

Solution 1Solution 2

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1  # Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3  class BinaryTree:
4      def __init__(self, value, left=None, right=None):
5          self.value = value
6          self.left = left
7          self.right = right
8
9
10 # O(n) time | O(d) space - where n is the number of nodes in the Binary Tree
11 # and d is the depth (height) of the Binary Tree
12 def flattenBinaryTree(root):
13     leftMost, _ = flattenTree(root)
14     return leftMost
15
16
17 def flattenTree(node):
18     if node.left is None:
19         leftMost = node
20     else:
21         leftSubtreeLeftMost, leftSubtreeRightMost = flattenTree(node.left)
22         connectNodes(leftSubtreeRightMost, node)
23         leftMost = leftSubtreeLeftMost
24
25     if node.right is None:
26         rightMost = node
27     else:
28         rightSubtreeLeftMost, rightSubtreeRightMost = flattenTree(node.right)
29         connectNodes(node, rightSubtreeLeftMost)
30         rightMost = rightSubtreeRightMost
31
32     return [leftMost, rightMost]
33
34
35 def connectNodes(left, right):
36     left.right = right
37     right.left = left
38
```

