Liars and Saints (Junior)

SEASON 6 – ROUND SIX – 100 points

Invacho and his crew are sitting around a **round** table at the local pub. Each of them is either a saint, who always says true statements, or a liar, who always says untrue statements. At the same time each one of them says a single statement - "The person to my left is a liar and the person to my right is a saint". Your task is, given a certain configuration of people, to check if it is valid, i.e. does it lead to a logical contradiction with the rules.

Input

The first row of the file `liars.in` contains an integer **N** – the number of people sitting round the table.

The next row contains a string, denoting the order, in which the people are sitting. Saints are denoted by an **"S"**, and liars by an **"L"**.

Output

In the output file `liars.out` print either **"INVALID"** or **"OK"** if the given configuration leads or doesn't lead to a logical contradiction.

Constraints

$2 \leq N \leq 10000$

Time limit: 0.5 sec
Memory limit: 256 MB

Example test

Input (liars.in)	Output (liars.out)
12 SSLLSLSLLLSS	/Output intentionally omitted/