

**OPERATING SYSTEMS**  
**LAB DIGITAL ASSIGNMENT - 3**

Course Code : SWE3001

Slot : L25+L26

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**Compute Average waiting Time (AWT) & Average Turnaround Time (ATT) for the following data given below using First Come First Serve (FCFS) Scheduling algorithm. For implementation use UNIX 'C' language.**

Processes	Arrival Time	CPU Time
VLC	08:00:00	3
Word	08:02:00	6
PPT	08:04:00	4
Firefox	08:06:00	5
Chrome	08:08:00	2

**Code :**

```
#include<stdio.h>

int main()
{
    int AT[10],BT[10],WT[10],TT[10],n;
    int burst=0,cmpl_T;
    float Average_WaitingTime,Average_TurnaroundTime,Total=0;
    printf("Enter the number of the process to be executed in the program \n");
```

```
scanf("%d",&n);
printf("Enter the Arrival time and Burst time of the process below\n");
printf("AT\t\tBT\n");
for(int i=0;i<n;i++)
{
scanf("%d%d",&AT[i],&BT[i]);
}

for(int i=0;i<n;i++)
{
if(i==0)
WT[i]=AT[i];
else
WT[i]=burst-AT[i];
burst+=BT[i];
Total+=WT[i];
}
Average_WaitingTime=Total/n;
cml_T=0;
Total=0;
for(int i=0;i<n;i++)
{
cml_T+=BT[i];
TT[i]=cml_T-AT[i];
Total+=TT[i];
}
Average_TurnaroundTime=Total/n;
```

```

printf("Process ,Waiting_time ,TurnAround_time\n");
for(int i=0;i<n;i++)
{
printf("%d\t\t%d\t\t%d\n",i+1,WT[i],TT[i]);
}
printf("Average waiting time is : %f\n",Average_WaitingTime);
printf("Average turn around time is : %f\n",Average_TurnaroundTime);
return 0;
}

```

## Output :

The image shows a C program in a text editor and its execution in a terminal. The program calculates the average waiting and turn-around times for a set of processes based on their arrival and burst times.

**Program Code (Question3.c):**

```

1 #include<stdio.h>
2
3 int main()
4 {
5     int AT[10],BT[10],WT[10],TT[10],n;
6     int burst=0,cnpl_T;
7     float Average_WaitingTime,Average_TurnaroundTime,Total=0;
8     printf("Enter the number of the process to be executed in the program \n");
9     scanf("%d",&n);
10    printf("Enter the Arrival time and Burst time of the process below\n");
11    printf("AT\t\tBT\n");
12    for(int i=0;i<n;i++)
13    {
14        scanf("%d%d",&AT[i],&BT[i]);
15    }
16    for(int i=0;i<n;i++)
17    {
18        if(i==0)
19            WT[i]=AT[i];
20        else
21            WT[i]=burst-AT[i];
22        burst+=BT[i];
23        Total+=WT[i];
24    }
25    Average_WaitingTime=Total/n;
26    cnpl_T=0;
27    Total=0;
28    for(int i=0;i<n;i++)
29    {
30        cnpl_T+=BT[i];
31        TT[i]=cnpl_T-AT[i];
32        Total+=TT[i];
33    }
34    Average_TurnaroundTime=Total/n;
35
36    printf("Process ,Waiting_time ,TurnAround_time\n");
37    for(int i=0;i<n;i++)
38    {
39        printf("%d\t\t%d\t\t%d\n",i+1,WT[i],TT[i]);
40    }
41    printf("Average waiting time is : %f\n",Average_WaitingTime);
42    printf("Average turn around time is : %f\n",Average_TurnaroundTime);
43    return 0;
44 }

```

**Terminal Output:**

```

deepan2001@ubuntu: ~/Desktop/Lab
deepan2001@ubuntu:~$ cd Desktop
deepan2001@ubuntu:~/Desktop$ cd Lab
deepan2001@ubuntu:~/Desktop/Lab$ gcc Question3.c
deepan2001@ubuntu:~/Desktop/Lab$ ./a.out
Enter the number of the process to be executed in the program
5
Enter the Arrival time and Burst time of the process below
AT      BT
0        3
2        6
4        4
6        5
8        2
Process ,Waiting_time ,TurnAround_time
1        0        3
2        1        7
3        5        9
4        7        12
5        10       12
Average waiting time is : 4.600000
Average turn around time is : 8.600000
deepan2001@ubuntu:~/Desktop/Lab$

```