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DEPARTMENT- CSE (4TH SEM , SEC - A)

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OS LAB ASSIGNMENT-5

Q1.write a C program to implement FCFS scheduling algorithm.

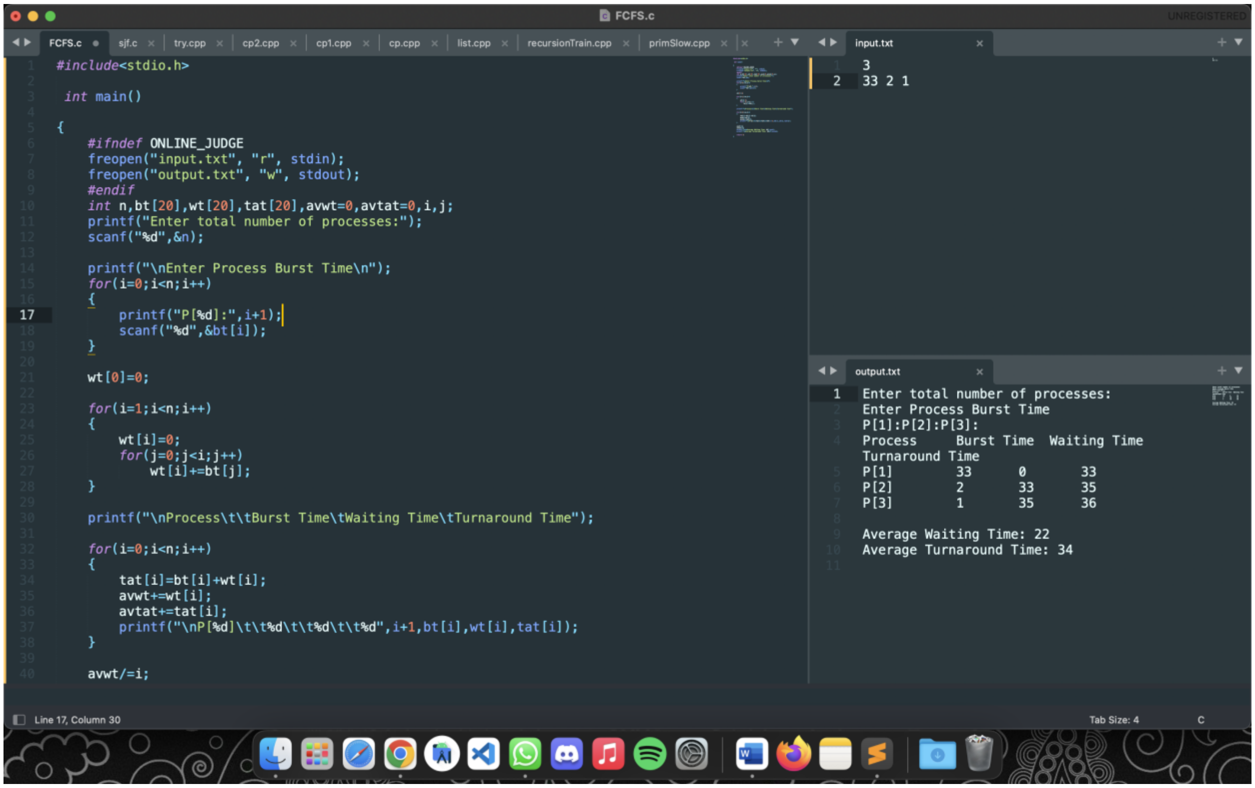
CODE:

```
#include<stdio.h>


 int main()


{
   // #ifndef ONLINE_JUDGE
   // freopen("input.txt", "r", stdin);
   // freopen("output.txt", "w", stdout);
   // #endif
   int n,bt[20],wt[20],tat[20],avwt=0,avtat=0,i,j;
   printf("Enter total number of processes:");
   scanf("%d",&n);
```

```
printf("\nEnter Process Burst Time\n");
for(i=0;i<n;i++)
{
    printf("P[%d]:",i+1);
    scanf("%d",&bt[i]);
}

wt[0]=0;

for(i=1;i<n;i++)
{
    wt[i]=0;
    for(j=0;j<i;j++)
        wt[i]+=bt[j];
}

printf("\nProcess\t\tBurst Time\tWaiting Time\tTurnaround Time");

for(i=0;i<n;i++)
{
    tat[i]=bt[i]+wt[i];
```

```
        avwt+=wt[i];

        avtat+=tat[i];

        printf("\nP[%d]\t\t%d\t\t%d\t\t%d",i+1,bt[i],wt[i],tat[i]);

    }


    avwt/=i;

    avtat/=i;

    printf("\n\nAverage Waiting Time: %d",avwt);

    printf("\nAverage Turnaround Time: %d\n",avtat);


    return 0;

}
```

