

```

// Algorithm selection menu
printf("\nSelect Scheduling Algorithm:\n");
printf("1. FCFS\n2. Round Robin\n3. SJF\n4. Priority\n5. Exit\nChoice: ");
scanf("%d", &algo);

switch (algo) {
    case 1:
        segCount = fcfs(tempP, n, gantt);
        for (int i = 0; i < segCount; i++)
            execOrder[i] = gantt[i].pid;
        execCount = segCount;
        break;

    case 2:
        printf("Enter Time Quantum: ");
        scanf("%d", &tq);
        segCount = roundRobin(tempP, n, tq, gantt, execOrder, &execCount);
        break;

    case 3: {
        int type;
        printf("Select SJF Type:\n1. Non-Preemptive\n2. Preemptive\nChoice: ");
        scanf("%d", &type);
        segCount = (type == 1) ? sjfNonPreemptive(tempP, n, gantt)
            : sjfPreemptive(tempP, n, gantt, execOrder, &execCount);
        if (type == 1) {
            for (int i = 0; i < segCount; i++)
                execOrder[i] = gantt[i].pid;
            execCount = segCount;
        }
        break;
    }

    case 4: {
        int type;
        printf("Select Priority Type:\n1. Non-Preemptive\n2. Preemptive\nChoice: ");
        scanf("%d", &type);
        segCount = (type == 1) ? priorityNonPreemptive(tempP, n, gantt)
            : priorityPreemptive(tempP, n, gantt, execOrder, &execCount);
        if (type == 1) {
            for (int i = 0; i < segCount; i++)
                execOrder[i] = gantt[i].pid;
            execCount = segCount;
        }
        break;
    }
}

```

```

case 5:
    printf("Exiting program...\n");
    return 0;

default:
    printf("Invalid choice. Try again.\n");
    continue;
}

// Display results
printGantt(gantt, segCount);
printReadyQueue(execOrder, execCount);
printTable(tempP, n);

```

Output:

```

manasvi@manasvi:/mnt/c/Users/bhute/Desktop/oslab/Assignment3$ gcc 3.c -o first
manasvi@manasvi:/mnt/c/Users/bhute/Desktop/oslab/Assignment3$ ./first

```

Enter number of processes: 5

```

Enter PID, Arrival Time, Burst Time for process 1: 1 2 3
Enter PID, Arrival Time, Burst Time for process 2: 2 3 4
Enter PID, Arrival Time, Burst Time for process 3: 3 4 5
Enter PID, Arrival Time, Burst Time for process 4: 4 5 6
Enter PID, Arrival Time, Burst Time for process 5: 5 6 7

```

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

Choice: 1

Gantt Chart:

```

-----
| P1 | P2 | P3 | P4 | P5 |
-----
2    5    9    14   20   27

```

Ready Queue: P1 | P2 | P3 | P4 | P5

PID	AT	BT	CT	TAT	WT
1	2	3	5	3	0
2	3	4	9	6	2
3	4	5	14	10	5

4	5	6	20	15	9
5	6	7	27	21	14

Average TAT: 11.00

Average WT : 6.00

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

Choice: 2

Enter Time Quantum: 3

Gantt Chart:

| P1 | P2 | P3 | P4 | P5 | P2 | P3 | P4 | P5 | P5 |

2 5 8 11 14 17 18 20 23 26 27

Ready Queue: P1 | P2 | P3 | P4 | P5 | P2 | P3 | P4 | P5 | P5

PID	AT	BT	CT	TAT	WT
-----	----	----	----	-----	----

1	2	3	5	3	0
2	3	4	18	15	11
3	4	5	20	16	11
4	5	6	23	18	12
5	6	7	27	21	14

Average TAT: 14.60

Average WT : 9.60

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

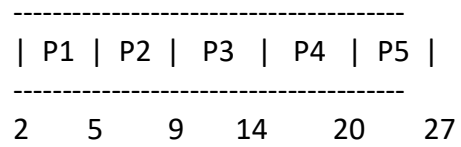
Choice: 3

Select SJF Type:

1. Non-Preemptive
2. Preemptive

Choice: 1

Gantt Chart:



Ready Queue: P1 | P2 | P3 | P4 | P5

PID	AT	BT	CT	TAT	WT
-----	----	----	----	-----	----

1	2	3	5	3	0
2	3	4	9	6	2
3	4	5	14	10	5
4	5	6	20	15	9
5	6	7	27	21	14

Average TAT: 11.00

Average WT : 6.00

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

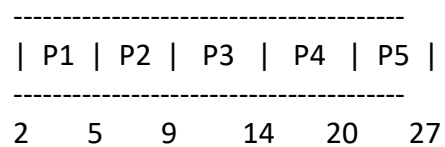
Choice: 3

Select SJF Type:

1. Non-Preemptive
2. Preemptive

Choice: 2

Gantt Chart:



Ready Queue: P1 | P2 | P3 | P4 | P5

PID	AT	BT	CT	TAT	WT
-----	----	----	----	-----	----

1	2	3	5	3	0
2	3	4	9	6	2
3	4	5	14	10	5
4	5	6	20	15	9
5	6	7	27	21	14

Average TAT: 11.00

Average WT : 6.00

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

Choice: 4

Select Priority Type:

1. Non-Preemptive
2. Preemptive

Choice: 1

Priority for P1: 4

Priority for P2: 3

Priority for P3: 5

Priority for P4: 2

Priority for P5: 3

Gantt Chart:

	P1		P4		P2		P5		P3	
2	5		11		15		22		27	

Ready Queue: P1 | P4 | P2 | P5 | P3

PID	AT	BT	CT	TAT	WT
-----	----	----	----	-----	----

1	2	3	5	3	0
2	3	4	15	12	8
3	4	5	27	23	18
4	5	6	11	6	0
5	6	7	22	16	9

Average TAT: 12.00
Average WT : 7.00

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

Choice: 4

Select Priority Type:

1. Non-Preemptive
2. Preemptive

Choice: 2

Priority for P1: 4

Priority for P2: 3

Priority for P3: 5

Priority for P4: 2

Priority for P5: 3

Gantt Chart:

	P1		P2		P4		P2		P5		P1		P3	
2	3		5		11		13		20		22		27	

Ready Queue: P1 | P2 | P4 | P4 | P2 | P5 | P5 | P1 | P3 | P3 | P3

PID	AT	BT	CT	TAT	WT
-----	----	----	----	-----	----

1	2	3	22	20	17
2	3	4	13	10	6
3	4	5	27	23	18
4	5	6	11	6	0
5	6	7	20	14	7

Average TAT: 14.60
Average WT : 9.60

Select Scheduling Algorithm:

1. FCFS
2. Round Robin
3. SJF
4. Priority
5. Exit

Choice: 5

Exiting program...

manasvi@manasvi:/mnt/c/Users/bhute/Desktop/oslab/Assignment3\$