Program

#include<stdio.h>

void linear(int[],int,int);

void sort(int[],int);

void binary(int[],int,int);

void main(){

int a[10],n,c,i,key;

printf("Enter number of elements:\n");

scanf("%d",&n);

printf("Enter elements of array:\n");

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

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

}

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

scanf("%d",&key);

printf("Enter choice: 0 for linear search and 1 for binary search\n");

scanf("%d",&c);

if(c==0){

linear(a,n,key);

} else if(c==1) {

binary(a,n,key);

} else {

printf("Invalid choice");

}

}

void linear(int a[],int n,int key){

int f=0,i;

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

if(a[i]==key){

printf("Element is found at position %d\n",i+1);

f=1;

}

}

if(f==0){

printf("Element not found");

}

}

void sort(int a[],int n){

int i,j,temp;

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

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

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

temp=a[j];

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

a[j+1]=temp;

}

}

}

}

void binary(int a[],int n,int key){

int low=0,mid,high=n-1;

sort(a,n);

mid=(low+high)/2;

while(low<=high){

if(key>a[mid]){

low=mid+1;

} else if(key<a[mid]) {

high=mid-1;

} else {

printf("Element is found at position %d after sorting",mid+1);

break;

}

mid=(low+high)/2;

}

if(low>high){

printf("Element not found");

}

}

Output









