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//Write a program for searching element from given array using binary search.

#include<iostream>

using namespace std;

class BinarySearch

{

private:

        int a[20],n,r;

public:

        int binary(int a[],int n,int val);

        void get();

        void show(int r);

};

int BinarySearch::binary(int a[],int n,int val)

{

    int first = 0;

    int last = n-1;

    int mid;

    while(first <= last)

    {

        mid = (first + last)/2;

        if (a[mid]==val)

            return mid+1;

        else if (val>a[mid])

            first = mid + 1;

        else

            last = mid - 1;

    }

    return 0;

}

void BinarySearch::show(int r)

{

    if(r == 0)

    {

        cout<<"element not found.";

    }

    else

    {

        cout<<"element found at position : "<<r;

    }

}

void BinarySearch::get()

{

    int no;

    cout<<"Enter no. of elements :";

    cin>>n;

    cout<<"Enter only sorted element :  ";

    for (int i =0;i<n;i++)

    {

        cin>>a[i];

    }

    cout<<"Enter element to search : ";

    cin>>no;

    int result = binary(a,n,no);

    show(result);

}

int main()

{

    BinarySearch obj;

    obj.get();

    return 0;

}

Output:

Enter no. of elements :5

Enter only sorted element : 12

23

36

65

78

Enter element to search : 36

element found at position : 3