**Group : B**

**Assignment No. : 8.2**

**Title : Write a program to implement SCAN**

**Roll No. : 2365**

**-------------------------------------------------------------------------------------------**

import java.util.\*;

public class SCAN{

public static void main(String[] args) {

// TODO Auto-generated method stub

Scanner sc=new Scanner(System.in);

int trackseq[]=new int[20];

int sortedseq[]=new int[20],flag[]=new int[20];

int noofcylinders=0;

int curpos=100;

int noofheadpos=0;

int theadmovement,sum=0;

System.out.print("\nEnter no fo cylinders::");

noofcylinders=sc.nextInt();

System.out.print("Enter total no of head positions in work queue::");

noofheadpos=sc.nextInt();

System.out.print("\nEnter the work queue::");

for(int i=0;i<noofheadpos;i++)

{

trackseq[i]=sc.nextInt();

sortedseq[i]=trackseq[i];

}

System.out.print("Enter current head position::");

curpos=sc.nextInt();

sortedseq[noofheadpos]=curpos;

//sorting array

for(int i=0;i<=noofheadpos;i++)

{

for(int j=i+1;j<=noofheadpos;j++)

{

if(sortedseq[i]>sortedseq[j])

{

int t=sortedseq[i];

sortedseq[i]=sortedseq[j];

sortedseq[j]=t;

}

}

}

//finding headposition.

int headid=0;

for(int i=0;i<=noofheadpos;i++)

{

if(sortedseq[i]==curpos)

{

headid=i;

}

}

sum=0;

for(int j=0;j<=(noofheadpos);j++)

flag[j]=0;

int k=1,prev=headid;

for(int j=0;j<headid;j++)

{

if(flag[headid-k]!=1)

{

sum=sum+sortedseq[prev]-sortedseq[headid-k];

System.out.println(""+sortedseq[prev]+" - "+sortedseq[headid-k]+"="+(sortedseq[prev]-sortedseq[headid-k]));

flag[headid-k]=1;

}

prev=headid-k;

k++;

}

k=1;

//prev=headid;

for(int j=0;j<(headid-1);j++)

{

if(flag[headid+k]!=1)

{

sum=sum+sortedseq[headid+k]-sortedseq[prev];

System.out.println(""+sortedseq[headid+k]+" - "+sortedseq[prev]+"="+(sortedseq[headid+k]-sortedseq[prev]));

flag[headid+k]=1;

}

prev=headid+k;

k++;

}

System.out.println("Total head movement::"+sum);

}

}

/\*

Enter no fo cylinders::200

Enter current head position::125

Enter total no of head positions in work queue::6

Enter the work queue::100

175

51

133

8

140

125 - 100=25

100 - 51=49

51 - 8=43

133 - 8=125

140 - 133=7

Total head movement::249

OUTPUT2:

Enter no fo cylinders::200

Enter current head position::125

Enter total no of head positions in work queue::7

Enter the work queue::125

100

175

51

133

8

140

125 - 125=0

125 - 100=25

100 - 51=49

51 - 8=43

133 - 8=125

140 - 133=7

175 - 140=35

Total head movement::284

\*/