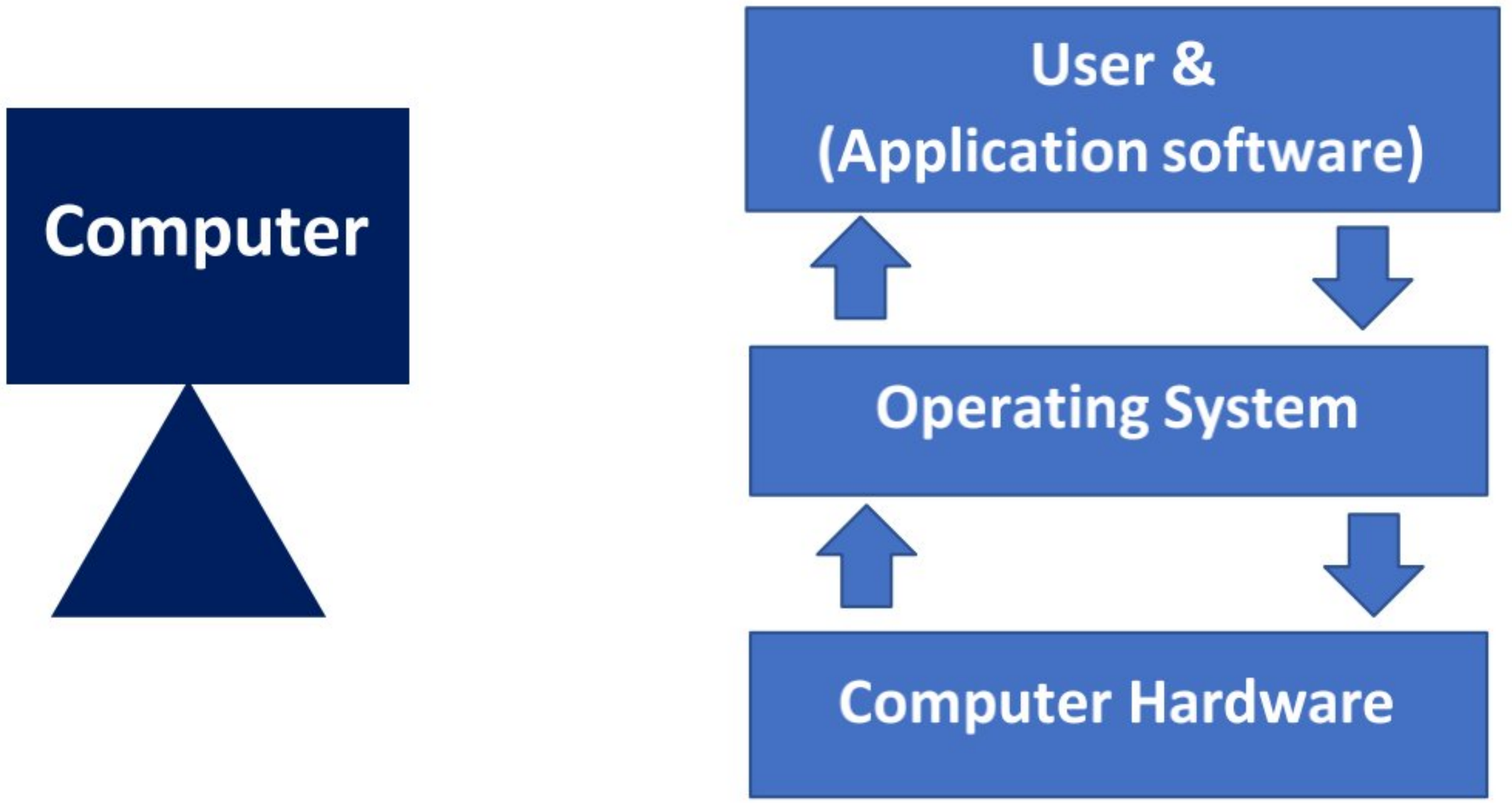
