

HAMMAD MURTAZA

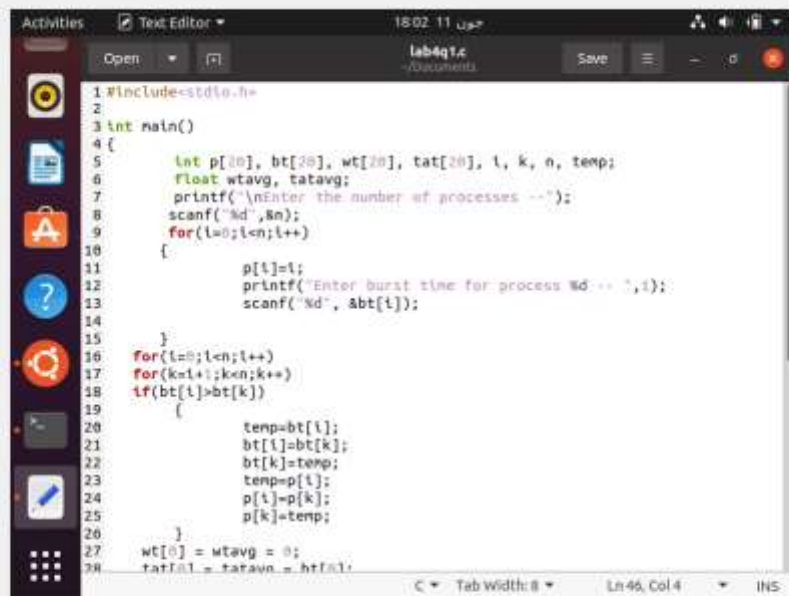
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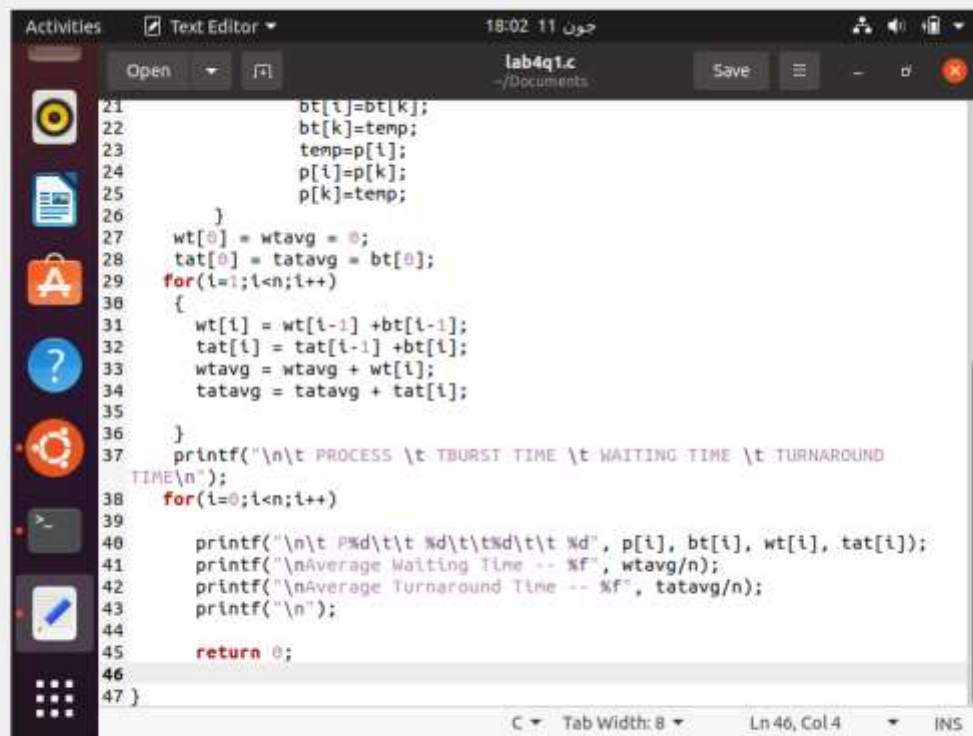
OS LAB 4

Q1:

CODE:

