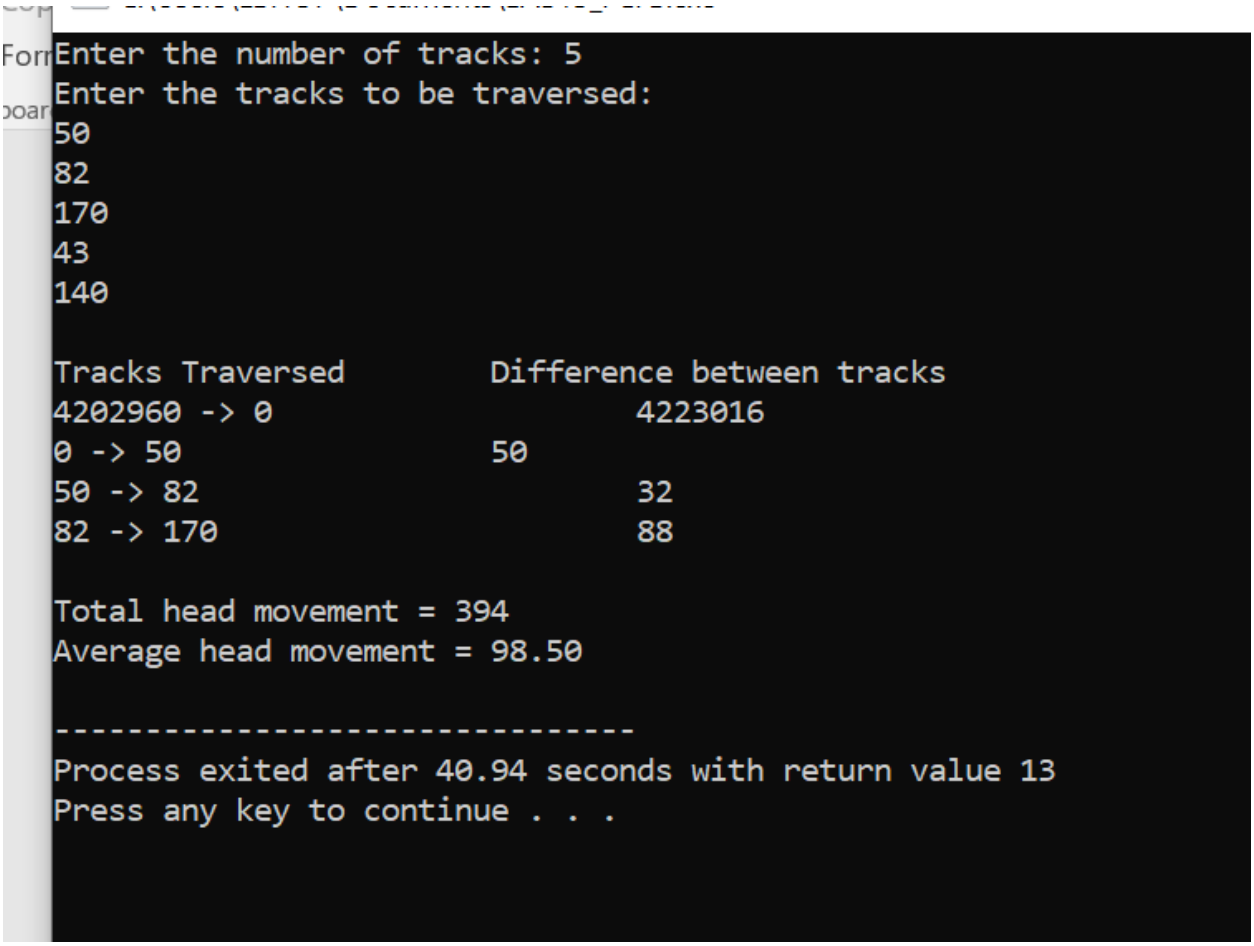
# LAB # 13

**Q) Implement the above code and paste the screen shot of the output.**

```
#include <stdio.h>
#include <conio.h> // Only needed if you're using getch()

int main() {
    int t[20], n, i, tohm[20], tot = 0;
    float avhm;

    printf("Enter the number of tracks: ");
    scanf("%d", &n);

    printf("Enter the tracks to be traversed:\n");
    for(i = 2; i < n+2; i++) {
        scanf("%d", &t[i]);
    }

    for(i = 1; i < n + 1; i++) {
        tohm[i] = t[i + 1] - t[i];
        if(tohm[i] < 0)
            tohm[i] = -tohm[i];
        tot += tohm[i];
    }

    avhm = (float) tot / (n - 1);
```

```
    printf("\nTracks Traversed\tDifference between tracks\n");
    for(i = 0; i < n - 1; i++) {
        printf("%d -> %d\t\t\t%d\n", t[i], t[i + 1], tohm[i]);
    }

    printf("\nTotal head movement = %d", tot);
    printf("\nAverage head movement = %.2f\n", avhm);


    getch();
}
```



```
Enter the number of tracks: 5
Enter the tracks to be traversed:
50
82
170
43
140

Tracks Traversed        Difference between tracks
4202960 -> 0                    4223016
0 -> 50                 50
50 -> 82                        32
82 -> 170                       88

Total head movement = 394
Average head movement = 98.50

--------------------------------
Process exited after 40.94 seconds with return value 13
Press any key to continue . . .
```

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
int RQ[100],i,n,TotalHeadMoment=0,initial,count=0;
printf("Enter the number of Requests\n");
scanf("%d",&n);
printf("Enter the Requests sequence\n");
for(i=0;i<n;i++)
scanf("%d",&RQ[i]);
printf("Enter initial head position\n");
scanf("%d",&initial);
// logic for sstf disk scheduling
/* loop will execute until all process is completed*/
while(count!=n)
{
int min=1000,d,index;
for(i=0;i<n;i++)
{
d=abs(RQ[i]-initial);
if(min>d)
{
min=d;
index=i;
}
}
TotalHeadMoment=TotalHeadMoment+min;
initial=RQ[index];
```

```
// 1000 is for max
// you can use any number
RQ[index]=1000;
