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

Solved ●

Medium Topics Companies Hint

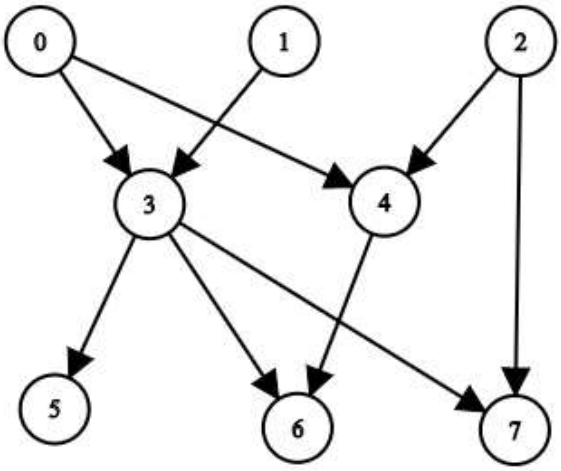
You are given a positive integer `n` representing the number of nodes of a **Directed Acyclic Graph** (DAG). The nodes are numbered from `0` to `n - 1` (**inclusive**).

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

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

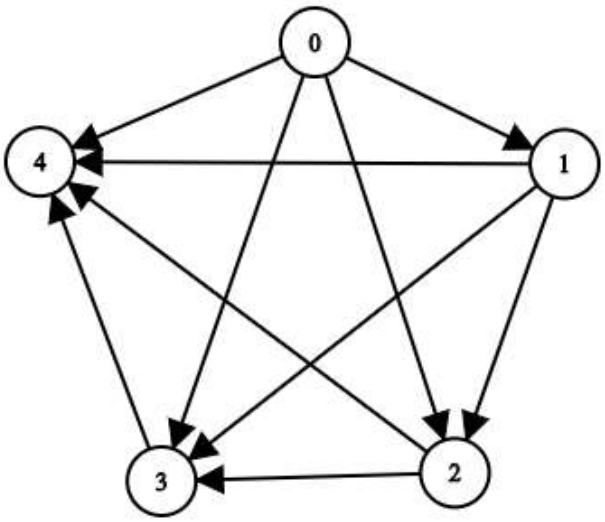
A node `u` is an **ancestor** of another node `v` if `u` can reach `v` via a set of edges.

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 <= from_i, to_i <= n - 1`
- `from_i != to_i`
- There are no duplicate edges.
- The graph is **directed** and **acyclic**.

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

Hint 2

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