

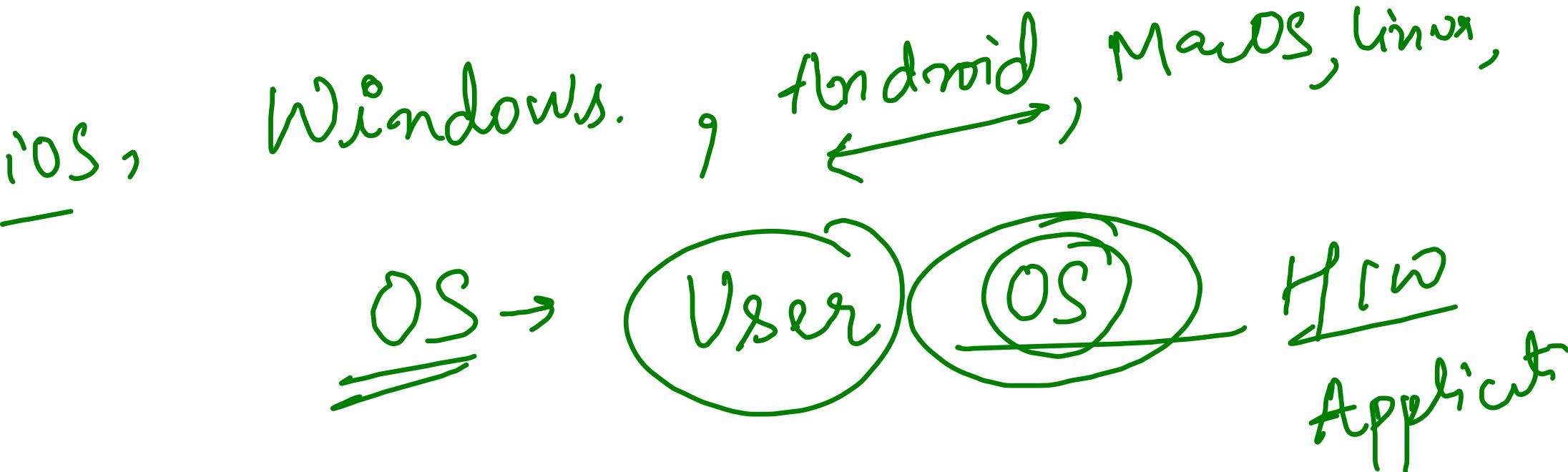
Operating System

(Lecture -1)

What, why, how & when

- 1) What is OS?
- 2) why do we need OS?
- 3) How operating system works?

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OS Class: 1

Welcome All!

1 → Intro -

OS

2 - Process mg^t

3 - Res. mg^t
file mg^t
Mem. mg^t

Why do we need OS?

→ Analogy



Too Much Chaos!

