Codility_

Candidate Report: Anonymous

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Test Name:

Summary Timeline Feedback

Tasks summary

Task	Time spent	Score
BinaryGap C#	23 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.

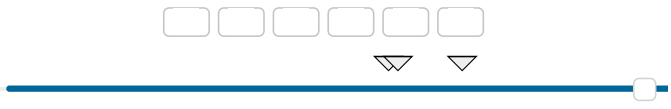
Write an **efficient** algorithm for the following assumptions:

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

Solution

Programming language used:	C#
Total time used:	23 minutes
Effective time used:	23 minutes
Notes:	*not defined yet*

Task timeline



07:14:49 07:37:20

Code: 07:37:20 UTC, cs, final, score: **100** show code in pop-up

```
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 {
```

```
    public int solution(int N) {
       int len =0,maxLen=0;
       bool started = false;
       for(uint i=1;i<=N;i<<=1)
       {
           if((i&N) !=0)
           {
               if(started)
               {
                   if(len >maxLen)
                        maxLen = len;
               len = 0;
               }
               started = true;
           }
           else if(started)
                len++;
       }
       return maxLen;

    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

collapse all — Example tests

▼ example1 example test n=1041=10000010001_2	✓ OK	
1. 0.020 s OK		
▼ example2 example test n=15=1111_2	✓ OK	
1. 0.020 s OK		
▼ example3 example test n=32=100000_2	✓ OK	
1. 0.016 s OK		

collapse all — Correctness tests

▼ extremes n=1, n=5=101_2 and n=2147483647=2**31-1	✓ OK	
1. 0.016 s OK		
2. 0.020 s OK		
3. 0.016 s OK		
▼ trailing_zeroes n=6=110_2 and n=328=101001000_2	✓ OK	
1. 0.016 s OK		
2. 0.016 s OK		
▼ power_of_2 n=5=101_2, n=16=2**4 and n=1024=2**10	✓ OK	
1. 0.016 s OK		
2. 0.016 s OK		
3. 0.016 s OK		
▼ simple1 n=9=1001_2 and n=11=1011_2	✓ OK	

1. 0.020 s OK
2. 0.020 s OK

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

1. 0.020 s OK
2. 0.016 s OK

▼ simple3 ✓ OK
n=1162=10010001010_2 and n=5=101_2

1. 0.020 s OK
2. 0.016 s OK

▼ medium1 ✓ OK
n=51712=110010100000000_2 and n=20=10100_2

1. 0.020 s OK
2. 0.020 s OK

▼ medium2 ✓ OK
n=561892=10001001001011100100_2 and n=9=1001_2

1. 0.020 s OK
2. 0.020 s OK

▼ medium3 ✓ OK
n=66561=10000010000000001_2

1. 0.024 s OK

▼ large1 ✓ OK
n=6291457=11000000000000000000001_2

1. 0.020 s OK

▼ large2 ✓ OK
n=74901729=10001110110111010001110001001

1. 0.016 s OK

▼ large3 ✓ OK
n=805306373=11000000000000000000000000101_2

1. 0.016 s OK

▼ large4 ✓ OK
n=1376796946=10100100001000001000001000010010_2

1. 0.016 s OK

▼ large5 ✓ OK
n=1073741825=10000000000000000000000000001_2

1. 0.016 s OK

▼ large6 ✓ OK
n=1610612737=11000000000000000000000000001_2

1. 0.020 s OK