476. Number Complement

Easy

Topics

Companies

The **complement** of an integer is the integer you get when you flip all the `0`'s to `1`'s and all the `1`'s to `0`'s in its binary representation.

- For example, The integer `5` is `"101"` in binary and its **complement** is `"010"` which is the integer `2`.

Given an integer `num`, return *its complement*.

Example 1:

Input: num = 5
Output: 2
Explanation: The binary representation of 5 is 101 (no leading zero bits), and its complement is 010. So you need to output 2.

Example 2:

Input: num = 1
Output: 0
Explanation: The binary representation of 1 is 1 (no leading zero bits), and its complement is 0. So you need to output 0.

Constraints:

- `1 <= num < 231`

Solution:

```
class Solution {

    public int findComplement(int num)

    {

        int n = (int)(Math.pow(2, digits(num)) - 1); //calling digits(num) func (int)(2 ^ 3) = 8 - 1 = 7

        return n - num;                                 //7 - 5 = 2
```

```
    }

    public static int digits(int n)

    {

        int c = 0;                  //c = 0

        while(n > 0)                //5 > 0, 2 > 0, 1 > 0

        {

            n = n / 2;              //n = 5/2 = 2, 2)2/2 = 1, 3)1/2 = 0

            c++;                    //c = 1, 2, 3

        }

        return c;                   //return 3

    }

}
```