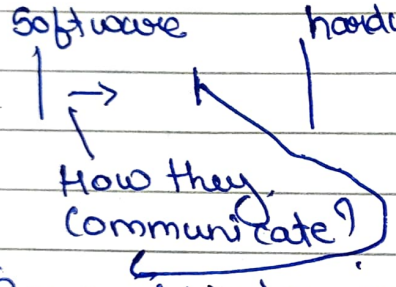
1. Introduction to OS. - (8)
2. Process Management. - (9)
3. Memory Management. - (12)
4. File System. - (4)
5. I/O System. - (3)
6. Storage Management and data protection :- (2).

OS and main function.

⊙ OS and main function.



O.S eg:- Window, mac etc.

main function.
Device manager
User Interface
Memory, file, Process

⊙ Process and thread.

Process is One app.
In app other function are open which work.
Simontously is called thread.

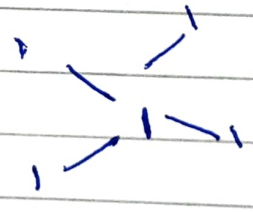
⊙ Types of O.S.

1. Batch operating O.S.
   ⇓
   work One by One.

2. Multiprograming O.S.
   work Together.

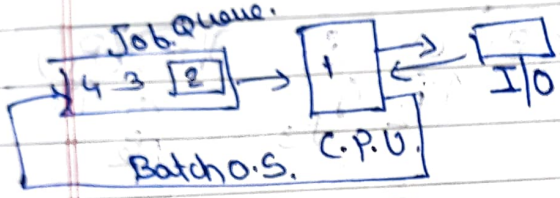
3. Real-Time ⇒ where time is Strictly eg:- Space Center.

4. Distributed O.S.
   Apple Ecosystem.



5. Embedded O.S.
   eg:- elon must Rocket Catuh Team. (IOT).

1.④ Batch OS.



One by One.

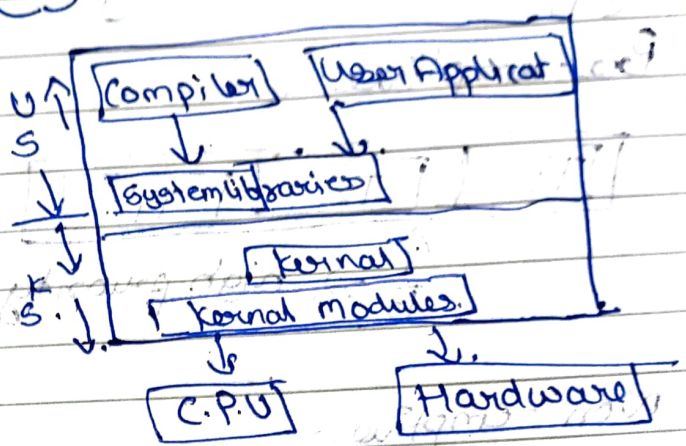
1.5 Multiprograming and Multi Tasking.

M.P ⇒ C.P.U Change the T1 and Go Start with T2 and again Start T1 means Switching between Job.

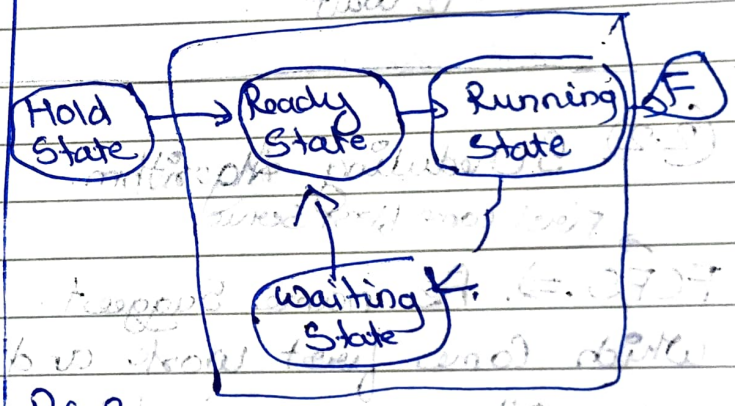
M.T ⇒ In Switch Rapadily between C.P.U and memory in Small Qutaum that user think it's work together.

Context Switching ⇒ Change in One process to another the time is called Context Switching.

(1.6) kernel and user:



(1.7) Process and Thread.



P.C.B and T.C.B are checking and show like meter data.

(1.8) Normal Call V/S System call.

Normall call	System call.
Run on. Program Code.	depend on. hardware response.

(2) Process Management

(2.1).

Pre-emptive.

↑ T_2 ⇒ high priority.

T_2.

Non-emptive.

↑ T_2 wait

(2.2). Scheduling Algorithm.

