

# Problem 1. Counting Numbers 數字計數

## 問題描述 (Problem Description) :

Write a program that reads numbers from the keyboard into an integer array. You may assume that there will be 50 or fewer entries in the array. Your program allows any number of numbers to be entered, up to 50 numbers. The output is to be a two-column list. The first column is a list of the distinct array elements; the second column is the count of the number of occurrences of each element. The list should be sorted on entries in the first column, largest to smallest.

撰寫一個程式，讀取輸入的數字存到整數陣列中。假設陣列中最多只有 50 個元素。你的程式可輸入任意數量的數字，最多 50 個數字。輸出為一個兩欄的清單。第一欄是不重複的陣列元素清單；第二欄是該每個元素出現的次數。清單以第一欄的元素由大到小排序。

## 輸入說明 (Input):

User can keyin n number ( $n \leq 50$ ), and end input by keyin -999.

使用者可以輸入 n 個數字( $n \leq 50$ )，輸入 -999 表示結束輸入。

## 輸出說明 (Output):

The output is to be a two-column list. The first column is a list of the distinct array elements; the second column is the count of the number of occurrences of each element. The list should be sorted on entries in the first column, largest to smallest.

輸出為一個兩欄的清單。第一欄是不重複的陣列元素清單；第二欄是該每個元素出現的次數。清單以第一欄的元素由大到小排序。

**範例 (Sample):**

Sample Input:	Sample Output:
-12 3 -12 4 1 1	4 2
-12 1 -1 1 2 3 4 2	3 3
3 -12 -999	2 2
	1 4
	-1 1
	-12 4

## Problem 2. 到底有幾對兔子?

How many pairs of rabbits are there on the farm?

### 問題描述 (Problem Description):

Assume each pair of newly born male and female rabbits will grow into adult rabbits in two months. From the third month, they can give birth to a pair of male and female rabbits each month.

If a pair of male and female rabbits are born on the first day of the first month, and rabbits can survive forever. How many pairs of rabbits will live on this farm in the  $N$ th month?

假設在一個農場中，每對雌雄小兔子生出來後，經過兩個月可成長成兩隻雌雄大兔子，且從第三個月開始每個月可以生出一對雌雄小兔子。假設第一個月初誕生了一對雌雄小兔子，如果兔子可以永遠存活下去，請問第  $N$  個月，該農場中會有多少對兔子？

### 輸入說明 (Input):

Each test case contains an integer representing the  $N$ th month,  $1 \leq N \leq 90$ .

每一個測試案例包含一個整數表示第  $N$  個月， $1 \leq N \leq 90$ 。

### 輸出說明 (Output):

Print how many pairs of rabbits will be on the farm in the Nth month, and please end with a newline character.

輸出第  $N$  個月農場會有多少對兔子，最後必須有換行字元。

### 範例 (Sample):

Sample Input:	Sample Output:
5	5

## Problem 3. Uniform invoice lottery

### 統一發票對獎

#### Problem Description:

There are eight digits in the unified invoice number, and one special prize number and three first prize numbers will be issued in each issue.

The special prize is \$2 million for the 8-digit number that is the same as the special prize number.

The first prize is \$200,000 for an 8-digit number that is the same as the first prize number.

The second prize is \$40,000 for each winner, the last 7 digits of the number match the last 7 digits of the first prize number.

The third prize is \$10,000 for each winner, the last 6 digits of the number match the last 6 digits of the first prize number.

The fourth prize is \$4,000 for each winner, the last 5 digits of the number match the last 5 digits of the first prize number.

The fifth prize is \$1,000 for each winner, the last 4 digits of the number are identical to the last 4 digits of the first prize number.

The sixth prize is \$200 for each winner, the last 3 digits of the number are identical to the last 3 digits of the first prize number.[U1] Assuming that all prizes are given priority to the larger amount of winnings, please write a simulated prize matching program, read in the lottery numbers and unified invoice numbers, print out the type and number of winning prizes, and the total amount of winnings.

#### 問題描述：

統一發票號碼共有八位數，每期開出一組特獎號碼和三組頭獎號碼。

特獎為 8 位數號碼與特獎號碼相同者，獎金 200 萬元。

頭獎為 8 位數號碼與頭獎號碼相同者，獎金 20 萬元。

二獎為末 7 位數號碼與頭獎號碼末 7 位相同者，各得獎金 4 萬元。

三獎為末 6 位數號碼與頭獎號碼末 6 位相同者，各得獎金 1 萬元。

四獎為末 5 位數號碼與頭獎號碼末 5 位相同者，各得獎金 4 千元。

五獎為末 4 位數號碼與頭獎號碼末 4 位相同者各得獎金 1 千元。

六獎為末 3 位數號碼與頭獎號碼末 3 位相同者各得獎金 2 百元。

假設所有獎項均以中獎金額較大的優先，請寫一模擬對獎程式，讀入開獎號碼及統一發票號碼，印出中獎種類及張數，以及中獎總金額。

### Input:

The first line is an 8-digit integer representing the special prize lottery number. In the next three lines, each line is an 8-digit integer representing the first prize lottery number. The fifth line is a positive integer  $N$  ( $1 \leq N \leq 100000$ ), representing a total of  $N$  invoices To be rewarded, there are  $N$  lines after that, each line is an invoice number (8-digit integer).

### 輸入說明：

第一行為一 8 位整數表示特獎開獎號碼，接下來有三行，每行為一 8 位整數代表頭獎開獎號碼，第五行為一正整數  $N$  ( $1 \leq N \leq 100000$ )，代表共有  $N$  張發票要對獎，之後有  $N$  行，每行為一張發票號碼 (8 位整數)。

### Output:

Output the number of prizes for each award in a row, the prizes are arranged in order, starting from the special prize, there is a blank space between the number of prizes, and the total amount of winnings will be output at the last row.

