GE23131-Programming Using C-2024

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Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Monday, 16 December 2024, 11:45 AM
Duration	7 days 5 hours

Question **1**

Correct

Marked out of 3.00

Flag question

Given an array A of sorted integers and another non negative integer k, find if there exists 2 i
A[j] = k, i != j.

Input Format

1. First line is number of test cases T. Following T lines contain:
2. N, followed by N integers of the array
3. The non-negative integer k

Output format

Print 1 if such a pair exists and 0 if it doesn't.

Example

Input:

1
3 1 3 5
4

Output:

1

Input:

1
3 1 3 5
99

Output:

0

Answer: (penalty regime: 0 %)

	Input	Expected	Got	
	1 3 1 3 5 4	1	1	
	1 3 1 3 5 99	0	0	

Passed all tests!

Question **2**

Correct

Marked out of 5.00

Flag question

Sam loves chocolates and starts buying them on the 1st day of the year. Each day of the year
On days when x is odd, Sam will buy x chocolates; on days when x is even, Sam will not purch

Complete the code in the editor so that for each day Ni (where 1 ≤ x ≤ N ≤ Y) in array arr, the
purchased (during days 1 through N) is printed on a new line. This is a function-only challeng
you by the locked stub code in the editor.

Input Format

The program takes an array of integers as a parameter.

The locked code in the editor handles reading the following input from stdin, assembling it in
and calling calculate(arr).

The first line of input contains an integer, T (the number of test cases). Each line i of the T sub
ith test case as an integer, Ni (the number of days).

Constraints

$1 \le T \le 2 \times 105$

$1 \le N \le 2 \times 106$

$1 \le x \le N \le Y$

Output Format

For each test case, Ti in arr, your calculate method should print the total number of chocolate
on a new line.

Sample Input 0

3
1
2
3

Sample Output 0

1

4

Explanation

Test Case 0: N = 1

Sam buys 1 chocolate on day 1, giving us a total of 1 chocolate. Thus, we print 1 on a new lin

Test Case 1: N = 2

Sam buys 1 chocolate on day 1 and 0 on day 2. This gives us a total of 1 chocolate. Thus, we

Test Case 2: N = 3

Sam buys 1 chocolate on day 1, 0 on day 2, and 3 on day 3. This gives us a total of 4 chocolat
line.

Answer: (penalty regime: 0 %)

	Input	Expected	Got	
	3 1 2 3	1 1 4	1 1 4	
	10 71 100 86 54 40 9 77 9 13 98	1296 2500 1849 729 400 25 1521 25 49 2401	1296 2500 1849 729 400 25 1521 25 49 2401	

Passed all tests!

Question **3**

Correct

Marked out of 7.00

Flag question

The number of goals achieved by two football teams in matches in a league is given in the fo

- Football team A, has played three matches, and has scored { 1 , 2 , 3 } goals in each mat
- Football team B, has played two matches, and has scored { 2, 4 } goals in each match res
- Your task is to compute, for each match of team B, the total number of matches of team
less than or equal to the number of goals scored by team B in that match.
- In the above case:
- For 2 goals scored by team B in its first match, team A has 2 matches with scores 1 and
- For 4 goals scored by team B in its second match, team A has 3 matches with scores 1, 2

Complete the code in the editor below. The program must return an array of m positive integ
representing the total number of elements nums[j] satisfying nums[j] ≤ maxes[i] where 0 ≤ j
given order.

It has the following:

nums[nums[0],...nums[n-1]]: first array of positive integers

maxes[maxes[0],...maxes[n-1]]: second array of positive integers

Constraints

- 2 ≤ n, m ≤ 105
- 1 ≤ nums[j] ≤ 109, where 0 ≤ j < n.
- 1 ≤ maxes[i] ≤ 109, where 0 ≤ i < m.

Input Format For Custom Testing

Input from stdin will be processed as follows and passed to the function.

The first line contains an integer n, the number of elements in nums.
The next n lines each contain an integer describing nums[j] where 0 ≤ j < n.
The next line contains an integer m, the number of elements in maxes.
The next m lines each contain an integer describing maxes[i] where 0 ≤ i < m.

Sample Case 0

Sample Input 0

4
1
4
2
4
2
3
5

Sample Output 0

2
4

Explanation 0

We are given n = 4, nums = [1, 4, 2, 4], m = 2, and maxes = [3, 5].

1. For maxes[0] = 3, we have 2 elements in nums (nums[0] = 1 and nums[2] = 2) that are ≤
2. For maxes[1] = 5, we have 4 elements in nums (nums[0] = 1, nums[1] = 4, nums[2] = 2, a
maxes[1].

Thus, the function returns the array [2, 4] as the answer.

Sample Case 1

Sample Input 1

5

5
4
8
4
3
1
7
8

Sample Output 1

1
0
3
4

Explanation 1

We are given, n = 5, nums = [2, 10, 5, 4, 8], m = 4, and maxes = [3, 1, 7, 8].

1. For maxes[0] = 3, we have 1 element in nums (nums[0] = 2) that is ≤ maxes[0].
2. For maxes[1] = 1, there are 0 elements in nums that are ≤ maxes[1].
3. For maxes[2] = 7, we have 3 elements in nums (nums[0] = 2, nums[2] = 5, and nums[3] =
4. For maxes[3] = 8, we have 4 elements in nums (nums[0] = 2, nums[2] = 5, nums[3] = 4, a
maxes[3].

Thus, the function returns the array [1, 0, 3, 4] as the answer.

Answer: (penalty regime: 0 %)

	Input	Expected	Got	
	4 1 4 2 4 2 3 5	2 4	2 4	
	5 2 10 5 4 8 4 3 1 7 8	1 0 3 4	1 0 3 4	

Save the state of the flags