2020 01 04 - Binary Trees

Q1. Balanced Binary Tree

Link: https://leetcode.com/problems/balanced-binary-tree/

Given a binary tree, determine if it is height-balanced.

For this problem, a height-balanced binary tree is defined as:“a binary tree in which the left and right subtrees of every node differ in height by no more than 1.”

Example 1
Given the following tree `[3,9,20,null,null,15,7]`:
Return : true

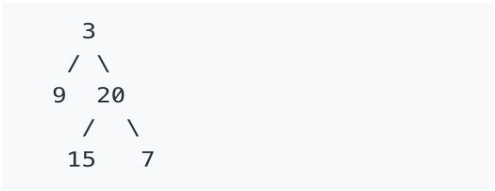

Diagram-01

Example 2
Given the following tree `[1,2,2,3,3,null,null,4,4]`:
Return : false

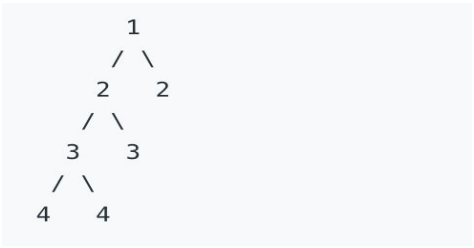

Diagram-02

Q2. Binary Tree Zigzag Level Order Traversal

Link: https://leetcode.com/problems/binary-tree-zigzag-level-order-traversal/

Given a binary tree, return the zigzag level order traversal of its nodes' values.
(ie, from left to right, then right to left for the next level and alternate between).

For Example:
Input: [3, 9, 20, null, null, 15, 7] (refer binary tree ‘**Diagram-01**’)
Output: [[3], [20, 9], [15, 7]]

Q3. Construct Binary Tree from Preorder and Inorder Traversal

Link: https://leetcode.com/problems/construct-binary-tree-from-preorder-and-inorder-traversal/

Given preorder and inorder traversal of a tree, construct the binary tree.
Note: You may assume that duplicates do not exist in the tree.

For Example, given below Inputs,
Preorder: [3, 9, 20, 15, 7]
Inorder: [9, 3, 15, 20, 7]

Output - refer binary tree ‘**Diagram-01**’