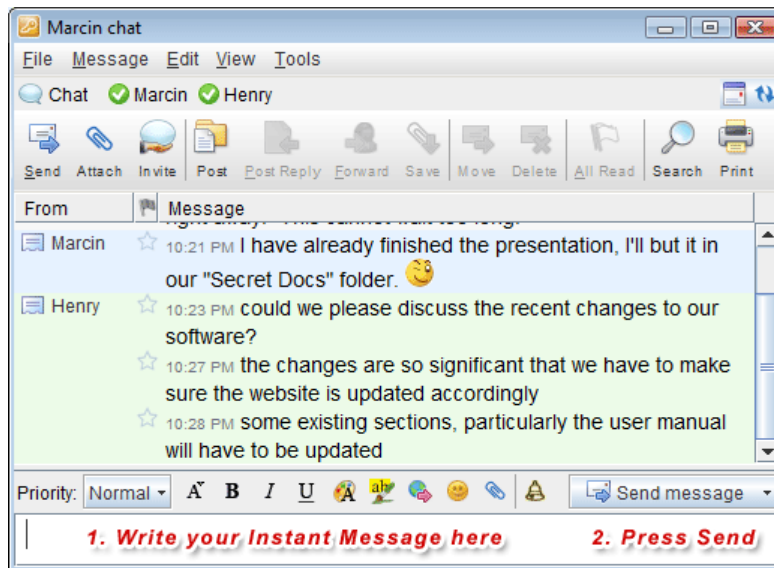
Chat

Online conversations in which you are immediately able to send messages back and forth to one another is called "chat".
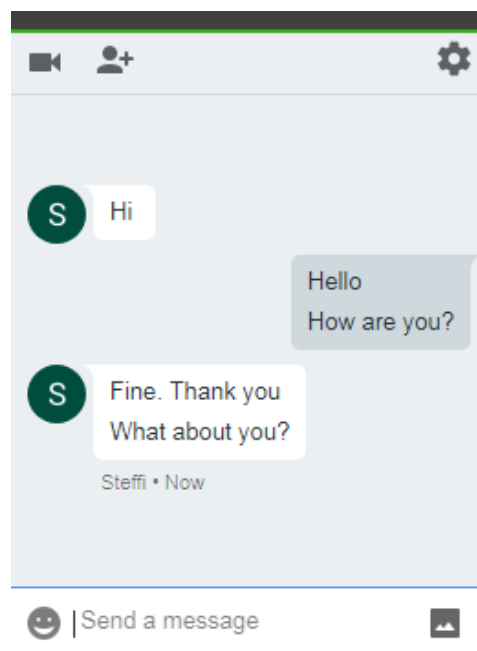
Remote access

Internet permits computer users to connect to other computers across the world and to store information effortlessly. This can be done with or without any security, authentication and encryption technologies depending on the requirements which encourages work from home culture.

Collaboration

Low cost and rapid sharing of ideas, knowledge and skills has made collaborative work easy. It is a convenient way to stay in touch with colleagues through group chat or private messaging. Email is also an easy way to communicate. Collaboration helps voice and video chat between team members and to work with shared set of documents.
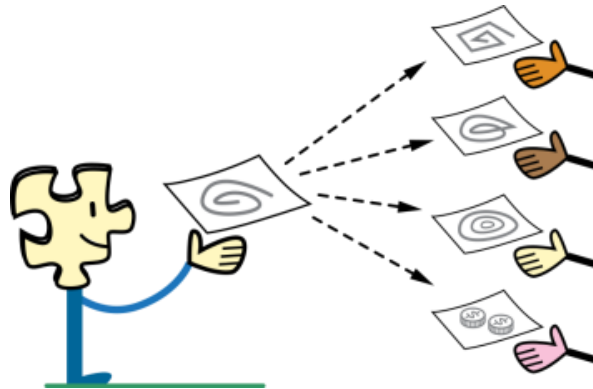
File Sharing

- A file or document can be e-mailed to anyone as an attachment.
- It can be uploaded to a website or FTP server, for users to download content easily.
- It can be put into a shared location or onto a cloud for instant use by colleagues.
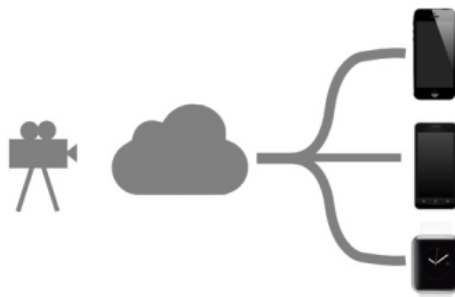
Streaming media

Many existing radio and television presenters provide internet "feeds" of their live audio and video streams. An internet-connected device, such as a computer or something more specific, can be used to access on-line media in much the same way, as television or radio receiver.

File Transfer Protocol

File Transfer Protocol is a network protocol which is used to transfer data from one computer to another over any TCP/IP based network. It helps to manipulate files on another computer regardless of the operating system involved.
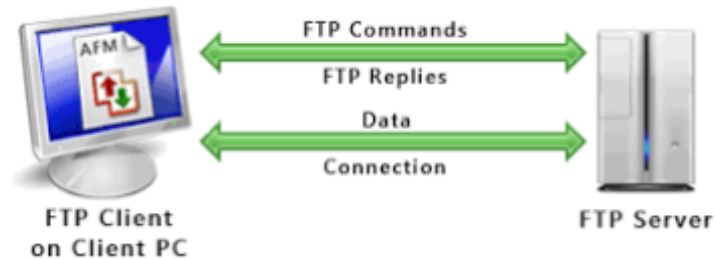
Telnet

TELNET means TELecommunication NETwork. It is a network protocol used on the internet or LAN connections. It helps to provide text oriented mutual communication using virtual terminal connection.
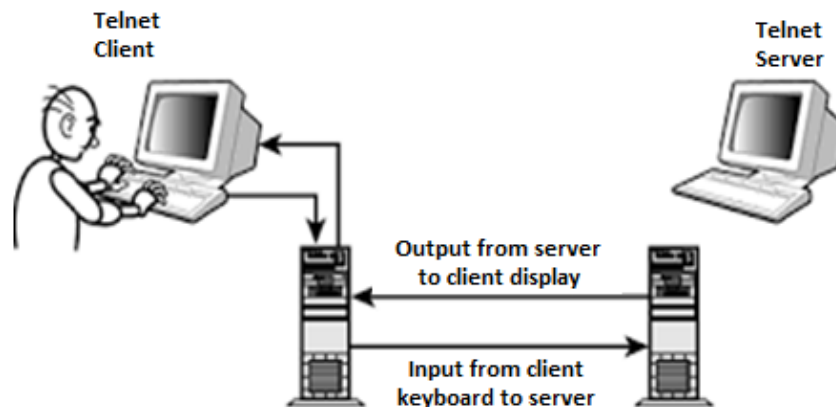
Newsgroups

A forum on the Usenet service for the discussion of a particular topic. Newsreader software is used to read newsgroups.

Preparing Computer for Internet Access

There are many ways to obtain access to the internet. The method varies according to the type of devices (computer, laptop, mobile) being used and type of connections offered.

ISPs and Examples (Broadband/Dialup/Wi-Fi)

Internet Service Provider (ISP) is the gateway to access internet. It is an organization that gives access to the internet. ISPs provide services for home, large industries, government sectors, etc. There are two types of connections:

- ✓ **Instant:** Starts when user dials-up for connection and ends after the session is over.
- ✓ **Full-time:** The connection prevails 24/7 even if the session ends.

Broadband

Broadband connections are considered as high speed connections, as they use modes that can handle several signals at once, such as fiber optics, twisted pair cables, coaxial cables and other technologies.

Dial-up

In dial-up connection, the computer uses its modem to dial a telephone number given to user by an Internet Service Provider. This launches a connection between personal computer and ISP server. The dial-up connections are temporary, as the connection ends once the session gets completed.

Wi-Fi

Wireless LAN has become popular for use these days which is based on the technology called Wi-Fi (Wireless Fidelity). This uses radio waves to transmit signals and provides access to the internet within a short distance.

Below is the list of Internet Service Providers:

S. No	ISP	Narrowband	Broadband
1	Airtel	52,064,601	38,473,189
2	Vodafone	39,726,68	27,760,081
3	Idea Cellular	21,110,847	22,924,981
4	Reliance	23,449,233	15,567,769
5	BSNL	13,740,051	20,351,570
6	Aircel	14,906,282	7,541,005
7	Tata Teleservices	11,812,117	9,229,125
8	Telenor India	13,671,479	0
9	MTNL	456,096	1,511,496

10	Videocon	1,213,631	0	

Internet Access Techniques

Internet can be accessed using following methods:

Dial-up Connections

In dial-up connection, computer uses its modem to dial a telephone number given to the user by an Internet Service Provider. This launches a connection between personal computer and ISP server. The process begins when the ISP server answers, and ceases when your computer or the server "hangs up". This is similar to a traditional telephone call. Most ISP servers disconnect automatically after a certain period of inactivity. Once a connection is configured on the user's computer, he/she can use the connection. It is secure and de-allocates unused memory automatically.

Broadband Connection

Broadband connections are considered as high speed connections, as they use modes that can handle several signals at once, such as fiber optics, twisted pair cables, coaxial cable and other technologies. Even with hundreds of users on the network, these connections allow large files and complex web pages to download quickly. To be considered as a broadband, the connection must be able to transmit data at a rate faster than is possible with the fastest dial-up connection. Downloading and uploading content will be fast.
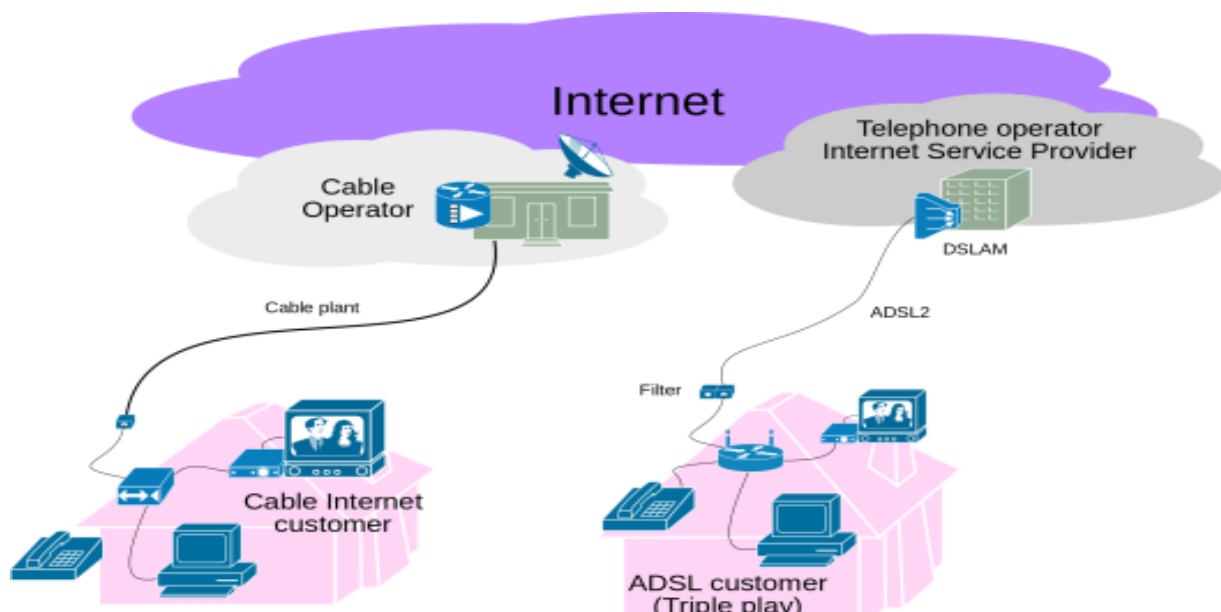
Integrated Services Digital Network (ISDN) Service

Integrated Services Digital Network (ISDN) is a digital service that simultaneously transmits voice & data, and controls signals over a single telephone line. ISDN service operates on a standard telephone line, but requires a special modem and phone service, which adds to the cost. An ISDN data connection can transfer data up to 128,000 bits per second (128 Kbps). It helps to connect a PC, telephone and fax to a single ISDN line and use them simultaneously.
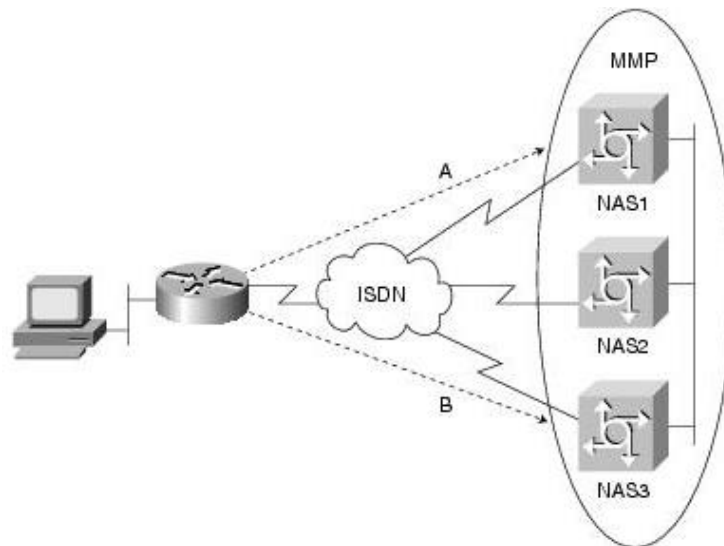
Digital Subscriber Line (DSL)

Digital Subscriber Line is similar to that of ISDN in using telephone network, but it uses more advanced digital signal processing and algorithms to squeeze maximum number of signals through telephone lines. DSL also requires changes in components of telephone network before it can be offered in any area. Like ISDN, DSL provides simultaneous data, voice and fax transmission on the same line. Several versions of DSL services are available for home and business use; each version provides 24/7 full-time connection at different levels of service, speed, bandwidth and distance.
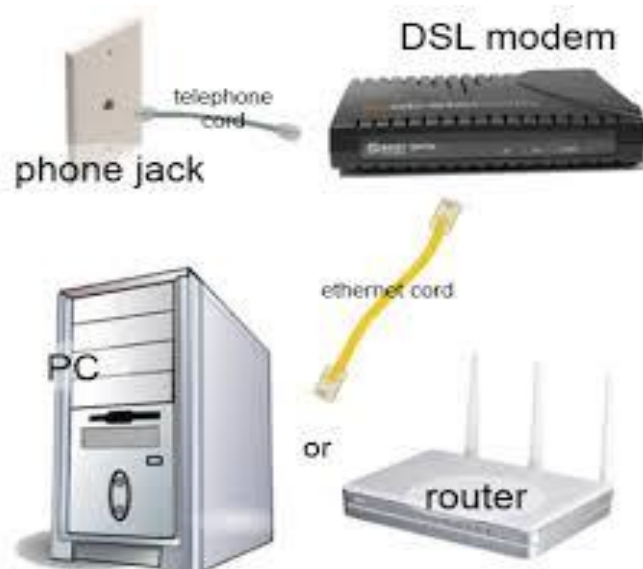
DSL Type	Maximum Sending speed	Maximum Receiving speed	Maximum Distance	Lines Required	Phone Support
ADSL	800 Kbps	8 Mbps	5,500 m	1	Yes
HDSL	1.54 Kbps	1.54 Mbps	3,650 m	2	No
IDSL	144 Kbps	144 Mbps	10,700 m	1	No
MSDSL	2 Mbps	2 Mbps	8,800 m	1	No
RADSL	1 Mbps	7 Mbps	5,500 m	1	Yes
SDSL	2.3 Mbps	2.3 Mbps	6,700 m	1	No
VDSL	16 Mbps	52 Mbps	1,200 m	1	Yes

Cable Modem Service

Now-a-days many cable television companies use some percentage of their network's bandwidth to provide internet access through prevailing cable television connections. Since this connection uses a special cable modem, it is called "Cable Modem Service". Cable television systems transmit data via coaxial cable, which can transmit data as much as 100 times faster than common telephone lines. Coaxial cable allows transmission via several channels simultaneously, i.e., the internet data can be transmitted on one channel, while audio, video and control signals are transmitted separately. The user can access internet and watch television concurrently, with two non-interfering data streams.
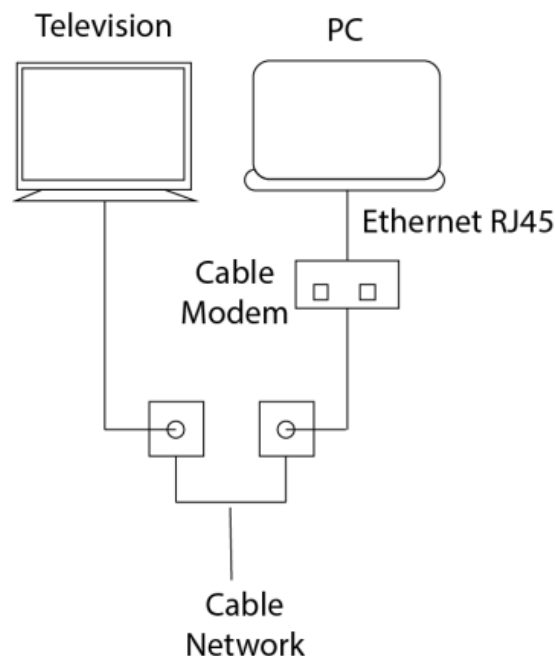
Wireless LAN (WLAN) Connections

Wireless LAN connections are very common these days, which are based on the technology that is often cited as Wi-Fi (Wireless Fidelity). The distance covered by WLAN is usually measured in meters rather than miles. Therefore, this is not a technology that connects

directly to an ISP but can be used to connect to another LAN or device through which internet access is achieved.
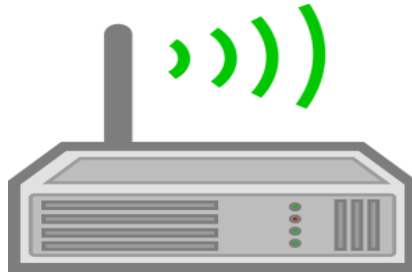
Process

- To connect to internet, the wireless access point is connected to a wired LAN like any other devices, and then computers with wireless NICs can access the wired LAN.
- "Wireless access point" is a device that acts as a hub or switch.
- "NIC" refers to a Network Interface Card which helps to identify a computer on a network.

Wireless WAN (WWAN) Connections

A WWAN is a digital network that spans over a large geographical area. A WWAN accepts and transmits data using radio signals via cellular sites and satellites. At the switching center, the WWAN divides off into segments and then connects to either isolated or public network through telephone or other high speed communication links. The data is then linked to an organization's existing LAN/WAN infrastructure. The coverage area for WWAN is normally measured in miles (kilometers) with a data transmission rate of 100 Mbps.

Satellite Services

Satellite services provide a mutual (two-way) communication between user and the internet. This provides a full-time connection which is used in armed forces, business, etc. It includes two parts:

Transceiver - A satellite dish that is placed outdoors in direct line of sight to one of the several satellites in geostationary orbit.

Modem-like device – It is connected to a dish, placed indoors and connected to a LAN or computer.

171
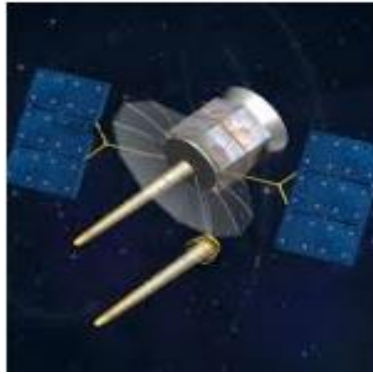
Web Browsing Software

"World Wide Web" or simple "Web" is the name given to all the resources of internet. The special software or application program with which you can access web is called "Web Browser".

Launching a Web Browser

Web browser is an application that is located on a computer's disk. Once you have an internet connection, you can launch a web browser using the following methods:

Method 1

Step 1: Go to "Start Menu".
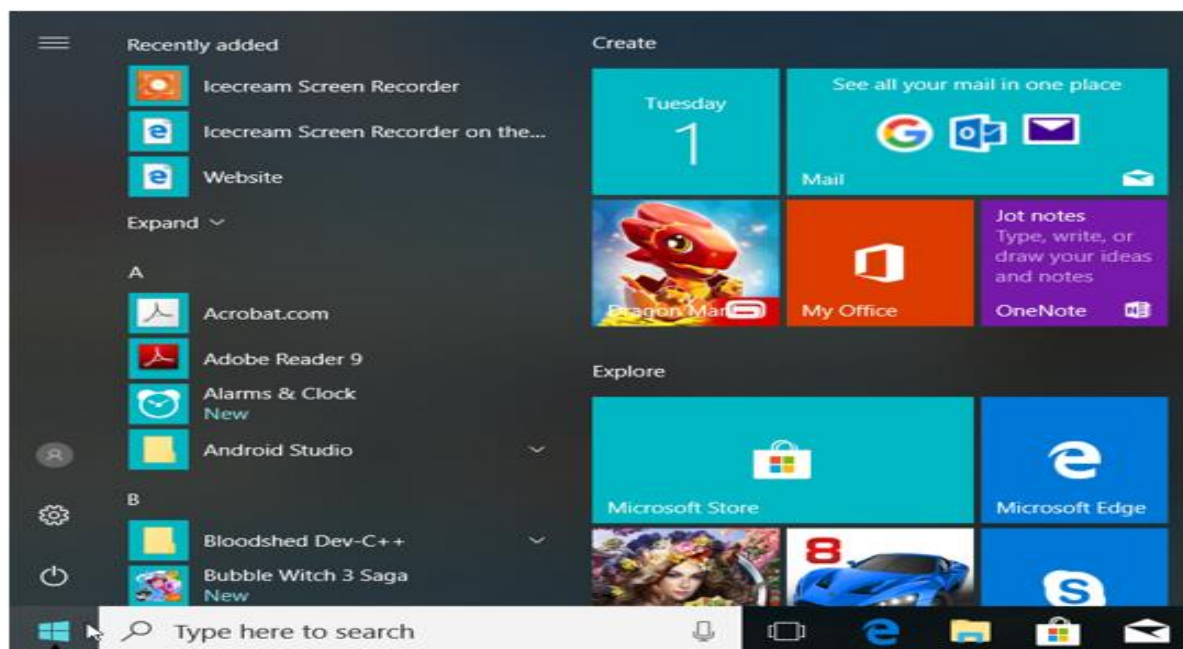
Go to Start menu

Step 2: From the menu opened, click on the web browser (Mozilla, Google Chrome, Internet Explorer).

Select Google Chrome

Method 2: Alternate way is to click the shortcut icon on the taskbar or desktop.

Select the shortcut icon on the task bar

Popular Web Browsing Software

The most popular web browsing software includes:

Google Chrome

Google Chrome is a web browsing software developed in the year 2008 by Google Inc. First, it was designed for windows platform, and later adopted to Linux, Macintosh, and even Android. It is written using C++, Assembly, Python, and JavaScript.

Mozilla Firefox

Mozilla Firefox is a web browsing software developed in the year 2002 by the Mozilla Foundation. It is designed to work on all operating systems like Windows, Macintosh, Linux, and Android. It is written using C++, JavaScript, Rust, C, CSS, XUL, and XBL.

Opera

Opera is a web browsing software developed in the year 1995 by Opera Software. It is designed to work on all operating systems like Windows, Macintosh, and Linux and is written using C++ language.

Internet Explorer

Internet Explorer is a web browsing software developed in the year 1995 by Microsoft. It is designed to work on all operating systems like Windows, Macintosh, Linux and Android and is written using C++ language.

Configuring Web Browser

Configuring a web browser is organizing or changing the settings of the browser in a format presentable to the user.

Configuring Microsoft Edge

Configuring Microsoft Edge includes the following steps:

Step 1: Open Microsoft Edge via shortcut icon in the task bar or "Start Menu".
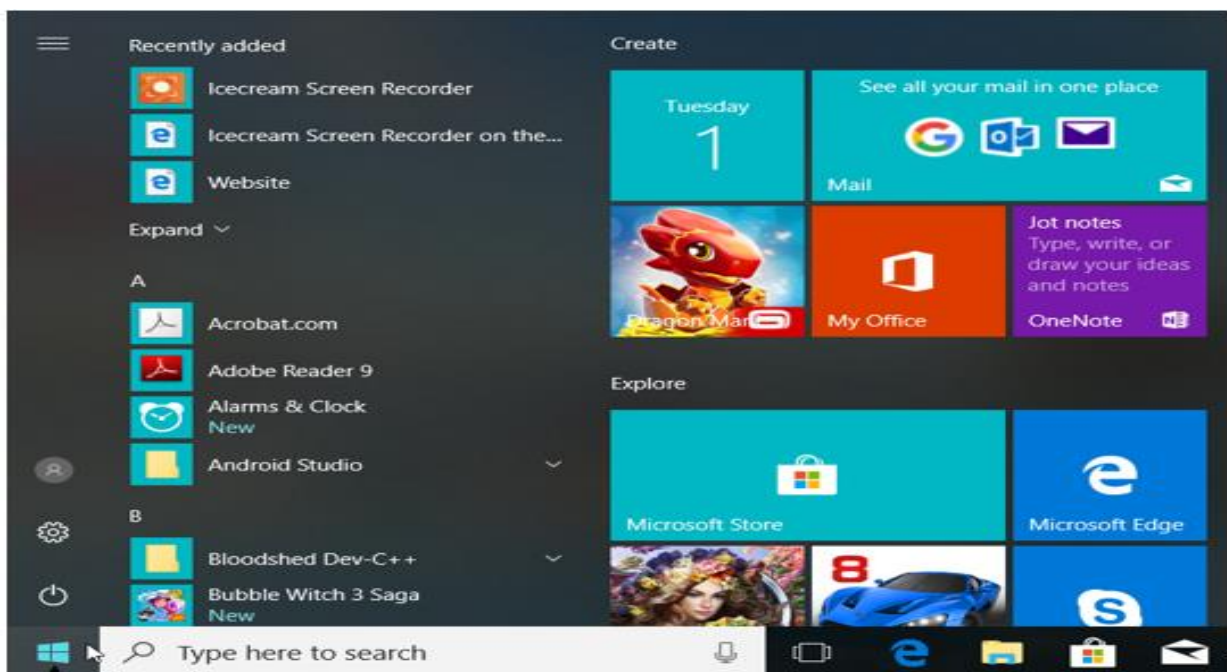
Go to Start menu

Step 2: Select Microsoft Edge.

Select Microsoft Edge

OR

Select the shortcut key on the task bar

Step 3: Click "Settings" from the "Settings and more" menu.

Select Settings and more

Select Settings option
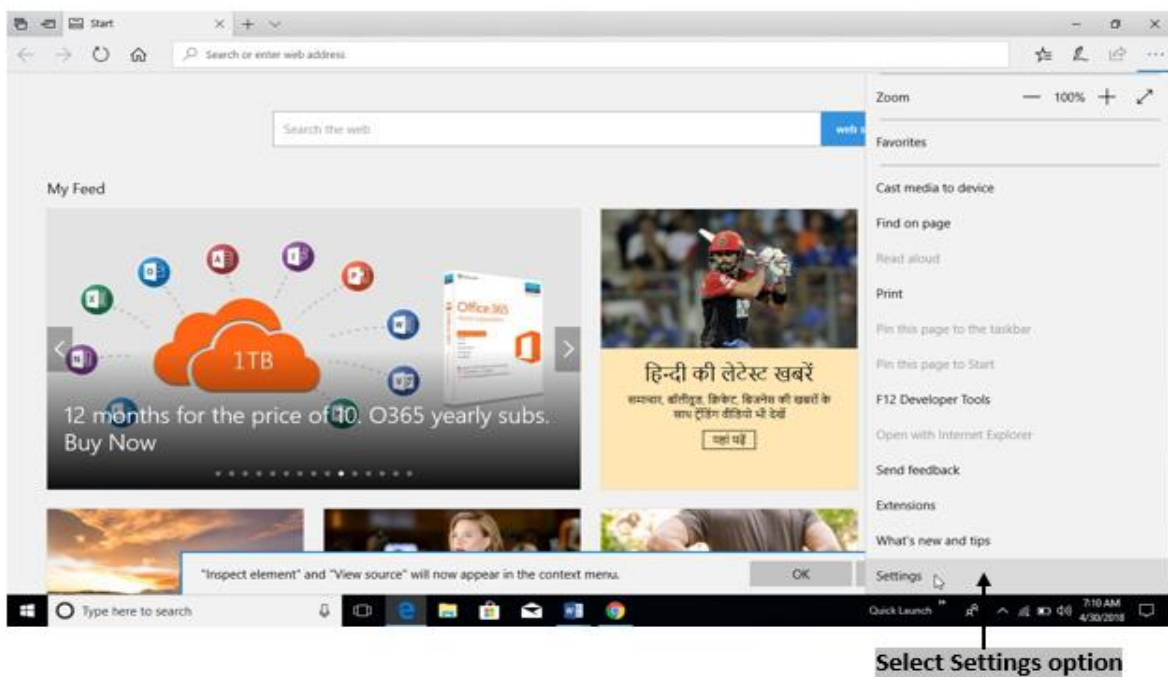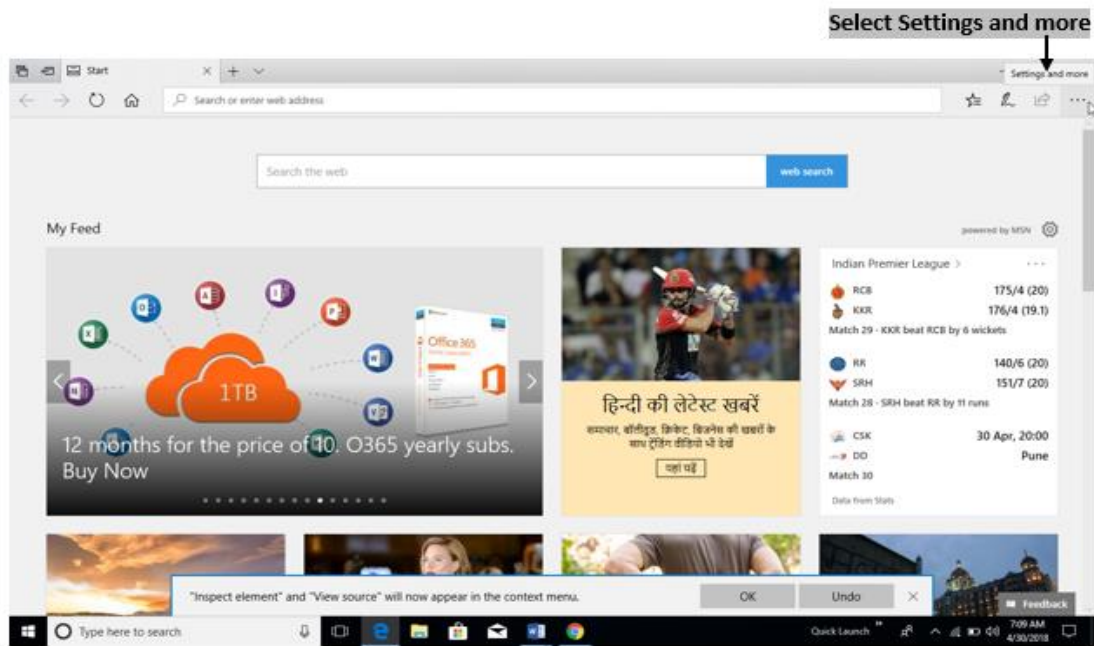
Step 3: From window opened, make changes to the settings.

Change the General Settings here
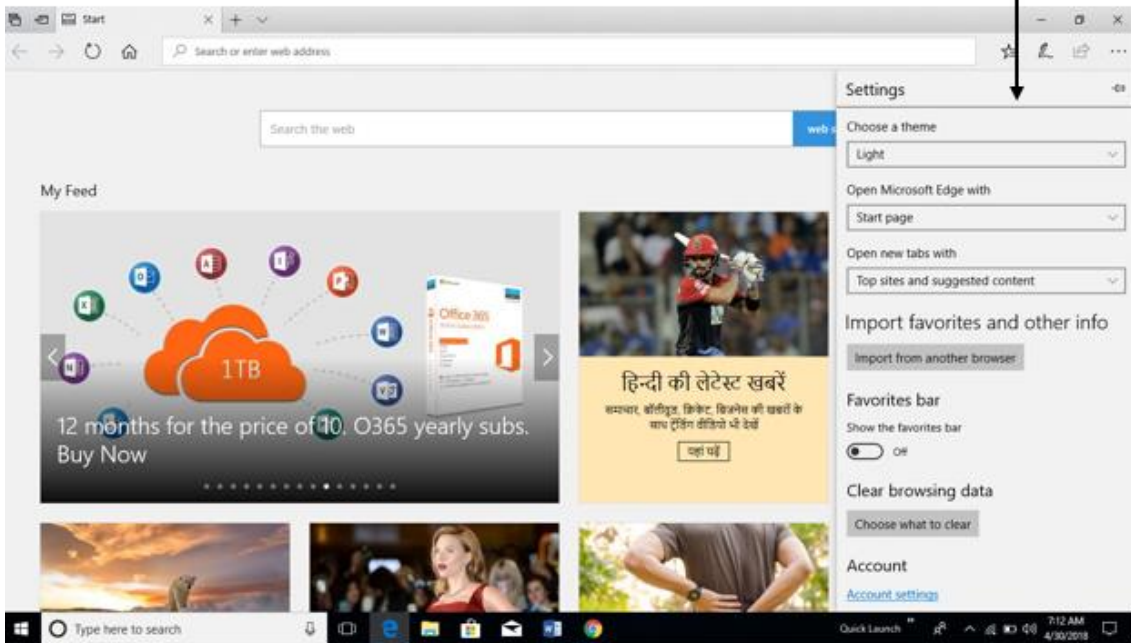
Change the Account settings here
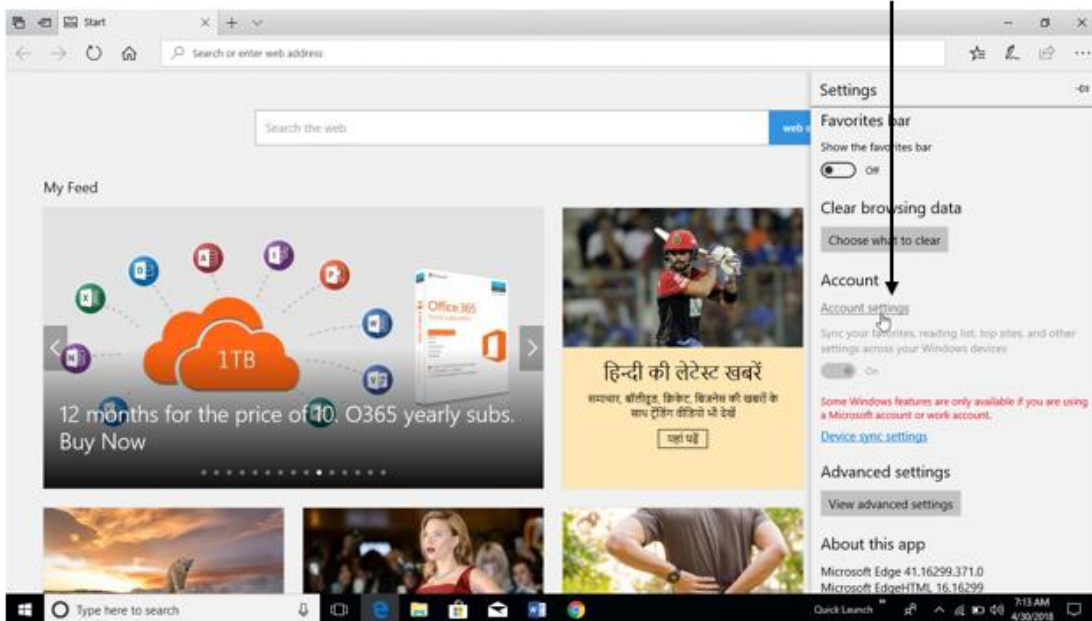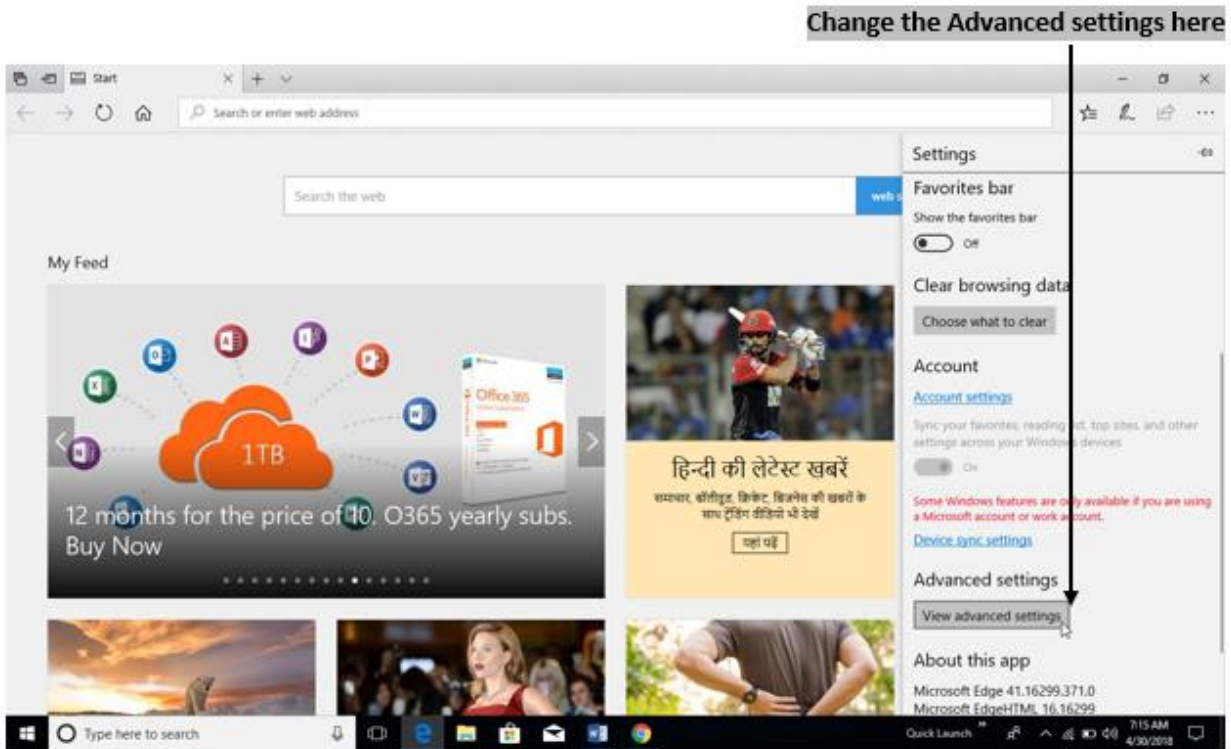
Configuring Google Chrome

Step 1: Open Google Chrome via icon in the task bar or "Start Menu".
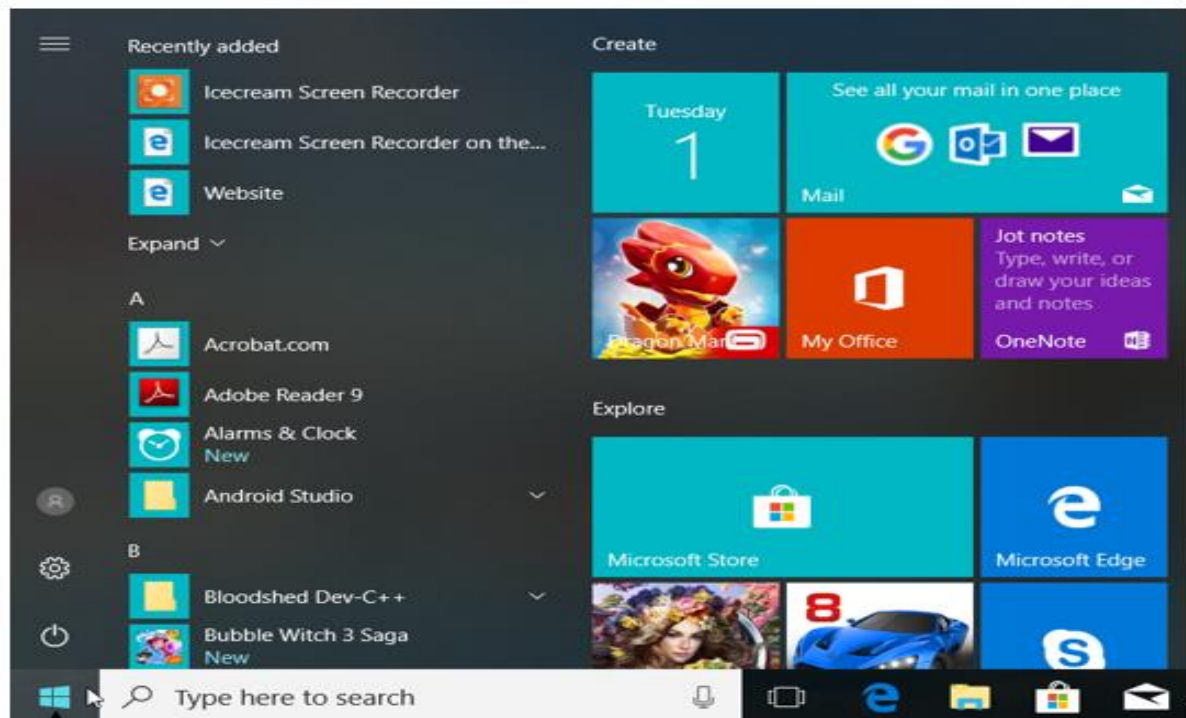
Select Google Chrome

Step 2: Click three vertical dots icon (⋮) present at upper right corner of the window and go to "Settings" option from the menu displayed.

Select Customize and control Google Chrome option

179
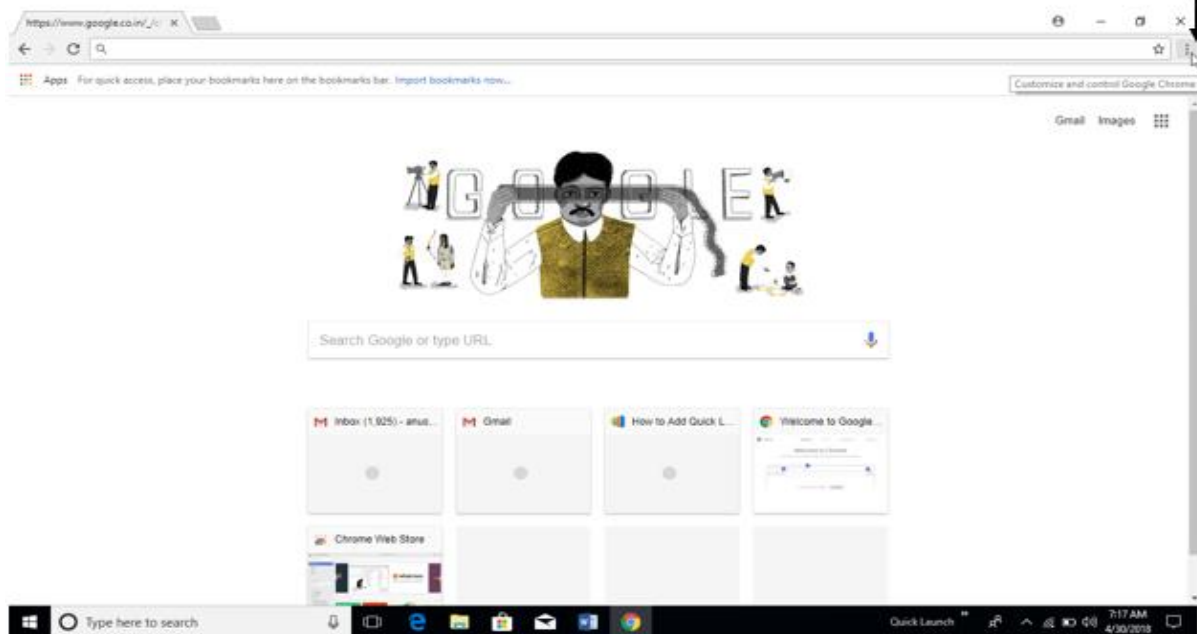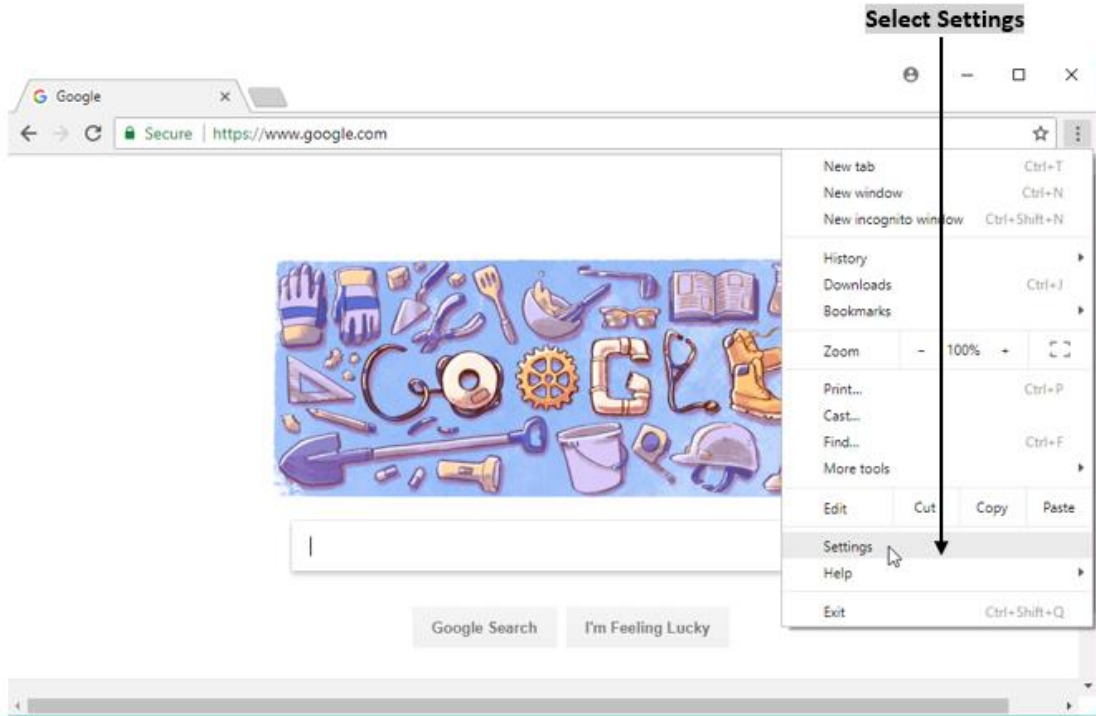
Step 3: From the window opened, change settings of people, appearance, search engine, default browser, startup and advanced tabs.
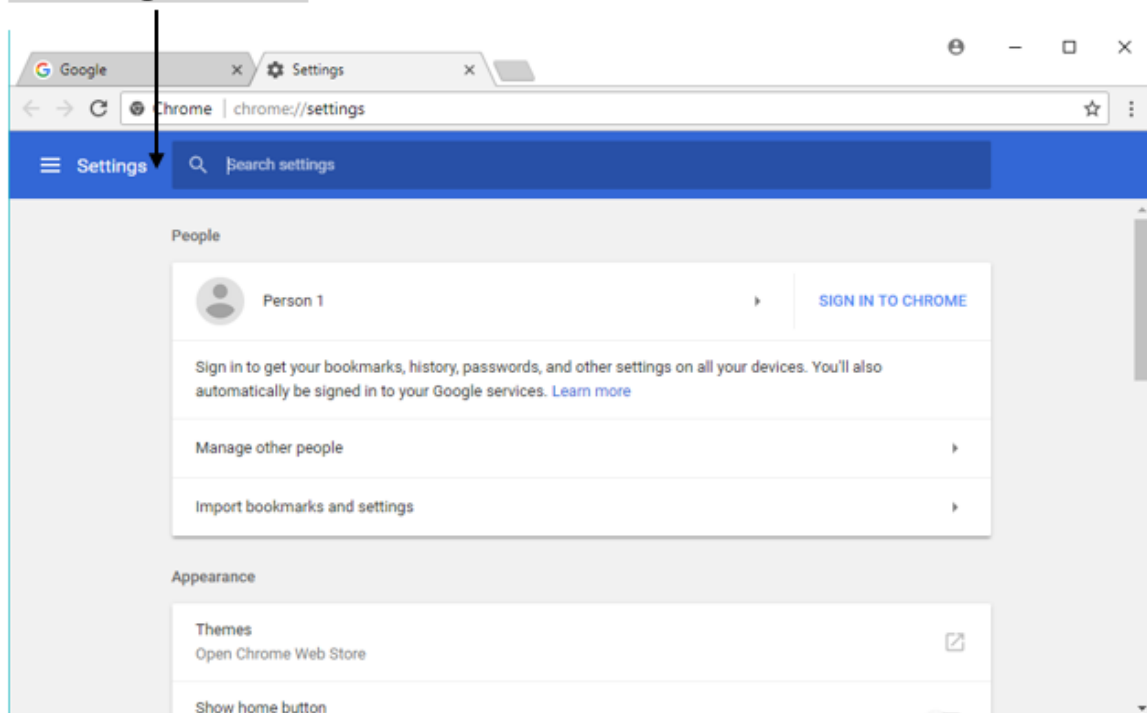
Search Engines

Search Engine is an application that allows you to search for content on the web. It displays multiple web pages based on the content or a word you have typed.

The most popular search engines are listed below.

Google

Google is the most popular and robust search engine launched in the year 1997 by Google Inc. It was developed by Larry Page and Sergey Brin. It is written using C, C++ and Python. Beyond searching content, it also provides weather forecasts, sports score, temperatures, area codes, language translation, synonyms, etc. Now-a-days the advancement is still more, that it displays maps in a touch. It is used by 4+ million users across the world.
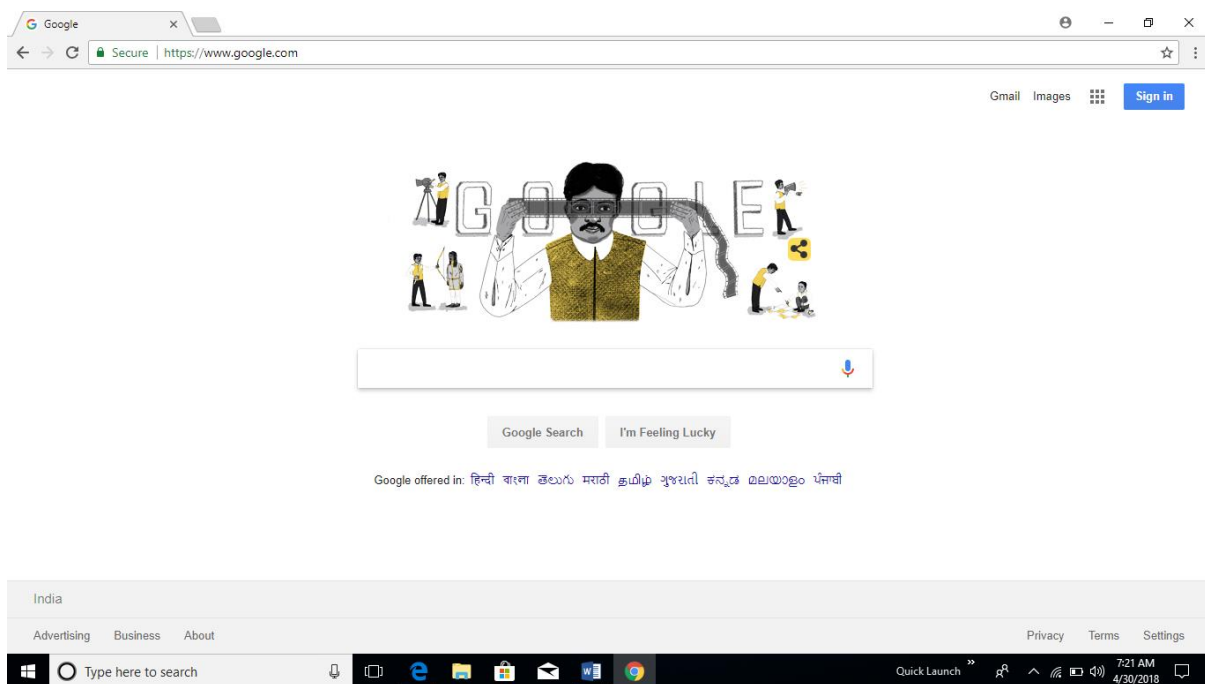
Bing

Bing is also a popular search engine launched by Microsoft in the year 2009. It is written using ASP .Net language. It is used to search web content, video, images, maps, etc.
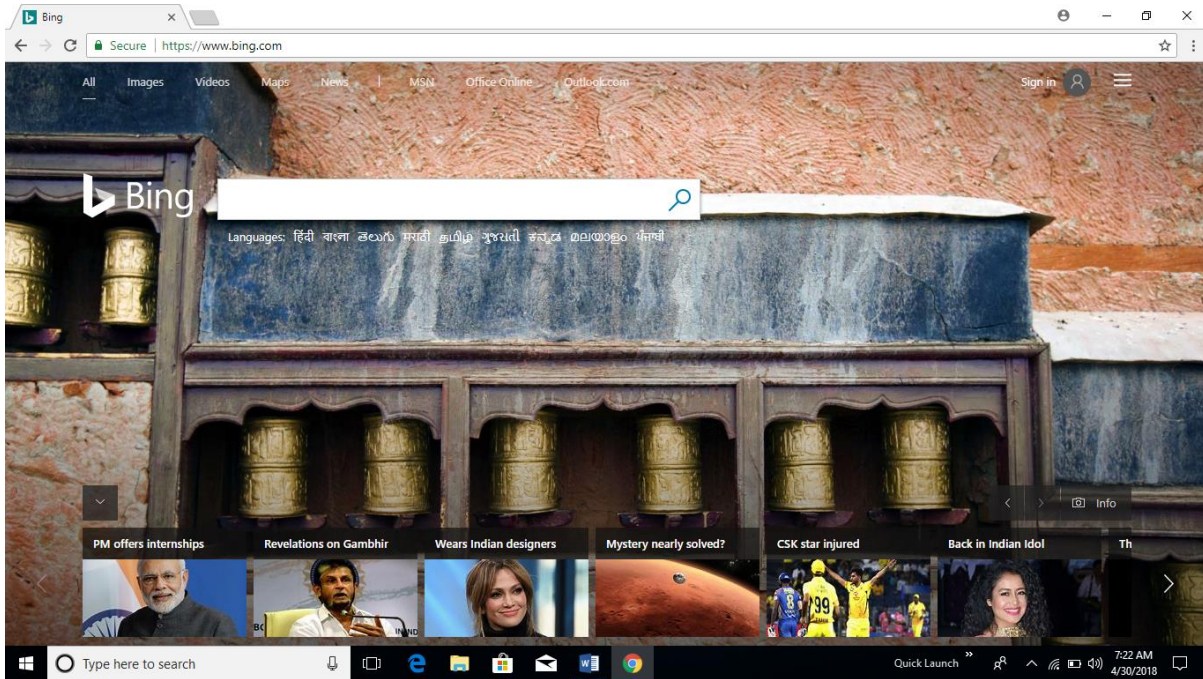
Yahoo

Yahoo is a common search engine launched by Yahoo in the year 1995. It is a multilingual search engine and written using PHP language.
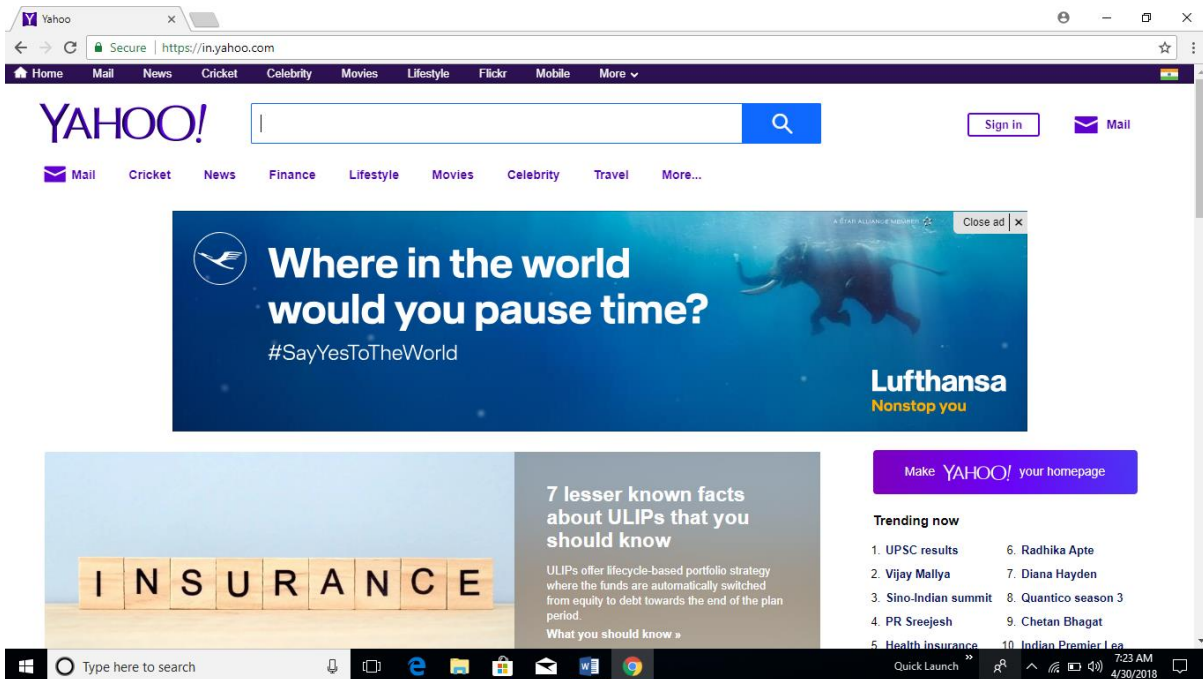
Ask

Ask is the most popular search engine and application for e-business which was launched by IAO in the year 1996. It was developed by Garrett Gruener, David Warthen, and Douglas Leeds.
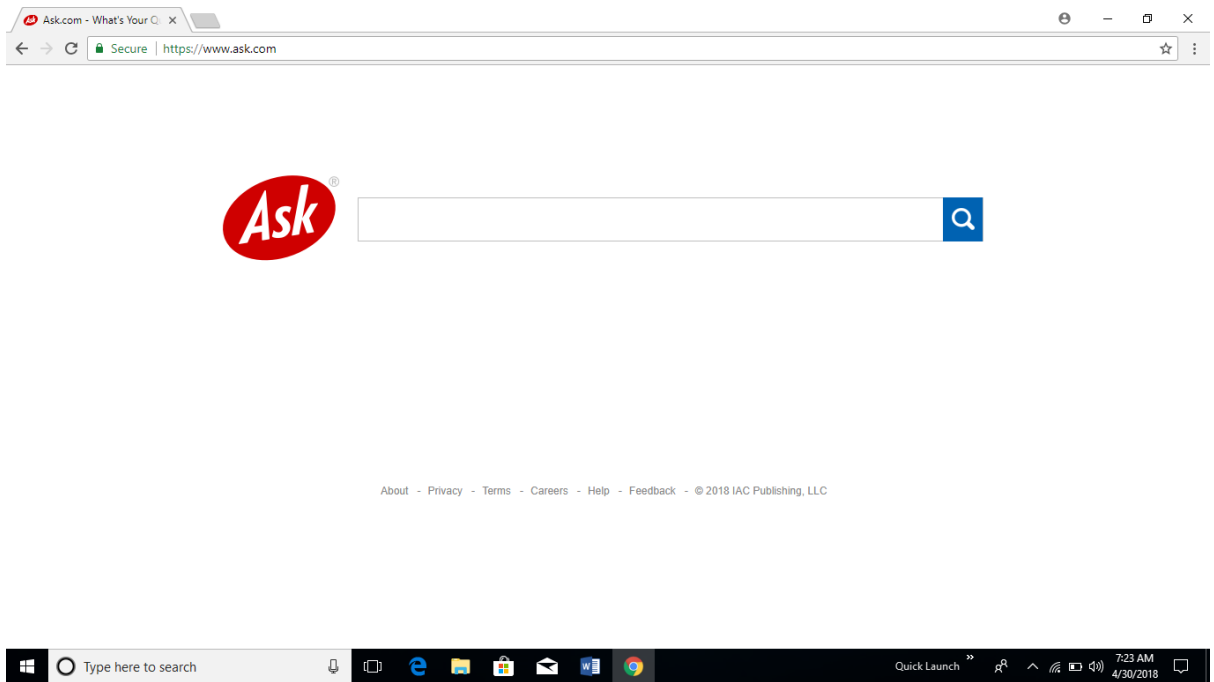
AOL

America Online is a popular search engine launched in the year 1993 by AOL Inc. At first, it was called as control Video Corporation. The founders of AOL are Marc Seriff, Steve Case, and Jim Kimsey.
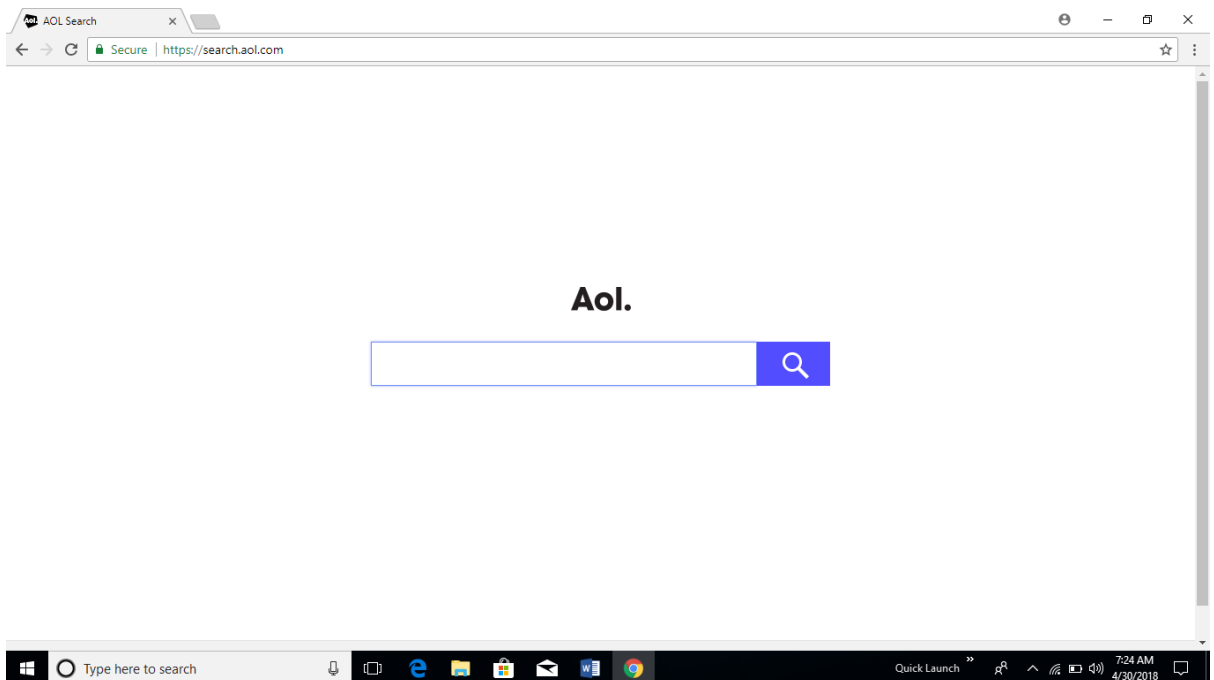
Search for the content

Search Engine helps to search for content on web using the following steps.

Step 1: Launch your web browser.

Select the shortcut icon on the task bar

Step 2: In "Address bar/Location", type the search engine you want to use and press enter.

Enter the name of search engine here

Step 3: Type the content you want to search in the "search text box" and press enter.

Enter the content to be searched here
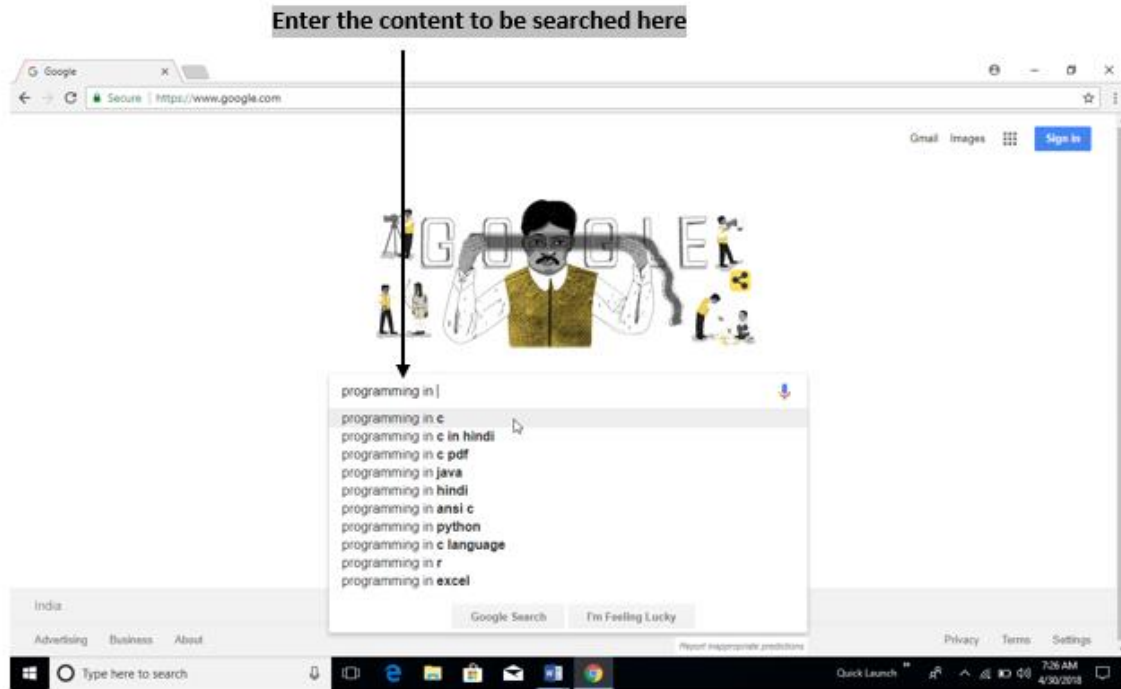
Step 4: It displays a list of web pages from which you can select corresponding content/web page you want.

Web pages related to the search will be displayed
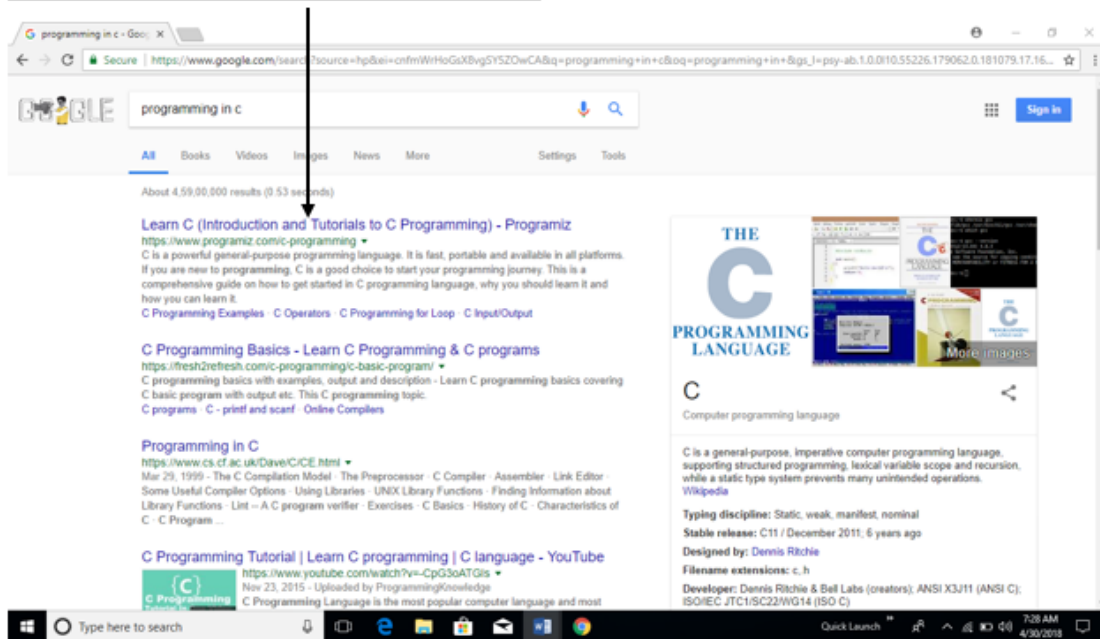
Accessing Web Browser

There are several ways to access a web page like using URLs, hyperlinks, using navigating tools, search engine, etc.

