FCFS

```
#include<stdio.h>
typedef struct {
    int pID,aT,bT,sT,cT,taT,wT;
} Process;

void calculateTimes(Process p[], int n) {
    int currT = 0;
    for (int i = 0; i < n; i++) {
        p[i].sT = currT;
        p[i].cT = currT + p[i].bT;
        p[i].taT = p[i].cT - p[i].aT;
        p[i].wT = p[i].taT - p[i].bT;
        currT = p[i].cT;
    }
}

void displayp(Process p[], int n) {
    printf("Process\tArrival Time\tCPU Time\tStart Time\tCompletion Time\tTurnaround Time\tWaiting Time\n");

    for (int i = 0; i < n; i++) {
        printf("%d\t%d\t\t%d\t\t%d\t\t%d\t\t%d\t\t%d\n", p[i].pID, p[i].aT,
                p[i].bT, p[i].sT, p[i].cT,
                p[i].taT, p[i].wT);
    }
}

int main() {
    int n;
    double sum;
```

```
printf("Enter the number of processes: ");
scanf("%d", &n);
Process p[n];
for (int i = 0; i < n; i++) {
    printf("Enter the arrival time and CPU time for process %d: ", i + 1);
    scanf("%d %d", &p[i].aT, &p[i].bT);
    p[i].pID = i + 1;
}
calculateTimes(p, n);
displayp(p, n);

for (int i = 0; i < n - 1; i++) {
    for (int j = 0; j < n - i - 1; j++) {
        if (p[j].aT > p[j + 1].aT) {
            Process temp = p[j];
            p[j] = p[j + 1];
            p[j + 1] = temp;
        }
    }
}

calculateTimes(p, n);
displayp(p, n);
printf("\nAverage waiting time:\n");
for(int i=0;i<n;i++)
{
    sum+=p[i].bT;
}
printf("\n%f",sum/4);
return 0;
```

}

OUTPUT

```
Enter the number of processes: 4
Enter the arrival time and CPU time for process 1: 0 3
Enter the arrival time and CPU time for process 2: 1 6
Enter the arrival time and CPU time for process 3: 4 4
Enter the arrival time and CPU time for process 4: 6 2
Process Arrival Time    CPU Time        Start Time      Completion Time Turnaround Time Waiting Time
1       0               3               0               3               3               0
2       1               6               3               9               8               2
3       4               4               9               13              9               5
4       6               2               13              15              9               7
Process Arrival Time    CPU Time        Start Time      Completion Time Turnaround Time Waiting Time
1       0               3               0               3               3               0
2       1               6               3               9               8               2
3       4               4               9               13              9               5
4       6               2               13              15              9               7

Average waiting time:

3.750000
```