UNIT-II (OPERATING SYSTEM AND WINDOWS)

OPERATING SYSTEM

An operating system (OS) is system software that controls the internal activities of the computer hardware and provides user interface. All application programs need to be programmed in such a way that they talk with the operating system for interacting and use hardware resources. It is just like a traffic man who controls the overall traffic on the road.

It is the first program loaded (copied) into the computer's memory after the computer is switched on. Some of the popular operating system are MS-DOS, WINDOWS, LINUX etc.

Two primary objectives of an operating system are:

1. Make a computer system easier to use.

2. Manage the resources of a computer system.

Logical structure of a computer system:-

Operating system hides details of hardware from programmers and other users and provides them with a convenient interface for using the system.
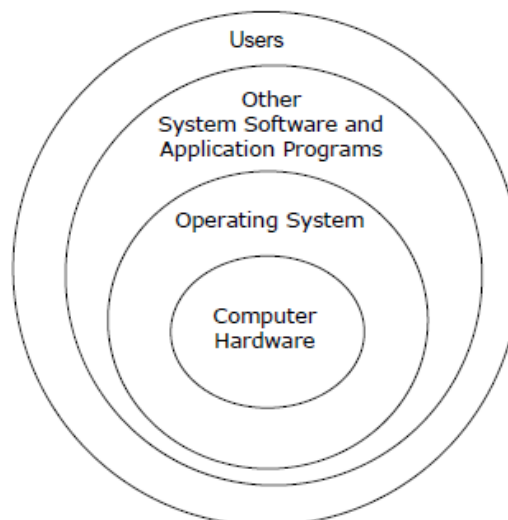
Hardware resources are surrounded by operating system layer and is surrounded by a layer of other system software (such as complier, editors, utilities etc) and a set of application programs (such commercial data processing application, scientific and engineering application etc).Finally end users view the computer system in terms of the user interface of the application programs.

FUNCTION OF AN OPERATING SYSTEM

An operating system performs the following functions

1. Command Interpretation:-In order to run a task on a computer, we have to give commands to it. Operating system enables the computer to understand the commands given by the users through keyboard or mouse. It also enables the computer to give the results based on the commands of the users.

2. File Management:- It manages files on various storage devices and the transfer of these files from one storage device to another. It also allows all files to be changed and modified through the use of text editors or some other file manipulation software packages.

3. Memory Management:-The operating system allots space for the files in the memory. The operating system only knows where the particular file has been kept in the system. When the user requires that file, the operating system will search and give the file to the user.

4.Process Management:-In a multi-user operating system two or more processes can work one time. One computer may ask for a file, another for printing the document and so on. The operating system will keep all those works in an order and gives some time for each work. This is called process management or time sharing. In this way the operating system processes the commands and executes all works one by one.

5.Input/Output Management: - The Operating system (OS) carries out the input/output management and co-ordinates and assigns different input and output devices.

6. Security Management: -It establishes data security and integrity. That is, it keeps different programs and data in such a manner that they do not interface with each other. It also protects data from being destroyed by any other user.

7. Scheduling: - It establishes and enforces the job priority. That is it determines and maintains the order in which jobs are to be executed in the computer system.

8. Error Message:-When a hardware device or a program in the computer is not working properly, then the operating system gives a message to the user. The operating system will also rectify the minor errors in the system.

9. Operating system maintains internal time clock and log of system usage for all users.

10. Operating system facilitates easy communication between the computer and the computer operator (human).

TYPES OF OPERATING SYSTEM

Operating systems are of many types. The following are the main types of operating systems.

1. Single user Operating System: - The operating system allows only one user to work on a computer at a time is known as single user operating system. We cannot run more than one application here. If we want to open another programme, we have to close the current application or programme. Example-MS-DOS

2. Multi-User Operating System: - The Operating System which allows a number of users to work together on a single computer. Each user will be provided a terminal connected to a single computer. One computer is the main (Server) here and there are subsidiary computers for other to work. The main computer will be connected with CPU and other parts, whereas in other computers, we have only monitors and keyboards. These subsidiaries computers are connected with main computer (Server).

Example- UNIX

3. <u>Multi Programming Operating System:-</u> Multiprogramming is a feature of an Operating system which allows running multiple programs simultaneously on 1 CPU.We can open MS word and type a letter and we can hear audio at the same time. We can even make calculations on MS Excel without closing MS word. Thus all these programs can be executed simultaneously by the operating system.

Example-Windows XP

4. <u>Multi-Processing Operating System:-</u>The operation of this type of operating system is same as above multi-program Operating System. The difference is we have many CPUs in multiprocessing system whereas only one CPU in multiprogramming Operating System. Since we have more than one CPU, programs are processed very fastly in this multiprocessing Operating System where as the programs are executed one by one in multi programming Operating System.

Example- Windows XP.

5. <u>Time Sharing Operating System: -</u> Time sharing Operating System is a system software which shares the CPU time among the users so that user need not wait for the CPU time in the queue.

Example-UNIX

6. <u>Real time Operating System: -</u> Real-Time operating system work towards providing immediate processing and also responding to user's commands in a very short time such an Operating System is more commonly used in chemical industry for process control, scientific processing like airplane control, space vehicle control operation and used in robotics, complex multimedia and animation.

Example- Lynx.

7. <u>Batch Processing Operating System:-</u>Batch means a collection of instructions. Batch operating system is a system software which facilitate the transition from one program in the batch of programs to the next without human intervention. This type of operating system is used in Main frame computers where thousands of instructions in batch wise are processed.

Example-MS-DOS

HOW TO OPEN DOS?

Click on start button->Programs->Accessories->command prompt

OR

1. Click on start button.

2. Select Run option.

3. Type command or cmd and press enter key.

DOS (DISK OPERATING SYSTEM)

DOS (Disk Operating System) was the first widely-installed operating system for personal computers. (Earlier, the same name had been used for an IBM operating system for a line of business computers.)It is a single user operating system.

