

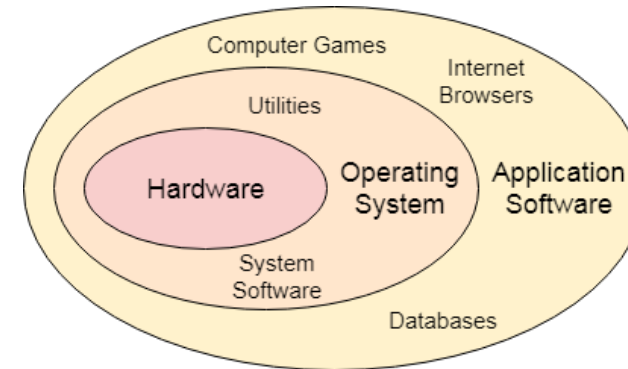
OPERATING SYSTEM

BASICS

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Where operating system stands ?

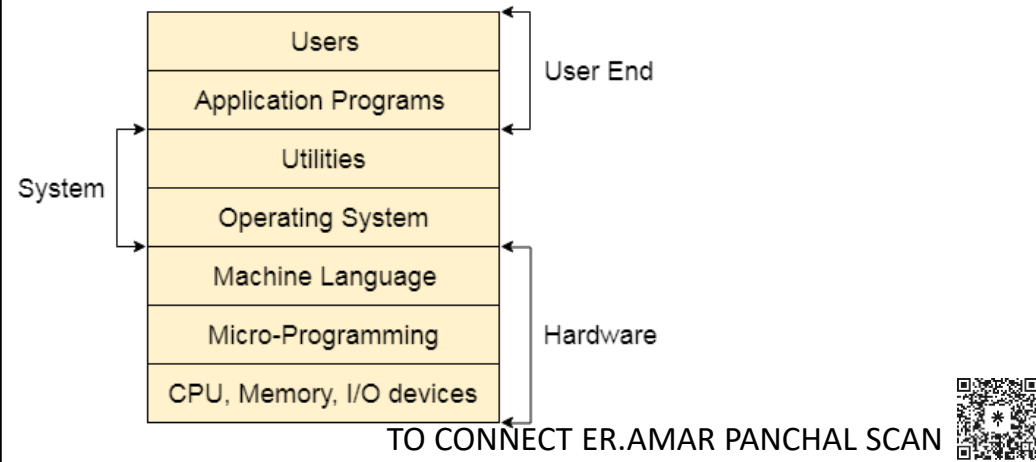


An **Operating System** can be defined as an **interface between user and hardware**. It acts as resource manager.

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Structure of a Computer System



Basic Functions of OS

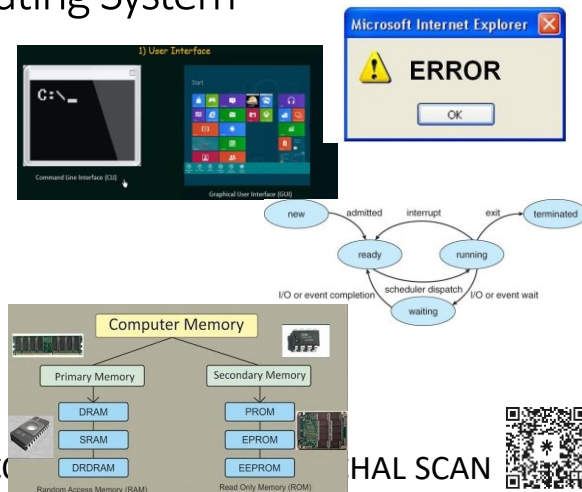
- Resource Allocation
- Accounting
- Protection and Security

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Services of Operating System

- User Interface
- Process Management
- Memory Management
- File Management
- Device Management
- Error Management