OUTPUT:



```
#include<stdio.h>

 int main()

{
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif
    int n,bt[20],wt[20],tat[20],avwt=0,avtat=0,i,j;
    printf("Enter total number of processes:");
    scanf("%d",&n);

    printf("\nEnter Process Burst Time\n");
    for(i=0;i<n;i++)
    {
        printf("P[%d]:",i+1);
        scanf("%d",&bt[i]);
    }

    wt[0]=0;

    for(i=1;i<n;i++)
    {
        wt[i]=0;
        for(j=0;j<i;j++)
            wt[i]+=bt[j];
    }

    printf("\nProcess\t\tBurst Time\tWaiting Time\tTurnaround Time");

    for(i=0;i<n;i++)
    {
        tat[i]=bt[i]+wt[i];
        avwt+=wt[i];
        avtat+=tat[i];
        printf("\nP[%d]\t\t%d\t\t%d\t\t%d",i+1,bt[i],wt[i],tat[i]);
    }

    avwt/=i;
```

```
3
33 2 1
```

```
Enter total number of processes:
Enter Process Burst Time
P[1]:P[2]:P[3]:
Process     Burst Time  Waiting Time
Turnaround Time
P[1]        33      0       33
P[2]        2       33      35
P[3]        1       35      36

Average Waiting Time: 22
Average Turnaround Time: 34
```

Q2. write a C program to implement SJF scheduling algorithm.

