Sunbeam Institute of Information Technology
Pune and Karad

Module - Concepts of Operating System

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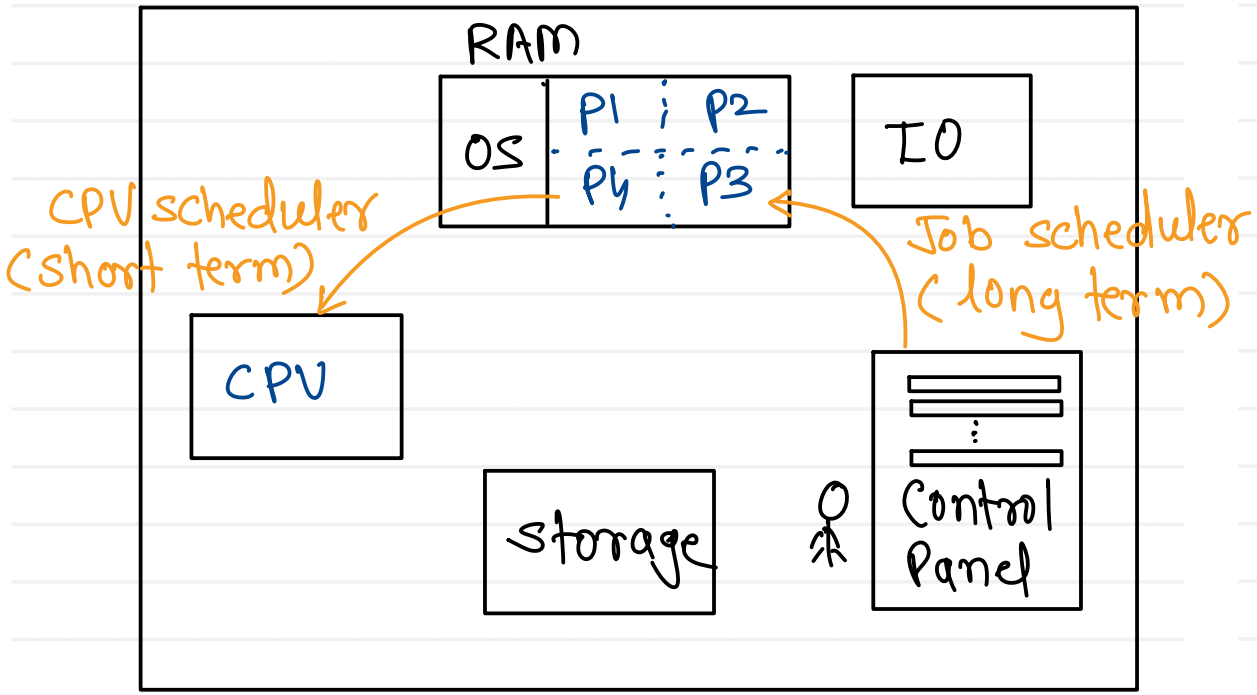
Types of Operating system



1. Resident monitor
2. Batch systems
3. Multiprogramming system

- multiple programs are loaded into RAM (memory)

CPU burst : time spend by process on CPU
IO burst : time spend by process for IO

CPU burst > IO burst : CPU bound process
IO burst > CPU burst : IO bound process

- mixture of CPU bound & IO bound processes was loaded inside RAM

Degree of multi programming :
No. of processes which can be loaded into RAM

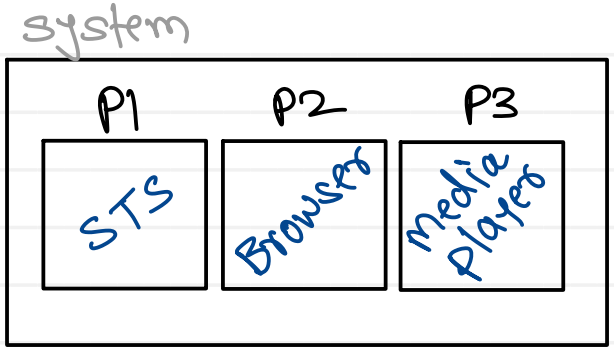
Types of Operating system

4. Time sharing system : (Multi tasking system)
- CPU time is shared in all the processes of RAM

Response time < 1 sec

- multiple tasks are getting executed in single system concurrently.

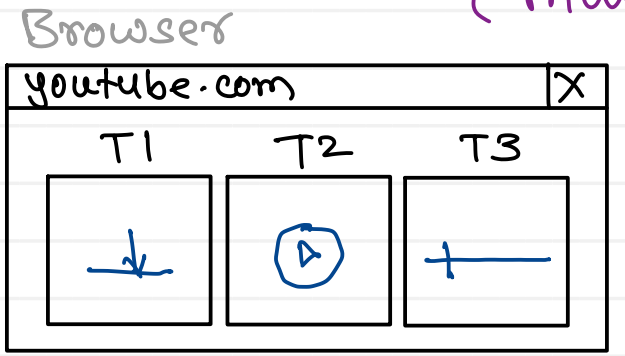
i) Process based multitasking



- system wide multitasking

ii) Thread based multitasking (multithreading)

