

CPU Scheduling — Combined Report

Case: out_case1

FCFS

Statistics

Metric	Value
Max Waiting Time	4.003
Avg Waiting Time	2.252
Max Turnaround Time	8.003
Avg Turnaround Time	5.502
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.954 %
Total Context Switches	3
Makespan	13.003

Timeline

```
[ 0 ] -- P001 -- [ 4 ]
[ 4.001 ] -- P002 -- [ 7.001 ]
[ 7.002 ] -- P003 -- [ 9.002 ]
[ 9.003 ] -- P004 -- [ 13.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
P001,0.0,4.0,2,4.0
P002,2.0,3.0,1,7.001
P003,4.0,2.0,3,9.002
P004,5.0,4.0,2,13.003
```

NonPreemptivePriority

Statistics

Metric	Value
Max Waiting Time	7.003
Avg Waiting Time	2.752
Max Turnaround Time	9.003
Avg Turnaround Time	6.002
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.954 %
Total Context Switches	3
Makespan	13.003

Timeline

```
[ 0 ] -- P001 -- [ 4 ]
[ 4.001 ] -- P002 -- [ 7.001 ]
[ 7.002 ] -- P004 -- [ 11.002 ]
[ 11.003 ] -- P003 -- [ 13.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
P001,0.0,4.0,2,4.0
P002,2.0,3.0,1,7.001
P003,4.0,2.0,3,13.003
P004,5.0,4.0,2,11.002
```

NonPreemptiveSJF

Statistics

Metric	Value
Max Waiting Time	4.003
Avg Waiting Time	2.002
Max Turnaround Time	8.003
Avg Turnaround Time	5.252
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.954 %
Total Context Switches	3
Makespan	13.003

Timeline

```
[ 0 ] -- P001 -- [ 4 ]
[ 4.001 ] -- P003 -- [ 6.001 ]
[ 6.002 ] -- P002 -- [ 9.002 ]
[ 9.003 ] -- P004 -- [ 13.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
P001,0.0,4.0,2,4.0
P002,2.0,3.0,1,9.002
P003,4.0,2.0,3,6.001
P004,5.0,4.0,2,13.003
```

PreemptivePriority

Statistics

Metric	Value
Max Waiting Time	7.003
Avg Waiting Time	3.002
Max Turnaround Time	9.003

Avg Turnaround Time	6.252
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.954 %
Total Context Switches	3
Makespan	13.003

Timeline

```
[ 0 ] -- P001 -- [ 2 ]
[ 2 ] -- P002 -- [ 4 ]
[ 4 ] -- P002 -- [ 5 ]
[ 5 ] -- P002 -- [ 5 ]
[ 5.001 ] -- P001 -- [ 7.001 ]
[ 7.002 ] -- P004 -- [ 11.002 ]
[ 11.003 ] -- P003 -- [ 13.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
P001,0.0,4.0,2,7.001
P002,2.0,3.0,1,5.0
P003,4.0,2.0,3,13.003
P004,5.0,4.0,2,11.002
```

PreemptiveSJF

Statistics

Metric	Value
Max Waiting Time	4.004
Avg Waiting Time	2.002
Max Turnaround Time	8.004
Avg Turnaround Time	5.252
Throughput (T -> completed processes)	

50	4
100	4
150	4
200	4
CPU Efficiency	99.938 %
Total Context Switches	4
Makespan	13.004

Timeline

```
[ 0 ] -- P001 -- [ 2 ]
[ 2 ] -- P001 -- [ 4 ]
[ 4.001 ] -- P003 -- [ 5 ]
[ 5.001 ] -- P003 -- [ 6.002 ]
[ 6.003 ] -- P002 -- [ 9.003 ]
[ 9.004 ] -- P004 -- [ 13.004 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
P001,0.0,4.0,2,4.0
P002,2.0,3.0,1,9.003
P003,4.0,2.0,3,6.002000000000001
P004,5.0,4.0,2,13.004
```

RoundRobin

Statistics

Metric	Value
Max Waiting Time	4.003
Avg Waiting Time	2.252
Max Turnaround Time	8.003
Avg Turnaround Time	5.502
Throughput (T -> completed processes)	
50	4
100	4
150	4

200	4
CPU Efficiency	99.954 %
Total Context Switches	3
Makespan	13.003

Timeline

```
[ 0 ] -- P001 -- [ 4 ]
[ 4.001 ] -- P002 -- [ 7.001 ]
[ 7.002 ] -- P003 -- [ 9.002 ]
[ 9.003 ] -- P004 -- [ 13.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
P001,0.0,4.0,2,4.0
P002,2.0,3.0,1,7.001
P003,4.0,2.0,3,9.002
P004,5.0,4.0,2,13.003
```

