

Solution Review: Problem Challenge 2

We'll cover the following

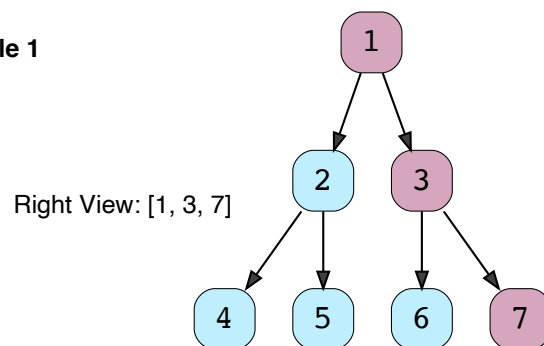


- Right View of a Binary Tree (easy)
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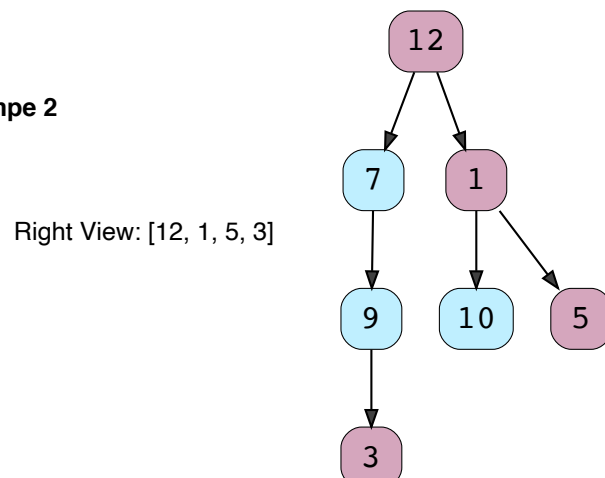
Right View of a Binary Tree (easy)

Given a binary tree, return an array containing nodes in its right view. The right view of a binary tree is the set of **nodes visible when the tree is seen from the right side**.

Example 1



Example 2



Solution







This problem follows the Binary Tree Level Order Traversal

(<https://www.educative.io/collection/page/5668639101419520/5671464854355968/5726607939469312/>) pattern. We can follow the same **BFS** approach. The only additional thing we will be do is to append the last node of each level to the result array.

Code

Here is what our algorithm will look like; only the highlighted lines have changed:

| Java | Python3 | C++ | JS |
|---|---------|-----|----|
| <pre>1 from __future__ import print_function 2 from collections import deque 3 4 5 class TreeNode: 6 def __init__(self, val): 7 self.val = val 8 self.left, self.right = None, None 9 10 11 def tree_right_view(root): 12 result = [] 13 if root is None: 14 return result 15 16 queue = deque() 17 queue.append(root) 18 while queue: 19 levelSize = len(queue) 20 for i in range(0, levelSize): 21 currentNode = queue.popleft() 22 # if it is the last node of this level, add it to the result 23 if i == levelSize - 1: 24 result.append(currentNode) 25 # insert the children of current node in the queue 26 if currentNode.left: 27 queue.append(currentNode.left) 28 if currentNode.right:</pre> | | | |
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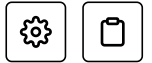
Time complexity

The time complexity of the above algorithm is $O(N)$, where 'N' is the total number of nodes in the tree. This is due to the fact that we traverse each node once.

Space complexity

The space complexity of the above algorithm will be $O(N)$ as we need to return a list containing the level order traversal. We will also need $O(N)$ space for the queue. Since we can have a maximum of $N/2$ nodes at any level (this could happen only at the lowest level), therefore we will need $O(N)$ space to store them in the queue.

Similar Questions



Problem 1: Given a binary tree, return an array containing nodes in its left view. The left view of a binary tree is the set of nodes visible when the tree is seen from the left side.

Solution: We will be following a similar approach, but instead of appending the last element of each level we will be appending the first element of each level to the output array.

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