The first personal computer version of DOS, called PC-DOC, was developed for IBM by Bill Gates and his new Microsoft Corporation. He retained the rights to market a Microsoft version, called MS-DOC. PC-DOS and MS-DOS are almost identical and most users have referred to either of them as just "DOS." DOS was (and still is) a non-graphical line-oriented command- or menu-driven operating system, with a relatively simple interface but not overly "friendly" user interface. Its prompt to enter a command looks like this:

C :>

The first Microsoft Windows operating system was really an application that ran on top of the MS-DOS operating system. Today, Windows operating systems continue to support DOS (or a DOS-like user interface) for special purposes by emulating the operating system. The different versions of DOS is DOS 3.0, DOS 3.1, DOS 3.2, DOS 7.0 and soon.

FUNCTIONS OF DISK OPERATING SYSTEM

1. It takes commands from keyboard and interprets them.

2. It shows all the files in the system.

3. It creates new files and allots space for programme.

4. It changes the name of a file in place of old name.

5. It copies information in a floppy.

6. It helps in locating a file.

7. It searches where the file is located in the disk.

8. If we want the information in the file to be printed, it gives print out of the information.

9. It hides the files and directories so as not to be seen by others.

10. It permanently removes the file.

FEATURES OF DOS

DOS has the following features-

1. It is primary system where the user will get an environment about the input and output devices, e.g monitor, keyboard, printers etc.

2. It is helpful in performing file management e.g.creating, editing, deleting files etc.

3. It is a single user operating system. One user can operate at one time in this operating system.

4. It is character Based Interface system.

STRUCTURE OF MS-DOS:-

MS-DOS is structured in following ways-

(i)BIOS-IO.SYS

(ii)Kernal-MS DOS.SYS

(iii)The Shell-COMMAND.COM

(i)BIOS (Basic Input/Output System)-The BIOS contains a collection of low level device drivers, that isolated and correspond to the hardware components.

BIOS represent IO.SYS file system, which is hidden file and represent in all MS-DOS system, and is loaded immediately after booting and contains a module.

(ii)Kernel-Kernel provides service routines to implement of memory, directory and process management. It contains the machine independent part of the operating system.Kernal present MS-DOS.SYS file. This is also hidden file.

(iii)The Shell-MS-DOS provides a shell that interpreters command lines. Its also screen oriented interface. The shell represent COMMAND.COM file system.

DOS COMMANDS

As soon as the computer is switched ON, self test are performed and we can see.C:\> on the screen. It is known as "C prompt". This indicates that DOS is loaded and the computer is ready to accept DOS command.

In MS-DOS, commands are used to perform different operations such as copying files, deleting files, creating a directory etc.

Command-command is defined as a directive given to the computer to perform a specific operation.

MS-DOS commands are broadly classified into two categories

(I). Internal Commands

(II). External Commands

1. Internal Commands-(i) The internal commands are built into the operating system as part of a file called COMMAND.COM, Which is loaded into the main memory during the booting process.

(ii)The internal commands are easy to execute as they are present in the main memory as long as the computer is on and do not need to be located on the hard drive.

Some of the most commonly used internal DOS commands are:

1. DATE: - It is used to display or set the system date.

Syntax: C:\>DATE ⟵⎯⎯⎯|

⟵⎯⎯⎯| -means pressing enter button.

DOS displays the current date and prompts you to enter a new date as shown below:

The current date is: 12/08/2012

Enter the new date :(dd-mm-yy) _

Press the Enter key to keep the same date.

DATE [/T]-Where [/T] displays only the current date.

Syntax: C:\>DATE /T ⟵⎯⎯⎯|

12/08/2012

2. TIME:-It is used to display or set the system time.

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Syntax: C:\>TIME   ←⏌

DOS displays the current system time and prompts you to enter a new system time.

The current time is: 15:59:08.18

Enter the new time: _

Press the Enter key to keep the same time.

TIME [/T]

Where [/T] displays only the current time.

Syntax: C:\>TIME /T   ←⏌

3:59 PM

3. CLS:-It is used to clear the Screen.

Syntax: C:\>CLS   ←⏌

4. VER (Version):-It is used to display the version number of MS-DOS.

 Syntax: C:\>VER   ←⏌

5. VOL: - It is used to display the disk volume label and serial number.

Syntax: C:\>VOL [Drive:]   ←⏌

To display the volume label and serial number of the current drive, use the following command.

C:\>VOL   ←⏌

 To display the volume label and serial number of a drive other than the current drive.i.e To display volume information of D drive, use the following command.

C:\>VOL D: ←⏌

6. EXIT:- Quits the COMMAND.COM program (command interpreter).That is if we want to go back to windows from DOS,we have to use this command.

 Syntax: C:\>EXIT   ←⏌

7. COPY CON:- It is used to create a new file.

Syntax: C :\> COPY CON file name   ←⏌

Where file name specifies the name of the file to be created.

Example:-To create a new file stu.txt, use the following command

C :\> COPY CON stu.txt   ←⏌

The Cursor goes to next line. This means that you have created the file and now you can type the matter in that file. Suppose the following data in the file

    "WELCOME TO ALL STUDENTS"

Saving the file: press Ctrl+Z or F6 and then press Enter key.

Then we will get the following message.

    1 file<s> copied

8. TYPE:-It is used to display the contents of a specified file.

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Syntax: C:\>TYPE file name

Example: - C:\>TYPE stu.txt

Then the contents of the file stu.txt are display on the screen.

9. COPY:-It is used to copy the contents of one file or files from one location to another. Copy creates a duplicate file.

Syntax: C:\>COPY source file target file

Example: - C:\>COPY stu.txt stu1.txt

To copy the contents of stu.txt file (Source file) to stu1.txt (Target file).

(ii)Copy more than one file (stored at the same location) to another location at once.

