

ASSIGNMENT 10

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A/7/C1

Priority Preemptive

```
#include<stdio.h>
```

```
struct Job{  
    int Pr,AT,BT,CT,TAT,WT;  
};
```

```
typedef struct Job Job;
```

```
Job Job_Array[10];
```

```
float get_avg_TAT(int N){  
    float f=0;  
    int i=0;  
    for(i=0;i<N;i++){  
        f=f+Job_Array[i].TAT;  
    }  
    return f/(N);  
}
```

```
float get_avg_WT(int N){  
    float f=0;  
    int i=0;
```

```

        for(i=0;i<N;i++){
            f=f+Job_Array[i].WT;
        }
        return f/(N);
    }

```

```

int get_max_priority(int Time,int N){
    int max=0;
    int i=0,Index=0,flag=0;
    for(i=0;i<N;i++){
        if(Job_Array[i].AT<=Time && Job_Array[i].BT>0 && Job_Array[i].Pr>max){
            max=Job_Array[i].Pr;
            Index=i;
            flag=1;
        }
    }
    if(flag==0){
        return -1;
    }
    return Index;
}

```

```

void main(){
    int N=5,Timer=0,count=0,tmp_index=0;
    float Avg_TAT,Avg_WT;

    Job_Array[0]=(Job){4,0,5};
    Job_Array[1]=(Job){3,1,4};

```

```

Job_Array[2]=(Job){6,1,3};
Job_Array[3]=(Job){8,2,6};
Job_Array[4]=(Job){5,3,8};

int Initial_BT[]={5,4,3,6,8};

while(count<N){
    tmp_index=get_max_priority(Timer,N);
    if(tmp_index!=-1){
        Job_Array[tmp_index].BT=Job_Array[tmp_index].BT-1;
        Timer++;
        if(Job_Array[tmp_index].BT==0){
            count++;
            Job_Array[tmp_index].CT=Timer;
            Job_Array[tmp_index].TAT=Job_Array[tmp_index].CT-
Job_Array[tmp_index].AT;
            Job_Array[tmp_index].WT=Job_Array[tmp_index].TAT-
Initial_BT[tmp_index];
        }
    }
}

printf("\n%s \t%s \t%s \t%s \t%s", "AT", "BT", "CT", "TAT", "WT");

for(count=0;count<N;count++){
    printf("\n%d \t%d \t%d \t%d \t%d
\t%d",Job_Array[count].AT,Initial_BT[count],Job_Array[count].CT,Job_Array[count].TAT,Job_Array[coun
t].WT);
}

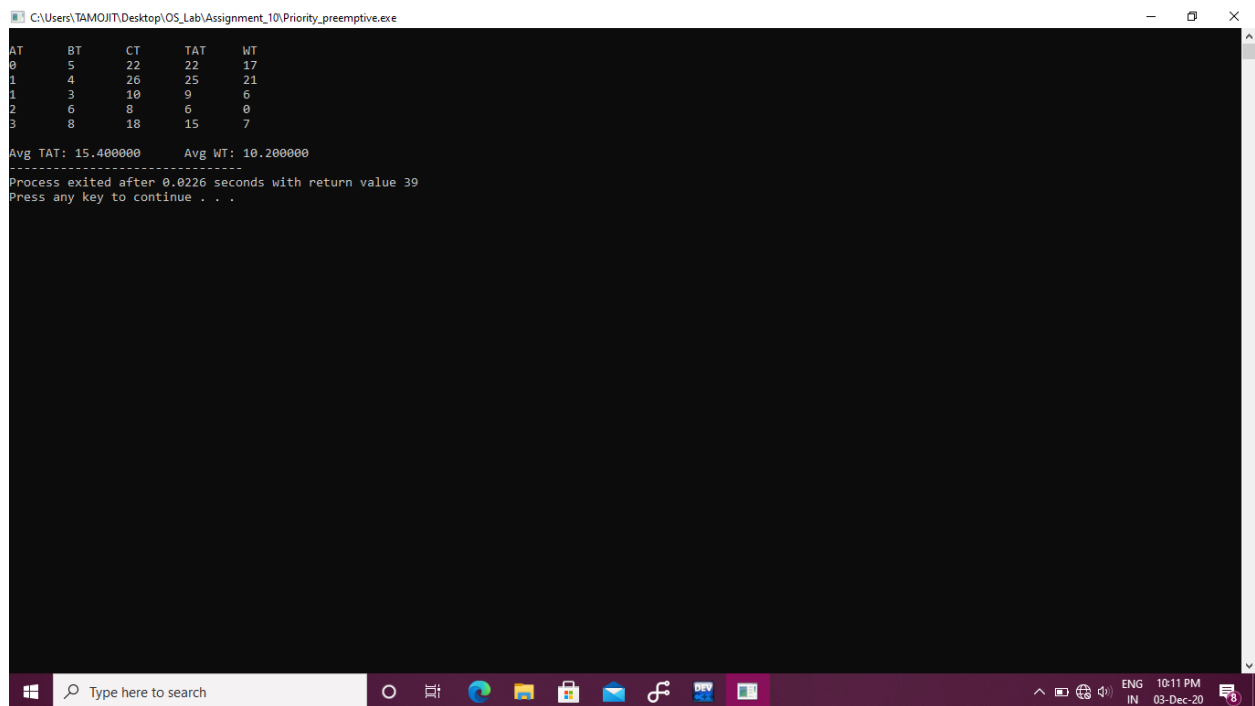
```

```
Avg_TAT=get_avg_TAT(N);

Avg_WT=get_avg_WT(N);

printf("\n\nAvg TAT: %f \tAvg WT: %f",Avg_TAT,Avg_WT);

}
```



```
C:\Users\TAMUJIT\Desktop\OS_Lab\Assignment_10\Priority_preemptive.exe

AT   BT   CT   TAT   WT
0    5    22   22    17
1    4    26   25    21
1    3    10    9     6
2    6     8    6     0
3    8    18   15     7

Avg TAT: 15.400000    Avg WT: 10.200000
-----
Process exited after 0.0226 seconds with return value 39
Press any key to continue . . .
```