

## 310. Minimum Height Trees

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题目描述: <https://leetcode.com/problems/minimum-height-trees/>

给定一个无环无向图，求出使得该图高度最小的根节点。

例如:

Example 1:

Given  $n = 4$ ,  $edges = [[1, 0], [1, 2], [1, 3]]$

```
  0
  |
  1
 / \
2   3
return [1]
```

Example 2:

Given  $n = 6$ ,  $edges = [[0, 3], [1, 3], [2, 3], [4, 3], [5, 4]]$

```
0  1  2
 \ | /
  3
  |
  4
  |
  5
return [3, 4]
```

解题思路:

按层次，依次删除根节点，直到剩余1or2个节点为止，剩下的节点就是根啦。

代码:

```

class Solution {
public:
    vector<int> findMinHeightTrees(int n, vector<pair<int, int>>& edges) {
        vector<unordered_set<int> > graph(n);
        vector<int> t;
        for(int i = 0; i < edges.size(); i++) {
            pair<int, int> e = edges[i];
            graph[e.first].insert(e.second);
            graph[e.second].insert(e.first);
        }
        while(n - t.size() > 2) {
            vector<int> k; // leaf nodes
            for(int i = 0; i < graph.size(); i++) {
                if(graph[i].size() == 1) {
                    k.push_back(i)
                }
            }
            for(int i = 0; i < k.size(); i++) {
                for(auto item: graph[i]) {
                    graph[item].erase(i);
                }
            }
            t = k;
        }
        return t;
    };
};

```