S.No: 2	Exp. Name: ***Implement CPU Scheduling Algorithms***	Date:

Aim:

Implementation of the Round Robin cpu scheduling algorithm
(https://gecgudlavalleru.codetantra.com/secure/labs-q.jsp?
sNo=4&qId=5bec179564bac110545ba035&bd=AY3RFZHVEQg%3D%3D&lid=5db6d168a183970b79e5cd34&labbd=AMzM2X2N0X2No&expTitle=Implementation%20of%20the%20Round%20Ro

Source Code:

os4.c

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
#define max 50
void main(){
   int i,n,sum=0,count=0,y,quant,wt=0,tat=0,aTime[max],bTime[max],temp[max],wTime[max],
rem_btime[max],taTime[max];
   float avg_wt,avg_tat;
   printf("Enter Total Number of Processes: ");
   scanf("%d",&n);
   y=n;
   for(i=0; i<n; i++){
      printf("Enter Details of Process[%d]: Arrival Time:\t",i+1);
      scanf("%d", &aTime[i]);
      printf("Burst Time:\t");
      scanf("%d",&bTime[i]);
      temp[i]=bTime[i];
   }
   printf("Enter Time Quantum:\t");
   scanf("%d",&quant);
   printf("Process ID\t\tBurst Time\t Turnaround Time\t Waiting Time\n");
   for(sum=0,i=0;y!=0;){
      if(temp[i] <= quant && temp[i]>0){
         sum = sum + temp[i];
         temp[i] = 0;
         count = 1;
      }
      else if(temp[i]>0){
         temp[i] = temp[i] - quant;
         sum = sum+quant;
      }
      if(temp[i] == 0 && count == 1){
         y--;
         printf("Process[%d]\t\t%d\t\t %d\t\t\t %d\n",i+1,bTime[i],sum-aTime[i],sum-aTi
me[i]-bTime[i]);
         wt = wt+sum-aTime[i]-bTime[i];
         tat = tat+sum-aTime[i];
         count = 0;
      }
      if(i == n-1){
         i=0;
      }
      else if(aTime[i+1]<=sum){
         i++;
      }
      else{
         i=0;
      }
   }
   avg_wt=(float)wt/n;
   avg_tat=(float)tat/n;
   printf("Average Waiting Time:\t%f\n",avg_wt);
   printf("Avg Turnaround Time:\t%f\n",avg_tat);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1

User Output

```
Enter Total Number of Processes:  3
Enter Details of Process[1]: Arrival Time:       0
Burst Time:      3
Enter Details of Process[2]: Arrival Time:       0
Burst Time:      2
Enter Details of Process[3]: Arrival Time:       1
Burst Time:      3
Enter Time Quantum:      5
Process ID              Burst Time       Turnaround Time         Waiting Time
Process[1]              3                3                       0
Process[2]              2                5                       3
Process[3]              3                7                       4
Average Waiting Time:   2.333333
Avg Turnaround Time:    5.000000
```