```
1 }
Enter number of processes: 3
Burst time P1: 2
Burst time P2: 5
Burst time P3: 7

P  BT  WT  TAT
1  2  0  2
2  5  2  7
3  7  7  14
(base) PS C:\Users\ACER\Desktop\operating system>
```

```
Enter number of processes: 4
BT P1: 2
BT P2: 15
BT P3: 3
BT P4: 6

P BT WT TAT
1 2 0 2
3 3 2 5
4 6 5 11
2 15 11 26
(base) PS C:\Users\ACER\Desktop\operating system>
```

2

```
Enter number of processes: 3

AT BT P1: 0 5
AT BT P2: 1 3
AT BT P3: 2 4

--- SRTN Scheduling Timeline ---
Time 0: Executing P1 (Remaining: 4)
Time 1: Executing P2 (Remaining: 2)  // P2 arrives, shorter than P1's remaining 4
Time 2: Executing P2 (Remaining: 1)
Time 3: Executing P2 (Remaining: 0)  // P2 completes
Time 4: Executing P1 (Remaining: 3)  // Back to P1 (rem: 3) vs P3 (rem: 4)
Time 5: Executing P1 (Remaining: 2)
Time 6: Executing P1 (Remaining: 1)
Time 7: Executing P1 (Remaining: 0)  // P1 completes
Time 8: Executing P3 (Remaining: 3)  // Only P3 left
Time 9: Executing P3 (Remaining: 2)
Time 10: Executing P3 (Remaining: 1)
Time 11: Executing P3 (Remaining: 0) // P3 completes

SRTN execution completed at time 12
```

3

```
Enter number of processes: 3

BT P1: 10
BT P2: 5
BT P3: 8

Time quantum: 3

--- Round Robin Scheduling Timeline ---
Time 0: Executing P1 for 3 units (Remaining: 7)
Time 3: Executing P2 for 3 units (Remaining: 2)
Time 6: Executing P3 for 3 units (Remaining: 5)
Time 9: Executing P1 for 3 units (Remaining: 4)
Time 12: Executing P2 for 2 units (Completed)
Time 14: Executing P3 for 3 units (Remaining: 2)
Time 17: Executing P1 for 3 units (Remaining: 1)
Time 20: Executing P3 for 2 units (Completed)
Time 22: Executing P1 for 1 units (Completed)

RR completed at time 23
```

4

```
1 }
Enter number of processes: 3
Enter Burst Time and Priority for P1: 3 2
Enter Burst Time and Priority for P2: 4 1
Enter Burst Time and Priority for P3: 6 3

Process BT      Priority        WT      TAT
P2      4       1               0       4
P1      3       2               4       7
P3      6       3               7       13
(base) PS C:\Users\ACER\Desktop\operating system>
```

5

```
Enter number of processes: 3
Enter AT BT Priority for P1: 0 7 2
Enter AT BT Priority for P2: 2 4 1
Enter AT BT Priority for P3: 4 1 3

Process AT      BT      Priority        WT      TAT
P1      0       7       2               4       11
P2      2       4       1               0       4
P3      4       1       3               7       8
(base) PS C:\Users\ACER\Desktop\operating system>
```

6

7

```
Enter number of memory blocks: 4
Enter number of processes: 3
Enter size of each block:
500
200
170
300
Enter size of each process:
256
489
225

Process Size    Block
P1      256     B1
P2      489     Not Allocated
P3      225     B1
```

8

```
Enter number of memory blocks: 3
Enter number of processes: 2
Enter size of each block:
200
500
120
Enter size of each process:
109
300

Process Size    Block
P1      109     B3
P2      300     B2
```

9

```
Enter number of memory blocks: 3
Enter number of processes: 2
Enter size of each block:
200
500
333
Enter size of each process:
100
400

Process Size    Block
P1      100     B2
P2      400     B2
```

10

```
Enter number of processes: 3
Enter number of resources: 2
Enter Allocation matrix:
1 0
0 1
1 1
Enter Max matrix:
2 1
1 2
2 2
Enter Available resources:
1 1
System is in SAFE state
Safe sequence: P0 P1 P2
```

