OS LAB-5:

CPU SCHEDULING ALGORITHMS:

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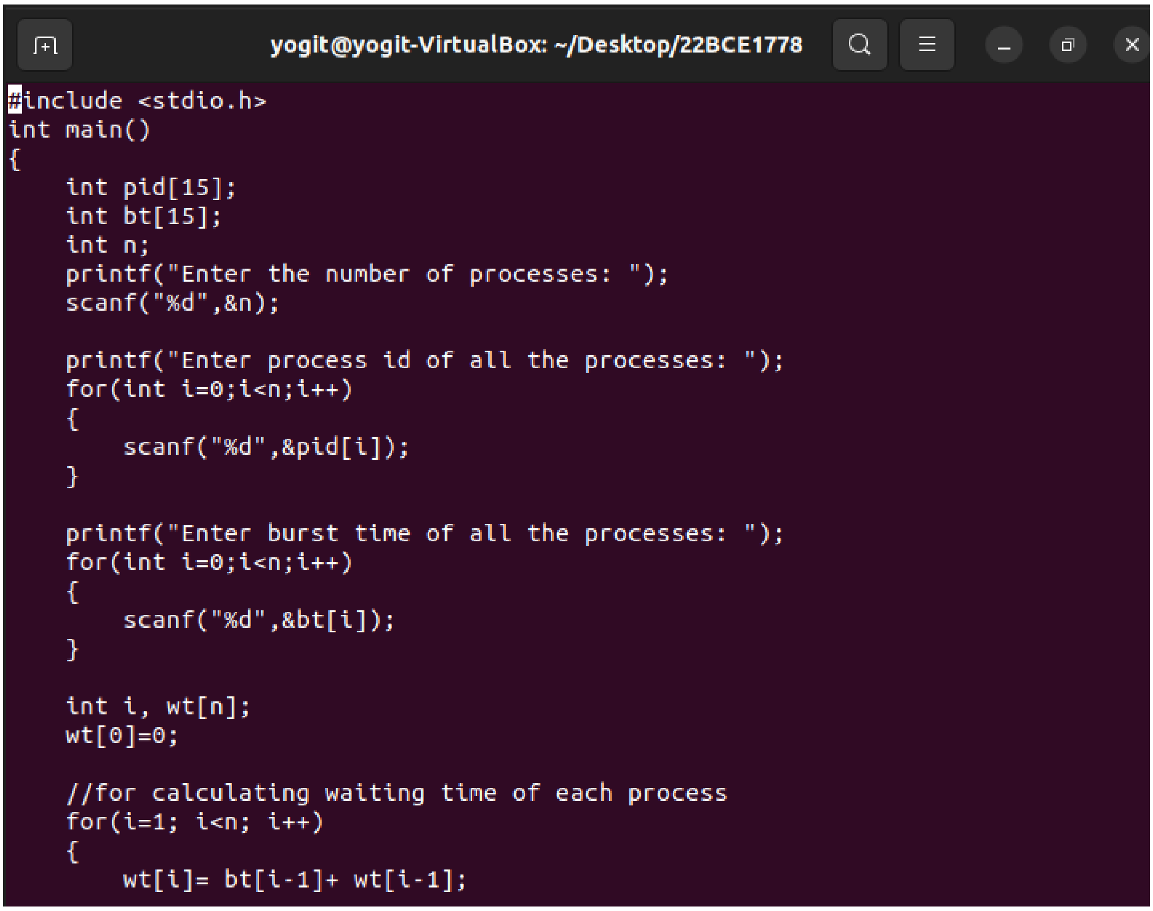
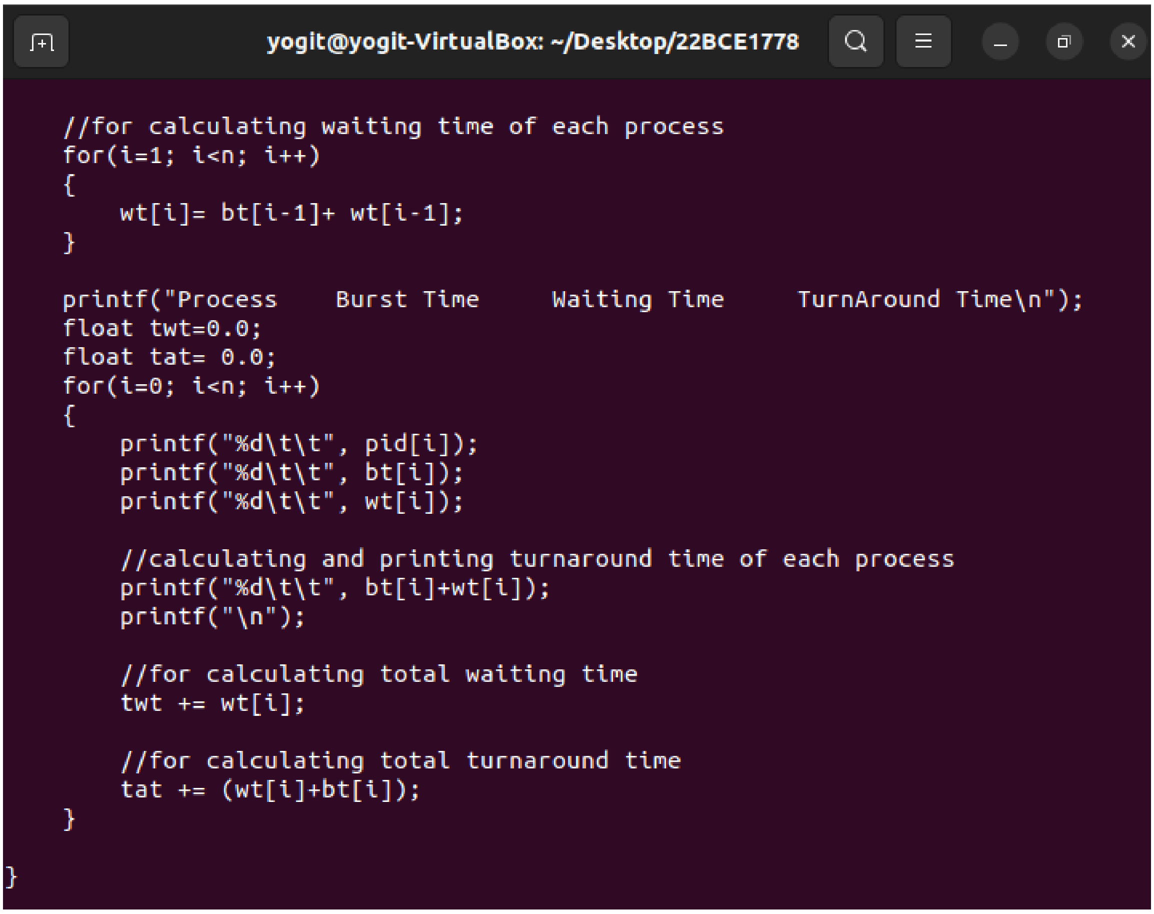
22BCE1778

