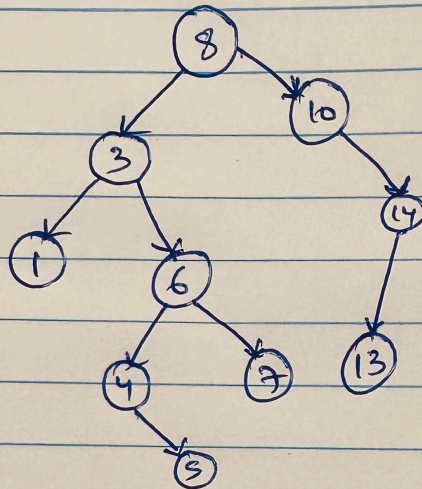


Week3-Q1

Homework-3 Q1

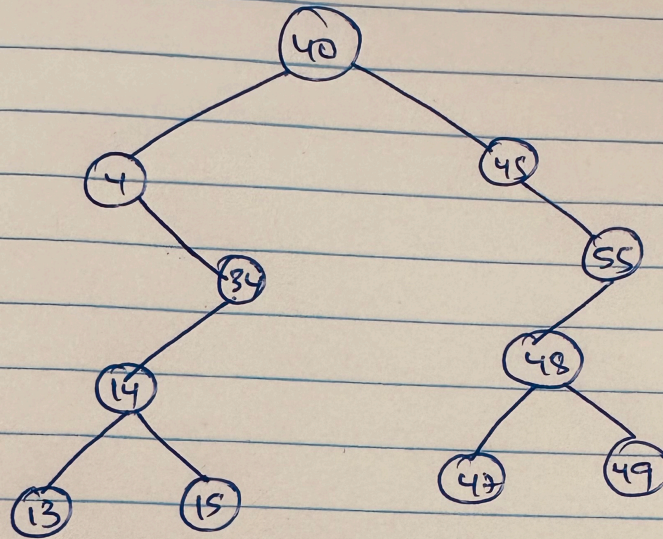


Inorder traversal $\Rightarrow 1, 3, 4, 5, 6, 7, 8, 10, 13, 14$

Pre order $\Rightarrow 8, 3, 1, 6, 4, 5, 7, 10, 14, 13$

Post Order $\Rightarrow 1, 5, 4, 7, 6, 3, 13, 14, 10, 8$





Inorder Traversal: 4, 13, 14, 15, 34, 40, 45, 47, 48, 49, 55
 Pre Order \Rightarrow 4, 14, 13, 15, 34, 40, 48, 47, 49, 55, 45
 Post Order \Rightarrow 13, 15, 14, 34, 4, 47, 49, 48, 55, 45, 40

```

class TreeNode:
    def __init__(self, val=0, left=None, right=None):
        self.val = val
        self.left = left
        self.right = right

def isSameTree(p: TreeNode, q: TreeNode) -> bool:
    if not p and not q:
        return True

    if not p or not q or p.val != q.val:
        return False

    return isSameTree(p.left, q.left) and isSameTree(p.right, q.right)

p = TreeNode(1)
p.left = TreeNode(2)
p.right = TreeNode(3)

q = TreeNode(1)
q.left = TreeNode(2)
q.right = TreeNode(3)

result = isSameTree(p, q)

print(result) # Output: True

p1 = TreeNode(1)
p1.left = TreeNode(2)

q1 = TreeNode(1)
q1.left = TreeNode(None)
q1.right = TreeNode(2)

result1 = isSameTree(p1, q1)

print(result1)

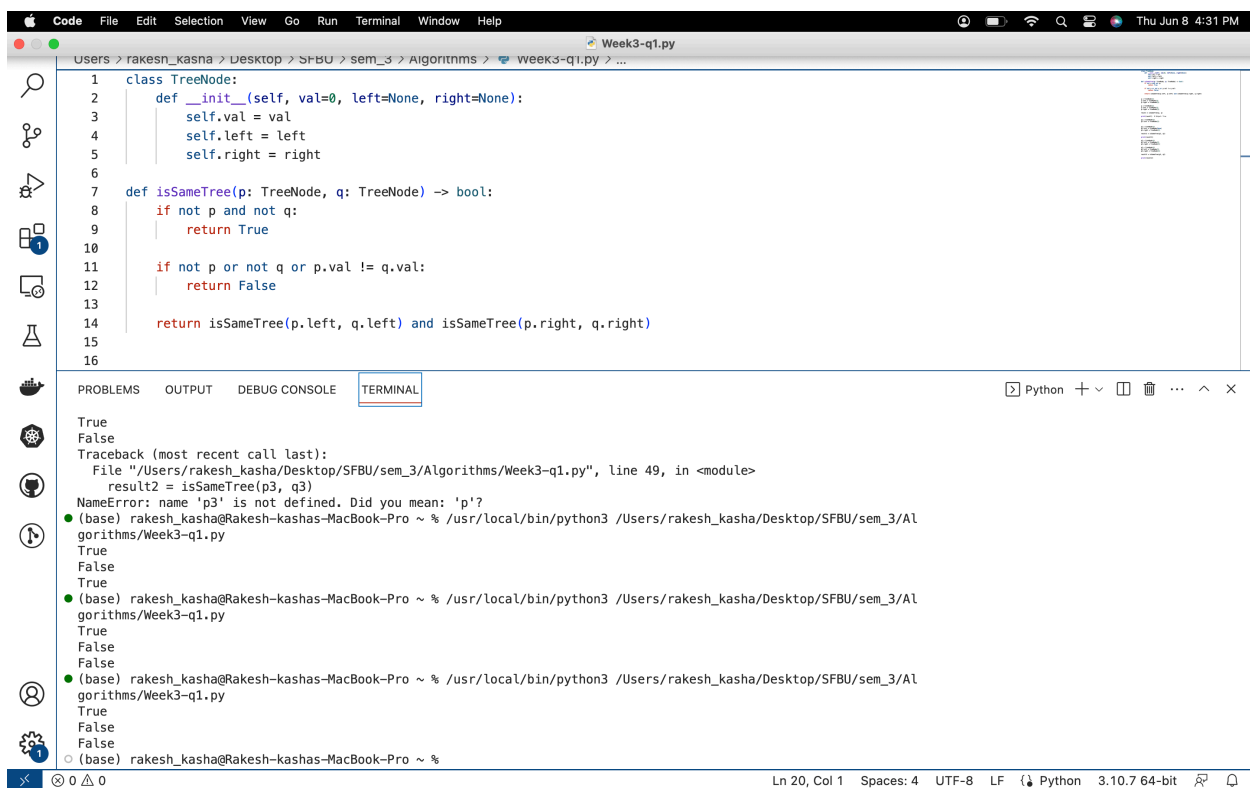
```

```
p2 = TreeNode(1)
p2.left = TreeNode(2)
p2.right = TreeNode(1)
```

```
q2 = TreeNode(1)
q2.left = TreeNode(1)
q2.right = TreeNode(1)
```

```
result2 = isSameTree(p2, q2)
```

```
print(result2)
```



