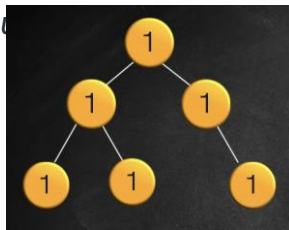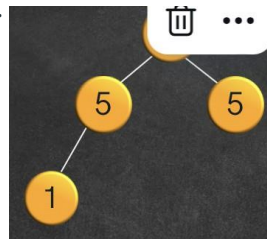# Binary Trees
(Assignment Questions)

Question 1 : A binary tree is uni-valued if every node in the tree has the same value. Given the root of a binary tree, return true if the given tree is uni-valued, or false otherwise. [Go to Qs]
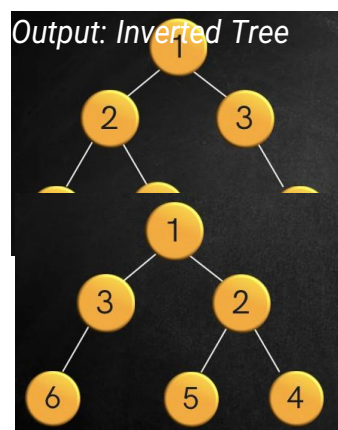
Examples :

Input: root Node of treeOutput: true

Input: root Node of treeOutput: false

Question 2 : Given the root of a binary tree, invert the tree, and return its root.[Go to Qs]

Examples :

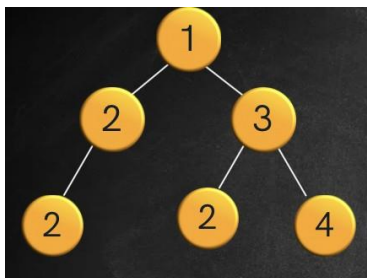*Input: Binary Tree*

Output: Inverted Tree

Question 3 : Given a binary tree root and an integer target, delete all the leaf nodes with value target.
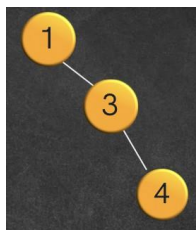
Note that once you delete a leaf node with value target, if its parent node becomes a leaf node and has the value target, it should also be deleted (you need to continue doing that until you cannot).[Go to Qs]
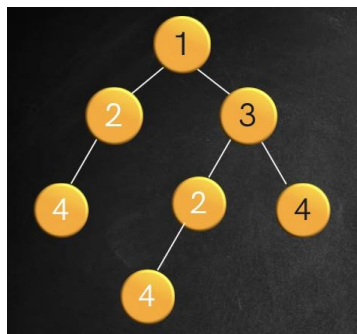
Examples :

Input: target = 2

Output:

Question 4 : Given the root of a binary tree, return all duplicate subtrees.

For each kind of duplicate subtree, you only need to return the root node of any one of them. Two trees are duplicate if they have the same structure with the same node values. [Go to Qs]

Examples :

Input:

Output: [[2, 4], [4]]

First duplicate subtree with nodes [2, 4]Second duplicate subtree with node [4]

Question 5 : A path in a binary tree is a sequence of nodes where each pair of adjacent nodes in the sequence has an edge connecting them. A node can only appear in the sequence at most once. Note that the path does not need to pass through the root.

The path sum of a path is the sum of the node's values in the path.

Given the root of a binary tree, return the maximum path sum of any non-empty path. [Go to Qs]
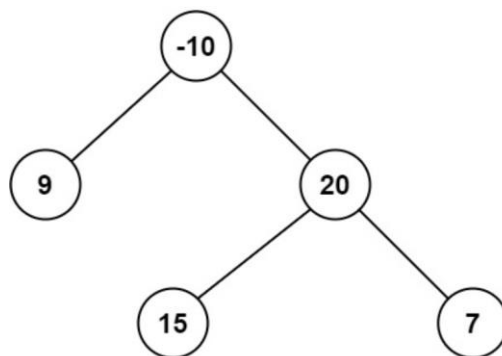
Examples :

Input:

```
   4
  / \
  2   7
```

Output : 13

Input:

Output : 42

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