Example:-C :\> COPY stu.txt+stu1.txt D:

(iii)Copying from one disk to another disk:-

Files can also be copied from hard disk to floppy or vice versa. In that case the following command can be used.

C:\>COPY *.*A:

Then all the files in C drive will be copied into a floppy.

Suppose you want to copy only one file into floppy.

C:\>COPY stu.txt.A:

Here A means floppy drive.

10. REN (Rename):-It is used to change the name of existing file.

Syntax: C:\>REN old file name New file name

Or

C:\>RENAME old file name New file name

Example: - C:\>REN stu.txt stu2.txt

After the execution of above command stu.txt file will disappear and stu2.txt file appears in its place.

11. DEL (DELETE) OR ERASE:-It is used to delete one or more files.

Syntax: C:\>DEL Name of file

Example:- C:\>DEL stu2.txt

(i)To delete the files starting with a particular character, say's'.

C:\>DEL s*.*

All the files starting with 's' will be deleted.

Note:-Suppose you want to delete a file under a particular directory, first you shall have to go to concerned directory and then delete the file

12. DIR:-It is used to display the list of files or subdirectories present in a directory.

Syntax: C:\>DIR

Different forms of DIR commands:-

This command can be operated in many ways:-

1. DIR/P: It shows the commands page-wise. We can show each page of the file by using this command.

2. DIR/W:-This command shows the files on width wise so that we can see more files in a screen.

3. DIR/A: H:-List all the hidden files in the current working directory, use (/A) parameter with attribute H

Note:-A hidden file is a file that is present in the directory; however, not visible to the user.

13. MD or MKDIR (Making Directory):- It is used to create a new directory in a drive.

Syntax: C:\>MD Name of Directory

Example :-(i) To create a directory in the name of COLLEGE in the current directory.

C:\>MD COLLEGE

(ii) To create a directory SCHOOL in E drive.

C:\>MD E:\SCHOOL

14. CD or CHDIR:-It is used to change the current directory.

Syntax: C:\>CD Directory name

Example :-Suppose you want to go or change to 'COLLEGE' directory

C:\>CD COLLEGE

C:\COLLEGE>

Now if you want to change back to the parent directory, use the following command.

C:\COLLEGE>CD..

15. RD or RMDIR:-It is used to remove or delete a directory from a drive.

Syntax: C:\>RD Directory name

Example: - C:\>RD/S COLLEGE

The computer prompts you for confirmation before deleting as shown below:

COLLEGE, Are you sure (Y/N)?

Press Y to delete all the files and directories, otherwise press N.

(II)External Commands:-The storage capability of the main memory is limited, not all DOS commands are stored in the main memory. There are some commands that take a lot of storage space and are not used as frequently as the internal commands. These commands are stored in a separate file (with .com, .exe or .bat file extension) on the hard disk drive and are known as external commands.

(1)PRINT:-It is used to print a file.

Syntax: C:\>PRINT file name

Example: - C:\>PRINT stu1.txt

(2)MEM:-It is used to display the amount of used and free memory on the computer.

Syntax: C:\>MEM

(3)FORMAT:-It is used to format a disk.

Example: To format a floppy.

C:\>FORMAT A: ←⎯⎤

(4)LABEL:-It is used to create, change or delete the volume label of a disk.

Syntax: - C:\>LABEL [Drive:]   ←⎯⎤

Where [Drive :]-> specifies the drive.

Example: - To give a name to the floppy this command is used.

C:\>LABEL A: ←⎯⎤

The Name, however, shall not exceed 11 characters.

(5)DISKCOPY:-This command copies the contents from one disk to another.

Syntax:-C :\> DISKCOPY <source disk> <target disk >   ←⎯⎤

C :\> DISKCOPY A: C   ←⎯⎤

Where 'A' is the source disk and 'C' is the target disk.

When the contents are copied, it asks as under.

Copy another Y/N?

If you want one more copy of the disk, type 'Y', otherwise type 'N'.

(6)CHKDSK:-It is used to check a disk and display its status report including total disk space, number of folders and hidden files.

Syntax:-C :\> CHKDSK Name of Drive   ←⎯⎤

Example: - C :\> CHKDSK D: ←⎯⎤

(6)TREE:-It is used for displaying the tree structure of directories graphically.

Syntax:-C :\> TREE   ←⎯⎤

Displays the entire directory structure of C drive.

(7)FIND:-It is used to search a file.

Syntax:- C :\> find <file name> ←⎯⎤

Example C :\> find bcom.txt   ←⎯⎤

(8)UNDELETE:-It is used to restore the delete files.

Syntax: - C :\> UNDELETE <file name>   ←⎯⎤

(9)EDIT: - Edit allows a user to view, create, or modify their computer files.
Syntax:-C :\> EDIT <file name> ←⎯⎤
Example: - C :\> EDIT stud.txt ←⎯⎤

WILD CARDS CHARACTERS

 Wild character is a special symbol that stands for one or more character. Many operating systems and applications support wild card for identifying files and directories.DOC, Windows and other Operating Systems use this wildcard characters.

1.Asterisk (*), which represents one or more characters.

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(i)m*-It refers to all files which begin with m.

(ii)*.->indicates any filename.

(iii).*->indicates any extension.

(iv)*.*->indicates any filename with any extension

2.Question mark (?), which represents a single character.

Example:-

(1) Listing files in MS-DOS that contain c, mp and any other character in-between. For example,

comp, camp, c2mp, and c-mp would all be matched.

C:\>dir c?mp

(2) List of files that end with .MP3 file extension.

C:\>dir *.mp3

(3)List any file that ends with data. For example, appdata, mydata, and 123data would all be matched.

C:\>dir *data

(4)List any file that is four characters long, begins with he, and has any extension. For example, help.txt, help.mp3, and heck.jpg would all be matched.

