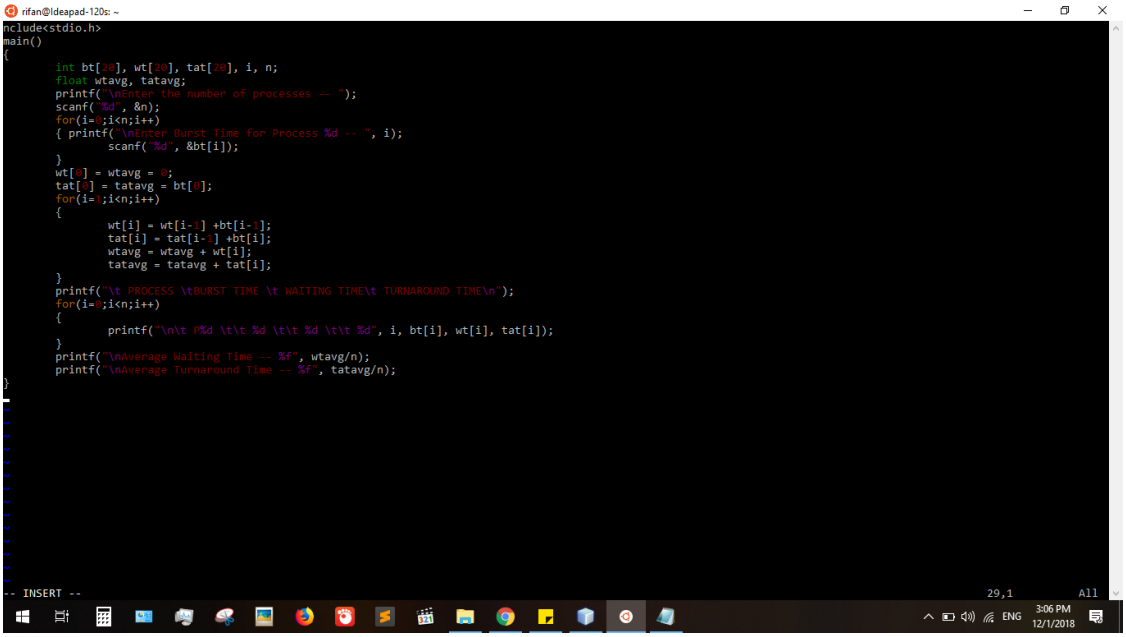
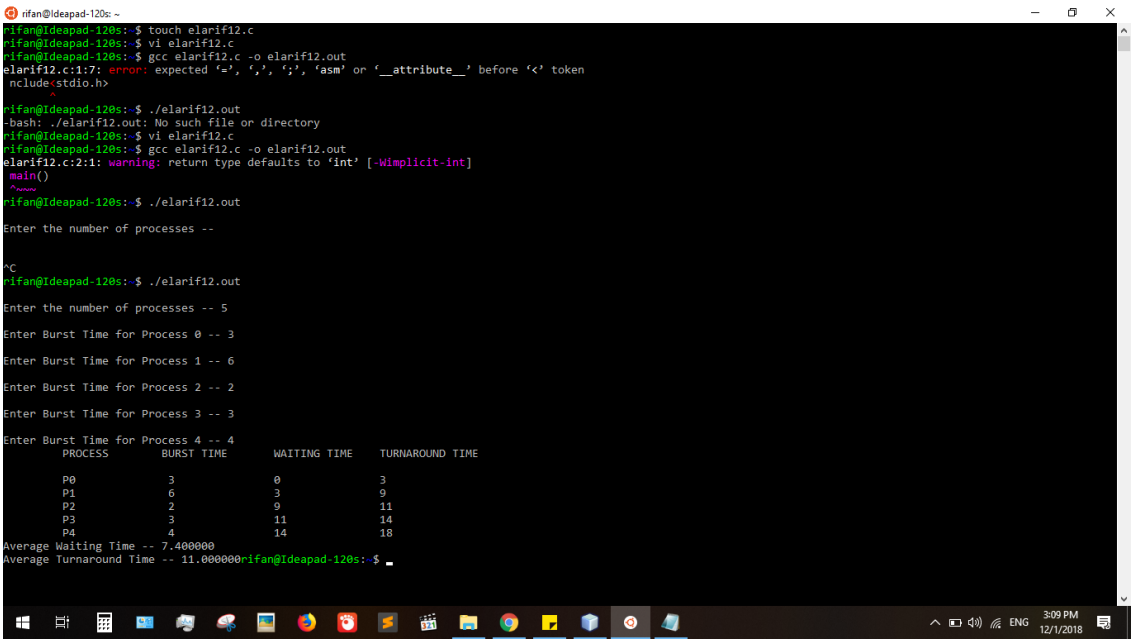
Nama : Muhammad Firman El Arif

Kelas : 17.01.53.2028

1. *Program Penjadwalan Proses dan Hasil First-come, first-served (FCFS)*

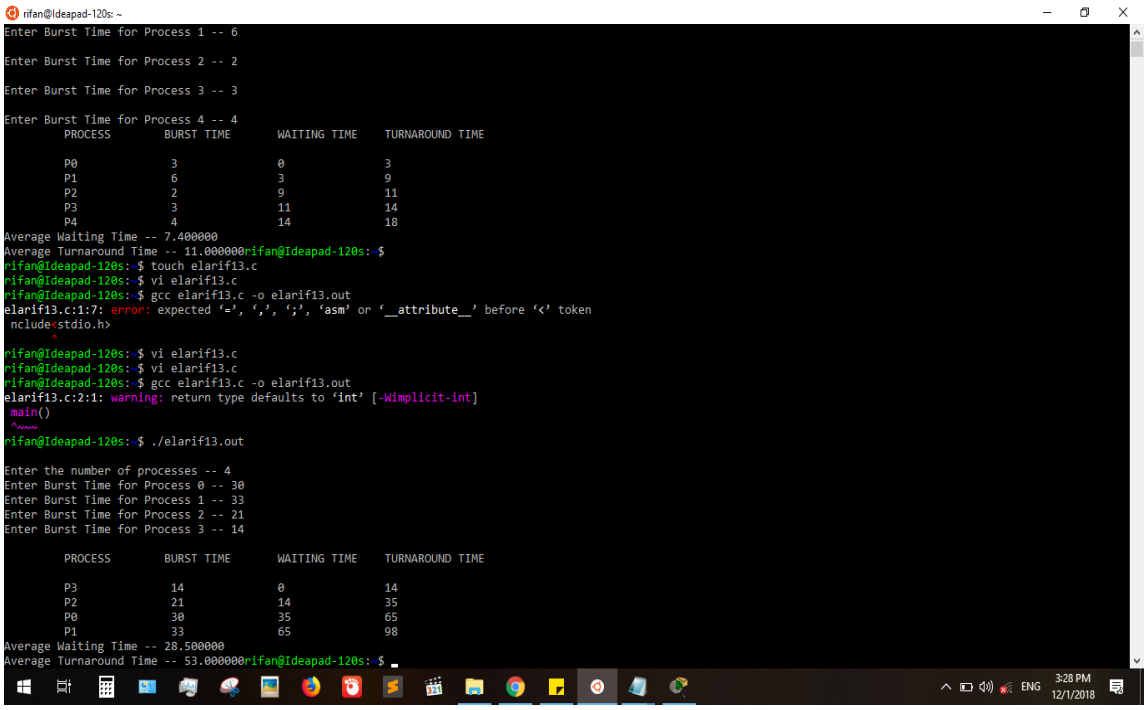


```
rifan@Ideapad-120s: ~
nclude<stdio.h>
main()
{
        int bt[20], wt[20], tat[20], i, n;
        float wtavg, tatavg;
        printf("\nEnter the number of processes -- ");
        scanf("%d", &n);
        for(i=0;i<n;i++)
        { printf("\nEnter Burst Time for Process %d -- ", i);
                scanf("%d", &bt[i]);
        }
        wt[0] = wtavg = 0;
        tat[0] = tatavg = bt[0];
        for(i=1;i<n;i++)
        {
                wt[i] = wt[i-1] +bt[i-1];
                tat[i] = tat[i-1] +bt[i];
                wtavg = wtavg + wt[i];
                tatavg = tatavg + tat[i];
        }
        printf("\t PROCESS \tBURST TIME \t WAITING TIME\t TURNAROUND TIME\n");
        for(i=0;i<n;i++)
        {
                printf("\n\t P%d \t\t %d \t\t %d \t\t %d", i, bt[i], wt[i], tat[i]);
        }
        printf("\nAverage Waiting Time -- %f", wtavg/n);
        printf("\nAverage Turnaround Time -- %f", tatavg/n);
}
-- INSERT --                                                    29,1          All
```

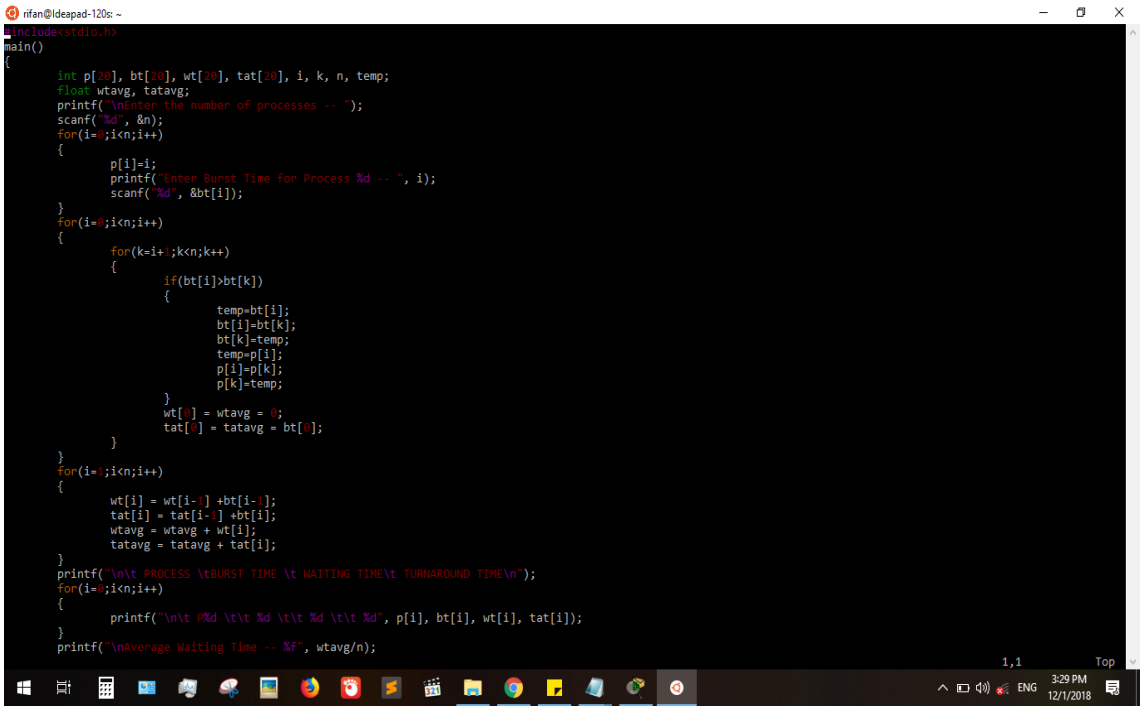


```
rifan@Ideapad-120s: ~
rifan@Ideapad-120s:~$ touch elarif12.c
rifan@Ideapad-120s:~$ vi elarif12.c
rifan@Ideapad-120s:~$ gcc elarif12.c -o elarif12.out