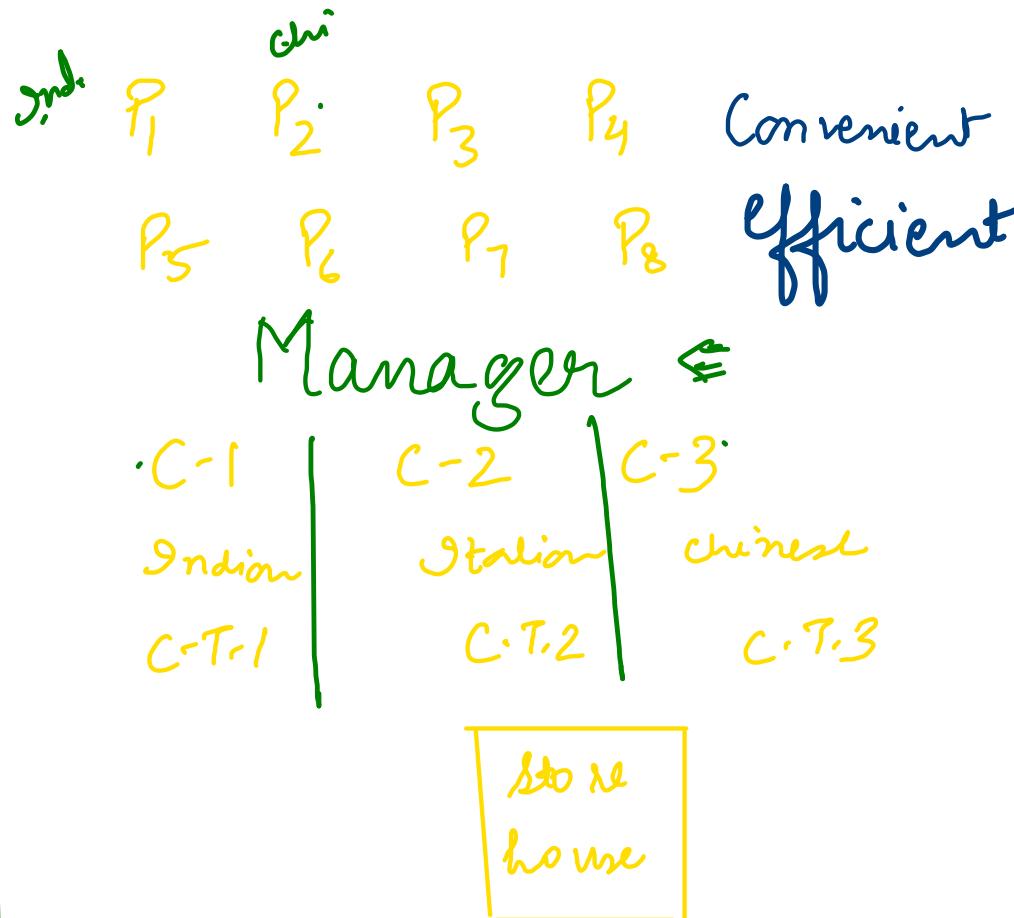
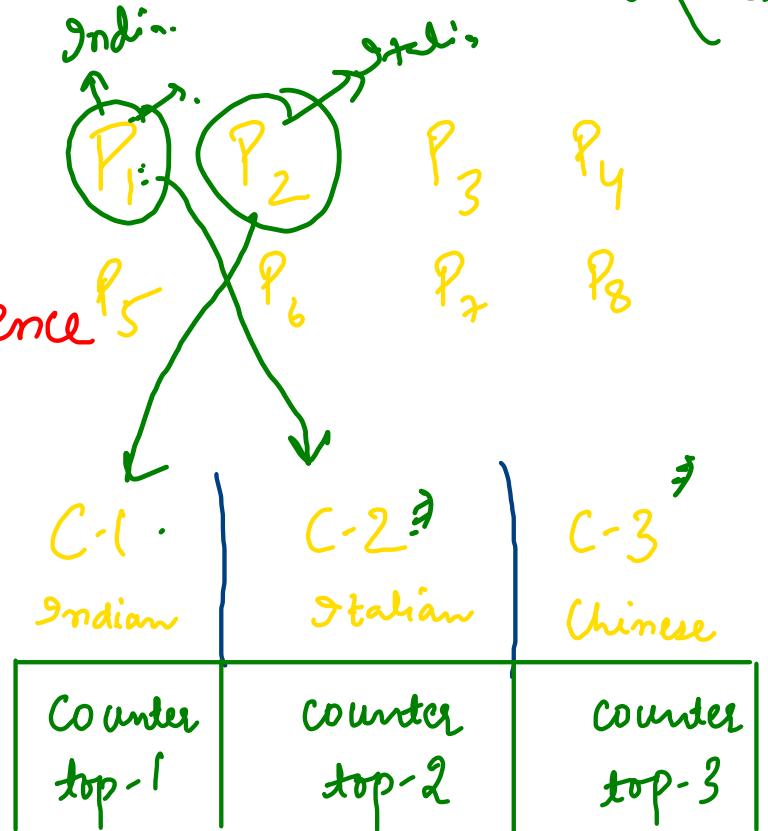
Restaurant

