Exercises: Strings and Streams

Please submit your solutions (source code) of all below-described problems in Judge

1. Valid Usernames

Write a program that:

- Read **usernames** on a single line (joined by "**,** ")
- Prints all **valid usernames**

A **valid** username is:

- Has a length of between **3 and 16 characters (inclusively)**
- It contains only **letters, numbers, hyphens (-)** and **underscores (_)**

Examples

Input	Output
sh, too_long_username, !lleg@l ch@rs, jeffbutt	jeffbutt
Jeff, john45, ab, cd, peter-ivanov, @smith	Jeff John45 peter-ivanov

2. Caesar Cipher

Write a program that:

- Read a text from the first line of the console
- Encrypt the text by shifting each character with three positions forward.
  Example:
    o A would be replaced by D
    o B would become E
    o P would become S
- Print the encrypted text

Examples

Input	Output
Programming is cool!	Surjudpplqj#lv#frro$
One year has 365 days.	Rqh#|hdu#kdv#698#gd|v1

3. Replace Repeating Chars

Write a program that:

- Reads a **string** from the console
- Replaces **any sequence of the same letters with a single corresponding letter**
- Print **resulting string**

Examples

Input	Output
aaaaabbbbbcdddeeeedssaa	abcdedsa
qqqwerqwecccwd	qwerqwecwd

4. Character Multiplier

Write a program that:

- Reads **two strings** from the console, **separated by single space**
- **Calculate the sum of strings character codes multiplied (multiply str1[0] with str2[0] and add to the total sum) and continue with the next two characters**
- Print the calculated sum

Note: If one of the strings is longer than the other, add the remaining character codes to the total sum without multiplication.

Examples

Input	Output
George Peter	52114
123 522	7647
love SoftUni	45337

5. Mathematical Expression

Write a program that:

- Reads a line from the console containing a mathematical expression
- Check whether the brackets in the expression **()** are placed correctly
- Print **"correct",** if the brackets are placed correctly
- Print **"incorrect",** if the brackets are placed incorrectly

Note: Assume everything else is correct, you don't need to check for correct signs, correct variables / numbers.

Examples

Input	Output
((a+b)/5-d)	correct
a+b	correct
a+(b)	correct
((a+b)/5-d	incorrect
(a+b	incorrect

Follow us:

6. Title Case

Write a program that:

- Reads a **text from the first line of the console**
- Changes each word in **a text to start with a capital letter**
- Print the **resulting string**

Note: The first letter of a word is an English alphabetical symbol preceded by a non-alphabetical symbol. So in "we will--rock you", "we", "will", "rock" and "you" are all considered words which need to be capitalized.

Examples

Input	Output
On the south Carpathian mountains,a tree is swinging	On The Couth Carpathian Mountains,A Tree Is Swinging
Write a program that changes each word in	Write A Program Which Changes Each Word In

7. Replace All

Write a program that:

- Read a **text** from the first line of the console
- Read a "**find" string** from the second line of the console
- Read a **"replace" string** from the third line of the console
- Any part of the text which matches the **"find" string should be replaced with the "replace" string**
- Print the resulting text on the console

Examples

Input	Output
I am the night. Dark Night! No, not the knight night day	I am the day. Dark Night! No, not the kday
This is a test string. Such a funny string! string life	This is a test life. Such a funny life!

8. Invalid Input

Write a program that:

- Read a line **containing integer numbers**, separated by space from the console
- Calculate **sum of the entered numbers**
- Print the **calcualated sum**
- In addition to the numbers, **each line will contain one or more words**
- Print **those words** on a separate line, separated by spaces, **after the sum, in the order, they were in the input**

Examples

Input	Output

1 2 3 invalid 4	10 invalid
H 2 adasashd oneTwo -1 4	5 H adasashd oneTwo
0 HELLO 13 -5 ten 10 14 Noise	32 HELLO ten Noise