

SOURCE CODE

```
// Binary Search using Recursion
#include <iostream>
using namespace std;
int binary_search(int a[], int num, int first, int last)
{
    int mid;
    while (first <= last)
    {
        mid = (first + last) / 2;
        if (a[mid] == num)
            return mid + 1;
        else if (a[mid] < num)
            return binary_search(a, num, mid + 1, last);
        else
            return binary_search(a, num, first, mid - 1);
    }
    return 0;
}
int main()
{
    int *a, n, num, result;
    cout << "Enter size of array:";
    cin >> n;
    cout << "Enter elements of array(in asc. order):";
    for (int i = 0; i < n; i++)
        cin >> a[i];
    cout << "Enter number to be search:";
    cin >> num;
    int first = 0, last = n - 1;
    result = binary_search(a, num, first, last);
    if (result == 0)
        cout << "Given number is not found";
    else
        cout << "Given number is found on " << result << " position";
    return 0;
}
```

OUTPUT

```
PS C:\Users\anil kumar\Documents\anil\.vscode\DataStructure_in_nsut> cd "c:\Users\anil kumar\Documents\anil\.vscode\Da
\" ; if ($?) { g++ -std=c++17 10_Recursive_BinarySearch.cpp -o 10_Recursive_BinarySearch } ; if ($?) { .\10_Recursive
Enter size of array:6
Enter elements of array(in asc. order):11
22
33
44
55
66
Enter number to be search:66
Given number is found on 6 position
PS C:\Users\anil kumar\Documents\anil\.vscode\DataStructure_in_nsut> cd "c:\Users\anil kumar\Documents\anil\.vscode\Da
\" ; if ($?) { g++ -std=c++17 10_Recursive_BinarySearch.cpp -o 10_Recursive_BinarySearch } ; if ($?) { .\10_Recursive
Enter size of array:5
Enter elements of array(in asc. order):5
12
34
45
56
Enter number to be search:45
Given number is found on 4 position
PS C:\Users\anil kumar\Documents\anil\.vscode\DataStructure_in_nsut> █
```