2204. Distance to a Cycle in Undirected Graph

Description

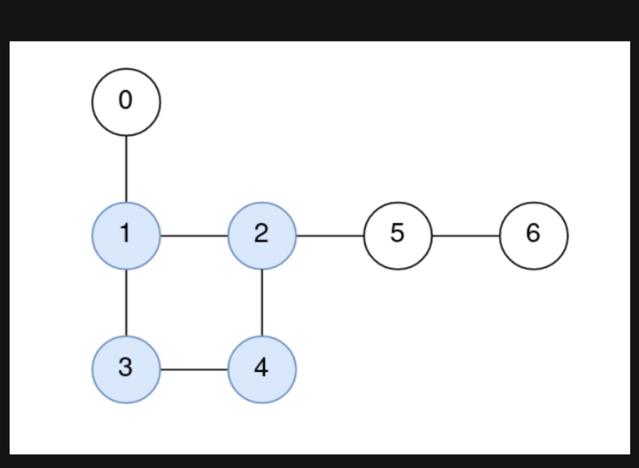
You are given a positive integer `n` representing the number of nodes in a **connected undirected graph** containing **exactly one** cycle. The nodes are numbered from `0` to `n - 1` (**inclusive**).

You are also given a 2D integer array `edges`, where `edges[i] = [node1 i , node2 i ]` denotes that there is a **bidirectional** edge connecting `node1 i` and `node2 i` in the graph.

The distance between two nodes `a` and `b` is defined to be the **minimum** number of edges that are needed to go from `a` to `b`.

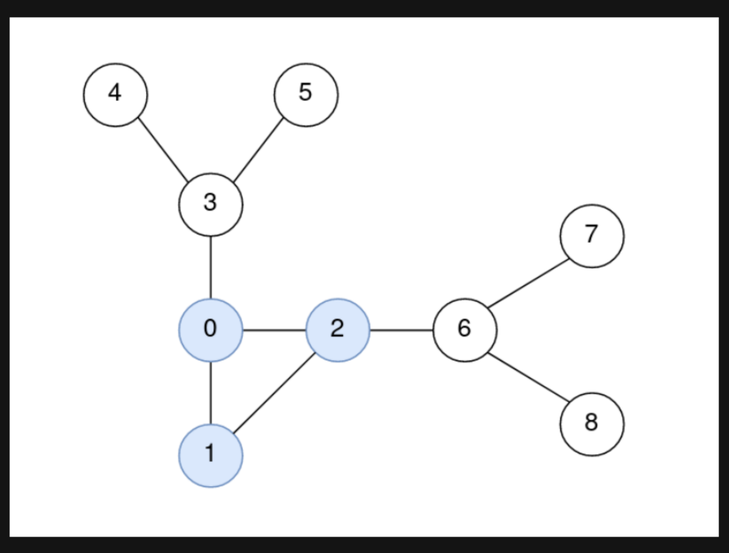
Return *an integer array* `answer` *of size* `n`*, where* `answer[i]` *is the* ***minimum*** *distance between the* `i th` *node and* ***any*** *node in the cycle.*

Example 1:




```
Input: n = 7, edges = [[1,2],[2,4],[4,3],[3,1],[0,1],[5,2],[6,5]]
Output: [1,0,0,0,0,1,2]
Explanation:
The nodes 1, 2, 3, and 4 form the cycle.
The distance from 0 to 1 is 1.
The distance from 1 to 1 is 0.
The distance from 2 to 2 is 0.
The distance from 3 to 3 is 0.
The distance from 4 to 4 is 0.
The distance from 5 to 2 is 1.
The distance from 6 to 2 is 2.
```

Example 2:




```
Input: n = 9, edges = [[0,1],[1,2],[0,2],[2,6],[6,7],[6,8],[0,3],[3,4],[3,5]]
Output: [0,0,0,1,2,2,1,2,2]
Explanation:
The nodes 0, 1, and 2 form the cycle.
The distance from 0 to 0 is 0.
The distance from 1 to 1 is 0.
The distance from 2 to 2 is 0.
The distance from 3 to 1 is 1.
The distance from 4 to 1 is 2.
The distance from 5 to 1 is 2.
The distance from 6 to 2 is 1.
The distance from 7 to 2 is 2.
The distance from 8 to 2 is 2.
```

Constraints:

- `3 <= n <= 10 5`
- `edges.length == n`
- `edges[i].length == 2`
- `0 <= node1 i , node2 i <= n - 1`
- `node1 i != node2 i`
- The graph is connected.
- The graph has exactly one cycle.
- There is at most one edge between any pair of vertices.