**OPERATING SYSTEM ASSIGNMENT**

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Code:

#include<stdio.h>

#include<conio.h>

void thirdIT(int num,int remt[10],int Cur\_t,int arrt[10], int bst[10]);

int main()

{

int ProNo,j,num,CurT,RemPro,indicator,tq,WaiT,tut,arrt[10],bst[10],remt[10],ivar=1;

indicator = 0;

WaiT = 0;

tut = 0;

printf("Enter number of processes... ");

scanf("%d",&num);

RemPro = num;

printf("\nEnter details of the processes\n");

for(ProNo = 0;ProNo < num;ProNo++)

{

printf("\nProcess P%d\n\t",ProNO+1);

printf("Arrival time = ");

scanf("%d",&arrt[ProNO]);

printf("\tBurst time = ");

scanf("%d",&bst[ProNO]);

remt[ProNO]=bst[ProNO];

}

printf(" First round with 3 as time quantum : \n");

tq=3;

CurT=0;

for(ProNO=0;RemPro!=0;)

{

if(remt[ProNO]<=tq && remt[ProNO]>0)

{

CurT+=remt[ProNO];

remt[ProNO]=0;

indicator=1;

}

else if(remt[ProNO]>0)

{

remt[ProNO]-=tq;

CurT+=tq;

}

if(remt[ProNO]==0 && indicator==1)

{ printf("%d",ProNO);

RemPro--;

printf("P %d",ProNO+1);

printf("\t\t\t%d",CurT-arrt[ProNO]);

printf("\t\t\t%d\n",CurT-bst[ProNO]-arrt[ProNO]);

WaiT+=CurT-arrt[ProNO]-bst[ProNO];

tut+=CurT-arrt[ProNO];

indicator=0;

}

if(ProNO==num-1){

ivar++;

if(ivar==2){

ProNO=0;

tq=6;

printf("\n Completion of First");

printf("\nSecond round initiated with 6 as time quantum \n");

}

else{

printf("\n Second round Over");

break;

}

}

else if(CurT >= arrt[ProNO+1]){

ProNO++;

}

else{

ProNO=0;

}

}

thirdIT(num,remt,CurT,arrt,bst);

return 0;

}

void thirdIT(int num,int remt[10],int Cur\_t,int arrt[10], int bst[10]){

float averageWaiT,averagetut;

int i,j,n=num,temp,btime[20],ProNO[20],WaiTime[20],tutime[20],total=0,loc;

printf("\nThird round with least burst time starts\n");

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

{

btime[i]=remt[i];

WaiTime[i]=Cur\_t-arrt[i]-btime[i];

ProNO[i]=i+1;

}

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

{

loc=i;

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

{

if(btime[j]<btime[loc]){

loc=j;

}

}

temp=btime[i];

btime[i]=btime[loc];

btime[loc]=temp;

temp=ProNO[i];

ProNO[i]=ProNO[loc];

ProNO[loc]=temp;

}

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

{

for(j=0;j<i;j++){

WaiTime[i]+=btime[j];

}

total+=WaiTime[i];

}

averageWaiT=(float)total/n;

total=0;

printf("\nProcess\t\tBurst time\t\tWaiting time\t\tTurnaround Time");

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

{

tutime[i]=btime[i]+WaiTime[i];

total=total + tutime[i];

printf("\nP%d\t\t\t%d\t\t\t%d\t\t\t%d",ProNO[i],btime[i],WaiTime[i],tutime[i]);

}

averagetut=(float)total/n;

printf("\n\nAverage waiting time = %f",averageWaiT);

printf("\nAverage turnaround time = %f\n",averagetut);

}