NAMA   : Hanifah Elvira Sukma Dewi
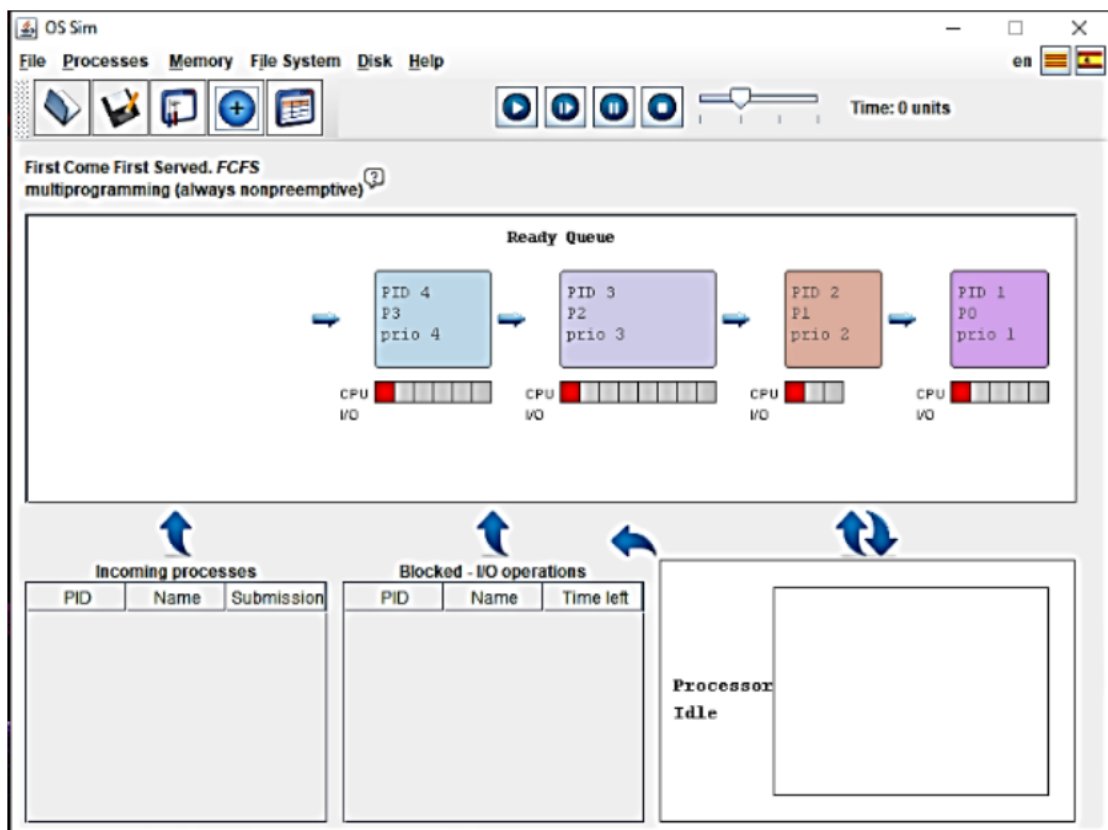
