

## UNIT -1

### BASIC COMPUTER OPERATION

#### Different Components of a Computer:

Below diagram shows the different components of a Computer System –



#### Switch on, Shut down and Restart Process:

- When we want to switch on a PC, we have to first check the power supply is on, then press the power button on the CPU. It will start the Computer.
- When we want to shut down the PC, first we have to click on the start button on the task bar, click on Power and select Shut Down, It'll shut down the Computer.
- Similarly, when we want to restart the PC, we click on start button, select Power and select restart, it'll restart the Computer.

#### Bootting Process

Bootting is a startup sequence that start the operating system of a computer when it is turned on. A boot sequence is the initial set of operation that the computer performs when it is switched on. Every computer has a boot sequence. Bootting can be of two types:

##### Cold Boot

When you turn the computer off and back on, you're performing what's called a cold boot. During a cold boot, the computer runs self test on its hardware and loads its operating system before it's ready for you to use.

##### Warm Boot

When you restart the system without interrupting power, It's a warm boot. A warm boot is usually done from the operating system and doesn't initiate the computer's self test routine. To perform a warm boot click the power icon on the start screen, If shown, and then click "Restart."

## UNIT – 2 PERSONAL COMPUTER SYSTEM

### Power supply form factor-

Form factor for computers refers to the size, shape, and physical specifications of hardware or hardware components. Computer form factor is used to describe any physical aspect of a computer system. Form factor is very important for connection compatibility.

### Importance of form factors

- The most obvious example of a computer form factor is the difference between a desktop and a laptop computer. Although the same parts are present in each, they are shaped and attached differently. For example, the keyboard from a desktop computer cannot fit into the keyboard space of a laptop computer.
- The form factor design of hardware is dependent on, and influenced by, the form factor design of the components that go into the larger hardware unit. The size and the shape of the component are affected as are the connections and power specifications. Most component manufacturers have standardization rules so that components work together electrically and electronically and that they physically fit into the available space.

### Inside view of a CPU -

The following are the different major components that are present inside a CPU case -

#### Motherboard

The motherboard is the computer's main circuit board. It's a thin plate that holds the CPU, memory, connectors for the hard drive and optical drives, expansion cards to control the video and audio, and connections to your computer's ports (such as USB ports). The motherboard connects directly or indirectly to every part of the computer.



#### Processor

The central processing unit (CPU), also called a processor, is located inside the computer case on the motherboard. It is sometimes called the brain of the computer, and its job is to carry out commands. Whenever you press a key, click the mouse, or start an application, you're sending instructions to the CPU.

The CPU is usually a two-inch ceramic square with a silicon chip located inside. The chip is usually about the size of a thumbnail. The CPU fits into the motherboard's CPU socket, which is covered by the heat sink, an object that absorbs heat from the CPU.



A processor's speed is measured in megahertz (MHz), or millions of instructions per second; and gigahertz (GHz), or billions of instructions per second. A faster processor can execute instructions more quickly. However, the actual speed of the computer depends on the speed of many different components—not just the processor.

## RAM (random access memory)

RAM is your system's short-term memory. Whenever your computer performs calculations, it temporarily stores the data in the RAM until it is needed.

This short-term memory disappears when the computer is turned off. If you're working on a document, spreadsheet, or other type of file, you'll need to save it to avoid losing it. When you save a file, the data is written to the hard drive, which acts as long-term storage.

RAM is measured in megabytes (MB) or gigabytes (GB). The more RAM you have, the more things your computer can do at the same time. If you don't have enough RAM, you may notice that your computer is sluggish when you have several programs open. Because of this, many people add extra RAM to their computers to improve performance.



## Hard drive

The hard drive is where your software, documents, and other files are stored. The hard drive is long-term storage, which means the data is still saved even if you turn the computer off or unplug it.

When you run a program or open a file, the computer copies some of the data from the hard drive onto the RAM. When you save a file, the data is copied back to the hard drive. The faster the hard drive, the faster your computer can start up and load programs.



## Power supply unit

The power supply unit in a computer converts the power from the wall outlet to the type of power needed by the computer. It sends power through cables to the motherboard and other components. If you decide to open the computer case and take a look, make sure to unplug the computer first. Before touching the inside of the computer, you should touch a grounded metal object—or a metal part of the computer casing—to discharge any static buildup. Static electricity can be transmitted through the computer circuits, which can seriously damage your machine.



## Expansion cards

Most computers have expansion slots on the motherboard that allow you to add various types of expansion cards. These are sometimes called PCI (peripheral component interconnect) cards. You may never need to add any PCI cards because most motherboards have built-in video, sound, network, and other capabilities.

## Video card

The video card is responsible for what you see on the monitor. Most computers have a GPU (graphics processing unit) built into the motherboard instead of having a separate video card. If you like playing graphics-intensive games, you can add a faster video card to one of the expansion slots to get better performance.



**Sound card**

The sound card—also called an audio card—is responsible for what you hear in the speakers or headphones. Most motherboards have integrated sound, but you can upgrade to a dedicated sound card for higher-quality sound.

**Network card**

The network card allows your computer to communicate over a network and access the Internet. It can either connect with an Ethernet cable or through a wireless connection (often called Wi-Fi). Many motherboards have built-in network connections, and a network card can also be added to an expansion slot.



## UNIT – 3

### COMPUTER LAB SAFETY AND STUDY OF LAB TOOLS

#### Safe Lab Procedures

Safety guidelines help protect individuals from accidents and injury. They also help to protect equipment from damage. Some of these guidelines are designed to protect the environment from contamination caused by improperly discarded materials.

#### General Safety

Safe working conditions help prevent injury to people and damage to computer equipment. A safe workspace is clean, organized, and properly lighted. Everyone must understand and follow safety procedures.

Follow the basic safety guidelines to prevent cuts, burns, electrical shock, and damage to eyesight. As a best practice, make sure that a fire extinguisher and first-aid kit are available in case of fire or injury. Poorly placed or unsecured cables can cause tripping hazards in a network installation. Cables should be installed in conduit or cable trays to prevent hazards.

This is a partial list of basic safety precautions to use when working on a computer:

- Remove your watch and jewelry and secure loose clothing.
- Turn off the power and unplug equipment before performing service.
- Cover sharp edges inside the computer case with tape.
- Never open a power supply or a CRT monitor.
- Do not touch areas in printers that are hot or that use high voltage.
- Know where the fire extinguisher is located and how to use it.
- Keep food and drinks out of your workspace.
- Keep your workspace clean and free of clutter.
- Bend your knees when lifting heavy objects to avoid injuring your back.

#### Electrical Safety

Follow electrical safety guidelines to prevent electrical fires, injuries, and fatalities in the home and the workplace. Power supplies and CRT monitors contain high voltage.

##### **CAUTION**

*Do not wear the antistatic wrist strap when repairing power supplies or CRT monitors. Only experienced technicians should attempt to repair power supplies and CRT monitors.*

Some printer parts become hot during use, and other parts might contain high voltage. Check the printer manual for the location of high-voltage components. Some components retain a high voltage even after the printer is turned off. Make sure that the printer has had time to cool before making the repair.

