

1) FCFS (First-Come, First-Serve)

Given processes (Arrival Time in ms, Burst Time in ms):

Process	Arrival Time (AT)	Burst Time (BT)
P1	0	6
P2	1	8
P3	2	7
P4	3	3
P5	4	4
P6	5	5

FCFS follows arrival order. Ready queue: P1 → P2 → P3 → P4 → P5 → P6

Gantt Chart (execution intervals):

P1: 0 → 6

P2: 6 → 14

P3: 14 → 21

P4: 21 → 24

P5: 24 → 28

P6: 28 → 33

Gantt (compact): | 0 | P1 | 6 | P2 | 14 | P3 | 21 | P4 | 24 | P5 | 28 | P6 | 33 |

Formulas used:

Completion Time (CT) = finish time of process

Turnaround Time (TAT) = CT - AT

Waiting Time (WT) = TAT - BT

FCFS — Calculations:

Process	AT	BT	CT	TAT = CT - AT	WT = TAT - BT
P1	0	6	6	6	0
P2	1	8	14	13	5
P3	2	7	21	19	12
P4	3	3	24	21	18
P5	4	4	28	24	20
P6	5	5	33	28	23

FCFS — Average calculations (showing sums):

Sum of TATs = 6 + 13 + 19 + 21 + 24 + 28 = 111

Average TAT = Sum of TATs / 6 = 111 / 6 = 18.5

Sum of WTs = 0 + 5 + 12 + 18 + 20 + 23 = 78

Average WT = Sum of WTs / 6 = 78 / 6 = 13.0

2) SJF (Shortest Job First) — Non-preemptive

Given processes (Arrival Time in ms, Burst Time in ms):

Process	Arrival Time (AT)	Burst Time (BT)
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P1	0	8
P2	1	4
P3	2	9
P4	3	5
P5	4	2
P6	5	7
P7	6	3

Detailed selection and Gantt Chart (with times):

At t=0: only P1 has arrived → execute P1 from 0 to 8

At t=8: ready processes = P2(4), P3(9), P4(5), P5(2), P6(7), P7(3) → choose shortest: P5 (2) → 8 to 10

At t=10: ready = P2(4), P3(9), P4(5), P6(7), P7(3) → choose P7 (3) → 10 to 13

At t=13: ready = P2(4), P3(9), P4(5), P6(7) → choose P2 (4) → 13 to 17

At t=17: ready = P3(9), P4(5), P6(7) → choose P4 (5) → 17 to 22

At t=22: ready = P3(9), P6(7) → choose P6 (7) → 22 to 29

At t=29: only P3 remains → 29 to 38

Gantt (compact): | 0 | P1 | 8 | P5 | 10 | P7 | 13 | P2 | 17 | P4 | 22 | P6 | 29 | P3 | 38 |

Formulas (same as FCFS): CT, TAT = CT - AT, WT = TAT - BT

SJF — Calculations:

Process	AT	BT	CT	TAT = CT - AT	WT = TAT - BT
P1	0	8	8	8	0
P2	1	4	17	16	12
P3	2	9	38	36	27
P4	3	5	22	19	14
P5	4	2	10	6	4
P6	5	7	29	24	17
P7	6	3	13	7	4

SJF — Average calculations (showing sums):

Sum of TATs = 8 + 16 + 36 + 19 + 6 + 24 + 7 = 116

Average TAT = 116 / 7 = 16.57

Sum of WTs = 0 + 12 + 27 + 14 + 4 + 17 + 4 = 78

Average WT = 78 / 7 = 11.14