QUES 11: Write a program to implement SRJF scheduling algorithm.

```
#include<stdio.h>

int main()

{
 int n,p[30],bt[30],temp_bt[30],wt[30],tat[30],at[30],smallest=0,time,remain;

 float avg_waitingT,avg_turnaroundT;

 printf("Enter the Number of Processes :");

 scanf("%d",&n);

 remain=n;

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

 {
  printf("Enter the Burst Time of Process %d :",i);

  scanf("%d",&bt[i]);

  printf("Enter the Arrival time for Process %d :",i);

  scanf("%d",&at[i]);

  temp_bt[i]=bt[i];

  p[i]=i;

 }
 int temp;

 // Bubble Sorting
 for(int i=1;i<=n;i++)
 {
    for(int j=1;j<=n-i;j++)
  {
        if(at[j]>at[j+1])
       {
```

```
            //Sorting the Processes according to their Arrival Time
              temp=at[j];

            at[j]=at[j+1];

            at[j+1]=temp;

              //Sorting the Buffer in accordance with its Arrival Time
    temp=bt[j];

     bt[j]=bt[j+1];

    bt[j+1]=temp;

    //To Sort the Positions of Process in accordance with their Arrival Time
    temp=p[j];

    p[j]=p[j+1];

    p[j+1]=temp;

    }

   }

 }
   temp_bt[29]=450;

for(time=0;remain!=0;time++)

{
 smallest=29;

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

 {
  if(at[i]<=time &&temp_bt[i]<temp_bt[smallest]&&temp_bt[i]>0)

  {
   smallest=i;
  }

 }
  temp_bt[smallest]--;

 if(temp_bt[smallest]==0)
 {

   remain--;
```

```
    tat[smallest]=time+1-at[smallest];

    wt[smallest]=tat[smallest]-bt[smallest];
  }
}
int total_wt=0,total_tat=0;

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

    total_wt=total_wt+wt[i];

    total_tat=total_tat+tat[i];

}
   avg_waitingT=total_wt/n;

   avg_turnaroundT=total_tat/n;

   printf("\nProcess\tArrival Time\tBurst Time\tWaiting Time\tTurnAround Time\n");

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

       printf("\nP%d\t\t%d\t\t \t\t%d\t\t\t\t%d\t\t\t\t%d",p[i],at[i],bt[i],wt[i],tat[i]);
  }

             printf("\nAverage Waiting time : %f\n",avg_waitingT);

           printf("Average Turn Around Time :%f",avg_turnaroundT);

    return 0;

}
```

OUTPUT:

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/final)
g++ -o main q11.c &&./main
Enter the Number of Processes :4
Enter the Burst Time of Process 1 :8
Enter the Arrival time for Process 1 :0
Enter the Burst Time of Process 2 :4
Enter the Arrival time for Process 2 :1
Enter the Burst Time of Process 3 :5
Enter the Arrival time for Process 3 :3
Enter the Burst Time of Process 4 :7
Enter the Arrival time for Process 4 :4

Process Arrival Time    Burst Time  Waiting Time    TurnAround
Time

P1      0               8               9               17
P2      1               4               0               4
P3      3               5               2               7
P4      4               7               13              20
Average Waiting time : 6.000000
```