#include<stdio.h>

#include<stdbool.h>

int main() {

int n,i,j;

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

scanf("%d", &n);

int process[n],burst\_time[n],waiting\_time[n],turn\_a\_time[n],time\_quantum;

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

printf("Enter the order of processes in terms of 1,2,3,4..n:");

for(j=0;j<n;j++)

{

scanf("%d",&process[j]);

}

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

{

printf("Enter the burst time for P%d:",process[i]);

scanf("%d",&burst\_time[i]);

}

printf("Enter the time quantum: ");

scanf("%d", &time\_quantum);

int copy\_bt[n];

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

copy\_bt[i] = burst\_time[i];

}

int t = 0;

while(1) {

bool done = true;

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

if(copy\_bt[i] > 0) {

done = false;

if(copy\_bt[i] > time\_quantum) {

t += time\_quantum;

copy\_bt[i] -= time\_quantum;

} else {

t += copy\_bt[i];

waiting\_time[i] = t - burst\_time[i];

copy\_bt[i] = 0;

}

}

}

if(done == true) {

break;

}

}

for(int j = 0; j < n; j++) {

turn\_a\_time[j] = waiting\_time[j] + burst\_time[j];

}

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

avg\_wt += waiting\_time[i];

avg\_tat += turn\_a\_time[i];

}

printf("\nProcess No\tBurst Time\tWaiting Time\tTurn Around Time");

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

printf("\nP%d\t\t %d\t\t %d\t\t\t%d",process[i],burst\_time[i],waiting\_time[i],turn\_a\_time[i]);

}

printf("\nAverage waiting time:%.2f", avg\_wt/n);

printf("\nAverage turnaround time:%.2f\n", avg\_tat/n);

}