Encrypting Messages

Data encryption prevents data visibility in the event of its unauthorized access.

Consider the following encryption algorithm to encipher a given string input. Firstly, discard all spaces of the string. Then store all the characters within a matrix, according to the constraints below, to get the encoded string output.

Constraints

- `floor(squareRoot(stringLength)) <= matrixRows <= matrixColumns <= ceil(squareRoot(stringLength))`
- `matrixRows x matrixColumns >= stringLength`
- Choose the matrix with the smallest area.
- Print out the characters of the first column, then embed a space before printing out the following column, etc.

Input format

A string

Output format

An encrypted string

Examples

Example 1

Command line input:

```
coding
```

Output: `ci on dg`

i.e. The string length is 6. The square root of 6 is between 2 and 3. Thus, the string is rewritten as a matrix with 2 rows and 3 columns.

```
cod
ing
```

Example 2

Command line input:

```
its harder to read code than to write it
```

Output: `ideeoi teatwt srdhr htcai aoont rrdte`

i.e. The string length is 32. The square root of 32 is between 5 and 6. However, 5 x 6 is not >= 32, therefore, the string is rewritten as a matrix with 6 rows and 6 columns.

```
itshar
dertor
eadcod
ethant
owrite
it
```

Reset Undo Run Submit Dark Mode C++ enter

```
#include <bits/stdc++.h>

using namespace std;

string encrypt(string words) {
   string px = "";

    int n = words.length();
    for (int i = 0; i < n; i++)
    {
        if (words[i] != ' ')
            px += words[i];
    }
    words = px;
    n = words.length();
    int x = ceil(sqrt(n));
    if (x * x > n)
    {
        int temp = x * x - n;
        string a = "";
        while (temp > 0)
        {
            a += '@';
            temp--;
```

Your submission History for Question 6

	Timestamp	Commit ID	Language	# Tests Passed	# Tests Failed	# Tests Timed out	Build Status

	Timestamp	Commit ID	Language	# Tests Passed	# Tests Failed	# Tests Timed out	Build Status
+	10/19/2020, 9:59:45 PM	18b6b84	CPLUSPLUS	90	0	0	Perfect

Copyright 1997 - 2020 CREDIT SUISSE GROUP AG and/or its affiliates. All rights reserved.

Terms and Conditions | Accessibility