#include <stdio.h>

int main(){

int i, NOP, sum = 0, count = 0, y, quant, wt = 0, tat = 0, at[10], bt[10], temp[10];

float avg\_wt, avg\_tat;

printf(" Total number of process in the system = ");

scanf("%d", &NOP);

printf("Enter the Time Quantum for the process = ");

scanf("%d", &quant);

y = NOP;

for (i = 0; i < NOP; i++){

printf("\nEnter the Arrival and Burst time of the Process[%d]\n", i + 1);

printf("Arrival time is = ");

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

printf("Burst time is = ");

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

temp[i] = bt[i];

}

printf("\n Process No \t\t Burst Time \t TAT \t\t Waiting Time ");

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--; // decrement the process no.

printf("\nProcess No[%d] \t\t %d\t\t %d\t\t %d", i + 1, bt[i], sum - at[i], sum - at[i] - bt[i]);

wt = wt + sum - at[i] - bt[i];

tat = tat + sum - at[i];

count = 0;

}

if (i == NOP - 1) i = 0;

else if (at[i + 1] <= sum) i++;

else i = 0;

}

avg\_wt = wt \* 1.0 / NOP;

avg\_tat = tat \* 1.0 / NOP;

printf("\n\nAverage Turn Around Time = %f", avg\_wt);

printf("\nAverage Waiting Time = %f", avg\_tat);

}