Started on	Tuesday, 1 October 2024, 12:27 PM
State	Finished
Completed on	Tuesday, 1 October 2024, 12:30 PM
Time taken	3 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 %)

```c
#include <stdio.h>

// Function to find the floor of x using binary search
int findFloor(int arr[], int low, int high, int x) {
    if (low > high) {
        return -1;
    }

    if (x >= arr[high]) {
        return arr[high];
    }

    int mid = (low + high) / 2;

    if (arr[mid] == x) {
        return arr[mid];
    }

    if (mid > 0 && arr[mid - 1] <= x && x < arr[mid]) {
        return arr[mid - 1];
    }

    if (x < arr[mid]) {
        return findFloor(arr, low, mid - 1, x);
    }

    return findFloor(arr, mid + 1, high, x);
}

int main() {
    int n, x;


    scanf("%d", &n);

    int arr[n];


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


    scanf("%d", &x);

    int result = findFloor(arr, 0, n - 1, x);

    if (result == -1) {
        printf("%d\n", x);
    } else {
        printf("%d\n",  result);
    }
```

	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.

◄ 2-Majority Element

Jump to...

4-Two Elements sum to x ►