



Training center

y training tasks

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<https://codility.com/demo/take-sample-test/distinct/>

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Training ticket

Session

ID: trainingWGYNQ-8VT

Time limit: 120 min.

Status: closed

Created on: 2016-02-18 07:49 UTC

Started on: 2016-02-18 07:49 UTC

Finished on: 2016-02-18 07:50 UTC

Tasks in test

1 **Distinct**
Submitted in: Go

Correctness

100%

Performance

100%

Task score

100%

Test score

100%

100 out of 100 points

EASY

1. Distinct

Compute number of distinct values in an array.

score: 100 of 100

Task description

Write a function

```
func Solution(A []int) int
```

that, given a zero-indexed array *A* consisting of *N* integers, returns the number of distinct values in array *A*.

Assume that:

- *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].

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.

Complexity:

- expected worst-case time complexity is $O(N \cdot \log(N))$;
- expected worst-case space complexity is $O(N)$, beyond

Solution

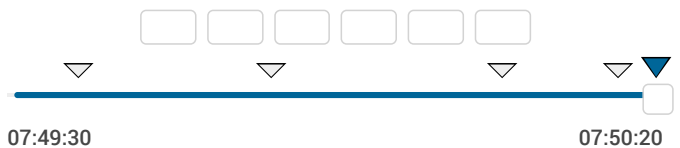
Programming language used: Go

Total time used: 1 minutes

Effective time used: 1 minutes

Notes: not defined yet

Task timeline



Code: 07:50:20 UTC, go, final,
score: 100.00

[show code in pop-up](#)

```
1 package solution
2
3 // you can also use imports, for example:
```

input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

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```
4 // import "fmt"
5 // import "os"
6
7 // you can write to stdout for debugging purposes, e.g.
8 // fmt.Println("this is a debug message")
9
10 func Solution(A []int) int {
11
12     distinct := 0
13
14     m := make(map[int]bool, 0);
15
16     for _, n := range A {
17         m[n]=true
18     }
19
20     for _ = range m {
21         distinct++;
22     }
23
24     return distinct;
25 }
```

Analysis summary

The solution obtained perfect score.

Analysis

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

| | | |
|------------|--|------|
| expand all | Example tests | |
| ▶ | example1 | ✓ OK |
| | example test, positive answer | |
| expand all | Correctness tests | |
| ▶ | extreme_empty | ✓ OK |
| | empty sequence | |
| ▶ | extreme_single | ✓ OK |
| | sequence of one element | |
| ▶ | extreme_two_elems | ✓ OK |
| | sequence of three distinct elements | |
| ▶ | extreme_one_value | ✓ OK |
| | sequence of 10 equal elements | |
| ▶ | extreme_negative | ✓ OK |
| | sequence of negative elements, length=5 | |
| ▶ | extreme_big_values | ✓ OK |
| | sequence with big values, length=5 | |
| ▶ | medium1 | ✓ OK |
| | chaotic sequence of value sfrom [0..1K], length=100 | |
| ▶ | medium2 | ✓ OK |
| | chaotic sequence of value sfrom [0..1K], length=200 | |
| ▶ | medium3 | ✓ OK |
| | chaotic sequence of values from [0..10], length=200 | |
| expand all | Performance tests | |
| ▶ | large1 | ✓ OK |
| | chaotic sequence of values from [0..100K], length=10K | |
| ▶ | large_random1 | ✓ OK |
| | chaotic sequence of values from [-1M..1M], length=100K | |

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

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