

ACSL BOOK

PROBLEM: A book cipher is a method of encoding and decoding a message where the sender and the receiver both use the same text. The sender's message is encoded by replacing each alphanumeric character in the message to be sent with the location of that character in the text using an "s.w.c" format representing the number of the sentence in the text (s), the number of the word in that sentence (w), and the number of the character in that word (c), all indexed starting with 1. The receiver decodes the encoded message by locating the characters in the text specified by each "s.w.c" string.

In this program, you will be given the text and the message to be encoded.

Encode the location of each character of the message using the "s.w.c" format. The following rules apply:

- Any keyboard character can be included in the text or the message and all alphabetic characters are case sensitive

- A word in the text contains only alphanumeric characters and all words are separated by a single space or any non–alphanumeric character(s)
- All sentences in the text will end with a period, question mark, or exclamation point and will be separated by exactly 2 spaces
- Only alphanumeric characters in the message will be encoded and all other characters will remain as they are in the encoded message
- If a space occurs in the message, use an underscore (“_”) for that character when encoding it
- For every character in the message to be encoded, find the location of the 1st occurrence in the text of the 1st character in the message, the 2nd occurrence in the text of the 2nd character in the message, the 3rd occurrence in the text of the 3rd character in the message, etc.
- We guarantee that each character in the message will occur at least once in the text
- If there aren’t that many occurrences of a character found in the text, divide the number in half using integer division until that number of occurrences of that character is found

d (e.g. if there is no 13th occurrence of a character,
find the 6th, then the 3rd, then the 1st if needed)

- Each encoded “s.w.c” within a word will be separated by a single space

EXAMPLE:

Input	Output
ACSL, or the American Computer Science League, is an international computer science competition among more than 300 schools. Originally founded in 1978 as the Rhode Island Computer Science League, it then became the New England Computer Science League. American Computer Science League (ACSL) is fun!	1.1.1 1.5.3 1.5.7 1.10.5 1.10.9 1.12.6 1.16.3 1.13 .11_2.18.1 1.18.5 1.14.2 1.13.4 2.11.5 2.18.6 2.6. 3 2.9.8_2.19.1 2.10.2 2.1.3 2.11.2 1.16.4 2.14.3 2 .14.2_2.11.1 2.15.3 2.17.5 2.20.4 2.18.5 2.19.7_(1 .1.1 2.9.1 2.19.1 2.20.1)_1.13.9 1.18.7_2.2.1 2.2. 3 2.19.5!

Explanation:

The “A” is the 1st character in the message so

find the 1st occurrence of “A” in the text (1.1.1). The “m” is the

2nd character in the message so find the
2nd occurrence of “m” in the text. The string “1.5.3” locates
that “m” in the 1st
sentence, the 5th word, and the 3rd character in that word. The
“C” in “Computer” is the 9th character in the message.
There are not 9 occurrences in the text so find the 4th
occurrence which is in
the 2nd sentence, the 18th word, and the 1st character in the
word “Computer” (2.18.1).

There is a single space between
each encoded character in each
word and all non-alphanumeric characters are included as they
are in the original string except for a space
which is encoded as an underscore (“_”).

INPUT: Input two strings: the text to be used and the message
to be encoded. The text will be no more than 2000 characters
and the message will be no more than 400 characters.

OUTPUT: Output the encoded message as a string of characters.

SAMPLE INPUT

SAMPLE OUTPUT

<p>ACSL, or the American Computer Science League, is an international computer science competition among more than 300 schools. Originally founded in 1978 as the Rhode Island Computer Science League, it then became the New England Computer Science League. American Computer Science League (ACSL) is fun!</p>	<p>1.1.1 1.5.3 1.5.7 1.10.5 1.10.9 1.12.6 1.16.3 1.13 .11_2.18.1 1.18.5 1.14.2 1.13.4 2.11.5 2.18.6 2.6. 3 2.9.8_2.19.1 2.10.2 2.1.3 2.11.2 1.16.4 2.14.3 2 .14.2_2.11.1 2.15.3 2.17.5 2.20.4 2.18.5 2.19.7_(1 .1.1 2.9.1 2.19.1 2.20.1)_1.13.9 1.18.7_2.2.1 2.2. 3 2.19.5!</p>
<p>To be or not to be, that is the question – a quote by William Shakespeare. 2B or not 2B – a hexadecimal equivalent! How would you write it? Boolean is always True!</p>	<p>2.1.2 1.3.1 1.4.2 2.7.7 1.12.5 2.5.1 2.3.1_3.5.1 1 .10.4_1.15.9 3.2.4 3.4.1 2.5.1 1.13.2 1.15.6_1.1.1 3.4.2 3.2.3 2.6.2!</p>

Various programming languages are: Java, Python, Visual BASIC, C++, Lisp, C#, FORTRAN, R, SQL. Javascript is the language of the Internet! HTML stands for Hypertext Markup Language and is not really a coding language! There are over 300 languages. Which one do you like best? Java is the language of AP CS! Where is Lisp used?

1.5.1 1.2.6 4.3.2 1.3.6_2.1.8 2.2.2_3.2.2
4.1.2 3.
4.7_3.10.5 2.4.2 3.13.3 4.5.7 3.13.5
3.6.2 3.6.7 4
.5.8_5.2.1 3.3.1_1.12.6 1.6.1_1.9.1
1.14.1!_5.1.1
5.1.5 4.1.3 4.3.4 4.1.5_3.8.1 3.2.1_3.1.4
3.12.4 3
.2.6 3.4.3_4.5.5 3.8.2 5.2.3 5.3.1?

Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this. This was written by Abraham Lincoln on 11/19/1863! The #1 speech of all time was less than 8 minutes long!

