# Binary Tree Zigzag Level Order Traversal

This problem is similar to level order traversal, but with a twist: the order alternates between left-to-right and right-to-left at each level.

## Approach: BFS with Direction Flag:

1. Perform a normal BFS using a queue.
2. For each level:
   - Store nodes in a temporary vector.
   - If the current level needs to be reversed (zigzag), reverse the vector before adding it to the result.
3. Alternate the direction for the next level using a boolean flag.

## Complexity:

- Time: $O(n)$ — visit each node exactly once.
- Space: $O(n)$ - queue + result storage.