

1238. Circular Permutation in Binary Representation

Description

Given 2 integers `n` and `start`. Your task is return any permutation `p` of $(0, 1, 2, \dots, 2^n - 1)$ such that :

- `p[0] = start`
- `p[i]` and `p[i+1]` differ by only one bit in their binary representation.
- `p[0]` and `p[2^n - 1]` must also differ by only one bit in their binary representation.

Example 1:

Input: `n = 2, start = 3`

Output: `[3, 2, 0, 1]`

Explanation: The binary representation of the permutation is (11,10,00,01).

All the adjacent element differ by one bit. Another valid permutation is `[3, 1, 0, 2]`

Example 2:

Input: `n = 3, start = 2`

Output: `[2, 6, 7, 5, 4, 0, 1, 3]`

Explanation: The binary representation of the permutation is (010,110,111,101,100,000,001,011).

Constraints:

- `1 <= n <= 16`
- `0 <= start < 2 ^ n`

