

SCHEDULING ALGORITHMS

TYPES :-

- 1) FCFS (NON PREEM)
- 2) SJF (PREM/NON PREM)
- 3) PRIORITIY (NON PREM/PREM)
- 4) RR (PREEMTIVE)

TIME

AT = ARRIVAL TIME (konti process kadhi aali)

In most cases there AT time is not given so considered as 0 for all the processes

BT = BURST TIME (process cha execution time)

CT = completion time

TAT = TURN AROUND TIME

WT = WAITING TIME

RT = RESPONSE TIME

SCHEDULING ALGORITHMS

***** FCFS *****

- Criteria = Arrival time
- Non preemptive

id	AT	BT	CT	TAT CT-AT	WT TAT - BT
P1	4	5	15	11	6
P2	2	8	10	8	0
P3	2	4	19	17	13
P4	8	1	20	12	11
P5	20	3	23	3	0
				51/5=10.2	30/5=6

GANTT CHART:-

...IDLE..	P2	P1	P3	P4	P5	
0	2	10	15	19	20	23

AT ---->

SCHEDULING ALGORITHMS

SJF

- CRITERIA = “Burst time”
- Preem / non preem

SJF (NON PREEMPTIVE)

PROCESS ID	ARRIVAL TIME	BURST TIME	COMPLETION TIME	TAT CT - AT	WAITING TIME TAT - BT
P1	5	12	30		
P2	1	4	5		
P3	4	6	11		
P4	7	7	18		
				AVG= sum/no. of process 52/4= 13.16	AVG= sum/no. of process 7

Ready processes :-

Gantt Chart: -

.....idle.....	P2	P3	P4	P1	
0	1	5	11	18	30

SCHEDULING ALGORITHMS

SJF (PREEMPTIVE)

PROCESS ID	ARRIVAL TIME	BURST TIME	COMPLETION TIME	TAT CT - AT	WAITING TIME TAT - BT
P1	0	10-3=7	17	17	10
P2	4	4-2 = 2	10	6	2
P3	8	11	35	27	16
P4	6	7	24	18	11
P5	3	3	6	3	0
				AVG= sum/no. of process 71/5=14.2	AVG= sum/no. of process 39/5=7.5

Ready Queue Chart :-

P1	P5	P2	P4	P3						
0..1	2....345	6.....78					

GANTT CHART: -

P1	P5	P2	P1	P4	P3										
0	3	6	10	17	24	35									

TIME →

SCHEDULING ALGORITHMS

****** PRIORITY: -**

1) THE lower NO. HIGHER THE PRIORITY

0,1,3,4

0 HAVE HIGH THAN AN OTHER

2) HIGHER THE NO. HIGHER THE PRIORITY

0,1,3,4

4 LA SAGLYAT JASAT PRIORITY



SCHEDULING ALGORITHMS

1) EX :1 (PRIORITY NON-PREM) [LOW NO. HIGH PRIORITY]

PRIORITY	P ID	AT	BT	CT	TAT	WT
					CT – AT	TAT- BT
3	P1	0	10	16	16	6
1	P2	0	1	1	1	0
4	P3	0	2	18	18	16
5	P4	0	1	19	19	18
2	P5	0	5	6	6	1
					AVG= sum/no. of process 60/5=12	AVG= sum/no. of process 41/5=8.2

READY QUEUE CHART

P1		P2		P3		P4		P5	
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0

GANTT CHART: -

P2	P5	P1	P3	P4	
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0

1

6

16

18

19

SCHEDULING ALGORITHMS

2) PRIORITY (PREEMPTIVE): - (HIGH NO. HIGH PRIORITY)

PRIORITY	P ID	AT	BT	CT	TAT	WT
					CT – AT	TAT- BT
3	P1	5	6	14	09	03
1	P2	0	7	23	23	16
4	P3	3	2	8	05	03
5	P4	1	5	6	05	00
2	P5	2	3	17	15	12
					AVG= sum/no. of process /=	AVG= sum/no. of process /=

READY QUEUE

P2	P4	P5	P3		P1				
0	1	2	3	4	5				

GANTT CHART: -

P2	P4	P3	P1	P5	P2					
0	1	6	8	14	17	23				

SCHEDULING ALGORITHMS

*** ROUND ROBIN ***

➤ CRITERIA = "TIME QUANTUM."

➤ PREEMPTIVE

TQ = 2s

PROCESS ID	ARRIVAL TIME	BURST TIME	COMPLETION TIME	TAT CT - AT	WT TAT - BT
P1	0	10-2=8			
P2	4	4			
P3	8	11			
P4	6	7			
P5	2	3-2			
				AVG= sum/no. of process 71/5=14.2	AVG= sum/no. of process 39/5=7.5

READY QUEUE CHART :-

P1(10)	P5(3)	P1(8)	P2(4)	P5(1)	P4(7)	P1(6)	P3(11)	P2(2)	
0.....	2.....	4.....							

GANTT CHART :-

P1	P5	P1	P2	P5					
0.....	2.....	4.....	6.....	8.....	9				

SCHEDULING ALGORITHMS

PROCESS ID	ARRIVAL TIME	BURST TIME	COMPLETION TIME	TAT CT - AT	WT TAT - BT
P1	0	10	32		
P2	0	4	14		
P3	0	11	35		
P4	0	7	30		
P5	0	3	19		
				AVG= sum/no. of process 71/5=14.2	AVG= sum/no. of process 39/5=7.5

READY QUEUE CHART :-

P1(10)	P2(4)	P3(11)	P4(7)	P5(3)	P1(8)	P2(2)	P3(9)	P4(5)	P5(1)
P1(6)	P3(7)	P4(3)	P1(4)	P3(5)	P4(1)	P1(2)	P3(3)		

GANTT CHART :-

P1	P2	P3	P4	P5	P1	P2	P3	P4	P5	
0	2	4	6	8	10	12	14	16	18	19

P1	P3	P4	P1	P3	P4	P1	P3	P3	
19	21	23	25	27	29	30	32	34	35

SCHEDULING ALGORITHMS

P ID	AT	BT	CT	TAT	WT
				CT – AT	TAT- BT
P1	0	24	30	30	6
P2	0	3	7	7	4
P3	0	3	10	10	7
				AVG= sum/no. of process /=	AVG= sum/no. of process /=

TQ = 4

READY QUEUE

P1(24)	P2(3)	P3(3)	P1(20)						
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0

GANTT CHART: -

P1 (24-4)	P2	P3	P1						
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0 4 7 10 30