Chaos

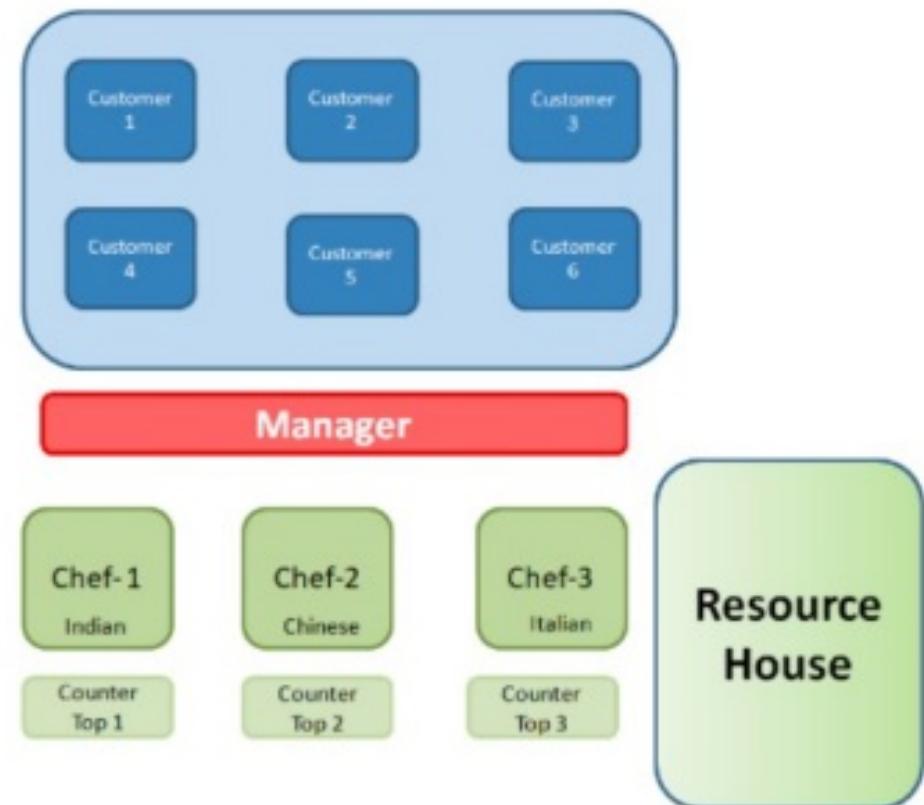
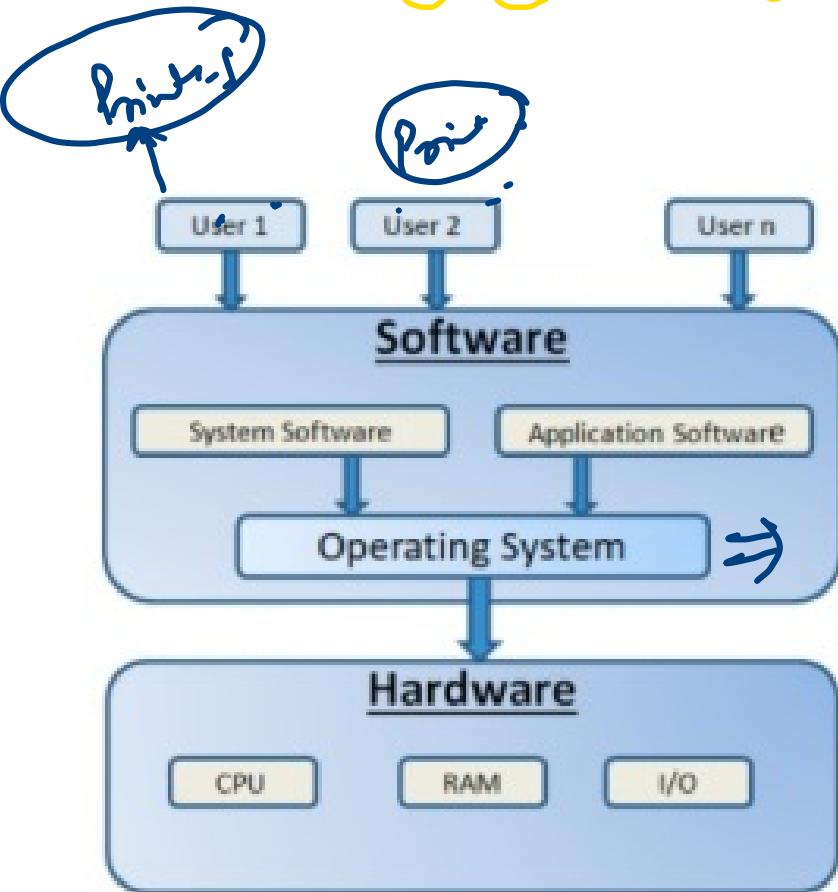
Inconvenience

=
Kings
Spices

Store
house



OS as resource manager!