Using URLs

URL refers to "Uniform Resource Locator". Each and every website can be recognized using a unique address called "Uniform Resource Locator" or simply a URL. Once you provide URL of a specific page in address bar, web browser will find the corresponding page and displays result to the user.
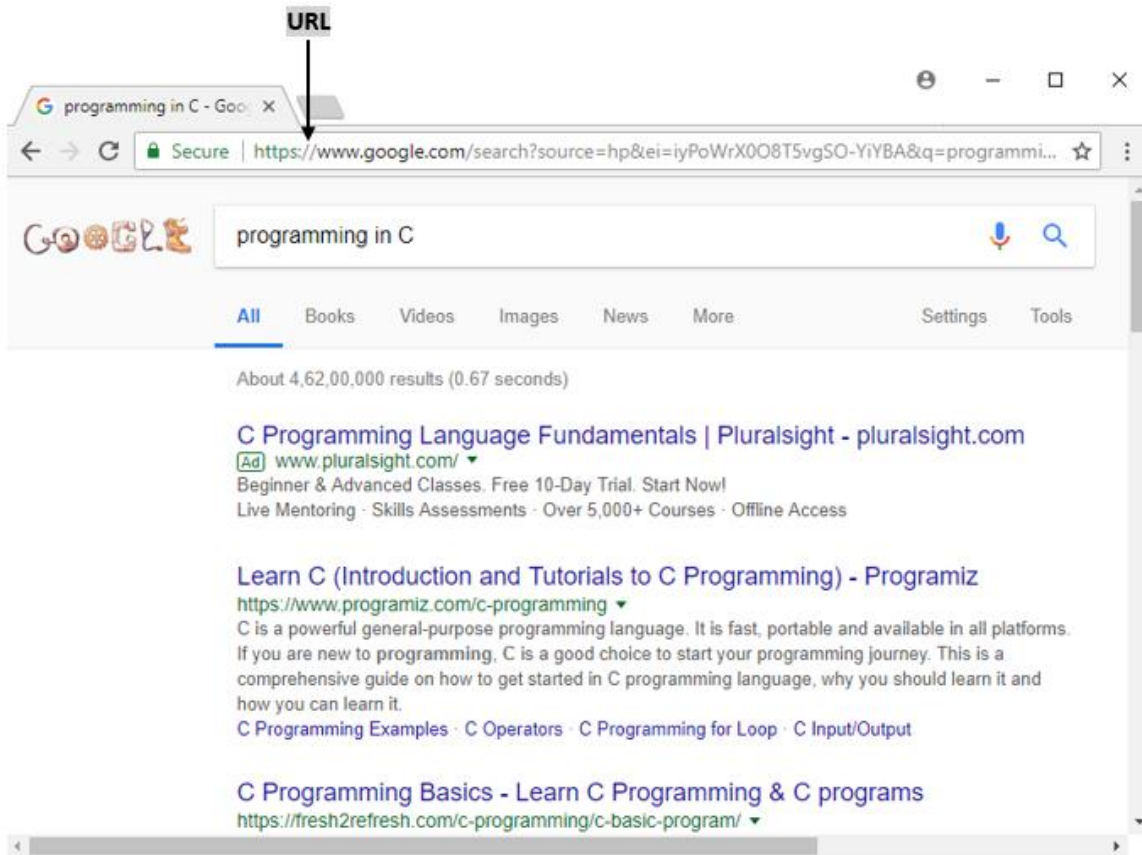
Using Hyperlinks

"Hyperlink" is a part of web page that is linked to URL. Hyperlink can be text, image, button, arrow, etc. By clicking on a hyperlink you can move to different URL specified in the link from the current URL. Hyperlinked text is an underlined blue color text which is represented using hand symbol.
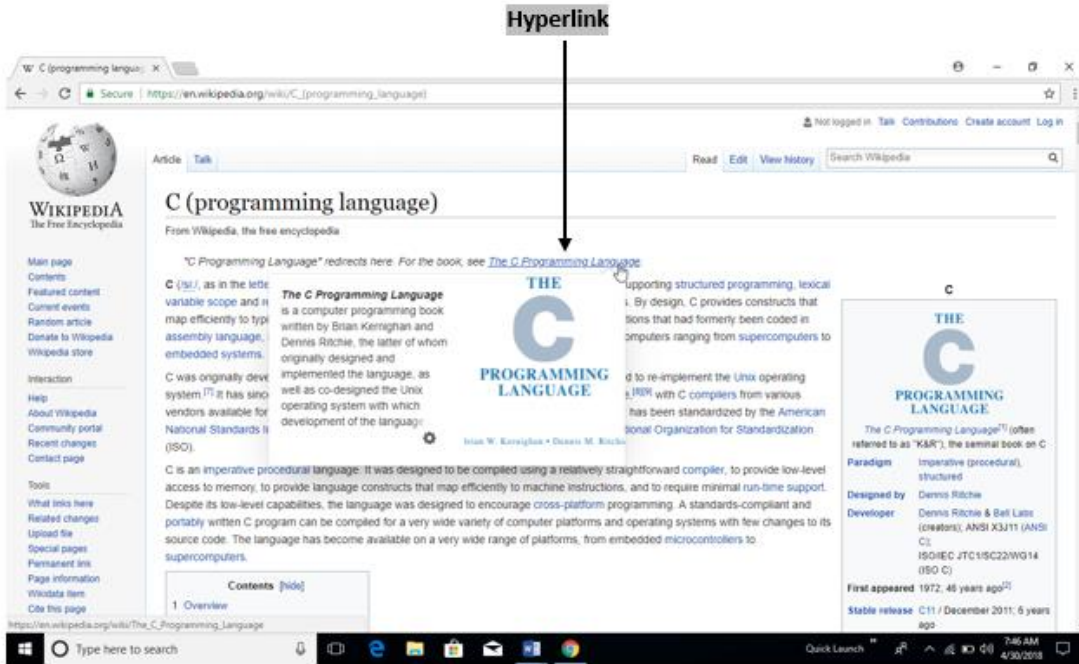
Using Browsers Navigation Tools

Web browsers offer a variety of tools to help you move around the web. These tools help you to quickly go back and forth through web pages.

Back Button - Helps to move back to the previous page from current page.
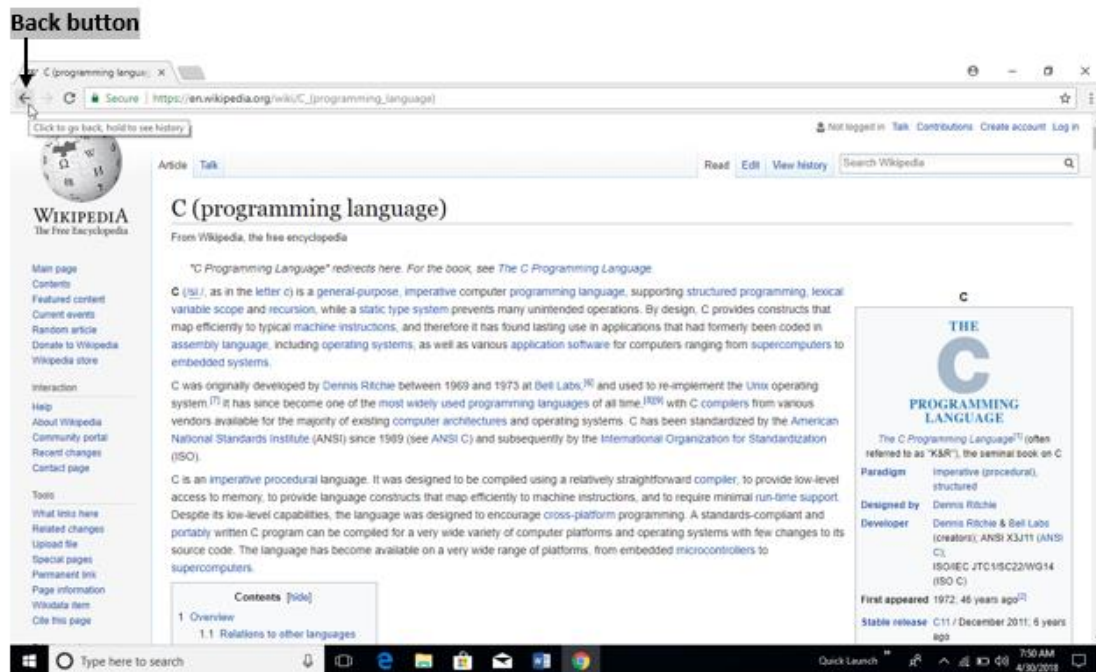
Forward Button - Helps to move to the next page from current page.
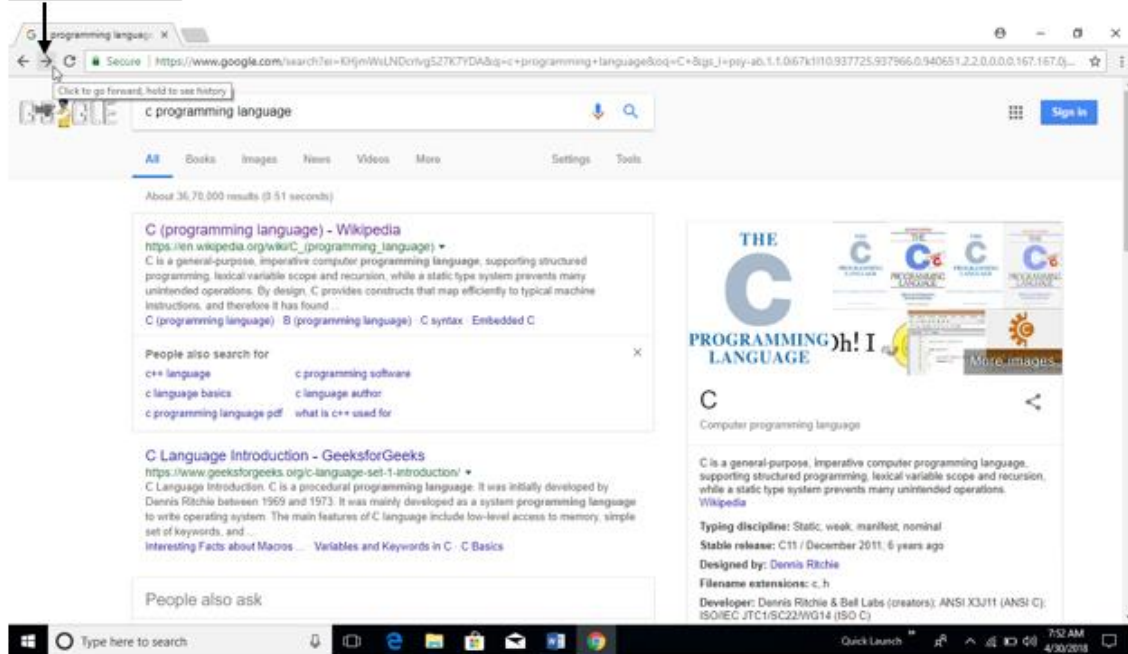
Refresh Button - Helps to refresh a current page.
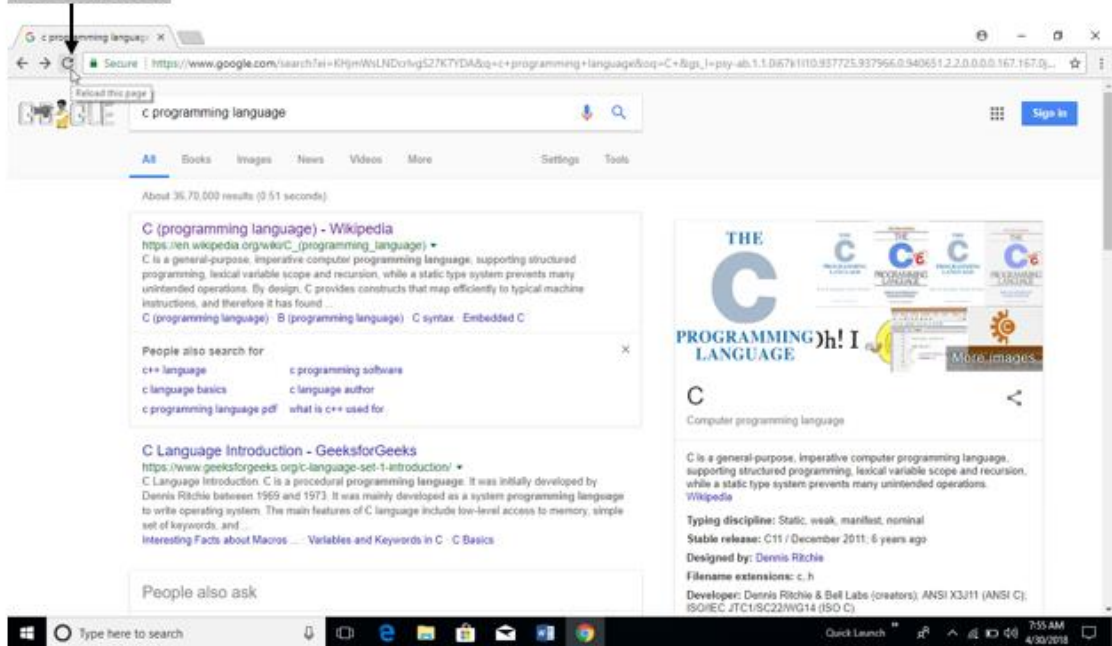
Close Button - Helps to close a web page.
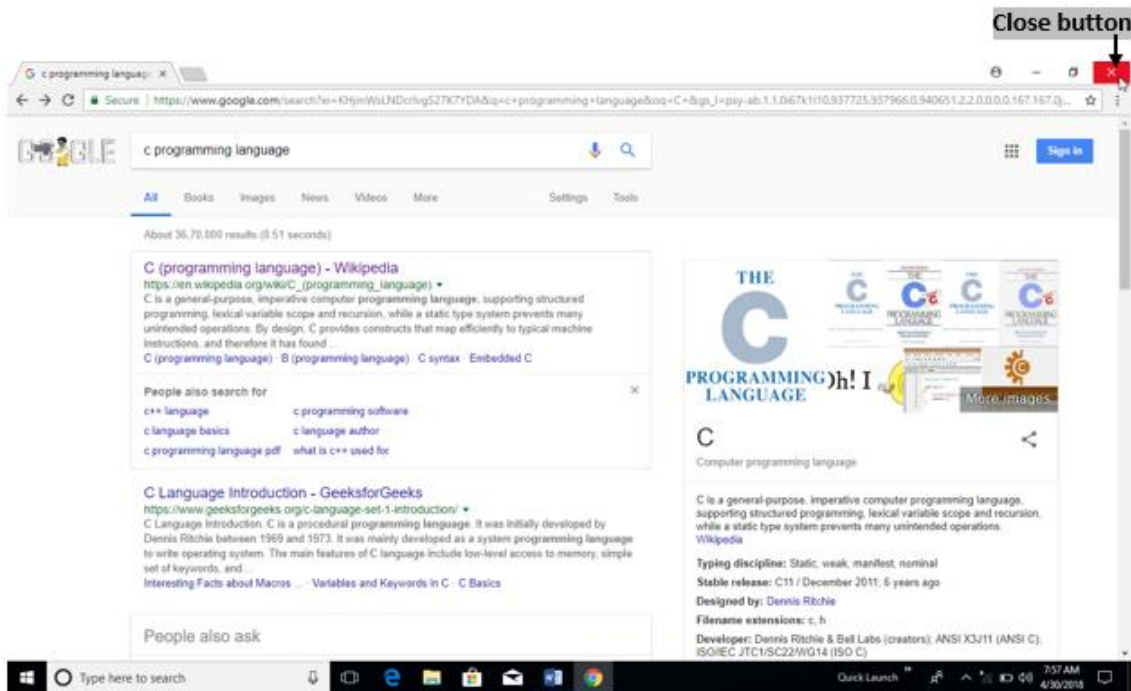
Using Bookmark

Web browsers allow you to bookmark pages that you visit most frequently. This helps you to go to web page directly by selecting from a list of bookmarks instead of typing the URL multiple times. This is displayed as an icon with star symbol in the top right corner of the page.
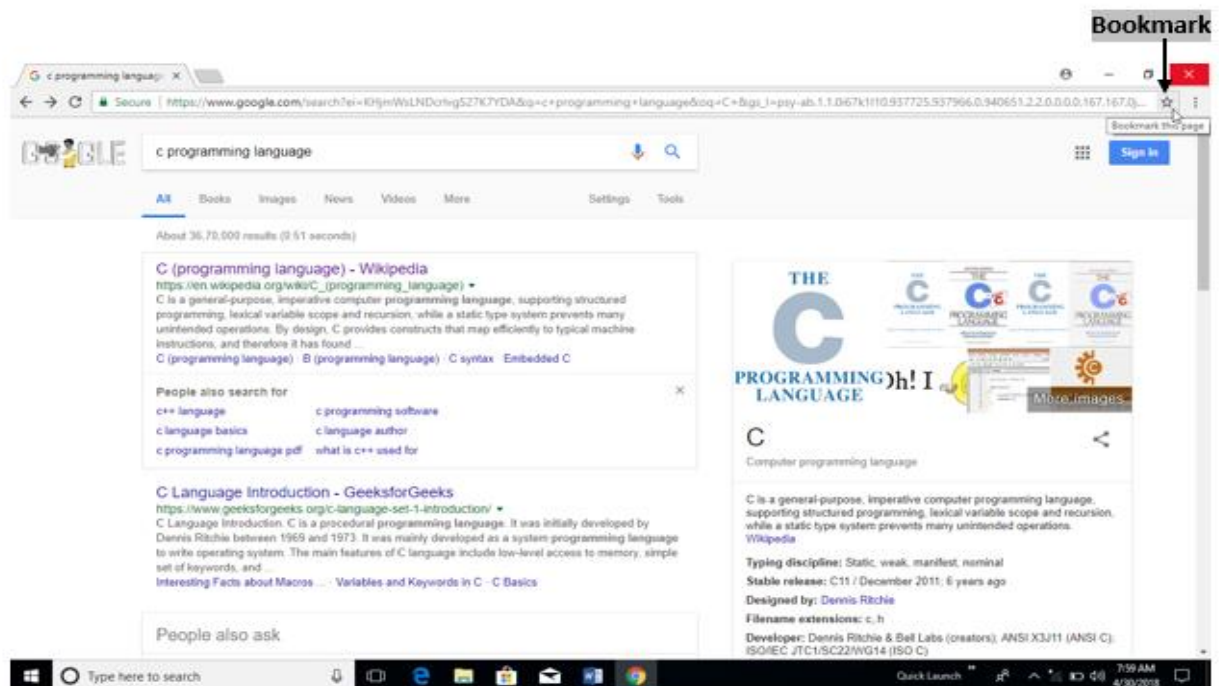
Using History

When you type any URL in address bar, the browser saves that URL automatically, thus creating a history list for current session. You can choose the URL you want from the history list instead of typing it again.
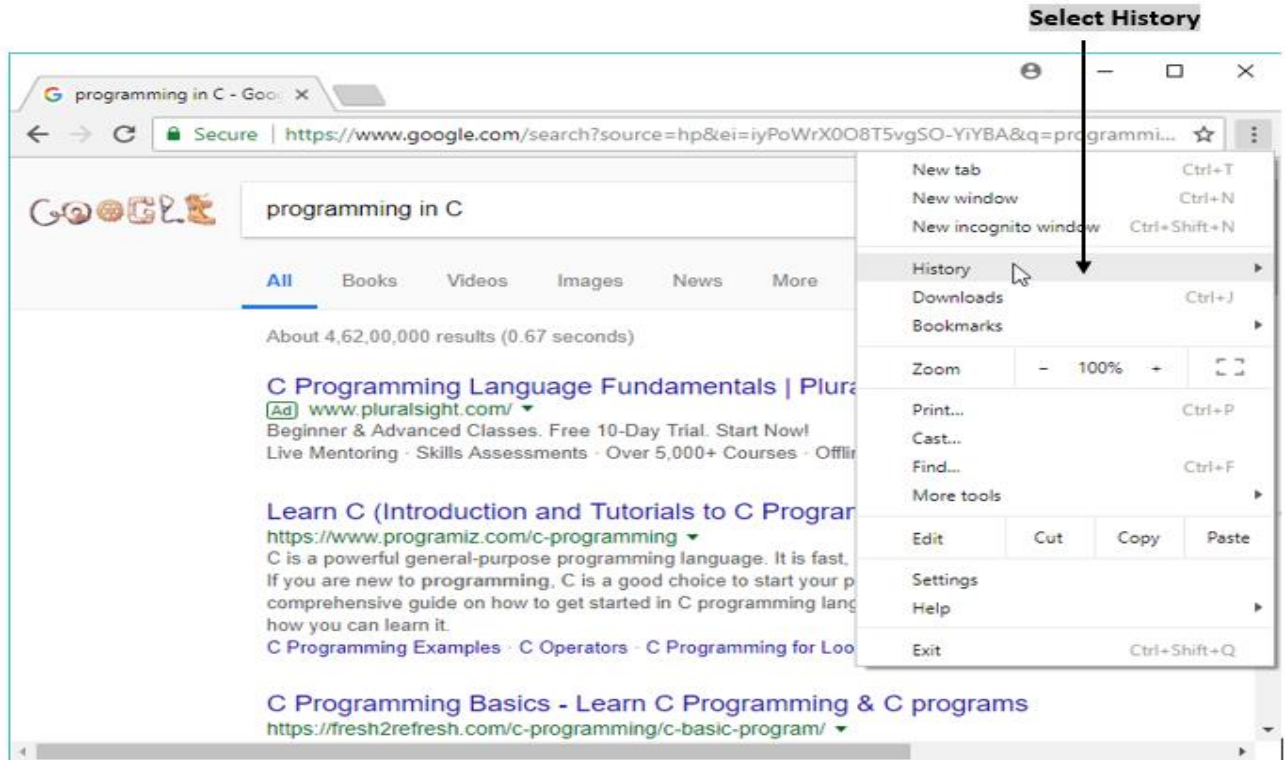
Using Search Engine

Search engine is an application that allows you to search for content on web. It displays multiple web pages based on the content or a word you have typed. The most popular search engines include Google, Yahoo, Ask, etc. Below are the steps to use a search engine.

Step 1: Launch your web browser.

Select the shortcut icon on the task bar

Step 2: In "Address bar/Location", type the search engine you want to use and press enter.

Enter the name of search engine here
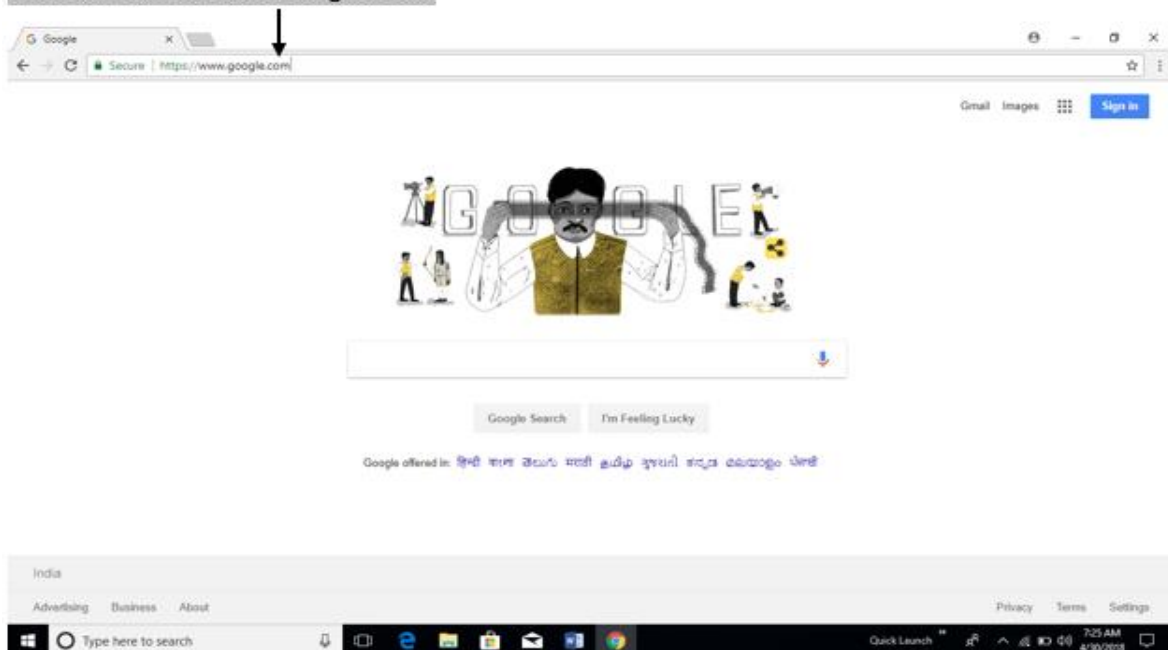
Step 3: Type the content you want to search in the "search text box" and press enter.
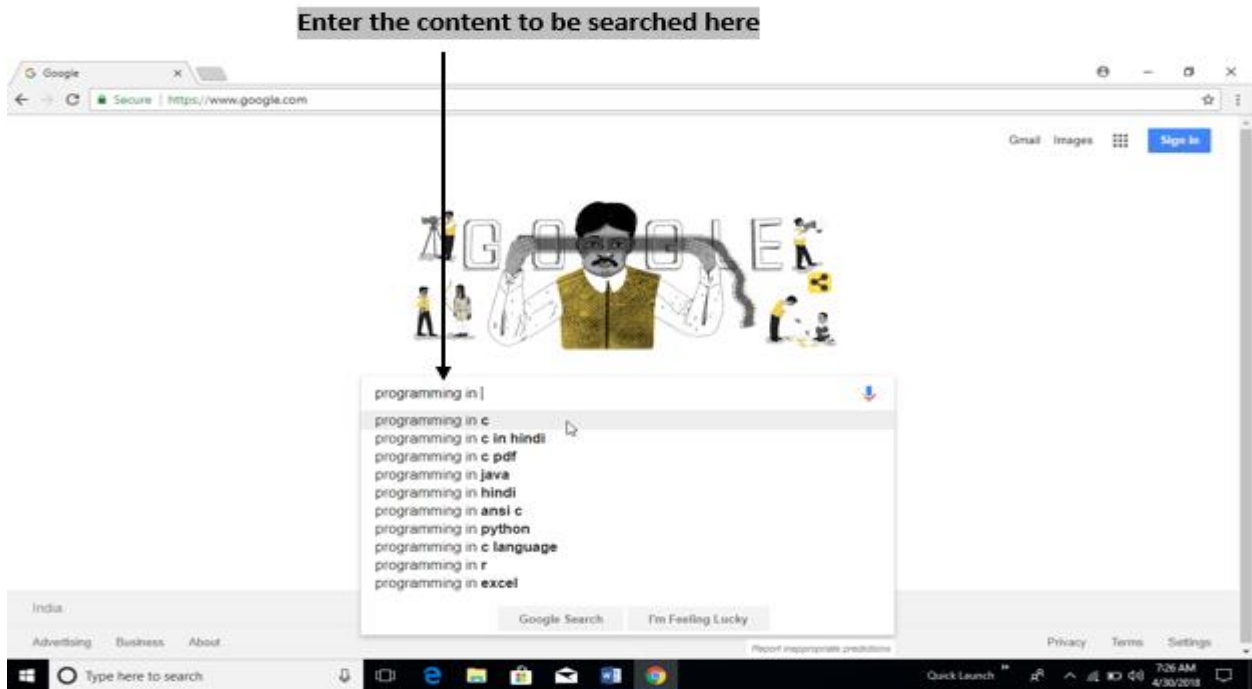
Step 4: It displays a list of web pages from which you can select the content/web page you want.
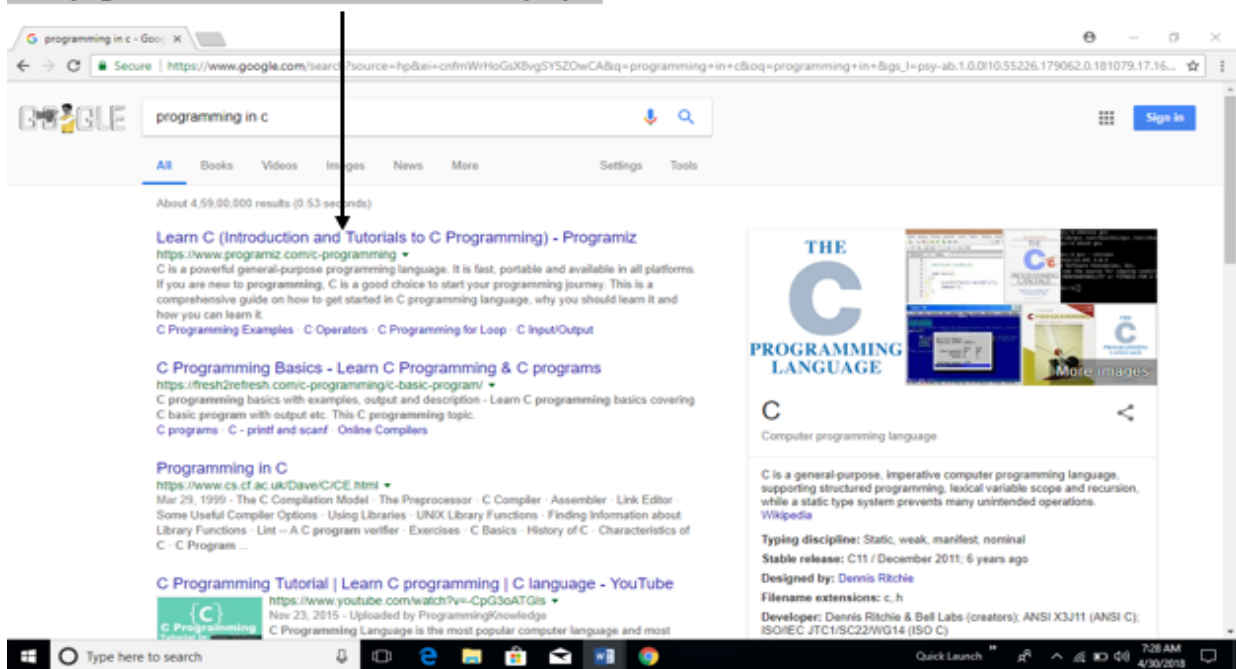
Using Favorites Folder

Web browsers allow you to bookmark the pages that you visit most frequently. The Favorites folder is called Bookmarks. This helps you to go to the web page directly by

selecting from the list of bookmarks instead of typing the URL again and again. Adding and removing the pages to the favorite's folder include the following steps.

Step 1: Click star icon present at the top right corner of the page.
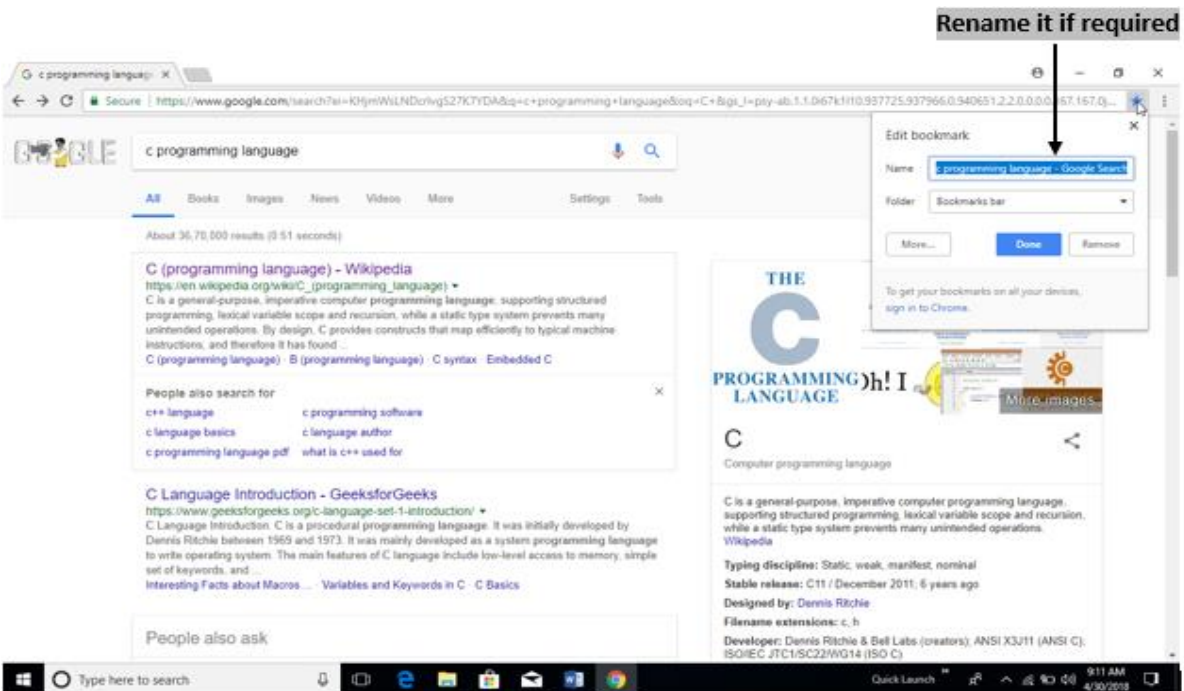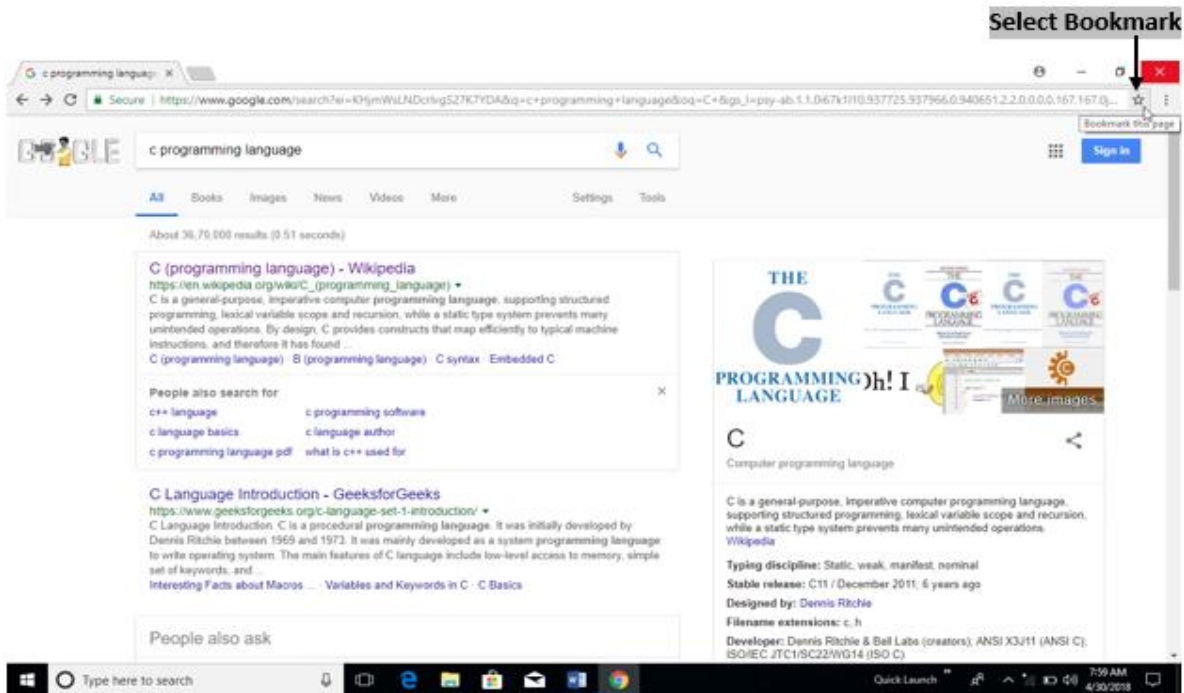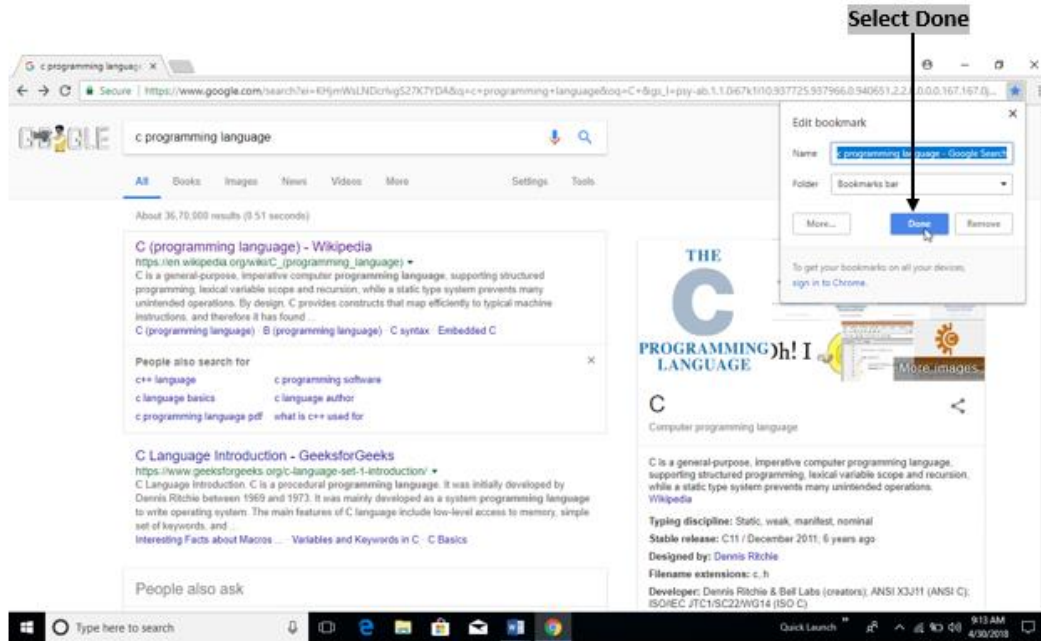
Step 2: In order to add the web page, type the page you want to add as favorite and click "Done" button or you can click the three vertical dots (⋮) icon on top right corner of the screen and select "Bookmark this page" option from the displayed menu to bookmark the current page.

Select Bookmarks

Select Bookmark this page...
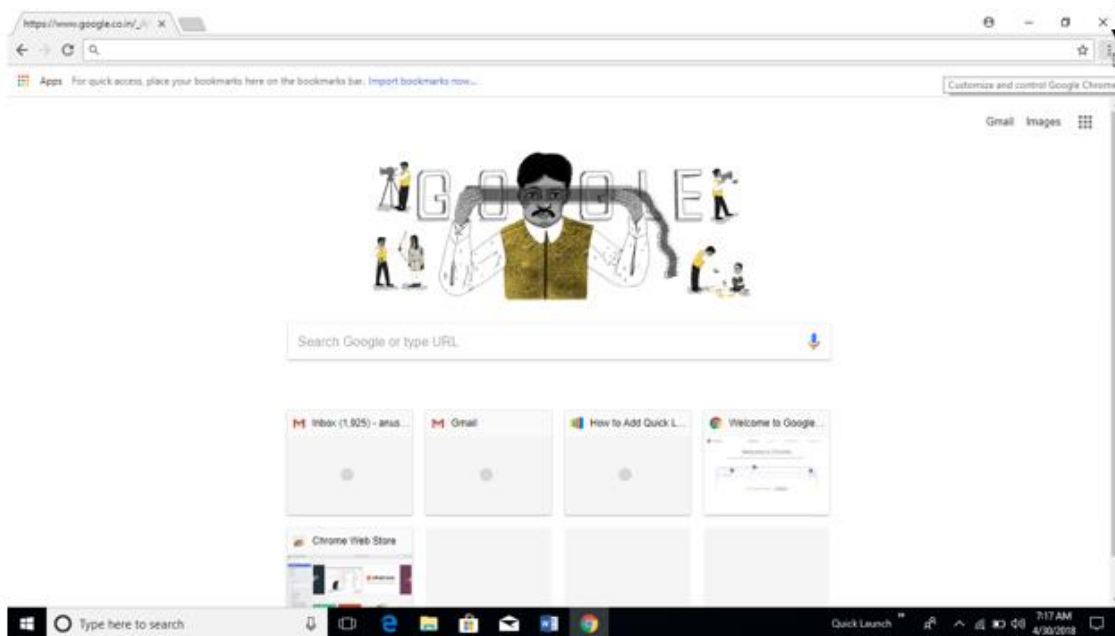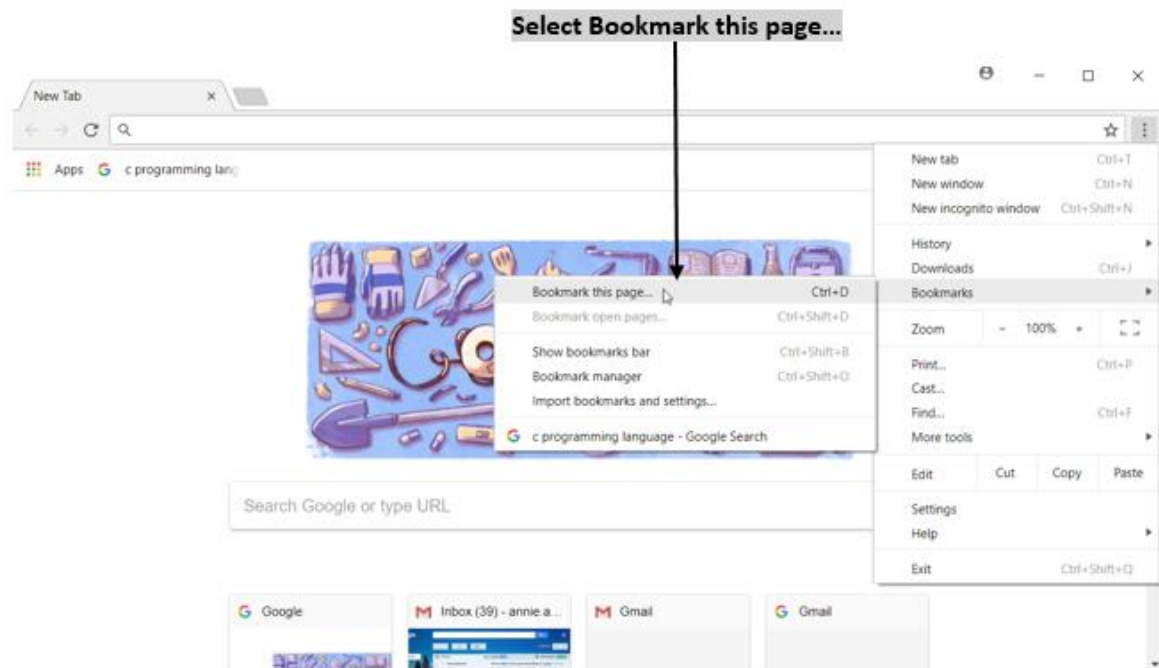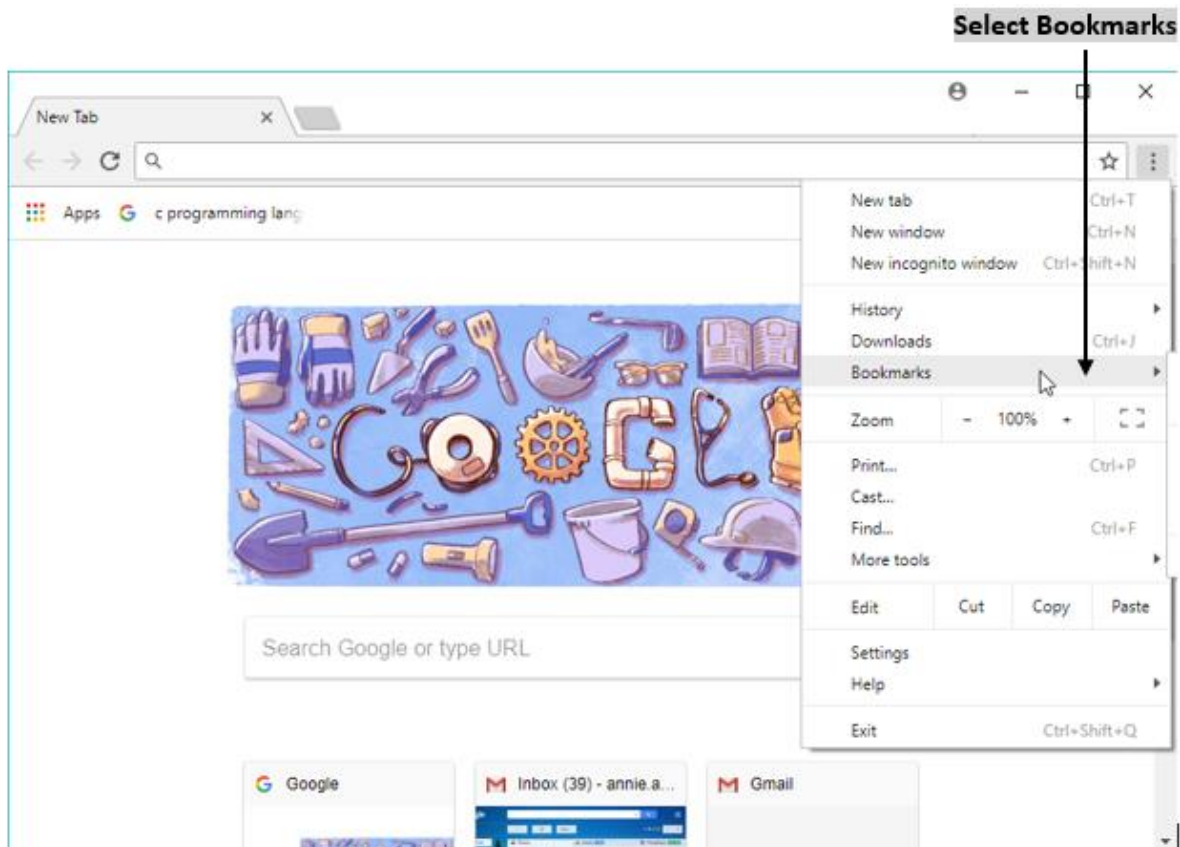
Step 3: In order to remove the web page, select a page and press "Remove" button or you can click the three vertical dots icon(⋮) on top right corner of the screen and select the web page you want to delete and "Right click" and click "Delete" option.

Select Customize and control Google Chrome option
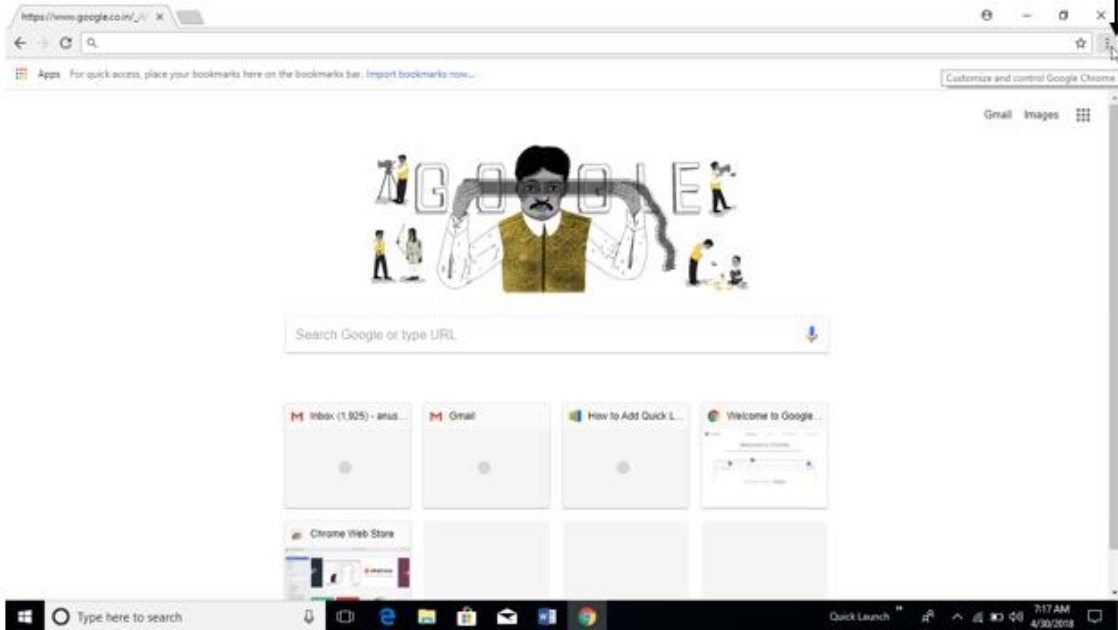
Select Bookmarks
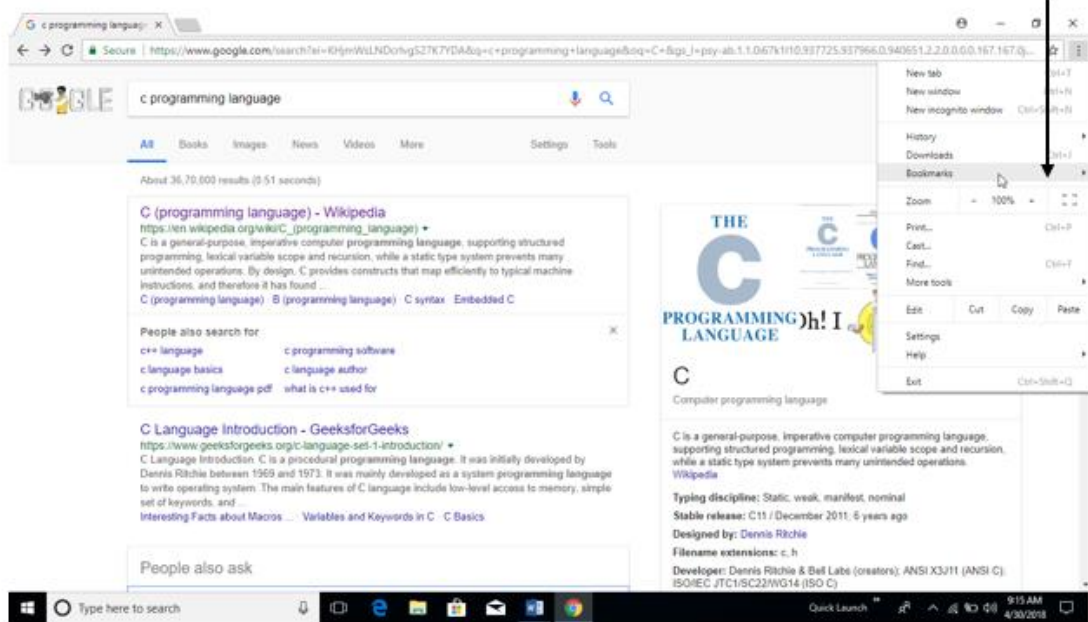
Select the web page to be un-bookmarked
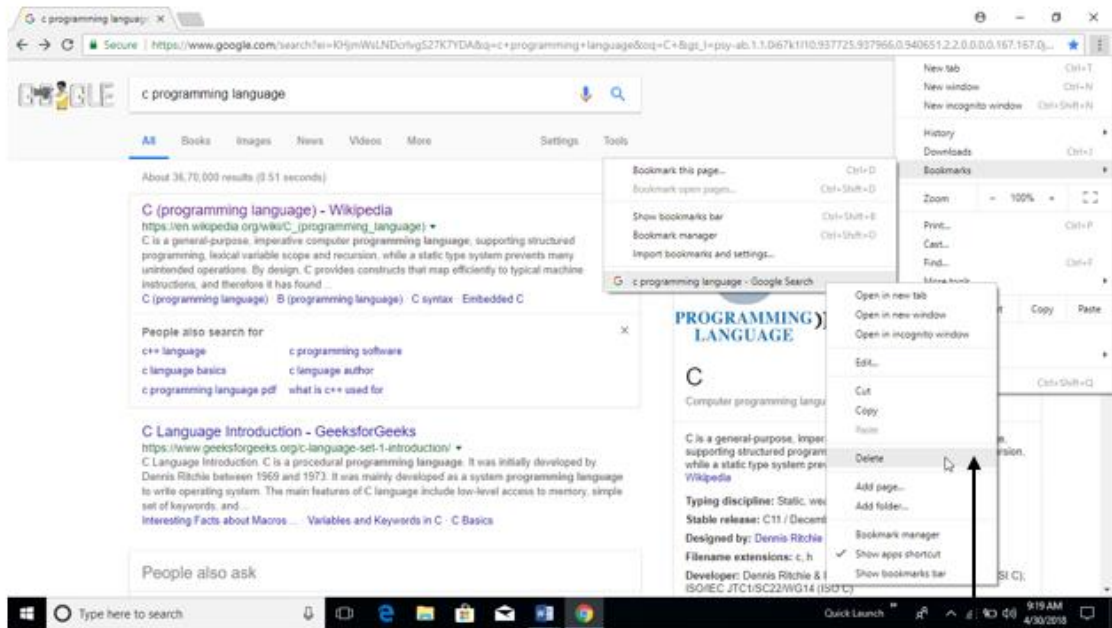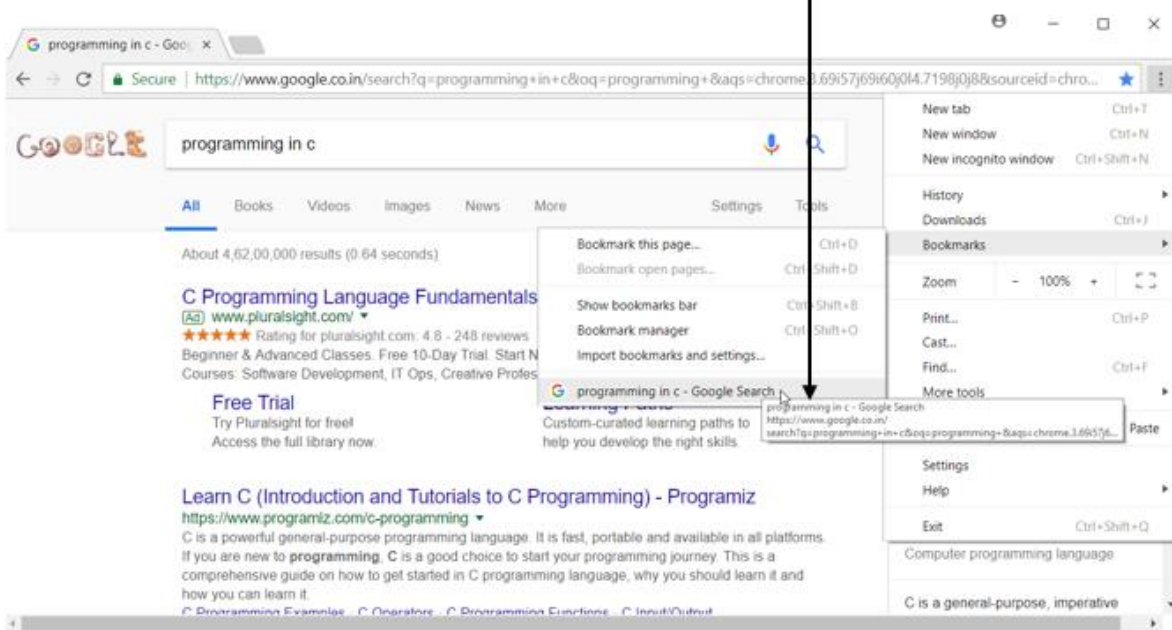
Right click on the selected web page and select delete

Alternately, we can use the below screenshots:
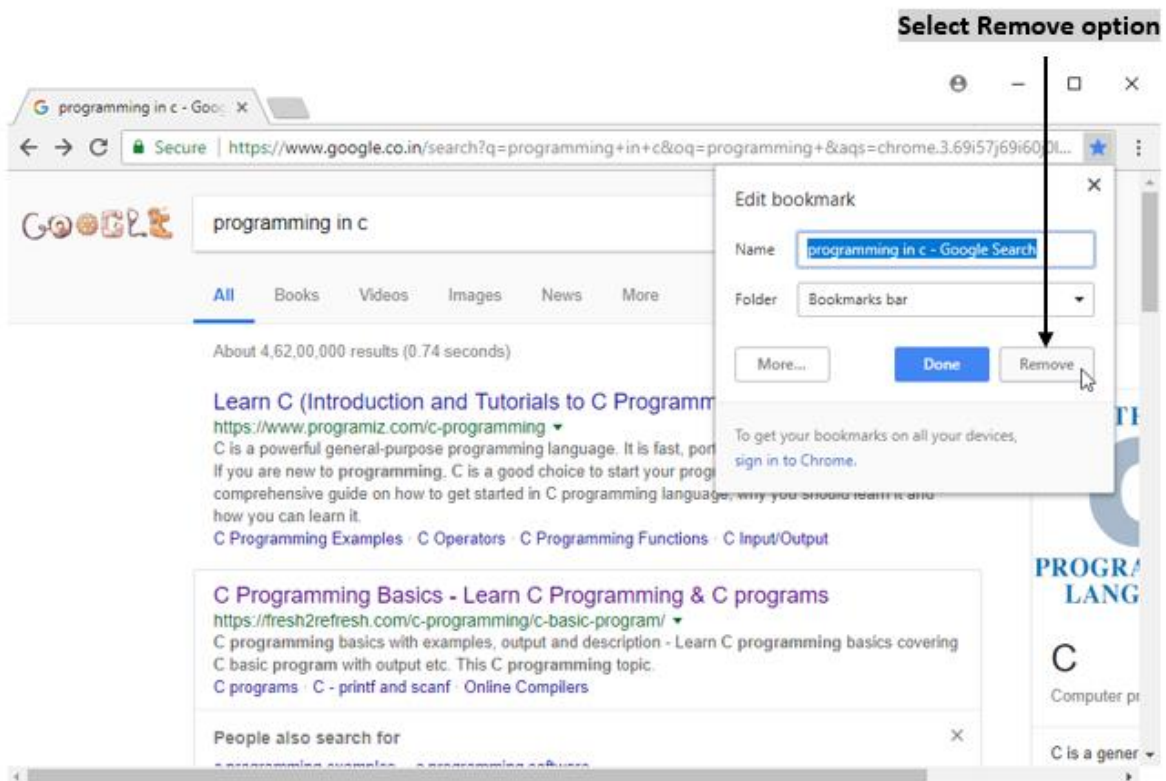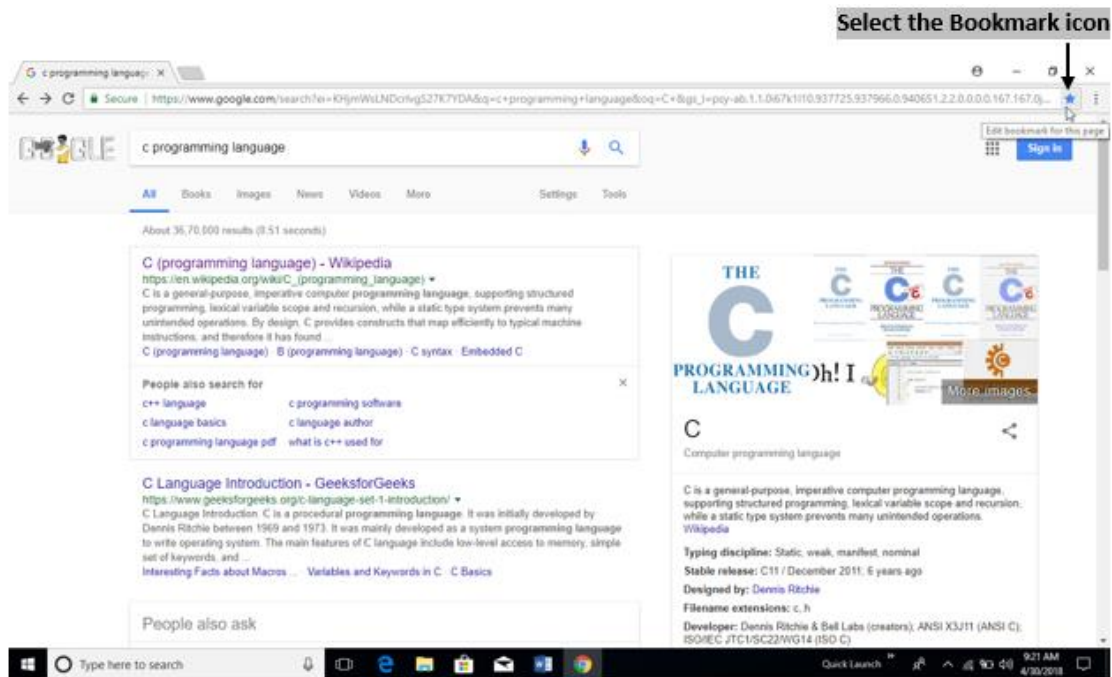
Downloading Web Pages

Downloading is saving a file or document or web page on your hard disk. It consists of following steps.

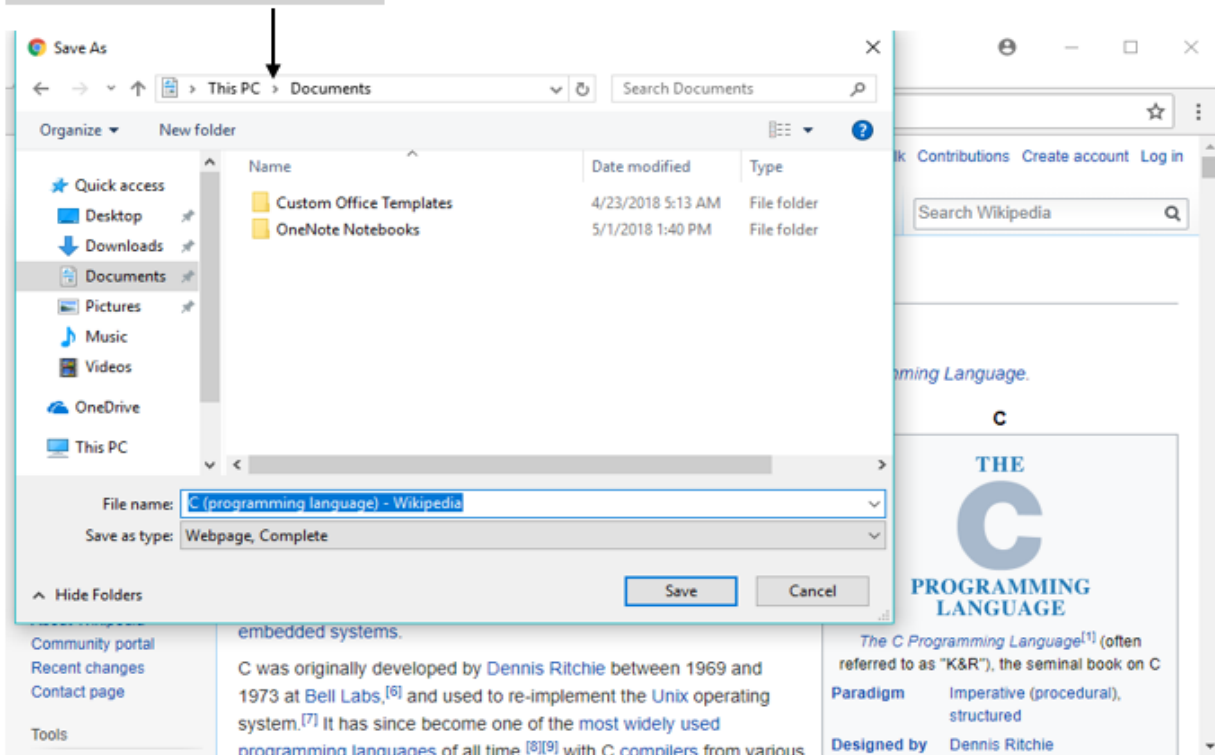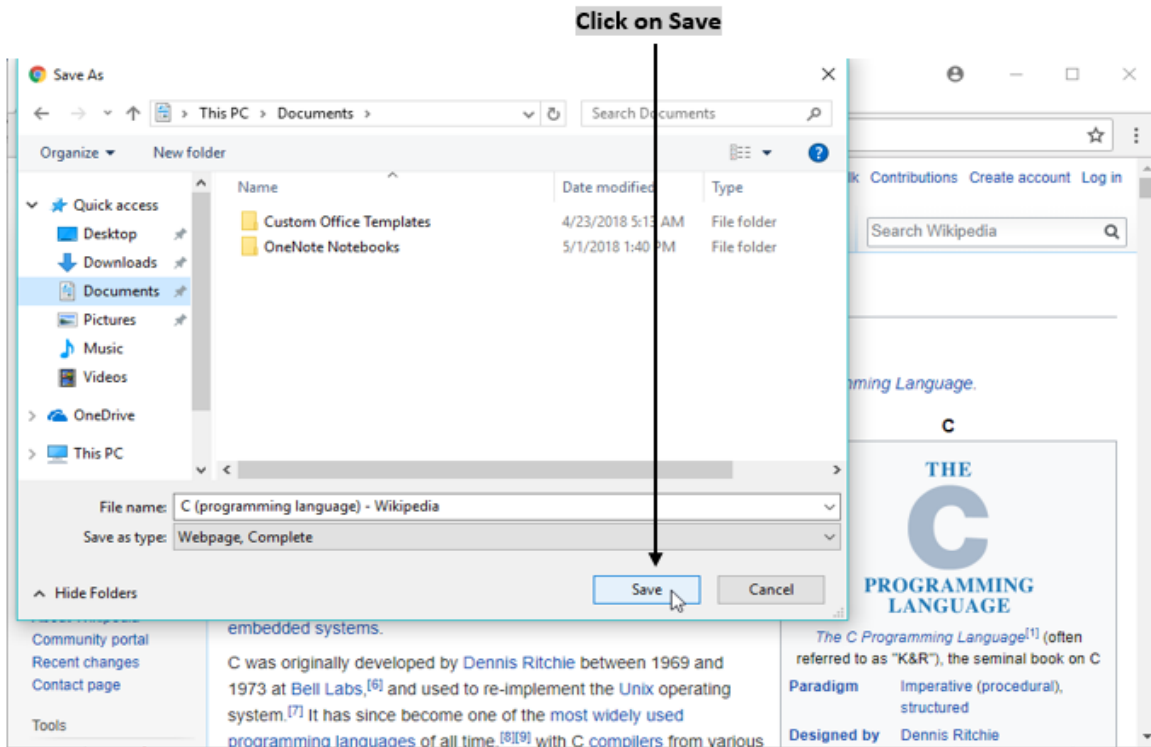**Step 1:** Open a web browser and navigate to the webpage which you want to download.
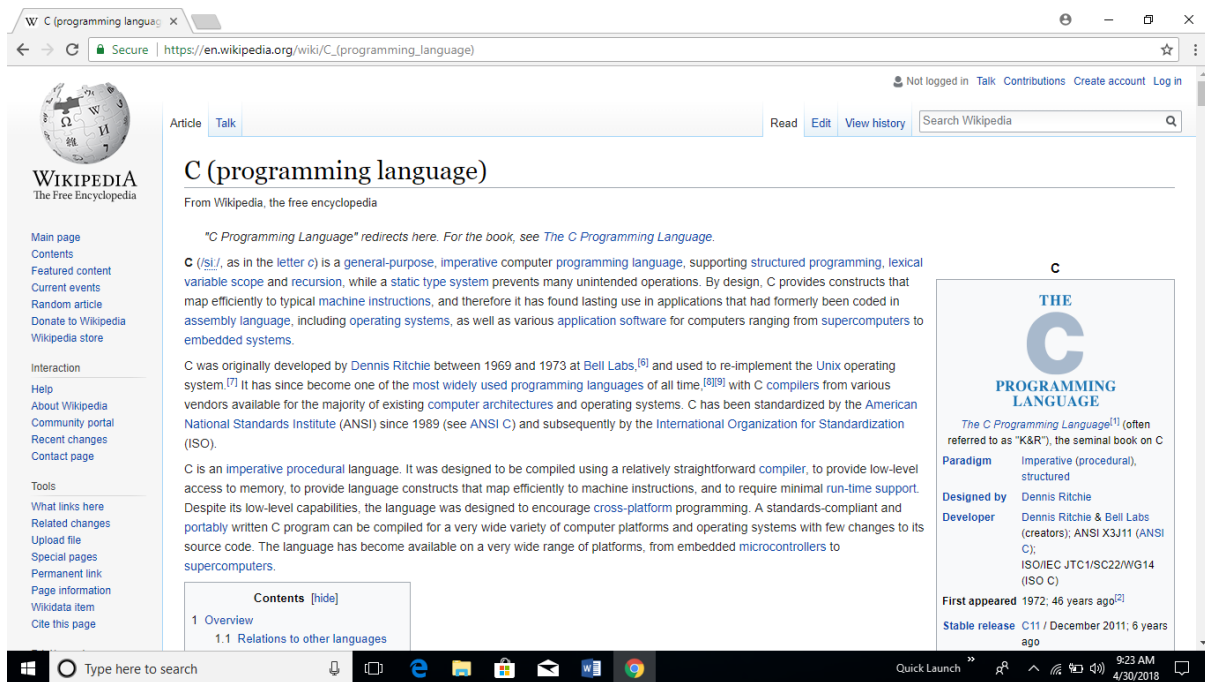
Step 2: Right-click on the file and choose **Save as.**

Rename the file if required
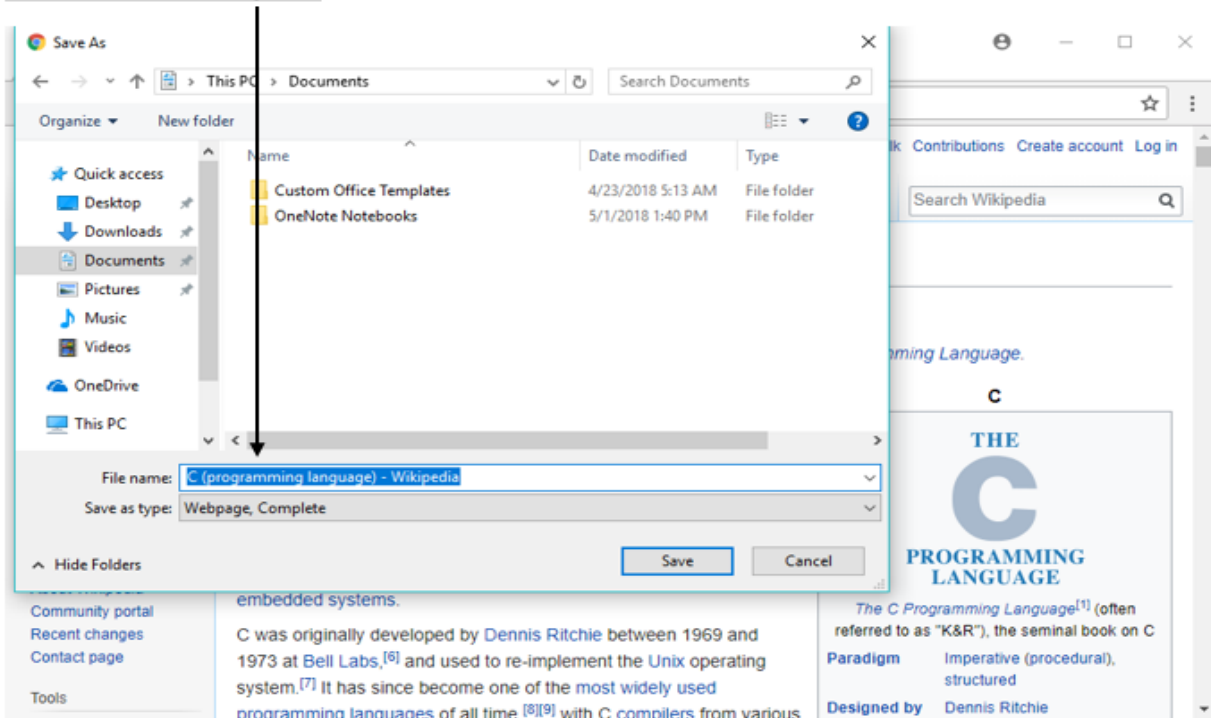
Step 3: Choose where you want to save the file, then click **Save**.

