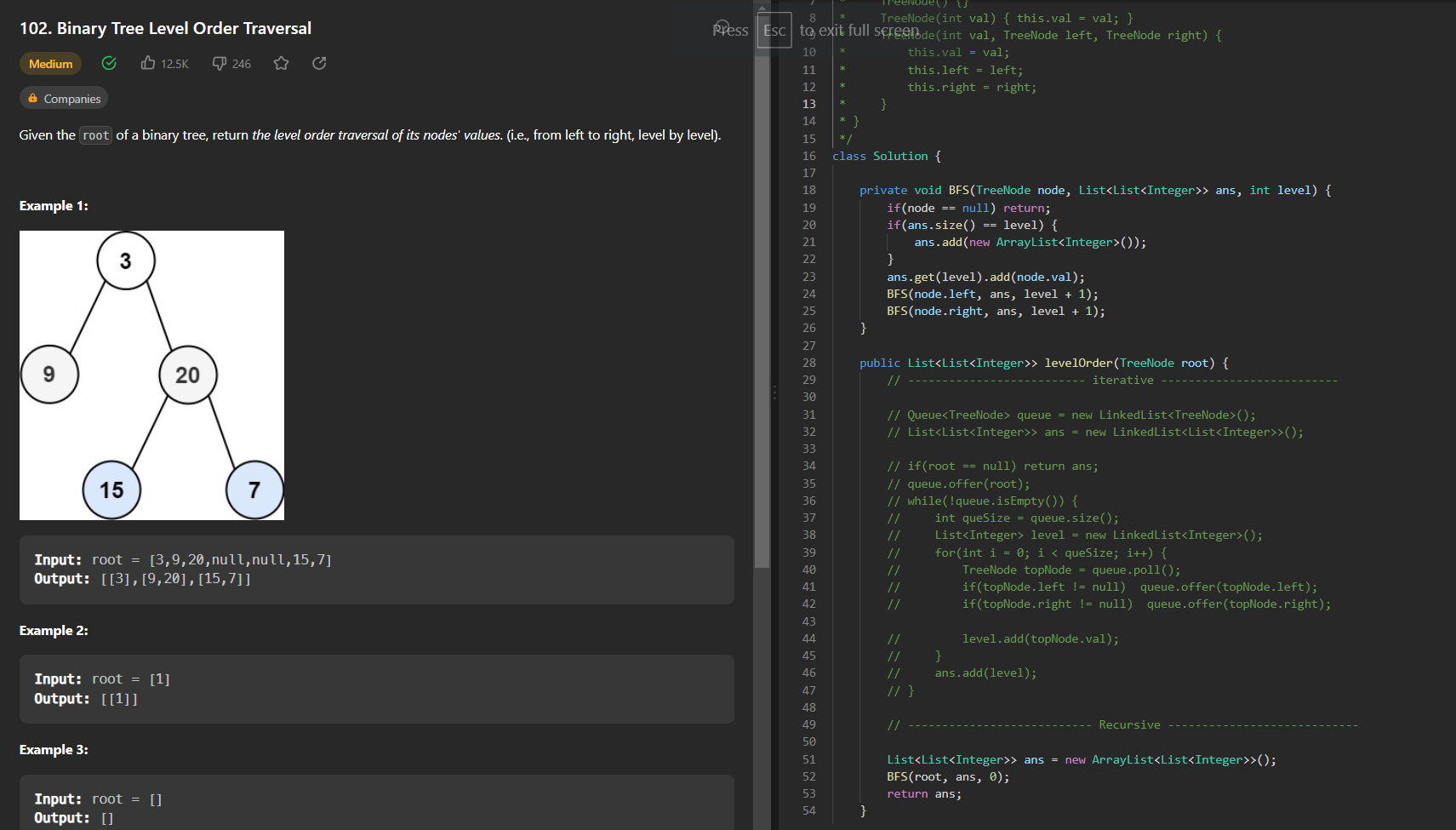
|  |  |
| --- | --- |
| **Trees** | |
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**Tree BFS traversal**

Iterative TC: O(N) recursive TC: O(N)

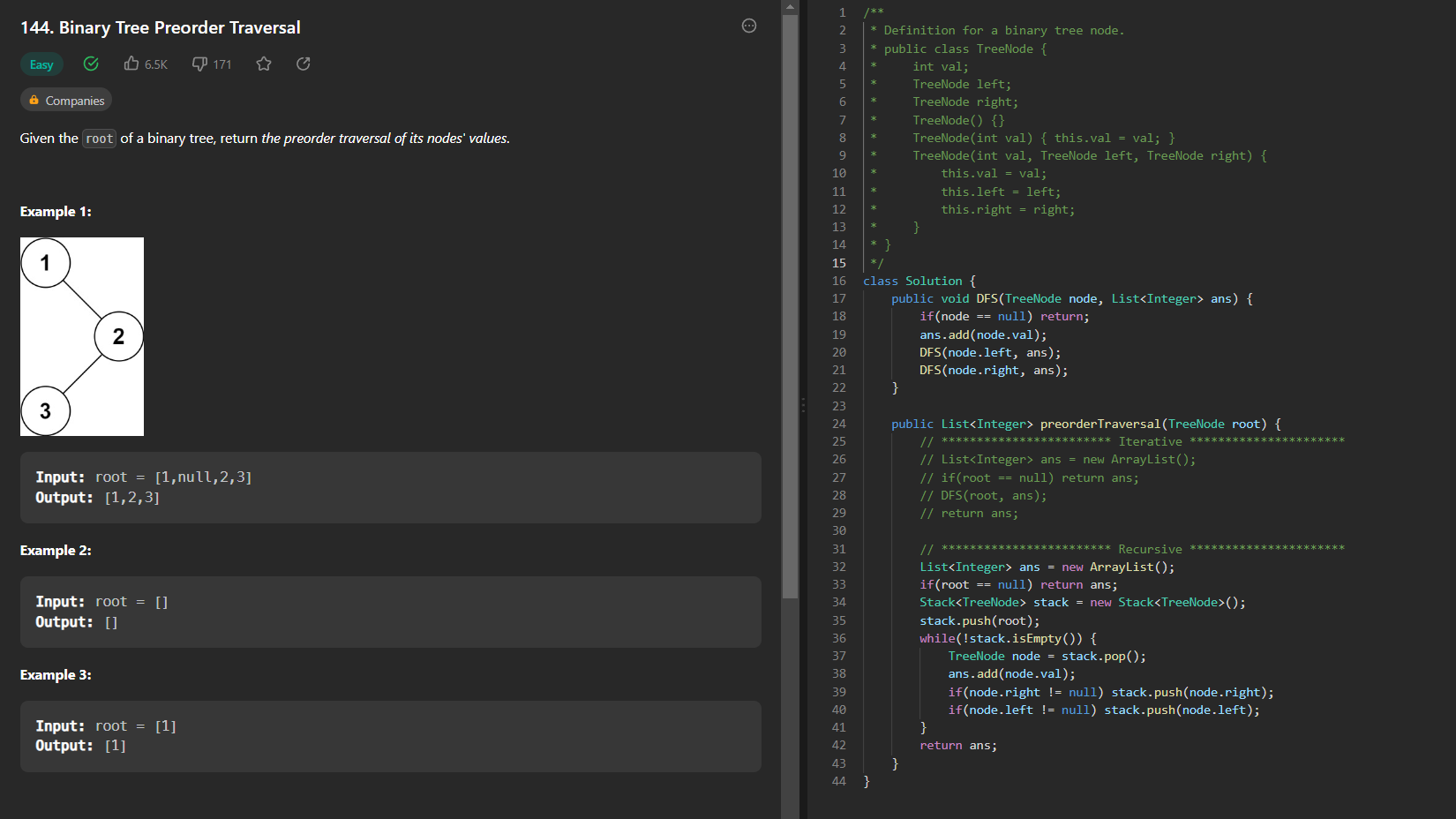
SC: O(L) Max no.of nodes in a level SC: O(H)