Goals of OS

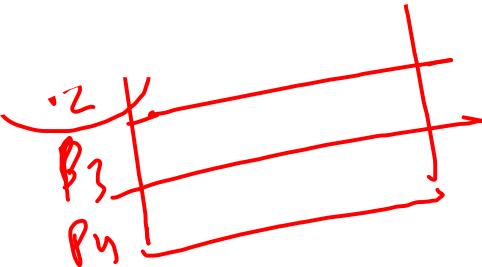
- 1) Convenience
- 2) Efficiency

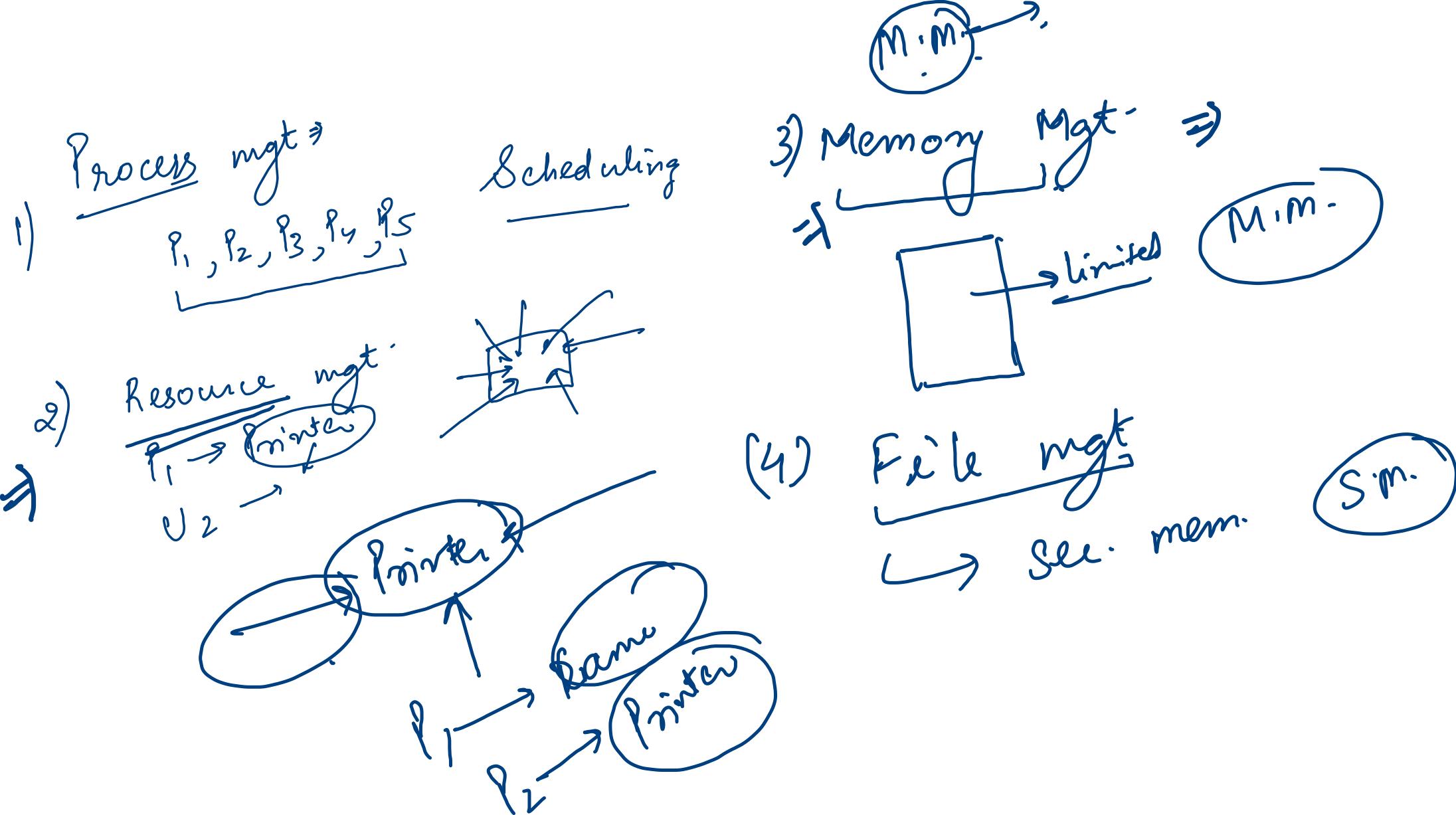


Functions of OS

- 1) Resource mgt
- 2) Memory mgt
- 3) Process mgt
- 4) File mgt
- 5) Security & privacy

Authentiz



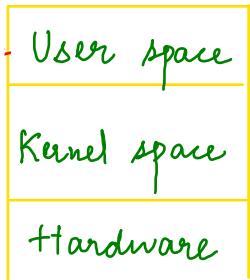


OS is the macro manager!

Components of OS!

