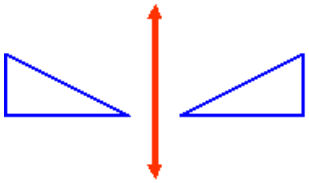
Problem 19: Reflection



Difficulty: Medium

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Problem Background

Reflections – you deal with them on a daily basis when you look in the mirror or drive a car. In your math classes, you may have dealt with functions that get reflected. Today, we will be dealing with pictures that will be reflected (sort of).

Problem Description

You will be given a picture built out of ASCII characters, and you will be asked to build the reflection of the picture you are given in one of three ways:

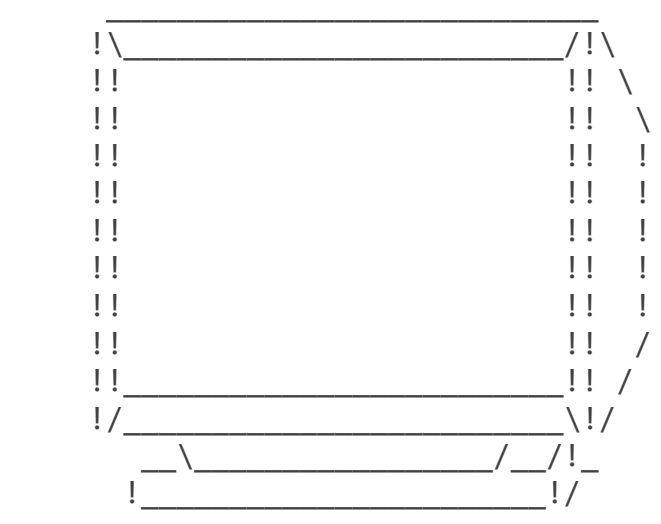
- Around the x axis: for this type of reflection, you will flip the picture up and down. Be careful not to add extra spaces at the ends of lines during this type of reflection.
- Around the y axis: for this type of reflection, you will flip the picture left and right. Since the starting picture will be left justified, your reflected picture should be right justified.
- Around the line y=x: for this type of reflection, the x values and y values are switched. This type of reflection is how you find the inverse of a function in mathematics. For our purposes, the origin will be the top left of the picture.

Sample Input

The first line of your program's input, received from the standard input channel, will contain a positive integer representing the number of test cases. Each test case will include:

- A positive number N representing how tall the picture is.
- N lines, containing the picture. The lines may vary in length, so you will need to take this into account when preforming the reflection.
- The last line of the test case will contain one of these three strings:
    - X – if you should reflect the picture up and down.
    - Y – if you should reflect the picture left and right.
    - INVERSE – if you should switch the x and y values.

```
3
19
```



```
X
6
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```
Y
8
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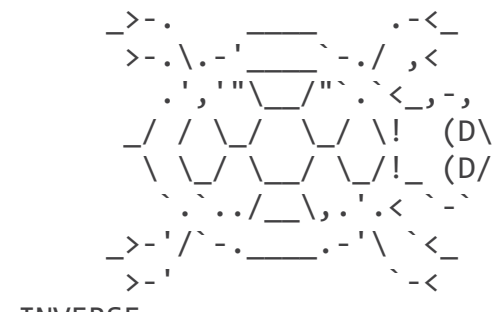

```
INVERSE
```

Sample Output

Your program should print the appropriate picture after the specified reflection.