The screenshot shows a VS Code editor window with a file named `Week3-q1.py`. The code defines a `TreeNode` class and an `isSameTree` function. The `isSameTree` function checks if two binary trees are identical by comparing their root values and recursively checking their left and right subtrees. The terminal output shows the execution of the script, which prints `True` and `False` for different tree configurations. A `NameError` is also shown, indicating that the variable `p3` is not defined.

```
1 class TreeNode:
2     def __init__(self, val=0, left=None, right=None):
3         self.val = val
4         self.left = left
5         self.right = right
6
7 def isSameTree(p: TreeNode, q: TreeNode) -> bool:
8     if not p and not q:
9         return True
10
11     if not p or not q or p.val != q.val:
12         return False
13
14     return isSameTree(p.left, q.left) and isSameTree(p.right, q.right)
15
16
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

True
False
Traceback (most recent call last):
 File "/Users/rakesh_kasha/Desktop/SFBU/sem_3/Algorithms/Week3-q1.py", line 49, in <module>
 result2 = isSameTree(p3, q3)
NameError: name 'p3' is not defined. Did you mean: 'p'?

● (base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ % /usr/local/bin/python3 /Users/rakesh_kasha/Desktop/SFBU/sem_3/Algorithms/Week3-q1.py
True
False
True
● (base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ % /usr/local/bin/python3 /Users/rakesh_kasha/Desktop/SFBU/sem_3/Algorithms/Week3-q1.py
True
False
False
● (base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ % /usr/local/bin/python3 /Users/rakesh_kasha/Desktop/SFBU/sem_3/Algorithms/Week3-q1.py
True
False
False
● (base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ %

Ln 20, Col 1 Spaces: 4 UTF-8 LF Python 3.10.7 64-bit