AlgoExpert Quad Layout Java 12px Sublime Monokai 00:00:00

Prompt Scratchpad Our Solution(s) Video Explanation Run Code

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Solution 1
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```
_{\rm 1} \, // Copyright 0 2020 AlgoExpert, LLC. All rights reserved.
 3 import java.util.function.Function;
 5 class Program {
     // O(n) time | O(1) space
      public static void iterativeInOrderTraversal(
         BinaryTree tree, Function<BinaryTree, Void> callback) {
        BinaryTree previousNode = null;
        BinaryTree currentNode = tree;
10
11
        while (currentNode != null) {
12
          BinaryTree nextNode;
13
          if (previousNode == null || previousNode == currentNode.parent) {
14
           if (currentNode.left != null) {
15
             nextNode = currentNode.left;
16
           } else {
17
              callback.apply(currentNode);
              nextNode = currentNode.right != null ? currentNode.right : currentNode.parent;
18
19
20
          } else if (previousNode == currentNode.left) {
21
22
           callback.apply(currentNode);
            nextNode = currentNode.right != null ? currentNode.right : currentNode.parent;
23
          } else {
24
            nextNode = currentNode.parent;
25
26
          previousNode = currentNode;
27
          currentNode = nextNode;
28
29
30
31
      static class BinaryTree {
32
        public int value;
33
        public BinaryTree left;
34
        public BinaryTree right;
35
36
        public BinaryTree parent;
37
        public BinaryTree(int value) {
38
          this.value = value;
39
40
41
        public BinaryTree(int value, BinaryTree parent) {
42
          this.value = value;
43
          this.parent = parent;
44
45
```