

An echo server or echo process will respond to the sent message directly by that message. Some applications may require further reversing each sent message, so that each message is a inversion of what is sent. Your goal is to write an echo server with two modes: one is to echo the sent message, and the other is to reverse the sent message. Please handle the two modes in two **recursive** functions.

Input

The input has several cases and ends with a single character O. Each case contains a character and a string of characters. The first character represent the mode of the echo server: an 'E' is to echo the message, and an 'R' is to reverse the message. The string which follows the character 'E' or 'R' is the message to handle.

Output

For each case, output the message according to the mode in a separate line.

Sample Input

```
E Hello
R ereht
O
```

Sample Output

```
Hello
there
```