RAJALAKSHMI ENGINEERING COLLEGE

Started on	Friday, 10 October 2025, 2:04 PM
State	Finished
Completed on	Friday, 10 October 2025, 2:18 PM
Time taken	14 mins 34 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>
# include <stdlib.h>

int findFloor(int *arr, int left, int right, int x){
    if(left>right) return -1;
    int mid = left + (right-left)/2;
    if(arr[mid] == x) return arr[mid];
    if(arr[mid] < x){
        int floor = findFloor(arr, mid+1, right, x);
        return (floor != -1)?floor:arr[mid];
    }
    else
        return findFloor(arr, left, mid-1, x);
}
int main(){
    int n;
    scanf("%d", &n);
    int *arr  = (int *)malloc(sizeof(int)*n);
    for(int i=0; i<n; i++)
        scanf("%d", &arr[i]);
    int x;
    scanf("%d", &x);
    printf("%d", findFloor(arr, 0, n, x));
}
```

	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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