

# Hello Kitty

Kitty sends a kind of original email messages to her friend Garf. To write a message, she chooses a word  $W$  and a number  $n$  and replicates  $W$   $n$  times horizontally. Then she repeats this string in the next line, but rotating the characters once to the left. And she repeats this 'rotate-and-output' process until the word  $W$  appears displayed as the first column of the rectangular pattern that she produces. As an example, when she chooses the word Hello and the number 3, she gets the pattern:

```
HelloHelloHello
elloHelloHelloH
lloHelloHelloHe
loHelloHelloHel
oHelloHelloHell
```

Kitty has been sending such emails during the last three years. Recently, Garf told her that perhaps her work may be automatized with a software to produce Kitty's patterns. Could you help her?

## Input

The input contains several test cases, each one of them in a separate line. Each test case has a word and a positive integer that should generate the corresponding rectangular pattern. The word is a string of alphabetic characters (a..z). The number is less than 10.

A line whose contents is a single period character means the end of the input (this last line is not to be processed).

## Output

Output texts for each input case are presented in the same order that input is read. For each test case the answer must be a left aligned Kitty pattern corresponding to the input.

## Example

### Input:

```
Love 1
Kitty 2
```

.

### Output:

```
Love
oveL
veLo
eLov
KittyKitty
ittyKittyK
ttyKittyKi
tyKittyKit
yKittyKitt
```

