**Name:Farhana Afrin Shikha**

**ID:IT-18038**

**Lab Report Name: Implementation of SJF Scheduling algorithm.**

**Lab Report No:08**

**Lab Report 08: Implementation of SJF Scheduling algorithm .**

**Theory :** Shortest-Job-First (SJF) is a non-preemptive discipline in which waiting job (or process) with the smallest estimated run-time-to-completion is run next. In other words, when CPU is available, it is assigned to the process that has smallest next CPU burst. The SJF scheduling is especially appropriate for batch jobs for which the run times are known in advance. Since the SJF scheduling algorithm gives the minimum average time for a given set of processes, it is probably optimal.

**Advantages of SJF** 1.Maximum throughput 2.Minimum average waiting and turnaround time **Disadvantages of SJF** 1.May suffer with the problem of starvation 2.It is not implementable because the exact Burst time for a process can't be known in advance.

**Corresponding Code:**

#include<stdio.h>

int 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; //average turnaround time

printf("\n\nAverage Waiting Time=%f",avg\_wt);

printf("\nAverage Turnaround Time=%f\n",avg\_tat);

printf("\n"); return 0;

}

**Output:**

