COCI '07 Contest 3 #3 Tajna

Time limit: 1.0s **Memory limit:** 32M

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** $R \leq C$ and $R \times C = N$. 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 Specification

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 Specification

Output the original (decrypted) message.

Sample Input 1

```
bok
```

Sample Output 1

```
bok
```

Sample Input 2

```
koaski
```

Sample Output 2

```
kakosi
```

Sample Input 3

```
boudonuimilcbsai
```

Sample Output 3

```
bombonisuuladici
```

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