**NAME : ANIKET BOTE CLASS : D7C ROLL NO : 09**

**PROGRAM :**

#include<stdio.h>

void bin(void);

void lin(void);

void main()

{

int k;

printf("select option \n1:binary search \n2:linear search :");

scanf("%d",&k);

switch(k)

{

case 1:

{

bin();

}

break;

case 2:

{

lin();

}

break;

}

}

void bin(void)

{

int a[100],i,j,n,beg=0,mid = 0,end,pos,x,temp;

printf("Number of data items : \n");

scanf("%d",&n);

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

{

scanf("%d",&a[i]);

}

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

{

for(j=0;j<n-1-i;j++)

{

if(a[j]>a[j+1])

{

temp=a[j];

a[j]=a[j+1];

a[j+1]= temp;

}

}

}

end = n-1;

pos = -1;

printf("Enter number to be searched :\n");

scanf("%d",&x);

while(beg<=end)

{

mid = (beg+end)/2;

if(a[mid]==x)

{

pos = mid;

printf("element found at position %d",pos+1);

break;

}

else if(a[mid]>x)

{

end = mid - 1;

}

else

{

beg = mid + 1;

}

}

}

void lin(void)

{

int a[100],i,j,n,x;

printf("Number of data items : \n");

scanf("%d",&n);

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

{

scanf("%d",&a[i]);

}

printf("Enter number to be searched :\n");

scanf("%d",&x);

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

{

if(a[i]==x)

break;

}

if(i<n)

printf("Number present at position %d",i+1);

else

printf("Number not found");

}

**OUTPUT :**