Electrical devices have certain power requirements. For example, AC adapters are manufactured for specific laptops. Exchanging power cords with a different type of laptop or device may cause damage to both the AC adapter and the laptop.

#### Fire Safety

Follow fire safety guidelines to protect lives, structures, and equipment. To avoid an electrical shock and to prevent damage to the computer, turn off and unplug the computer before beginning a repair.

Fire can spread rapidly and be very costly. Proper use of a fire extinguisher can prevent a small fire from getting out of control. When working with computer components, be aware of the possibility of an accidental fire and know how to react. Be alert for odors emitting from computers and electronic devices. When electronic components overheat or short out, they emit a burning odor.

If there is a fire, follow these safety procedures:

- Never fight a fire that is out of control or not contained.
- Always have a planned fire escape route before beginning any work.
- Get out of the building quickly.
- Contact emergency services for help.
- Locate and read the instructions on the fire extinguishers in your workplace before you have to use them.

Be familiar with the types of fire extinguishers used in your country or region. Each type of fire extinguisher has specific chemicals to fight different types of fires:

- Paper, wood, plastics, cardboard
- Gasoline, kerosene, organic solvents
- Electrical equipment
- Combustible metals

It is important to know how to use a fire extinguisher. Use the memory aid P-A-S-S to remember the basic rules of fire extinguisher operation:

- **P:** Pull the pin.
- **A:** Aim at the base of the fire, not at the flames.
- **S:** Squeeze the lever.
- **S:** Sweep the nozzle from side to side.

### Analysis of Different Power Fluctuation Types:

Voltage is the force that moves electrons through a circuit. The movement of electrons is called *current*. Computer circuits need voltage and current to operate electronic components. When the voltage in a computer is not accurate or steady, computer components might not operate correctly. Unsteady voltages are called *power fluctuations*.

The following types of AC power fluctuations can cause data loss or hardware failure:

- **Blackout:** Complete loss of AC power. A blown fuse, damaged transformer, or downed power line can cause a blackout.
- **Brownout:** Reduced voltage level of AC power that lasts for a period of time. Brownouts occur when the power line voltage drops below 80 percent of the normal voltage level. Overloading electrical circuits can cause a brownout.
- **Noise:** Interference from generators and lightning. Noise results in poor quality power, which can cause errors in a computer system.
- **Spike:** Sudden increase in voltage that lasts for a short period and exceeds 100 percent of the normal voltage on a line. Spikes can be caused by lightning strikes, but can also occur when the electrical system comes back on after a blackout.
- **Power surge:** Dramatic increase in voltage above the normal flow of electrical current. A power surge lasts for a few nanoseconds, or one-billionth of a second.

### Power Protection Devices –

To help shield against power fluctuation problems, use *power protection devices* to protect the data and computer equipment:

- **Surge suppressor:** Helps protect against damage from surges and spikes. A surge suppressor diverts extra electrical voltage that is on the line to the ground.
- **Uninterruptible power supply (UPS):** Helps protect against potential electrical power problems by supplying a consistent level of electrical power to a computer or other device. The battery is constantly recharging while the UPS is in use. The UPS provides a consistent quality of power when brownouts and blackouts occur. Many UPS devices can communicate directly with the computer operating system. This communication allows the UPS to safely shut down the computer and save data prior to the UPS losing all electrical power.

- **Standby power supply (SPS):** Helps protect against potential electrical power problems by providing a backup battery to supply power when the incoming voltage drops below the normal level. The battery is on standby during normal operation. When the voltage decreases, the battery provides DC power to a power inverter, which converts it to AC power for the computer. This device is not as reliable as a UPS because of the time it takes to switch over to the battery. If the switching device fails, the battery cannot supply power to the computer.

## **Procedures for Proper Disposal/Recycling of Hazardous Computer Components:**

The proper disposal or recycling of hazardous computer components is a global issue. Make sure to follow regulations that govern how to dispose of specific items. Organizations that violate these regulations can be fined or face expensive legal battles.

### **Batteries**

Batteries often contain rare earth metals that can be harmful to the environment. Batteries from portable computer systems can contain lead, cadmium, lithium, alkaline manganese, and mercury. These metals do not decay and remain in the environment for many years. Mercury is commonly used in the manufacturing of batteries and is extremely toxic and harmful to humans.

Recycling batteries should be a standard practice for a technician. All batteries, including lithium-ion, nickel-cadmium, nickel-metal hydride, and lead-acid, are subject to disposal procedures that comply with local environmental regulations.

### **Monitors**

Monitors contain glass, metal, plastics, lead, barium, and rare earth metals. According to the U.S. Environmental Protection Agency (EPA), monitors can contain approximately 4 pounds (1.8 kg) of lead. Monitors must be disposed of in compliance with environmental regulations.

Handle CRT monitors with care. Extremely high voltage can be stored in CRT monitors, even after being disconnected from a power source.

### **Toner Kits, Cartridges, and Developers**

Used printer toner kits and printer cartridges must be disposed of properly or recycled. Some toner cartridge suppliers and manufacturers take empty cartridges for refilling. Some companies specialize in refilling empty cartridges. Kits to refill inkjet printer cartridges are available but are not recommended, because the ink might leak into the printer, causing irreparable damage. Using refilled inkjet cartridges might also void the inkjet printer warranty.

### **Chemical Solvents and Aerosol Cans**

Contact the local sanitation company to learn how and where to dispose of the chemicals and solvents used to clean computers. Never dump chemicals or solvents down a sink or dispose of them in a drain that connects to public sewers.

The cans or bottles that contain solvents and other cleaning supplies must be handled carefully. Make sure that they are identified and treated as special hazardous waste. For example, some aerosol cans explode when exposed to heat if the contents are not completely used.

## **Study of General Lab Tools:**

For every job there is the right tool. Make sure that you are familiar with the correct use of each tool and that the correct tool is used for the current task. Skilled use of tools and software makes the job less difficult and ensures that tasks are performed properly and safely.

A toolkit should contain all the tools necessary to complete hardware repairs. As you gain experience, you learn which tools to have available for different types of jobs. Hardware tools are grouped into four categories:



- ESD tools
- Hand tools
- Cleaning tools
- Diagnostic tools

## ESD Tools

There are two ESD tools: the antistatic wrist strap and the *antistatic mat*. The antistatic wrist strap protects computer equipment when grounded to a computer chassis. The antistatic mat protects computer equipment by preventing static electricity from accumulating on the hardware or on the technician.

