CSE2005

Operating Systems

Lab FAT

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Software: Ubuntu for Windows

Question 4 :

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

CODE:

```
#include<stdio.h>
void main()
{
int p[20],at[20],bt[20], su[20], wt[20],tt[20],i, k, n, temp;
float wtavg, ttavg;
printf("Number of processes: ");
scanf("%d",&n);
printf("Assume: All Burst Times are same\n");
for(i=0;i<n;i++)
{
p[i] = i;
```

```
printf("Arrival Time of Process %d: ", i);
scanf("%d",&at[i]);
bt[i]=2;
printf("For System Process, 0 | For User Process, 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=at[i];
at[i]=at[k];
at[k]=temp;
temp=su[i];
su[i]=su[k];
su[k]=temp;
}
wtavg = wt[0] = 0;
ttavg = tt[0] = bt[0];
for(i=1;i<n;i++)
{
wt[i] = wt[i-1] + bt[i-1];
tt[i] = tt[i-1] + bt[i];
wtavg = wtavg + wt[i];
ttavg = ttavg + tt[i];
}
printf("\nPROCESS\t\t SYSTEM/USER PROCESS \tARRIVAL TIME \tBURST
TIME\tWAITING TIME\tTURNAROUND TIME");
```

```
for(i=0;i<n;i++)
printf("\n%d \t\t %d \t\t \t%d \t\t %d \t\t %d \t\t %d ",p[i],su[i],at[i],bt[i],wt[i],tt[i]);
printf("\nAverage Waiting Time:  %f",wtavg/n);
printf("\nAverage Turnaround Time: %f",ttavg/n);
}
```

OUTPUT SCREENSHOTS: