

■■ Binary Tree Interview Prep Roadmap

1. Traversals (DFS/BFS Variants)

- Inorder, Preorder, Postorder, Level-order, Zigzag
- Problems:
 - Binary Tree Inorder Traversal (LC #94 – Easy)
 - Binary Tree Level Order Traversal (LC #102 – Medium)
 - Binary Tree Zigzag Level Order Traversal (LC #103 – Medium)

2. Views of Binary Tree

- Top view, Bottom view, Left/Right view
- Problems:
 - Top View of Binary Tree (GFG)
 - Binary Tree Right Side View (LC #199 – Medium)
 - Vertical Order Traversal (LC #987 – Hard)

3. Diameter of a Binary Tree

- Longest path between 2 nodes.
- Problems:
 - Diameter of Binary Tree (LC #543 – Easy)

4. Lowest Common Ancestor (LCA)

- LCA in Binary Tree, LCA in BST.
- Problems:
 - Lowest Common Ancestor of Binary Tree (LC #236 – Medium)
 - LCA of BST (LC #235 – Medium)

5. BST Problems

- Validation, insert/delete, Kth smallest.
- Problems:
 - Validate BST (LC #98 – Medium)
 - Kth Smallest Element in BST (LC #230 – Medium)
 - Delete Node in a BST (LC #450 – Medium)

6. Path-based Problems

- Path sums, max path sum, root-to-leaf paths.
- Problems:
 - Path Sum (LC #112 – Easy)
 - Path Sum II (LC #113 – Medium)
 - Binary Tree Maximum Path Sum (LC #124 – Hard)

7. Height / Balance Problems

- Height, min depth, balanced tree.
- Problems:
 - Maximum Depth of Binary Tree (LC #104 – Easy)
 - Minimum Depth of Binary Tree (LC #111 – Easy)
 - Balanced Binary Tree (LC #110 – Easy)

8. Serialize / Deserialize

- Encode & decode tree using BFS/DFS.
- Problems:
 - Serialize and Deserialize Binary Tree (LC #297 – Hard)

9. Boundary & Vertical Traversals

- Boundary order (anti-clockwise), vertical order.
- Problems:
 - Boundary Traversal of Binary Tree (GFG)
 - Vertical Order Traversal (LC #987 – Hard)

10. Transformations & Conversions

- Flattening, mirroring, array → BST.
- Problems:
 - Invert Binary Tree (LC #226 – Easy)
 - Flatten Binary Tree to Linked List (LC #114 – Medium)
 - Convert Sorted Array to BST (LC #108 – Easy)