Problem 2306: Naming a Company

Problem Information

Difficulty: Hard
Acceptance Rate: 46.45%
Paid Only: No
Tags: Array, Hash Table, String, Bit Manipulation, Enumeration

Problem Description

You are given an array of strings `ideas` that represents a list of names to be used in the process of naming a company. The process of naming a company is as follows:

1. Choose 2 **distinct** names from `ideas`, call them `ideaA` and `ideaB`. 2. Swap the first letters of `ideaA` and `ideaB` with each other. 3. If **both** of the new names are not found in the original `ideas`, then the name `ideaA ideaB` (the **concatenation** of `ideaA` and `ideaB`, separated by a space) is a valid company name. 4. Otherwise, it is not a valid name.

Return _the number of**distinct** valid names for the company_.

Example 1:

Input: ideas = ["coffee","donuts","time","toffee"] **Output:** 6 **Explanation:** The following selections are valid: - ("coffee", "donuts"): The company name created is "doffee conuts". - ("donuts", "coffee"): The company name created is "conuts doffee". - ("donuts", "time"): The company name created is "tonuts dime". - ("donuts", "toffee"): The company name created is "tonuts doffee". - ("time", "donuts"): The company name created is "dime tonuts". - ("toffee", "donuts"): The company name created is "doffee tonuts". Therefore, there are a total of 6 distinct company names. The following are some examples of invalid selections: - ("coffee", "time"): The name "toffee" formed after swapping already exists in the original array. - ("time", "toffee"): Both names are still the same after swapping and exist in the original array. - ("coffee", "toffee"): Both names formed after swapping already exist in the original array.

Example 2:

Input: ideas = ["lack","back"] **Output:** 0 **Explanation:** There are no valid selections. Therefore, 0 is returned.

Constraints:

* `2 <= ideas.length <= 5 * 104` * `1 <= ideas[i].length <= 10` * `ideas[i]` consists of lowercase English letters. * All the strings in `ideas` are **unique**.

Code Snippets

C++:

```
class Solution {
public:
long long distinctNames(vector<string>& ideas) {

}
};
```

Java:

```
class Solution {
public long distinctNames(String[] ideas) {

}
}
```

Python3:

```
class Solution:
def distinctNames(self, ideas: List[str]) -> int:
```