Three Friends

Three friends like to play the following game. The first friend chooses a string S. Then the second friend constructs a new string T that consists of two copies of the string S. Finally, the third friend inserts one letter at the beginning, the end or somewhere inside the string T, thereby creating a string U.

Task

You are given the string U and your task is to reconstruct the original string S.

Input

The first line of the input contains N, the length of the final string U. The string U itself is given on the second line. It consists of N uppercase English letters (A, B, C, ..., Z).

Output

Your program should print the original string S. However, there are two exceptions:

1. If the final string U could not have been created using the above procedure, you should print `NOT POSSIBLE`.
2. If the original string S is not unique, you should print `NOT UNIQUE`.

Examples

Input	Output
7 ABXCABC	ABC

Input	Output
6 ABCDEF	NOT POSSIBLE

Input	Output
9 ABABABABA	NOT UNIQUE

Scoring

Subtask 1 (35 points): $1 \leq N \leq 2001$.

Subtask 2 (65 points): $1 \leq N \leq 2000001$.

Constraints

Time limit: 0.5 s.

Memory limit: 256 MB.