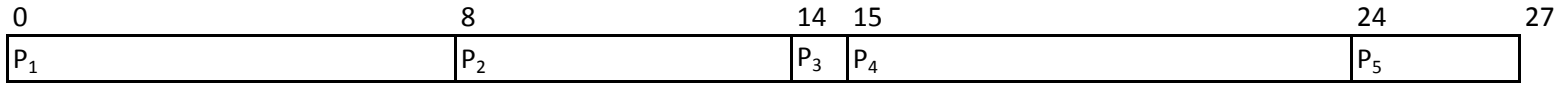
# CPU Scheduling Exercises
# Problem 1
# Solutions

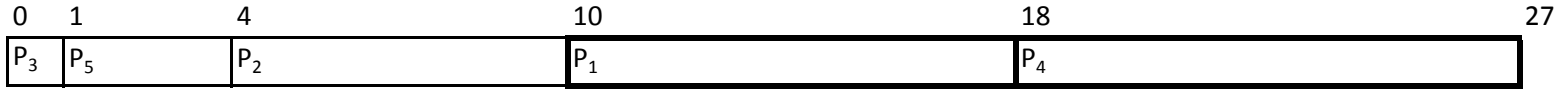
| Process | Burst | Priority |
|---|---|---|
| $P_1$ | 8 | 4 |
| $P_2$ | 6 | 1 |
| $P_3$ | 1 | 2 |
| $P_4$ | 9 | 2 |
| $P_5$ | 3 | 3 |

First Come First Served



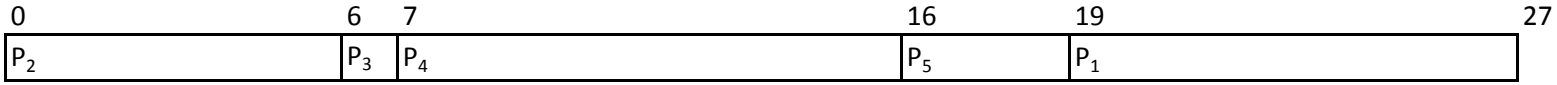

Avg. Wait = 0+8+14+15+24 = 61/5 = 12.2ms  Avg. TAT = 8+14+15+24+27 = 17.6ms

Shortest Job First



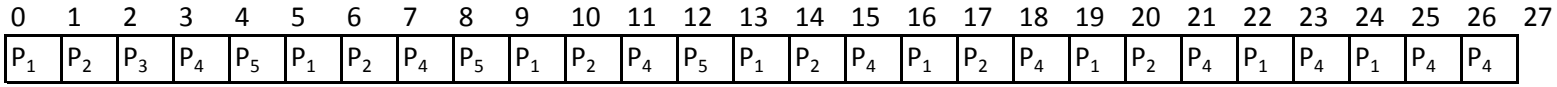

Avg. Wait = 0+1+4+10+18 = 33/5 = 6.6ms  Avg. TAT = 1+4+10+18+27 = 60/5 = 12ms

Non-Preemptive Priority




Avg. Wait Time = 0+6+7+16+19 = 48/5 = 9.6ms  Avg TAT = 6+7+16+19+27 = 75/5 = 15ms

Round Robin (1ms Quantum)




Wait Time $P_1$ = 0+5-1+9-6+13-10+16-14+19-17+22-20+24-23 = 0+4+3+3+2+2+2+1 = 17
Wait Time P2 = 1+6-2+10-7+14-11+17-15+20-18 = 1+4+3+3+2+2 = 15
Wait Time P3 = 2
Wait Time P4 = 3+7-4+11-8+15-12+18-16+21-19+23-22+25-24 = 3+3+3+3+2+2+1+1 = 18
Wait Time P5 = 4+8-5+12-9 = 4+3+3 = 10
Avg Wait Time = 62/5 = 12.4ms

Avg TAT =25+21+3+27+13 = 89/5 = 17.8ms

| **Algorithm** | **Avg Wait** | **Avg TAT** |
|---|---|---|
| FCFS | 12.2 | 17.6 |
| SJF | 6.6 | 12 |
| NonP Priority | 9.6 | 15 |
| RR | 12.4 | 17.8 |

SJF has shortest wait and shortest TAT