261. Graph Valid Tree

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Question

Total Accepted: **7941**   Total Submissions: **25931**   Difficulty: **Medium**

Given `n` nodes labeled from `0` to `n − 1` and a list of undirected edges (each edge is a pair of nodes), write a function to check whether these edges make up a valid tree.

For example:

Given `n = 5` and `edges = [[0, 1], [0, 2], [0, 3], [1, 4]]`, return `true`.

Given `n = 5` and `edges = [[0, 1], [1, 2], [2, 3], [1, 3], [1, 4]]`, return `false`.

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Note: you can assume that no duplicate edges will appear in `edges`. Since all edges are undirected, `[0, 1]` is the same as `[1, 0]` and thus will not appear together in `edges`.

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C++ ⬍

↻

```
1   class Solution {
2
3       void dfs(vector<vector<int>>& adjacencyList, vector<bool>& vertexMark
4           for (int neighbor: adjacencyList[curVertex]) {
5               if (vertexMarks[neighbor] == 0) {
6                   vertexMarks[neighbor] = 1;
7                   dfs(adjacencyList, vertexMarks, neighbor);
8               }
```

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```
 9              }
10          }
11   public:
12       bool validTree(int n, vector<pair<int, int>>& edges) {
13           vector<vector<int>> adjacencyList(n);
14           if (edges.size() != n-1) return false;
15           for (auto& p: edges) {
16               adjacencyList[p.first].push_back(p.second);
17               adjacencyList[p.second].push_back(p.first);
18           }
19           vector<bool> vertexMarks(n, false);
20           vertexMarks[0] = 1;
21           dfs(adjacencyList, vertexMarks, 0);
22           for (int i=1; i<n; i++) {
23               if (vertexMarks[i] == 0)
24                   return false;
25           }
26           return true;
27       }
28   };
```

Custom Testcase ☐

<div style="text-align:right">

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