RAJALAKSHMI ENGINEERING COLLEGE

THIVYASRI T 2024-CSE

T2

Started on	Wednesday, 17 September 2025, 9:03 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 9:11 AM
Time taken	8 mins 13 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 %)

```c
#include <stdio.h>

int findFloor(int arr[], int low, int high, int x) {
    if (low > high) {
        return -1;
    }

    int mid = (low + high) / 2;

    if (arr[mid] == x) {
        return arr[mid];
    }
    else if (arr[mid] > x) {
        return findFloor(arr, low, mid - 1, x);
    }
    else {
        int floorRight = findFloor(arr, mid + 1, high, x);
        if (floorRight == -1 || floorRight > x) {
            return arr[mid];
        } else {
            return floorRight;
        }
    }
}

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 floorVal = findFloor(arr, 0, n - 1, x);
    printf("%d\n", floorVal);
    return 0;
}

```

	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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