

107. Binary Tree Level Order Traversal II

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

将一棵二叉树按照层次输出结果到一个vector中，要求按照从下到上，从左到右的顺序输出。

例如:

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

输出结果为[[15,7],[9,20],[3]]

解题思路:

BFS+reverse

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>> levelOrderBottom(TreeNode* root) {
        vector<vector<int>> v;
        vector<int> vv;
        queue<pair<TreeNode*, int>> q;
        if(root == NULL)
            return v;
        q.push(pair<TreeNode*, int>(root, 0));
        while(!q.empty()){
            pair<TreeNode*, int> top = q.front();
            if(top.first == NULL){
                q.pop();
                continue;
            }
            if(v.size() <= top.second)
                v.push_back(vv);
            v[top.second].push_back(top.first->val);
            q.pop();
            q.push(pair<TreeNode*, int>(top.first->left, top.second+1));
            q.push(pair<TreeNode*, int>(top.first->right, top.second+1));
        }
        reverse(v.begin(), v.end());
        return v;
    }
};
```