**LAB EXERCISE 9**

**ROUND ROBIN ALGORITHM**

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## **//Code:**

#include<stdio.h>

int main()

{

int n;

printf("Enter the number of processes:");

scanf("%d",&n);

int at[n],bt[n],ct[n],tat[n],wt[n],tq;

printf("Enter the Arrival Time for each process:");

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

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

printf("Enter the Burst Time for each process:");

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

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

printf("Enter the time quantum for the Round Robin process:");

scanf("%d",&tq);

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

ct[i]=0;

int bt2[n];

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

bt2[i]=bt[i]; //creating a copy of burst time array

int comp=0;

while(1)

{

int done=1;

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

{

if(bt[i]>0)

{

done=0; //there is a pending process

if(bt[i]>tq)

{

comp=comp+tq;

bt[i]=bt[i]-tq;

}

else if(bt[i]<=tq)

{

ct[i]=comp+bt[i];

bt[i]=0;

comp=ct[i];

}

}

}

if(done==1)

break;

}

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

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

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

wt[i]=tat[i]-bt2[i];

printf("\nProcess\tA.T.\tB.T.\tC.T.\tTAT\tW.T.\n");

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

{

printf("P%d\t%d\t%d\t%d\t%d\t%d\n",i,at[i],bt2[i],ct[i],tat[i],wt[i]);

}

float total\_tat=0,total\_wt=0;

float avg\_tat,avg\_wt;

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

{

total\_tat+=tat[i];

total\_wt+=wt[i];

}

avg\_tat=total\_tat/n;

avg\_wt=total\_wt/n;

printf("Average Turn Around Time is %f\n",avg\_tat);

printf("Average Waiting Time is %f\n",avg\_wt);

return 0;

}

**//Output:**

