// Algorithm lab by Dagi

// 1 binary search

#include <iostream>

#include<string.h>

using namespace std;

void linear( int x[],int key,int n)

{

int b=0;

int t=n-1;

int found=0;

do{

int m=(b+t)/2;

if(x[m]==key)

found=1;

else if(key>m)

b=m+1;

else

t=m-1;

}while(found==0&&b<=t);

if(found==1)

cout<<key<<" is found in the list\n";

else

cout<<key<<" is not found in the list";

}

int main(){

int list[100],i,j,num,k;

cout<<"enter number you want\n";

cin>>j;

cout<<"enter the element of array\n";

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

cin>>list[i];

}

cout<<"inter the key\n";

cin>>num;

linear(list,num,j);

}

// 2 linear search

#include <iostream>

#include<string.h>

using namespace std;

void linear( int x[],int key,int n)

{

int index=0,found=0;

do{

if(x[index]==key)

found=1;

else

index++;

}while(found==0&&index<n);

if(found==1)

cout<<key<<"is found in the list\n";

else

cout<<key<<"isnot foound in the list";

}

int main(){

int list[100],i,j,num,k;

cout<<"enter number you want\n";

cin>>j;

cout<<"enter the element of array\n";

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

cin>>list[i];

}

cout<<"inter the key\n";

cin>>num;

linear(list,num,j);

}

// 3 INSERTION SORT

#include <iostream>

#include<string.h>

using namespace std;

int insertion(int list[],int n){

int temp=0;

for(int i=1;i<n;i++){

temp=list[i];

for(int j=i;j>0&&temp<list[j-1];j--)

{

list[j]=list[j-1];

list[j-1]=temp;

}

}

cout<<"array after sorted\n";

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

cout<<list[i]<<endl;

}

int main(){

int list[100];

int i,j,num;

cout<<"enter size fo array\n";

cin>>j;

cout<<"enter array element\n";

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

cin>>list[i];

insertion(list,j);

}

// 4 selection SORT

#include <iostream>

#include<string.h>

using namespace std;

int selection(int list[],int n){

int i,j, smallest;

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

smallest=i;

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

{

if(list[j]<list[smallest])

smallest=j;

}

int temp;

temp=list[smallest];

list[smallest]=list[i];

list[i]=temp;

}

cout<<"array after sorted\n";

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

cout<<list[i]<<endl;

}

int main(){

int list[100];

int i,j;

cout<<"enter size fo array\n";

cin>>j;

cout<<"enter array element\n";

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

cin>>list[i];

selection(list,j);

}

// 5 Bubble SORT

#include <iostream>

#include<string.h>

using namespace std;

int bubble(int list[],int n){

int i,j,temp;

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

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

{

if(list[j]<list[j-1]){

temp=list[j];

list[j]=list[j-1];

list[j-1]=temp;

}

}

cout<<"array after sorted by buble\n";

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

cout<<list[i]<<endl;

}

int main(){

int list[100];

int i,j,num;

cout<<"enter size fo array\n";

cin>>j;

cout<<"enter array element\n";

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

cin>>list[i];

bubble(list,j);

}