

Software:

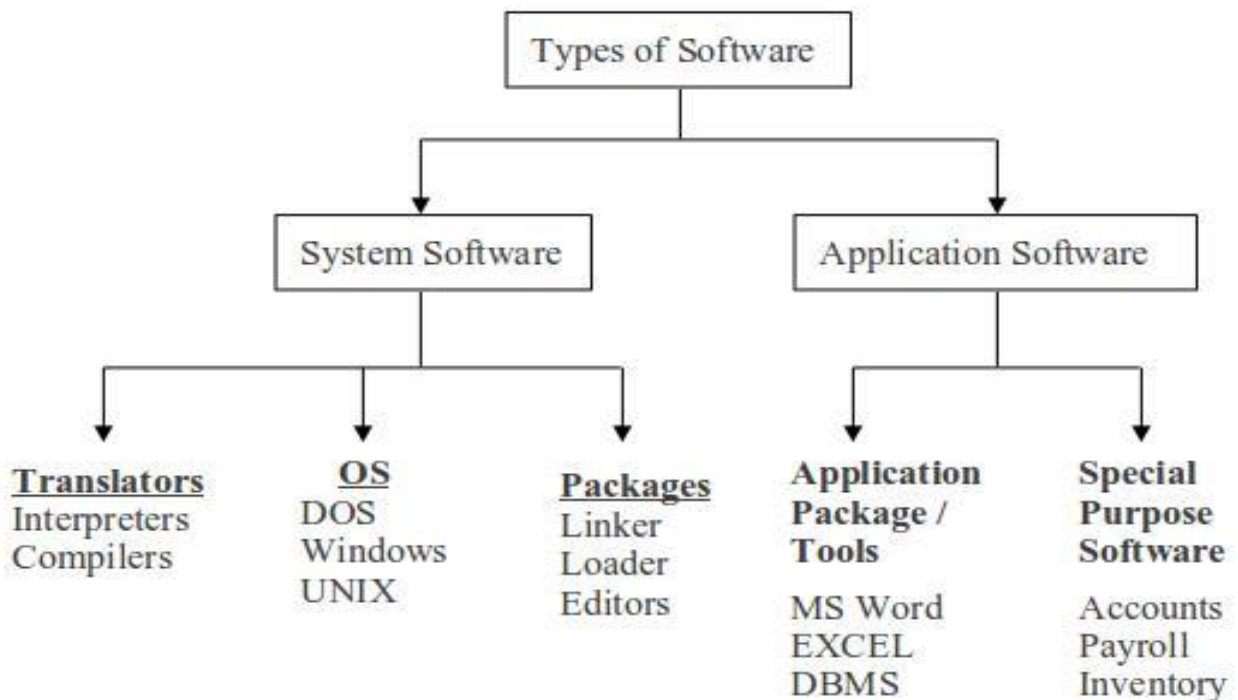
Software is a set of programs, which is designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem.

Computer software, or just **software**, is any set of machine-readable instructions that directs a computer's processor to perform specific operations. The term is used to contrast with computer hardware, the physical objects (processor and related devices) that carry out the instructions. Computer hardware and software require each other and neither can be realistically used without the other.

Software is a general term. It can refer to all computer instructions in general, or to any specific set of computer instructions. It is inclusive of both machine instructions (the binary code that the processor "understands") and source code (more human-understandable instructions that must be rendered into machine code by compilers or interpreters before being executed).

Types of Software

- 1) System Software.
- 2) Application Software.
- 3) Utility Software.



System Software:

System software is computer software designed to operate the computer hardware, to provide basic functionality, and to provide a platform for running application software. System software includes device drivers, operating systems, servers, utilities, and window systems.

System software also includes the boot firmware, which loads (or in some cases constitutes) the operating system. Firmware is software that has been permanently stored in hardware (specifically, in non-volatile memory). Thus, it has qualities of both software and hardware, but it is still software.

Features of system software are as follows:

- Close to system
- Fast in speed
- Difficult to design
- Difficult to understand
- Less interactive
- Smaller in size
- Difficult to manipulate
- Generally written in low-level language

Application Software:

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

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

Accounting software, enterprise software, graphics software, media players, and office suites. Many application programs deal principally with documents. Applications may be bundled with the computer and its system software or published separately, and can be coded as university projects.^[2]

Examples of Application software are following:

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

Features of application software are as follows:

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

Utility Software:

Utility software is system software designed to help analyze, configure, optimize or maintain a computer. Smaller than an application in size, a utility is a computer program intended for a particular task; usually pertaining to system resource management. A good example is Microsoft's Disk Cleanup utility, which is used to delete unnecessary files and recover disk drive space.

Examples:

- **Anti-virus** utilities scan for computer viruses
- **Backup software** can make copies of all information stored on a disk and restore either the entire disk (e.g. in an event of disk failure) or selected files (e.g. in an event of accidental deletion).
- **Device Drivers** is a computer program that controls a particular device that is connected to your computer. Typical devices are keyboards, printers, scanners, digital cameras and external storage devices. Each of this needs a driver in order to work properly.