NIM   : L200180124
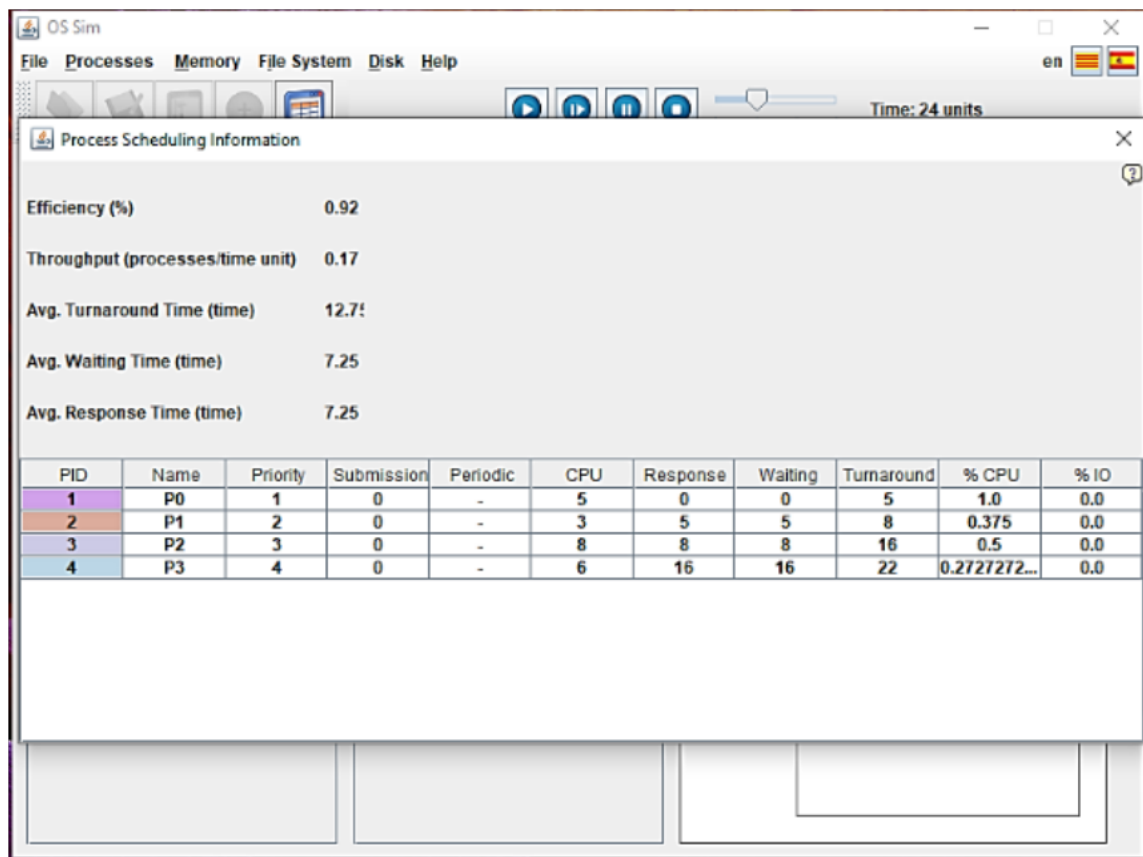
KELAS   : C

