

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 // Average case: when the tree is balanced 4 // O(n) time   O(n) space - where n is the number of nodes in the Binary Tree 5 ▾ function allKindsOfNodeDepths(root) { 6     addNodeCounts(root); 7     addNodeDepths(root); 8     return sumAllNodeDepths(root); 9 } 10 11 ▾ function sumAllNodeDepths(node) { 12     if (node == null) return 0; 13     return sumAllNodeDepths(node.left) + sumAllNodeDepths(node.right) + node._sumOfDepths; 14 } 15 16 ▾ function addNodeDepths(node) { 17     node._sumOfDepths = 0; 18     ▾ if (node.left !== null) { 19         addNodeDepths(node.left); 20         node._sumOfDepths += node.left._sumOfDepths + node.left._numNodesInTree; 21     } 22     ▾ if (node.right !== null) { 23         addNodeDepths(node.right); 24         node._sumOfDepths += node.right._sumOfDepths + node.right._numNodesInTree; 25     } 26 } 27 28 ▾ function addNodeCounts(node) { 29     node._numNodesInTree = 1; 30     ▾ if (node.left !== null) { 31         addNodeCounts(node.left); 32         node._numNodesInTree += node.left._numNodesInTree; 33     } 34     ▾ if (node.right !== null) { 35         addNodeCounts(node.right); 36         node._numNodesInTree += node.right._numNodesInTree; 37     } 38 } 39 40 // This is the class of the input binary tree. 41 ▾ class BinaryTree { 42     ▾ constructor(value) { 43         this.value = value; 44         this.left = null; 45         this.right = null; 46     } 47 } 48 49 exports.allKindsOfNodeDepths = allKindsOfNodeDepths; 50</pre>			

