

# Digital Assignment I

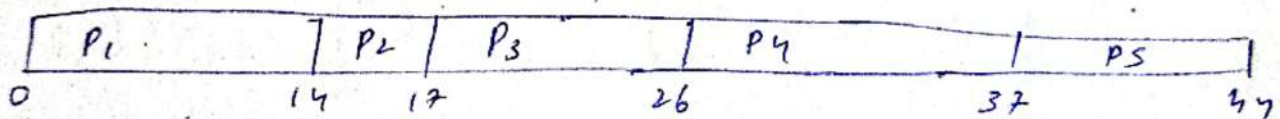
RAJAT SINGH

22MCA0139

1)

Process	Burst Time	Priority
P <sub>1</sub>	14	1
P <sub>2</sub>	3	2
P <sub>3</sub>	9	3
P <sub>4</sub>	11	4
P <sub>5</sub>	7	5

FCFS



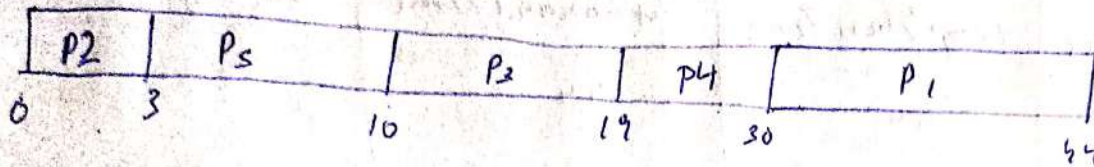
Process	Burst Time	Completion Time	Turn Around Time	Waiting Time
P <sub>1</sub>	14	14	14	0
P <sub>2</sub>	3	17	17	14
P <sub>3</sub>	9	26	26	17
P <sub>4</sub>	11	37	37	26
P <sub>5</sub>	7	44	44	37
			138	94



$$\text{Avg Turn Around Time} = \frac{138}{5} = 27.6 \text{ ms}$$

$$\text{Avg Waiting Time} = \frac{94}{5} = 18.8 \text{ ms}$$

SJF



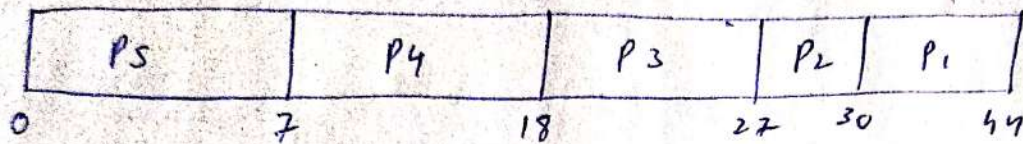
Process	Burst Time	Completion Time	Turnaround Time	Waiting Time
P <sub>1</sub>	14	44	44	30
P <sub>2</sub>	3	3	3	0
P <sub>3</sub>	9	19	19	10
P <sub>4</sub>	11	30	30	19
P <sub>5</sub>	7	44	44	3
		106		62

$$\text{Avg Turnaround Time} = \frac{106}{5} = 21.2 \text{ ms}$$

$$\text{Avg Waiting Time} = \frac{62}{5} = 12.4 \text{ ms}$$



Priority (high priority number has more priority)



Process	Burst Time	Completion Time	Turnaround Time	Waiting Time
P1	14	44	44	36
P2	3	36	36	27
P3	9	27	27	18
P4	11	18	18	7
P5	7	7	7	0
			126	82

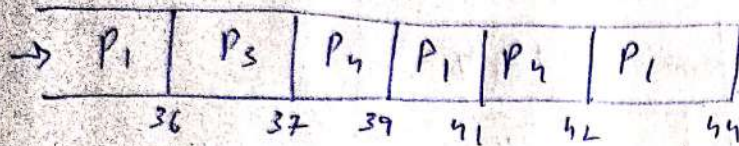
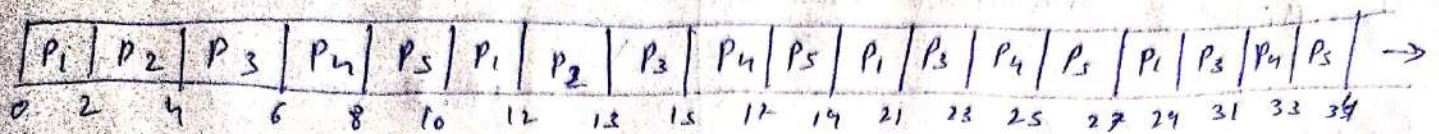
$$\text{Avg Turnaround Time} = \frac{126}{5} = 25.2 \text{ ms}$$

