1257. Smallest Common Region

Medium 379 29 Add to List Share

You are given some lists of `regions` where the first region of each list includes all other regions in that list.

Naturally, if a region `x` contains another region `y` then `x` is bigger than `y`. Also, by definition, a region `x` contains itself.

Given two regions: `region1` and `region2`, return *the smallest region that contains both of them*.

If you are given regions `r1`, `r2`, and `r3` such that `r1` includes `r3`, it is guaranteed there is no `r2` such that `r2` includes `r3`.

It is guaranteed the smallest region exists.

Example 1:

```
Input:
regions = [["Earth","North America","South America"],
["North America","United States","Canada"],
["United States","New York","Boston"],
["Canada","Ontario","Quebec"],
["South America","Brazil"]],
region1 = "Quebec",
region2 = "New York"
Output: "North America"
```

Example 2:

```
Input: regions = [["Earth", "North America", "South America"],["North America",
"United States", "Canada"],["United States", "New York", "Boston"],["Canada",
"Ontario", "Quebec"],["South America", "Brazil"]], region1 = "Canada", region2 =
"South America"
Output: "Earth"
```

Constraints:

- `2 <= regions.length <= 10^4`
- `2 <= regions[i].length <= 20`
- `1 <= regions[i][j].length, region1.length, region2.length <= 20`
- `region1 != region2`
- `regions[i][j]`, `region1`, and `region2` consist of English letters.

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```cpp
class Solution {
public:
    string findSmallestRegion(vector<vector<string>>& regions, string region1, string region2) {

 unordered_map<string,string>mp;

        for(int i=0;i<regions.size();i++)
        {
            for(int j=1;j<regions[i].size();j++)
            {
                mp[regions[i][j]] = regions[i][0];
            }
        }

        unordered_set<string>s;

        while(1)
        {

 if(mp.find(region1)!=mp.end())
            {
                s.insert(region1);
                region1 = mp[region1];
            }
            else
            {
                s.insert(region1);
                break;
            }
        }

        while(1)
        {

 if(s.find(region2)!=s.end())
                return region2;
            else if(mp.find(region2)!=mp.end())
            {
                region2 = mp[region2];
            }
            else
                break;
        }

        return "";
    }
};
```

NEW

Testcase Run Code Result Debugger

Accepted Runtime: 0 ms

Your input [["zDkA","GfAj","lt"], ["GfAj","rtupD","og","l"],

Output "GfAj" Diff

Expected "GfAj"

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