FCFS

```c
#include <stdio.h>

struct Process {
    int id;
    int burst_time;
    int arrival_time;
    int waiting_time;
    int turnaround_time;
    int completion_time;
};

void fcfs(struct Process processes[], int n) {
    int total_waiting_time = 0;
    int total_turnaround_time = 0;
    int current_time = 0;

    for (int i = 0; i < n; ++i) {
        if (current_time < processes[i].arrival_time)
            current_time = processes[i].arrival_time;
        processes[i].waiting_time = current_time - processes[i].arrival_time;
        processes[i].completion_time = current_time + processes[i].burst_time;
        processes[i].turnaround_time = processes[i].waiting_time + processes[i].burst_time;

        total_waiting_time += processes[i].waiting_time;
        total_turnaround_time += processes[i].turnaround_time;

        current_time = processes[i].completion_time;
    }

    printf("Process ID\tBurst Time\tWaiting Time\tTurnaround Time\tCompletion
Time\tArrival\n");
    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].id, processes[i].burst_time,
            processes[i].waiting_time, processes[i].turnaround_time,
processes[i].completion_time, processes[i].arrival_time);
    }

    printf("Avg. waiting time= %.6f\n", (float)total_waiting_time / n);
}

int main() {
    int n;
    printf("Enter the number of processes: ");
    scanf("%d", &n);

    struct Process processes[n];

    printf("Enter process id of all the processes: ");
    for (int i = 0; i < n; ++i) {
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```c
        scanf("%d", &processes[i].id);
    }

    printf("Enter burst time of all the processes: ");
    for (int i = 0; i < n; ++i) {
        scanf("%d", &processes[i].burst_time);
    }

    printf("Enter arrival time of all the processes: ");
    for (int i = 0; i < n; ++i) {
        scanf("%d", &processes[i].arrival_time);
    }

    fcfs(processes, n);

    return 0;
}
```

Output

```
  ┌──(kali㉿kali)-[~/Desktop/22054029/4th_lab]
  └─$ ./a.out
Enter the number of processes: 4
Enter process id of all the processes: 1 2 3 4
Enter burst time of all the processes: 2 4 6 8
Enter arrival time of all the processes: 3 5 7 9
Process ID      Burst Time      Waiting Time    Turnaround Time Completion Time Arrival
1               2               0               2               5               3
2               4               0               4               9               5
3               6               2               8               15              7
4               8               6               14              23              9
Avg. waiting time= 2.000000
```

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