Computer Languages

Languages are used for Communication with the System. As we know that there are also Some Human Languages like English, Punjabi and Hindi those are used for Communicating with the Other Humans. As we know that different Humans Understands Different Languages.

For Making a Request to the System, a user can use any Programs, and the Programs are the Collection of Statements and these Statements are written into the Some Programming Languages. So that at that Time there are Many Languages those are also called as the Programming Languages because they are used for making a Program So that they are called as the Programming Languages.

Types of Computer Languages:

1. Low Level Language (1st GL).
2. Assembly Level Language (2nd GL).
3. High Level Language (3rd GL).
4. Fourth Generation Language (4th GL)

Low Level Language or Binary or Machine:

This is also called as the First Generation Computer Languages. And in these Machine Languages has developed. The Machine Language Programs contains all the instructions in the Binary Form and we know that the Program which has written into the Machine Language are easily understandable to the computer System. So that it is very difficult to understand for the user because all the instructions are written into the Form of 0 and 1. Basically this Language was used for writing the Machine Instructions Means how the Registers will Work and how they will be Work for Performing the Requests of the users. So that we can also say that these Languages are used for Internal Structure of the computer System.

Advantages and Disadvantages of Low Level Languages:

- It consists of binary digits and some symbols.
- It depends on machine.
- Machine language directly executes on computer.
- No need of language translator for machine language.
- Program written in low level language is called object code.

Disadvantages of Low Level Languages:

- It is not easy to understand.
- It is difficult to modify.

Assembly Level Language:

As We know that the Program which is Written into the Machine Language are very difficult to understand for the user So that there is the Development of the new Programming Language which is also known as the second Generation Language Which is also known as the Assembly Language and in the Assembly Language there are Many **Mnemonics** those are also Called as the **Reserve Words** those are easy to understand to the users and those have Some Specific Meaning.

In the Assembly Language the Programs are written into the Form of some Words those are Machine Oriented Mans which has the Specific Meaning and the Words those are easily understand by the Machine Language.

For Example, if a user wants to add two Numbers then he has to use Some Mnemonics like this ADD A, B in this ADD is the Mnemonics which is used for performing the Add Operation

Advantages of Assembly Language

1. It is easier to understand and use as compared to machine language.
2. It is easy to locate and correct errors.
3. It is modified easily

Disadvantages of Assembly Level Languages:

1. **No Symbolic names** for memory locations. You need to keep track of the exact memory location that a piece of data is stored. That is, you must manipulate memory locations directly.
2. **Hard to read.** Although we've made a few improvements by eliminating hex code, the command names are not always clear.
3. **Code is still machined dependent.** We haven't really moved that far away from the machine language - just put pseudo-English labels on it. We still need to rewrite every piece of code for every machine.
4. **Hard to maintain and debug.** Finding mistakes in machine code is difficult. Correcting them or adding new features can also be a challenge.
5. **Code must be heavily documented.** It's very difficult (if not impossible) to figure out what a program does by reading the code. Detailed explanation must be prepared for future coders (including the original programmer) who need to modify or use the code.

High Level Language or 3rd GL

High Level Programming Languages are User Friendly means the Syntax of these Languages is Quite Simple because they Contain all the Words those are in the Form of English Language but the Main Problem is that they are not Machine Oriented Means the Program which is written into the High Level Languages is not understood by the Computer So that the Program Must be Converted into the Machine Language and the Program which is Written into the Human Language will cause the Computer in Slow of Processing.

Advantages and disadvantages of High Level Languages:

- It is close to human being
- It is easy to understand
- It consists of English language like structure
- It does not depend upon machine
- It is easy to modify
- The programs written in high level languages is called source code
- Examples of high level languages are BASIC, PASCAL, C/C++ etc.

Disadvantages of high level languages:

- It needs language translator to translate into program in to machine language.
- It does not execute directly on computer.

Language Translators or Processors:

A translator is a **computer program** that performs the translation of a program written in a given programming language into a functionally equivalent program in a different computer language, without losing the functional or logical structure of the original code (the "essence" of each program).

Types of Language Translators or Processors:

1. Assemblers
2. Compilers
3. Interpreters

Assembler

An Assembler is a language translator which converts an assembly program into machine code.



An **assembler** translates assembly language into machine code. Assembly language consists of mnemonics for machine opcodes so assemblers perform a 1:1 translation from mnemonic to a direct instruction. For example:

LDA #4 converts to 0001001000100100

Conversely, one instruction in a high level language will translate to one or more instructions at machine level.

Advantages of using an Assembler:

- + Very fast in translating assembly language to machine code as 1 to 1 relationship
- + Assembly code is often very efficient (and therefore fast) because it is a low level language
- + Assembly code is fairly easy to understand due to the use of English-like mnemonics.

