**WEEK 5**

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**1BM21CS254**

**Q:** Write a C program to simulate a multi-level queue scheduling algorithm considering the following scenario. All the processes in the system are divided into two categories – system processes and user processes. System processes are to be given higher priority than user processes. Use FCFS scheduling for the processes in each queue.

**#include<stdio.h>**

**int main()**

**{**

**int p[20],bt[20], su[20],at[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("Enter the arrival time of process%d",i);**

**scanf("%d",&at[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];**

**bt[k]=temp;**

**temp=su[i];**

**su[i]=su[k];**

**su[k]=temp;**

**}**

**wtavg = wt[0] = 0;**

**tatavg = tat[0] = bt[0];**

**for(i=1;i<n;i++)**

**{**

**wt[i] = wt[i-1] + bt[i-1];**

**tat[i] = tat[i-1] + bt[i];**

**wtavg = wtavg + wt[i];**

**tatavg = tatavg + tat[i];**

**}**

**printf("\nPROCESS\t\tARRIVAL TIME\t\tSYSTEM/USER PROCESS\t\tBURST TIME\t\tWAITING TIME\t\tTURNAROUND TIME");**

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

**printf("\n%d\t\t\t%d\t\t\t%d\t\t\t%d\t\t\t%d\t\t\t %d ",p[i],at[i],su[i],bt[i],wt[i],tat[i]);**

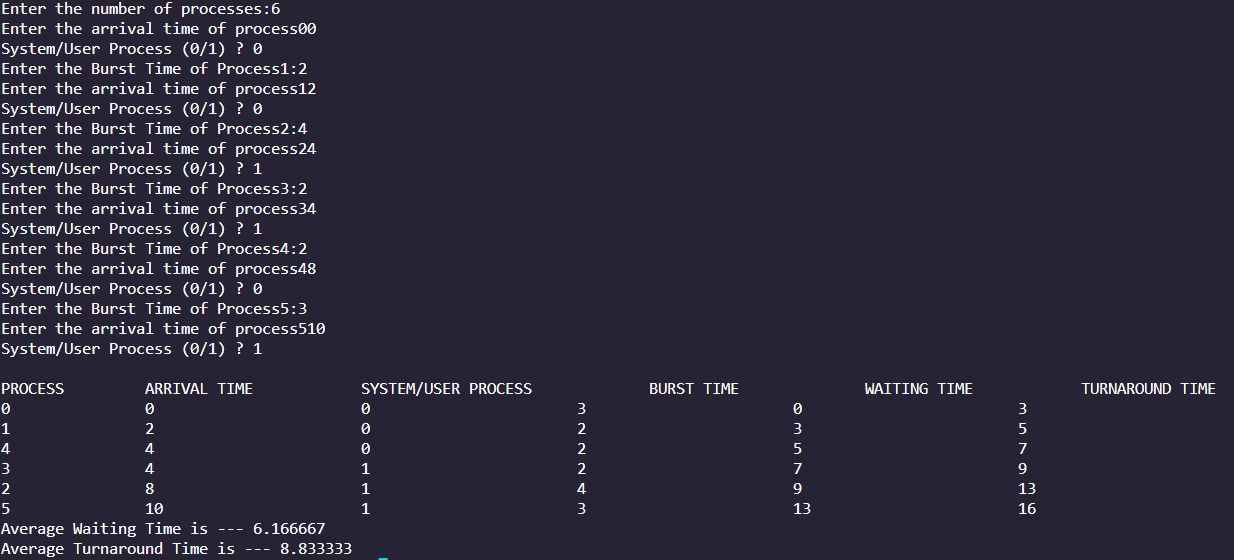
**printf("\nAverage Waiting Time is --- %f",wtavg/n);**

**printf("\nAverage Turnaround Time is --- %f",tatavg/n);**

**return 0;**

**}**

**O/P**

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