# VIDYAPITH ACADEMY

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# HARDWARE TECHNOLOGY

**TOPIC 1: COMPUTER FUNDAMENTALS (WINDOWS, MS-OFFICE & INTERNET)**

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# COMPUTER FUNDAMENTALS

Computer is an electronic device that is designed to work with Information. The term computer is derived from the Latin term 'compute', this means to calculate. Computer cannot do anything without a Program. It represents the decimal numbers through a string of binary digits. The Word 'Computer' usually refers to the Center Processor Unit plus Internal memory.

**CHARLES BABBAGE**

**Charles Babbage** was an English polymath. He was a mathematician, philosopher, inventor and mechanical engineer, who is best, remembered now for originating the concept of a programmable computer.

Considered a "father of the computer", Babbage is credited with inventing the first mechanical computer that eventually led to more complex designs. His varied work in
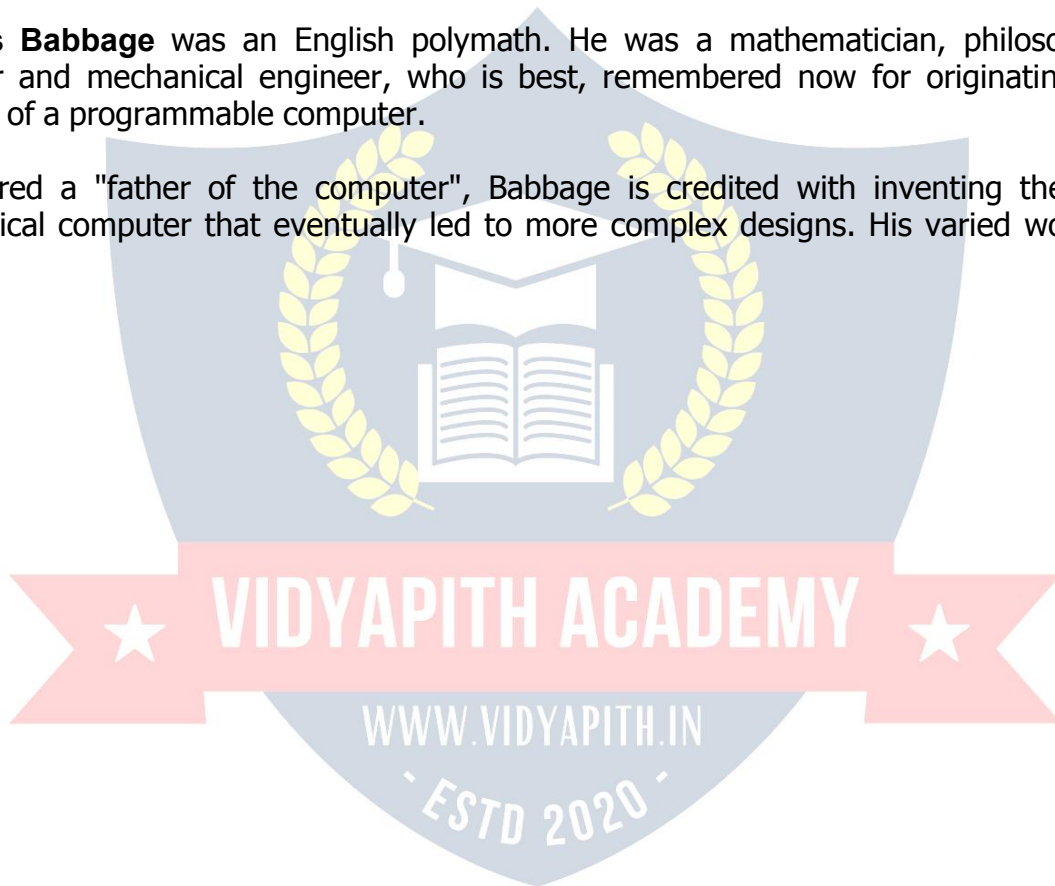
other fields has led him to be described as "pre-eminent" among the many polymaths of his century.

## FUNCTIONALITES OF COMPUTER:

Any digital computer carries out five functions in gross terms:

- Takes data as input.

- Stores the data/instructions in its memory and can use them when required.

- Process the data and convert it into useful information.

- Output the information.

- Control all the above four steps.
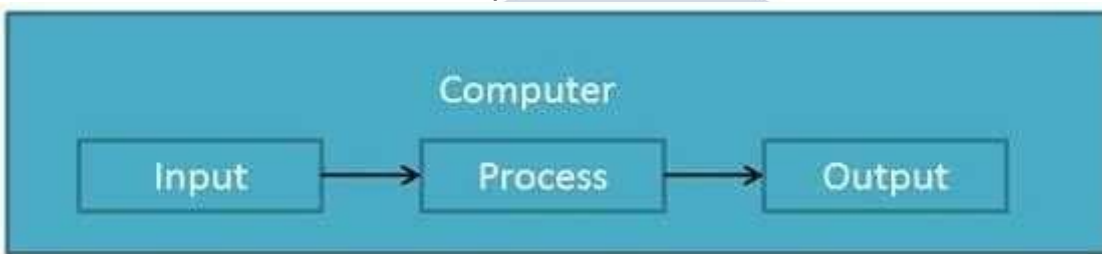


**Definition**

Computer System is an electronic data processing device which does the following:

- Accept and store an input data.

- Process the data input.
- And output the processed data in required format.

## ADVANTAGES OF COMPUTER:

Following list demonstrates the advantages of Computers: **High Speed**

- Computer is a very fast device.

- It is capable of performing addition of very big data.

- The computer has units of speed in microsecond, nanosecond and even the picoseconds.

- It can perform millions of calculations in a few seconds as compared to man who can spend many months for doing the same task.

**Accuracy**

- In addition to being very fast, computer is very accurate.

- The computer can perform calculations 100% error free.

- Computers perform all jobs with 100% accuracy.

### Storage Capability

- Memory is a very important characteristic of a computer.

- The computer has much more storage capacity than human beings.

- It can store large amount of data.

- It can store any type of data such as images, videos, text, audio and any other type.

### Diligence

- Unlike human beings, a computer is free from monotony, tiredness and lack of concentration.

- It can work continuously without creating any error and boredom.

- It can do repeated work with same speed and accuracy.

### Versatility

- A computer is a very versatile machine.
- A computer is very flexible in performing the jobs to be done.

- This machine can be used to solve the problems relating to various different fields.

- At one instant, it may be solving a complex scientific problem and the very next moment it may be playing a card game. **Reliability**

- A computer is a reliable machine.

- Modern electronic components have failure free long lives.

- Computers are designed to make maintenance easy.

### Automation

- Computer is an automatic machine.

- Automation means ability to perform the task automatically.

- Once a program is given to computer i.e. stored in computer memory, the program and instruction can control the program execution without human interaction.

### Reduction In Paper Work

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

- As data in electronic files can be retrieved as and when required, the problem of maintenance of large number of files gets reduced.

### Reduction In Cost

- Though the initial investment for installing a computer is high but it substantially reduces the cost of each of its transaction.

## DISADVANTAGES OF COMPUTER:

Following list demonstrates the disadvantages of Computers in today's arena.

- A computer is a machine and has no intelligence of its own to perform any task.

- Each and every instruction has to be given to the computer.

- A computer cannot take any decision on its own.

### Dependency

- It can perform function as instructed by the user, so it is fully dependent on human being.

### Environment

- The operating environment of computer should be dust free and suitable to it. **No Feeling**

- Computer has no feeling or emotions.

- It cannot make Judgment based on feelings, tastes, experiences and knowledge unlike a human being.

## APPLICATIONS OF COMPUTER

### Banking

Today Banking is almost totally dependent on computer.

Banks provide following facilities:

- Banks on-line accounting facility, which include current balances, deposits, overdrafts, interest charges, shares and trustee records.

- ATM machines are making it even easier for customers to deal with banks.

### Insurance

Insurance companies are keeping all records up to date with the help of computer. The Insurance Companies, Finance houses and Stock broking firms are widely using computers for their concerns.

Insurance Companies are maintaining a database of all clients with information showing

- how to continue with policies

- starting date of the policies

- next due installment of a policy

- maturity date

- interests due

- survival benefits

- bonus

### Education

The computer has provided a lot of facilities in the Education System.

- The uses of computer provide a tool in the Education system is known as CBE (Computer Based Education).

- CBE involves Control, Delivery and Evaluation of learning.

- The computer education is very familiar and rapidly increasing the graph of computer students.

- There are number of methods in which educational institutions can use computer to educate the students.

- It is used for prepare a database about student performance and analysis are carried out.

### Marketing

In Marketing uses of computer are following:

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

## Health Care

Computers have become important part in all Medical Systems.

The computers are being used in hospitals to keep the record of patients and medicines. It is also used in scanning and diagnosing different diseases. ECG, EEG, Ultrasounds and CT Scans etc. are also done by computerized machines.

Some of major fields of health care in which computer are used:
- **Diagnostic System:** Computers are used to collect data and identify cause of illness.
- **Lab-diagnostic System:** All tests can be done and reports are prepared by computer.
- **Patient Monitoring System:** These are used to check patient's signs for abnormality such as in Cardiac Arrest, ECG etc.
- **Pharma Information System:** Computer checks Drug-Labels, Expiry dates, harmful drug side effects etc.

- Nowadays, computers are also used in performing surgery.

## Engineering Design

Computers are widely used in engineering purposes.

One of major areas is CAD (Computer Aided Design). CAD provides creation, edition and modification of image. Some fields are:
- **Structural Engineering:** Requires stress and strain analysis required for design of Ships, Buildings, Budgets, and Airplanes etc.
- **Industrial Engineering:** Computers deals with design, implementation and improvement of integrated systems of people, materials and equipments.
- **Architectural Engineering:** Computers help in planning towns, designing buildings, determining a range of buildings on a site using both 2D and 3D drawings.

## Military
Computers are largely used in defense. Modern tanks, missiles, weapons etc. employ computerized control systems. Some military areas where a computer has been used are:

- Missile Control

- Military Communication

- Military operation and planning

- Smart Weapons

## Communication

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

- E-mail

- Chatting

- Usenet

- FTP

- Telnet

- Video-conferencing

## Government applications

Computers play an important role in government applications. Some major fields in this category are:

- Budgets

- Sales tax department
- Income tax department

- Male/Female ratio

- Computerization of voters lists

- Computerization of Driving Licensing system

- Computerization of PAN card ▢     Weather Forecasting.

## TYPES OF COMPUTER:

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

| Sr. No. | Type | Specifications |
|---------|------|----------------|
|         |      |                |

| 1 | PC (Personal Computer) | Single user computer system. Moderately powerful microprocessor. |
|---|---|---|
| 2 | WorkStation | Single user computer system. Similar to Personal Computer but have more powerful microprocessor. |
| 3 | Mini Computer | Multi-user computer system. Capable of supporting hundreds of users simultaneously. |
| 4 | Main Frame | Multi-user computer system. Capable of supporting hundreds of users simultaneously. Software technology is different from minicomputer. |
| 5 | Supercomputer | An extremely fast computer which can perform hundreds of millions of instructions per second. |

## INPUT DEVICES

Following are few of the important input devices which are used in Computer Systems

- Keyboard
- Mouse
- Joy Stick
- Light pen
- Track Ball
- Scanner
- Graphic Tablet
- Microphone
- Magnetic Ink Card Reader(MICR)
- Optical Character Reader(OCR)
- Bar Code Reader
- Optical Mark Reader
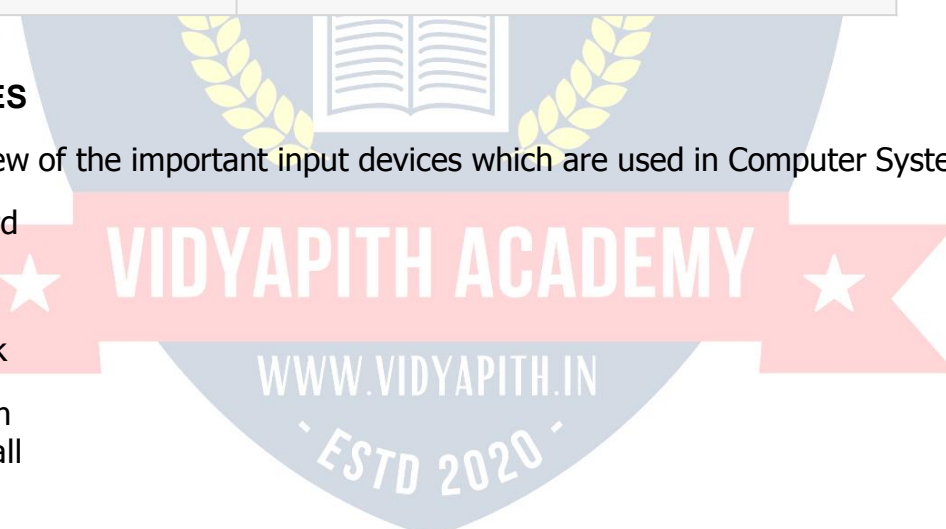
**OUTPUT DEVICES**

Following are few of the important output devices which are used in Computer Systems

*         Monitors

*         Graphic Plotter

*         Printer

**CPU (CENTRAL PROCESSING UNIT)**

*         CPU is considered as the brain of the computer.

*         CPU performs all types of data processing operations.

*         It stores data, intermediate results and instructions (program).

*         It controls the operation of all parts of computer.

CPU itself has following three components.

*         Memory Or Storage Unit:

*         Control Unit

*         ALU (Arithmetic Logic Unit)
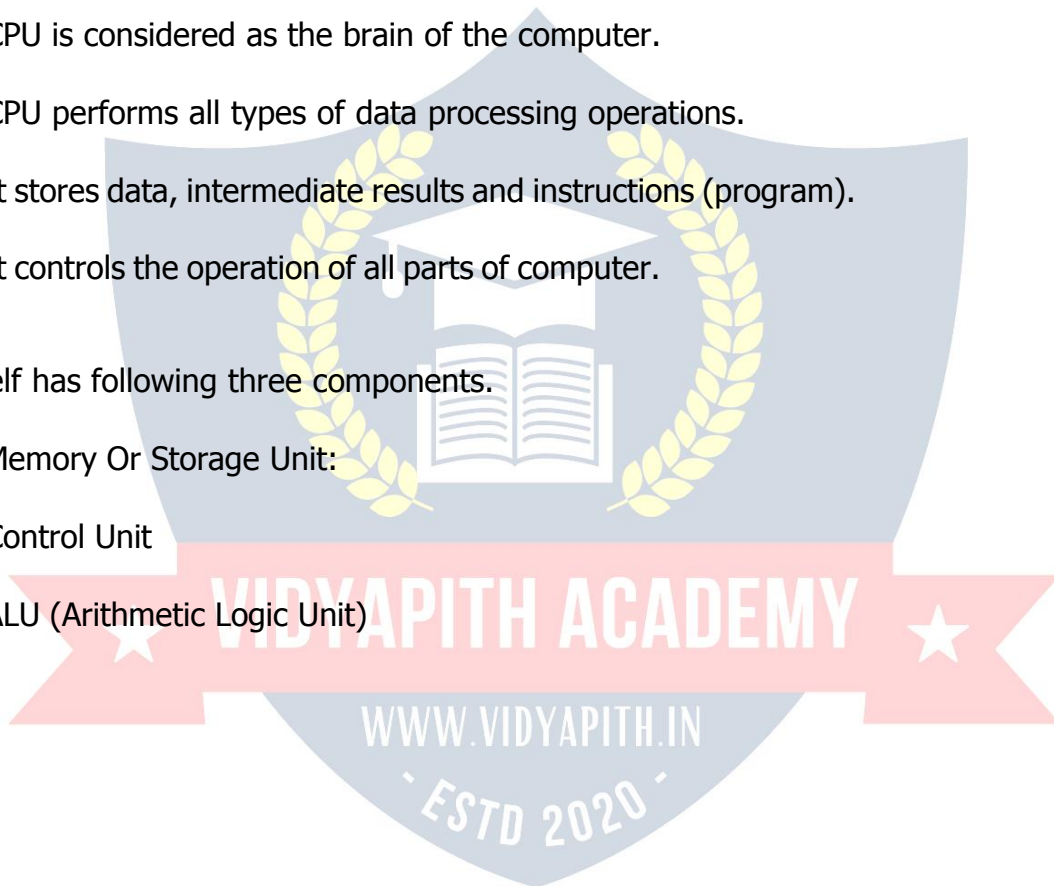
**Memory or Storage Unit:**

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

Its size affects speed, power and capability. There are primary memory and secondary memory two types of memories in the computer.

Function of Memory Unit is:

It stores all the data to be processed and the instructions required for processing.

It stores intermediate results of processing.

It stores final results of processing before these results are released to an output device.

All inputs and outputs are transmitted through main memory.

**Control Unit:**

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

Functions of this unit are

It is responsible for controlling the transfer of data and instructions among other units of a computer.

It manages and coordinates all the units of the computer.

It obtains the instructions from the memory, interprets them and directs the operation of the computer.

It communicates with Input/output devices for transfer of data or results from storage.

It does not process or store data.

**ALU (Arithmetic Logic Unit):**

This unit consists of two sub-sections namely

- Arithmetic section

- Logic Section

## ARITHMETIC SECTION

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

## LOGIC SECTION

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

## Units of Computer Memory Measurements

1 Bit = Binary Digit (Bits of Computer are 0 and 1)
8 Bits = 1 Byte
1024 Bytes = 1 KB (Kilo Byte)
1024 KB = 1 MB (Mega Byte)
1024 MB = 1 GB(Giga Byte)

## Computer Memory

In computing, **memory** refers to the physical devices used to store programs (sequences of instructions) or data (e.g. program state information) on a temporary or permanent basis for use in a computer or other digital electronic device. The term primary memory is used for the information in physical systems which function at highspeed (i.e. RAM), as a distinction from secondary memory, which are physical devices for program and data storage which are slow to access but offer higher memory capacity. Primary memory stored on secondary memory is called "virtual memory". An archaic synonym for memory is **store**.

The term "memory", meaning primary memory is often (but not always) associated with addressable semiconductor memory, i.e. integrated circuits consisting of silicon-based transistors, used for example as primary memory but also other purposes in computers and other digital electronic devices. There are two main types of semiconductor memory: volatile and non-volatile. Examples of non-volatile memory are flash memory (sometimes used as secondary, sometimes primary computer memory) and ROM/PROM/EPROM/EEPROM memory (used for firmware such as boot programs). Examples of volatile memory are primary memory (typically dynamic RAM, DRAM), and fast CPU cache memory (typically static RAM, SRAM, which is fast but energyconsuming and offer lower memory capacity per area unit than DRAM) .

## Volatile memory

Volatile memory is computer memory that requires power to maintain the stored information. Most modern semiconductor volatile memory is either Static RAM or dynamic RAM. SRAM retains its contents as long as the power is connected and is easy to interface to but uses six transistors per bit. Dynamic RAM is more complicated to interface to and control and needs regular refresh cycles to prevent its contents being lost. However, DRAM uses only one transistor and a capacitor per bit, allowing it to reach much higher densities and, with more bits on a memory chip, be much cheaper per bit. SRAM is not

worthwhile for desktop system memory, where DRAM dominates, but is used for their cache memories. SRAM is commonplace in small embedded systems, which might only need tens of kilobytes or less. Forthcoming volatile memory technologies that hope to replace or compete with SRAM and DRAM include Z-RAM, TTRAM, A-RAM and ETA RAM.