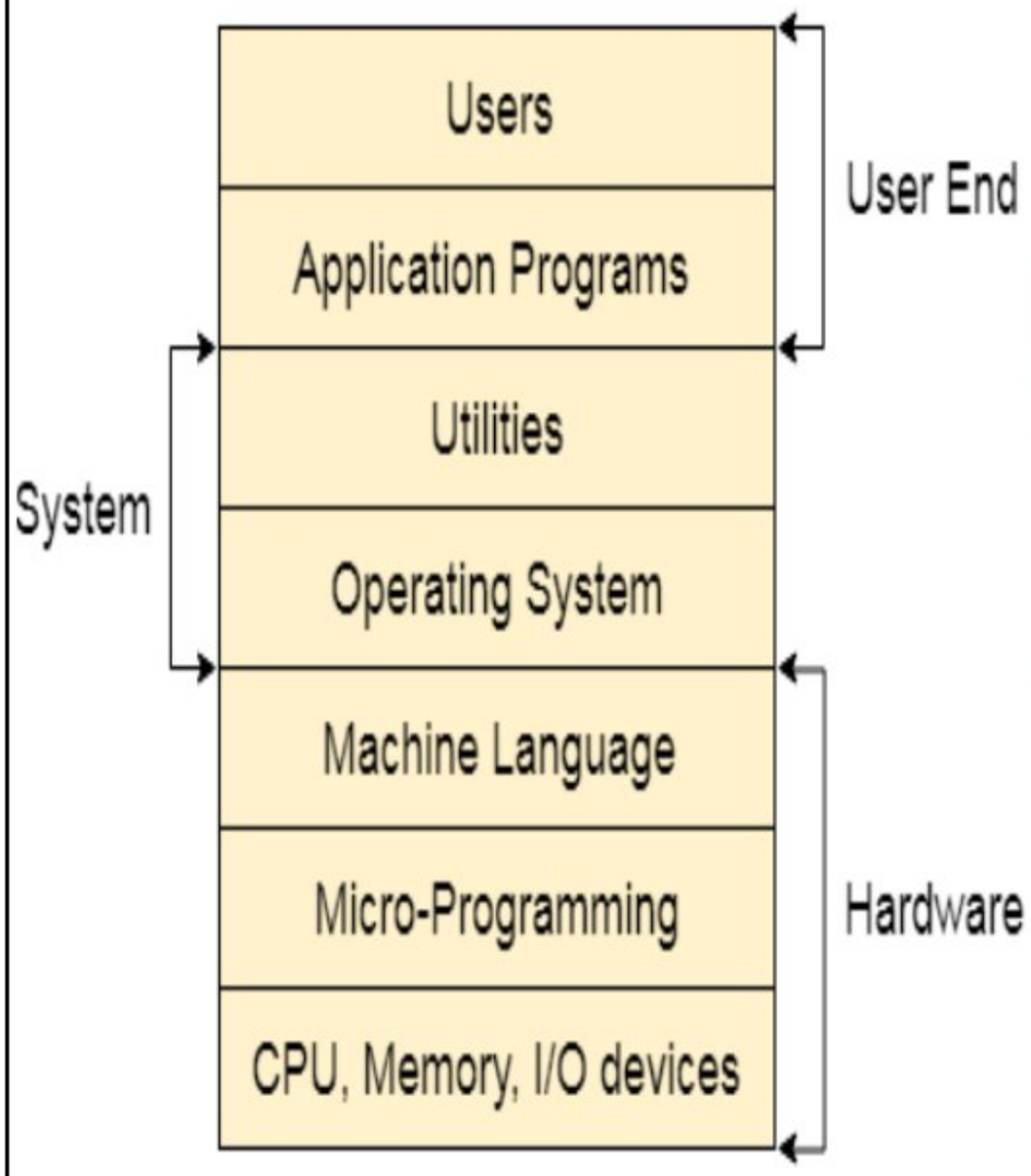
❖ What is Operating System (OS): -