**Pre Order traversal**

Iterative TC: O(N) recursive TC: O(N)

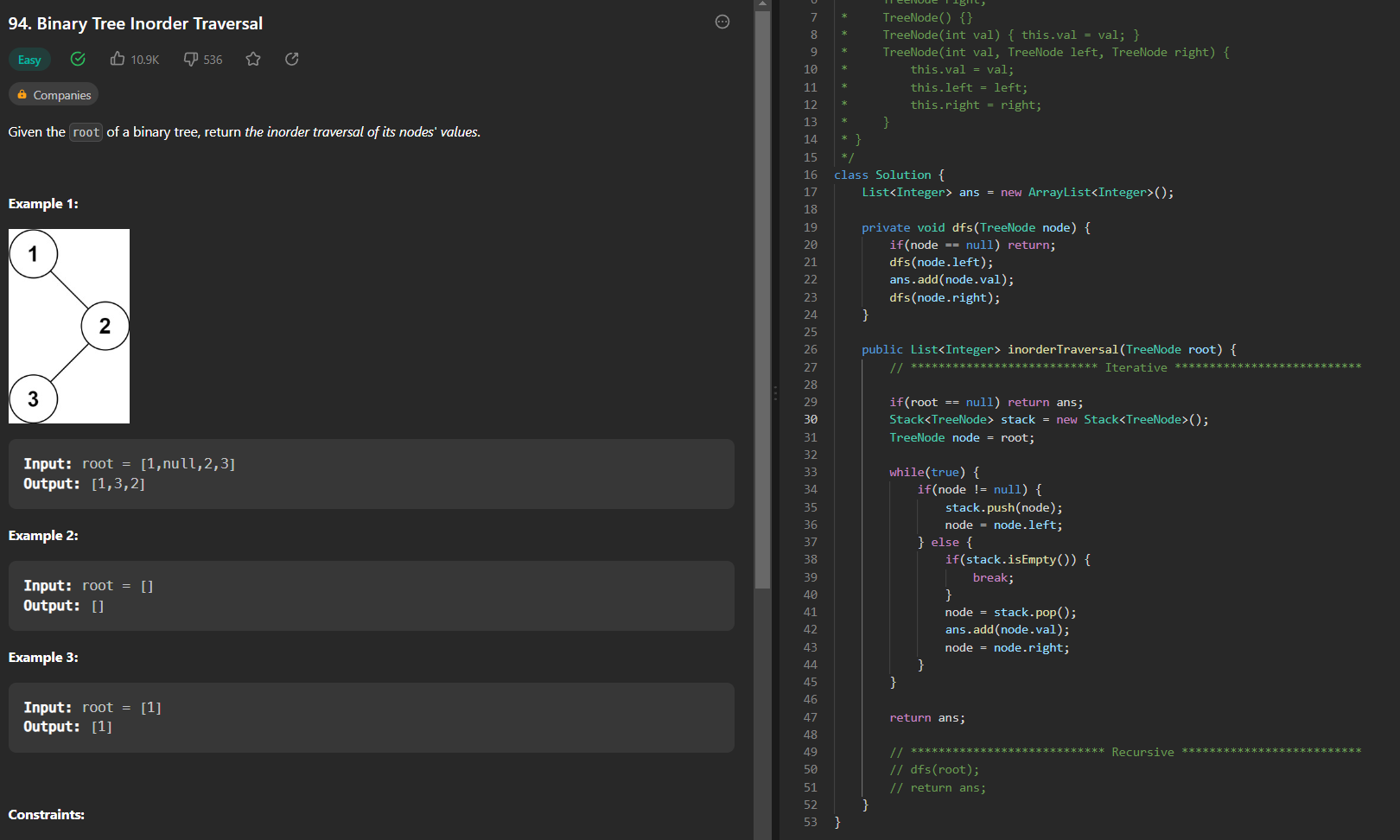
SC: O(H) Height of the tree SC: O(H)



**In Order traversal**

Iterative TC: O(N) recursive TC: O(N)

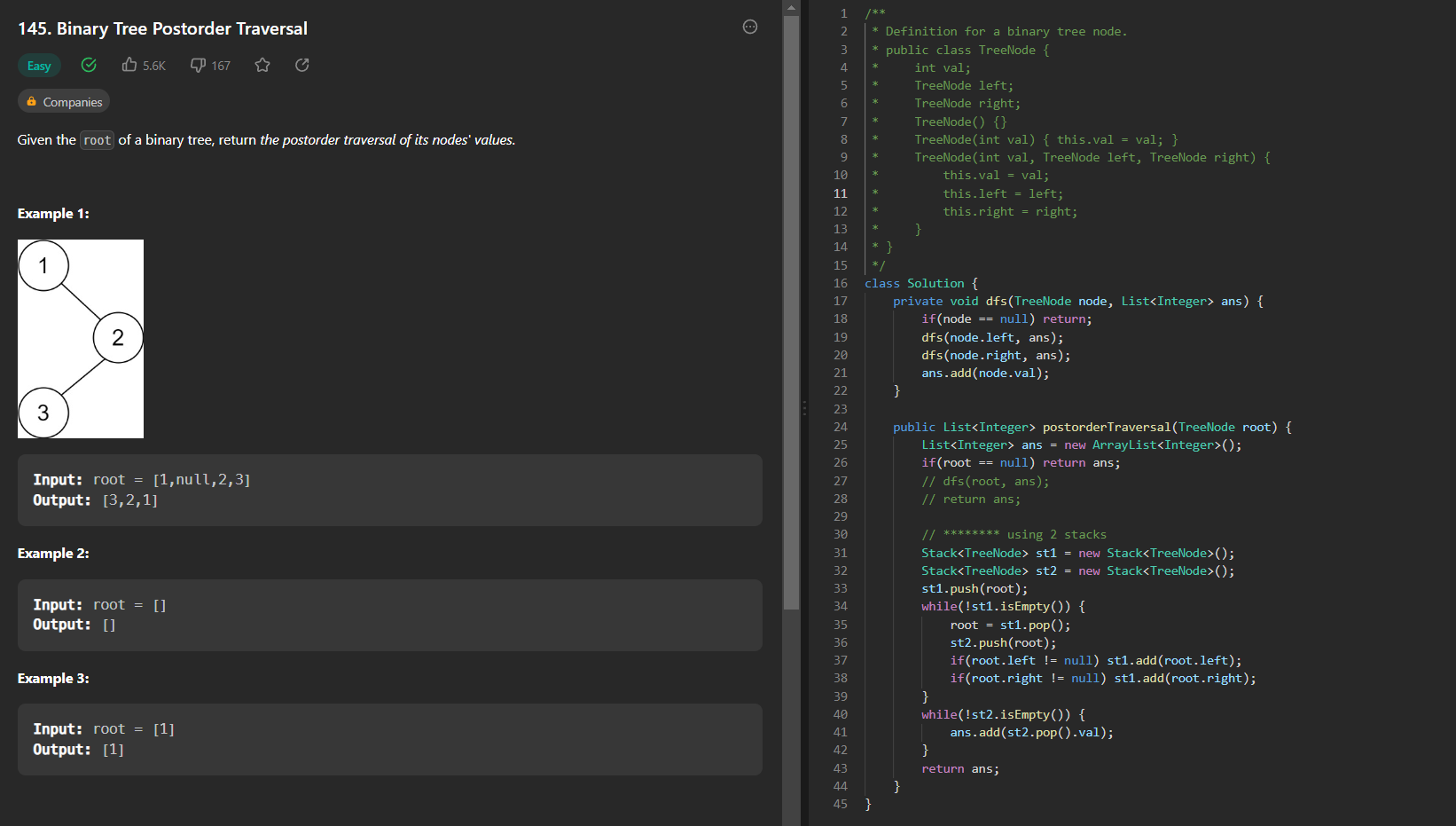
SC: O(H) uses stack SC: O(H)