Disadvantages of using Assembler:

- Assembly language is written for a certain instruction set and/or processor
- Assembly tends to be optimized for the hardware it's designed for, meaning it is often incompatible with different hardware
- Lots of assembly code is needed to do relatively simple tasks, and complex programs require lots of programming time

Compiler

A Compiler is a program that translates a high level language into machine code. The Turbo Pascal compiler, for example, translates a program written in Pascal into machine code that can be run on a PC.

A **Compiler** is a computer program that **translates code** written in a high level language to a lower level language, object/machine code. The most common reason for translating source code is to create an executable program (converting

from a high level language into machine language).



Advantages of using a compiler

- + Source code is not included; therefore, compiled code is more secure than interpreted code
- + Tends to produce faster code than interpreting source code
- + Produces an executable file, and therefore the program can be run without need of the source code

Disadvantages of using a compiler

- Object code needs to be produced before a final executable file, this can be a slow process
- The source code must be 100% correct for the executable file to be produced

Interpreter

An interpreter program executes other programs directly, running through program code and executing it line-by-line. As it analyses every line, an interpreter is slower than running compiled code but it can take less time to interpret program code than to compile and then run it – this is very useful when prototyping and testing code. Interpreters are written for multiple platforms; this means code written once can be run immediately on different systems without having to recompile for each. Examples of this include flash based web programs that will run on your PC, MAC, games console and Mobile phone.



Advantages of using an Interpreter

- + Easier to debug (check errors) than a compiler
- + Easier to create multi-platform code, as each different platform would have an interpreter to run the same code
- + Useful for prototyping software and testing basic program logic

Disadvantages of using an Interpreter

- Source code is required for the program to be executed, and this source code can be read making it insecure
- Interpreters are generally slower than compiled programs due to the per-line translation method

Difference between Compiler & Interpreter

S.No	Compiler	Interpreter
1	Translates the high level instruction into machine language	Translates the high level instruction into an intermediate code.
2	executes the entire program at a time	Executes each and every line individually.
3	The list of errors that are caused during the process of execution	It quits translating soon after finding an error, the progression of the other lines of the program will be done after refining the error.
4	Autonomous executable file is generated by the compiler	Interpreter is compulsory for an interpreter program.
5	the analyzing and processing time of the program is more	Spends less time for the program analyzing and processing.
6	The resulting code of the compiler is in the form of machine code or binary format	In case of interpreter the resulting code is in the form of the intermediate code.
7	the resulting code is executed by the computer hardware	Another program interprets the resulting code
8	The execution of the program is fast in the compiler	An interpreter the program execution speed is comparatively slow.
9	will verify syntax of program	Verifies the keywords of a program.
10	will verify the entire program at a time	Verifies the program concurrently in the editor.

Editor or Loader & Linker**Loader**

A loader reads the executable code into memory does some address translation and tries to run the program resulting in a running program or an error message (or both)

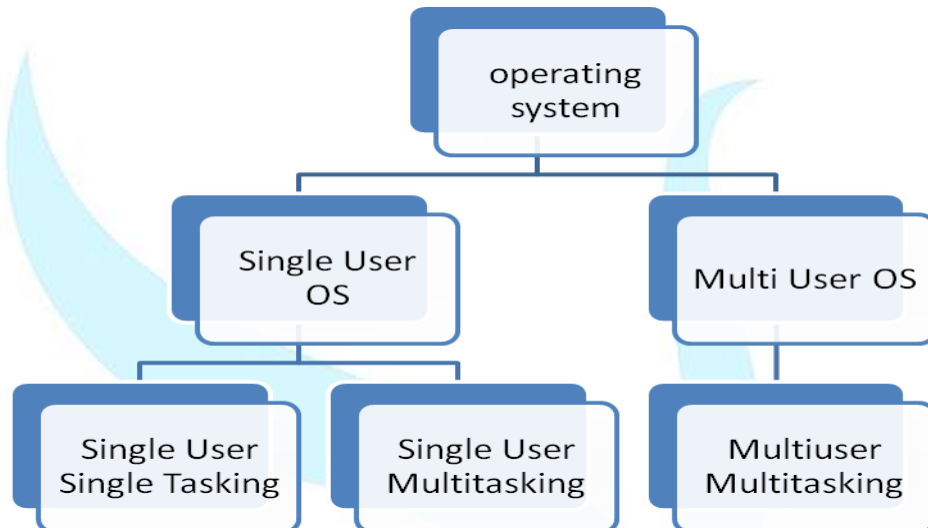
Linker

A linker combines one or more object files and possible some library code into some executable, some library or a list of error messages.

Operating System:

An **operating system (OS)** is a collection of software that manages computer hardware resources and provides common services for computer programs. The operating system is an essential component of the system software in a computer system. Application programs usually require an operating system to function. OS acts as a interface between the user and computer

Types of Operating System:



Single User Operating System:

A single-user operating system is a type of operating system (OS) that is developed and intended for use on a computer or similar machine that will only have a single user at any given time. This is the most common type of OS used on a home computer, as well as on computers in offices and other work environments. There are two general types of single-user systems: single task and multitasking systems. Though this OS can be connected to other systems through a network, it is still truly only used by a single person and is different than a multi-user OS.

