Problem #1009: Complement of Base 10 Integer

<https://leetcode.com/problems/complement-of-base-10-integer/>

My Solution:

Solution 1:

We need to replace the 1’s in the binary string by 0’s and 0’s by 1’s.

For this, I replaced the 1’s by ‘a’, then the 0’s by 1 and finally ‘a’ by 0’s.

class Solution:

def bitwiseComplement(self, N: int) -> int:

return int(bin(N)[2:].replace('1', 'a').replace('0', '1').replace('a', '0'), 2)

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Solution 2:

Example:

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| Input | Output | Sum |
| bin(5) = 101 | bin(2) = 10 | bin(7) = 111 |
| bin(7) = 111 | bin(0) = 0 | bin(7) = 111 |
| bin(10) = 1010 | bin(5) = 0101 | bin(15) = 1111 |

1. If we take the input of bin(5), it is 101. Its complement is 10 which is 2 as an integer.

The sum is 111 which is 7 as an integer. We see that the length of ‘111 ‘ is 3 and the sum = 7 which is (2^3) – 1, i.e. (2^length) – 1

2. We have input + output = sum

Therefore, output = sum – input

So output = (2 ^ length) – 1 - N

class Solution:

def bitwiseComplement(self, N: int) -> int:

return(2\*\*(len(str(N))) - 1 -N)