Maximum Height of Binary Tree [LeetCode](https://leetcode.com/problems/maximum-depth-of-binary-tree/description/)

The program for finding the maximum height of a binary tree

Example:

13

/ \

15 1

/ \ \

7 8 9

/ \ \ /

11 16 17 91

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10

Output: The Maximum Height of Binary Tree: 5

**Approach 1: Function to find the maximum height of the binary tree recursively**

* In the **maxHeightRecursively** function, we calculate the maximum height of the binary tree recursively.
* If the tree is empty (root is null), its height is 0.
* We calculate the height of the left and right subtrees recursively and return the maximum of these heights, adding 1 for the current level.

**Time Complexity:** **O(N), where N is the number of nodes in the binary tree. We visit each node once.**

**Space Complexity:** **O(H), where H is the height of the binary tree due to the function call stack.**

**Approach 2: Function to find the maximum height of the binary tree iteratively**

* In the **maxHeightIteratively** function, we calculate the maximum height of the binary tree iteratively using a queue.
* We start with the root node and process levels.
* We enqueue all nodes at the current level and increment the height for each level.
* The final height is the maximum height of the tree.

**Time Complexity:** **O(N), where N is the number of nodes in the binary tree. We visit each node once.**

**Space Complexity:** **O(H), where H is the height of the binary tree due to creation of Queue.**