

# East Delta University

Course: Operating System Lab

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## Lab Performance 2 : SJF

```
#include<stdio.h>

int main()
{
    int n;

    printf("Enter Number of Process: ");
    scanf("%d", &n);

    int bt[n], p[3];

    printf("Enter The Processes: \n");
    for(int i=0; i<n; i++)
    {
        scanf("%d", &p[i]);
    }

    printf("Enter The Burst time: \n");
    for (int i=0; i<n; i++)
    {
        scanf("%d",&bt[i]);
    }

    SJF (n, bt, p);
    average(n, bt);

    return 0;
```

```

}

void SJF (int n, int bt[], int p[]){
    int pos, temp;
    for(int i=0; i<n; i++)
    {
        pos=i;
        for(int j=i+1; j<n; j++)
        {
            if(bt[j]<bt[pos])
                pos=j;
        }
        temp=bt[i];
        bt[i]=bt[pos];
        bt[pos]=temp;

        temp=p[i];
        p[i]=p[pos];
        p[pos]=temp;
    }
    printf("\nAfter Sorting: \n");
    for (int i=0; i<n; i++)
    {
        printf("Process-%d : %d\n",p[i], bt[i]);
    }
}

int average(int n,int bt[])

```

```

{
    int wt[n];
    int total=0;

    waiting(wt,bt, n);
    turnaround(wt,bt,n);
    for(int i=0; i<n; i++)
    {
        total =wt[i]+ total;
    }
    double avgwt=total/(double)n;
    printf("Average Waiting Time: %.2lf\n", avgwt);
}

void waiting(int wt[],int bt[], int n)
{
    wt[0]=0;
    printf("\nWaiting Time :\n");
    for(int i=1; i<n; i++)
    {
        wt[i]=bt[i-1]+ wt[i-1];
    }
    for(int i=0; i<n; i++)
    {
        printf("\t%d\n",wt[i]);
    }
}

```

```
void turnaround(int wt[],int bt[],int n)
{
    int tt[n];
    int total =0;
    printf("Turn Around Time:\n");
    for(int i=0; i<n; i++)
    {
        tt[i]=wt[i]+bt[i];
        printf("\t%d\n",tt[i]);
    }
    for(int i=0; i<n; i++)
    {
        total=tt[i]+total;
    }
    double avgtt = total/(double)n;
    printf("\nAverage Turn around Time: %.2lf\n",avgtt);
}
```

