Given a positive integer n, return the number of the integers in the range [0, n] whose binary representations **do not** contain consecutive ones.

**Example 1:**

Input: n = 5  
Output: 5  
Explanation:  
Here are the non-negative integers <= 5 with their corresponding binary representations:  
0 : 0  
1 : 1  
2 : 10  
3 : 11  
4 : 100  
5 : 101  
Among them, only integer 3 disobeys the rule (two consecutive ones) and the other 5 satisfy the rule.

**Example 2:**

Input: n = 1  
Output: 2

**Example 3:**

Input: n = 2  
Output: 3

**Constraints:**

* 1 <= n <= 109