C :\> dir he??.*

VIRUS

"*VIRUS*" stands for **Vital Information Resource Under Siege.**

A computer virus is a software program, script, or macro designed to infect, destroy, modify, or cause other problems with your computer or software programs. Viruses can also replicate themselves. All computer viruses are man-made. A simple virus that can make a copy itself over and over again is relatively easy to produce.

Causes a computer virus-

It may be caused by putting an infected USB (universal serial bus) flash drive or cd/dvd into your computer, opening an infected email, downloading infected files, going to websites that are dangerous, etc.

Characteristics of Virus

When a virus is infected to a computer, one or more of the following features may exist.

1. The computer may not boot.

2. The programs may not work properly or take a lot of time to load.

3. The disk space, files sizes may be effected.

4. New messages may be displayed on the screen.

5. File names may have new characters.

6. The virus may spread from one computer to another through network.(i.e internet).

Virus Protection

The steps to virus protection can be divided into two types:

1. To take precautions to prevent the virus.

2. To use Anti-Virus software.

1. Precautions to prevent Virus:

a. Do not use other than the original floppies unless they are write-protected.

b. Do not use illegal or pirated software.

c. Do not connect your system with an infected server in the loan.

d. Do not download programs unless you confirmed that they are from reliable websites.

e. Do not open e-mail attachment coming from un-known persons.

2. Anti-Virus Software:

The Anti-Virus software searches the system for any viruses. There are many famous anti-virus software are given below.

1. Kaspersky Anti-Virus   2.Norton Antivirus   3.McAfee   4.AVG

So remedies of computer Virus are
- Get an Anitvirus program.
- Run a full system scan and remove the virus.
- Delete the infected file.
- Use system restore (Win XP).
- Reinstall the OS (not recommended, only use as a last resort).

Types of Virus

There are different types of virus available in the environment.

(1) Trojan horse-This virus is actually a destructive program which stands as a begin program which damages the system when it is executed in some situations like stealing passwords or spreading viruses.

(2) Worms-These viruses generally occur in internet application when an e-mail is forwarded to the receiver. It duplicates itself and finally clogging the entire system with copies.

(3) Macro Virus-These are like the small programs or mini programs which run inside different programs. These are responsible for damaging the computer. These viruses are very easy to write and they spread very quickly.

(4) Bomb-Bomb doesn't propagate itself at all, but is placed by human or another program and activated by a trigger such as time or event.

(5) Port Scanner –Port Scanner is hides on a system and scans the surrounding environment for IP addresses and open ports that makes available to other malicious code or individuals.

(6) Encrypted Virus-This virus disturbs the code of the program which creates a cipher text or it may scramble the signature which is a specific sequence of data. Thus this virus is responsible for scrambling of signature, making it difficult for virus scanning software to detect.

(7) Polymorphic Viruses-This virus works similar to that of encrypted virus but here the data is de-scrambled**.**

CRYPTOLOGY OR CRYPTOGRAPHY

Crypto is the Greek root for secret or hidden. Cryptology is the process of conversion of data into a secrete code for transmission over a public network. In this process the original text which is a plain text is converted into a coded text which is known as cipher text using the concept of encryption algorithm. Again the cipher text, which is a secret code is decoded, ie decrypted at the receiving end and is turned back into the plain text.

The uses of cryptography are:

1. This method is secure and safeguards to render information illegally to users.

2. The uses optimized multimedia for the transmission of data from one client to other client.

3. Nowadays cryptography technique is applied to fax, television and computer network communication.

4. This process provides secure exchange of computer information in different organizations like banking government and commercial transactions.

Windows Operating System

Windows Operating System is the most widely used computer program in the world today for personal computers. The original 1985 version of windows introduced to home and business PC users many of the graphical user interface (GUI) ideas that were developed at an experimental lab at Xerox and introduced commercially by Apple's Lisa and Macintosh computers.

Microsoft Windows is a series of software operating systems and Graphical User Interfaces (GUI) produced by Microsoft.

Different version of windows are following:

1. Windows 1.0(1985) 2.Windows 2.0 3.Windows 3.0 4.Windows 3.1 5.Windows 3.11

2. Windows NT 7.Windows 95 8.Windows 98 9. Windows 2000 10. Windows Me

11. Windows XP 12.Windows Vista 13. Windows 7 14. Windows 8 (2012)

Windows XP is an operating system introduced in 2001 by Microsoft and is a part of the windows family of operating systems. The operating system provides a new interface that uses graphics to simplify navigation and completing common tasks, thus, making learning and working easir.

Microsoft released windows XP in two versions: Windows XP Home and Windows XP professional. Windows XP Home Edition is designed for home use and small business, while windows XP professional is specially designed for advanced home computing, business and larger organizations. Windows XP professional is designed to handle more powerful computing needs by providing more reliability, security and administrative options.

Features of Windows XP-

Windows XP provides a new interface to simplify navigation and perform common tasks (like crating and opening of a file) easily, thus, making learning and working easier. These are the various features that make Windows XP a powerful, fast, efficient, and stable operating system.

1. Improved interface: Windows XP provides a completely redesigned interface. Start menu lets you access programs more quickly. Windows XP displays the most used items in the start menu while it hides the least used items.

2. More reliable: Windows XP is based on the same technology that is used in Microsoft Windows NT and Windows 2000.This makes windows XP much more stable than windows 95,windows 98 and windows ME and greatly reduces the number of system crashes and system restarts.

3. Better file and folder management: Windows XP makes it easier to view and work with files and folders for example, Thumbnail view lets you preview photos and images and the new file and folder tasks pane lets you easily copy, move, rename or delete any file or folder.

4. Better help and support: Windows XP provides efficient help and support with new features such as Remote Assistance which allows you to contact computer experts and lets them fix a problem on your computer even if they are miles apart geographically.