Select the destination of the file

Click on Save

Step 4: When the file is downloaded, you'll see it at the bottom of your Chrome window. Click the file name to open it.

This is the downloaded file

Pause, Resume or Cancel

At the bottom of the screen, you can see the downloading file. Click the arrow next to the file name at the bottom of your screen. Click **Pause**, **Resume** or **Cancel, whatever action you want to perform**.
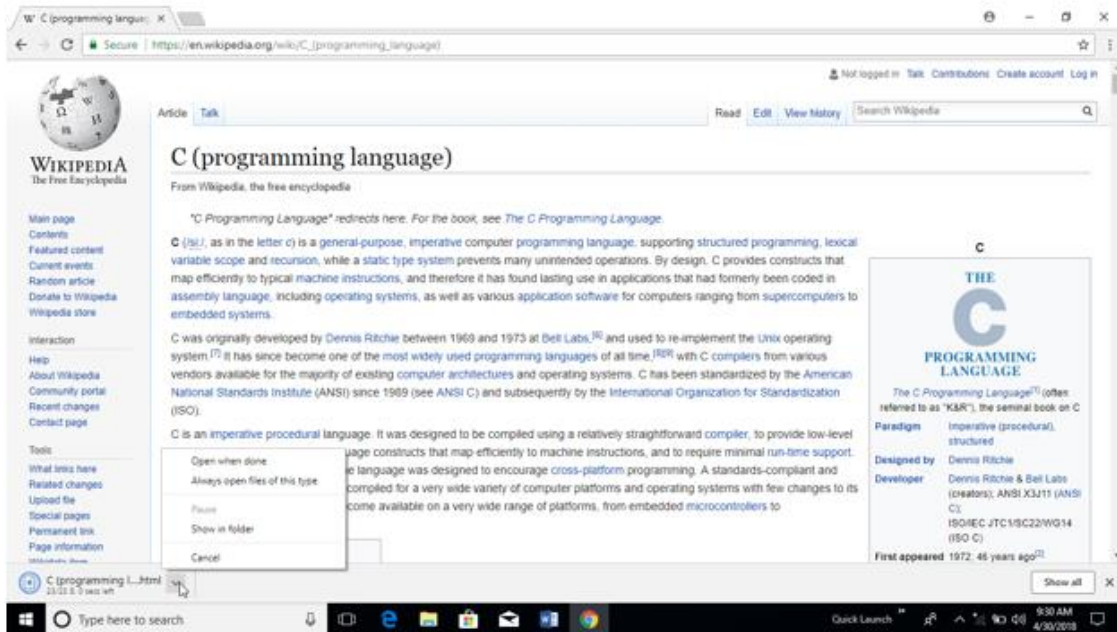

Printing Web Pages

Printing is creating hard copy of a document which can be a web page or any other content. It includes the following steps:

Step 1: After launching web browser, open the page, image, or file you want to print.

Step 2: Click on three vertical dots icon (⋮) on the top right corner of the screen or use a keyboard shortcut: **Ctrl + P.**

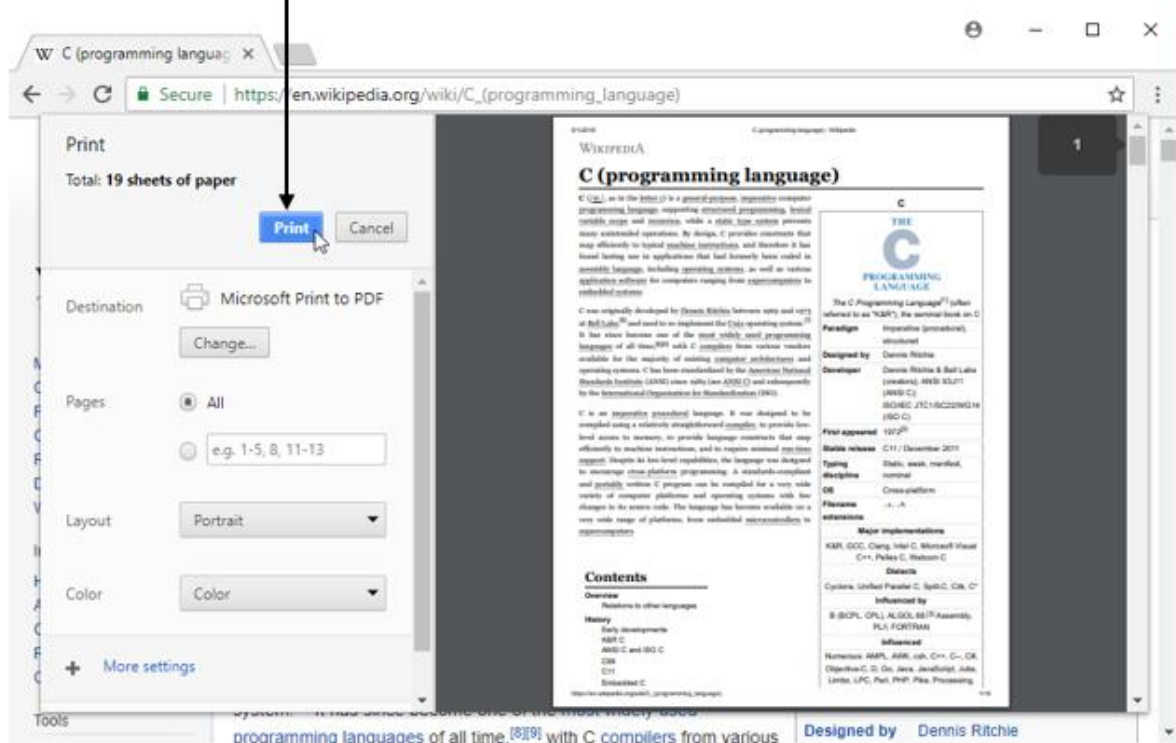**Select Customize and control Google Chrome option**
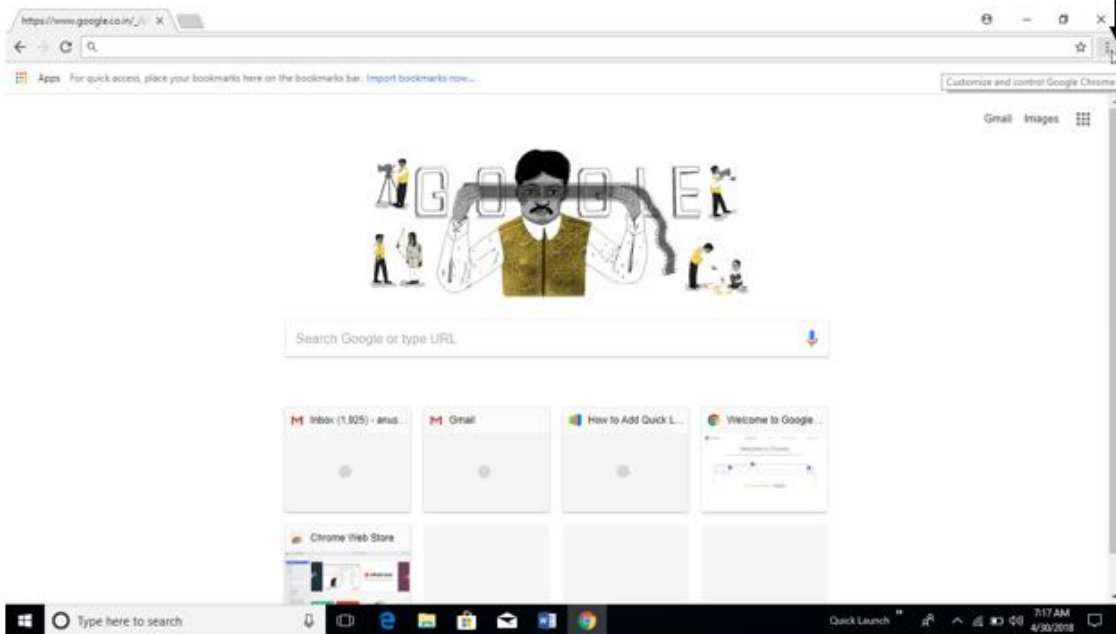
Select Print...

Step 3: In the window that appears, select destination and change any print settings you want; when ready, click **Print**.

Select correct destination and click on Print

Summary

This topic summarized the concepts of internet like LAN, WAN, internet architecture, internet services, WWW, communications on the internet, internet service providers, internet access techniques, web browsers, search engines, favourites folder, configuration of web browsers, and downloading & printing web pages.

6. Computer Concepts — Communication and Collaboration

Communication refers to exchange of information between persons through internet. Internet provides a basis for communication and collaboration which can be done using mail, chat, skype, etc. When dealing with official matters, electronic mail helps in the exchange of messages text documents, web pages, audio, video, etc.

In this topic, we are going to discuss in detail about basics of email, email addressing, configuring email client, using emails, opening email client, mailbox, creating and sending a new email, replying to an email message, forwarding an email message, sorting and searching emails, advance email features, sending documents by email, activating spell check, using address book, sending softcopy as attachment, handling spam, instant messaging and collaboration, using emoticons and some of the internet etiquettes.

Basics of E-mail

Electronic mail is an application that supports interchange of information between two or more persons. Usually text messages are transmitted through email. Audio and video transfer through email depends on the browser in use. This provides a faster way of communication in an affordable cost.

Advantages of E-mail

Functionalities like attachment of documents, data files, program files, etc., can be enabled. This is a faster way of communication at an affordable cost.

Disadvantages of E-mail

If the connection to the ISP is lost, then you can't access email. Once you send an mail to a recipient, you have to wait until she/he reads and replies to your mail.

Email Addressing

Email address is a unique address given to the user that helps to identify the user while sending and receiving messages or mails.

Username - Name that identifies any user's mailbox

Domain name - Represents the Internet Service Provider (ISP).

@ Symbol - Helps to concatenate username and domain name.

For example: user_name@domain_name

Username - user, **Domain name** - gmail.com
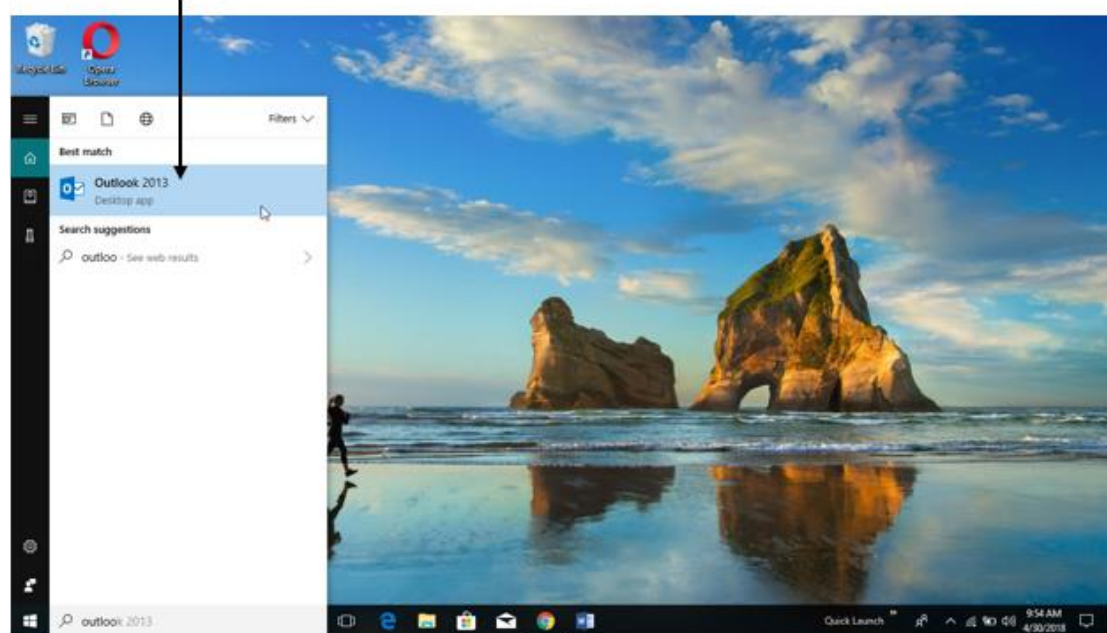
Configuring Email Client

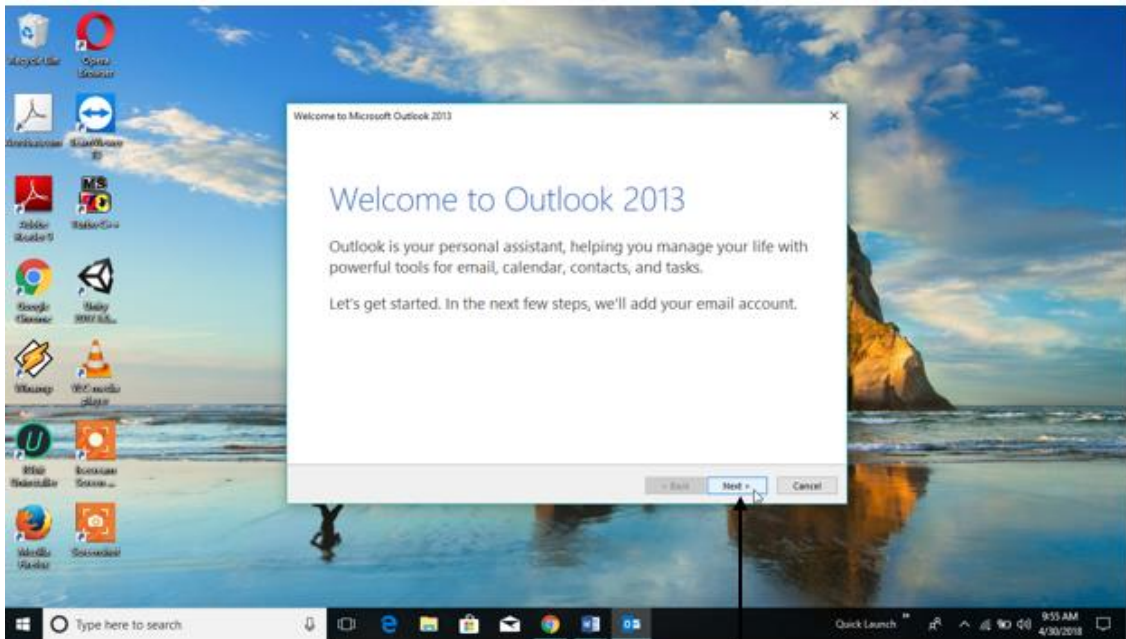Configuring email client is setting up a client which includes the following steps:

Step 1: Open Outlook Express using "**Start Menu**" or using search option under the start menu. Once the outlook window is open, press "**Next**" button at the bottom of the outlook express window.

Click Next
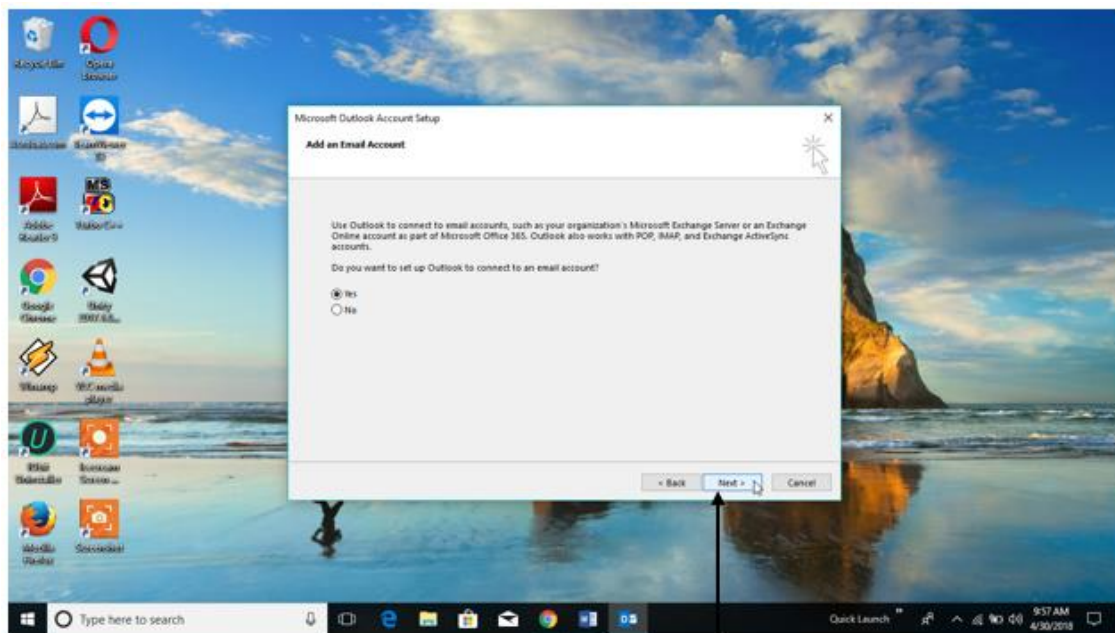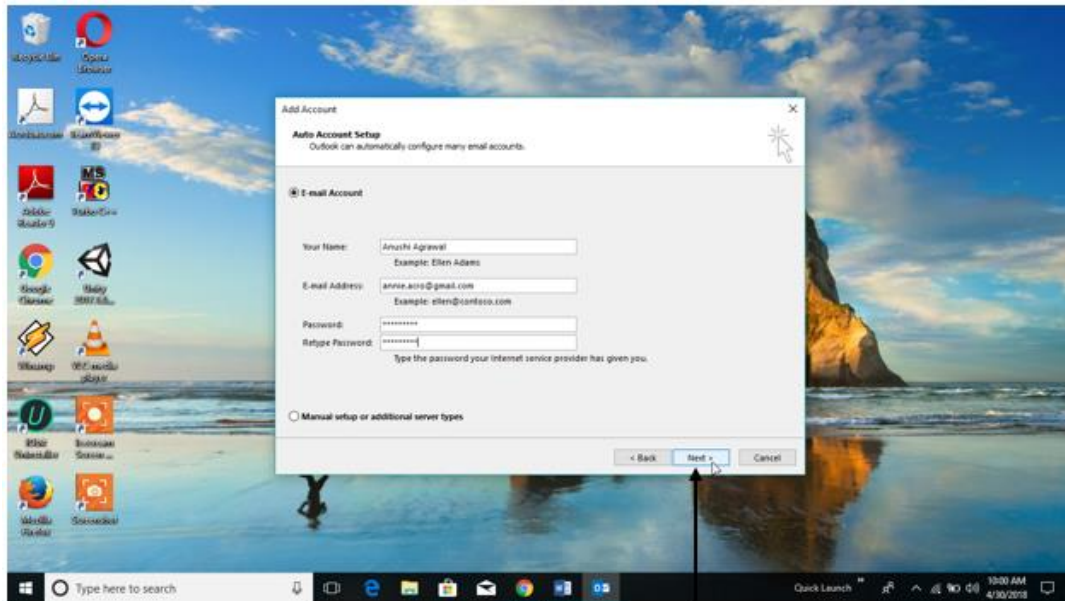
Step 2: Then "**Add an email account**" window pops up showing "**Do you want to set up outlook to connect to an email account?**"

Check mark the '**Yes'** radio button and hit NEXT.

Click Next

Step 3: Then "**Auto account set up"** window opens showing the details of the mail account to be configured. After providing corresponding details, press "**Next**" button.

207

Enter your details and click Next

Step 4: The server will verify your email and then an email client will get configured once you press the finish button.
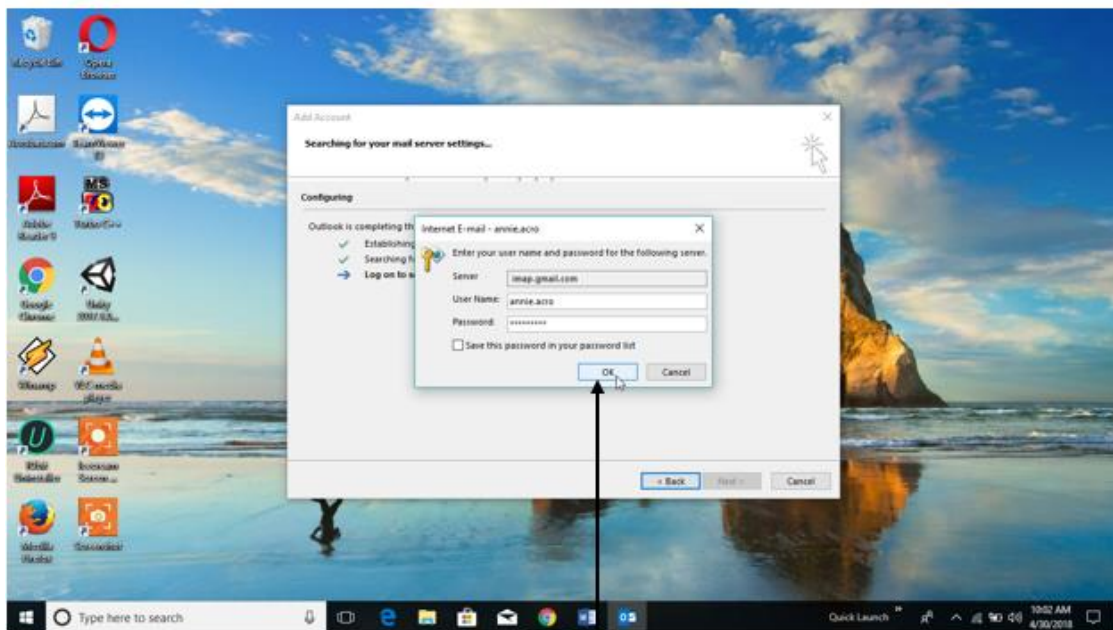
Select OK

Using E-mails

The main purpose of using email is to exchange information between persons. The process starts with opening of client email and ends with sending and verifying mail to recipients.

Opening Email Client

In order to interchange messages between people, the first step is to open or create an email account. Follow steps below to create an email account.

Step 1: Go to Gmail homepage and select "**More options → Create account**" option.
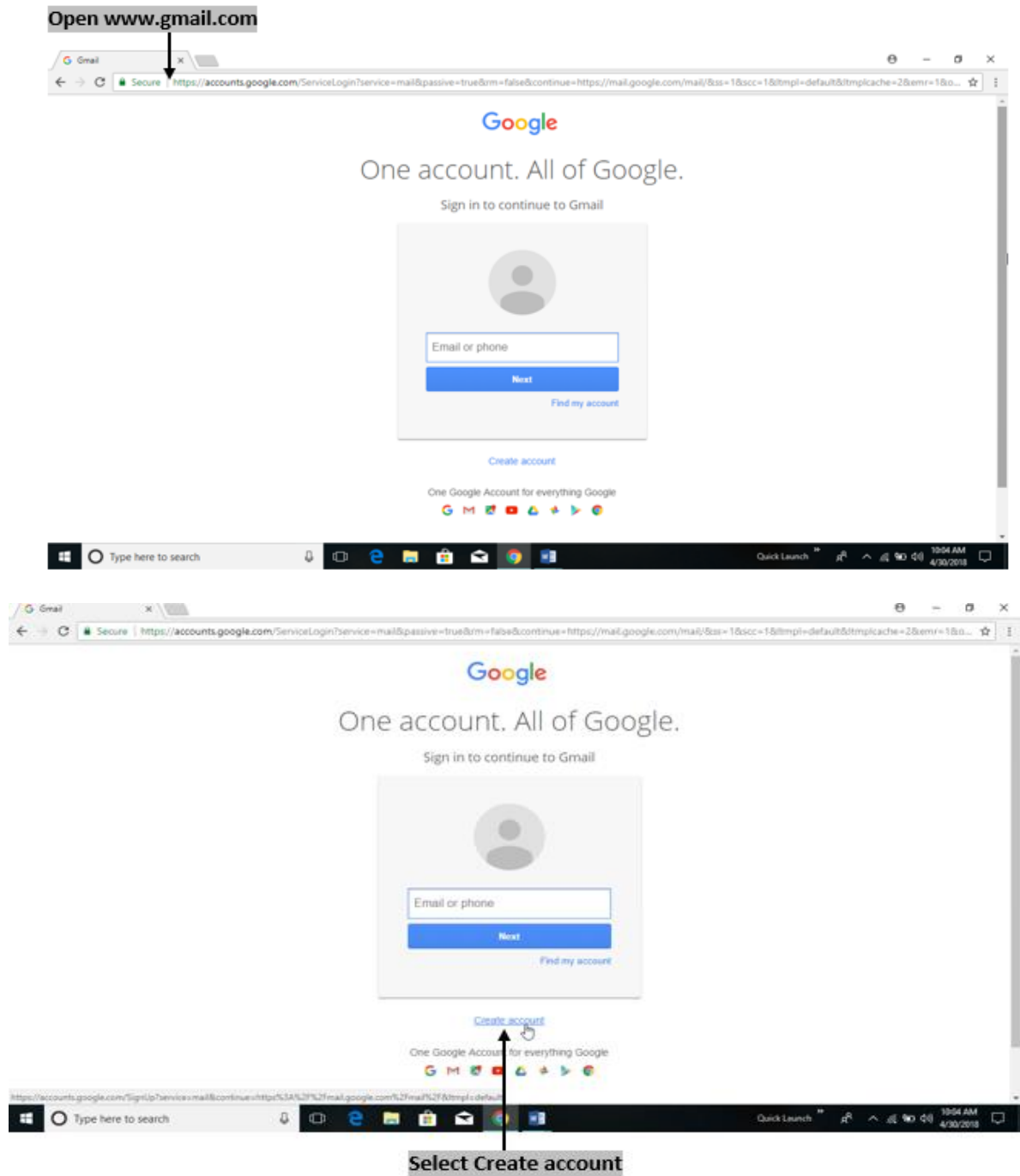
Step 2: In the window displayed, fill mandatory details and press "**Next**".

Enter your details and select Next

Step 3: Then mobile verification code will be sent to the mobile number you have entered, upon verification, your email account will be created.
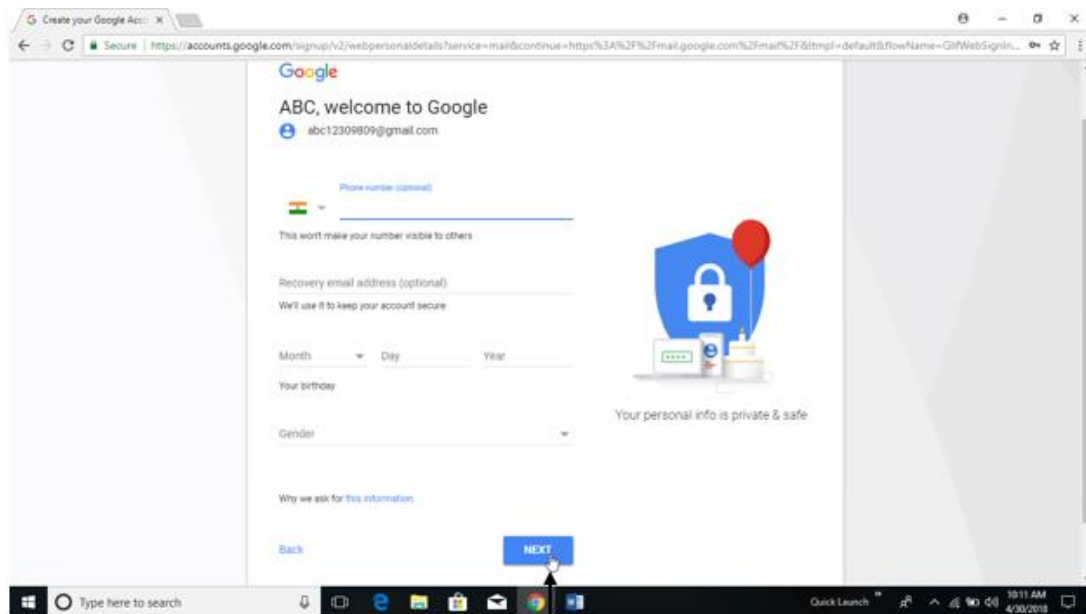

Enter the phone number and select Next
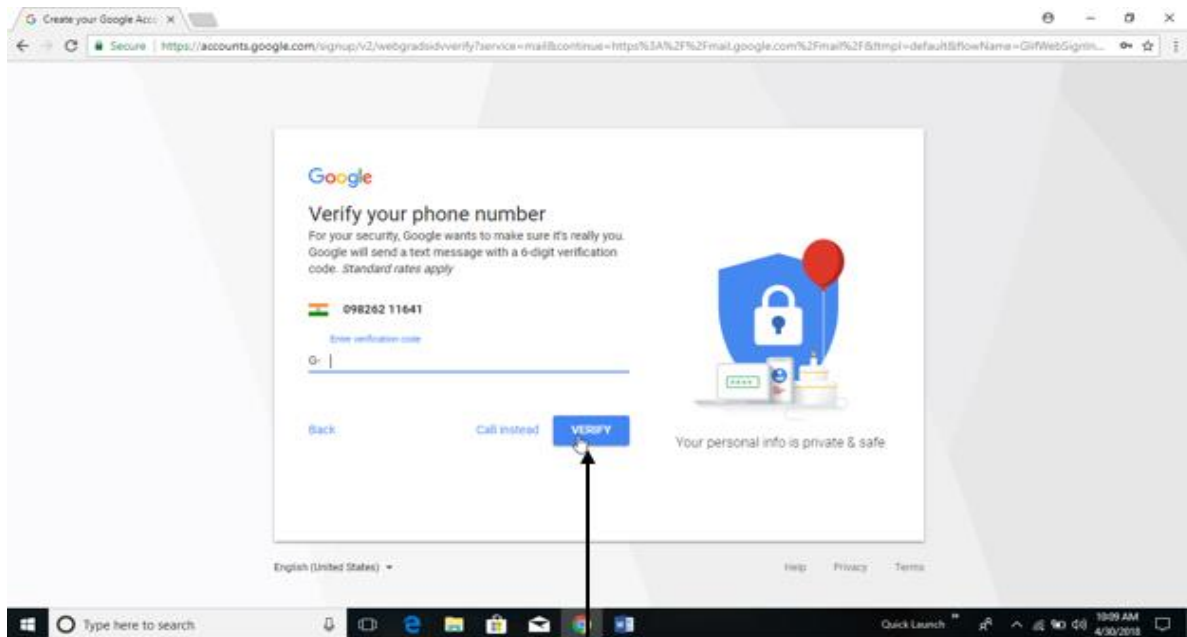
Enter the verification code and select Verify

Step 4: Enter details to setup the account.

Enter your details and select Next

Mailbox: Inbox and Outbox

Inbox - Inbox is an area where you can see all the received mails.
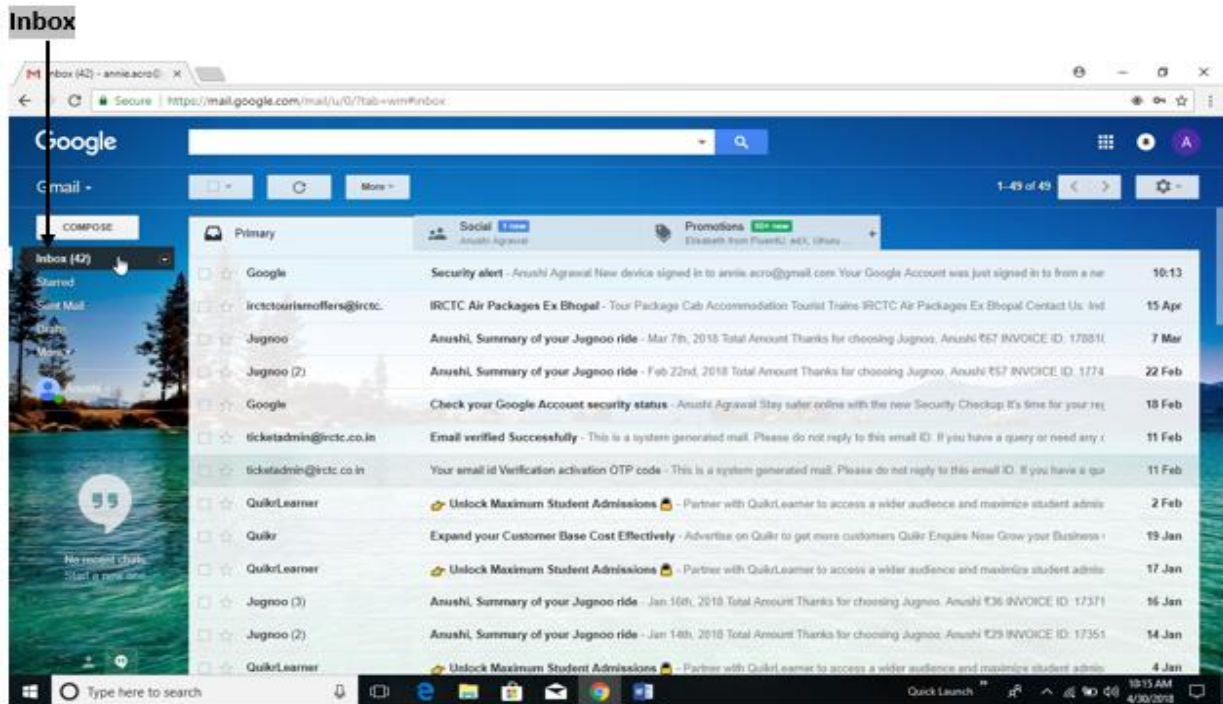
tutorialspoint
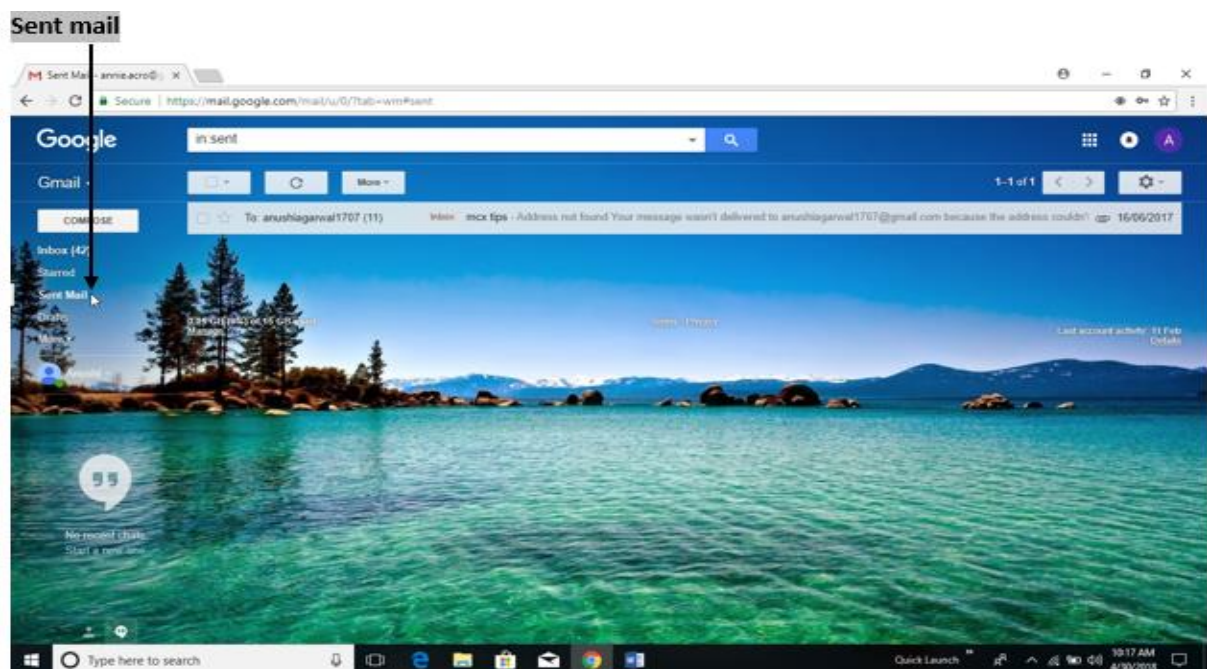SIMPLYEASYLEARNING

Inbox

Fig 6.13

Outbox - Outbox is an area where the outgoing messages or messages which are in process of sending or which are failed to send are stored.
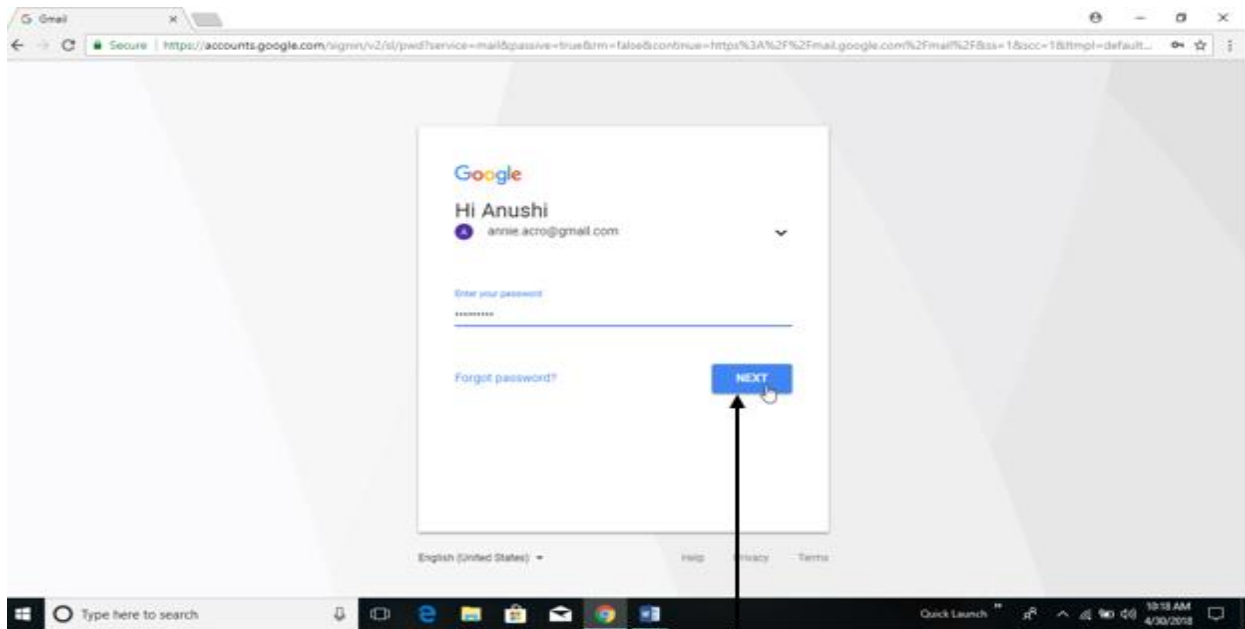
Sent mail - Sent mail is an area to view all the sent or successfully delivered mails.

Sent mail

Creating and sending a new E-mail

In order to send a new text message to the user, first create or compose the message which includes the following steps.
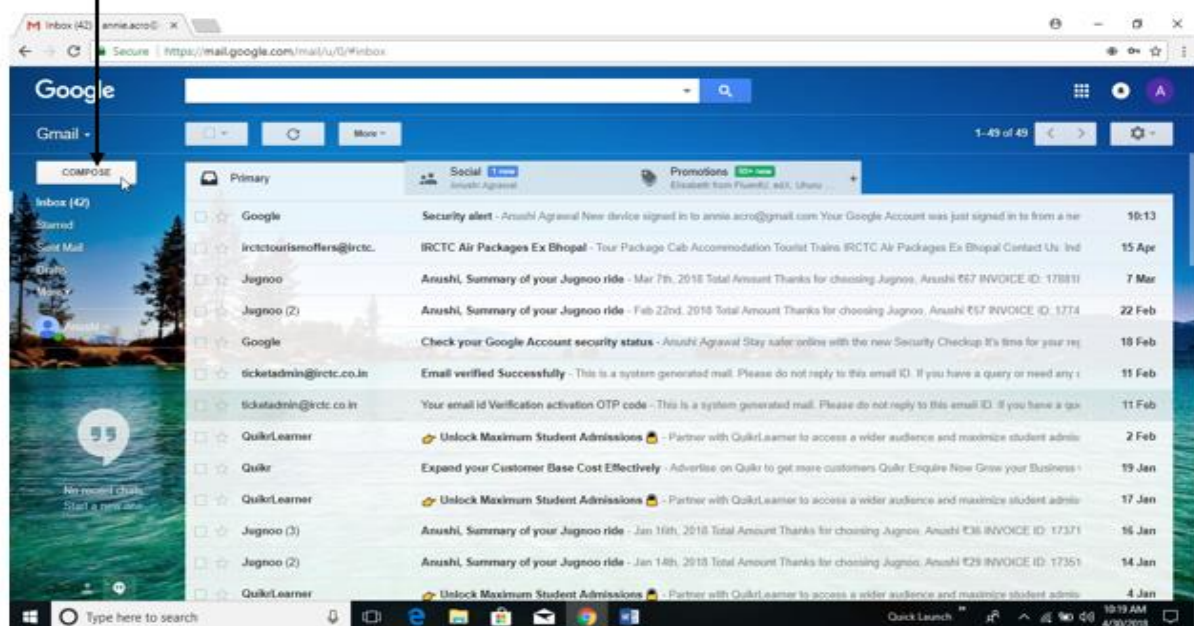
**Step 1:** Open your mail account by providing correct **User name** and **Password**.

Enter your account credentials and select Next

Step 2: Compose or create your message by selecting "**compose**" option shown in the window.

Step 3: In the window displayed, enter recipient's address in "**To**" textbox and add "**Subject**" of message, then add a "**Body**" of the message and press "**Send**" button. Remember, the subject of the mail should be explicit and short.
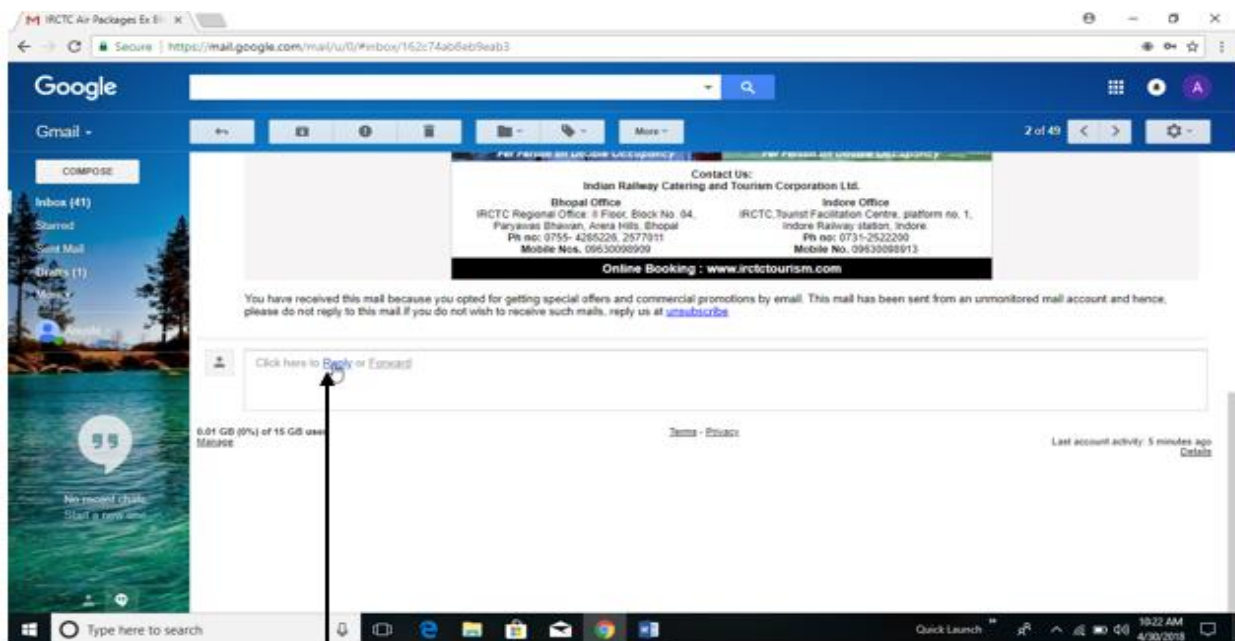
213
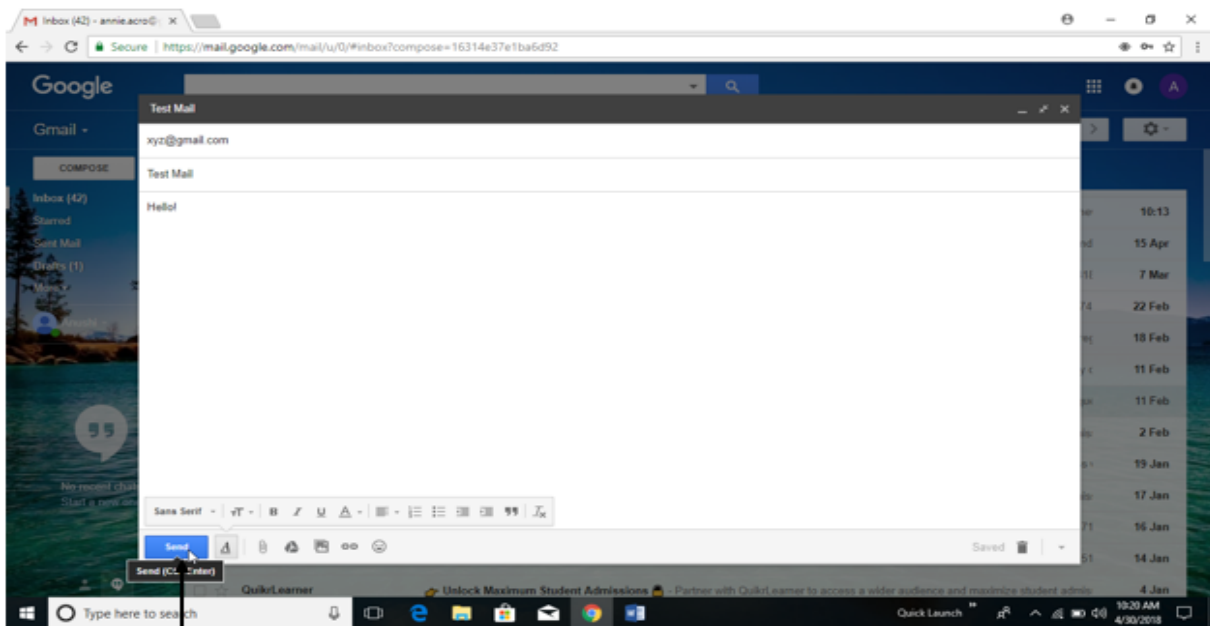
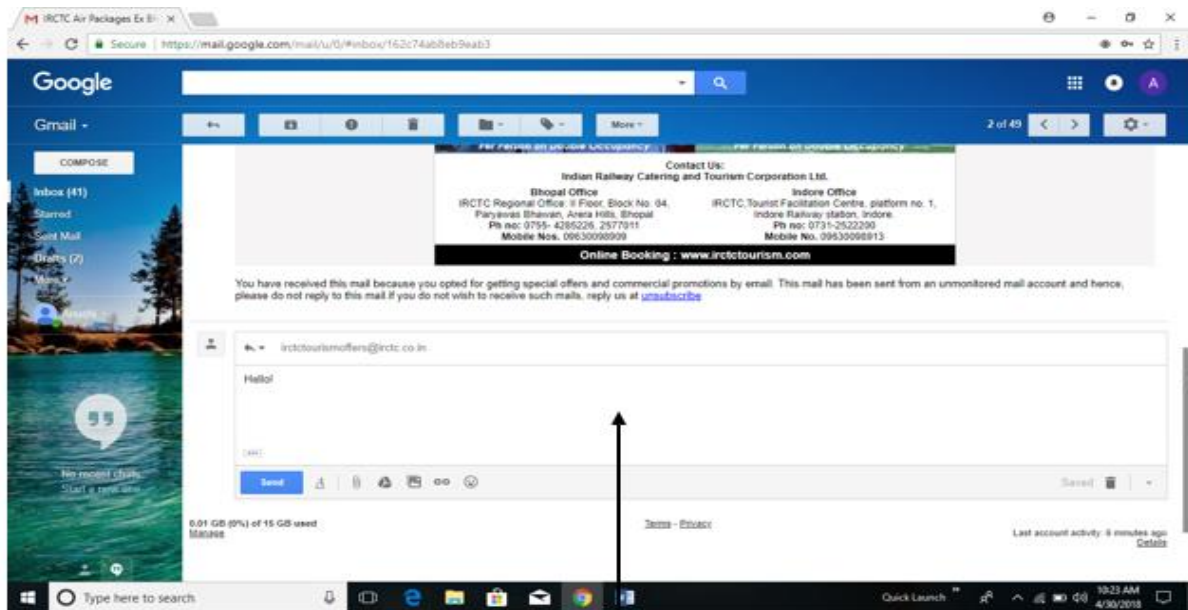**Enter the email id, subject and body of the email. Select Send**

Replying to an E-mail message

Replying is giving response to the received mail which includes the following steps.

Step 1: Open an email to which you want to reply and press the "**Reply**" button or press "**Shift+R**" on the keyboard.
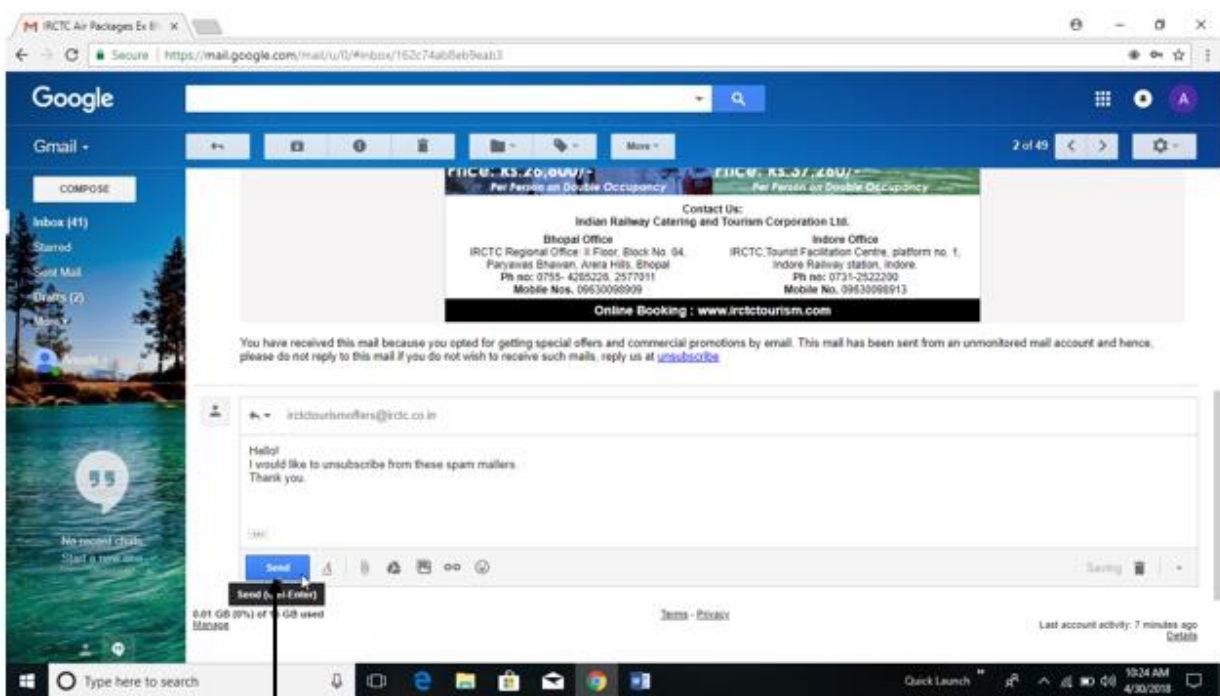

Click on Reply

tutorialspoint
SIMPLYEASYLEARNING

Enter your message here

Step 2: In the window displayed, enter "**Body**" of the mail and click "**Send**" button. The mail will be sent automatically to the corresponding person without having to re-type the "**To**" address.
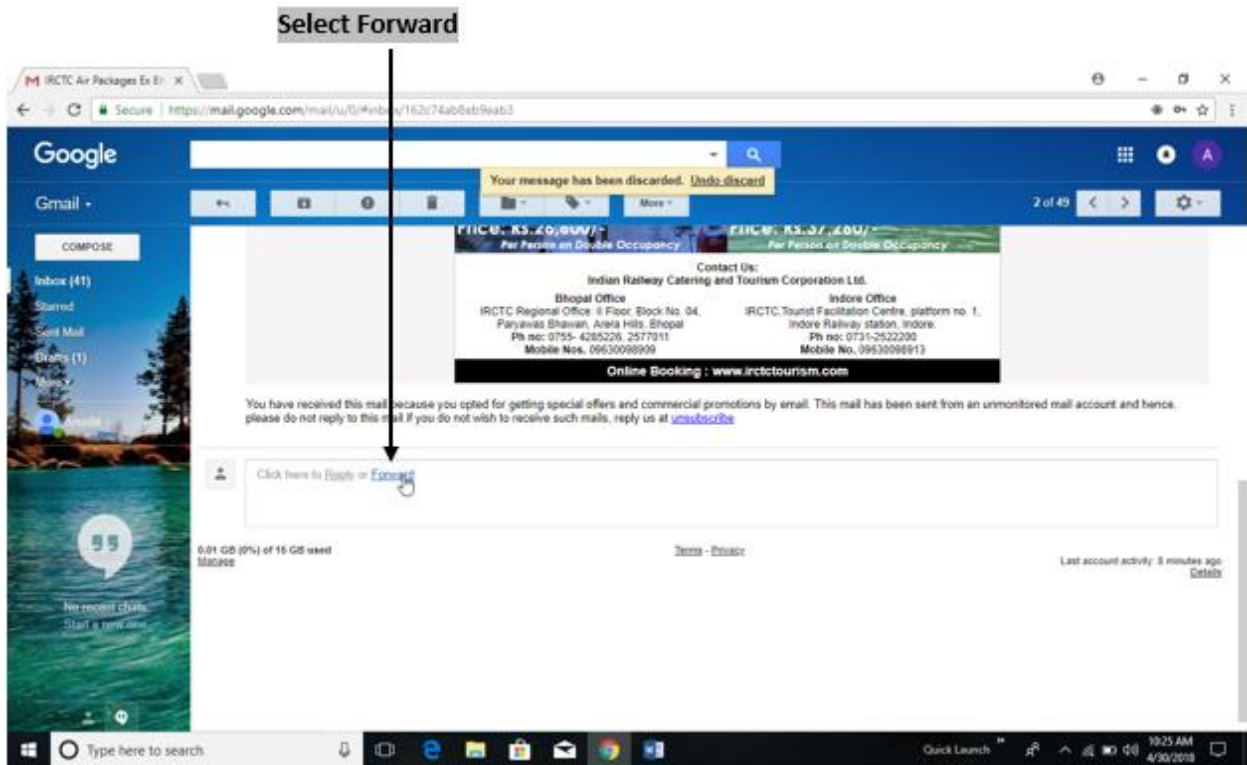

Select Send

Forwarding an E-mail message

Forwarding is a process of resending an email message that you received from another email id. This option saves time as the user doesn't have to re-type the same message again. It includes the following steps.
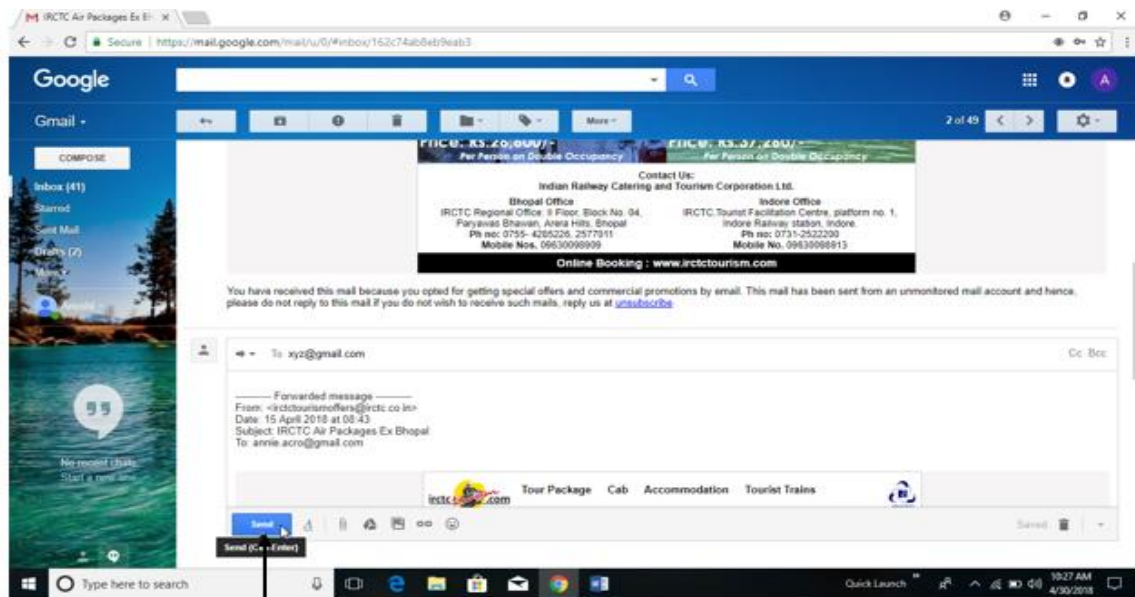
Step 1: Open the email which you want to forward and click on "**Forward**" option or press "**Shift + F**" on the keyboard.

Step 2: In the window displayed, enter the recipient address in "**To**" textbox and press "**Send**" button. The mail will be forwarded to the corresponding person.


216

Select Send
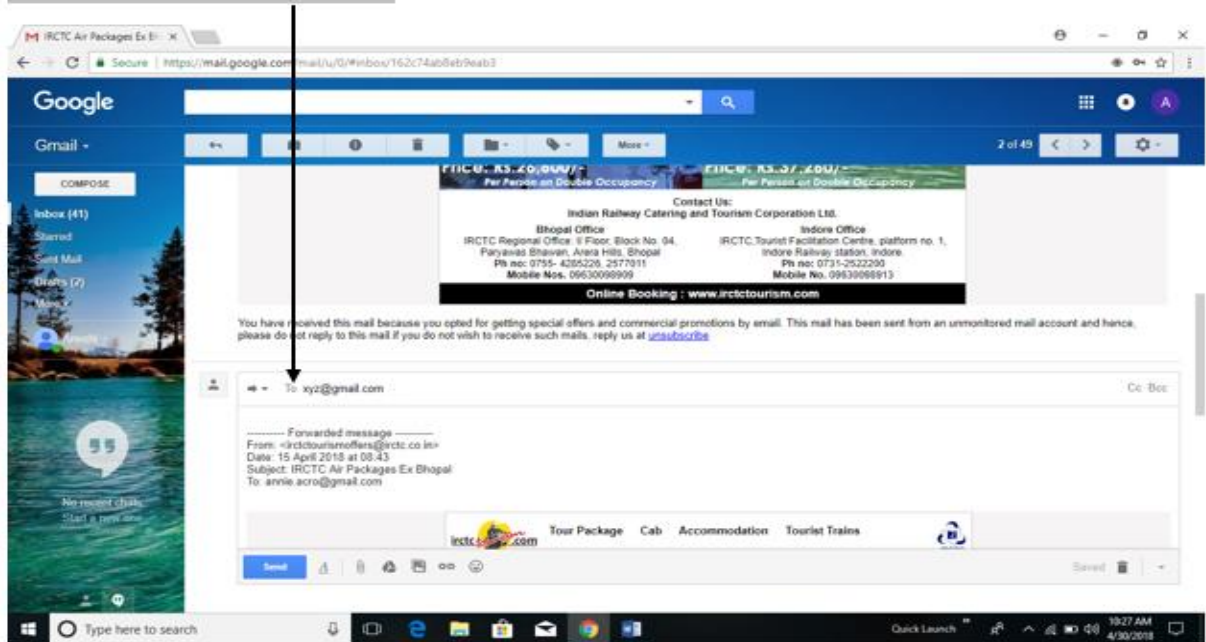
Sorting and Searching emails

Here, we will discuss about how to sort and search the existing emails:
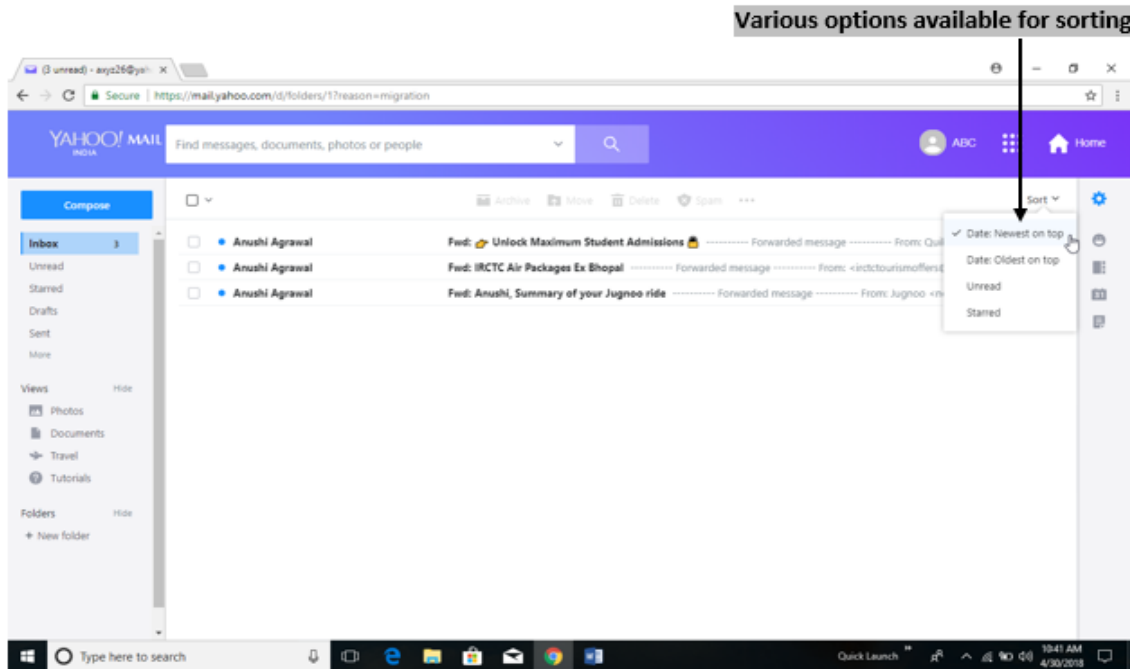
Sorting Emails

Sorting helps you to arrange mails or messages in an orderly fashion. It includes the following steps.

Step 1: Click arrow adjacent to "**Sort by date**", a default sort option visible at the top of the window.

Click on Sort option for sorting

tutorialspoint
SIMPLYEASYLEARNING
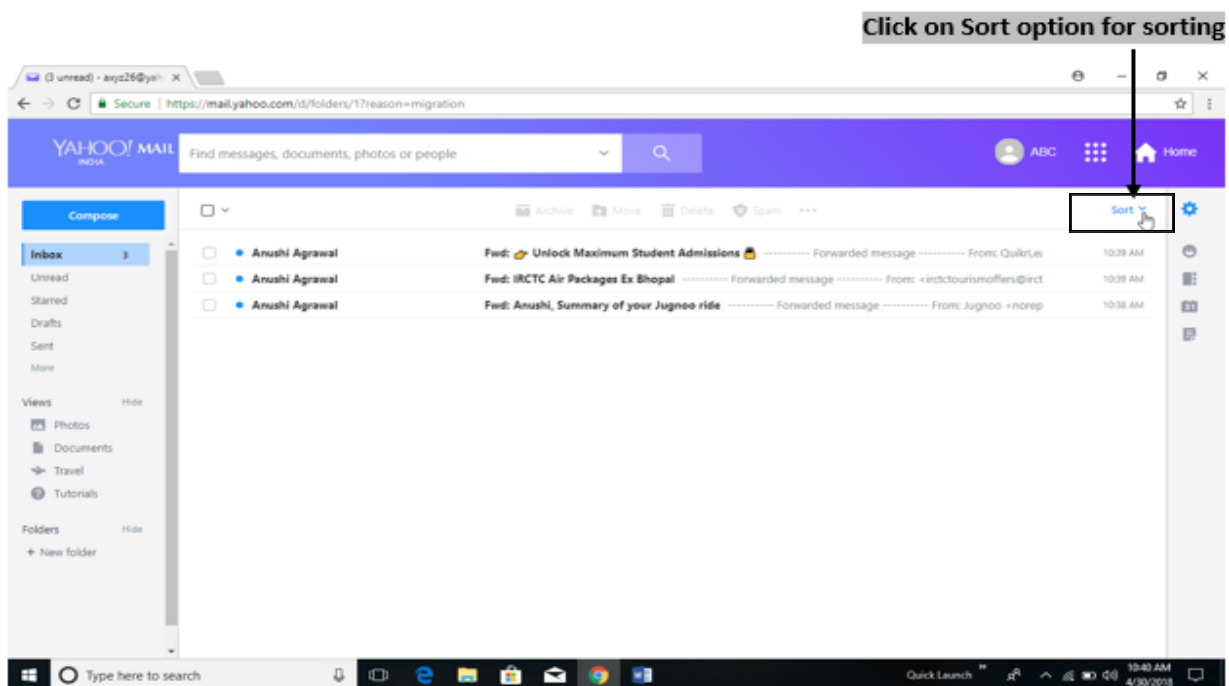
Step 2: Click on any of the options from dropdown list displayed.

- **Date:** Sort in chronological order as per the date of received mail.
- **Unread messages:** Sort mails based on unopened messages.
- **Attachments:** Sort mails based on the size of attachments.
- **Starred:** Sort mails based on bookmarked or important messages.
- **Sender:** Sort mails in alphabetical order based on the sender's name.
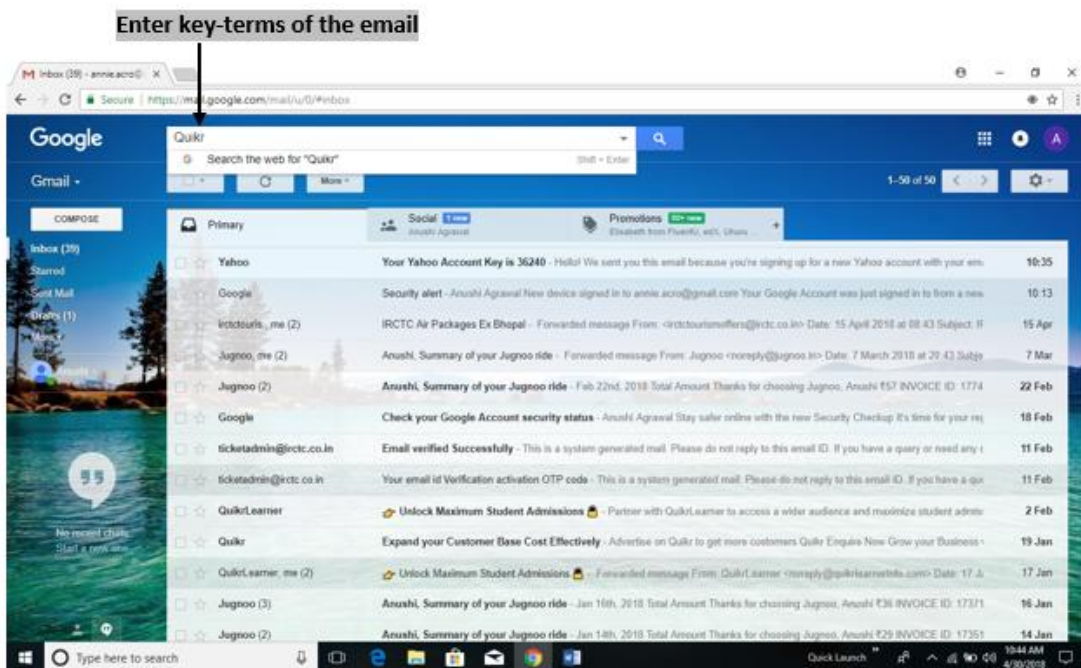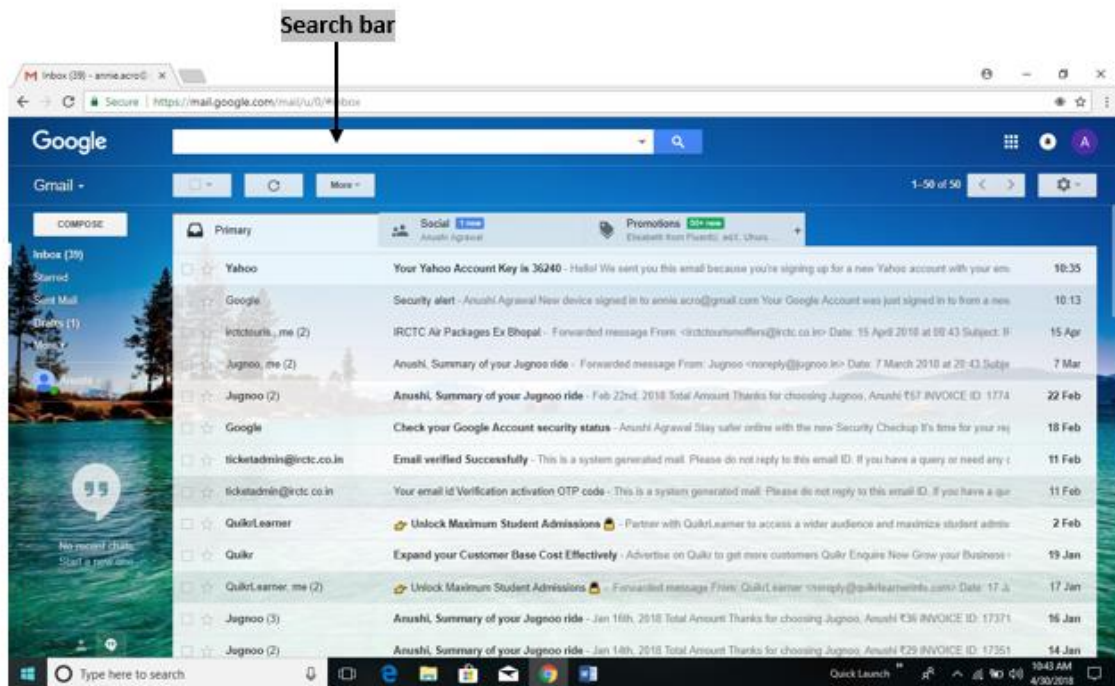- **Subject:** Sort mails based on the subject.

