2359. Find Closest Node to Given Two Nodes

Hint

Medium 1.3K 285

Companies

You are given a **directed** graph of `n` nodes numbered from `0` to `n - 1`, where each node has **at most one** outgoing edge.

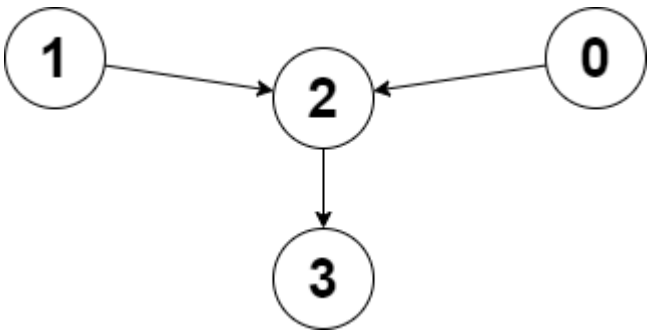
The graph is represented with a given **0-indexed** array `edges` of size `n`, indicating that there is a directed edge from node `i` to node `edges[i]`. If there is no outgoing edge from `i`, then `edges[i] == -1`.

You are also given two integers `node1` and `node2`.

Return *the **index** of the node that can be reached from both `node1` and `node2`, such that the **maximum** between the distance from `node1` to that node, and from `node2` to that node is **minimized***. If there are multiple answers, return the node with the **smallest** index, and if no possible answer exists, return `-1`.

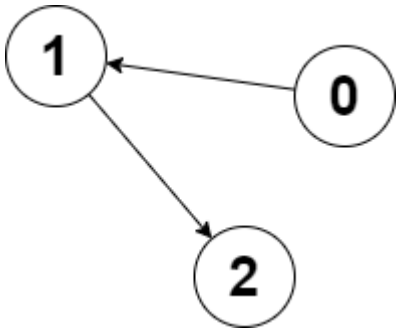
Note that `edges` may contain cycles.

Example 1:




```
Input: edges = [2,2,3,-1], node1 = 0, node2 = 1
Output: 2
Explanation: The distance from node 0 to node 2 is 1, and the distance
from node 1 to node 2 is 1.
The maximum of those two distances is 1. It can be proven that we cannot
get a node with a smaller maximum distance than 1, so we return node 2.
```

Example 2:



Input: edges = [1,2,-1], node1 = 0, node2 = 2
Output: 2
Explanation: The distance from node 0 to node 2 is 2, and the distance from node 2 to itself is 0.
The maximum of those two distances is 2. It can be proven that we cannot get a node with a smaller maximum distance than 2, so we return node 2.

Constraints:

- n == edges.length
- 2 <= n <= 10^5
- -1 <= edges[i] < n
- edges[i] != i
- 0 <= node1, node2 < n