Day 19:

1. Binary Tree Pruning **[Medium] [Amazon, Google, Facebook, Apple]**

   https://interviewprep.appliedroots.com/lecture/2/interview-preparation-course/1278/binary-tree-pruning-problem-statement-leetcode/18/module-5-problem-solving

2. Validate Binary Search Tree **[Medium] [Amazon, Bloomberg, Facebook, Microsoft, Zillow, Google, Apple]**

   https://interviewprep.appliedroots.com/lecture/2/interview-preparation-course/1281/validate-binary-search-tree-problem-statement-leetcode/18/module-5-problem-solving

3. Populating Next Right Pointers in Each Node **[Medium] [Facebook, Microsoft, Amazon, Google]**

   https://interviewprep.appliedroots.com/lecture/2/interview-preparation-course/1299/populating-next-right-pointers-in-each-node-problem-statement-leetcode/18/module-5-problem-solving

4. Binary Tree Right Side View **[Medium] [Facebook, Amazon, ByteDance, Microsoft, eBay, Oracle, Apple, Goldman Sachs]**

   https://interviewprep.appliedroots.com/lecture/2/interview-preparation-course/1488/binary-tree-right-side-view-problem-statement-leetcode/18/module-5-problem-solving

5. Kth Smallest Element in a BST **[Medium] [Amazon, Facebook, Microsoft, Adobe, eBay]**

https://interviewprep.appliedroots.com/lecture/2/interview-preparation-course/1494/kth-smallest-element-in-a-bst-problem-statement-leetcode/18/module-5-problem-solving

Practice Questions:

6. Given the root of a binary search tree (BST) with duplicates, return all the mode(s) (i.e., the most frequently occurred element) in it.

   If the tree has more than one mode, return them in any order. **[Easy] [Google, Adobe, Amazon]**

   Practice link:
   https://leetcode.com/problems/find-mode-in-binary-search-tree/

7. Given a binary tree

   ```
   struct Node {
     int val;
     Node *left;
     Node *right;
     Node *next;
   }
   ```
   Populate each next pointer to point to its next right node. If there is no next right node, the next pointer should be set to NULL.

   Initially, all next pointers are set to NULL. **[Medium] [Microsoft, Amazon, Bloomberg, Facebook]**

   Follow up:

   - You may only use constant extra space.
   - Recursive approach is fine, you may assume implicit stack space does not count as extra space for this problem.

Practice link: https://leetcode.com/problems/populating-next-right-pointers-in-each-node-ii/

8. Given a non-empty special binary tree consisting of nodes with the non-negative value, where each node in this tree has exactly two or zero sub-node. If the node has two sub-nodes, then this node's value is the smaller value among its two sub-nodes. More formally, the property root.val = min(root.left.val, root.right.val) always holds.

   Given such a binary tree, you need to output the second minimum value in the set made of all the nodes' value in the whole tree.

   If no such second minimum value exists, output -1 instead. **[Easy] [LinkedIn, Adobe, Microsoft, Google]**

   Practice link: https://leetcode.com/problems/second-minimum-node-in-a-binary-tree/

9. You are given the root of a binary tree. We install cameras on the tree nodes where each camera at a node can monitor its parent, itself, and its immediate children.

   Return the minimum number of cameras needed to monitor all nodes of the tree. **[Hard] [Microsoft, Google, Apple, Flipkart]**

   Practice link: https://leetcode.com/problems/binary-tree-cameras/

10. Given a binary search tree, return a balanced binary search tree with the same node values.

    A binary search tree is balanced if and only if the depth of the two subtrees of every node never differ by more than 1.

If there is more than one answer, return any of them. **[Medium] [Facebook, Amazon, Goldman Sachs]**

Practice link:
https://leetcode.com/problems/balance-a-binary-search-tree/