

NGT Mock Test1 60 minutes

Question - 1 Psychometric Testing

SCORE: 50 points

Binary Search Data Structures Easy Algorithms Arrays Problem Solving

Psychometric testing is designed to find job-relevant information about an applicant that the traditional interview process would not uncover. It typically includes a combination of online aptitude and personality tests that measure cognitive ability and personality traits.

A company has psychometric scores for n candidates, and it will only extend job offers to candidates with scores in the inclusive range given by [lowerLimit, upperLimit]. Given the list of scores and a sequence of score ranges, determine how many candidates the company will extend offers to for each range of scores. For example, if the scores are scores = [1,2,2,3,4] and the limits are 2 and 4, there are 4 candidates, i.e. those with scores [2,2,3,4] that match the conditions.

Function Description

Complete the *jobOffers* function in the editor below. The function must return an array of *q* integers where the value at each index *i* denotes the number of candidates in the inclusive range [lowerLimits[i], upperLimits[j]] that the company will extend offers to.

jobOffers has the following parameter(s):

scores[scores[0],...scores[n-1]]: an array of integers lowerLimit[lowerLimit[0],...lowerLimit[q-1]]: an array of integers upperLimit[upperLimit[0],...upperLimit[q-1]]: an array of integers

Constraints

- $1 \le n \le 10^5$
- 1 ≤ scores[j] ≤ 10⁹
- $1 \le q \le 10^5$
- 1 ≤ lowerLimits[i] ≤ upperLimits[i] ≤ 10⁹

▼ 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, that denotes the number of elements in *scores*.

Each line j of the n subsequent lines (where $0 \le j < n$) contains an integer that describes scores[j].

The next line contains an integer, q, that denotes the number of elements in *lowerLimits*.

Each line i of the q subsequent lines (where $0 \le i < q$) contains an integer that describes lowerLimits[i].

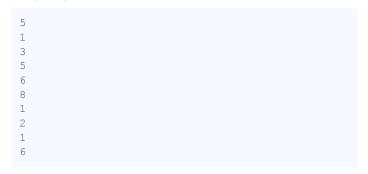
The next line contains an integer, q, that denotes the number of elements in *lowerLimits*.



Each line i of the q subsequent lines (where $0 \le i < q$) contains an integer that describes upperLimits[i].

▼ Sample Case 0

Sample Input For Custom Testing Sample Input 0



Sample Output 0

3

Explanation 0

Given scores = [1, 3, 5, 6, 8], lowerLimits = [2], and upperLimits = [6], perform the following q = 1 query:

0. Find all the scores in the inclusive range [2, 6]. There are three such candidates (i.e., scores 3, 5, and 6), so store 3 in index 0 of the return array.

The function then returns the array [3].

▼ Sample Case 1

Sample Input For Custom Testing Sample Input 1

```
3
4
8
7
2
2
4
2
8
4
```

Sample Output 1

3 1

Explanation 1

Given scores = [4, 8, 7], lowerLimits = [2, 4], and upperLimits = [8, 4], perform the following q = 2 queries:

0. Find all the scores in the inclusive range [2, 8]: there are three such candidates (i.e., scores 4, 7, and 8), so store 3 in index 0 of the return array.