Operating system :- An operating system (OS) is system software that manages computer hardware, software resources, and provides common services for computer programs.

Popular Operating System :-

Most popular operating system by computer

If you were to break up the different types of computing devices into categories, the most popular operating system for each category is as follows.

Windows 10 is the most popular operating system for desktop and laptop computers.

Android is the most popular smartphone operating system.

iOS is the most popular tablet operating system.

Variants of Linux are most widely used in the Internet of things and smart devices.

Other variants of Linux are the most popular operating system on web servers and supercomputers.

Functions of Operating Systems :-

Let us discuss the function of the operating system (OS) in detail.

- Security

The operating system uses a password protection to protect user data it also prevents unauthorized access to programs and user data, but for external functionality we need to install malware software to protect the system.

- Control over system performance

The operating system monitors overall system setup to help in improving the performance and it also records the response time between service requests and system response so that it has a complete view of the system. This can help improve performance by providing important information that is needed at the time of troubleshooting problems.

- Job Accounting

Operating systems always keep track of time and resources that are used by various tasks and users, this information can be used to track resource usage for a particular user or a group of users.

- Error detecting aids

Operating systems constantly monitor the system which helps us to detect errors and also avoid the malfunctioning of computer systems.

- Coordination between other software and users

Operating systems help in coordinate and assign interpreters, compilers, assemblers, and other software to the various users of the computer systems.

- Memory Management

The operating system controls the primary memory or main memory. Primary memory is a large array of bytes or words where each byte or word is assigned a certain address. It is a fast storage, and it can be accessed directly by the CPU which is present inside the system. If a program wants to be executed, it should be first loaded in the main memory.

The following activities are performed by operating system for memory management –

- Processor Management

The OS manages the order in which processes have access to the processor, and how much processing time that each process must stay in the multiprogramming environment. This is called process scheduling.

- Device Management

An OS manages device communication through respective drivers.

- File Management

A file system is arranged into directories for efficient navigation and usage. These directories contain other directories and other files.

Operating environment :-

In computer software, an operating environment or integrated applications environment is the environment in which users run application software. The environment consists of a user interface provided by an applications manager and usually an application programming interface to the applications manager. An operating environment is usually not a full operating system but is a form of middleware that rests between the OS and the application. For example, the first version of Microsoft Windows, Windows 1.0, was not a full operating system, but a GUI laid over DOS albeit with an API of its own. Similarly, the IBM U2 system operates on both Unix/Linux and Windows NT. Usually the user interface is text-based or graphical, rather than a command-line interface, which is often the interface of the underlying operating system.

What is Open Source Operating System :-

To understand it, first, you should know what is Open source?

Open source refers to the computer software or applications where the owners or copyright holders allow the users or third party to see, use and provide the right to modify the source code of the product.

An Open-source Operating System is the Operating System in which source code is visible publically and editable. The generally known Operating Systems like Microsoft's Windows, Apple's iOS and Mac OS, are closed Operating system.

What is a Utility Program :-

Utility program is a system application that executes a specific task, generally pertaining to optimal maintenance or operation of the system resources. Operating systems such as Windows, macOS and Linux come with their own set of utility programs to maintain and execute different utility functions such as formatting, compressing, scanning, exploring and much more.

What are the Functions of Utility Programs?

System Utilities

File Management Utilities

Storage Device Management Utilities

Miscellaneous Utilities