

3094. Guess the Number Using Bitwise Questions II

Description

There is a number `n` between `0` and `230 - 1` (both inclusive) that you have to find.

There is a pre-defined API `int commonBits(int num)` that helps you with your mission. But here is the challenge, every time you call this function, `n` changes in some way. But keep in mind, that you have to find the **initial value of** `n`.

`commonBits(int num)` acts as follows:

- Calculate `count` which is the number of bits where both `n` and `num` have the same value in that position of their binary representation.
- `n = n XOR num`
- Return `count`.

Return *the number* `n`.

Note: In this world, all numbers are between `0` and `230 - 1` (both inclusive), thus for counting common bits, we see only the first 30 bits of those numbers.

Example 1:

Input: `n = 31`

Output: `31`

Explanation: It can be proven that it's possible to find 31 using the provided API.

Example 2:

Input: `n = 33`

Output: `33`

Explanation: It can be proven that it's possible to find 33 using the provided API.

Constraints:

- `0 <= n <= 230 - 1`
- `0 <= num <= 230 - 1`
- If you ask for some `num` out of the given range, the output wouldn't be reliable.

