

2192. All Ancestors of a Node in a Directed Acyclic Graph

Description

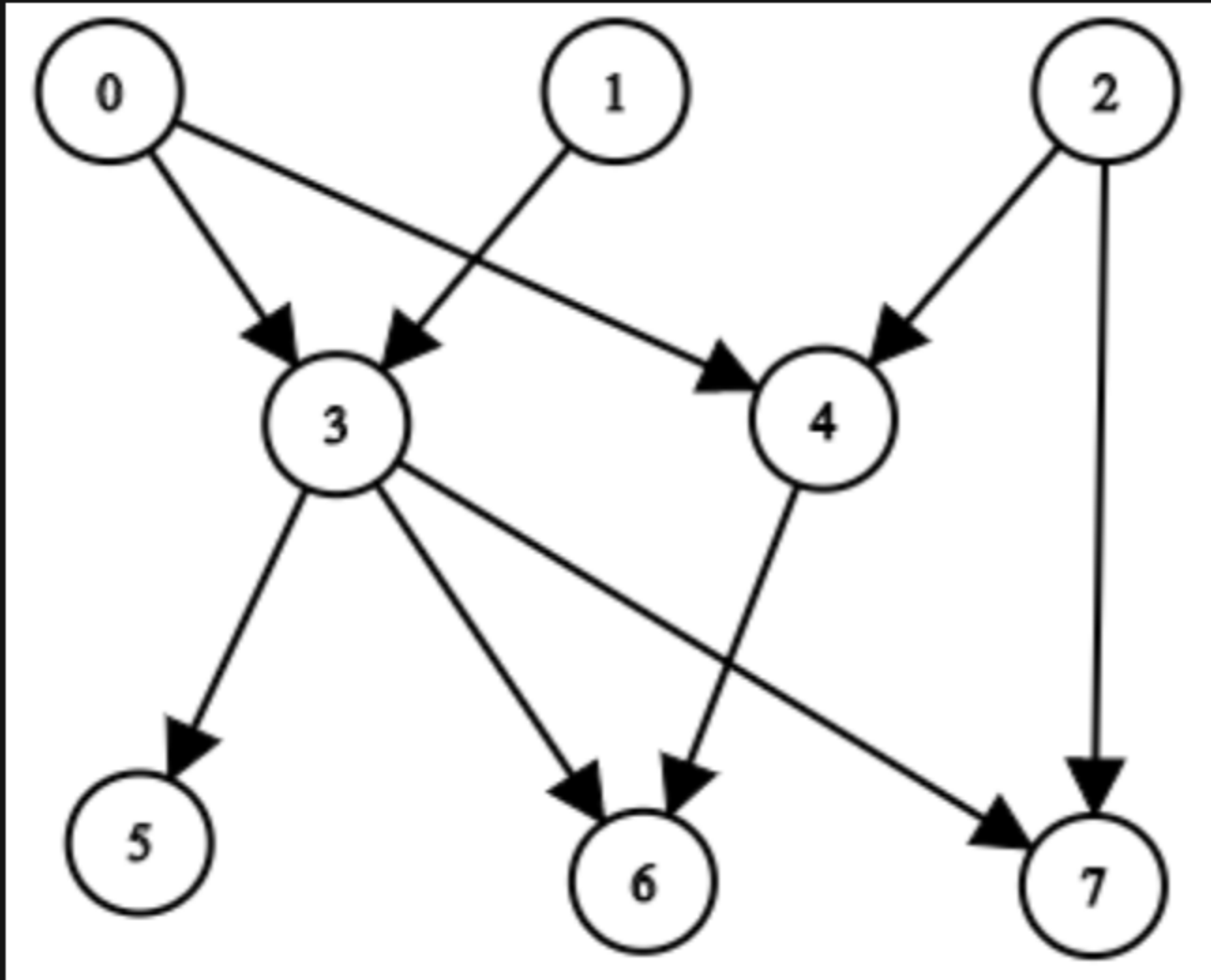
You are given a positive integer `n` representing the number of nodes of a **Directed Acyclic Graph** (DAG). The nodes are numbered from `0` to `n - 1` (inclusive).

You are also given a 2D integer array `edges`, where `edges[i] = [fromi, toi]` denotes that there is a **unidirectional** edge from `fromi` to `toi` in the graph.

Return *a list* `answer`, where `answer[i]` is the *list of ancestors of the `i`th node, sorted in ascending order*.