elarif12.c:1:7: error: expected '=', ',', ';', 'asm' or '__attribute__' before '<' token
 nclude<stdio.h>
       ^
rifan@Ideapad-120s:~$ ./elarif12.out
-bash: ./elarif12.out: No such file or directory
rifan@Ideapad-120s:~$ vi elarif12.c
rifan@Ideapad-120s:~$ gcc elarif12.c -o elarif12.out
elarif12.c:2:1: warning: return type defaults to 'int' [-Wimplicit-int]
 main()
 ^~~~
rifan@Ideapad-120s:~$ ./elarif12.out

Enter the number of processes --

^C
rifan@Ideapad-120s:~$ ./elarif12.out

Enter the number of processes -- 5

Enter Burst Time for Process 0 -- 3

Enter Burst Time for Process 1 -- 6

Enter Burst Time for Process 2 -- 2

Enter Burst Time for Process 3 -- 3

Enter Burst Time for Process 4 -- 4
         PROCESS        BURST TIME      WAITING TIME    TURNAROUND TIME

         P0             3               0               3
         P1             6               3               9
         P2             2               9               11
         P3             3               11              14
         P4             4               14              18
Average Waiting Time -- 7.400000
Average Turnaround Time -- 11.000000rifan@Ideapad-120s:~$
```

2. *Program Penjadwalan Proses dan Hasil* Shortest-Job-First (SJF)

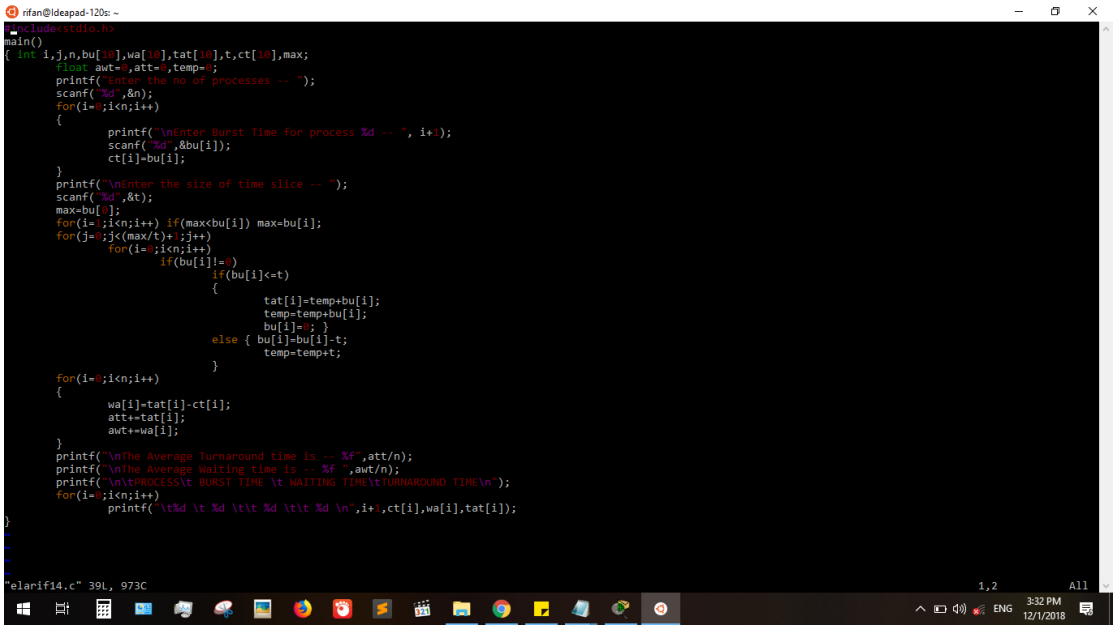


```
rifan@Ideapad-120s: ~
Enter Burst Time for Process 1 -- 6

Enter Burst Time for Process 2 -- 2

Enter Burst Time for Process 3 -- 3

Enter Burst Time for Process 4 -- 4
        PROCESS         BURST TIME      WAITING TIME    TURNAROUND TIME

