

1042. Flower Planting With No Adjacent

Description

You have `n` gardens, labeled from `1` to `n`, and an array `paths` where `paths[i] = [xi, yi]` describes a bidirectional path between garden `xi` to garden `yi`. In each garden, you want to plant one of 4 types of flowers.

All gardens have **at most 3** paths coming into or leaving it.

Your task is to choose a flower type for each garden such that, for any two gardens connected by a path, they have different types of flowers.

Return *any such a choice as an array `answer`, where `answer[i]` is the type of flower planted in the `(i+1)th` garden. The flower types are denoted `1`, `2`, `3`, or `4`. It is guaranteed an answer exists.*

Example 1:

Input: `n = 3, paths = [[1,2],[2,3],[3,1]]`
Output: `[1,2,3]`
Explanation:
Gardens 1 and 2 have different types.
Gardens 2 and 3 have different types.
Gardens 3 and 1 have different types.
Hence, `[1,2,3]` is a valid answer. Other valid answers include `[1,2,4]`, `[1,4,2]`, and `[3,2,1]`.

Example 2:

Input: `n = 4, paths = [[1,2],[3,4]]`
Output: `[1,2,1,2]`

Example 3:

Input: `n = 4, paths = [[1,2],[2,3],[3,4],[4,1],[1,3],[2,4]]`
Output: `[1,2,3,4]`

Constraints:

- `1 <= n <= 104`
- `0 <= paths.length <= 2 * 104`
- `paths[i].length == 2`
- `1 <= xi, yi <= n`
- `xi != yi`
- Every garden has **at most 3** paths coming into or leaving it.