## Hand Tools

Most tools used in the computer assembly process are small *hand tools*. They are available individually or as part of a computer repair toolkit. Toolkits range widely in size, quality, and price. Some common hand tools and their uses are:

- **Flat-head screwdriver:** Used to tighten or loosen slotted screws.
- **Phillips-head screwdriver:** Used to tighten or loosen cross-headed screws.
- **Torx screwdriver:** Used to tighten or loosen screws that have a star-like depression on the top, a feature that is mainly found on laptops.
- **Hex driver:** Used to tighten or loosen nuts in the same way that a screwdriver tightens or loosens screws (sometimes called a nut driver).
- **Needle-nose pliers:** Used to hold small parts.
- **Wire cutters:** Used to strip and cut wires.
- **Tweezers:** Used to manipulate small parts.
- **Part retriever:** Used to retrieve parts from locations that are too small for your hand to fit.
- **Flashlight:** Used to light up areas that you cannot see well.
- **Wire stripper:** A wire stripper is used to remove the insulation from wire so that it can be twisted to other wires or crimped to connectors to make a cable.
- **Crimper:** Used to attach connectors to wires.
- **Punch-down tool:** Used to terminate wire into termination blocks. Some cable connectors must be connected to cables using a punch down tool.

## Cleaning Tools

Having the appropriate *cleaning tools* is essential when maintaining and repairing computers. Using the appropriate cleaning tools helps ensure that computer components are not damaged during cleaning. Cleaning tools include the following:

- **Soft cloth:** Used to clean different computer components without scratching or leaving debris
- **Compressed air:** Used to blow away dust and debris from different computer parts without touching the components
- **Cable ties:** Used to bundle cables neatly inside and outside of a computer
- **Parts organizer:** Used to hold screws, jumpers, fasteners, and other small parts and prevents them from getting mixed together

## Diagnostic Tools

*Diagnostic tools* are used to test and diagnose equipment. Diagnostic tools include the following:

- A *digital multimeter*, is a device that can take many types of measurements. It tests the integrity of circuits and the quality of electricity in computer components. A digital multimeter displays the information on an LCD or LED.
- A *loopback adapter*, also called a loopback plug, tests the basic functionality of computer ports. The adapter is specific to the port that you want to test.





- The *toner probe*, is a two-part tool. The toner part is connected to a cable at one end using specific adapters, such as an RJ-45, coaxial, or metal clips. The toner generates a tone that travels the length of the cable. The probe part traces the cable. When the probe is in near proximity to the cable to which the toner is attached, the tone can be heard through a speaker in the probe.



Although an *external hard drive enclosure* is not a diagnostic tool, it is often used when diagnosing and repairing computers. The customer hard drive is placed into the external enclosure for inspection, diagnosis, and repair using a known-working computer. Backups can also be recorded to a drive in an external enclosure to prevent data corruption during a computer repair.

## Software Tools

Like hardware tools, there are a variety of software tools that can be used to help technicians pinpoint and troubleshoot problems. Many of these tools are free and several come with the Windows operating system.

## Disk Management Tools

Software tools help diagnose computer and network problems and determine which computer device is not functioning correctly. A technician must be able to use a range of software tools to diagnose problems, maintain hardware, and protect the data stored on a computer.

You must be able to identify which software to use in different situations. *Disk management tools* help detect and correct disk errors, prepare a disk for data storage, and remove unwanted files.

The following are some disk management tools:

- **FDISK:** A command-line tool that creates and deletes partitions on a hard drive. The FDISK tool is not available in Windows XP, Vista, or 7. It has been replaced with the Disk Management tool.
- **Disk Management Tool:** Initializes disks, creates partitions, and formats partitions.
- **Format:** Prepares a hard drive to store information.
- **ScanDisk or CHKDSK:** Checks the integrity of files and folders on a hard drive by scanning the file system. These tools might also check the disk surface for physical errors.
- **Defrag:** Optimizes space on a hard drive to allow faster access to programs and data.
- **Disk Cleanup:** Clears space on a hard drive by searching for files that can be safely deleted.
- **System File Checker (SFC):** A command-line tool that scans the operating system critical files and replaces files that are corrupted.

Use the Windows 7 boot disk for troubleshooting and repairing corrupted files. The Windows 7 boot disk repairs Windows system files, restores damaged or lost files, and reinstalls the operating system.

UNIT -4  
OPERATING SYSTEM

### Basic DOS Commands:

DOS commands are small programs, which are made to perform a particular job. Every DOS command performs different task. It is not possible to work on the computer without these commands. There are two types of DOS command.

**Internal Commands :** These commands enter into the computer memory during computer booting. These commands are not in the form of any file; so neither they can be viewed nor can be edited or detected. For example : MD, CD, TIME, DATE, COPY, COPER CON, TYPE ETC.

**External Commands :** These commands are stored in the computer list in the form of files. These Commands can be viewed, copied, changed or deleted. For example : FORMAT, COPY, PRINT, SYS, EDIT, TREE, SORT, PROMPT etc.

### **Important Internal DOS Commands**

**MD (Make Directory) :** We use this commands to make a new directory or sub directory.

Syntax : C:\>MD DIRECTORY NAME

Example : MD STUDENT

**CD (Change Directory) :** This commands is used to move from one directory to another.

Syntax : C:\> CD Directory name

Example : > CD Student

*Exit to Directory :*

CD... The command move the subdirectory to parent directory.

CD\ The command is used to move directly to the root directory.

**RD (Remove Directory) :** If a Directory which was earlier is ;not required than such directory can be removed by using

Syntax : C:\> RD Directory name

Example : >RD student

**Note :** (a) The directory, which is to be removed, must be empty.

(b) The directory in which one is working cannot be removed.

**TIME -** Displays current time and allows it to be changed.

Syntax: C:\> TIME

**DATE -** Displays current date and allows it to be changed.

Syntax: C:\> DATE

**CLS -** Clears the screen.

Syntax: C:\> CLS

**DIR -** Shows directory information of a diskette: name, size, and the date and time stamp of files.

Syntax: C:\>DIR [d:][path]

DEL : This command is used to erase the files which are no longer required.

Syntax : C:\> Del < File name >

Example : >Del Monu

TYPE : This command is used to view the contents of text file.

Syntax : C:\> Type <file name>

COPY : This command is used to copy of file from one place to another place. A copy of file is another file with the same contents.

Syntax : C:\> copy <source> < destination path>

REN : This command is used to rename the file. In REN command two parameters are used. The first is the file we want to rename and the second is the new name for the file.

Syntax : C:\> Ren <old file name> <New file name>

### **Basic WINDOWS Operations –**

To use Windows efficiently, you must master a few simple operations, such as pointing and clicking, dragging and dropping, and right-clicking. You perform all these operations with your mouse.

#### **Pointing and Clicking -**

The most common mouse operation is pointing and clicking. Simply move the mouse so that the cursor is pointing to the object you want to select, and then click the left mouse button once. Pointing and clicking is an effective way to select menu items, directories, and files.

#### **Double-Clicking -**

If you're using Windows XP's default operating mode, you'll need to double-click an item to activate an operation. This involves pointing at something onscreen with the cursor and then clicking the left mouse button twice in rapid succession. For example, to open program groups or launch individual programs, simply double-click a specific icon.

#### **Right-Clicking -**

When you select an item and then click the right mouse button, you'll often see a pop-up menu. This menu, when available, contains commands that directly relate to the selected object. Refer to your individual programs to see whether and how they use the right mouse button.

#### **Dragging and Dropping -**

Dragging is a variation of clicking. To drag an object, point at it with the cursor and then press and hold down the left mouse button. Move the mouse without releasing the mouse button, and drag the object to a new location. When you're done moving the object, release the mouse button to drop it onto the new location.