- Operating system is system software that manages computer hardware and software resources, and provides common services for computer programs.
- it is an interface between user and hardware. It is set of Program
- It is responsible for the execution of all the processes, Resource Allocation, CPU management, File Management and many other tasks.



❖ Structure of Computer System: -

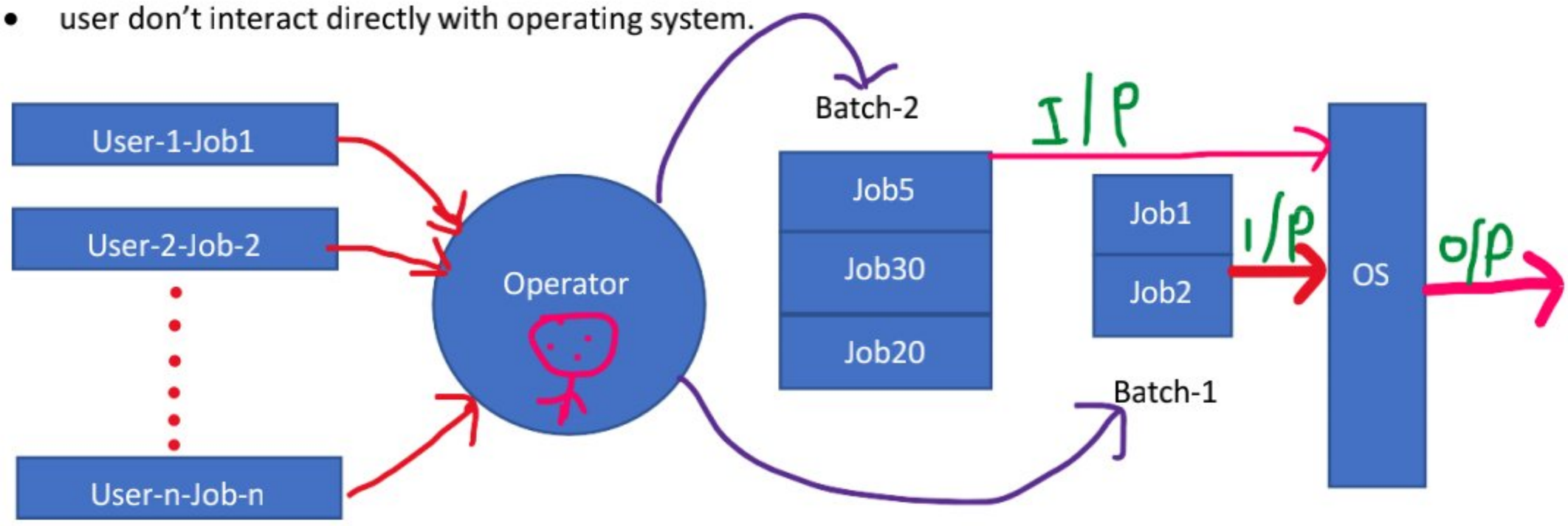


❖ Types of operating system: -

1. Batch OS	2. Time-sharing OS	3. Distributed OS	4. Network OS
5. Real-Time OS	6. Multiprogramming OS	7. Multitasking OS	8. Multi-processing OS

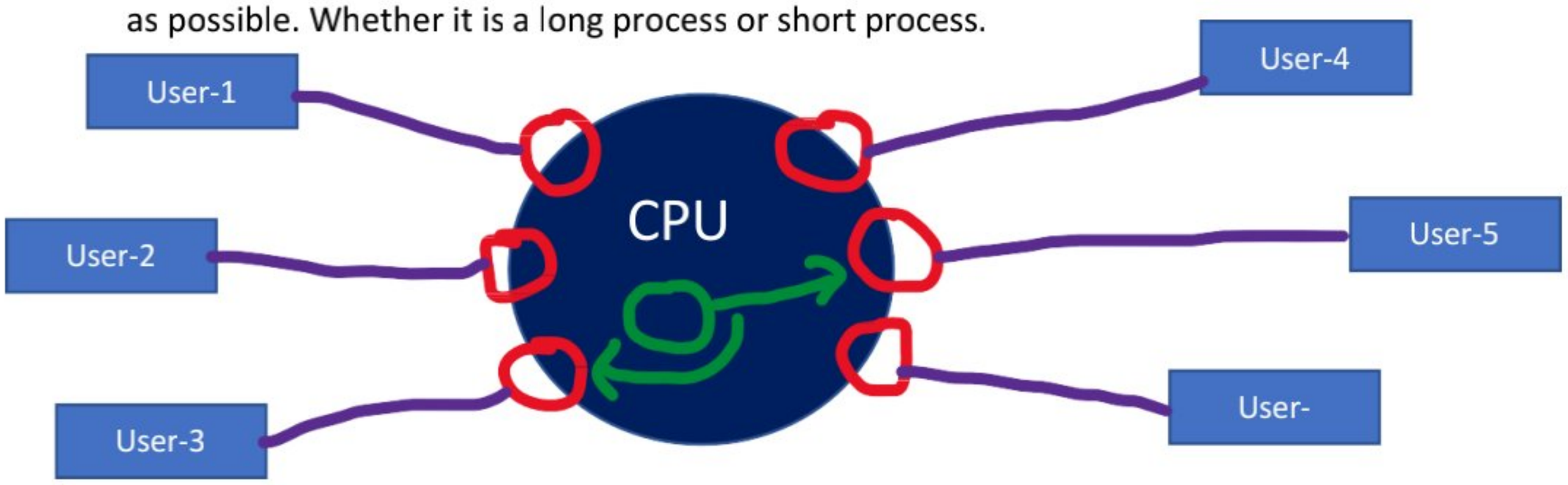
1. Batch Operating System:

