

## TASKS DETAILS

EASY	1. <b>MissingInteger</b> Find the smallest positive integer that does not occur in a given sequence.	Task Score	Correctness	Performance
		66%	100%	25%

## Task description

This is a demo task.

Write a function:

```
def solution(A)
```

that, given an array A of N integers, returns the smallest positive integer (greater than 0) that does not occur in A.

For example, given A = [1, 3, 6, 4, 1, 2], the function should return 5.

Given A = [1, 2, 3], the function should return 4.

Given A = [-1, -3], the function should return 1.

Assume that:

- N is an integer within the range [1..100,000];
- each element of array A is an integer within the range [-1,000,000..1,000,000].

Complexity:

- expected worst-case time complexity is  $O(N)$ ;
- expected worst-case space complexity is  $O(N)$  (not counting the storage required for input arguments).

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## Solution

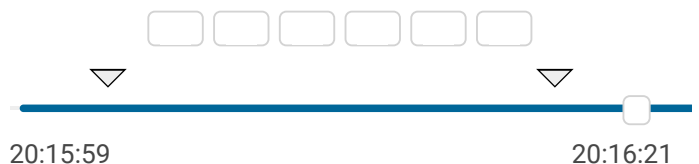
Programming language used: Python

Total time used: 1 minutes ?

Effective time used: 1 minutes ?

Notes: *not defined yet*

## Task timeline ?



Code: 20:16:20 UTC, py,  
final, score: 66

[show code in pop-up](#)

```
1 # Solution 1
2 def solution(A):
3     bigger = max(A)
4     if bigger <= 0:
5         return 1
6
7     for i in range(1, bigger):
8         if i not in A:
9             return i
10
11     return bigger + 1
```

## Analysis summary

The following issues have been detected: timeout errors.

## Analysis ?

Detected time complexity:  $O(N^2)$ 

expand all	Example tests	
▶	example1 first example test	✓ OK
▶	example2 second example test	✓ OK
▶	example3 third example test	✓ OK
expand all	Correctness tests	
▶	extreme_single a single element	✓ OK
▶	simple simple test	✓ OK
▶	extreme_min_max_value minimal and maximal values	✓ OK
▶	positive_only shuffled sequence of 0...100 and then 102...200	✓ OK
▶	negative_only shuffled sequence -100 ... -1	✓ OK
expand all	Performance tests	
▶	medium chaotic sequences length=10005 (with minus)	✓ OK
▶	large_1 chaotic + sequence 1, 2, ..., 40000 (without minus)	✗ TIMEOUT ERROR running time: >6.00 sec., time limit: 0.56 sec.
▶	large_2 shuffled sequence 1, 2, ..., 100000 (without minus)	✗ TIMEOUT ERROR running time: >6.00 sec., time limit: 0.64 sec.
▶	large_3 chaotic + many -1, 1, 2, 3 (with minus)	✗ TIMEOUT ERROR running time: >6.00 sec., time limit: 0.58 sec.