c0d1l1ty

...ck out Codility training tasks

Demo ticket

Session

ID: demoPF2GAW-EDR
Time limit: 120 min.

Status: closed

Created on: 2014-04-23 17:36 UTC
Started on: 2014-04-23 17:36 UTC
Finished on: 2014-04-23 18:06 UTC

Tasks in test	Correctness	Performance	Task score
1 {} PermMissingElem	100%	100%	100%

Test score

❓

100%

100 out of 100 points

EASY

1. PermMissingElem
Find the missing element in a given permutation.

score: 100 of 100

Task description

A zero-indexed 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 a zero-indexed 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
```
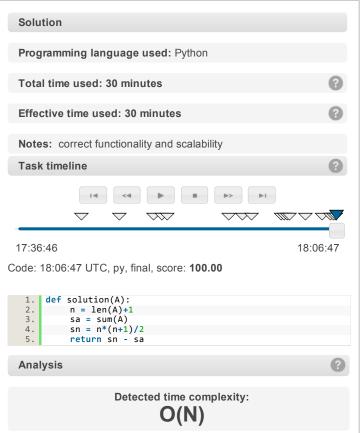
the function should return 4, as it is the missing element.
Assume that:

- N is an integer within the range [0..100,000];
- the elements of A are all distinct;
- each element of array A is an integer within the range [1..(N + 1)].

Complexity:

- expected worst-case time complexity is O(N);
- expected worst-case space complexity is O(1), beyond input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

Solution

Programming language used: Python

Total time used: 30 minutes ❓

Effective time used: 30 minutes ❓

Notes: correct functionality and scalability

Task timeline ❓

17:36:46   18:06:47

Code: 18:06:47 UTC, py, final, score: **100.00**

```
1.  def solution(A):
2.      n = len(A)+1
3.      sa = sum(A)
4.      sn = n*(n+1)/2
5.      return sn - sa
```

Analysis ❓

Detected time complexity:

O(N)

test	time	result
Example tests		
example example test	0.050 s.	OK
Correctness tests		
empty_and_single empty list and single element	0.050 s.	OK
missing_first_or_last the first or the last element is missing	0.050 s.	OK
single single element	0.050 s.	OK
double two elements	0.050 s.	OK
simple simple test	0.050 s.	OK
Performance tests		
medium1 medium test, length = ~10,000	0.060 s.	OK
medium2 medium test, length = ~10,000	0.060 s.	OK
large_range range sequence, length = ~100,000	0.130 s.	OK
large1 large test, length = ~100,000	0.210 s.	OK
large2 large test, length = ~100,000	0.140 s.	OK

Training center