Modul 11

1. FCFS

Process	Arrival Time	Burst Time	Service Time
P0	0	5	0
P1	1	3	5
P2	2	8	8
P3	3	6	16

OS Sim — Process Scheduling Information

Efficiency (%)	0.92
Throughput (processes/time unit)	0.17
Avg. Turnaround Time (time)	12.7!
Avg. Waiting Time (time)	7.25
Avg. Response Time (time)	7.25

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
1	P0	1	0	-	5	0	0	5	1.0	0.0
2	P1	2	0	-	3	5	5	8	0.375	0.0
3	P2	3	0	-	8	8	8	16	0.5	0.0
4	P3	4	0	-	6	16	16	22	0.2727272...	0.0

Process	Wait Time : Service Time − Arrival Time
P0	0
P1	5
P2	8
P3	16
Av wait time	7.25

2. SJF

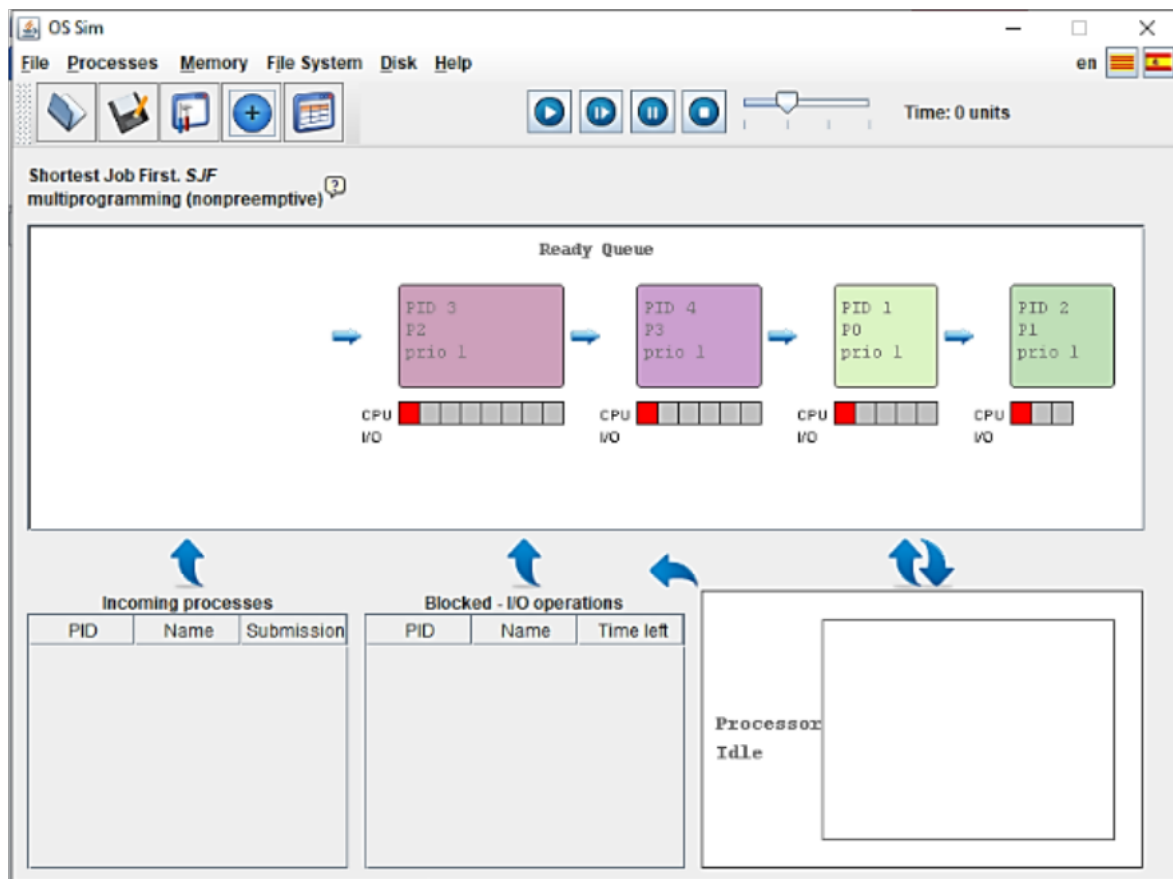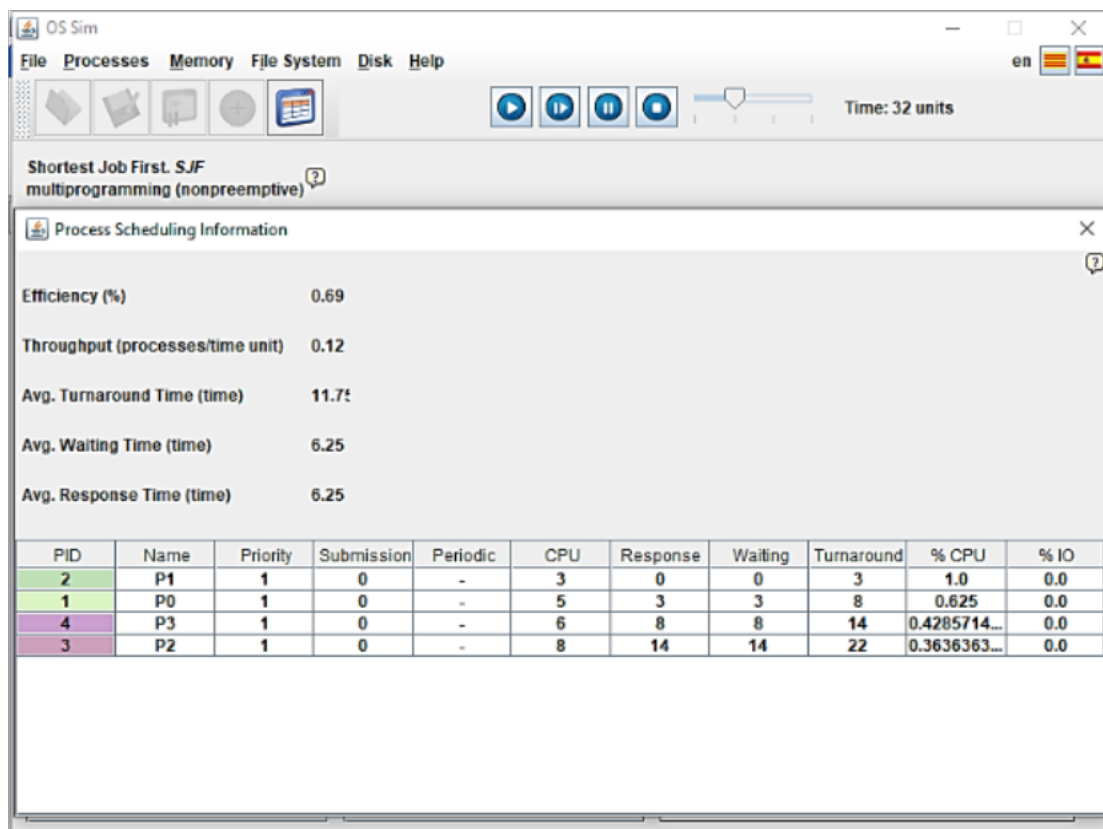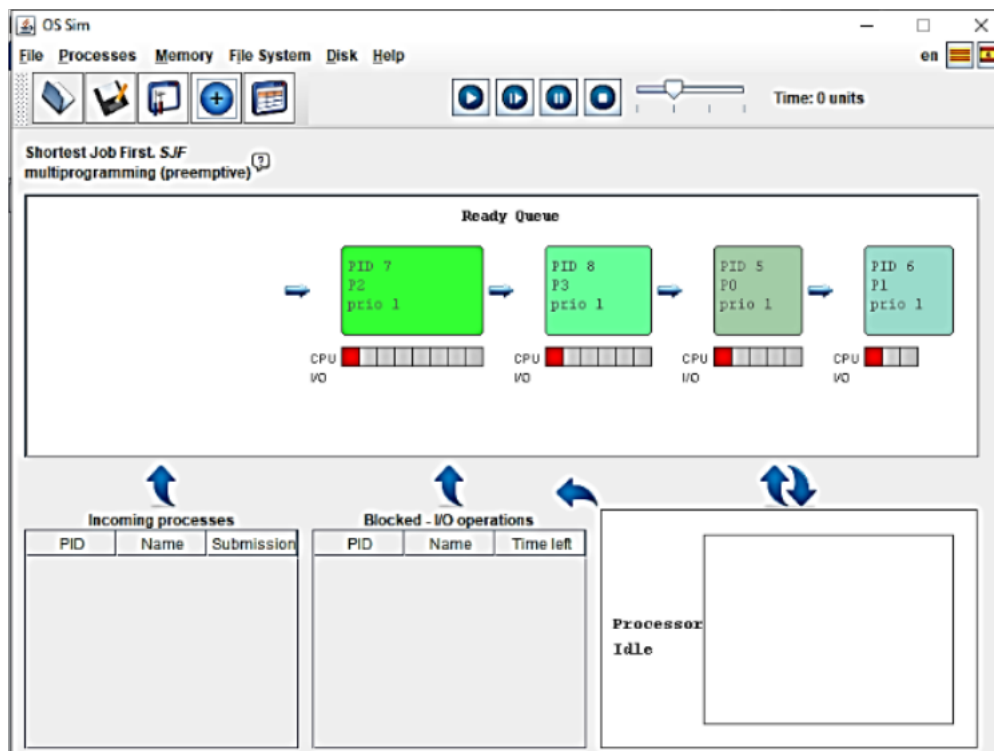| Process	Arrival Time	Burst Time	Service Time
P0	0	5	0
P1	1	3	5
P2	2	8	8
P3	3	6	16

