

CS23331-Design and Analysis of Algorithms-2023 Batch-CSE

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✓

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Started on	Friday, 18 October 2024, 1:44 PM
State	Finished
Completed on	Friday, 18 October 2024, 1:44 PM
Time taken	30 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1
Correct
Mark 1.00 out of 1.00
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Problem Statement:

Given a sorted array and a value x, the floor of x is the largest element in array smaller than or equal to x. Write divide and conquer algorithm to find floor of x.

Input Format

First Line Contains Integer n – Size of array
Next n lines Contains n numbers – Elements of an array
Last Line Contains Integer x – Value for x

Output Format

First Line Contains Integer – Floor value for x

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2
3 int floor_val(int *arr, int l ,int h,int x)
4 {
5     if(l==h)
6     {
7         if (arr[l]<=x)
8         {
9             return arr[l];
10        }
11        return -1;
12    }
13
14    int m=(l+h)/2;
15    int lhs=floor_val(arr,l,m,x);
16    int rhs=floor_val(arr,m+1,h,x);
17
18    if(lhs>=x && rhs<=x) return lhs;
19    else if(lhs>=x) return lhs;
20    else if(rhs>=x) return rhs;
21    else return lhs>rhs?lhs:rhs;
22 }
23
24 int main()
25 {
26     int n,x;
27     scanf("%d",&n);
28     int arr[n];
29     for(int i=0;i<n;i++)
30         scanf("%d",&arr[i]);
31     scanf("%d",&x);
32     int ans = floor_val(arr,0,n-1,x);
33     printf("%d",ans);
34 }
35
```

	Input	Expected	Got	
✓	6 1 2 8 10 12 19 5	2	2	✓
✓	5 10 22 85 108 129 100	85	85	✓
✓	7 3 5 7 9 11 13 15 10	9	9	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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→ 2-Majority Element

Jump to...

4-Two Elements sum to x ►