#include <stdio.h>

void swap(int\* num1, int\* num2);

void bubbleSort(int priorities[], int burstTimes[], int processes[], int n);

void priority(int priorities[], int processes[], int burstTimes[], int n);

int main() {

int n;

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

scanf("%d", &n);

int i;

int burstTimes[n];

int priorities[n];

int processes[n];

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

printf("Enter the priority and burst time of the process %d:", i + 1);

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

processes[i] = i + 1;

}

priority(priorities, processes, burstTimes, n);

}

void priority(int priorities[], int processes[], int burstTimes[], int n) {

bubbleSort(priorities, burstTimes, processes, n);

int waitingTimes[n];

int turnAround[n];

waitingTimes[0] = 0;

int avgWait = 0;

int avgTurn = 0;

int i;

for (i = 0; i < n - 1; i++) {

waitingTimes[i + 1] = burstTimes[i] + waitingTimes[i];

avgWait += waitingTimes[i + 1];

turnAround[i + 1] = waitingTimes[i + 1] + burstTimes[i + 1];

avgTurn += turnAround[i + 1];

}

turnAround[0] = waitingTimes[1];

avgTurn += turnAround[0];

printf("\nProcess\t Burst Time\t Priority\t Waiting Time\t Turn Around Time\n");

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

printf(" %d\t\t%d\t\t%d\t\t%d\t\t%d\n", processes[i] , burstTimes[i], priorities[i], waitingTimes[i], turnAround[i]);

printf("\nAverage Waiting Time = %d\nAverage Turn Around Time = %d", avgWait / n, avgTurn / n);

}

void swap(int\* num1, int\* num2) {

int temp = \*num2;

\*num2 = \*num1;

\*num1 = temp;

}

void bubbleSort(int priorities[], int burstTimes[], int processes[], int n) {

for(int i = 0; i < n - 1; i++){

for(int j = 0; j < n - i - 1; j++){

if(priorities[j] > priorities[j + 1]) {

swap(&burstTimes[j], &burstTimes[j+1]);

swap(&priorities[j], &priorities[j+1]);

swap(&processes[j], &processes[j+1]);

}

}

}

}