        P0              3               0               3
        P1              6               3               9
        P2              2               9               11
        P3              3               11              14
        P4              4               14              18
Average Waiting Time -- 7.400000
Average Turnaround Time -- 11.000000rifan@Ideapad-120s:~$
rifan@Ideapad-120s:~$ touch elarif13.c
rifan@Ideapad-120s:~$ vi elarif13.c
rifan@Ideapad-120s:~$ gcc elarif13.c -o elarif13.out
elarif13.c:1:7: error: expected '=', ',', ';', 'asm' or '__attribute__' before '<' token
 nclude<stdio.h>
       ^
rifan@Ideapad-120s:~$ vi elarif13.c
rifan@Ideapad-120s:~$ vi elarif13.c
rifan@Ideapad-120s:~$ gcc elarif13.c -o elarif13.out
elarif13.c:2:1: warning: return type defaults to 'int' [-Wimplicit-int]
 main()
 ^~~~
rifan@Ideapad-120s:~$ ./elarif13.out

Enter the number of processes -- 4
Enter Burst Time for Process 0 -- 30
Enter Burst Time for Process 1 -- 33
Enter Burst Time for Process 2 -- 21
Enter Burst Time for Process 3 -- 14

        PROCESS         BURST TIME      WAITING TIME    TURNAROUND TIME

        P3              14              0               14
        P2              21              14              35
        P0              30              35              65
        P1              33              65              98
Average Waiting Time -- 28.500000
Average Turnaround Time -- 53.000000rifan@Ideapad-120s:~$
```

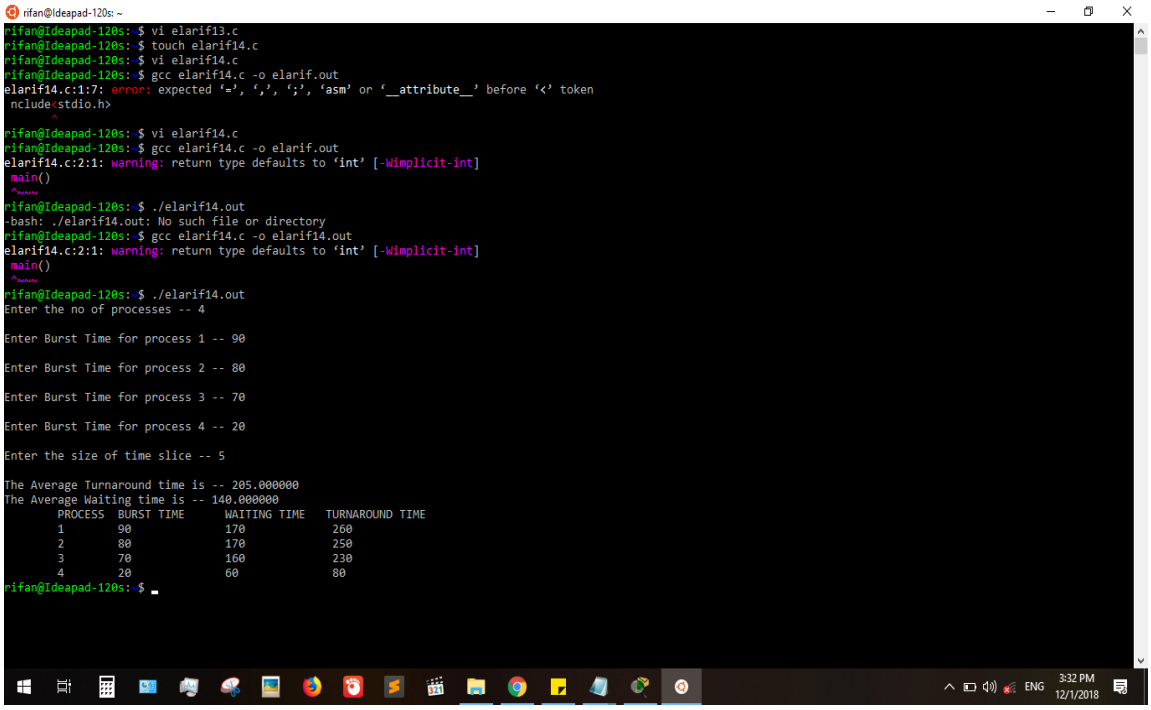