Design Issues of Operating System

- Simplicity
- Completeness
- Efficiency

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Types of Operating Systems

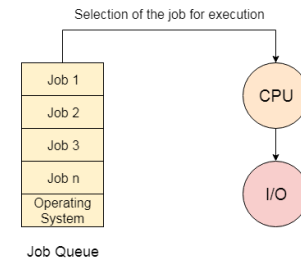


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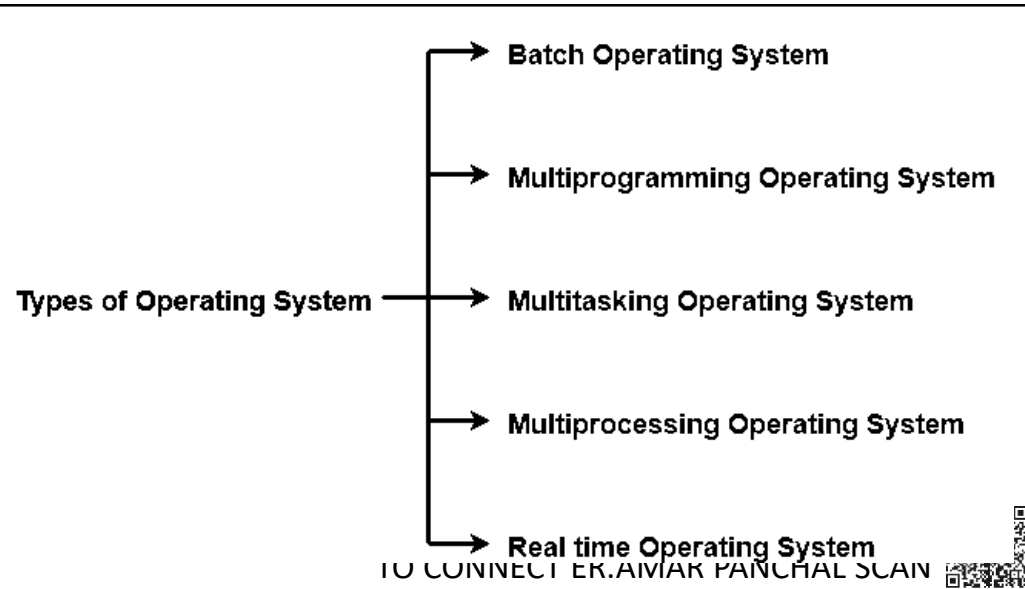
■ Single user/Single tasking OS

- One user works on the system
- Performs one task at a time
- MS-DOS and PalmOS
- Take up little space on disk
- Run on inexpensive computer



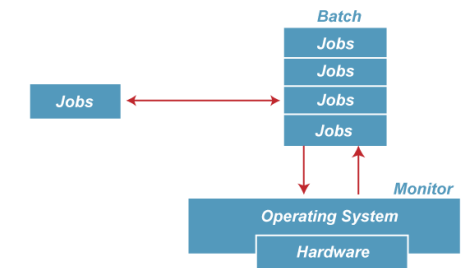
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Batch Operating System

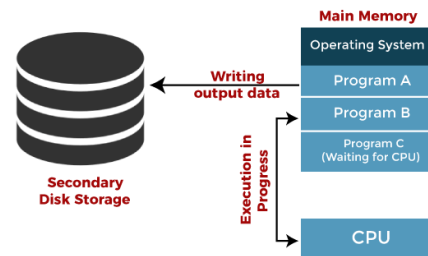
- In this technique, similar types of jobs were batched together and executed in time.
- In Batch operating system, access is given to more than one person; they submit their respective jobs to the system for the execution.
- The system put all of the jobs in a queue on the basis of first come first serve and then executes the jobs one by one. The users collect their respective output when all the jobs get executed.



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Multiprogramming Operating System

- In a multiprogramming environment, when a process does its I/O, the CPU can start the execution of other processes. Therefore, multiprogramming improves the efficiency of the system.



