

OS LAB WEEK 4

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Q: Write a program in C for Priority Scheduling (Preemptive).

```
#include<stdio.h>
struct process
{
    int WT,AT,BT,TAT,PT;
};

struct process a[10];

int main()
{
    int n,temp[10],t,count=0,short_p;
    float total_WT=0,total_TAT=0,Avg_WT,Avg_TAT;
    printf("Enter the number of the process\n");
    scanf("%d",&n);
    printf("Enter the arrival time , burst time and priority of the process\n");
    printf("AT BT PT\n");
    for(int i=0;i<n;i++)
```

```
{  
    scanf("%d%d%d",&a[i].AT,&a[i].BT,&a[i].PT);  
  
    temp[i]=a[i].BT;  
}
```

```
a[9].PT=10000;
```

```
for(t=0;count!=n;t++)  
{  
    short_p=9;  
    for(int i=0;i<n;i++)  
    {  
        if(a[short_p].PT>a[i].PT && a[i].AT<=t && a[i].BT>0)  
        {  
            short_p=i;  
        }  
    }  
}
```

```
a[short_p].BT=a[short_p].BT-1;
```

```
if(a[short_p].BT==0)  
{
```

```
    count++;  
    a[short_p].WT=t+1-a[short_p].AT-temp[short_p];  
    a[short_p].TAT=t+1-a[short_p].AT;
```

```
        total_WT=total_WT+a[short_p].WT;
        total_TAT=total_TAT+a[short_p].TAT;

    }
}

Avg_WT=total_WT/n;
Avg_TAT=total_TAT/n;

printf("ID WT TAT\n");
for(int i=0;i<n;i++)
{
    printf("%d %d\t%d\n",i+1,a[i].WT,a[i].TAT);
}

printf("Avg waiting time of the process is %f\n",Avg_WT);
printf("Avg turn around time of the process is
%f\n",Avg_TAT);

return 0;
}
```

Output:-

```
Enter the number of the process
3
Enter the arrival time , burst time and priority of the process
AT BT PT
0 3 3
1 5 1
2 2 2
ID WT TAT
1 7 10
2 0 5
3 4 6
Avg waiting time of the process is 3.666667
Avg turn around time of the process is 7.000000

...Program finished with exit code 0
Press ENTER to exit console.
```