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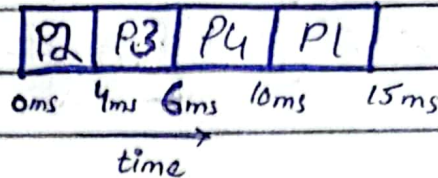
— | Assignment #02 | —

— Operating Systems —

1- First Come First Serve - FCFS :-

Process	Arrival time	Burst time	Turnaround time	Wait time	Completion time	Response time
P1	3ms	5ms	12ms	7ms	15ms	7ms
P2	0ms	4ms	4ms	0ms	4ms	0ms
P3	4ms	2ms	2ms	0ms	6ms	0ms
P4	5ms	4ms	5ms	1ms	10ms	1ms

Gantt Chart



* at 15ms
all processes
got completed

$$\text{Average Wait time} = \frac{7+0+0+1}{4} = \frac{8}{4} = 2\text{ms}$$

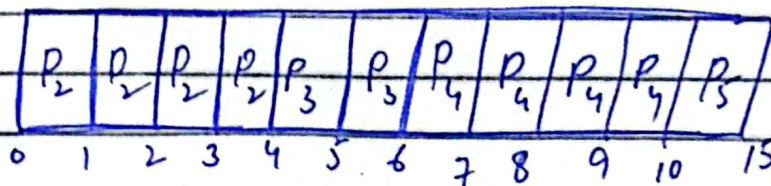
$$\text{Average TAT} = \frac{12+4+2+5}{4} = \frac{23}{4} = 5.75\text{ms}$$

$$\text{Average Response time} = \frac{7+0+0+1}{4} = \frac{8}{4} = 2\text{ms}$$

2- Shortest Job First (SJF) :-

Process	Arrival time	Burst time	Completion time	Turnaround time	Wait time	Response time
P1	3ms	5ms	15ms	12ms	7ms	7ms
P2	0ms	4ms	4ms	4ms	0ms	0ms
P3	4ms	2ms	6ms	2ms	0ms	0ms
P4	5ms	4ms	10ms	5ms	1ms	1ms

Gantt Chart



$$\text{Average Wait time} := \frac{7+0+0+1}{4} = \frac{8}{4} = 2\text{ms}$$

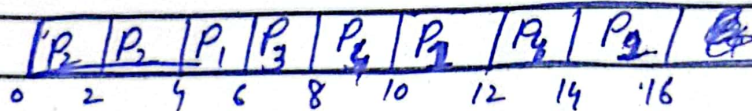
$$\text{Average TAT} = \frac{12+4+2+5}{4} = \frac{23}{4} = 5.75\text{ms}$$

$$\text{Average Response Time} = \frac{7+0+0+1}{4} = \frac{8}{4} = 2\text{ms}$$

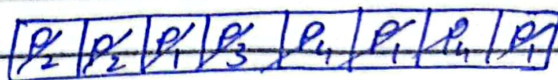
3- Round Robin — 2ms = Time slice.

Process	Arrival Time	Burst Time	Completion time	Turnaround time	Wait time	Response time
P ₁	3ms	5ms	16ms	13ms	8ms	1ms
P ₂	0ms	4ms	4ms	4ms	0ms	0ms
P ₃	4ms	2ms	8ms	4ms	2ms	2ms
P ₄	5ms	4ms	14ms	9ms	5ms	3ms

Gantt Chart :-



Ready Queue :-



$$\text{Average wait time} = \frac{8+0+2+5}{4} = \frac{15}{4} = 3.75\text{ms}$$

$$\text{Average TAT} = \frac{13+4+4+9}{4} = \frac{30}{4} = 7.5\text{ms}$$

$$\text{Average Response time} = \frac{1+0+2+3}{4} = \frac{6}{4} = 1.5\text{ms}$$