**Non-volatile memory**

Non-volatile memory is computer memory that can retain the stored information even when not powered. Examples of non-volatile memory include read-only memory(ROM), flash memory, most types of magnetic computer storage devices (e.g. hard disks, floppy discs and magnetic tape), optical discs, and early computer storage methods such as paper tape and punched cards.

# Operating System

An operating system is a program that acts as an interface between the software and the computer hardware.

- It is an integration set of specialized programs that are used to manage overall resources and operations of the computer.

- It is specialized software that controls and monitors the execution of all other programs that reside in the computer, including application programs and other system software.

**Objectives of Operating System**

- Making a computer system convenient to use in an efficient manner

- To hide the details of the hardware resources from the users

- To provide users a convenient interface to use the computer system.

- To act as an intermediary between the hardware and its users and making it easier for the users to access and use other resources.

- Manage the resources of a computer system.

- Keep track of who is using which resource, granting resource requests, according for resource using and mediating conflicting requests from different programs and users.

- The efficient and fair sharing of resources among users and programs

## Characteristics of Operating System

- **Memory Management** -- It keeps tracks of primary memory i.e. what part of it are in use by whom, what part are not in use etc. Allocates the memory when the process or program requests it.

- **Processor Management** -- Allocate the processor (CPU) to a process. De-allocate processor when processor is no longer required.

- **Device Management** -- Keep tracks of all devices. This is also called I/O controller. Decides which process gets the device when and for how much time.

- **File Management** -- Allocates the resources. De-allocates the resources. Decides who gets the resources.

- **Security** -- By means of passwords & similar other techniques, preventing unauthorized access to programs & data.

- **Job accounting** -- Keeping track of time & resources used by various jobs and/or users.

- **Control over system performance** -- Recording delays between request for a service & from the system.

- **Interaction with the operators** -- The interaction may take place via the console of the computer in the form of instructions. Operating System acknowledges the same, do the corresponding action and inform the operation by a display screen.

- **Error-detecting aids** -- Production of dumps, traces, error messages and other debugging and error-detecting methods.

- **Coordination between other software and users** -- Coordination and assignment of compilers, interpreters, assemblers and other software to the various users of the computer systems.

# WINDOWS 7

**Windows 7** is an operating system produced by Microsoft for use on personal computers, including home and business desktops, laptops, net books, tablet PCs, and media center PCs. It was released to manufacturing on July 22, 2009, and became generally available retail worldwide on October 22, 2009, less than three years after the release of its predecessor, Windows Vista. Windows 7's server counterpart, Windows Server 2008 R2, was released at the same time. Windows 7 is succeeded by Windows 8.

Unlike Windows Vista's many new features, Windows 7 was an incremental upgrade designed to work with Vista-compatible applications and hardware. Presentations given by Microsoft in 2008 focused on multi-touch support, an updated Windows shell with a new taskbar, referred to internally as the *Superbar*, a home networking system called Home Group, and performance improvements. Some standard applications that have been included with prior releases of Microsoft Windows, including Windows Calendar, Windows

Mail, Windows Movie Maker, and Windows Photo Gallery, are not included in Windows 7; most are instead offered separately at no charge as part of the Windows Essentials suite.

## Install Windows 7

Many people have computers that come with Windows 7 so they may never have to install it. However, you may need to install Windows 7 if:

- You replaced your hard disk drive with a new hard disk drive that does not have Windows 7 installed.
- You are reinstalling Windows 7 on a computer because you want to clean off your hard drive and remove any unwanted programs, such as spyware. ▯ You purchased a computer without an operating system.

## Pre-installation checklist

Before you begin the installation process, use this checklist to make sure that you are

prepared: ▯ You have the Windows 7 CD.

- You have the product key available. The product key is located on your Windows 7 CD case and is required to install and activate Windows 7.
- Your computer hardware is set up. At a minimum, you should connect your keyboard, mouse, monitor, and CD drive. If available, you should connect your computer to a wired network.
- You have Windows 7 drivers available. Drivers are software that Windows 7 uses to communicate with your computer's hardware. If you do not have drivers available, Windows 7 may already include drivers for your hardware. If not, you should be able to download them from your hardware manufacturer's website after you set up Windows 7.
- If you are reinstalling Windows 7 on an existing computer, you need a backup copy of your files and settings. The installation process will delete all of your files. You can use the File and Settings Transfer Wizard to store your files and settings on removable media and then restore them after installation is complete.

## Installation process

Installing Windows 7 can take up to two hours. To make the process more manageable, it has been broken up into several sections.

To Begin Installation:

1. Insert the Windows 7 CD into your computer and restart your computer.
2. If prompted to start from the CD, press Spacebar. If you miss the prompt (it only appears for a few seconds), restart your computer to try again.
3. Windows 7 Setup begins. During this portion of setup, your mouse will not work, so you must use the keyboard. On the Welcome to Setup page, press Enter. 4. On the Windows 7 Licensing Agreement page, read the licensing agreement. Press the Page Down key to scroll to the bottom of the agreement. Then press F8.

5. This page enables you to select the hard disk drive on which Windows 7 will be installed. Once you complete this step, all data on your hard disk drive will be removed and cannot be recovered. It is extremely important that you have a recent backup copy of your files before continuing. When you have a backup copy, press D, and then press L when prompted. This deletes your existing data.
6. Press Enter to select unpartitioned space, which appears by default.
7. Press Enter again to select Format the partition using the NTFS file system, which appears by default.
8. Windows 7 erases your hard disk drive using a process called formatting and then copies the setup files. You can leave your computer and return in 20 to 30 minutes.

**To Continue the Installation**

1. Windows 7 restarts and then continues with the installation process. From this point forward, you can use your mouse. Eventually, the Regional and Language Options page appears. Click Next to accept the default settings. If you are multilingual or prefer a language other than English, you can change language settings after setup is complete.
2. On the Personalize Your Software page, type your name and your organization name. Some programs use this information to automatically fill in your name when required. Then, click next.
3. On the Your Product Key page, type your product key as it appears on your Windows 7 CD case. The product key is unique for every Windows 7 installation. Then, click Next.
4. On the Computer Name and Administrator Password page, in the Computer name box, type a name that uniquely identifies your computer in your house, such as FAMILYROOM or TOMS. You cannot use spaces or punctuation. If you connect your computer to a network, you will use this computer name to find shared files and printers. Type a strong password that you can remember in the Administrator password box, and then retype it in the Confirm password box. Write the password down and store it in a secure place. Click Next.
5. On the Date and Time Settings page, set your computer's clock. Then, click the Time Zone down arrow, and select your time zone. Click Next.
6. Windows 7 will spend about a minute configuring your computer. On the Networking Settings page, click next.
7. On the Workgroup or Computer Domain page, click Next.

**To complete the installation**

1. Windows 7 will spend 20 or 30 minutes configuring your computer and will automatically restart when finished. When the Display Settings dialog appears, click OK.
2. When the Monitor Settings dialog box appears, click OK.
3. The final stage of setup begins. On the Welcome to Microsoft Windows page, click Next.
4. On the Help protect your PC page, click Help protect my PC by turning on Automatic Updates now. Then, click Next.
5. Windows 7 will then check if you are connected to the Internet:

    ○ If you are connected to the Internet, select the choice that describes your network connection on the Will this computer connect to the Internet directly, or through a network page. If you're not sure, accept the default selection, and click Next. ○ If you use dial-up Internet access, or if Windows 7 cannot connect to the Internet, you can connect to the Internet after setup is complete. On the How will this computer connect to the Internet? Page, click Skip.

6. Windows 7 Setup displays the Ready to activate Windows page. If you are connected to the Internet, click Yes, and then click Next. If you are not yet connected to the Internet, click No, click Next, and then skip to step 24. After setup is complete, Windows 7 will automatically remind you to activate and register your copy of Windows 7.

7. On the Ready to register with Microsoft page, click Yes, and then click Next.

8. On the Collecting Registration Information page, complete the form. Then, click Next.

9. On the Who will use this computer page, type the name of each person who will use the computer? You can use first names only, nicknames, or full names. Then click Next.

10. On the Thank you! Page, click Finish.

Windows 7 setup is complete. You can log on by clicking your name on the logon screen. If you've installed Windows 7 on a new computer or new hard disk drive, you can now use the File and Settings Transfer Wizard to copy your important data to your computer or hard disk drive.

# MS-DOS

Short for **Microsoft Disk operating system**, **MS-DOS** is a non-graphical command line operating system derived from 86-DOS that was created for IBM compatible computers. MS-DOS originally written by Tim Peterson and introduced by Microsoft in August 1981 and was last updated in 1994 when MS-DOS 6.22 was released. Today, MS-DOS is no longer used; however, the command shell, more commonly known as the **Windows command line** is still used by many users.

Today, most computer users are only familiar with how to navigate Microsoft Windows using the mouse Unlike Windows, MS-DOS is a command-line and is navigated by using MS-DOS commands. For example, if you wanted to see all the files in a folder in Windows you would double-click the folder to open the folder in Windows Explorer. In MS-DOS, to view that same folder you would navigate to the folder using the CD command and then list the files in that folder using the dir command.

### DOS Commands

MS-DOS has a relatively small number of commands, and an even smaller number of commonly used ones. Moreover, these commands are generally inflexible because, in contrast to Linux and other Unix-like operating systems, they are designed to accommodate few options or *arguments* (i.e., values that can be passed to the commands).

Some of the most common commands are as follows (corresponding commands on Unix-like operating systems are shown in parenthesis):

CD - changes the current directory (cd)
COPY - copies a file (cp)
DEL - deletes a file (rm)
DIR - lists directory contents (ls)
EDIT - starts an editor to create or edit plain text files (vi, vim, ed, Joe)
FORMAT - formats a disk to accept DOS files (mformat)
HELP - displays information about a command (man, info)
MKDIR - creates a new directory (mkdir)
RD - removes a directory (rmdir)
REN - renames a file (mv)
TYPE - displays contents of a file on the screen (more, cat)

**Other DOS Command commonly used are :**

**Append**
The append command can be used by programs to open files in another directory as if they were located in the current directory.
**Attrib**
The attrib command is used to change the attributes of a single file or a directory.
**Break**
The break command sets or clears extended CTRL+C checking. **Call**
The call command is used to run a script or batch program from within another script or batch program.
The call command has no effect outside of a script or batch file. In other words, running the call command at the DOS prompt will do nothing. **Chcp**
The chcp command displays or configures the active code page number.
**Chdir**
The chdir command is used to display the drive letter and folder that you are currently in. Chdir can also be used to change the drive and/or directory that you want to work in.
**Chkdsk**
The chkdsk command, often referred to as *check disk*, is used to identify and correct certain hard drive errors.
**Choice**
The choice command is used within a script or batch program to provide a list of choices and return the value of that choice to the program.
**Cls**
The cls command clears the screen of all previously entered commands and other text.
**Dir**
The dir command is used to display a list of files and folders contained inside the folder that you are currently working in.
The dir command also displays other important information like the hard drive's serial number, the total number of files listed, their combined size, the total amount of free space left on the drive, and more.

DIR [drive:][path][filename] [/P] [/W] [/A[[:]attributes]] [/O[[:]sort order]] [/S] [/B] [/L] [/V]

|  | Specifies drive, directory, or files to list. (Could be enhanced file [drive:][path][filename] specification or multiple file specs) |
|---|---|
| /P | Pauses after each screenful of information. |
| /W | Uses wide list format. |
| /A | attributes: D Directories<br>R Read-only files<br>H Hidden files<br>A Files ready for archiving<br>S System files<br>- Prefix meaning not |
| /O | List by files in sorted order, sort order:<br>N By name (alphabetic)<br>S By size (smallest first)<br>E By extension (alphabetic)<br>D By date and time (earliest first)<br>G Group directories first<br>- Prefix to reverse order<br>A By Last Access Date (earliest first) |
| /S | Displays files in specified directory and all subdirectories. |

## MS- PAINT

Paint is a drawing tool you can use to create simple or elaborate drawings. These drawings can be either black-and-white or color, and can be saved as bitmap files. You can print your drawing, use it for your desktop background, or paste it into another document. You can even use Paint to view and edit scanned photos.

You can also use Paint to work with pictures, such as .jpg, .gif, or .bmp files. You can paste a Paint picture into another document you've created, or use it as your desktop background.

**To draw a straight line**
1.  In the toolbox, click **Line** .
2.  Below the toolbox, click a line width.
3.  Drag the pointer to draw the line.

**To draw a freeform line**
1.  In the toolbox, click **Line** .
2.  Drag the pointer to draw the line.

**To draw a curved line**
1.  In the toolbox, click **Curve** .
2.  Below the toolbox, click a line width.
3.  Draw a straight line by dragging the pointer.
4.  Click where you want one arc of the curve to be, and then drag the pointer to adjust the curve. Repeat this step for a second arc. You can only create two curves for each line.

**To send an image using e-mail**

After you are done working on an image, you can send it to anyone who has an e-mail account (as long as you also have access to an e-mail account).

1. On the **File** menu, click **Send**.
2. Your e-mail program will display, with your image included either as an attachment or as part of the message section of your e-mail.
3. Specify your recipient's e-mail address, a subject, and a message; then send the email as you normally would.

**To draw a rectangle or square**

1. In the toolbox, click **Rectangle** ▭ to create a square-cornered shape, or click **Rounded Rectangle** ▢ to create a round-cornered shape.
2. Below the toolbox, click a fill style.
3. To draw a rectangle, drag the pointer diagonally in the direction you want.
4. To draw a square, hold down SHIFT while dragging the pointer.

**To acquire an image from a scanner or a digital camera** 1.

On the **File** menu, click **From Scanner or Camera**.

**2.** In the **Get Pictures** dialog box, click the image you want, and then click **Get Picture**.

**NOTEPAD**

**Notepad overview**

Notepad is a basic text editor you can use for simple documents or for creating Web pages. The most common use for Notepad is to view or edit text (.txt) files, but many users find Notepad a simple tool for creating Web pages.

Because Notepad supports only very basic formatting, you cannot accidentally save special formatting in documents that need to remain pure text. This is especially useful when creating HTML documents for a Web page because special characters or other formatting may not appear in your published Web page or may even cause errors. You can save your Notepad files as Unicode, ANSI, UTF-8, or big-endian Unicode. These formats provide you greater flexibility when working with documents that use different character sets.

**WORDPAD**

**WordPad** is a basic word processor that is included with almost all versions of Microsoft Windows from Windows 95 onwards. It is more advanced than Notepad but simpler than Microsoft Works Word Processor and Microsoft Word. It replaced Microsoft Write.

## Using WordPad

WordPad is a basic word processor that is included in Windows. A word processor is a computer program that you can use to create, edit, view, and print text documents. With WordPad, you can type letters, book reports, and other simple documents. You can also change how the text looks, quickly move sentences and paragraphs around, and copy and paste text within and between documents.

**The WordPad window**

To open WordPad, click the **Start** button🌐, click **All Programs**, click **Accessories**, and then click **WordPad.**

There are four main parts of the WordPad window:

**The toolbar:** The toolbar contains buttons for basic commands, including saving and printing. To find out what a button does, rest your mouse pointer on it. A box pops up showing the function of the button.

**The format bar:** The format bar contains buttons that you can use to format the text in your document. For example, you can choose the font, color, and alignment of your text.

**The ruler:** Use the ruler to check the layout and placement of text in your document.

**The document area:** This is where you type your document, make changes to the text, and apply your formatting.

**Typing text:** When you're ready to get started, type in the document area of WordPad. A flashing vertical line called the cursor | indicates where the next text that you type will appear. To move the cursor within text, click where you want the cursor to appear.

Unlike using a typewriter, when you type in WordPad you don't have to press ENTER to start a new line. WordPad will take care of that for you by automatically starting a new line when you reach the end of the one you're working on. When you want to start a new paragraph, press ENTER.

**Selecting text**

Whenever you want to do something to text in your document, such as copy it or format it, you need to select it first. To select text, position the mouse pointer to the left of where you want to begin your selection. With the pointer positioned, click and hold the left mouse button while you drag the pointer over the text that you want to select. The selected text will be highlighted. Once you've completed your selection, release the mouse button.

**Copying and moving text**

If you have text in one part of your document that you want to appear in another part, there are two ways to move the text around without having to retype it: You can copy and paste it to another location, or you can move it to another location.

When you copy text, it is placed in the Clipboard. You can then paste it in a different location. The original text is preserved.

When you move text to another location, the original text is not preserved. You might find this method useful when you want to rearrange the sentences and paragraphs in your document.

**To copy text and paste it in another location**

1. Select the text that you want to copy.

2. On the **Edit** menu, click **Copy**.

3. Move the cursor to the location where you want to insert the copied text.

**4.** On the **Edit** menu, click **Paste**.

**Tip**

☐ To quickly copy text that you've selected, press CTRL+C. To paste it, press CTRL+V.

### Inserting and deleting text

WordPad makes it easy to insert and delete text wherever you want. To insert text, click where you want to insert the text and then just start typing. To delete text, select the text that you want to delete, and then press DELETE.

### Formatting your document

Formatting refers to the how the text in your document looks as well as how it is arranged. WordPad lets you easily change the formatting in your document. For example, you can choose from many different fonts and font sizes, and you can make your text almost any color you want. You can also easily change how your document is aligned.

### To change the font, font style, or font size:

1. Select the text whose formatting you want to change.

2. On the **Format** menu, click **Font**.

3. In the **Font** box, type or select the font you want to use.
4. In the **Font Style** box, type or select the font style you want.

5. In the **Size** box, type or select the size you want to use.

### To change the color

1. Select the text whose color you want to change.

2. On the **Format** menu, click **Font**.

3. Under **Color**, click the color that you want.

### To change the alignment

You can align the text in your document to either the left margin, the center, or the right margin.

1. Select the paragraph whose alignment you want to change.

2. On the **Format** menu, click **Paragraph**.

3. In the **Alignment** box, click the alignment you want.

### Saving your document

It's a good idea to save your document periodically while you are working on it so that in case your computer stops working for some reason, you won't lose any of your work. Saving the document will also allow you to come back to it later if you want to work on it again.

**To save the document**

☐ On the **File** menu, click **Save**.

If you haven't saved the document yet, you'll be asked to provide a name for the document and location on your computer to save it to:

1.    In the **Save in** box, click the location where you want to save the document.

2.    In the **File name** box, type a name for your document.

**3.**    Click **Save**.

**Printing your document**

On the **File** menu, click **Print**. In the **Print** dialog box, use the **Page Range** box and the **Number of copies** box to specify which pages you want to print as well as how many copies. When you're done, click **Print**.

**Microsoft Office** is an office suite of desktop applications, servers and services for the Microsoft Windows and OS X operating systems, introduced by Microsoft on August 1, 1989. Initially a marketing term for a bundled set of applications, the first version of Office contained Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. Over the years, Office applications have grown substantially closer with shared features such as a common spell checker, OLE data integration and Microsoft Visual Basic for Applications scripting language. Microsoft also positions Office as a development platform for line-of-business software under the Office Business Applications brand. Office is reported to now be used by over a billion people worldwide.

The current versions are Office 2013 for Windows, released on October 11, 2012 and Office 2011 for OS X, released October 26, 2010. On 24 October 2012, the RTM final code of Office 2013 Professional Plus has been released to TechNet and MSDN subscribers for download.  On 15 November 2012, the 60-day trial version of Office 2013 Professional Plus was released for download.

