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` 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` or equivalent. Do not write to `stderr`.

- 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 a space.

- 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 *name* is a continuous sequence of from 2 to 30 characters (printed or written letters or symbols).

- 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 sometimes terminated by a ‘sentinel’ line. This line should not be processed.

Please also note that:

- The filenames of your submitted programs may need to follow a particular naming convention, for example the name of a Java file containing a public class needs to be the name of the class followed by the '.java' extension.

- DOMjudge will reject a submitted file which has any spaces in its file name.

- Problems have a time limit shown on the Problem Set page of DOMjudge. It is usually 1 second but may be longer. A TIMELIMIT error will be issued for submissions that exceed that limit on a single test run.

- Each problem description in the main contest takes up 2 pages, one of which may be empty.

PRACTICE PROBLEM A HELLO NZPC 1 POINT

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

Input

There is no 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

Bill 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 Bill 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

```
5
Wellsford
Ruakaka
Marsden Point
Wellsford
Warkworth
4
Rangiora
Oxford
Oxford
Rangiora
0
```

Output for Sample Input 1

```
Week 1 4
Week 2 2
```

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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

```
5
10 15 1
1 8 9
-10 10 0
52 160 7
27 398 3
```

Output for Sample Input 1

```
7
0
3
21
176
```