Codility_

Candidate Report: trainingKYR5CD-F3U

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Test Name:

Summary Timeline Feedback

Tasks summary

Task	Time spent	Score
BinaryGap C#	1 min	100%

Total score

Tasks Details

Easy

1. BinaryGap

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.

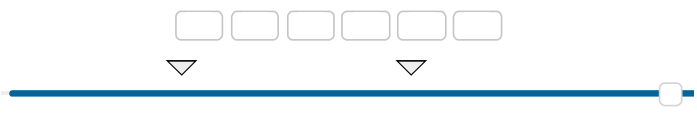
For example, given N = 1041 the function should return 5, because N has binary representation `10000010001` and so its longest binary gap is of length 5. Given N = 32 the function should return 0, because N has binary representation '100000' and thus no binary gaps.

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

Solution

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

Task timeline



19:45:41 19:46:38

Code: 19:46:38 UTC, cs, final, score: **100**

show code in pop-up

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


```
1  using System;
2  using System.Linq;
3  // you can also use other imports, for example:
4  // using System.Collections.Generic;
5
6  // you can write to stdout for debugging purposes, e.g.
7  // Console.WriteLine("this is a debug message");
8
9  class Solution {
10    public int solution(int N)
11         {
12
13             int retVal = 0;
14             var binary = Convert.ToString(N, 2);
15             var len = binary.Length;
16             int currMax = 0;
17             if (binary.Count(m => (m == '1')) <= 1)
18                 return 0;
19
20             int i = binary.LastIndexOf('1') ;
21
22
23
24             while ( i > 0)
25             {
26                 if (binary[i] == '0')
27                 {
28                     ++currMax;
29                 }else
30                 {
31                     if (currMax > retVal)
32                        retVal = currMax;
33                     currMax = 0;
34                 }
35                 --i;
36             }
37             if (currMax > retVal )
38                 retVal = currMax;
39             return retVal;
40         }
41 }
```

Analysis summary

The solution obtained perfect score.

Analysis

expand all	Example tests	
▶	example1 example test n=1041=10000010001_2	✓ OK
▶	example2 example test n=15=1111_2	✓ OK
▶	example3 example test n=32=100000_2	✓ OK
expand all	Correctness tests	
▶	extremes n=1, n=5=101_2 and n=2147483647=2**31-1	✓ OK
▶	trailing_zeroes n=6=110_2 and n=328=101001000_2	✓ OK
▶	power_of_2 n=5=101_2, n=16=2**4 and n=1024=2**10	✓ OK
▶	simple1 n=9=1001_2 and n=11=1011_2	✓ OK

▶	simple2 n=19=10011 and n=42=101010_2	✓ OK
▶	simple3 n=1162=10010001010_2 and n=5=101_2	✓ OK
▶	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=10001110110111010001110000 1001	✓ OK
▶	large3 n=805306373=11000000000000000000000 0000101_2	✓ OK
▶	large4 n=1376796946=10100100001000001000001 00010010_2	✓ OK
▶	large5 n=1073741825=10000000000000000000000 000000001_2	✓ OK
▶	large6 n=1610612737=11000000000000000000000 000000001_2	✓ OK

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