Software

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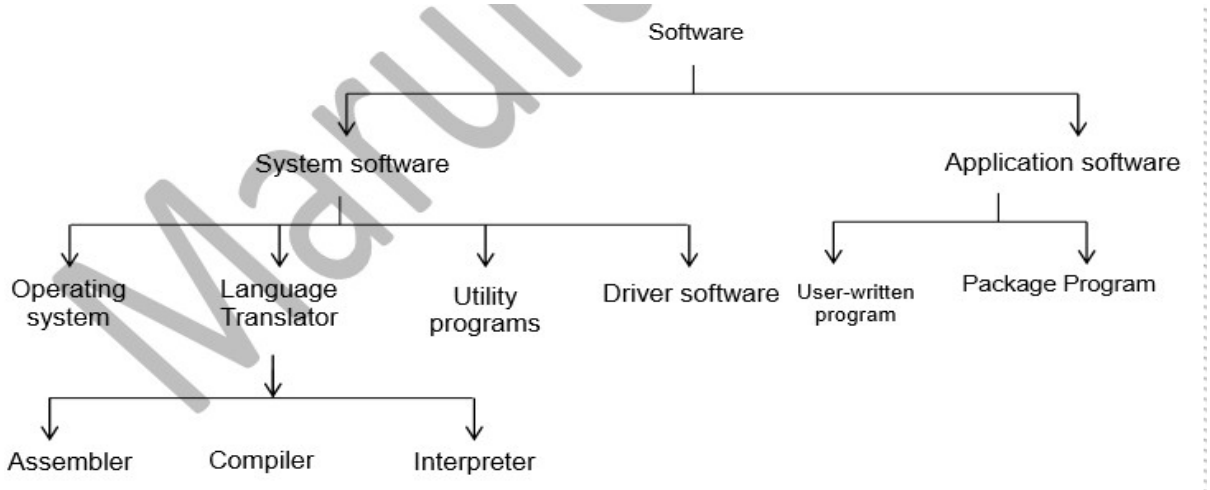
Q1: What is Software? Write down the Classification of Software.

Software: Software is one or more computer programs. Computer programs are set of instructions given to a computer to perform some predefined tasks. Example: Windows 7, MS Office 2010, Matlab 7, AutoCAD etc.

Classification of Computer Software: Computer software can be classified as a tree like or hierarchical classification.



Q2: Define System Software and Application Software with examples.

System Software: System software is one or more generalized programs used by the computer system to provide necessary helps to the computer users. Example: Windows 7, Vista, Linux etc.

Application Software: Application software is one or more specialized programs used by the computer users to solve their daily life problems. Example: MS Office 2010, AutoCAD etc.

Q3: Define Operating System with its types and functions.

Operating System: An operating system is a system software. It is an intermediary program in between computer user and computer hardware. It provides an environment in which a user can use the computer system effectively, efficiently, and conveniently. Example: Windows 7, Vista, Linux etc.

Types of Operating System (OS): An operating system can be any one of the following major types:

1. Batch Processing OS. Ex. DOS.

2. Multi-tasking OS. Ex. Windows.

3. Multi-programming OS.

4. Time sharing OS. Ex. Unix.

5. Real Time OS.

6. Multiprocessing OS.

Functions of Operating System (OS): An operating system performs following functions:

1. CPU Scheduling.

2. Memory Management.

3. Input/output Control.

Q4: Differentiate between windows and Dos operating system.

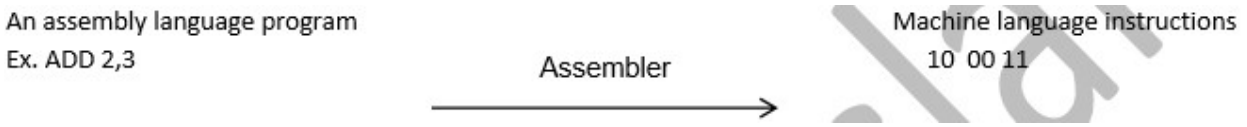
DOS(Disk Operating System)	Windows operating System
1. Defination:	1. Defination
2. DOS is text or command based operating system.	2.Windows is Graphics based operating system.
3. DOS is not user friendly operating system	4. Windows is user friendly operating system.
5. Mouse is not used here.	6. Mouse is used here.

Q5: What is language translator?

Language Translator: A language translator is a computer program used to translate another computer program into machine or binary language. Here, source program can be written in any language other than machine language but after translating the destination program must be in machine language instructions. That is,

Q6. What is Assembler, Interpreter and Compiler?