You can use dragging and dropping to move files from one folder to another or to delete files by dragging them onto the Recycle Bin icon.

## Hovering -

When you position the cursor over an item without clicking your mouse, you're hovering over that item. Many operations require you to hover your cursor and then perform some other action.

## Moving and Resizing Windows

Every software program you launch is displayed in a separate onscreen window. When you open more than one program, you get more than one window—and your desktop can quickly get cluttered.

There are many ways to deal with desktop clutter. One way to do this is to move a window to a new position. You do this by positioning your cursor over the window's title bar and then clicking and holding down the left button on your mouse. As long as this button is depressed, you can use your mouse to drag the window around the screen. When you release the mouse button, the window stays where you put it.

You also can change the size of most windows. You do this by positioning the cursor over the very edge of the window—any edge. If you position the cursor on either side of the window, you can resize the width. If you position the cursor on the top or bottom edge, you can resize the height. Finally, if you position the cursor on a corner, you can resize the width and height at the same time.

After the cursor is positioned over the window's edge, press and hold the left mouse button; then drag the window border to its new size. Release the mouse button to lock in the newly sized window.

## Maximizing, Minimizing, and Closing Windows

Another way to manage a window in Windows is to make it display full-screen. You do this by maximizing the window. All you have to do is click the Maximize button at the upper-right corner of the window.



Use the Maximize, Minimize, and Close buttons to manage your desktop windows.

If the window is already maximized, the Maximize button changes to a Restore Down button. When you click the Restore Down button, the window resumes its previous (pre-maximized) dimensions.

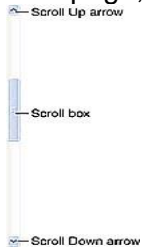
If you'd rather hide the window so that it doesn't clutter your desktop, click the Minimize button. This shoves the window off the desktop, onto the Taskbar. The program in the window is still running, however—it's just not on the desktop. To restore a minimized window, all you have to do is click the window's button on the Windows Taskbar (at the bottom of the screen).

If what you really want to do is close the window (and close any program running within the window), just click the window's Close button.

**CAUTION** *If you try to close a window that contains a document you haven't saved, you'll be prompted to save the changes to the document. Because you probably don't want to lose any of your work, click Yes to save the document and then close the program.*

## Scrolling Through a Window -

Many windows contain more information than can be displayed at once. When you have a long document or Web page, only the first part of the document or page is displayed in the window. To view the rest of the document or page, you have to scroll down through the window, using the various parts of the scrollbar. Use the scrollbar to scroll through long pages.



There are several ways to scroll through a window. To scroll up or down a line at a time, click the up or down arrow on the window's scrollbar. To move to a specific place in a long document, use your mouse to grab the scroll box (between the up and down arrows) and drag it to a new position. You can also click on the scroll bar between the scroll box and the end arrow, which scrolls you one screen at a time.

If your mouse has a scroll wheel, you can use it to scroll through a long document. Just roll the wheel back or forward to scroll down or up through a window.

## Using Menus -

Most windows in Windows use a set of pull-down menus to store all the commands and operations you can perform. The menus are aligned across the top of the window, just below the title bar, in what is called a menu bar.

You open (or pull down) a menu by clicking the menu's name. The full menu then appears just below the menu bar. You activate a command or select a menu item by clicking it with your mouse.



Navigating Windows' menu system.

Some menu items have a little black arrow to the right of the label. This indicates that additional choices are available, displayed on a submenu. Click the menu item or the arrow to display the submenu.

Other menu items have three little dots (called an ellipsis) to the right of the label. This indicates that additional choices are available, displayed in a dialog box. Click the menu item to display the dialog box.

The nice thing is, after you get the hang of this menu thing in one program, the menus should be very similar in all the other programs you use. For example, almost all programs have a File menu that lets you open, save, and close documents, as well as an Edit menu that lets you cut, copy, and paste. While each program has menus and menu items specific to its own needs, these common menus make it easy to get up and running when you install new software programs on your system.

## Using Toolbars -




Some Windows programs put the most frequently used operations on one or more toolbars, typically located just below the menu bar..) A toolbar looks like a row of buttons, each with a small picture (called an icon) and maybe a bit of text. You activate the associated command or operation by clicking the button with your mouse.

If the toolbar is too long to display fully on your screen, you'll see a right arrow at the far-right side of the toolbar. Click this arrow to display the buttons that aren't currently visible.

## Using Dialog Boxes, Tabs, and Buttons -

There are several different types of dialog boxes, each one customized to the task at hand. However, most dialog boxes share a set of common features, which include the following:

- **Buttons**—Most buttons either register your inputs or open an auxiliary dialog box. The most common buttons are OK (to register your inputs and close the dialog box), Cancel (to close the dialog box without registering your inputs), and Apply (to register your inputs without closing the dialog box). Click a button once to activate it.
- **Tabs**—These allow a single dialog box to display multiple "pages" of information. Think of each tab, arranged across the top of the dialog box, as a "thumbtab" to the individual page in the dialog box below it. Click the top of a tab to change to that particular page of information.
- **Text boxes**—These are empty boxes where you type in a response. Position your cursor over the empty input box, click your left mouse button, and begin typing.
- **Lists**—These are lists of available choices; lists can either scroll or drop down from what looks like an input box. Select an item from the list with your mouse; you can select multiple items in some lists by holding down the Ctrl key while clicking with your mouse.
- **Check boxes**—These are boxes that let you select (or deselect) various standalone options.
- **Sliders**—These are sliding bars that let you select increments between two extremes, similar to a sliding volume control on an audio system.

Name of control and picture	Description
(Command) Button 	Buttons (also called command buttons) do something when clicked.
Check box 	A check box turns something on or off. There is a check in the box if it is on, to change it click on it.
Text box 	Also called edit boxes, these boxes let you type text in them.
Radio button	Also called option buttons, these boxes come in groups, you can only pick one per group.
List box	These boxes contain lists of things: you can select one.
Combo box	Also called drop-down boxes, these boxes are like text boxes, but they have a button on the side that, when clicked, brings up a list of things that you can pick from.
Spin button	These buttons increase or decrease numerical values by one when the up or down arrow half is clicked.
Scroll bar	Click on the arrows at the top and bottom of these bars to move the screen, you can also drag the box that is on the bar.
Label	Often overlooked, labels don't do anything, but they sit near other controls with text in them to tell you what those things are.

## Mouse Operations

There are four basic mouse operations that you can perform:

### <Click>

To select an item or choose a menu command, point the mouse at it with the pointer and <Click> the left mouse button.

### <Click and Drag>

To move an item is called dragging. To complete this operation, point at the item, <Click> it and hold down the left mouse button. While holding down the left mouse button drag the item where you want it to be. Release the button. Note: Practice this a bit before doing it, since you can inadvertently drag an item anywhere.



### *<Double-Click>*

This is a shortcut method used to access an item or to open or close a window quickly without using a menu. To complete this operation, point the mouse pointer to the item and <Double-Click> it with the left mouse button.

