3. TAJNA

Every evening, little Ivica sends secret messages to little Marica through e-mail. Knowing Ivica's e-letter travels unguarded through the network on its way to Marica's e-mailbox, they have decided to encrypt every message using the following algorithm:

- Suppose Ivica's message consists of N characters.
- Ivica must first find a matrix consisting of R rows and C columns **such that R ≤ C** and R·C = N. If there is more than one such matrix, Ivica chooses the one with the most rows.
- Ivica writes his message into the matrix in row-major order. In other words, he writes the first segment of the message into the first row, the second segment into the second row and so on.
- The message he sends to Marica is the matrix read in column-major order.

Marica has grown tired of spending her precious time deciphering Ivica's messages, so you must write a program to do it for her.

Input

The input contains the received message, a string of lowercase letters of the English alphabet (with no spaces).

The number of letters will be between 1 and 100.

Output

Output the original (decrypted) message.

Sample test data

input	**input**	**input**
bok	koaski	boudonuimilcbsai
output	**output**	**output**
bok	kakosi	bombonisuuladici

Third sample test:

Ivica wants to send the message "bombonisuuladici" containing 16 letters. He can use a 1×16, 2×8 or 4×4 matrix. Of these, the 4×4 has the most rows. When the message is written into it, the matrix looks like this:

b	o	m	b
o	n	i	s
u	u	l	a
d	i	c	i