Assembler: An assembler is a language translator used to translate an assembly language program into machine language instructions. That is,



Interpreter: An interpreter is a language translator used to translate a high-level language instruction into machine language instruction and then executes it. That is

Compiler: A compiler is a language translator used to translate a high-level language program into machine language instructions. That is,

Q7: Difference between compiler and interpreter.

Compiler	Interpreter
1. Compiler is a language translator used to translate a high-level language program into machine language instruction.	1. An Interpreter is a language translator used to translate a high level language instruction into machine language instruction and then executes it.
2. Translate entire program at a time.	3. Translate one instruction at a time
4. Only translation no execution is done.	5. Both translation and execution is done.
6. Faster in operation.	7. Slower in operation.

Q8: What is Utility Program? Discuss some utility programs with their tasks.

Utility Programs: Utility programs are some special programs which are used to enhance the efficiency of a computer system. Some utility programs and their tasks are mentioned below:

Utility Program	**Task**
Scan Disk	To find and repair system files errors.
Disk Defragmenter	To make computer system faster.
Disk Cleanup	To remove temporary (.tmp) files from computer.

Winzip/Pk Zip (Zip programs)	To compress files or programs.
Data Recovery	To recover deleted files or programs.
Anti-virus	To scan, clean/delete/vault virus programs.

Q9. What is a User-written program? Mention some name of programming languages that can be used to develop a User-written program.

User-written Program: A user-written program is written by computer user to solve their daily life problems. Here, the user must have some programming knowledge and he or she must use some high level programming language to develop that program.

Programming Language	Full meaning
BASIC	Beginners All purposes Symbolic Instruction Codes
COBOL	Common Business Oriented Language
Fortran	Formula Translators
Matlab	Matrix Laboratory
Prolog	Programming in Logic
Lisp	List Processing

**Some programming languages which have no full meaning are: C, C++, C#, Java etc.

Q10. Define package program. Mention the major programs available in MS office package.

Package Program: A package program is commercially developed for common computer users. These programs are developed to use as very much user-friendly. The major programs which are available in MS office package are below:

Program	Task
MS Word	Documentary
MS Excel	Spread Sheet Analysis
MS Access	DBMS (Database Management System)
MS PowerPoint	Presentation

Q11. What do you mean by driver software?

A **device driver** is a program that controls a particular type of **device** that is attached to your computer. There are **device driver**s for printers, displays, CD-ROM readers, diskette drives, and so on. When you buy an operating system, many **device drivers** are built into the product.

Q12: Define different operating system.

Batch Processing OS: Batch processing is the execution of a series of jobs in a program on a computer without manual intervention (non-interactive). Strictly speaking, it is a **processing** mode: the execution of a series of programs each on a set or "**batch**" of inputs, rather than a single input (which would instead be a custom job).

Multi-tasking OS: Multitasking, in an operating system, is allowing a user to perform more than one computer task (such as the operation of an application program) at a time. The operating system is able to keep track of where you are in these tasks and go from one to the other without losing information. Microsoft Windows 2000, IBM's OS/390, and Linux are examples of operating systems that can do multitasking (almost all of today's operating systems can). When you open your Web browser and then open Word at the same time, you are causing the operating system to do multitasking.

Multi-programming OS: In a multiprogramming system there are one or more programs loaded in main memory which are ready to execute. Only one program at a time is able to get the CPU for executing its instructions (i.e., there is at most one process running on the system) while all the others are waiting their turn. The main idea of multiprogramming is to maximize the use of CPU time.

Time sharing OS: A **time sharing system** allows many users to share the computer resources simultaneously. In other words, time sharing refers to the allocation of computer resources in time slots to several programs simultaneously. For example a mainframe computer that has many users logged on to it. Each user uses the resources of the mainframe -i.e. memory, CPU etc. The users feel that they are exclusive user of the CPU, even though this is not possible with one CPU i.e. shared among different users.

Real Time OS: A real-time operating system (RTOS) is an operating system (OS) intended to serve real-time applications that process data as it comes in, typically without buffering delays. Processing time requirements (including any OS delay) are measured in tenths of seconds or shorter increments of time.

Multiprocessing OS: Multiprocessing sometimes refers to executing multiple processes (programs) at the same time. In fact, multiprocessing refers to the *hardware* (i.e., the CPU units) rather than the *software* (i.e., running processes). If the underlying hardware provides more than one processor then that is multiprocessing. Several variations on the basic scheme exist, e.g., multiple cores on one die or multiple dies in one package or multiple packages in one system.

