Codility_

Candidate Report: trainingCZ8EVT-BF6

Check out Codility training tasks

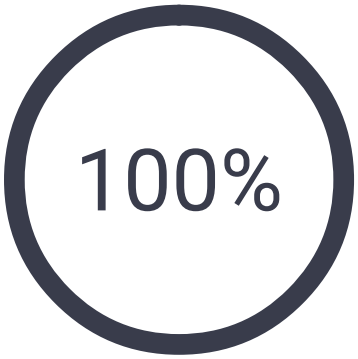
Test Name:

Summary Timeline

Tasks summary

Task	Time spent	Score
PermMissingElem Python	4 min	100%

Total score



Tasks Details

Easy

1. PermMissingElem

Find the missing element in a given permutation.

Task Score	Correctness	Performance
100%	100%	100%

Task description

An array A consisting of N different integers is given. The array contains integers in the range [1..(N + 1)], which means that exactly one element is missing.

Your goal is to find that missing element.

Write a function:

```
def solution(A)
```

that, given an array A, returns the value of the missing element.

For example, given array A such that:

```
A[0] = 2
A[1] = 3
A[2] = 1
A[3] = 5
```

the function should return 4, as it is the missing element.

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

- N is an integer within the range [0..100,000];

Solution

Programming language used:	Python
Total time used:	4 minutes
Effective time used:	4 minutes
Notes:	*not defined yet*

Task timeline

09:56:39 10:00:00

Code: 10:00:00 UTC, py, final, score: **100** show code in pop-up

- the elements of A are all distinct;
- each element of array A is an integer within the range [1..(N + 1)].


```python
# you can write to stdout for debugging purposes, e.g.
# print("this is a debug message")

def solution(A):
    # write your code in Python 3.6
    dic = {}
    for i in A:
        dic[i] = 1
    i = 1
    while True:
        if i not in dic:
            return i
        i = i + 1
    return i
```

Analysis summary

The solution obtained perfect score.

Analysis

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

expand all	Example tests	
▶	example example test	✓ OK
expand all	Correctness tests	
▶	empty_and_single empty list and single element	✓ OK
▶	missing_first_or_last the first or the last element is missing	✓ OK
▶	single single element	✓ OK
▶	double two elements	✓ OK
▶	simple simple test	✓ OK
expand all	Performance tests	
▶	medium1 medium test, length = ~10,000	✓ OK
▶	medium2 medium test, length = ~10,000	✓ OK
▶	large_range range sequence, length = ~100,000	✓ OK
▶	large1 large test, length = ~100,000	✓ OK
▶	large2 large test, length = ~100,000	✓ OK

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