Problem 1220: Count Vowels Permutation

Problem Information

Difficulty: Hard
Acceptance Rate: 61.40%
Paid Only: No
Tags: Dynamic Programming

Problem Description

Given an integer `n`, your task is to count how many strings of length `n` can be formed under the following rules:

* Each character is a lower case vowel (`'a'`, `'e'`, `'i'`, `'o'`, `'u'`) * Each vowel `'a'` may only be followed by an `'e'`. * Each vowel `'e'` may only be followed by an `'a'` or an `'i'`. * Each vowel `'i'` **may not** be followed by another `'i'`. * Each vowel `'o'` may only be followed by an `'i'` or a `'u'`. * Each vowel `'u'` may only be followed by an `'a'`.

Since the answer may be too large, return it modulo `10^9 + 7`.

Example 1:

Input: n = 1 **Output:** 5 **Explanation:** All possible strings are: "a", "e", "i" , "o" and "u".

Example 2:

Input: n = 2 **Output:** 10 **Explanation:** All possible strings are: "ae", "ea", "ei", "ia", "ie", "io", "iu", "oi", "ou" and "ua".

**Example 3: **

Input: n = 5 **Output:** 68

Constraints:

* `1 <= n <= 2 * 10^4`

Code Snippets

C++:

```
class Solution {
public:
int countVowelPermutation(int n) {

}
};
```

Java:

```
class Solution {
public int countVowelPermutation(int n) {

}
}
```

Python3:

```
class Solution:
def countVowelPermutation(self, n: int) -> int:
```