### *<Right-Click>*

When you click the right mouse button you can access a drop down menu to choose what you can do with the item, such as "copy," "paste", etc. Every menu is specific to what you click. To perform this operation, point at the desired item or object and <Click> the right mouse button ONLY once.

## UNIT -5 WORKING WITH MS – OFFICE

### Components of the MS Word Window

Besides the usual PC window components (close box, title bar, scroll bars, etc.), a Word window has other elements

Component	Functionality or Purpose of the Component
Menu Bar	Contains File, Edit, View, Insert, Format, Tools, Table, Window and Help menus
Standard Toolbar	Contains icons for shortcuts to menu commands.
Formatting Tool Bar	Contains pop-up menus for style, font, and font size; icons for boldface, italic, and underline; alignment icons; number and bullet list icons; indentation icons, the border icon, highlight, and font color icons.
Ruler	Ruler on which you can set tabs, paragraph alignment, and other formats.
Insertion Point	Blinking vertical bar that indicates where text you type will be inserted. Don't confuse the insertion point with the mouse I-beam. To move the insertion point, just click the mouse where you want the point moved.
End-of-File Marker	Non-printing symbol that marks the end of the file. You cannot insert text after this mark.
Selection Bar (Gutter)	Invisible narrow strip along the left edge of the window. Your mouse pointer changes to a right-pointing arrow when it is in this area. It is used to select a line, a paragraph, or the entire document.
Split Handle	Double-click to split the window in two (to view different portions of the same file). Double-click to return to one window
Status Bar	Displays page number, section number, and total number of pages, pointer position on page and time of day.
Task Pane	Displays and groups commonly used features for convenience.
Office Assistant	An animated character that can provide help and suggestions. There are multiple characters to choose from, and it is possible to turn the Office Assistant off.

**A blank document**, ready to type in.

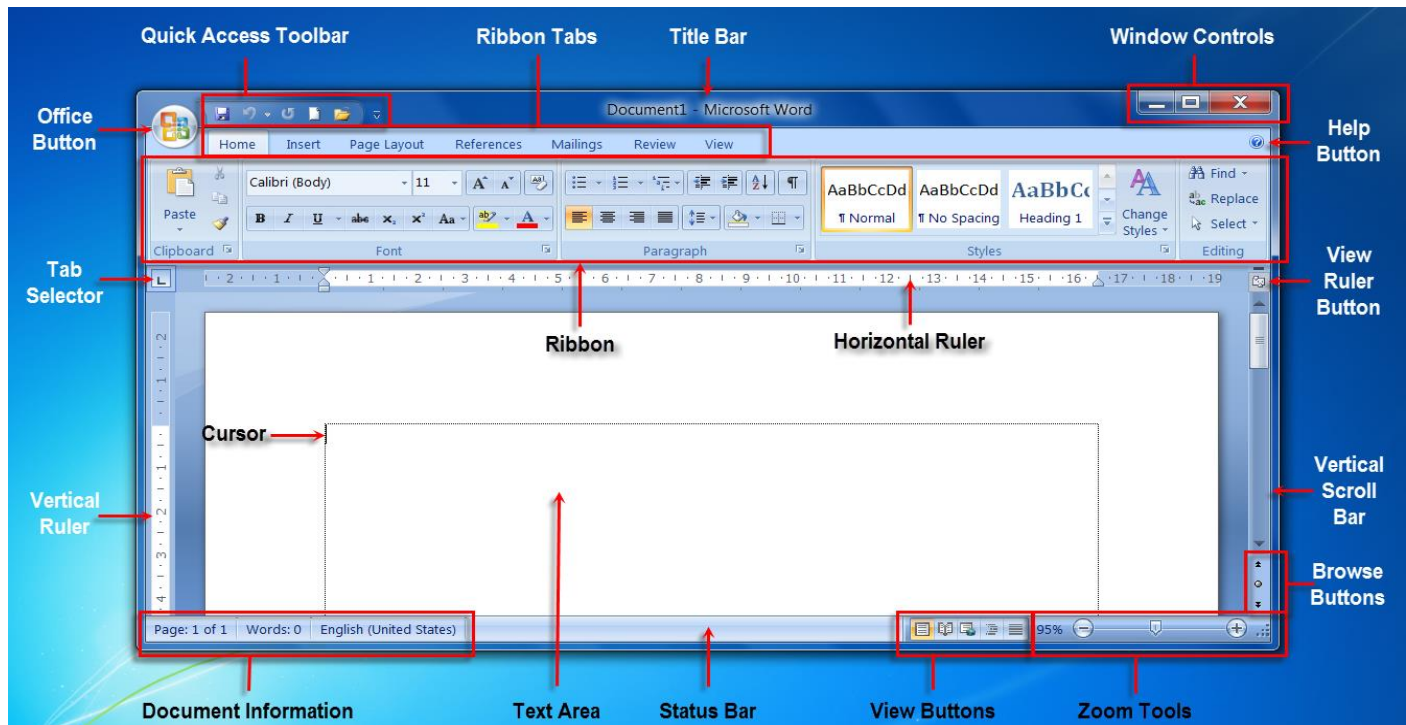
Callout 1 The first document you open is called Document1 in the title bar at the top of the window.

Callout 2 The menu bar. The File menu is the first one on the left.

Callout 3 The Standard and Formatting toolbars.

Callout 4 The insertion point.

When you start Word, a new **file** opens. That file is called a **document**. Above the document you'll see the menu bar and the toolbars displayed across the top of the window, as shown in the illustration.



If you've already started Word, you create a new document by clicking **New** on the **File** menu. In the **New Document** task pane that opens, click **Blank document**.

In the upper-left corner of the document, or page, is the insertion point, a blinking vertical line. The first thing you type will appear there. You can start further down the page if you want to by pressing ENTER until the insertion point is where you want the first line to begin. As you type, the insertion point moves to the right.

If you're typing a letter, you might start by typing the date. After that, press ENTER to move the insertion point down the page one line.

## Components of the MS Excel Window

Microsoft excel is a spreadsheet program. Spreadsheets present tables of values arranged in rows and columns that can be manipulated mathematically using both basic and complex arithmetic operations and functions.

It has varios components, major being:-

**Title Bar:-** The title bar displays both the name of the application and the name of the spreadsheet. The topmost blue bar with excel logo in the image.

**Menu Bar:-** The menu bar displays all of the menus available for use in Excel XP. The contents of any menu can be displayed by left-clicking the menu name. The bar below Title bar with File, Edit, View options in the image is called menu bar.

