Codility_

Candidate Report: trainingXHDCZC-DRD

Check out Codility training tasks

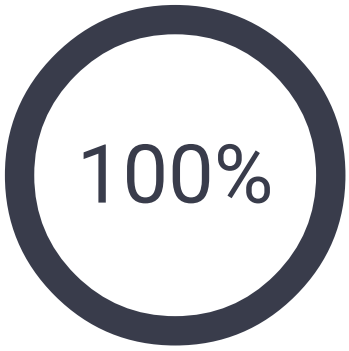
Test Name:

Summary | Timeline

Tasks summary

Task	Time spent	Score
PermCheck Java 8	5 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.

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:

Solution

Programming language used:	Java 8
Total time used:	5 minutes
Effective time used:	5 minutes
Notes:	*not defined yet*

Task timeline

02:34:11 — 02:38:47

Code: 02:38:47 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.
```

```
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].


```
5  // System.out.println("this is a debug message");
6
7  class Solution {
8      public int solution(int[] A) {
9          // write your code in Java SE 8
10         Set<Integer> contents = new HashSet<>();
11         for(Integer item: A){
12             contents.add(item);
13         }
14
15         for(int i=1; i < A.length+1; i++){
16             if(!contents.contains(i)){
17                 return 0;
18             }
19         }
20         return 1;
21     }
22 }
```

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	✔ OK

	times, N = ~100,000	
▶	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
