RAJALAKSHMI ENGINEERING COLLEGE

RAKSHITA N 2024-IT

R2

Started on	Thursday, 9 October 2025, 10:39 AM
State	Finished
Completed on	Tuesday, 18 November 2025, 11:14 AM
Time taken	40 days
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 %)

```c
#include <stdio.h>

int findFloor(int arr[], int n, int x) {
    int low = 0, high = n - 1;
    int floor = -1;
    while (low <= high) {
        int mid = (low + high) / 2;

        if (arr[mid] == x)
            return arr[mid];
        else if (arr[mid] < x) {
            floor = arr[mid];
            low = mid + 1;
        } else {
            high = mid - 1;
        }
    }

    return floor;
}

int main() {
    int n;
    scanf("%d", &n);

    int arr[n];
    for (int i = 0; i < n; i++)
        scanf("%d", &arr[i]);

    int x;
    scanf("%d", &x);

    int floorValue = findFloor(arr, n, x);
    printf("%d\n", floorValue);

    return 0;
}
```

	Input	Expected	Got	
✔	6 1 2 8 10 12 19 5	2	2	✔

	Input	Expected	Got	
✔	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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