$$\text{Avg Waiting Time} = \frac{82}{5} = 16.4 \text{ ms}$$



# Round Robin

$$TQ = 2ms$$



Process	Burst Time	Completion Time	Turnaround Time	Waiting Time
P <sub>1</sub>	14	44	44	30
P <sub>2</sub>	3	13	13	16
P <sub>3</sub>	9	37	37	28
P <sub>4</sub>	11	42	42	31
P <sub>5</sub>	7	34	34	27
			170	126

$$\text{Avg Turnaround Time} = \frac{170}{5} = 34ms$$

$$\text{Avg Waiting Time} = \frac{126}{5} = 25.2ms$$



### Comparison Table

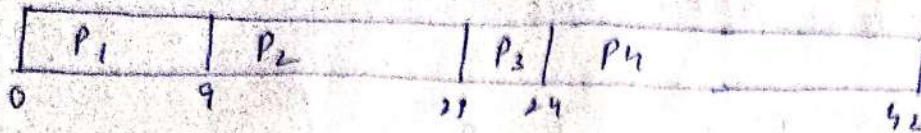
Algorithm	Avg Turn around Time (ms)	Avg Waiting Time (ms)
FCFS	27.6	18.8
SJF	21.2	12.4
Priority	25.2	16.4
Round Robin	34	25.2

2)

Process	Arrival Time	Burst Time
P <sub>1</sub>	0	9
P <sub>2</sub>	1	12
P <sub>3</sub>	2	3
P <sub>4</sub>	3	18



# FCFS



Process	Burst Time	Arrival Time	Completion Time	Turnaround Time	Waiting Time
P <sub>1</sub>	9	0	9	9	0
P <sub>2</sub>	12	1	21	20	8
P <sub>3</sub>	3	2	24	22	19
P <sub>4</sub>	18	3	42	39	21
				90	48

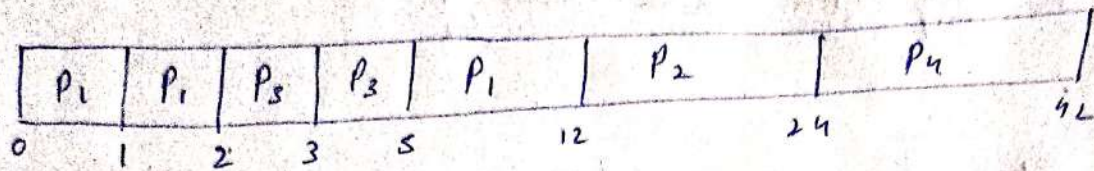
$$\text{Avg Turnaround Time} = \frac{90}{4} = 22.5 \text{ ms}$$

$$\text{Avg waiting Time} = \frac{48}{4} = 12 \text{ ms}$$



## SRT

Priorities be done after 1ms



Process	Burst Time	Arrival Time	Completion Time	Turnaround Time	Waiting Time
P <sub>1</sub>	9	0	12	12	3
P <sub>2</sub>	12	1	24	23	11
P <sub>3</sub>	3	2	5	3	0
P <sub>4</sub>	18	3	42	39	21
			77		35

$$\text{Avg Turnaround Time} = \frac{77}{4} = 19.25 \text{ ms}$$

$$\text{Avg Waiting Time} = \frac{35}{4} = 8.75 \text{ ms}$$

## Round Robin

$$TQ = 2 \text{ ms}$$



Process	Burst Time	Arrival Time	Completion Time	Turnaround Time	Waiting Time
P <sub>1</sub>	9	0	28	28	19
P <sub>2</sub>	12	1	34	33	21
P <sub>3</sub>	3	2	13	11	8
P <sub>4</sub>	18	3	42	39	21
			111		69

$$\text{Avg Turn around Time} = \frac{111}{4} = 27.75$$

$$\text{Avg Waiting Time} = \frac{69}{4} = 17.25$$

### Comparison Table

Algorithms	Avg Turnaround Time (ms)	Avg Waiting Time (ms)
FCFS	22.5	12
SRT	19.25	8.75
Round Robin	27.75	17.25