5300. All Ancestors of a Node in a Directed Acyclic Graph

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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**).

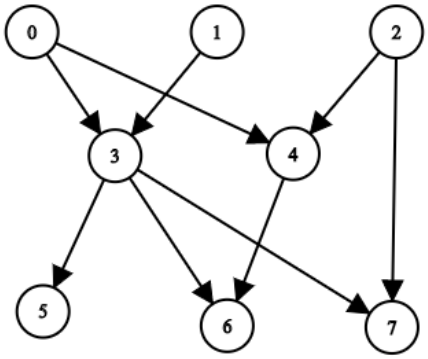
You are also given a 2D integer array `edges`, where `edges[i] = [from_i, to_i]` denotes that there is a **unidirectional** edge from `from_i` to `to_i` in the graph.

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.

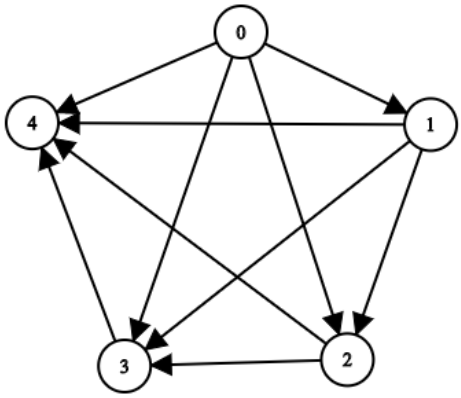
User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

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**.

JavaScript

```javascript
const initializeGraph = (n) => { let g = []; for (let i = 0; i < n; i++) { g.push([]); } return g; };
const packDG = (g, edges) => { for (const [u, v] of edges) { g[u].push(v); } };

const getAncestors = (n, edges) => {
    let g = initializeGraph(n), res = initializeGraph(n);
    packDG(g, edges);
    for (let i = 0; i < n; i++) {
        let q = [i], visit = new Set([i]);
        while (q.length) {
            let cur = q.shift();
            if (cur != i) res[cur].push(i);
            for (const child of g[cur]) {
                if (visit.has(child)) continue;
                visit.add(child);
                q.push(child);
            }
        }
    }
    return res;
};
```

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