Types of Single User Operating System

Single User Single Tasking:

A single-user operating system that is a single task system is developed for use with a computer or electronic device that will only run one application at a time. This type of OS is typically used on devices like wireless phones and two-way messaging devices. A single task operating system can only run one program or application at a time, and so it is not as useful for a computer or other device intended to run multiple programs at once.

Examples: MSDOS (Microsoft Disk Operating System).

Single User Multi-Tasking:

This is where a multitasking single-user operating system is used instead. A multitasking OS can run multiple applications and programs at once. This is often used on computers where someone may wish to navigate the Internet, run a

graphics editing program, play music through a media playing program, and type in notes in a simple word processing program all at the same time. A single task OS could not do this, but the multitasking systems are able to handle all of these processes.

Examples: MS Windows 95, MS Windows 98, MS Windows Xp.

Multi User Multi Tasking:

Multi-user is a term that defines an operating system or application software that allows access by multiple users of a computer. Time-sharing systems are multi-user systems. Most batch processing systems for mainframe computers may also be considered "multi-user", to avoid leaving the CPU idle while it waits for I/O operations to complete. However, the term "multitasking" is more common in this context.

Examples: MS Windows NT, UNIX.

Functions of OS

Operating system is large and complex software consisting of several components. Each component of the operating system has its own set of defined inputs and outputs. Different components of OS perform specific tasks to provide the overall functionality of the operating system

Main functions of the operating system are as follows:

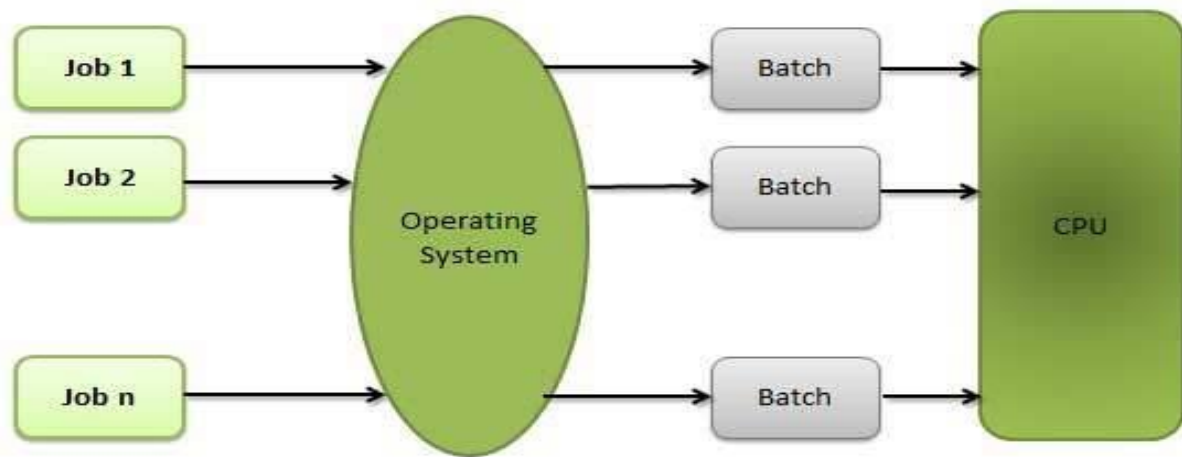
- **Process Management**— The process management activities handled by the OS are—(1) control access to shared resources like file, memory, I/O and CPU, (2) control execution of applications, (3) create, execute and delete a process (system process or user process), (4) cancel or resume a process (5) schedule a process, and (6) synchronization, communication and deadlock handling for processes.
- **Memory Management**— The activities of memory management handled by OS are—(1) allocate memory, (2) free memory, (3) re-allocate memory to a program when a used block is freed, and (4) keep track of memory usage.
- **File Management**— The file management tasks include—(1) create and delete both files and directories, (2) provide access to files, (3) allocate space for files, (4) keep back-up of files, and (5) secure files.
- **Device Management**— The device management tasks handled by OS are—(1) open, close and write device drivers, and (2) communicate, control and monitor the device driver.
- **Protection and Security**— OS protects the resources of system. User authentication, file attributes like read, write, encryption, and back-up of data are used by OS to provide basic protection.
- **User Interface or Command Interpreter**— Operating system provides an interface between the computer user and the computer hardware. The user interface is a set of commands or a graphical user interface via which the user interacts with the applications and the hardware.

Classes of Operating System

Batch processing OS

Batch processing is a technique in which Operating System collects one programs and data together in a batch before processing starts. Operating system does the following activities related to batch processing.

- OS defines a job which has predefined sequence of commands, programs and data as a single unit.
- OS keeps a number a jobs in memory and executes them without any manual information.
- Jobs are processed in the order of submission i.e first come first served fashion.
- When job completes its execution, its memory is released and the output for the job gets copied into an output spool for later printing or processing.



