

Week-4

Write a C program to simulate multilevel queue scheduling algorithm considering the following scenario. All the process in the system are divided into 2 categories- System processes and user processes. System processes have higher priority. Use FCFS Scheduling for the processes in each queue.

```
#include <stdio.h>
```

```
#define MAX 20
```

```
type def struct
```

```
int main()
```

```
{
```

```
int p[20], bt[20], su[20], wt[20], tat[20], i, k, n, temp;
```

```
float wtavg, tatavg;
```

```
printf("Enter the number of processes:");
```

```
scanf("%d", &n);
```

```
for(i=0; i<n; i++)
```

```
{
```

```
    p[i]=i;
```

```
    printf("Enter the Burst time of process %d:", i);
```

```
    scanf("%d", &bt[i]);
```

```
    printf("System/user process (0/1):");
```

```
    scanf("%d", &su[i]);
```

```
}
```

```
for(i=0; i<n; i++)
```

```
    for(k=i+1; k<n; k++)
```

```
        if(su[i] > su[k])
```

```
{
```

```
    temp = p[i];
```

```
    p[i] = p[k];
```

```
    p[k] = temp;
```

```
    temp = bt[i];
```

```
    bt[i] = bt[k];
```

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System / user process (0/1) ?

Process	System/user Process	Burst Time	Waiting Time	Turnaround Time
0	0	4	0	4
1	0	3	4	7
2	0	5	7	12

Average waiting Time is 3.66667

Average Turnaround Time is 7.66667

Enter the number of processes: 2

Enter the Burst time of process 0: 2

System/user process (0/1): 1

Enter the Burst time of process 1: 3

System/user process (0/1): 1

Process	System/user process	Burst Time	Waiting Time	Turnaround Time
0	1	2	0	2
1	1	3	2	5

Average waiting Time is 1.0000

Average Turnaround Time is 3.50000

6/10

19/7/23

Enter number of processes: 3

Enter the burst time of Process 1 :12

For a System Process(0) Else if its a User Process(1):0

Enter the burst time of Process 2 :24

For a System Process(0) Else if its a User Process(1):1

Enter the burst time of Process 3 :5

For a System Process(0) Else if its a User Process(1):0

Process-ID	System/User Process	Burst Time	Waiting Time	TAT
1	0	12	0	12
3	0	5	12	17
2	1	24	17	41

Average Waiting Time:9.667
Average TurnaroundTime:23.333