5. More secure: Windows XP provides new security tools that help keep your computer more secure and provide new technologies that run in the background, making your computer run more efficiently. This operating system includes the new security center which allows you to check the status of the important security elements on your computer-windows firewall, Automatic updates and virus protection software-making it convenient for you to understand how to keep your computer better protected against viruses and other security threats.

6. Remote Desktop: Windows XP includes a feature known as Remote Desktop which allows you to access your windows session from another computer just as if you were in front of your computer. Example, you can connect to your office computer from home, have access to all of your files and network resources as though you were in front of your computer at office. You can leave programs running at work and when you get home, you can see your desktop at work displayed on your home computer with the same programs running.

7. Clear Type: Windows XP provides special features called Clear Type that makes the words on your computer screen look as smooth as the words on a page. This increases the font resolution of the words written in different programs like Notepad and WordPad.

The Desktop

Desktop is the first screen visible after logging in windows XP operating system. When Microsoft Windows XP is opened, the Desktop appears. The Desktop is a full-screen display where all windows activity takes place. It is part of a graphical user interface, where icon, menus and dialog boxes on the screen represents programs, files and options on your computer.

The desktop is actually an invisible folder called Desktop folder (you can access this folder by using windows explorer).Move files and folders to the desktop for easy access. It allows, to run programs and use a file system without using the command prompt of the operating system.

Icon-An Icon is a graphical symbol representing a windows element. Icons helps to access files or applications quickly.

Different type of Icons represent various files/applications in computer are-

(i) Desktop Icons

(ii) Documents Icons

(iii)Shortcut Icon

(i) Desktop Icons-The desktop normally contains My Computer, My documents, Internet Explorer, Network Neighborhood and Recycle Bin are called Desktop Icons.

- My computer icon allows users to access disk drives, view and manage files and folders and access other areas of operating system such as Control panel and installed printers .

- My documents icon is, by default, a shortcut to the folder. Since the folder is dependent upon the current user that is logged in, every users My Documents folder is different. It is the default location to save all documents, downloaded files, pictures and music.

- The Internet Explorer is used as a browser for viewing internet.

- Network Neighborhood shows the various computers connected with the system.

- Recycle Bin is just like a waste box in which all delete files are stored.

(ii)Document Icons- Files can actually be stored as part of the Desktop. This icon represents a document rather than a shortcut to the application. There is no arrow at the bottom left like there is for a shortcut. The W on the top of the paper is the logo for MS Word.

(iii)Shortcut Icon-A shortcut points to the file that runs a program like MS Word or MS Excel etc.A shortcut can be placed wherever you want to put it-on the Desktop, in a folder, in the Quick Launch area. A shortcut may have a small arrow at the bottom left of the icon.

Task Bar- The taskbar is used as a link to easily open and close programs. It also allows, to switch between the open application programs and files. If more than one instance of the same program open at the same time then similar windows are grouped into one button and labeled with the name of the program.

By default, the taskbar is placed at the bottom of the Desktop screen. The taskbar can be moved to any of the four sides of the desktop and can be resized to display more window buttons. Taskbar includes start menu, Quick launch Toolbar and system Tray.

Start Menu-The start menu provides a way to open most of the software applications that are installed on the computer. The start menu has been customized to provide quick access methods to all the programs and windows utilities present on the computer. Click start menu to display a list of items stored in it. Some of the most commonly used start menu items are

1. Programs-It provides access to a list of available programs and submenus of related programs.

2. Documents-Shows the recent documents that we have created or accessed already. Suppose we want to complete the work in one of the recent documents, it is short cut way to open the document.

3. Settings-Provides quick access to the control panel, printer options and taskbar properties.

4. Search-Searches for different types of files and in various locations. Using this features, you can search for files or even certain word found in the file.

5. Help and Support-Gives access to the Help feature for the Windows XP environment.

6. Run-Starts a program by typing in the programs name and path. There is a browse button to search for the program to be opened, in case, path is not known.

7. <u>Shut Down-</u>This item has several options such as shut down and restart computer, close all programs and log on as a different user or shut down completely.

Notification Area-The Notification area (also known as system tray in older version of Windows operating system) is located on the right-hand side of the taskbar and generally contains icons of various programs that are running in the background. This includes system applications such as the volume control and Anti-Virus programs (if any).This area also displays icons of clock and other features related to time and date. To change the system date and time, double-click on the displayed time in the taskbar.

Control Panel

Control panel is an important part of windows XP as it provides various options to view and adjust system settings such as adding a new hardware, adding and removing programs (software), managing user accounts, changing settings of your mouse and keyboard, and so on. To open the control panel, follow any of the steps given below:

1. Click start and then click control panel.
2. Click start and then click Run. This displays the Run dialog box. Type control or control panel and click ok or press the Enter key.

Windows XP allows to view control panel in either Classic view or catgory view. In the Classic view, all the individual shortcut icons appear with their name while in the category view icons are grouped into categories which are then displayed.
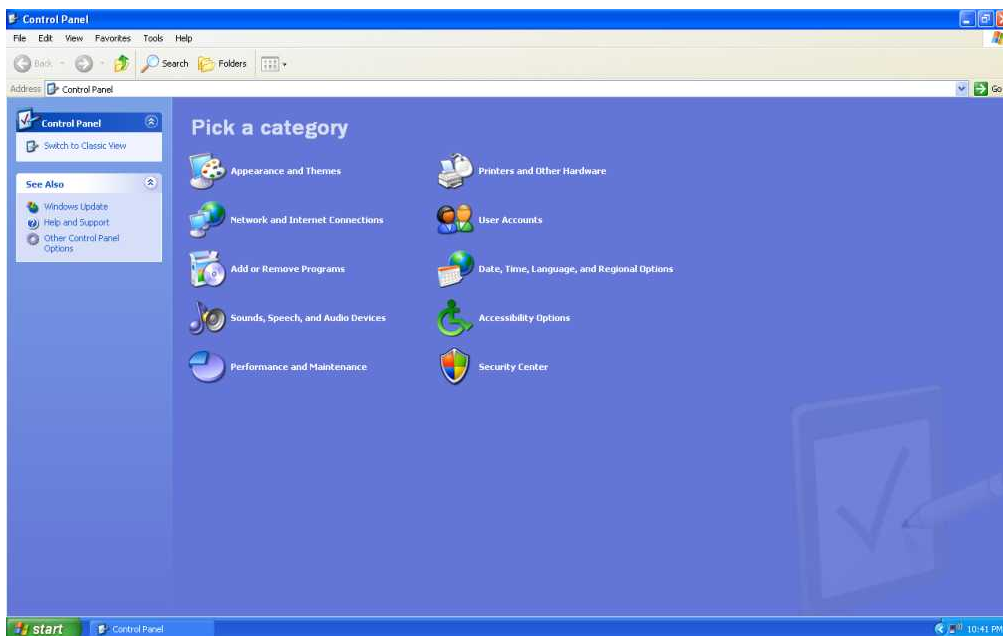
(Category View)