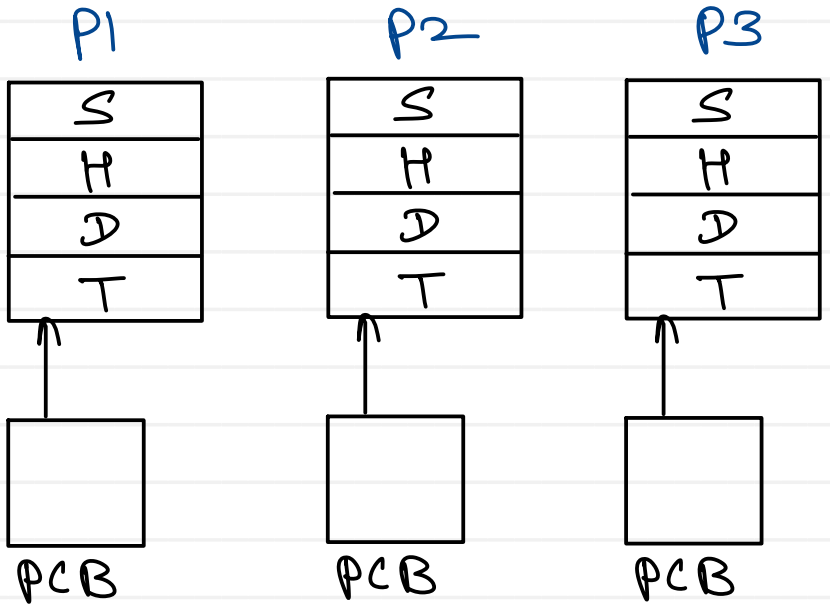
- light weight process



- multitasking within process

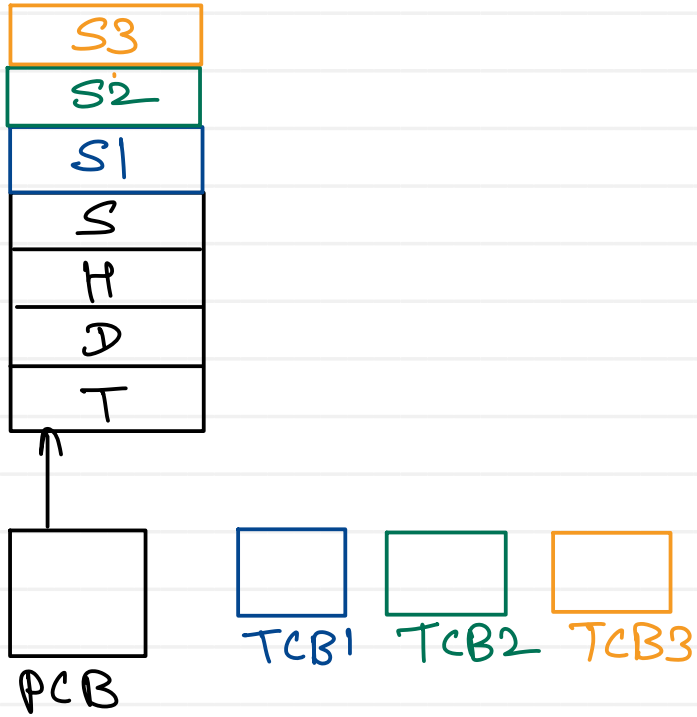
Process Vs Thread

- processes are created in system.



- for process all sections are created in user space + PCB is created in kernel space.

- threads are created always inside process



- for thread only stack section is created in user space & TCB is created in kernel space.
- remaining sections of user space are shared with parent process.

Types of Operating system

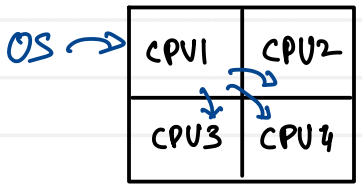
5. Multiprocessing systems :

- multiple processing units (CPU) are putted on single chip which is called as multiprocessor / multi core.

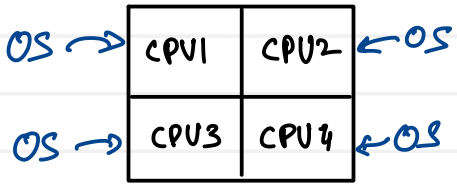
- OS can take advantage of this, by scheduling process for each core

- multiple processes can be executed parallely. (parallel systems)

i. Asymmetric multi processing

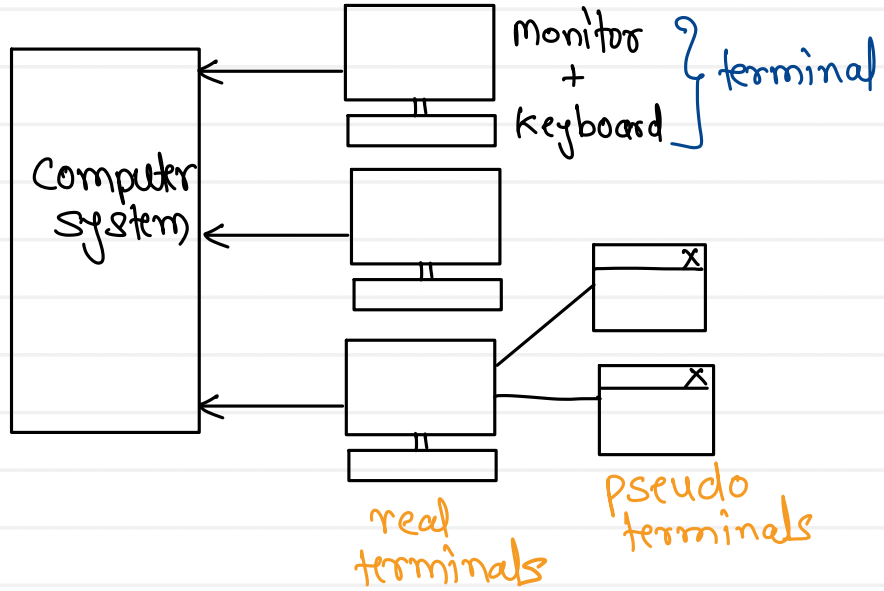


ii. symmetric multi processing



Windows Vista
linux 2.6

6. Multiuser system :




```
ps          uname       who
ps -e       uname -r    tty
top         uname -a    whoami
                        w
```

Thank you!!!

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