OPERATING SYSTEM

INTRODUCTION TO OS

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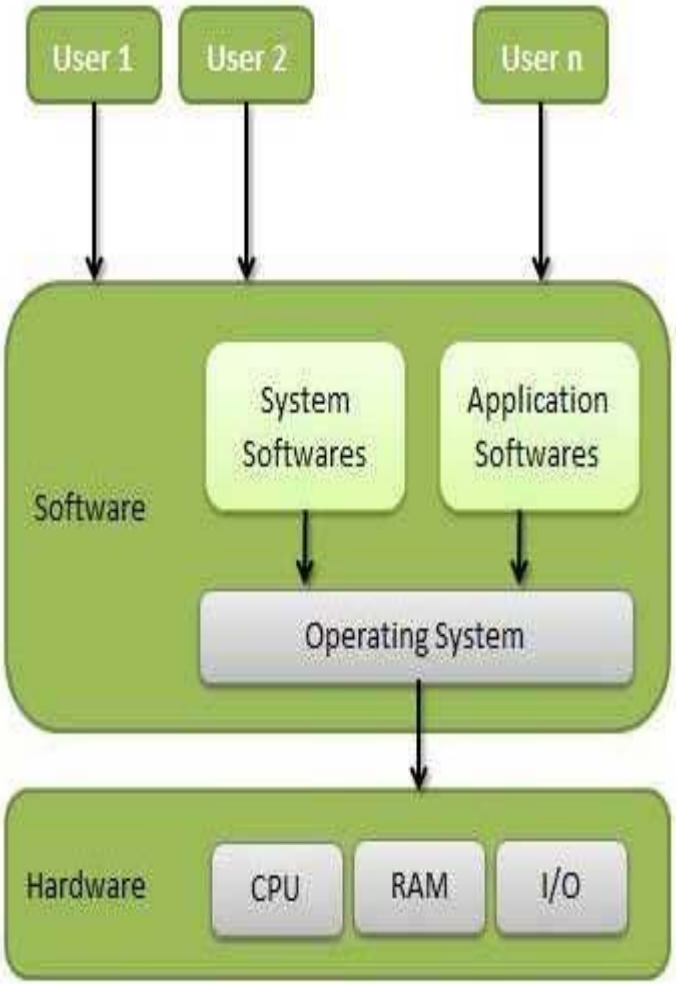
OPERATING SYSTEM

- An Operating System (OS) is an interface between a computer user and computer hardware.

- An operating system is a software which performs all the basic tasks like file management, memory management, process management, handling input and output, and controlling peripheral devices such as disk drives and printers.

Definition



- An operating system is a program that acts as an interface between the user and the computer hardware and controls the execution of all kinds of programs.
- Operating system is a software that controls the hardware

functions of an operating System

- Memory Management
- Processor Management
- Device Management
- File Management

Memory Management

- Memory management refers to management of Primary Memory or Main Memory.
- Main memory is a large array of words or bytes where each word or byte has its own address.
- Main memory provides a fast storage that can be accessed directly by the CPU.
- For a program to be executed, it must in the main memory

An Operating System does the following activities for memory management –

- Keeps tracks of primary memory, i.e., what part of it are in use by whom, what part are not in use.
- In multiprogramming, the OS decides which process will get memory when and how much.
- Allocates the memory when a process requests it to do so.
- De-allocates the memory when a process no longer needs it or has been terminated.

Processor Management

- In multiprogramming environment, the OS decides which process gets the processor when and for how much time. This function is called **process scheduling**.
- **An Operating System does the following activities for processor management –**
- Keeps tracks of processor and status of process. The program responsible for this task is known as **traffic controller**.
- Allocates the processor (CPU) to a process.
- De-allocates processor when a process is no longer required.

Device Management

- An Operating System manages device communication via their respective drivers. It does the following activities for device management –
- Keeps tracks of all devices. Program responsible for this task is known as the **I/O controller**.
- Decides which process gets the device when and for how much time.
- Allocates the device in the efficient way.
- De-allocates devices.

File Management

- A file system is normally organized into directories for easy navigation and usage. These directories may contain files and other directions.
- An Operating System does the following activities for file management –
- Keeps track of information, location, uses, status etc. The collective facilities are often known as **file system**.
- Decides who gets the resources.
- Allocates the resources.
- De-allocates the resources.