

2306. Naming a Company

My Submissions (/contest/weekly-contest-297/problems/naming-a-company/submissions/)

Back to Contest (/contest/weekly-contest-297/)

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:

User Accepted:	570
User Tried:	2930
Total Accepted:	664
Total Submissions:	5900
Difficulty:	Hard

- Choose 2 **distinct** names from `ideas`, call them `ideaA` and `ideaB`.
- Swap the first letters of `ideaA` and `ideaB` with each other.
- 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.
- 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**.

Discuss (https://leetcode.com/problems/naming-a-company/discuss)

JavaScript


```
1 const ord = (c) => c.charCodeAt();
2 const charIthBitValue = (c) => 1 << ord(c) - 97;
3 const checkIthBit = (x, i) => x & (1 << i);
4
5 const distinctNames = (ideas) => {
6   let m = new Map(), res = 0;
7   for (const s of ideas) {
8     let r = s.slice(1);
9     m.set(r, (m.get(r) || 0) + charIthBitValue(s[0]));
10  };
11  for (let i = 0; i < 26; i++) {
12    for (let j = i + 1; j < 26; j++) {
13      let a = 0, b = 0;
14      for (const [x] of m) {
```

```
15         if (checkIthBit(x, i) && !checkIthBit(x, j)) a++;
16         if (checkIthBit(x, j) && !checkIthBit(x, i)) b++;
17     }
18     res += a * b;
19 }
20 }
21 return res * 2;
22 };
```

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