FIRST COME FIRST SERVE(FCFS) CPU SCHEDULING ALGORITHM:

CODE:

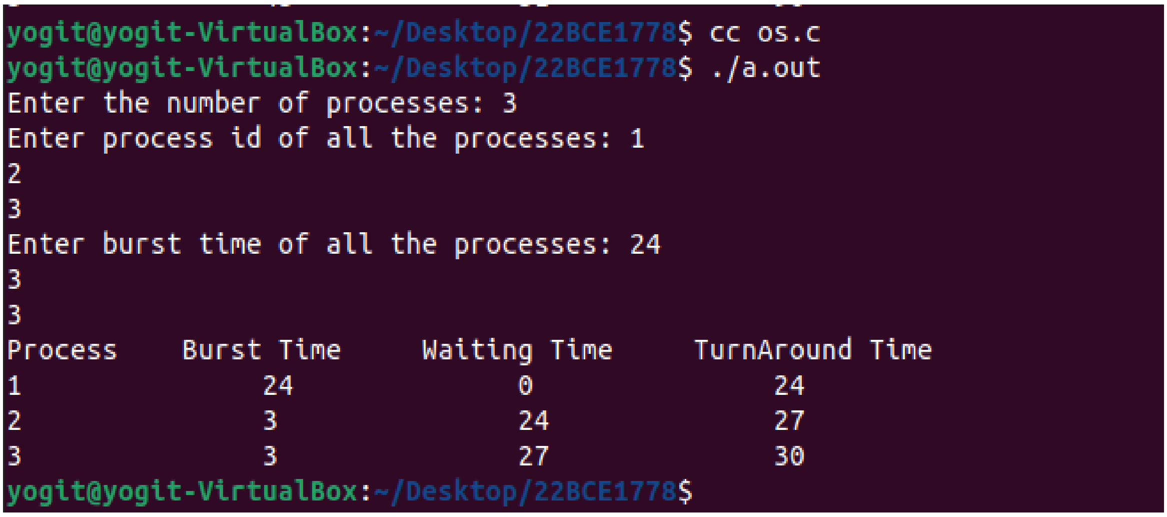


```
#include <stdio.h>
int main()
{
    int pid[15];
    int bt[15];
    int n;
    printf("Enter the number of processes: ");
    scanf("%d",&n);

    printf("Enter process id of all the processes: ");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&pid[i]);
    }

    printf("Enter burst time of all the processes: ");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&bt[i]);
    }

    int i, wt[n];
    wt[0]=0;

    //for calculating waiting time of each process
    for(i=1; i<n; i++)
    {
        wt[i]= bt[i-1]+ wt[i-1];
```



```
    //for calculating waiting time of each process
    for(i=1; i<n; i++)
    {
        wt[i]= bt[i-1]+ wt[i-1];
    }

    printf("Process    Burst Time     Waiting Time     TurnAround Time\n");
    float twt=0.0;
    float tat= 0.0;
    for(i=0; i<n; i++)
    {
        printf("%d\t\t", pid[i]);
        printf("%d\t\t", bt[i]);
        printf("%d\t\t", wt[i]);

        //calculating and printing turnaround time of each process
        printf("%d\t\t", bt[i]+wt[i]);
        printf("\n");

        //for calculating total waiting time
        twt += wt[i];

        //for calculating total turnaround time
        tat += (wt[i]+bt[i]);
    }

}
```

