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BATCH - A

CSE 250 OPERATING SYSTEMS

SECTION - A

1.a) Batch Systems

2a) Tightly coupled systems don't share resources with each other

3.d) Statement 2 is true

4d) Statement 2 is true

5b) Ready state

SECTION - B

7.

Process no.	Arrival Time (AT)	Burst Time	Completion	TAT	WT
P_1	0	53	134	134	81
P_2	0	17	37	37	20
P_3	0	68	162	162	94
P_4	0	24	121	121	97

BATCH - A

Since arrival time not given assuming 'at'

AT at $t = 0$ units

* Gantt chart:

33	0	48	4	13	28	0	0	8	0
P_1	P_2	P_3	P_4	P_1	P_3	P_4	P_1	P_3	P_3

0   20   37   57   77   97   117   121   134   154   162

$$\text{Avg TAT} = \frac{134 + 37 + 162 + 121}{4}$$

$$= 113.5$$

$$\text{Avg WT} = \frac{81 + 20 + 94 + 97}{4}$$

$$= 73$$

8★ Process Attributes:

- Attributes of Processess are used to create PCB (process Control Block)
- Each processes on the system has a set of attributes
- To control policies application we can specify processes

BATCH-A

- Attributes in Process Control Block :

* Process ID   -   Unique ID

* Process State   -   ready , running , writing

* Priority   -   Weightage for priority based processes
* Accounting   -   CPU used , clock time elapsed
* Program Counter -   Adress for previous instruction

* General Purpose Register (GPU) - Own set of registers
* I/O status - I/O devices allocated to processes
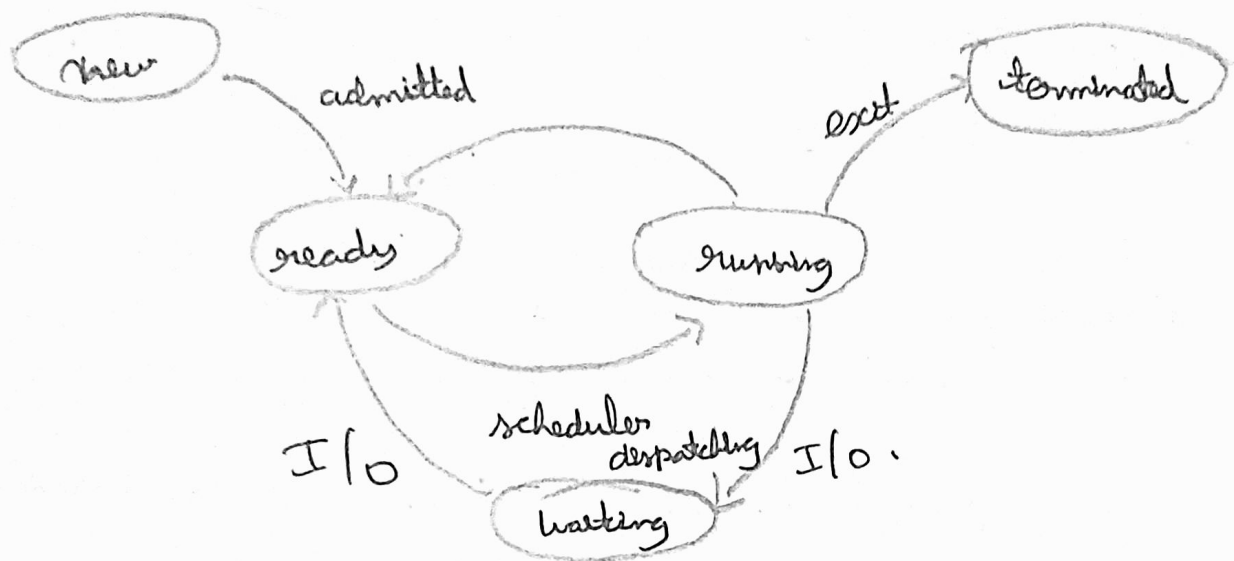* Process States :

   As process gets executed , it changes state
   Some of them are :

      ~~* Running :~~

      - Running : Instructions are executed

      - New : The process is being created

      - Waiting : The process is waiting for some
                  event to occur

      - Ready : The process is waiting to be
                get assigned

      - Terminated : The process has finished
                     executing

* Operations involved :

* Creation : Waiting in queue

* Scheduling : Scheduled process manually runs first

* Execution : Process Executing started

* Deletion : Once Purpose of process over, it is deleted
OS kills the process.