PROBLEM

Gray to Binary equivalent

Medium Accuracy: 68.7% Submissions: 40K+ Points: 4

Given an integer number **n,** which is a decimal representation of **Gray Code.** Find the **binary equivalent** of the Gray Code & return the **decimal representation** of the **binary equivalent**.

Decimal	Binary	Gray Code
0	000	000
1	001	001
2	010	011
3	011	010
4	100	110
5	101	111
6	110	101
7	111	100

Example 1:

Input:
n = 4
Output:
7
Explanation:
Given 4, its gray code = 110.
Binary equivalent of the gray code 110 is 100.
Return 7 representing gray code 100.

Example 2:

Input:
n = 15
Output:
10
Explanation:
Given 15 representing gray code 1000.
Binary equivalent of gray code 1000 is 1111.
Return 10 representing gray code 1111
ie binary 1010.

Your Task:

You don't need to read input or print anything. Your task is to complete the function **grayToBinary()** which accepts an integer **n** as an input parameter and **returns decimal representation** of the **binary equivalent** of the given gray code.

Expected Time Complexity: O(log (n)).

Expected Auxiliary Space: O(1).

Constraints:

$0 <= n <= 10^9$

CODE

```
#User function Template for python3


class Solution:

    ##Complete this function

    # function to convert a given Gray equivalent n to Binary equivalent.

    def grayToBinary(self,n):

        binary=bin(n)[2:]

        res=binary[0]

        for i in range(1,len(binary)):

            res+=str(int(res[-1])^int(binary[i]))

        return int(res,2)

        ##Your code here
```