**PROGRAM**

#include<stdio.h>

#include<conio.h>

#include<string.h>

struct p

{

char no[10];

int at;

int bt;

int ct;

int tt;

int wt;

int rt;

}ob[10],a[10],q[10];

void main()

{

int n,i,s=0,small,j,k,m,t,sum=0,sum1=0;

int c=0;

float av,b;

struct p temp;

clrscr();

printf("Enter The Number Of Processes\n");

scanf("%d",&n);

printf("Enter The Process No,Arrival Time,Burst Time\n");

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

{

scanf("%s%d%d",ob[i].no,&ob[i].at,&ob[i].bt);

ob[i].rt=ob[i].bt;

s=s+ob[i].bt;

}

small=ob[0].at;

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

{

if(ob[i].at<small)

{

small=ob[i].at;

}

}

printf("GANT CHART : ");

for(i=small;i<=s;)

{

k=0;

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

{

if(ob[j].at<=i && ob[j].rt>0)

{

a[k]=ob[j];

k++;

}

}

m=k;

for(j=0;j<m;j++)

{

for(t=j+1;t<m;t++)

{

if(a[j].rt>a[t].rt)

{

temp=a[j];

a[j]=a[t];

a[t]=temp;

}

else if(a[j].rt==a[t].rt)

{

if(a[j].at>a[t].at)

{

temp=a[j];

a[j]=a[t];

a[t]=temp;

}

}

}

}

i=i+a[0].bt;

a[0].rt=0;

q[c]=a[0];

c++;

for(j=0;j<m;j++)

{

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

{

if(strcmp(a[j].no,ob[t].no)==0)

{

ob[t].wt=a[j].wt;

ob[t].rt=a[j].rt;

}

}

}

}

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

{

q[j].ct=i;

q[j].wt=i-q[j].at;

i=i+q[j].bt;

q[j].tt=q[j].wt+q[j].bt;

sum=sum+q[j].wt;

sum1=sum1+q[j].tt;

}

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

printf("(%d)%s---->",q[i].ct,q[i].no);

printf("(%d)",s);

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

ob[i].tt=ob[i].wt+ob[i].bt;

printf("\n\n");

printf("PROCESS ");

printf("ATIME ");

printf("BTIME ");

printf("CTIME ");

printf("WTIME ");

printf("TTIME ");

printf("\n");

for(i=0;i<5;i++)

printf("---------");

printf("\n");

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

{

printf("%s ",q[i].no);

printf("%d ",q[i].at);

printf("%d ",q[i].bt);

printf("%d ",q[i].ct+q[i].bt);

printf("%d ",q[i].wt);

printf("%d ",q[i].tt);

printf("\n");

}

av=(float)sum/n;

b=(float)sum1/n;

printf("\n\nAverage Waiting Time : %f",av);

printf("\nAverage Turn Around Time : %f",b);

}

**OUTPUT**

**mat@mat-18:~/Desktop/VANISHA46$ gcc sjfn.c**

**mat@mat-18:~/Desktop/VANISHA46$ ./a.out**

Enter The No.Of Processes

6

Enter Process no,Arrival Time,Burst Time

p1 0 8

p2 0 5

p3 1 4

p4 2 8

p5 2 9

p6 3 5

GANT CHART : (0)p2---->(5)p3---->(9)p6---->(14)p1---->(22)p4---->(30)p5---->(39)

PROCESS ATIME BTIME CTIME WTIME TTIME

--------------- ----------- ------------ ----------- ----------- -----------

p2 0 5 5 0 5

p3 1 4 9 4 8

p6 3 5 14 6 11

p1 0 8 22 14 22

p4 2 8 30 20 28

p5 2 9 39 28 37

Average Waiting Time : 12.000000

Average Turn Around Time : 18.500000