# MS- WORD

Microsoft Word is an example of a program called a "word processor." The key benefit to using a word processor is that you can make changes easily, including correcting spelling; adding, deleting, formatting, and relocating text; and inserting images. Once you create a document, you can effortlessly print it (as many copies as you want!), save it for later modifications, or send it to a friend via e-mail. Microsoft Word is a very powerful word processor—this handout was created using just a small number of its features!

Microsoft Word is available on both PCs and Macs, so what you learn in class today should be applicable to any computer you use. The program may look slightly different depending on the version and computer that you're using, but Microsoft Word will function in the same basic ways. There are other word processors out there, including OpenOffice.org Writer, WordPerfect, Apple Pages, and WordPad. They have many features in common with Microsoft Word, and you should feel free to choose any program you prefer.
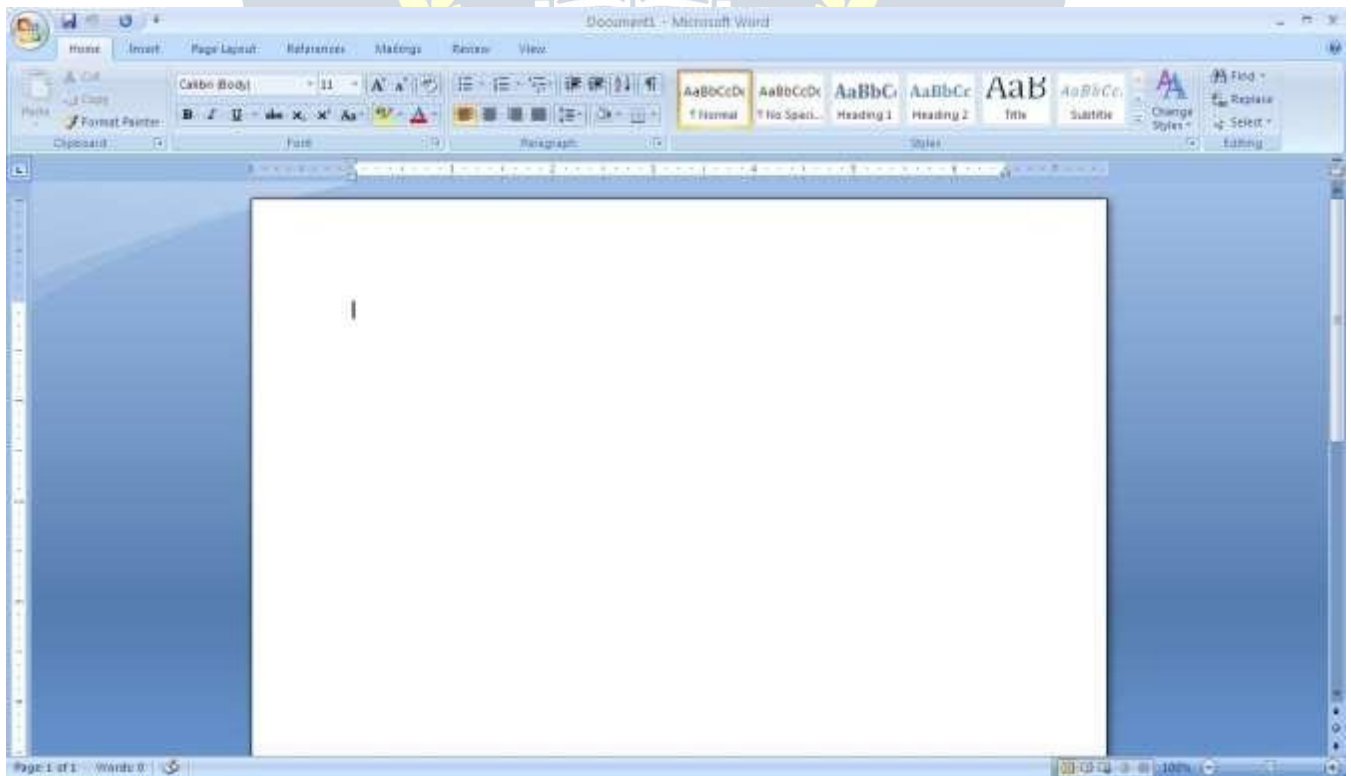
**Opening Microsoft Word**

To get started with Microsoft Word (sometimes called "MS Word"), you will need to locate and open the program on your computer. To open the program, point to Word's icon on the desktop with your mouse and double-click on it with the left mouse button. If you don't see the MS Word icon on your desktop, you'll have to access the program from the Start Menu. Click on the button in the bottom left corner to pull up the Start Menu. You should see the MS Word icon here, so click on it once with your left button. If you still don't see it, click on "All Programs" and scroll through the list of programs until you find it. Click once with your left button to open the program. Occasionally, Microsoft Word will be in a folder called "Microsoft Office" or something similar—this will make one more step between "All Programs" and "Microsoft Word."

MS Word will then open a blank page called "Document 1."

This is an image of the upper-left corner of MS Word. This box features two important pieces of information: the name of the file that you are currently working on (in this case, "Document 1" since we have not yet renamed it) and which program you are using ("Microsoft Word").There should now be a blinking line in the top left corner of the part of the screen that looks like a sheet of paper. This means you will be able to type in this space!

## Microsoft Word Features



## The Title Bar

This is a close-up view of the Title Bar, where file information is located. It shows the name of the file (here, "Microsoft Word") and the name of the program ("Microsoft Word"). Notice the three buttons on the right side, controlling the size and closing of the program.

**Minimize**: Left click this button to shrink the window down to a small button that will appear in the task bar

**Maximize**: Left click this button to make the window as large as it can be—it should take up your entire screen.

**Close**: Left-click this button to close the window. The program will close and stop running. Make sure you save your work first!

**Restore Down**:
Left-click this button to make the window smaller without minimizing it. The tabbed Ribbon menu system is how you navigate through Word and access various Word commands. If you have used previous versions of Word, the Ribbon system replaces the traditional menus.

## The File Menu

In Microsoft Office 2007, there was something called the Microsoft Office Button ( ) in the top left-hand corner. In Microsoft Office 2010, this has been replaced with a tab in the Ribbon called "File."

When you left-click on this tab, a drop-down menu appears. From this menu, you can perform the same functions as were found under the Microsoft Office Button menu, such as: Create a new document, open files, save files in a variety of ways, and print.

**Quick Access Toolbar**

On the top left-hand side of the Title Bar, you will see several little icons above the File menu. These let you perform common tasks, such as saving and undoing, without having to find them in a menu. We'll go over the meanings of the icons a little later.

## The Home Tab

The most commonly used commands in MS Word are also the most accessible. Some of these commands available in the Home Tab are: The Home Tab Toolbar offers options that can change the font, size, color, alignment, organization and style of the text in the document. For example, the "Times New Roman" Indicates the FONT of your text, the "12" indicates the SIZE of your text; etc. We will go over how to use all of these options to format your text in a little while. Each of these options expands into a menu if you left-click on the tiny down-arrow in the bottom right corner of the window. The ruler is found below the Ribbon. The ruler tells you where you are on the page, along with the dimensions of the overall document. Just like a real piece of paper, the default setting is 8.5 x 11 inches, and the margins have been incorporated for you. Similar to most options in MS Word, this is entirely customizable and the user can create a document of any dimensions.

**Keyboard Review**

In order to use MS Word effectively, you must input commands using both the mouse and the keyboard. The above image of a keyboard should look similar to the keyboard in front of you; learning just a few certain keys will help to improve your efficiency in typing, as well as present you with more options within the program. The following is a list of commonly used keys that have special functions in MS Word (key functions can change depending on which program you are using):

1. Backspace: This key deletes letters backward.

2. Delete: This key deletes letters forward.

3. Shift: This key, when pressed WITH another key, will perform a secondary

Function.

4. Spacebar: This key enters a space between words or letters.

5. Tab: This key will indent what you type, or move the text to the right. The default Indent distance is usually ½ inch.

6. Caps Lock: Pressing this key will make every letter you type capitalized.

7. Control (Ctrl): This key, when pressed WITH another key, performs a shortcut.

8. Enter: This key either gives you a new line, or executes a command (pressed in MS Word, it begins a new line).

9. Number Keypad: These are exactly the same as the numbers at the top of the

Keyboard; some people just find them easier to use in this position.

10. Arrow Keys: Like the mouse, these keys are used to navigate through a document.

**MICROSOFT WORD BASICS**

**Typing Text**

To enter text, type just as you would if you were using a typewriter. To capitalize a letter, hold down the SHIFT key while typing the letter. Or, press the CAPS LOCK key on the left-hand side of your keyboard. You will have to press the CAPS LOCK key again—once you are done capitalizing—to remove the lock. You do not need to press ENTER to start a new line—Microsoft Word will automatically wrap your sentence at the end of the line. To move the cursor from its position at the end of your sentence to anywhere else on the page, use the mouse or the arrow keys to move the cursor where you want the letters or spaces to be (left-click the mouse to place the cursor) and then type what you want to add—the text will automatically adjust to include it. Press ENTER to start a new paragraph (this is sometimes called a "carriage return").

**Deleting Text**

While typing a document, sometimes you will make a mistake. Unlike a typewriter, MS Word can delete text on the screen and leave no trace—it is as if you never typed on the

page in the first place. There are two different buttons on the keyboard that will allow you to erase text. They are the "Delete" key and the "Backspace" key (#s 1 and 2 on the keyboard map on page. The "Backspace" key deletes words to the LEFT of the cursor, and the "Delete" key deletes words to the RIGHT of the cursor.

**BACKSPACE ↔ DELETE**

Let's assume that the vertical line dissecting the word "creative" in the example above is

Our cursor. Pressing the "Backspace" key will erase "a," "e," "r," "c," and so on, moving

LEFT. The "Delete" key will erase "t," "i," "v," "e," and so on, moving RIGHT.
To delete a whole chunk of text at once, left-click with your mouse and drag to highlight a

section of text. Then simply press "Backspace" or "Delete" and all of the highlighted Text

will disappear.

**Undoing and Redoing**

The UNDO and REDO features of Microsoft Windows applications are great tools to rely on. The program will keep a list of the last 25 commands that you have performed, and it allows for taking "one step" backwards in order to erase what you have just done. Click on the UNDO button in the Quick Access Toolbar to go back one step. Click on the REDO button in the Quick Access Toolbar to go forward one step.

**Formatting Text**

Changing the look of what you've written is called "formatting." This can include changing the text style, size, color, and more. This is a sentence that features many different fonts. This is a sentence that features many different sizes. From the Home Tab, the "B" will make your text BOLD, the "I" will put it in italics, and the "U" will add an underline to your text. These features do not have to be used independently of each other—in other words, you can bold, underline, and italicize a single piece of text. The alignment of the text can be altered using the buttons with the horizontal lines on them. You can align text To the LEFT, To the CENTER and to the RIGHT.

In order to apply certain stylistic or formatting changes to text, you must first HIGHLIGHT the text. This is a common procedure in Microsoft Windows applications, and because it is so useful, it is a skill worth practicing. You can also change the font color by clicking on the appropriate buttons in the

**Formatting Toolbar.** Experiment and remember—you can always start over with a fresh, new document, so don't worry about making mistakes! If you do, however, there is always the incredible "UNDO" tool. Cutting, Copying, and Pasting Text in MS Word, you can CUT

or COPY text from one area of the document and save that text to be PASTED elsewhere (these commands are found on the Home Tab). When you CUT text, you actually delete it from where you took it, as opposed to COPYING it, which makes a copy of your selection.

When you CUT or COPY text, it is stored on the CLIPBOARD. The Clipboard is a tool in MS Word that stores cuts and copies of your work, to be pasted in other places in the document. Once your selection is on the CLIPBOARD, you can PASTE it as many times as you want! CUTTING a selection will place it on the clipboard, just in case you want to PASTE it elsewhere. To CUT a selection, first highlight it. Then, click on the CUT icon from the Home Tab. The highlighted text will disappear, as you have just cut it out, but a copy is now on your clipboard, and MS Word is waiting for you to paste it somewhere else. To PASTE this cut selection, place your cursor where you want the selection to go. Click on the PASTE icon from the Home Tab toolbar, and it will pop the text into place, right where you have your cursor. To COPY, simply follow those same steps, replacing the CUT command with COPY. The COPY command  will not alter your original selection atall, as it simply makes a copy of the selection without changing or deleting it in any way.

## DOING MORE WITH MICROSOFT WORD

### Inserting Images and Clip Art

With Microsoft Word, you can insert pictures in your document using the Insert Tab toolbar. You can insert pictures from the "Clip Art" album that comes with the program, or you can insert pictures from a file that you have previously saved on a disk or elsewhere on the computer (e.g., the My Pictures folder).Clip Art is a collection of cartoon and computer-generated images that cover a broad array of commonly needed icons and pictures. These include business, holiday, nature, entertainment, academic and other themes, along with standard bullets and symbols.

 To insert a clip art picture into a Microsoft Word document, you will first need to place your cursor (left-click) where you wish to insert you picture in your document. Then, from the Insert tab on the Ribbon, click on **"Clip Art."** A Clip Art search box will appear on the right side of your screen. From here, you can enter a search word for the picture you would like to find. Then click "Go." This will show all the options of pictures you can insert. When you see a piece of clip art that you like, click on it, and it will automatically insert into your document, in the exact place where you left the cursor. To resize your image, grab one of the corners of the image by left-clicking and holding—drag it to your desired size and fine-tune the placement. The cursor will change from a typing icon to a double arrow when it can be used to resize an image.

 Drag the corner toward the upper-left corner of the screen, and the image will grow. Drag toward the bottom-right, and it will shrink. You can move the image to another place in the document by left-clicking and holding on the center of it; drag it to its desired location. More options, such as aligning the image with text (or special effects like wrapping text around or through an image) can be found by clicking on the picture, and then choosing the Picture Tools Tab. You can also insert a photograph or other images from your files

using this same process. On the Insert Tab, click on Picture and locate the files that you want to include.

**Modifying Line Spacing**

Line spacing in Word refers to the amount of space between lines of text. The default in Word 2010 is 1.15 spacing, which leaves a little bit more space than single-spacing, or what you would find in a normal book. Single spacing is generally easy for the eye to read. There may be times, however, when you want to change this spacing. One common option is to double-space text: This text is double-spaced. Double-spacing is especially useful if someone else is proof reading your document. It allows for more room to write comments on the page.

**To change the line spacing:**

1. Select text you want to format by highlighting it.

2. On the Home Tab, click on the Line Spacing button in the Paragraph group.

3. Choose the spacing you want from the menu that appears. For more options, select Line Spacing Options. In the dialog box that appears, you can choose other spacing options, including spacing between paragraphs. This can be done by changing the values in the before and after boxes.

**Creating Bulleted and Numbered Lists**

Word allows you to create lists within your document that can be organized with bullets or numbers. Lists are useful for presenting text that wouldn't make the most sense in paragraph form (for example, step-by-step instructions) or for emphasizing key points Bullets are usually small circles at the beginning of item in a list, and numbers are used for lists that are arranged in sequential order. Here's an example of a bulleted list:

- Bananas
- Milk
- Eggs
- Ice Cream

**To create a list:**

1. On the Home tab, select either the Bullets or Numbering buttons from the Paragraph group. If you want to choose a particular style for your bullets or numbers, click on the triangle next to the button and choose a style from the menu that appears.

2. You will see the first bullet or number appear on your document. Type your first line of text and then hit Enter.

3. Another bullet or number will appear automatically. Type your next line of text and hit Enter.

4. When you have finished your list, hit Enter twice to end the bullets or numbering.

**Changing Views and Overall Look**

There will be times when you need to create documents that don't fit on a standard piece of paper (8.5" by 11").

**Click on the Page Layout Tab.**

From this menu, you can alter the margins, width, height, and orientation (portrait = 11"14long; landscape = 11" wide) of the document, as well as choose from a variety of templates, different types of paper, and document styles that come with the program. To change the orientation of your page, click on the Orientation button.

Click on Landscape from the drop-down box that appears. Your document should now be in landscape position. If you wish to return to portrait orientation, go through the same steps, clicking on the Landscape option instead of Portrait. If you would like to change the display of your document or zoom in and out without affecting the way your document will print, you can do that from the View Tab. Anything you change from the View Tab will not change the way your document prints out. So if you want your text to be bigger when you print out the document, make sure to change the size of the font instead of the zoom.

**Spelling and Grammar Check**

One benefit of using a computerized word processor is its ability to recognize, change, and give advice about your writing. MS Word has utilities that can check your spelling and grammar against a master database, and can offer advice on a variety of different grammatical styles. **MS Word** automatically underlines any words that it does not recognize in red, assuming that they are not spelled correctly, and underlines in green if it does not recognize the grammatical pattern, assuming that the sentence does not make sense.

For example: In this case, "jumping" should read "jump" and "laziy" should be "lazy." If you right click on the word, a menu with pop up with options, including "Ignore" if you do not want help on this specific phrase or agree with the suggestion. You can also choose to add words to the MS Word spelling database, if you are going to use them often and don't want them to be flagged as misspelled every time—this is especially useful for names, as MS Word often interprets these as misspellings. The spelling and grammar tools can be found in the Review Tab

**USING MICROSOFT WORD**

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**Opening Microsoft Word**

To get started with Microsoft Word (sometimes called "MS Word"), you will need to locate and open the program on your computer. To open the program, point to Word's icon on the desktop with your mouse and double-click on it with the left mouse button. If you don't see the MS Word icon on your desktop, you'll have to access the program from the Start Menu. Click on the button in the bottom left corner to pull up the Start Menu. You should see the MS Word icon here, so click on it once with your left button. If you still don't see it, click on "All Programs" and scroll through the list of programs until you find it. Click once with your left button to open the program.

Occasionally, Microsoft Word will be in a folder called "Microsoft Office" or something similar—this will make one more step between "All Programs" and "Microsoft Word."MS Word will then open a blank page called "Document 1."This is an image of the upper-left corner of MS Word. This box features two important pieces of information: the name of the file that you are currently working on (in this case, "Document 1" since we have not yet renamed it) and which program you are using ("Microsoft Word").There should now be a blinking line in the top left corner of the part of the screen that looks like a sheet of paper. This means you will be able to type in this space!

**MICROSOFT WORD BASICS**

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The "Backspace" key deletes words to the LEFT of the cursor, and the "Delete" key deletes words to the RIGHT of the cursor.

## Microsoft Word Features

### The Title Bar

This is a close-up view of the Title Bar, where file information is located. It shows the name of the file (here, "Microsoft Word") and the name of the program ("Microsoft Word"). Notice the three buttons on the right side, controlling the size and closing of the program.

**Minimize**: Left click this button to shrink the window down to a small button that will appear in the task bar

**Maximize**: Left click this button to make the window as large as it can be—it should take up your entire screen.

**Close**: Left-click this button to close the window. The program will close and stop running. Make sure you save your work first!

**Restore Down:** Left-click this button to make the window smaller without minimizing it.

### The File Menu

In Microsoft Office 2007, there was something called the Microsoft Office Button ( ) in the top left-hand corner. In Microsoft Office 2010, this has been replaced with a tab in the Ribbon called "File." When you left-click on this tab, a drop-down menu appears. From this menu, you can perform the same functions as were found under the Microsoft Office Button menu, such as: Create a new document, open existing files, save files in a variety of ways, and print.

### The Home Tab

The most commonly used commands in MS Word are also the most accessible. Some of these commands available in the Home Tab are: The Home Tab Toolbar offers options that can change the font, size, color, alignment, organization and style of the text in the document. For example, the "Times New Roman" indicates the FONT of your text, the

"12" indicates the SIZE of your text; etc. We will go over how to use all of these options to format your text in a little while. Each of these options expands into a menu if you left-click on the tiny down-arrow in the bottom right corner of the window.

**The Ruler**

The ruler is found below the Ribbon. The ruler tells you where you are on the page, along with the dimensions of the overall document. Just like a real piece of paper, the default setting is 8.5 x 11 inches, and the margins have been incorporated for you.
Similar to most options in MS Word, this is entirely customizable and the user can create a document of any dimensions.

**Keyboard Review**

In order to use MS Word effectively, you must input commands using both the mouse and the keyboard. The above image of a keyboard should look similar to the keyboard in front of you; learning just a few certain keys will help to improve your efficiency in typing, as well as present you with more options within the program. The following is a list of commonly used keys that have special functions in MS Word (key functions can change depending on which program you are using)

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3. Shift: This key, when pressed WITH another key, will perform a secondary function.

4. Spacebar: This key enters a space between words or letters.

5. Tab: This key will indent what you type, or move the text to the right. The default indent distance is usually ½ inch. 6. Caps Lock: Pressing this key will make every letter you type capitalized.

7. Control (Ctrl): This key, when pressed WITH another key, performs a shortcut.

8. Enter: This key either gives you a new line, or executes a command (pressed in MS Word, it begins a new line).

9. Number Keypad: These are exactly the same as the numbers at the top of the keyboard; some people just find them easier to use in this position.

10. Arrow Keys: Like the mouse, these keys are used to navigate through a document or page.
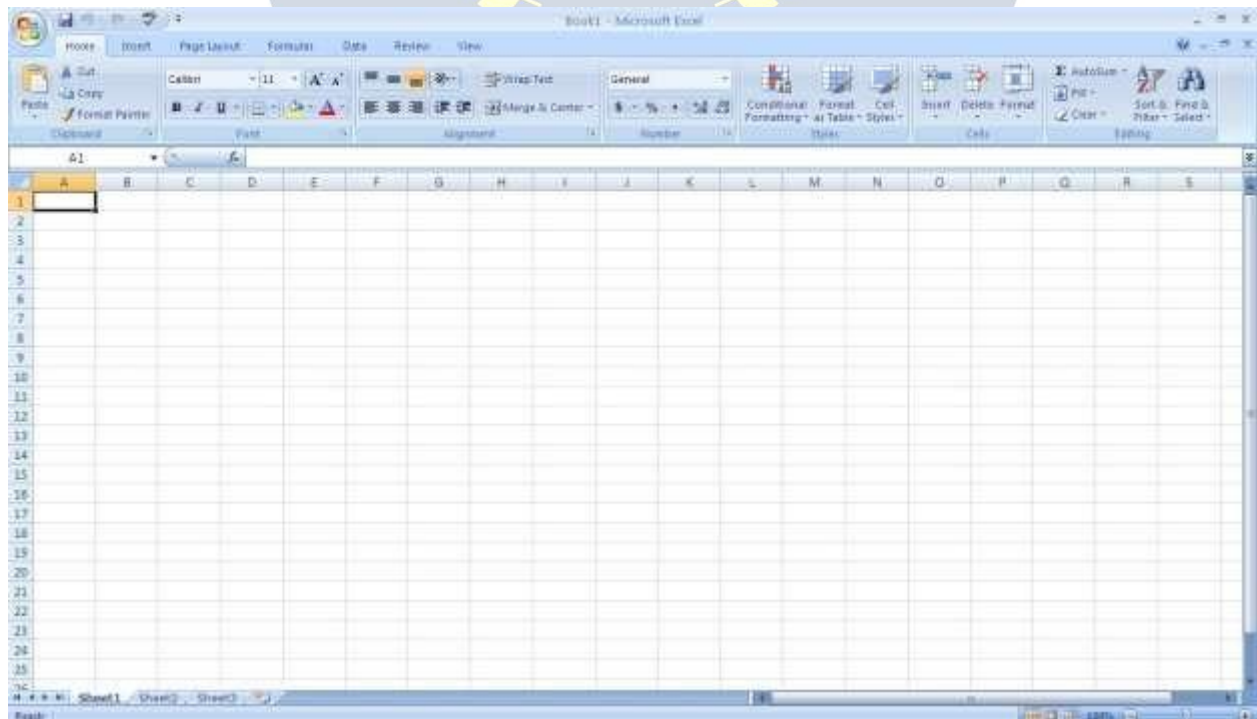
# MICROSOFT EXCEL

Microsoft Excel is an example of a program called a "spreadsheet." Spreadsheets are used to organize real world data, such as a check register or a rolodex. Data can be numerical or alphanumeric (involving letters or numbers). The key benefit to using a spreadsheet program is that you can make changes easily, including correcting spelling or values, adding, deleting, formatting, and relocating data. You can also program the spreadsheet to perform certain functions automatically (such as addition and subtraction), and a spreadsheet can hold almost limitless amounts of data—a whole filing cabinet's worth of information can be included in a single spreadsheet. Once you create a spreadsheet, you can effortlessly print it (as many copies as you want!), save it for later modifications, or send it to a colleague via e-mail. Microsoft Excel is a very powerful.

## Opening Microsoft Excel

To get started with Microsoft Excel (often called "Excel"), you will need to locate and open the program on your computer. To open the program, point to Excel's icon on the desktop with your mouse and double-click on it with the left mouse button. If you don't see the Excel icon on your desktop, you'll have to access the program from the Start Menu. Click on the button in the bottom left corner to pull up the Start Menu. You may see the Excel icon here, so click on it once with your left button. If you still don't see it, click on "All Programs" and scroll through the list of programs until you find it. It may also be located in a folder called "Microsoft Office" or something similar—it will depend on your specific machine. Click once with your left button to open the program. Excel will then open a blank page called "Book1."

## Microsoft Excel Features

**The Title Bar**

This is a close-up view of the Title Bar, where file information is located. It shows the name of the file (here, "Book1," the default title) and the name of the program ("Microsoft Excel"). You will be able to name your file something new the first time that you save it. Notice the three buttons on the right side of the Title Bar, controlling the size and closing of the program.

**The Ribbon Menu System**

The tabbed Ribbon menu system is how you navigate through Excel and access various Excel commands. If you have used previous versions of Excel, the Ribbon system replaces the traditional menus. At the bottom, left area of the spreadsheet, you will find worksheet tabs. By default, three worksheet tabs appear each time you create a new workbook. On the bottom, right area of the spreadsheet you will find page view commands, the zoom tool, and the horizontal scrolling bar.

**The File Menu**

In Microsoft Office 2007, there was something called the Microsoft Office Button ( ) in the top left-hand corner. In Microsoft Office 2010, this has been replaced with a tab in the Ribbon called "File."When you left-click on this tab, a drop-down menu appears. From this menu, you can perform the same functions as were found under the Microsoft Office Button menu, such as: Create a new worksheet, open existing files, save files in a variety of ways, and print.6

Quick Access Toolbar On the top left-hand side of the Title Bar, you will see several little icons above the File menu. These let you perform common tasks, such as saving and undoing, without having to find them in a menu. We'll go over the meanings of the icons a little later.

**The Home Tab**

The most commonly used commands in Excel are also the most accessible. Some of these commands available in the Home Tab are: The Home Tab Toolbar offers options that can change the font, size, color, alignment, organization and style of the text in the spreadsheet and individual cells. For example, the "Calibri" indicates the FONT of your text; the "11" indicates the SIZE of your text; etc. We will go over how to use all of these options to format your text in a little while. Each of these options expands into a menu if you left-click on the tiny down-arrow in the bottom right corner of the window. This tab works the exact same way as the MS Word Formatting Toolbar. The main difference is that the format changes will only affect the selected cell or cells, all unselected cells remain in the default setting ("Calibri" font, size "11").

**Equation Editor**

The Equation Editor is generally found below the ribbon menu. The left side denotes which cell is selected ("C5") and the right side allows you to input equations or text into the selected cell.

There are two ways to input information into a cell. You may either select an individual cell and type the equation or text into the equation editor or type the equation or text directly

into the selected cell. Equations (for example, =SUM(D5+E5)) will automatically be hidden inside the cell and can only be viewed using the equation editor; the result of the equation will display in the cell. If any written text is longer than the cell width, then the spreadsheet will cover up any portion longer than the cell width. The information will still be in the cell, you just won't be able to see it at all times.

**Keyboard Review**

In order to use Excel effectively, you must input commands using both the mouse and the keyboard. The above image of a keyboard should look similar to the keyboard in front of you; learning just a few certain keys will help to improve your efficiency in typing as well as present you with more options within the program. The following is a list of commonly used keys that you may already be familiar with:

1. Backspace: This key deletes letters backwards.
2. Delete: This key deletes letters forward.
3. Shift: This key, when pressed WITH another key, will perform a secondary function.
4. Spacebar: This key enters a space between words or letters.
5. Tab: This key will indent what you type, or move the text to the right. The default indent distance is usually ½ inch.
6. Caps Lock: Pressing this key will make every letter you type capitalized.
7. Control (Ctrl): This key, when pressed WITH another key, performs a shortcut.
8. Enter: This key either gives you a new line, or executes a command.
9. Number Keypad: These are exactly the same as the numbers at the top of the keyboard; some people just find them easier to use in this position.
10. Arrow Keys: Like the mouse, these keys are used to navigate through a document or page.

**Pointer Shapes**

As with other Microsoft programs, the pointer often changes its shape as you work in Excel. Each pointer shape indicates a different mode of operation. This table shows the various pointer shapes you may see while working in Excel.

**MICROSOFT EXCEL BASICS**

**Formatting Cells**

Cells are the small rectangular boxes that make up the spreadsheet. All the information entered into an Excel spreadsheet is entered into cells. The cell width and height will usually need to be adjusted to view all the information entered into a cell.

To adjust the cell width, move the mouse pointer in between two cell columns in the column header. Hold down the left mouse button and drag the mouse left to shorten the width or right to expand the width. Notice that all cells within the column are automatically adjusted. Adjust the cell height using the same method. Move the mouse cursor between two rows, hold down the left mouse button and move the mouse up to decrease the height and down to increase the height. Before you begin entering data into a spreadsheet, you may already know the width and height you want your cells to have. In this case, you can adjust all the widths and heights by doing the following: Select the "square" between Column A and Row 1.

This will select ALL the cells in the spreadsheet. From the "Home" tab of the Ribbon Menu, within the "Cells" box, click on "Format," and select Row Height. You will now be asked to enter a numerical value for height. The default value is 15, but you can enter your own height value (10, 20, 25, etc.).

Repeat the same steps for Column width. From the "Home" tab of the Ribbon Menu, within the "Cells" box, click on "Format," and select Column Width. Note that the default value for the width is 8.43. Enter your own width value (5, 10, 15, 20, etc.).

For any given cell or selected cells, you can also format the way your data is represented within the cell(s). Select a single cell or multiple cells.
Again, from the "Home" tab of the Ribbon Menu, within the "Cells" box, click on Format."
Select "Format Cells."The format window will now appear, giving you a wide variety of options on how to format your cell.

**Number** – This allows you to choose how to represent the numbers that are entered into a cell (number, currency, time, etc.).
**Alignment** – This determines how the data will be aligned within the cell (left-side, centered, or right-side).
**Font** – Select the type of font to be used within the cells.
**Border** – This option lets you choose what type of border, if any, you would like around the cells or some of the cells.
**Fill** – This allows you to change the background color of the cell.
**Protection** – This option allows you to "lock" cell information so that other users cannot make changes.  **Typing in Cells**
Click on a cell to begin typing in it. It is that easy! When you are finished typing in the cell, press the Enter key and you will be taken to the next cell down. You can then begin typing in that cell. You can easily navigate around the cells using your arrow keys. Keep in mind that the Formatting toolbar in Microsoft Excel 2010 is exactly the same as the one used for Microsoft Word 2010. The biggest difference between the two programs is that, in Excel, the format is set for each individual cell.

 So if you change the font and applied the bold option in cell C5, then this format will only be applied to cell C5. All remaining cells will remain in default mode until they have been changed. Sometimes you may only wish to adjust the format of one particular cell. In this case, simply select the cell by clicking the mouse on it and make any necessary adjustments to the font, size, style, and alignment. Those changes will not carry over when you begin typing in a new cell. Other times, you may wish to adjust the text format of a group of cells, entire rows, or entire columns.

In Excel, you can choose groups of cells in rectangular units—all the cells you select must form a rectangle of some kind. To select a group of cells, begin by clicking on the cell that would be in the upper-left hand corner of your rectangle. Hold down the Shift key on your keyboard and use the arrows (←, →, ↑, ↓) on the keyboard to expandthe selection of cells, or click and drag your mouse. Once the group of cells has been

selected, you can make adjustments to the font, size, style, and alignment and they will be applied to all selected cells.

To select an entire row, click on the Row Number with your mouse—note how the entire row becomes highlighted. All formatting changes will now be applied to the whole row. To select an entire column, click on the Column Number with your mouse—again, the entire column will become highlighted. All formatting changes will be applied to the whole column.

**Inserting Rows and Columns.**
When you are working on a spreadsheet, you may realize that you left out a row or column of data and need to add it in. To insert a row, click on the row below where you want your new row to be (remember to click on the row number to highlight the entire row). From the "Home" tab, within the "Cells" box, click "Insert." Select

**"Insert Sheet Rows."** A new row will automatically be inserted and the row numbers automatically adjusted. To insert a column, click on the column to the right of where you want your new column to be (remember to click on the column letter to highlight the entire column). From the "Home" tab, within the "Cells" box, click "Insert." Select "Insert sheet Columns." A new column will automatically be inserted and the column letters automatically adjusted.

**Sorting Data**
Once you have created your spreadsheet and entered in some data, you may want to organize the data in a certain way. This could be alphabetically, numerically, or another way. Let's look at the following spreadsheet as an example. This information can be sorted by check number, date, alphabetically by description, or using any of the other columns.

First, select all the cells that represent the data to be sorted, including the header descriptions (Check No., Date, Description, etc.). Then, select the first cell in Row 1 (Check No.) Click and drag to select all the cells that you want to sort. Using the mouse, select Sort & Filter from the Editing panel. Select Custom Sort…
Select the column you wish to sort by. Do you want to sort by alphabetical order, reverse alphabetical order, date, or amount? When you press "OK," your spreadsheet will be sorted in the order that you specified.

**AutoSum and Excel Equations**
One of the most powerful features of Excel is its ability to perform basic math functions on data. Excel can add, subtract, multiply, divide, find the average, and perform general counting functions on the numerical data that you enter. To enable this feature, highlight all of the cells in a column, plus one additional empty cell in which to display the result.

**Select the AutoSum icon from the ribbon menu:**
If you click directly on the $\Sigma$, Excel will automatically add up the numbers you have selected. If you click on the little dropdown arrow next to it ($\blacktriangledown$), you will get the full choice of mathematical functions. If you double-click on the cell in which the answer appears, you

will see an equation that looks something like this (you will also see this equation in the Equation Editor):

Let's break down what exactly the equation means:

= indicates that you are starting an equation in this cell.

SUM tells the function to be performed. In this case, all the cells will be added together.

( ) The parentheses contain the cells that the function will be performed on.

D2 this is the first cell to be included in the addition formula.

D8 this is the last cell to be included in the addition formula indicates that all cells between the first and the last should be included in the formula.

The spreadsheet will often "select" the cells that it thinks you wish to include. But you Can manually change the cell range by typing into the Equation Editor. When you are ready to execute the formula, just press the "Enter" key. Other mathematical functions you can perform from the AutoSum button include:

**Average** – This function will calculate the average of the selected cells.

Count Numbers – This function simply counts the number of cells selected.

**Max** – This function will return the highest value of the selected cells.

**Min** – This function will return the lowest value of the selected cells.

**\*Remember\*** Excel equations are similar to programming languages, so have some patience and if at first you don't succeed, try again. Even Excel professionals create incorrect formulas on their first try.

Once you get an equation to work, you will technically be a computer programmer!

**Creating Charts and Graphs:**

In Excel, there are also ways to represent your data in chart or graphical forms. To create a chart or graph, select the Insert tab from the Ribbon Menu bar. In the middle of this new menu, you will see a "Charts" box.

1. Select the range of data to be represented in the chart or graph. Click on your spreadsheet and select the data to be represented using the same method that you used to select data in the sorting exercise. For this example, we want to see a visual comparison of how much money we spent on each item in the list. Select rows 1 through 8 in rows B, C, and D.

2. Select the type of chart or graph you wish to create (for our example, we'll choose a bar graph).

3. Once you have created your graph, you can now "customize" it by giving it a title and labeling different parts. You can also make certain design decisions regarding the appearance of your graph or chart by choosing the different elements under the Design tab that appears on the Ribbon Menu bar.

4. Finally, you will need to decide if your chart should be pasted on to the existing spreadsheet or if it should be pasted on to a brand new sheet. On the very right side of the Ribbon Menu bar, select Move Chart. Once the chart or graph has been created and you realize a mistake has been made or it did not turn out the way you wanted it to, simply click on the chart or graph and hit the Backspace key on your keyboard to delete it from your spreadsheet. Don't be afraid to go back and try again!

**Multiple Sheets**

Sometimes you may find it useful to have multiple spreadsheets for related data. For example, personal finances are usually tracked on a monthly calendar and it's generally good idea to keep records of the past transactions. Excel can create multiple spreadsheets attached to the same Excel file, one for each month. Tabs for the different sheets are located in the lower-left corner of the spreadsheet. The spreadsheet that is currently being worked on is on the top tab. To access another spreadsheet, select the appropriate tab, such as Sheet 2. The default names for the sheets are usually Sheet1, Sheet2, and Sheet3. To rename a sheet or to create a new sheet, simply move the mouse pointer over the sheet name and right-click. Select "Rename" to rename the sheet or select "Insert" to create a new sheet.

You can transfer cell information between two or more sheets by creating a simple formula. For example, most people who keep track of their personal finances don't begin every month with a balance of $0. Instead, the balance at the beginning of the month is transferred over from the previous month. So if you have a March 2012 finance spreadsheet and an April 2012 finance spreadsheet, you can select a cell in the April 2012 sheet and write in the formula

**='March 2012'! D11**
The equals sign (=) tells Excel that the value for this cell is to be derived from somewhere in the spreadsheet (such as a formula or another cell location).
'Sheet name' tells Excel what sheet to refer to when it retrieves the value. The single quotation marks (' ') are important. ! D11 tells Excel that it is to copy the value that is located in cell D11 (or whatever cells you wish to copy the value from).
If you want to transfer cell information from one cell to another on the same sheet, you can use the exact same formula; just exclude 'Sheet name.'

# DOING MORE WITH MICROSOFT EXCEL

### Cutting, Copying, and Pasting Data
When you are typing in your spreadsheet, it can be very helpful to cut or copy information from one cell and paste it into another. This can help reduce the amount of typing you have to do, as well as limit the number of typographical errors. Cutting, copying, and pasting the contents of cells in Excel is very similar to the way you do it in Microsoft Word. These commands are all accessible from the Home tab on the Ribbon Menu bar.
**To CUT** the contents of a cell, click on the cell to select it, then click on the Cut button on the Home tab. You will see the border of the cell turn into little "marching ants." The contents are now on the Clipboard, ready for you to paste them somewhere else.

**To PASTE** the cut selection somewhere else, clicks on the cell where you want the selection to go. Then click on the Paste button on the Home tab. The selection will now appear in the new cell and be removed from the original cell.

**To COPY** the contents of a cell, simply follow the directions above but replace the CUT command with COPY. This will leave the contents of the original cell in place and make an exact copy of them in another cell.

**Filling Data across Columns and Rows**

Another way to copy text from one cell to another is to drag it or "fill" it across a range of cells (a row or a column). This is a great method if you want all the text (or numbers) in column or row to be the same. For example, if you have a spreadsheet for your yearly budget with a column for rent, you could use this method to fill in all the cells in the rent column with the same number without re-typing.

To fill the contents of cells in a column:

1. Click on the cell with the information you want to copy to the other cells.
2. Hover your mouse over the little square (called a "fill handle") in the bottom right corner of the highlighted cell border. Your mouse will turn into a cross.
3. Click on the fill handle and drag your mouse (while still holding the button down) down the column until you've highlighted all the cells where you want the text to go. 4. Let go of the mouse button. The text will now appear in all the cells you highlighted.
5. You can follow these same steps to fill the contents of a row rather than a column— simply drag your mouse across the row instead of down the column.

You can also use this technique to copy formulas across columns and rows in the spreadsheet.

# CLOSING MICROSOFT EXCEL

**Saving Spreadsheets**

When you finish your spreadsheet and want to leave the computer, it is important to save your work, even if you are printing a hard copy. To save your work in Excel, it is essential to know WHAT you are trying to save and WHERE you are trying to save it. Click on the File Tab, then click **"Save As"** to get started. You can change the filename that Excel has chosen just by typing a new one in the "File name" box at the bottom of the window that appears. The My Documents folder on your computer's hard drive is a good place to store your documents. A blank CD or a USB jump drive are great portable storage options and can contain a LOT of data. Excel will automatically save your document with the suffix ".xlsx"–this is simply a tag that lets Excel know that your work is specific to this program and what version it is in. You do not have to type it–just highlight what is there (default is "Book1") and write a new file name. You may also chose to save it in an older format so that it can be opened with older versions of Excel. After the first save, you can just click "Save" to preserve your work.

However, it is important to note that every following command of SAVE will overwrite your original file, creating the most up-to-date version. If you would like to keep saving different versions of your worksheet, be sure to use the "Save As" function each time you save, using a slightly different name for each version.

**Printing Spreadsheets**

To print your Excel document, click on the File Tab, then click "Print" from the left-side column. A Print Preview and printing options will appear in your Excel window.

Click the large "Print" button to send your worksheet to the printer. You can change the number of copies you would like to print, change the paper orientation, choose which printer you want to use, and more.

**Finding More Help**
You can get help with Excel by clicking on the Question Mark symbol in the upper-right hand corner of the main menu bar or by pressing the "F1" button. This will take you to help from Office.com, Microsoft's help website. There are also many other resources and tutorials available online. You might try a Google search with the words "Excel 2010" and the function you are trying to perform. Ask your instructor for help finding these resources if you have any trouble.

**Closing the Program**
Click on the File Tab, then click "Exit." OR
Click on the X in the top right corner of the Excel screen.

# MICROSOFT POWERPOINT

Microsoft PowerPoint is a professional presentation program that allows the user to create "presentation slides" that can be displayed on the computer screen or through a projector that is plugged in to the computer. A PowerPoint presentation is a good way to convey pieces of information, usually in the form of an outline, to a large audience. Generally, PowerPoint presentations are appealing to users because they are easy to create and edit and generally small enough to fit onto a CD or a USB Jump Drive. Therefore, a user does not have to carry around any slides or a slide project, and, if necessary, can make last-minute changes to the presentation.

## Microsoft PowerPoint Components:
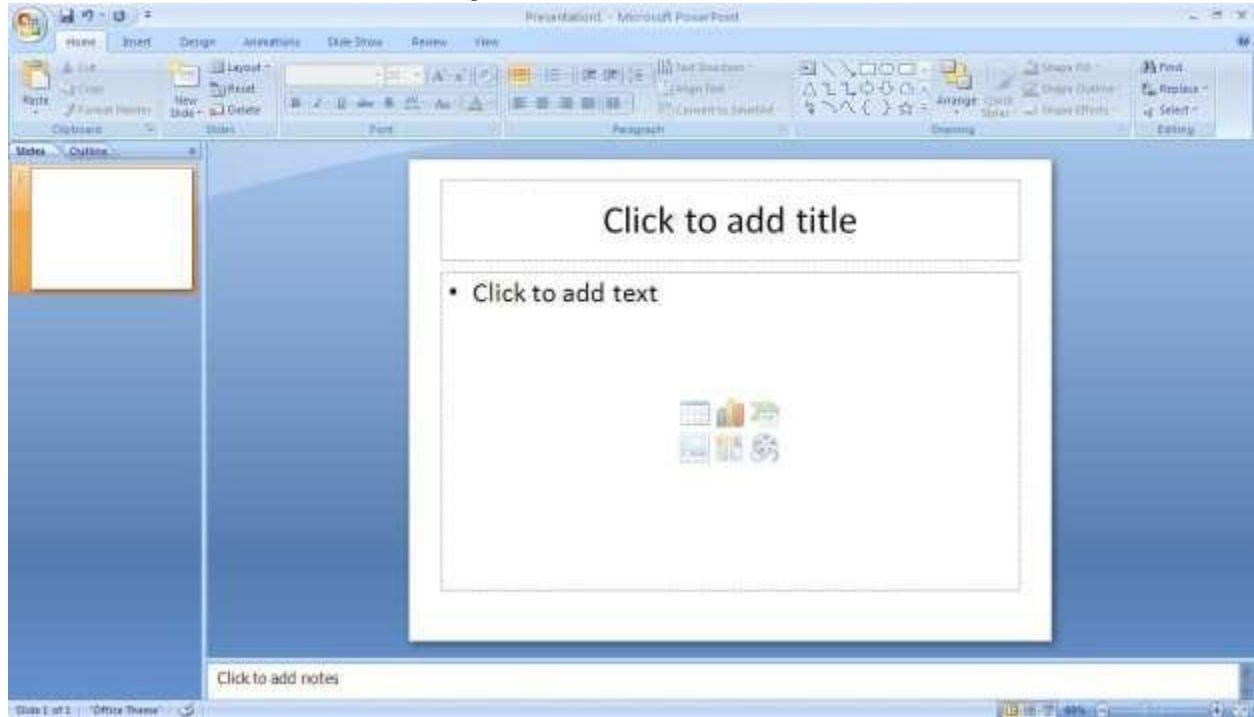


Before you get started with Microsoft PowerPoint (commonly referred to as PowerPoint), you will need to locate and open it on the computer. It may be on your desktop.
On the computer desktop:
1. Double-click on the MS PowerPoint icon
If the MS PowerPoint icon is not on the desktop, go to the Start menu:
1. Click ►Start ► Programs ►Microsoft PowerPoint*
MS PowerPoint will open a blank page called "Presentation1."

## The Title Bar
This is a close-up view of the Title Bar, where file information is located. Notice the default title "Presentation1." You will get a chance to rename your presentation slides the first time you choose to save it.

### The Menu Bar
The Menu Bar is a common sight in almost all Microsoft Windows programs. It features text based menus, on which virtually every option available to the user in the entire program is listed.
Each menu expands when clicked (with the left mouse button), offering many options categorized by specific tasks.

### Standard Toolbar
Toolbars provide "shortcuts" to commands also found in the Menu Bar. Toolbars are usually located just below the Menu Bar and exist to offer another way to perform the same task.
The most commonly used commands in MS PowerPoint are also the most accessible.

Some of these commands are:

**New | Open | Save | Print | Preview | Spell-check | Copy | Paste | Undo | Insert**

**Formatting Toolbar**

The Formatting Toolbar offers options that can change the font, size, color, alignment, organization, and style of the text in the presentation slides. For example, (starting from the left side of the Toolbar) the "Arial" indicates the FONT of your text; the "32" indicates the SIZE of your text; and so on. This toolbar works the exact same way as the MS Word Formatting Toolbar. The main difference is that the format changes will only affect the text box in which you are currently working.

All other text boxes will remain in the default setting ("Arial" font, size "32"). Design/New Slide Icons additional shortcut icons appear on the MS PowerPoint toolbar: the Design icon and the New Slide icon. Both commands are frequently used, and it is good to be familiar with their location on the toolbar.

The Design icon is a shortcut to the slide design page. Here you will be able to create and edit the appearance of your slide(s). The New Slide icon automatically adds a new, blank slide for you to work on. You can keep track of the slides you have already worked on in the Slide Outline box on the left-hand side of the screen. You can access a slide at any time by clicking on it with your mouse through this screen.

# SIMPLE TASKS IN MICROSOFT POWERPOINT

**Text Boxes:**

Text Boxes are "designated" areas that allow you to type words, sentences, and bullet points into the slide. You can adjust the size and placement of the text box within any given slide. It is also possible to have multiple text boxes per slide.

When you first open MS PowerPoint, there will automatically be two text boxes on the slide:

"Click to add title" and "Click to add subtitle." These text boxes already have a preset format applied to them. The "title" box has a font size of "44" while the "subtitle" box has a font size of "32." You can change the text format of any box at anytime by adjusting the format settings on the Formatting Toolbar. To adjust the size of the text box, first click on the text box. Notice the change in border. Once you have clicked on a text box, the border of the box becomes thicker and little circles appear on the corners and at the midpoints of the box. Move the mouse pointer over any one of the circles. Notice that the mouse pointer will change to either ↔ or ↕. Click and hold down the left mouse button. To adjust the height, move the mouse up or down; to adjust the width, move the mouse left or right. Note that the corner circles can adjust both height and width, while the mid-point circles can only adjust either height or width.

To move the text box to a different location on the slide, move your mouse pointer over any part of the thick, gray box outline. Notice the change in your mouse pointer (it will look something like a "plus" sign (+) with arrows). Click and hold down the left button on your mouse. You can now drag the text box to any position on the slide by simply moving your mouse. To write in a text box, simply click inside the box with your mouse.

When a cursor is flashing, you are ready to type.

**Slide Design:**

One of the more popular features of MS PowerPoint is that it gives the use a wide variety of design choices. At some point, you may wish to change the design and color of the background of your slides. To do so, simply click on the Design icon. On the righthand side of your screen, the "Slide Design" pane will appear. Here, you are given three design options to apply to your slides.

**Design Templates**: Here is a list of over 20 templates that you can choose from to apply to the background of your slides. For each template, you have the option of applying the design to all slides or to only the selected slide. You can view these options by clicking on the arrow on the right side of the template. If you are connected to the Internet, you can also choose to view hundreds of additional templates by choosing "Design Templates on Microsoft Office Online" on the bottom of the template screen.

**Color Schemes**: This option gives you a variety of color schemes to choose from to apply to your selected design template.

**Animation Schemes**: This option will allow you to select different types of animation that can be applied to either all the slides or selected slides. The animation schemes are different ways the slides are "introduced" to your audience, such as "faded wipe" or "pinwheel."

**Designing your own background**:

Sometimes you may wish to design your own background.

To do this, select Format ► Background... from the Menu Bar. Select the Color Bar on the bottom of the Background window and choose the appropriate color and or/effects that you desire. There is no right or wrong way to design your own background, so if you choose this option, have some patience and don't be afraid to experiment.

**Slide Layout:**

The default in PowerPoint for each new slide is to have a Title text box and a Text box. As discussed earlier, you do have the option of rearranging the text boxes to fit any layout you have in mind. However, sometimes it will be easier simply to select a layout that fits your needs rather than reformatting the default layout for each slide. To choose a slide layout, select Format ► Slide Layout from the Menu Bar. On the right-hand side of your screen, the "Slide Layout" pane will appear. From here, you have the option of applying a slide layout either to a selected slide or to a new slide that has yet to be inserted. You can view these options by clicking on the arrow on the right side of the template.

**Note the four different types of layout categories.**

**Text Layout:** These options are for choosing a layout in which you are only organizing different text boxes. There is no room for pictures, charts, or graphs.

**Content Layout:** These options are for choosing a layout that will only contain pictures, charts, or graphs. There is no room for text boxes.

Text and Content Layout: These options have room for both text boxes and pictures, charts, or graphs.

**Other Layouts:** These layouts are designed for other media content such as video clips or audio tracks.

**Inserting a Picture:**

Inserting a picture into MS PowerPoint is very similar to inserting a picture into MS Word.

1. Select the slide that you wish to add a picture to.

2. From the Menu Bar, select Insert ► Picture► From File (or Clip Art).

3. Choose the picture you wish to insert and select "Insert."
**\*Note\*:** The picture will be inserted in its original size, so you will probably have to resize it. You can re-size a picture the same way you re-sized a text box. Click on the picture and note the circles at the corners and at the midpoints of the length and width. Move your mouse pointer over the circles, left-click the mouse and hold the button down. Move the mouse vertically or horizontally to re-size.

**Rotating a picture:** It is possible to rotate pictures in MS PowerPoint. Once a picture has been inserted onto a slide and you have clicked on the picture so it is "outlined," notice the green circle above the center of the picture.

Move the mouse pointer over the green circle and left-click and hold the button down. Now move the mouse either clockwise or counter-clockwise and the picture will rotate in the same direction.

**Inserting a Graph or Table:**

There are two ways to insert a graph or table into a PowerPoint slide.

1. The graph or table may already exist in another document or file. If this is the case, then you can simply insert the graph or table as you would a picture. Follow the instructions under

**Inserting a Picture.**

Or you could Cut and Paste a graph or chart from another document or file into your slide presentation.

2.  MS PowerPoint can create graphs or tables directly in the slide. From the Menu Bar, select

**Insert ► Chart (or Table).**

For the Chart option, PowerPoint will present a very simple bar graph.

You will need to go in and edit the information in the bar graph to conform to the information you wish to represent in a chart. From the Datasheet, you can enter in the appropriate values for the columns and re-name the entities.

The Table option will present you with the following window:

Select the appropriate number of rows and columns you wish to have in your table. Click **"OK"** to insert the table. Once the table has been inserted you will be able to put information into the table cells.

**Slide Management:**

Once you have completed a slide, you can create a new slide by clicking on the New Slide icon. Notice that your previous slides still appear on the left-side frame. You can still access your previous slides by simply clicking on them from this location.

Once all your slides have been completed, you can present your slides in a "slideshow." From the Menu Bar select Slide Show► View Show. Notice that the slide takes over our entire screen. To navigate through the slides, use the arrow keys on your keyboard (←, → or ↑, ↓). You can also navigate through your slides by clicking on the left or right arrowsin the lower left corner of your slide. To end your slide show, click on the square box on the lower left side of your slide show (this is difficult to see at first because it is designedto blend into you slide show so it won't be noticeable to your audience). Select End Show from the pop-up window. **CLOSING MICROSOFT POWERPOINT Saving Slide Shows:**

When you come to a stopping point and want to leave the computer, it is important to save your work (even if you are printing a hard copy — saving should be a reflex). To save your work in MS PowerPoint, it is essential to know WHAT you are trying to save as well as WHERE you are trying to save it.

Click ►File ►Save from the Menu Bar to get started.

You can change the filename that PowerPoint has chosen just by typing a new one in the File name box at the bottom of the window that appears.

MS PowerPoint will automatically save your document with the suffix ".ppt" – this is simply a tag that lets PowerPoint know that your work is specific to this program. You do not have to type it – just highlight what is there (default is "Presentation1") and write a new file name.

The My Documents folder on your computer's hard drive is a good place to store your documents. A blank CD (compact disc) or a USB Jump Drive are great portable storage devices and can contain a LOT of data. It is important to note that every consequent command of SAVE will overwrite your original file, creating the most up-to-date version. If you want to save any changes to your PowerPoint slides without destroying the original one:

In the Menu Bar, click ►File ►Save As from the menu bar and give your document a new filename (unique from the original). To bring a saved document back up on the screen from MS PowerPoint:

Click ►File ►Open from the Menu Bar. Locate where the file is located (which folder, that is) and click on the filename of the document you want.
Click ►Open.

Printing Slides:

To print your MS PowerPoint slides:

Click ►File ►Print from the Menu Bar and a Print window will pop up on the screen.

Click ►OK for your document to start printing.

As with all commands in MS PowerPoint, you can make changes along the way. From the Print menu, you can alter how many copies will be made, in what order the pages will be, and much more. Other useful tools are the Print Preview function found alongside the Print command and the

**Page Setup function**. Print Preview will allow you to look over an exact copy of what will come out of the printer before actually executing the print command.

**Closing the Program:**

When you are finished,

Click ►File ►Exit from the menu bar

OR

Click on the X in the top right corner of the computer screen.

# INTERNET INTRODUCTION:

The internet in simple terms is a network of the interlinked computer networking worldwide, which is accessible to the general public. These interconnected computers work by transmitting data through a special type of packet switching which is known as the IP or the internet protocol.

Internet is such a huge network of several different interlinked networks relating to the business, government, academic, and even smaller domestic networks, therefore internet is known as the network of all the other networks. These networks enable the internet to be used for various important functions which include the several means of communications like the file transfer, the online chat and even the sharing of the documents and web sites on the WWW, or the World Wide Web.

It is always mistaken said that the internet and the World Wide Web are both the same terms, or are synonymous. Actually there is a very significant difference between the two which has to be clear to understand both the terms. The internet and World Wide Web are both the networks yet; the internet is the network of the several different computers which are connected through the linkage of the accessories like the copper wires, the fiber optics and even the latest wireless connections. However, the World Wide Web consists of the interlinked collection of the information and documents which are taken as the resource by the general public. These are then linked by the website URLs and the hyperlinks. Therefore World Wide Web is one of the services offered by the whole complicated and huge network of the internet. The use of IP in the Internet is the integral part of the network, as they provide the services of the internet, through different layers organization through the IP data packets. There are other protocols that are the sub-classes of the IP itself, like the TCP, and the HTTP.

By the turn of the century, information, including access to the Internet, will be the basis for personal, economic, and political advancement. The popular name for the Internet is the information superhighway. Whether you want to find the latest financial news, browse through library catalogs, exchange information with colleagues, or join in a lively political debate, the Internet is the tool that will take you beyond telephones, faxes, and isolated computers to a burgeoning networked information frontier. The Internet supplements the traditional tools you use to gather information, Data Graphics, News and correspond with other people. Used skillfully, the Internet shrinks the world and brings information, expertise, and knowledge on nearly every subject imaginable straight to your computer.

**What is the Internet?**

The Internet links are computer networks all over the world so that users can share resources and communicate with each other. Some computers have direct access to all the facilities on the Internet such as the universities. And other computers, example privately-owned ones, have indirect links through a commercial service provider, who offers some or all of the Internet facilities. In order to be connected to Internet, you must go through service suppliers. Many options are offered with monthly rates. Depending on the option chosen, access time may vary.