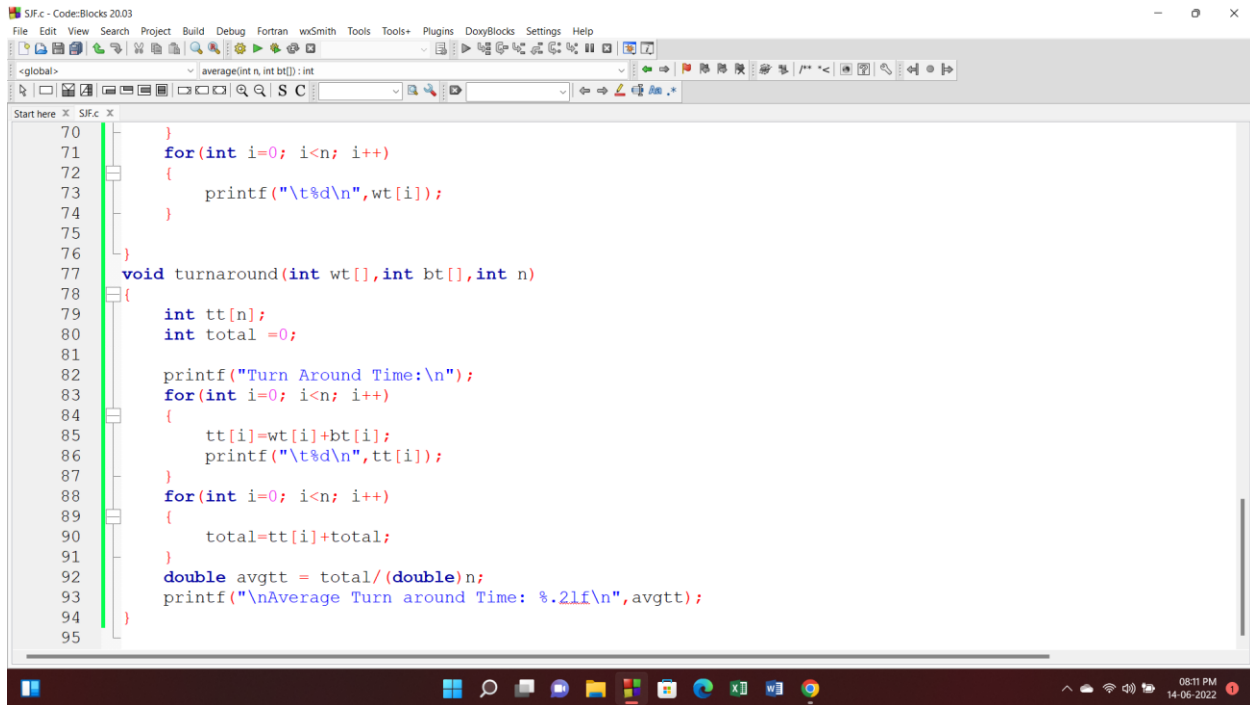
**IDE Screenshot:**

```
SIF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> | main0: int
Start here x SIF.c x
1 #include<stdio.h>
2 int main()
3 {
4     int n;
5     printf("Enter Number of Process: ");
6     scanf("%d", &n);
7     int bt[n], p[3];
8     printf("Enter The Processes: \n");
9     for(int i=0; i<n; i++)
10     {
11         scanf("%d", &p[i]);
12     }
13
14     printf("Enter The Burst time: \n");
15     for (int i=0; i<n; i++)
16     {
17         scanf("%d",&bt[i]);
18     }
19     SJF (n, bt, p);
20     average(n, bt);
21
22     return 0;
23 }
24 void SJF (int n, int bt[], int p[]){
25     int pos, temp;
26     for(int i=0; i<n; i++)
```

```
SIF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> | main0: int
Start here x SIF.c x
22     return 0;
23 }
24 void SJF (int n, int bt[], int p[]){
25     int pos, temp;
26     for(int i=0; i<n; i++)
27     {
28         pos=i;
29         for(int j=i+1; j<n; j++)
30         {
31             if(bt[j]<bt[pos])
32                 pos=j;
33         }
34         temp=bt[i];
35         bt[i]=bt[pos];
36         bt[pos]=temp;
37
38         temp=p[i];
39         p[i]=p[pos];
40         p[pos]=temp;
41     }
42     printf("\nAfter Sorting: \n");
43     for (int i=0; i<n; i++)
44     {
45         printf("Process-%d : %d\n",p[i], bt[i]);
46     }
47 }
```

```
SIF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> main0: int
Start here x SIF.c x
43     for (int i=0; i<n; i++)
44     {
45         printf("Process-%d : %d\n",p[i], bt[i]);
46     }
47 }
48 int average(int n,int bt[])
49 {
50     int wt[n];
51     int total=0;
52
53     waiting(wt,bt, n);
54     turnaround(wt,bt,n);
55
56     for(int i=0; i<n; i++)
57     {
58         total =wt[i]+ total;
59     }
60     double avgwt=total/(double)n;
61     printf("Average Waiting Time: %.2lf\n", avgwt);
62 }
63 void waiting(int wt[],int bt[], int n)
64 {
65     wt[0]=0;
66     printf("\nWaiting Time :\n");
67     for(int i=1; i<n; i++)
68     {
```

