

103. Binary Tree Zigzag Level Order Traversal

题目描述:<https://leetcode.com/problems/binary-tree-zigzag-level-order-traversal/>

给定一棵二叉树，按照zig-zag的方式打印。

例如：

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

return its zigzag level order traversal as:

```
[
  [3],
  [20,9],
  [15,7]
]
```

解题思路：

bfs. queue. 每次处理一层

代码：

```

/**
 * Definition for a binary tree node.
 * struct TreeNode {
 *     int val;
 *     TreeNode *left;
 *     TreeNode *right;
 *     TreeNode(int x) : val(x), left(NULL), right(NULL) {}
 * };
 */
class Solution {
public:
    vector<vector<int>> zigzagLevelOrder(TreeNode* root) {
        queue<TreeNode*> q;
        vector<vector<int> > res;
        vector<int> tmp;
        bool flag = false;
        if(root == NULL) {
            return res;
        }
        q.push(root);
        while(!q.empty()) {
            int size = q.size();
            tmp.clear(); tmp.resize(size);
            for(int i = 0; i < size; i++) {
                TreeNode* tn = q.front();
                q.pop();
                int index = i;
                if(flag) {
                    index = size - i - 1;
                }
                tmp[index] = tn->val;
                if(tn->left != NULL) {
                    q.push(tn->left);
                }
                if(tn->right != NULL) {
                    q.push(tn->right);
                }
            }
            flag = !flag;
            res.push_back(tmp);
        }
        return res;
    }
};

```