

Our Solution(s)	Run Code	Your Solutions	Run Code
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Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 class AncestralTree {
4   constructor(name) {
5     this.name = name;
6     this.ancestor = null;
7   }
8 }
9
10 // O(d) time | O(1) space - where d is the depth (height) of the ancestral tree
11 function getYoungestCommonAncestor(topAncestor, descendantOne, descendantTwo) {
12   const depthOne = getDescendantDepth(descendantOne, topAncestor);
13   const depthTwo = getDescendantDepth(descendantTwo, topAncestor);
14   if (depthOne > depthTwo) {
15     return backtrackAncestralTree(descendantOne, descendantTwo, depthOne - depthTwo);
16   } else {
17     return backtrackAncestralTree(descendantTwo, descendantOne, depthTwo - depthOne);
18   }
19 }
20
21 function getDescendantDepth(descendant, topAncestor) {
22   let depth = 0;
23   while (descendant !== topAncestor) {
24     depth++;
25     descendant = descendant.ancestor;
26   }
27   return depth;
28 }
29
30 function backtrackAncestralTree(lowerDescendant, higherDescendant, diff) {
31   while (diff > 0) {
32     lowerDescendant = lowerDescendant.ancestor;
33     diff--;
34   }
35   while (lowerDescendant !== higherDescendant) {
36     lowerDescendant = lowerDescendant.ancestor;
37     higherDescendant = higherDescendant.ancestor;
38   }
39   return lowerDescendant;
40 }
41
42 exports.AncestralTree = AncestralTree;
43 exports.getYoungestCommonAncestor = getYoungestCommonAncestor;
44
```

Solution 1

Solution 2

Solution 3

```
1 // This is an input class. Do not edit.
2 class AncestralTree {
3   constructor(name) {
4     this.name = name;
5     this.ancestor = null;
6   }
7 }
8
9 function getYoungestCommonAncestor(topAncestor, descendantOne, descendantTwo) {
10   // Write your code here.
11 }
12
13 // Do not edit the line below.
14 exports.AncestralTree = AncestralTree;
15 exports.getYoungestCommonAncestor = getYoungestCommonAncestor;
16
```

Custom Output

Raw Output

Submit Code

Run or submit code when you're ready.