Problem 552: Student Attendance Record II

Problem Information

Difficulty: Hard
Acceptance Rate: 56.20%
Paid Only: No
Tags: Dynamic Programming

Problem Description

An attendance record for a student can be represented as a string where each character signifies whether the student was absent, late, or present on that day. The record only contains the following three characters:

* `'A'`: Absent. * `'L'`: Late. * `'P'`: Present.

Any student is eligible for an attendance award if they meet **both** of the following criteria:

* The student was absent (`'A'`) for **strictly** fewer than 2 days **total**. * The student was **never** late (`'L'`) for 3 or more **consecutive** days.

Given an integer `n`, return _the**number** of possible attendance records of length_ `n` _that make a student eligible for an attendance award. The answer may be very large, so return it**modulo** _`109 + 7`.

Example 1:

Input: n = 2 **Output:** 8 **Explanation:** There are 8 records with length 2 that are eligible for an award: "PP", "AP", "PA", "LP", "PL", "AL", "LA", "LL" Only "AA" is not eligible because there are 2 absences (there need to be fewer than 2).

Example 2:

Input: n = 1 **Output:** 3

Example 3:

Input: n = 10101 **Output:** 183236316

Constraints:

* `1 <= n <= 105`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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