



链滴

[每日 LeetCode] 637. Average of Levels in Binary Tree

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原文链接: <https://ld246.com/article/1559576193895>

来源网站: [链滴](#)

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Description:

Given a non-empty binary tree, return the average value of the nodes on each level in the form of an array.

Example 1:

Input:

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

Output: [3, 14.5, 11]

Explanation:

The average value of nodes on level 0 is 3, on level 1 is 14.5, and on level 2 is 11. Hence return [3, 14.5, 11].

Note:

1. The range of node's value is in the range of 32-bit signed integer.

思路：本题要求二叉树每层结点的平均值，返回此平均值数组。可借助[\[每日LeetCode\] 102. Binary Tree Level Order Traversal](#)层序遍历思想，对每层结点入队后进行求平均值操作，最后返回每层结点的平均值数组。

C++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<double> averageOfLevels(TreeNode* root) {
        vector<double> v;
        if(root == NULL)
            return v;
        queue<TreeNode*> q;
        vector<int> a;
        q.push(root);
        q.push(NULL);
        while(!q.empty())
```

```

{
    TreeNode* temp = q.front();
    q.pop();
    if(temp==NULL)
    {
        double sum=0;
        for(int i=0;i<a.size();i++)
            sum+=a[i];
        sum = sum/a.size();
        v.push_back(sum);
        a.clear();
        if(!q.empty())
            q.push(NULL);
    }
    else
    {
        a.push_back(temp->val);
        if(temp->left)
            q.push(temp->left);
        if(temp->right)
            q.push(temp->right);
    }
}
return v;
};

```

运行时间: 20ms

运行内存: 22M