## codility

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### Demo ticket

#### Session

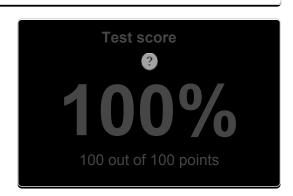
ID: demoY4ZNJV-K2H Time limit: 120 min.

#### Status: closed

Created on: 2014-03-16 22:14 UTC Started on: 2014-03-16 22:14 UTC Finished on: 2014-03-16 22:20 UTC

#### Tasks in test

Task score



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#### 1. PermCheck

Check whether array A is a permutation.

score: 100 of 100



22:20:21

#### 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.

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

Write a function:

int solution(vector<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:

A[0] = 4

A[1] = 1A[2] = 3

the function should return 0.

Assume that:



Code: 22:20:21 UTC, cpp, final, score: **100.00** 

```
// you can also use includes, for example:
      // #include <algorithm>
02.
      int solution(vector<int> &A) {
    vector<long long> C(A.size(), 0);
03.
04.
05.
             for (int i = 0; i < (int)A.size(); i++) {
   if (A[i] > (int)A.size() || A[i] < 1)</pre>
06.
07.
08.
                        return 0;
09.
10.
                         if (C[A[i]-1] != 0)
11.
                               return 0;
12.
                         else
13.
                               C[A[i]-1] += 1;
14.
15.
            return 1:
16.
17.
```

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- 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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# O(N) or O(N \* log(N))

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test	time	result
example1 the first example test	0.020 s.	ОК
example2 the second example test	0.020 s.	ок
extreme_max single element with maximal value	0.020 s.	ок
single single element	0.020 s.	ок
double two elements	0.020 s.	ок
antiSum1 total sum is corret (equals 1 + 2 + N), but it is not a permutation, N = 3	0.020 s.	ок
medium_permutation permutation, N = ~10,000	0.020 s.	ок
antiSum2 total sum is corret (equals 1 + 2 + N), but it is not a permutation, N = ~100,000	0.040 s.	ок
large_permutation large permutation, N = ~100,000	0.040 s.	ок
large_range sequence 1, 2,, N, N = ~100,000	0.040 s.	ок
extreme_values all the same values, N = ~100,000	0.030 s.	ок

Training center

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