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School of computer application

CA 1st
Of
Advance Data Structure (CAP-680)
Session 2022-2024

Submitted to:

Name: Mr.Ritesh Verma
(Dept of. Computer Science)

Submitted by:

Name: Sanjeev Kumar
Roll no: RDOC14 A26
Course: MCA

Department of Computer Science
Lovely Professional University Jalandhar Punjab (144401)
India

Que-1 Traversing array elements and binary search?

```
#include <iostream>
using namespace std;
int binarySearch(int a[], int beg, int end, int val)
{
    int mid;
    if(end >= beg)
    {
        mid = (beg + end)/2;

        if(a[mid] == val)
        {
            return mid+1;
        }

        else if(a[mid] < val)
        {
            return binarySearch(a, mid+1, end, val);
        }

        else
        {
            return binarySearch(a, beg, mid-1, val);
        }
    }
    return -1;
}

int main() {
    int a[] = {10, 12, 24, 29, 39, 40, 51, 56, 70};
    int val = 51;
    int n = sizeof(a) / sizeof(a[0]); // size of array
    int res = binarySearch(a, 0, n-1, val); // Store result
    cout<<"The elements of the array are - ";
    for (int i = 0; i < n; i++)
        cout<<a[i]<<" ";
    cout<<"\nElement to be searched is - "<<val;
    if (res == -1)
        cout<<"\nElement is not present in the array";
    else
        cout<<"\nElement is present at "<<res<<" position of array";
    return 0;
}
```

Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
The elements of the array are - 10 12 24 29 39 40 51 56 70
Element to be searched is - 51
Element is present at 7 position of array[1] + Done          "/us
erm} 0<"/tmp/Microsoft-MIEngine-In-e0tjyvk.02h" 1>"/tmp/Microsoft-MIEngine-00
alright@alright:~/Desktop/programming/DSA$ █
```