

Code:

```
// Write a program to implement Round Robin. Calculate waiting time, turnaround  
// time for each process. Calculate avg. waiting time, avg turnaround time
```

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    float n, quantum, avwt = 0, avtat = 0;
```

```
    float pid[50], bt[50], at[50], rem_time[50], comp_time[50];
```

```
    float wt[50], tat[50];
```

```
    cout << "Enter total number of processes: ";
```

```
    cin >> n;
```

```
    cout << "Enter time quantum: ";
```

```
    cin >> quantum;
```

```
    cout << "\nEnter the arrival time and burst time for each process: " << endl;
```

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

```
        cout << "Process " << i + 1 << ":\n";
```

```
        pid[i] = i + 1;
```

```
        cout << "\tArrival time: ";
```

```
        cin >> at[i];
```

```
        cout << "\tBurst time: ";
```

```
        cin >> bt[i];
```

```
        rem_time[i] = bt[i];
```

```
        wt[i] = tat[i] = 0;
```

```
    }
```

```
    int curr_time = 0, total_rem_time = n;
```

```
    while (total_rem_time > 0) {
```

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

```
            if (rem_time[i] > 0) {
```

```
                if (rem_time[i] <= quantum) {
```

```
                    curr_time += rem_time[i];
```

```
                    rem_time[i] = 0;
```

```
                    total_rem_time--;
```

```
                    comp_time[i] = curr_time;
```

```
                } else {
```

```
                    curr_time += quantum;
```

```
                    rem_time[i] -= quantum;
```

```
            }
```

```
        }
```

```
    }
```

```
}
```

```

for (int i = 0; i < n; i++) {
    tat[i] = comp_time[i] - at[i];
    wt[i] = tat[i] - bt[i];
    avwt += wt[i];
    avtat += tat[i];
}

avwt /= n;
avtat /= n;

cout
    << "\nProcess\tArrival Time\tBurst Time\tWaiting Time\tTurnaround Time\n";
for (int i = 0; i < n; i++) {
    cout << "P" << pid[i] << "\t\t" << at[i] << "\t\t\t\t" << bt[i] << "\t\t\t\t"
        << wt[i] << "\t\t\t\t" << tat[i] << endl;
}

cout << "\nAverage Waiting Time: " << avwt;
cout << "\nAverage Turnaround Time: " << avtat;

return 0;
}

```

Sample Output:

Enter total number of processes: 5

Enter time quantum: 2

Enter the arrival time and burst time for each process:

Process 1:

Arrival time: 0

Burst time: 8

Process 2:

Arrival time: 1

Burst time: 1

Process 3:

Arrival time: 2

Burst time: 3

Process 4:

Arrival time: 3

Burst time: 2

Process 5:

Arrival time: 4

Burst time: 6

Process	Arrival Time	Burst Time	Waiting Time	Turnaround Time
P1	0	8	12	20
P2	1	1	1	2
P3	2	3	7	10
P4	3	2	2	4
P5	4	6	8	14

Average Waiting Time: 6

Average Turnaround Time: 10