

SHORTEST JOB SCHEDULING

```
#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) {
    int sum=0;
    double avg;
    printf("Process\tArrival Time\tBurst Time\tStart Time\tCompletion Time\tTurnaround\n");
    printf("Time\tWaiting Time \n");

    for (int i = 0; i < n; i++) {
        printf("%d\t%d\t%d\t%d\t%d\t%d\t%d\t%d\n", p[i].pID, p[i].aT,
            p[i].bT, p[i].sT, p[i].cT,
            p[i].taT, p[i].wT);
        sum=sum+p[i].taT;
    }
    avg=(double)sum/n;
    printf("Average Turnaround time = %f\n",avg);
}

int main() {
    int n;
    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 burst time for process %d: ", i + 1);
        scanf("%d %d", &p[i].aT, &p[i].bT);
        p[i].pID = i + 1;
    }

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

calculateTimes(p, n);
displayp(p, n);
return 0;
}

```

OUTPUT:

```

Enter the number of processes: 4
Enter the arrival time and burst time for process 1: 0
3
Enter the arrival time and burst time for process 2: 1
6
Enter the arrival time and burst time for process 3: 4
4
Enter the arrival time and burst time for process 4: 6
2
Process Arrival Time    Burst 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 Turnaround time = 7.250000

...Program finished with exit code 0
Press ENTER to exit console.

```