Codility_

Tasks Details

Check out Codility training tasks

Easy

1. Distinct

Compute number of distinct values in an array.

Task Score	Correctness	Performance
100%	100%	100%

Task description

Write a function

```
def solution(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:	Python
Total time used:	2 minutes
Effective time used:	2 minutes
Notes:	*not defined yet*

Task timeline

00:07:01 00:08:55

Code: 00:08:55 UTC, py, final, score: **100** show code in pop-up

```
1  # you can write to stdout for debugging purposes, e.g.
2  # print("this is a debug message")
3
4  def solution(A):
5      # write your code in Python 3.6
6      if len(A)==0:
7          return 0
8      dic = {}
9      for i in A:
10         dic[i] = 1
11     return len(dic)
```

Analysis summary

The solution obtained perfect score.

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	✓ OK
▶	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