WEEK 2 (18/03/25)

1BM23CS015 (AFEEFAH)

2.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>

void main()

{

int n, iu=0, is=0, i, b;

float wt\_avg, tat\_avg;

printf("Enter no of processes: ");

scanf("%d", &n);

int p[n], up[n], sp[n], ubt[n], sbt[n], bt[n], u[n], wt[n], tat[n];

for(int j=0; j<n; j++)

{

    printf("Enter System/User process (1/0): ");

    scanf("%d",&i);

    printf("Enter burst time: ");

    scanf("%d",&b);

    if(i==1)

    {

        sp[is]=j+1;

        sbt[is++]=b;

    }

    else

    {

        up[iu]=j+1;

        ubt[iu++]=b;

    }

}

for(int j=0; j<is; j++)

{

    p[j]=sp[j];

    bt[j]=sbt[j];

    u[j]=1;

}

for(int j=0; j<iu; j++)

{

    p[j+is]=up[j];

    bt[j+is]=ubt[j];

    u[j+is]=0;

}

wt[0]=0;

tat[0]=bt[0];

wt\_avg=wt[0];

tat\_avg=tat[0];

for(int j=1; j<n; j++)

{

    wt[j]=wt[j-1]+bt[j-1];

    tat[j]=tat[j-1]+bt[j];

    wt\_avg+=wt[j];

    tat\_avg+=tat[j];

}

printf("Process\t System/User Process\t Burst Time\t Waiting Time\t Turn Around Time\n");

for(int j=0; j<n; j++)

{

    printf("%d\t\t%d\t\t%d\t\t%d\t\t%d\n", p[j], u[j], bt[j], wt[j], tat[j]);

}

printf("\nAverage waiting time = %f", wt\_avg/n);

printf("\nAverage turn around time = %f", tat\_avg/n);

}

OUTPUT:

