AlgoExpert

Quad Layout

Swift

12px

Sublime

Monok

Prompt

Scratchpad

Our Solution(s)

Video Explanation

Run Code

Solution 1

Solution 2

```swift
// Copyright © 2020 AlgoExpert, LLC. All rights reserved.

class Program {
  class BinaryTree {
    var value: Int
    var left: BinaryTree?
    var right: BinaryTree?

    init(value: Int) {
      self.value = value
    }
  }

  struct Level {
    var root: BinaryTree?
    var depth: Int
  }

  // Average case: when the tree is balanced
  // O(n) time | O(h) space - where n is the number of nodes in
  // the Binary Tree and h is the height of the Binary Tree
  static func nodeDepths(_ root: BinaryTree?) -> Int {
    var sumOfDepths = 0
    var stack: [Level] = [Level(root: root, depth: 0)]
    while stack.count > 0 {
      var top = stack[stack.count - 1]
      stack.removeLast()

      var depth = top.depth
      if let node = top.root {
        sumOfDepths += depth
        stack.append(Level(root: node.left, depth: depth + 1))
        stack.append(Level(root: node.right, depth: depth + 1))
      }
    }
    return sumOfDepths
  }
}

```