

OS LAB

SCHEDULING ALGORITHMS

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CB.EN.U4CYS21022

FCFS

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int bt[15];
```

```
    int n;
```

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

```
    scanf("%d",&n);
```

```
    printf("Enter burst time of all the processes: ");
```

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

```
    {
```

```
        scanf("%d",&bt[i]);
```

```
    }
```

```
int i, wt[n];
wt[0]=0;
for(i=1; i<n; i++)
{
    wt[i]= bt[i-1]+ wt[i-1];
}
printf("Burst Time    Waiting Time    TurnAround Time\n");
float twt=0.0;
float tat= 0.0;
for(i=0; i<n; i++)
{

    printf("%d\t\t", bt[i]);
    printf("%d\t\t", wt[i]);
    printf("%d\t\t", bt[i]+wt[i]);
    printf("\n");

    //for calculating total waiting time
    twt += wt[i];

    //for calculating total turnaround time
    tat += (wt[i]+bt[i]);
```

```

    }

    float att,awt;

    //for calculating average waiting time

    awt = twt/n;


    //for calculating average turnaround time

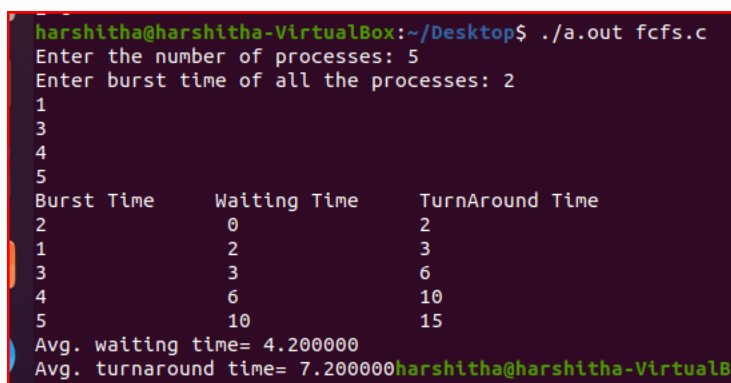
    att = tat/n;

    printf("Avg. waiting time= %f\n",awt);

    printf("Avg. turnaround time= %f",att);

}

```



```

harshitha@harshitha-VirtualBox:~/Desktop$ ./a.out fcfs.c
Enter the number of processes: 5
Enter burst time of all the processes: 2
1
3
4
5
Burst Time      Waiting Time      TurnAround Time
2                0                2
1                2                3
3                3                6
4                6                10
5                10               15
Avg. waiting time= 4.200000
Avg. turnaround time= 7.200000harshitha@harshitha-VirtualB

```

Sjf

```

#include <stdio.h>

int main()

{

    int A[100][4]; // Matrix for storing Process Id, Burst
                  // Time, Average Waiting Time & Average

```

```
        // Turn Around Time.

int i, j, n, total = 0, index, temp;

float avg_wt, avg_tat;

printf("Enter number of process: ");

scanf("%d", &n);

printf("Enter Burst Time:\n");

// User Input Burst Time and allotting Process Id.

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

    printf("P%d: ", i + 1);

    scanf("%d", &A[i][1]);

    A[i][0] = i + 1;

}

// Sorting process according to their Burst Time.

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

    index = i;

    for (j = i + 1; j < n; j++)

        if (A[j][1] < A[index][1])

            index = j;

    temp = A[i][1];

    A[i][1] = A[index][1];

    A[index][1] = temp;
```

```

    temp = A[i][0];
    A[i][0] = A[index][0];
    A[index][0] = temp;
}
A[0][2] = 0;
// Calculation of Waiting Times
for (i = 1; i < n; i++) {
    A[i][2] = 0;
    for (j = 0; j < i; j++)
        A[i][2] += A[j][1];
    total += A[i][2];
}
avg_wt = (float)total / n;
total = 0;
printf("P   BT   WT   TAT\n");
// Calculation of Turn Around Time and printing the
// data.
for (i = 0; i < n; i++) {
    A[i][3] = A[i][1] + A[i][2];
    total += A[i][3];
    printf("P%d   %d   %d   %d\n", A[i][0],
        A[i][1], A[i][2], A[i][3]);
}

```

```
}  
  
avg_tat = (float)total / n;  
  
printf("Average Waiting Time= %f", avg_wt);  
  
printf("\nAverage Turnaround Time= %f", avg_tat);  
  
}
```

```
harshitha@harshitha-VirtualBox:~/Desktop$ nano sjf.c  
harshitha@harshitha-VirtualBox:~/Desktop$ gcc sjf.c  
harshitha@harshitha-VirtualBox:~/Desktop$ ./a.out sjf.c  
Enter number of process: 4  
Enter Burst Time:  
P1: 3  
P2: 2  
P3: 1  
P4: 4  


| P  | BT | WT | TAT |
|----|----|----|-----|
| P3 | 1  | 0  | 1   |
| P2 | 2  | 1  | 3   |
| P1 | 3  | 3  | 6   |
| P4 | 4  | 6  | 10  |

  
Average Waiting Time= 2.500000  
Average Turnaround Time= 5.000000harshitha@harshitha-Virtua
```