1) User space

- convenient env. to use apps
- Mode bit = 1
- Restricted

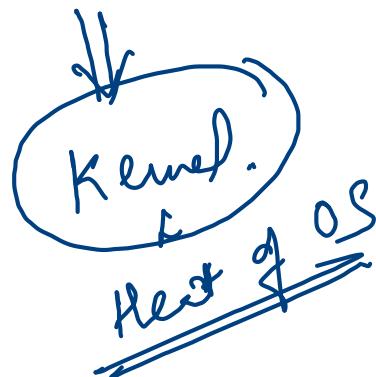
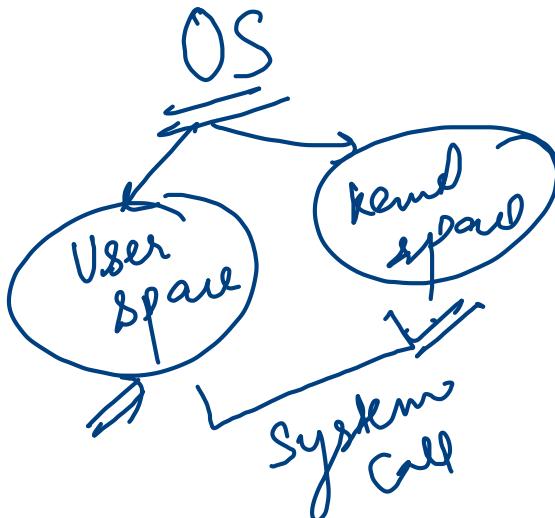
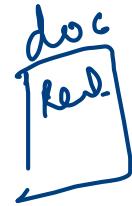


