

Prompt	Scratchpad	Our Solution(s)	Video Explanation	Run Code
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Solution 1	Solution 2	Solution 3	Solution 4
<pre>1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved. 2 3 ▾ class Program { 4 ▾ class BinaryTree { 5 var value: Int 6 var left: BinaryTree? 7 var right: BinaryTree? 8 9 ▾ init(value: Int) { 10 self.value = value 11 } 12 } 13 14 ▾ struct TreeInfo { 15 var numNodesInTree: Int = 0 16 var sumOfDepths: Int = 0 17 var sumOfAllDepths: Int = 0 18 } 19 20 // Average case: when the tree is balanced 21 // O(n) time O(h) space - where n is the number of nodes in 22 // the Binary Tree and h is the height of the Binary Tree 23 ▾ static func allKindsOfNodeDepths(_ root: BinaryTree?) -> Int { 24 return getTreeInfo(root).sumOfAllDepths 25 } 26 27 ▾ static func getTreeInfo(_ tree: BinaryTree?) -> TreeInfo { 28 ▾ if let node = tree { 29 var leftInfo = getTreeInfo(node.left) 30 var rightInfo = getTreeInfo(node.right) 31 32 var sumOfLeftDepths = leftInfo.sumOfDepths + leftInfo.numNodesInTree 33 var sumOfRightDepths = rightInfo.sumOfDepths + rightInfo.numNodesInTree 34 35 var numNodesInTree = 1 + leftInfo.numNodesInTree + rightInfo.numNodesInTree 36 var sumOfDepths = sumOfLeftDepths + sumOfRightDepths 37 var sumOfAllDepths = sumOfDepths + leftInfo.sumOfAllDepths + rightInfo.sumOfAllDepths 38 39 return TreeInfo(numNodesInTree: numNodesInTree, sumOfDepths: sumOfDepths, sumOfAllDepths: sumOfAllDepths) 40 } 41 return TreeInfo() 42 } 43 } 44</pre>			

