

Problem G. Required Substring

Time limit 1000 ms

Mem limit 524288 kB

Your task is to calculate the number of strings of length n having a given pattern of length m as their substring. All strings consist of characters A–Z.

Input

The first input line has an integer n : the length of the final string.

The second line has a pattern of length m .

Output

Print the number of strings modulo $10^9 + 7$.

Constraints

- $1 \leq n \leq 1000$
- $1 \leq m \leq 100$

Explanation: The final string will be of the form ABCDB x or x ABCDB where x is any character between A–Z.

Sample

Input	Output
6 ABCDB	52