Searching Emails

Searching email is a process of finding the desired email without going through all the emails.
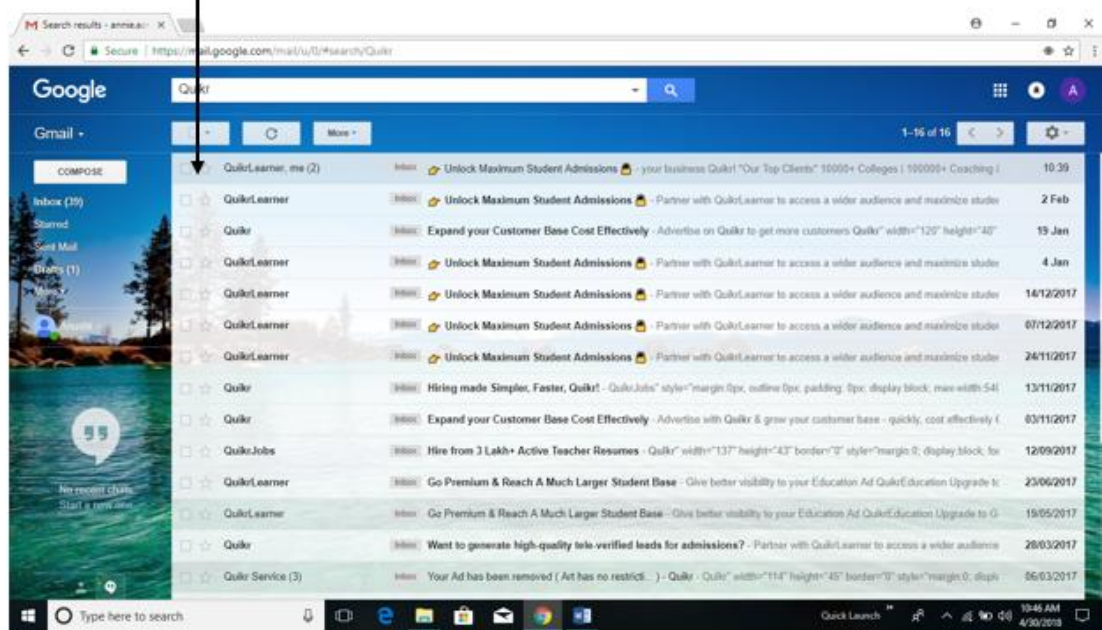
Step 1: Type the name, email id or key-term in the search box displayed on top of the window.

Step 2: From the list of displayed mails, select desired mail or message.

Select the desired email from the list

Advance Email Features

Email provides many advanced features which includes sending attachments like documents, videos, images, audio, etc. Apart from this, you can proofread your mail via feature of spell check, address book, etc.

Sending document by E-mail

We can communicate with a person by sending and receiving emails. To send an email with the document as an attachment, follow the steps below:

Step 1: Compose a mail providing "**To**" address, "**Subject**" and "**Body**" of the message, then click on attachment( ) button and select "**Attach files from computer**" option in order to add documents to the mail.
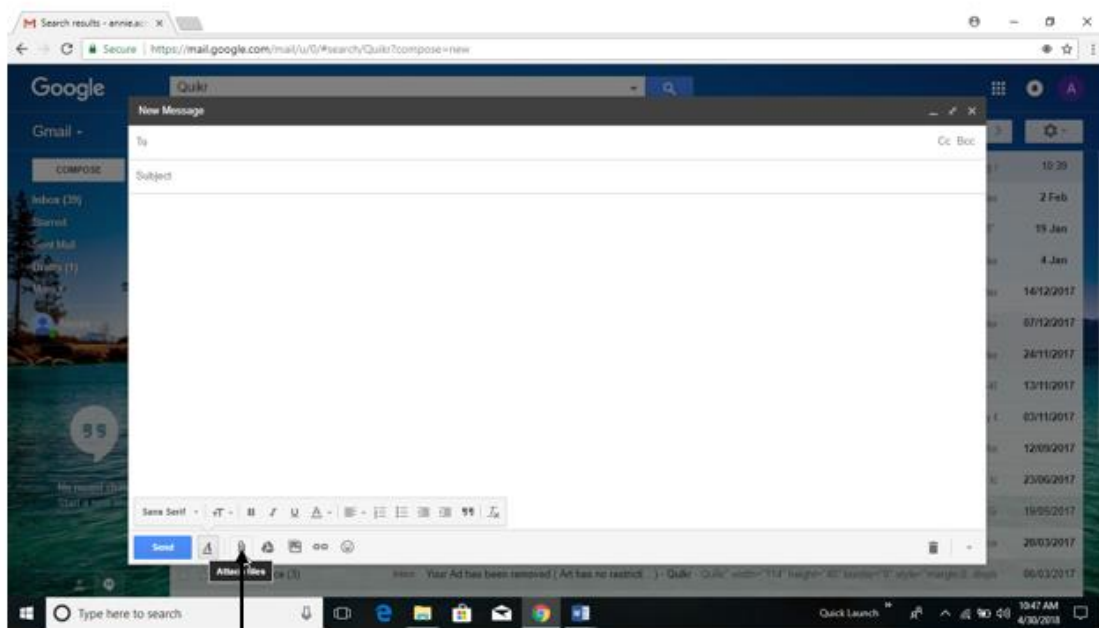
Select Attach files icon

Step 2: In the window opened, browse document you wish to send and click "**Open**" button.
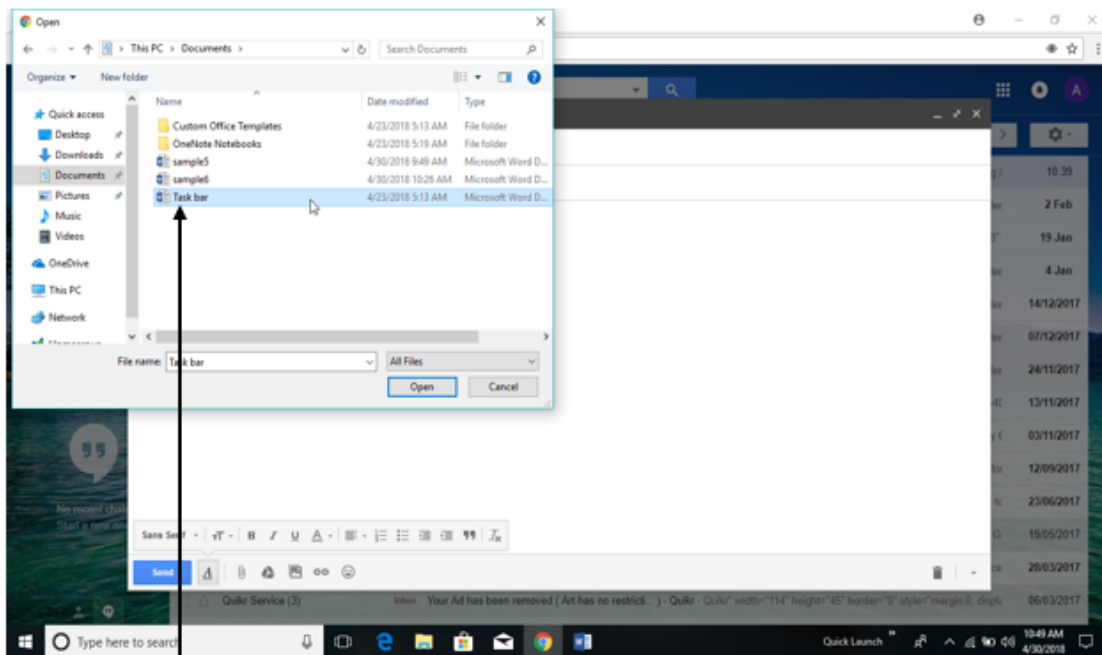
Select a file

Click on Open

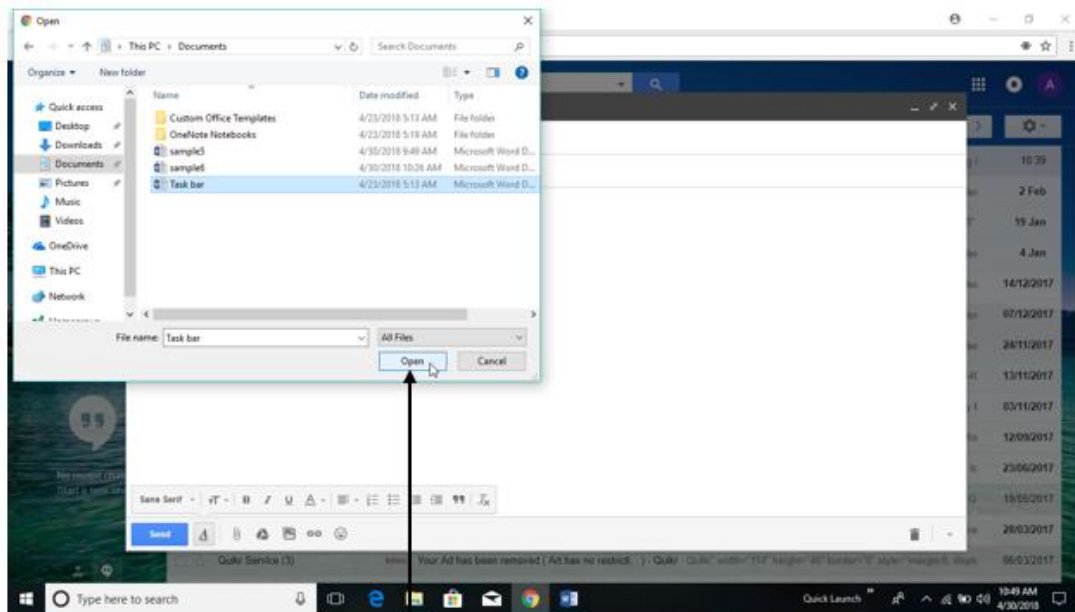**Step 3:** Document gets uploaded and will be an attachment to that mail. Finally click "**Send**" button to send mail to the recipient.
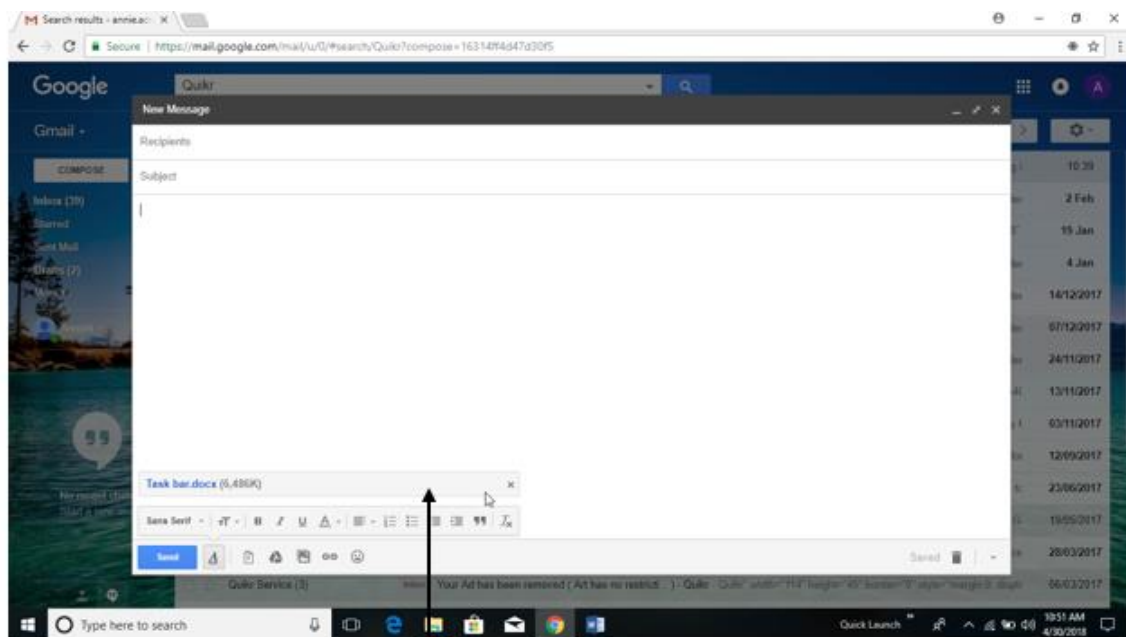
The file is attached to the email

Activating Spell Check

Activating spell check helps to avoid spelling mistakes while inserting the body of the mail. It includes the following steps:

Step 1: Start composing or creating a message by providing "**To**" address, "**Subject**", "**Body**" of the message.
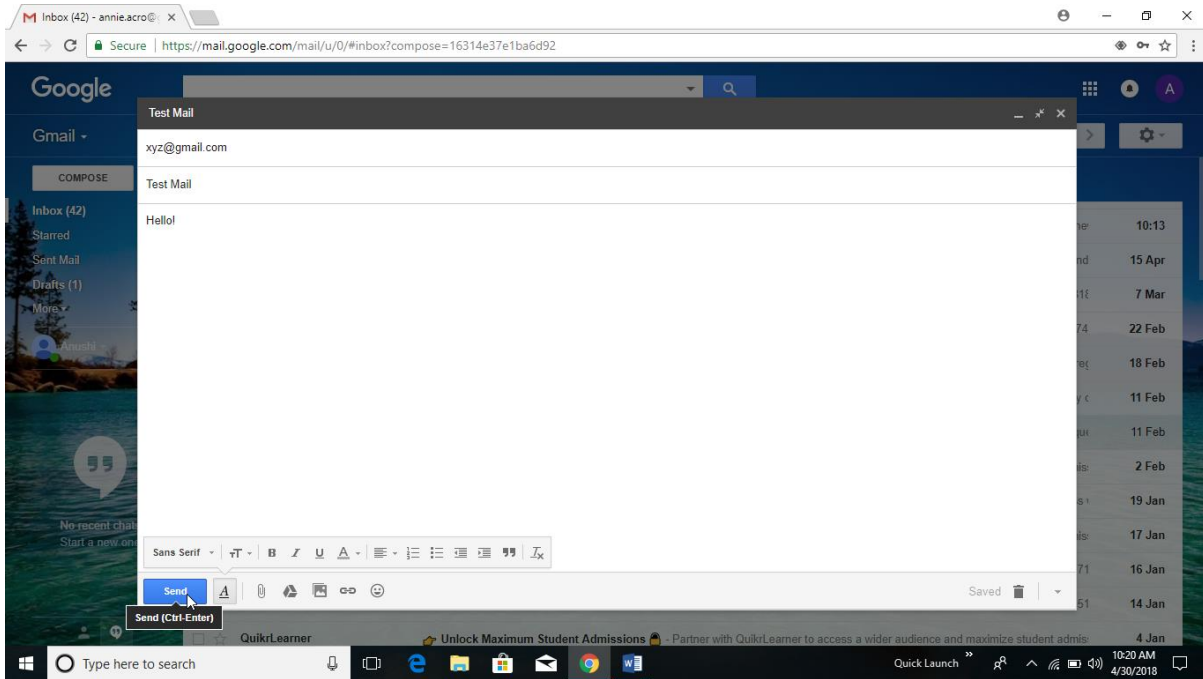
Step 2: The second step is to "**Right click**" on mouse and select "**Spell check**" and from the list displayed, select "**Check the spelling of text fields**", then the spell check feature gets activated.
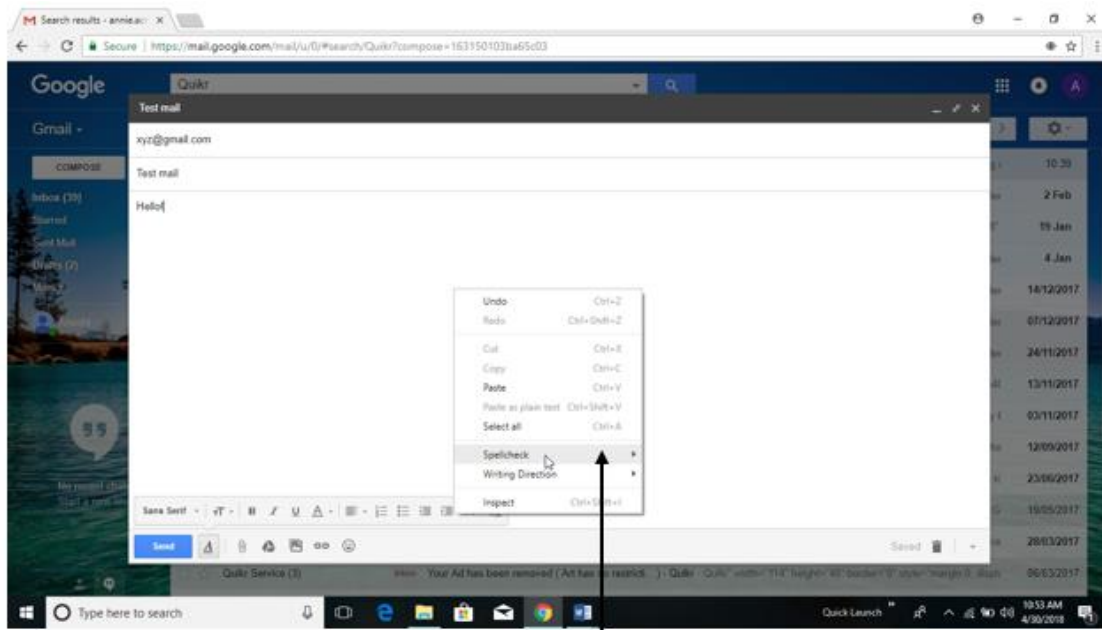
Right click and select Spellcheck
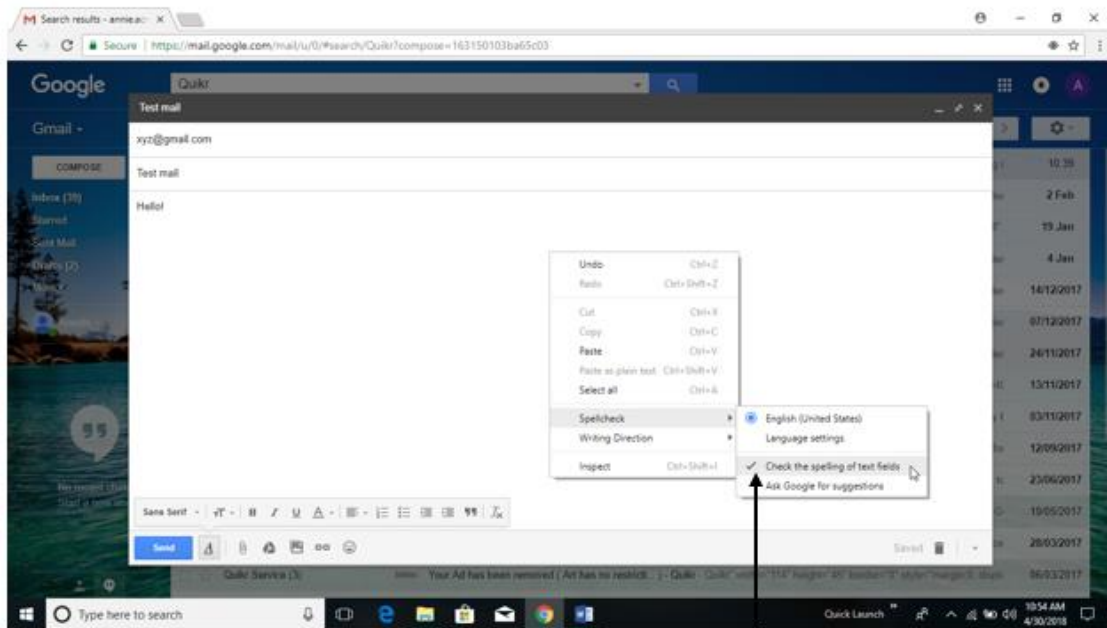
Select Check the spelling of the text fields option

Using Address Book

Address book helps to add an address of recipient for future reference. Instead of typing the address again and again this helps to include a recipient address from the address book. The process includes following steps.

Step 1: Go to "**Settings**" at the top right corner of your web page and from dropdown list, select "**Settings**".

Select Settings

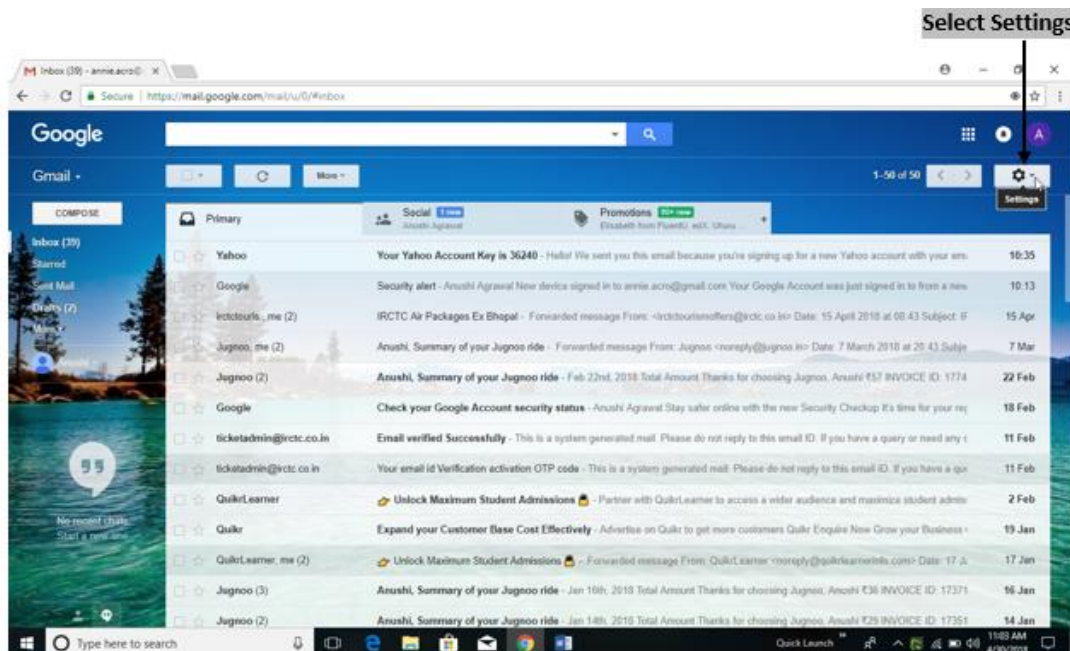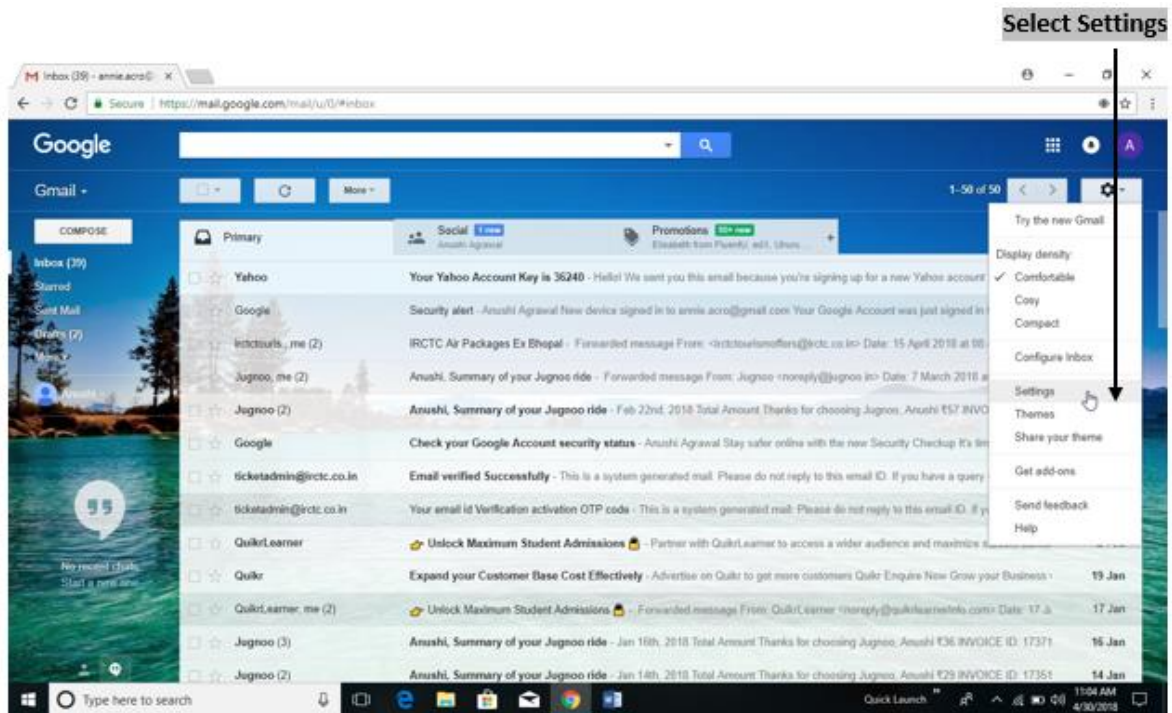**Step 2:** Click "**Writing email**" tab and mark the check box that shows "**Automatically add new recipients to contacts**", now new addresses get added to the contacts or address book.
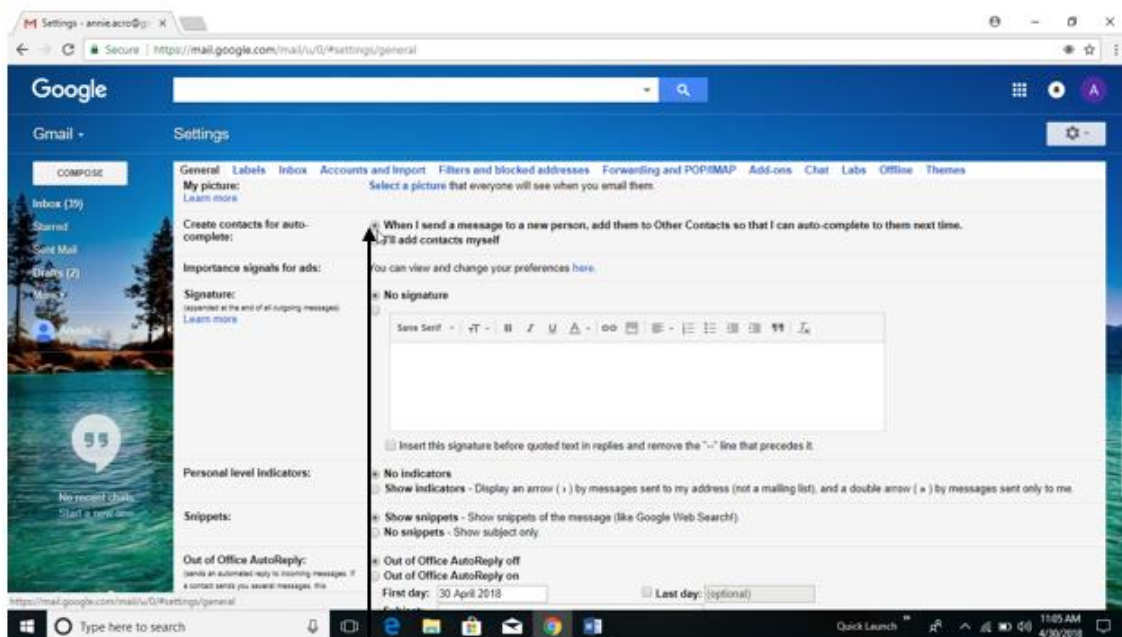
Sending Softcopy as attachment

Softcopy is a digital document or a file that is stored in a computer unlike a written or printed document like papers or notebooks. Attaching softcopy is similar to that of attaching documents to the mail. The steps involved are given below.

Step 1: Compose mail providing "**To**" address, "**Subject**", "**Body**" of the message, then click on attachment (✐) button and select "**Attach files from computer**" option in order to add softcopy of a document to the mail.
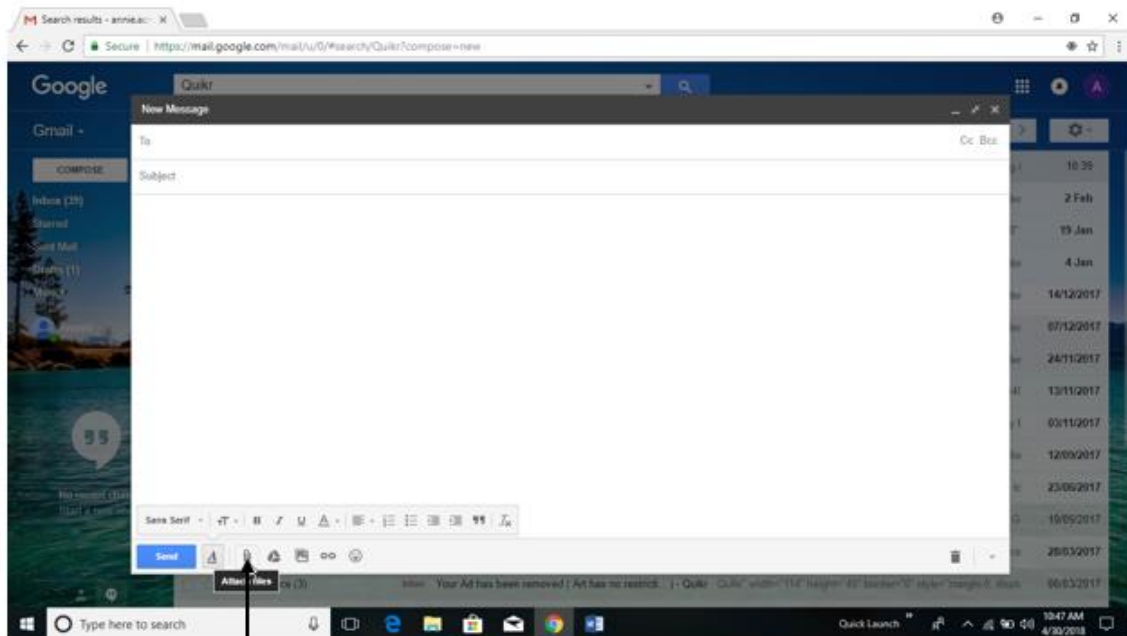
Select Attach files icon

Step 2: In the window opened, select document or file you need to send and click "**Open**" button.
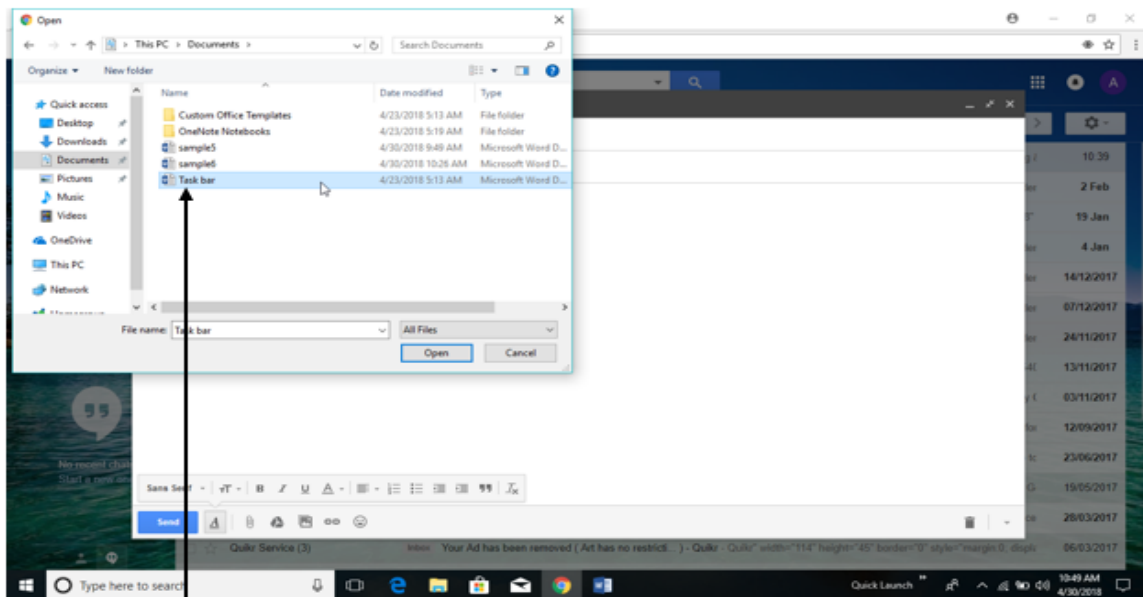
Select a file
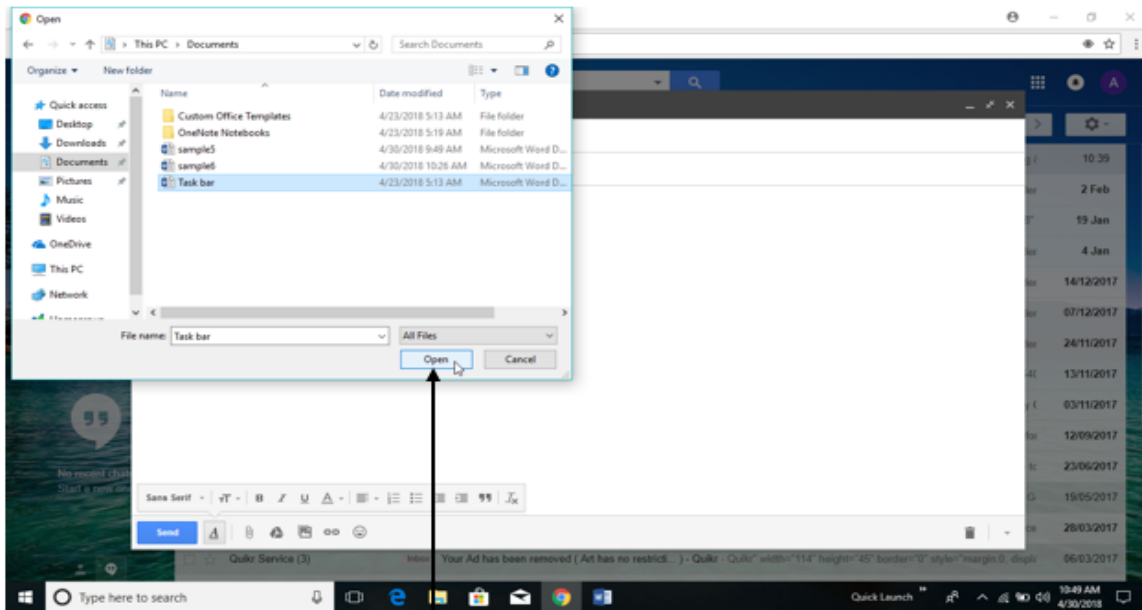
Click on Open

Step 3: Once the document or file gets attached to mail, click "**Send**" button to send mail to the recipient.
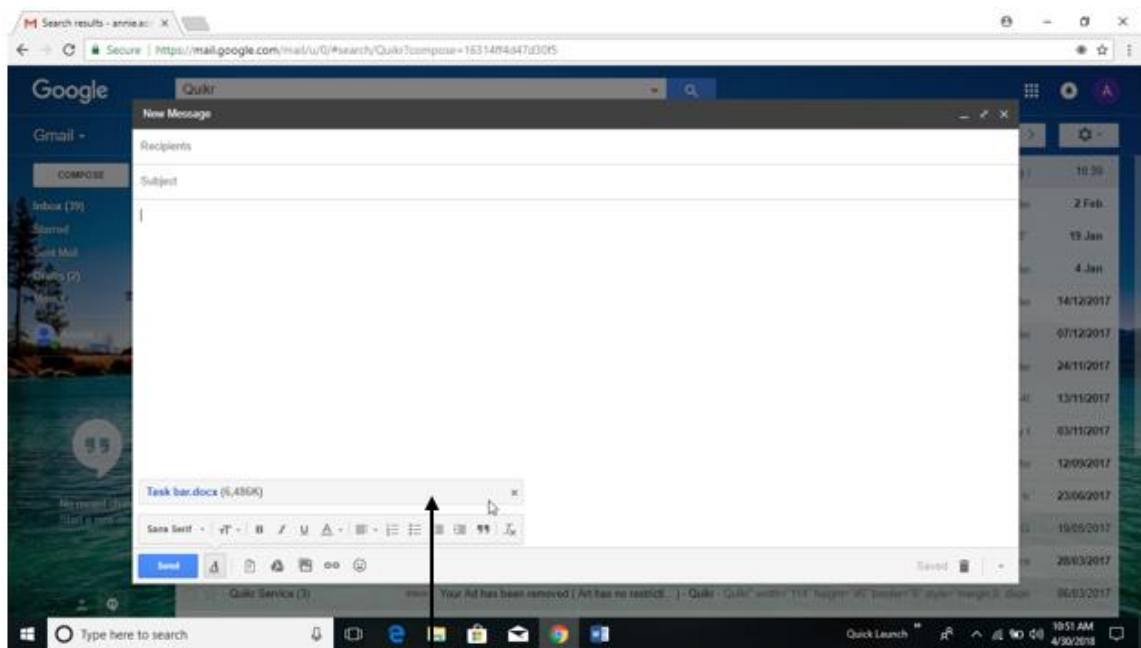
The file is attached to the email

Handling SPAM

Spam is a folder where unwanted or suspected mails get stored.

Mark emails as spam

We can mark email as spam using the following steps.

Step 1: Select the email that you want to move to spam folder and click "**Move to**" option.
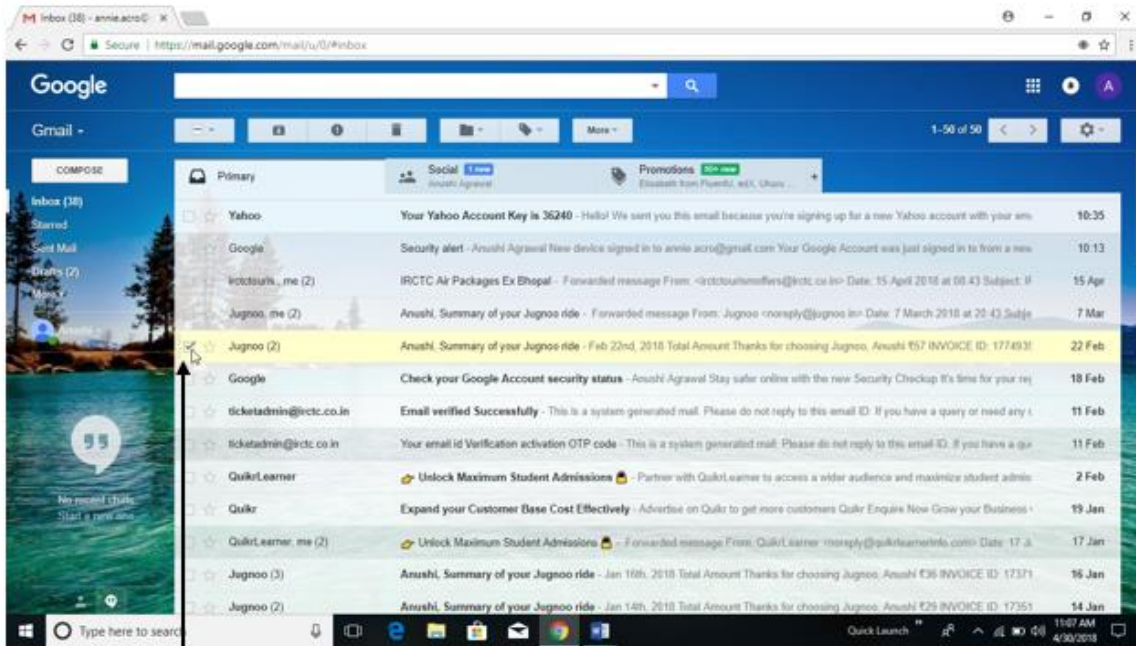
Select the email to be sent to Spam

Select Move to icon
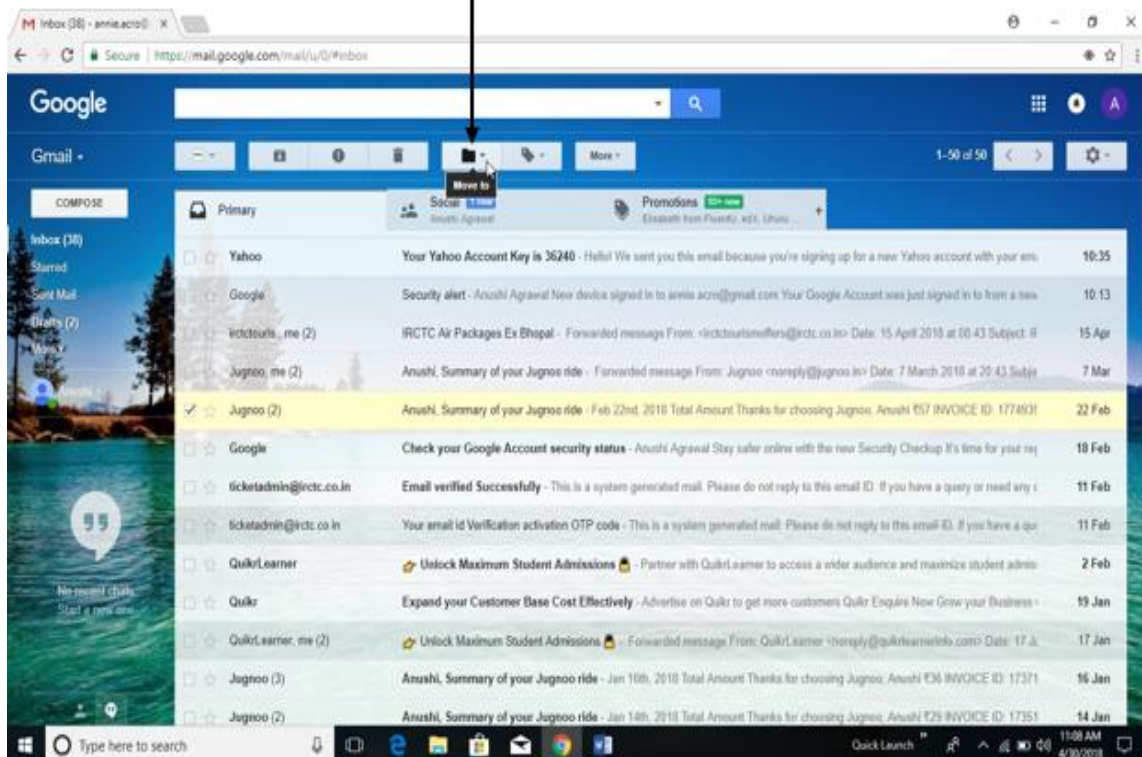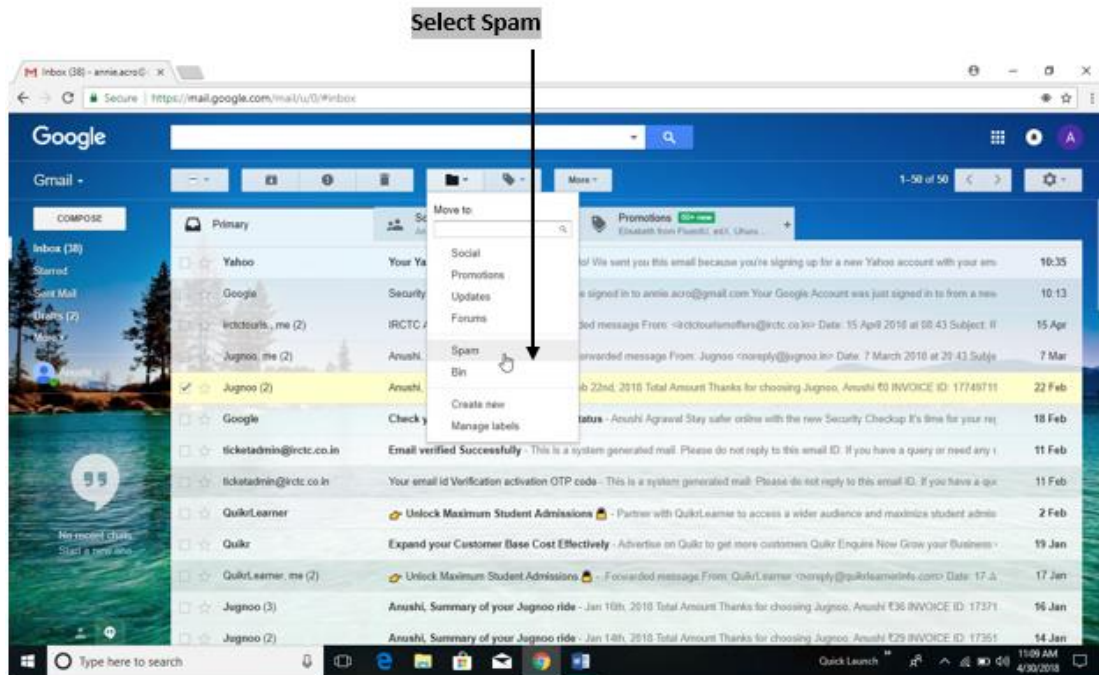
Step 2: From the displayed menu, click any one of the following options.

- ✓ **Report Spam -** Unwelcomed/uninvited/unsought emails.
- ✓ **Report a Hacked Account -** Emails from the contacts that are not usual or normal.
- ✓ **Report a Phishing Account -** Emails from authorized concern, but are actually meant to scam personal information.
- ✓ **Not my mail -** Email addressed to some other person.

Step 3: Now, when you check the spam folder, you can see the mail that you marked as spam is added to the spam folder.
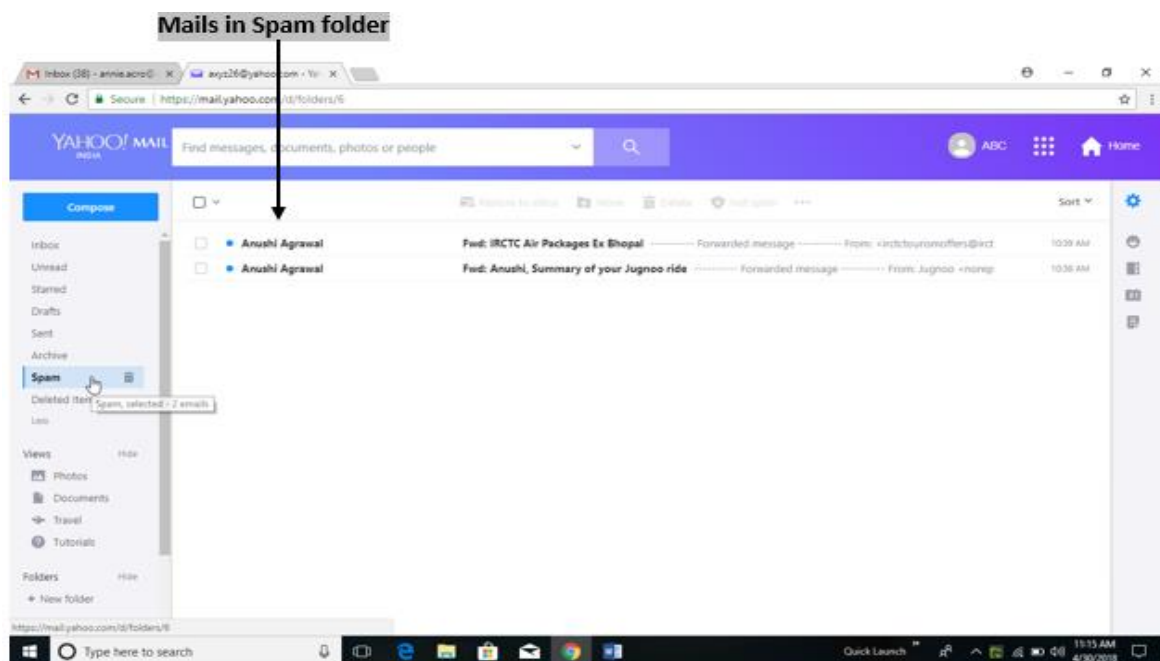
Mark emails as not spam

We can mark emails as not spam using the following steps.

Step 1: Go to spam folder and mark the mail that you don't want to be displayed in the spam folder.
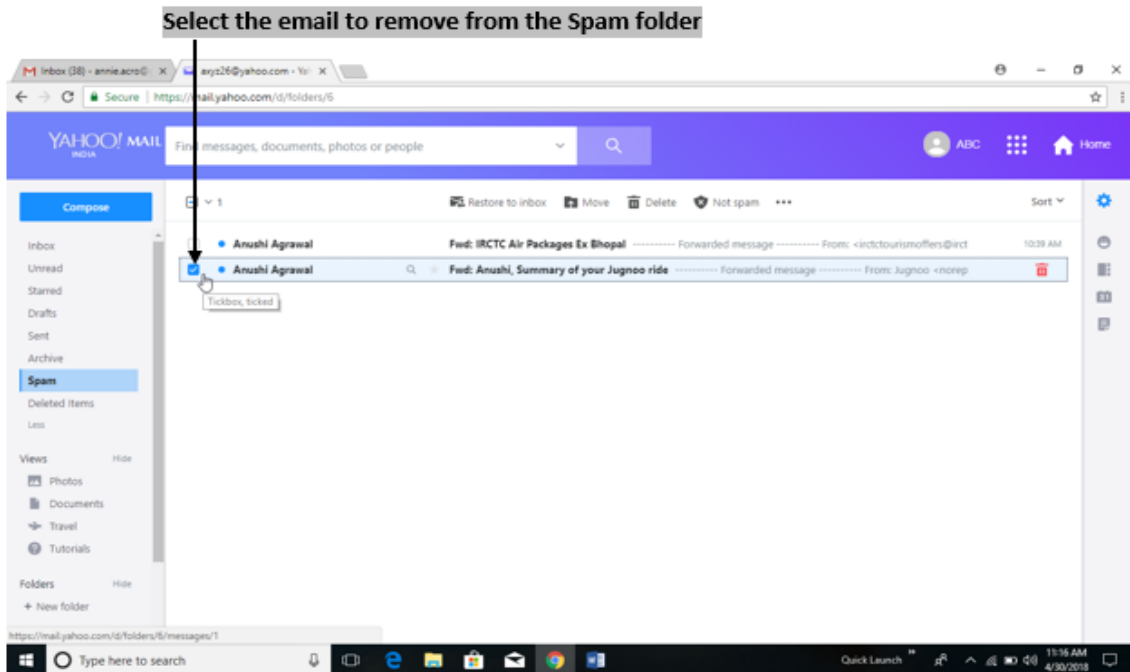
Step 2: Click "**Not spam**" option at the top of the page.
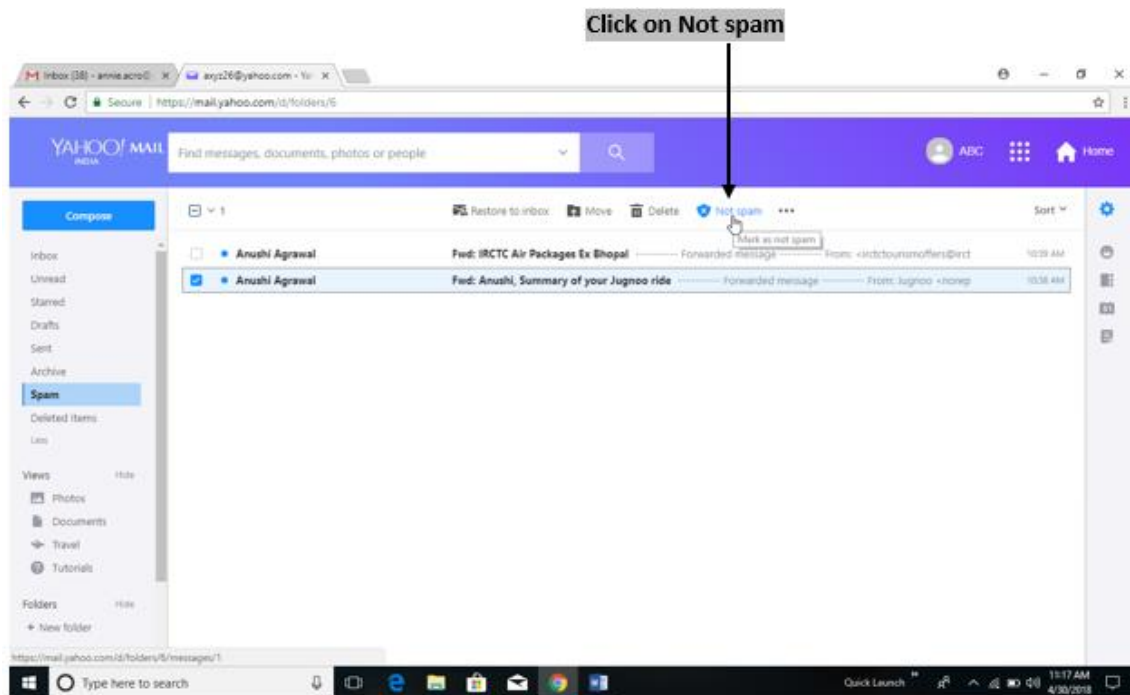
Step 3: Now go to "**Inbox**", you can see the email that you removed from the spam folder is shifted to the "**Inbox**" folder.

230
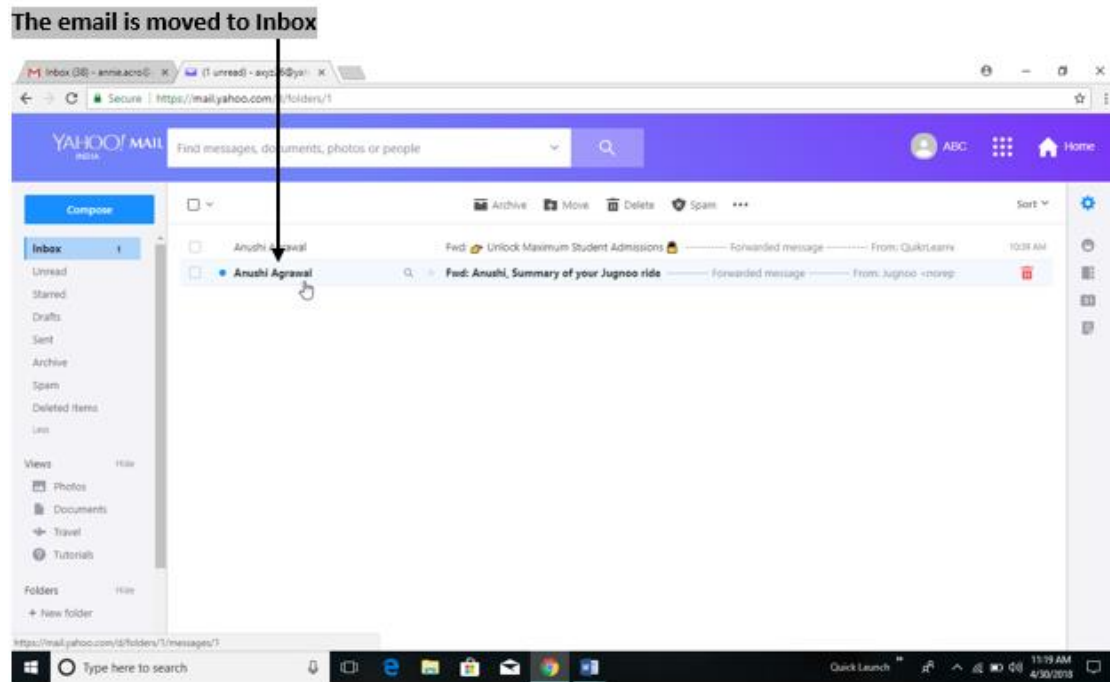
Instant Messaging and Collaboration

Instant messaging is real time mutual communication between persons via internet. This is a private chat. Once the recipient is online, you can start sending messages to him/her. Unlike emails, where you have wait for the reply from the recipient, collaboration uses instant messaging technique. This also supports the usage of add-on features like smiley or emoticons with the text message. Examples of instant messaging applications include Facebook, We Chat, Twitter, LinkedIn, etc.

Using Smiley

Smileys are otherwise called as emoticons. **Emoticons** are graphical representation of emotions. There are 300+ emoticons in instant messaging. Emoticons are pictorial representation of facial expressions that showcase emotions like happiness, sorrow, crying, exclamation, etc.

Adding Smileys or Emoticons

To add an emoticon to the message, follow the below steps.

Step 1: Go to instant messenger and open your chat window.
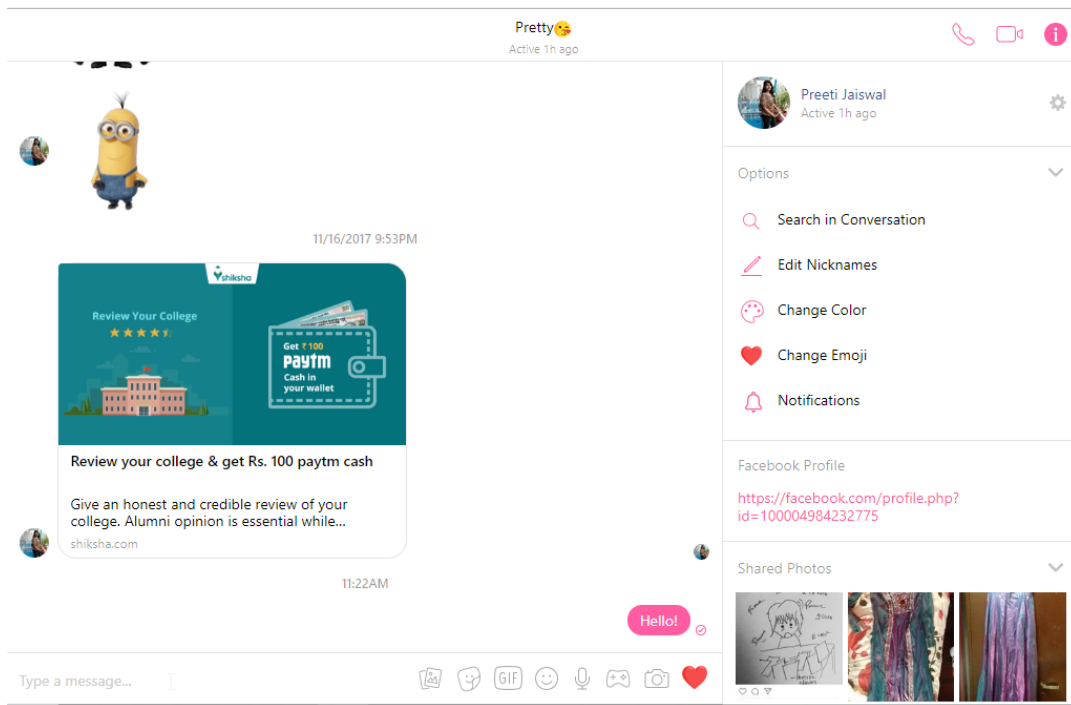
Step 2: At the bottom of chat window, you can see emoticon symbol, on clicking that, a list or group of emoticons is displayed. You can choose the desired emoticon by selecting it.
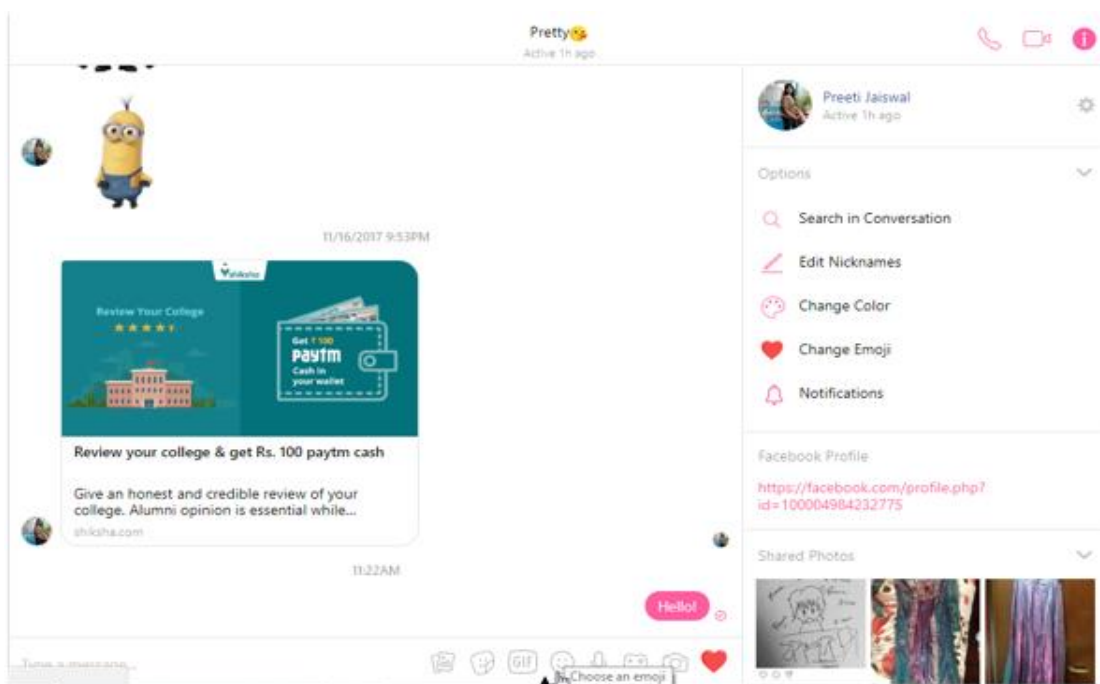
Choose emoticons from here

Here are various types of emoticons
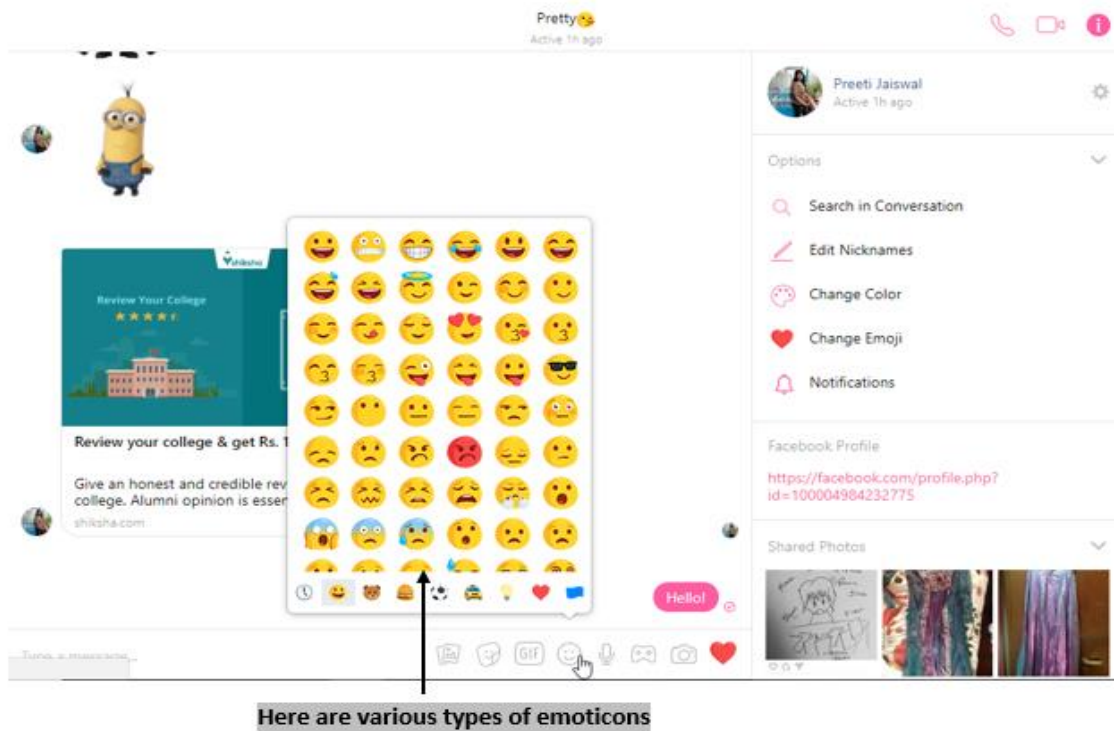
Internet etiquettes

- Internet etiquettes are also called as "Netiquette".
- Netiquettes are basic rules or techniques which are accepted worldwide. For effective communication through the internet, these are to be mandatorily followed.
- Some of the internet etiquettes are as follows:

Short messages

- Messages you send through internet should be short and to the point.

Spell check

- Activate spell check feature in your document to avoid spelling mistakes while typing.

Mixed-case

- Instead of using a single case (either lower/upper) throughout the entire message, try to use mixed-case. This increases readability.
- For example, start with uppercase letters at the beginning of a line and paragraph, write the headings in uppercase letters and body with mixed-case letters.

Subject

- Always have a hint related to your content as a subject. The subject ought to be a phrase rather than a complete sentence, providing the crux of email.

Carbon copy

- The mail addresses of the important people who are intended to read the content of email should only be added in CC (carbon copy).

Blind carbon copy

- You can go with 'blind carbon copy' option when you are broadcasting the mail, especially among recipients who are unfamiliar.
- This avoids recipients from knowing other's email addresses.

Name at the bottom

- Include your name at the bottom of every mail or message you sent.
- This helps to identify the sender, especially when you multicast or broadcast the message.

Attachments to be small

- Keep the attachments small with respect to memory size, as it clogs (block) the recipient's mailbox.
- Try to avoid sending files larger than 2 megabytes.

Do not forward unwanted messages

- Avoid forwarding unwanted messages as well as the messages that do not belong to you.

Abbreviations

- Use abbreviations wisely.

Send button

- As you cannot change anything mail once it is sent, think twice before you hit the send button.
- Check whether you have conveyed everything in a formal language before hitting the send button.

Summary

This chapter has given a clear idea about the electronic mail and its features. Thus, we gained a deep understanding about the basics of email, email addressing, configuring email client, using emails, opening email client, mailbox, creating and sending a new email, replying to an email message, forwarding an email message, sorting and searching emails, advance email features like sending document by email, activating spell check, using address book, sending softcopy as an attachment, handling SPAM, Instant Messaging and Collaboration, using smiley/emoticons and some internet etiquettes.

Microsoft PowerPoint is one of the powerful tools of MS-Office, which helps in creating and designing presentations. PowerPoint Presentation is an array of slides that convey information to people in an attractive manner.

In this chapter, we are going to discuss in detail about the applications of presentation using Microsoft PowerPoint, opening and saving a presentation, creating presentation using templates and a blank presentation, entering and editing text, inserting and deleting slides in a presentation, preparing slides, inserting word table or an excel worksheet and other objects, adding clip arts, resizing and scaling of objects, providing aesthetics by enhancing text presentation, working with colors and line style, adding movie and sound, header and footer, viewing a presentation, choosing a set up for presentation, printing slides and handouts, Slide Show, running a Slide Show, transition and slide timings, automating a Slide Show.