**Post Order traversal**

Iterative TC: O(N) recursive TC: O(N)

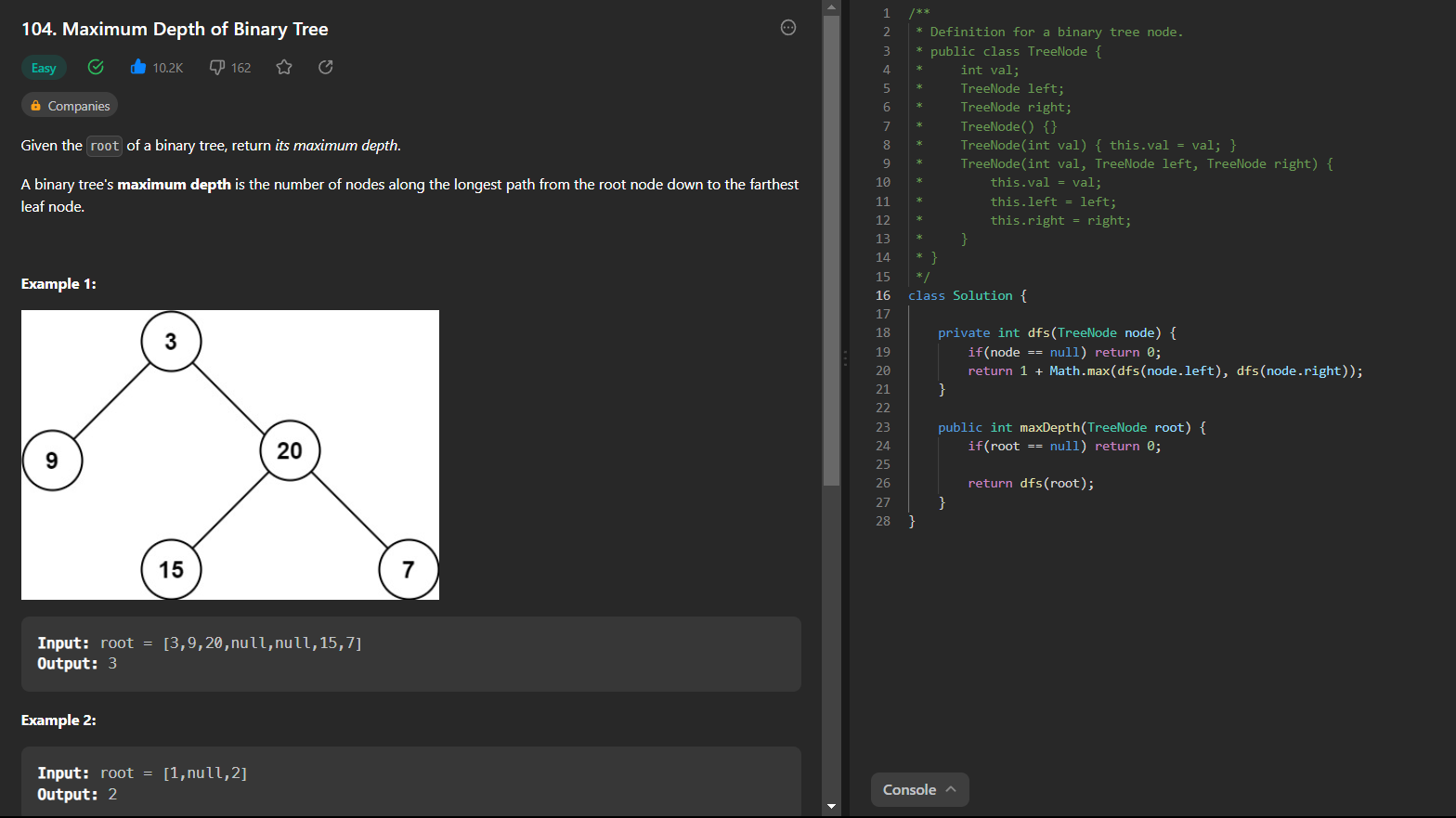
SC: O(N + H) uses 2 stacks SC: O(H)



**Maximum depth of the binary tree**

TC: O(N)

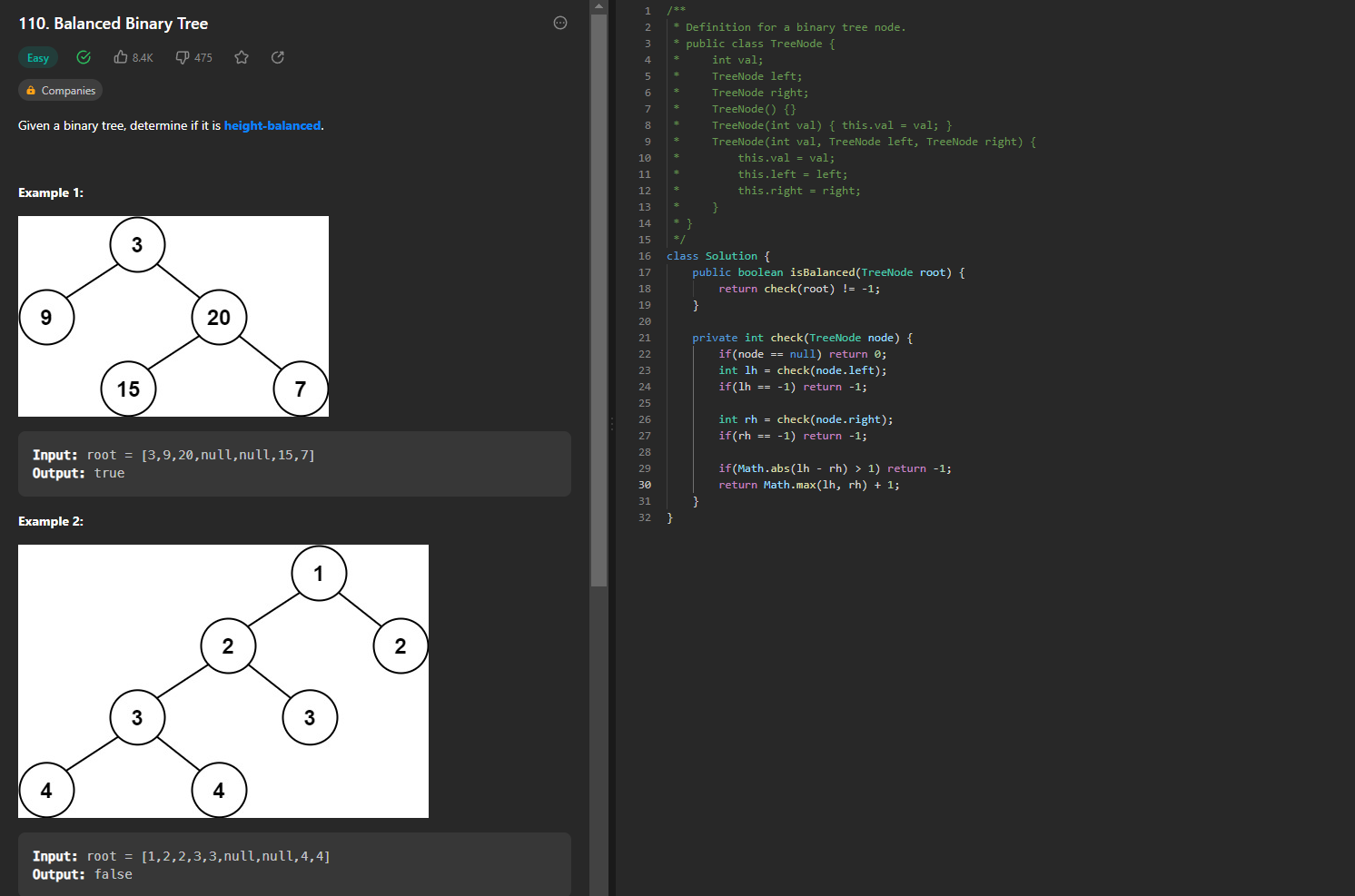
SC: O(H)



