

### Congratulations

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## Training ticket

### Session

ID: trainingGCY56M-H49  
Time limit: 120 min.

### Status: closed

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

### Tasks in test

1 | **PermCheck**  
Submitted in: Java

Correctness

100%

Performance

100%

Task score

100%

100%

100 out of 100 points

EASY

### 1. PermCheck

Check whether array A is a permutation.

score: 100 of 100



#### Task description

A non-empty zero-indexed 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 a zero-indexed 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:

#### Solution

Programming language used: Java

Total time used: 1 minutes

2

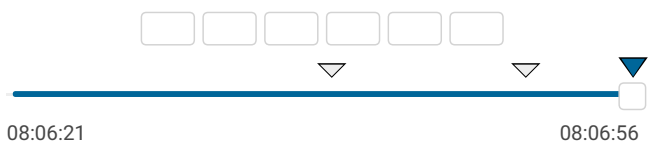
Effective time used: 1 minutes

2

Notes: not defined yet

Task timeline

2



Code: 08:06:56 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
10        boolean[] used = new boolean[A.length];
11        for (int i=0; i<A.length; i++) {
12            if (A[i] < 1 || A[i] > A.length || used[A[i]-1])
13                return 0;
14        }
15        used[A[i]-1] = true;
```

A[ 0 ] = 4  
A[ 1 ] = 1  
A[ 2 ] = 3  
the function should return 0.

Assume that:

- 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].

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.

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```
16     }  
17     return 1;  
18  
19     }  
20 }
```

Analysis summary

The solution obtained perfect score.

Analysis



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

expand all	Example tests	
▶	example1	✓ OK
	the first example test	
▶	example2	✓ OK
	the second example test	
expand all	Correctness tests	
▶	extreme_min_max	✓ OK
	single element with minimal/maximal value	
▶	single	✓ OK
	single element	
▶	double	✓ OK
	two elements	
▶	antiSum1	✓ OK
	total sum is correct, but it is not a permutation, N <= 10	
▶	small_permutation	✓ OK
	permutation + one element occurs twice, N = ~100	
expand all	Performance tests	
▶	medium_permutation	✓ OK
	permutation + few elements occur twice, N = ~10,000	
▶	antiSum2	✓ OK
	total sum is correct, but it is not a permutation, N = ~100,000	
▶	large_permutation	✓ OK
	permutation + one element occurs three times, N = ~100,000	
▶	large_range	✓ OK
	sequence 1, 2, ..., N, N = ~100,000	
▶	extreme_values	✓ OK
	all the same values, N = ~100,000	