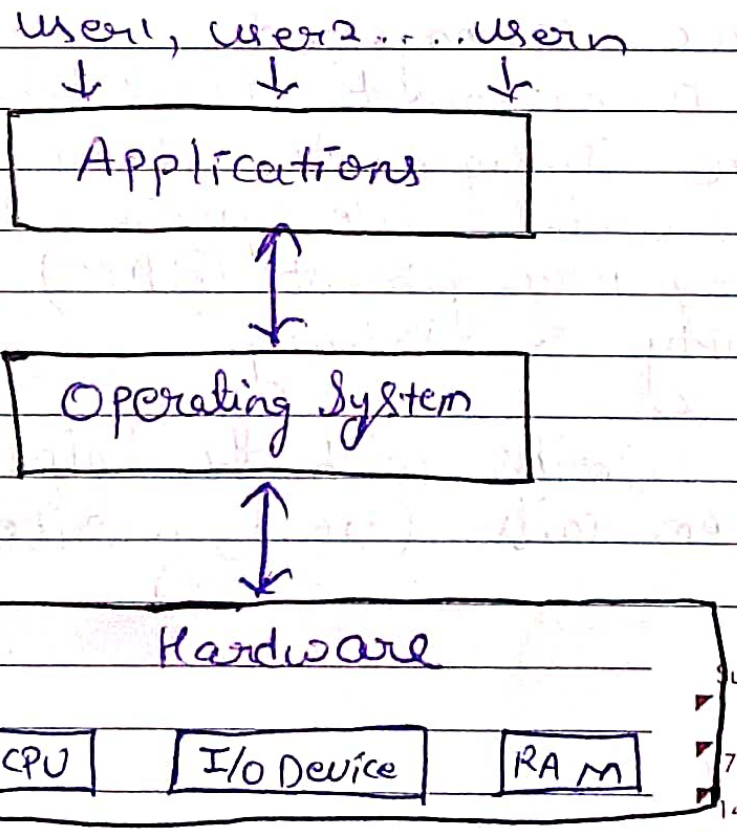
Introduction to Operating System & functionalities.

Operating System is the System Software which acts as an interface between the user and hardware.

★ If there will be no Operating System, then we need to write programs for each and every task we need to perform.

That is why we need O.S.



NOTES

Need or Goal of Operating System

The primary goal that Operating System has :-

→ To provide convenience to the users. (windows)

→ throughput (no. of tasks executed per unit time) (Linux)

Functions of Operating System

1) Resource Management
2) Process Management (CPU Scheduling)
3) Storage Management (Hard Disk) done with file system
4) Memory Management (RAM)
5) Security & Privacy

And O.S. Works with the help of System calls (read, write, open etc.).

NOTES

Types of Operating System

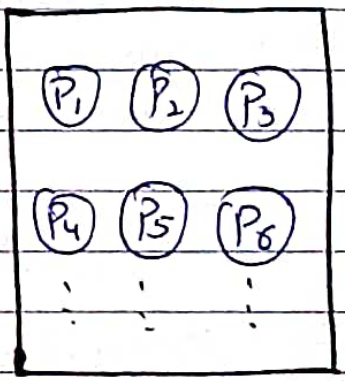
1) Batch O.S. (Non-Preemptive)

Similar type of jobs in a batch → to CPU

Disadvantage:-
→ CPU is idle untill process is completed.

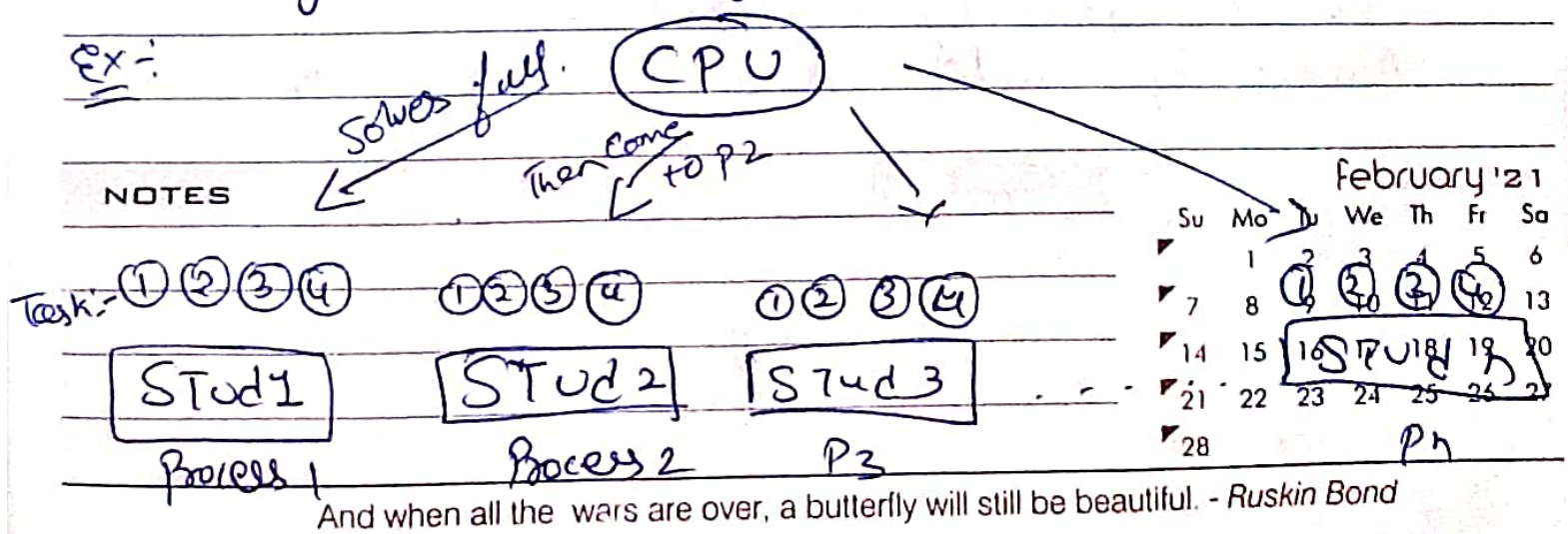
2) Multiprogrammed O.S. (Non-Preemptive)

We bring multiple process inside RAM
In multiprogrammed these process are executed in non-preemptive means CPU execute process till its completion untill and unless process goes for some other task like I/O. In this case CPU will not sit idle but execute another process.



