# Encryption



### Problem Statement

An English text needs to be encrypted using the following encryption scheme.
First, the spaces are removed from the text. Let $L$ be the length of this text.
Then, characters are written into a grid, whose rows and columns have the following constraints:

- $\lfloor\sqrt{L}\rfloor \leq rows \leq column \leq \lceil\sqrt{L}\rceil$, where $\lfloor x\rfloor$ is floor function and $\lceil x\rceil$ is ceil function

For example, the sentence `if man was meant to stay on the ground god would have given us roots` after removing spaces is $54$ characters long, so it is written in the form of a grid with 7 rows and 8 columns.

```
ifmanwas
meanttos
tayonthe
groundgo
dwouldha
vegivenu
sroots
```

- Ensure that $rows \times columns \geq L$
- If multiple grids satisfy the above conditions, choose the one with the minimum area, i.e. $rows \times columns$.

The encoded message is obtained by displaying the characters in a column, inserting a space, and then displaying the next column and inserting a space, and so on. For example, the encoded message for the above rectangle is:

`imtgdvs fearwer mayoogo anouuio ntnnlvt wttddes aohghn sseoau`

You will be given a message in English with no spaces between the words. The maximum message length can be $81$ characters. Print the encoded message.

Here are some more examples:

**Sample Input:**

```
haveaniceday
```

**Sample Output:**

```
hae and via ecy
```

**Sample Input:**

```
feedthedog
```

### Sample Output:

```
fto ehg ee dd
```

### Sample Input:

```
chillout
```

### Sample Output:

```
clu hlt io
```

Copyright © 2015 HackerRank.
All Rights Reserved

**Submissions:** 12591

**Max Score:** 30

**Difficulty:** Moderate

More

**Current Buffer** (saved locally, editable) Java 8

```
1  import java.io.*;
2  import java.util.*;
3
4  public class Solution {
5
6      public static void main(String[] args) {
7          /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named
   Solution. */
8      }
9  }
```

Line: 1 Col: 1

Upload Code as File  Test against custom input  Run Code  Submit Code