```
rifan@Ideapad-120s: ~
#include<stdio.h>
main()
{
        int p[20], bt[20], wt[20], tat[20], i, k, n, temp;
        float wtavg, tatavg;
        printf("\nEnter the number of processes -- ");
        scanf("%d", &n);
        for(i=0;i<n;i++)
        {
                p[i]=i;
                printf("Enter Burst Time for Process %d -- ", i);
                scanf("%d", &bt[i]);
        }
        for(i=0;i<n;i++)
        {
                for(k=i+1;k<n;k++)
                {
                        if(bt[i]>bt[k])
                        {
                                temp=bt[i];
                                bt[i]=bt[k];
                                bt[k]=temp;
                                temp=p[i];
                                p[i]=p[k];
                                p[k]=temp;
                        }
                        wt[0] = wtavg = 0;
                        tat[0] = tatavg = bt[0];
                }
        }
        for(i=1;i<n;i++)
        {
                wt[i] = wt[i-1] +bt[i-1];
                tat[i] = tat[i-1] +bt[i];
                wtavg = wtavg + wt[i];
                tatavg = tatavg + tat[i];
        }
        printf("\n\t PROCESS \tBURST TIME \t WAITING TIME\t TURNAROUND TIME\n");
        for(i=0;i<n;i++)
        {
                printf("\n\t P%d \t\t %d \t\t %d \t\t %d", p[i], bt[i], wt[i], tat[i]);
        }
        printf("\nAverage Waiting Time -- %f", wtavg/n);
