



CSC 227

Operating Systems

Course Project

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Task Distribution

Task	Student
Implement PCB class & SJF scheduling algorithm	Arwa Alfarhood, Lujain Alsuleiman, Reema almadhi
Implement Round Robin scheduling algorithm	Arwa Alfarhood, Lujain Alsuleiman, shoug alsaleem
Implement Preemption between queues	Lujain Alsuleiman, shoug alsaleem
Implement generate report method And calculating averages	Arwa Alfarhood
Setting up report	Arwa Alfarhood, Lujain Alsuleiman ,Reema almadhi, shoug alsaleem

Test cases:

Round Robin Scheduling Algorithm:

Case: some processes have less/equal/more CPU burst time than quantum:

Process#	Arrival time	Burst time
A	0	6
B	2	2
C	3	4
D	7	3

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Scheduling Order: [ P1 | P2 | P3 | P4 | P1 | P3 | ]

ProcessID | Pr | AT | Burst | ST | ET | TT | WT | RT
P2         | 1  | 2  | 2      | 3  | 5  | 3  | 1  | 1
P4         | 1  | 7  | 3      | 8  | 11 | 4  | 1  | 1
P1         | 1  | 0  | 6      | 0  | 14 | 14 | 8  | 0
P3         | 1  | 3  | 4      | 5  | 15 | 12 | 8  | 2

Average Turnaround Time: 8.25
Average Waiting Time: 4.5
Average Response Time: 1.0

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Non-preemptive Shortest-Job-First:

Process#	Arrival time	Burst time
A	0	5
B	0	3
C	1	2
D	2	6

Scheduling Order: [P2 | P3 | P1 | P4 |]

ProcessID	Pr	AT	Burst	ST	ET	TT	WT	RT
P2	2	0	3	0	3	3	0	0
P3	2	1	2	3	5	4	2	2
P1	2	0	5	5	10	10	5	5
P4	2	2	6	10	16	14	8	8

Average Turnaround Time: 7.75

Average Waiting Time: 3.75

Average Response Time: 3.75

Preemption with a newly arriving process has a higher priority than the currently executing process:

Process#	Arrival time	Burst time	Priority
A	0	4	2
B	2	3	1
C	5	5	2
D	5	6	1

Scheduling Order: [P1 | P2 | P4 | P4 | P1 | P3 |]

ProcessID	Pr	AT	Burst	ST	ET	TT	WT	RT
P2	1	2	3	2	5	3	0	0
P4	1	5	6	5	11	6	0	0
P1	2	0	4	0	13	13	9	0
P3	2	5	5	13	18	13	8	8

Average Turnaround Time: 8.75

Average Waiting Time: 4.25

Average Response Time: 2.0

A screenshot of the Report:

File Edit View

Process	ID	Pr	AT	Burst	ST	ET	TT	WT	RT
P2		1	2	3	2	5	3	0	0
P4		1	5	6	5	11	6	0	0
P1		2	0	4	0	13	13	9	0
P3		2	5	5	13	18	13	8	8

Average Turnaround Time: 8.75

Average Waiting Time: 4.25

Average Response Time: 2.0

Teamwork Evaluation:

Criteria	Student 1	Student 2	Student 3	Student 4
Work division				
Peer evaluation				
Project discussion				
Time management				
Total/4				