Q13: Define computer virus. Why are computer viruses created?

Computer Virus: The full meaning of VIRUS is Vital Information and Resources Under Seized. A virus is a parasitic program buried within another legitimate program or stored in a special area of a disk called the boot sector. Executing the program or accessing the disk, virus becomes active without the user's knowledge.

Q14: Write down the reasons to Create Computer Virus?

Some major reasons to create computer viruses are as follows:

1.Copy themselves to other programs.

2.Display information on the screen.

3.Destroy data files.

4.Erase an entire hard disk.

5.Lie dormant for a specified time or until a given condition is met and then becomes active.

Q15: Mention some symptoms of computer virus

Answer: Some important symptoms of computer viruses are as follows:

1.Unexplainable loss of free memory spaces.

2.Unusually long time for program loading and execution.

3.Print routines that stop working.

4.Strange "beeps".

5.Computer "freezing-up".

6.Computer reboots in the middle of a process.

7.Changes in file and program size.

8.Corrupted files.

Q16: How can we prevent our computer from virus attack?

Answer: There are two ways to attack a computer by virus programs. These are:

1. **Off-line way:** In off-line way virus programs are spread out through third memory devices such as CD, DVD, pen drive etc.

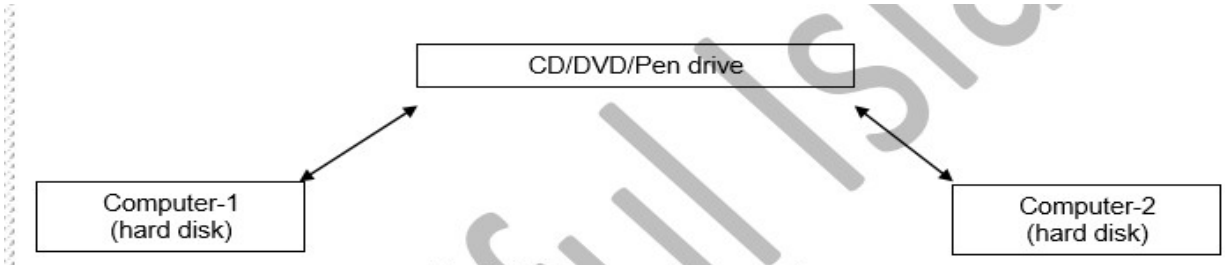


Fig. 1: Off-line way virus spreading.

2. **On line way:** In on-line way virus programs are spread out through computer network basically Internet.
   Prevention: We can prevent our computer from virus programs by installing a powerful anti-virus programs in it. The an anti-virus needs to be updated in regular basis. Before copying any file to our computer, at first we need to ensure whether the file is free from virus or not. To verify it, we need to check the file by the anti-virus program and if any virus is found then the virus must be cleaned or deleted before copying the desired file to our computer disk.

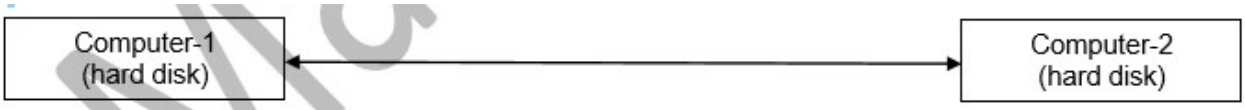


Fig. 2: On-line way virus spreading.

Q17: What is Anti Virus? Write down some name of Anti Virus.

Anti-virus: An anti-virus is a program that acts against the virus programs. Anti-virus program is used to scan for virus program and then tries to clean, or delete, or make vault of the virus program if it is found.

Some common anti-virus programs are:

1. MacAfee 2. Kespersky 3. Norton Anti-virus 4. Bit Defender 5. Avast 6. Avg 7. Bit Defender and so on.

Q18: Define computer hacker and computer cracker.

Computer Hacker: A computer hacker is a computer skilled person who performs an unauthorized or illegal access to the computer system of an organization to know their activities or to make fun. A hacker uses computer network basically Internet to hack the computer system of an organization. A powerful fire-wall protection can make a computer system from hacking.

Computer Cracker: A computer cracker is a computer skilled person who performs an unauthorized or illegal access to the computer system of an organization to know their activities and then perform any harms to the system of the organization. A cracker uses computer network basically Internet to hack and then crack the computer system of an organization. A powerful fire-wall protection can also make a computer system from hacking and then cracking.