**Balanced binary tree**

TC: O(N)

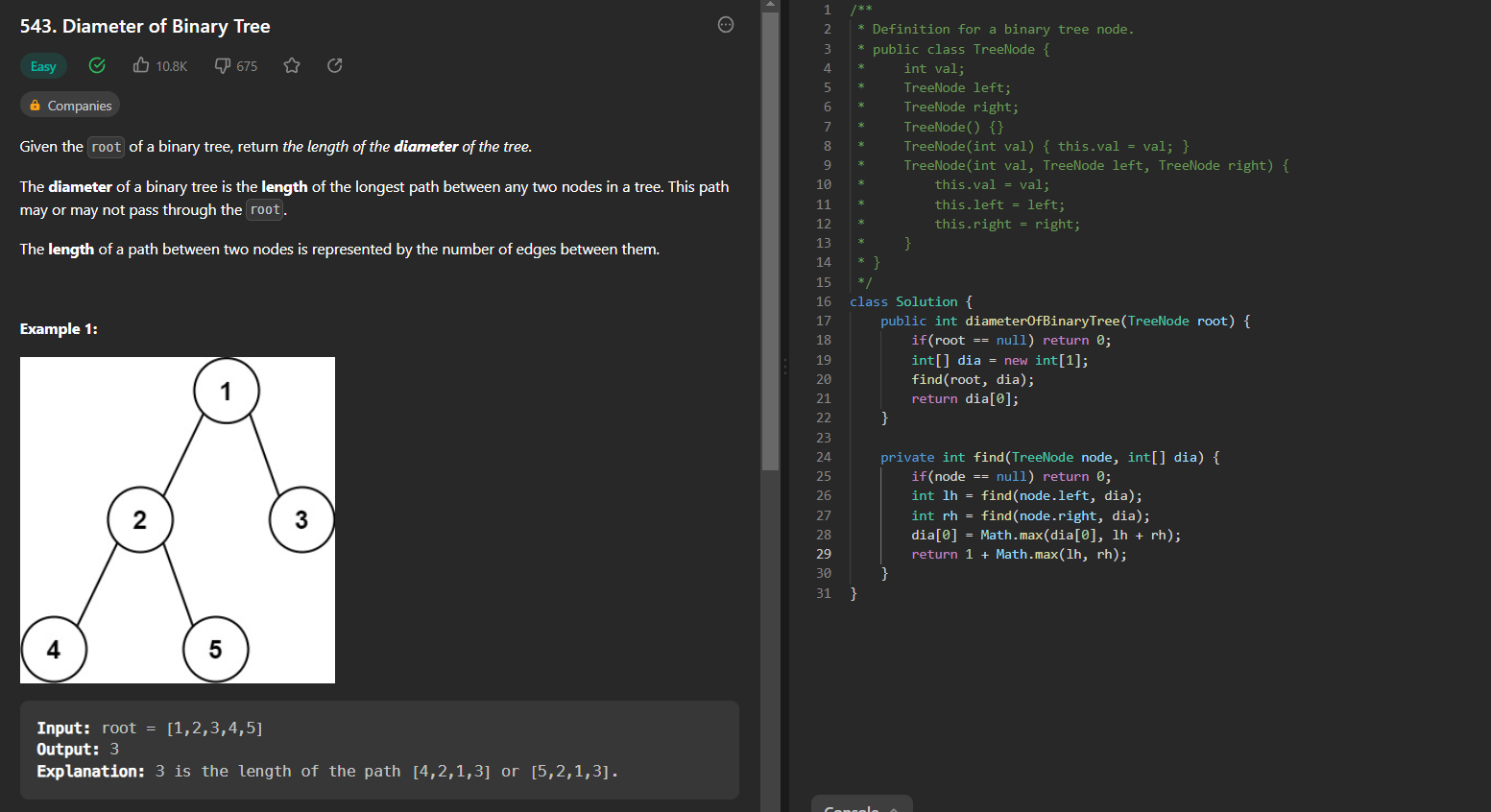
SC: O(H)

****

**Diameter of Binary tree:**

TC: O(N)

