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 Modul 11 praktikum SO

Process	Arrival time	Burst time	Service time	Priority
P0	0	7	0	1
P1	1	3	7	2
P2	2	10	10	3
P3	3	2	20	4

### 1. FCFS

Process	Wait time
P0	0
P1	7
P2	10
P3	20
Average waiting time	9.25
Average Response time	9.25
Average Turnaround time	14.75

The screenshot shows the 'OS Sim' application window. The 'Process Scheduling Information' panel is active, displaying the following statistics:

- Efficiency (%): 1.00
- Throughput (processes/time unit): 0.18
- Avg. Turnaround Time (time): 14.75
- Avg. Waiting Time (time): 9.25
- Avg. Response Time (time): 9.25

Below the statistics is a table showing the execution details for each process:

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
9	P0	1	0	-	7	0	0	7	1.0	0.0
10	P1	2	0	-	3	7	7	10	0.3	0.0
11	P2	3	0	-	10	10	10	20	0.5	0.0
12	p3	1	0	-	2	20	20	22	0.0909090...	0.0

The 'Time: 22 units' indicator is visible at the top right of the simulation window.

## 2. SJFS

### A. Non Preemptive

Efficiency (%)	1.00
Throughput (processes/time unit)	0.18
Avg. Turnaround Time (time)	10.25
Avg. Waiting Time (time)	4.75
Avg. Response Time (time)	4.75

  

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
16	P3	3	0	-	2	0	0	2	1.0	0.0
14	P1	2	0	-	3	2	2	5	0.6	0.0
13	P0	4	0	-	7	5	5	12	0.5833333...	0.0
15	P2	1	0	-	10	12	12	22	0.4545454...	0.0

Process	Wait time
P0	5
P1	2
P2	12
P3	0
Average waiting time	4.75
Average Response time	4.75
Average Turnaround time	10.25

### B. Preemptive

Efficiency (%)	1.00
Throughput (processes/time unit)	0.18
Avg. Turnaround Time (time)	10.25
Avg. Waiting Time (time)	4.75
Avg. Response Time (time)	4.75

  

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
16	P3	3	0	-	2	0	0	2	1.0	0.0
14	P1	2	0	-	3	2	2	5	0.6	0.0
13	P0	4	0	-	7	5	5	12	0.5833333...	0.0
15	P2	1	0	-	10	12	12	22	0.4545454...	0.0

Process	Wait time
P0	5
P1	2
P2	12
P3	0
Average waiting time	4.75
Average Response time	4.75
Average Turnaround time	10.25

### 3. Priority Scheduling

Process Scheduling Information											
Efficiency (%)		1.00									
Throughput (processes/time unit)		0.18									
Avg. Turnaround Time (time)		12.50									
Avg. Waiting Time (time)		7.00									
Avg. Response Time (time)		7.00									
PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO	
13	P0	4	0	-	7	0	0	7	1.0	0.0	
16	P3	3	0	-	2	7	7	9	0.2222222...	0.0	
14	P1	2	0	-	3	9	9	12	0.25	0.0	
15	P2	1	0	-	10	12	12	22	0.4545454...	0.0	

Process	Wait time
P0	0
P1	9
P2	12
P3	7
Average waiting time	7.00
Average Response time	7.00
Average Turnaround time	12.50

#### 4. Round Robbin

Process Scheduling Information										
<div> <div>Efficiency (%)</div> <div>1.00</div> </div> <div> <div>Throughput (processes/time unit)</div> <div>0.18</div> </div> <div> <div>Avg. Turnaround Time (time)</div> <div>14.50</div> </div> <div> <div>Avg. Waiting Time (time)</div> <div>9.00</div> </div> <div> <div>Avg. Response Time (time)</div> <div>5.50</div> </div>										
PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
14	P1	2	0	-	3	4	4	7	0.4285714...	0.0
16	P3	3	0	-	2	11	11	13	0.1538461...	0.0
13	P0	4	0	-	7	0	9	16	0.4375	0.0
15	P2	1	0	-	10	7	12	22	0.4545454...	0.0

Process	Wait time
P0	15
P1	7
P2	22
P3	13
Average waiting time	9.00
Average Response time	5.50
Average Turnaround time	14.50