Problem 2266: Count Number of Texts

Problem Information

Difficulty: Medium
Acceptance Rate: 49.47%
Paid Only: No
Tags: Hash Table, Math, String, Dynamic Programming

Problem Description

Alice is texting Bob using her phone. The **mapping** of digits to letters is shown in the figure below.

In order to **add** a letter, Alice has to **press** the key of the corresponding digit `i` times, where `i` is the position of the letter in the key.

* For example, to add the letter `'s'`, Alice has to press `'7'` four times. Similarly, to add the letter `'k'`, Alice has to press `'5'` twice. * Note that the digits `'0'` and `'1'` do not map to any letters, so Alice **does not** use them.

However, due to an error in transmission, Bob did not receive Alice's text message but received a **string of pressed keys** instead.

* For example, when Alice sent the message `"bob"`, Bob received the string `"2266622"`.

Given a string `pressedKeys` representing the string received by Bob, return _the**total number of possible text messages** Alice could have sent_.

Since the answer may be very large, return it **modulo** `109 + 7`.

Example 1:

Input: pressedKeys = "22233" **Output:** 8 **Explanation:** The possible text messages Alice could have sent are: "aaadd", "abdd", "badd", "cdd", "aaae", "abe", "bae", and "ce".

Since there are 8 possible messages, we return 8.

Example 2:

Input: pressedKeys = "22222222222222222222222222222222222222" **Output:** 82876089 **Explanation:** There are 2082876103 possible text messages Alice could have sent. Since we need to return the answer modulo 109 + 7, we return 2082876103 % (109 + 7) = 82876089.

Constraints:

* `1 <= pressedKeys.length <= 105` * `pressedKeys` only consists of digits from `'2'` \- `'9'`.

Code Snippets

C++:

```
class Solution {
public:
int countTexts(string pressedKeys) {

}
};
```

Java:

```
class Solution {
public int countTexts(String pressedKeys) {

}
}
```

Python3:

```
class Solution:
def countTexts(self, pressedKeys: str) -> int:
```