JAVA Programming — Homework Assignment #3

請將每題命名為：**HW3_題號_學號.java**
最外層的類別 (class) 亦需命名為：**HW3_題號_學號**
將作答後的 Java 檔存於 **HW3_學號**資料夾中

HW3_學號資料夾壓縮為 zip 或 rar
上傳到 YZU Portal 作業繳交區

以學號 1111699 為例：
(上層目錄)
└──HW3_1111699 ⟶ 名為「HW3_學號」的資料夾
HW3_1_1111699.java
HW3_2_1111699.java
HW3_3_1111699.java
HW3_4_1111699.java
HW3_5_1111699.java
HW3_6_1111699.java
} 名為「HW3_題號_學號」的 Java 檔

最後上傳 HW3_1111699.zip

1. (20%) 輸入一個由兩個運算元與一個運算子 (+、-、*、/) 所組成的字串 (例如：123*456)，然後印出該字串所代表的數學運算式的值。
   例如，輸入 123*456，按 Enter 後，會輸出下面 4 行：
   123
   *
   456
   56088

   備註: 遇到除法時，直接輸出即可，不必做格式處理。

2. (25%) 輸入以空白相隔的三個字串 str1 與 str2 與 str3，然後印出將 str1 裡面所有出現 str2 的地方，替換成 str3 的結果。例如，輸入
   AABBBC**DE**AABBCCC**DE**FABC **DE** XYZ
   會輸出
   AABBBCXYZAABBCCCXYZFABC

3. (25%) 輸入以空白相隔的三個字串 str1 與 str2 與 str3，然後印出 str2 與 str3 在 str1 中出現的索引位置之總和。例如，輸入

   AABBBCDEAABBCCCDEFABC DE AA

   會輸出

   29

   因為 DE 出現在索引位置 6 與 15，AA 出現在索引位置 0 與 8，

   6+15+0+8=29。

4. (20%) 寫完成下面程式中的函式 int findCount(string s1, string s2)。此函式會傳回 s2 在 s1 裡面出現的次數。例如，輸入 s1 後按 Enter 輸入 s2，再按 Enter 輸出結果。

   請在指定的(灰色)區域內寫程式，Class 名稱可以改。

   abeabdfabafbgbbaxbahjjbabebeaba

   ab

   會輸出

   5

```java
import java.io.*;

public class HW3_4_1111699
{
    public static int findCount(String s1, String s2)
    {
     // ------------ write your code below ------------

     // ------------ write your code above ------------
    }

    public static void main(String[] args) throws IOException
    {
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        String s1, s2;
        s1 = br.readLine();
        s2 = br.readLine();
        System.out.print(findCount(s1, s2));
    }
}
```

5. (5%) UVa 10420 - List of Conquests.
6. (5%) UVa 401 - Palindromes.

UVa Online Judge

10420 List of Conquests

In Act I, Leporello is telling Donna Elvira about his master's long list of conquests:

> "This is the list of the beauties my master has loved, a list I've made out myself: take a look, read it with me. In Italy six hundred and forty, in Germany two hundred and thirty-one, a hundred in France, ninety-one in Turkey; but in Spain already a thousand and three! Among them are country girls, waiting-maids, city beauties; there are countesses, baronesses, marchionesses, princesses: women of every rank, of every size, of every age." (Madamina, il catalogo questo)

As Leporello records all the "beauties" Don Giovanni "loved" in chronological order, it is very troublesome for him to present his master's conquest to others because he needs to count the number of "beauties" by their nationality each time. You are to help Leporello to count.

Input

The input consists of at most 2000 lines. The first line contains a number n, indicating that there will be n more lines. Each following line, with at most 75 characters, contains a country (the first word) and the name of a woman (the rest of the words in the line) Giovanni loved. You may assume that the name of all countries consist of only one word.

Output

The output consists of lines in alphabetical order. Each line starts with the name of a country, followed by the total number of women Giovanni loved in that country, separated by a space.

Sample Input

```
3
Spain Donna Elvira
England Jane Doe
Spain Donna Anna
```

Sample Output

```
England 1
Spain 2
```

UVa Online Judge

401 Palindromes

A regular palindrome is a string of numbers or letters that is the same forward as backward. For example, the string "ABCDEDCBA" is a palindrome because it is the same when the string is read from left to right as when the string is read from right to left.

A mirrored string is a string for which when each of the elements of the string is changed to its reverse (if it has a reverse) and the string is read backwards the result is the same as the original string. For example, the string "3AIAE" is a mirrored string because 'A' and 'I' are their own reverses, and '3' and 'E' are each others' reverses.

A mirrored palindrome is a string that meets the criteria of a regular palindrome and the criteria of a mirrored string. The string "ATOYOTA" is a mirrored palindrome because if the string is read backwards, the string is the same as the original and because if each of the characters is replaced by its reverse and the result is read backwards, the result is the same as the original string. Of course, 'A', 'T', 'O', and 'Y' are all their own reverses.

A list of all valid characters and their reverses is as follows.

Character	Reverse	Character	Reverse	Character	Reverse
A	A	M	M	Y	Y
B		N		Z	5
C		O	O	1	1
D		P		2	S
E	3	Q		3	E
F		R		4	
G		S	2	5	Z
H	H	T	T	6	
I	I	U	U	7	
J	L	V	V	8	8
K		W	W	9	
L	J	X	X		

Note that '0' (zero) and 'O' (the letter) are considered the same character and therefore **ONLY** the letter 'O' is a valid character.

Input

Input consists of strings (one per line) each of which will consist of one to twenty valid characters. There will be no invalid characters in any of the strings. Your program should read to the end of file.

Output

For each input string, you should print the string starting in column 1 immediately followed by exactly one of the following strings.

STRING	CRITERIA
' -- is not a palindrome.'	if the string is not a palindrome and is not a mirrored string
' -- is a regular palindrome.'	if the string is a palindrome and is not a mirrored string
' -- is a mirrored string.'	if the string is not a palindrome and is a mirrored string
' -- is a mirrored palindrome.'	if the string is a palindrome and is a mirrored string

Note that the output line is to include the '-'s and spacing exactly as shown in the table above and demonstrated in the Sample Output below.

In addition, after each output line, you must print an empty line.

Sample Input

```
NOTAPALINDROME
ISAPALINILAPASI
2A3MEAS
ATOYOTA
```

Sample Output

```
NOTAPALINDROME -- is not a palindrome.

ISAPALINILAPASI -- is a regular palindrome.

2A3MEAS -- is a mirrored string.

ATOYOTA -- is a mirrored palindrome.
```