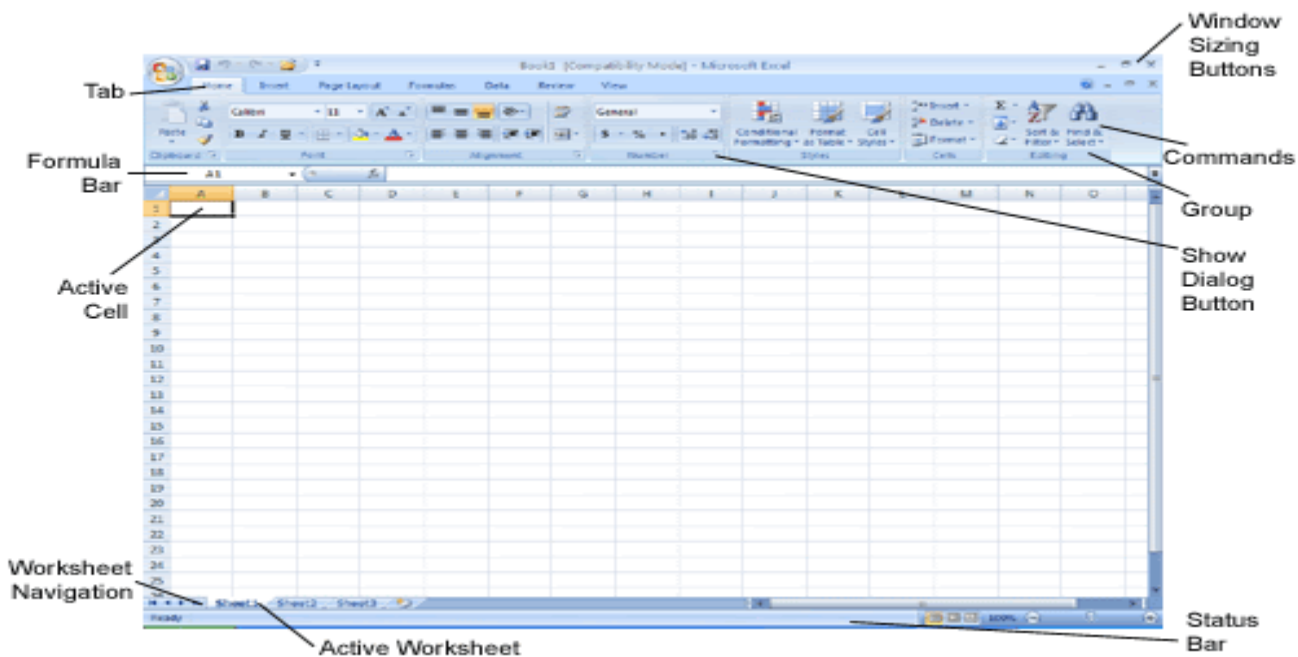
**Column Headings:** Each Excel spreadsheet contains 256 columns. Each column is named by a letter or combination of letters.

**Row Headings:** Each spreadsheet contains 65,536 rows. Each row is named by a number.

**Formula Bar:** The formula bar displays information entered—or being entered as you type—in the current or active cell. The contents of a cell can also be edited in the formula bar.

**Cell:** A cell is an intersection of a column and row. Each cell has a unique cell address. In the picture above, the cell address of the selected cell is A1. The heavy border around the selected cell is called the cell pointer.

**Workbook and worksheets:** Each sheet you see on screen is called worksheet and collections of these sheets is together called as a workbook.



## Components of the MS Power Point Window

PowerPoint's many features can be overwhelming to new presenters. As you work with the program, it can be useful to create a list of the PowerPoint elements you use most often. Consider the operations you perform in PowerPoint, as well as the content and data that those operations impact. A benefit of listing PowerPoint's elements is that you can concentrate on learning one element at a time. Here's a sample element list that you can use as a template for making your own: PowerPoint's user interface, slides, content, formatting, and presentation playback.

## **User Interface**

The most visible element of PowerPoint is its user interface—the screens, dialog boxes, buttons, panes, and other parts of the application window. The biggest part of the interface is the pane for creating and editing slides. The toolbar, called the Ribbon, is another big chunk of the application window. For example, if you insert an arrow shape on a slide, the Ribbon will display a new tab: "Drawing Tools." This tab is filled with previously unavailable commands for formatting the arrow.

## **Slides**

The slide is the PowerPoint element on which you insert text, graphics, audio, video, and animations. You can create new slides by pressing "Ctrl-M" or by clicking "New Slide" on the Home tab. Delete slides by selecting them in PowerPoint's left pane and then pressing the "Delete" key. Arrange slides by dragging them in the slide thumbnail pane. Change slide dimensions by clicking the "Page Setup" button on the Design tab.

## **Content**

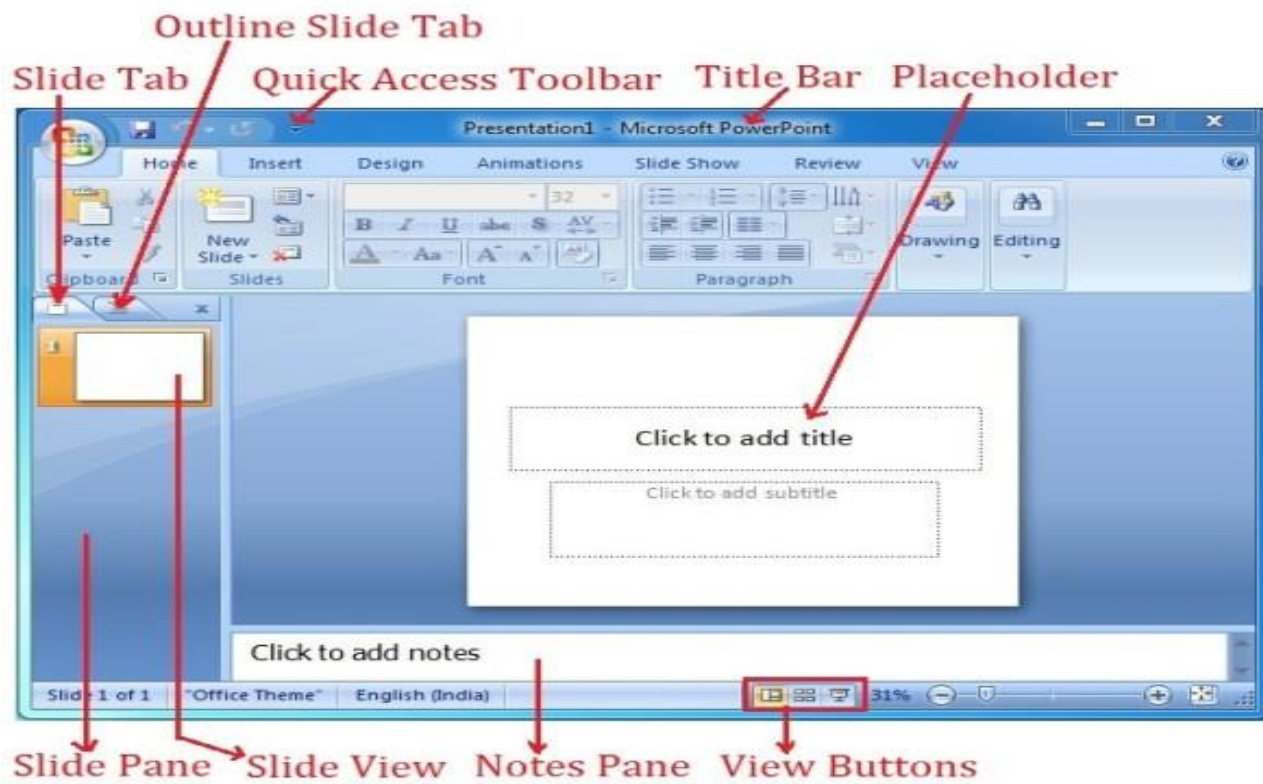
PowerPoint's content types include static text and graphics, audio, video, and animation created inside PowerPoint itself. Most of the commands for creating content are on the Insert tab. For example, the Media Clips group has a "Movie" option for importing videos. Use the Animation tab for creating new animations, such as entrance and exit effects on a slide's graphics and text.

