

Problem 3125: Maximum Number That Makes Result of Bitwise AND Zero

Problem Information

Difficulty: Medium

Acceptance Rate: 69.81%

Paid Only: Yes

Tags: String, Greedy, Sorting

Problem Description

Given an integer `n`, return the **maximum** integer `x` such that `x <= n`, and the bitwise `AND` of all the numbers in the range `[x, n]` is 0.

Example 1:

Input: n = 7

Output: 3

Explanation:

The bitwise `AND` of `[6, 7]` is 6. The bitwise `AND` of `[5, 6, 7]` is 4. The bitwise `AND` of `[4, 5, 6, 7]` is 4. The bitwise `AND` of `[3, 4, 5, 6, 7]` is 0.

Example 2:

Input: n = 9

Output: 7

Explanation:

The bitwise `AND` of `[7, 8, 9]` is 0.

****Example 3:****

****Input:**** n = 17

****Output:**** 15

****Explanation:****

The bitwise `AND` of `[15, 16, 17]` is 0.

****Constraints:****

* `1 <= n <= 1015`

Code Snippets

C++:

```
class Solution {
public:
    long long maxNumber(long long n) {
        }
};
```

Java:

```
class Solution {
public long maxNumber(long n) {
    }
}
```

Python3:

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