                                                                        1,1           Top
```

3. *Program Penjadwalan Proses dan Hasil* Round-Robin (RR)



```
#include<stdio.h>
main()
{ int i,j,n,bu[10],wa[10],tat[10],t,ct[10],max;
        float awt=0,att=0,temp=0;
        printf("Enter the no of processes -- ");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        {
                printf("\nEnter Burst Time for process %d -- ", i+1);
                scanf("%d",&bu[i]);
                ct[i]=bu[i];
        }
        printf("\nEnter the size of time slice -- ");
        scanf("%d",&t);
        max=bu[0];
        for(i=1;i<n;i++) if(max<bu[i]) max=bu[i];
        for(j=0;j<(max/t)+1;j++)
                for(i=0;i<n;i++)
                        if(bu[i]!=0)
                                if(bu[i]<=t)
                                {
                                        tat[i]=temp+bu[i];
                                        temp=temp+bu[i];
                                        bu[i]=0; }
                                else { bu[i]=bu[i]-t;
                                        temp=temp+t;
                                }
        for(i=0;i<n;i++)
        {
                wa[i]=tat[i]-ct[i];
                att+=tat[i];
                awt+=wa[i];
        }
        printf("\nThe Average Turnaround time is -- %f",att/n);
        printf("\nThe Average Waiting time is -- %f ",awt/n);
        printf("\n\tPROCESS\t BURST TIME \t WAITING TIME\tTURNARROUND TIME\n");
        for(i=0;i<n;i++)