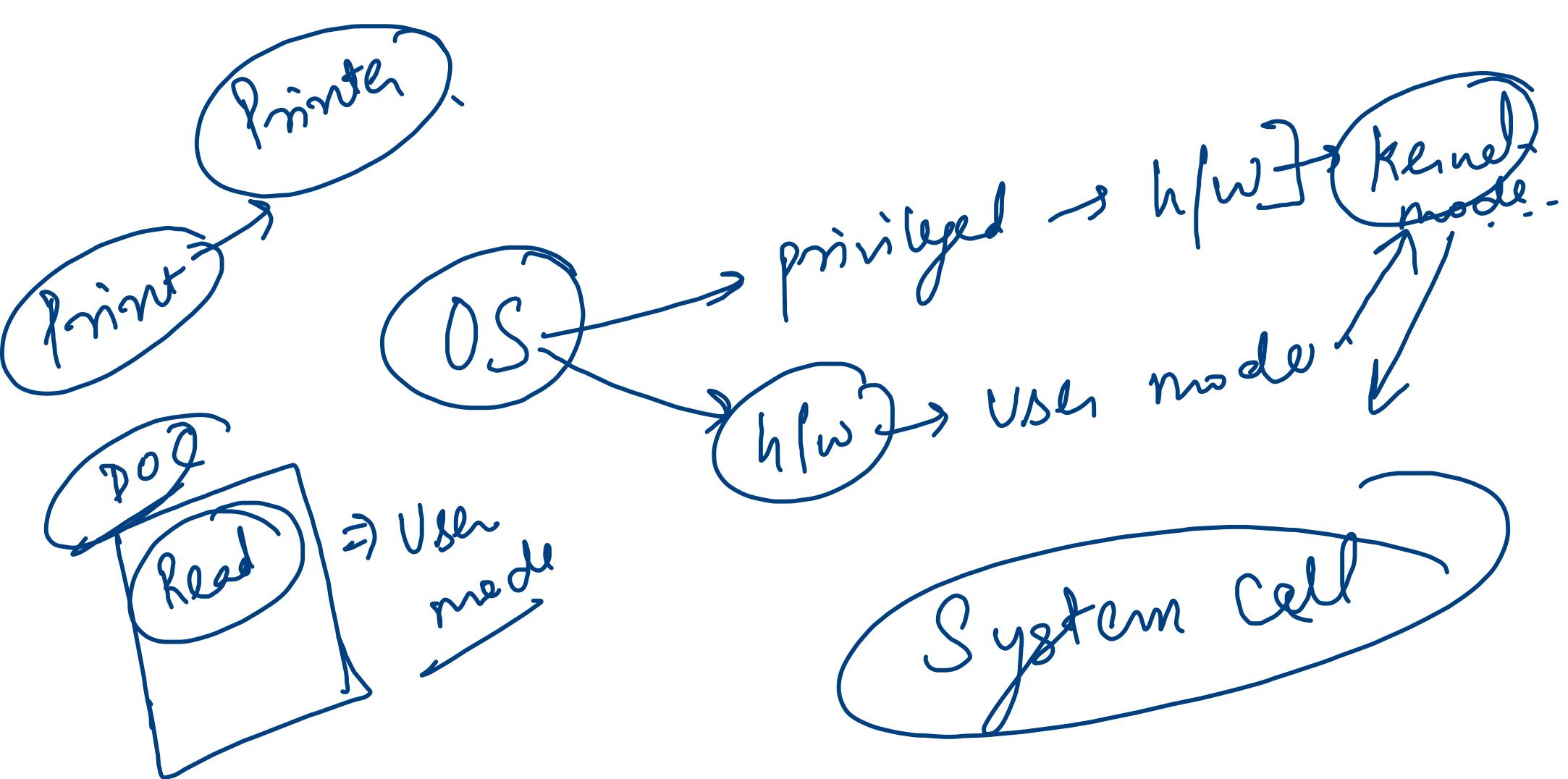
2) Kernel space

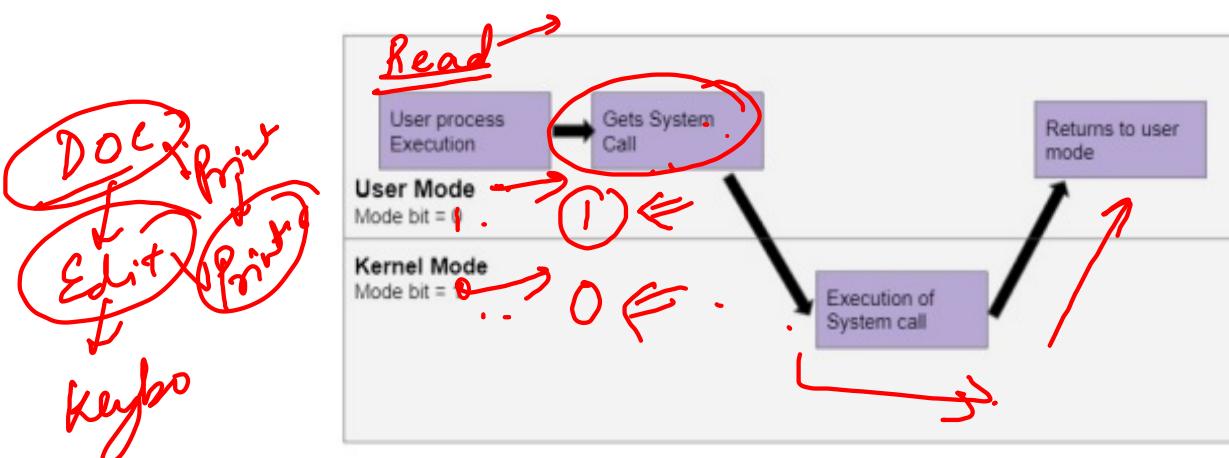
