Codility_

Candidate Report: trainingNQ8PR6-ZTV

Test Name:

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Summary Timeline

Tasks summary

Task	Time spent	Score
BinaryGap C# ⚠	98 min	100%

Total score

100%

Tasks Details

1. BinaryGap

Easy

Find longest sequence of zeros in binary representation of an integer.

Task Score	Correctness	Performance
100%	100%	Not assessed

Task description

A *binary gap* within a positive integer N is any maximal sequence of consecutive zeros that is surrounded by ones at both ends in the binary representation of N.

For example, number 9 has binary representation `1001` and contains a binary gap of length 2. The number 529 has binary representation `1000010001` and contains two binary gaps: one of length 4 and one of length 3. The number 20 has binary representation `10100` and contains one binary gap of length 1. The number 15 has binary representation `1111` and has no binary gaps. The number 32 has binary representation `100000` and has no binary gaps.

Write a function:

```
class Solution { public int solution(int N); }
```

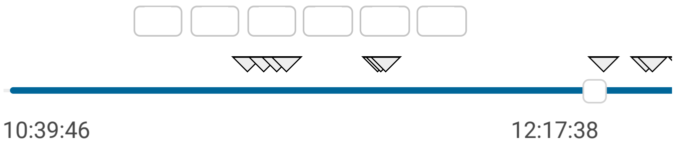
that, given a positive integer N, returns the length of its longest binary gap. The function should return 0 if N doesn't contain a binary gap.

For example, given N = 1041 the function should return 5, because N has binary representation `10000010001` and so its longest binary gap is of length 5. Given N = 32 the function should return 0, because N has binary representation '100000' and thus no binary gaps.

Solution

Programming language used:	C#
Total time used:	98 minutes
Effective time used:	98 minutes
Notes:	*not defined yet*

Task timeline



Code: 12:17:37 UTC, cs, final, score: **100**

show code in pop-up

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

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

- N is an integer within the range [1..2,147,483,647].

```
// using System.Collections.Generic;

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

class Solution {
    public int solution(int N) {
           if (N <= 4)
                return 0;
            var count = 0;
            var maxCount = 0;
            var isStarted = false;
            var lastResult = N;
            while (lastResult > 0)
            {
                if (lastResult % 2 == 0)
                {
                    if (isStarted)
                        count++;
                }
                else
                {
                    if (isStarted && count > 0)
                    {
                        isStarted = false;
                        if (count > maxCount)
                            maxCount = count;
                        count = 0;
                    }
                    isStarted = true;
                }
                lastResult /= 2;
            }
            return maxCount;
    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

expand all Example tests

▶ example1 ✓ OK
example test n=1041=10000010001_2

▶ example2 ✓ OK
example test n=15=1111_2

▶ example3 ✓ OK
example test n=32=100000_2

expand all Correctness tests

▶ extremes ✓ OK
n=1, n=5=101_2 and n=2147483647=2**31-1

▶ trailing_zeroes ✓ OK
n=6=110_2 and n=328=101001000_2

▶ power_of_2 ✓ OK
n=5=101_2, n=16=2**4 and n=1024=2**10

▶ simple1 ✓ OK
n=9=1001_2 and n=11=1011_2

▶ simple2 ✓ OK
n=19=10011 and n=42=101010_2

▶ simple3 ✓ OK
n=1162=10010001010_2 and

	n=5=101_2	
▶	medium1 n=51712=110010100000000_2 and n=20=10100_2	✓ OK
▶	medium2 n=561892=10001001001011100100_2 and n=9=1001_2	✓ OK
▶	medium3 n=66561=10000010000000001_2	✓ OK
▶	large1 n=6291457=11000000000000000000001_2	✓ OK
▶	large2 n=74901729=100011101101110100011100001	✓ OK
▶	large3 n=805306373=110000000000000000000000000101_2	✓ OK
▶	large4 n=1376796946=101001000010000010000100010010_2	✓ OK
▶	large5 n=1073741825=1000000000000000000000000000001_2	✓ OK
▶	large6 n=1610612737=1100000000000000000000000000001_2	✓ OK

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