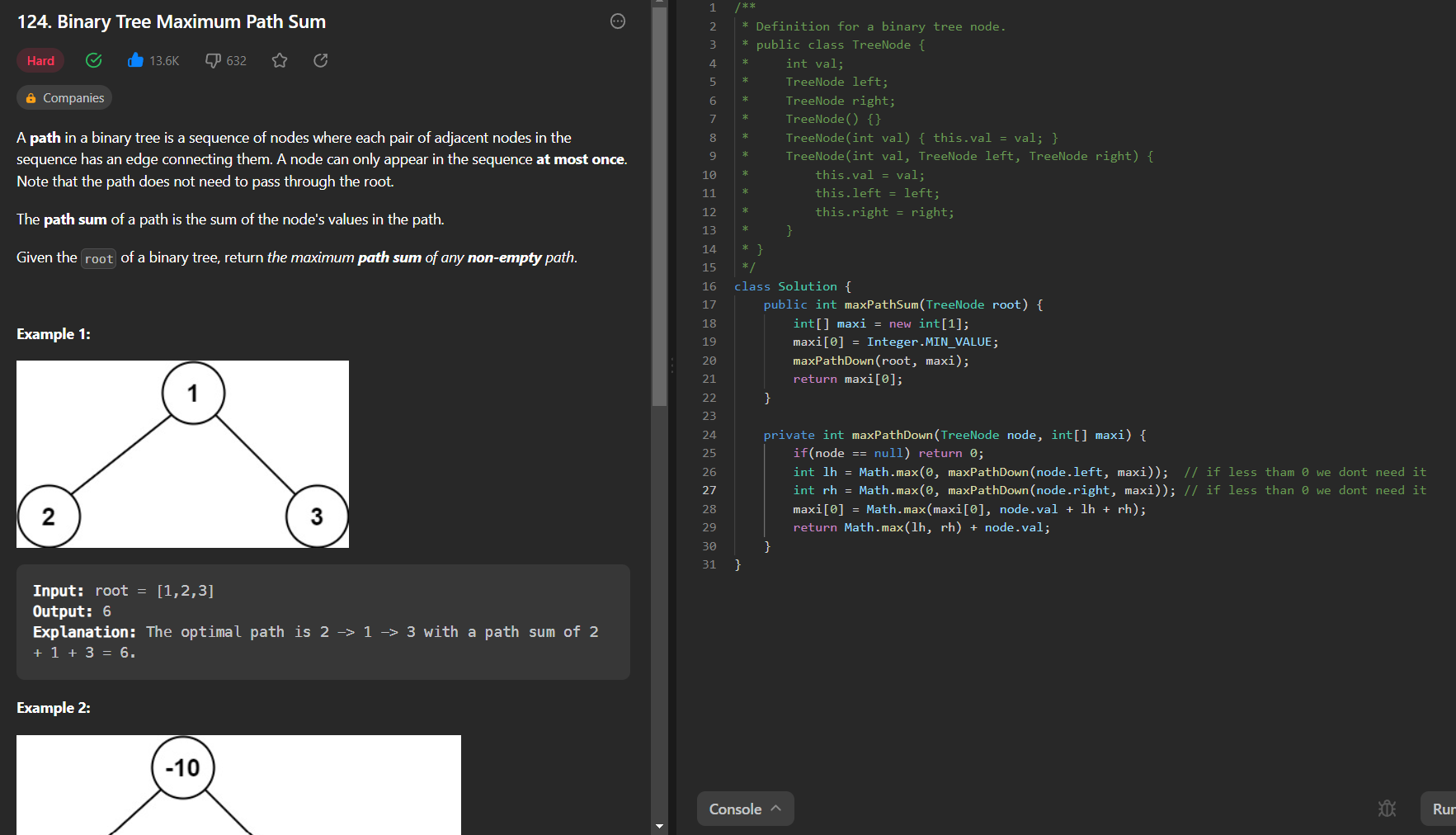
SC: O(H)

****

**Maximum Path sum in a binary tree:**

TC: O(N)

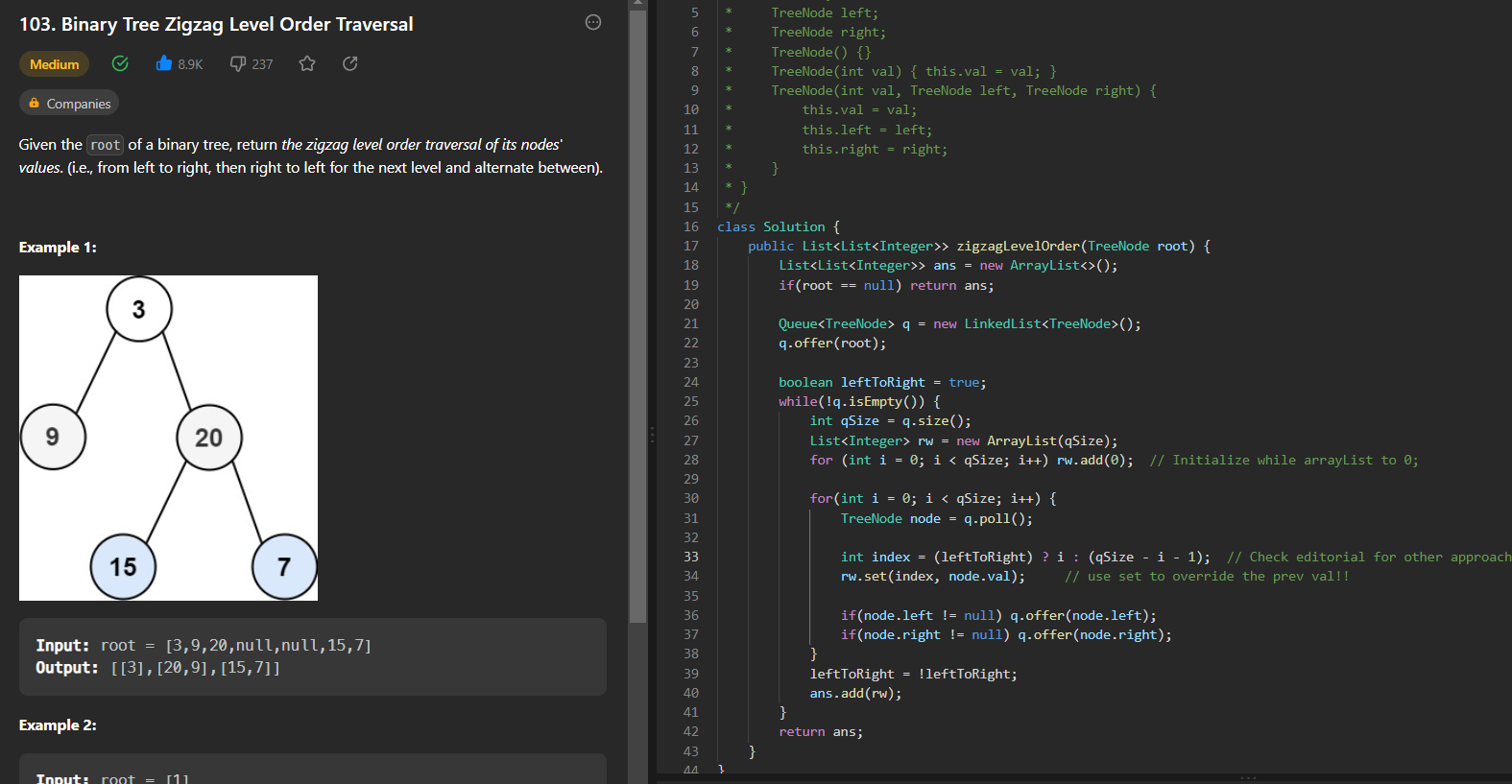
SC: O(H)

******

**Binary Tree Zigzag Level Order Traversal:**

TC: O(N)