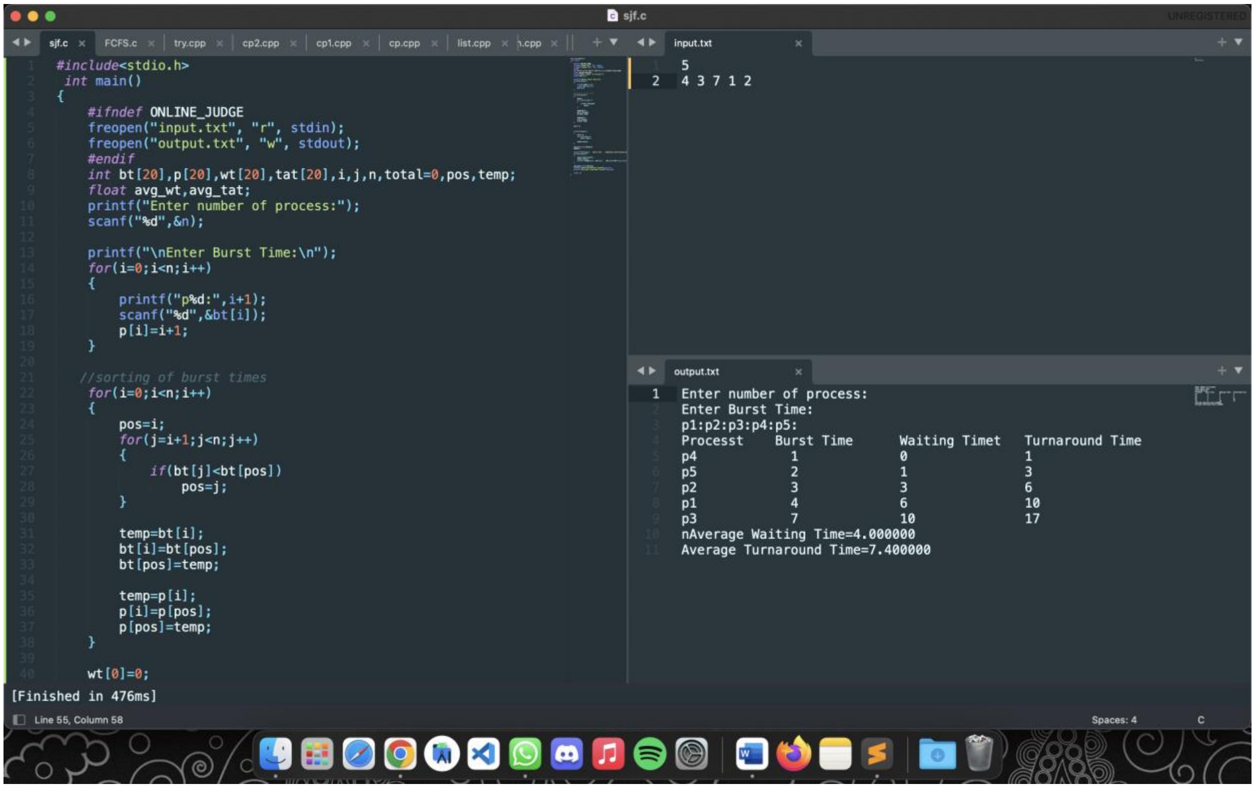
CODE:

```
#include<stdio.h>

 int main()

{

    // #ifndef ONLINE_JUDGE

    // freopen("input.txt", "r", stdin);

    // freopen("output.txt", "w", stdout);

    // #endif

    int bt[20],p[20],wt[20],tat[20],i,j,n,total=0,pos,temp;
 float avg_wt,avg_tat;

 printf("Enter number of process:");

 scanf("%d",&n);


 printf("\nEnter Burst Time:\n");

 for(i=0;i<n;i++)

 {

     printf("p%d:",i+1);

     scanf("%d",&bt[i]);

     p[i]=i+1;

 }


//sorting of burst times

 for(i=0;i<n;i++)

 {

     pos=i;

     for(j=i+1;j<n;j++)

     {

         if(bt[j]<bt[pos])

             pos=j;

     }
```

```
   temp=bt[i];
   bt[i]=bt[pos];
   bt[pos]=temp;

   temp=p[i];
   p[i]=p[pos];
   p[pos]=temp;
}

wt[0]=0;


for(i=1;i<n;i++)
{
   wt[i]=0;
   for(j=0;j<i;j++)
      wt[i]+=bt[j];

   total+=wt[i];
}

avg_wt=(float)total/n;
```

```
    total=0;


    printf("\nProcesst    Burst Time    \tWaiting Timet\tTurnaround Time");
    for(i=0;i<n;i++)
    {
        tat[i]=bt[i]+wt[i];
        total+=tat[i];
        printf("\np%d\t\t\t  %d\t\t\t    %d\t\t\t\t%d",p[i],bt[i],wt[i],tat[i]);
    }


    avg_tat=(float)total/n;
    printf("\nnAverage Waiting Time=%f",avg_wt);
    printf("\nAverage Turnaround Time=%f",avg_tat);


    return 0;
}
```

OUTPUT:



```c
#include<stdio.h>
 int main()
{
    #ifndef ONLINE_JUDGE
    freopen("input.txt", "r", stdin);
    freopen("output.txt", "w", stdout);
    #endif
    int bt[20],p[20],wt[20],tat[20],i,j,n,total=0,pos,temp;
    float avg_wt,avg_tat;
    printf("Enter number of process:");
    scanf("%d",&n);

    printf("\nEnter Burst Time:\n");
    for(i=0;i<n;i++)
    {
        printf("p%d:",i+1);
        scanf("%d",&bt[i]);
        p[i]=i+1;
    }

   //sorting of burst times
    for(i=0;i<n;i++)
    {
        pos=i;
        for(j=i+1;j<n;j++)
        {
            if(bt[j]<bt[pos])
                pos=j;
        }

        temp=bt[i];
        bt[i]=bt[pos];
        bt[pos]=temp;

        temp=p[i];
        p[i]=p[pos];
        p[pos]=temp;
    }

    wt[0]=0;
```

```
[Finished in 476ms]
```

```
5
4 3 7 1 2
```

```
Enter number of process:
Enter Burst Time:
p1:p2:p3:p4:p5:
Processt    Burst Time      Waiting Timet   Turnaround Time
p4            1             0               1
p5            2             1               3
p2            3             3               6
p1            4             6               10
p3            7             10              17
nAverage Waiting Time=4.000000
Average Turnaround Time=7.400000
```