DISK SCHEDULING ALGORITHMS

2. SCAN / Elevator Algorithm

```
// Disk Scheduling - SCAN
#include<stdio.h>
#include<math.h>
int main()
{
 int i,j,sum=0,n;
 int d[20];
 int disk;    //loc of head
 int temp,max;
 int dloc;    //loc of disk in array

 printf("Enter number of locations:\t");
 scanf("%d",&n);
 printf("Enter position of Head:\t");
 scanf("%d",&disk);
 printf("Enter elements of Disk Queue:\n");
 for(i=0;i<n;i++)
 {
          scanf("%d",&d[i]);
 }
 d[n]=disk;
 n=n+1;
 for(i=0;i<n;i++)     // sorting disk locations
 {
           for(j=i;j<n;j++)
           {
                     if(d[i]>d[j])
                     {
                               temp=d[i];
                               d[i]=d[j];
                               d[j]=temp;
                     }
           }
 }
 max=d[n];
 for(i=0;i<n;i++)    // to find loc of disc in array
 {
           if(disk==d[i])
           {
                    dloc=i; break;
           }
 }
 sum += abs(disk - d[dloc]);
 printf("\n|||");
 for(i=dloc;i>=0;i--)
 {
          printf("%d -->",d[i]);
          if(i>0)
                    sum += abs(d[i] - d[i-1]);
 }
 printf("0 -->");
 sum +=abs(d[dloc+1] - d[0]);
 for(i=dloc+1;i<n;i++)
```

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```
{
        printf("%d-->",d[i]);
        if(i == n-1)
                printf("%d |||",d[i]);
        if(i<n-1)
                sum += abs(d[i+1] - d[i]);
}
printf("\n Total Movement of Disk Cylinders:  %d",sum);
return 0;
}
```

OUTPUT DISK-SCAN :

Enter number of locations: 8
Enter position of Head: 53
Enter elements of Disk Queue:
98
183
37
122
14
124
65
67

|||53 -->37 -->14 -->0 -->65-->67-->98-->122-->124-->183-->183 |||

Total Movement of Disk Cylinders: **208**