Advantage:- Idleness of CPU decreases

Ex:-



3) Multitasking / Time Sharing OS

(Preemptive)

Here time is fixed for each process for its execution and time by time it executes the process.

Advantage:- Responsiveness.

4) Real time OS → Hard
→ Soft

- No delays
- Time matters
- immediate outputs

5) Distributed OS -

Distributed Environment

6) Clustered OS -

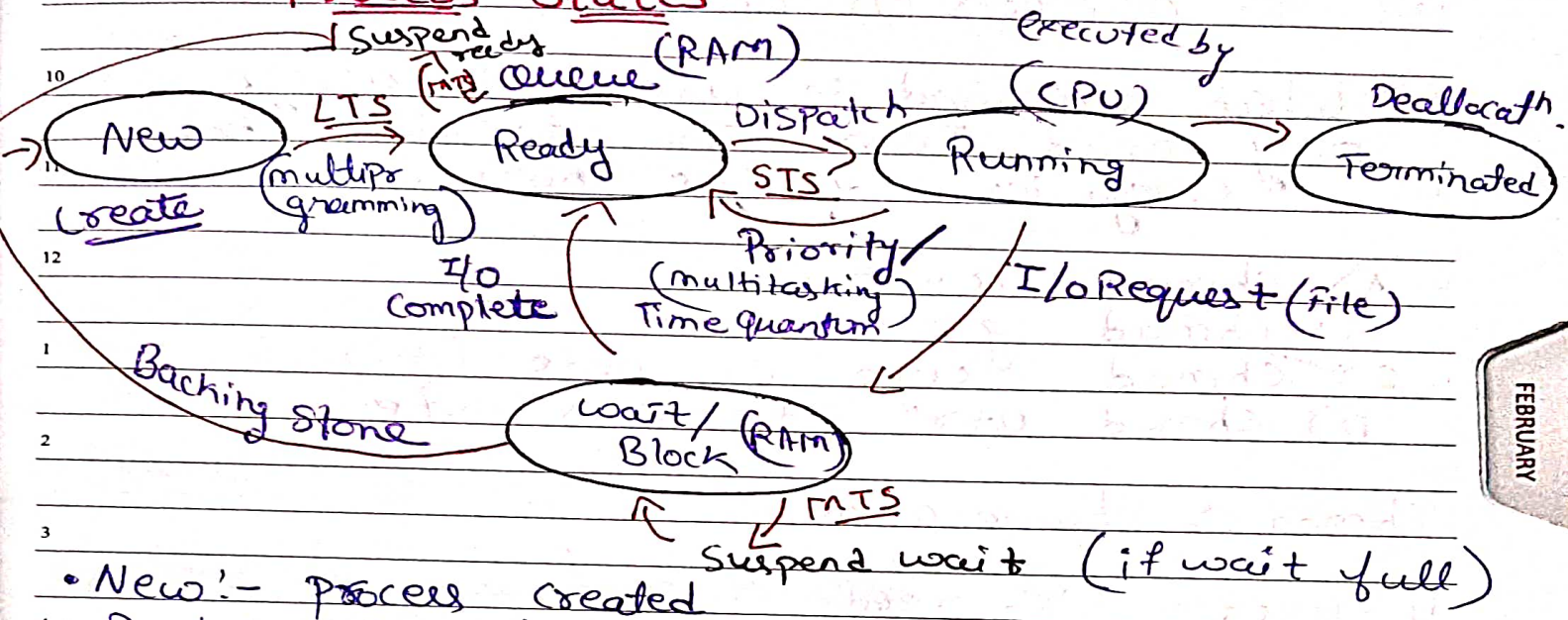
Multiple machines works as one machine, this is managed by Clustered OS.
Availability, Fault tolerance, Scalability

(7) Embedded OS -

Functionality is set.

NOTES

Process States



- New :- process created
- Ready :- Queued in RAM

Long Term Scheduler :- LTS

Mid Term Scheduler :- MTS

Short Term Scheduler :- STS

SUNDAY 10

NOTES

February '21

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21	22	23	24	25	26	27
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Questions on Linux Commands

1) Which Command is used to assign only Read Permission to all three Categories of file 'note'.

A) Chmod a-rw
B) chmod go+r note
C) Chmod ugo=r note (Ans)
D) Chmod u+r, g+r, o-x note

Chmod -> change mode

u - user
g - group
o - others
r - read
w - write
x - execute

r w x r w _ r w _
u g o

2) 'chmod ugo+rw note' command can be represented in octal notation as.

A) chmod 555 note
B) chmod 666 note (ans)
C) chmod 333 note
D) chmod 444 note

Numbers are given:
r = 4
w = 2
x = 1

rx -> 5 (add)
rwx -> 7

3) Suppose you have a file "f1" whose contents are:
1234567890abcdefghij
Here 'lseek' is used two times sequentially
lseek (n, 10, SEEK_CUR);
lseek (n, 5, SEEK_SET);
n is file descripter

After applying lseek two times, what will be current position of R/W head?

A) 0 B) 5 C) 10 D) 15

NOTES

lseek is basic command from System call. It provide random read/write commands to move randomly.

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