Codility_

CodeCheck Report: trainingMPK8ND-73K

Test Name:

Check out Codility training tasks

Summary Timeline

Tasks summary

Task	Time spent	Score
PassingCars Java 8 ⚠	17 min	100%

Total score

Tasks Details

Easy

1. PassingCars

Count the number of passing cars on the road.

Task Score	Correctness	Performance
100%	100%	100%

Task description

A non-empty array A consisting of N integers is given. The consecutive elements of array A represent consecutive cars on a road.

Array A contains only 0s and/or 1s:

- 0 represents a car traveling east,
- 1 represents a car traveling west.

The goal is to count passing cars. We say that a pair of cars (P, Q), where 0 ≤ P < Q < N, is passing when P is traveling to the east and Q is traveling to the west.

For example, consider array A such that:

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

We have five pairs of passing cars: (0, 1), (0, 3), (0, 4), (2, 3), (2, 4).

Write a function:

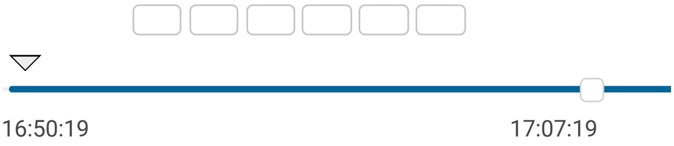
```
class Solution { public int solution(int[] A); }
```

that, given a non-empty array A of N integers, returns the number of pairs of passing cars.

Solution

Programming language used:	Java 8
Total time used:	17 minutes
Effective time used:	17 minutes
Notes:	*not defined yet*

Task timeline



Code: 17:07:19 UTC, java, final, score: **100**

show code in pop-up

```
// you can also use imports, for example:
// import java.util.*;

// you can write to stdout for debugging purposes,
// System.out.println("this is a debug message");

```

The function should return −1 if the number of pairs of passing cars exceeds 1,000,000,000.

For example, given:

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

the function should return 5, as explained above.

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

- N is an integer within the range [1..100,000];
- each element of array A is an integer that can have one of the following values: 0, 1.

```java
class Solution {
 public int solution(int[] A) {
 int carsSeen = 0;
 int passingCars = 0;
 for(int car:A){
 if(car == 0){
 carsSeen++;
 }else{
 passingCars+=carsSeen;
 if(passingCars > 1000000000){
 return -1;
 }
 }
 }
 return passingCars;
 }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

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

expand all	Example tests	
▶	example example test	✓ OK
expand all	Correctness tests	
▶	single single element	✓ OK
▶	double two elements	✓ OK
▶	simple simple test	✓ OK
▶	small_random random, length = 100	✓ OK
▶	small_random2 random, length = 1000	✓ OK
expand all	Performance tests	
▶	medium_random random, length = ~10,000	✓ OK
▶	large_random random, length = ~100,000	✓ OK
▶	large_big_answer 0..01..1, length = ~100,000	✓ OK
▶	large_alternate 0101..01, length = ~100,000	✓ OK
▶	large_extreme large test with all 1s/0s, length = ~100,000	✓ OK