

Minimum Height Trees

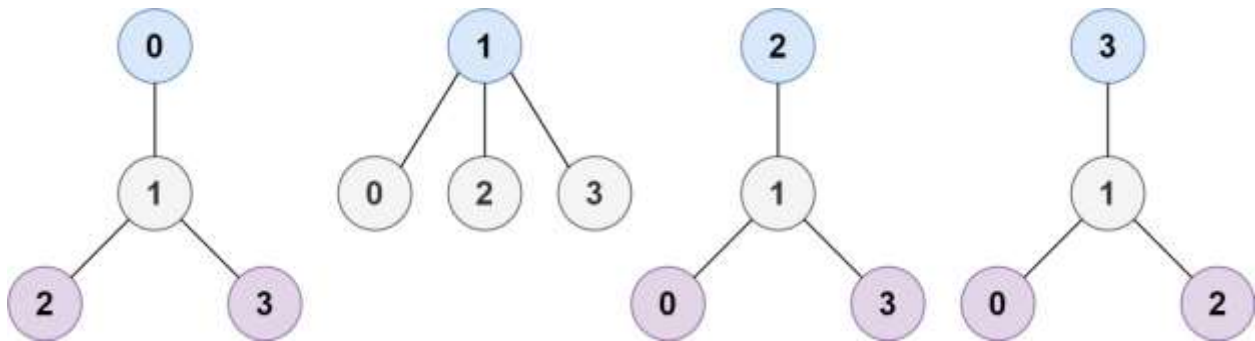
A tree is an undirected graph in which any two vertices are connected by *exactly* one path. In other words, any connected graph without simple cycles is a tree.

Given a tree of n nodes labelled from 0 to $n - 1$, and an array of $n - 1$ edges where $\text{edges}[i] = [a_i, b_i]$ indicates that there is an undirected edge between the two nodes a_i and b_i in the tree, you can choose any node of the tree as the root. When you select a node x as the root, the result tree has height h . Among all possible rooted trees, those with minimum height (i.e. $\min(h)$) are called **minimum height trees** (MHTs).

Return a list of all **MHTs'** root labels. You can return the answer in **any order**.

The **height** of a rooted tree is the number of edges on the longest downward path between the root and a leaf.

Example 1:

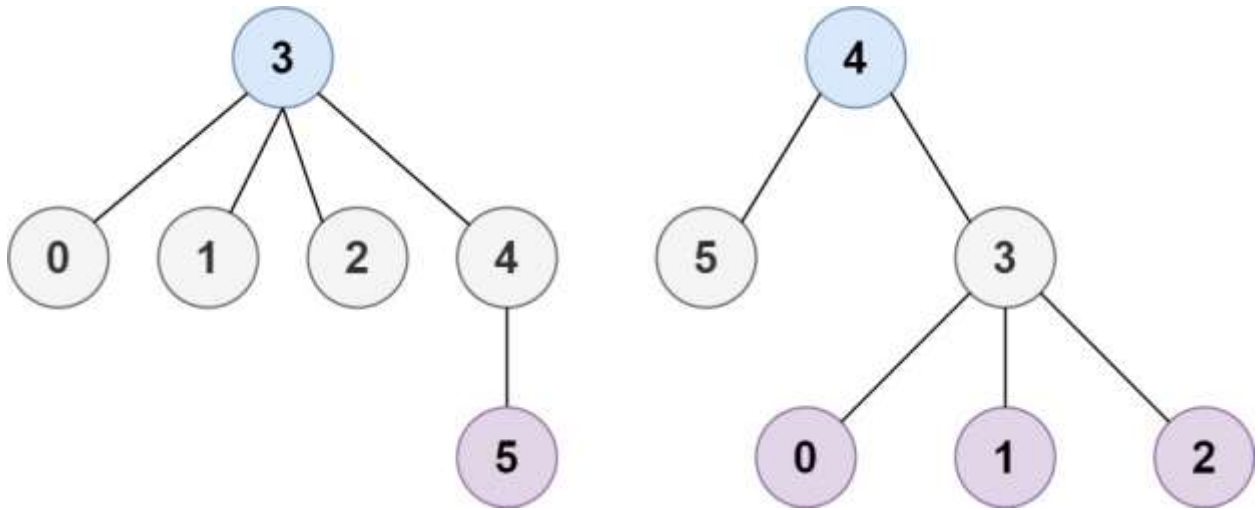


Input: $n = 4$, $\text{edges} = [[1,0],[1,2],[1,3]]$

Output: $[1]$

Explanation: As shown, the height of the tree is 1 when the root is the node with label 1 which is the only MHT.

Example 2:



Input: $n = 6$, edges = $[[3,0],[3,1],[3,2],[3,4],[5,4]]$

Output: [3,4]

Constraints:

- $1 \leq n \leq 2 \cdot 10^4$
- $\text{edges.length} == n - 1$
- $0 \leq a_i, b_i < n$
- $a_i \neq b_i$
- All the pairs (a_i, b_i) are distinct.
- The given input is **guaranteed** to be a tree and there will be **no repeated** edges.