codility

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Training ticket

Session

ID: trainingW22G4Y-D6X
Time limit: 120 min.

Status: closed

Created on: 2016-06-20 19:27 UTC
Started on: 2016-06-20 19:27 UTC
Finished on: 2016-06-20 19:28 UTC

Tasks in test	Correctness	Performance	Task score
1 PermMissingElem Submitted in: Java	100%	100%	100%

Test score ❓

100%

100 out of 100 points

1. PermMissingElem

EASY

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:

```
class Solution { public int solution(int[] 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

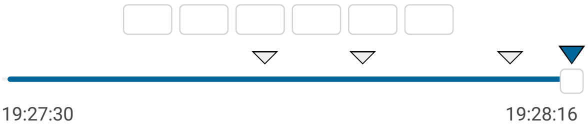
Programming language used: Java

Total time used: 1 minutes ❓

Effective time used: 1 minutes ❓

Notes: *not defined yet*

Task timeline ❓



Code: 19:28:16 UTC, java, final, score: 100

show code in pop-up

```
import java.util.Arrays;

class Solution {
    public int solution(int[] A) {
        Arrays.sort(A);
        for (int i = 0; i < A.length; i++) {
            int expectedValue = (i+1);
            if(A[i] != expectedValue) {
                return expectedValue;
            }
        }
        return A.length+1;
    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity:

O(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

Training center