

Problem Statement -1 : Given a binary tree, write a program that will return true if the binary tree is a mirror image of itself, and false if it is not.

Input: Tree

The correct output given this binary tree would be true because it is symmetrical else false.

Code:

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

def isMirror(root1, root2):
    if root1 is None and root2 is None:
        return True
    if root1 is None or root2 is None:
        return False
    return (root1.val == root2.val) and isMirror(root1.left, root2.right) and
isMirror(root1.right, root2.left)

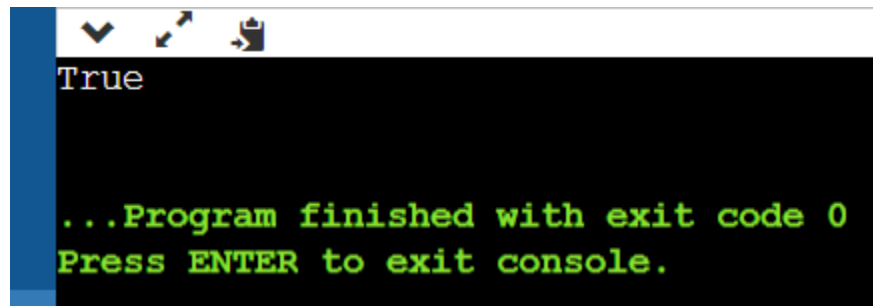
def isSymmetric(root):
    if root is None:
        return True
    return isMirror(root.left, root.right)

# Example usage
root = TreeNode(1)
```

```
root.left = TreeNode(2)
root.right = TreeNode(2)
root.left.left = TreeNode(3)
root.left.right = TreeNode(4)
root.right.left = TreeNode(4)
root.right.right = TreeNode(3)

print(isSymmetric(root))
```

OUTPUT:

A screenshot of a console window with a black background and a blue title bar. The title bar contains three icons: a checkmark, a magnifying glass, and a document. The console output shows the word "True" in white text. Below it, in green text, is the message "...Program finished with exit code 0" followed by "Press ENTER to exit console." on the next line.

```
True

...Program finished with exit code 0
Press ENTER to exit console.
```