552. Student Attendance Record II

Difficulty : Hard

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*** $10^9 + 7$.

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:

- $1 <= n <= 10^5$