count++;
}
printf("Total head movement is %d",TotalHeadMoment);
return 0;
}
```

```
Enter the number of Requests
12
Enter the Requests sequence
98
183
37
122
14
124
65
67
31
21
44
55
Enter initial head position
53
Total head movement is 236
--------------------------------
Process exited after 65.04 seconds with return value 0
Press any key to continue . . .
```

```
#include<stdio.h>
#include<conio.h> // Optional, for getch()

int main() {
```

```
    int t[20], d[20], h, i, j, n, temp, k, atr[20], sum = 0, p;

    printf("Enter the number of tracks to be traversed: ");
    scanf("%d", &n);  // ? FIXED: removed invalid character

    printf("Enter the current head position: ");
    scanf("%d", &h);

    t[0] = 0;  // Start of disk
    t[1] = h;  // Head position

    printf("Enter the track requests:\n");
    for(i = 2; i < n + 2; i++)
        scanf("%d", &t[i]);

    // Sort the track list
    for(i = 0; i < n + 2; i++) {
        for(j = 0; j < n + 2 - i - 1; j++) {
            if(t[j] > t[j + 1]) {
                temp = t[j];
                t[j] = t[j + 1];
                t[j + 1] = temp;
            }
        }
    }

    // Find the head's index in the sorted array
    for(i = 0; i < n + 2; i++) {
```

```
    if(t[i] == h) {
        j = i;
        break;
    }
}

k = i;
p = 0;

// Move left from head to 0
while(t[j] != 0) {
    atr[p++] = t[j--];
}
atr[p++] = t[j]; // Add 0

// Move right from head to end
for(i = k + 1; i < n + 2; i++) {
    atr[p++] = t[i];
}

// Calculate differences
for(i = 0; i < n + 1; i++) {
    d[i] = abs(atr[i + 1] - atr[i]);
    sum += d[i];
}

printf("\nAverage head movement: %.2f\n", (float)sum / n);  // ? Division by n
```

```
    getch();  // Optional
    return 0;
}
```

```
Enter the number of tracks to be traversed: 8
Enter the current head position: 50
Enter the track requests:
82
43
145
88
66
11
77
87

Average head movement: 24.38

--------------------------------
Process exited after 49.58 seconds with return value 0
Press any key to continue . . .
```