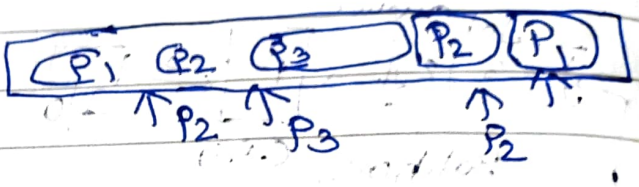
FCFS ⇒ First come first serve. As name Suggest. which come first work and no other process is between.

SJF ⇒ Shortest Job First.

P	T
1	3
2	2
3	1
4	5

↳ which have shortest time work line.

SRTF (Sort Remaing Time First)



Round Robin.

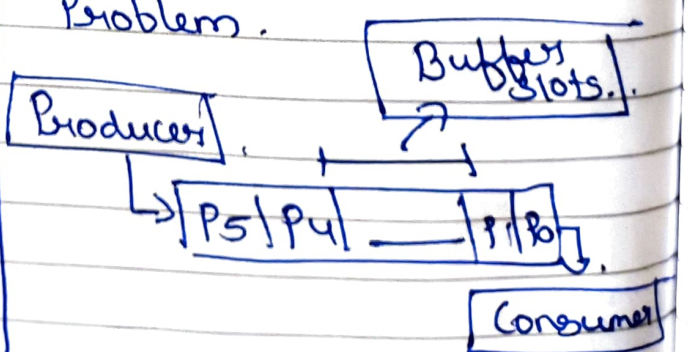
↳ Given Each frame time to every One is Called Round Robin

(2.3). Starving and Aging.

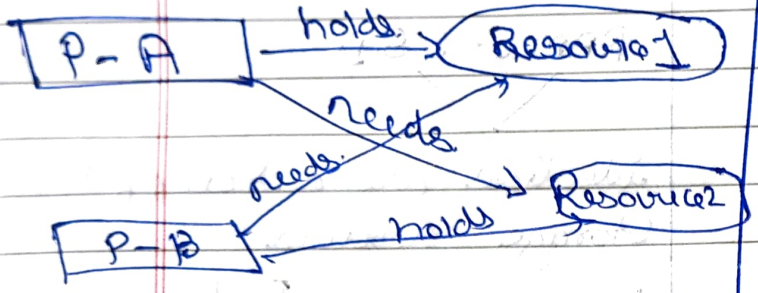
Starving :- lower priority task is denied and high priority task is comming. it lead to inefficient System. performace is Called Starving.

Aging :- low priority task move up over time is Called Ageing.

(2.4) Producer - Consumer Problem.



2.5 Critical-Section Problem.



Dead Lock.
if A is not hold the Other will not start and B is not released A not start.

Preventing :- Other have to wait and One have to process and finished.

(2.6) Semaphores.

it is Computing Environment to prevent race-condition.

① Binary ② Counting.

(3) Dining philospher Problem.

(4) Banker's Algorithm.

Memory Management.

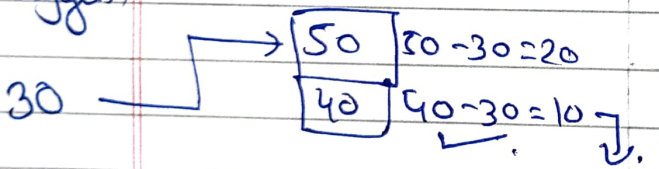
Fragmentation ⇒ it means. Waste of memory i.e. Unused memory is called. Fragmentation.

First Fit Algorithm.

Where it find first Storage Space is called first fit Algorithm.

Best-fit Algorithm.

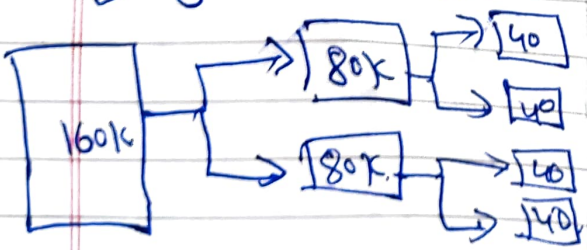
After Substracting which finds minimum waste of memory is assigned



(iii) Worst-fit Algorithm.

After Sub Maximum Waste is that Assigned.

(iv) Buddy System Allocation.

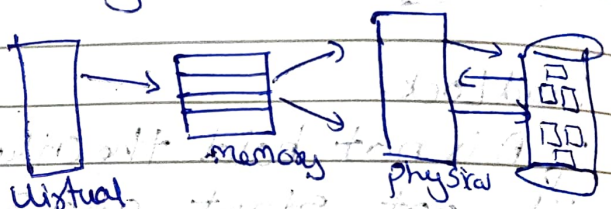


(v) Virtual Memory.

It is a

RAM or S.S.D

idealized abstraction of the Storage resource.



Paging:- Divide memory into Each Equal back is called Paging.

Segmentation:- Divide memory into Unequal part according to their requirment.