codility

Training center

y training tasks

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Training ticket

Session

ID: trainingFXSGUK-EYY
Time limit: 120 min.

Status: closed

Created on: 2016-06-05 08:33 UTC
Started on: 2016-06-05 08:33 UTC
Finished on: 2016-06-05 08:33 UTC

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

100%

100 out of 100 points

EASY

1. MissingInteger

Find the minimal positive integer not occurring in a given sequence.

score: 100 of 100

Task description

Write a function:

```
class Solution { public int solution(int[] A); }
```

that, given a non-empty zero-indexed array A of N integers, returns the minimal positive integer (greater than 0) that does not occur in A.

For example, given:

```
A[0] = 1
A[1] = 3
A[2] = 6
A[3] = 4
A[4] = 1
A[5] = 2
```

the function should return 5.

Assume that:

- N is an integer within the range [1..100,000];
- each element of array A is an integer within the range [−2,147,483,648..2,147,483,647].

Complexity:

- expected worst-case time complexity is O(N);
- expected worst-case space complexity is O(N), 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

08:33:17

08:33:39

Code: 08:33:39 UTC, java, final, score: **100**

show code in pop-up

```
// you can also use imports, for example:
// import java.util.*;

// you can write to stdout for debugging purposes, e.g
// System.out.println("this is a debug message");

class Solution {
    public int solution(int[] A) {
        boolean[] used = new boolean[A.length];
        int cv = 0;
        for (int i=0;i<A.length;i++) {
          cv = A[i];
          if (cv > 0 && cv <= A.length && !used[cv-1])
            used[cv-1]=true;
          }
        }

        for (int i=0;i<used.length;i++) {
          if (!used[i]) {
            return i+1;
          }
        }

        return A.length + 1;
    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity:
O(N)

expand all **Example tests**

▶	example example (without minus)	✔ OK

expand all **Correctness tests**

▶	extreme_single a single element	✔ OK
▶	simple simple test	✔ OK
▶	extreme_min_max_int MININT and MAXINT (with minus)	✔ 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 (with minus)	✔ OK
▶	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

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