Shortest Job First

Process which have the shortest burst time/ service time are scheduled first.

The selection however depends on the (A.T) as well since the policy is non-preemptive.

If the (A.T) for processes are different, which means all the processes are not available in the ready queue at time 0, and some jobs arrive after some time, in such situation, sometimes process with short burst time have to wait for the current process's execution.

To finish, b/c in Non-preemptive SJF, on arrival of a process with short duration, the existing Job/process's execution is not halted/stopp

- cd to execute the short job first.

=> Decision mode: Non-Preemptive

=> Selection func: min [Burst Time]

* Advantages

- This is the best approach to minimize W.T and A.T
* Disadvantages
- Not practical: difficult to predict B.T.
- Learning to predict future.
- May starve long jobs.
- This scheduling algorithm is optimal if all the jobs/Processes are available at the same time. (either AT is 0 for all, or AT is same for all)

Date .....

⇒ Shortest Job First

(1)

PRCS	AT	BT	CT	TAT	WT	RT
P_1	0	8	8	8	0	0
P_2	1	4	12	11	7	7
P_3	2	9	26	24	15	15
P_4	3	5	17	14	9	9

R.T = WT
b/c non-pre-emptive

Gantt Chart : | P_1 | P_2 | P_4 | P_3 |

0 8 12 17 26

(2)

	PRCS	A.T	B.T	CT	TAT	WT	RT
✓	P_1	1	3	6	5	2	2
✓	P_2	2	4	10	8	4	4
✓	P_3	1	2	3	2	0	0
	P_4	4	4	14	10	6	6

Gantt chart : | /// | P_3 | P_2 | P_1 | P_4 | ✓

0 1 3 5 8 12

| /// | P_3 | P_1 | P_2 | P_4 |

0 1 3 6 10 14

(3)

	PRCS	AT	BT	CT	TAT	WT	RT
✓	P_1	2	6	9	7	1	1
✓	P_2	5	2	11	6	4	4
	P_3	1	8	23	22	14	14
✓	P_4	0	3	3	3	0	0
✓	P_5	4	4	15	11	7	7

Gantt chart :

P_4	P_1	P_2	P_5	P_3

0 3 9 11 15 23

(4)

	PRCS	AT	BT	CT	TAT	WT	RT
	P_1	4	1	7	3	2	2
	P_2	1	5	13	12	7	7
	P_3	4	1	8	4	3	3
✓	P_4	0	6	6	6	0	0

Gantt chart:

P_4	P_1	P_3	P_2	P_4	P_1	P_3	P_2

0 6 7 8 13

(5)

	PRCS	AT	BT	CT	TAT	WT	RT
✓	P_1	4	1	7	3	2	2
	P_2	1	5	16	15	10	10
✓	P_3	4	1	8	4	3	3
✓	P_4	0	6	6	6	0	0
✓	P_5	2	3	11	9	6	6

Gantt chart :

P_4	P_1	P_3	P_5	P_2

0 6 9 8 11 16

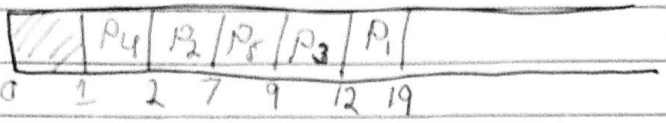
SHAMA

Date .....

(6)

PCS	AT	BT	CT	TAT	WT	RT
P_1	1	7	19	18	11	11
P_2	2	5	7	5	0	0
P_3	5	3	12	7	4	4
P_4	1	1	2	1	0	0
P_5	3	2	9	6	4	4

Gantt chart :



(7)

PCS	AT	BT	CT	TAT	WT	RT
P_1	0	1	1	1	0	0
P_2	2	2	6	4	2	2
P_3	1	3	4	3	0	0
P_4	3	2	10	7	5	5
P_5	2	2	8	6	4	4

Gantt chart :