**Atividades – Python**

**Age in Days**

Adapted by Neilor Tonin, URI  Brazil

**Timelimit: 1**

Read an integer value corresponding to a person's age (in days) and print it in years, months and days, followed by its respective message “ano(s)”, “mes(es)”, “dia(s)”.

Note: only to facilitate the calculation, consider the whole year with 365 days and 30 days every month. In the cases of test there will never be a situation that allows 12 months and some days, like 360, 363 or 364. This is just an exercise for the purpose of testing simple mathematical reasoning.

**Input**

The input file contains 1 integer value.

**Output**

Print the output, like the following example.

**Interval**

Adapted by Neilor Tonin, URI  Brazil

**Timelimit: 1**

You must make a program that read a float-point number and print a message saying in which of following intervals the number belongs: [0,25] (25,50], (50,75], (75,100]. If the read number is less than zero or greather than 100, the program must print the message “Fora de intervalo” that means "Out of Interval".

The symbol '(' represents greather than. For example:  
[0,25] indicates numbers between 0 and 25.0000, including both.  
(25,50] indicates numbers greather than 25 (25.00001) up to 50.0000000.

**Input**

The input file contains a floating-point number.

**Output**

The output must be a message like following example.

**Month**

Adapted by Neilor Tonin, URI  Brazil

**Timelimit: 1**

Read an integer number between 1 and 12, including. Corresponding to this number, you must print the month of the year, in english, with the first letter in uppercase.

**Input**

The input contains only an integer number.

**Output**

Print the name of the month according to the input number, with the first letter in uppercase.

**Interval 2**

Adapted by Neilor Tonin, URI  Brazil

**Timelimit: 1**

Read an integer **N**. This N will be the number of integer numbers **X**that will be read.

Print how many these numbers **X**are in the interval [10,20] and how many values are out of this interval.

**Input**

The first line of input is an integer **N**(**N**< 10000), that indicates the total number of test cases.  
Each case is an integer number **X**(-107 < **X** < 107).

**Output**

For each test case, print how many numbers are in and how many values are out of the interval.

**Logical Sequence**

Adapted by Neilor Tonin, URI  Brazil

**Timelimit: 1**

Write a program that reads an integer N. N \* 2 lines must be printed by this program according to the example below. For numbers with more than 6 digits, all digits must be printed (no cientific notation allowed).

**Input**

The input file contains an integer **N** (1 < **N** < 1000).

**Output**

Print the output according to the given example.

**Call List**

By OBI - Brazilian Informatics Olympiad 2010 BR Brazil

**Timelimit: 1**

Joana is a respected teacher and has several students. In her last class, she promised that she would raffle off a student to earn a special bonus on the final grade: she put N pieces of paper numbered from 1 to N in a bag and drew a certain number K; the winning student was the Kth student on the roll call.

The problem is that Joana forgot her class diary, so she has no way of knowing which number corresponds to which student. She knows the names of all the students, and that their numbers, from 1 to N, are assigned in alphabetical order, but her students are very anxious and want to know right away who was the winner.

Given the names of Joana's students and the number drawn, determine the name of the student who should receive the bonus.

**Input**

The first line contains two integers **N** and **K** separated by a blank space (1 ≤ **K** ≤ **N** ≤ 100). Each of the following **N** lines contains a string of minimum length 1 and maximum length 20 representing the names of the students. Names are made up of all lowercase letters from 'a' to 'z'.

**Output**

Your program must print a single line, containing the name of the student who is to receive the bonus.

**Shopping List**

By Michele Selivon, URI BR Brazil

**Timelimit: 1**

Valentina is a very dedicated woman, and she works late every day. To save her time, she writes down the items at the same time she remembers. She uses a mobile app for this task.

The problem is that the application does not delete duplicate items and as Valentina is distracted, she frequently notes the same item more than once and the list gets too long. You should improve the app used by Valentina. Make a code that excludes duplicate items from the shopping list and sorts them in alphabetical order.

