Problem 3064: Guess the Number Using Bitwise Questions I

Problem Information

Difficulty: Medium
Acceptance Rate: 89.05%
Paid Only: Yes
Tags: Bit Manipulation, Interactive

Problem Description

There is a number `n` that you have to find.

There is also a pre-defined API `int commonSetBits(int num)`, which returns the number of bits where both `n` and `num` are `1` in that position of their binary representation. In other words, it returns the number of set bits in `n & num`, where `&` is the bitwise `AND` operator.

Return _the number_ `n`.

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:

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

Code Snippets

C++:

```
/**
* Definition of commonSetBits API.
* int commonSetBits(int num);
*/

class Solution {
public:
int findNumber() {

}
};
```

Java:

```
/**
* Definition of commonSetBits API (defined in the parent class Problem).
* int commonSetBits(int num);
*/

public class Solution extends Problem {
public int findNumber() {

}
}
```

Python3:

```
# Definition of commonSetBits API.
# def commonSetBits(num: int) -> int:

class Solution:
def findNumber(self) -> int:
```