NZPC

New Zealand Programming Contest

PRACTICE PROBLEM SET

This problem set is to be used during the practice contest, whose purpose is to ensure that DOMjudge is working correctly, and to make sure teams know how to submit solutions.

It is a good idea to submit some deliberately wrong answers to check out the error messages, and to submit at least one clarification.

PREAMBLE

Please note the following very important details relating to input and output:

- Read all input from the keyboard, i.e. use `stdin`, `System.in`, `cin`, `Console.ReadLine`, `input` or equivalent. Input will be redirected from a file to form the input to your submission.

- Do NOT prompt for input as this will appear in your output and cause a submission to be judged as wrong.

- Write all output to the screen, i.e. use `stdout`, `System.out`, `cout`, `Console.WriteLine`, `print` or equivalent. Do not write to `stderr`. Do NOT use, or even include, any module that allows direct manipulation of the screen, such as `conio`, `Crt` or anything similar.

- Output from your program is redirected to a file for later checking. Use of direct I/O means that such output is not redirected and hence cannot be checked. This could mean that a correct program is rejected! You have been warned.

- Unless otherwise stated, all *integers* will fit into a standard 32-bit computer word. If more than one integer appears on a line, they will be separated by white space, i.e. spaces or tabs.

- An *uppercase letter* is a character in the sequence 'A' to 'Z'. A *lower case letter* is a character in the sequence 'a' to 'z'. A *letter* is either a lower case letter or an upper case letter.

- Unless otherwise stated, a *word* or a *name* is a continuous sequence of letters.

- Unless otherwise stated, a *string* is a continuous sequence of visible characters.

- Unless otherwise stated, words and names will contain no more than 60 characters, and strings will contain no more than 250 characters.

- If it is stated that ‘a line contains no more than *n* characters’, this does not include the character(s) specifying the end of line.

- Input files are often terminated by a ‘sentinel’ line, followed by an end of file marker. This line should not be processed.

PRACTICE PROBLEM A **HELLO NZPC** **1 POINT**

This problem doesn't read input. You simply need to output the single line shown below.

Input

This problem doesn't read input

Output

Output consists of the single line

```
Hello NZPC, Goodbye world!
```

Sample Input 1	**Output for Sample Input 1**
	Hello NZPC, Goodbye world!

Note

You may like to check what happens when you submit an answer with one of the punctuation marks missing, one with a lower case 'g', and one with completely wrong text eg "Chicken nuggets."

PRACTICE PROBLEM B **SALESMAN** **3 POINTS**

Bob Smith has to tour New Zealand visiting his company's customers. His database churns out a list of the towns where each customer lives, but it has not been well programmed so may display a given town more than once. Your job is to help Bob by removing the duplicates and telling him how many towns he actually has to visit.

Input

Input consists of a number of lists, each representing a week of visits. The first line of each week is a single integer, *N* (1 <*N*<= 100), which is the number of towns in the list. Input is terminated by *N* = 0 - this week should not be processed.

Each week contains a list of *N* towns, each on a line by itself. The name of a town may contain more than one word. The first letter of each word in a town's name begins with an upper case letter; all other letters are lower case. A town's name will contain no more than 20 characters.

Output

Output consists of a single line for each week. It contains the word Week, followed by a space, followed by the week number, the first week being 1, followed by a space, followed by the actual number of towns to be visited, duplicates having been removed.

For example, in the sample output below, Wellsford is repeated in week 1 and both Rangiora and Oxford are repeated in week 2.

Sample Input 1	**Output for Sample Input 1**
5 Wellsford Ruakaka Marsden Point Wellsford Warkworth 4 Rangiora Oxford Oxford Rangiora 0	Week 1 4 Week 2 2

PRACTICE PROBLEM C **COUNTING DIGITS** **3 POINTS**

How many 1s are there in the numbers between 10 and 15 inclusive?

10 11 12 13 14 15

You will see that there are 7. In this problem you will be asked to perform similar counts.

Input

Input begins with a line containing a single integer, *N*(0 <*N*<= 100), which is the number of counts you have to make.

Each count is represented by a separate line containing 3 integers, *S F C*, separated by single spaces. *S* (−1000 <= *S*< 1000) is the start number, *F* is the finish number (*S*<*F* <= 1000) while *C* is the digit to count (a single digit).

Output

For each count line in the input, produce one line of output. The output should be the number of times the required digit occurs in the specified number range (inclusive).

Sample Input 1	**Output for Sample Input 1**
5 10 15 1 1 8 9 -10 10 0 52 160 7 27 398 3	 7 0 3 21 176