

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
P003,4.0,2.0,3,6.0020000000000001
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,1.0,3.0,2,8.0010000000000001
C,2.0,8.0,1,16.0020000000000002
D,3.0,6.0,3,22.0030000000000004
```

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,1.0,3.0,2,16.0020000000000002  
C,2.0,8.0,1,13.0010000000000001  
D,3.0,6.0,3,22.0030000000000004
```

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,1.0,3.0,2,8.0010000000000001
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,1.0,3.0,2,16.0020000000000002
```

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

PreemptiveSJF

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,0.0,5.0,1,16.003999999999998  
B,1.0,3.0,2,7.001  
C,2.0,8.0,1,20.005  
D,3.0,6.0,3,22.006
```

Generated by report_generator.py