Non-preemptive

Proces s	Wait Time : Service Time − Arrival Time
P0	3
P1	0
P2	14
P3	8
Av wait time	6.25

Preemptive

Process	Arrival Time	Burst Time	Service Time
P0	0	5	0
P1	1	3	5
P2	2	8	8

P3	3	6	16

Process Scheduling Information

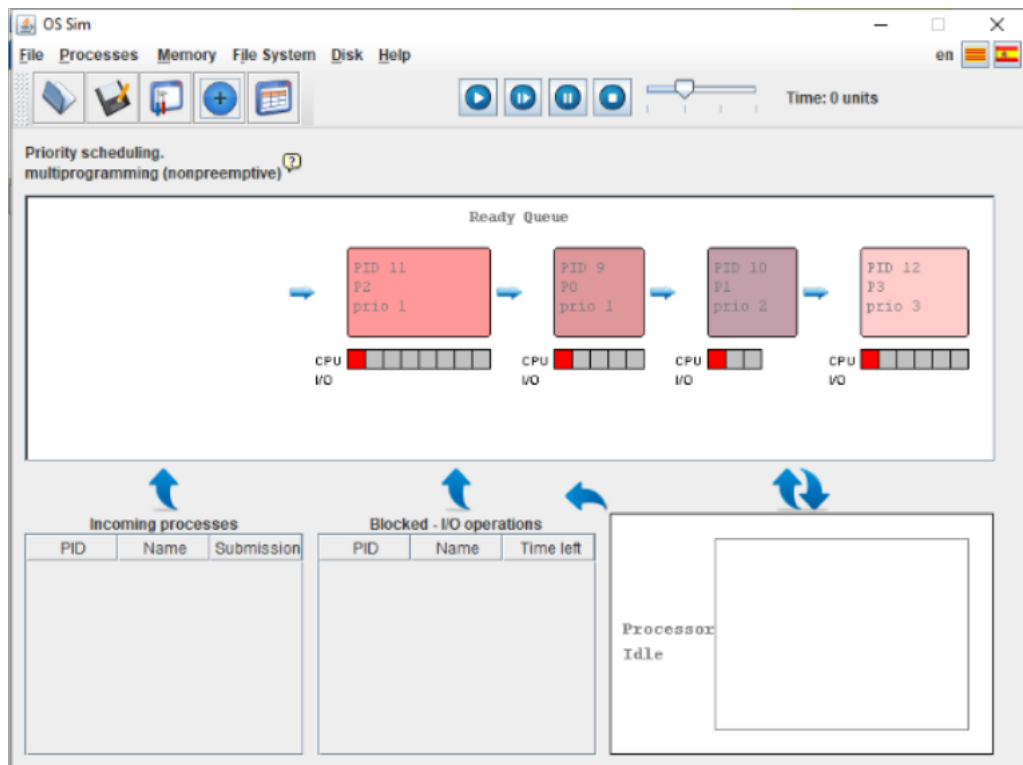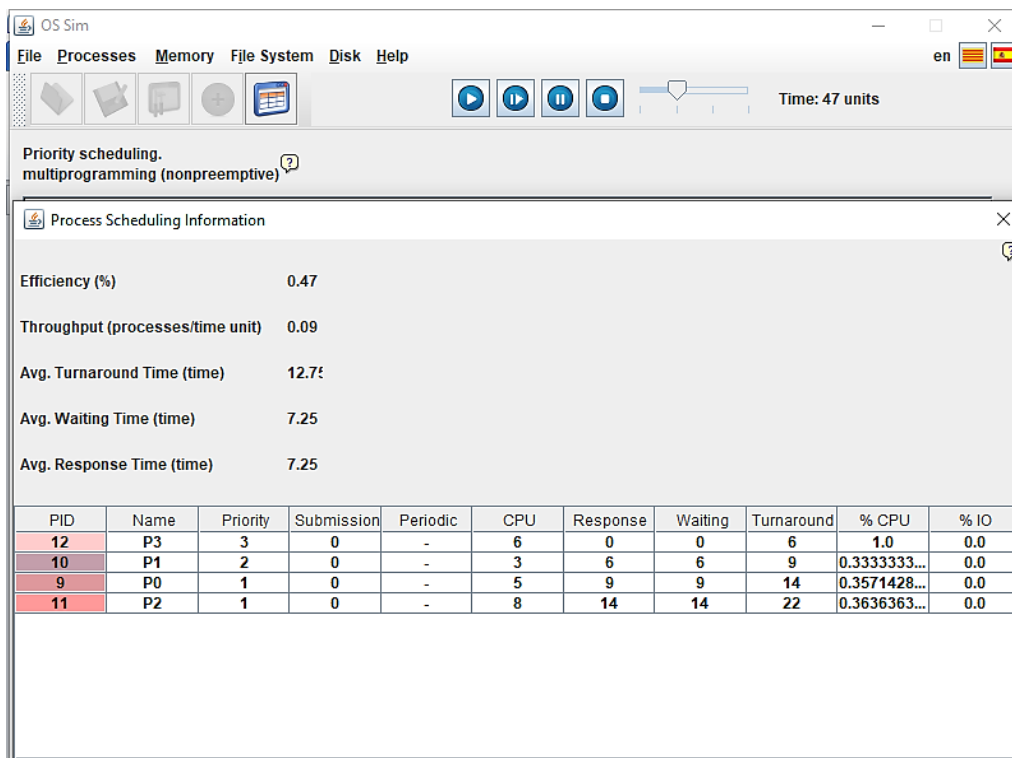|	
Efficiency (%)	0.33
Throughput (processes/time unit)	0.06
Avg. Turnaround Time (time)	11.75
Avg. Waiting Time (time)	6.25
Avg. Response Time (time)	6.25