11

```
Enter number of processes: 2
Enter number of resources: 1
Enter Allocation matrix:
1 0
Enter Request matrix:
1 1
Enter Available resources:
0
Deadlocked Processes: P0 P1
```

13

```
Enter number of pages: 6
Enter page reference string:
1 2 3 2 4 1
Enter number of frames: 2
Frame: 1 -1
Frame: 1 2
Frame: 3 2
Frame: 3 2
Frame: 3 4
Frame: 1 4
Total Page Faults: 5
```

14

```
Enter number of pages: 6
Enter page reference string:
1
2
3
2
1
5
Enter number of frames: 3
Frame: 1 -1 -1
Frame: 1 2 -1
Frame: 1 2 3
Frame: 1 2 3
Frame: 1 2 3
Frame: 5 2 3
Total Page Faults: 4
```

15

```
Enter number of pages: 6
Enter page reference string: 1
2
3
2
1
5
Enter number of frames: 2

Page    Frames
1       1 -
2       1 2
3       3 2
2       3 2
1       1 2
5       1 5

Total Page Faults = 5
```

17

```
Philosopher 0 is thinking
Philosopher 1 is thinking
Philosopher 2 is thinking
Philosopher 3 is thinking
Philosopher 4 is thinking
Philosopher 0 picked left fork
Philosopher 1 picked left fork
Philosopher 2 picked left fork
Philosopher 3 picked left fork
Philosopher 4 picked left fork
```

18

```
Reader 1 is reading
Reader 2 is reading
Reader 3 is reading
Writer 1 is writing
Reader 4 is reading
Reader 5 is reading
Writer 2 is writing
```

19

```
Customer entered. Waiting customers = 1
Barber is cutting hair. Waiting customers = 0
Customer is getting haircut
Customer entered. Waiting customers = 1
No chair available. Customer left
...
```

20

```
Enter number of disk requests: 5
Enter disk request sequence:
15
56
34
78
25
Enter initial head position: 30

Head Movement:
30 -> 15
15 -> 56
56 -> 34
34 -> 78
78 -> 25

Total Head Movement = 175
```

21

```
Enter number of disk requests: 5
Enter disk request sequence:
10
300
180
70
40
Enter initial head position: 55

Head Movement:
55 -> 70
70 -> 40
40 -> 10
10 -> 180
180 -> 300

Total Head Movement = 365
```

22

```
Enter number of requests: 5
Enter request sequence:
70
82
45
30
10
Enter initial head position: 20
Enter disk size: 100
Enter direction (0 = left, 1 = right): 1

Head movement:
20 -> 30
30 -> 45
45 -> 70
70 -> 82
99 -> 82
82 -> 70
70 -> 45
45 -> 30
30 -> 10

Total head movement = 168
```

23

```
Enter number of requests: 5
Enter request sequence:
12
50
34
90
80
Enter initial head position: 22
Enter disk size: 100

Head Movement:
22 -> 34
34 -> 50
50 -> 80
80 -> 90

Total head movement = 77
```

24

```
Enter number of requests: 5
Enter request sequence:
15
23
90
80
50
Enter initial head position: 40
Enter direction (0=left, 1=right): 1

Head Movement:
40 -> 50
50 -> 80
80 -> 90
90 -> 80
80 -> 50
50 -> 23
23 -> 15

Total Head Movement = 125
```

25

```
Enter number of requests: 5
Enter request sequence:
10
60
90
180
170
Enter initial head position: 85

Head Movement:
85 -> 90
90 -> 170
170 -> 180
180 -> 10

Total Head Movement = 265
```

A Lab Report On

Operating system

Faculty of Humanities and Social Science

Tribhuvan University

Submitted by:

Rojip Chhantyal

Roll Number: 53002157

Southwestern State College

Submitted to:

Anupraj poudel

Department of Bachelor of Computer Application (BCA 4th Semester)

Southwestern State College

In the partial fulfilment of the requirements of the degree of Bachelor of Computer Application (BCA 4th Semester)

Basundhara, Kathmandu

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