You have N gardens, labelled 1 to N.  In each garden, you want to plant one of 4 types of flowers.

paths[i] = [x, y] describes the existence of a bidirectional path from garden x to garden y.

Also, there is no garden that has more than 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]

**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]

**Note:**

* 1 <= N <= 10000
* 0 <= paths.size <= 20000
* No garden has 4 or more paths coming into or leaving it.
* It is guaranteed an answer exists.