**Group : B**

**Assignment No. : 5.2**

**Title : Write a program to implement SRTF.**

**Roll No. : 2365**

**-------------------------------------------------------------------------------------------**

package Assign5;

import java.util.\*;

public class SRTF

{

public static void main (String args[])

{

Scanner sc=new Scanner(System.in);

System.out.println ("Enter no of process:");

int n= sc.nextInt();

int pid[] = new int[n];

int at[] = new int[n];

int bt[] = new int[n];

int ct[] = new int[n];

int ta[] = new int[n];

int wt[] = new int[n];

int f[] = new int[n];

int rt[]= new int[n];

int i, syt=0, count=0;

int rs[]=new int[50];

float avgwt=0, avgta=0;

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

{

pid[i]= i+1;

System.out.print ("Enter arrival time:");

at[i]= sc.nextInt();

System.out.print("Enter burst time:");

bt[i]= sc.nextInt();

rt[i]= bt[i];

f[i]= 0;

System.out.println();

}

int j=0;

while(true)

{

int min=99,c=n;

if (count == n)

break;

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

{

if ((at[i]<=syt) && f[i]==0 && (bt[i]<min))

{

min=bt[i];

c=i;

}

}

if (c==n)

syt++;

else

{

bt[c]--;

syt++;

rs[j]=c+1;

j++;

if (bt[c]==0)

{

ct[c]= syt;

f[c]=1;

count++;

}

}

}

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

{

ta[i] = ct[i] - at[i];

wt[i] = ta[i] - rt[i];

avgwt= avgwt +wt[i];

avgta= avgta +ta[i];

}

System.out.println("PID\tAT\tBT\tFT\tTT\tWT");

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

{

System.out.println(pid[i] +"\t"+ at[i]+"\t"+ rt[i] +"\t"+ ct[i] +"\t"+ ta[i] +"\t"+ wt[i]);

}

System.out.println("\nGANTT CHART.");

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

{

if(i<=10)

System.out.print("|P "+rs[i]+"");

else

System.out.print("|P "+rs[i]+"");

}

System.out.print(" |\n");

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

{

if(i<11)

System.out.print(i+" ");

else

System.out.print(""+i+" ");

}

System.out.println("\n\nAverage Turnaround time is :"+ (float)(avgta/n));

System.out.println("Average Waiting time is :"+ (float)(avgwt/n));

sc.close();

}

}

/\*OUTPUT::

Enter no of process:

4

Enter arrival time:0

Enter burst time:6

Enter arrival time:2

Enter burst time:2

Enter arrival time:4

Enter burst time:5

Enter arrival time:6

Enter burst time:3

PID AT BT FT TT WT

1 0 6 8 8 2

2 2 2 4 2 0

3 4 5 16 12 7

4 6 3 11 5 2

GANTT CHART.

|P 1|P 1|P 2|P 2|P 1|P 1|P 1|P 1|P 4|P 4|P 4| P 3| P 3| P 3| P 3| P 3 |

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Average Turnaround time is :6.75

Average Waiting time is :2.75\*/