Codility_

Candidate Report: training4NFZNB-YQQ

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Test Name:

Summary Timeline Feedback

Tasks summary

Task	Time spent	Score
PassingCars C#	1 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 $0 \le P < Q < N$, 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
```

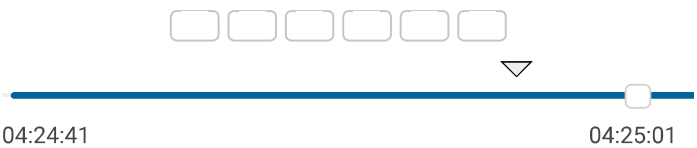
We have five pairs of passing cars: (0, 1), (0, 3), (0, 4), (2, 3), (2, 4).

Write a function:

Solution

Programming language used:	C#
Total time used:	1 minutes
Effective time used:	1 minutes
Notes:	*not defined yet*

Task timeline



Code: 04:25:00 UTC, cs, final, score: **100**

show code in pop-up

```
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.

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.


```
1  using System;
2  // you can also use other imports, for example:
3  // using System.Collections.Generic;
4
5  // you can write to stdout for debugging purposes, e.g.
6  // Console.WriteLine("this is a debug message");
7
8  class Solution {
9      public int solution(int[] A)
10         {
11
12             int l = A.Length;
13             int countZero = 0;
14             int countPairs = 0;
15             int exceed = 1000000000;
16
17
18             for (int i = 0; i < l; i++)
19             {
20                 if (A[i] == 1)
21                     countPairs += countZero;
22                 else
23                     countZero++;
24                 if (countPairs > exceed || countPairs < 0
25             }
26             return countPairs;
27         }
28 }
```

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