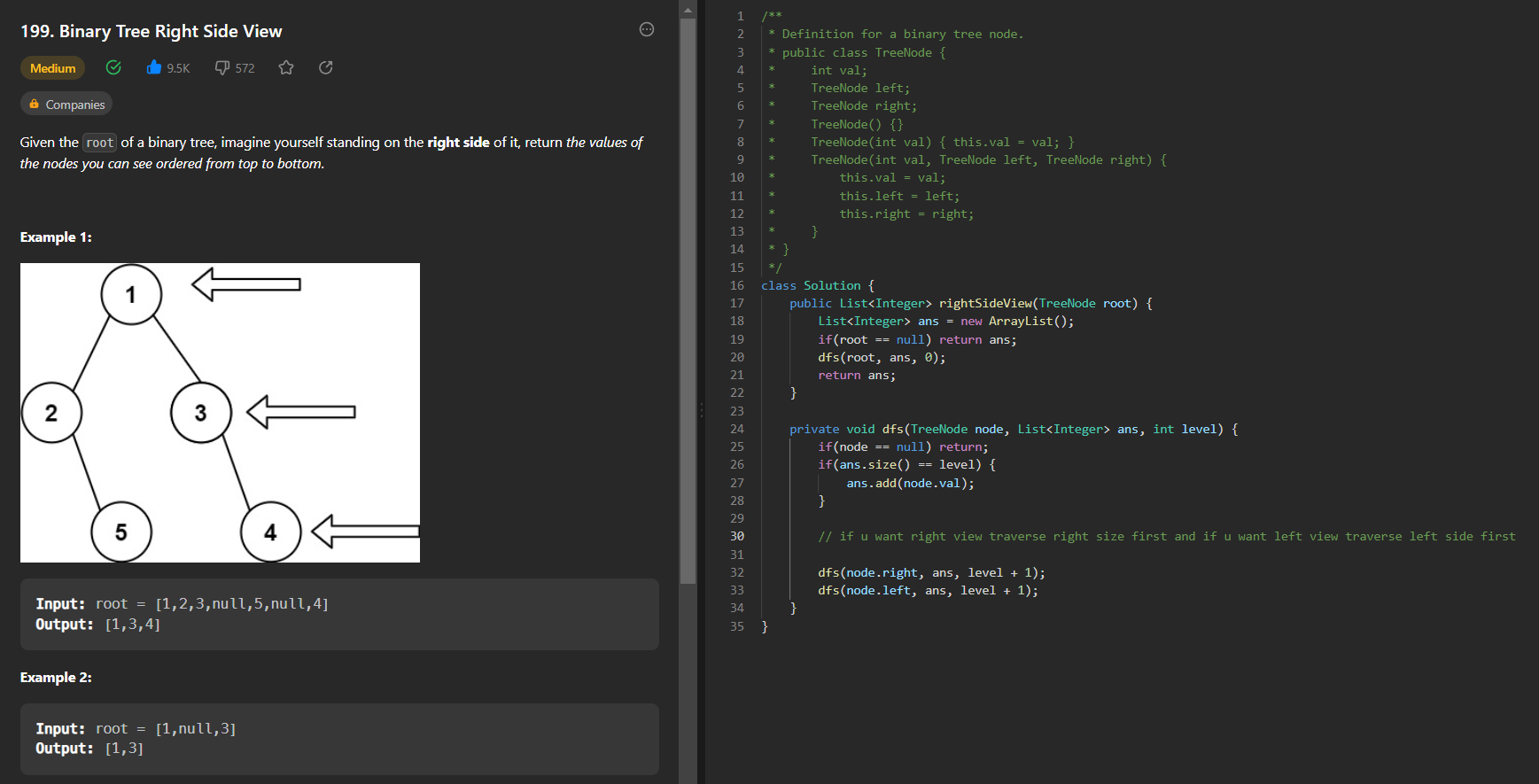
SC: O(L)

****

**Binary Tree Right Side View**

TC: O(N)

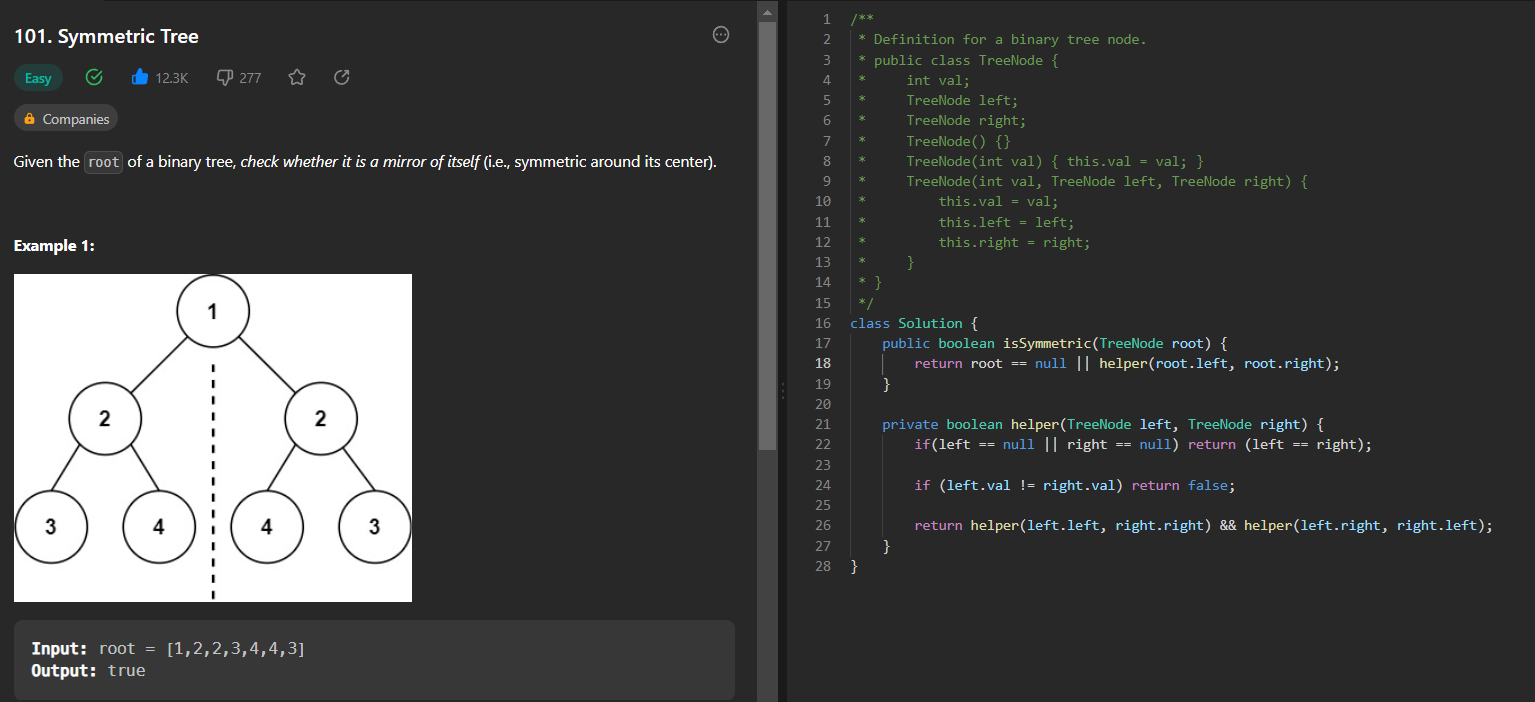
SC: O(H)

****

**Symmetric Tree:**

TC: O(N)