The important components of control panel are-

1. **<u>Accessibility Options-</u>**This is used to customize the keyboard, display or mouse function. The accessibility tools available in accessibility options in control panel perform various functions, which are following:

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- **Sticky keys** (ALT, CTRL and SHIFT) enables simultaneous keystrokes while pressing on key at a time.
- **Filter keys** adjusts the response of your keyboard.
- **Toggle keys** emits sounds when certain locking keys(CAPS LOCK,NUM LOCK or SCROLL LOCK)are pressed.
- **Mouse keys** enables the keyboard to perform mouse functions.
- **Serial keys** allow the use of alternative input devices instead of a keyboard and mouse.
- **SoundSentry** provides visual warnings for system sounds.
- **High contrast** improves screen contrast with alternative colors and font sizes.

2. **Add hardware-**Allows to add a new hardware device to the system.

3. **Add/remove programs-**Allows to add/remove a program or windows component. It also indicates the size an installed program is occupying and the frequency of its usage.

4. **Date and Time-**Allows to set (Change) the system's date, time and time zone.

5. **Display-**The colour, background and other setting of the computer screen can be adjusted here.

6. **Folder Options-**Allows you specifying the settings for files or folders like should folders open in a new window or existing one, should windows hide system files or folders as well as hidden files etc.

7. **Fonts-**Allows to view the fonts installed in the computer as well as install new fonts and remove the existing fonts.

8. **Keyboard-**Allows to change the keyboard setting like cursor blink rate.

9. **Mouse-**Allows to customizing the mouse settings like configuring double-click and scroll speed, changing shape of pointer, swapping left and right mouse buttons etc.

10. **Printer and Faxes-**Allows you view the installed printers and faxes. You can remove the existing printer as well as install a new printer from here.

11. **System-**Allows you view and specify various setting for system including viewing the version of windows, amount of RAM and speed of CPU, changing the name of your computer, enabling or disabling hardware devices installed on your computer and so on.

12. **User Accounts-**Allows you creating, managing and removing user accounts for persons who share your computer. For instance, you can specify the privileges to user account, add, change or remove the password, and so on.

Windows accessories

The Windows Accessories component is part of the start menu hierarchy. Accessories are small programs that are useful in performing some tasks in windows. Like a Geometry box in a student's bags, accessories perform many diversified functions such as type a letter on a plain document, makes

calculations, paint a figure, play a CD player, view a video programme etc. Accessories include a calculator, a painting program, a word processor, a text editor and Internet applications.

In order to operate accessories we have to click start->Programs->Accessories

The important Accessories are

1. Calculator: A built-in calculator is included in the windows operating system that works just like a hand-held calculator, expect you use it on-screen rather than in your hand. The calculator can be used in any one of the two views: standard and scientific. In the standard view of calculator, perform common mathematical operations such as addition,substraction, multiplication,division etc.In the scientific view of calculator,perform advanced mathematical operations such as trigonometric and statistical operations, calculate logarithm, exponent, factorial and power. To open the calculator, follow any of the steps given below:

- Click **Start**, point to **programs**, then point to **Accessories** and click **calculator** from the submenu that appears.
- Click **start** and then click **Run**. This displays the Run dialog box. Type *calc* and click **OK** or press the **Enter** key.
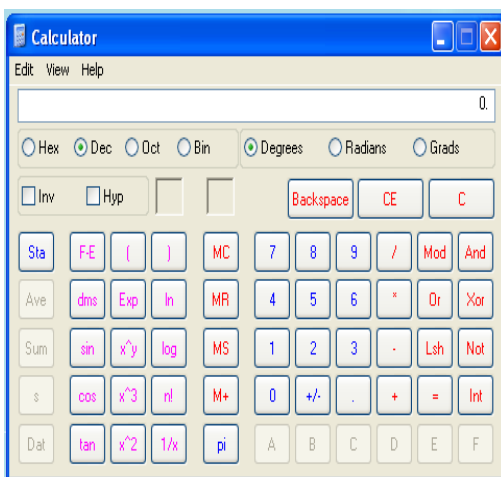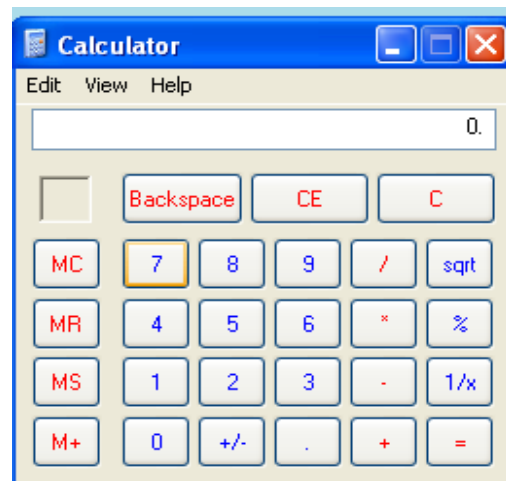

