

LAB 5: PROCESS SCHEDULING ALGORITHMS

Abubakar Jamil 10662

Q1:

Code:

```
4 //Abubakar 10662
5 int main() {
6     printf("Abubakar 10662\n\n");
7     int p[20],bt[20],pri[20], wt[20],tat[20],i, k, n, temp;
8     float wtavg, tatavg;
9     printf("Enter the number of processes -- ");
10    scanf("%d",&n);
11    for(i=0;i<n;i++) {
12        p[i] = i;
13        printf("Enter the Burst Time & Priority of Process %d- ",i);
14        scanf("%d %d",&bt[i], &pri[i]); }
15    for(i=0;i<n;i++)
16        for(k=i+1;k<n;k++)
17            if(pri[i] > pri[k]) {
18                temp=p[i];
19                p[i]=p[k];
20                p[k]=temp;
21                temp=bt[i];
22                bt[i]=bt[k];
23                bt[k]=temp;
24                temp=pri[i];
25                pri[i]=pri[k];
26                pri[k]=temp;
27            }
28    wtavg = wt[0] = 0;
29    tatavg = tat[0] = bt[0];
30    for(i=1;i<n;i++) {
31        wt[i] = wt[i-1]+ bt[i-1];
32        tat[i] = tat[i-1] + bt[i];
33        wtavg = wtavg + wt[i];
34        tatavg = tatavg + tat[i];
35    }
36    printf("\nProcess\t\tPriority\tBurstTime\tWaitingTime\tTurnAroundTime");
37    for(i=0;i<n;i++)
38        printf("\n%d\t\t%d\t\t%d\t\t%d\t\t%d ",p[i],pri[i],bt[i],wt[i],tat[i]);
39    printf("\nAvg Waiting Time is %f",wtavg/n);
40    printf("\nAvg Turnaround Time is %f",tatavg/n); }
```

Output:

```
D:\University\IOS Lab\Lab Task 5\LabTask5.exe
Abubakar 10662
Enter the number of processes -- 5
Enter the Burst Time & Priority of Process 0- 55
66
Enter the Burst Time & Priority of Process 1- 88
77
Enter the Burst Time & Priority of Process 2- 11
22
Enter the Burst Time & Priority of Process 3- 33
66
Enter the Burst Time & Priority of Process 4- 55
44
Process      Priority      BurstTime      WaitingTime      TurnAroundTime
2            22           11             0               11
4            44           55             11             66
3            66           33             66             99
0            66           55             99             154
1            77           88             154            242
Avg Waiting Time is 66.000000
Avg Turnaround Time is 114.400002
-----
Process exited after 11.61 seconds with return value 0
Press any key to continue . . .
```

X-----X-----X

Q2: Which of the following process scheduling algorithm may lead to starvation?

- a) FIFO.
- b) Round Robin.
- c) Shortest Job First.**
- d) None of the Above.

Explanation:

Shortest job next may lead to process starvation for processes which will require a long time to complete if short processes are continually added.

