

MAKE NAMI-SAN HAPPY

As members of the Straw Hat Pirates, our ship unexpectedly struck an island filled with diamond mines. Among the excitement, Nami-san, eager for treasure, realized not all diamonds were valuable. Only those matching the Kohinoor's structure held real worth.

Our job was clear: sift through the diamonds represented as strings in the "diamonds" array, and find matches to the Kohinoor, also given as a string.

We carefully compared each diamond to the Kohinoor's description. Any match was collected into a bag for Nami-san, who awaited the valuable finds.

We navigated the challenge posed by the island's riches, ensuring only the most precious diamonds, like the legendary Kohinoor, reached Nami-san. Each string in the "diamonds" array was checked to make sure our collection was worthy of her discerning eye.

As the sun set, we stood ready with our bag of treasures, knowing our efforts would pay off in the Straw Hat Pirates' grand adventure.

Input Format:

you are given an array “diamonds” consist of strings(strings represents structure of each diamond).

you are given a structure in form of string named “kohinoor”,which the the master pattern.

Output Format:

you have to return an array of strings.(structures that have same structure as kohinoor).

Input: words = ["abc","deq","mee","aqq","dkd","ccc"], pattern = "abb"

Output: ["mee","aqq"]

Explanation: "mee" matches the pattern because there is a permutation {a -> m, b -> e, ...}.

"ccc" does not match the pattern because {a -> c, b -> c, ...} is not a permutation, since a and b map to the same letter.

Input: words = ["a","b","c"], pattern = "a"

Output: ["a","b","c"]

Testcases:

Input: words = ["ab","sv","c"], pattern = "a"

Output: ["c"]

Input: words = ["abc","bed","cff"], pattern = "xyz"

Output: ["abc","bed"]

Input: words = ["aabb","bbaa","abab"], pattern = "ppqq"

Output: ["aabb","bbaa"]

Input: words = ["deeeef","lmmmn","pqr","zcccz","fdfd"], pattern = "bffffb"

Output: ["deeeef","lmmmn","zcccz"]

Input: words = ["c","aaaaa","d","ef","rrrrr","ghi"], pattern = "pppppp"

Output: ["aaaaa","rrrrr",]

Input: words = ["qs","rtd","ritik","is","op","you","know","ijijij"], pattern = "lellee"

Output: ["ijijij","b","c"]

Input: words = ["abcd","efg","hij","k","lmo","p","q","restuvwxyz"], pattern = "aa"

Output: []

Input: words = ["luffy","is","king"], pattern = "abccd"

Output: ["luffy"]

Input: words = ["dod","pod","lod","pop","tat","mat","pat"], pattern = "heh"

Output: ["dod","pop","tat"]

Input: words = ["a","bcdef","c","pqrst","heha","ghijk","kullu"], pattern = "qmzyf"

Output: ["bcdef","pqrst","ghijk"]

Input: words = ["jinga","lala","hu","jinga","lala","hu","jinga","lala","hu","hu","hu"], pattern = "ab"

Output: ["hu","hu","hu","hu","hu"]

CPP CODE:

```
vector<string> findDiamonds(vector<string>& diamonds, string kohinoor) {
    vector<string> result;

    for (int i = 0; i < diamonds.size(); ++i) {
        unordered_map<char, char> kohinoor_to_diamond; // Maps characters from kohinoor
to current diamond
        unordered_map<char, char> diamond_to_kohinoor; // Maps characters from current
diamond to kohinoor
        string current_diamond = diamonds[i];
        bool match = true;

        for (int j = 0; j < current_diamond.size(); ++j) {
            // Check kohinoor to current_diamond mapping
            if (kohinoor_to_diamond.find(kohinoor[j]) != kohinoor_to_diamond.end()) {
                if (kohinoor_to_diamond[kohinoor[j]] != current_diamond[j]) {
                    match = false;
                    break;
                }
            }

            // Check current_diamond to kohinoor mapping
            if (diamond_to_kohinoor.find(current_diamond[j]) != diamond_to_kohinoor.end()) {
                if (diamond_to_kohinoor[current_diamond[j]] != kohinoor[j]) {
                    match = false;
                    break;
                }
            }

            // Establish mappings
            kohinoor_to_diamond[kohinoor[j]] = current_diamond[j];
            diamond_to_kohinoor[current_diamond[j]] = kohinoor[j];
        }

        if (match) {
            result.push_back(current_diamond);
        }
    }

    return result;
}
```

JAVA CODE:

```
public List<String> findDiamonds(List<String> diamonds, String kohinoor) {
    List<String> result = new ArrayList<>();

    for (String currentDiamond : diamonds) {
        Map<Character, Character> kohinoorToDiamond = new HashMap<>(); // Maps characters
from kohinoor to current diamond
        Map<Character, Character> diamondToKohinoor = new HashMap<>(); // Maps characters
from current diamond to kohinoor
        boolean match = true;

        for (int j = 0; j < currentDiamond.length(); ++j) {
            char kohinoorChar = kohinoor.charAt(j);
            char diamondChar = currentDiamond.charAt(j);

            // Check kohinoor to currentDiamond mapping
            if (kohinoorToDiamond.containsKey(kohinoorChar)) {
                if (kohinoorToDiamond.get(kohinoorChar) != diamondChar) {
                    match = false;
                    break;
                }
            }

            // Check currentDiamond to kohinoor mapping
            if (diamondToKohinoor.containsKey(diamondChar)) {
                if (diamondToKohinoor.get(diamondChar) != kohinoorChar) {
                    match = false;
                    break;
                }
            }

            // Establish mappings
            kohinoorToDiamond.put(kohinoorChar, diamondChar);
            diamondToKohinoor.put(diamondChar, kohinoorChar);
        }

        if (match) {
            result.add(currentDiamond);
        }
    }

    return result;
}
```