codility

Training center
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Candidate Report: Anonymous

Test Name:

SUMMARY TIMELINE

Test Score

100 out of 100 points

100%

Tasks in Test

	Time Spent	Task Score
BinaryGap Submitted in: Java	1 min	100%

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

Solution

Programming language used: Java

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.

Assume that:

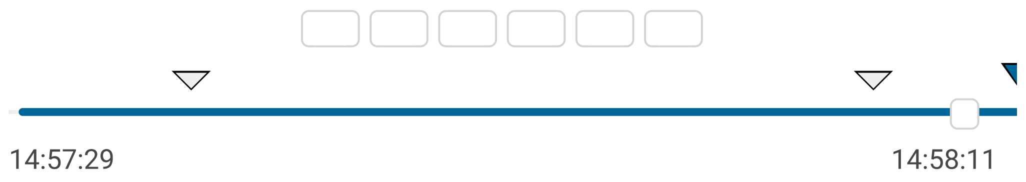
- N is an integer within the range [1..2,147,483,647].

Complexity:

- expected worst-case time complexity is O(log(N));
- expected worst-case space complexity is O(1).

Total time used:	1 minutes
Effective time used:	1 minutes
Notes:	*not defined yet*

Task timeline



Code: 14:58:10 UTC, java, final, score: **100**

show code in pop-up

```java
// you can also use imports, for example:
// import java.util.*;

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

class Solution {
    public int solution(int N) {
        // write your code in Java SE 8
        String binaryString = Integer.toBinaryString(N);
        int count = 0;
        boolean flag = false;
        char[] binaryChar = binaryString.toCharArray();
        for (int i = 0, j = 0; i < binaryChar.length; i++)
        {
            if(flag || (binaryChar[i]) == '0' && i > 0  && binar
                flag = true;
                if((binaryChar[i]) == '0')
                    j++;
            }
            if(binaryChar[i] == '1' && flag) {
                flag = false;
```

```
                    if (j > count)
                        count = j;
                    j = 0;
                }
            }
            return count;
        }
}
```

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=1100101000000000_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=1010010000100000100000100010010_2	✔ OK
▶	large5 n=1073741825=1000000000000000000000000000001_2	✔ OK
▶	large6 n=1610612737=1100000000000000000000000000001_2	✔ OK