                printf("\t%d \t %d \t\t %d \t\t %d \n",i+1,ct[i],wa[i],tat[i]);
}
~
~
~
~
"elarif14.c" 39L, 973C                                                  1,2           All
```



```
rifan@Ideapad-120s:~$ vi elarif13.c
rifan@Ideapad-120s:~$ touch elarif14.c
rifan@Ideapad-120s:~$ vi elarif14.c
rifan@Ideapad-120s:~$ gcc elarif14.c -o elarif.out
elarif14.c:1:7: error: expected '=', ',', ';', 'asm' or '__attribute__' before '<' token
 nclude<stdio.h>
       ^
rifan@Ideapad-120s:~$ vi elarif14.c
rifan@Ideapad-120s:~$ gcc elarif14.c -o elarif.out
elarif14.c:2:1: warning: return type defaults to 'int' [-Wimplicit-int]
 main()
 ^~~~
rifan@Ideapad-120s:~$ ./elarif14.out
-bash: ./elarif14.out: No such file or directory
rifan@Ideapad-120s:~$ gcc elarif14.c -o elarif14.out
elarif14.c:2:1: warning: return type defaults to 'int' [-Wimplicit-int]
 main()
 ^~~~
rifan@Ideapad-120s:~$ ./elarif14.out
Enter the no of processes -- 4

Enter Burst Time for process 1 -- 90

Enter Burst Time for process 2 -- 80

Enter Burst Time for process 3 -- 70

Enter Burst Time for process 4 -- 20

Enter the size of time slice -- 5

The Average Turnaround time is -- 205.000000
The Average Waiting time is -- 140.000000
        PROCESS  BURST TIME      WAITING TIME    TURNAROUND TIME
        1        90             170             260
        2        80             170             250
        3        70             160             230
        4        20             60              80
rifan@Ideapad-120s:~$
```