

SJF EXAMPLE WITH DIFFERENT ARRIVAL TIMES

🟡 If at time T , we have multiple processes in the ready queue, then select the process with least burst time and Schedule it on the cpu.

🟡 If the burst time of multiple processes are same, pick the one with least arrival time (FCFS)

🟡 Even if the arrival time are same for multiple processes, pick the one which is above in the table. $\rightarrow p_1$
 $\rightarrow p_2$

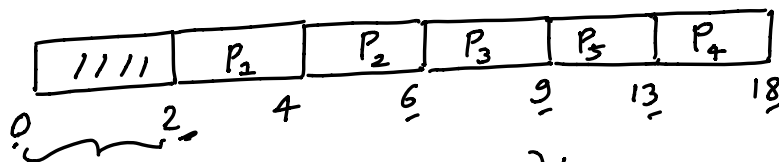
🟡 SJF is nonpreemptive

🟡 SJF gives minimum average waiting time for a set of processes — Advantage

🟡 Predicting next burst time of a process is a tough task. —

$\left\{ \begin{array}{l} \text{FCFS} \\ \text{SJF} \leftarrow \cdot \\ A_1 \\ A_2 \\ A_3 \end{array} \right. \quad p_1 \dots p_n$

		AT	BT	ST	CT	TAT	WT	RT
X →	P ₁	2	2	2	4	2	0	0
X	P ₂	2	2	4	6	4	2	2
X	P ₃	4	3	6	9	5	2	2
X	P ₄	3	5	13	18	15	10	10
X	P ₅	5	4	9	13	8	4	4



$$TAT = CT - AT$$

$$WT = TAT - \text{CPU Burst} - \text{I/O Burst}$$

$$RT = ST - AT$$

$$\text{Avg TAT} = (2 + 4 + 5 + 15 + 8) / 5 = \frac{34}{5}$$

$$\text{Avg WT} = (0 + 2 + 2 + 10 + 4) / 5 = \frac{18}{5}$$

$$\text{Avg RT} = (0 + 2 + 2 + 10 + 4) / 5 = \frac{18}{5}$$

$$\text{CPU utilization} = \frac{16}{18} \times 100$$

$$\begin{array}{l} \rightarrow P_1 \quad 24 \\ \rightarrow P_2 \quad (2) \\ \rightarrow P_3 \quad (2) \end{array} \quad \underline{24}$$

$$\text{Throughput} = \frac{5}{\text{Max}(CT) - \text{Min}(AT)} = \frac{5}{18 - 2} = \frac{5}{16} \text{ proc/unit time}$$