Types of Operating system

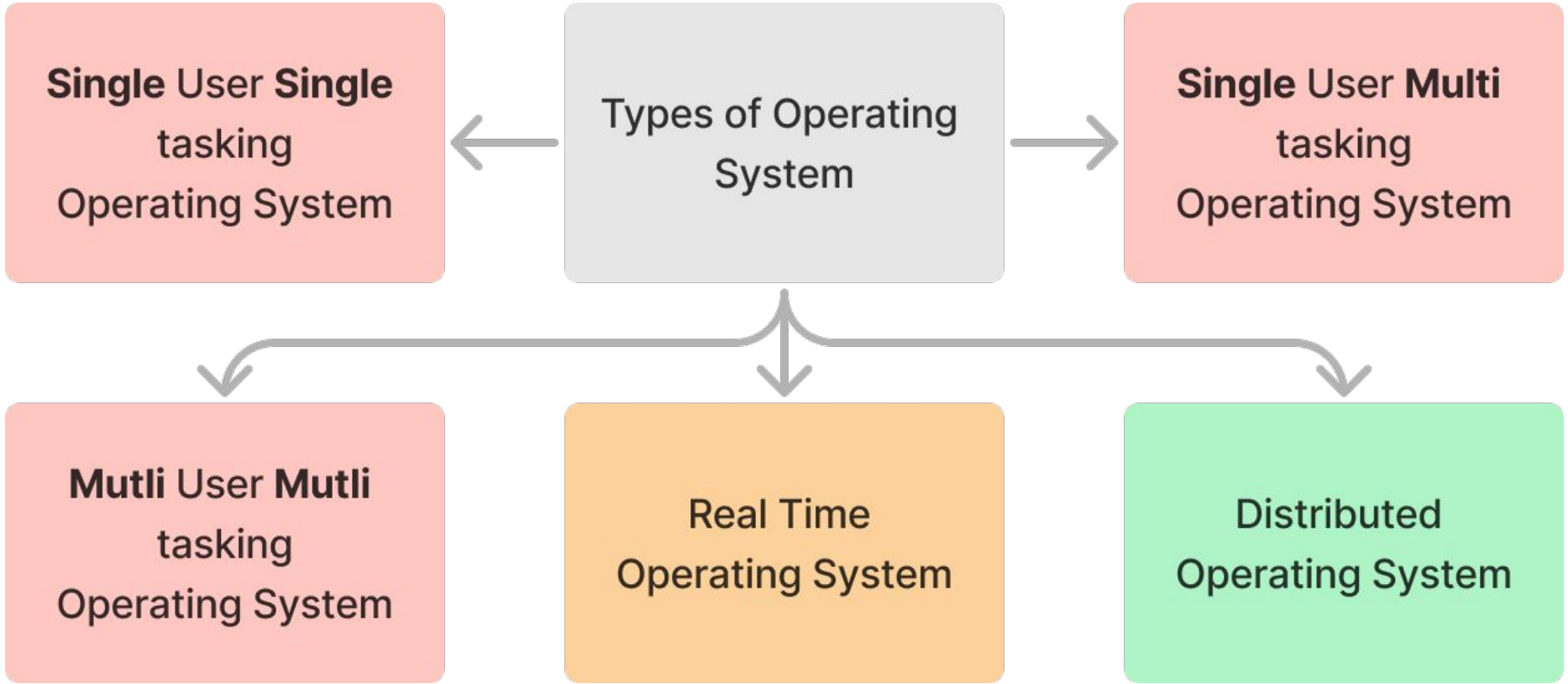
And why we need them?

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.


Types of Operating System
Single User Single tasking Operating System
Single User Multi tasking Operating System
Mutli User Mutli tasking Operating System
Real Time Operating System
Distributed Operating System

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