3. Write a c program to compute the average waiting time and average turnaround time based on Non Preemptive Shortest-Job-First Scheduling for the following process with the given CPU burst times, ( and the assumption that all jobs arrive at the same time.)

Process Burst Time

P1 6

P2 8

P3 7

P4 3

#include<stdio.h>

void main() {

int n = 4; // number of processes

int burst\_time[] = {6, 8, 7, 3}; // burst times of the processes

int waiting\_time[n], turnaround\_time[n], completion\_time[n], total\_waiting\_time = 0, total\_turnaround\_time = 0;

// Sorting the burst times of the processes in ascending order using selection sort

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

int min\_index = i;

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

if(burst\_time[j] < burst\_time[min\_index]) {

min\_index = j;

}

}

int temp = burst\_time[i];

burst\_time[i] = burst\_time[min\_index];

burst\_time[min\_index] = temp;

}

// Calculating the completion time of each process and the total waiting time and turnaround time

completion\_time[0] = burst\_time[0];

waiting\_time[0] = 0;

turnaround\_time[0] = completion\_time[0];

total\_waiting\_time += waiting\_time[0];

total\_turnaround\_time += turnaround\_time[0];

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

completion\_time[i] = completion\_time[i - 1] + burst\_time[i];

waiting\_time[i] = completion\_time[i - 1];

turnaround\_time[i] = completion\_time[i];

total\_waiting\_time += waiting\_time[i];

total\_turnaround\_time += turnaround\_time[i];

}

// Calculating the average waiting time and average turnaround time

float avg\_waiting\_time = (float) total\_waiting\_time / n;

float avg\_turnaround\_time = (float) total\_turnaround\_time / n;

// Printing the results

printf("Process\tBurst Time\tWaiting Time\tTurnaround Time\n");

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

printf("P%d\t%d\t\t%d\t\t%d\n", i+1, burst\_time[i], waiting\_time[i], turnaround\_time[i]);

}

printf("Average Waiting Time: %.2f\n", avg\_waiting\_time);

printf("Average Turnaround Time: %.2f\n", avg\_turnaround\_time);

}

