

Our Solution(s)	Run Code	Your Solutions	Run Code
<div>Solution 1</div> <pre>1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved. 2 3 public class Program { 4 // O(d) time O(1) space - where d is the depth (height) of 1 5 public static AncestralTree GetYoungestCommonAncestor(6 AncestralTree topAncestor, 7 AncestralTree descendantOne, 8 AncestralTree descendantTwo 9) { 10 int depthOne = getDescendantDepth(descendantOne, topAncestor); 11 int depthTwo = getDescendantDepth(descendantTwo, topAncestor); 12 if (depthOne > depthTwo) { 13 return backtrackAncestralTree(descendantOne, descendantTwo, 14 depthOne - depthTwo); 15 } else { 16 return backtrackAncestralTree(descendantTwo, descendantOne, 17 depthTwo - depthOne); 18 } 19 } 20 21 public static int getDescendantDepth(AncestralTree descendant, 22 AncestralTree topAncestor) { 23 int depth = 0; 24 while (descendant != topAncestor) { 25 depth++; 26 descendant = descendant.ancestor; 27 } 28 return depth; 29 } 30 31 public static AncestralTree backtrackAncestralTree(32 AncestralTree lowerDescendant, 33 AncestralTree higherDescendant, 34 int diff 35) { 36 while (diff > 0) { 37 lowerDescendant = lowerDescendant.ancestor; 38 diff--; 39 } 40 while (lowerDescendant != higherDescendant) { 41 lowerDescendant = lowerDescendant.ancestor; 42 higherDescendant = higherDescendant.ancestor; 43 } 44 return lowerDescendant; 45 } 46 47 public class AncestralTree { 48 public char name; 49 public AncestralTree ancestor; 50 51 public AncestralTree(char name) { 52 this.name = name; 53 this.ancestor = null; 54 } 55 56 // This method is for testing only. 57 public void AddAsAncestor(AncestralTree[] descendants) { 58 foreach (AncestralTree descendant in descendants) { 59 descendant.ancestor = this; 60 } 61 } 62 } 63 }</pre>		<div>Solution 1 Solution 2 Solution 3</div> <pre>1 public class Program { 2 public static AncestralTree GetYoungestCommonAncestor(3 AncestralTree topAncestor, 4 AncestralTree descendantOne, 5 AncestralTree descendantTwo 6) { 7 // Write your code here. 8 return null; 9 } 10 11 public class AncestralTree { 12 public char name; 13 public AncestralTree ancestor; 14 15 public AncestralTree(char name) { 16 this.name = name; 17 this.ancestor = null; 18 } 19 20 // This method is for testing only. 21 public void AddAsAncestor(AncestralTree[] descendants) { 22 foreach (AncestralTree descendant in descendants) { 23 descendant.ancestor = this; 24 } 25 } 26 } 27 } 28 }</pre>	
		Custom Output	Submit Code

Run or submit code when you're ready.