Case: out_case2

FCFS

Statistics

Metric	Value
Max Waiting Time	13.003
Avg Waiting Time	5.752
Max Turnaround Time	19.003
Avg Turnaround Time	11.252
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.973 %

Total Context Switches	3
Makespan	22.003

Timeline

```
[ 0 ] -- A -- [ 5 ]
[ 5.001 ] -- B -- [ 8.001 ]
[ 8.002 ] -- C -- [ 16.002 ]
[ 16.003 ] -- D -- [ 22.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
A,0.0,5.0,1,5.0
B,1.0,3.0,2,8.001000000000001
C,2.0,8.0,1,16.002000000000002
D,3.0,6.0,3,22.003000000000004
```

NonPreemptivePriority

Statistics

Metric	Value
Max Waiting Time	13.003
Avg Waiting Time	7.002
Max Turnaround Time	19.003
Avg Turnaround Time	12.502
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.973 %
Total Context Switches	3
Makespan	22.003

Timeline

```
[ 0 ] -- A -- [ 5 ]
[ 5.001 ] -- C -- [ 13.001 ]
[ 13.002 ] -- B -- [ 16.002 ]
[ 16.003 ] -- D -- [ 22.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
A,0.0,5.0,1,5.0
B,1.0,3.0,2,16.00200000000002
C,2.0,8.0,1,13.00100000000001
D,3.0,6.0,3,22.00300000000004
```

NonPreemptiveSJF

Statistics

Metric	Value
Max Waiting Time	12.003
Avg Waiting Time	5.252
Max Turnaround Time	20.003
Avg Turnaround Time	10.752
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.973 %
Total Context Switches	3
Makespan	22.003

Timeline

```
[ 0 ] -- A -- [ 5 ]
[ 5.001 ] -- B -- [ 8.001 ]
[ 8.002 ] -- D -- [ 14.002 ]
[ 14.003 ] -- C -- [ 22.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
A,0.0,5.0,1,5.0
B,1.0,3.0,2,8.001000000000001
C,2.0,8.0,1,22.003
D,3.0,6.0,3,14.002
```

PreemptivePriority

Statistics

Metric	Value
Max Waiting Time	13.003
Avg Waiting Time	7.002
Max Turnaround Time	19.003
Avg Turnaround Time	12.502
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.973 %
Total Context Switches	3
Makespan	22.003

Timeline

```
[ 0 ] -- A -- [ 1 ]
[ 1 ] -- A -- [ 2 ]
[ 2 ] -- A -- [ 3 ]
[ 3 ] -- A -- [ 5 ]
[ 5 ] -- A -- [ 5 ]
[ 5.001 ] -- C -- [ 13.001 ]
[ 13.002 ] -- B -- [ 16.002 ]
[ 16.003 ] -- D -- [ 22.003 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
A,0.0,5.0,1,5.0
B,1.0,3.0,2,16.00200000000002
```

C,2.0,8.0,1,13.001000000000001
 D,3.0,6.0,3,22.003000000000004

Preemptive SJF

Statistics

Metric	Value
Max Waiting Time	12.003
Avg Waiting Time	5.002
Max Turnaround Time	20.003
Avg Turnaround Time	10.502
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.973 %
Total Context Switches	3
Makespan	22.003

Timeline

```
[ 0 ] -- A -- [ 1 ]
[ 1 ] -- B -- [ 2 ]
[ 2 ] -- B -- [ 3 ]
[ 3 ] -- B -- [ 4 ]
[ 4.001 ] -- A -- [ 8.001 ]
[ 8.002 ] -- D -- [ 14.002 ]
[ 14.003 ] -- C -- [ 22.003 ]
```

Processes (CSV)

pid	arrival	burst	priority	completion
A	0.0	5.0	1	8.001000000000001
B	1.0	3.0	2	4.0
C	2.0	8.0	1	22.003
D	3.0	6.0	3	14.002

RoundRobin

Statistics

Metric	Value
Max Waiting Time	13.006
Avg Waiting Time	9.254
Max Turnaround Time	19.006
Avg Turnaround Time	14.754
Throughput (T -> completed processes)	
50	4
100	4
150	4
200	4
CPU Efficiency	99.945 %
Total Context Switches	6
Makespan	22.006

Timeline

```
[ 0 ] -- A -- [ 4 ]
[ 4.001 ] -- B -- [ 7.001 ]
[ 7.002 ] -- C -- [ 11.002 ]
[ 11.003 ] -- D -- [ 15.003 ]
[ 15.004 ] -- A -- [ 16.004 ]
[ 16.005 ] -- C -- [ 20.005 ]
[ 20.006 ] -- D -- [ 22.006 ]
```

Processes (CSV)

```
pid,arrival,burst,priority,completion
A,0.0,5.0,1,16.00399999999998
B,1.0,3.0,2,7.001
C,2.0,8.0,1,20.005
D,3.0,6.0,3,22.006
```

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