

# Leet Code

## Day-46 Q-04 Gray Code

The gray code is a binary numeral system where two successive values differ in only one bit.

Given a non-negative integer  $n$  representing the total number of bits in the code, print the sequence of gray code. A gray code sequence must begin with 0.

### Example 1:

Input: 2

Output: [0,1,3,2]

Explanation:

00 - 0

01 - 1

11 - 3

10 - 2

For a given  $n$ , a gray code sequence may not be uniquely defined.

For example, [0,2,3,1] is also a valid gray code sequence.

00 - 0

10 - 2

11 - 3

01 - 1

### Example 2:

Input: 0

Output: [0]

Explanation: We define the gray code sequence to begin with 0.

A gray code sequence of  $n$  has size  $= 2^n$ , which for  $n = 0$  the size is  $2^0 = 1$ .

Therefore, for  $n = 0$  the gray code sequence is  $[0]$ .