Advantages

- Batch processing takes much of the work of the operator to the computer.
- Increased performance as a new job gets started as soon as the previous job finished without any manual intervention.

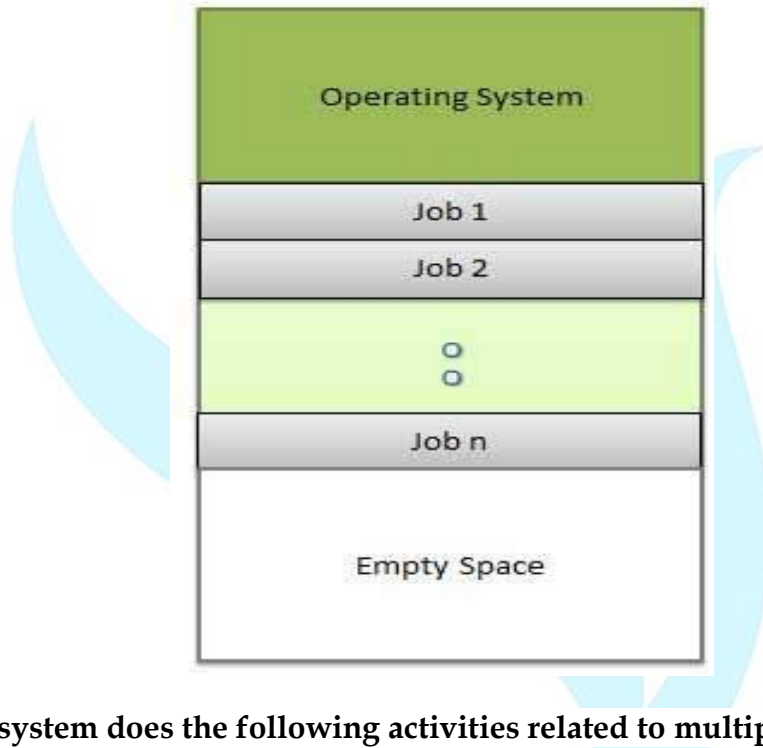
Disadvantages

- Difficult to debug program.
- A job could enter an infinite loop.
- Due to lack of protection scheme, one batch job can affect pending jobs.

Multiprogramming

When two or more programs are residing in memory at the same time, then sharing the processor is referred to as multiprogramming. Multiprogramming assumes a single shared processor. Multiprogramming increases CPU utilization by organizing jobs so that the CPU always has one to execute.

Following figure shows the memory layout for a multiprogramming system.



Operating system does the following activities related to multiprogramming.

- The operating system keeps several jobs in memory at a time.
- This set of jobs is a subset of the jobs kept in the job pool.
- The operating system picks and begins to execute one of the jobs in the memory.
- Multiprogramming operating system monitors the state of all active programs and system resources using memory management programs to ensure that the CPU is never idle unless there are no jobs.

Advantages

- High and efficient CPU utilization.
- User feels that many programs are allotted CPU almost simultaneously.

Disadvantages

- CPU scheduling is required.
- To accommodate many jobs in memory, memory management is required.

Time-sharing operating systems

Time sharing is a technique which enables many people, located at various terminals, to use a particular computer system at the same time. Time-sharing or multitasking is a logical extension of multiprogramming. Processor's time which is shared among multiple users simultaneously is termed as time-sharing. The main

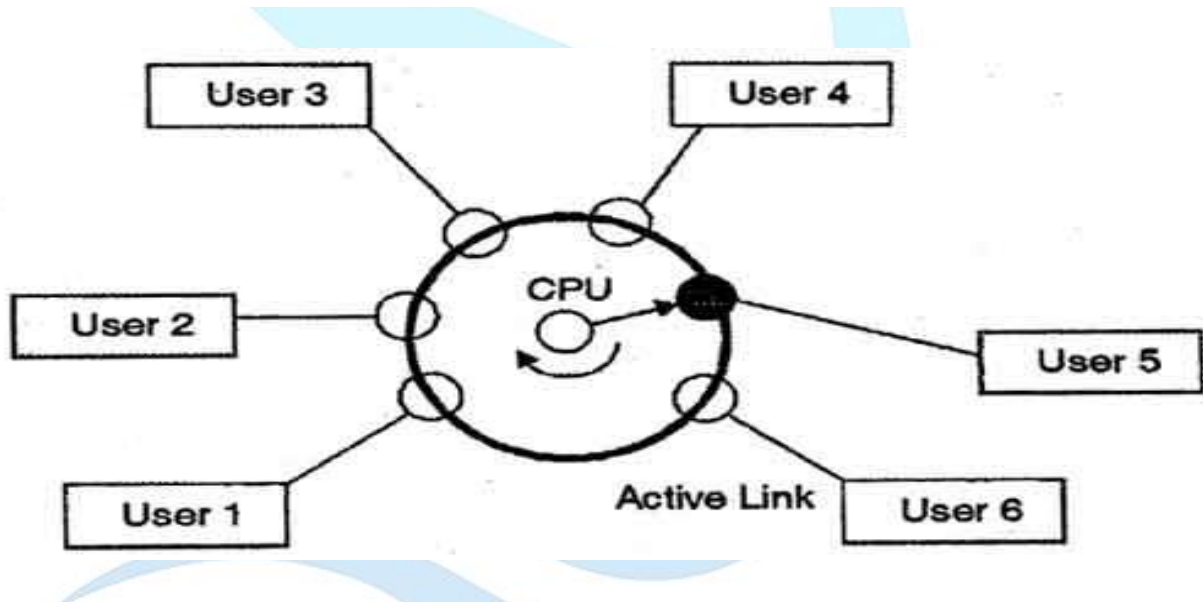
difference between Multiprogrammed Batch Systems and Time-Sharing Systems is that in case of Multiprogrammed batch systems, objective is to maximize processor use, whereas in Time-Sharing Systems objective is to minimize response time.