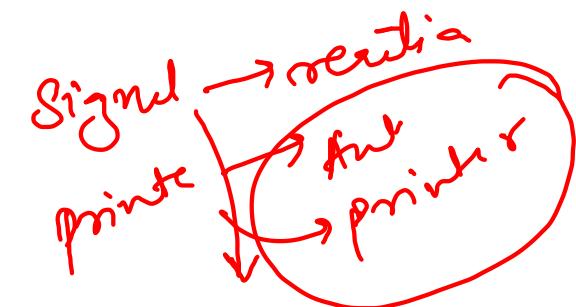
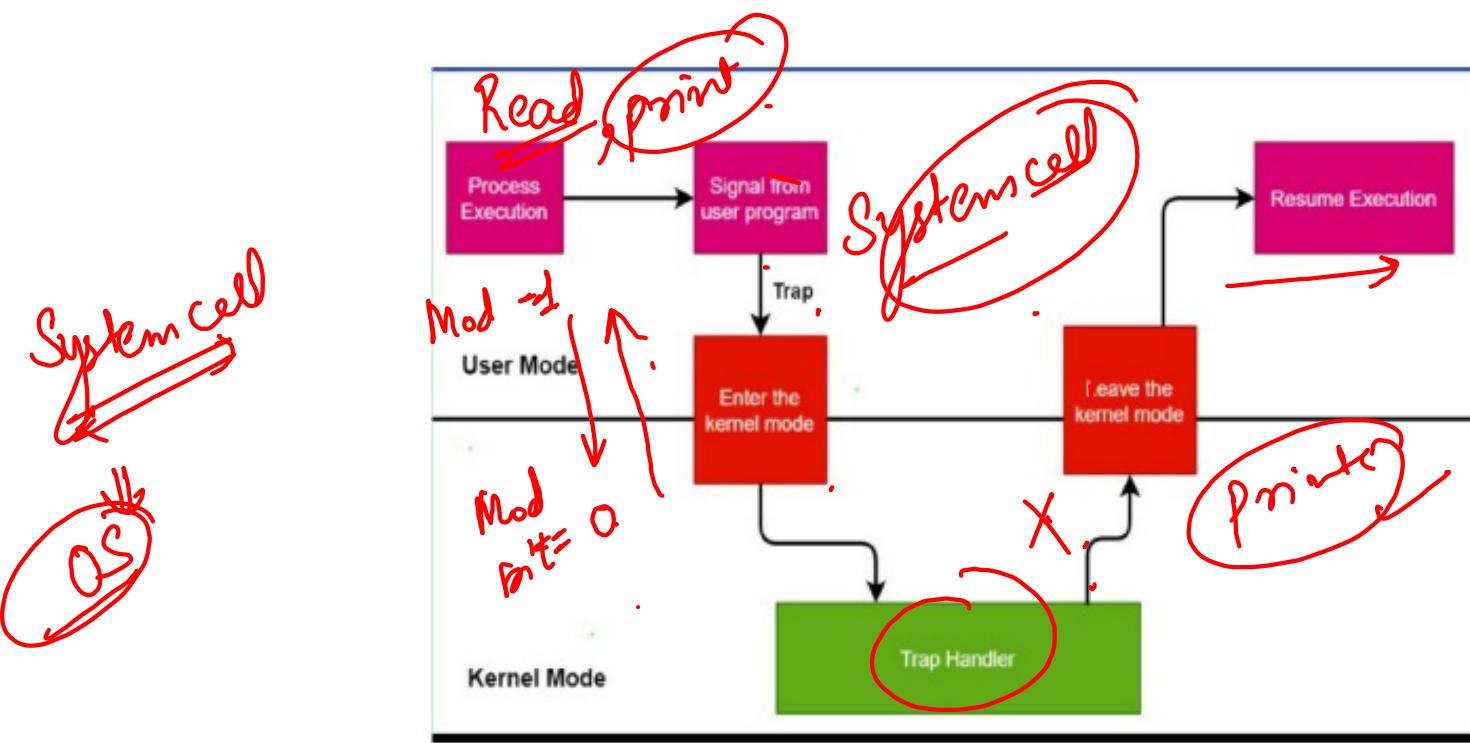
- heart of OS.
- Mode bit = 0
- Privileged