**輸出說明 :**

輸出各獎項之中獎張數於第一行，自特獎開始，獎項依序排列，獎項中獎張數間空一格；最後一行輸出總共中獎金額。

**範例 (Sample) :**

Sample Input:	Sample Output:
14672884	0 1 0 0 0 1 1
79807980	201200
85312452	
94251069	
3	
79807980	
84556452	
15661069	



## Problem 4. One-Two-Three 一二三

### 問題描述 (Problem Description):

Your little brother has just learned to write one, two, and three in English. He has written a lot of those words on a paper, and your task is to recognize them. Be aware that your little brother is only a child, so he may make some small mistakes: there might be at most one wrong letter for each word. The word length is always correct. It is guaranteed that each letter he wrote is in lower-case, and each word has a unique interpretation.

你的弟弟剛學會寫英文的一二三。他在一張紙上寫了很多這幾個字，而你的工作便是辨認它們。要注意的是你弟弟不過是個小孩子，因此他會犯些小錯誤：至多一個錯誤的字母。單字長度一定是正確的。他所寫的一定是小寫字母，每個單字只可能有一種合理解釋。

### 輸入說明 (Input):

The first line contains the number of words that your little brother has written. Each of the following lines contains a single word with all letters in lower-case. The words satisfy

the constraints above: at most one letter might be wrong, but the word length is always correct. There will be at most 10 words in the input.

第一行包含你弟弟所寫單字數。接下來的每一行含有一個小寫字母組成的單字。單字必符合上述限制：至多一個錯誤的字母，但是單字長度永遠正確。輸入中最多有 10 個單字。

### 輸出說明 (Output):

For each test case, print the numerical value of the word.

對每筆測資，輸出單字的數值。

### 範例 (Sample):

Sample Input	Sample Output
3	1
owe	2
too	3
theee	

## Problem 5. Language Detection 語言檢測

### 問題描述(Description):

English, Spanish, German, French, Italian and Russian are the six most prominent languages in the countries of the European Union. All of these languages have different words to represent the English word "HELLO." For example, the word equivalent to "HELLO" is "HOLA" in Spanish. In German, French, Italian and Russian language, the word that means (or similar to) "HELLO" is "HALLO" , "BONJOUR" , "CIAO" and "ZDRAVSTVUJTE" respectively. In this problem, your task is pretty simple. You will be given one of the six words mentioned above or any other word, and you will have to identify what language it is.

英文、西班牙文、德文、法文、義大利文及俄文為歐盟國家中最盛行的 6 種語言。這些語言都有不同的字來表示英文的「HELLO」。例如西班牙文中等同於英文「HELLO」的字是「HOLA」，而德文、法文、義大利文及俄文中意思為(或相近)「HELLO」的字依序為「HALLO」、「BONJOUR」、「CIAO」和「ZDRAVSTVUJTE」。

你在本題中的任務非常簡單。給你以上的幾個單字之一或是其他的單字，你需要辨識它是哪一種語言。

## 輸入說明 (Input):

The input file contains around 2000 lines of inputs. Each line contains a string. You can assume that all the letters of the string are uppercase English letters, and the maximum length of the string is 14. Input is terminated by a line containing a single character #. This line needs not to be processed.

輸入檔含有大約 2000 行的輸入。每行含有一個字串。你可以假設所有的字母都是大寫英文字母，且字串的最大長度為 14。輸入以僅含有一個 # 的一行作為結束，該行不需處理。

## 輸出說明 (Output):

Each line of input, except the last one, produces one output line. Each output line contains the serial of output followed by a language name. If the input string is 'HELLO' or 'HOLA' or 'HALLO' or 'BONJOUR' or 'CIAO' or 'ZDRAVSTVUJTE,' then you should report the language it belongs to. If the input string is something other than these six strings, print the string 'UNKNOWN' (without the quotes) instead. All characters in the output strings are uppercase as well. Samples are shown below.

除了最後一行以外，每一行輸入都要產生一行輸出。每個輸出行含有輸出的序號及語言名稱。

如果輸入的字串是「HELLO」、「HOLA」、「HALLO」、「BONJOUR」、「CIAO」或「ZDRAVSTVUJTE」

時，你要回報它是屬於哪一種語言。如果輸入字串是這 6 個以外的字串，則印出字串「UNKNOWN」。所有的輸出字串也都是大寫。詳細的格式細節請參見範例。

### 範例 (Sample):

Sample Input	Sample Output
HELLO	Case 1: ENGLISH
HOLA	Case 2: SPANISH
HALLO	Case 3: GERMAN
BONJOUR	Case 4: FRENCH
CIAO	Case 5: ITALIAN
ZDRAVSTVUJTE	Case 6: RUSSIAN
ALOHA	Case 7: UNKNOWN
#	

## Problem 6. Sum of all integer 所有正整數的和

### 問題描述 (Problem Description):

Please write a program that can keep read in integers until 0, sum up all integers and print out the result.

請寫一個程式可以不斷地讀取輸入入檔案中的正整數，直到讀到 0 為止，並輸出所有正整數的和。

### 輸入說明 (Input):

The input consists of several positive integers with the end of 0.

輸入為一連串的正整數，最後一個數字是 0。

### 輸出說明 (Output):

Sum of all integers

所有正整數的和

範例 (Sample):

Sample Input	Sample Output
1	10
2	
3	
4	
0	