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
6	P1	1	0	-	3	0	0	3	1.0	0.0
5	P0	1	0	-	5	3	3	8	0.625	0.0
8	P3	1	0	-	6	8	8	14	0.4285714...	0.0
7	P2	1	0	-	8	14	14	22	0.3636363...	0.0

Process	Wait Time : Service Time − Arrival Time
P0	3
P1	0
P2	14
P3	8
Av wait time	6.25

3. Priority

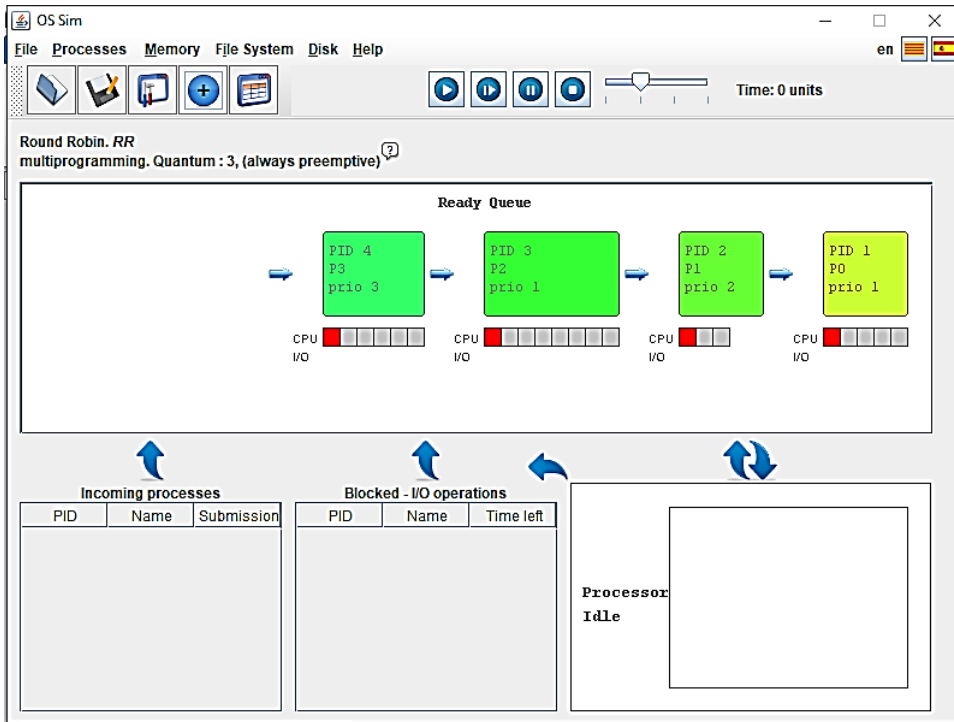| Process	Arrival Time	Burst Time	Priority	Service Time
P0	0	5	1	0
P1	1	3	2	11
P2	2	8	1	14
P3	3	6	3	5

File   Processes   Memory   File System   Disk   Help   en

Time: 47 units

Priority scheduling.
multiprogramming (nonpreemptive)

Process Scheduling Information

Efficiency (%)	0.47
Throughput (processes/time unit)	0.09
Avg. Turnaround Time (time)	12.75
Avg. Waiting Time (time)	7.25
Avg. Response Time (time)	7.25

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
12	P3	3	0	-	6	0	0	6	1.0	0.0
10	P1	2	0	-	3	6	6	9	0.3333333...	0.0
9	P0	1	0	-	5	9	9	14	0.3571428...	0.0
11	P2	1	0	-	8	14	14	22	0.3636363...	0.0

Process	Wait Time : Service Time − Arrival Time
P0	9
P1	6
P2	14
P3	0
Av wait time	7.25

4. Round Robin (quantum time = 3)

Process	Arrival Time	Burst Time	Priority	Service Time
P0	0	5	1	0
P1	1	3	2	11
P2	2	8	1	14
P3	3	6	3	5

OS Sim

File Processes Memory File System Disk Help en

Time: 0 units

Round Robin. *RR*
multiprogramming. Quantum : 3, (always preemptive)

Ready Queue

PID 4	PID 3	PID 2	PID 1
P3	P2	P1	P0
prio 3	prio 1	prio 2	prio 1

CPU I/O   CPU I/O   CPU I/O   CPU I/O

Incoming processes

PID	Name	Submission

Blocked - I/O operations

PID	Name	Time left

Processor
Idle

OS Sim

File Processes Memory File System Disk Help en

Time: 31 units

Round Robin. *RR*
multiprogramming. Quantum : 3, (always preemptive)

Process Scheduling Information

Efficiency (%)   0.71

Throughput (processes/time unit)   0.13

Avg. Turnaround Time (time)   15.5(

Avg. Waiting Time (time)   10.0(

Avg. Response Time (time)   4.50

PID	Name	Priority	Submission	Periodic	CPU	Response	Waiting	Turnaround	% CPU	% IO
2	P1	2	0	-	3	3	3	6	0.5	0.0
1	P0	1	0	-	5	0	9	14	0.3571428...	0.0
4	P3	3	0	-	6	9	14	20	0.3	0.0
3	P2	1	0	-	8	6	14	22	0.3636363...	0.0

Process	Wait Time : Service Time − Arrival Time
P0	9
P1	3
P2	14
P3	14
Av wait time	10