

Problem 1641: Count Sorted Vowel Strings

Problem Information

Difficulty: Medium

Acceptance Rate: 79.10%

Paid Only: No

Tags: Math, Dynamic Programming, Combinatorics

Problem Description

Given an integer n , return the number of strings of length n that consist only of vowels (`a`, `e`, `i`, `o`, `u`) and are **lexicographically sorted**.

A string s is **lexicographically sorted** if for all valid i , $s[i]$ is the same as or comes before $s[i+1]$ in the alphabet.

Example 1:

Input: $n = 1$ **Output:** 5 **Explanation:** The 5 sorted strings that consist of vowels only are `["a", "e", "i", "o", "u"]`.

Example 2:

Input: $n = 2$ **Output:** 15 **Explanation:** The 15 sorted strings that consist of vowels only are `["aa", "ae", "ai", "ao", "au", "ee", "ei", "eo", "eu", "ii", "io", "iu", "oo", "ou", "uu"]`. Note that `"ea"` is not a valid string since `'e'` comes after `'a'` in the alphabet.

Example 3:

Input: $n = 33$ **Output:** 66045

Constraints:

$1 \leq n \leq 50$

Code Snippets

C++:

```
class Solution {  
public:  
    int countVowelStrings(int n) {  
  
    }  
};
```

Java:

```
class Solution {  
    public int countVowelStrings(int n) {  
  
    }  
}
```

Python3:

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