3/20/2014

# cødility



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# Demo ticket

#### Session

ID: demoNTZZPT-YXC Time limit: 120 min.

### Status: closed

Created on: 2014-03-20 16:08 UTC Started on: 2014-03-20 16:08 UTC Finished on: 2014-03-20 16:13 UTC

#### Tasks in test

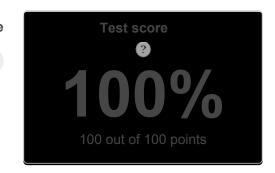
1 | {} CountNonDivisible

#### Task score

100%

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return ret



# 1. CountN

#### 1. CountNonDivisible

Calculate the number of elements of an array that are not divisors of each element.



#### Task description

You are given a non-empty zero-indexed array A consisting of N integers.

For each number A[i] such that  $0 \le i < N$ , we want to count the number of elements of the array that are not the divisors of A[i]. We say that these elements are non-divisors.

For example, consider integer N = 5 and array A such that:

- A[0] = 3
- A[1] = 1
- A[2] = 2
- A[3] = 3
- A[4] = 6

#### For the following elements:

- A[0] = 3, the non-divisors are: 2, 6,
- A[1] = 1, the non-divisors are: 3, 2, 3, 6,
- A[2] = 2, the non-divisors are: 3, 3, 6,
- A[3] = 3, the non-divisors are: 2, 6,
- A[6] = 6, there aren't any non-divisors.

#### Write a function:

```
def solution(A)
```

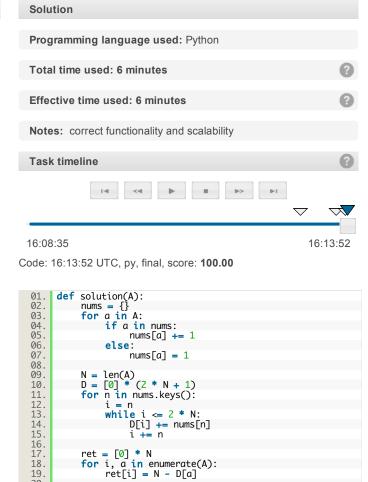
that, given a non-empty zero-indexed array A consisting of N integers, returns a sequence of integers representing the numbers of non-divisors.

The sequence should be returned as:

- · a structure Results (in C), or
- a vector of integers (in C++), or
- · a record Results (in Pascal), or
- an array of integers (in any other programming language).

## For example, given:

A[0] = 3A[1] = 1



A[2] = 2 A[3] = 3A[4] = 6

the function should return [2, 4, 3, 2, 0], as explained above. Assume that:

- N is an integer within the range [1..50,000];
- each element of array A is an integer within the range [1..2 \* N].

## Complexity:

- expected worst-case time complexity is O(N\*log(N));
- expected worst-case space complexity is O(N), beyond input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

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test	time	result
example example test	0.050 s.	ок
extreme_simple extreme simple	0.050 s.	ок
double two elements	0.050 s.	ок
simple simple tests	0.050 s.	ок
primes prime numbers	0.050 s.	ок
small_random small, random numbers, length = 100	0.050 s.	ок
medium_random medium, random numbers length = 5,000	0.080 s.	ок
large_range 1, 2,, N, length = ~20,000	0.140 s.	ок
large_random large, random numbers, length = ~30,000	0.180 s.	ок
large_extreme large, all the same values, length = 50,000	0.230 s.	ок

# Training center

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