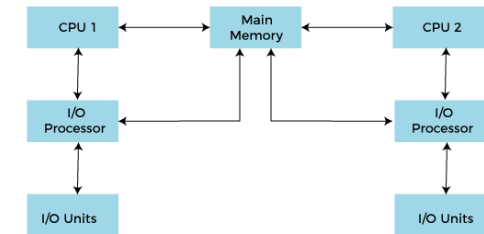
Jobs in multiprogramming system

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Multiprocessing Operating System

- In Multiprocessing, Parallel computing is achieved. There are more than one processors present in the system which can execute more than one process at the same time. This will increase the throughput of the system.



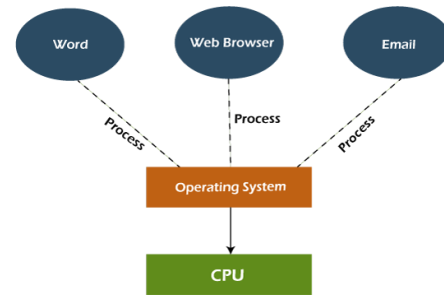
Working of Multiprocessor System

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Multitasking Operating System

- The multitasking operating system is a logical extension of a multiprogramming system that enables **multiple** programs simultaneously. It allows a user to perform more than one computer task at the same time.

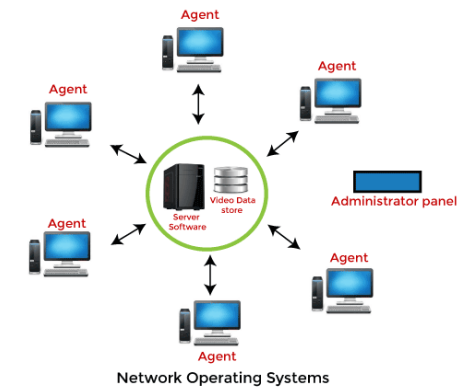


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Network Operating System

- An Operating system, which includes software and associated protocols to communicate with other computers via a network conveniently and cost-effectively, is called Network Operating System.

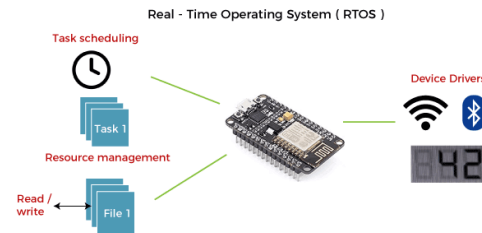


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Real Time Operating System

- In Real-Time Systems, each job carries a certain deadline within which the job is supposed to be completed, otherwise, the huge loss will be there, or even if the result is produced, it will be completely useless.

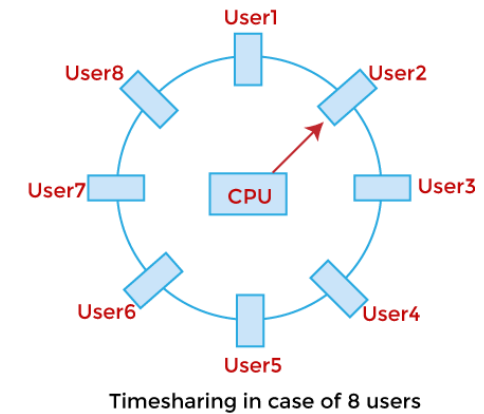


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Time-Sharing Operating System

- In the Time Sharing operating system, computer resources are allocated in a time-dependent fashion to several programs simultaneously. Thus it helps to provide a large number of user's direct access to the main computer.

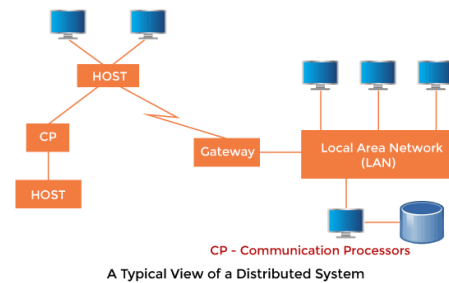


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Distributed Operating System

- The Distributed Operating system is not installed on a single machine, it is divided into parts, and these parts are loaded on different machines. A part of the distributed Operating system is installed on each machine to make their communication possible.

