

2.SCAN

```
#include<stdio.h>

#include<stdlib.h>

int main()
{
    int RQ[100],i,j,n,TotalHeadMoment=0,initial,size,move;

    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);

    printf("Enter total disk size\n");

    scanf("%d",&size);

    printf("Enter the head movement direction for high 1 and for low 0\n");

    scanf("%d",&move);


    // logic for Scan disk scheduling


    /*logic for sort the request array */

    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 movement is towards high value
if(move==1)
{
    for(i=index;i<n;i++)
    {
        TotalHeadMoment=TotalHeadMoment+abs(RQ[i]-initial);
    }
}

```

```

initial=RQ[i];

}

// last movement for max size

TotalHeadMoment=TotalHeadMoment+abs(size-RQ[i-1]-1);

initial = size-1;

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

{

TotalHeadMoment=TotalHeadMoment+abs(RQ[i]-initial);

initial=RQ[i];

}

}

// if movement is towards low value

else

{

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

{

TotalHeadMoment=TotalHeadMoment+abs(RQ[i]-initial);

initial=RQ[i];

}

// last movement for min size

TotalHeadMoment=TotalHeadMoment+abs(RQ[i+1]-0);

initial =0;

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

{

```

```
TotalHeadMoment=TotalHeadMoment+abs(RQ[i]-initial);
```

```
initial=RQ[i];
```

```
}
```

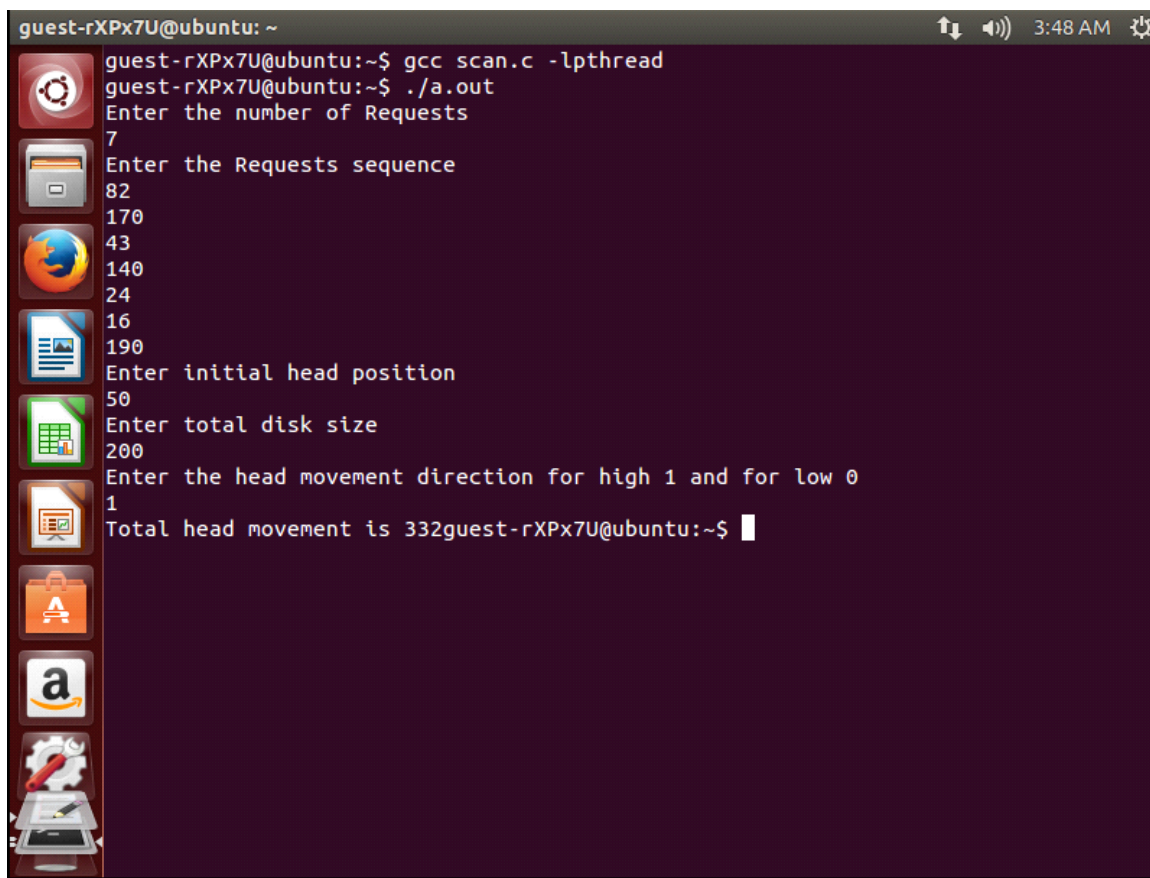
```
}
```

```
printf("Total head movement is %d",TotalHeadMoment);
```

```
return 0;
```

```
}
```

OUTPUT:

A screenshot of a Linux terminal window titled 'guest-rXPx7U@ubuntu: ~'. The terminal shows the execution of a C program. The user enters 'gcc scan.c -lpthread' to compile the program, then './a.out' to run it. The program prompts for several inputs: 'Enter the number of Requests' (7), 'Enter the Requests sequence' (82, 170, 43, 140, 24, 16, 190), 'Enter initial head position' (50), 'Enter total disk size' (200), and 'Enter the head movement direction for high 1 and for low 0' (1). Finally, it outputs 'Total head movement is 332'. The terminal has a dark purple background and a sidebar on the left with various application icons.

```
guest-rXPx7U@ubuntu: ~  
guest-rXPx7U@ubuntu:~$ gcc scan.c -lpthread  
guest-rXPx7U@ubuntu:~$ ./a.out  
Enter the number of Requests  
7  
Enter the Requests sequence  
82  
170  
43  
140  
24  
16  
190  
Enter initial head position  
50  
Enter total disk size  
200  
Enter the head movement direction for high 1 and for low 0  
1  
Total head movement is 332guest-rXPx7U@ubuntu:~$
```