Dated: 04/05/2021

Experiment No. - 04

Objective:
Calculate avgWT and avgTAT using Round Robin

Program:

```
#include<stdio.h>
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]);
   }
   printf("\nEnter Quantum  :  ");
   scanf("%d",&q);
   float AvgWT = 0.0;
   float AvgTAT = 0.0;
   int sum=0;
   for(int i=0;i<n;i++)
   {
      rbt[i]=bt[i];
      sum=sum+bt[i];
   }
   int time=0;
   while(time<sum)
   {
      for(int i=0;i<n;i++)
      {
         if(rbt[i]!=0)
         {
            if(rbt[i]>=q)
            {
               rbt[i]=rbt[i]-q;
               time=time+q;
               if(rbt[i]==0)
                  ct[i]=time;
            }
            else
            {
               time=time+rbt[i];
               rbt[i]=0;
               ct[i]=time;
            }
```

```
        }
      }
   }
   for(int i=0;i<n;i++)
   {
      wt[i]=ct[i]-bt[i];
      tat[i]=ct[i];
      AvgTAT += tat[i];
      AvgWT += wt[i];
   }
   AvgWT = AvgWT/n;
   AvgTAT = AvgTAT/n;
   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);
   printf("Average Turn Around Time is %f Units",AvgTAT);
}
```

Input/Output :

```
No of Process  :  5
Enter the AT & BT of Process
P[0]    0       4
P[1]    3       6
P[2]    6       7
P[3]    0       8
P[4]    2       9

Enter Quantum  :  2

        AT      BT      WT      TAT
P[0]    0       4       8       12
P[1]    3       6       16      22
P[2]    6       7       22      29
P[3]    0       8       23      31
P[4]    2       9       25      34

Average Waiting Time is 18.799999 Units
Average Turn Around Time is 25.600000 Units
```

Result:

We have verified **Round Robin** Successfully.