Using Powerpoint

You can create a new presentation by choosing File → New → Presentation.
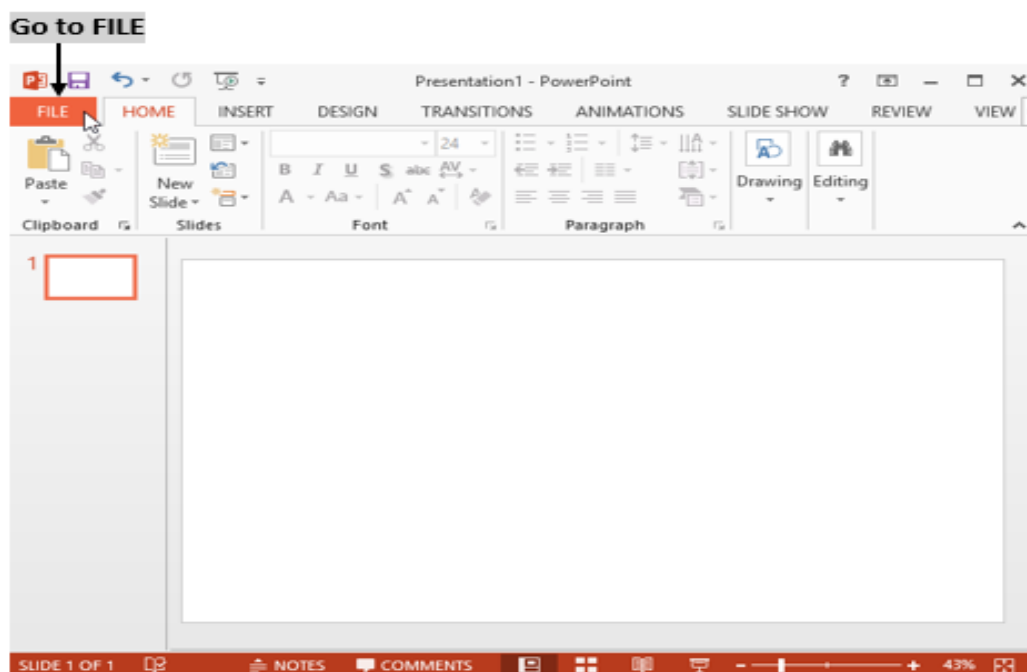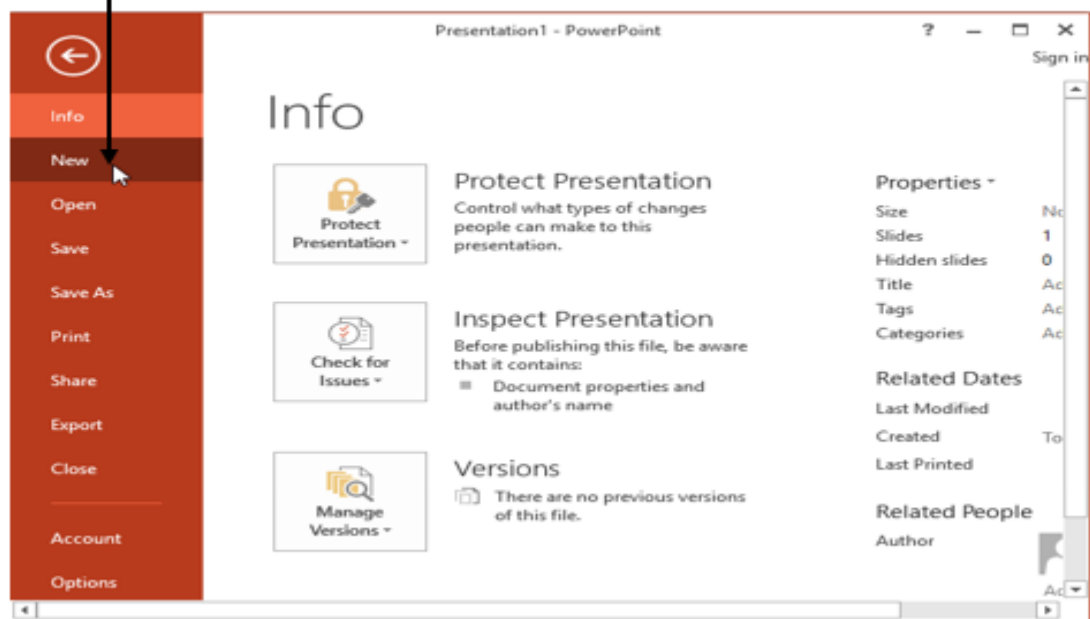
Select Pictures
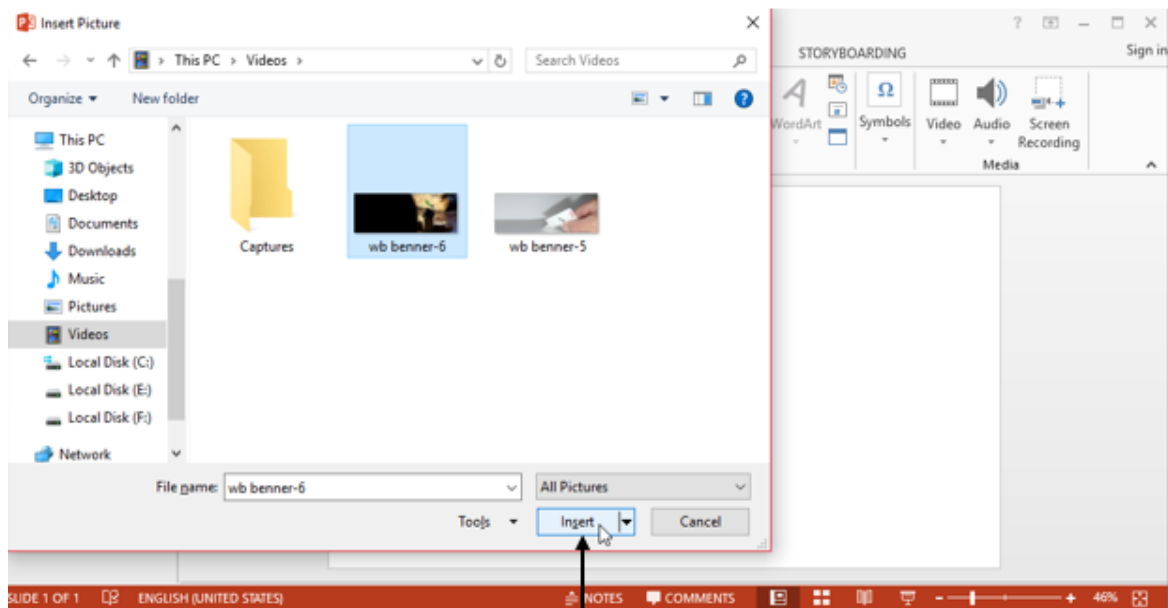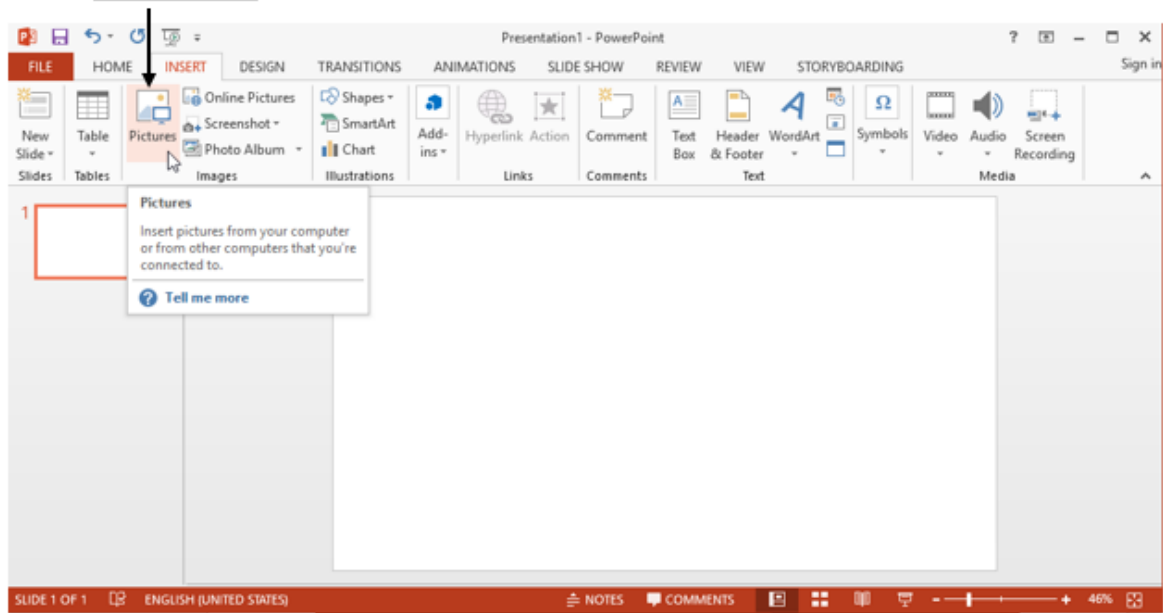
Browse the image and select Insert
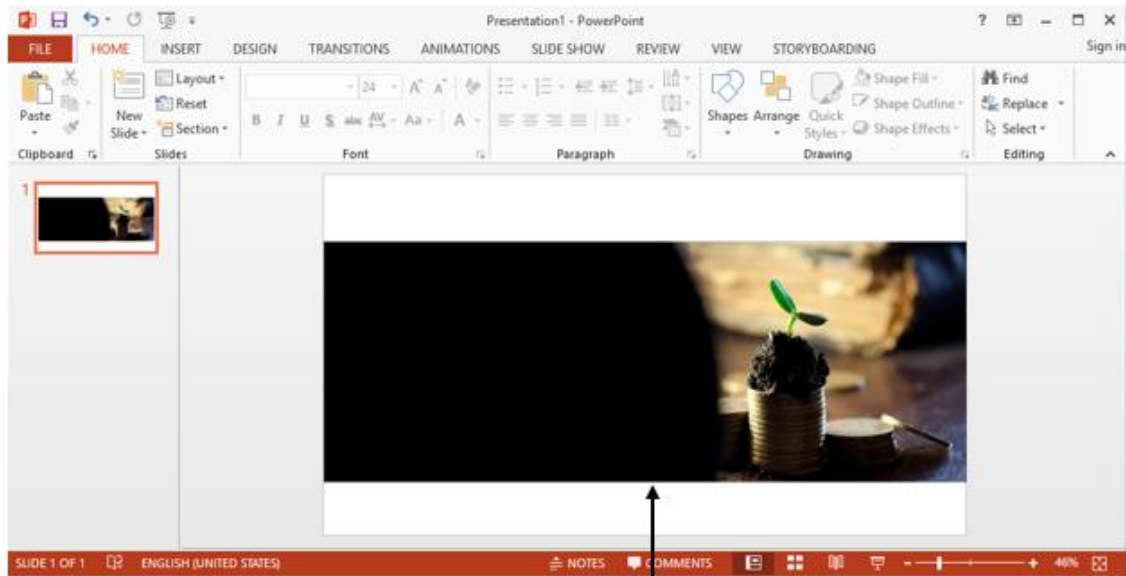
The image is inserted on the slide

Opening an existing PowerPoint presentation

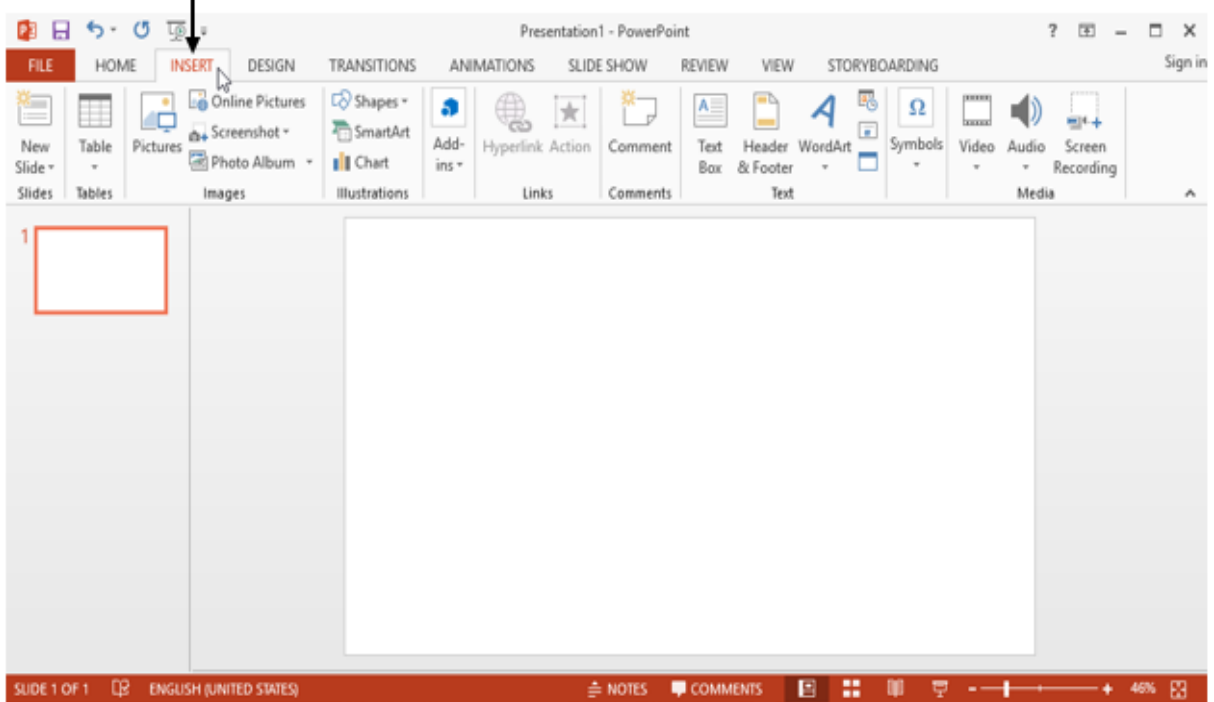To open an existing PowerPoint, select **File → Open → Recent Presentations →** and **select the presentation** you want to open.
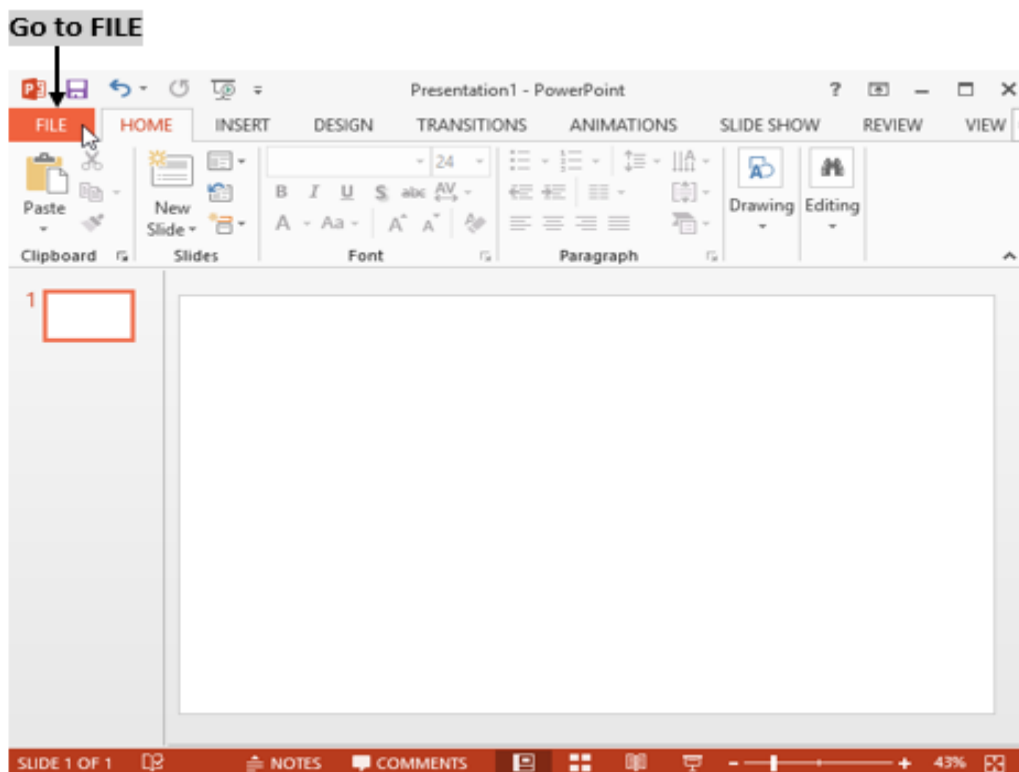
Select Open
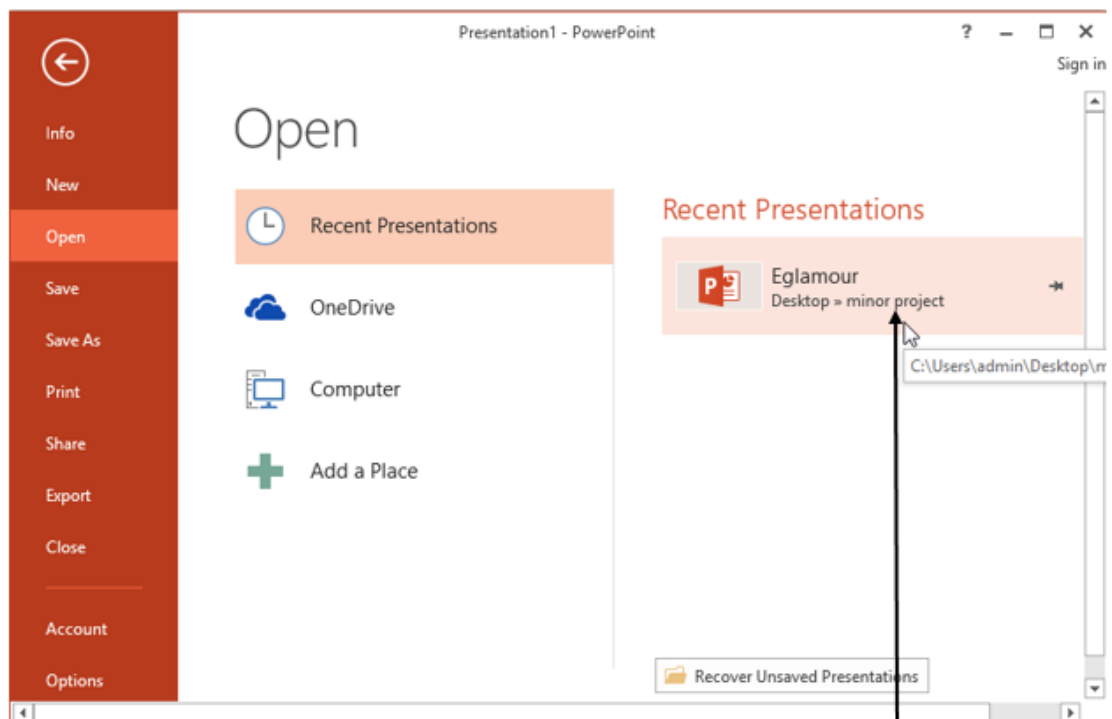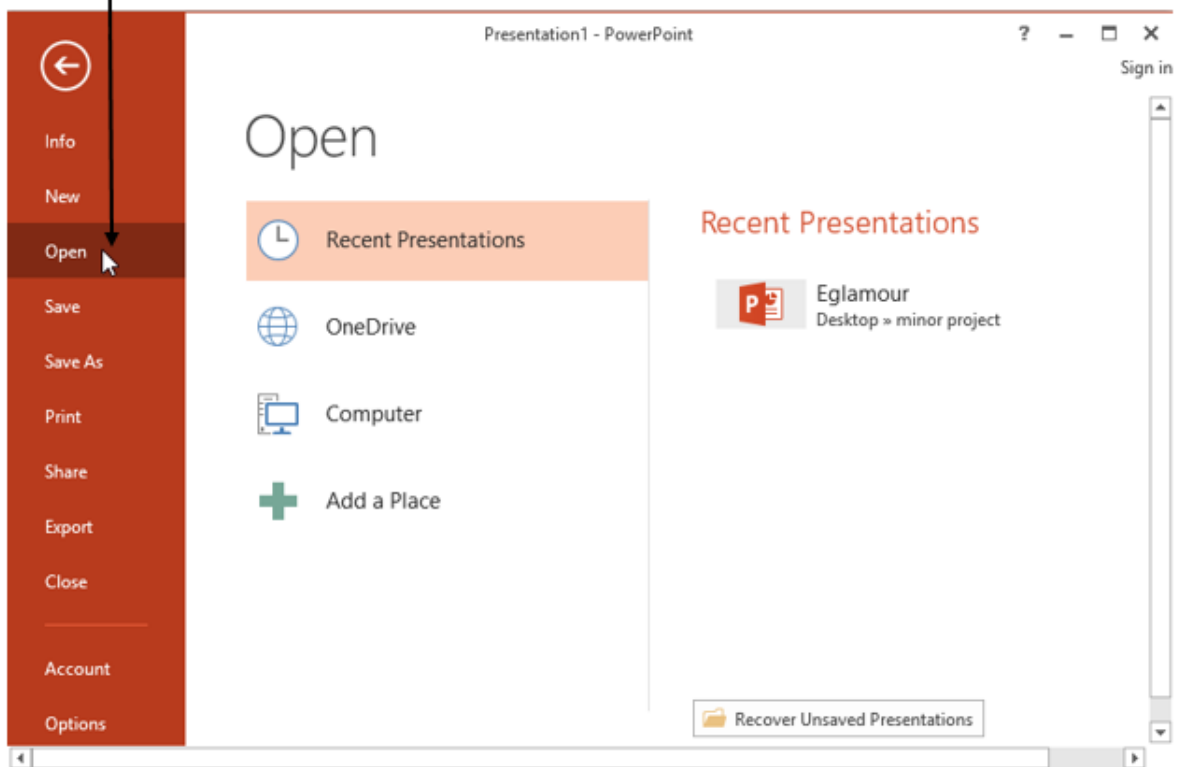
Select the file to open

Saving a presentation

- To save a presentation, click on "File" menu and choose "Save" option.
- Every presentation will be saved by default as presentation1, presentation2, presentation3 and so on.
- To change the default save location, select **Save As → Computer → Browse**.
- Click on the browse option to see a window where you can select desired location to save the file.
- To rename the presentation, simply add desired name in the 'File Name' tag. Click on 'Save'.
- MS PowerPoint saves files with the extension (.ppt).
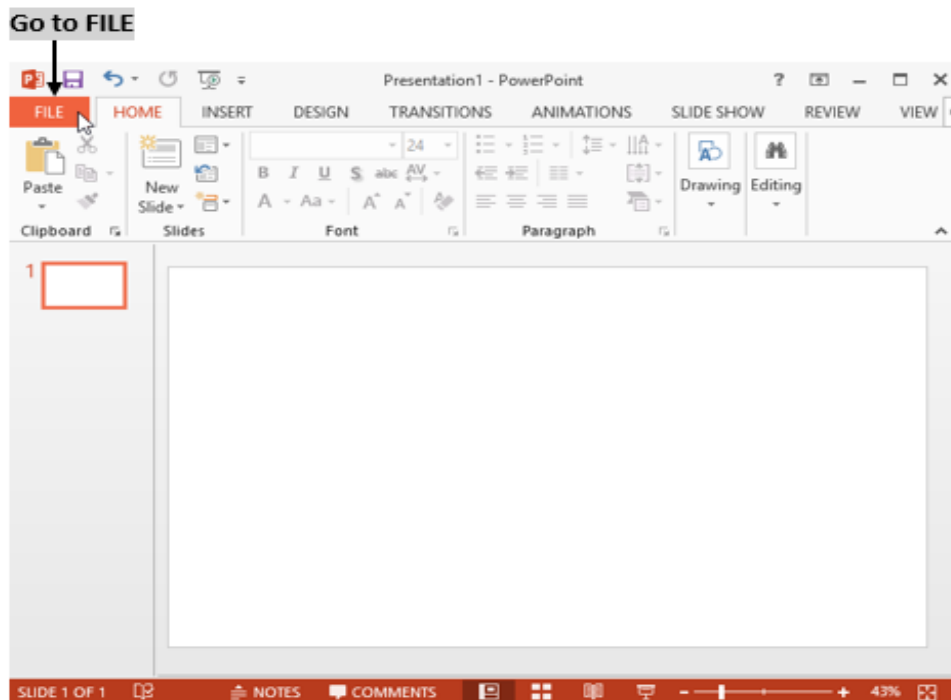
Select Save
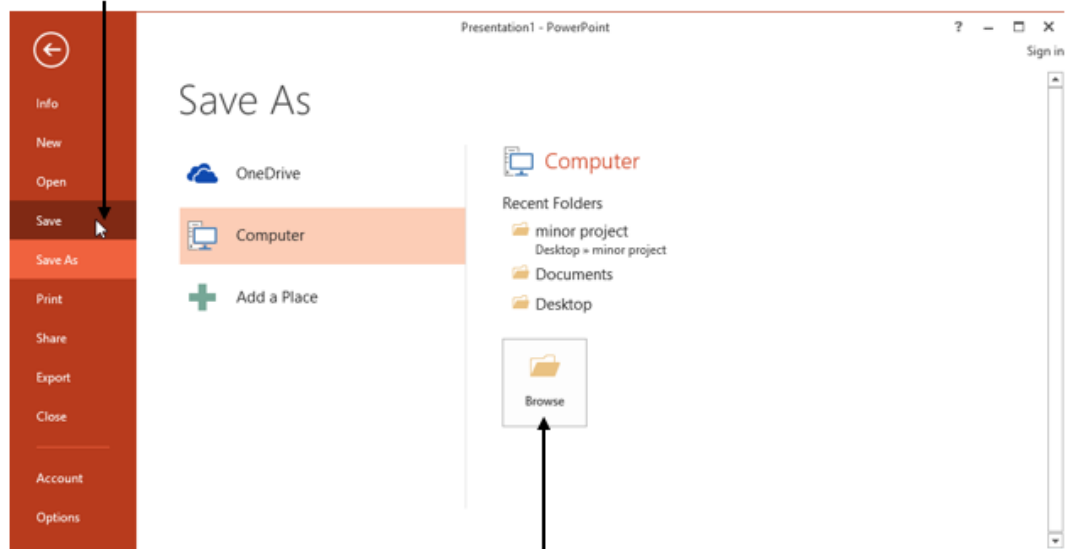
Browse the destination

Rename the file

Select Save
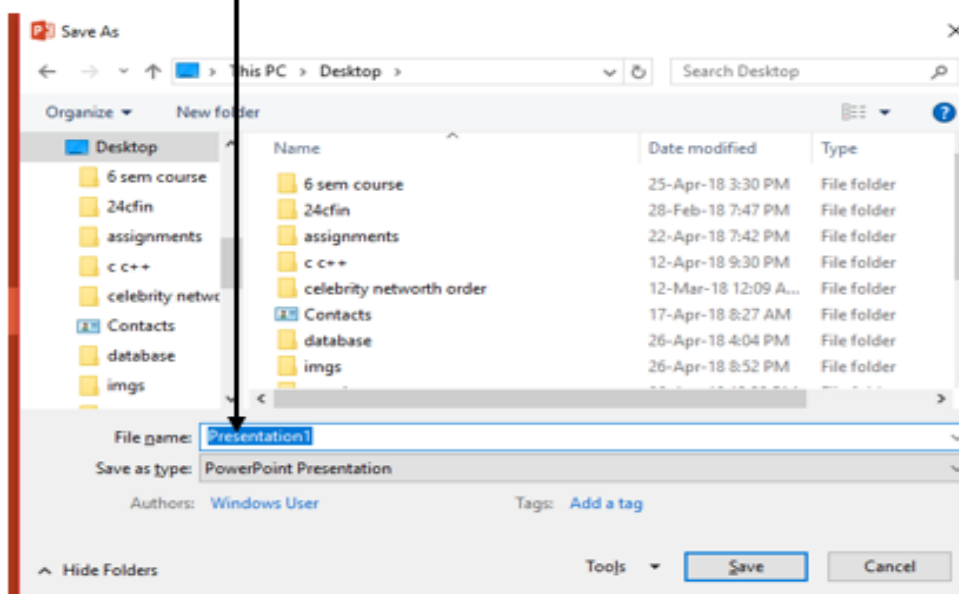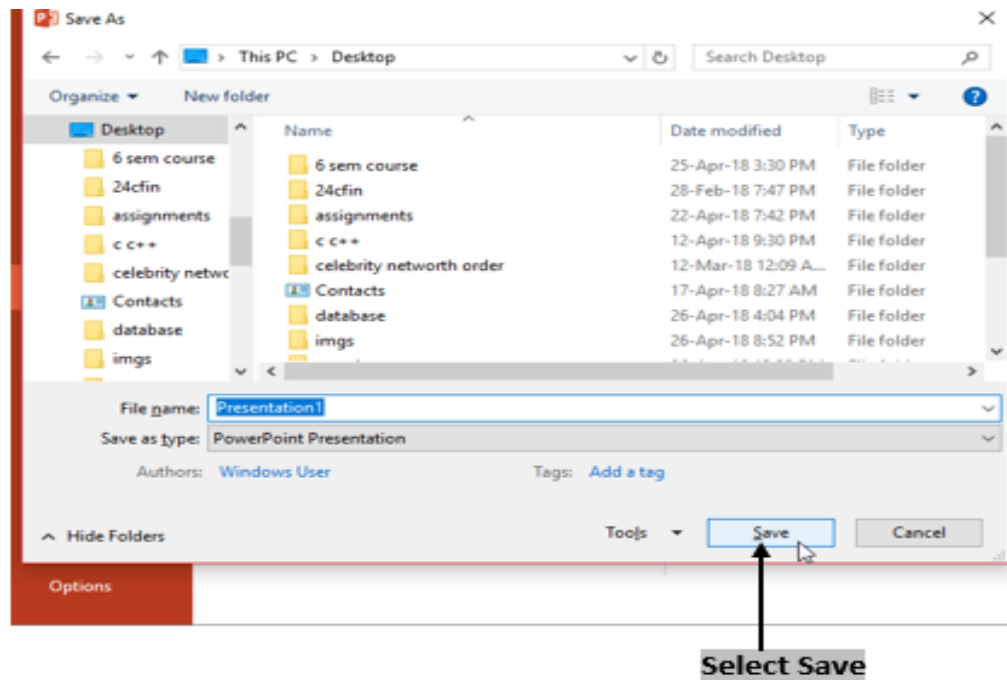
Creation of Presentation

A presentation is made up of number of slides that are displayed in a sequence. Each slide has sub-topics and different content related to the given topic.

Creating a presentation using a template

A template is a presentation that has a pre-defined theme and format. Templates are readily available design structures. There are two types of templates: design and content templates. A design template automatically gives final look of your presentation. The content template is used to include text and graphics.

To create a presentation using template, select **File → New → and select desired template**.

Go to FILE

Go to New

Select a theme
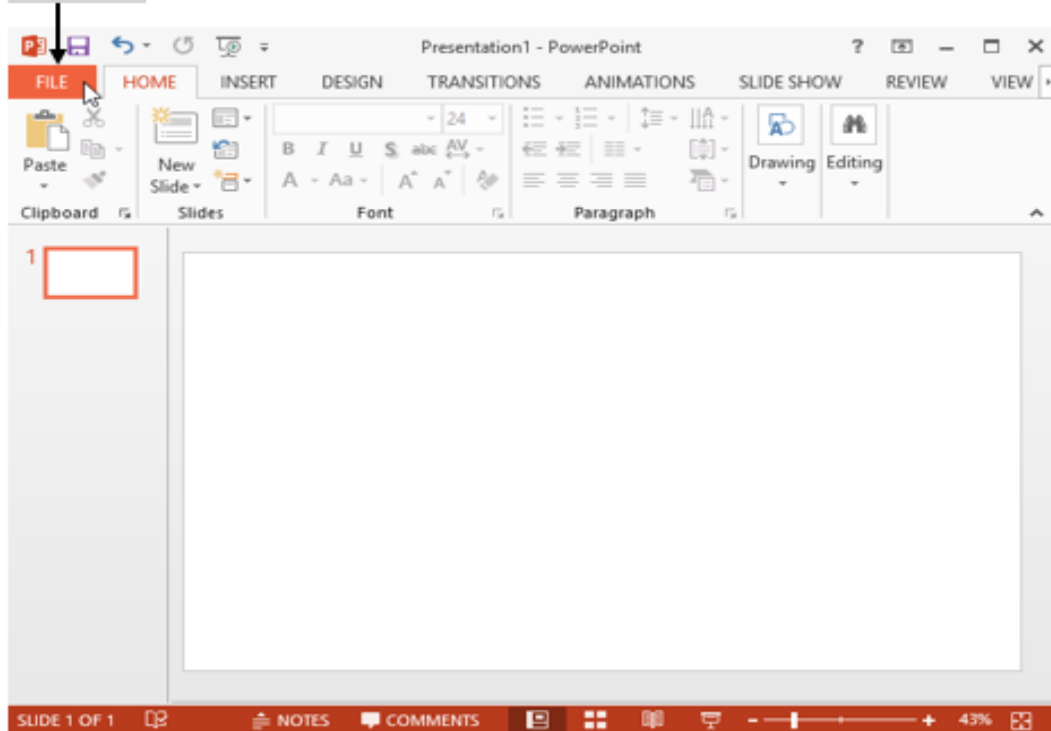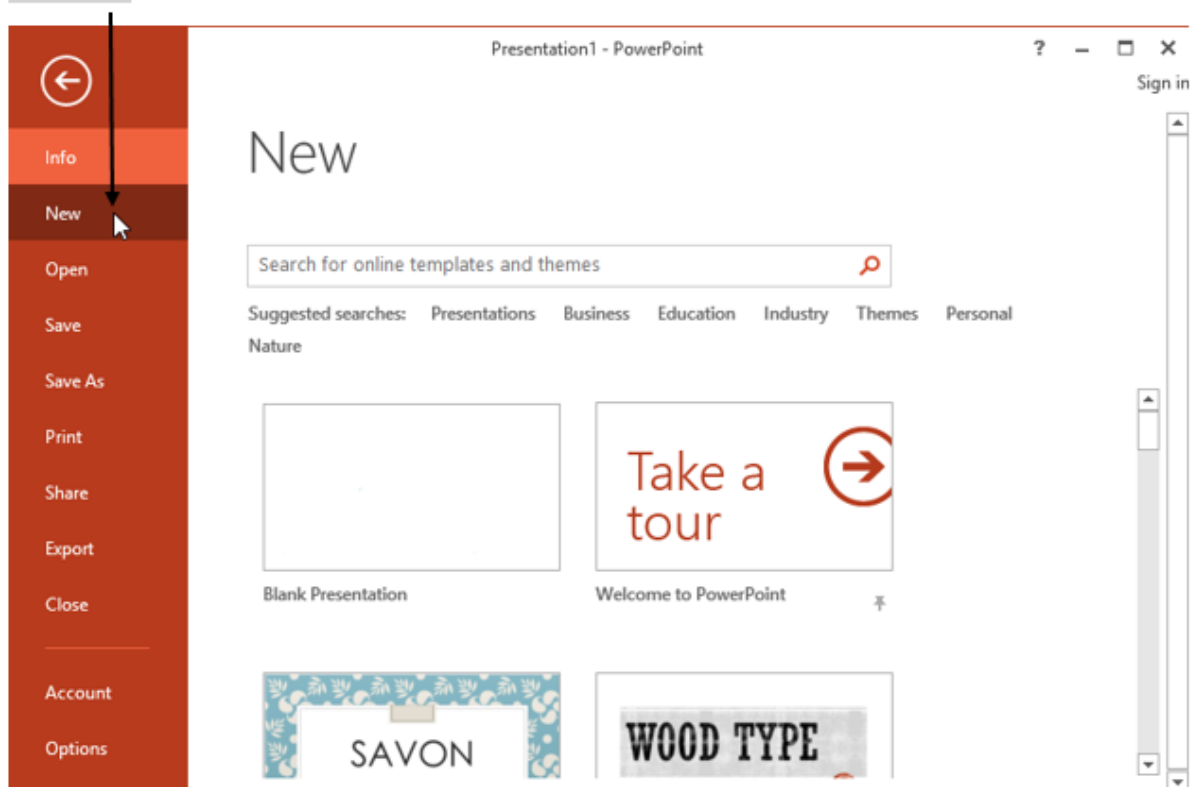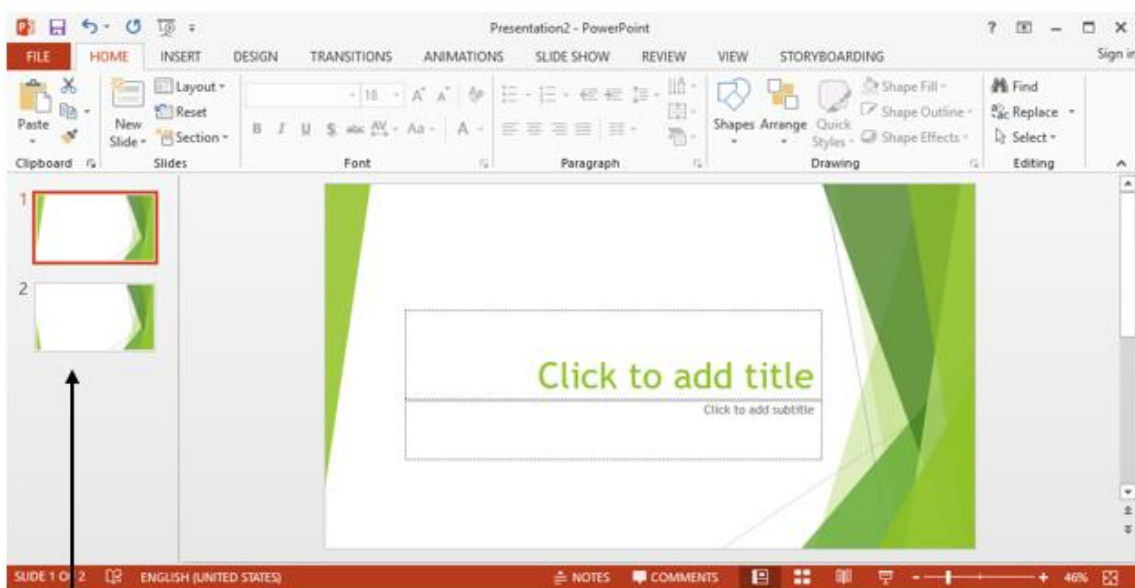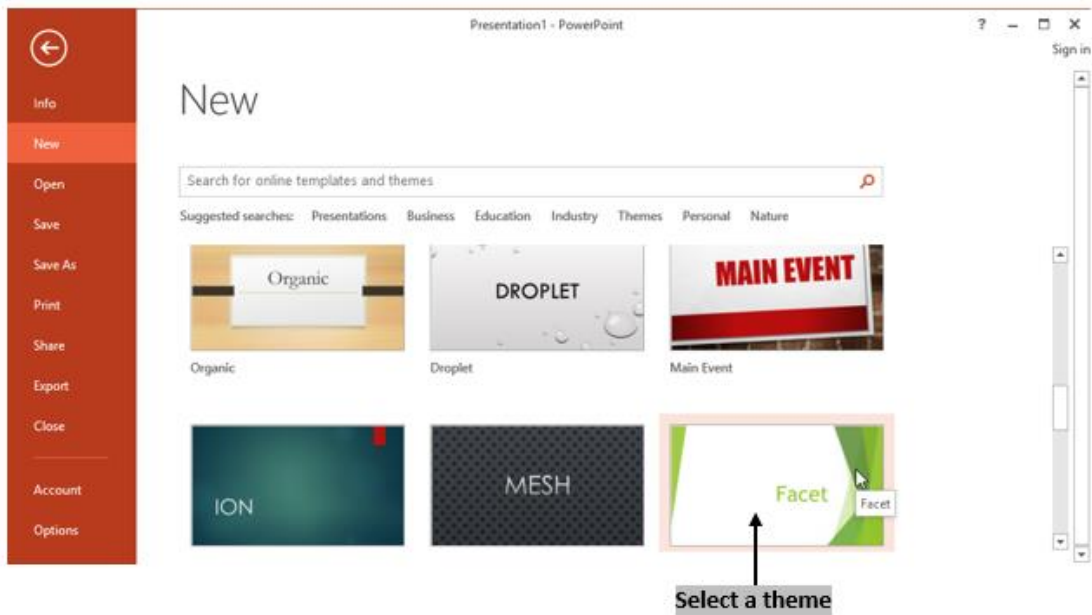
New presentation with selected theme created

Creating a Blank Presentation

- A blank presentation has no pre-formatted designs or colors. Every required element in the presentation has to be created or inserted specifically by the user.
- To create a blank presentation, select **File → New → Blank presentation**.

Go to FILE

Go to New
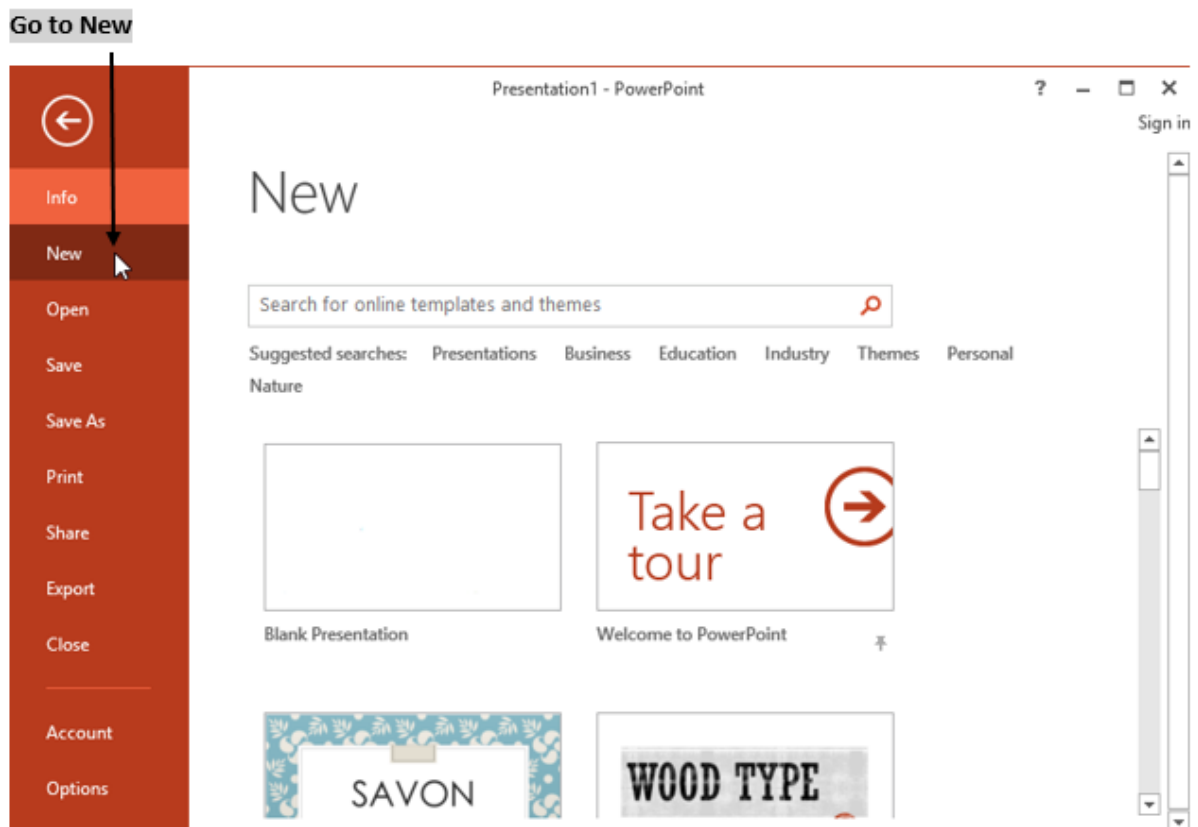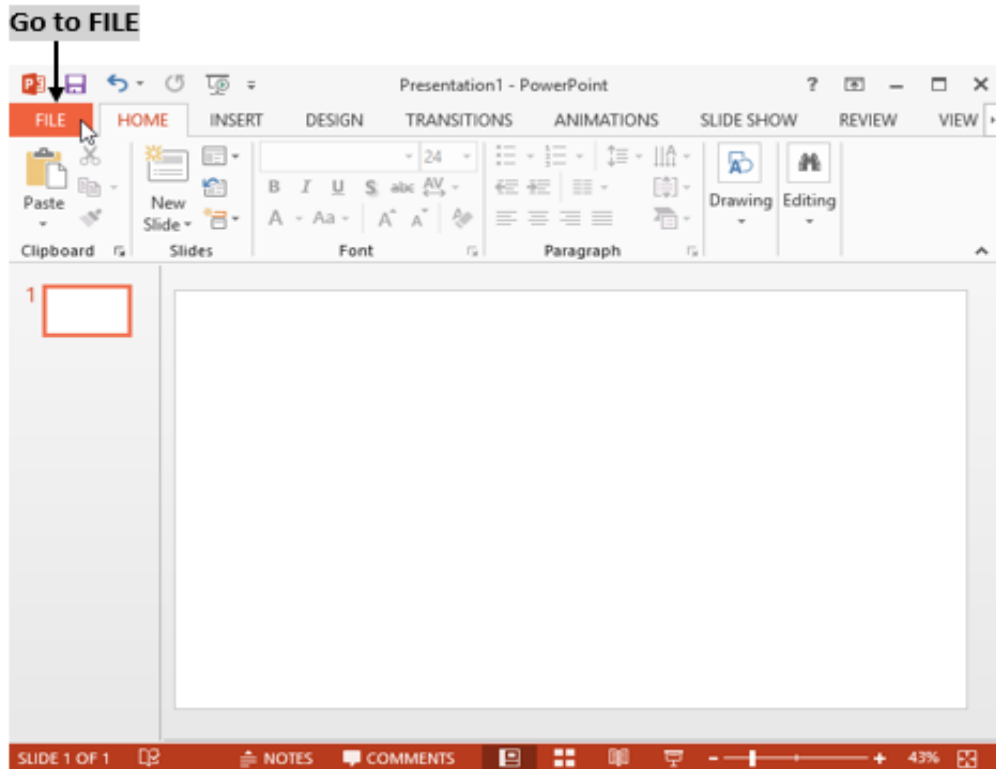
Select Blank Presentation
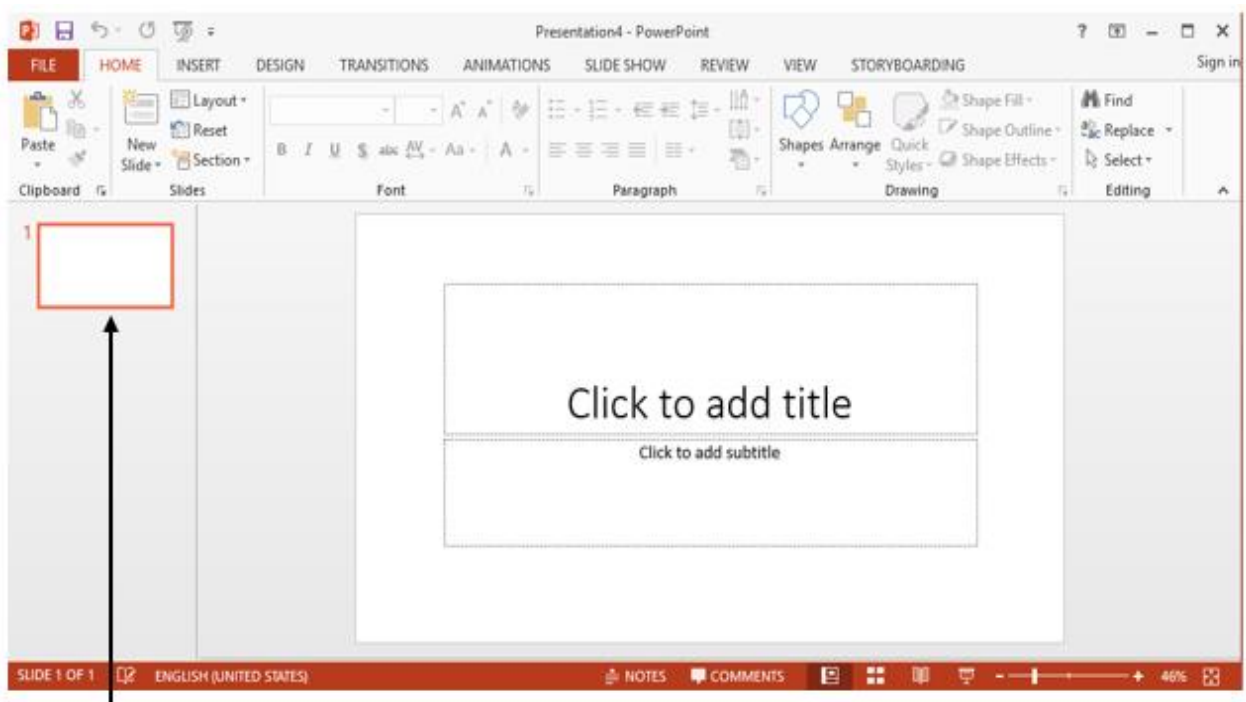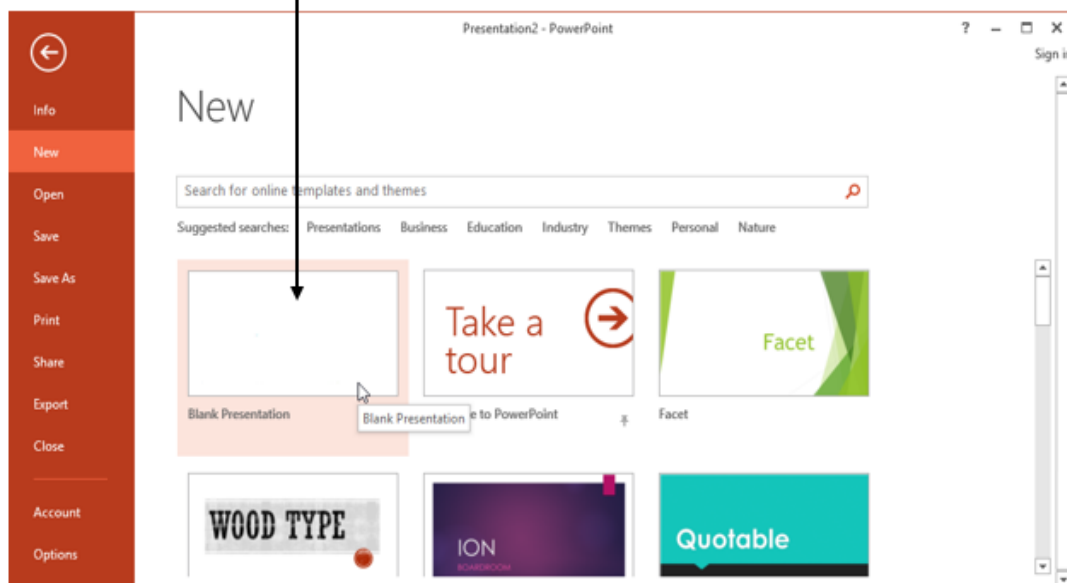
Blank presentation created

Entering and editing text

- To enter text in a slide, insert a new slide.
- A slide has two sections:
  1. Click to add the title.
  2. Click to add the subtitle.
- In 'Click to add title' box, delete the text and include desired heading.
- In 'Click to add subtitle' box, delete the text and add sub heading.
- Editing text refers to the changing of text size, style, color, indentation, etc.
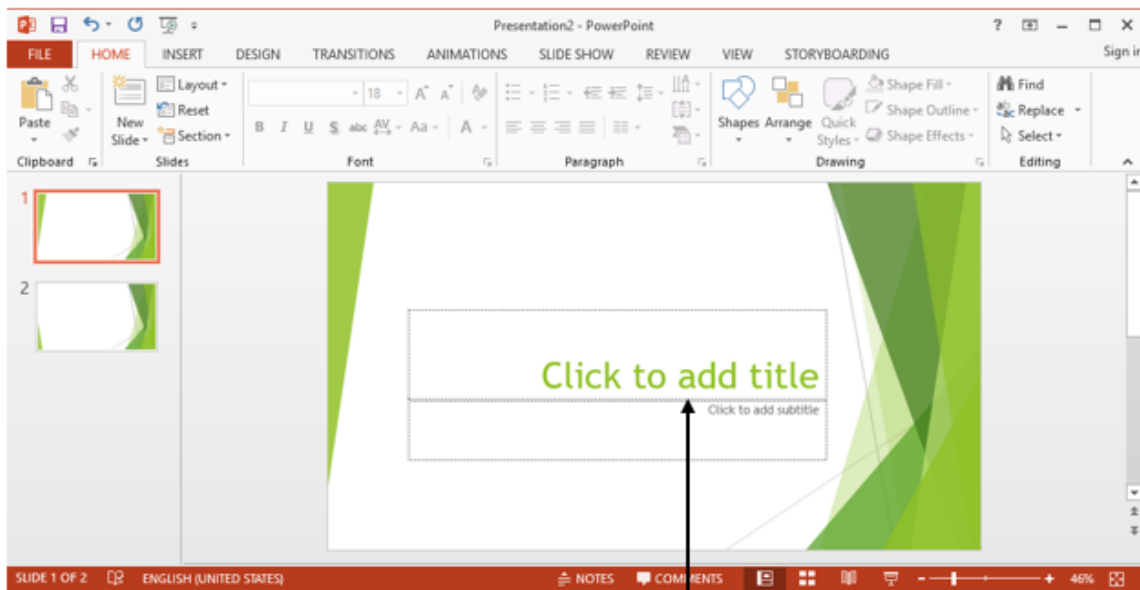
Click on the text box and enter text
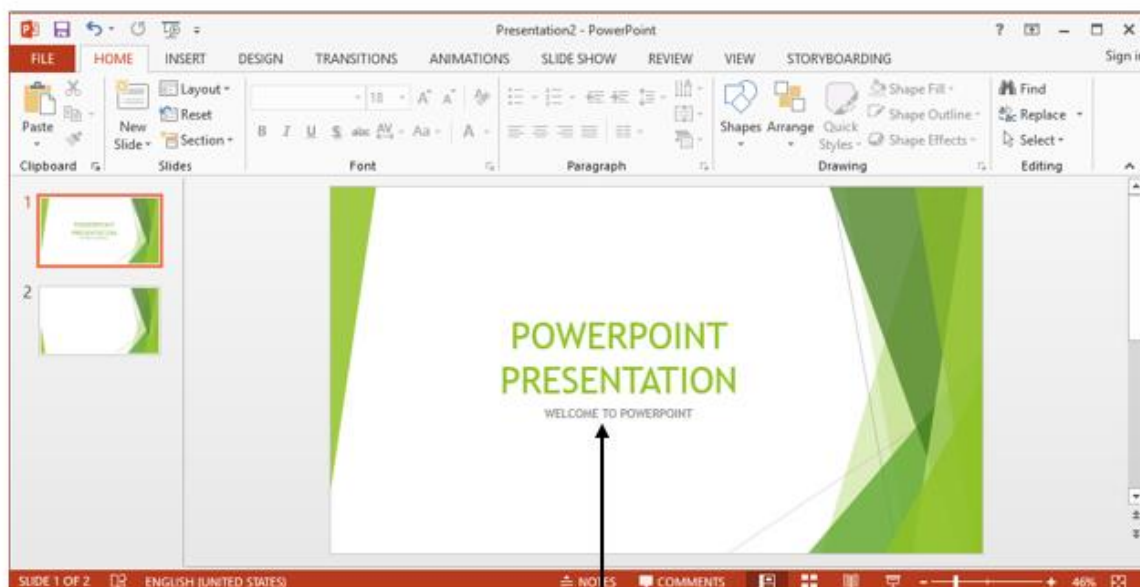
Text entered

Inserting and deleting slides in a presentation

To create a new slide, follow the below steps:

- o Go to Home → New Slide or
- o Insert → New Slide or
- o Right Click over the slide → select New Slide.
- Shortcut key to create a new slide is Ctrl + M.

Select New Slide in the Home menu
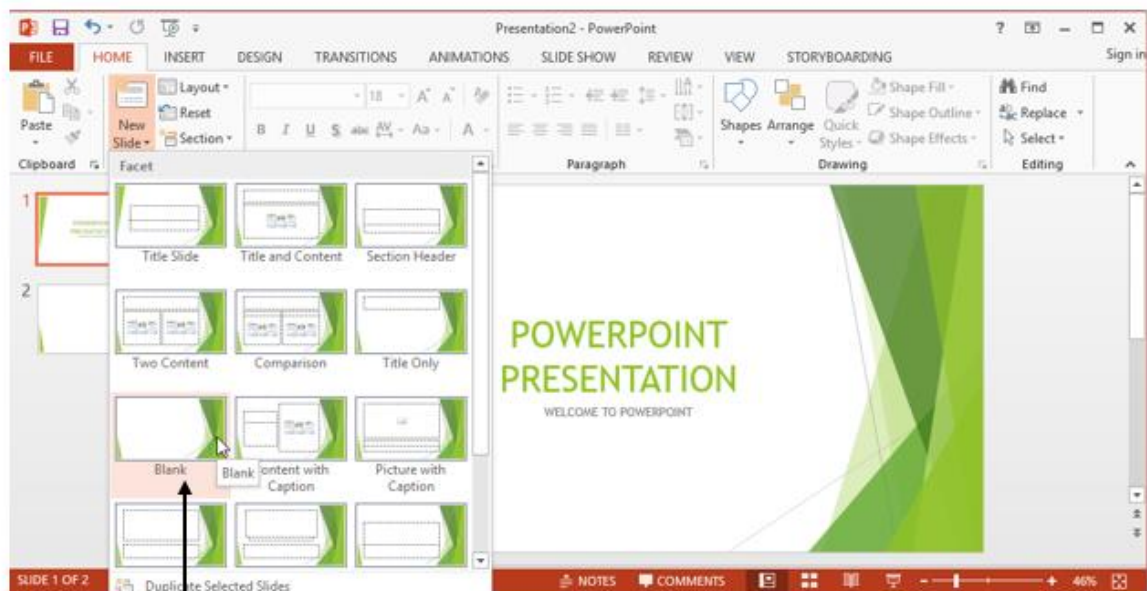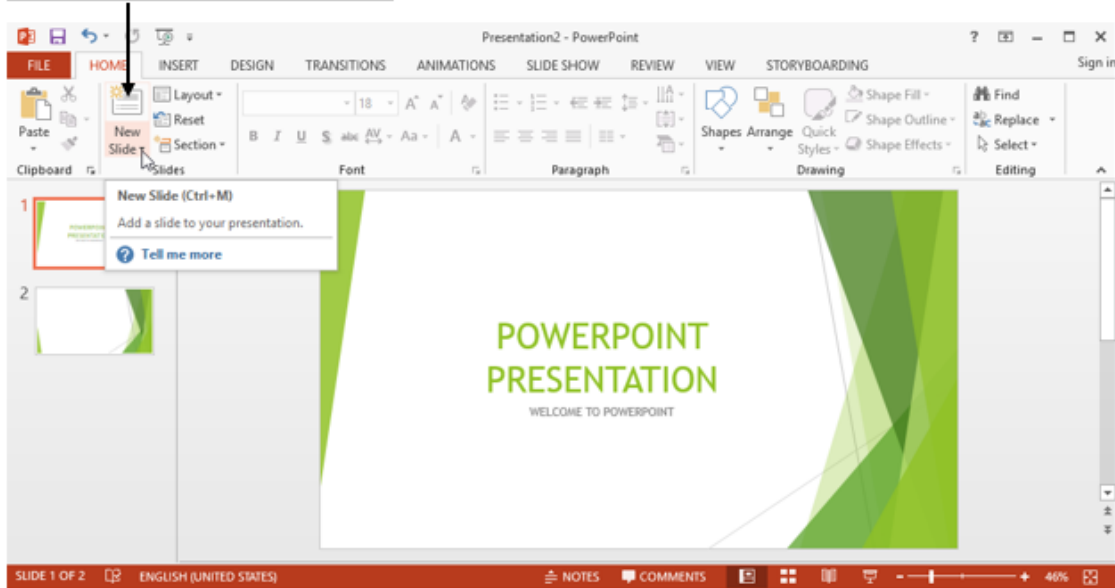
Select the type of slide from the drop down menu
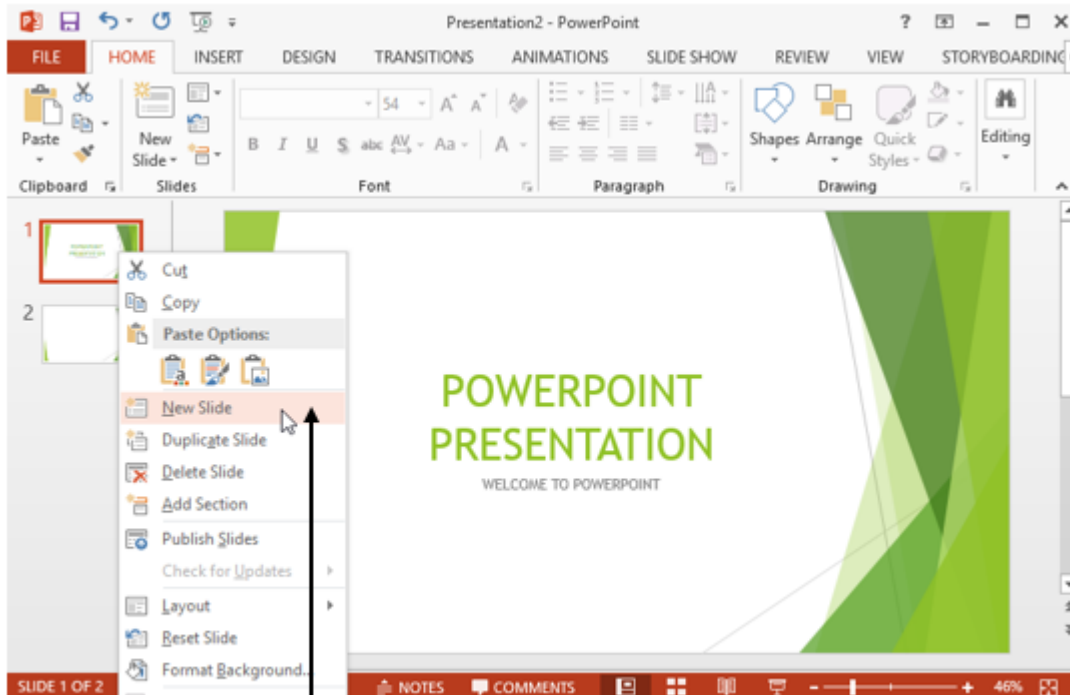
Right click and select New Slide

To delete a slide, go to the corresponding slide and right click on it to select Delete slide option.
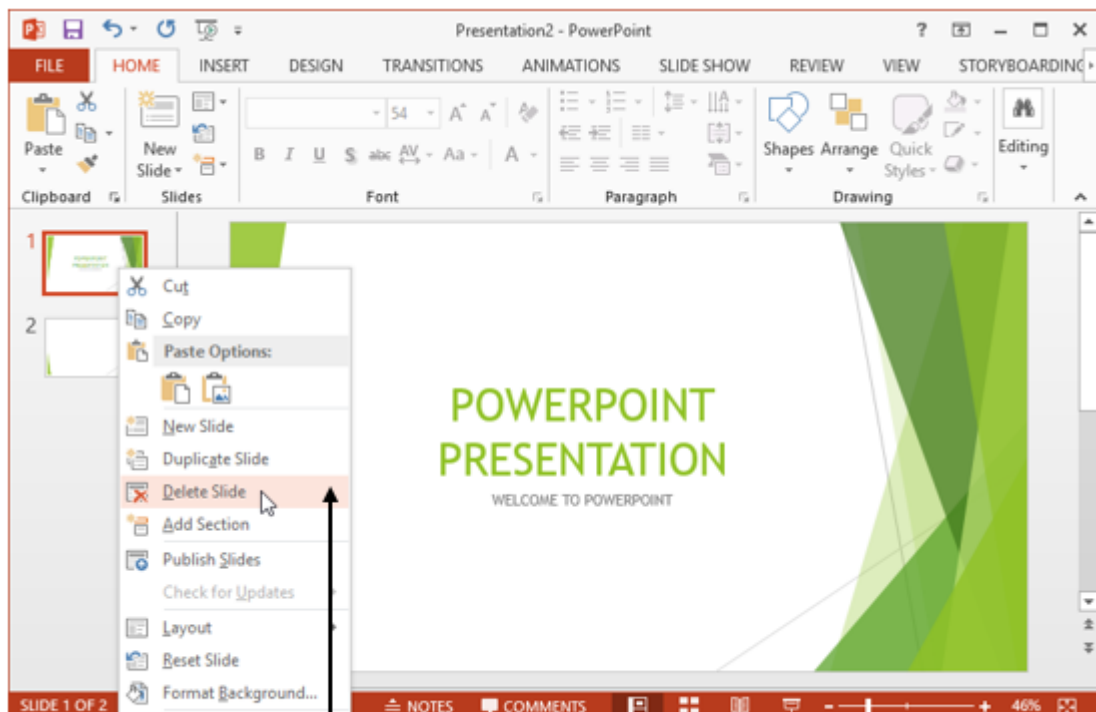
Right click and select Delete Slide

Customizing a Presentation

- Customizing a presentation can be done using **Custom Slide Show** options.

- PowerPoint allows you to start Slide Show from the current slide and also provides option to hide some slides.

- To customize a Slide Show, Choose **Slide Show → Custom Slide Show → New**.

- Under existing slides, select slides you want to add to your Slide Show.

- Hold down shift to select a range of slides, or Ctrl to select non continuous slides.

- Here you can change the order of the slides in your Custom Slide Show by dragging and dropping the slides under selected slides.

- Click ok button.

Check mark the slide

Click Add
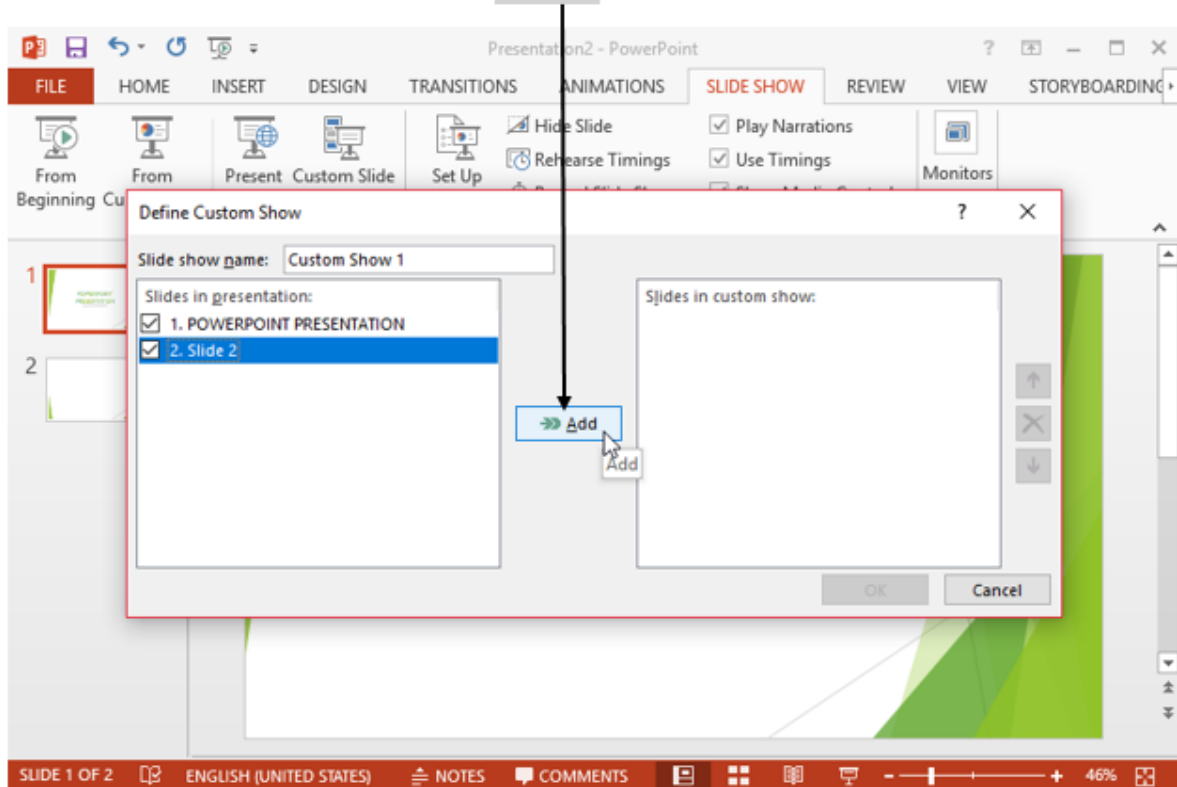
The slide is added in custom show. Select OK
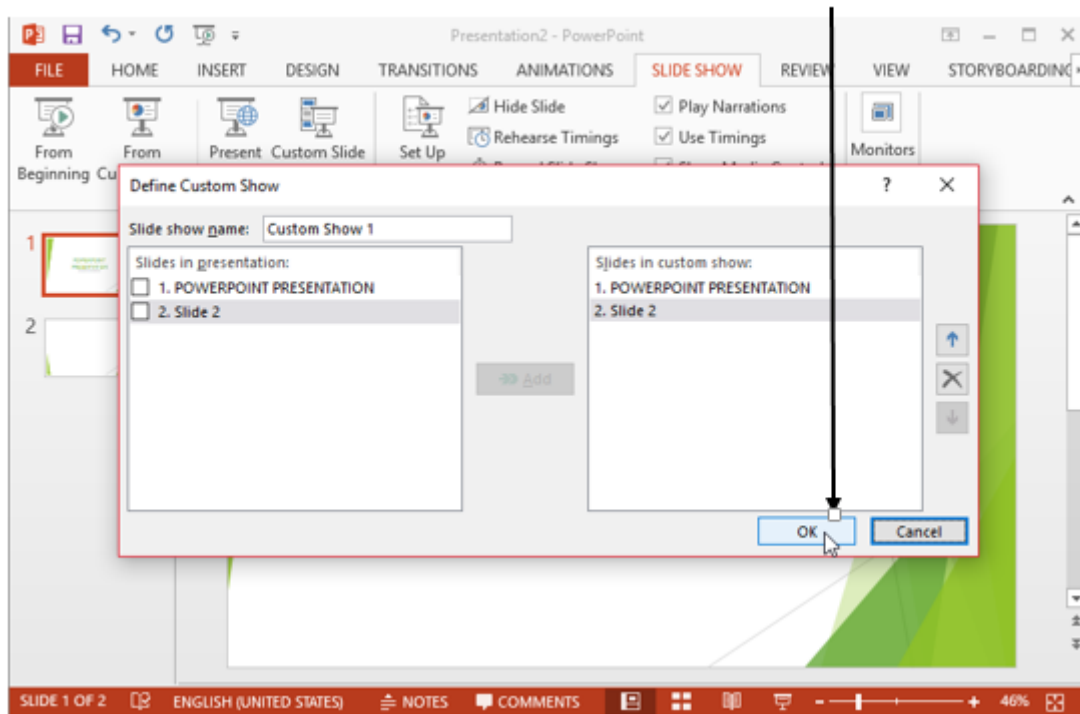
Preparation of slides

The below topics explain the preparation of slides:

Inserting a word table or an excel worksheet

- We can insert a word table in PowerPoint using "Insert" menu.
- To insert the table, first create a new slide.
- Then click on "Insert" menu and select the "Table" icon. Select the number of rows and columns.
- Press Enter.

