1257. Smallest Common Region Premium

Medium | Topics | Companies | Hint

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.

Seen this question in a real interview before? 1/5

Yes No

Accepted 31K | Submissions 45.6K | Acceptance Rate 68.0%

Topics

Array Hash Table String Tree Depth-First Search Breadth-First Search

Companies

0 - 3 months

Airbnb 2

0 - 6 months

TikTok 2

Hint 1

Try to model the problem as a graph problem.

Hint 2

The given graph is a tree.

Hint 3

The problem is reduced to finding the lowest common ancestor of two nodes in a tree.

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