Lowest Common Ancestor of a Binary Tree III

Try to solve the Lowest Common Ancestor of a Binary Tree III problem.

We'll cover the following

Statement

You are given two nodes, `p` and `q`. The task is to return their lowest common ancestor (LCA). Both nodes have a reference to their parent node. The tree's root is not provided; you must use the parent pointers to find the nodes' common ancestor.

> **Note:** The lowest common ancestor of two nodes, `p` and `q`, is the lowest node in the binary tree, with both `p` and `q` as descendants.
>
> In a tree, a descendant of a node is any node reachable by following edges downward from that node, including the node itself.

Constraints:

- $-10^4 \leq$`Node.data` $\leq 10^4$
- The number of nodes in the tree is in the range $[2, 500]$.
- All `Node.data` are unique.
- `p != q`
- Both `p` and `q` are present in the tree.

Example