(Scientific View)   (Standard View)

2. NotePad:-Windows accessories include a simple built-in text editor, notepad, that helps to create simple text documents as well as web pages. The default extension for the files created in Notepad is .txt. To open Notepad, follow any of the steps given below:

- Click **Start**, point to **programs**, then point to **Accessories** and click **Notepad** form the submenu that appears.
- Click **Start** and then click **Run**. This displays the Run dialog box. Type notepad and click **ok** or press the **Enter** key

Title Bar

Menu Bar
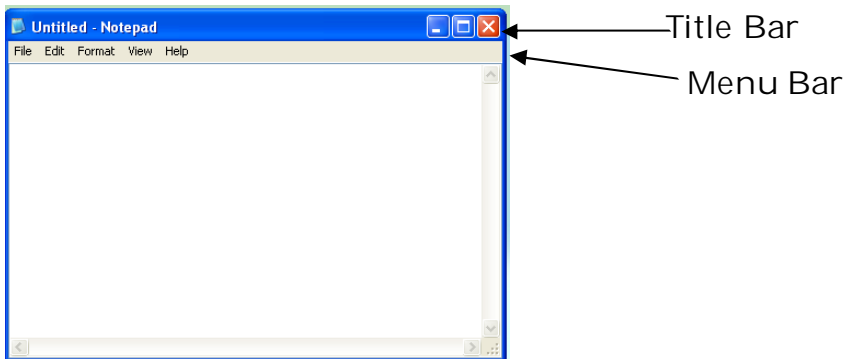
NotePad contains five menus namely file, Edit, Format, View and Help.

Menus and their associated commands in Notepad.

Menu	Commands	Description
File	New	Opens a new Notepad windows
	Open	Opens an already saved file
	Save	Saves the current file
	Save as	Saves the current file with some other name
	Page Setup	Set the size, orientation and margins of the page and header and footer as well as changes the printer settings.
	Print	Prints the current file
	Exit	Closes the notepad window
Edit	Undo	Undoes the last action
	Cut	Cuts the text
	Copy	Copies the text
	Paste	Pastes the cut or copied text
	Delete	Deletes the selected text
	Find	Finds the desired word or pharse
	Find Next	Finds the next instance of the word or pharse
	Replace	Replaces a word or a pharse.
	Go To	Takes the cursor to the specified line number
	Select All	Selects the entire text in a file
	Time/Date	Inserts the current time and date
Format	Font	Changes the font ,font style, font size and the script
View	Status Bar	Displays/hides the status bar
Help	Help Topics	Provides help on how to use Notepad and its features
	About Notepad	Provides information about Notepad

**3. WordPad:-**It is also similar to the Notepad. But it has many options like font style, size and other formatting features.

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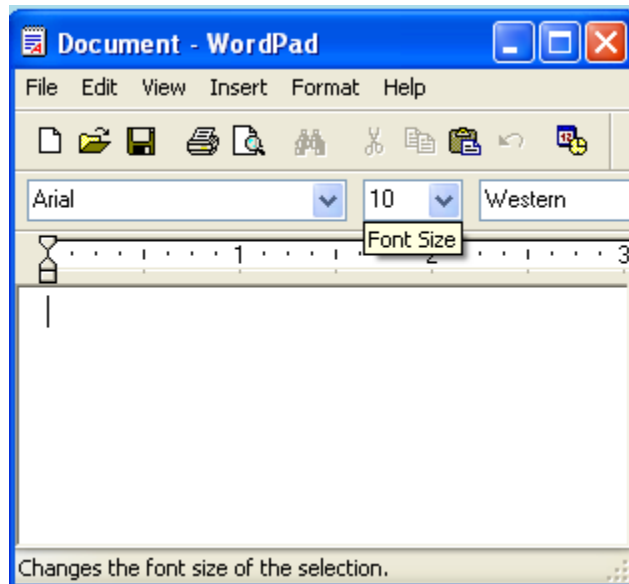
4. Paint:-Windows provides paint to create and edit graphics. Paint is a simple and easy to use tool and work with bitmap (BMP) as well as JPEG (Joint Photographic Experts Group) and GIF (Graphics Interchange Format) graphics.

To open paint, follow any of the steps given below:

