

Problem B. C++ vs. Java

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

C++ is better and faster than Java!

This is one of the most controversial topics in the universe! and Eonics developers community is no exception...

You can always witness an argument between two developers there where you hear things like: *You don't control your pointers in Java! nor you have structs, haha!*, and *Well good luck compiling your code on different platforms!*. You can watch some really intense arguments, where one of the sides can't say any more words, but you can also be present in a discussion where both sides give strong arguments.

Something to note however, is that Python programmers are always quite and are content with just watching, because they realize that they code in a very slow (turtle speed) language.

One day, developers of Eonics were standing in one line, next to each other; so **Nasreddine** took a picture of them, labeled every one of them with his preferred programming language, and sent the picture to his friend **Nesrine**, and asked her to find out, who are the developers that will win the argument of the topic *C++ vs. Java*.

To determine that, there are 4 rules:

- A developer will **lose** an argument if and only if he is standing **between two developers** that like a different language than him.
- A developer will **win** an argument if and only if he **didn't lose an argument** and he's **next to a losing** developer that likes a different language than him.
- Rest of cases are considered a draw.

You're given labels of each developer in the order they appear in the picture that **Nasreddine** has sent to **Nesrine**, can you find out the state of each one? (winning, losing or draw).

Input

The first line of input contains a single integer n , the number of developers in the picture. $1 \leq n \leq 10^5$. The second line contains a string of length n , formed by the two characters 'J' and 'C' representing Java or C++ programmers respectively.

Output

Output n lines, the i_{th} line should contain the state of the i_{th} programmer in the picture ("winning" or "losing" or "draw").

Example

standard input	standard output
5	winning
JCJCC	losing
	losing
	winning
	draw