## **Formatting**

Formatting commands are the PowerPoint element with which you decorate the content on your slides. The Home tab, for example, has many of the same formatting commands as Microsoft Word, including character-level tools such as "Bold," and paragraph-level tools that include "Align Text Left." Another tab, "Design," has a group of commands called Themes that let you apply font and color changes to all of the slides in your presentation at once.

## **Presentation Playback**

The final slide presentation will be the only PowerPoint element that your audience sees, if you've saved the presentation with the extension PPSX. In that case, clicking the PPSX file brings up the presentation directly, and not the PowerPoint interface you used to create the presentation. But if you've saved the presentation with the PPTX extension, the PowerPoint interface will appear—if PowerPoint is installed on the computer. Computers without the main PowerPoint application can still run PowerPoint presentations by using Microsoft's free PowerPoint viewer.





## **UNIT 6**

### **WORKING WITH INTERNET**

#### **What is the Internet?**

The Internet is a world wide network of computers that are connected (networked) and are using the communication method called TCP/IP. The Internet was named ARPANET in 1969 by the Advanced Research Projects Agency of the U.S. Department of Defense with just four computers connected together.

#### **What is the World Wide Web?**

Also called web or www, it is a collection of information, resources, pictures, sounds, multimedia on the internet that are linked and connected together. Using a software product such as Netscape makes accessing and linking to web pages containing information, easy. The world wide web was invented by Tim Bernes-lee in the CERN Laboratory in March 1989.

#### **What is a Host?**

A computer that is used to transfer data on the Internet.

#### **What is DNS?**

DNS (Domain Name System) is a large database of domain names and their correspondent Internet (IP Addresses) for example: [www.widget.com](http://www.widget.com) corrisponds to it's unique number 207.168.6.12

#### **What is HTML?**

Hypertext Markup Language is a coding language used to tell a browser how to place pictures, text, multimedia and links to create a web page. When a user clicks on a link within a web page, that link, which is coded with HTML, links the user to a specific linked web page.

**HTTP** - The hypertext transfer protocol (http) that enables html documents to be read on the Internet.

#### **What is Hypertext?**

Hypertext is text on a webpage that links to another document or webpage. The hypertext link can be as small as a letter or word, or as big as all the text on the page.

#### **What is FTP?**

File Transfer Protocal is a method of transferring files between two computers on the Internet. To access, upload or download information on a server computer (or a computer that accesses a server computer), FTP software makes the information access or transfer possible.

#### **What is a home Page?**

A home Page is the main or index page of a web site. For example, if a user opens Netscape or Internet Explorer and types the URL, <http://www.commentum.com>, that would open the home Page of the Commentum Communications company.

## What is a URL?

Uniform Resource Locator is a web address used to connect to a remote resource on the world wide web.

For example:

https://www.comentum.com

ftp://ftp.comentum.com

telnet://info.comentum.com

## Create an E-mail Account:

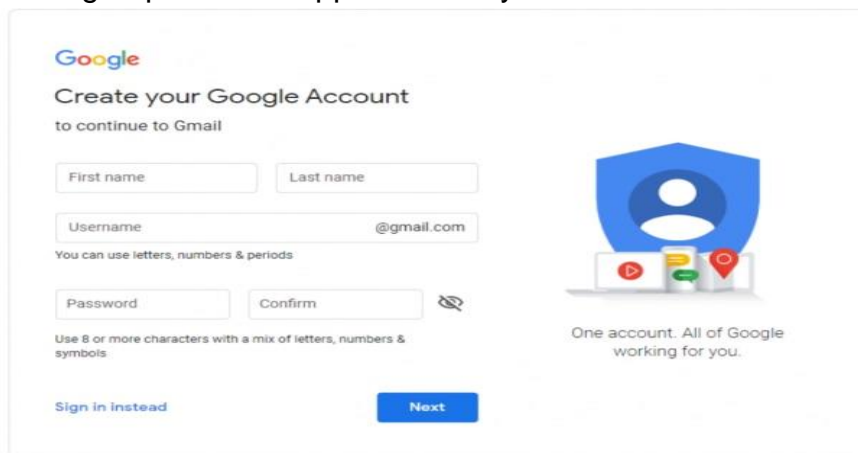
### How to create a Gmail account?

You can use your username and password to sign in to Gmail and other Google products like YouTube, Google Play, and Google Drive. Follow the steps, create your Gmail account and start sending emails.

**Step 1:** Visit Google account creation page, [accounts.google.com](https://accounts.google.com)

**Step 2:** Click on **Create account**, choose **for myself**.

**Step 3:** The sign-up form will appear. Enter your **first** and **last name**.

The image shows the Google account creation page. At the top, the Google logo is followed by the text "Create your Google Account to continue to Gmail". Below this, there are input fields for "First name" and "Last name". A "Username" field is shown with "@gmail.com" as a placeholder. A note states "You can use letters, numbers & periods". Below the username field are "Password" and "Confirm" fields, with a small icon of an eye for toggling visibility. A note below the password fields says "Use 8 or more characters with a mix of letters, numbers & symbols". At the bottom left is a link "Sign in instead" and at the bottom right is a blue "Next" button. On the right side of the form, there is a graphic of a blue shield with a white person icon, and below it, icons for YouTube, Google Play, and Google Maps, with the text "One account. All of Google working for you."

**Step 4:** Choose a **Username** for your account. (Here you can also use an existing email address)

**Step 5:** After choosing a username, **enter a password**. Type the password again to confirm. (As per Google's instruction always use 8 or more characters with a mix of letters, numbers & symbols)

**Step 6:** At last tap on **Next**. (Right corner of the screen)

**Step 7:** On the next page enter **your phone number** to verify your account. (It is a two-step verification process for security)

### Mobile phone

**Step 8:** On the given mobile number you will receive a text message from **Google** with a verification code. **Enter the verification code** and tap on **Verify**.

**Step 9:** On the next page enter your **DOB** in the specified fields.

### Birthday

Month

Day

Year

You can't leave this empty.

**Step 10:** Choose a **Gender**.

### Gender

I am...

You can't leave this empty.

**Step 11:** Tap on **Next**.

**Step 12:** Read, Google's Terms of Service and Privacy Policy will appear on the screen and click on **I agree**.

## Privacy and Terms

By choosing "I agree" below you agree to Google's [Terms of Service](#).

