

Software and Operating System: Quick Revision of Key Points

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What is software?

A particular set of instructions which tells the computer what are the tasks to be carried out and how they are to be done is known as Software.

What is a Program?

Program is a set of instructions which looks over the sequence of operations. It is a sequence of instructions, written to perform a specified task with a computer.

Types of Software:

Application software: It is a group of program designed to fulfil the demand of end user. Examples: Word processing software, Spreadsheet software, Database software, Education software and Entertainment software.

System software: It is a program which is created for the system and to make the system user friendly. Operating system is a type of computer program that is designed to run a computer's hardware and application programs. Examples: Operating system, Programming language translators, Communication software, Compiler and Interpreters and Command line shell.

Utility software: It is designed to help analyze, configure, optimize or maintain a computer. Example: Anti-virus, Registry cleaners, Disk defragmenters, Data backup utility and Disk cleaners.

What is Operating System?

Operating system is a set of programs that help in controlling and managing the hardware and the software resources of a computer system.

Main functions:

Process management: The Operating System handles all the tasks those are assigned by the user. It also takes care of the processes those are System's own. The Operating System will set the Priorities for the user. It also starts or stops the execution of the Process and also divides the Large Processes into the Small Processes.

Memory management: OS also manages the memory of the Computer System. It provides the memory to the Process and also takes back the memory from the process. Once the process gets completed the OS will reallocate the memory from

File management: OS also controls all the storage operations. It determines how the data or files will be stored in the computers and how they will be accessed by the users.

Security: If a computer program is run by an unauthorized user, then he/she may cause severe damage to computer or data stored in it. Therefore an OS provides security to resources such as CPU, memory, disk, software programs and most importantly data stored in the computer.

Extended Machine: Operating System also behaves like an Extended Machine since it enables users to share files among multiple users. An OS also provides some graphical environments and various languages for communications. It executes many complex operations like the performance of hardware and software as well.

Resource allocation: Operating System also known as the Resource Manager. Memory, Processor and all the input and output devices those are attached to the computer are known as the resources of the computer. The OS manages all the resources those are attached to the computer.

Types of Operating System

- **Batch operating system:** Here data and program that need to be processed are bundled and collected as a batch and executed together.
- **Multi-programming operating system:** It allows the instruction and data from two or more separate processes to reside in primary simultaneously. Multi-programming systems are multitasking multi-user and multiprocessing operating systems.
- **Single user:** It is designed for single user and single people use it at a time. Examples - DOS, Windows 95 etc.
- **Distributed operating system:** This type of OS manages a collection of independent computers and makes them appear to the user of the system as a single computer.
- **Real Time Operating System:** It is a computing environment that reacts to input within a specific time period. It is used at those places in which users require higher and timely response.
- **Time Sharing System:** This system allows two or more users to share the computer resources simultaneously. A time-shared system takes a very small fraction of time and thus only a little CPU time is needed for each user.
- **Mobile OS:** Windows 10 Mobile is the latest name for Microsoft's phone and tablet operating system. Google's latest version of its Android OS is Nougat and iOS (iPhone Operating System) latest version is iOS 10.