codility

Training center

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Candidate Report: Anonymous

Test Name:

SUMMARY TIMELINE

Mail Status: Not Applicable

User Note

Finished: 2018-08-10 13:16 UTC

Started: 2018-08-10 12:44 UTC

Invitation Created: 2018-08-10 12:43 UTC

You can add the note here.

TASKS DETAILS

		Task Score	Correctness	Performance
EASY	1. **BinaryGap** Find longest sequence of zeros in binary representation of an integer.	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.

Solution

Programming language used:	C++
Total time used:	33 minutes
Effective time used:	33 minutes
Notes:	*not defined yet*

Task timeline

Write a function:

```
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.

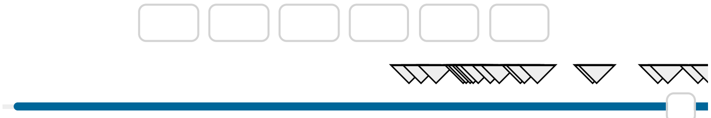
For example, given N = 1041 the function should return 5, because N has binary representation `10000010001` and so its longest binary gap is of length 5. Given N = 32 the function should return 0, because N has binary representation '100000' and thus no binary gaps.

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).



12:44:00 13:16:18

Code: 13:16:18 UTC, cpp, final, score: **100**

show code in pop-up

```
// you can use includes, for example:
// #include <algorithm>

// you can write to stdout for debugging p
// cout << "this is a debug message" << en

int solution(int N) {
    // write your code in C++14 (g++ 6.2.0
    int binaryRepresentArray [100000];
    int i = 0;
    while(N > 0) {
        binaryRepresentArray [i] = N % 2;
        N = N / 2;
        ++i;
    }

    int count = 0;
    int max = 0;
    for(int j = 0; j < i; j++) {
        count = 0;
        if(binaryRepresentArray [j] == 1 &
            ++j;
            while (binaryRepresentArray [j
                ++j;
                ++count;
            }
            if(binaryRepresentArray [j] ==
                max = (max > count)?max:co
                --j;
            }
        }
    }
    return max;
}
```

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=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