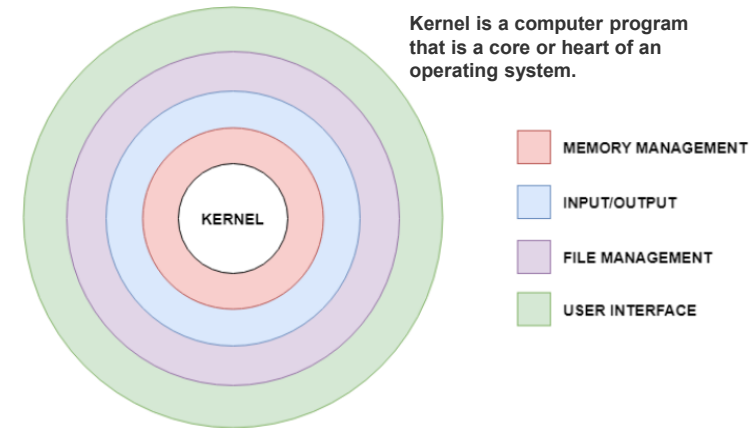


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Operating System Design

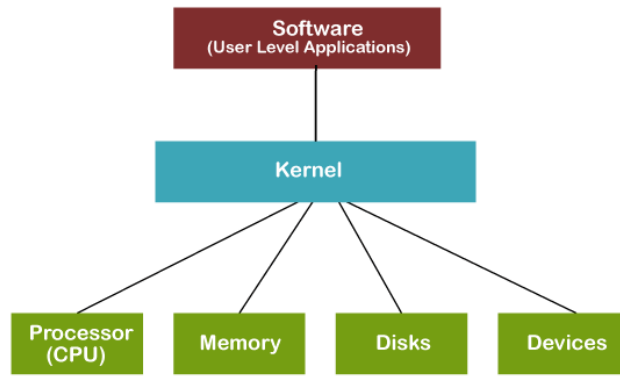
Kernel is a computer program that is a core or heart of an operating system.



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Operating System Design

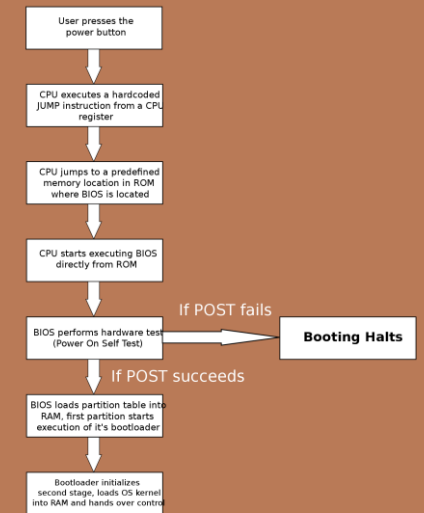


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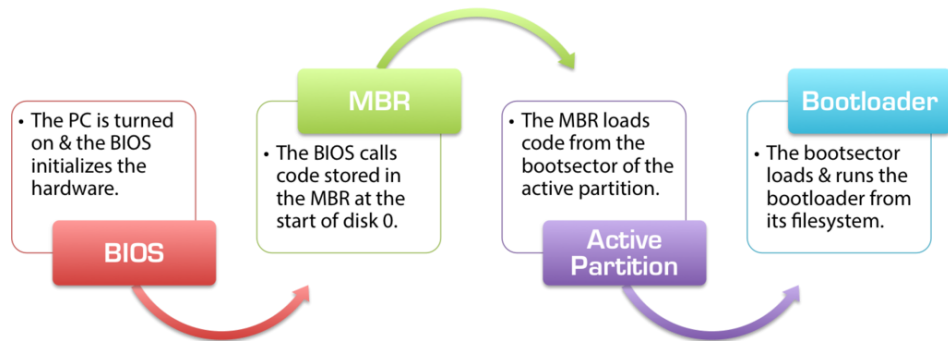
OS BOOTING PROCESSES

Computer booting sequence



TO CONNECT E

OS BOOTING PROCESSES



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