**Question:**

Consider the following set of processes, with the length of the CPU burst given in milliseconds:

| Process | Burst Time | Priority |
|---|---|---|
| $P_1$ | 2 | 2 |
| $P_2$ | 1 | 1 |
| $P_3$ | 8 | 4 |
| $P_4$ | 4 | 2 |
| $P_5$ | 5 | 3 |

The processes are assumed to have arrived in the order P1, P2, P3, P4, P5, at time 1, 2, 3, 4 and 5 respectively.

Calculate the turnaround time of each process for each of FCFS, SJF, non-preemptive priority (a larger priority number implies a higher priority).

**Solution**

FCFS Turnaround Time:

TA Time = Time of completion – Time of Arrival.

P1 = 3 – 1 = 2

P2 = 4 – 2 = 2

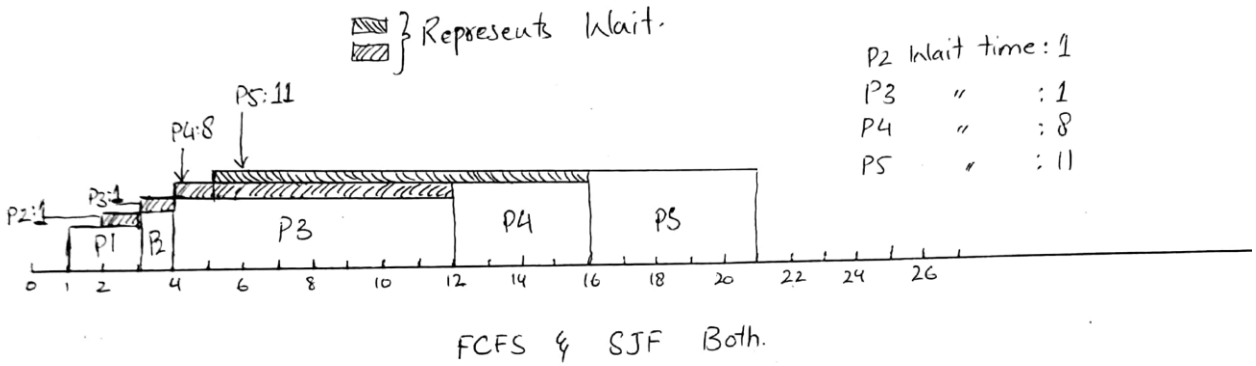
P3 = 12 – 3 = 9

P4 = 16 – 4 = 12

P5 = 21 – 5 = 16

SJF Turnaround Time:

It will be same as FCFS, as the arrival time of all the processes is different. During execution, only when P3 is executing, P4 and P5 both have to wait, and P4 will be executed first as it has shorter Burst Time than P5.




FCFS & SJF Both.

Non-Preemptive Priority:

The Turnaround Time for first 3 processes will be same as SJF, i.e.

P1: 2,

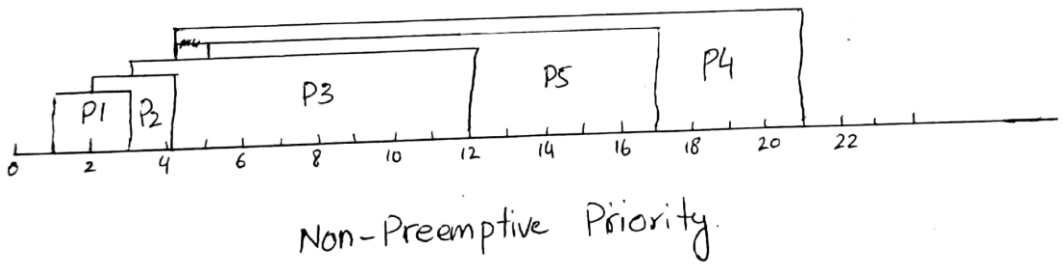
P2: 2,

P3: 9

Only time when the ready queue will have more than one process is when P3 is being executed, and P4 & P5 both are waiting. P5 will be executed before P4 because of its higher priority.

P4: 21 – 4 = 17

P5: 17 – 5 = 12




Non-Preemptive Priority