- Click **Start**, point to **programs**, then point to Accessories, and click paint.
- Click **Start** and then click **Run**. This displays the Run dialog box. Type *mspaint* and click **ok** or press the **Enter** key.
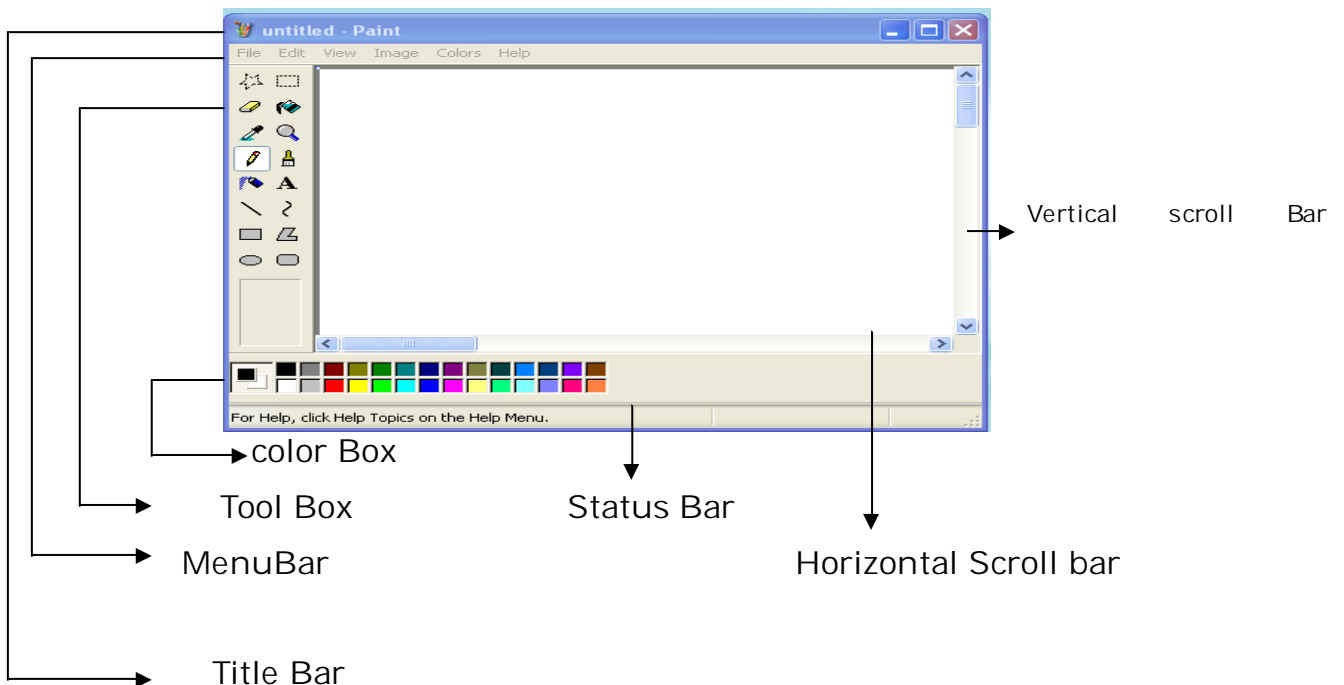
Menus and their associated commands in Notepad.

Menu	Commands	Description

File	New	Opens a new paint windows
	Open	Opens an already saved file
	Save	Saves the current file
	Save as	Saves the current file with some other name
	From scanner or camera	Acquires an image from a scanner or a digital camera-this option is dimmed if scanner or a digital camera is not installed.
	Print preview	Displays the graphic as it will appear on the printed paper
	Page setup	Sets the size, orientation and margins of the page as well as changes the printer settings.
	send	Sends the graphic as an e-mail
	Print	Prints the current file
	Exit	Closes the paint window
Edit	Undo	Undoes the last action-you can go up to three steps back.
	Cut	Cuts the entire or part of the graphic
	Copy	Copies the entire or part of the graphic
	Paste	Pastes the cut or copied graphic
	Clear Selection	Deselects the selected part
	Select All	Selects the entire graphic
	Copy To	Copies the graphic to another graphic file
	Paste from	Pastes the contents of some other file into your active paint file
view	Tool box	Displays or hides the tool box
	Color Box	Displays or hides the color box
	Status bar	Displays or hides the status bar
	Text Toolbar	Displays or hides the text toolbar-this option is available only when the Text tool is selected
	Zoom	Allows you to zoom the graphic
	View Bitmap	Displays the graphic without the Tool Box
Color	Edit colors	Allows you to edit the colors
Help	Help Topics	Provides help on how to use paint and its features
	About Notepad	Provides information about paint

Tool Box-The Tool box contains several tools for creating drawings and text, selecting and erasing part of images, filling colors in images and so on.

Color Box-The color box contains several colors and lets you select a color for image

Scroll Bar-Paint window has two scroll bars: Vertical and horizontal. These scroll bars let you scroll and view the portion of image currently not visible on the screen.

Status Bar-The status bar displays messages and measurements as you work in paint. For example, it displays the information related to a tool as mouse is moved over it in the Tool Box.

5. Adress Book-The Address Book provides a convenient place to store contact information for easy retrieval from programs such as Outlook Express, Internet Explorer, NetMeeting etc. You can search for people and businesses, create groups of contacts for mailing lists and send and receive electronic business cards.

Booting Process

Booting refers to the process of loading the operating system (such as Windows) to the RAM (working memory) of the computer, which otherwise is stored in the hard disk (secondary memory). Computer cannot access anything which is stored in the secondary memory unless it is loaded to the RAM. And as you may know that without the Operating system being loaded you can't work on a computer. So starting the computer is called **booting** and naturally restarting is called"**rebooting"** .Rebooting can be soft rebooting or hard rebooting. To soft reboot, depress the CTRL plus ALT and DEL keys simultaneously. This is normally done when we get stuck in a program or the computer 'hangs' while working on the computer. It is always preferred reboot the computer system again. To Hard reboot, press the reset button of the main unit or turn the computer off wait for a short while and turn it on again.

Booting process is bootstrapping process (to pull oneself up by bootstraps) that's starts operating systems whenever the user turns on or switch on the computer system.

How a computer operates on Booting?

Insert a bootable floppy in drive 'A' and switch on the computer.

1. A program called POST (Power ON Self Test)is automatically excuted.POST resides in the ROM chips(Read Only Memory).It checks for all parts of the computer.

2. The last portion or the POST program is called the boots trap routine. It loads one tiny program called the boot record from the DOS Disk in drives 'A'. If the boot record is not found, it displays   the   following   message. NON-SYSTEM disk or disk error strike any key when ready.

3. While formatting a disk, DOS automatically stores a small record called the "Boot Record" in the first sector of the system disk. The boot record has only one purpose in life and that is to start loading MS DOS.

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It locates two of the three files that make up MS-DOS IO.SYS and MS-DOS.SYS. Once the boot record has loaded these files, it turns control over to them.

4. Now, MS-DOS checks the CONFIG.SYS. It contains commands for tuning the system to out preference. Then the file COMMAND.COM is copied into memory by MS-DOS.SYS.

5. COMMAND.COM is the portion of MS DOS that responds to the command you type. It's first act is to automatically execute the batch of commands stored in a file called AUTOEXEC.BAT then displays the DOS PROMPT.

6. COMMAND then waits for a keyboard input. The computer is now ready to accept the DOS or any other command the user gives.