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 the length of the final string N. The string 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. However, there are two exceptions:

1. If it is not possible that the final string is created using the above procedure, you should print NOT POSSIBLE.

2. If the original string 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): $2 \leq N \leq 2001$.

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

Constraints

Time limit: 0.5 s.

Memory limit: 256 MB.