Multiple jobs are executed by the CPU by switching between them, but the switches occur so frequently. Thus, the user can receive an immediate response. For example, in a transaction processing, processor execute each user program in a short burst or quantum of computation. That is if n users are present, each user can get time quantum. When the user submits the command, the response time is in few seconds at most.

Operating system uses CPU scheduling and multiprogramming to provide each user with a small portion of a time. Computer systems that were designed primarily as batch systems have been modified to time-sharing systems.

Advantages of Timesharing operating systems are following

- Provide advantage of quick response.
- Avoids duplication of software.
- Reduces CPU idle time.



Disadvantages of Timesharing operating systems are following.

- Problem of reliability.
- Question of security and integrity of user programs and data.

Problem of data communication.

Real Time operating System

Real time system is defines as a data processing system in which the time interval required to process and respond to inputs is so small that it controls the environment. Real time processing is always on line whereas on line system need not be real time. The time taken by the system to respond to an input and display of required updated information is termed as response time. So in this method response time is very less as compared to the online processing.

Real-time systems are used when there are rigid time requirements on the operation of a processor or the flow of data and real-time systems can be used as a

control device in a dedicated application. Real-time operating system has well-defined, fixed time constraints otherwise system will fail. For example scientific experiments, medical imaging systems, industrial control systems, weapon systems, robots, and home-appliance controllers, Air traffic control system etc.

There are two types of real-time operating systems.

Hard real-time systems

Hard real-time systems guarantee that critical tasks complete on time. In hard real-time systems secondary storage is limited or missing with data stored in ROM. In these systems virtual memory is almost never found.

Soft real-time systems

Soft real time systems are less restrictive. Critical real-time task gets priority over other tasks and retains the priority until it completes. Soft real-time systems have limited utility than hard real-time systems. For example, Multimedia, virtual reality, Advanced Scientific Projects like undersea exploration and planetary rovers etc.

MS-DOS

MS-DOS short for Microsoft Disk Operating System) is an operating system for x86-based personal computers. It was the most commonly used member of the DOS family of operating systems, and was the main operating system for IBM PC compatible personal computers during the 1980s to the mid-1990s, until it was gradually superseded by operating systems offering a graphical user interface (GUI), in particular by various generations of the Microsoft Windows operating system.

Types of Commands:

- ✓ Internal Command.
- ✓ External Command.

Internal Command & External Command:

The following is a list of MS-DOS version 5.0 internal and external commands. The internal commands reside in COMMAND.COM, which loads into memory when the computer system is started; these commands do not reside on disk. The external commands are files that do reside on disk and have an extension of .COM, .EXE, or .BAT. Both command types are executed from the MS-DOS prompt.

List of Internal Commands:

1) Dir (Directory)

This command gives a listing of most of the files and directories on a disk (Hard disk and floppy disk). In DOS 3.3 and below, there are only 2 known switches:

C:\>DIR/W - gives the directory listing wide across your screen without times, dates, and sizes

2) MD or MKDIR (Make Director)

This lets you Make a Directory, hence the MD (MKDIR is a holdover from UNIX style OS's. If you switch between a UNIX OS and DOS, you may come to appreciate MKDIR). You type MD followed by a file name. You can nest (Make a directory within a directory) up to 16 directories on most DOS only systems.

C:\> MD SAMPLE

3) CD (Change Director)

This command lets you change directories. Let's say you are at root (Just a "C:\>" prompt) and you want to get into a directory named WINDOWS. Type the following:

C:\>cd windows

You will get a prompt like this:

4) COPY

This command obviously copies files to different spots on your disks. It does not remove the source file after writing the new file. Usage:

C:\>copy mystuff.doc A:

This example will copy "mystuff.doc" to your A: drive. Here's another example:

5) RD (Remove Director)

RD will Remove a Directory. Use RD followed by the name of the directory you wish to delete. You must empty the directory first or you will just get an error message from DOS. Since DOS 5.00 there has been a nifty utility called DELETREE which doesn't care if the directory has files in it.