- In 1970s, it was popular. this Types of OS similar types of jobs batched together and execute.
- system put all of jobs in a queue on the basis of first come first serve and then executes jobs one by one.
- user don't interact directly with operating system.



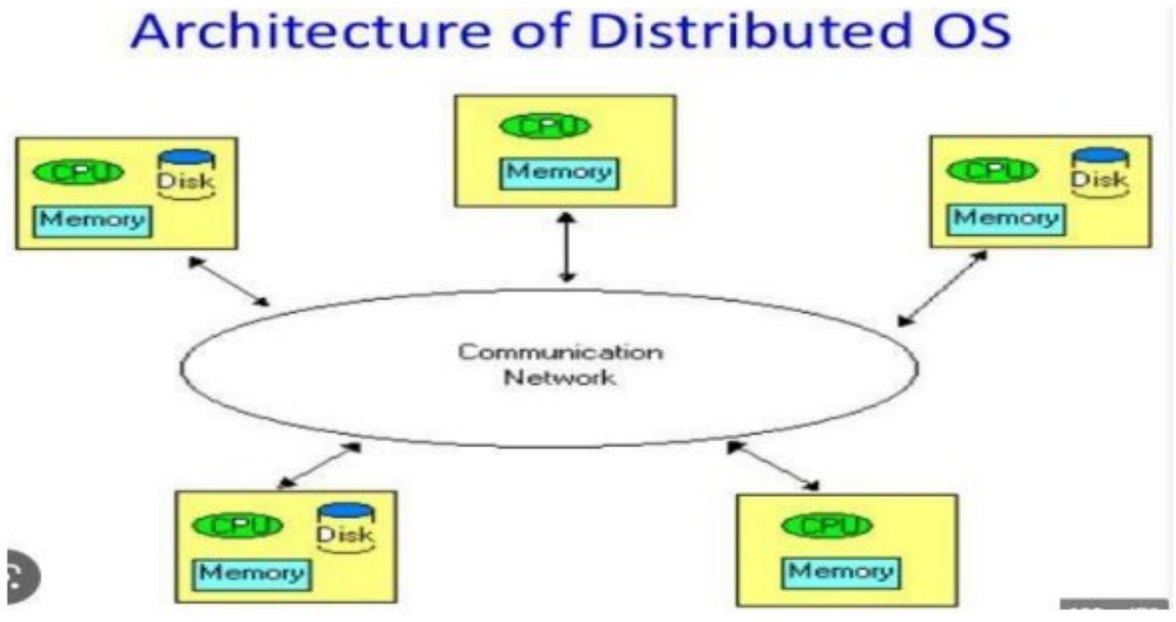
2. Time-Sharing Operating System: -

- computer resources are allocated in a time-dependent fashion to several programs simultaneously.
- It is allowing many users to be served simultaneously
- Here, the CPU will provide a same time period to each an every process to complete its task as soon as possible. Whether it is a long process or short process.



