Codility_

Candidate Report: trainingKS5YHT-H3Q

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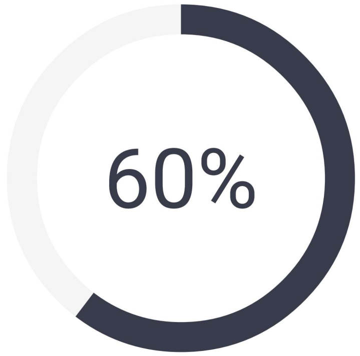
Test Name:

Summary Timeline Feedback

Tasks summary

Task	Time spent	Score
PassingCars C#	1 min	60%

Total score



Tasks Details

Easy

1. PassingCars

Count the number of passing cars on the road.

Task Score	Correctness	Performance
60%	100%	20%

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); }
```

Solution

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

Task timeline

18:34:59 18:35:22

Code: 18:35:22 UTC, cs, final, score: **60**

show code in pop-up

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.

```
using System;
// you can also use other imports, for example:
// using System.Collections.Generic;

// you can write to stdout for debugging purposes, e.g.
// Console.WriteLine("this is a debug message");

class Solution {
   public int solution(int[] A)
        {
            int retVal = 0;
            var len = A.Length;

            for (int i = 0; i < len; i++)
            {
                if (A[i] == 0)
                {
                    for (int j = i+1; j < len; j++)
                    {
                        retVal += A[j];

                    }
                }
            }

            return retVal;

        }
}
```

Analysis summary

The following issues have been detected: timeout errors.

Analysis

Detected time complexity: O(N ** 2)

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		✗ TIMEOUT ERROR running time: 2.248 sec., time limit: 0.144 sec.
▶ large_big_answer 0..01..1, length = ~100,000		✗ TIMEOUT ERROR running time: 3.364 sec., time

		limit: 0.144 sec.
▶	large_alternate 0101..01, length = ~100,000	✗ TIMEOUT ERROR running time: 2.252 sec., time limit: 0.144 sec.
▶	large_extreme large test with all 1s/0s, length = ~100,000	✗ TIMEOUT ERROR running time: 4.464 sec., time limit: 0.144 sec.

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