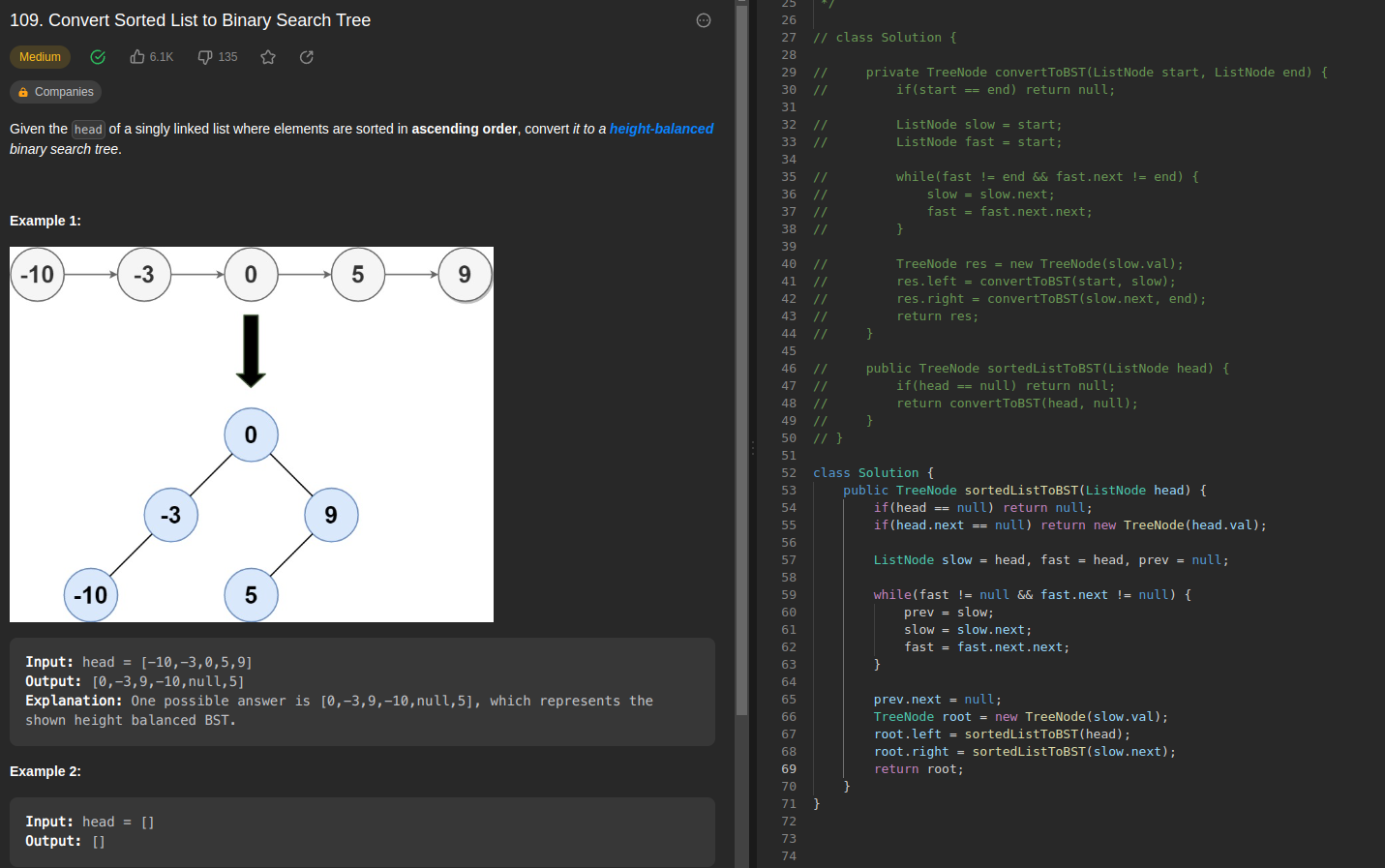
SC: O(H)



**Convert a sorted linked list to BST:**

TC: O(N)

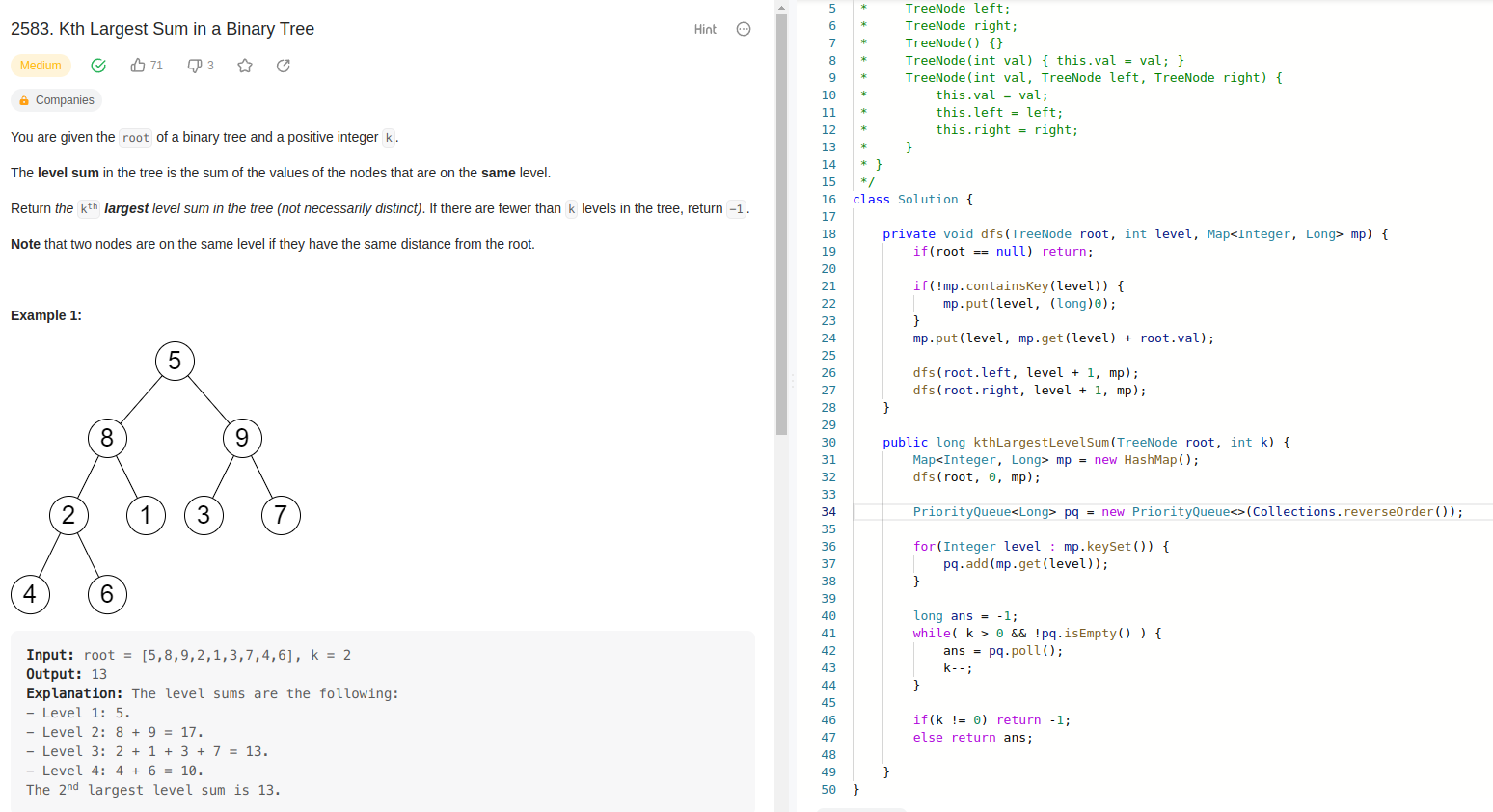
SC: O(H + N) call stack + N treenodes

****

**Kth largest sum in a binary tree using DFS:**

TC: O(N)