In INSERT menu, select table
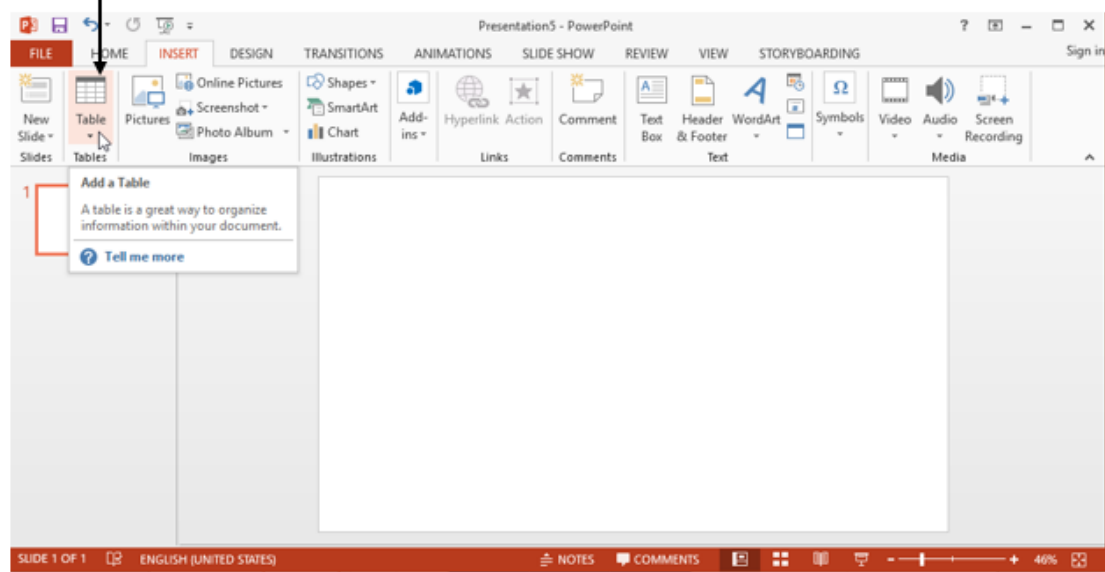
Select number of rows and columns
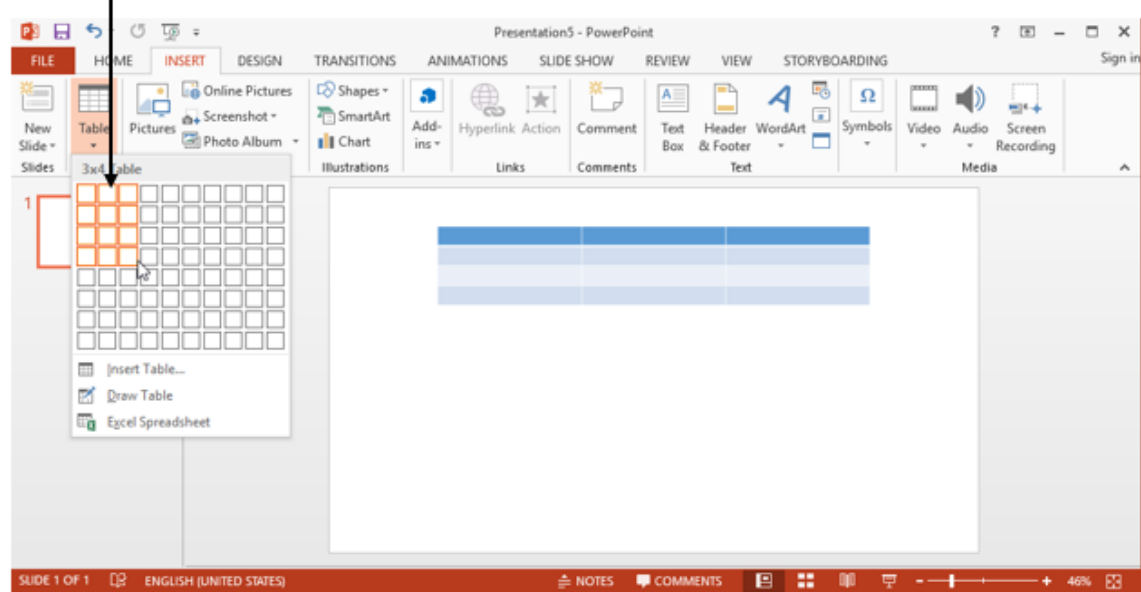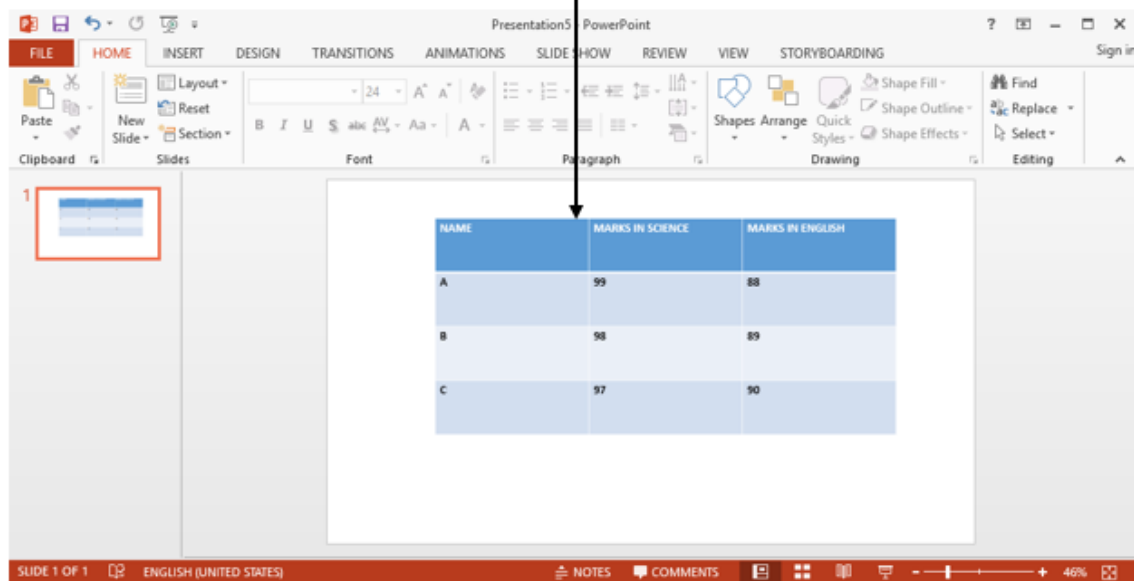
Inserting an excel worksheet

- We can insert an excel worksheet in PowerPoint using "Insert" menu.
- First, create a new slide.
- To insert a new excel file inside the presentation, click on insert menu and select **Object icon → Create New → Choose the object type as Microsoft Excel sheet →** click **Ok**.
- To insert an existing excel file, select **Create from file → Browse**.
- Finally, select the excel document you wish to insert and press enter.

In INSERT menu, go to Object

Select this option

Click OK

An excel sheet is inserted
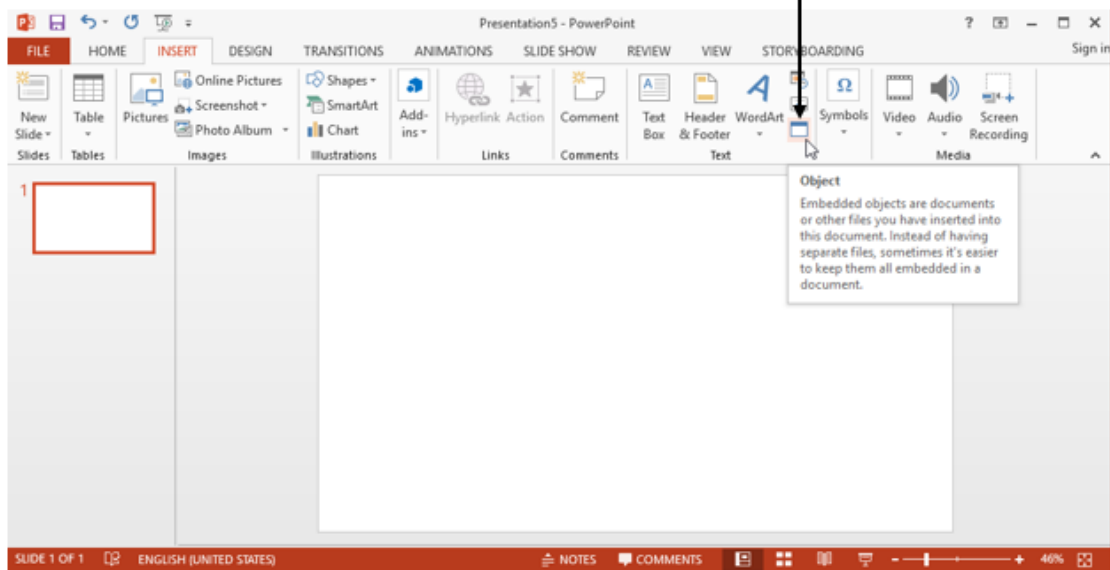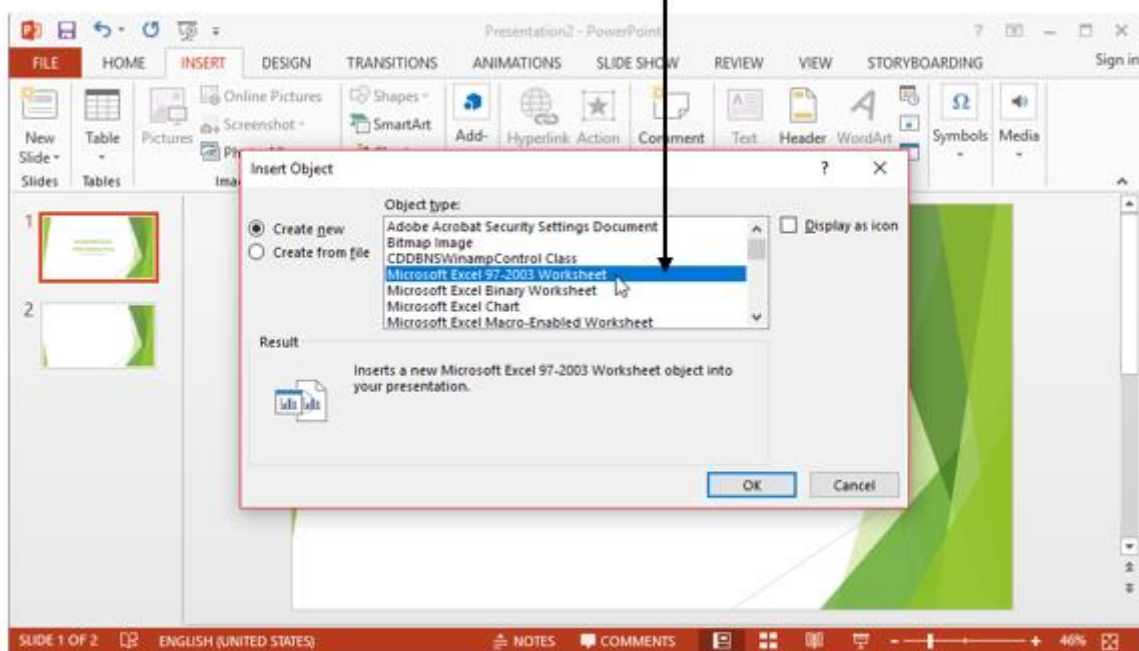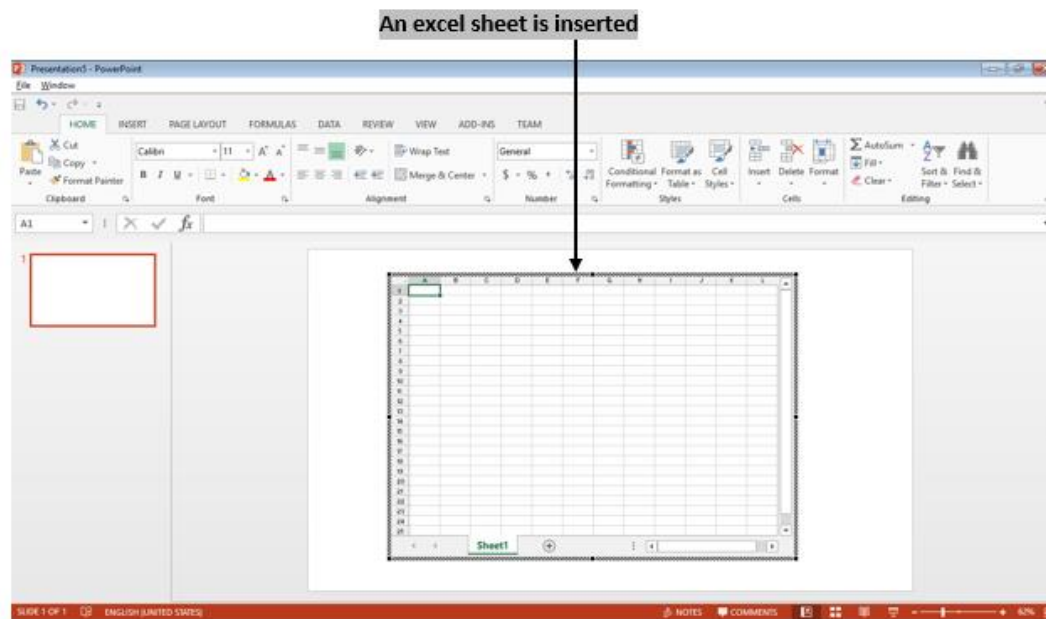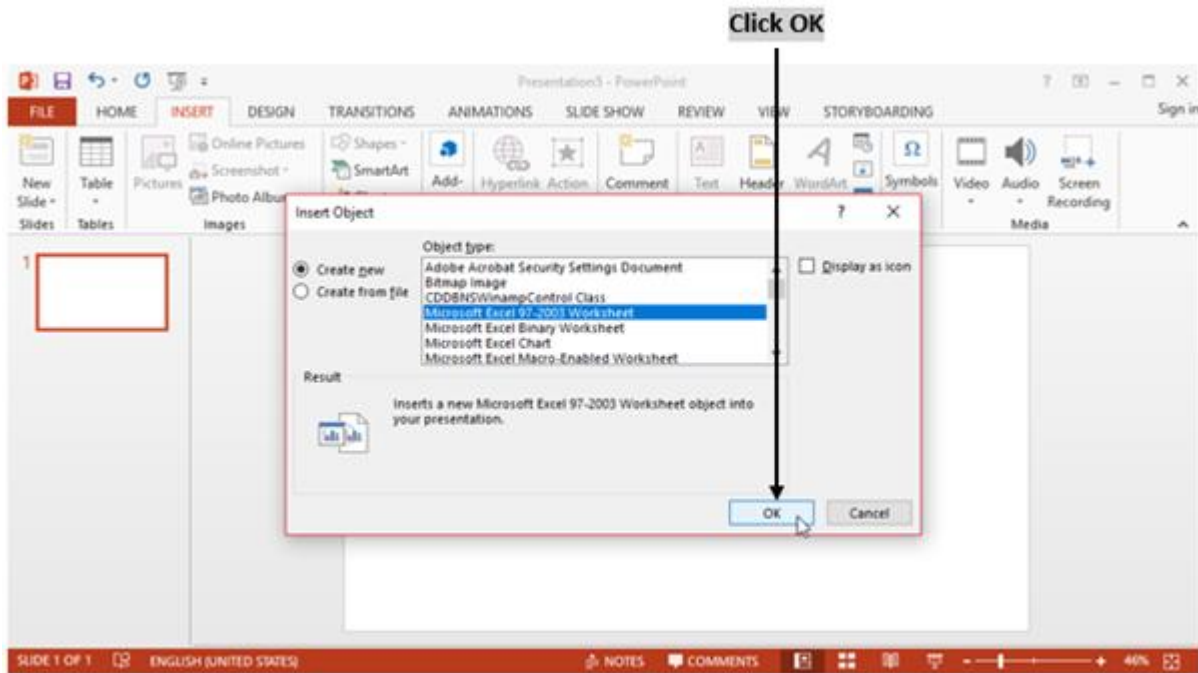
Adding clip art pictures

- Clip art is a cartoon-like icon or representation.
- Select **Insert → Online pictures**.
- In the dialog box, enter category and select the picture you want to insert.
- Click on **Insert** button.

tutorialspoint
SIMPLYEASYLEARNING

In INSERT menu, select Online Pictures
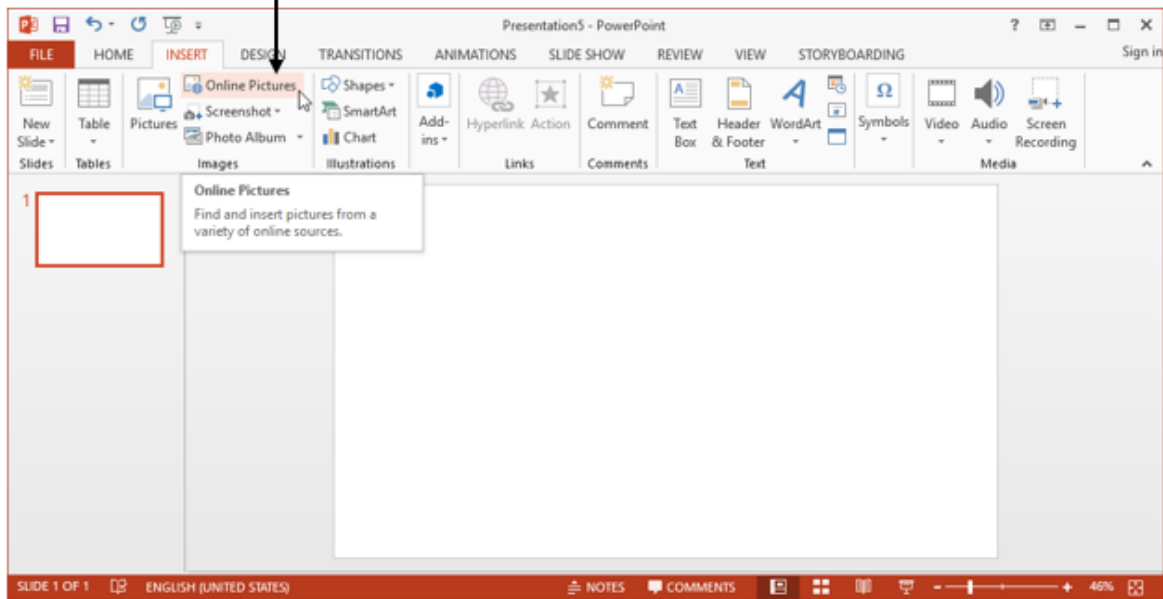
Enter the item you want to insert in the search bar and press enter
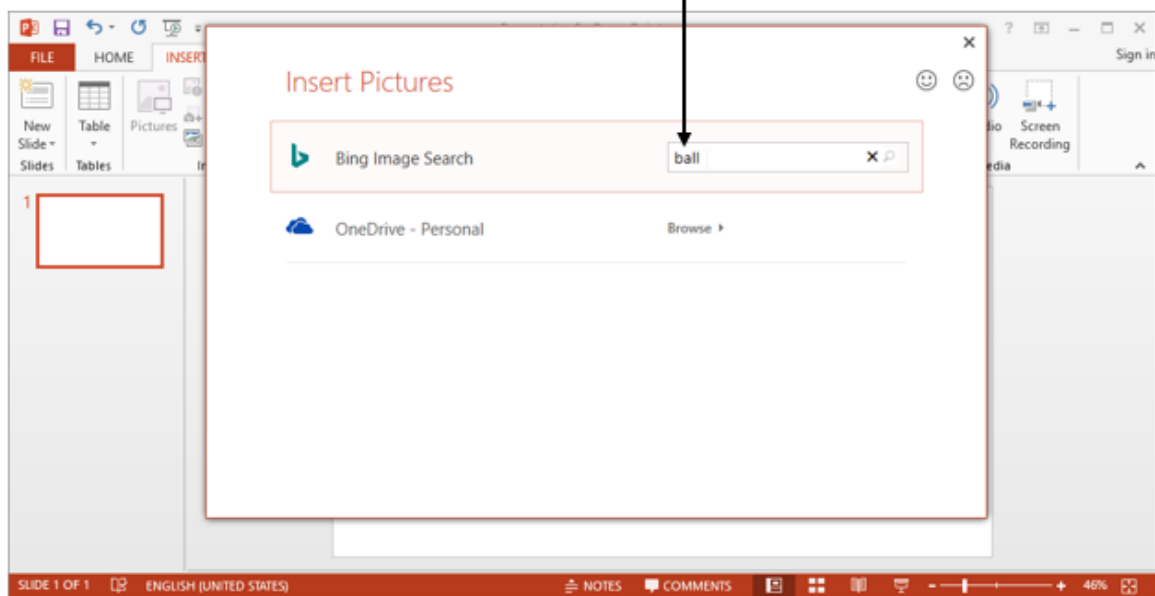
Select the object from the search results

Select Insert

The image is inserted in the slide
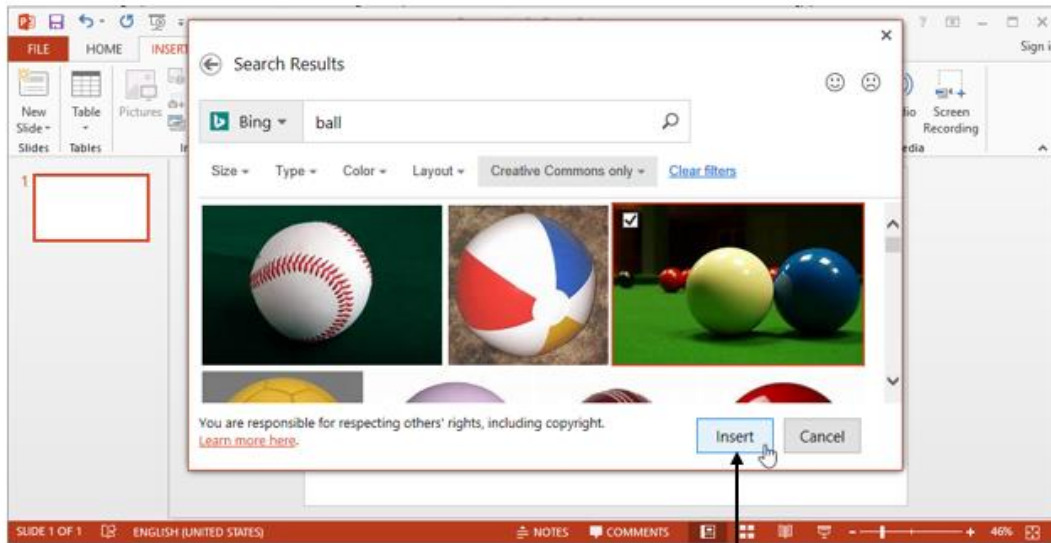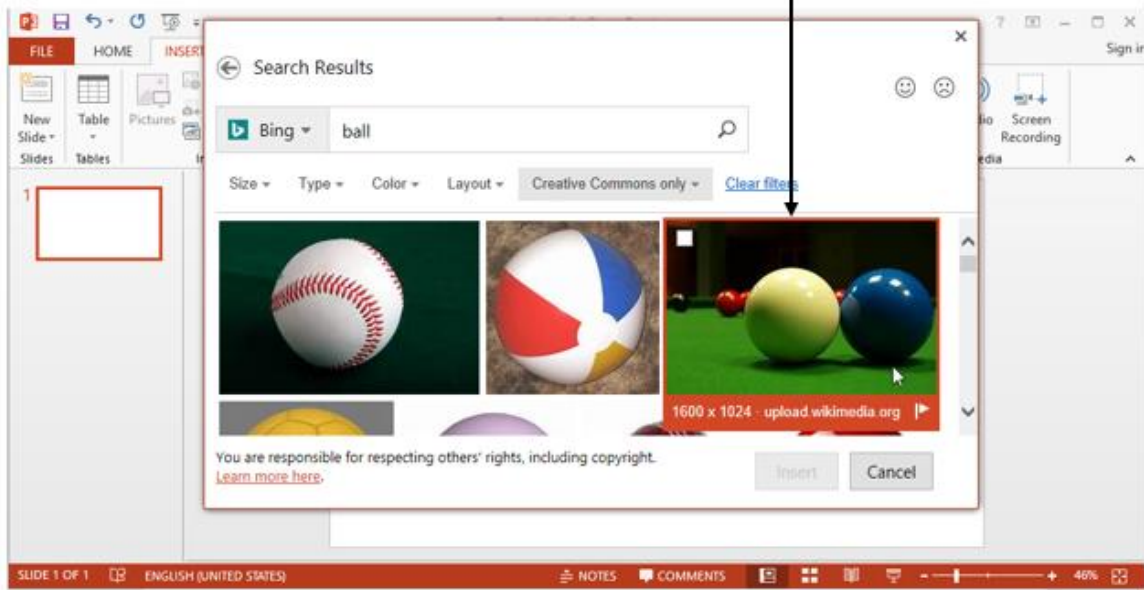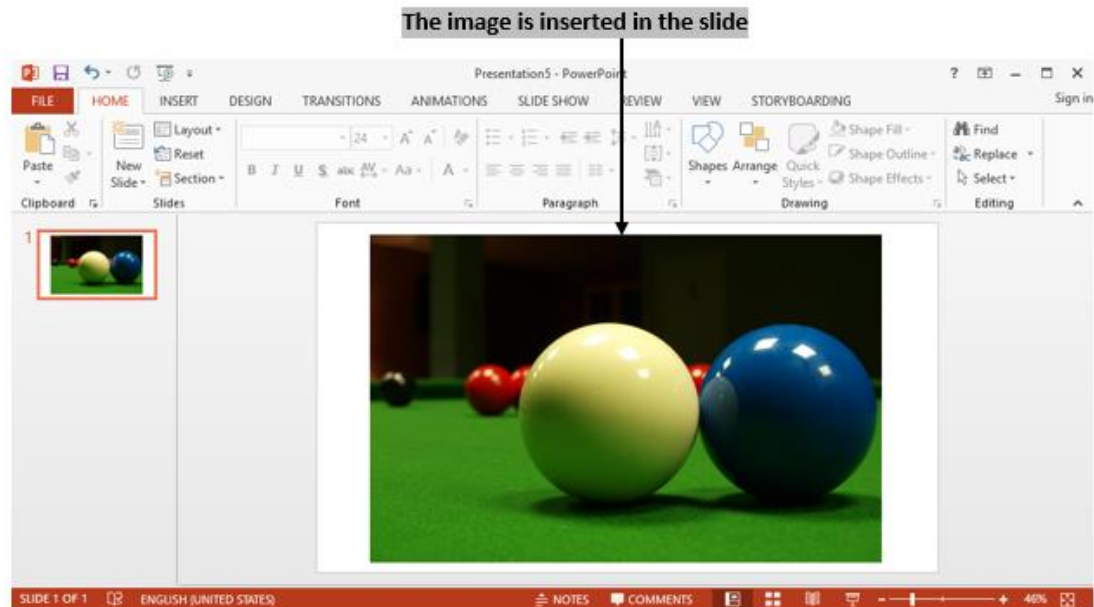
Inserting other objects

- You can insert existing objects in a presentation by clicking **Object** icon in the insert menu.

- Select **Create from file** option and then select **Browse** button.

- Select the file you want to insert and click **Ok** button.

- If you want to link the file, select the link check box.

- To display the file as an icon, checkmark '**Display as icon'** check box and click **Ok** button

In INSERT menu, go to Objects
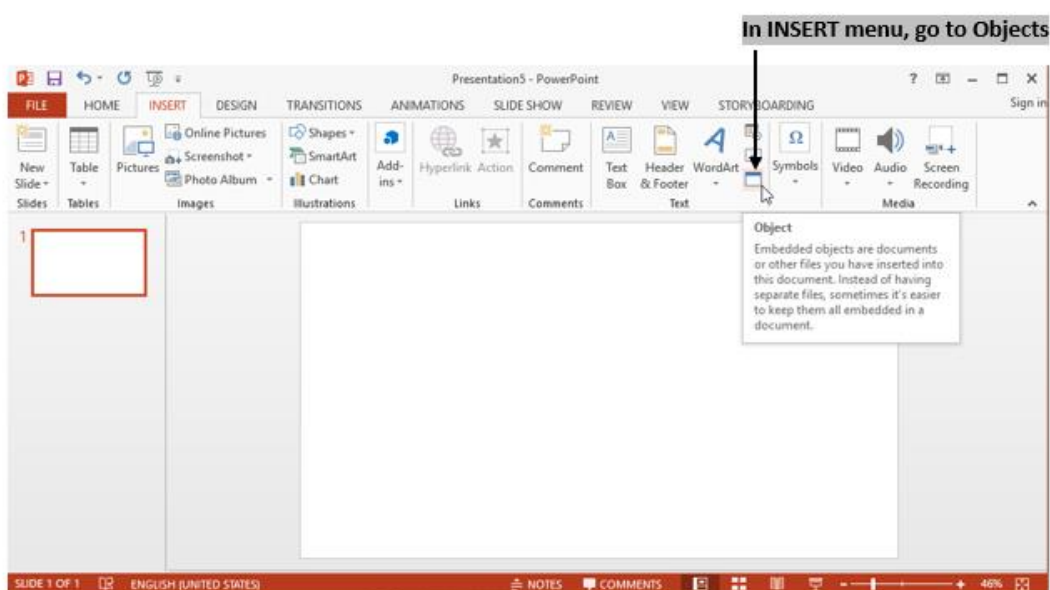
Select Create from file
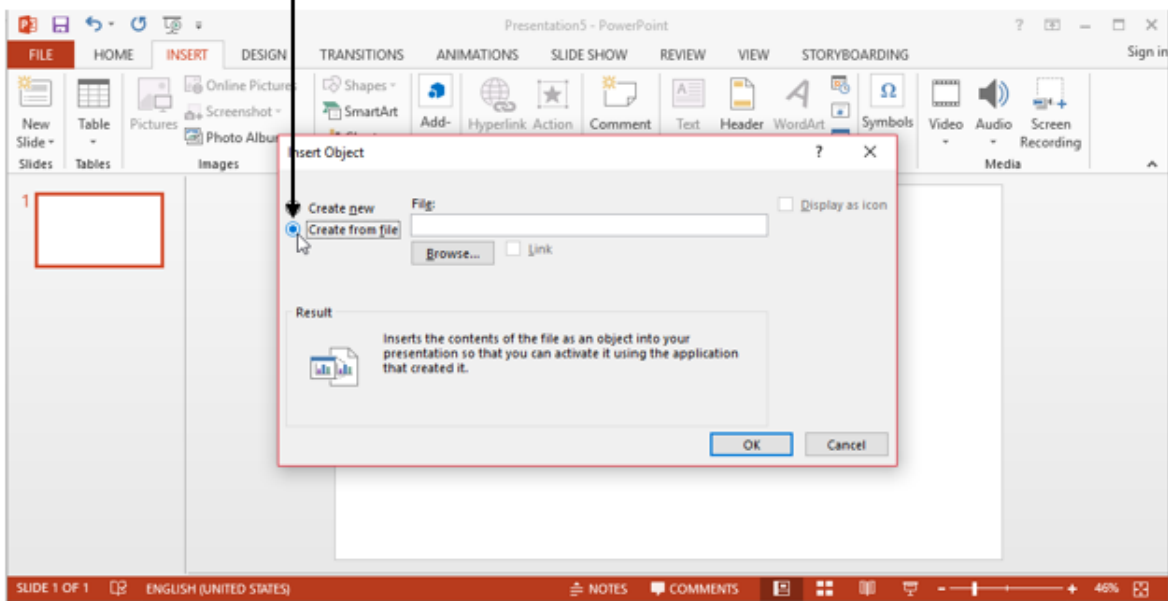
Select Browse
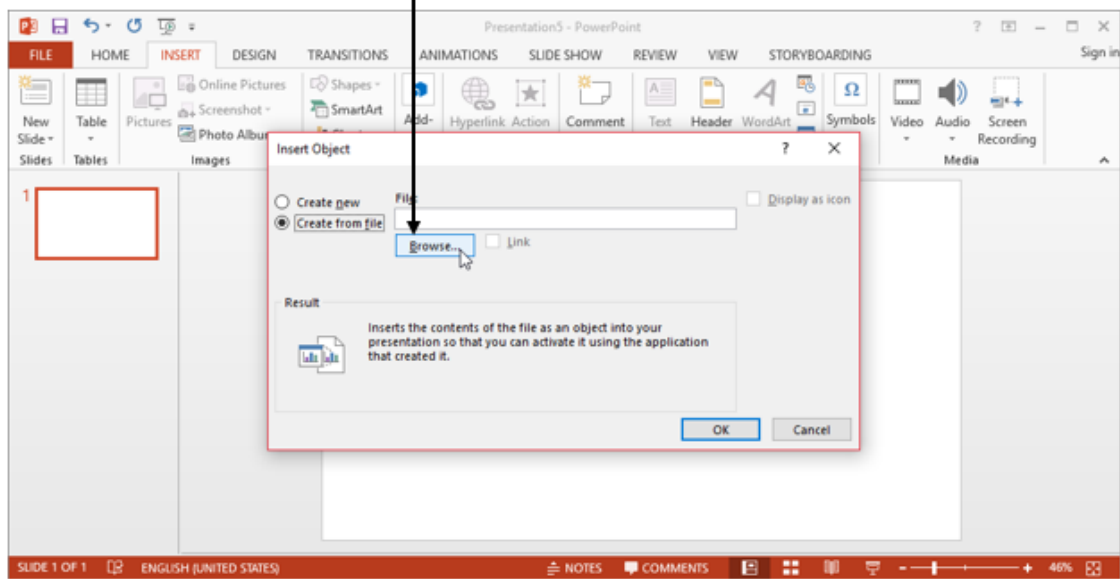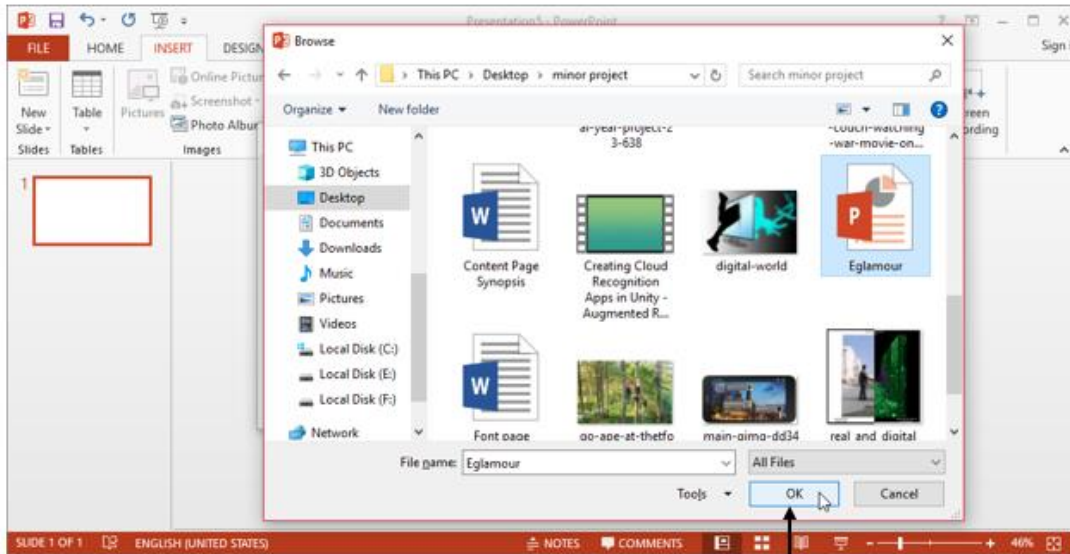
Browse the desired file and select OK

Select OK

The file will be inserted
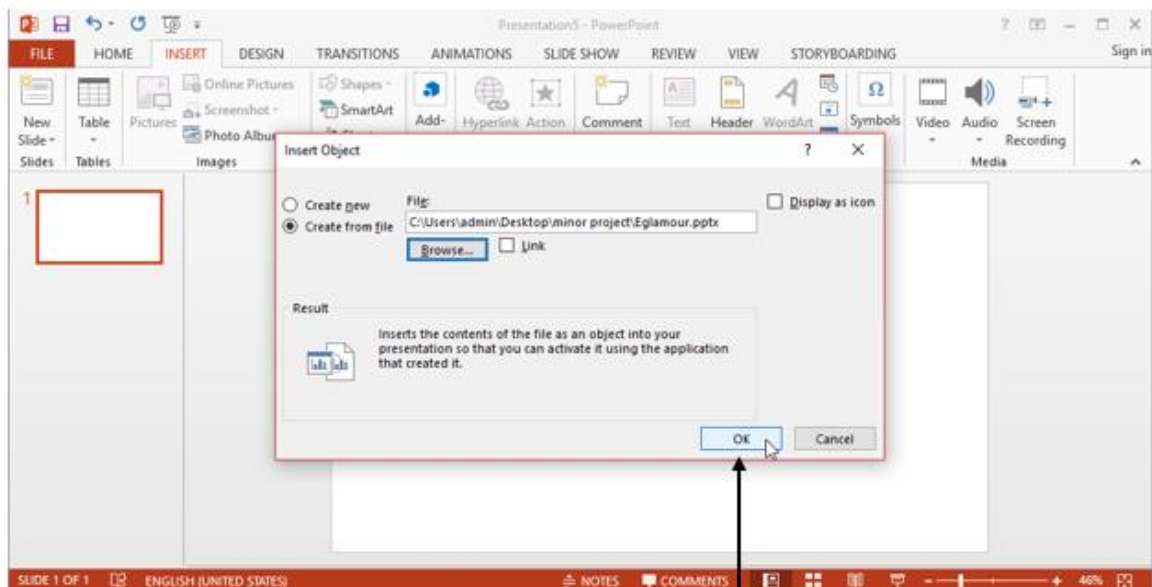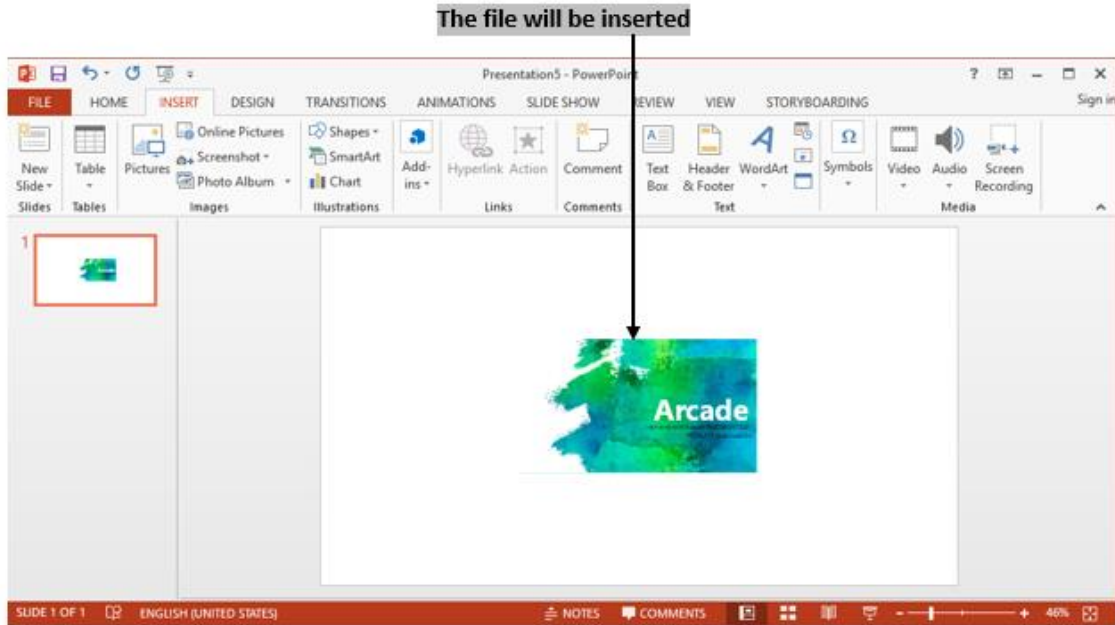
Resizing and scaling an object

First we will learn how to resize an object below:

- To resize an object in presentation mode, select the object, then click and drag on resize handle around the outline.

- You can rotate the selected object by clicking and moving rotate handle which is usually present at top of the object.

In INSERT menu, select Shapes
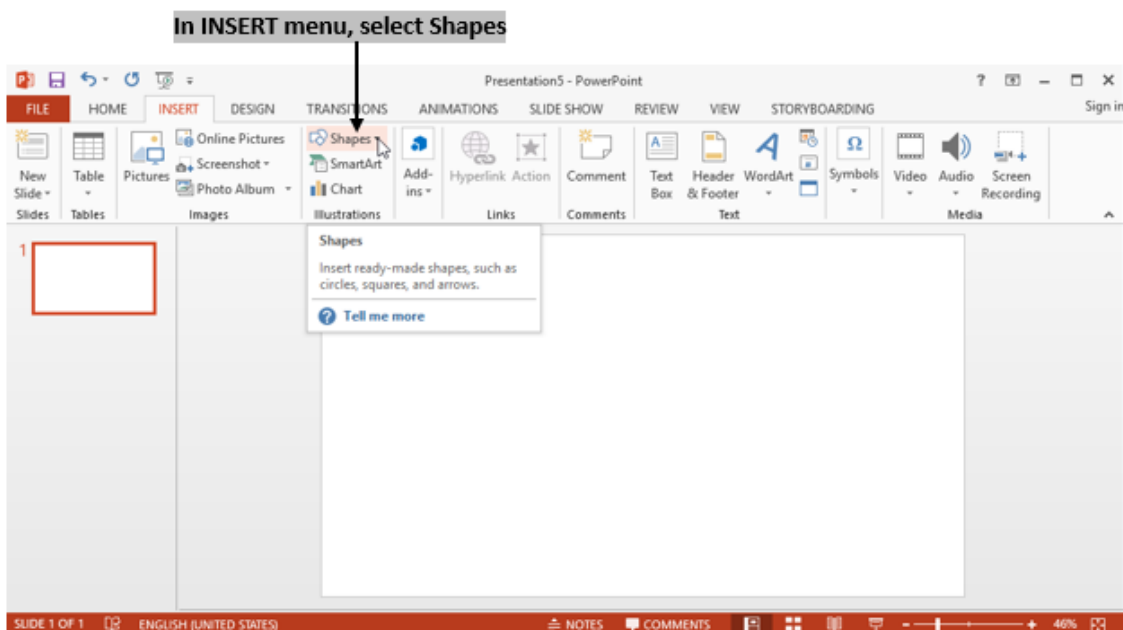
Select the shape of your choice
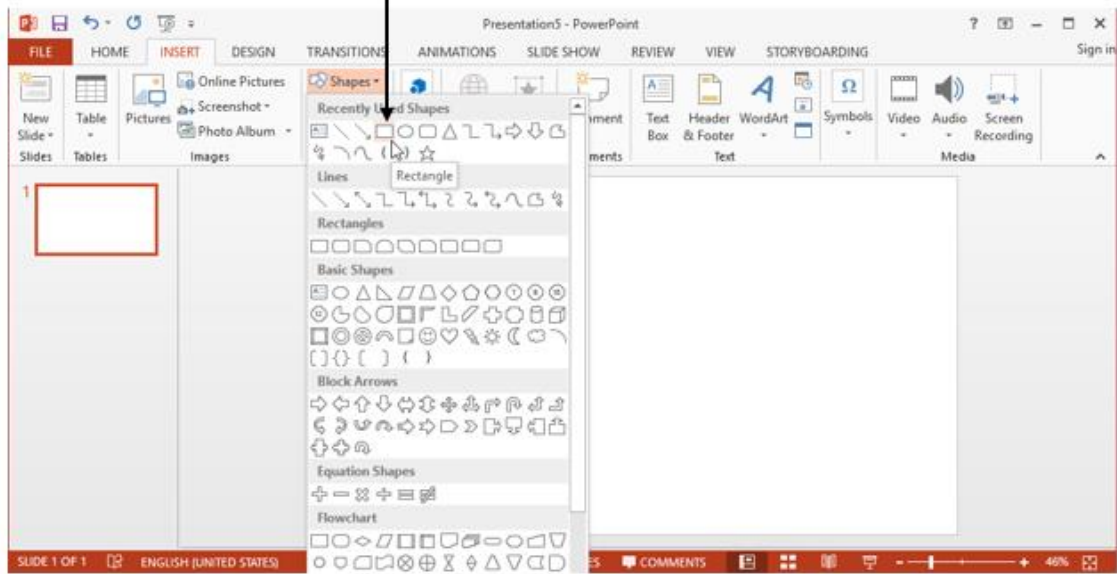
Draw the shape on slide
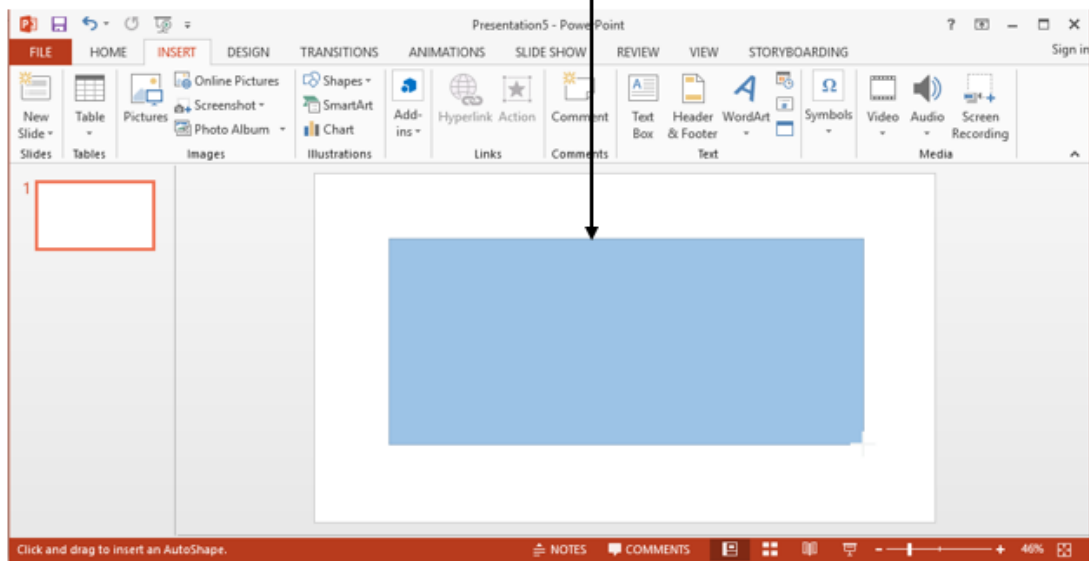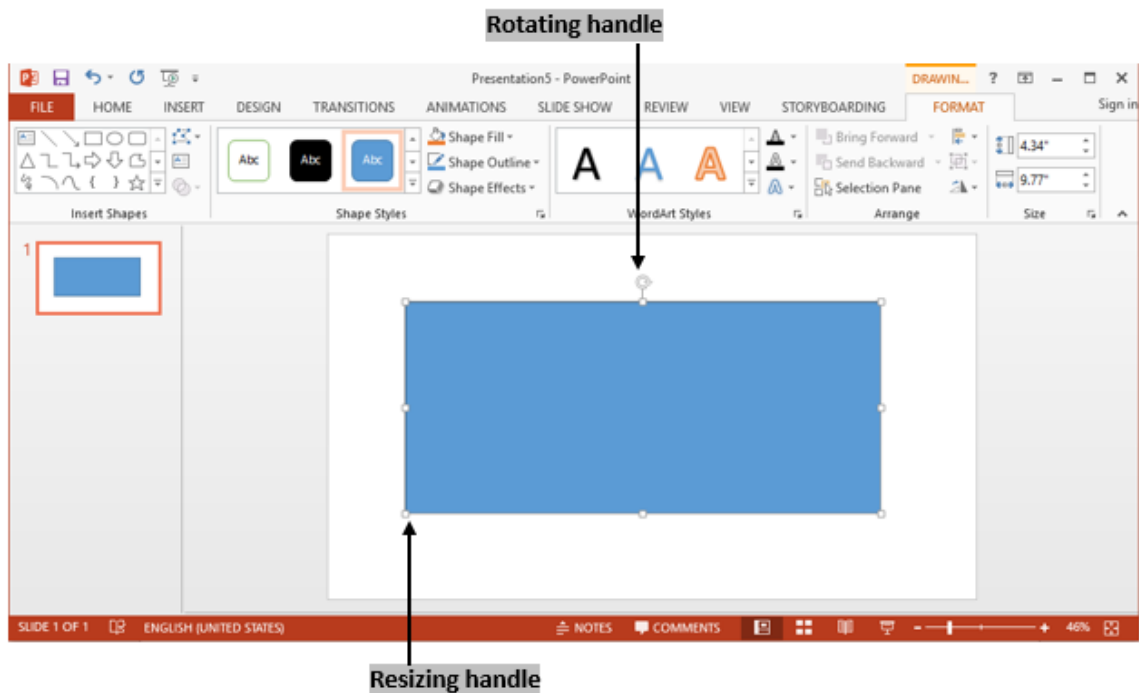
Next, we shall leran how to scale an object:

- To scale an object in the presentation mode, select the object.
- You can change the height and width of the selected object by right clicking on the **Size and Position** option, and change values accordingly.
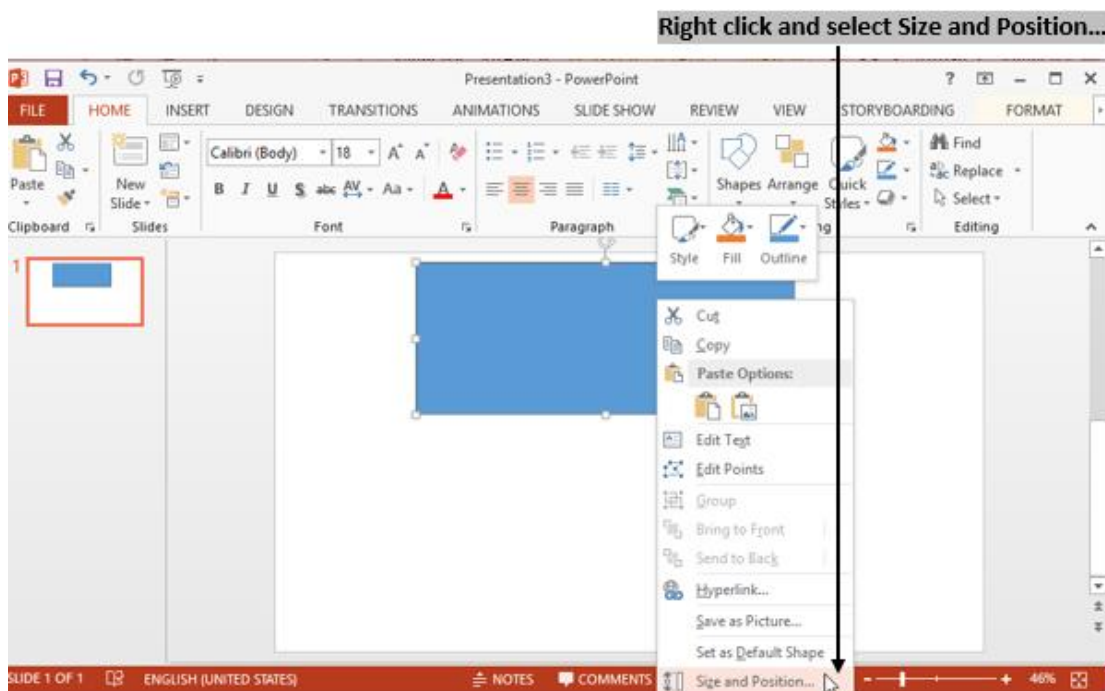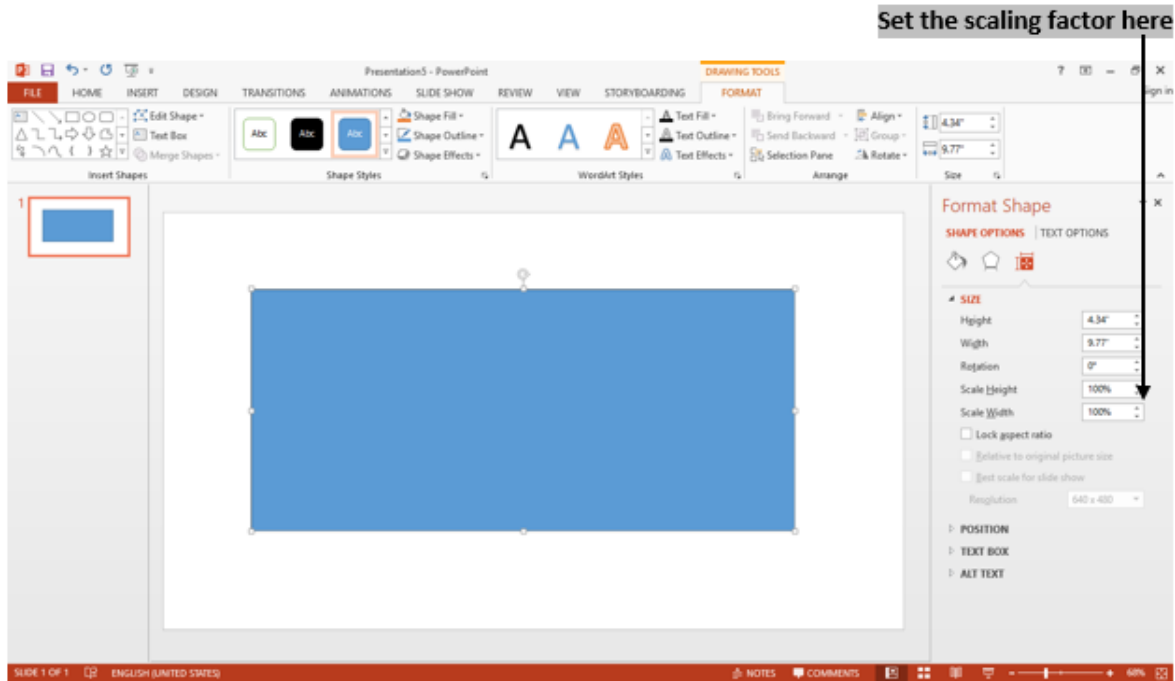
Providing Aesthetics

This feature helps our Powerpoint presentation to look more attractive and interesting.

Enhancing text presentation

Enhancing text can be done by altering font style, font color, font size, and using font case options.

Font Color

- Enhancing text can be done using "font color" from "Home" menu.
- The text will be displayed in the color you have selected.

Select the text

Change the text color from here
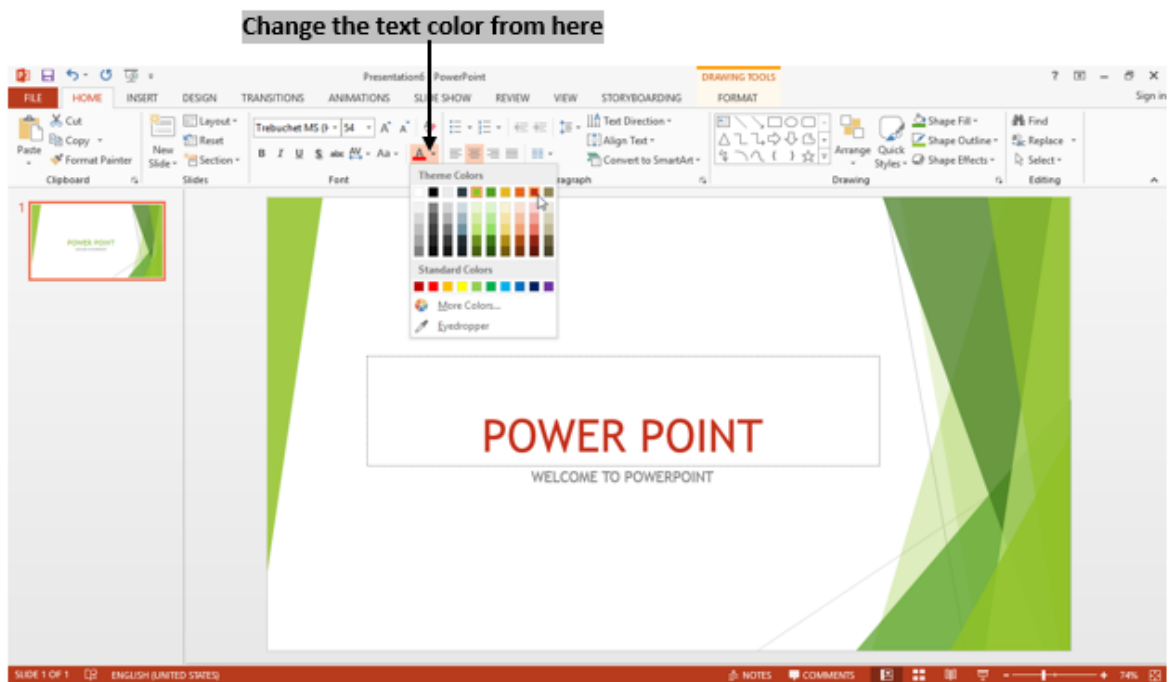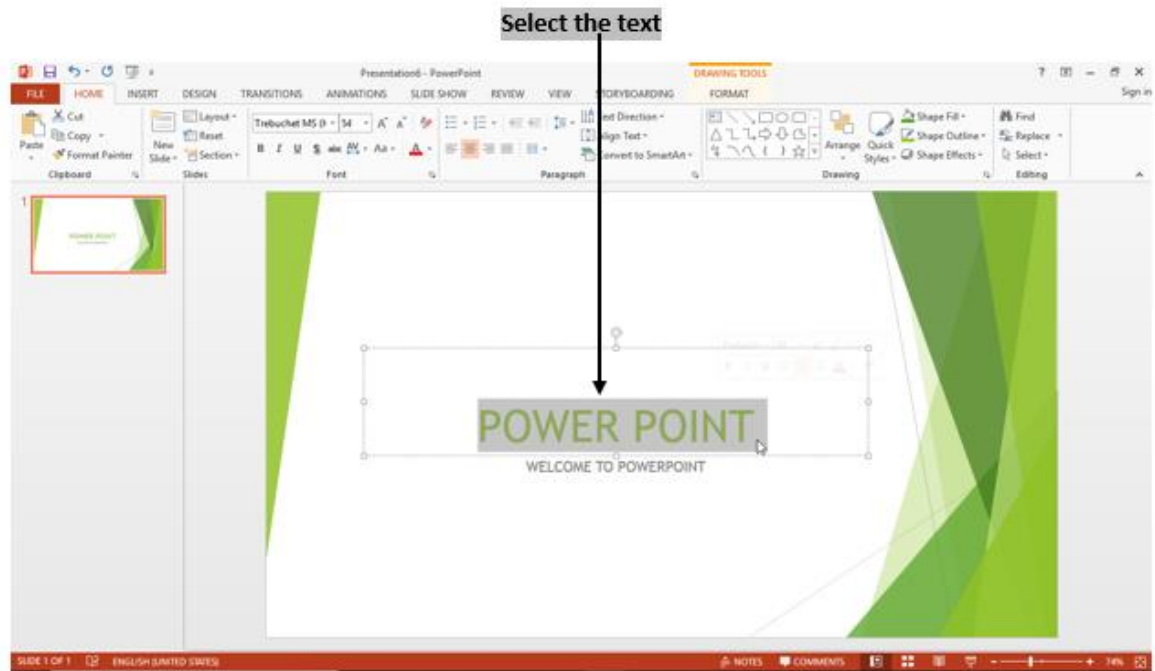
Font Style

- Enhancing text can be done using "**Font Style**" from "**Home**" menu.
- You can change font styles of the text by selecting from the list of options in the drop down menu.

Select the text

Change font style from here
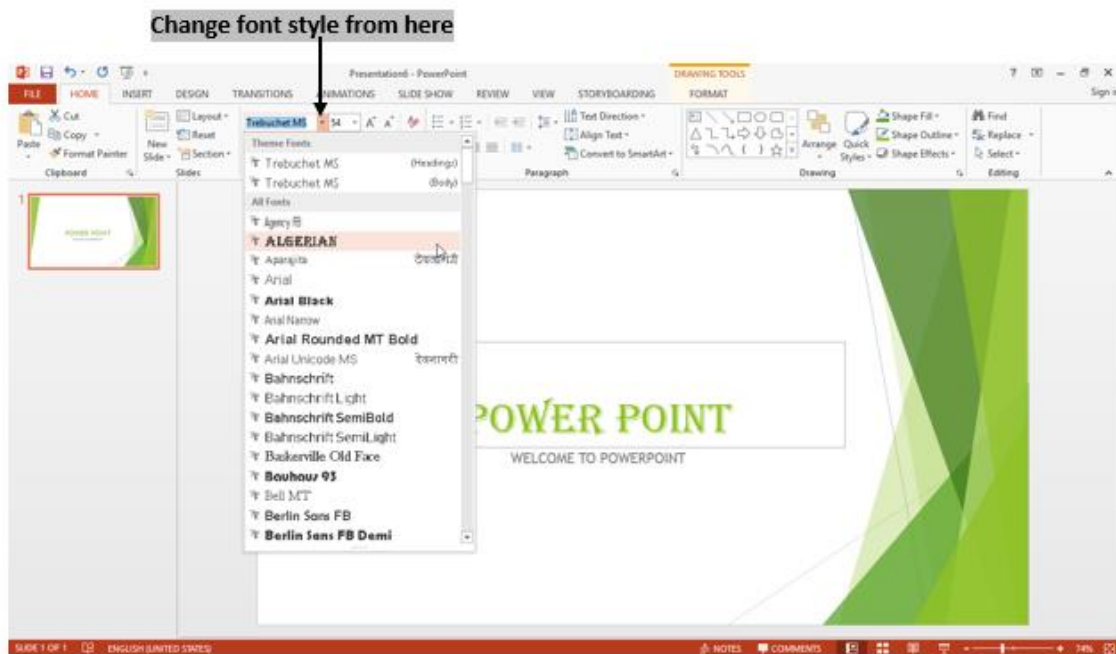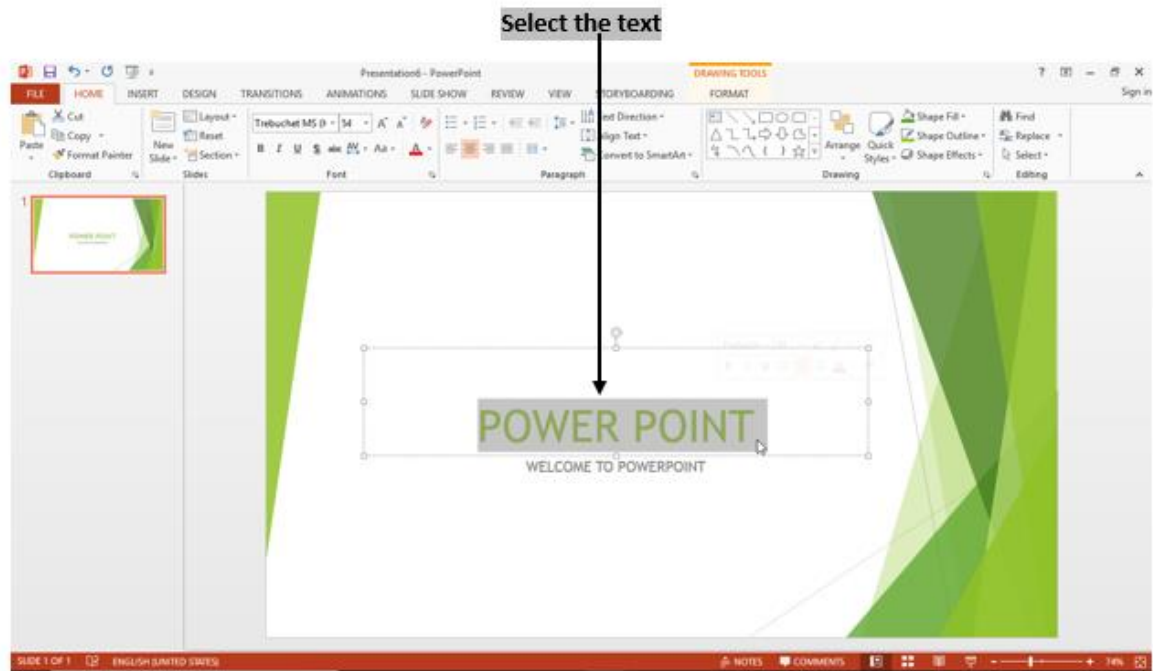
Font Size

- To increase or decrease the font size, use "font size" option from "Home" menu.

