Write c++ code for binary search

#include <bits/stdc++.h>

using namespace std;

int binarySearch(int arr[], int l, int r, int x)

{

    if (r >= l) {

        int mid = l + (r - l) / 2;

        if (arr[mid] == x)

            return mid;

        if (arr[mid] > x)

            return binarySearch(arr, l, mid - 1, x);

        // Else the element can only be present

        // in right subarray

        return binarySearch(arr, mid + 1, r, x);

    }

    // We reach here when element is not

    // present in array

    return -1;

}

int main(void)

{

    int arr[] = { 2, 3, 4, 10, 40 };

    int x = 10;

    int n = sizeof(arr) / sizeof(arr[0]);

    int result = binarySearch(arr, 0, n - 1, x);

    (result == -1)

        ? cout << "Element is not present in array"

        : cout << "Element is present at index " << result;

    return 0;

}