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Write a c program for disc scheduling as per  
FCFS, SCAN, CSCAN

### CSCAN

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int RQ[1000], i, j, n, TotalHeadMovement = 0,
    initial, size, move;
    printf("Enter the no. of requests \n");
    scanf("%d", &n);
    printf("Enter the request sequence \n");
    for (i = 0; i < n; i++)
        scanf("%d", &RQ[i]);
    printf("Enter initial head position \n");
    scanf("%d", &initial);
    printf("Enter total disk size \n");
    scanf("%d", &size);
    printf("Enter the head movement direction for  
high + & for low 0 \n");
    scanf("%d", &move);
    // logic for c-scan disk scheduling
    for (i = 0; i < n; i++)
    {
        for (j = 0; j < n - i - 1; j++)
        {
            if (RQ[j] > RQ[j+1])
            {
                int temp;
                temp = RQ[j];
                RQ[j] = RQ[j+1];
                RQ[j+1] = temp;
            }
        }
    }
}
```

```
int index;
```

```
for (i = 0; i < n; i++)
```

```
{
```

```
if (initial < Rq[i])
```

```
{
```

```
index = i;
```

```
break;
```

```
}
```

```
}
```

```
if (move == 1)
```

```
{
```

```
for (i = index; i < n; i++)
```

```
{
```

```
Total Head Moment = Total Head Moment + abs (size - i - 0);
```

```
initial = 0;
```

```
for (i = 0; i < index; i++)
```

```
{
```

```
Total Head Moment = Total Head Moment + abs (Rq[i] - initial);
```

```
initial = Rq[i];
```

```
}
```

```
}
```

```
else
```

```
{
```

```
for (i = index - 1; i >= 0; i--)
```

```
{
```

```
Total Head Moment = Total Head Moment + abs (Rq[i] - initial);
```

```
initial = Rq[i];
```

```
}
```

```
Total Head Moment = Total Head Moment + abs (Rq[i] + 1 - 0);
```

```
Total Head Moment = Total Head Moment + abs (size - 1 - 0);
```

```

initial = size - 1;
for (i = n - 1; i >= index; i--)
{
    Total Head Movement = Total Head Movement + abs (req[i] -
    initial);
    initial = req[i];
}
printf ("Total head movement is %d",
    Total Head Movement);
return 0;
}

```

Output

Enter the request - 5  
 Enter the request sequence - 35 12 37 22 90  
 Enter head position - 20  
 Enter total disk size - 100.  
 Enter head movement direction for high + for low -  
 → 1  
 Total head movement is 172.



SCAN

```

#include <stdio.h>
#include <stdlib.h>
int main()
{
    int RQ[1000], i, j, n, TotalHeadMoment=0, initial,
    size, move;
    printf("Enter no. 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);
    printf("Enter total disk size\n");
    scanf("%d", &size);
    printf("Enter the head moment direction for high 1
    and for low 0\n");
    scanf("%d", &move);
    for (i=0; i<n; i++)
    {
        for (j=0; j<n-i-1; j++)
        {
            if (RQ[j] > RQ[j+1])
            {
                int temp;
                temp = RQ[j];
                RQ[j] = RQ[j+1];
                RQ[j+1] = temp;
            }
        }
    }
    int index;
    for (i=0; i<n; i++)
    {

```

```

if initial < RQ[i]
{
    index = i;
    break;
}
if (move == 1)
{
    for li = index; i < n; i++)
    {
        Total Head Moment = Total Head Moment + abs(size - RQ[li - 1]);
        initial = size - 1;
        for li = index - 1; i >= 0; i--)
        {
            Total Head Moment = THM + abs(RQ[i] - initial);
            initial = RQ[i];
        }
    }
else
{
    for li = index - 1; i >= 0; i--)
    {
        THM = THM + abs(RQ[i] - initial);
        initial = RQ[i];
    }
    THM = THM + abs(RQ[li + 1] - 0);
    initial = 0;
    for li = index; i < n; i++)
    {
        THM = THM + abs(RQ[i] - initial);
        initial = RQ[li];
    }
}

```

```

** Printf ("Total head movement is %d",
Total head moment);
return 0;
}

```

### Output

Enter the request: 5

Enter the request sequence:

35 12 37 22 40

Enter head position - 20

Enter total disk size - 100

Enter the head moment direction for high  
for low 0 → 1

Total head moment is 93.

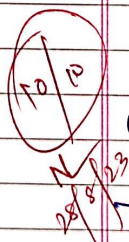


# FCFS

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int RQ[100], i, n; THM=0, initial;
    printf("Enter no. of requests \n");
    scanf("%d", &n);
    printf("Enter req. sequence \n");
    for (i=0; i<n; i++)
        scanf("%d", &RQ[i]);
    printf("Enter initial pos: \n");
    scanf("%d", &initial);
    for (i=0; i<n; i++)
    {
        THM = THM + abs(RQ[i] - initial);
        initial = RQ[i];
    }
    printf("Total head moment is %d", THM);
    return 0;
}
```

## Output

Enter number of requests - 3  
 Enter the request sequence  
 55 12 37 22  
 Enter head position  
 20  
 Total head moment is 118.



```
PS D:\VS Code\OS> cd "d:\VS Code\OS\" ; if ($?) { gcc disks.c -o disks } ; if ($?) { .\disks }
```

```
Enter number of disks: 5
```

```
Enter 5 values: 10 25 30 45 12
```

```
Enter source position: 19
```

```
Enter number disks: 50
```

```
FCFS
```

```
Total seek sequence: 77
```

```
Seek Sequence:
```

```
9 15 5 15 33
```

```
C-SCAN
```

```
Total seek sequence: 118
```

```
Seek Sequence:
```

```
31 50 2 2 13 5 15
```

```
SCAN
```

```
Total seek sequence: 61
```

```
Seek Sequence:
```

```
26 15 5 13 2
```