



Dashboard

My courses




CS23331-DAA-2024-CSE / 3-Finding Floor Value



3-Finding Floor Value

Started on	Wednesday, 17 September 2025, 8:44 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 8:50 AM
Time taken	5 mins 55 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct | Mark 1.00 out of 1.00 |  [Flag question](#)**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     if (low > high)
4         return -1;
5
6     if (x >= arr[high])
7         return arr[high];
8
9     int mid = (low + high) / 2;
10
11     if (arr[mid] == x)
12         return arr[mid];
13
14     if (mid > 0 && arr[mid - 1] <= x && x < arr[mid])
15         return arr[mid - 1];
16
17     if (x < arr[mid])
18         return findFloor(arr, low, mid - 1, x);
19
20     return findFloor(arr, mid + 1, high, x);
21 }
22
23 int main() {
24     int n, x;
25     scanf("%d", &n);
26
27     int arr[n];
28     for (int i = 0; i < n; i++) {
29         scanf("%d", &arr[i]);
30     }
31     scanf("%d", &x);
32
33     int floorValue = findFloor(arr, 0, n - 1, x);
34     if (floorValue != -1)
35         printf("%d\n", floorValue);
36     else
37         printf("%d\n", x);
38
39     return 0;
40 }
```

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

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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Data retention summary