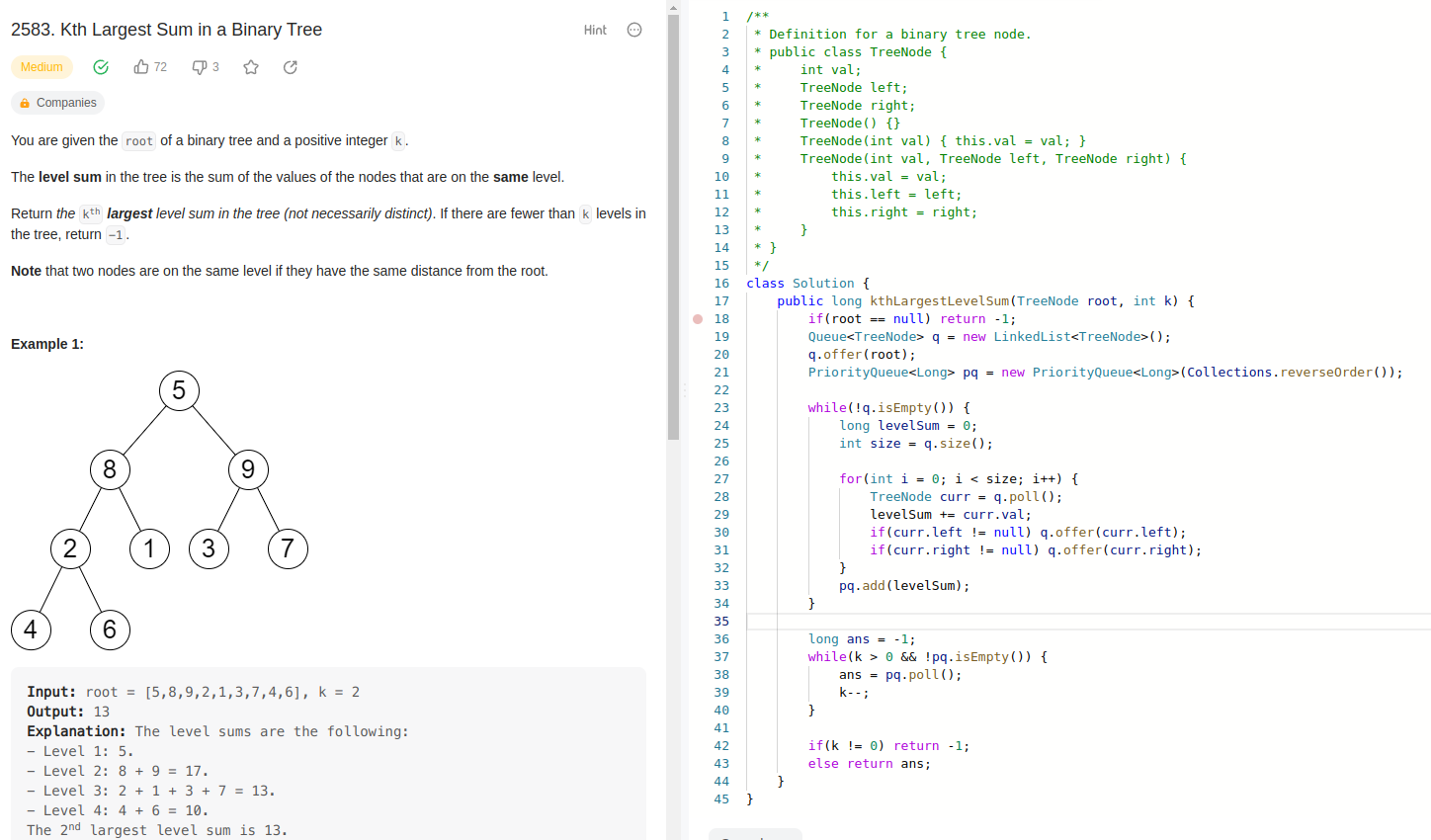
SC: O(H + H) for call stack and priority queue



**Kth largest sum in a binary tree using BFS:**

TC: O(N)

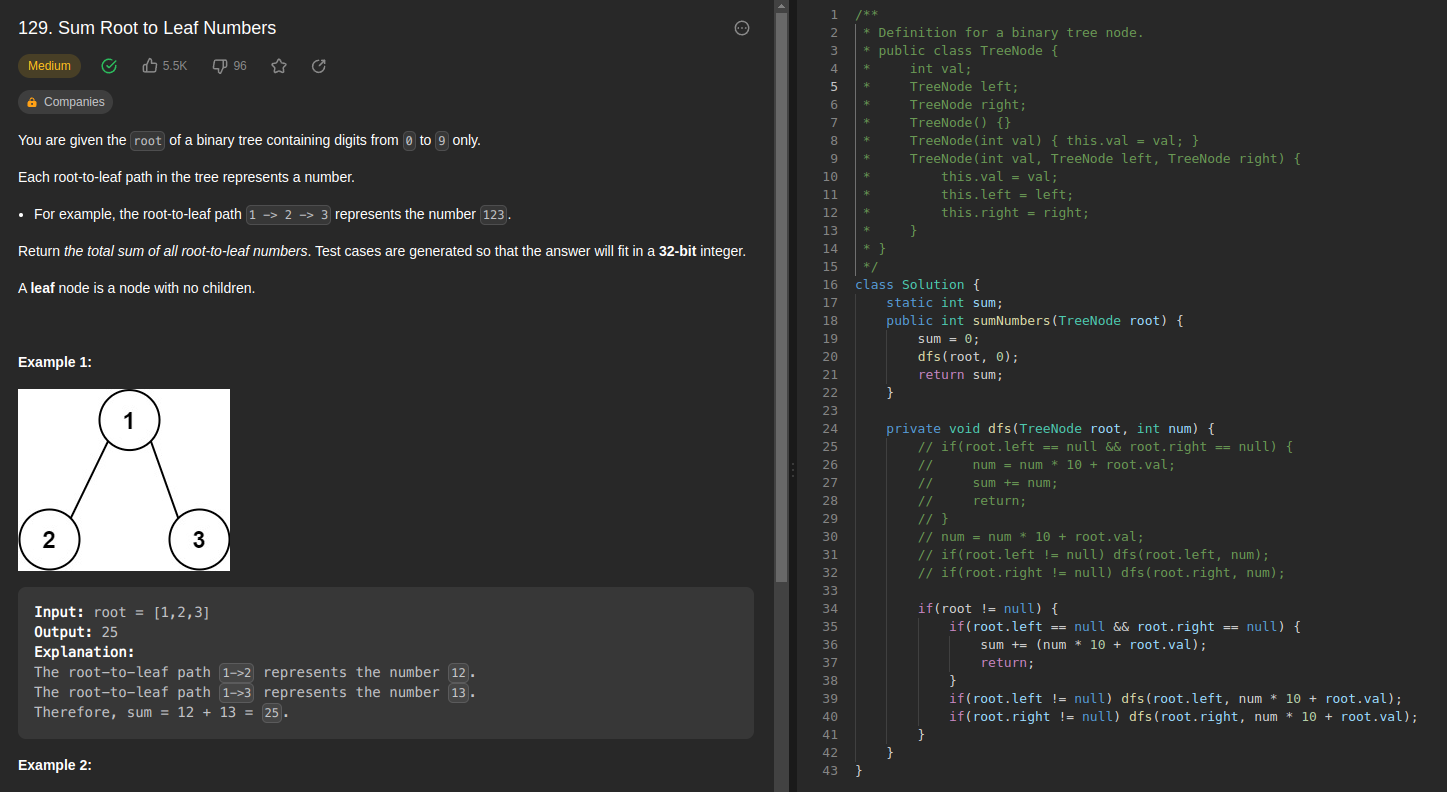
SC: O(H + H) for queue and priority queue

****

**Sum root to leaf numbers:**

TC: O(N)

SC: O(H)



**Check completeness of a binary tree:**

TC: O(N)

SC: O(H)

