102. Binary Tree Level Order Traversal

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

给一个二叉树，按层输出树 例如：一颗二叉树为

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

输出结果为：[[3], [9,20], [15,7]]

解题思路：

BFS

代码：

```cpp
/**
 * 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>> levelOrder(TreeNode* root) {
        vector<vector<int> > res;
        if(root == NULL)
            return res;
        queue<pair<TreeNode*,int> > q;
        q.push(pair<TreeNode*,int> (root,1));
        while(!q.empty()){
            pair<TreeNode*,int> p = q.front();
            if(res.size() < p.second){
                vector<int> v;
                res.push_back(v);
            }
            res[p.second - 1].push_back(p.first->val);
            q.pop();
            if(p.first->left != NULL)
                q.push(pair<TreeNode*,int> (p.first->left,1+p.second));
            if(p.first->right != NULL)
                q.push(pair<TreeNode*,int> (p.first->right,1+p.second));
        }
        return res;
    }
};
```