

Started on Tuesday, 23 September 2025, 10:15 PM

State Finished

Completed on Tuesday, 23 September 2025, 10:28 PM

Time taken 13 mins 3 secs

Marks 1.00/1.00

Grade 10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00**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  int main()
3  {
4      int n,x;
5      scanf("%d",&n);
6      int arr[n];
7      for(int i=0;i<n;i++)
8      {
9          scanf("%d",&arr[i]);
10     }
11     scanf("%d",&x);
12     int low=0,high=n-1;
13     int floorValue=-1;
14     while(low<=high)
15     {
16         int mid=low+(high-low)/2;
17         if(arr[mid]==x)
18         {
19             floorValue=arr[mid];
20             break;
21         }
22         else if(arr[mid]<x)
23         {
24             floorValue=arr[mid];
25             low=mid+1;
26         }
27         else
28         {
29             high=mid-1;
30         }
31     }
32     printf("%d",floorValue);
33 }
```

	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.