**Operating Systems**

An Operating System (OS) is a powerful program that manages and controls the software and hardware on a computing device so as to make the device behave in a predictable but flexible way. An OS acts an interface between a user and a device.

All the computers and computer-like devices comprise Operating System, including laptop, desktop, or any other smart computing system like a smart phone or a smart watch.

The functions of an OS include: Memory Management. Device Management. Processor Management. File Management. Controls System Performance. Security. Error Detection. Coordination among Software and Users. Job accounting.

One of the main functions of OS is to manage the primary and secondary memory. All the memory devices such as hard disk and pen drive are managed by OS.

An OS with help of drivers manages device communication.

OS decides which process will get the processor when and for how long.

OS allocates and deallocates the resources and controls System Performance.

An OS by using password and other similar techniques prevents and checks unauthorized users to access the data and program.

**Types of Operating Systems**

Operating systems can be categorized in to four types Real Time Operating System; Single User Single Task OS; Single User Multi Tasking OS; Multi User OS.

A Real Time Operating System is a time bound operating system which has fixed time constraints. Processing has to be done within certain time limits or the system will fail. Examples of Real Time systems are Air Traffic, Control Systems, Command Control Systems etc.

Single User Single Task OS is a system in which only one program can be executed at one time. It manages the computer in a way that one user can successfully perform one task at a time. The problem of this type is that the program has to be placed in a queue.

Single User MultiTasking Operating System allows a single user to operate several programs at the same time. Single User MultiTasking Operating System. Most people use this Operating-System on their computers, laptop and desktops today. Best examples of these types of Operating System are Apple’s Mac OS platform and Microsoft’s Windows.

Multi User Operating System allows various different users on different desktop or computer to access a single System. A user at the terminal or desktop, through a network takes access of the system and other system attached machines such as printers.