The Internet is what we call a Meta network, that is, a network of networks that spans the globe. It's impossible to give an exact count of the number of networks or users that comprise the Internet, but it is easily in the thousands and millions respectively. The Internet employs a set of standardized protocols which allow for the sharing of resources among different kinds of computers that communicate with each other on the network. These standards, sometimes referred to as the Internet Protocol Suite, are the rules that developers adhere to when creating new functions for the Internet. The Internet is also what we call a distributed system; there are no central archives. Technically, no one runs the Internet. Rather, the Internet is made up of thousands of smaller networks. The Internet thrives and develops as its many users find new ways to create, display and retrieve the information that constitutes the Internet.

### Who Owns the Internet?
No one actually owns the Internet, and no single person or organization controls the Internet in its entirety. The Internet is more of a concept than an actual tangible entity, and it relies on a physical infrastructure that connects networks to other networks.

### Is Web and Internet the Same?
The Internet is not synonymous with World Wide Web. The Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. The World Wide Web, or simply Web, is a way of accessing information over the medium of the Internet.
It is an information-sharing model that is built on top of the Internet.

### WEB BROWSER:

A **web browser** (commonly referred to as a **browser**) is a software application for retrieving, presenting, and traversing information resources on the World Wide Web. An information resource is identified by a Uniform Resource Identifier (URI/URL) and may be a web page, image, video or other piece of content. Hyperlinks present in resources enable users easily to navigate their browsers to related resources.

Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems.

## Uses of Internet

Internet is today one of the most important part of our daily life. There are large numbers of things that can be done using the internet and so it is very important. You can say that with the progress in the internet we are progressing in every sphere of life as it not only makes our tasks easier but also saves a lot of time. Today internet is used for different purposes depending upon the requirement. Here in this very article we have mentioned then ten best uses of the internet. Here goes the list.

## 1) Email:

By using internet now we can communicate in a fraction of seconds with a person who is sitting in the other part of the world. Today for better communication, we can avail the facilities of Email. We can chat for hours with our loved ones. There are plenty messenger services and email services offering this service for free. With help of such services, it has become very easy to establish a kind of global friendship where you can share your thoughts, can explore other cultures of different ethnicity.

## 2) Information:

The biggest advantage that internet offering is information. The internet and the World Wide Web has made it easy for anyone to access information and it can be of any type, as the internet is flooded with information. The internet and the World Wide Web has made it easy for anyone to access information and it can be of any type. Any kind of information on any topic is available on the Internet.

## 3) Business:

World trade has seen a big boom with the help of the internet, as it has become easier for buyers and sellers to communicate and also to advertise their sites. Now a day's most of the people are using online classified sites to buy or sell or advertising their products or services. Classified sites save a lot of money and time so this is chosen as medium by most of people to advertise their products. We have many classified sites on the web like craigslist, Adsglobe.com, Kijiji etc.

## 4) Social Networking:

Today social networking sites have become an important part of the online community. Almost all users are members use it for personal and business purposes. It's an awesome

place to network with many entrepreneurs who come here to begin building their own personal and business brand.

### 5) Shopping:

In todays busy life most of us are interested to shop online. Now a day's almost anything can be bought with the use of the internet. In countries like US most of consumers prefer to shop from home. We have many shopping sites on internet like amazon.com, Dealsglobe.com etc. People also use the internet to auction goods. There are many auction sites online, where anything can be sold.

### 6) Entertainment:

On internet we can find all forms of entertainment from watching films to playing games online. Almost anyone can find the right kind of entertainment for themselves. When people surf the Web, there are numerous things that can be found. Music, hobbies, news and more can be found and shared on the Internet. There are numerous games that may be downloaded from the Internet for free.

### 7) E-Commerce:

Ecommerce is the concept used for any type of commercial maneuvering, or business deals that involves the transfer of information across the globe via internet. It has become a phenomenon associated with any kind of shopping, almost anything. It has got a real amazing and range of products from household needs, technology to entertainment.

### 8) Services:

Many services are now provided on the internet such as online banking, job seeking, purchasing tickets for your favorite movies, and guidance services on array of topics in the every aspect of life, and hotel reservations and bills paying. Often these services are not available off-line and can cost you more.

### 9) Job Search:

Internet makes life easy for both employers and job seekers as there are plenty of job sites which connect employers and job seekers.

### 10) Dating/Personals:

People are connecting with others though internet and finding their life partners. Internet not only helps to find the right person but also to continue the relationship.

# E-mailing

Short for **electronic mail**, **e-mail** or **email** is text messages that may contain files, images, or other attachments sent through a network to a specified individual or group of

individuals. The first e-mail was sent by Ray Tomlinson in 1971. By 1996, more electronic mail was being sent than postal mail.

*"Email, e-mail or electronic mail is the transmission of messages (emails or email messages) over electronic networks like the internet."*

Email, sometimes written as e-mail, is simply the shortened form of "electronic mail," a system for receiving, sending, and storing electronic messages. It has gained nearly universal popularity around the world with the spread of the Internet. In many cases, email has become the preferred method for both personal and business communication. **How It Is Used** Messages sent by electronic mail normally reach a recipient's account within seconds. They frequently include more than just text; images and numerous types of formatted documents are now easily included as attached files. Moreover, it is no longer necessary to be sitting in front of a PC to send or receive an email. A variety of mobile devices, such as tablet computers and smart phones, make it possible manage correspondence on the go.

Most e-mail systems include a rudimentary text editor for composing messages, but many allow you to edit your messages using any editor you want. You then send the message to the recipient by specifying the recipient's address. You can also send the same message to several users at once. This is called **broadcasting**.

Sent messages are stored in electronic mailboxes until the recipient fetches them. To see if you have any mail, you may have to check your electronic mailbox periodically, although many systems alert you when mail is received. After reading your mail, you can store it in a text file, forward it to other users, or delete it. Copies of memos can be printed out on a printer if you want a paper copy. E-mail can be distributed to lists of people as well as to individuals. A shared distribution list can be managed by using an e-mail reflector. Some mailing lists allow you to subscribe by sending a request to the mailing list administrator. A mailing list that is administered automatically is called a list server.

To get a grasp of what email is its best — the terminology indicates it — to think in equivalents of "traditional" postal mail.

- **The email message** - Instead of using a pen to write a letter on paper, you're using your keyboard to type an email message in an email program on your computer.
- **Sending the email** - When the email is finished and has been addressed to the recipient's email address, you don't put a stamp on it and post it but press the *Send* button in the email program. This makes the email message go on its journey.
- **Email transport** - Like postal services transport letters and parcel, email servers transmit email messages from sender to recipient. Usually, emails are not delivered to the recipient directly, though, but waiting at the "nearest" mail server to be picked up by them.

- **Fetching new mail** - If you've got new mail in your mailbox, you go and fetch it. Similarly, your email program can check for new email messages at your mail server and download them for you to read.

# HOW TO ASSEMBLE A COMPUTER

- Normally Computer being assembled for any type of work has five devices
  - ☐ System Machine (CPU)
  - ☐ Monitor
  - ☐ Key Board/ Mouse
  - | Printer
  - ☐ CVT or UPS
- **System Machine or CPU (Central Processing Unit)**
- The MICROPROCESSOR used in the Computer is called the CPU. But, generally the whole system Machine is named as CPU. Various Devices that are being used in system Machine are

as follows:
- ☐☐Mother Board
- ☐☐Floppy Disk Drive
- ☐☐Hard Disk Drive
- ☐☐Power supply
- ☐☐Display Card
- ☐☐Super IDE Card
- ☐☐RAM (SIMM) (DIMM) Package
- ☐☐Cables
- ☐☐Speaker
- ☐☐Cabinet
- ☐☐CD ROM Drive
- ☐☐Sound Card
- ☐☐Microprocessor
- || LAN Card
- ☐☐Modem Card☐☐

**Monitor:** Mostly two types of Monitors are used.
- ☐☐MONOCHROME
- ☐☐COLOR

MONOCHROME are also divided into two Parts:
- | | Dual Monitor: It's signal Connector is of 9 pins.
- ☐☐VGA Monitor : It's signal Connector is of 15 pins

☐ **Daughter Card**

- 
- 

- On the Input - Output Slots of Mother Board, Different Cards are fitted. These cards are used to connect different Device such as Floppy Drive, Hard Disk, Monitor, Printer, Mouse etc.
- **Display Card:** In any Computer either it is PC-XT or PC-AT presence of Display card is necessary. These are of two types.
- **Dual** **Display Card:** In this card, female Connector of 9 pins is used for Monitor and 25 pins connector is used for Printer.
- **VGA** **Card**: It is use for VGA MONO, color Monitor. In this Female Connector of 15 pins is used for Display. There is NO Printer Port in this Card. To use this card extra RAM is installed.
- **Controller Card** :
- In Computer Hard Disk and Floppy Drive are to be controlled by Super IDE Controller Card. This Card Consists of Hard Disk Connector of 40 pins, Floppy Drive Connector of 34 pins, Mouse Connector (Serial Port) of 10/10 pins and Printer Connector (Parallel Port) of 25 pins.
- **RAM :**
- Ram are available in two types of packages
- **SIMM** •
- **DIMM** •
- **1MB, 16MB, 4MB, 32MB, 8MB, 64MB, 128MB, 256 MB, 512MB, 1GB, 2GB**
  **Computer Cables**
- **Floppy Drive Cable:** This is a twisted cable of 34 pins whose one and is female connector of 34 pins and the other and is edge connector of 34 pins.
- **Hard Disk Cable:** This is flat cable of 40 pins whose both ends are female connectors of 40 pins.
- **Mouse Cable:** This is a flat cable of 10 pins whose one end is female connector of 10 pins and the other end is male connector of 25 pins.
- **Printer Cable:** This is 25 pins cable whose one end is male connector of 25 pins while other is edge connector of 36 pins.
- **Cabinet:** Normally two types of cabinet are available for Computers.
- 
- **MINI TOWER** • **: Vertical**
  **DESK TOP** • **: Horizontal**
- **Printer**
- Printer is a Device, Through which the work done on the Computer can be Printed on the Paper

Generally three type of printer are being used.

- **DOT Matrix Printer (DMP):** The Information of any characteristic presented in form of DOTS. DOT Matrix Printer has been divided into two basis:

- **On The Basis Of Size**
- **80 Column**
- **132 Column**

- **On The Basis Of Quality**
- **9 pin Printer**
- **24 pin Printer**
- **Ink Jet Printer**
- **Laser Printer:** Generally Laser Printers are used for Publication related work. Basis of Quality of Laser Printer depends on its DPI Capacity (DPI-DOT Per Inch). Normally, Printers of 300, 600, 1200 DPI are used.

- ### CVT/UPS
- CVT Means a Device which supplies fix Voltage to the Computer whether the input supply is Constant or not. The same work is done by UPS but the Benefit in using UPS is that if by any reason, Man supply gets off Than the Battery invertors in UPS automatically provides the AC supply and the Computer can be saved by getting off suddenly. This type of Protection is benefitted in the way that any important work can be saved even when the supply gets off.

- ### Detail of main Parts of System Machine or CPU
- ### Mother Board
- This is the Main Board of the Computer on the which MICRO PROCESSOR is mounted which could be of 8088, 80286, 20386, 80486, Pentium I, Pentium II, Pentium III, Pentium IV ETC. Besides it in Mother Board, Slots are made for Display card, Sound card, Modem card, Super IDE Card, Which is known as I/O slots. In This I/O slots, other cards can also be fitted these all slots are connected in parallel. Those Mother Board in which Micro Processor of 8088 are used, are known as PC or PC-XT, where as Mother Board in which Micro-Processor of 80286, 386, 486 Pentium are used are called PC-AT. Mother Board is having RAM slots Simm and Dimm both type. ISA slots, PCI Slots, AGP Slots, Key Board Controller, Cache memory Chips, Micro Processor Supporting Chip, Math Co. Processor, Clock chip, BIOS setup chip, Battery, Power Supply Jack.

- ### Floppy Disk Drive
- Mainly there are two types of Floppy Disk Drive :

- **1.2 MB (Big)**
- **1.44 MB (Small)**

**Hard Disk Drive**

- Hard Disk is known as fix Disk or Non Removable Disk. The Different Capacity Hard Disk Available in the Market:
- **20MB, 40MB, 60MB, 80MB, 120MB 250MB, 340MB, 430MB, 560MB, 630MB, 680MB, 840MB, 1GB, 1.2GB, 1.7GB, 2.1GB, 4.3GB, 6.6GB, 8.2GB, 10GB, 17GB, 20GB, 40GB, 80GB, 160GB**
- Hard Disk is Identify by it's type no. This type no. shows the no. of Cylinder, head and sector.

Built in Hard Disk, Capacity of any, Hard Disk Depends upon it's cylinder, head and no. of sectors. Nowadays mostly type no. 47 is used which is known as users type no. In this type no. cylinder, head and sector no. depends upon user. These all data are filled in the standard CMOS SETUP.

- ### Switched Mode Power Supply
- A power supply is available by the name of Computer SMPS. It is fitted inside the CPU Cabinet.

In every type of SMPS, a wire of special color would have been used for these supplies,

- RED (+5V)
- White ( -5V)
- Yellow (+12V)
- Orange (+5V) power good
- Blue (-12V)
- Black – Ground

- **Important Tips of Assembling**

- 1.While fitting RAM CHIPS it should be remembered that the RAM chip is fitted in the Direction Of lock.
- 2. Two Jacks of both six wires comes out form power supply Unit for the Mother Board. While fitting them in Mother Board We should remember that black wire of both Sockets should be close to each other. The side of red wire always is pin no 1 of Cables.
- 3. To Enter in Computer BIOS SETUP Utilities Program. DEL Key is used for this at the Time Computer gets on the Screen shows the Message of hit (DEL) if you want to run SETUP.
- 4. There are different Options of Computer's BIOS SETUP utilities, out of which, mainly standard CMOS SETUP is used. Through which the selection of Hard Disk, Floppy etc. are made for entering in this, Enter Key is used. Once using Enter, the standard CMOS Chart is Open, In which we select the Option through arrows and the Modification Selection of Hard Disk, Floppy Drive and Monitor according to Configuration. For this Escape key is Used and then F10 key is

Pressed by which a message "Save and Exit CMOS (Yes/ No)? " Press "Y" and use enter key to reset the Computer again.

# AFTER COMPLETION THE COMPUTER ASSEMBLING FOLLOWING STEPS ARE USED

## Connecting External Connectors on Mother Board

**( A ) AT Power Supply Connector :** A 12 PIN dual power supply provides two plugs incorporates standard ±5V and ±12V, and containing six wires, two of which are Black, orient the connectors so that the black wires are together.

**Note:** Place 2 black wires on each of the plug closed to the center.

| PIN NO | SIGNAL NAME |
|--------|-------------|
| 1 | Power good |
| 2 | + 5V |
| 3 | + 12V |
| 4 | - 12V |
| 5 | Ground |
| 6 | Ground |
| 7 | Ground |
| 8 | Ground |
| 9 | - 5V |
| 10 | + 5V |
| 11 | + 5V |
| 12 | + 5V |

**(B) ATX Power Supply Connector:** A single 20 pin connector incorporates standard ± 5V and ±12V, optional 3.3V and Soft-Power signals, with a power supply supports remote power on/off, the MB can turn off the system power through Software Control, such as the shutdown in Windows 95 start menu. The

system BIOS will turn the system power off when it receives the proper APM command from the OS (operating system) APM must be enabled in the system BIOS and OS in order for the soft off feature to work correctly.

| PIN NO | SIGNAL NAME |
|--------|-------------|
| 1 | +3.3V |
| 2 | +3.3V |
| 3 | Ground |
| 4 | +5V |
| 5 | Ground |
| 6 | +5V |
| 7 | Ground |
| 8 | PWR GOOD |
| 9 | +5V SB |
| 10 | +12V |
| 11 | +3.3V |
| 12 | -12V |
| 13 | Ground |
| 14 | PWR ON |
| 15 | Ground |
| 16 | Ground |
| 17 | Ground |
| 18 | -5V |
| 19 | +5V |
| 20 | +5V |

BIOS SETUP

↓

Disk for H.D.D Partition

↓

Format

↓

Software Loading

**(I) Floppy Drive Connector:** This 34 PIN connector supports the provided floppy drive ribbon cable. After connecting the single end to the on board "FLOPPY" connector, connect the remaining plug on the other end to the floppy drives correspondingly.

**(S) IDE Connectors (Harddisk):** The two on-board IDE connectors support the provided 40 PIN IDE hard disk ribbon cable. After connecting the single end to the board, connect the two remaining plugs at the other end of your hard disks. If you install two hard disks, you must configure the two drives by setting its jumpers according to the documentation of your hard disk. Also, you may connect the two hard disks to be both Masters using are ribbon cable on the primary IDE connector and one on the secondary IDE connector. The system BIOS support automatic detection of the IDE device data transfer rate and transition between different kinds of device mode such as LBA (Logical Block Addressing ) and ECSH (Extended cylinder sector head) translation modes and ATAPI (CD-ROM) device on both IDE interfaces.

**NOTICE:** For the flat ribbon cable connector, please make sure that the pin 1 of the ribbon cable (the red wire side of the cable) is correctly connected to the on-board connector's PIN 1.

**(F) Integrated Function Connector or Integrated USB, Infra-Red and PS/2 Mouse Connector:** The total of two USB devices connectors, a PS/2 mouse/KB, and infrared devices are all allocated at this connector. From pin 1 to 5 is the first USB device "USBI" and 11 to 15 is the second

USB device "USB2" connector. Universal Serial Bus (USB) is new interface standard for any I/O device "outside the Box". USB makes your peripherals have real plug and play (PnP) capabilities with up to 12MB/sec data speed. In the coming soon, any external device connected to your computer will be standardized into USB standard which are all lane a special A- Pin rectangle shape connector, Therefore, with the INTEL chipset, this mother board builds two USB headers on-board for you future investment. USB socket is for like camera. From pin 6-10 is the PS/2 device like some PS/2 keyboard and mouse, are all lane a standard 6 pin round shape connector. From PIN 6-20 is a 5 pin interface on the front panel I/O connector is provided to allow connection to a Hewlett Packard HSDSL-1000 compatible Infrared (IR) transmitter/receiver.

## Pin Description of Connector

| PIN NO | SIGNAL NAME |
|---|---|
| 1 (USB 1) | USB +5V |
| 2 | USB PORT 1- |
| 3 | USB PORT 1+ |
| 4 | Ground |
| 5 | NC |
| 6 (PS/2 MOUSE) | PS/2 DATA |
| 7 | PS/2 CLOCK |
| 8 | GROUND |
| 9 | NC |
| 10 | +5V |
| 11 (USB 2) | USB + 5V |
| 12 | USB PORT 2- |
| 13 | USB PORT 2+ |
| 14 | GROUND |
| 15 | NC |
| 16 (IR) | +5V |
| 17 | NC |

| 18 | **INFRA RED RECEIVE** |
| 19 | **GROUND** |
| 20 | **INFRA RED TRANSMIT** |



**(P) Replacing Battery:** A 3V CR -2030 Lithium battery is installed on the on-board battery socket. This battery is used to supply the CMOS-RAM back up power during system powered-off.