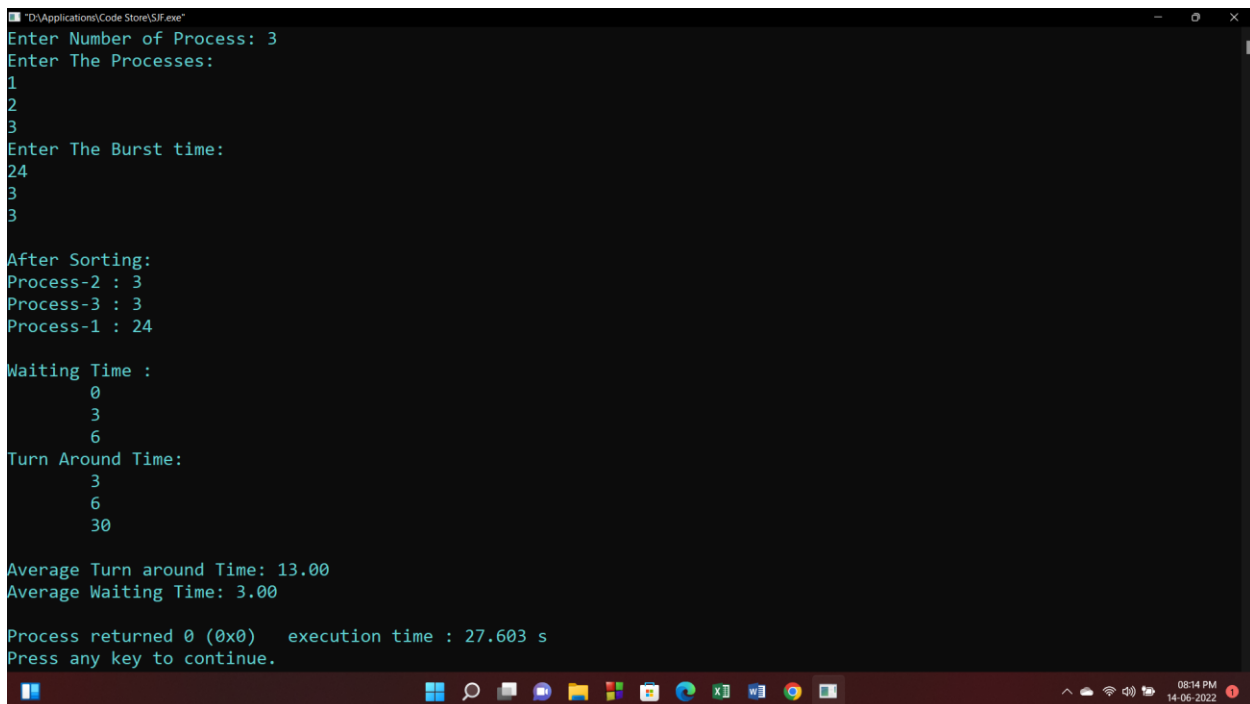
```
SIF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> average(int n, int bt[]): int
Start here x SIF.c x
58         total =wt[i]+ total;
59     }
60     double avgwt=total/(double)n;
61     printf("Average Waiting Time: %.2lf\n", avgwt);
62 }
63 void waiting(int wt[],int bt[], int n)
64 {
65     wt[0]=0;
66     printf("\nWaiting Time :\n");
67     for(int i=1; i<n; i++)
68     {
69         wt[i]=bt[i-1]+ wt[i-1];
70     }
71     for(int i=0; i<n; i++)
72     {
73         printf("\t%d\n",wt[i]);
74     }
75 }
76 }
77 void turnaround(int wt[],int bt[],int n)
78 {
79     int tt[n];
80     int total =0;
81
82     printf("Turn Around Time:\n");
83     for(int i=0; i<n; i++)
```



The screenshot shows a C code editor with the following code:

```
70 }
71 for(int i=0; i<n; i++)
72 {
73     printf("\t%d\n",wt[i]);
74 }
75 }
76 }
77 void turnaround(int wt[],int bt[],int n)
78 {
79     int tt[n];
80     int total =0;
81
82     printf("Turn Around Time:\n");
83     for(int i=0; i<n; i++)
84     {
85         tt[i]=wt[i]+bt[i];
86         printf("\t%d\n",tt[i]);
87     }
88     for(int i=0; i<n; i++)
89     {
90         total=tt[i]+total;
91     }
92     double avgtt = total/(double)n;
93     printf("\nAverage Turn around Time: %.2lf\n",avgtt);
94 }
95 }
```

## Output:



The screenshot shows the output of the program in a terminal window:

```
"D:\Applications\Code Store\SIF.exe"
Enter Number of Process: 3
Enter The Processes:
1
2
3
Enter The Burst time:
24
3
3
After Sorting:
Process-2 : 3
Process-3 : 3
Process-1 : 24
Waiting Time :
0
3
6
Turn Around Time:
3
6
30
Average Turn around Time: 13.00
Average Waiting Time: 3.00
Process returned 0 (0x0)   execution time : 27.603 s
Press any key to continue.
```