Codility_

Candidate Report: trainingYU2QGF-QYA

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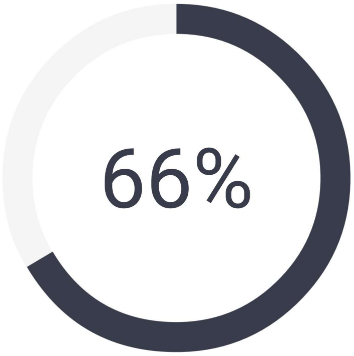
Test Name:

Summary Timeline Feedback

Tasks summary

Task	Time spent	Score
MaxCounters C#	1 min	66%

Total score



Tasks Details

1. MaxCounters

Medium

Calculate the values of counters after applying all alternating operations: increase counter by 1; set value of all counters to current maximum.

Task Score	Correctness	Performance
66%	100%	40%

Task description

You are given N counters, initially set to 0, and you have two possible operations on them:

- *increase(X)* − counter X is increased by 1,
- *max counter* − all counters are set to the maximum value of any counter.

A non-empty array A of M integers is given. This array represents consecutive operations:

- if A[K] = X, such that 1 ≤ X ≤ N, then operation K is increase(X),
- if A[K] = N + 1 then operation K is max counter.

For example, given integer N = 5 and array A such that:

```
A[0] = 3
A[1] = 4
A[2] = 4
A[3] = 6
A[4] = 1
```

Solution

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

Task timeline

02:34:41 02:35:32

Code: 02:35:32 UTC, cs, final, score: **66**

show code in pop-up

```
A[5] = 4
A[6] = 4
```

the values of the counters after each consecutive operation will be:

```
(0, 0, 1, 0, 0)
(0, 0, 1, 1, 0)
(0, 0, 1, 2, 0)
(2, 2, 2, 2, 2)
(3, 2, 2, 2, 2)
(3, 2, 2, 3, 2)
(3, 2, 2, 4, 2)
```

The goal is to calculate the value of every counter after all operations.

Write a function:

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

that, given an integer N and a non-empty array A consisting of M integers, returns a sequence of integers representing the values of the counters.

Result array should be returned as an array of integers.

For example, given:

```
A[0] = 3
A[1] = 4
A[2] = 4
A[3] = 6
A[4] = 1
A[5] = 4
A[6] = 4
```

the function should return [3, 2, 2, 4, 2], as explained above.

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

- N and M are integers within the range [1..100,000];
- each element of array A is an integer within the range [1..N + 1].

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Linq;
// 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 {
    private int [] setCountersArray(int N, int value)
        {
            List<int> counters = new List<int>();
            for (int i = 1; i <= N; i++)
            {
                counters.Add(value);
            }
            return counters.ToArray();
        }
        public int[] solution(int N, int[] A)
        {
            var countersArray = setCountersArray(N, 0);
            int upper = A.Length;
            for (int i=0; i < upper; i++)
            {
                if (A[i] == N + 1)
                {
                    countersArray = setCountersArray(N, cou
                }else
                {
                    countersArray[A[i] - 1] += 1;
                }
            }
            return countersArray;
        }
}
```

Analysis summary

The following issues have been detected: timeout errors.

Analysis ?

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

expand all **Example tests**

▶ example ✓ OK
example test

expand all **Correctness tests**

▶ extreme_small ✓ OK
all max_counter operations

▶ single ✓ OK
only one counter

▶ small_random1 ✓ OK
small random test, 6 max_counter operations

▶ small_random2 ✓ OK
small random test, 10 max_counter operations

expand all **Performance tests**

▶	medium_random1 medium random test, 50 max_counter operations	✓ OK
▶	medium_random2 medium random test, 500 max_counter operations	✓ OK
▶	large_random1 large random test, 2120 max_counter operations	✗ TIMEOUT ERROR running time: 1.564 sec., time limit: 0.128 sec.
▶	large_random2 large random test, 10000 max_counter operations	✗ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.
▶	extreme_large all max_counter operations	✗ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.

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