S.No: 3	Exp. Name: ***Implement CPU Scheduling Algorithms***	Date: 2022-04-26

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Aim:

Write a program to implement the PRIORITY based cpu scheduling algorithm.

Source Code:

os3.c

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
   int et[20],at[10],n,i,j,temp,p[10],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,arrivaltime,execution time & priority:");
      scanf("%s%d%d%d",pn[i],&at[i],&et[i],&p[i]);
   }
   for(i=0;i<n;i++)
   for(j=0;j<n;j++)
   {
      if(p[i]<p[j])
      {
         temp=p[i];
         p[i]=p[j];
         p[j]=temp;
         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];
         wt[i]=st[i]-at[i];
         ft[i]=st[i]+et[i];
         ta[i]=ft[i]-at[i];
      }
      else
```

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```
      {
         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\tpriority\twaitingtime\ttatime");
   for(i=0;i<n;i++)
   printf("\n%s\t%5d\t\t%5d\t\t%5d\t\t%5d\t\t%5d",pn[i],at[i],et[i],p[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,arrivaltime,execution time & priority: first 4 6 7					
Enter process name,arrivaltime,execution time & priority: second 5 7 8					
Pname	arrivaltime	executiontime	priority	waitingtime	tatime
first	4	6	7	0	6
second	5	7	8	5	12
Average waiting time is:2.500000					
Average turnaroundtime is:9.000000					