

Shortest Job First

- This is also known as shortest job next, or SJN.
- It is a non-preemptive scheduling algorithm.
- Best approach to minimize waiting time.
- Easy to implement in Batch systems where required CPU time is known in advance.
- Impossible to implement in interactive systems where the required CPU time is not known.
- The processor should know in advance how much time a process will take.

Here I am going to use some short forms .

PID = Process ID

AT = Arrival Time

BT = Burst Time

CT = Completion Time

TAT = Turn Around Time

WT = Waiting Time

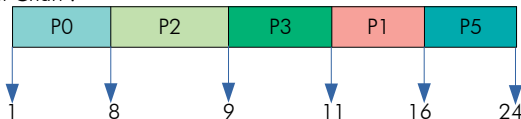
Example : Find Average Waiting Time & Average Turn Around Time

PID	AT	BT
P0	1	7
P1	2	5
P2	3	1
P3	4	2
P4	5	8

Solution :

Process Number = $N = 4$

Gantt Chart :



PID	AT	BT	CT	TAT	WT
P0	1	7	8	7	0
P1	2	5	16	14	9
P2	3	1	9	6	5
P3	4	2	11	7	5
P4	5	8	24	19	11

We have gotten CT from Gantt chart.

$$TAT = CT - AT$$

$$WT = TAT - BT$$

$$\text{Average Turn Around Time (TAT)} = \text{Sum of TAT}/N$$

$$= (7+14+6+7+19)/5 = 53/5 = 10.6\text{ms}$$

$$\text{Average Waiting Time (WT)} = \text{Sum of WT}/N$$

$$= (0+9+5+5+11)/5 = 30/5 = 6\text{ms}$$

If there is no Arrival time then Arrival time = 0 for all processes.