

Experiment No.9
Simulation of SJF Scheduling Algorithm

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Branch:20BIT-1

Semester: 3

Subject Name: OS LAB

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Section/Group: A

Date of Performance:25/11/21

Subject Code: 21O-20CSP-232

1. Aim/Overview of the practical:

Write Program to calculate Average turnaround time and Average waiting time using SJF Scheduling Algorithm

2. Task to be done:

Write Program to calculate Average turnaround time and Average waiting time using SJF Scheduling Algorithm

3. Apparatus:

- Laptop/PC
- Good internet connection
- C language IDE
- UNIX system

4.Steps for experiment/practical:

1. Sort all the process according to the arrival time.
2. Then select that process which has minimum arrival time and minimum Burst time.
3. After completion of process make a pool of process which after till the completion of previous process and select that process among the pool which is having minimum Burst time

PROGRAM:-

```
#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;
}
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;
```

```
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;
total=0;
printf("\nProcess\t Burst Time \tWaiting Time\tTurnaround Time");
for(i=0;i<n;i++)
{
    tat[i]=bt[i]+wt[i];
    total+=tat[i];
    printf("\np%d\t\t %d\t\t %d\t\t\t%d",p[i],bt[i],wt[i],tat[i]);
}
avg_tat=(float)total/n;
printf("\n\nAverage Waiting Time=%f",avg_wt);
printf("\n\nAverage Turnaround Time=%f\n",avg_tat);
}
```



OUTPUT SCREEN

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Reading list

OnlineGDB beta
online compiler and debugger for c/c++
code. compile. run. debug. share.

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main.c

```
29  
30     temp=p[i];  
31     p[i]=p[pos];  
32     p[pos]=temp;  
33 }  
34  
35 wt[0]=0;  
36 for(i=1;i<n;i++)
```

input

Enter number of process:3

Enter Burst Time:

p1:23
p2:24
p3:21

Process	Burst Time	Waiting Time	Turnaround Time
p3	21	0	21
p1	23	21	44
p2	24	44	68

Average Waiting Time=21.666666
Average Turnaround Time=44.333332

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

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Learning outcomes (What I have learnt):

1. Learn about how to use different Linux command
2. What is shell programming?
3. UNIX commands.
4. Shell script

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			