6) CLS (Clear Screen)

This command clears the screen. It also places your cursor at the top left-hand corner of your screen (Also called the "home position").

C:\>cls

7) TIME

This lets you set your systems time.

C:\>time

Current time is 1:46:11.30p

Enter new time:

C:\>

You don't need to specify the time to the nearest millisecond like DOS displays it, an hour and a minute will do. Notice the p at the end of the second line. That means it's P.M. You MUST put a p at the end of your new time or else your computer will be

- ✓ R stands for the READ-ONLY attribute
- ✓ A stands for the ARCHIVE attribute
- ✓ S stands for the SYSTEM attribute
- ✓ H stands for the HIDDEN attribute
- ✓ + adds the selected attribute to the specified file
- ✓ - removes the selected attribute from the selected file
- ✓ /S performs the attribute change on all files in the directory you specify

4) EDIT

This is a DOS text editor included with DOS 5 and up. Except for the windows 95/98 DOS, EDIT requires that you have QBASIC in the same directory or in the PATH. Here are the switches it accepts:

C:\>edit myfile.txt

/B - Forces monochrome mode.

/H - Displays the maximum number of lines possible for your hardware.

/R - Load file(s) in read-only mode.

/S - Forces the use of short filenames.

/<nnn> - Load binary file(s), wrapping lines to <nnn> characters wide.

Wildcards and multiple file specs can be given.

5) CHKDSK

This was the original "disk integrity" program. It checks your file system for improperly deleted files (Reported as "Lost chains") and other things. It was included with EVERY version of DOS, even in DOS 6 even though SCANDISK was available with DOS 6. Here's the switches it accepts:

C:\>CHKDSK

/F automatically fixes any errors found

/V shows every file on your disk

6) FORMAT

FORMAT is used for- you guessed it- formatting disks. This is necessary so that DOS knows where to put data on a disk. FORMAT writes over every available sector on the disk, putting "place holders" where every bit can go. It also sets up the boot sector, root directory, and FAT. FORMAT also detects bad sectors on your disk and marks them out so DOS won't try to use them. FORMAT gives you a list of all it did after completion. If you see that it found bad sectors on a floppy disk, I would advise throwing it away. Floppies are so cheap you shouldn't risk using a diskette that is on its way out. Even if you don't consider your data very important, it can be a hassle to mess with bad floppies.

C:\>FORMAT D:

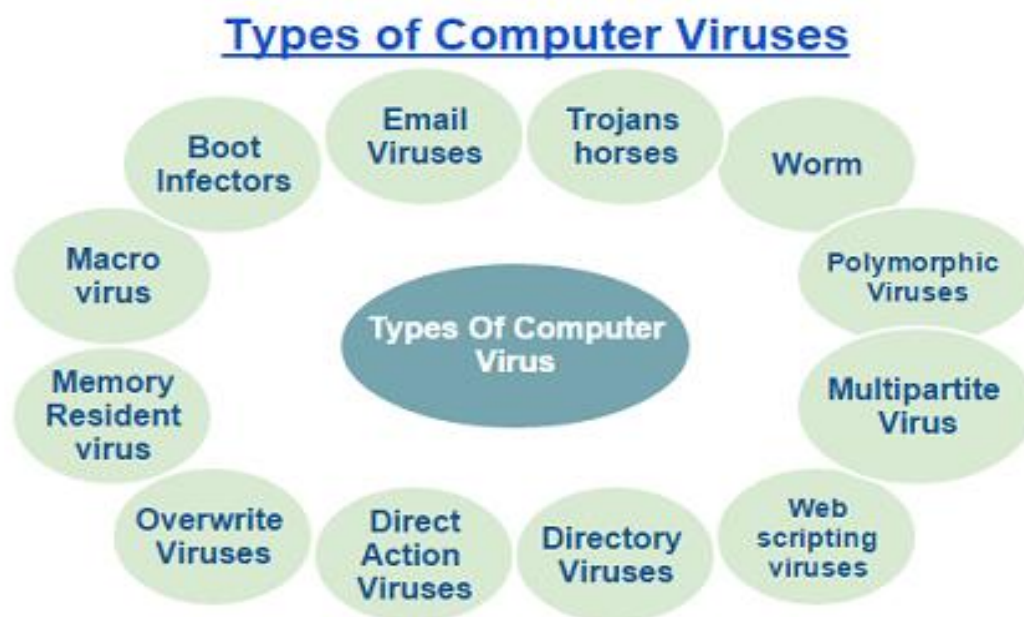
Computer Virus Definition

A computer virus we can say is a small software program or a piece of code that is loaded on your computer system while using internet can spread from one computer to another and running without your knowledge.

Computer viruses can also replicate and they are man-made. How the replication done in the computer virus? A simple virus that can make copy of itself over and over again and that would be easy to produce.

