913. Cat and Mouse

Description

A game on an **undirected** graph is played by two players, Mouse and Cat, who alternate turns.

The graph is given as follows: `graph[a]` is a list of all nodes `b` such that `ab` is an edge of the graph.

The mouse starts at node `1` and goes first, the cat starts at node `2` and goes second, and there is a hole at node `0`.

During each player's turn, they **must** travel along one edge of the graph that meets where they are. For example, if the Mouse is at node 1, it **must** travel to any node in `graph[1]`.

Additionally, it is not allowed for the Cat to travel to the Hole (node 0.)

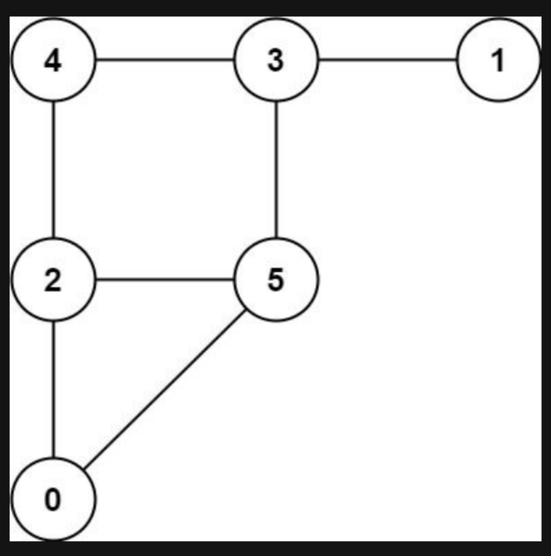
Then, the game can end in three ways:

- If ever the Cat occupies the same node as the Mouse, the Cat wins.
- If ever the Mouse reaches the Hole, the Mouse wins.
- If ever a position is repeated (i.e., the players are in the same position as a previous turn, and it is the same player's turn to move), the game is a draw.

Given a `graph`, and assuming both players play optimally, return

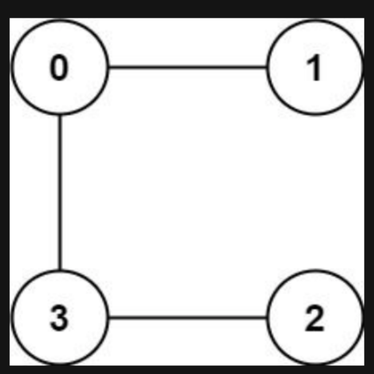
- `1` if the mouse wins the game,
- `2` if the cat wins the game, or
- `0` if the game is a draw.

Example 1:




```
Input: graph = [[2,5],[3],[0,4,5],[1,4,5],[2,3],[0,2,3]]
Output: 0
```

Example 2:




```
Input: graph = [[1,3],[0],[3],[0,2]]
Output: 1
```

Constraints:

- `3 <= graph.length <= 50`
- `1 <= graph[i].length < graph.length`
- `0 <= graph[i][j] < graph.length`
- `graph[i][j] != i`
- `graph[i]` is unique.
- The mouse and the cat can always move.