Symmetric Tree

Given a binary tree, check whether it is a mirror of itself (ie, symmetric around its center).
For example, this binary tree [1,2,2,3,4,4,3] is symmetric:

```
    1
   / \
  2   2
 / \ / \
3  4 4  3
```

But the following [1,2,2,null,3,null,3] is not:

```
    1
   / \
  2   2
   \   \
    3   3
```

Maximum Depth of Binary Tree

Given a binary tree, find its maximum depth. The maximum depth is the number of nodes along the longest path from the root node down to the farthest leaf node.
Note: A leaf is a node with no children.
Example:
Given binary tree [3,9,20,null,null,15,7],

```
    3
   / \
  9  20
    /  \
   15   7
```

return its depth = 3.

Implement and test your code in the BinaryTree.java as flowing:

```
import java.util.LinkedList;
import java.util.Queue;
import java.util.Stack;

public class BinaryTree {
	public Node root;

	public static class Node {
		public int key;
		public Node left, right;
```

```
            public Node(int item) {
                  key = item;
                  left = right = null;
            }
      }

      Public int MaxDepth(Node node) {
            // place your code here
      }

      public boolean isSymmetric(Node node) {
            // place your code here
      }


      public static void main(String args[]) {
            BinaryTree tree = new BinaryTree();
            tree.root = new Node(1);
            tree.root.left = new Node(2);
            tree.root.right = new Node(2);
            tree.root.left.left = new Node(3);
            tree.root.left.right = new Node(4);
            tree.root.right.left = new Node(4);
            tree.root.right.right = new Node(3);
            boolean output = tree.isSymmetric(tree.root);
            if (output == true)
                  System.out.println("The given tree is Symmetric");
            else
                  System.out.println("The given tree is not Symmetric");

            System.out.println("Height of tree is : " +
      tree.MaxDepth(tree.root));

      }
}
```

The expected output of the code is as follows:

```
The given tree is Symmetric
Height of tree is : 3
```