314. Binary Tree Vertical Order Traversal Premium

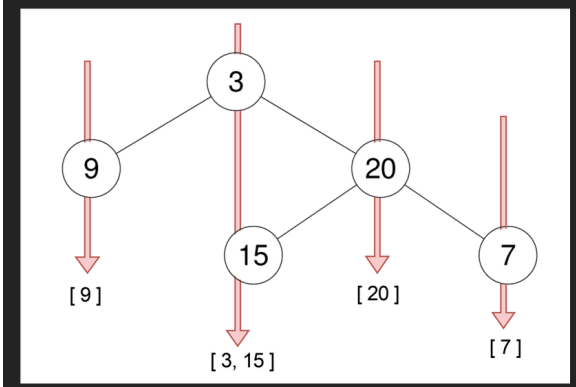
Solved

Medium | Topics | Companies | Hint

Given the `root` of a binary tree, return ***the vertical order traversal*** *of its nodes' values*. (i.e., from top to bottom, column by column).

If two nodes are in the same row and column, the order should be from **left to right**.

Example 1:




```
Input: root = [3,9,20,null,null,15,7]
Output: [[9],[3,15],[20],[7]]
```

```python
# Definition for a binary tree node.
# class TreeNode:
#     def __init__(self, val=0, left=None, right=None):
#         self.val = val
#         self.left = left
#         self.right = right
class Solution:
    def verticalOrder(self, root: Optional[TreeNode]) -> List[List[int]]:

        if root is None:
            return []

        hm = defaultdict(list)
        min_col, max_col = 0, 0
        queue = deque([(root, 0)])

        while queue:
            n, c = queue.popleft()

            if n is not None:
                hm[c].append(n.val)
                min_col = min(min_col, c)
                max_col = max(max_col, c)

                queue.append((n.left, c - 1))
                queue.append((n.right, c + 1))

        return [hm[x] for x in range(min_col, max_col + 1)]

```

hashmap

new key: column