Operating System HW3

B04901096 電機四 蔡昕宇

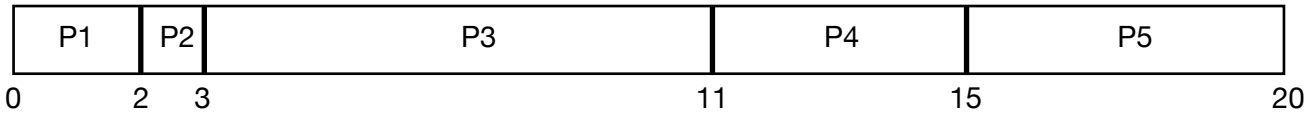
 # 5.6

The regressive round-robin scheduler favors CPU-bound processes because it rewards CPU-bound processes with the addition of 10 milliseconds to their time quantum and boosts its priority. I/O-bound processes are not rewarded and their priority remain the same.

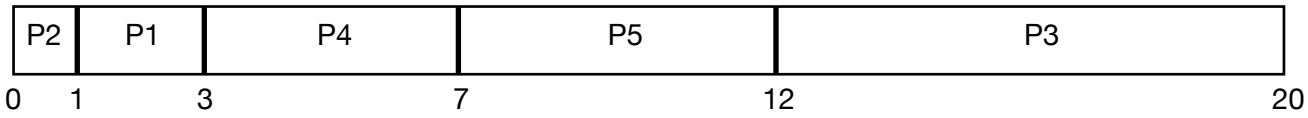
 # 5.7

a. Gantt charts

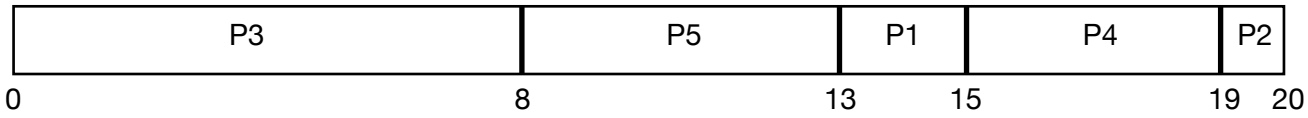
FCFS



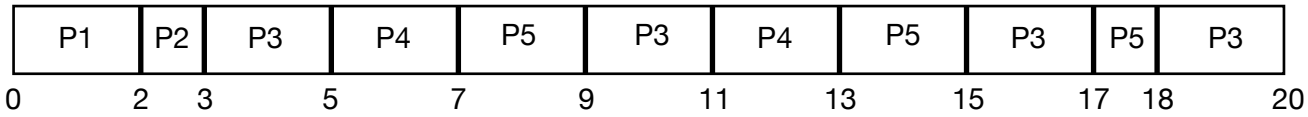
SJF



Non-preemptive priority



Round-Robin



b. turnaround time

	FCFS	SJF	Non-preemptive priority	Round-Robin
P1	2	3	15	2
P2	3	1	20	3
P3	11	20	8	20
P4	15	7	19	13
P5	20	12	13	18

c. waiting time

	FCFS	SJF	Non-preemptive priority	Round-Robin
P1	0	1	13	0
P2	2	0	19	2
P3	3	12	0	12
P4	11	3	15	9
P5	15	7	8	13

d. minimum average waiting time

	FCFS	SJF	Non-preemptive priority	Round-Robin
Average time	6.2	4.6	11	7.2

SJF result in the minimum average waiting time. SJF is optimal solution for scheduling among all scheduling algorithm.

 # 5.14

a. If beta > alpha > 0, the process comes first always has higher priority than those come after it. => first come first served (FCFS) scheduling algorithm
b. If alpha < beta < 0, the priority of the process comes first decays more than those come after it. => last in first out (LIFO) scheduling algorithm