Select the text

Change font size from here
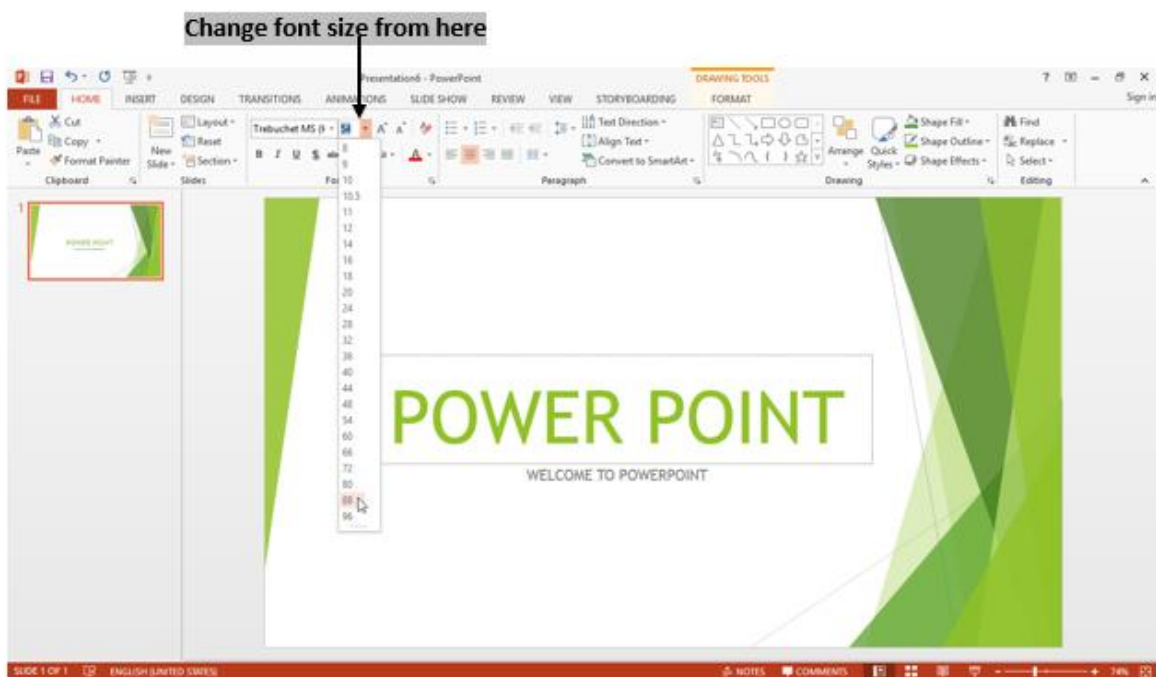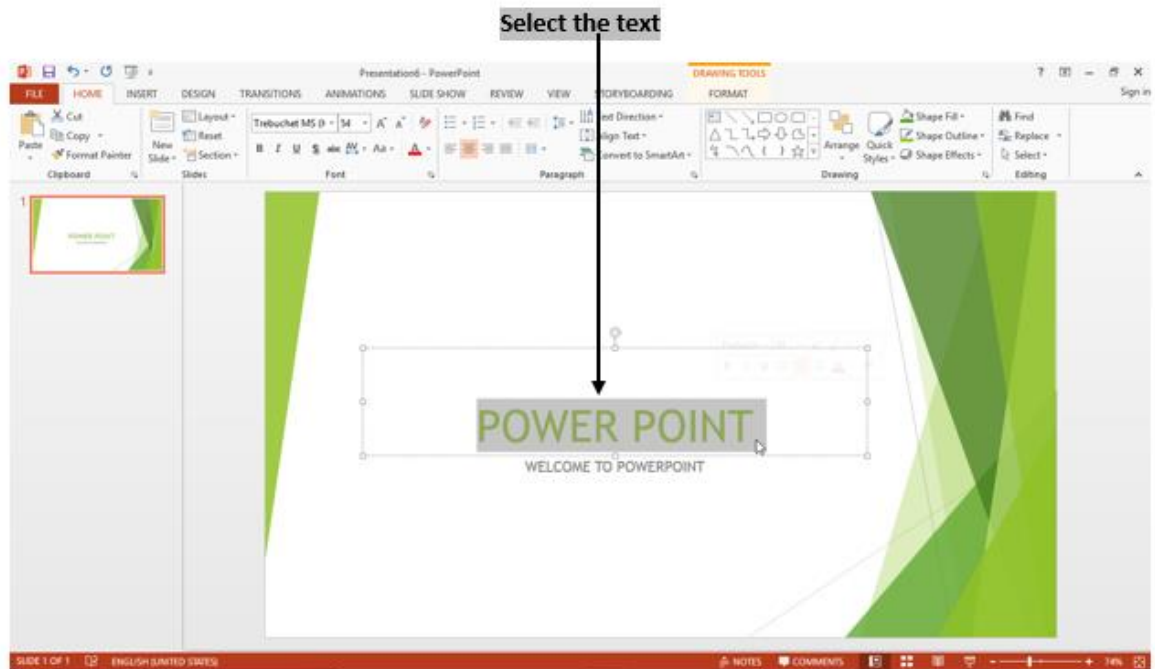
Highlight Text

- To enhance the text style, you may select either bold or italic.
- You can also highlight your text using the underline option or text shadow.
- Shortcut key for underline is **"Ctrl + U".**
- Shortcut key for bold is **"Ctrl + B".**

- Shortcut key for italic is **"Ctrl + I".**
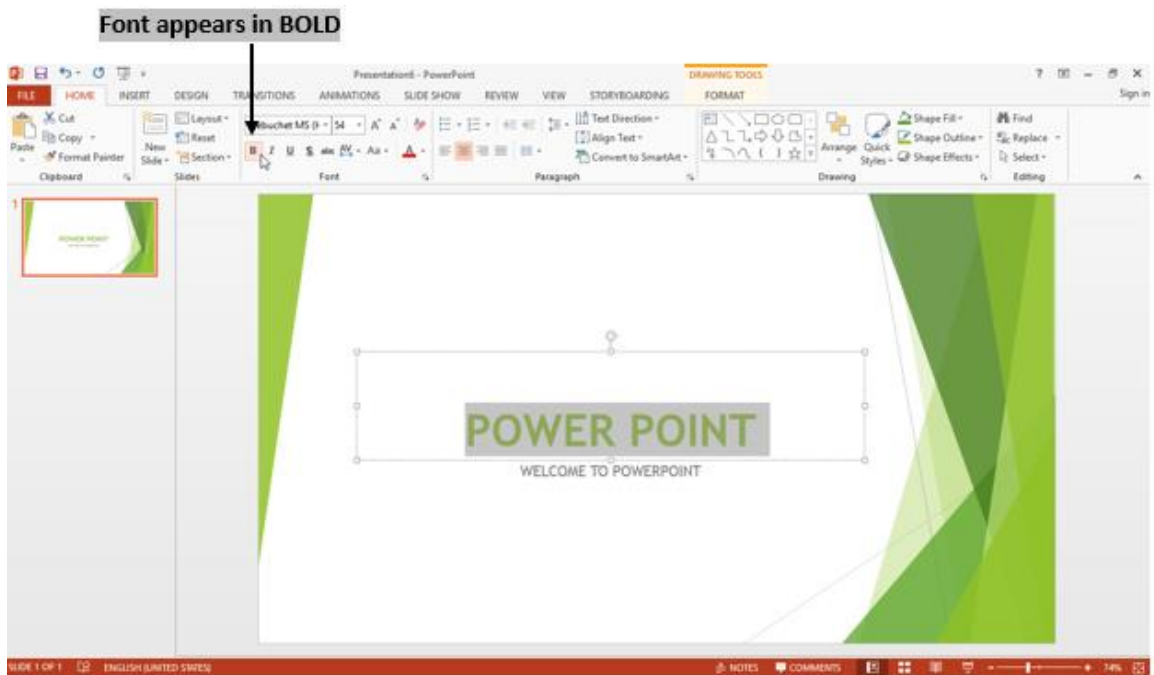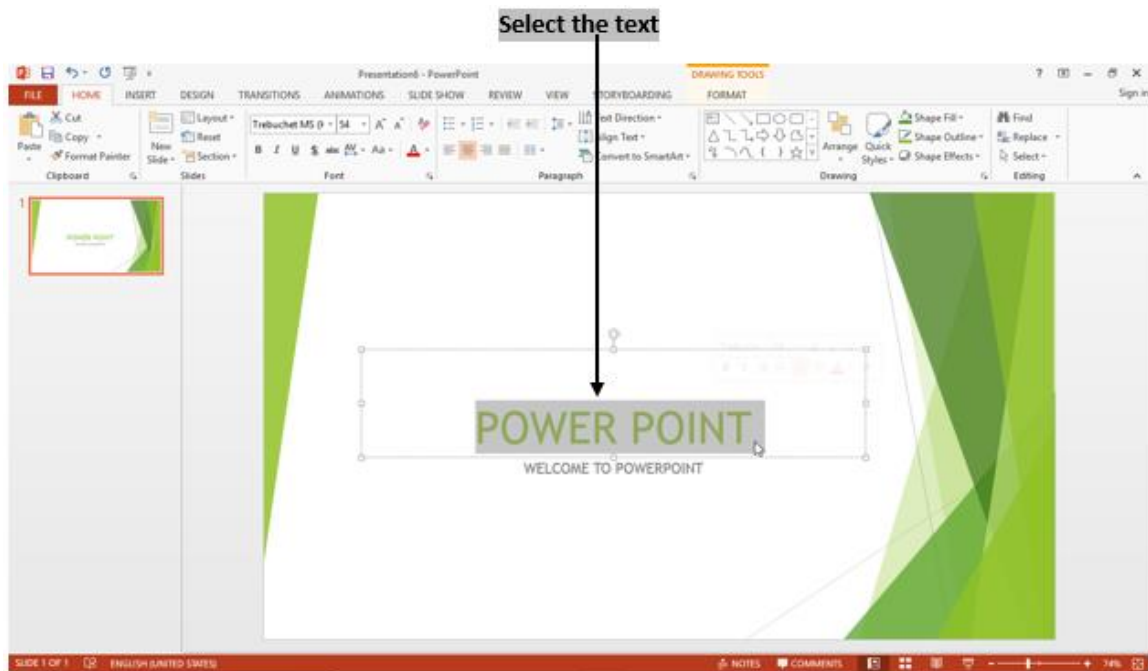
Font appears in ITALICS
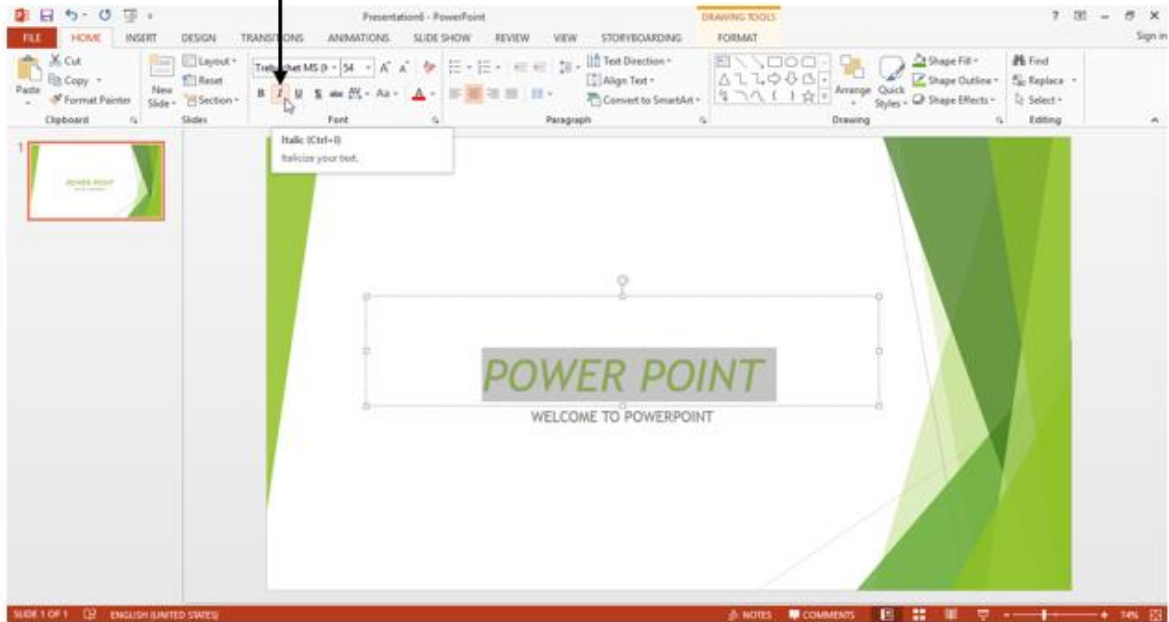
Font is underlined

Text shadow is added
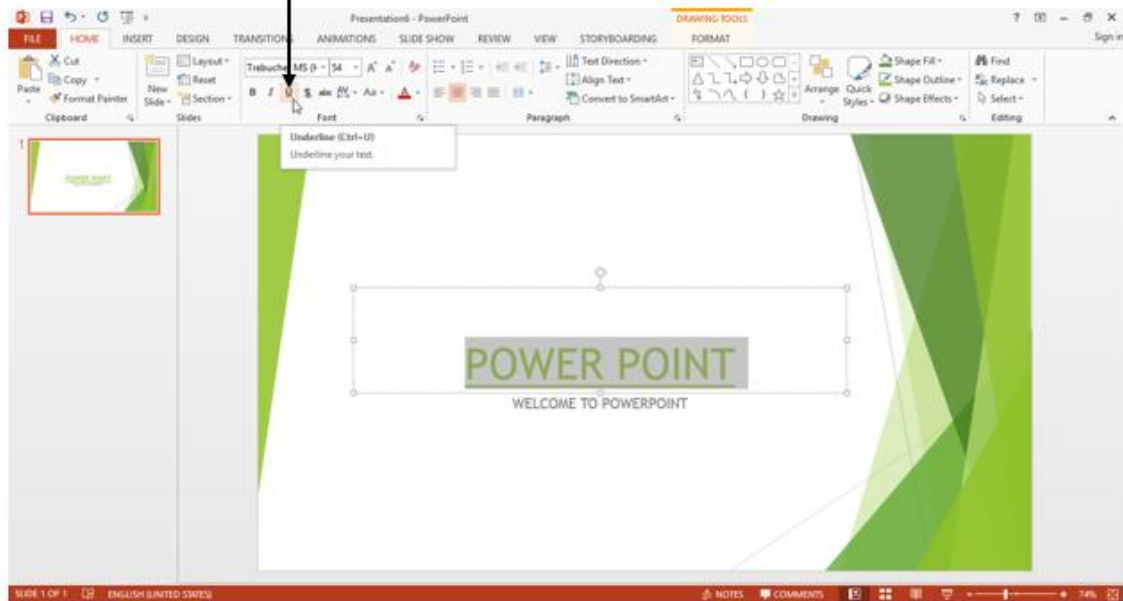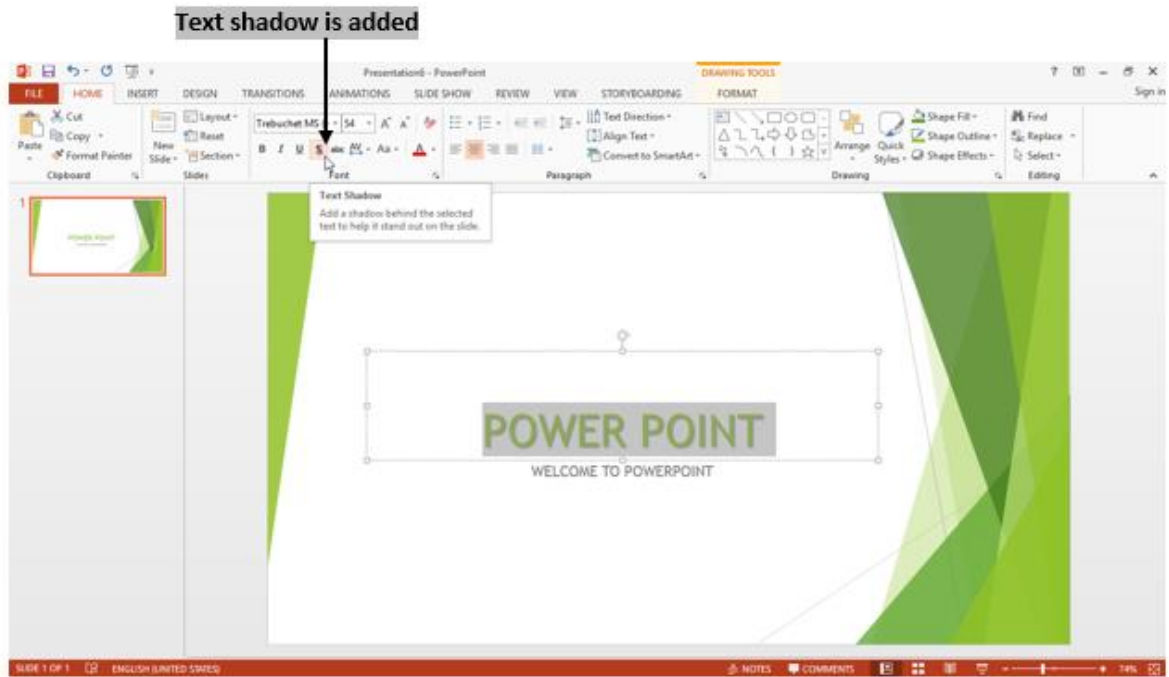
Font Case

You can highlight the text by changing it to upper, lower or mixed case.

Font case is changed from here
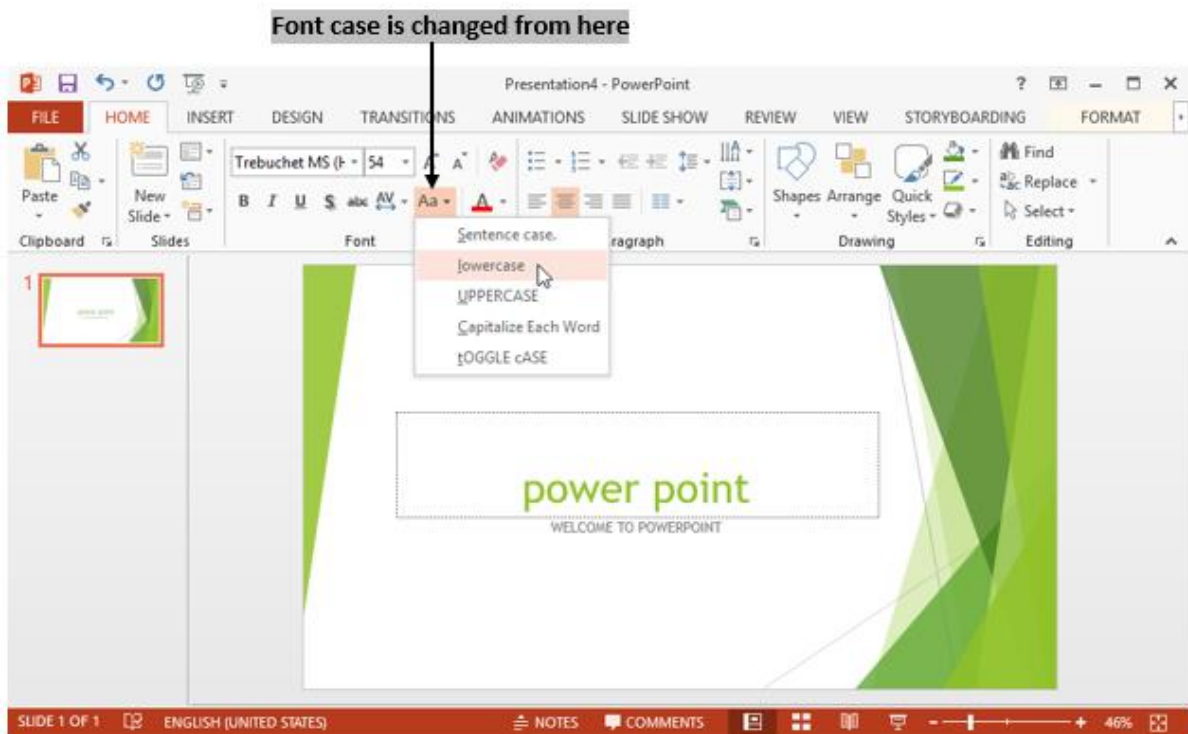
Working with color and line-style

Draw shapes and fill color, follow the below steps:

- To draw a shape, right click and select Fill option.
- Fill with the desired color.
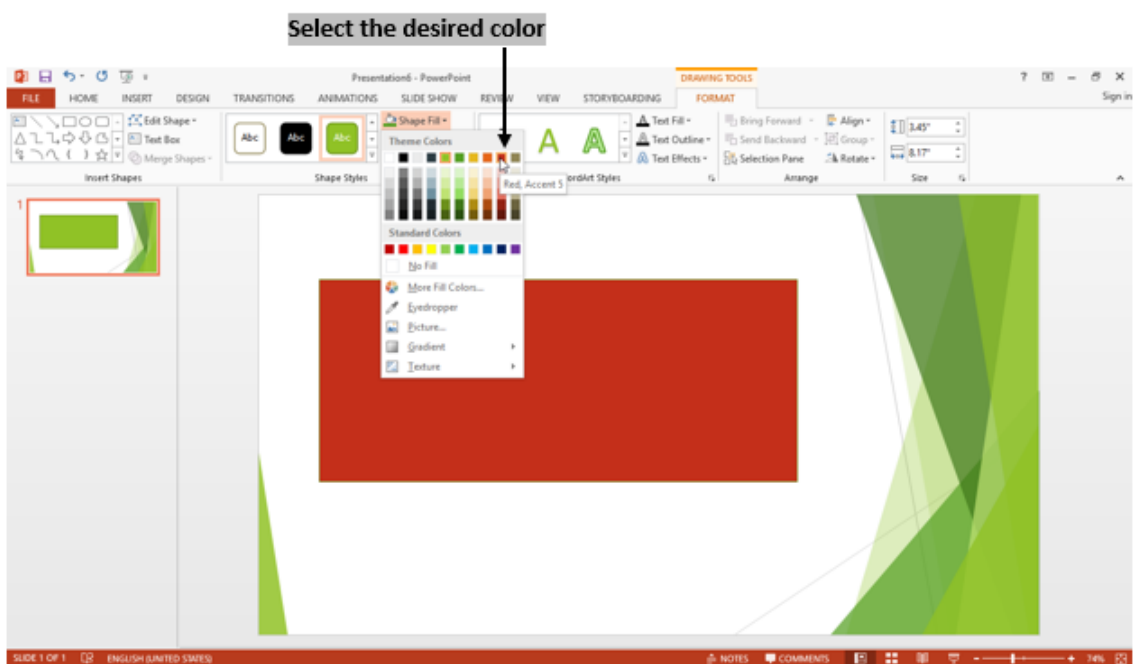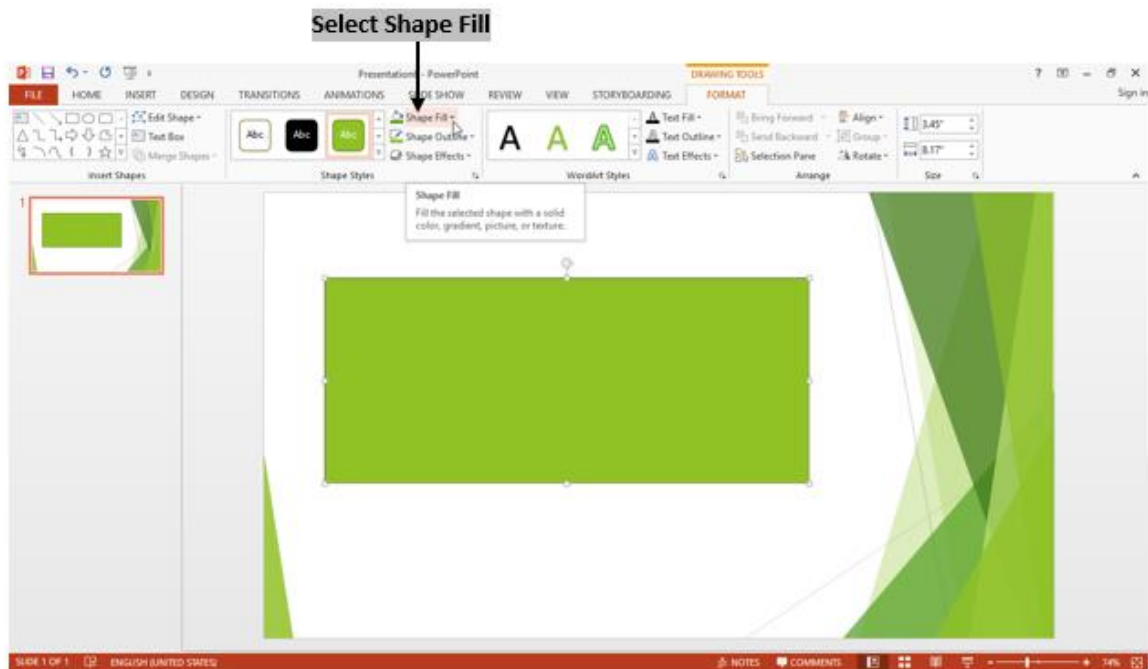
Background color

Giving background color to PowerPoint image makes the presentation more appealing and beautiful. To apply background, go to **Design** menu and select **Color** option.

In DESIGN menu, select More drop down arrow.
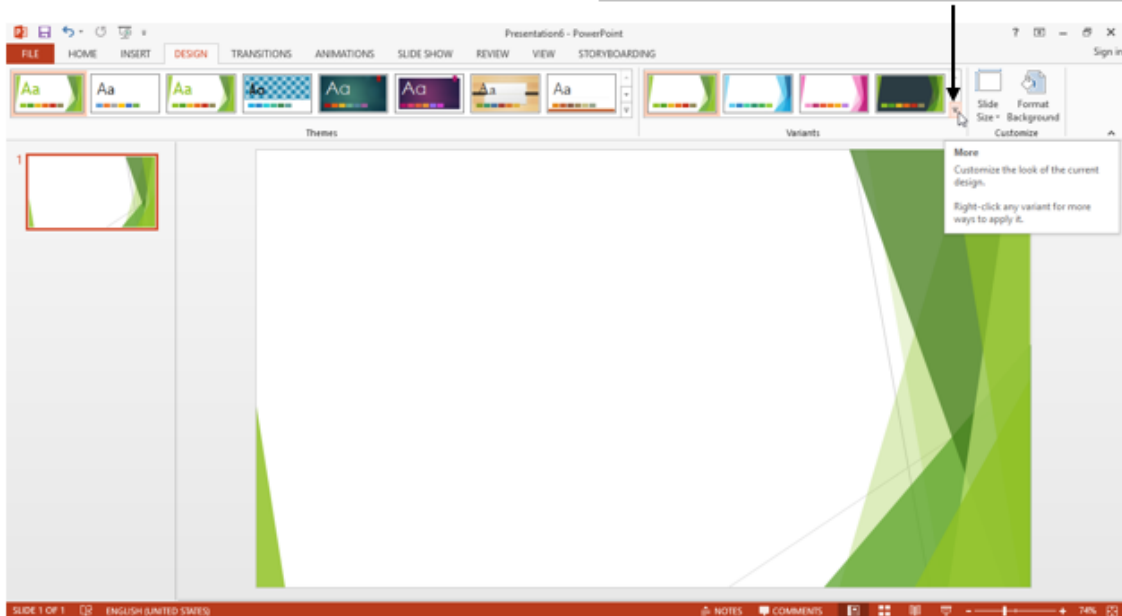
In Colors, select the desired background color
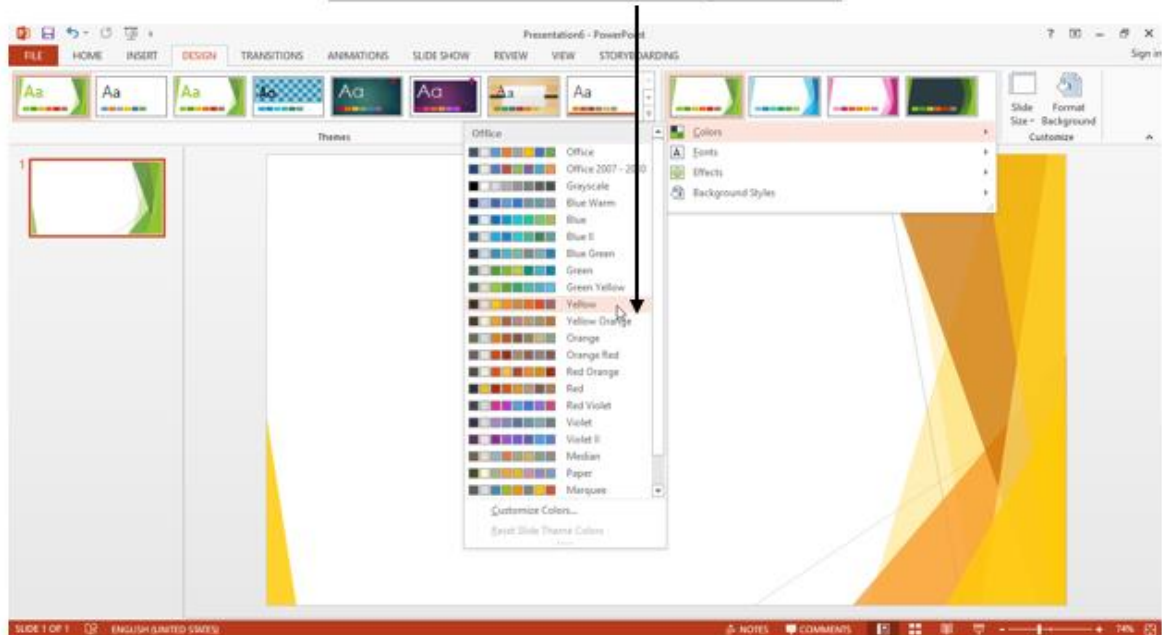
Line Style

- A line is termed as a connector between two points.
- In order to insert a line in your presentation, go to **Home → Shapes** and select the desired line style.
- Now you can draw line on the slide pane.

Select the desired line

Draw the line on the slide
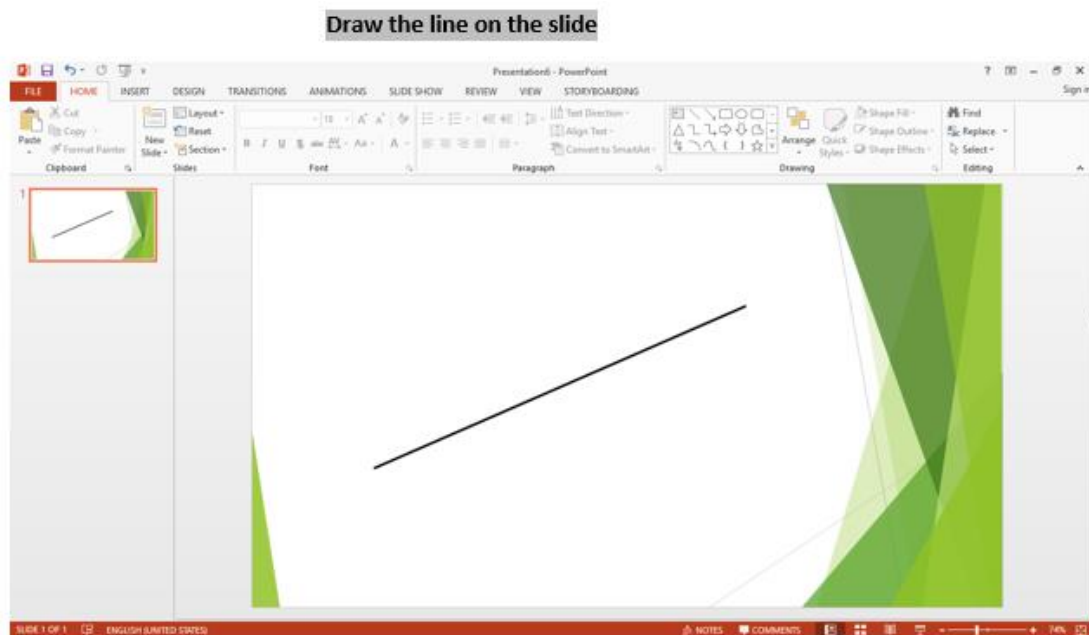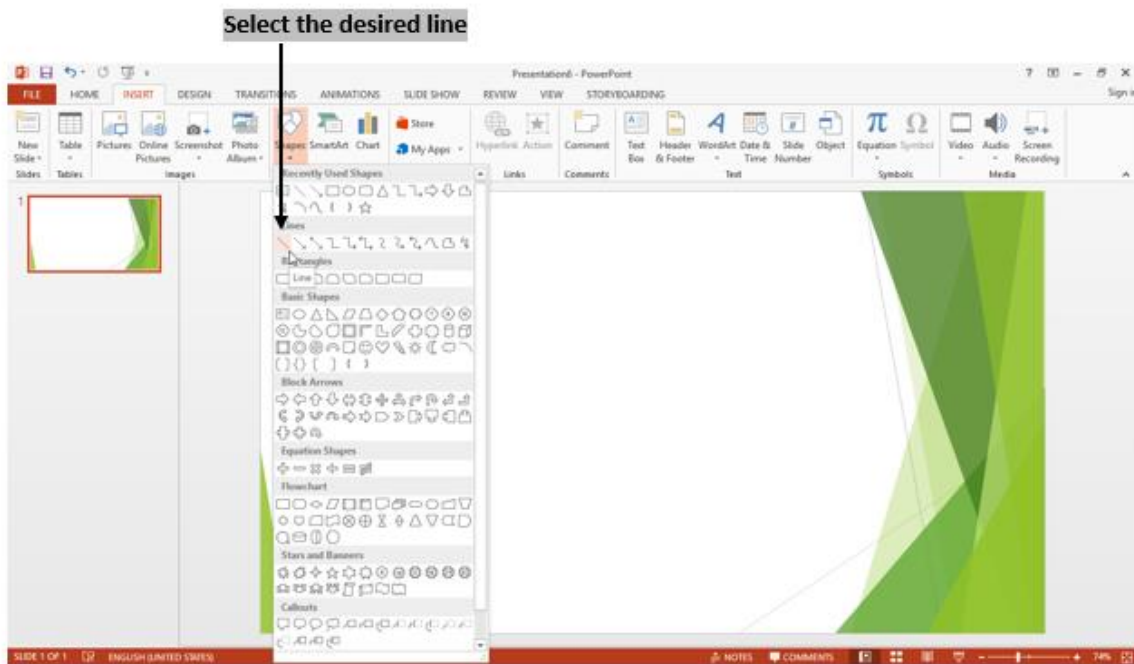
Adding movie and sound

- To insert a movie or audio in a slide, go to Insert video or audio options and select audio or video file you want.

- The inserted audio or video file will be displayed in your slide.
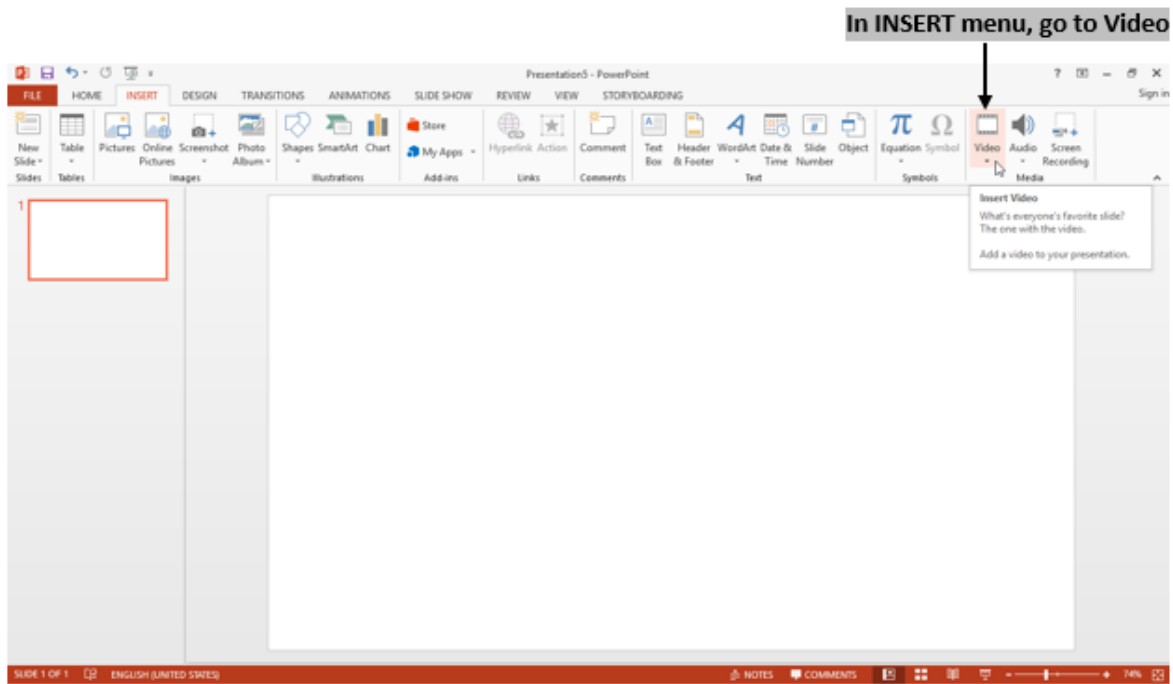
Browse and select the desired video. Click on Insert.
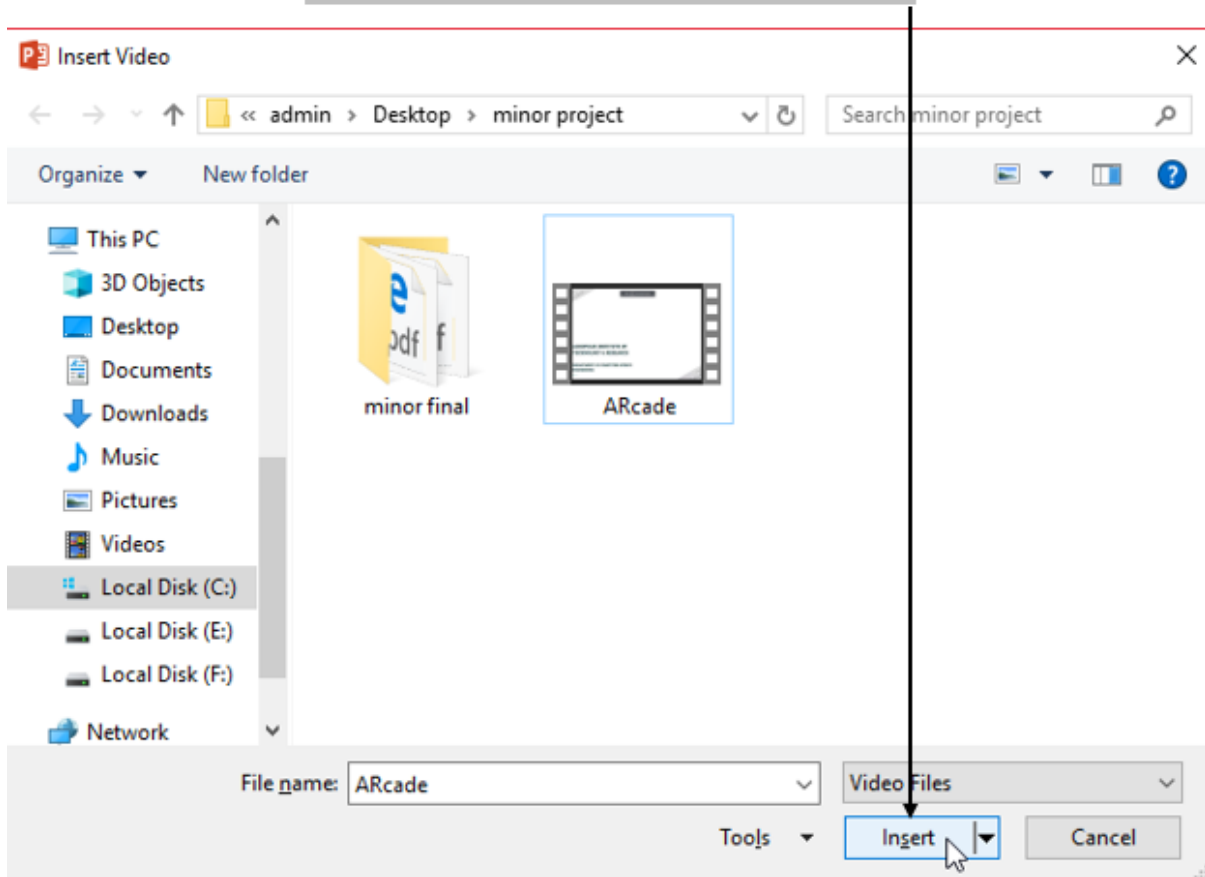
Video is inserted on the slide
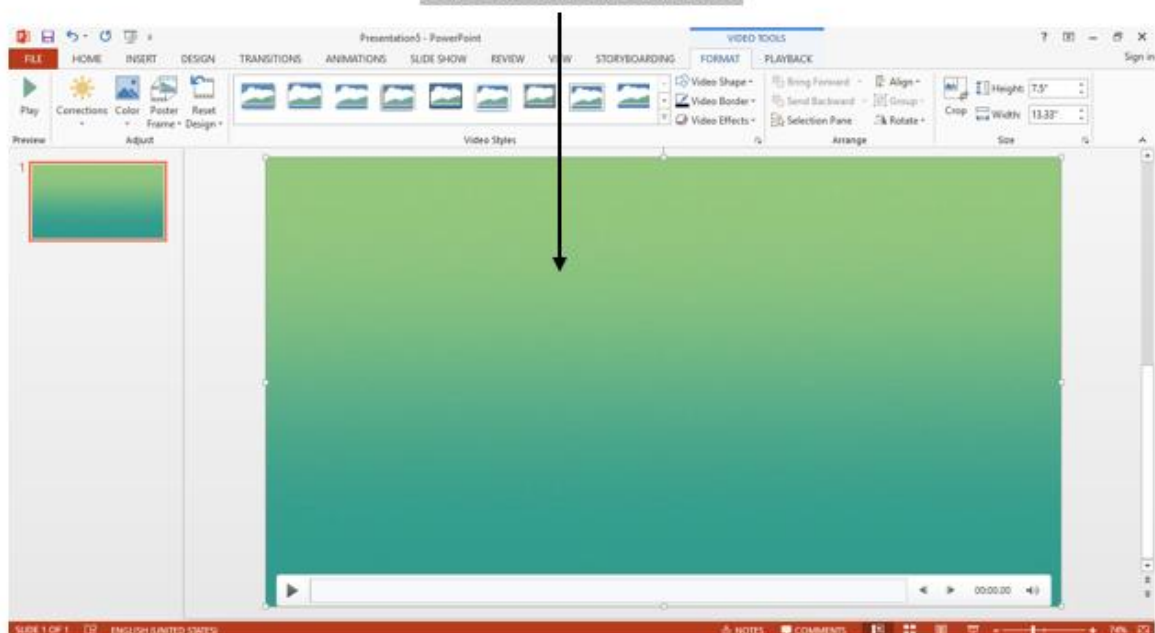
- To play a video or audio file in the presentation, follow the steps below.
  1. Open the slide that contains the video or audio file.

Select the slide containing video
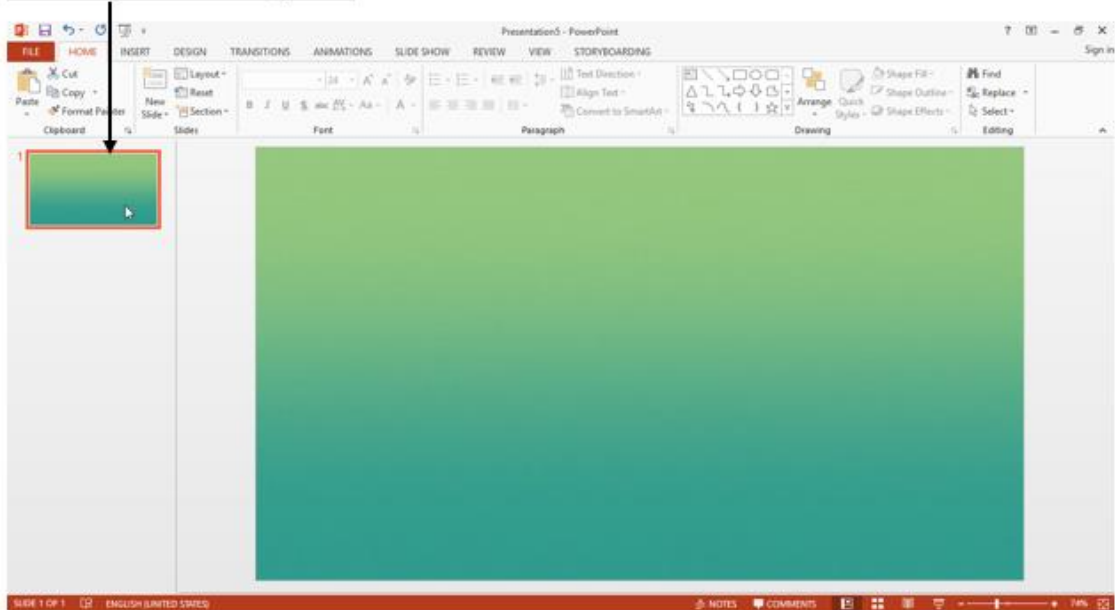
2. Click play from playback menu.

Select Play in PLAYBACK menu
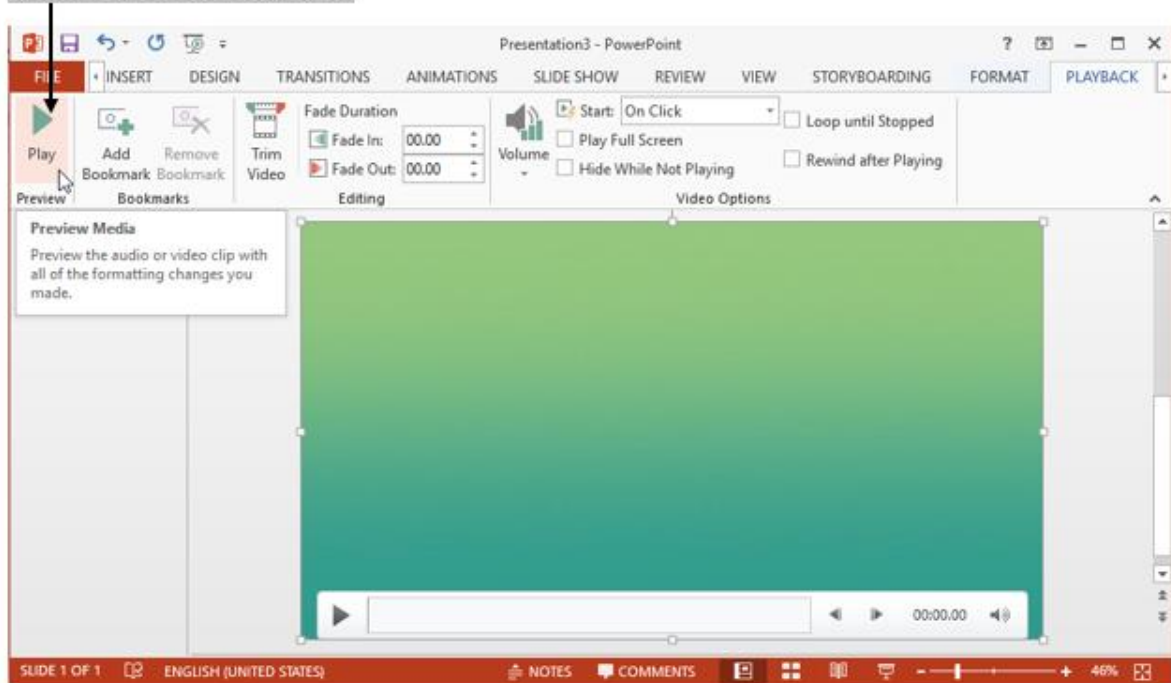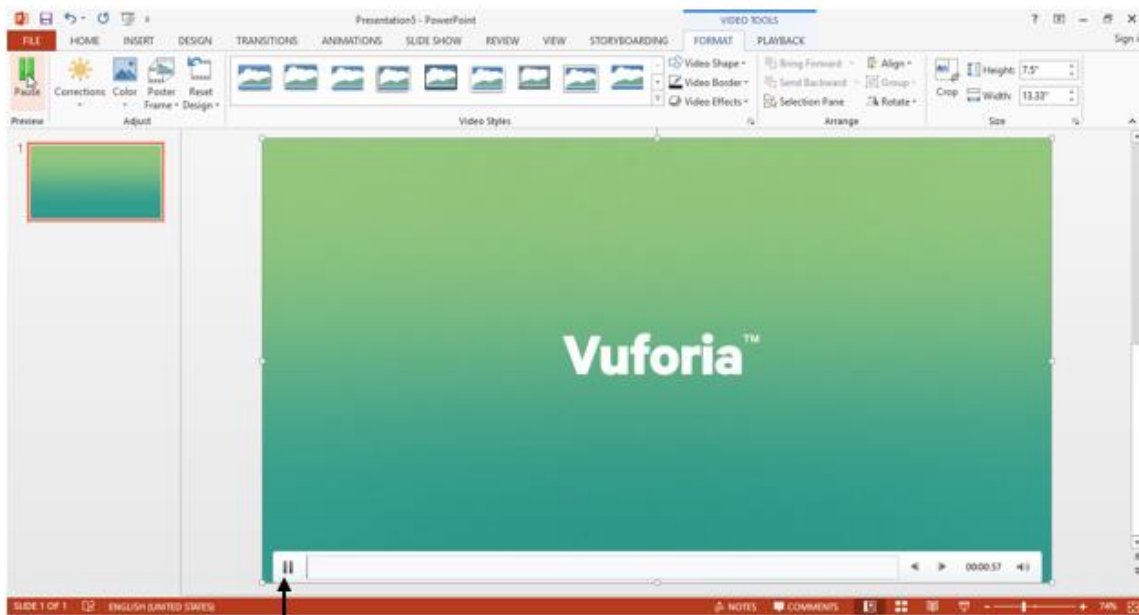
The video starts playing

- You can also use playback menu to explore options such as: Play Full Screen, Hide While Not Playing, Loop, etc., as well as adjust volume or mute playback of the file.

Things can be manipulated at run-time
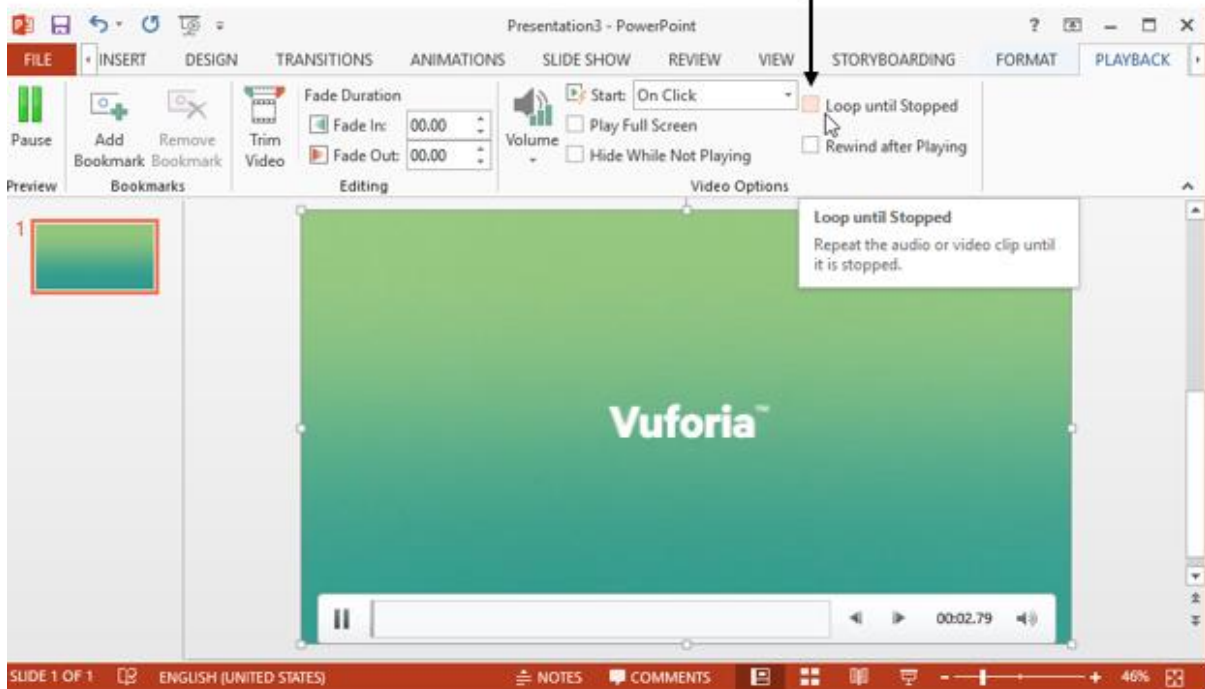
- Current playback position in the file is indicated on horizontal slider.
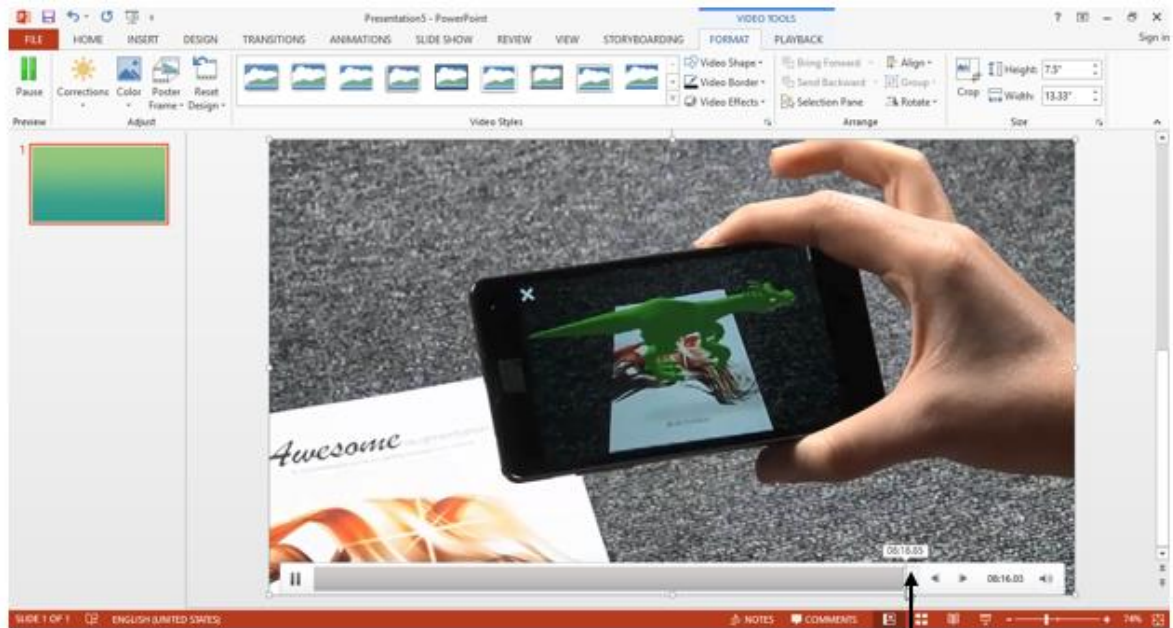
Current playback position

- Use the vertical slider to adjust the playback volume.
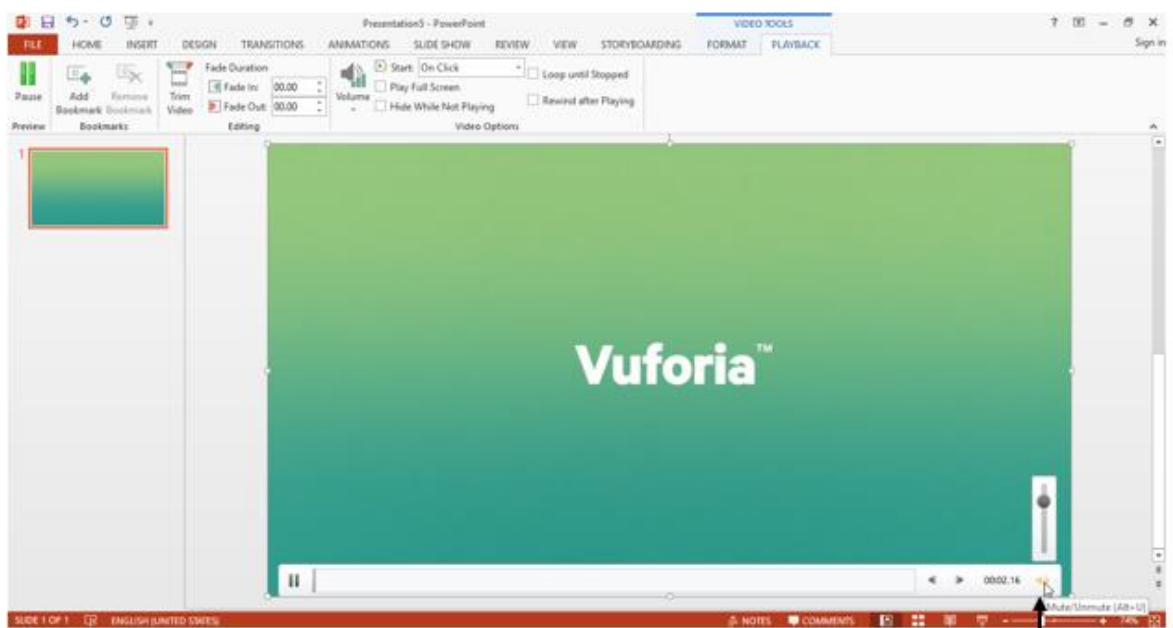
Volume can be adjusted from here

- Video files provide zoom-in feature which can be selected from "View" menu.

In the VIEW menu, select zoom option and the percentage of zoom required.
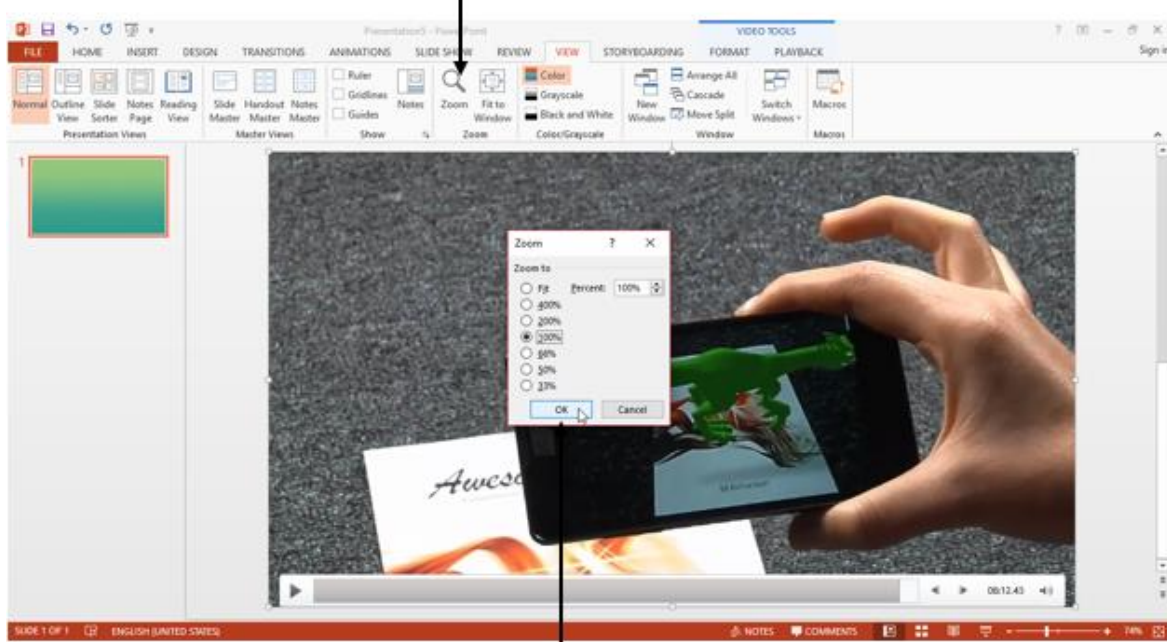
Click on OK

Zoom to the entered percentage is applied
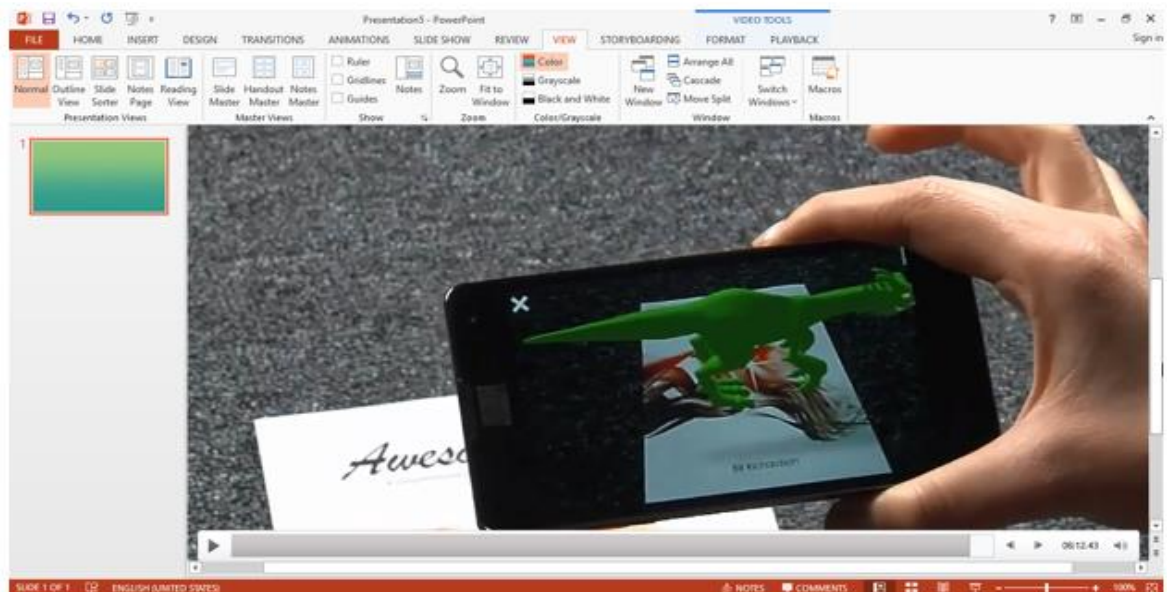
- PowerPoint enables to see the preview of audio or video files.
- To preview the file, go to **Animations → Preview**.

In ANIMATIONS menu, select Preview
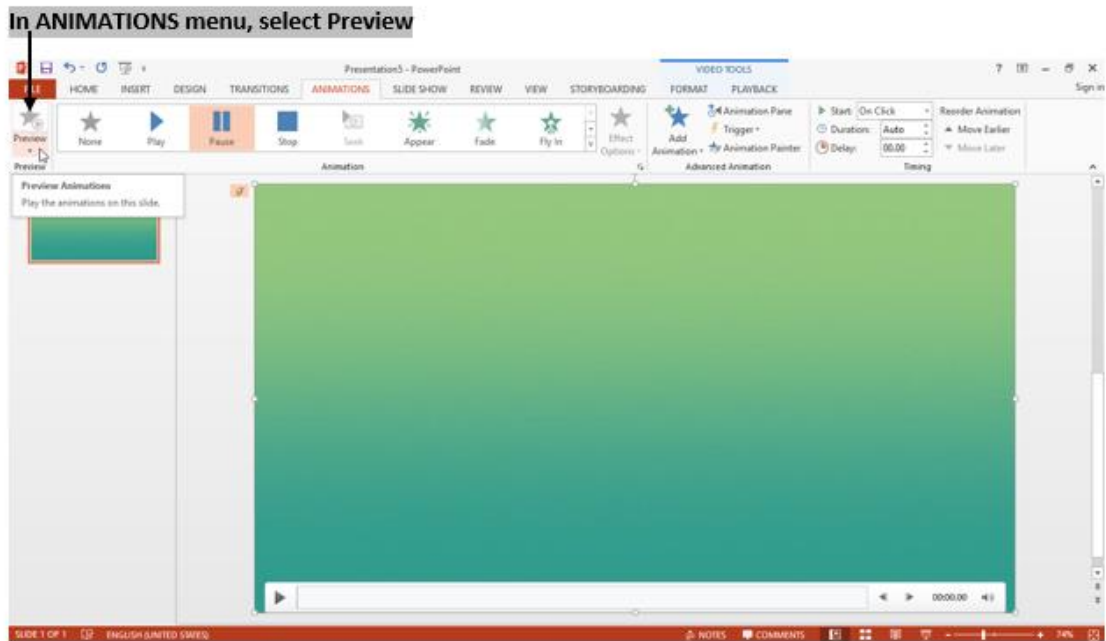
Program Example

We will look at the following example:

Aim:

To create a simple presentation with at least 5 slides to introduce a friend and include audio in slides.

Procedure:

- Boot the system under Microsoft Windows 2013.
- Click Start → Program → MS-Office → MS-PowerPoint.
- Once you open PowerPoint, choose the type of presentation you want.
- Select the desired presentation style in creating a new presentation window and click ok button.
- Enter information about your friend.
- Right click on the empty space on the slide, select background color and click "Apply".
- Select Slide → Transition.
- Select an effect and click Ok button.
- Click Insert → Audio, select a file to insert and press 'ok'.
- Click the first slide and drag the mouse to select all the slides.
- Run your presentation by clicking on the Slide Show or by hitting F5 key.

Result:

- Thus, a simple presentation to introduce your friend is created.
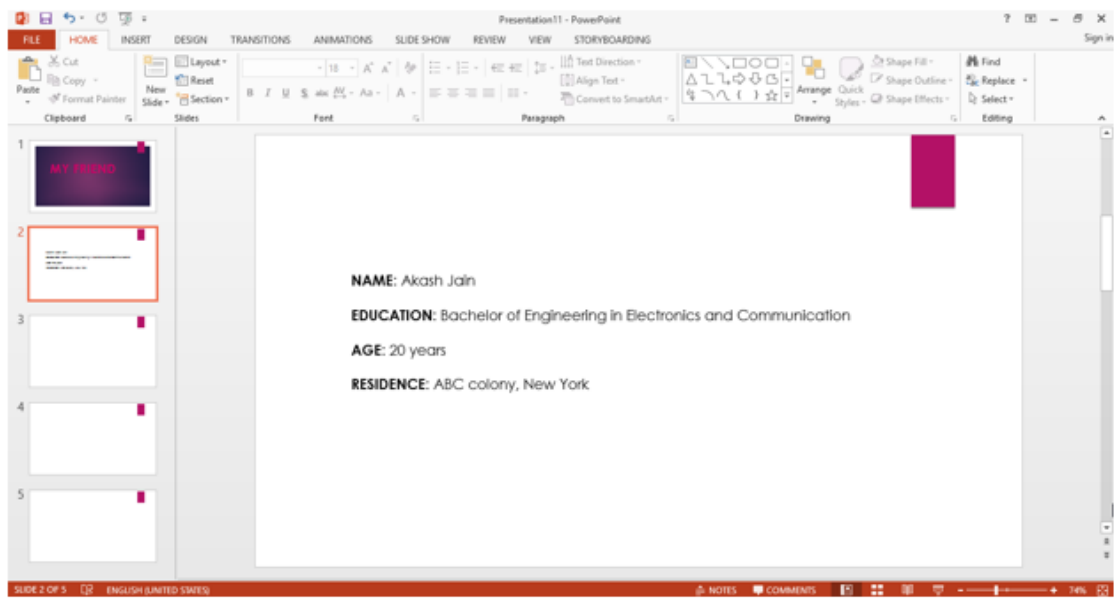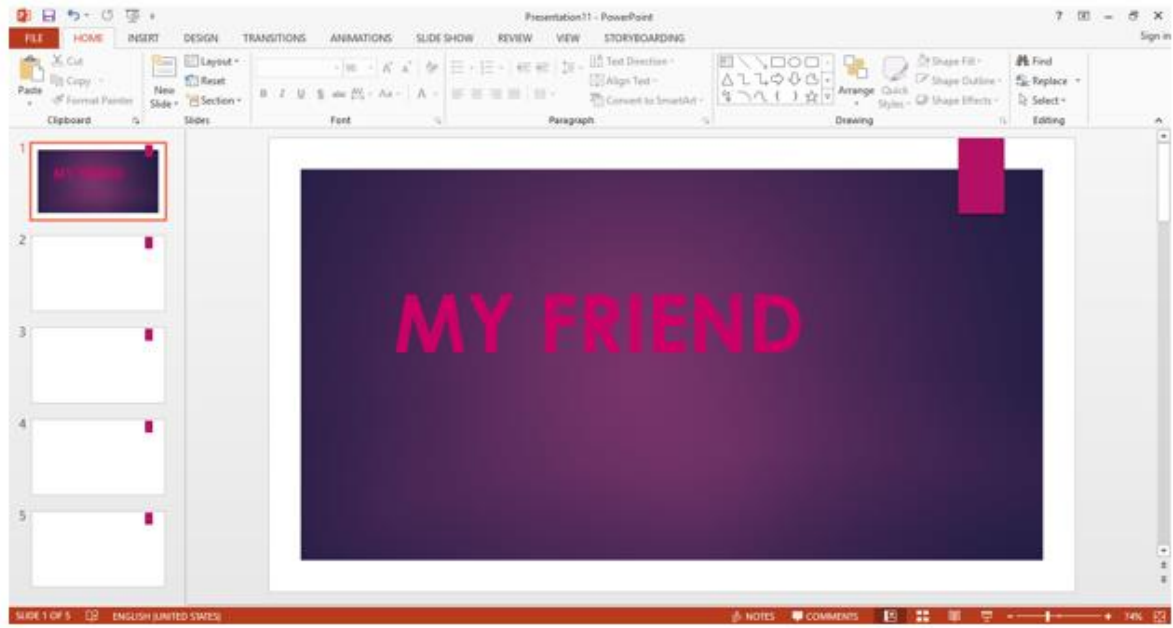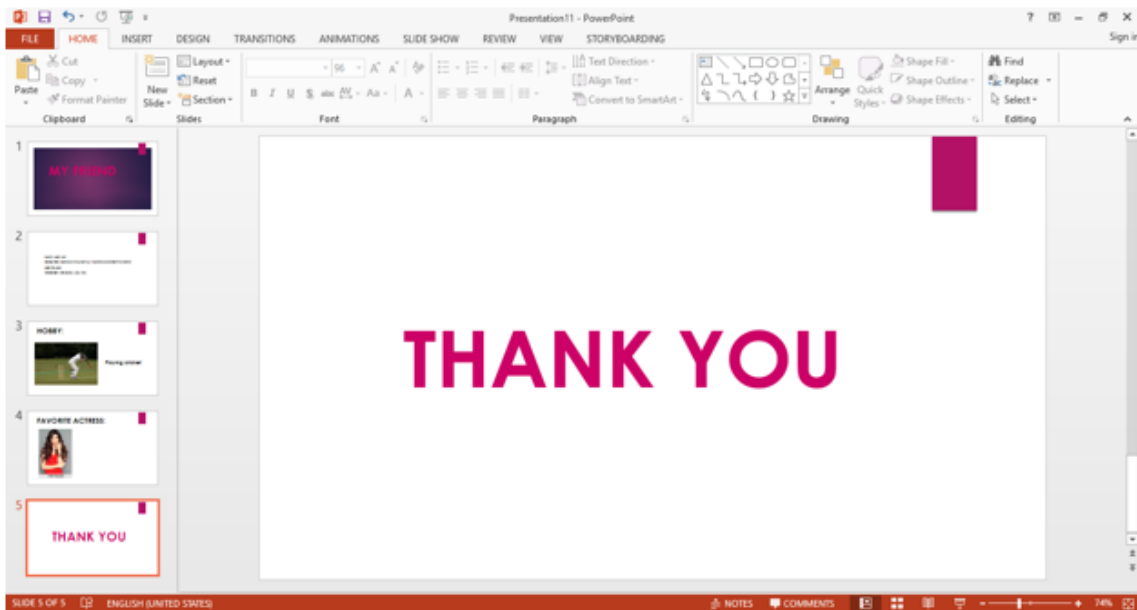
Adding headers and footers

- You can add headers and footers to the presentation.
- To insert headers and footers to the presentation, go to Insert menu → select Header and Footer icon.
- You can include or exclude the time and date, slide number and footer information in the slide.
- Make changes and click the option "Apply to all" to save the changes.
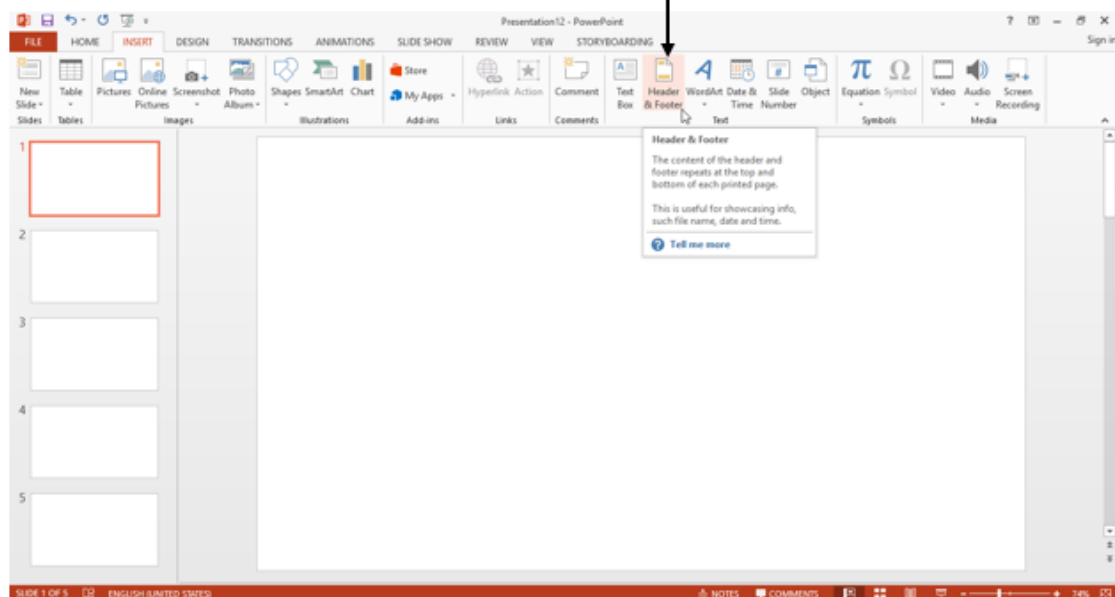
Select the desired options and click on Apply to All
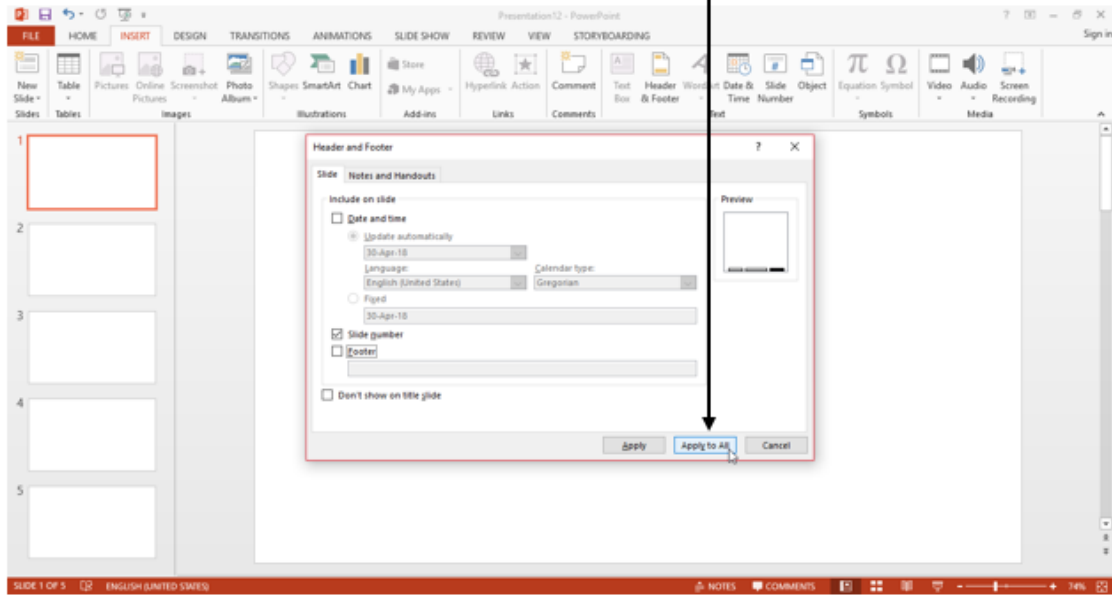
Presentation of Slides

We shall learn various features present in

Viewing a presentation

- Viewing pane is very similar to other application windows.
- It has a menu bar at top of the window which displays toolbar with shortcut icons for the most frequently used options.
- Status bar at bottom of the screen displays the status information, such as number of slides, current slide, word count, etc.
- Middle pane displays slides in the presentation, as you can see this section contains three panes.
- The panel on the left displays a thumbnail image of the slide and allows you to rename, delete or rearrange them.
- The panel in the center allows you to view the slide presentation.
- The panel on the right displays formatting options for the selected object.