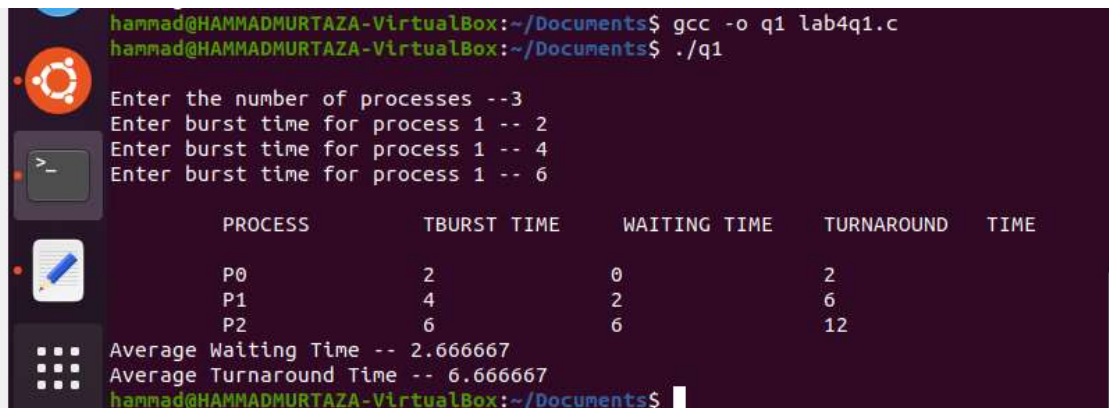


```
1 #include<stdio.h>
2
3 int main()
4 {
5     int p[20], bt[20], wt[20], tat[20], i, k, n, temp;
6     float wtavg, tatavg;
7     printf("\nEnter the number of processes --");
8     scanf("%d", &n);
9     for(i=0; i<n; i++)
10     {
11         p[i]=i;
12         printf("Enter burst time for process %d -- ", i);
13         scanf("%d", &bt[i]);
14     }
15     for(i=0; i<n; i++)
16     for(k=i+1; k<n; k++)
17     if(bt[i]>bt[k])
18     {
19         temp=bt[i];
20         bt[i]=bt[k];
21         bt[k]=temp;
22         temp=p[i];
23         p[i]=p[k];
24         p[k]=temp;
25     }
26     wt[0] = wtavg = 0;
27     tat[0] = tatavg = bt[0];
```



```
21         bt[i]=bt[k];
22         bt[k]=temp;
23         temp=p[i];
24         p[i]=p[k];
25         p[k]=temp;
26     }
27     wt[0] = wtavg = 0;
28     tat[0] = tatavg = bt[0];
29     for(i=1;i<n;i++)
30     {
31         wt[i] = wt[i-1] +bt[i-1];
32         tat[i] = tat[i-1] +bt[i];
33         wtavg = wtavg + wt[i];
34         tatavg = tatavg + tat[i];
35     }
36     printf("\n\t PROCESS \t TBURST TIME \t WAITING TIME \t TURNAROUND
37     TIME\n");
38     for(i=0;i<n;i++)
39     {
40         printf("\n\t P%d\t\t %d\t\t %d\t\t %d", p[i], bt[i], wt[i], tat[i]);
41         printf("\nAverage Waiting Time -- %f", wtavg/n);
42         printf("\nAverage Turnaround Time -- %f", tatavg/n);
43         printf("\n");
44     }
45     return 0;
46 }
47 }
```

OUTPUT:



```
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$ gcc -o q1 lab4q1.c
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$ ./q1
Enter the number of processes --3
Enter burst time for process 1 -- 2
Enter burst time for process 1 -- 4
Enter burst time for process 1 -- 6

```

PROCESS	TBURST TIME	WAITING TIME	TURNAROUND TIME
P0	2	0	2
P1	4	2	6
P2	6	6	12

```
Average Waiting Time -- 2.666667
Average Turnaround Time -- 6.666667
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$
```

Q2:

Correct Answer : C

REASON:

Let three process be P0, P1 and P2 with arrival times 0, 2 and 6 respectively and CPU burst times 10, 20 and 30 respectively. At time 0, P0 is the only available process so it runs. P1 is scheduled as it is the shortest remaining time process. Only two context switches are needed.