| S.No: 4 | Exp. Name: ***Implement CPU Scheduling Algorithms*** | Date: 2022-04-26 |
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**Aim:**

Write a program to implement the SJF Scheduling Algorithm.

**Source Code:**

os2.c

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
   int et[20],at[10],n,i,j,temp,st[10],ft[10],wt[10],ta[10];
   int totwt=0, totta=0;
   float awt,ata;
   char pn[10][10],t[10];
   printf("Enter the number of process:");
   scanf("%d",&n);
   for(i=0;i<n;i++)
   {
      printf("Enter process name, arrival time & execution time:");
      scanf("%s%d%d",pn[i],&at[i],&et[i]);
   }
   for(i=0;i<n;i++)
   for(j=0;j<n;j++)
   {
      if(et[i]<et[j])
      {
         temp=at[i];
         at[i]=at[j];
         at[j]=temp;
         temp=et[i];
         et[i]=et[j];
         et[j]=temp;
         strcpy(t,pn[i]);
         strcpy(pn[i],pn[j]);
         strcpy(pn[j],t);
      }
   }
   for(i=0;i<n;i++)
   {
      if(i==0)
      st[i]=at[i];
      else
      st[i]=ft[i-1];
      wt[i]=st[i]-at[i];
      ft[i]=st[i]+et[i];
      ta[i]=ft[i]-at[i];
      totwt+=wt[i];
      totta+=ta[i];
   }
   awt=(float)totwt/n;
   ata=(float)totta/n;
```

```
   printf("Pname\tarrivaltime\texecutiontime\twaitingtime\ttatime");
   for(i=0;i<n;i++)
   printf("\n%s\t%5d\t\t%5d\t\t%5d\t\t%5d",pn[i],at[i],et[i],wt[i],ta[i]);
   printf("\nAverage waiting time is:%f",awt);
   printf("\nAverage turnaroundtime is:%f",ata);
}
```



## Execution Results - All test cases have succeeded!

| Test Case - 1 | | | | |
|---|---|---|---|---|
| **User Output** | | | | |
| Enter the number of process: 2 | | | | |
| Enter process name, arrival time & execution time: first 23 24 | | | | |
| Enter process name, arrival time & execution time: second 25 26 | | | | |
| Pname | arrivaltime | executiontime | waitingtime | tatime |
| first | 23 | 24 | 0 | 24 |
| second | 25 | 26 | 22 | 48 |
| Average waiting time is:11.000000 | | | | |
| Average turnaroundtime is:36.000000 | | | | |