Codility_

CodeCheck Report: trainingBVMX4E-H7J

Test Name:

Summary   Timeline

Tasks summary

Task		Time spent	Score
PermMissingElem C#	⚠️	5 min	100%

Total score

100%

Tasks Details

	1. PermMissingElem	Task Score		Correctness		Performance	
Easy	Find the missing element in a given permutation.		100%		100%		100%

Task description

An 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 an array A, returns the value of the missing element.

For example, given array A such that:
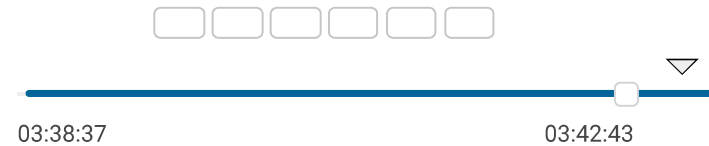
```
A[0] = 2
A[1] = 3
A[2] = 1
A[3] = 5
```

the function should return 4, as it is the missing element.

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

Solution

Programming language used:	C#
Total time used:	5 minutes ❓
Effective time used:	5 minutes ❓
Notes:	*not defined yet*

Task timeline ❓

03:38:37 ———————————————————— 03:42:43

| Code: 03:42:42 UTC, cs, final, score: **100** | show code in pop-up |

- 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)].

```csharp
using System;

/* Lesson 3.2 - Perm Missing Element
 * Paulo Santos
 * 24.Nov.2022
 */
class Solution {
    public int solution(int[] A) {

        /*
         * Check the input
         */
        if (A == null || A.Length == 0)
            return 1;

        Array.Sort(A);

        var ans = 0;
        foreach(var i in A) {
            if((++ans) != i)
                return (ans);
        }

        return (ans + 1);
    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

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

expand all	Example tests	
▶ example		✓ OK
example test		
expand all	Correctness tests	
▶ empty_and_single		✓ OK
empty list and single element		
▶ missing_first_or_last		✓ OK
the first or the last element is missing		
▶ single		✓ OK
single element		
▶ double		✓ OK
two elements		
▶ simple		✓ OK
simple test		
expand all	Performance tests	
▶ medium1		✓ OK
medium test, length = ~10,000		
▶ medium2		✓ OK
medium test, length = ~10,000		

▶	large_range	✓ OK
	range sequence, length = ~100,000	
▶	large1	✓ OK
	large test, length = ~100,000	
▶	large2	✓ OK
	large test, length = ~100,000	