S.No: 4	Exp. Name: ***Implement CPU Scheduling Algorithms***	Date:

Aim:

Write a program to implement the SJF Scheduling Algorithm.

Source Code:

os2.c

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
#define max 50
void main(){
   int bTime[max],aTime[max],n,i,j,temp,sTime[max],fTime[max],wTime[max],taTime[max];
   int totwTime=0,tottaTime=0;
   float awTime,ataTime=0;
   char pName[max][max],t[max];
   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",pName[i],&aTime[i],&bTime[i]);

   }
   for(i=0; i<n; i++){
      for(j=0; j<n; j++){
         if(bTime[i]<bTime[j]){
            temp = aTime[i];
            aTime[i] = aTime[j];
            aTime[j] = temp;
            temp = bTime[i];
            bTime[i] = bTime[j];
            bTime[j] = temp;
            strcpy(t,pName[i]);
            strcpy(pName[i],pName[j]);
            strcpy(pName[j],t);
         }
      }
   }
   for(i=0; i<n; i++){
      if(i == 0){
         sTime[i] = aTime[i];
      }
      else{
         sTime[i] = fTime[i-1];
      }
      wTime[i] = sTime[i]-aTime[i];
      fTime[i] = sTime[i]+bTime[i];
      taTime[i] = fTime[i]-aTime[i];
      totwTime += wTime[i];
      tottaTime += taTime[i];
   }
   awTime = (float)totwTime/n;
   ataTime = (float)tottaTime/n;
   printf("Pname\tarrivaltime\texecutiontime\twaitingtime\ttatime\n");
   for(i=0; i<n; i++){
```

```
      printf("%s\t%5d\t\t%5d\t\t%5d\t\t%5d\n",pName[i],aTime[i],bTime[i],wTime[i],taTim
e[i]);
   }
   printf("Average waiting time is:%f\n",awTime);
   printf("Average turnaroundtime is:%f\n",ataTime);
}
```


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				