6.1.1 1.9.6 1.4.4_#6.10.1_1.12.4 5.6.4
1.15.2 1.17
.5 2.18.4 3.10.2_1.22.2 4.10.1_1.30.4
5.9.5 6.6.6_
2.7.5 2.21.4 4.26.1 2.2.2_6.3.1 2.15.1
4.14.3_4.22
.1 2.10.2 4.17.4 4.22.5_3.7.3 4.18.2
3.7.2 4.13.3_
6.10.2_4.26.1 6.1.3 5.4.6 1.30.3 4.14.4
3.7.6 2.20
.1_4.13.5 2.18.2 2.15.2 4.20.1!

<p>There are 10 kinds of people in the world: those who know binary and those who don't! Make sure you learn binary. Computers all use it. Could you be the 0 kind or the 1 kind?</p>	<p>3.1.1 1.6.3 3.1.5 3.2.2 1.9.5_2.5.6 1.15.3 3.3.1_2 .5.1 2.2.4_3.1.6 1.16.2 3.3.3_1.3.2_2.1.3 2.5.2 2. 5.3 1.17.1_1.17.2 2.2.3_3.1.6 1.15.2 2.4.2_1.3.1_2 .1.3 1.13.2 1.17.3 1.14.3?</p>
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-----以下
为中文翻译，仅供参考

问题: 书加密法是一种发送者和接收者使用相同的文本对信息进行编码和解码的方法。发送者对信息进行编码时, 使用 "s.w.c" 格式将要发送的信息中的每个字母数字字符替换为该字符在文本中的位置。"s.w.c" 格式代表文本中句子的编号(s), 句子中单词的编号(w), 单词中字符的编号(c), 所有编号均从 1 开始。接收者通过查找每个 "s.w.c" 字符串在文本中指定的字符来对编码信息进行解码。

在此程序中，将给定文本以及需编码的信息。使用 "s.w.c" 格式对信息中每个字符的位置进行编码。规则如下：

- 文本或信息中可包含任意键盘字符，所有字母字符均区分大小写
- 文本中的每个单词只包含字母数字字符，每个单词之间均用一个空格或任意非字母数字字符（一个或多个）分隔
- 文本中的句子均以句号、问号或感叹号结束，且句子之间严格用两个空格分隔
- 仅对信息中的字母数字字符进行编码，其它所有字符均在编码信息中保持其原样不变
- 如果信息中出现空格，则使用下划线("_") 对其进行编码
- 对于信息中每一个需编码的字符，查找出信息中第 1 个字符在文本里第 1 次出现时的位置；信息中第 2 个字符在文本里第 2 次出现时的位置；信息中第 3 个字符在文本里第 3 次出现时的位置，以此类推
- 我们保证信息中每个字符在文本里至少会出现一次
- 如果发现文本中某个字符出现的次数没有那么多，则使用整数除法将该次数对半分，直到出现可以查找出该字符的次数为止（例如，如果某字符没有第 13 次出现，则去查找它第 6 次出现时的位置，如果没有出现第 6 次，就查找它第 3 次出现

时的位置，如果还是没有，就再查找出它第 1 次 出现时的位置)

- 一个单词内每个"s.w.c"编码之间用一个空格分隔

示例：

输入	输出
ACSL, or the American Computer Science League, is an international computer science competition among more than 300 schools. Originally founded in 1978 as the Rhode Island Computer Science League, it then became the New England Computer Science League. American Computer Science League (ACSL) is fun!	1.1.1 1.5.3 1.5.7 1.10.5 1.10.9 1.12.6 1.16.3 1.13 .11_2.18.1 1.18.5 1.14.2 1.13.4 2.11.5 2.18.6 2.6. 3 2.9.8_2.19.1 2.10.2 2.1.3 2.11.2 1.16.4 2.14.3 2 .14.2_2.11.1 2.15.3 2.17.5 2.20.4 2.18.5 2.19.7_(1 .1.1 2.9.1 2.19.1 2.20.1)_1.13.9 1.18.7_2.2.1 2.2. 3 2.19.5!

解释说明：

"A" 是信息中的第 1 个字符，所以要查找到 "A" 在文本中第 1 次出现的位置 (1. 1. 1) 。

"m" 是信息中的第 2 个字符，所以要查找到 "m" 在文本中第 2 次出现的位置。 字符串 "1. 5. 3" 表示 " m" 是

第 1 句话中第 5 个单词的第 3 个字符。"Computer" 中的 "C" 是信息中的第 9 个字符, 但 "C" 在文本中并没有出现 9 次, 因此要查找到第 4 次出现的 "C", 即第 2 句话的第 18 个单词 "Computer" 中的第 1 个字符 (2.18.1)。

每个单词中的每一个编码字符之间都有一个空格, 编码信息中所有非字母数字字符都保持其在原始字符串中的形式不变, 用下划线 ("_") 编码的空格除外。

输入： 输入两个字符串： 要使用的文本以及需编码的信息。文本不超过 2000 个字符， 信息不超过 400 个字符。

输出： 以字符串形式输出编码信息

样本输入	样本输出 (每行 50 个字符, 以便阅读)
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 4.14.3_4.22
 .1 2.10.2 4.17.4 4.22.5_3.7.3 4.18.2
 3.7.2 4.13.3_
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 1.15.3 3.3.1_2
 .5.1 2.2.4_3.1.6 1.16.2
 3.3.3_1.3.2_2.1.3 2.5.2 2.
 5.3 1.17.1_1.17.2 2.2.3_3.1.6 1.15.2
 2.4.2_1.3.1_2
 .1.3 1.13.2 1.17.3 1.14.3?

