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Distributed System Lab

LAB – 1

Aim: WAP to implement Round Robin Scheduling Algorithm

Program:

```
#include<iostream>
using namespace std;
void findWaitingTime(int processes[], int n, int bt[], int wt[], int
quantum)
{
    int rem_bt[n];
    for (int i = 0 ; i < n ; i++)
        rem_bt[i] = bt[i];
    int t = 0;
    while (1)
    {
        bool done = true;
        for (int i = 0 ; i < n; i++)
        {
            if (rem_bt[i] > 0)
            {
                done = false;
                if (rem_bt[i] > quantum)
                {
                    t += quantum;
                    rem_bt[i] -= quantum;
                }
            }
            else
            {

```

```

        t = t + rem_bt[i];
        wt[i] = t - bt[i];
        rem_bt[i] = 0;
    }
}
}
if (done == true)
    break;
}
}

void findTurnAroundTime(int processes[], int n, int bt[], int wt[],
int tat[])
{
    for (int i = 0; i < n ; i++)
        tat[i] = bt[i] + wt[i];
}

void findavgTime(int processes[], int n, int bt[], int quantum)
{
    int wt[n], tat[n], total_wt = 0, total_tat = 0;
    findWaitingTime(processes, n, bt, wt, quantum);
    findTurnAroundTime(processes, n, bt, wt, tat);
    cout << "Processes "<< " Burst Time "<< " Waiting Time " << "
Turn Around Time\n";
    for (int i=0; i<n; i++)
    {
        total_wt = total_wt + wt[i];
        total_tat = total_tat + tat[i];
        cout << " " << i+1 << "\t\t" << bt[i] << "\t " << wt[i]
<< "\t\t" << tat[i] << endl;
    }
    cout << "Average Waiting Time = "

```

```

        << (float)total_wt / (float)n;
    cout << "\nAverage Turn Around Time = "
        << (float)total_tat / (float)n;
}
int main()
{
    int processes[] = { 1, 2, 3, 4};
    int n = sizeof processes / sizeof processes[0];
    int burst_time[] = {10, 7, 11, 9};
    int quantum = 3;
    findavgTime(processes, n, burst_time, quantum);
    return 0;
}

```

Output:

```

Processes  Burst Time  Waiting Time  Turn Around Time
1          10         25           35
2           7         21           28
3          11         26           37
4           9         25           34
Average Waiting Time = 24.25
Average Turn Around Time = 33.5
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```