You also agree to our [Privacy Policy](#), which describes how we process your information, including these key points:

### Data we process when you use Google

- When you use Google services to do things like write a message in Gmail or comment on a YouTube video, we store the information you create.
- When you search for a restaurant on Google Maps or watch a video on YouTube, for example, we process information about that activity – including information like the video you watched, device IDs, IP addresses, cookie data, and location.

CANCEL

I AGREE

**Congratulations!** your account has been created. From now onwards every time you sign in you just have to enter your email id and password. And every time you sign-in don't forget to sign-out because it prevents others from viewing your emails.

## How to send an email

**Step 1:** Login your **Gmail account**, using Id and password.

**Step 2:** On the new page, click **Compose** (In the top left).

**Step 3:** A box appears on the screen, here in the **To** field, add recipients email id. (If you want, you can also add recipients in the **Cc** and **Bcc** fields)

[**CC is carbon copy, which means the e-mail sent to all the recipients can see every other E-mail ID**]

[**BCC is Blind Carbon Copy, which means no recipient can see other recipients for a particular E-mail message**]

**Step 4:** After that add a **subject**.

**Step 5:** In the body, write your **message**.

**Step 6:** At the bottom of the page, there is a send option-click **Send** to send mail.

## UNIT – 7

### C PROGRAMMING

**Write a program in c to find the greatest among three numbers.**

```
#include <stdio.h>
#include <conio.h>
void main()
{
    double n1, n2, n3;
    printf("Enter three numbers: ");
    scanf("%lf %lf %lf", &n1, &n2, &n3);
    if( n1>=n2 && n1>=n3)
        printf("%.2lf is the largest number.", n1);
    else if (n2>=n1 && n2>=n3)
        printf("%.2lf is the largest number.", n2);
    else
        printf("%.2lf is the largest number.", n3);
    getch();
}
```

**Write a program in C to find the average of n numbers using for loop.**

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int n,c;
    float a,sum=0;
    printf("enter a number\n");
    scanf("%d",&n);
    for(c=1;c<=n;c++)
    {
        sum=sum+c;
        printf("%d+",c);
    }
    a=sum/(n+1);
    printf("=%f\n",sum);
    printf("average=%f",a);
    getch();
}
```

**Write a program in C to find if a number is prime or not.**

```
#include <stdio.h>
int main()
{
    int n, i, flag = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
    for(i = 2; i <= n/2; ++i)
        if(n%i == 0)
        {
            flag = 1;
            break;
        }
    if (n == 1)
    {
        printf("1 is neither a prime nor a composite number.");
    }
    else
    {
        if (flag == 0)
            printf("%d is a prime number.", n);
        else
            printf("%d is not a prime number.", n);
    }
    return 0;
}
```

**Write a program in C to check whether a number is palindrome or not.**

```
#include <stdio.h>
int main()
{
    int n, reversedInteger = 0, remainder, originalInteger;
    printf("Enter an integer: ");
    scanf("%d", &n);
    originalInteger = n;
    // reversed integer is stored in variable
    while( n!=0 )
    {
        remainder = n%10;
        reversedInteger = reversedInteger*10 + remainder;
        n /= 10;
    }
}
```



```

// palindrome if originalInteger and reversedInteger are equal
if (originalInteger == reversedInteger)
    printf("%d is a palindrome.", originalInteger);
else
    printf("%d is not a palindrome.", originalInteger);
return 0;
}

```

### Write a program in C to compute Sine Series.

```

#include<stdio.h>
#include<conio.h>
void main()
{
    int i, n;
    float x, sum, t;
    clrscr();
    printf(" Enter the value for x : ");
    scanf("%f",&x);
    printf(" Enter the value for n : ");
    scanf("%d",&n);
    x=x*3.14159/180;
    t=x;
    sum=x;
    /* Loop to calculate the value of Sine */
    for(i=1;i<=n;i++)
    {
        t=(t*(-1)*x*x)/(2*i*(2*i+1));
        sum=sum+t;
    }
    printf(" The value of Sin(%f) = %.4f",x,sum);
    getch();
}

```

### Write a program in C to accept row wise and column wise elements in a 2D array and print them.

```

#include <stdio.h>
#define MAXROW 10
#define MAXCOL 10
int main()
{
    int matrix[MAXROW][MAXCOL];
    int i,j,r,c;
    printf("Enter number of Rows :");
    scanf("%d",&r);

```

```

printf("Enter number of Cols :");
scanf("%d",&c);
printf("\nEnter matrix elements :\n");
for(i=0;i< r;i++)
{
    for(j=0;j< c;j++)
    {
        printf("Enter element [%d,%d] : ",i+1,j+1);
        scanf("%d",&matrix[i][j]);
    }
}
printf("\nMatrix is :\n");
for(i=0;i< r;i++)
{
    for(j=0;j< c;j++)
    {
        printf("%d\t",matrix[i][j]);
    }
    printf("\n"); /*new line after row elements*/
}
return 0;
}

```

**Write a program in C to print vowels in a given string.**

```

#include <stdio.h>
int main()
{
    int index, str_length;
    //Create char buffer to store string
    char str[50];
    printf("\nEnter string: ");
    scanf("%[^\n]s", str);
    str_length = strlen(str);
    for(index = 0; index < str_length; index++)
    {
        if(str[index] == 'a' || str[index] == 'e' ||
           str[index] == 'i' || str[index] == 'o' ||
           str[index] == 'u' || str[index] == 'A' ||
           str[index] == 'E' || str[index] == 'I' ||
           str[index] == 'O' || str[index] == 'U')
        {
            printf("Vowel: %c at location: %d\n",str[index], index );
        }
    }
}

```

```
    return 0;
}
```

**Write a program in C to find the factorial of a number using recursion.**

```
#include<stdio.h>
int find_factorial(int);
int main()
{
    int num, fact;
    printf("\nEnter any integer number:");
    scanf("%d",&num);
    fact =find_factorial(num);
    printf("\nfactorial of %d is: %d",num, fact);
    return 0;
}
int find_factorial(int n)
{
    if(n==0)
        return(1);

    //Function calling itself: recursion
    return(n*find_factorial(n-1));
}
```

**Write a program in C to find the sum of Fibonacci series , by using function.**

```
#include<stdio.h>
int Fibonacci(int);
int main()
{
    int n, i = 0, c;
    scanf("%d",&n);
    printf("Fibonacci series\n");
    for ( c = 1 ; c <= n ; c++ )
    {
        printf("%d\n", Fibonacci(i));
        i++;
    }
    return 0;
}
int Fibonacci(int n)
{
    if ( n == 0 )
        return 0;
```

```

else if ( n == 1 )
    return 1;
else
    return ( Fibonacci(n-1) + Fibonacci(n-2) );
}

```

**Write a program in C to accept a number from keyboard and print it in reverse order of entry, by using function.**

```

#include <stdio.h>
long reverse(long);
int main()
{
    long n, r;
    scanf("%ld", &n);
    r = reverse(n);
    printf("%ld\n", r);
    return 0;
}
long reverse(long n)
{
    static long r = 0;
    if (n == 0)
        return 0;
    r = r * 10;
    r = r + n % 10;
    reverse(n/10);
    return r;
}

```