Sometimes a simple virus is very dangerous because it stored in your system available memory and when after some time all the small virus collected it may halt you system. A virus has a capacity to corrupt the files located in you system and it also has a capability to spread the virus via e-mail program and effect the system other email addresses in your online address book.

It can also delete everything on your hard disk that would be the worst case scenario. A virus can also affect your system security. In 1987, A virus infect ARPANET, then the Defense department and other universities using large network, many antivirus programs become available. Such programs are invent because they check periodically you system and prevent it from known viruses.



Macro virus

Macro virus infect the file hat are created from some application or programs which are mainly contain macro files like doc, pps, xls, mdb. So basically such virus infect the files with the macros and also templates and document that are contained in the file. These virus hide in documents that are shared through network and e-mail. Macro virus are Relax, bablas, Melissa.A, 097M/Y2K.

Memory Resident Viruses

Resident viruses activated every time the OS runs and end up infecting other opened files. Such virus usually fixes themselves inside the computer memory, hide in RAM. Resident viruses are CMJ, meve, randex, mrklunky.

Overwrite Viruses

Overwrite viruses delete the information from the file partially or completely once it infect a file. It infect only the file content may be change all the content but the file location and name remains the same, means doesn't infect the file name and the location. Overwrite viruses are Trj.Reboot, way, trivial.88.D.

Direct Action Viruses

Direct Action Virus activate when the file containing virus is executed. The virus take no other action unless an infected file is executed again. Most viruses avoid this because this is not so productive, but such virus damage in the past. Direct Action viruses are Vienna Virus.

Directory Virus

Directory virus is also known by cluster virus and file system virus. This can infect the computer's directory by changing the path by indication the location. Such virus located into the hard disk but affect the entire directory. Directory viruses are die-2 virus.

Web Scripting Virus

Mostly web pages contain complex code to make their web page content interactive so that such code exploit that cause undesirable actions. Such virus originates from browser and web pages. Web Scripting viruses include JS.Fortnight that spread via malicious emails.

Multipartite Virus

This type of virus spread in multiple ways and the taken action depending upon the type of OS installed and presence of certain files. Most of the time this virus try to hide in computer's memory not to infect the hard disk. Multipartite Viruses are flip, invader and tequila.

Polymorphic Virus

Polymorphic virus encode and encrypt themselves every time they are going to infect the computer system. For that they use different encryption methods and algorithms. Since they use different encryption method each time which is difficult for antivirus to locate and resolve them. Polymorphism viruses are Marburg, tuareg, Satan bug, elkern.

Worm

Worm is very similar to a virus having a capability to self-replicate which is leading to negative effect on your system. This consume too much system memory and also affect web servers and network servers. Worm viruses are lovgate.F, sobig.D, trile.C, PSWBugbear.B, Mapson.

Trojans horses

This name comes from a software which is very useful software but later do damage you system after run once. This virus can track the login details of the users who is online. Example as we all know E-banking is very common, so its vulnerability of tracing your login details whenever your PC is working without the support of strong antivirus.

Email Virus

This virus is spread via email, this will hide an email when recipient opens the mail.

Boot Infectors

This virus type will include boot sector and master boot record types. While all the viral codes are separated because they infect the hard disks or the floppy. It include the viruses like the brain virus which is very first wild virus is to be created.

Virus Protection Methods

Protection of virus is well designed software program which is used in infected computer systems to prevent from viruses, worms and Trojan horses. The main purpose of using Virus protection is to remove any malicious software code which is already infects a computer. Most of the virus protection utilities now bundle anti-spyware and anti-malware ability that belong to anti-virus protection. To secure internet that include some additional capabilities like anti-spam, anti-phishing, firewall, optimization of files and file protection.

Detection of Computer Virus

- Your computer slows down without any reason.
- Your computer system has less available memory than it should.
- Unknown programs or files are being created.
- Programs or files become missing.
- Corrupted files.
- Your computer restarts in unusual ways.
- Some files or programs suddenly don't work properly.
- Strange messages, displays, music or sounds.
- Changed Hard Drive name or Volume name.
- Hard Drives or Disk Drives are inaccessible.

Computer Virus Prevention Tips

- Keep your operating system and software always up-to-date
- Use a firewall
- Use antivirus software
- Don't ignore security warnings from Windows or your antivirus software
- Don't install and use pirated software
- If you don't use Java, then remove or disable it
- Don't click on "OK", "Yes" or "Run" when a pop-up window appears and ask you to install unknown software. Here's one example: "Your windows computer could be at risk! Install this repair tool to protect and clean your system by clicking "Secure Now" as soon as possible" Don't fall for this trick!
- Before you want to install free software (freeware) first check if its reliable by reading reviews about it
- Always download software from the official link or from a trusted website
- Don't click on a link (in emails or web pages) if you don't trust it.
- Use a secure and safe web browser like Google Chrome or Mozilla Firefox and keep it updated
- When installing software, always read everything clearly before clicking "Next", "OK", "Install", "Continue", etc...
- Microsoft recommends that you disable SMB1 on Windows for security reasons.

