
Started on Friday, 19 September 2025, 8:03 PM

State Finished

Completed on Friday, 19 September 2025, 9:28 PM

Time taken 1 hour 24 mins

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 findFloor(int arr[],int low,int high,int x)
3  {
4      if(low>high || x<arr[low]){
5          return -1;
6      }
7      if(x>=arr[high]){
8          return arr[high];
9      }
10     int mid=low+(high-low)/2;
11     if (arr[mid]==x){
12         return arr[mid];
13     }
14     if(x>arr[mid]){
15         if(mid+1<=high && x<arr[mid+1]){
16             return arr[mid];
17         }
18         return findFloor(arr,mid+1,high,x);
19     }else{
```

```
20     if(mid-1>=low && arr[mid-1]<=x){
21         return arr[mid-1];
22     }
23     return findFloor(arr,low,mid-1,x);
24 }
25 }
26 int main()
27 {
28     int n,x;
29     scanf("%d",&n);
30     int arr[n];
31     for(int i=0;i<n;i++)
32     {
33         scanf("%d",&arr[i]);
34     }
35     scanf("%d",&x);
36     int floor=findFloor(arr,0,n-1,x);
37     if(floor==-1){
38         printf("no");
39     }else{
40         printf("%d",floor);
41     }
42 }
43 return 0;
44 }
```

	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.