

# Operating Systems

## Assignment

### C – Program for SJFS

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```
roehit@LAPTOP-0SIPK43K: ~  
roehit@LAPTOP-0SIPK43K:~$ sudo nano sjfs.c  
roehit@LAPTOP-0SIPK43K:~$
```

```
roehit@LAPTOP-0SIPK43K ~  
GNU nano 2.9.3 sjfs.c  
#include<stdio.h>  
  
void main()  
{  
    int bt[20],p[20],wt[20],tat[20],i,j,n,total=0,pos,temp;  
    float avg_wt,avg_tat;  
    printf("Enter number of process:");  
    scanf("%d",&n);  
  
    printf("\nEnter Burst Time:\n");  
    for(i=0;i<n;i++)  
    {  
        printf("p%d:",i+1);  
        scanf("%d",&bt[i]);  
        p[i]=i+1; //contains process number  
    }  
  
    //sorting burst time in ascending order using selection sort  
    for(i=0;i<n;i++)  
    {  
        pos=i;  
        for(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;  
    }  
  
    wt[0]=0; //waiting time for first process will be zero  
  
    //calculate waiting time  
    for(i=1;i<n;i++)  
    {  
        wt[i]=0;  
        for(j=0;j<i;j++)  
            wt[i]+=bt[j];  
  
        total+=wt[i];  
    }  
  
    avg_wt=(float)total/n;  
    printf("Average Waiting Time=%f",avg_wt);  
  
    printf("\nEnter process number to find its Turnaround Time:");  
    scanf("%d",&i);  
    i--;  
    printf("Turnaround Time of process %d is %d",p[i],tat[i]);  
}
```

```
roehit@LAPTOP-0SIPK43K: ~  
roehit@LAPTOP-0SIPK43K:~$ sudo gcc sjfs.c  
roehit@LAPTOP-0SIPK43K:~$ ./a.out  
Enter number of process:5  
  
Enter Burst Time:  
p1:5  
p2:24  
p3:16  
p4:10  
p5:3  
  
Process    Burst Time    Waiting Time    Turnaround Time  
p5         3             0              3  
p1         5             3              8  
p4         10          8              18  
p3         16          18              34  
p2         24          34              58  
  
Average Waiting Time=12.600000  
Average Turnaround Time=24.200001  
roehit@LAPTOP-0SIPK43K:~$
```