

11 Character counting

4 points

Introduction

Your Computer Science teacher needs a program to analyze text. He is interested in counting how many uppercase and lowercase letters the text contains. The rest of the characters in the text (numbers, punctuation, math symbols, etc.) must be also counted except spacing characters that must be ignored. Would you be so kind to write this program?

Input

The input will be a line with the text to be analyzed.

Output

Print out the number of uppercase, lowercase and other characters found in the text.

Example

Input

Hi there! How are you today? The answer is $4*8 + 34 - 2 = (2^6)$

Output

Uppercase 3

Lowercase 29

Other 16