

Solution 1

```
1 # Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 class AncestralTree:
4     def __init__(self, name):
5         self.name = name
6         self.ancestor = None
7
8
9 # O(d) time | O(1) space - where d is the depth (height) of the ancestral tree
10 def getYoungestCommonAncestor(topAncestor, descendantOne, descendantTwo):
11     depthOne = getDescendantDepth(descendantOne, topAncestor)
12     depthTwo = getDescendantDepth(descendantTwo, topAncestor)
13     if depthOne > depthTwo:
14         return backtrackAncestralTree(descendantOne, descendantTwo, depthOne - de
15     else:
16         return backtrackAncestralTree(descendantTwo, descendantOne, depthTwo - de
17
18
19 def getDescendantDepth(descendant, topAncestor):
20     depth = 0
21     while descendant != topAncestor:
22         depth += 1
23         descendant = descendant.ancestor
24     return depth
25
26
27 def backtrackAncestralTree(lowerDescendant, higherDescendant, diff):
28     while diff > 0:
29         lowerDescendant = lowerDescendant.ancestor
30         diff -= 1
31     while lowerDescendant != higherDescendant:
32         lowerDescendant = lowerDescendant.ancestor
33         higherDescendant = higherDescendant.ancestor
34     return lowerDescendant
35
```

Solution 1

Solution 2

Solution 3

```
1 # This is an input class. Do not edit.
2 class AncestralTree:
3     def __init__(self, name):
4         self.name = name
5         self.ancestor = None
6
7
8 def getYoungestCommonAncestor(topAncestor, descendantOne, descendantTwo):
9     # Write your code here.
10     pass
11
```

Custom Output

Raw Output

Submit Code

Run or submit code when you're ready.