3. Distributed Operating System: -

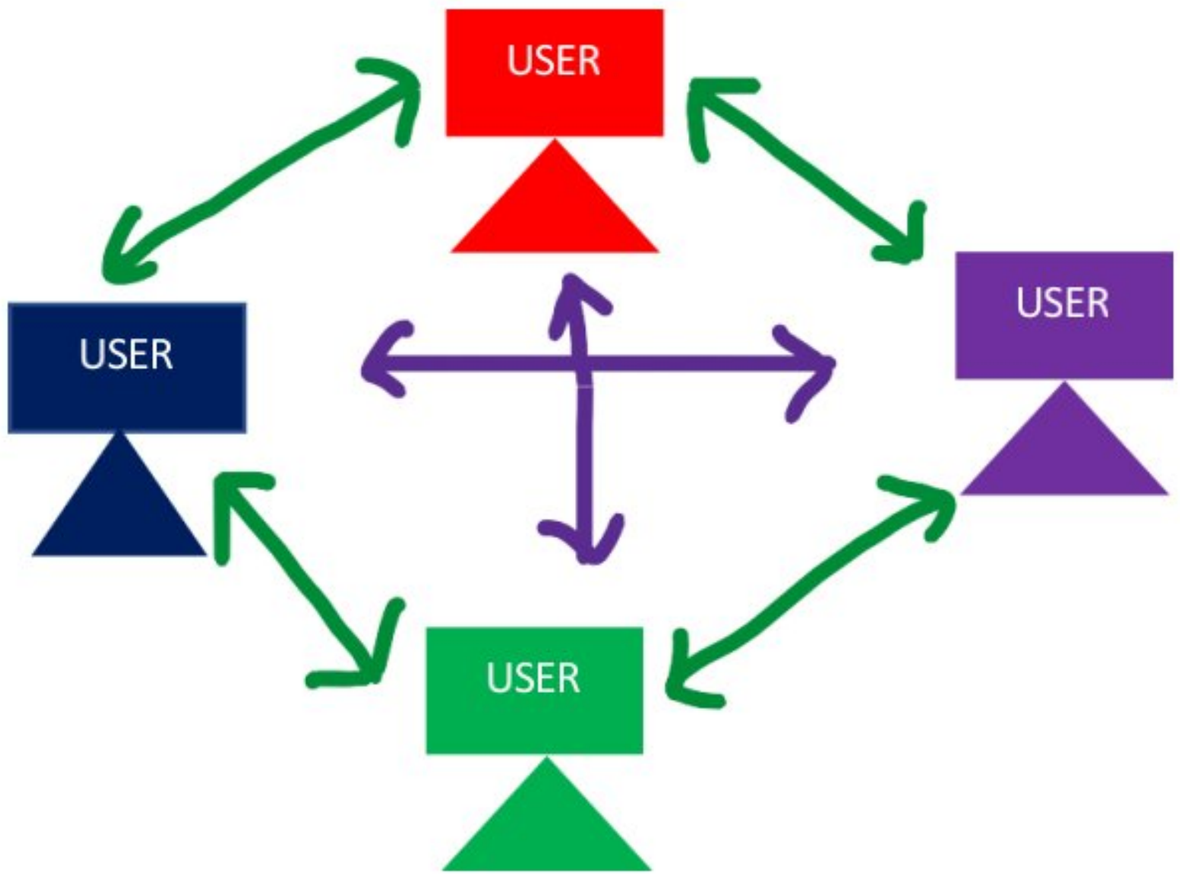
- -The Distributed Operating system is not installed on a single machine, it is divided into parts, and these parts are loaded on different machines. A part of the distributed Operating system is installed on each machine to make their communication possible.



