



# Types of Operating system

And why we need them?



## Who is the user?

- A user is a **person** or a **computer**.
- A user has **access** to a system and can make **changes**.
- A user can **instruct** the computer.



## What is a task or a process?

- A running program is process or a task.
- We can have a lot of tasks running in parallel in computers.



## Operating System based on Users

- A single user
- Multi - user : More than one user
- No user



## Operating System based on tasks

- A single task
- Multi - Task : More than one task
- No Task : Just kidding that **doesn't exist !**



## Single User Single Tasking

- A single user can login and do their work
- One task at a time
- They finish one task and go for the next task.
- MS DOS, Palm OS



## Single User Multi Tasking

- A single user can login and do their work
- Many tasks at a time.
- A second user has to wait for them to finish and login after them
- Windows, Linux, MacOS



## Multi User Multi Tasking

- Many users can login at the same time
- Many users can perform their tasks at the same time.
- One user's work will not affect the other.
- UNIX, Mainframe OS and Virtual Memory System (VMS)





## Real Time Operating System

- Real life problems
- No real need for users
- Give perfect output every time!
- Do the same tasks without failing **EVER!**
- Output in shortest time possible!



## Real Time Operating system prioritises tasks

- Because they have to do important processes
- In shortest time possible
- No chance for error
- Weapon Systems, Defence System, Medical Imaging



## Distributed Operating System

- Many computers are connected to each other.
- **THEY CAN BE ANYWHERE IN THE WORLD.**
- Each computer has its own Memory and CPU
- The operating system is responsible for connecting the computers to each other.
- OS provides an interface for all the computers in the network.



## Advantages of Distributed OS

- If one system fails its ok
- The computers are cheap
- No need for a central server
- No data loss, as all computers have the same copy
- Low resources required