3. Implement a simulation of the FCFS scheduling algorithm where the program should accept the number of processes, their arrival times, burst times from the user and perform the execution of these processes according to the FCFS algorithm.

#include <stdio.h>

void fcfs(int processes[], int n, int arrival\_time[], int burst\_time[]) {

int waiting\_time[n], turnaround\_time[n],C\_Time[n];

int total\_waiting\_time = 0, total\_turnaround\_time = 0;

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

C\_Time[i] = C\_Time[i-1] + burst\_time[i];

}

// Calculate turnaround time for each process

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

turnaround\_time[i] = C\_Time[i] - arrival\_time[i];

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

}

// Calculate waiting time for each process

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

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

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

}

// Print process details

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

printf("%d\t\t%d\t\t%d\t\t%d\t\t%d\t\t%d\n", processes[i], arrival\_time[i], burst\_time[i], C\_Time[i], turnaround\_time[i],waiting\_time[i]);

}

// Print average waiting time and average turnaround time

printf("\nAverage Waiting Time: %.2f\n", (float)total\_waiting\_time / n);

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

}

int main() {

int n;

// Input number of processes

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

scanf("%d", &n);

int processes[n], arrival\_time[n], burst\_time[n];

// Input arrival time and burst time for each process

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

printf("Enter arrival time for process %d: ", i + 1);

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

printf("Enter burst time for process %d: ", i + 1);

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

processes[i] = i + 1;

}

// Call FCFS scheduling function

fcfs(processes, n, arrival\_time, burst\_time);

return 0;

}

INPUT

Enter the number of processes: 5

Enter arrival time for process 1: 0

Enter burst time for process 1: 2

Enter arrival time for process 2: 1

Enter burst time for process 2: 3

Enter arrival time for process 3: 2

Enter burst time for process 3: 1

Enter arrival time for process 4: 3

Enter burst time for process 4: 5

Enter arrival time for process 5: 5

Enter burst time for process 5: 4

Process AT BT CT TAT WT

1 0 2 2 2 0

2 1 3 5 4 1

3 2 1 6 4 3

4 3 5 11 8 3

5 5 4 15 10 6

Average Waiting Time: 2.60

Average Turnaround Time: 5.60