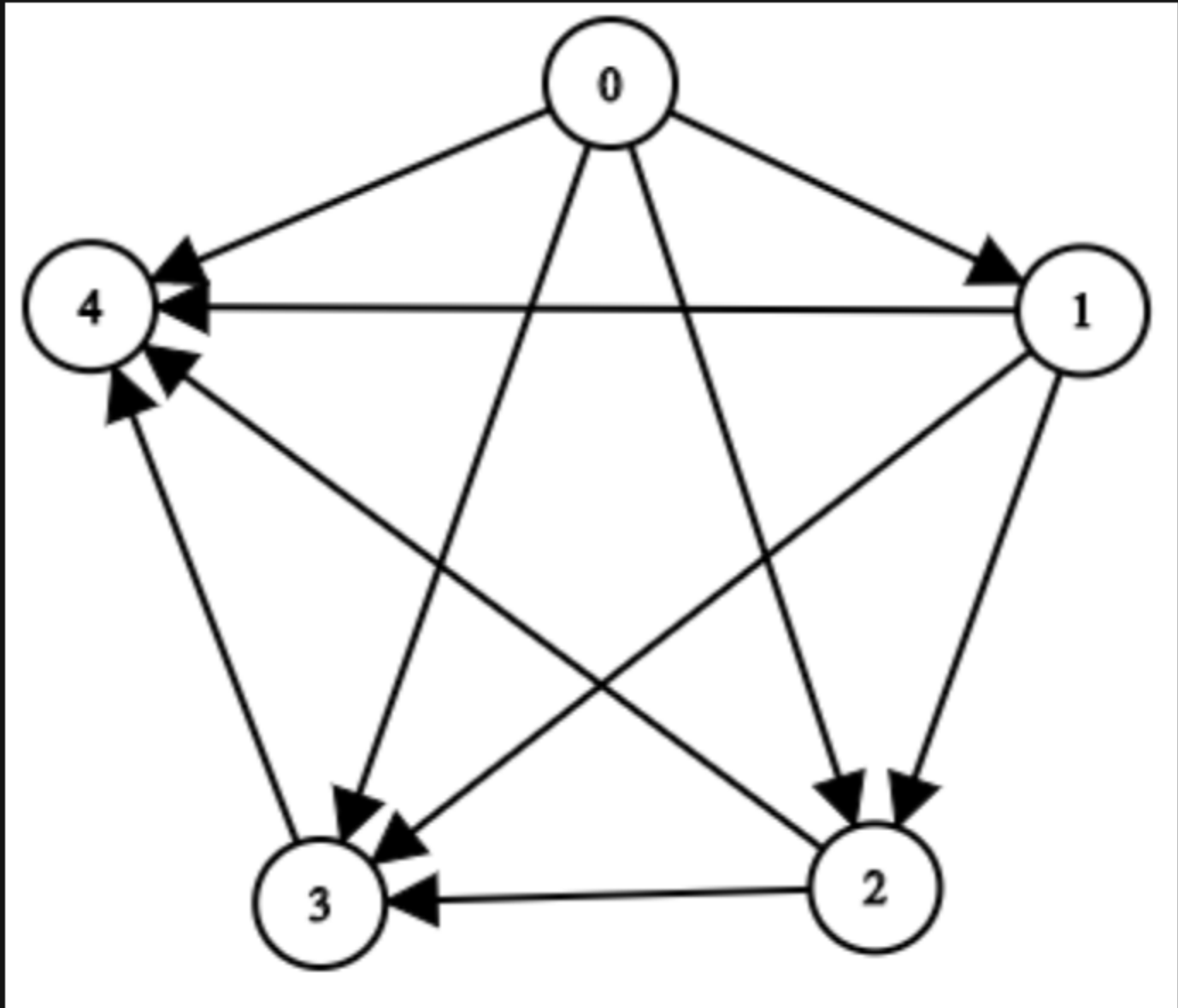
A node `u` is an **ancestor** of another node `v` if `u` can reach `v` via a set of edges.

Example 1:



Input: `n = 8, edgeList = [[0,3],[0,4],[1,3],[2,4],[2,7],[3,5],[3,6],[3,7],[4,6]]`
Output: `[[[]],[[]],[[]],[0,1],[0,2],[0,1,3],[0,1,2,3,4],[0,1,2,3]]`
Explanation:
The above diagram represents the input graph.
– Nodes 0, 1, and 2 do not have any ancestors.
– Node 3 has two ancestors 0 and 1.
– Node 4 has two ancestors 0 and 2.
– Node 5 has three ancestors 0, 1, and 3.
– Node 6 has five ancestors 0, 1, 2, 3, and 4.
– Node 7 has four ancestors 0, 1, 2, and 3.

Example 2:



Input: `n = 5, edgeList = [[0,1],[0,2],[0,3],[0,4],[1,2],[1,3],[1,4],[2,3],[2,4],[3,4]]`
Output: `[[[]],[0],[0,1],[0,1,2],[0,1,2,3]]`
Explanation:
The above diagram represents the input graph.
– Node 0 does not have any ancestor.
– Node 1 has one ancestor 0.
– Node 2 has two ancestors 0 and 1.
– Node 3 has three ancestors 0, 1, and 2.
– Node 4 has four ancestors 0, 1, 2, and 3.

Constraints:

- `1 <= n <= 1000`
- `0 <= edges.length <= min(2000, n * (n - 1) / 2)`
- `edges[i].length == 2`
- `0 <= fromi, toi <= n - 1`
- `fromi != toi`
- There are no duplicate edges.
- The graph is **directed** and **acyclic**.