**(C) At Key Board Connector for 101 Enhanced Keyboard**

**(D) SERIAL (COM 1 and 2) (Mouse) Port Headers**

**(E) Parallel (Printer) Port connector**

**(G) SD Ram Sockets:** There are two unbuffered, 3.3V SDRAM Socket on-board provides more flexibility for your system memory upgrade CPU FAN CONNECTOR

**(J) Audio Connector:** All the line in, MIC in line out and Midi/ Joystick for the on board sound are located here. **(K) Audio CD Connectors:** J6, J7 are the Audio CD input connectors for the on Board Sound.

 **J7 (LEFT GROUND, GROUND RIGHT) J6 (GROUND RIGHT, GROUND LEFT) (L) PCI Add-in Board Connectors: -** This mother board provides four full-length 32 bits pci slots with up to 133 mb/sec burst data transfer rate.

**(M) ISA Add-in Board Connector:** This mother board provides two 16 bits ISA slots which allows backward hardware compatibility.

**(O) Front Panel Function Connector:** All the front panel functions are integrated into a single connector, which included power LED, keyboard lock, turbo switch; VC set switch, SMI switch and speaker.

 **(Q) Wake Up- Link Interface:** This leader is used to connect an add-in NIC (Network Interface Card) which has WOL capability to a mother board. WOL (Wake On LAN)

   **(PENTIUM Type 7 Socket):**  The type-7 Socket is a 321- pins Zero Insertion Force (ZIF) socket.

# Quick Installation Guide

DIMM2

DIMM1

TX100
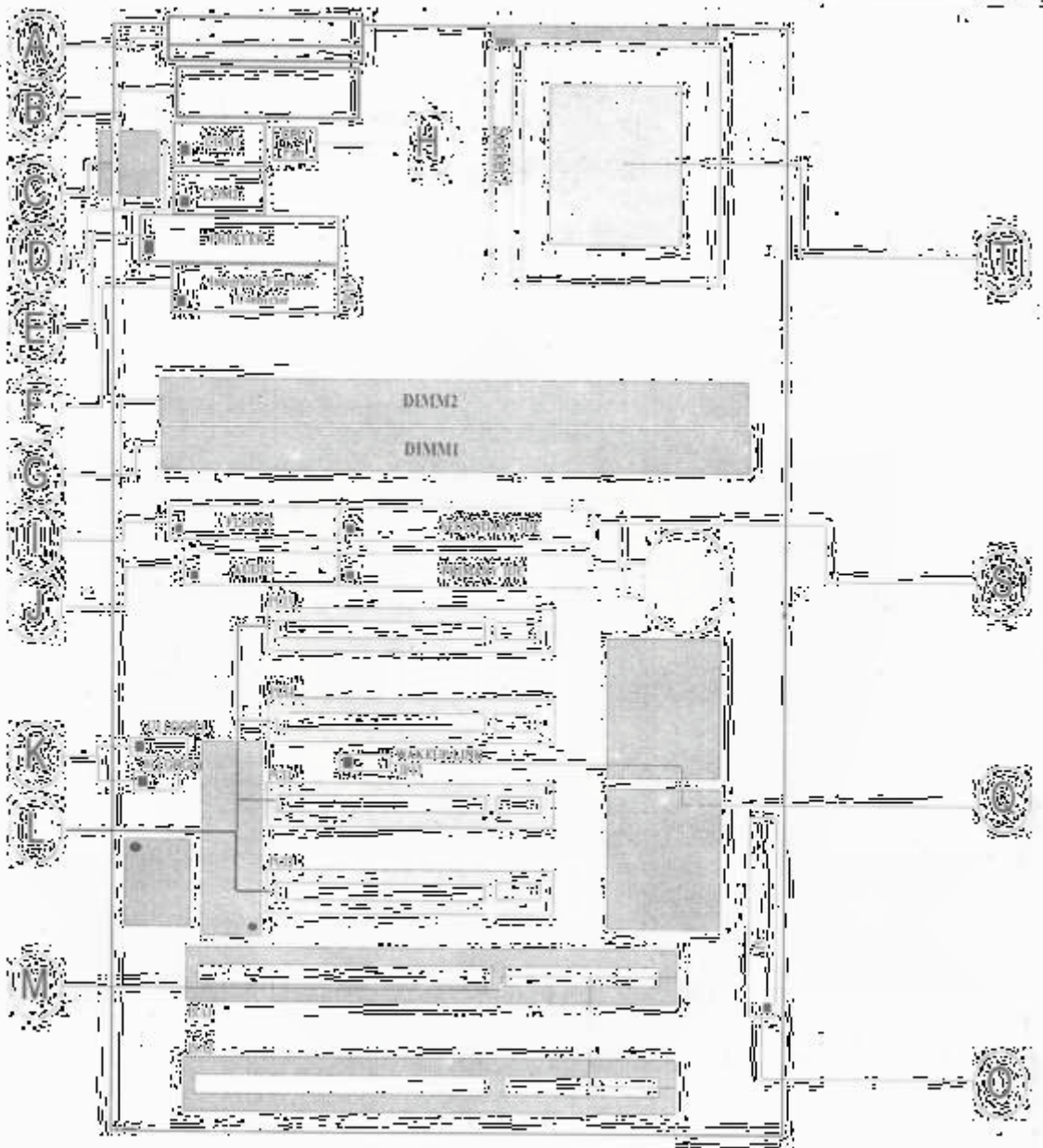
# BIOS SETUP

## AMI BIOS SET UP

**STANDARD CMOS SETUP:** Set time, date, hard disk type, type of floppy drives, monitor type, and if key board is installed.

**ADVANCE CMOS SETUP:** Sets typematic rate and delay, above 1MB memory test, memory test tick sound, hit <DEL> message display, system boot up sequence and many others.

**ADVANCE CHIP SET SETUP:** Sets chipset- specific option and features.

**POWER MANAGEMENT SETUP:** Controls power conservation options.

**PCI/PNP SETUP:** Set options related to PCI bus and plug and play option.

**PERIPHERAL SETUP:** Controls I/O controller - related options.

**CPU CONFIGURATION SETUP:** This option select the type of CPU install in the mother board, the setting are auto (AMI BIOS automatically determines the CPU TYPE).

| | |
|---|---|
| ESC | EXIT |
| | Page up, page down for selection |
| F2/F3 | For colors change |
| F10 | Save & Exit |

## ADVANCE CMOS SETUP

**1st BOOT DEVICE:** This option sets the type of device for the first boot device that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are Disabled, Network, Floppy, SCSI, CDROM, IDE-0, IDE-1, IDE-2, or IDE-3. The optimal and fail safe default setting are IDE-0.

| | | |
|---|---|---|
| **IDE-0** | : | Harddisk Primary Master |
| **IDE-1** | : | Primary Slave |
| **IDE-2** | : | Secondary Master |
| **IDE-3** | : | Secondary Slave |

**2nd BOOT DEVICE:** The optimal and fail safe default setting are floppy.
**3rd BOOT DEVICE:** CD - ROM
**4th BOOT DEVICE:** Disabled

**TRY OTHER BOOT DEVICE:** Set this option to yes to instruct AMIBIOS to attempts to boot from any other drive in the system if it cannot find a boot drive among the drives specified in the 1st Boot Device, 2nd Boot device, 3rd Boot device and 4th Boot device option.

**S.M. A. R. T. for Hard Disk:** Set this option to enable to permit AMIBIOS to use the SMART (System Management and Reporting Technologies) protocol for reporting server system information over a network. The setting is enabling/ disable. The optimal and fail-safe default setting is disabling.

**QUICK BOOT:** Set this option to enable to instruct AMIBIOS to boot quickly when the computer is power on. This option replaces the old above 1MB memory test Advanced setup option.

**BOOT UP NUM-LOCK:** Set this option to off to turn the NUM LOCK key off when the computer is booted so you can use the arrow key on both the numeric key pad and the key board. The setting is on or off. The default setting is on.

**FLOPPY DRIVE SWAP:** Floppy drive cable in Floppy Drive Cable Top Connector for A: Drive and Second for B: Drive but if we enable this option then first point is for B: Drive and second is for A: Drive

The default setting are disable

**FLOPPY DRIVE SEEKS: If** we enable this option then we get message on floppy drive failure and when we disable this we not get floppy drive error message. The default setting is enabling.

**FLOPPY ACCESS CONTROL:** This option specifies the R/W access that is set when booting from a floppy drive. The setting are normal (R/W) or read only. The default setting is normal.**HDD ACCESS CONTROL:** This option specifies the R/W access that is set when booting from a hard disk drive. The setting are normal (R/W) or read only. The default setting is normal.

**PS/2 MOUSE SUPPORT:** If set this option to enable to enable AMIBIOS support for a PS/2 type mouse. PIN2, 3 of the PS/2 mouse selector jumper on the MB must be shorted together to enable PS/2 mouse support. The setting are enabled or disabled. The default Setting is disabling.

**PRIMARY DISPLAY: The** option configures the type of monitor attached to the computer. The default setting is VGA/EGA.

**PASSWORD CHECK:** This option enables password checking every time the system boots or when you run AMIBIOS setup. If always is chosen, a user password prompt appears every time the computer is turned on. If setup is chosen, the password prompt appears if AMIBIOS is executed. The default setting is setup.

**BOOT TO OS/2:** Set this option to enable if running OS/2 and using more than 64 MB RAM. The default setting is disabled.

**L2/L3 CACHE:** ENABLE

**SYSTEM BIOS CACHEABLE:** When set to enabled, the contents of the F0000H system memory segment can be read from or written to cache memory. The contents of this memory segment are always copied from the BIOS ROM to system ROM for faster execution. The default setting is disabled.

**VGA BIOS CACHEABLE:** Disable

**C000, 16 K SHADOW: -** Disable

**NOTE:** This shadow or cacheable memory create problem during software workings) so this default setting is disabled.

## ADVANCE CHIP SET SETUP

**MEMORY HOLES:** Memory holes are the region is memory forwarded to ISP/PCI bus instead of memory bus. This feature will be useful for some operating system like UNIX. The default setting are none.

**ECC MODE:** For LAN NETWORKING (DISABLED)

**SUSTAINED 3T WRITE:** This option to the sustained 3T write logic for write through cache. The default setting is disabled.

**LINEAR BURST:** This option is only valid for Cyrix CPU. This option to enable linear burst cache mode for cyrix CPU. The default setting is disabled.

**CAS LATENCY:** This option is used to set the CAS latency timing for SDRAM. This setting is valid only for SDRAM DIMM. The setting is 2CL or 3CL. The default setting is 3CL.

**BANK INTERS LEAVE:** This option is to enable for D RAM banks interleave logic like 0, 1. For (fulfill the RAM Bank). The default setting is enabling.

**DRAM TIMING CONTROL:** This option is used set D RAM timing of the chipset. The default setting is normal.

**DRAM PIPE LINE:** This option is used to enable or disable D RAM read/write pipe line logic. The default setting is enable.

**CPU TO PCI WRITE BUFFER:** This option is used to write buffer logic for CPU to PCI. The default setting is enabled.

**PCI DYNAMIC BURSTING:** his option is used to enable or disable PCI dynamic bursting logic in the chipset. The default setting is enabling.

**PCI BURST:** This option is used for PCI burst logic in the chip set. The default setting is disabled.

**QUICK FRAME GENERATION:** This option is used for quick frame generation logic. The default setting is disabled.

**PCI MASTER 1WS WRITE:** This option is used for PCI Master 1 wait state write logic in the chipset. The default setting is disabled.

**PCI PEERT CONCURRENCY:** This option is used for PCI peer concurrency logic in the chipset. It's used with networking. The default setting is disabled.

**ISA BUS CLOCK:** PCI CLK/5

## PCI/PnP SETUP    PLUG AND PLAY

**PLUG AND PLAY AWARE O/S:** This option is to inform AMIBIOS that the O/S can handle plug and play devices. Windows 98 O/S is PnP O/S. The default setting is yes.

**CLEAR NV RAM ON EVERY BOOT:** This option clears RAM data every boot time. The default setting are no.

**PCI LATENCY TIMES (PCI CLOCKS):** This option is used for FPCI slot signal clock time. The default setting is 64.

**PCI VGA PALETTE SNOOP:** When this options is set to enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. If disable data read and written by the CPU is only direction to the PCI VGA devices. And if enabled then data R/W by the CPU is directed to the both the PCI VGA and the ISA VGA device. If there are two VGA devices in the computer (one PCI and one ISA) then the default setting are enabled and if only are PCI VGA device then the default setting are disabled.

**ALLOCATE IRQ (INTERRUPT REQUEST) TO PCI VGA:** Set this option to yes to allocate an IRQ to the VGA device on the PCI BUS.

**NOTE: -** These options specify the bus that the specify IRQ lines is used on.

**PCI SLOT 1 IRQ PRIORITY**
**PCI SLOT 2 IRQ PRIORITY**
**PCI SLOT 3 IRQ PRIORITY**
**PCI SLOT 4 IRQ PRIORITY**

These options specify the IRQ priority for PCI devices installed in the PCI expansion slots. The setting are auto.

## IRQ Interrupt Request

IRQ is used for card selection. If we are given IRQ number in BIOS Setup then on the card driver installation time we have to give same IRQ number to the card driver. The default settings are auto.

| | | |
|---|---|---|
| **SOUND CARD** | : | **IRQ 3, 5, 7** |
| **MODEM** | : | **IRQ 3** |
| **ISA LAN CARD** | : | **IRQ 3, 5** |
| **PCI LAN CARD** | : | **IRQ 10, 11** |
| **MONITOR** | : | **IRQ 3** |
| **MOUSE** | : | **IRQ 1,2,12** |
| **COM 1** | : | **IRQ 2, 4** |
| **COM 2** | : | **IRQ 1, 3** |
| **PRINTER** | : | **IRQ 7** |
| **DMA CHANNEL** | **0** | these option allow you to specify the bus type used by |
| **DMA CHANNEL** | **1** | each DMA channel. |

| DMA CHANNEL | 2 | the default setting are Auto/PnP |
|---|---|---|
| DMA CHANNEL | 3 | |
| DMA CHANNEL | 5 DMA | |
| CHANNEL | 6 | |
| DMA CHANNEL | 7 | |

## POWER MANAGEMENT SETUP

This option is used in computer for electric saving and adjustment like sleep mode to save power consumption like Auto shut off, Auto stand by or Auto suspend (off).

**POWER MANAGEMENT/APM:** This option is for the chipset power management and APM (Advanced Power Management) features. The default settings are disabled.

**WAKE-ON-LAN FEATURE:** This option is used for LAN Networking. The default setting is disabled.

**EXTERNAL MODEM WAKE-UP:** The default settings are disabling.

**GREEN PC MONITOR POWER STATE:** This option specifies the power state that the green PC-compliant video monitor enters. When AMIBIOS place it in a power saving state after the specified period of display inactivity has expired. The default settings are disabled.

**VIDEO POWER DOWN MODE:** This option specifies the power state that the video subsystem enters when AMIBIOS places it in a power saving state after the specified period of display inactivity has expired. The default setting is disabled.

**HARD DISK POWER DOWN MODE:** This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The default setting is disabled.

**HARD DISK POWER DOWN MODE HARD DISK TIME OUT:** This options specifies the length of a period of hard disk drive in activity when this length of time expires, the computer enters power-conserving state specified in the hard disk power down mode. The default setting is disabled.

**STAND BY TIME-OUT/SUSPEND TIME-OUT:** This option specifies the length of a period of system non activity while in stand by state. When this length of time expires, the computer enters stand by or suspend mode. The default settings are disabled.

**STAND BY CLOCK:** The default settings are CPU CLK/2

**DISPLAY ACTIVITY:** Ignore

**IRQ:** Ignore

### Peripherals Setup

This option is used in computer for cards and other devices. If sound, mouse, printer, VGA, Modem are all on board when we enable this option but if any onboard card chip are defective then we disable this onboard option because we use external cards. Here we use auto option. Auto is for both onboard and external.

| On board crystal 3 D audio | : | Disable |
|---|---|---|
| On board USB | : | (Universal Serial Bus) |
| Controller | : | Enable |
| USB Legacy support | : | Enable |
| On board FDC | : | Auto Serial |
| Port 1 | : | Auto |
| Serial Port 2 | : | Auto |
| On board Ir port | : | use only for remote function |
| I r mode | : | Disable Ir |
| Duplex | : | |
| On board parallel port | : | printer 378 |

| | | |
|---|---|---|
| **Parallel port IRQ** | : | **Normal** |
| **Parallel port IRQ** | : | **7** |
| **Parallel port DMA CHANNEL** | : | **N/A** |
| **VIA ON BOARD PCI IDE** | : | **BOTH** |
| **EPP VERSION** | : | **ENHANCED PARALLEL PORT** |

# Bootable System
## FDISK
### The Fdisk Command:

**Warning:** This command should be used by experience users only as it may lead to data loss. In order to make the hard disk usable you have to use the FDISK.EXE Program. This is similar to formatting a floppy for use through, after running the FDISK Program. You have to format the hard disk also.

After complete the BIOS Setup we want to make HDD for useful with FDisk command for using

Fdisk command we want need a Bootable Floppy or CD with Fdisk or Format command. To start the Fdisk Utility we need the DOS Prompt where we type Fdisk command and press enter. Before doing this we start computer with Bootable CD Support After completion of system booting process we get following menu.

Microsoft Windows 98 CD-ROM Start up Menu.

1. Boot from Hard disk
2. Boot from CD ROM

Enter your Choice:  2

Microsoft windows 98 start-up menu

1. Start windows 98 setup from CD ROM
2. Start Computer with CD ROM Support
3. Start Computer without CD ROM Support

Enter Your Choice: 2

A:\> D:\>  **FDISK**

 D:\> FDisk


FDISK is the DOS utility program that is used to partition a hard disk drive. After low-level formatting a new or old hard disk drive you must run the DOS program FDISK to properly partition the newly formatted hard disk.

Without FDISKing the drive you will not be able to use the drive to read/write any information. You must run the FDISK program and partition the drive, whether you want to use the entire drive as single partition or want to have multiple partitions on the drive.

Even if the drive was low-level formatted at the factory you must run the FDISK utility and partition the drive before doing high-level formatting and using the drive. The FDISK program can be used for the following

☐☐Creating a primary DOS partition
☐☐Creating an extended DOS partition
☐☐Creating logical drives in extended partition.
☐☐Setting a partition to active (bootable)
☐☐Deleting a partition
☐☐Displaying partition data
☐☐Selecting a hard disk drive for partitioning, when more than one hard disks drive is installed.

## FDisk

Your computer has a disk larger then 512 MB This version of windows includes improved support for large disks, resulting in more efficient use of disk space on large drives and allowing disks over 2 GB to be formatted as a single drive.

