

# 1744. Number of Ways to Form a Target String Given a Dictionary

## Difficulty : Hard

<https://leetcode.com/problems/number-of-ways-to-form-a-target-string-given-a-dictionary>

You are given a list of strings of the **same length** words and a string target.

Your task is to form target using the given words under the following rules:

- target should be formed from left to right.
- To form the  $i^{\text{th}}$  character (**0-indexed**) of target, you can choose the  $k^{\text{th}}$  character of the  $j^{\text{th}}$  string in words if  $\text{target}[i] = \text{words}[j][k]$ .
- Once you use the  $k^{\text{th}}$  character of the  $j^{\text{th}}$  string of words, you **can no longer** use the  $x^{\text{th}}$  character of any string in words where  $x \leq k$ . In other words, all characters to the left of or at index  $k$  become unusable for every string.
- Repeat the process until you form the string target.

**Notice** that you can use **multiple characters** from the **same string** in words provided the conditions above are met.

Return *the number of ways to form target from words*. Since the answer may be too large, return it **modulo**  $10^9 + 7$ .

### Example 1:

**Input:** words = ["acca","bbbb","caca"], target = "aba"

**Output:** 6

**Explanation:** There are 6 ways to form target.

"aba" -> index 0 ("a~~c~~ca"), index 1 ("b~~b~~bb"), index 3 ("caca~~a~~")  
"aba" -> index 0 ("a~~c~~ca"), index 2 ("bb~~b~~b"), index 3 ("cac~~a~~")  
"aba" -> index 0 ("a~~c~~ca"), index 1 ("b~~b~~bb"), index 3 ("acc~~a~~")  
"aba" -> index 0 ("a~~c~~ca"), index 2 ("bb~~b~~b"), index 3 ("acc~~a~~")  
"aba" -> index 1 ("c~~a~~ca"), index 2 ("bb~~b~~b"), index 3 ("acc~~a~~")  
"aba" -> index 1 ("c~~a~~ca"), index 2 ("bb~~b~~b"), index 3 ("cac~~a~~")

### Example 2:

**Input:** words = ["abba","baab"], target = "bab"

**Output:** 4

**Explanation:** There are 4 ways to form target.

"bab" -> index 0 ("b~~a~~ab"), index 1 ("b~~a~~ab"), index 2 ("ab~~b~~a")  
"bab" -> index 0 ("b~~a~~ab"), index 1 ("b~~a~~ab"), index 3 ("baa~~b~~")  
"bab" -> index 0 ("b~~a~~ab"), index 2 ("ba~~a~~b"), index 3 ("baa~~b~~")  
"bab" -> index 1 ("a~~b~~ba"), index 2 ("ba~~a~~b"), index 3 ("baa~~b~~")

### Constraints:

- $1 \leq \text{words.length} \leq 1000$
- $1 \leq \text{words}[i].\text{length} \leq 1000$
- All strings in words have the same length.
- $1 \leq \text{target.length} \leq 1000$
- words[i] and target contain only lowercase English letters.