Viewing pane
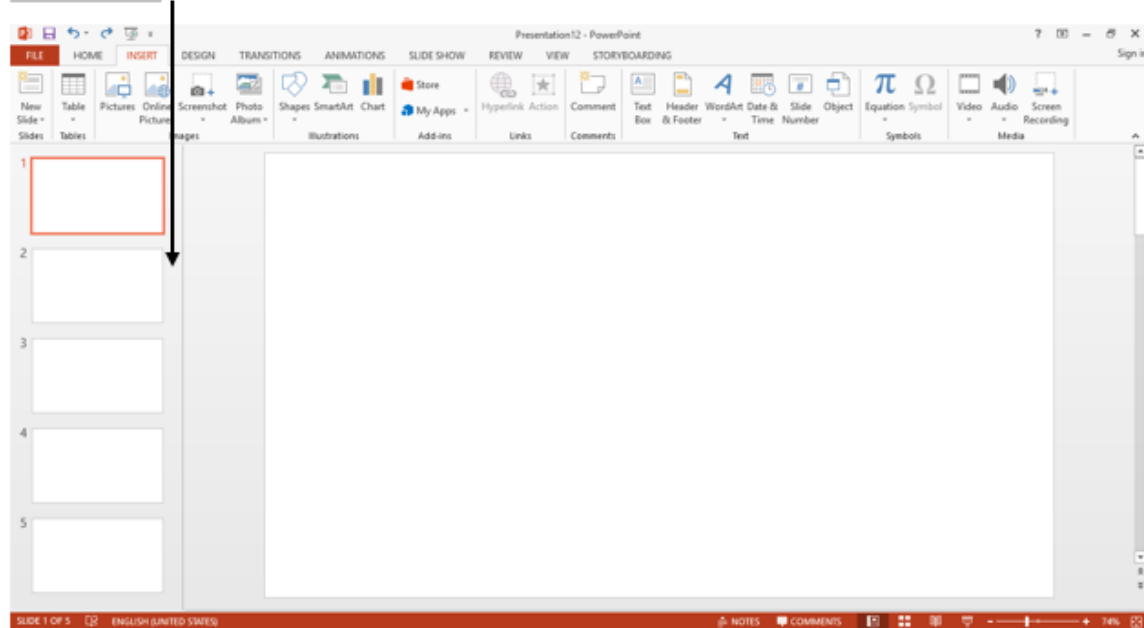
Choosing a set up for presentation

- In order to select set up for presentation, go to Slide Show and select set up Slide Show option.
- In the window displayed, make the changes accordingly and save the changes by clicking "ok" button.

In SLIDE SHOW menu, select Set Up Slide Show
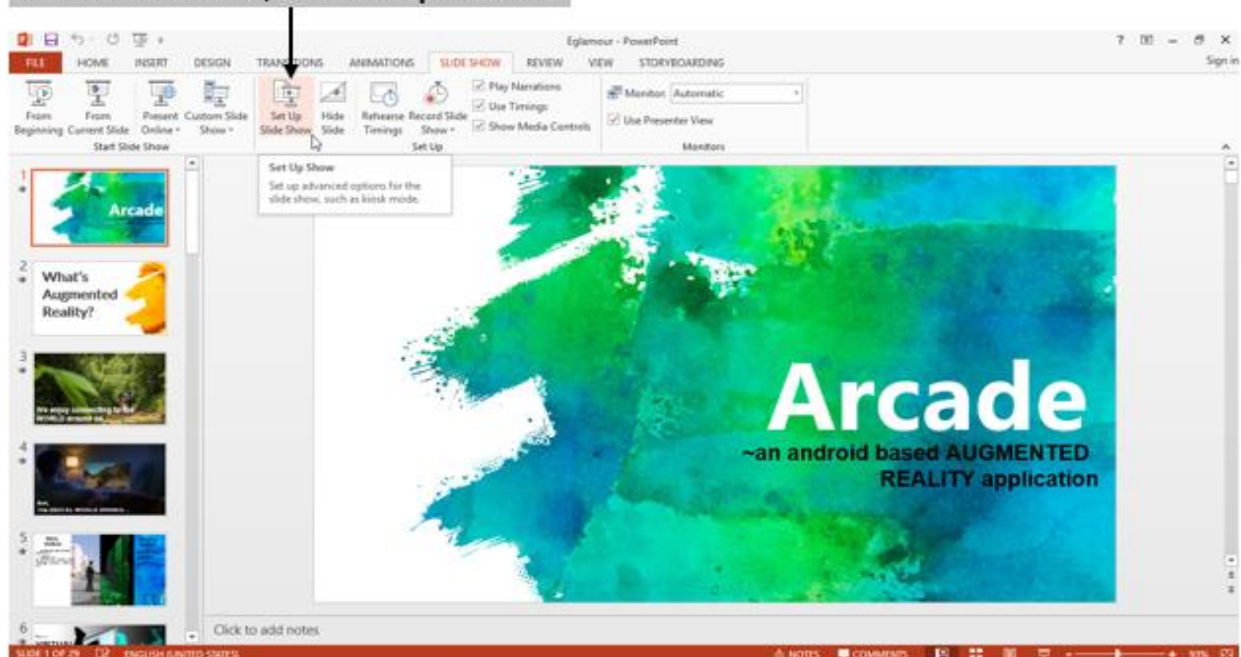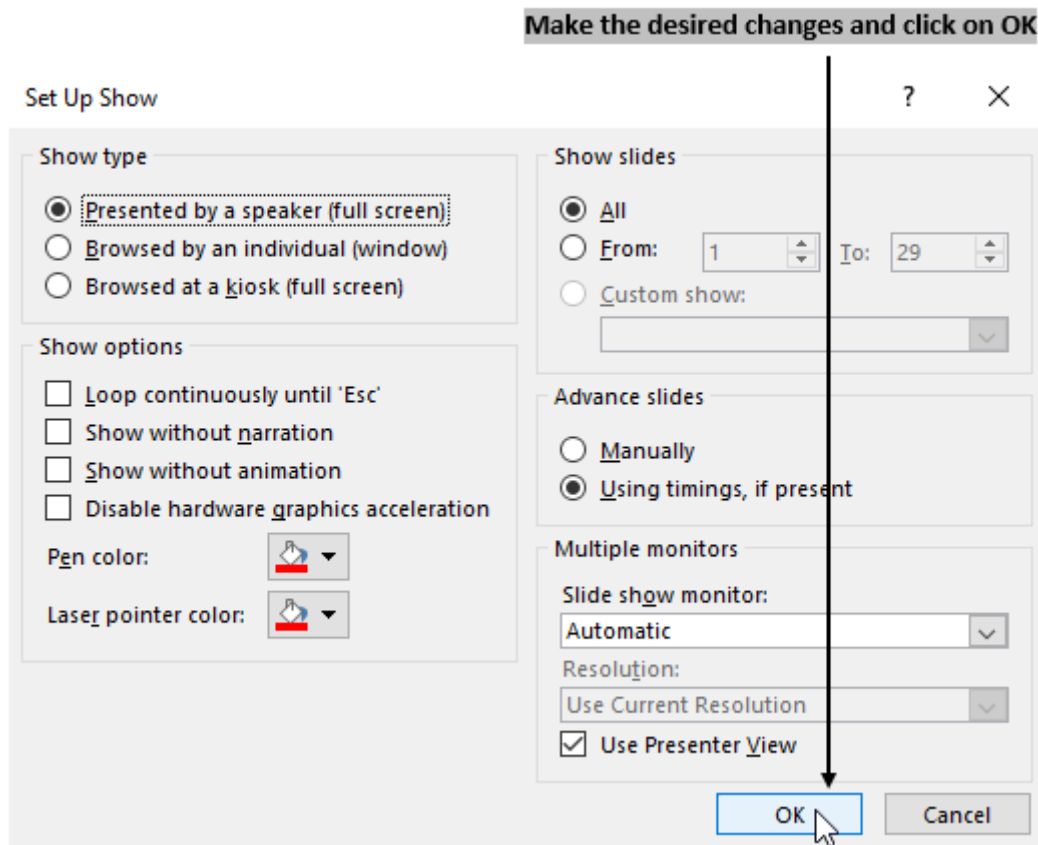
Printing slides and handouts

- To print the slide, click **File → Print**.
- Print preview option helps to preview the page before you print it.
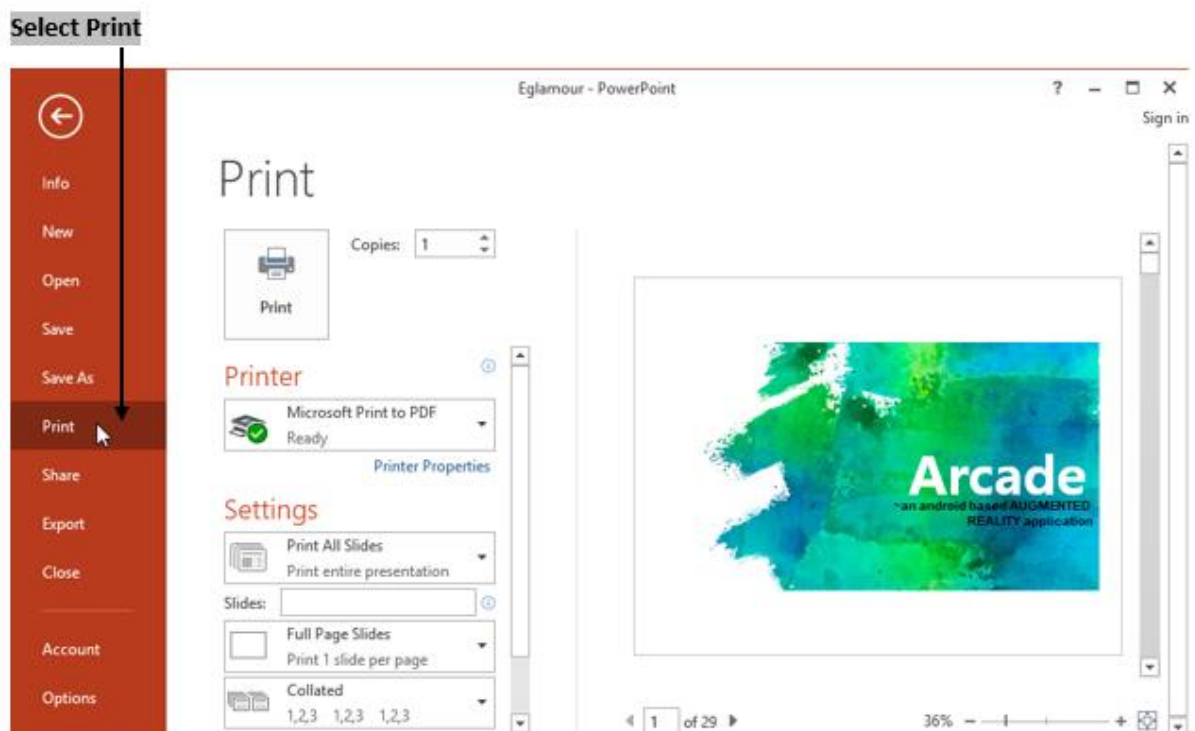
Creating and Printing Handouts

- Handouts are the printed form of presentation.
- If you want to provide handouts, go to File → Print.
- Handouts contain both individual slides and space for notes. These are very helpful presentation aids.
- Click handout master in view menu to preview the handout.
- Choose a layout to specify how many slides are to be printed on a single sheet of paper.

In VIEW menu, select Handout Master
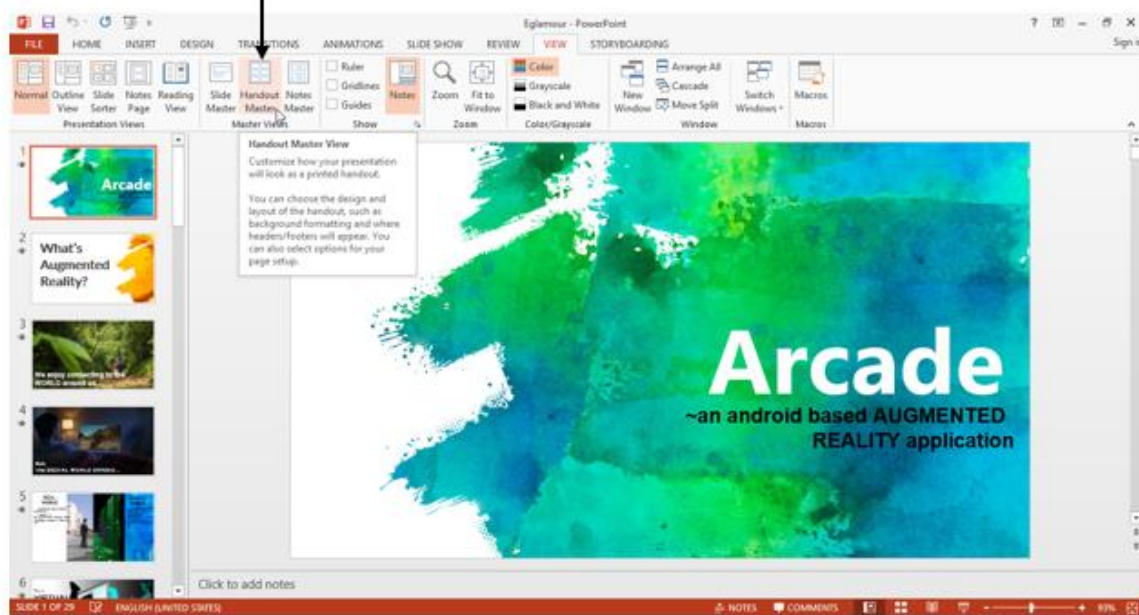
Make the desired changes and click on Close Mater View
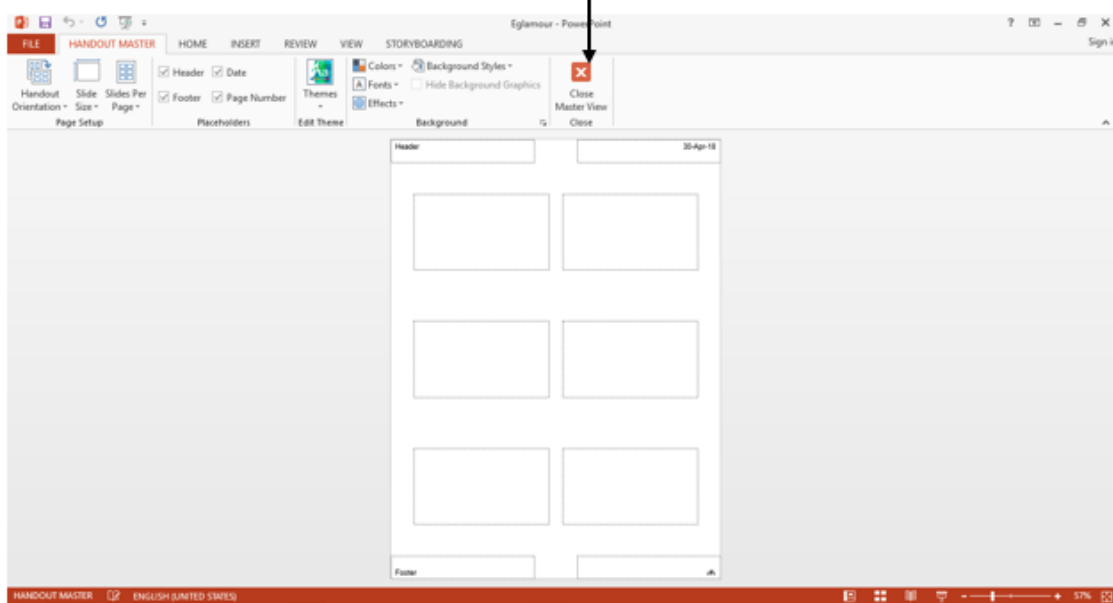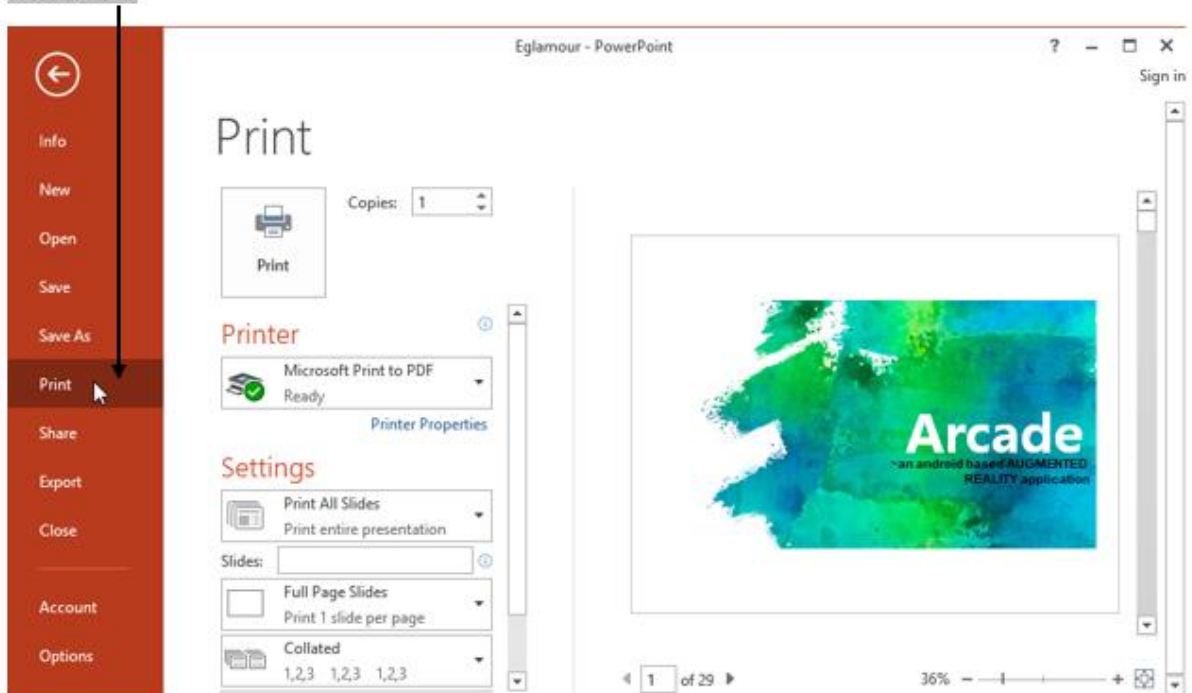
Slide Show

- Slide Show view of the presentation is used to display content of presentation to the audience.
- Editing is not possible in the Slide Show view.
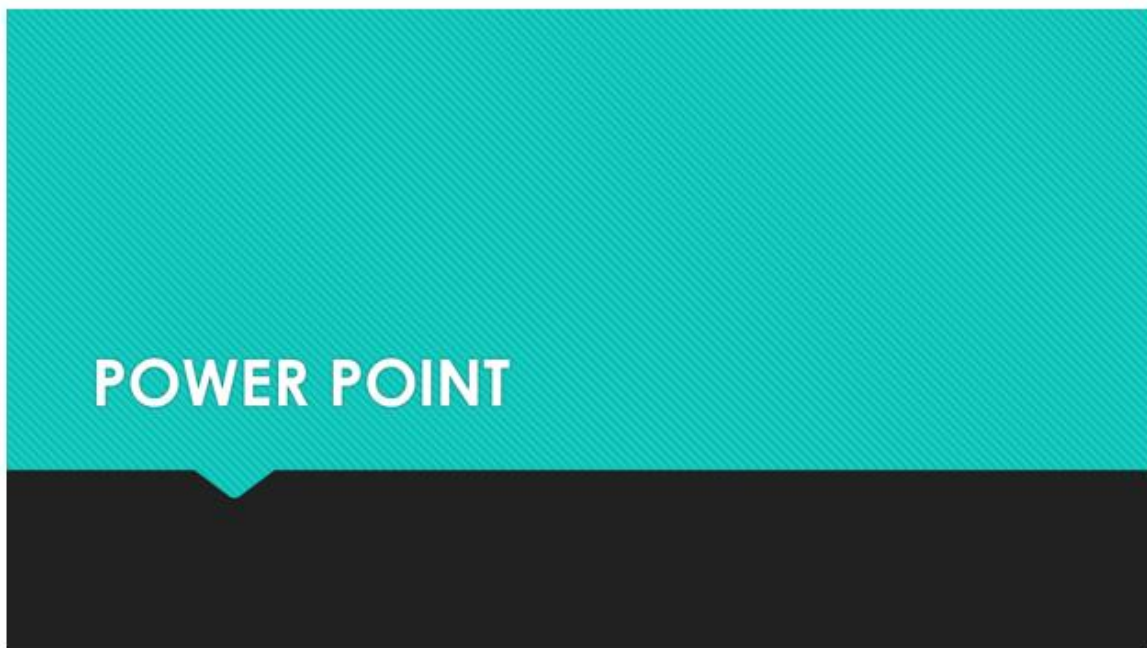
Running a Slide Show

- To start the Slide Show from the first slide, click on "From Beginning" icon from Slide Show menu.
- To start the Slide Show from the current slide, click on "From Current Slide" icon from Slide Show menu.
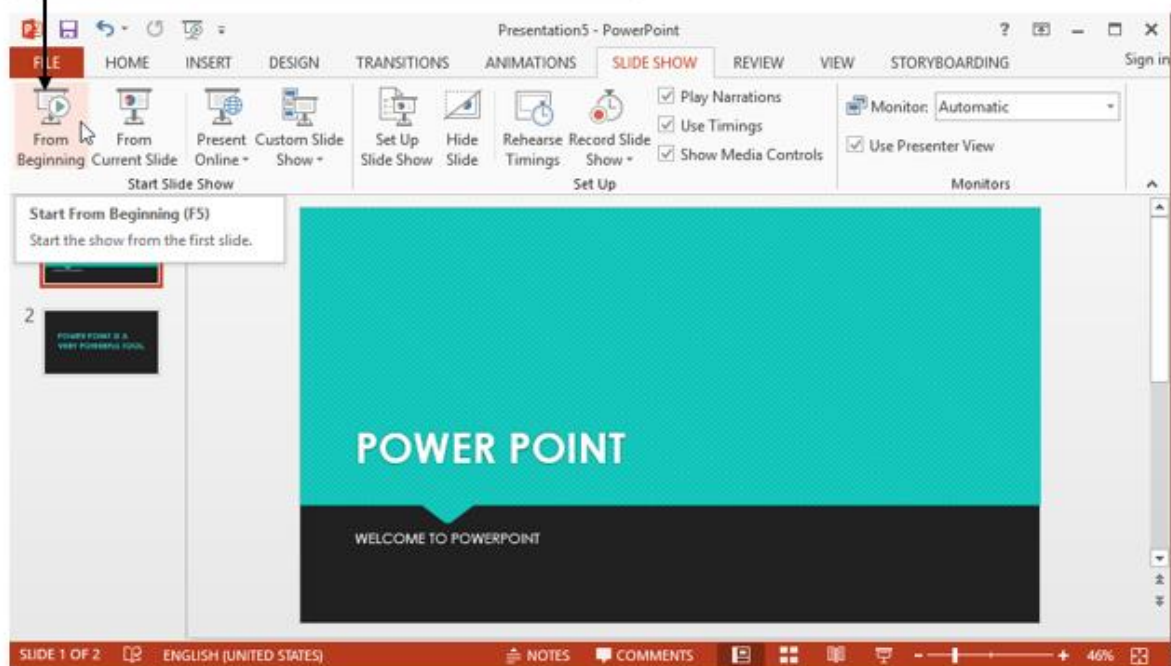
Transition and slide timings

First, we will learn the Transition feature:

- Click on "Transition" menu and select "Transition style" from the listed options.
- You can click on the arrow key to expand the gallery and check all the options available.
- To apply transition on the slide, double click on desired option.
- Press **"shift + F5"** from keyboard to switch to full-screen mode.
- To exit full-screen, press Esc key.
- You can edit selected transitions by using "Effect Option" from "Transition" menu and select option from the list.
- You can preview all the changes by clicking on preview icon in the top left side of screen.

In the TRANSITIONS menu, select the desired transition
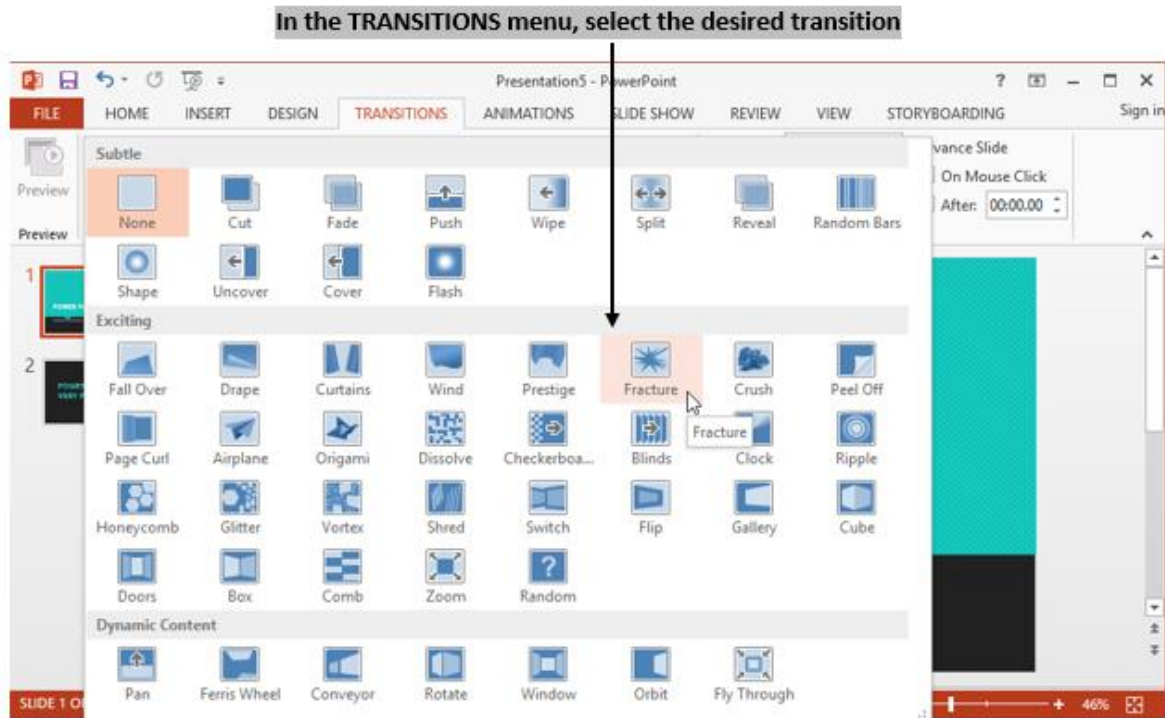
Automating a Slide Show

Automation of Slide Show can be done in two ways.

Using transition settings

- Select each slide and go to transition menu and select transition type for each slide and run the presentation by pressing "F5" key.

In the TRANSITIONS menu, select the desired transition
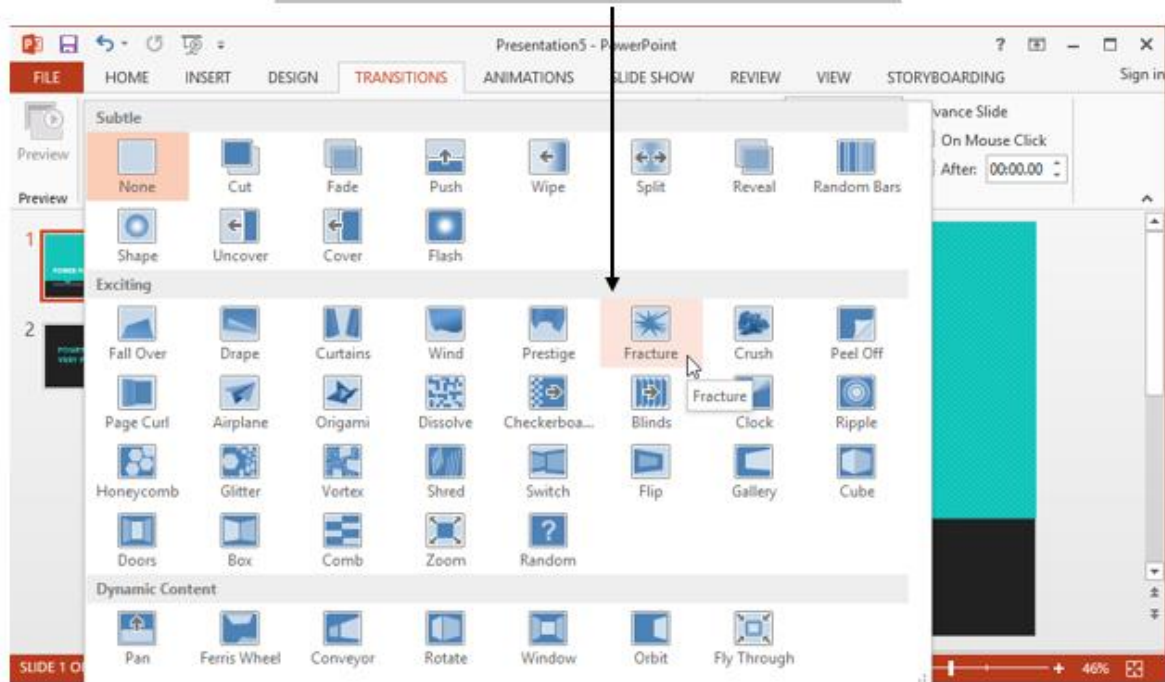
POWER POINT IS A
VERY POWERFUL TOOL

Using Rehearse Timing

- Open the presentation in which the timing has to be set.
- Go to Slide Show menu → Rehearse Timing.
- Press F5 to run the slide. When the Slide Show starts, you can find the rehearsal toolbar at the top left corner of window.
- Move to the next slide manually to record timing and press 'yes' button to record the time.
- Now, if you run your Slide Show, you can notice that it runs automatically with the time intervals you have saved.

In the SLIDE SHOW menu, go to Rehearse Timings
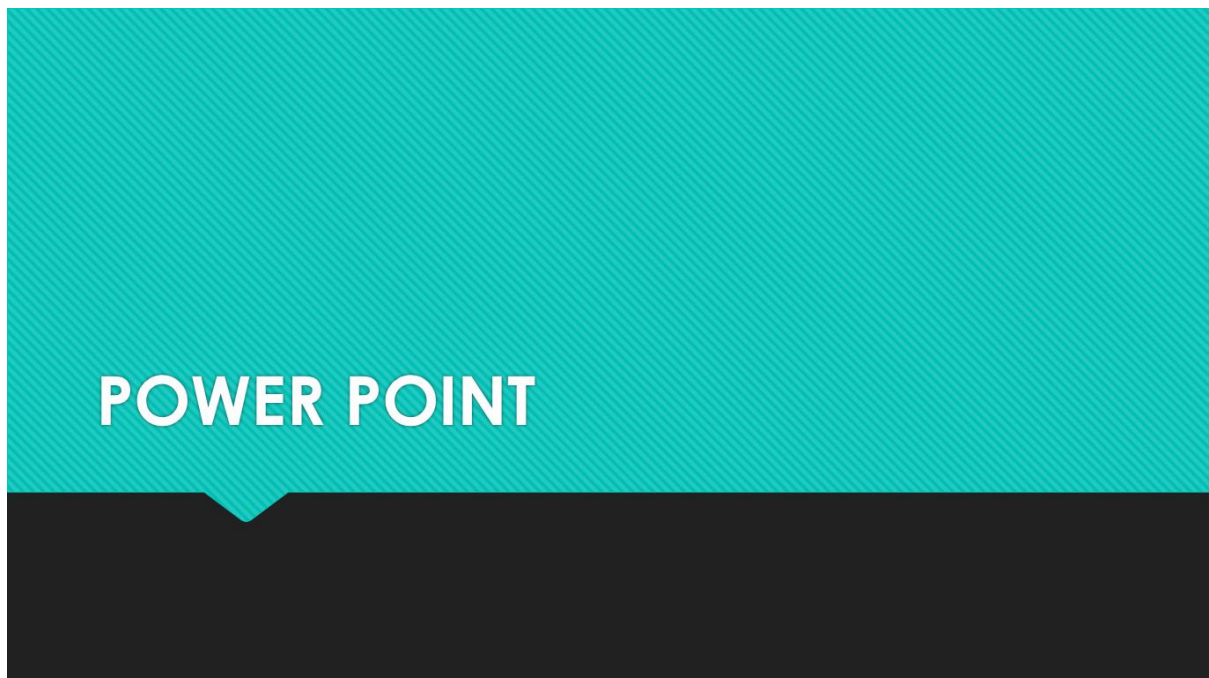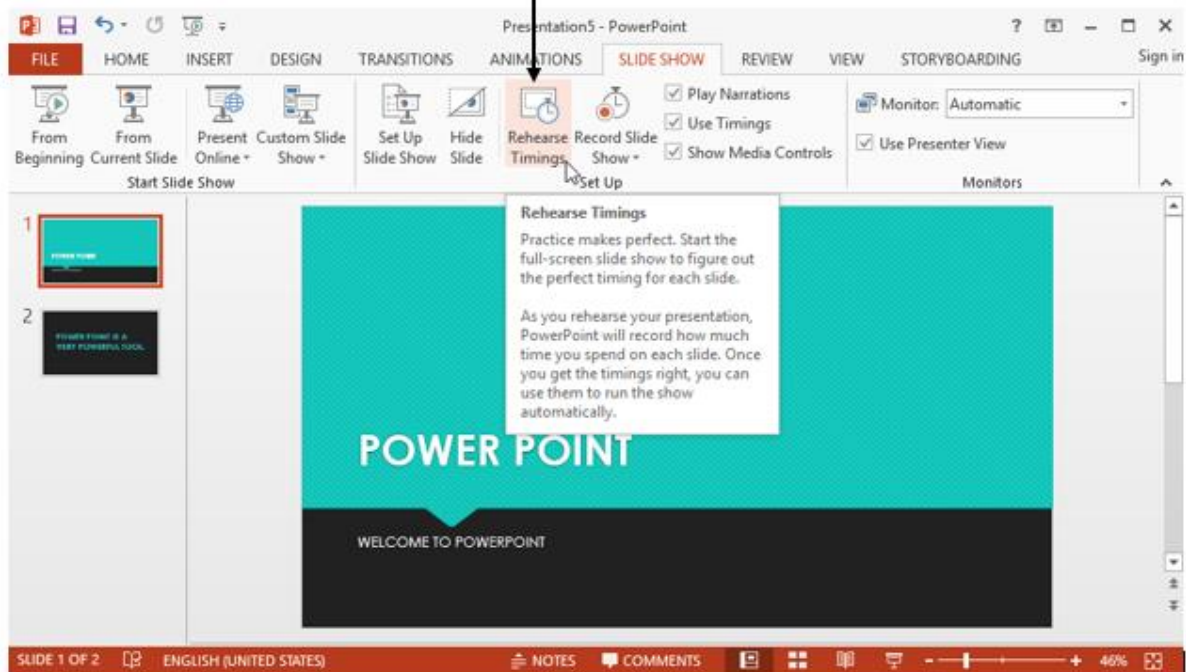
Changing Slide Order

- To change order of the slides, click on "Slide Sorter" in the "View" menu.
- In this mode, all slides in the presentation are displayed as thumbnails.
- Click on the slide you want to move and drag it with the mouse to the desired position.

In VIEW menu, select Slide Sorter option
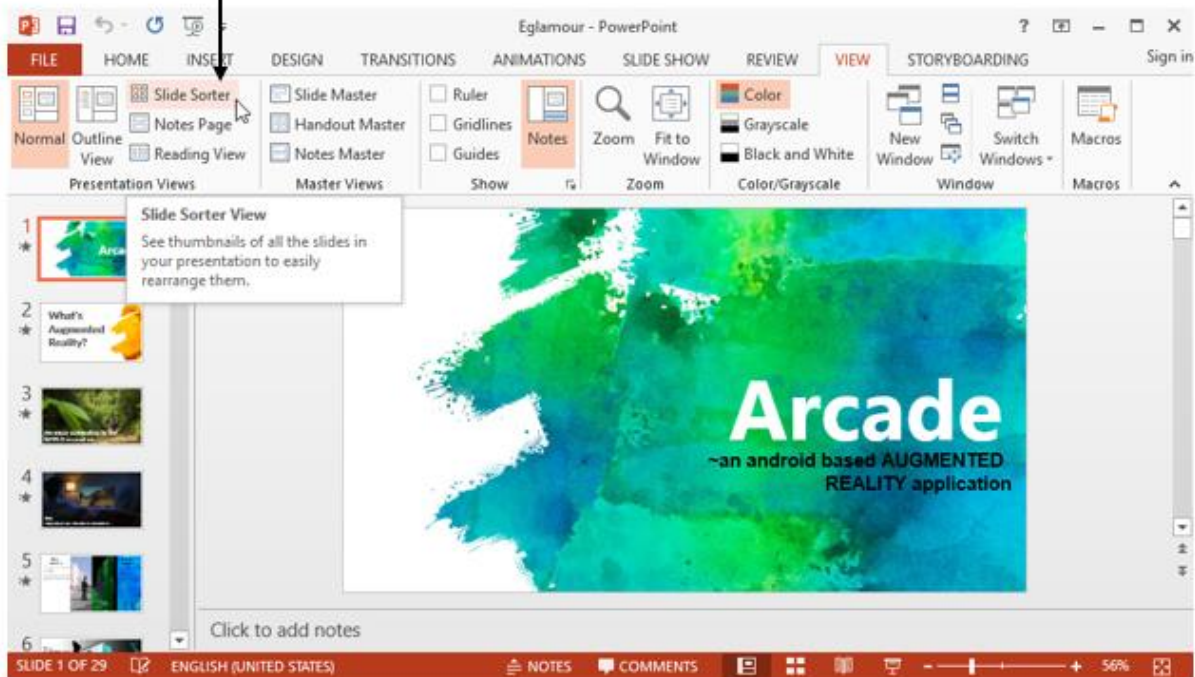
Change the order of the slides via drag and drop
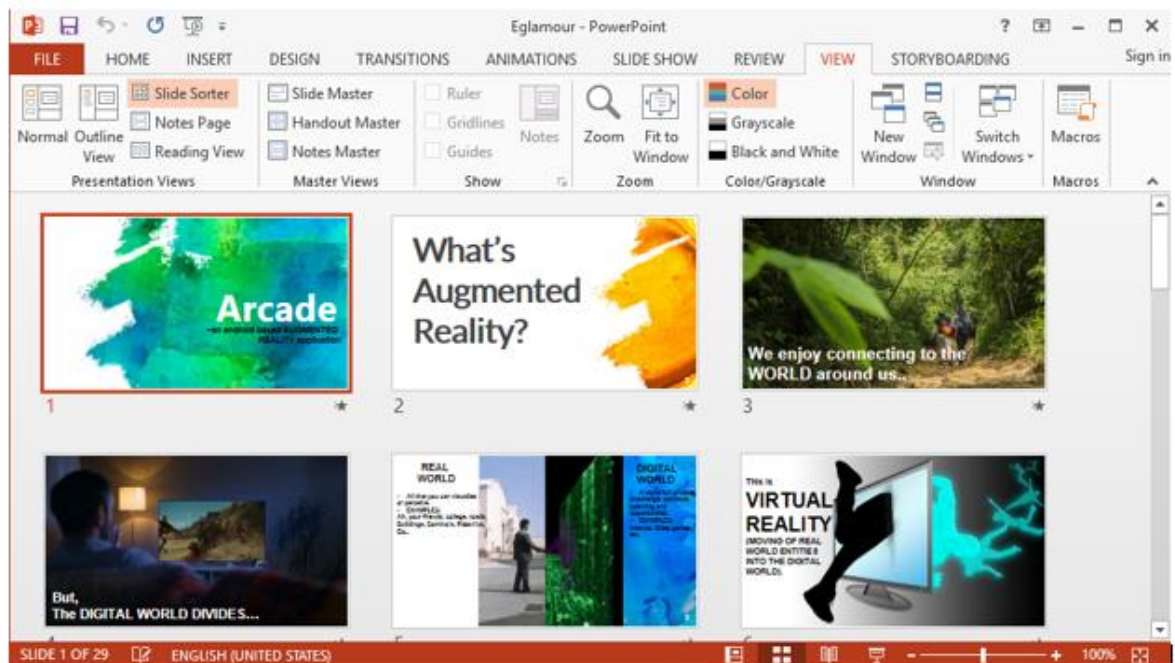
Example Program

We will look at the below example to understand the concept clearly:

Aim

- To create a simple presentation with at least 5 slides on the essay, "An astrologer's day" by R. K. Narayan.

Procedure

- Boot the system under Microsoft Windows 2013.
- Click start → program → MS-Office → MS-PowerPoint.
- Once you open PowerPoint, choose the type of presentation you want and click Ok.
- Select Insert → Text box.
- Draw the text box in the slide and enter information about the essay, "An astrologer's day".
- Right click on the text box and select custom animation in it.
- Select an effect and click ok.
- Right click in the empty space of the slide.
- Select background color and click apply button.
- Click Transition → select an effect and press ok.
- Click the first slide and drag the mouse to select all the slides.
- Run your presentation by clicking on "From Beginning" option from Slide Show or by pressing F5 key.

Result

- Thus, a simple presentation for the essay "An astrologer's day" by R.K.Narayan is created.
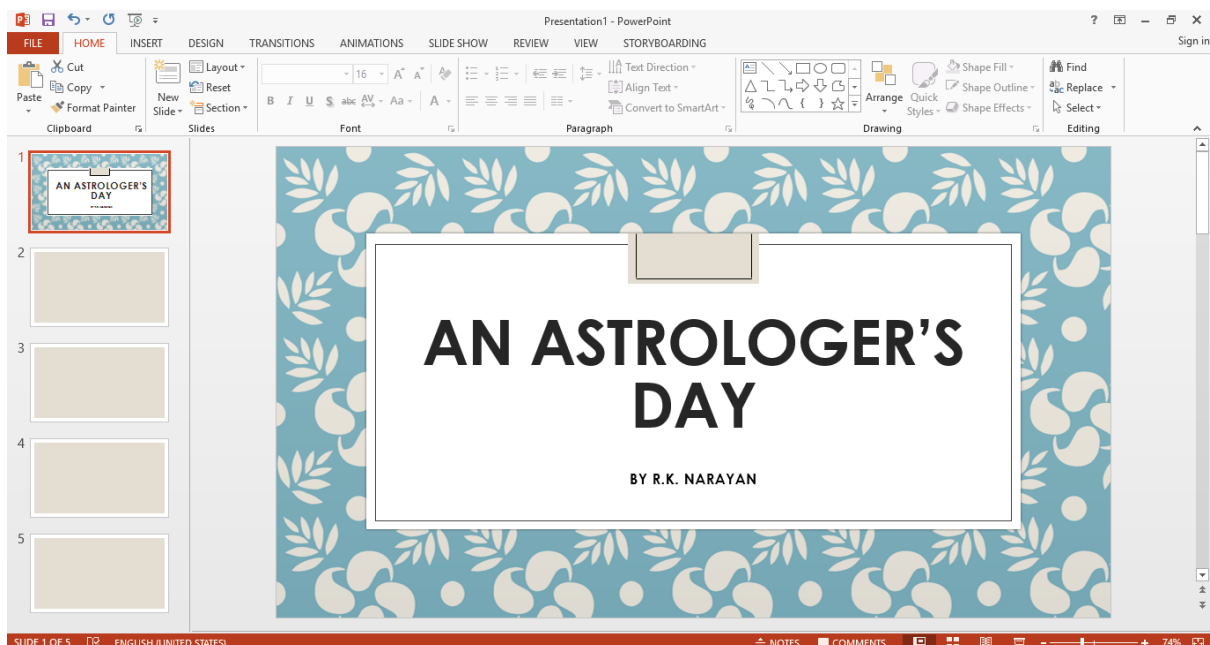
Summary

In this chapter, we have clearly learnt various concepts in PowerPoint presentation such as opening and saving a presentation, creating presentation using templates and a blank presentation, entering and editing text, inserting and deleting slides in a presentation, preparing slides, etc.

8. Computer Concepts — Application of Digital Financial Services

In today's world, everything is digitized, which means we can access or get every service in digital format through mobile phones, computers, tablets, etc. The invention of computers and smartphones has created a huge impact on financial services. Today using computers and mobile phones, a person can access his/her bank account, verify account details, transfer funds, deposit cash, renew deposit, pay bills, book tickets, etc. Also, the invention of ATMs reduced the time taken to withdraw money from banks. Digital services help to save time by providing services in a single touch. The introduction of digital wallets has also made a big positive impact on financial services.

In this topic, we are going to discuss in detail the importance of savings, importance of bank, banking products like accounts, deposits, loans, procedure for opening an account, banking services through a bank branch, ATM, internet banking, mobile banking, mobile wallets, insurance and various schemes introduced by the Prime Minister of India.

Why are savings needed?

Savings is the percentage of income which is not spent on present expenditures, instead conserved for future use. Being totally unaware of the future happenings, one should be ready to face any kind of unpredictable events. In such tough situations, our savings will be very helpful and beneficial to us.

Emergencies

Emergencies may come at anytime and we should always have a backup to handle such situations. Some examples of emergencies from our day to day life are:

- Personal and family health issues.
- Loss due to sudden natural calamities like flood, earthquake or cyclone, etc.
- Loss due to theft or any other unanticipated events.
- Sudden financial help for friends or relatives.
- Unplanned trips or any other plans.

Future Needs

Few future needs are listed below:

Retirement

The main purpose to save money is for your retirement. The earlier you start saving for retirement, the less you have to save in future. Saving for retirement makes you self-dependent and financially secure.

Own a property

Everyone dreams of owning a house. Though it is not an easy task, saving from early stages can help in fulfilling this dream.

Own your own vehicle

In today's scenario, transportation has become difficult in metropolitan cities. To explore places with ease and comfort, a person needs a car.

Education

Cost of education has become a burden these days, especially for higher studies. In order to attain higher degrees, one should save money.

To rescue debts and large expenses

We should start saving to deal with large expenses like:

- Buying property: house or land
- Buying vehicles
- Buying gold or expensive jewelry
- Handling emergency needs like health-related issues
- Going on a family tour
- Facing complex situations during natural calamities

Drawbacks of keeping cash at home

Here, we list certain drawbacks of maintaining cash at home:

Unsafe

It is unsafe to keep cash at home as there is a chance of theft or robbery.

Loss of Growth Opportunity

Keeping cash at home causes huge loss to the country's economy as it does not participate in national growth.

- **Recurring Deposit -** It is referred to as a monthly deposit for particular period of time for which the interest will be provided by banks to their customers.
- **Fixed Deposit -** It is bulk amount deposited by the customer for a fixed period of time, i.e., an year or two.
- In any of the schemes provided by banks, there will be profit.
- We can even earn interest or dividend by depositing our money in saving bank account.

No Credit Eligibility

- A person should have minimum balance in savings account to apply for credit cards or loans.
- If we save money at home instead of banks, we can't avail the credit facility provided by the financial institutions during tough times.

Why is bank needed?

Bank is an official financial institution that accepts money from public and lends money to public.

Secure Money, Earn Interest, Get Loan

Bank functions in various ways. Few of them are listed below:

Secure Money

- Bank helps to save our money very securely.
- Loading all your cash at home isn't safe.
- You can loose your money in situations like fire, flood or earthquake
- In order to avoid the scenarios given above, we need a bank.

Earn interest

Banks provide us with interest if we save money through RD and FD. In any of the schemes provided by the bank there will be an opportunity of growth in our money.

Get Loan

Bank will provide several kinds of loans if we satisfy the criteria issued by a bank and submit all necessary documents. Types of loans provided by bank are:

- **Home Loan –** Home loan is the money lent by banks to buy properties at a certain rate of interest to be paid every month as EMI.
- **Personal Loan -** Banks provide you with personal loans for marriage, emergency periods, etc.
- **Jewel Loan -** Banks provide you with jewel loans where you pledge your jewelry to get loan.

Remittances using Cheque and Demand Draft

Remittance is defined as the transfer of money or funds from one bank to another, either the same bank or different. Remittance can be done using Demand draft by Cheque, Pay slip, Mail Transfer, etc. A demand draft or "DD" is a popular mode of money transfer, where most of the banks in India use this for the effective transfer of money. Demand draft is usually issued on request of the client, for bill payments, and for transfer of property of deceased to legal heirs, etc. DD form requires the following details to be filled by the customer:

- Type of instrument needed.
- Receiver's Name.
- Transmitter's Name.
- Total amount to be transferred.
- The bank or location where the transferred money is to be funded.
- The way money is to be paid, i.e. in "Cash" or through a "Bank Account" in which you will pay money, i.e. in cash or by debit to your account.
- You should submit form along with cheque or cash.

Avoid risk of Chit Funds and Sahukars

Using banks to save money, we can avoid the below stated risks:

Chit Fund

Chit funds are local bodies which help to save money. It is run by one or more people of that area. Chit fund is purely based on trust. It is easy to join the chit fund because no proper background is needed except some paperwork. If you deposit money in chit fund you can take out that money whenever you need. Instead, in banks you must wait until the time period get completed.

Risk in saving money in chit funds or Sahukars

- Chit funds are not authorized parties to deposit money.
- People who are running chit funds can wind up their chit fund if they wish to do so.
- There are chances of loss or theft of money.
- There is no security or assurance for the money you deposit in chit funds.
- There is a chance that the fund manager disappears with mass amount.
- A member could disappear after winning the first bid.

Banking Products

We shall learn various banking products:

Accounts

An agreement with a bank, where an account holder can deposit and withdraw money or savings as needed.

Types of Accounts

There are three types of accounts avaliable, namely:

Personal account

Account that represents an individual or an organization is termed as "Personal account". Examples: Mr. Rama's account **-->** Individual persons account; Samsung's account **-->** Organization's account.

Real account

The account that represent tangible assets, that is, which can be physically sensed, is termed as "Real account". Examples include: cash, goods, stock accounts, etc.

Nominal account

Account that represents expenses and incomes is termed as "Nominal account". Examples include: salary, loss of asset accounts, etc.

Deposit

Accumulation of money in the bank is termed as deposits. There are two types of deposits: Time deposit and Demand deposit. Time deposit is defined as money deposited for a particular period of time which cannot be withdrawn before the time gets lapsed.

- **Fixed deposit-** A bulk amount is deposited for a fixed period like a year or two years etc.
- **Re-investment deposit-** Interest is accumulated quarterly and paid on maturity.
- **Recurring deposit-** Fixed amount is deposited at regular intervals like a month or quarterly etc.

Demand deposit is the scheme where the customer can withdraw money on demand without earlier notice to the bank. Demand deposit may or may not provide interest to the customer. Examples of demand deposits include current account and a savings account.

Types of Loan and Overdrafts

Loan is termed as the fund lent to a person on having a promise that he/she will return the money within a certain period with interest. Loan falls under the following categories.

Secure Loan is a loan where the borrower pledges any of his/her assets like house, land, jewel or any of the belongings as security. The financial institution has a right to sell these if repayment is not done on time.

Unsecure Loan is where the borrower does not submit any of the belongings as security to the bank. The example includes peer-peer lending, personal loans, credit debts, etc.

Demand Loan is a loan where a person borrows money on demand. It doesn't fix return time.

Educational Loan is money borrowed to support one's education. He/she doesn't have to repay the money while studying.

Personal Loan is a loan that is borrowed based on personal interest for marriage, world tour, other expenses, etc.

Commercial Loan is lent to an organization for improvement purposes.

Overdraft

An overdraft is a condition that occurs when a person attempts to withdraw money from zero balance account. The types of overdraft include:

- **Secured Overdraft-** Secure overdraft is where the customer pledges any of his/her assets to bank as security.

- **Unsecure Overdraft-** Unsecure overdraft is the one where the customer does not submit any of the belongings as security to the bank.

Filling up of Cheque, Demand Drafts

We will separately learn how to fill cheques and demand drafts below:

Filling up of Cheque

You must provide the following details while filling a cheque.

1. Write date at the top right corner of your cheque.
2. Write name of the receiver to whom the cheque is to be encashed.

3. Write the amount both in numbers as well as words.

4. Put your signature at bottom left corner of the cheque.

Sample Canadian Cheque
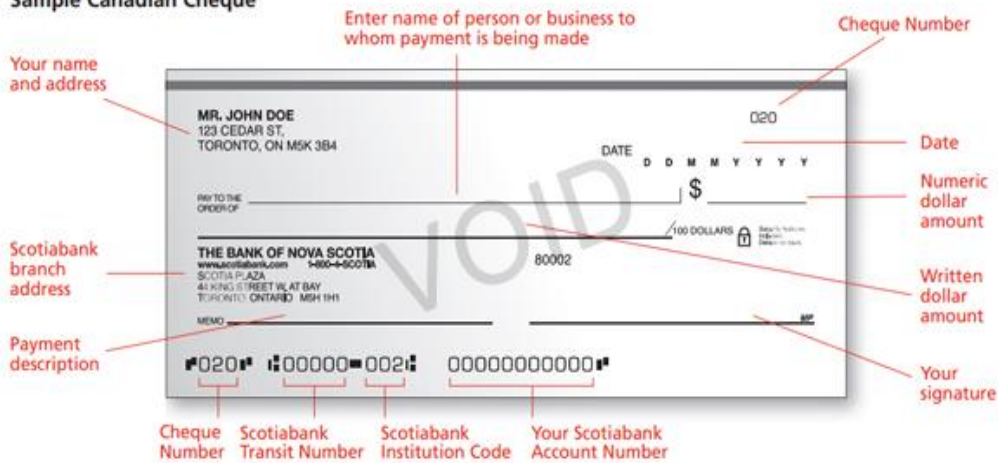
Filling up of Demand Drafts

You must provide the following details while filling a demand draft.

- Type of instrument needed.

- Receiver's Name.

- Transmitter's Name.

- Total amount to be transferred.

- The bank or location where the transferred money is to be funded.

- Mode of transaction, i.e. in "Cash" or through a "Bank Account" in which you will pay money, i.e. in cash or by debit to your account.

- You should submit the form along with cheque or cash.

tutorialspoint
SIMPLYEASYLEARNING
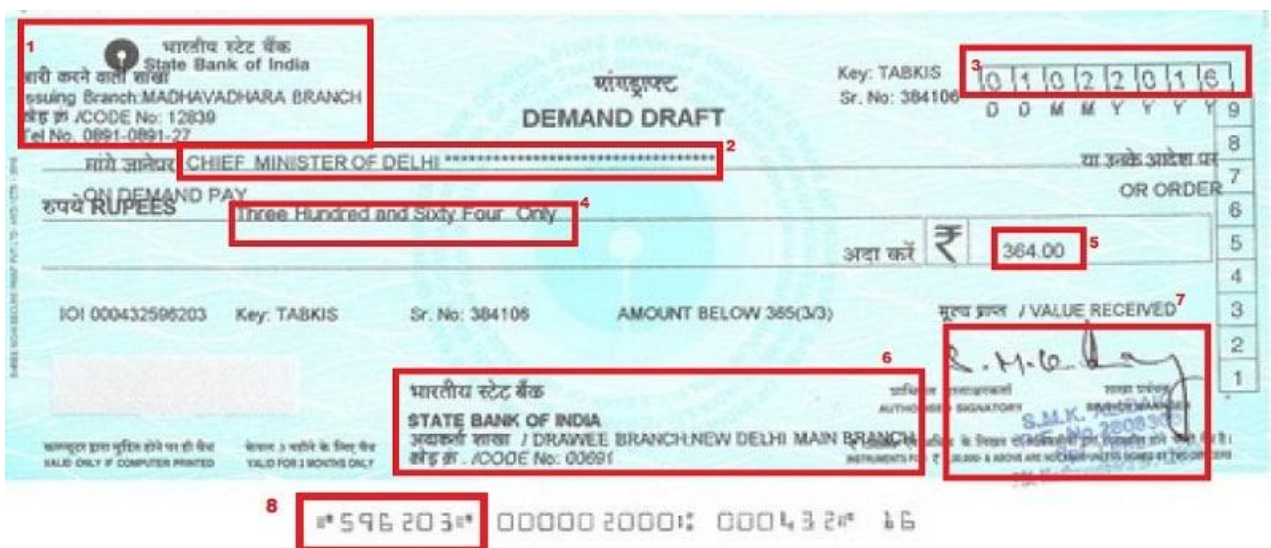
Documents for Opening Accounts

You need the below documents to open account in banks:

Know your Customer (KYC)

Know your Customer is a process in which banks acquire details about the identity and address of the customers. It is practice accomplished by banks when you open an account with that bank. Banks in regular intervals will update their customer details. The KYC process helps to make sure that the bank services are not misused.

Photo ID Proof, Address Proof

RBI issues a certain norm to be followed while opening an account. One of that is KYC during account opening. We should be providing ID proof and Address proof during the KYC process.

- **ID Proof -** KYC process accepts Voter ID card, Aadhaar Card, Driving license, PAN card, Passport, etc., as ID proof.
- **Address Proof -** Ration card, rental agreement, gas book, telephone bill, voter ID, Aadhar card, etc., are accepted as address proof.

Indian Currency

Indian currency is issued by "Reserve Bank of India". Indian rupee is the official currency of India. The word "Rupee" is the derivative of the Sanskrit word "Rupya" (meaning silver coin). It is denoted by the code "INR". We have 10, 20, 50, 100, 200, 500, 2000-rupee notes and 1, 2, 5, 10-rupee coins.

Banking Service Delivery Channels - I

We shall learn different banking service delivery channels in this section:

Bank Branch and ATM

Bank branch is one of the easiest and simplest ways of providing banking services. Every area has one or more bank branches depending on the space coverage of the area through which we can access bank services. We can go to the branch physically and avail services like money deposit or withdrawal, salary update, pension withdrawal, etc.

Automatic Teller Machine has reduced lot of human workload. This is one of the cheapest sources of bank delivering 24/7 service. This facilitates us with the service of money withdrawal. We also have cash deposit machines, passbook update machines, etc.

Bank Mitra with Micro ATM

Bank Mitra is also called as "Customer Service Point". Mitra provides services like account opening, cash deposit, cash withdrawal, fund transfer, etc., and is a representative of mini bank which provides services to rural areas. It especially provides services to villages where no bank branches are available.

Point of Sales

Point of Sales (POS) support for real-time transactions. Suppose if you are purchasing anything in shops and decided to use your debit card, the consumer will be having a POS machine in which your debit/credit card is swiped to deduct the amount for your purchase. This provides cashless transaction facility.

Banking Service Delivery Channels - II

This section deals with online delivery channels:

Internet Banking

Internet banking helps to save your time by providing digital services like:

1. Transfer funds from your account to another account.
2. Verify your bank account particulars and statements.
3. Make payment of utility and credit card bills.
4. Open and renewal of fixed deposit account.
5. Recharge and payments of daily needs like prepaid mobile/DTH, train bookings or bus tickets, etc.

National Electronic Fund Transfer (NEFT)

National Electronic Fund Transfer is a nationwide fund transfer system formulated and maintained by RBI. It helps to transfer funds between customers of the bank across the country. It was started in the year 2005. NEFT follows batch wise fund transfer process that it works from 8.00 AM to 6.30 PM on Monday to Saturday excluding 2nd, 4th Saturday and government holidays.

Real Time Gross Settlement (RTGS)

Real Time Gross Settlement (RTGS) is a real-time electronic fund transfer system between banks. Unlike NEFT which follows a batch process, RTGS helps to transfer funds in real-time and gross basis. Real-time settlement refers to that there is no waiting time for the money to get transferred. Gross refers to one-to-one transaction. The minimum amount to be transferred through RTGS is 2,00,000 rupees. Apart from money this helps to transfer securities (tradable financial asset).

Immediate Payment Services (IMPS)

Immediate Payment Services (IMPS) was launched in the year 2010. IMPS is available 24/7 and even on holidays. IMPS is managed by National Payments Corporation of India. It offers interbank electronic fund transfers and it is accepted by almost all banks and financial institutions.

Insurance

Insurance is an agreement to deliver a compensation amount by the financial institution for certain loss, destruction, ailment, or demise in return for payment of a specified premium.

Necessity of Insurance

Insurance is protection for financial loss and provides medical support in case of severe ailments. It provides safety and security to human life as well as business. It generates financial resources, encourages savings by investing regular premium and promotes economic growth by mobilizing domestic savings. Insurance. Insurance accelerates economic growth by collecting and investing funds in industrial development. Insurance helps to get loans. Insurance helps in medical emergencies.

Life Insurance and Non-Life Insurance

In the subsequent section, we shall discuss various about various Life Insurance schemes and various other schemes:

Life Insurance

An agreement to deliver compensation amount by the financial institution on demise of an insured person in return for payment of a specified premium.

Necessity for Life Insurance

- To give heirs a financial support after a person's demise.
- To protect your family and loved ones.
- To pay off debts taken by you.
- To support uncertainties in life.

Non-life Insurance

General or non-life insurance saves individual against uncertainties, loss, destruction and damage caused by natural events.

Necessity for Non-Life Insurance

- It provides peace of mind to the insured person or business man.
- It replaces lost income, destroyed property or damaged objects.

Pradhan Mantri Jan-Dhan Yojana (PMJDY)

Pradhan Mantri Jan-Dhan Yojana (PMJDY) is launched by Prime Minister of India, Narendra Modi on 28 August 2014. PMJDY is a National Mission for Financial Inclusion to ensure access to financial services, namely, Banking/Savings & Deposit Accounts, Remittance, Credit, Insurance and Pension in an affordable manner. Account can be opened in any bank branch or Business Correspondent outlet. PMJDY accounts are being opened with zero balance. However, if the account-holder wishes to get cheque book, he/she will have to fulfill minimum balance criteria.

Benefits of PMJDY

- Interest on deposit
- Accidental insurance cover of Rs. 1.00 lakh
- No minimum balance required

- Life insurance cover of Rs.30,000/-
- Easy transfer of money across India
- Beneficiaries of Government Schemes will get a direct benefit transfer in these accounts.
- After satisfactory operation of the account for 6 months, an overdraft facility will be permitted.
- Access to pension, insurance products
- Accident insurance cover, repay debit card must be used at least once in 45 days.
- Overdraft facility up to Rs.5000/- is available in only one account per household, preferably lady of the household.

Social Security Schemes

There are lots of social security schemes launched by the Prime Minister "Narendra Modi". Some of the important schemes are described in detail below.

Pradhan Mantri Suraksha Bima Yojana (PMSBY)

The scheme offers to provide you or your family a cover of up to Rs. 2 lakhs in case of any accidents, resulting in death or disability of the insured. In case of death or full disability, you or your family will get Rs. 2 lakhs and in case of partial disability, you will get Rs.1 lakh. Full disability means loss of both eyes, both legs, both hands, whereas partial disability means loss of one eye or leg or hand.

Age of the Insured – Savings bank account holders aged between 18 years and 70 years are eligible to apply for this scheme. People aged more than 70 years will not be able to get the benefits of this scheme.

Premium Amount – It costs you just Rs. 12 in annual premiums for having an accidental death or disability cover of Rs. 2 lakhs under this scheme. It works out to be just Re. 1/month, which is extraordinarily low. Again, your age has nothing to do with the premium payable for your insurance cover under this scheme as the premium is fixed at Rs. 12 for a cover of Rs. 2 lakhs.

Period of Insurance – You will remain insured for a period of one year from June 1, 2015 to May 31, 2016. Next year onwards, the risk cover period will remain to be June 1 to May 31.

Administrators for PMSBY – The scheme would be offered/administered by many general insurance companies, both in the public sector as well as in the private sector. Participating banks will be free to engage any such general insurance company for implementing the scheme for their subscribers. National Insurance Company Limited, Oriental Insurance Company Limited and ICICI Lombard are some of the companies which would be offering this scheme.

Auto Debit Facility – You will be required to provide your consent for auto debit of Rs. 12 as the annual premium from any one of your bank accounts at the time of enrolling for this scheme. This premium of Rs. 12 will get deducted from your savings bank account through auto debit facility every year between May 25 and June 1.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is a "Life insurance" coverage by "Government of India". The following are the features of this life insurance scheme:

Age of the Insured – Bank account holders aged between 18 and 50 years are eligible to apply in this scheme. So, if you are aged more than 50 years, you are not eligible to enroll yourself in this scheme. But, once enrolled, you can continue with this scheme till you attain the age of 55 years.

Premium Amount – Less than Re. 1 a day or an annual premium of Rs. 330 is what you need to pay to get a life cover of Rs. 2 lakhs. No matter what your age is, the premium is fixed at Rs. 330 for a life cover of Rs. 2 lakhs. This annual premium of Rs. 330 has been fixed for the first three years from June 1, 2015 to May 31, 2018, after which it will be reviewed again based on the insurers' annual claims experience.

Period of Insurance – June 1st, 2015 to May 31st, 2016 is the period for which this scheme will cover all kinds of risks to your life in the first year of operation. Next year also, the risk cover period will be from June 1 to May 31.

Auto Debit Facility – Annual premium of Rs. 330 will get deducted from your savings bank account through auto debit facility. You will have to give your consent for auto debit of premium from any one of your bank accounts at the time of enrolling for this scheme.

Atal Pension Yojana (APY)

The Government of India is concerned about the old age income security of the working poor and is focused on encouraging and enabling them to save for their retirement. To address the longevity risks among the workers in the unorganized sector and to encourage the workers in the unorganized sector to voluntarily save for their retirement, the Government of India has announced a new scheme called Atal Pension Yojana (APY) in 2015-16 budget. The APY focuses on all citizens in the unorganized sector. The scheme is administered by the Pension Fund Regulatory and Development Authority (PFRDA) through NPS architecture.

Eligibility for APY - Atal Pension Yojana (APY) is open to all bank account holders who are not members of any statutory social security scheme.

Age of joining and contribution period: The minimum age of joining APY is 18 years and the maximum age is 40 years. One needs to contribute till he/she attains 60 years of age.

Enrollment agencies - All Points of Presence (Service Providers) and Aggregators under Swavalamban Scheme would enroll subscribers through the setup of the National Pension System.

If a person joined Atal Pension Yojna at 35 years, he will contribute till the age of 60 years i.e. for 25 years. If he wants monthly pension of Rs. 1000 he would contribute Rs. 181 a month. On his death his wife will receive Rs. 1000 per month and after her death the nominees will get 1.7 lakh. If he wants monthly pension of Rs.3000 he would contribute Rs. 543 a month. On his death, his wife would get Rs. 3000 per month and after a death the nominees will get 5.1 lakh.

Pradhan Mantri Mudra Yojana (PMMY)

Prime Minister Narendra Modi launched Micro Units Development and Refinance Agency Ltd (MUDRA) Bank on 8 April, 2015 with a corpus of Rs. 20,000 crore and a credit guarantee corpus of Rs. 3,000 crore. The launch was the fulfilment of an announcement made earlier by the Finance Minister Mr. Arun Jaitley in his FY 15-16 Budget speech.

Objectives of PMMY

- Regulate the lender and the borrower of microfinance and bring stability to the microfinance system through regulation and inclusive participation.

- Extend finance and credit support to Microfinance Institutions (MFI) and agencies that lend money to small businesses, retailers, self-help groups and individuals.

- Register all MFIs and introduce a system of performance rating and accreditation for the first time. This will help last-mile borrowers of finance to evaluate and approach the MFI that meets their requirements better and whose past record is most satisfactory. This will also introduce an element of competitiveness among the MFIs. The ultimate beneficiary will be the borrower.

- Provide structured guidelines for the borrowers to follow to avoid failure of business or take corrective steps in time. MUDRA will help in laying down guidelines or acceptable procedures to be followed by the lenders to recover money in cases of default.

- Develop standardized covenants that will form backbone of the last-mile business in future.

- Offer a Credit Guarantee scheme to provide guarantee to the loans which are being offered to micro businesses.

- Introduce appropriate technologies to assist in the process of efficient lending, borrowing and monitoring of distributed capital.

- Build a suitable framework under the Pradhan Mantri MUDRA Yojana for developing an efficient last-mile credit delivery system to small and micro businesses.

National Pension Scheme

National Pension Scheme is a voluntary defined contribution pension system. NPS is administered and regulated by the Pension Fund Regulatory and Development Authority (PFRDA). NPS is the most economical pension scheme for Indian citizens between 18-60 age group. The more the invested money, the more the accumulated pension. A citizen of India, whether resident or non-resident can avail NPS facility. The NPS is applicable to central government employees, state government employees, corporate, individual, unorganized sector workers - Swavalamban Yojana. NPS helps to protect your future and get tax benefits.

Components of National Pension System

Point of Presence (POP): The authorized branches of a POP, called Point of Presence Service Providers (POP-SPs) act as collection points and extend a number of customer services to NPS subscribers.

Central Recordkeeping Agency (CRA): This provides recordkeeping, administration and customer service functions for all subscribers of the NPS.

Pension Funds (PFs)/Pension Fund Managers (PFMs): The six Pension Funds (PFs) appointed by PFRDA would manage your retirement savings under the NPS.

Trustee Bank: The Trustee Bank appointed under NPS shall facilitate fund transfers across various entities of the NPS system.

Annuity Service Providers (ASPs): ASPs would be responsible for delivering a regular monthly pension after you exit from the NPS.

NPS Trust: A Trust, appointed under the Indian Trusts Act, 1882 is responsible for taking care of the funds under NPS in the best interests of subscribers.

Pension Fund Regulatory and Development Authority (PFRDA): An autonomous body set up by the Government of India to develop and regulate the pension market in India.

Public Provident Fund (PPF) Scheme

Public Provident Fund (PPF) is a 15-year investment scheme launched by government of India to enjoy a tax exempted investment. It was introduced by the National Savings Institute of the Ministry of Finance in 1968. A minimum yearly deposit of Rs. 500 is required to open and maintain a PPF account. It provides 7.9% interest. Loan facility is available in PPF account.

Bank on your mobile

Mobile plays a major role in day-to-day activities. We can access services provided by bank through mobile.

Mobile Banking

Mobile banking is a facility provided by all banks to make customers' work easy. Using mobile app, we can do the following activities.

- Transfer funds from your account to another account.
- Verify your bank account particulars.
- Make payment of utility and credit card bills.
- Open and renewal of fixed deposit account.
- Recharge prepaid mobile/DTH.

Mobile Wallets

Mobile wallet is a virtual wallet, which stores your credit or debit card information. Instead of physically carrying card, we can use mobile device. Mobile wallet also helps to store driver's license, social security number, health information cards, loyalty cards, hotel key cards and bus or train tickets.

Summary

From this topic, we gained a detailed knowledge on the importance of savings; importance of bank, banking products like accounts, deposits, loans; procedure to open an account, banking services, ATM, internet banking, mobile banking, mobile wallet, insurance, and various schemes introduced by the Prime Minister of India.