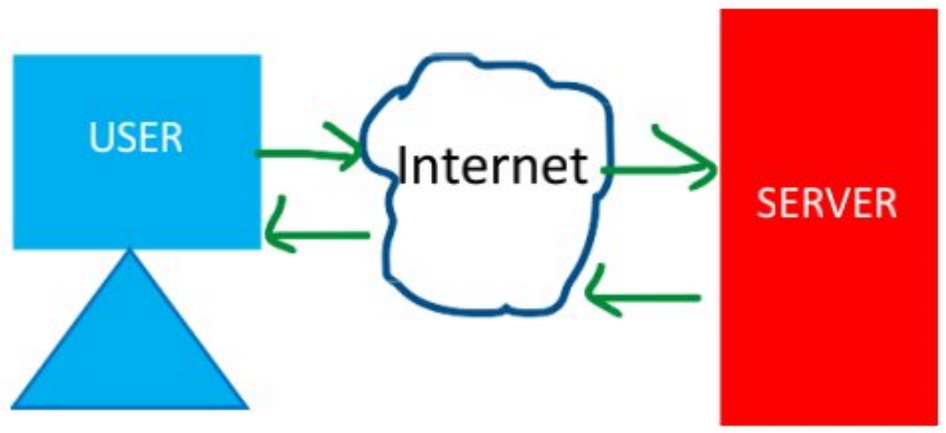
4. Network Operating System:

- Network Operating System have a server that connects many other client computers.
- An Operating system, which includes software and associated protocols to communicate with other computers via a network conveniently.

Example: Peer-to-peer OS:

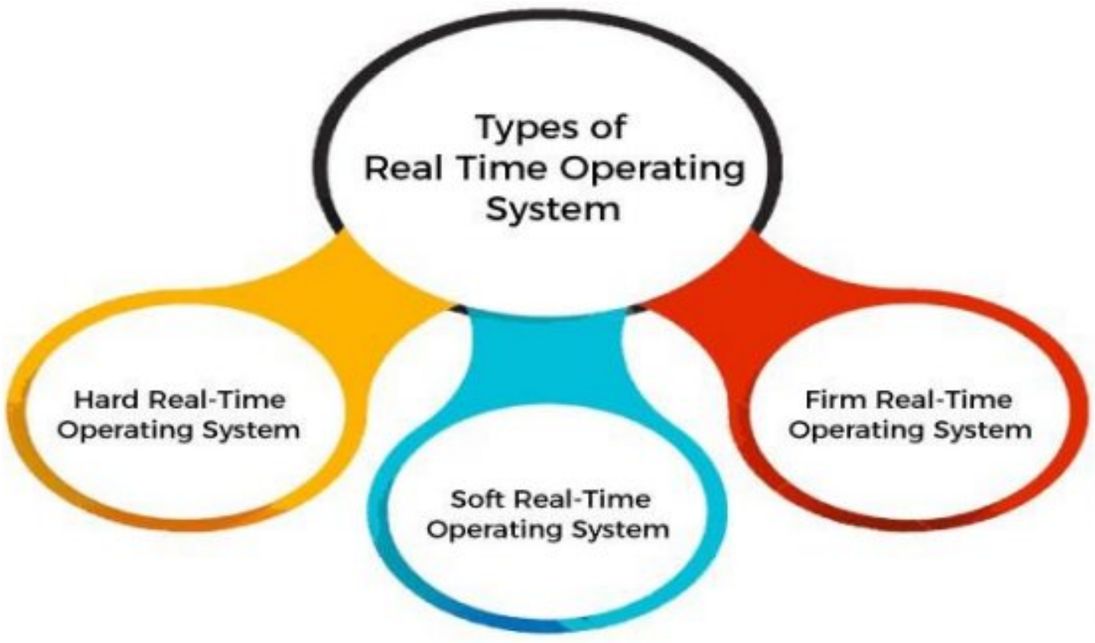


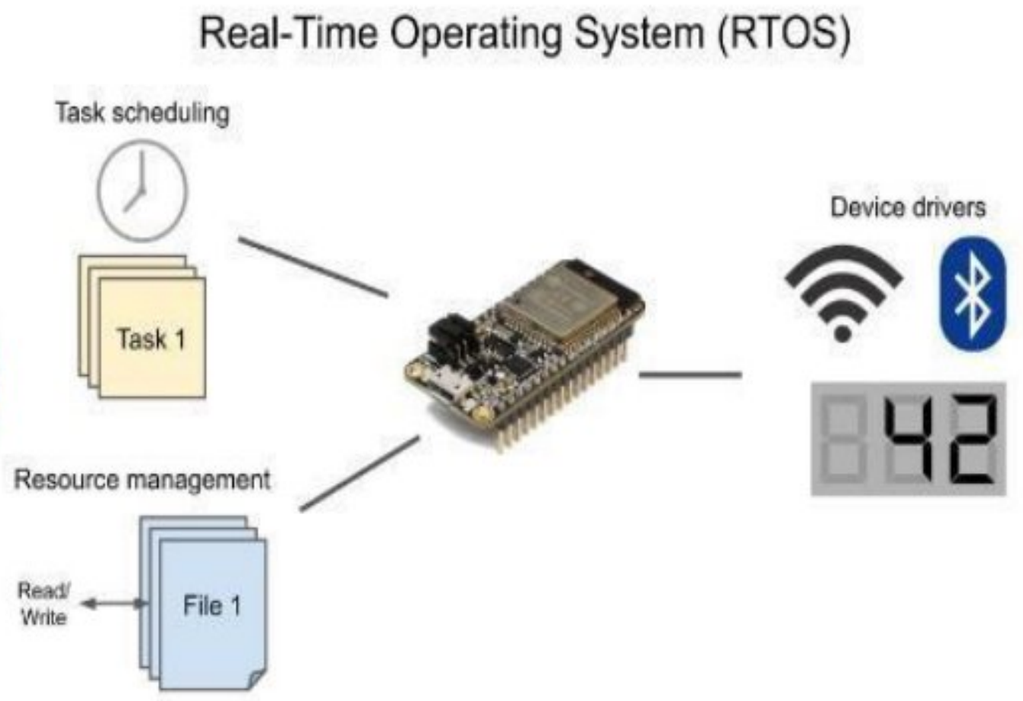
Example: Client server OS:



5. Real Time Operating System:

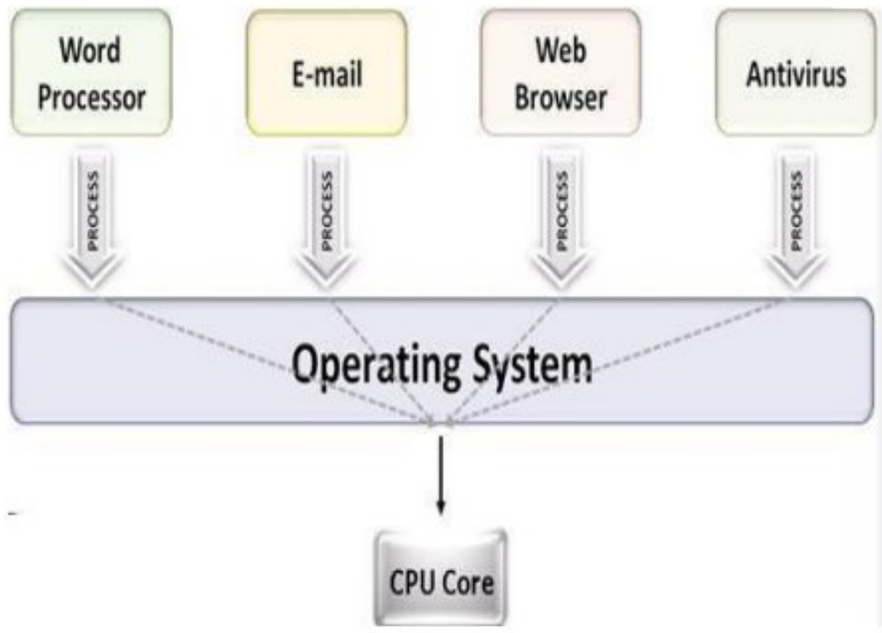
- Inputs immediately affect the outputs. Timing is critical Control of nuclear power plants, air traffic control systems. Application: - missile, RID canter, & Medical





6. Multiprogramming Operating System:

- The purpose of this operating system was mainly to transfer control from one job to another as soon as the job was completed.



- CPU is used most of time and never become idle
- system looks fast as all tasks runs in parallel
- Short time jobs are completed faster than long time jobs
- Multiprogramming systems support multiplies users
- Total read time taken to execute program/job

7. 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.

8. Multi-Processing Operating System: -

- A multiprocessing operating system is an OS that can support the simultaneous execution of multiple processes on multiple CPU cores.

❖ Example of operating system: -