Codility_

Candidate Report: Anonymous

Test Name:

Summary   Timeline

Tasks summary

Task		Time spent	Score
MissingInteger Python ⚠		5 min	100%

Total score

100%

Tasks Details

Medium

1. MissingInteger
Find the smallest positive integer that does not occur in a given sequence.

Task Score	Correctness	Performance
100%	100%	100%

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.

Write an **efficient** algorithm for the following assumptions:

- 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].

Solution

Programming language used:	Python	
Total time used:	5 minutes	❓
Effective time used:	5 minutes	❓
Notes:	*not defined yet*	

Task timeline ❓

09:14:24   09:18:45

Code: 09:18:45 UTC, py, final,   show code in pop-up
score: **100**

```python
1   # you can write to stdout for debugging purposes, e.g.
2   # print("this is a debug message")
3
4   def solution(A):
5       # write your code in Python 3.6
6       dic = {}
7       for i in A:
8           dic[i] = 1
9       #print(dic)
10      i = 1
11      while True:
12          if i not in dic:
13              return i
14          i = i + 1
15
16      return 0
17
18  """A = [1, 3, 6, 4, 1, 2]
19  tmp = solution(A)
20  print(tmp)"""
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity: **O(N) or O(N * log(N))**

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		✓ OK

(with minus)

▶	large_1 chaotic + sequence 1, 2, ..., 40000 (without minus)	✓ OK
▶	large_2 shuffled sequence 1, 2, ..., 100000 (without minus)	✓ OK
▶	large_3 chaotic + many -1, 1, 2, 3 (with minus)	✓ OK