```
// 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:
```
----------------------------------------
| 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: 3

Select SJF Type:
1. Non-Preemptive
2. Preemptive
Choice: 2

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: 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$