Data Structures

Binary Tree Homework 5

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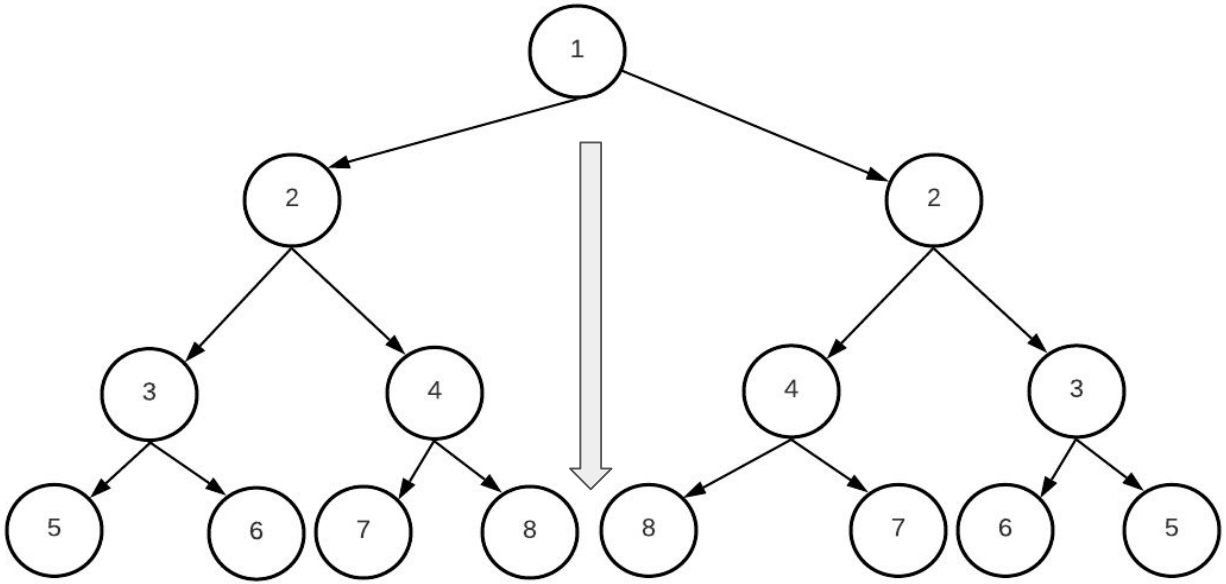
Problem #1: LeetCode 101 - Symmetric Tree

- A tree is symmetric if it mirrors precisely around its center
- Observe the 3rd level
  - 5 6 7 8
  - Then
  - 8 7 6 5
- A tree is a mirror if root.left & root.right are mirror

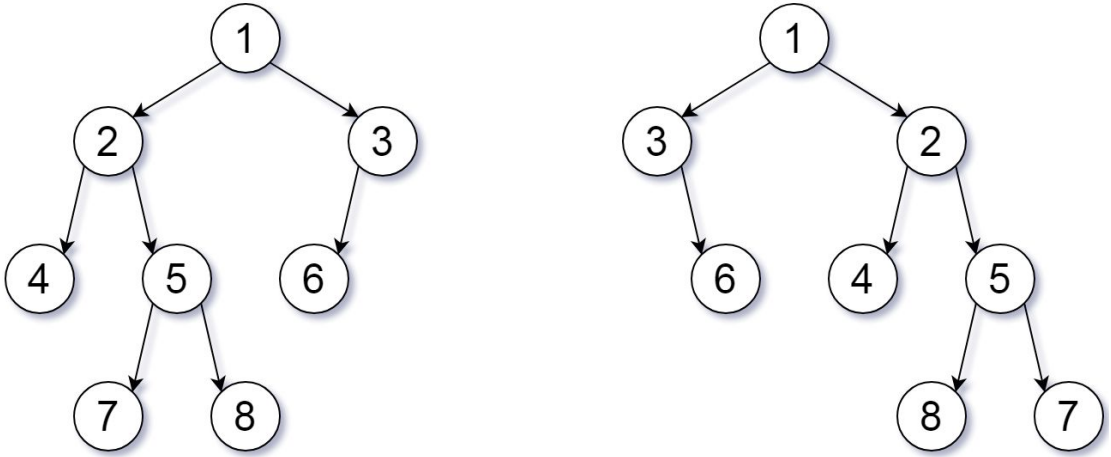


Problem #1: LeetCode 101 - Symmetric Tree

- Develop 2 methods
  - 1) Based on recursion to compare subtrees together
  - 2) Based on parenthesizing idea

Problem #2: LeetCode 951 - Flip Equivalent Binary Trees

- Given a tree, can we make some simple **flips** to the left/right children to convert it into another tree?
- All nodes must remain at their same level in either tree, but can be found in either the left or right child position
- Read official description



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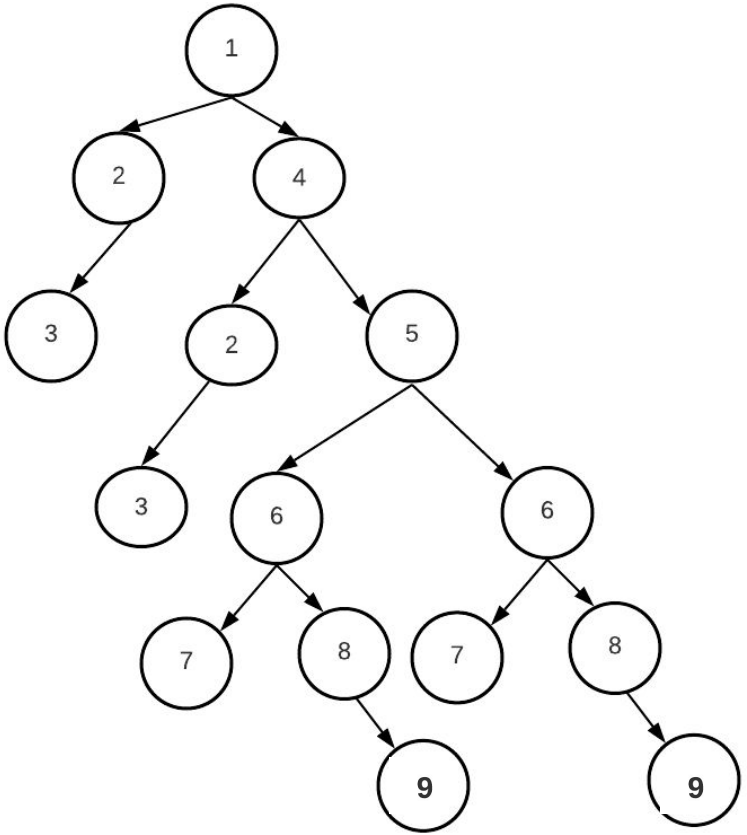
Problem #3: Print all duplicate subtrees

- Given a binary tree, print all duplicate subtrees of 2+ nodes.
  - Duplicates = Same structure & values
- There are 3 sub-trees
  - Root 2, Root 6, Root 8
- Output parentheses
  - (2(3()())())
  - (6(7()())(8()(9()())))
  - (8()(9()()))
  - *Use any order*



"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."