Codility_

CodeCheck Report: training7P9AUP-XM8

Test Name:

Check out Codility training tasks

Summary Timeline

Tasks summary

Task	Time spent	Score
PermCheck ⚠ C#	1 min	100%

Total score

Tasks Details

Easy

1. PermCheck

Check whether array A is a permutation.

Task Score	Correctness	Performance
100%	100%	100%

Task description

A non-empty array A consisting of N integers is given.

A *permutation* is a sequence containing each element from 1 to N once, and only once.

For example, array A such that:

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

is a permutation, but array A such that:

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

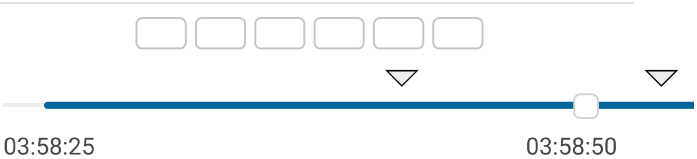
is not a permutation, because value 2 is missing.

The goal is to check whether array A is a permutation.

Solution

Programming language used:	C#
Total time used:	1 minutes
Effective time used:	1 minutes
Notes:	*not defined yet*

Task timeline



Write a function:

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

that, given an array A, returns 1 if array A is a permutation and 0 if it is not.

For example, given array A such that:

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

the function should return 1.

Given array A such that:

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

the function should return 0.

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

- N is an integer within the range [1..100,000];
- each element of array A is an integer within the range [1..1,000,000,000].

Code: 03:58:49 UTC, cs, final, score: **100** show code in pop-up

```
using System;

/* Lesson 4.2 - Perm Check
 * Paulo Santos
 * 24.Nov.2022
 */
class Solution {
    public int solution(int[] A) {

        /*
         * Check the input
         */
        if (A == null)
            throw new ArgumentNullException();

        Array.Sort(A);
        for (var i = 0; i < A.Length; i++)
            if (i != A[i] - 1)
                return 0;

        return 1;
    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

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

expand all	Example tests	
▶	example1 the first example test	✓ OK
▶	example2 the second example test	✓ OK
expand all	Correctness tests	
▶	extreme_min_max single element with minimal/maximal value	✓ OK
▶	single single element	✓ OK
▶	double two elements	✓ OK
▶	antiSum1 total sum is correct, but it is not a permutation, N <= 10	✓ OK

▶	small_permutation permutation + one element occurs twice, N = ~100	✓ OK
▶	permutations_of_ranges permutations of sets like [2..100] for which the anwsers should be false	✓ OK

expand all Performance tests

▶	medium_permutation permutation + few elements occur twice, N = ~10,000	✓ OK
▶	antiSum2 total sum is correct, but it is not a permutation, N = ~100,000	✓ OK
▶	large_not_permutation permutation + one element occurs three times, N = ~100,000	✓ OK
▶	large_range sequence 1, 2, ..., N, N = ~100,000	✓ OK
▶	extreme_values all the same values, N = ~100,000	✓ OK
▶	various_permutations all sequences are permutations	✓ OK