gradeup

Process Management Part-3

Content:-
1. Scheduling Algorithm
a. Shortest Remaining Time Next Algorithm(SRTN)
b. Priority Based Non-Pre-emptive Scheduling
c. Priority Based Pre-emptive scheduling
d. Round Robin Scheduling

a. **Shortest Remaining Time Next Algorithm(SRTN) :-** This is a pre-emptive algorithm , wherein the next job to be dispatched will be the one that happens to be shortest amongst the pending jobs, at the time making the decision . However, if a process arrives later, whose next burst happens to be shorter than the remaining burst time of the currently running process, the currently running process will be pre-emted by the new process.

Process	Arrival Time ms	Next Burst ms
P_0	0	10
P_1	1	6
P_2	3	2
P_3	5	4

EX-3

Average Turnover Time :- 10ms
Average Waiting Time :- 4.5 ms

b. Priority – Based Non- Pre-emtive Algorithm:-More critical processes are assigned a priority higher than the less critical ones . At the time of scheduling , a process dispatched will be the one that has highest priority amongst the processes waiting in the ready queue.

Process	Arrival Time ms	Next Burst ms	Process Priority
P_0	0	10	5
P_1	1	6	4
P_2	3	2	2
P_3	5	4	0

Ex-4

Average Turn Over Time :- 13.25 ms
Average waiting Time :- 7.75ms

NOTE:-
W_T & T_{AT} of FCFS >SJF > SRTM

c. Priority-Based with pre-emptive Scheduling :-At the time of scheduling , a process dispatched will be the one that has highest priority amongst the processes waiting in the Ready Queue. When a process P_1 is executing , if another processP_1 of higher priority become ready to run during its execution, then P_1will be preemted by p_j.

Process	Arrival Time ms	Next Burst ms	Process Priority
P_0	0	10	5
P_1	1	6	4

P_2	**3**	**2**	**2**
P_3	**5**	**4**	**0**

Ex-5

Average Turn Over Time :- 12.5 ms
Average waiting Time :-4.5ms

NOTE:-
Priority Pre-emtive $W_T T_A$ <Priority Non-Pre-emtive

d. Round Robin Scheduling :-This scheduling algorithm is specially tailor for interactive Time-Sharing Systems. A small unit of time, called Time-slice of Time Quantum is defined.

Process	Arrival Time ms	Next Burst ms
P_0	**0**	**10**
P_1	**1**	**6**
P_2	**3**	**2**
P_3	**5**	**4**

Time Slice = 4ms
Ex- 6

Average Turn Over Time :- 8.75ms
Average waiting Time :-14.25 ms