3370. Smallest Number With All Set Bits

Solved

Easy | Topics | Companies | Hint

You are given a *positive* number `n`.

Return the **smallest** number `x` **greater than** or **equal to** `n`, such that the binary representation of `x` contains only set bits

Example 1:

> **Input:** n = 5
>
> **Output:** 7
>
> **Explanation:**
>
> The binary representation of 7 is `"111"`.

Example 2:

> **Input:** n = 10
>
> **Output:** 15
>
> **Explanation:**
>
> The binary representation of 15 is `"1111"`.

Example 3:

> **Input:** n = 3
>
> **Output:** 3
>
> **Explanation:**
>
> The binary representation of 3 is `"11"`.

Constraints:

- `1 <= n <= 1000`

Python:

```
class Solution:
    def smallestNumber(self, n: int) -> int:

        return pow(2, n.bit_length()) - 1
```

JavaScript:

```
/**
 * @param {number} n
 * @return {number}
 */
var smallestNumber = function(n) {
    let b = Math.floor(Math.log2(n)) + 1; // Calculate the number of bits
    return (1 << b) - 1;                  // Return 2^b - 1
};
```

Java:

```
class Solution {

    public int smallestNumber(int n) {
        return (1 << (Integer.SIZE - Integer.

        numberOfLeadingZeros(n))) - 1; }
}
```