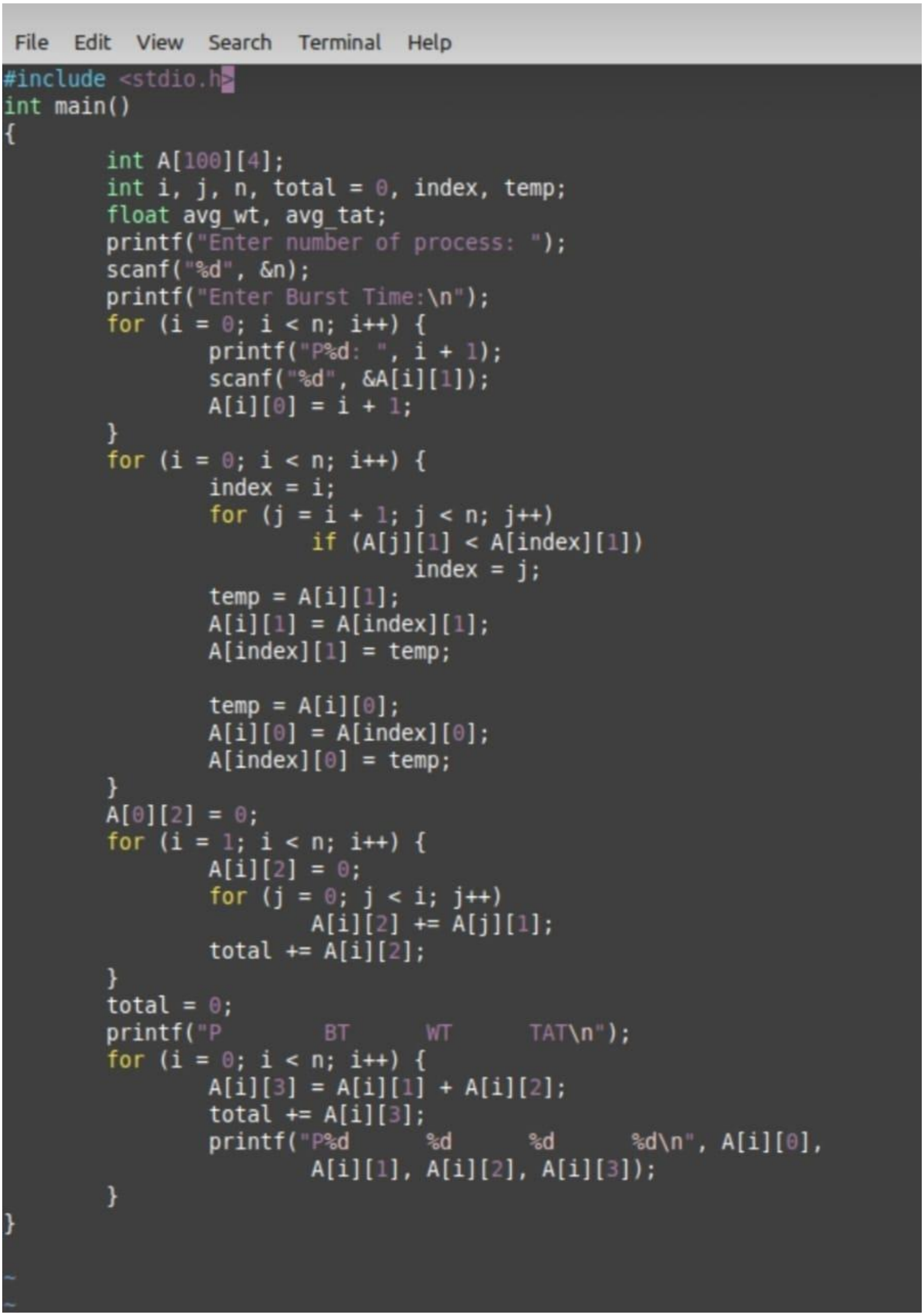
OUTPUT:



```
yogit@yogit-VirtualBox:~/Desktop/22BCE1778$ cc os.c
yogit@yogit-VirtualBox:~/Desktop/22BCE1778$ ./a.out
Enter the number of processes: 3
Enter process id of all the processes: 1
2
3
Enter burst time of all the processes: 24
3
3
Process    Burst Time     Waiting Time     TurnAround Time
1                24                0                24
2                3                 24               27
3                3                 27               30
yogit@yogit-VirtualBox:~/Desktop/22BCE1778$
```

