Mawlana Bhashani Science And Technology University

Lab-Report

Lab Report No: 08

Lab Report Name: Implementation of SJF algorithm with a C program
Course code: ICT-3110
Course title: Operating System Lab

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Experiment Name : Implementation of SJF algorithm with a C program

Aim and Objectives :

i) What is SJF Scheduling Algorithm?

ii) How to implementation in C?

Code :

```
#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;
}
```

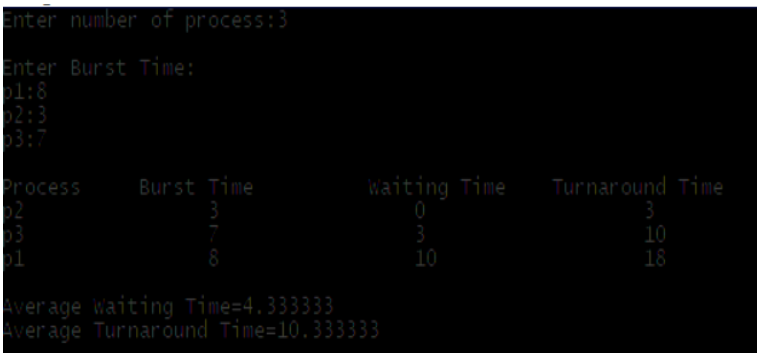
```
 temp=bt[i];
 bt[i]=bt[pos];
 bt[pos]=temp;
temp=p[i];
 p[i]=p[pos];
 p[pos]=temp;

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

Output:



Conclusion :

Shortest Job First (SJF) is an algorithm in which the process having the smallest execution time is chosen for the next execution. This scheduling method can be preemptive or non-preemptive. It significantly reduces the average waiting time for other processes awaiting execution.