

PROGRAM -7

```

1  #include<stdio.h>
2  int main()
3  {
4      int at[10],bt[10],pr[10];
5      int n,i,j,temp,time=0,count,over=0,sum_wait=0,sum_turnaround=0,start;
6      float avgwait,avgturn;
7      printf("Enter the number of processes\n");
8      scanf("%d",&n); for(i=0;i<n;i++)
9      {
10         printf("Enter the arrival time and execution time for process %d\n",i+1);
11         scanf("%d%d",&at[i],&bt[i]);
12         pr[i]=i+1;
13     }
14     for(i=0;i<n-1;i++)
15     {
16         for(j=i+1;j<n;j++)
17         {
18             if(at[i]>at[j])
19             {
20                 temp=at[i];
21                 at[i]=at[j];
22                 at[j]=temp;
23                 temp=bt[i];
24                 bt[i]=bt[j];
25                 bt[j]=temp;
26                 temp=pr[i];
27                 pr[i]=pr[j];
28                 pr[j]=temp;
29             }
30         }
31     }
32     printf("\n\nProcess\t|Arrival\t|Execution\t|Start time\t|End time\t|waiting\t|Turnaround time\n\n");
33     while(over<n)
34     {
35         count=0; for(i=over;i<n;i++)
36         {
37             if(at[i]<=time) count++;
38         }
39         if(count>1)
40         {
41             for(i=over;i<over+count-1;i++)
42             {
43                 for(j=i+1;j<over+count;j++)
44                 {
45                     if(bt[i]>bt[j])
46                     {
47                         temp=at[i];
48                         at[i]=at[j];
49                         at[j]=temp;
50                         temp=bt[i];
51                         bt[i]=bt[j];
52                         bt[j]=temp;
53                         temp=pr[i];
54                         pr[i]=pr[j];
55                         pr[j]=temp;
56                     }
57                 }
58             }
59             start=time;
60             time+=bt[over];
61             printf("p%d\t|\t%d\t|\t%d\t|\t%d\t|\t%d\t|\t%d\t|\t%d\n",pr[over], at[over],bt[over],start,time,time-at[over]- bt[over],time-at[over]);
62             sum_wait+=time-at[over]-bt[over];
63             sum_turnaround+=time-at[over];
64             over++;
65         }
66         avgwait=(float)sum_wait/(float)n;
67         avgturn=(float)sum_turnaround/(float)n;
68         printf("Average waiting time is %f\n",avgwait);
69         printf("Average turnaround time is %f\n",avgturn);
70         return 0;
71     }

```

OUTPUT

```

Enter the number of processes
3
Enter the arrival time and execution time for process 1
23
2
Enter the arrival time and execution time for process 2
5
6
Enter the arrival time and execution time for process 3
1
3

Process |Arrival    time |Execution    time |Start time |End time |waiting    time |Turnaro
und time
p[3] |      1 |      3 |      0 |      3 |      -1 |      2
p[2] |      5 |      6 |      3 |      9 |      -2 |      4
p[1] |     23 |      2 |      9 |     11 |     -14 |     -12
Average waiting time is -5.666667
Average turnaround time is -2.000000

-----
Process exited after 25.3 seconds with return value 0
Press any key to continue . . .

```