codility

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Candidate Report: Anonymous

Test Name:

Summary Timeline

Test Score

91 out of 100 points

91%

Tasks in Test

	Time Spent	Task Score
Distinct Submitted in: Java 8	30 min	91%

TASKS DETAILS

EASY

1. **Distinct**
Compute number of distinct values in an array.

Task Score	Correctness	Performance
91%	88%	100%

Task description

Write a function

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

that, given an array A consisting of N integers, returns the number of distinct values in array A.

For example, given array A consisting of six elements such that:

```
A[0] = 2    A[1] = 1    A[2] = 1
A[3] = 2    A[4] = 3    A[5] = 1
```

the function should return 3, because there are 3 distinct values appearing in array A, namely 1, 2 and 3.

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

- N is an integer within the range [0..100,000];
- each element of array A is an integer within the range [−1,000,000..1,000,000].

Solution

Programming language used:	Java 8
Total time used:	30 minutes
Effective time used:	30 minutes
Notes:	*not defined yet*

Task timeline

17:39:13 18:08:36

Code: 18:08:35 UTC, java, final, score: **91** 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  import java.util.Hashtable;
7  import java.util.Map;
8
9  class Solution {
```

```
10  public static int solution(int[] a) {
11                  Map<Integer, Integer> m = new Hashtable<In
12
13                  if (a.length == 1)
14                          return a[0];
15
16                  for (int i = 0; i < a.length; i++) {
17                          Integer v = m.putIfAbsent(a[i], 1)
18                          if (v != null) {
19                                  m.put(a[i], v + 1);
20                          }
21                  }
22
23                  int r = m.keySet().size();
24
25                  return r;
26          }
27  }
```

Analysis summary

The following issues have been detected: wrong answers.

For example, for the input `[0]` the solution returned a wrong answer (got 0 expected 1).

Analysis

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

expand all	Example tests	
▶	example1 example test, positive answer	✓ OK
expand all	Correctness tests	
▶	extreme_empty empty sequence	✓ OK
▶	extreme_single sequence of one element	✗ WRONG ANSWER got 0 expected 1
▶	extreme_two_elems sequence of three distinct elements	✓ OK
▶	extreme_one_value sequence of 10 equal elements	✓ OK
▶	extreme_negative sequence of negative elements, length=5	✓ OK
▶	extreme_big_values sequence with big values, length=5	✓ OK
▶	medium1 chaotic sequence of value sfrom [0..1K], length=100	✓ OK
▶	medium2 chaotic sequence of value sfrom [0..1K], length=200	✓ OK
▶	medium3 chaotic sequence of values from [0..10], length=200	✓ OK
expand all	Performance tests	
▶	large1 chaotic sequence of values from [0..100K], length=10K	✓ OK
▶		

large_random1 chaotic sequence of values from [-1M..1M], length=100K	✓ OK
▶ large_random2 another chaotic sequence of values from [-1M..1M], length=100K	✓ OK

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