#include <iostream>

using namespace std;

int binary\_search(int arr[], int n, int x)

{

    int left, right, mid;

    left = 0;

    right = n - 1;

    while (left <= right)

    {

        mid = (left + right) / 2;

        if (arr[mid] == x)

            return mid;

        else if (arr[mid] > x) *// search in left half*

            right = mid - 1;

        else

            left = mid + 1;

    }

    return -1;

}

int main()

{

    int n, x, pos;

    cout << "Enter number of elements : " << endl;

    cin >> n;

    int arr[n];

    cout << "Enter elements of array" << endl;

    for (int i = 0; i < n; i++)

        cin >> arr[i];

    cout << "Enter element to be searched" << endl;

    cin >> x;

    pos = binary\_search(arr, n, x);

    if (pos == -1)

        cout << x << " not found in array" << endl;

    else

        cout << x << "  found in array at index " << pos << endl;

    return 0;

}

