codility

Training center

y training tasks

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Training ticket

Session

ID: trainingHFE7QR-TH2
Time limit: 120 min.

Status: closed

Created on: 2016-06-04 21:03 UTC
Started on: 2016-06-04 21:03 UTC
Finished on: 2016-06-04 21:03 UTC

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

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:

```
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

21:03:23 — 21:03:51

Code: 21:03:51 UTC, java, final, score: **100**

show code in pop-up

```
1  // you can also use imports, for example:
2  // import java.util.*;
3
4  // you can write to stdout for debugging purposes, e.g.
5  // System.out.println("this is a debug message");
6
7  class Solution {
8      public int solution(int[] A) {
9      long sum = 0;
10     long max = A.length + 1;
11     for (int i: A) {
12       sum += i;
13     }
14     return (int)(((max * (max + 1)) / 2) - sum);
15     }
```

```
16  }
```

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