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Day 23: BST Level-Order Traversal

by vatsalchanana

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Objective
Today, we're going further with Binary Search Trees. Check out the Tutorial tab for learning materials and an instructional video!

Task
A level-order traversal, also known as a breadth-first search, visits each level of a tree's nodes from left to right, top to bottom. You are given a pointer, $root$, pointing to the root of a binary search tree. Complete the *levelOrder* function provided in your editor so that it prints the level-order traversal of the binary search tree.

Hint: You'll find a queue helpful in completing this challenge.

Input Format

The locked stub code in your editor reads the following inputs and assembles them into a BST:
The first line contains an integer, T (the number of test cases).
The T subsequent lines each contain an integer, $data$, denoting the value of an element that must be added to the BST.

Output Format

Print the $data$ value of each node in the tree's level-order traversal as a single line of N space-separated integers.

Sample Input

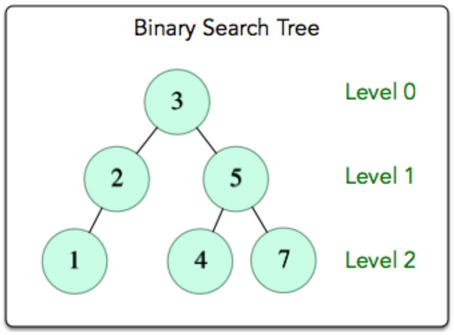
```
6
3
5
4
7
2
1
```

Sample Output

```
3 2 5 1 4 7
```

Explanation

The input forms the following binary search tree:



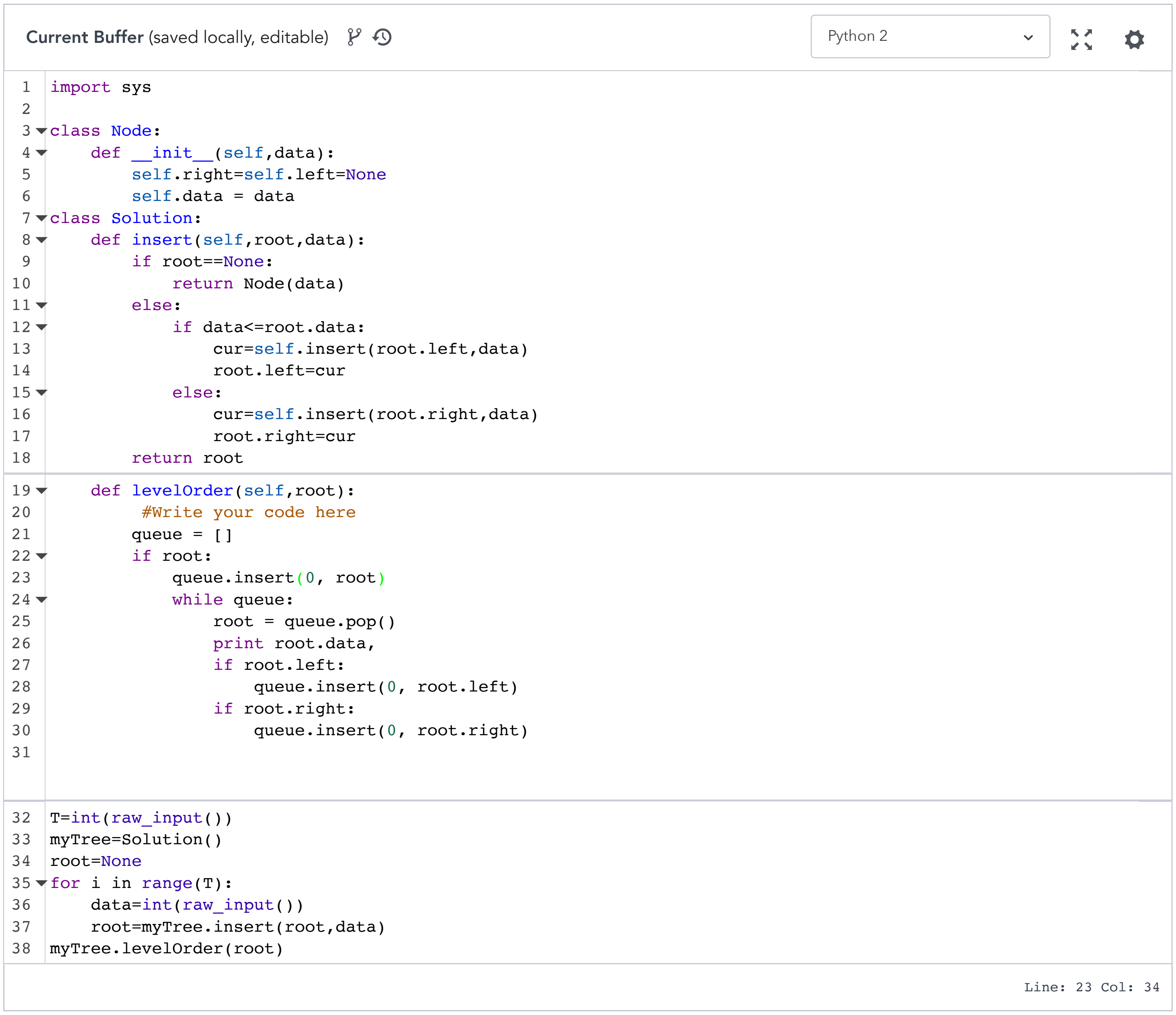
We traverse each level of the tree from the root downward, and we process the nodes at each level from left to right. The resulting level-order traversal is $3 \to 2 \to 5 \to 1 \to 4 \to 7$, and we print these data values as a single line of space-separated integers.

Submissions: 3828

Max Score: 30

Difficulty: Easy

More



```
import sys

class Node:
    def __init__(self,data):
        self.right=self.left=None
        self.data = data
class Solution:
    def insert(self,root,data):
        if root==None:
            return Node(data)
        else:
            if data<=root.data:
                cur=self.insert(root.left,data)
                root.left=cur
            else:
                cur=self.insert(root.right,data)
                root.right=cur
        return root
    def levelOrder(self,root):
         #Write your code here
        queue = []
        if root:
            queue.insert(0, root)
            while queue:
                root = queue.pop()
                print root.data,
                if root.left:
                    queue.insert(0, root.left)
                if root.right:
                    queue.insert(0, root.right)


T=int(raw_input())
myTree=Solution()
root=None
for i in range(T):
    data=int(raw_input())
    root=myTree.insert(root,data)
myTree.levelOrder(root)
```

Line: 23 Col: 34

Upload Code as File ☐ Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

✓ Test Case #0 ✓ Test Case #1 ✓ Test Case #2

Next Challenge

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