

CPU scheduling

Tutorial - Part 2

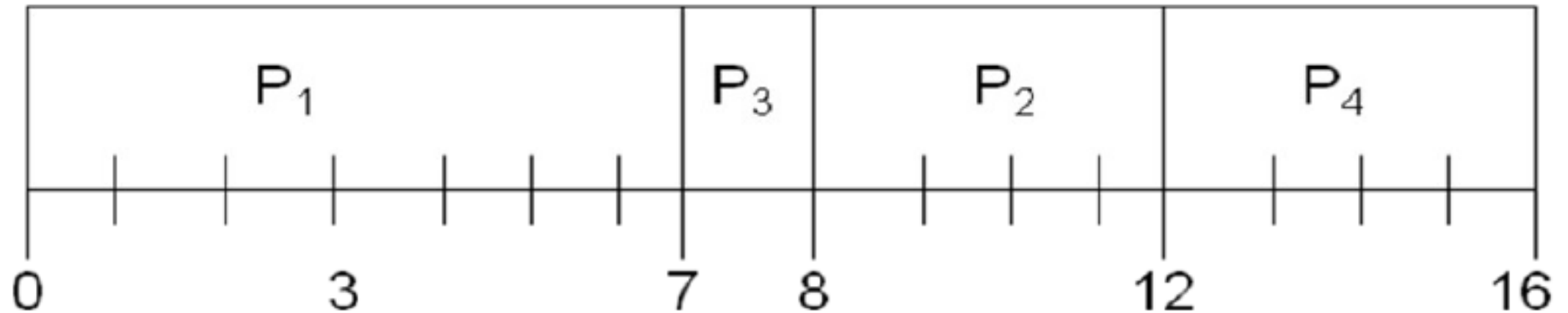
Given below are the arrival and burst times of four processes P1, P2, P3 and P4.

Draw the Gantt Chart using **SJF** (non-preemptive) and **SRTF** (preemptive SJF) scheduling algorithms and calculate the **average waiting time**.

<u>Process</u>	<u>Arrival Time</u>	<u>Burst Time</u>
P1	0.0	7
P2	2.0	4
P3	4.0	1
P4	5.0	4

Solution

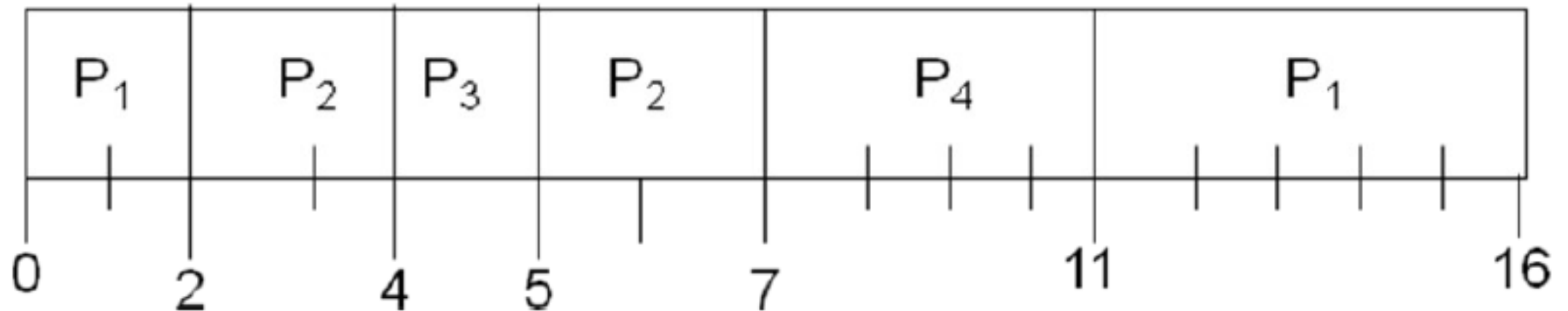
Non preemptive SJF:



$$\begin{aligned}\text{Average waiting time} &= (0 + (8-2) + (7-4) + (12-5))/4 \\ &= (0 + 6 + 3 + 7)/4 = 16/4 = 4 \text{ ms}\end{aligned}$$

SRTF (SJF preemptive)

Preemptive SJF:



$$\begin{aligned}\text{Average waiting time} &= ((11-2) + (5-4) + 0 + (7-2))/4 \\ &= (9 + 1 + 0 + 2)/4 = 12/4 = 3 \text{ ms}\end{aligned}$$