System call → entry gates to Kernel space.

Kernel → Heart of OS

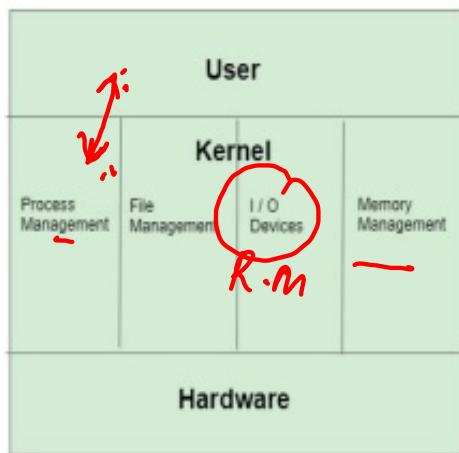






Types of Kernel

Monolithic

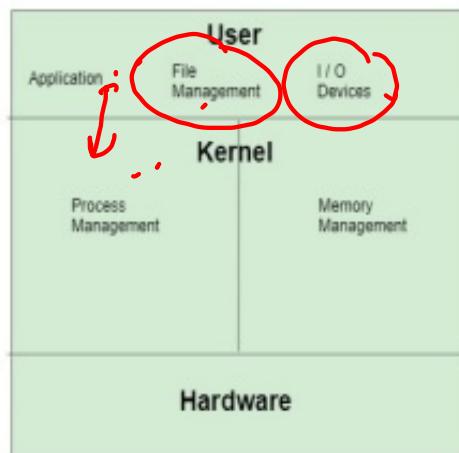


✓ → efficiency

✗ → Bulky

Linux, MS DOS

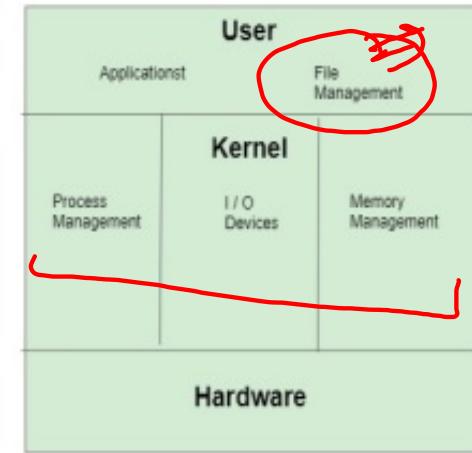
Micro



✗ → less bulky

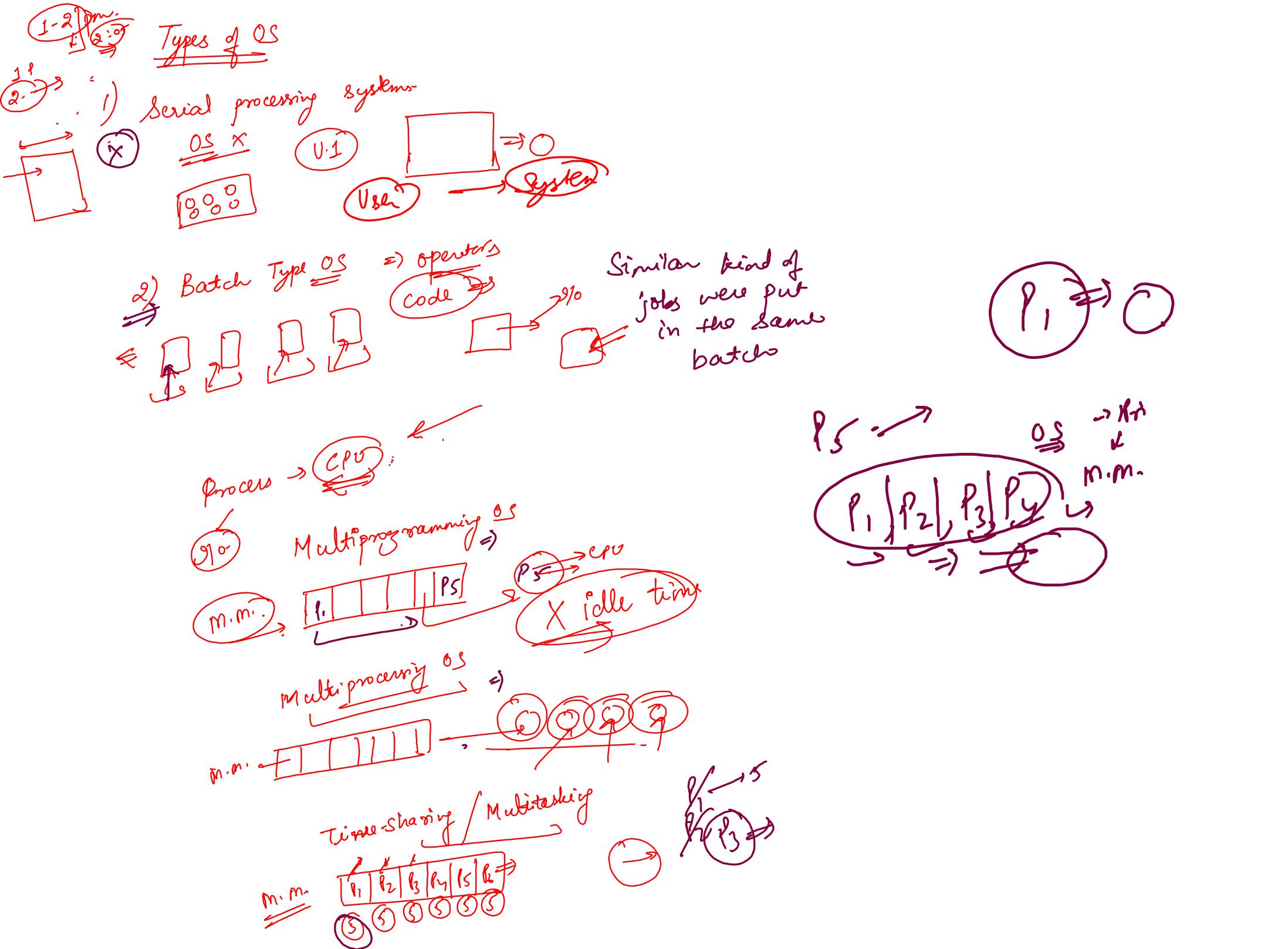
✗ → Performance
Symbios OS

Hybrid



Windows NT
Mac OS

✗ → efficiency
✗ → Bulky



What happens when we turn on a computer

ROM

Step-1 Power on

power supply to motherboard & harddisk.

Step-2 CPU loads BIOS → Boot I/O System

Step-3 BIOS run tests →

- loads some settings from mem. area
- POST → Power on self test

Step-4 BIOS → hands off to boot device

Step-5 Boot loads OS

