Experiment No. - 05

Objective:

Calculate avgWT and avgTAT using SRTF

Program:

```
#include<stdio.h>
void swap(int *a, int *b)
{
   int temp;
   temp = *a;
   *a = *b;
   *b = temp;
}
void main()
{
   int n,q;
   printf("No of Process  :  ");
   scanf("%d",&n);
   int at[n],bt[n],ct[n],wt[n],tat[n],rbt[n];
   printf("Enter the AT & BT of Process\n");
   for(int i=0;i<n;i++)
   {
      printf("P[%d]\t",i);
      scanf("%d%d",&at[i],&bt[i]);
   }
   float AvgWT = 0.0;
   float AvgTAT = 0.0;
   for(int i=0;i<n;i++)
   {
      for(int j=0;j<n-1-i;j++)
      {
         if(*(at+j)>*(at+j+1))
         {
            swap((at+j),(at+j+1));
            swap((bt+j),(bt+j+1));
         }
      }
   }
   int sum=0;
   for(int i=0;i<n;i++)
   {
      rbt[i]=bt[i];
      sum+=bt[i];
   }
   int time=at[0],min,k;
   for(int i=0;i<sum;i++)
   {
      min=100;
      k=0;
```

```
    for(int j=0;j<n;j++)
    {
      if(rbt[j]!=0)
      {
        if(at[j]<=time)
        {
          if(rbt[j]<min)
          {
            min=rbt[j];
            k=j;
          }
        }
      }
    }
    rbt[k]=rbt[k]-1;
    time=time+1;
    ct[k]=time;
  }
  for(int i=0;i<n;i++)
  {
    wt[i]=ct[i]-at[i]-bt[i];
    tat[i]=ct[i]-at[i];
    AvgTAT += tat[i];
    AvgWT += wt[i];
  }
  printf("\n   \tAT\tBT\tWT\tTAT\n");
  for(int i=0;i<n;i++)
    printf("P[%d]\t%d\t%d\t%d\t%d\n",i,at[i],bt[i],wt[i],tat[i]);
  printf("\nAverage Waiting Time is %f Units \n",AvgWT/n);
  printf("Average Turn Around Time is %f Units",AvgTAT/n);
}
```

Input/Output:

```
No of Process  :  5
Enter the AT & BT of Process
P[0]    2       7
P[1]    0       2
P[2]    1       9
P[3]    2       8
P[4]    7       9

        AT      BT      WT      TAT
P[0]    0       2       0       2
P[1]    1       9       16      25
P[2]    2       7       0       7
P[3]    2       8       7       15
P[4]    7       9       19      28

Average Waiting Time is 8.400000 Units
Average Turn Around Time is 15.400000 Units
```

Result:

We have verified **SRTF** Successfully.