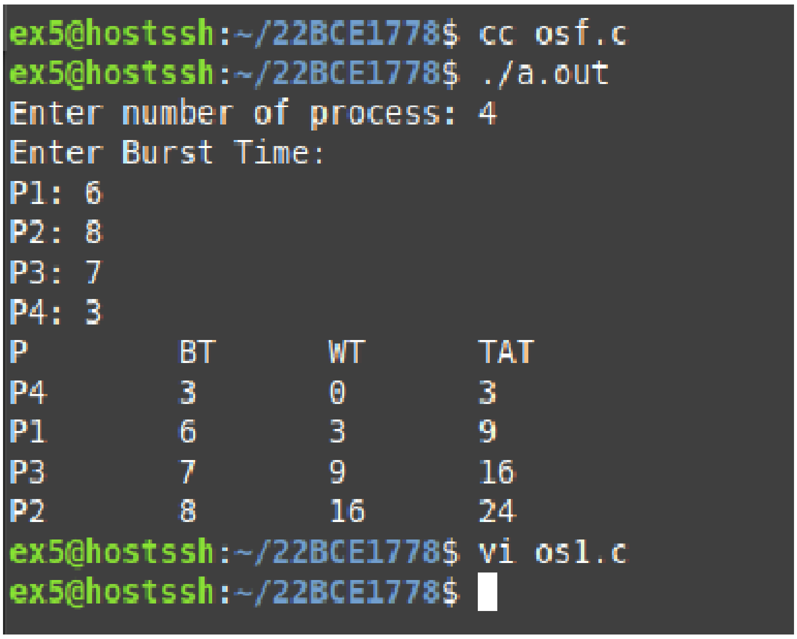
SHORTEST JOB FIRST(SJF) ALGORITHM:

CODE:



```
#include <stdio.h>
int main()
{
        int A[100][4];
        int i, j, n, total = 0, index, temp;
        float avg_wt, avg_tat;
        printf("Enter number of process: ");
        scanf("%d", &n);
        printf("Enter Burst Time:\n");
        for (i = 0; i < n; i++) {
                printf("P%d: ", i + 1);
                scanf("%d", &A[i][1]);
                A[i][0] = i + 1;
        }
        for (i = 0; i < n; i++) {
                index = i;
                for (j = i + 1; j < n; j++)
                        if (A[j][1] < A[index][1])
                                index = j;
                temp = A[i][1];
                A[i][1] = A[index][1];
                A[index][1] = temp;

                temp = A[i][0];
                A[i][0] = A[index][0];
                A[index][0] = temp;
        }
        A[0][2] = 0;
        for (i = 1; i < n; i++) {
                A[i][2] = 0;
                for (j = 0; j < i; j++)
                        A[i][2] += A[j][1];
                total += A[i][2];
        }
        total = 0;
        printf("P       BT      WT      TAT\n");
        for (i = 0; i < n; i++) {
                A[i][3] = A[i][1] + A[i][2];
                total += A[i][3];
                printf("P%d     %d      %d      %d\n", A[i][0],
                        A[i][1], A[i][2], A[i][3]);
        }
}

~
~
```

OUTPUT:



```
ex5@hostssh:~/22BCE1778$ cc osf.c
ex5@hostssh:~/22BCE1778$ ./a.out
Enter number of process: 4
Enter Burst Time:
P1: 6
P2: 8
P3: 7
P4: 3
P        BT      WT      TAT
P4       3       0       3
P1       6       3       9
P3       7       9       16
P2       8       16      24
ex5@hostssh:~/22BCE1778$ vi os1.c
ex5@hostssh:~/22BCE1778$
```