**Important :** If you enable large disk support and create any new drives this disk you will not be able to access the new drives using other operating systems, including same versions of Windows 95 and Windows NT as well as earlier versions of windows and MS-DOS In addition disk utilities that were not designed explicitly for the FAT32 system will not be able to work with this disk If you need to access this disk with other operating systems or older disk utilities do not enable large drive support  Do you wish to enable large disk support (Y/N)...................?  [Y]

## Fdisk Options:

Current Fixed Disk Drive: 1 Choose
one of the following:

1. Create DOS Partition or Logical DOS Drive
2. Set Active Partition
3. Delete Partition or Logical DOS Drive
4. Display Partition information

Enter Choice:  [  ]

4. Display Partition Information

Current Fixed Disk Drive:  1

| Partition | Status | Type | Vol. Label | MBytes | System | Usage |
|-----------|--------|------|------------|--------|--------|-------|
| C:\ | A | Pri DOS | Name | | Fat16 | 100% |
| | | | | | Fat32 | |

Delete Dos Partition or Logical DOS Drive
Current Fixed Disk Drive: 1 Choose one of
the following:

1. Delete Primary DOS Partition
2. Delete Extended DOS Partition
3. Delete Logical DOS Drive(s) in the Extended DOS Partition

Enter choice:  [  ]

 Warning! Data in the deleted Primary DOS partition will be lost. What primary Partition do you want to delete [  ]
No

    Enter Volume Label.....................?  [If any]
    Are you sure (Y/N)........................? [Y]
    Primary DOS Partition Deleted

1. Create DOS Partition or Logical DOS Drive Current
Fixed Disk Drive:   1

Choose one of the following:

1. Create Primary DOS Partition
2. Create Extended DOS Partition
3. Create Logical Drives in the extended DOS Partition

Enter Choice: [1]
    Create Primary DOS Partition

Current Fixed Disk Drive:  1

Do you wish to use maximum available size for a primary DOS Partition and make the partition Active (Y/ N)...................?  [Y]

You must restart your system for your changes to take effect. Any drives you have created or changed must be formatted after you restart  Shut down windows before restarting

D:\> Cd wins 98
D:\win98 > Format c: /s /q /u
/s System Files
/q Quick Format
/u Unconditional format
Warning: All data on Non Removable Disk
Drive C: will be lost
Proceed with Format (Y/N)? Y
Formatting 1.2 M
100 Percent completed
Formatting 1.2 M
Format Complete

# WINDOWS INSTALLATION

## WINDOWS INSTALLATION

### INTRODUCTION
Windows 98 is a 32-bit and Graphical User Interface operating system which supports networking feature also. The operating system is packaged in floppies as well as in CD ROM. It comes with two versions:
☐☐WINDOWS 98
☐☐WINDOWS 98 upgrade

### HARDWARE REQUIREMENT
☐☐486 or higher processor
☐☐4 MB or more memory
☐☐More than 100 MB hard disk space
☐☐Network Card (optional)

### INSTALLING WINDOWS 98 UPGRADE
To install Windows 98 Upgrade you should be in Windows 3.1 environment running.
☐☐Go to file menu
☐☐RUN setup.exe

### INSTALLING WINDOWS 98/ WINDOWS 98 Upgrade
**Step 1:**
You are installing from CD-ROM, run setup.exe at the DOS prompt from /WIN98 directory on the CDROM.
**Step 2:**
The installation shows following message:
Please wait while setup initializes...
Setup is now going to perform a routine check on you system. To continue, press ENTER. To quit setup press ESC  Press ENTER to continue.  **Step 3:**

Scandisks shows the following message:

Scandisk checked the following drive(s):

Drive C had no errors

Drive D had no errors Press

EXIT option.

**Note:** If your drive has some errors the Windows setup will not continue and the console comes to the DOS prompt. **Step 4:**

It then prompts:

Setup has checked your system and is now ready to setup Windows

After Windows is installed it is recommended that you run scandisk periodically to check your disk(s) for errors and repair any problem found. To continue with setup press ENTER Press ENTER option. **Step 5:**

In the meantime the following message flashes, which indicates that the setup has now switched over to GUI environment.

Please wait while setup initializes Copying files needed for Windows to setup. **Step 6:**

Setup now prepares setup wizard which will guide you through rest of setup. This wizard helps in all manners and installation will be self explanatory.

**Step 7:** Please press OK to accept the license agreement. **Step 8:**

The next three parts of the setup are:

☐ Collecting information about your computer.

☐ Copying windows98 files to your computer.

☐ restarting your computer and finishing setup. Note: Windows 98 replaces any version of MS-DOS and Windows that are already on your computer. **Step 9:**

Select the directory where you need to install Windows 98.

**Note:** If you install Windows 98 in a new directory, you must reinstall all of your Windows based programs to make them work properly under windows. Copying .GRP and .INI files from is not sufficient to run your programs under Windows 98.

Therefore, if you want Windows 3.1 X and Windows 98 both on the harddisk you must choose a new directory to install Windows 98 and reinstall Windows 98 based software on it. But if you install on your previous Windows directory it will upgrade that Windows 3.1 X to Windows 98. Hence you can no more use Windows 3.1 X. **Step 10:**

**Setup Option:** Typical is recommended. **Step11:**

**User Information:** This asks your name, company name etc. **Step 12:**

**Product Information:**

This step is related while you are installing from CD, it asks CD key. This key no. is mentioned on CDCase or on Original Certificate provided with it. **Step 13:** Setup Analyses your computer. **Step 14:**

If you want to get connected with the following tick anyone of them or all

☐ Microsoft Network
☐ Microsoft Mail
☐ Microsoft FAX

## Step 15:

Setup asks for Windows components (like accessories, games, network etc.) and prompts :

☐ Install the most common component.
☐ Show me the list of component so I can choose.
☐ Select all components for beginners.

## Step 16:

**Start-up Disk:**

You can use a start-up disk to start your computer and run diagnostic program, if you have trouble starting Windows. You need at least 1 .2 MB floppy diskette. **Step 17:**

Setup switches over to next part i.e. Copying windows 98 files to your com

## Step 18:

After completion of copying setup, automatically restarts the computer and prompts.  Starting windows 98 for the first time.

# PC Trouble Shooting and Maintenance
## COMMON PC-FAULTS

| No. | Symptom | Probable Causes |
|---|---|---|
| 1 | **Dead PC, no beep, no displays etc.** | 1. SMPS - DC voltage absent |
|  |  | 2. CPU Fault |
|  |  | 3. BIOS Fault |
|  |  | 4. CLK signal absent |
|  |  | 5. AC Fuse is blown |
|  |  | 6. SMPS Power Cable/ Jack faulty |
| 2. | **Intermittent fault, system hangs** | 1. SMPS - DC Voltage has excessive |
|  | **Number of times** | ripples of noisy |
|  |  | 2. Erratic CLK Signal |
|  |  | 3. There is noise pick up on reset input |
|  |  | Or on other bus lines |
|  |  | 4. Loose contacts on IC pins connectors. |
|  |  | 5. IC Faults due to thermal reasons. |
| 3. | **Key board does not work. Whole** | 1. Keyboard lock Switch faulty |
|  | **Keyboard appears dead, no indicator** | 2. PC XT/AT mode switch incorrectly set |
|  | **lamp (caps lock, scroll lock etc.)** | 3. Five pin DIN connector loose connection |
|  | **functions. In most cases the keyboard** | 4. Keyboard coiled cable fault. |
|  | **problem is indicated on the video** | 5. Fault in the keyboard internal electronics ckt. |
|  | **monitor as  "KeyBoard Error"** | 6. Fault in keyboard interface circuit on |

mother board

**4.** **Disk Boot Failure**

System hangs during booting with 1. MS-DOS Disk data got corrupted

Usually message like: 2. Virus infected on FD or HD

Disk Boot Failure or 3. FDD controller card faulty.

Non System Disk Error 4. FDD Drive Faulty/ or the connecting cable

LED on FDD remains glowing faulty.

Permanently or 5. Wrongly configured CMOS setup

LED goes off and system remains 6. DMA logic on motherboard may be at fault.

hanging

POST run successfully

**5. No Display, no booting**

Speaker click, keyboard indicator flash 1. MotherBoard Problem

are present but video display and FDD 2. Excessive ripple or noisy power supply

Indicator inactive. Sometimes, there may 3. CGA/ VGA Card problem

be grotesque display on video screen 4. FDD controller card problem

5. Wrong CMOS Setup in PC-AT

6. Wrong DIP switch setting in PC-XT

6. **No display but successful booting** 1. Mother Board Problem

2. Video Card Problem (eg. CG ROM fault)

3. Video monitor fuse blown or otherwise faulty

4. Video monitor cable loose connection or broken.

There may be problem with connectors.

7. **Mouse not working. All other functions** 1. COM 1/2 Serial port may be faulty

**of the PC are all right** 2. Mouse driver program got corrupted

3. Internal Mouse circuit may be faulty

4. Cable of the Mouse may be faulty

**8.** **No booting from hard disk; booting** 1. Wrong or corrupted CMOS setup

**from FDD O.K.** 2. Boot Track corrupted

3. Virus Infection

4. Bad Hard Drive

5. IDE failure

**9.** **Very Slow disk booting and** 1. Incorrect CONFIG.SYS setup

**performance** 2. Files may be fragmented

3. Disk Controller hardware fault

# TROUBLESHOOTING & MAINTENANCE:

# TYPES OF MAINTENANCE

Maintenance is the essential part of a Computer. The PC is a machine with electrical and electronic circuits as well as electromechanical assemblies, for reliable operation and long life, the PC should be carefully

handled. The computer should be operated gently without applying force. There are two types of Maintenance:

☐ **Preventive Maintenance**
☐ **Breakdown Maintenance**

### Preventive Maintenance

The computer room must be kept clean and dust free. Preventive maintenance is the steps to be taken to avoid major breakdown or to run the computer smoothly. The Preventive maintenance are prescribed by manufacturer should be done periodically. One of the essential' preventive maintenance is cleaning the dust prone parts. A PC can be saved from most of the problem by proper maintenance. The general problem sources are:

Dust
High temperature
Electrical noise / interface
Magnetic fields
Power fluctuation
Improper Handling

Drive head cleaning disk can do the floppy disk Preventive Maintenance

Turn Computer Power ON

Dampen the cleaning disk with solvent supplied.
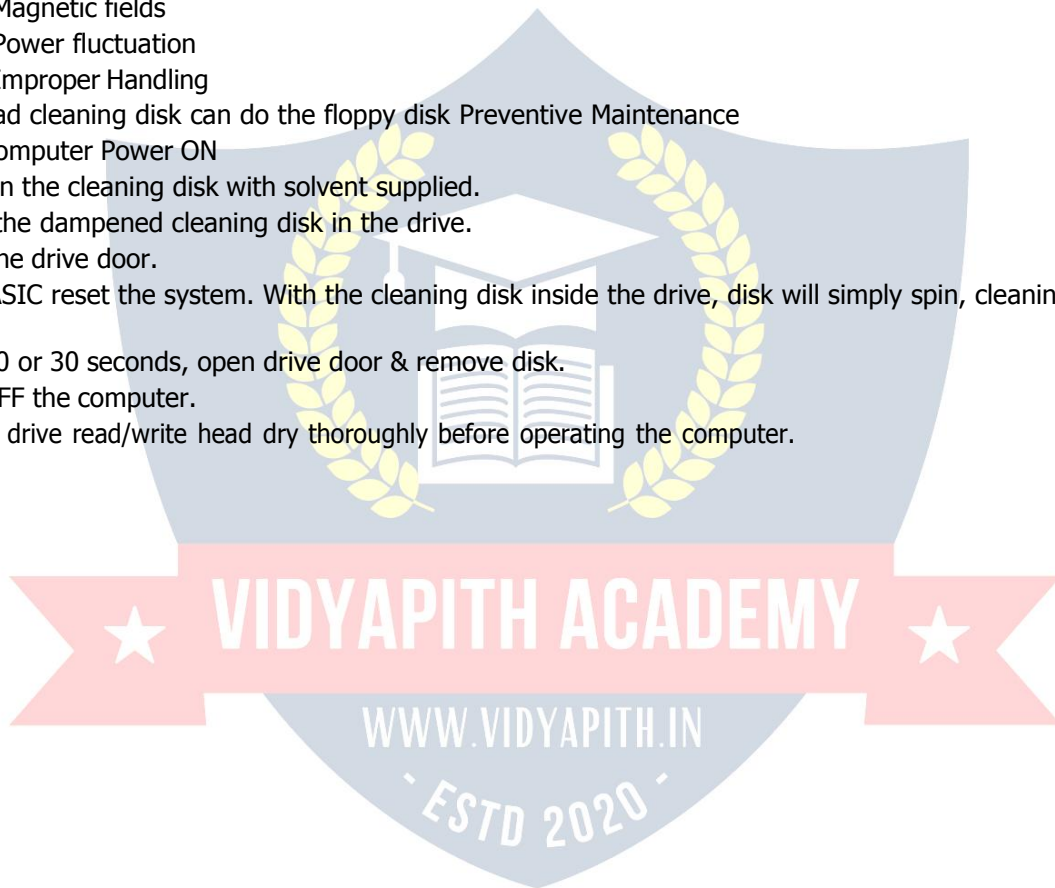
Insert the dampened cleaning disk in the drive.

Close the drive door.

If in BASIC reset the system. With the cleaning disk inside the drive, disk will simply spin, cleaning as it whirs along.

After 20 or 30 seconds, open drive door & remove disk.

Turn OFF the computer.

Let the drive read/write head dry thoroughly before operating the computer.

# NETWORKING PRINCIPLE

**A Brief Detail on Networking**
**What is Networking**

A networking is consists of minimum two computers connected to each other by a cable so that they can share data and resources. Without a network the documents have to be printed out so that other can edit them or use them. At best you give files on floppy disk to other to copy to their computers. If other makes changes to the document there is no way to merge the changes. Thus was and still is called working in a standalone environment.
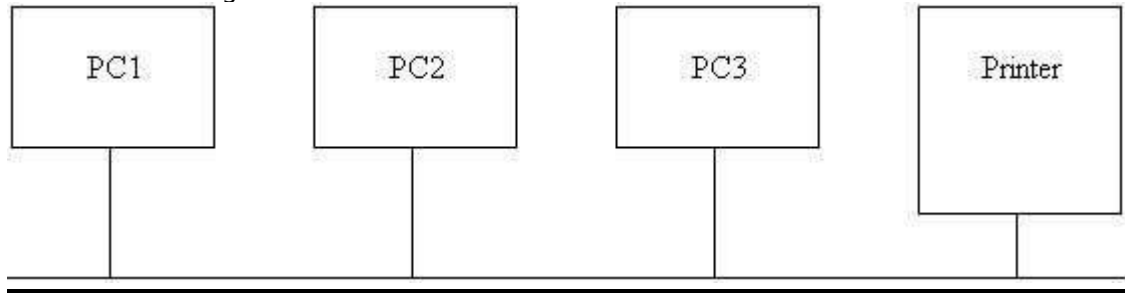


If the computer are connected to each other. Then the single user can share the data from the network on the other computer. A group of computer and other device connected together is called NETWORK. In the network computers can share

**Data**

**Messages**

**Graphics**

**Printers**

**Fax Machine Modems**

**Other Hardware Device and Resources.**

### Local Area Network (LAN)

Network started out small with perhaps ten computers connected together with a printer. The technology limited the size of the network including the number of computers connected as well as the physical distance that could be covered by the network.

### Wide Area Network (WAN)

As the geographical scope of the network grows by connecting users in different cities or different users states the LAN grows into WAN. The number of user in a company network can now grow from ten to thousands.

### Types of Network

we are having two types of networks

**PEER to PEER Network**

**Server Based Network Network**

**Components:**

**Server:** Computer that Provides share resources to network user.

**Client:** Computer that access the shared network resources provided by a server.

**Media:** The way that computers are connected.

**Shared Data:** Files provided by the servers across the network.

**Shared Printer and Other Peripherals:** Other resources provided by server. **Resources:** Files, Printer or other items to be used by the network users.
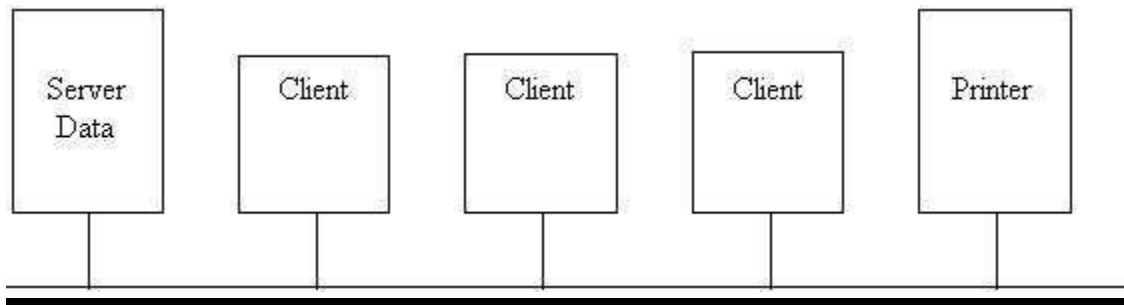
**Peer to Peer:**

In this network there are no dedicated servers among the network. All the computers are equal and therefore are known as peers. Each computer function as both a client and a server and there is no one assigned to be an administrator responsible for the entire network. The user at each computer determines what data on their computer gets shared on the network. **Size of Peer to Peer**

Peer to peer networks are called workgroups. In a peer to peer network there are typically fewer than 10 computers in the network.

**Cost**

Peer to peer networks is relatively simple because each computer functions as a client and server. There is no need for central powerful server. Peer to peer network can be less expensive than server based.

**Peer to Peer Operating Systems:**

In this network, the networking software doesn't need the same level of performance and security as the networking software designed for dedicated servers. Dedicated server function only as a server and are not used as a client or workstation in operation system such as

**MICROSOFT WINDOWS NT WORKSTATION**

**MICROSOFT WINDOWS FOR WORKGROUPS**

**MICROSOFT WINDOWS 98**

Peer to Peer networking is built into the operating system No additional Software is required to setup a peer to peer network.

**Where Peer to Peer is Appropriate** where the user are fewer than 10 the user are all located in the same general area.

Security is not an issue.

The organisation and the network will have limited growth within the future.
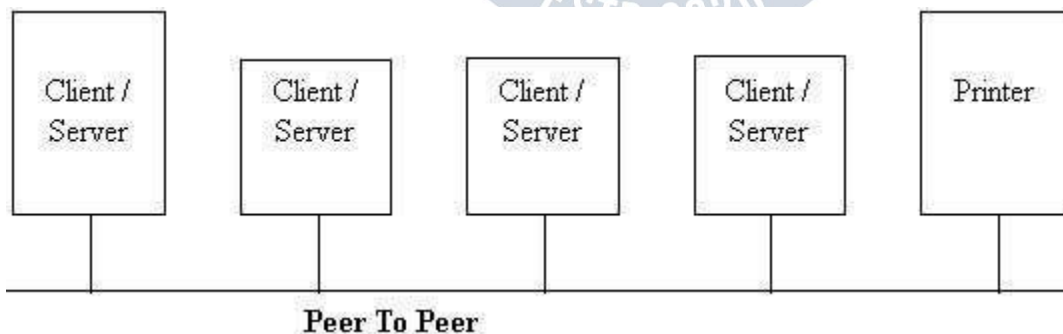


**Server Based Network**

In this type of networking the network have dedicated server. A dedicated server is one that only functions as server and is not used as client or workstation. Server is dedicated because they are optimized to quickly service request from network client and to ensure the security of files and directories. As networks

increase in size, more than one server ensures that each task will be performed in the most efficient manner possible. **Specialized Servers**

**Files and Print Servers**

Files and print servers manage user access and use of file and printer resources. If you are running word processing application the word processing application would run on your computer. The word processing documents stored on the files and print server. Files and print servers are for file and data storage.

**Application Servers**

Server store vast amount of data that is structured to make it easy to retrieve. With an application server the database stays on the server and only the results of a request is downloaded to the computer making a request.

**Mail Servers**

Mail server manages electronic messaging between network users.

**FAX server:**

This server manages fax traffic into and out of the network by sharing one or more fax modem boards.