**Input**

The first input line contains an integer **N** (**N** < 100) that indicates the number of test cases that follows. Each shopping list consists of a single line that contains from 1 to 1000 items or words composed only of lowercase letters (from one up to 20 chars), without accents and separated by a space.

**Output**

The output consist of **N** lines, each representing one of Valentina's shopping lists, with no items repeated and sorted in alphabetical order.

**Training List**

By Vinicius Coelho BR Brazil

**Timelimit: 1**

SAP is promoting in its headquarters an event to train candidates for interviews, being presented by the illustrious boss Pietro and hosted in partnership with some universities from Brazil. A form for the interested candidates was created, with fields for basic data such as:

* Complete name;
* University; and
* E-mail for contact.

The amount of interested candidates was much larger than the expected by the organizers, making necessary the confection of lanyards for access into the event. Many booths for distributing the lanyards were created along the entrance of the building, each with a list of registered attendees. However, many of the registered candidates did not show up, leaving a surplus of lanyards. The organizer team wants to know how many people did show up, but, since they are too tired, they asked you to help.

**Input**

The first line of each test is a single integer **C** (1 <= **C** <= 1000), representing the amount of registered candidates. The next line is composed of **C** integers separated by a space, each being 1 if the corresponding candidate joined the event, and 0 if he didn't.

**Output**

The output should be a single integer, representing the amount of candidates that joined the event.

**Name Lists**

By Sergio Costa, UFMA BR Brazil

**Timelimit: 1**

Marta wants to choose some names for her future son or daughter. She found a list of names, but she didn't like its presentation. She wanted to have a list of names, where each line was ordered according to the length of the name, from smallest to largest. On each line, only one name of a given size will appear. For example, consider a list with the names Eva and Ana. In the proposed presentation, Eva will appear on the first line while Ana on the second.

How about we make an algorithm that produces this list of names?

**Input**

The input consists of a first line containing an integer **N**, which can vary from 2 to 1000. The integer **N** represents the number of names in your collection. After that, there are **N** lines containing, each one, a name, which can be between 2 and 19 characters long.

**Output**

The output consists of one or more lines. Each line has a list of names ordered by size, starting with the smallest size. On each line, you will only have one name of a given size, and the next names of the same size will appear on the next lines, in the order they came in the input.

**Encryption**

By Neilor Tonin, URI  Brazil

**Timelimit: 1**

You have been asked to build a simple encryption program. This program should be able to send coded messages without someone been able to read them. The process is very simple. It is divided into two parts.  
  
First, each uppercase or lowercase letter must be shifted three positions to the right, according to the ASCII table: letter 'a' should become letter 'd', letter 'y' must become the character '|' and so on. Second, each line must be reversed. After being reversed, all characters from the half on (truncated) must be moved one position to the left in ASCII. In this case, 'b' becomes 'a' and 'a' becomes '`'.  
  
For example, if the resulting word of the first part is "tesla", the letters "sla" should be moved one position to the left. However, if the resulting word of the first part is "t#$A", the letters "$A" are to be displaced.

**Input**

The input contains a number of cases of test. The first line of each case of test contains an integer **N**(1 ≤ **N**≤ 1 \* 10⁴), indicating the number of lines the problem should encrypt. The following **N**lines contain **M**characters each **M**(1 ≤ **M**≤ 1 \* 10³).

**Output**

For each input, you must present the encrypted message.

**DDD**

Adapted by Neilor Tonin, URI  Brazil

**Timelimit: 1**

Read an integer number that is the code number for phone dialing. Then, print the destination according to the following table:

A white table with black text

Description automatically generated

If the input number isn’t found in the above table, the output must be:  
DDD nao cadastrado  
That means “DDD not found” in Portuguese language.

**Input**

The input consists in a unique integer number.

**Output**

Print the city name corresponding to the input DDD. Print *DDD nao cadastrado*if doesn't exist corresponding DDD to the typed number.

**LED**

Unknown Author

**Timelimit: 1**

John wants to set up a panel containing different numbers of LEDs. He does not have many leds, he is not sure if he will be able to mount the desired number. Considering the configuration of the LEDs of the numbers below, make an algorithm that helps John to discover the number of LEDs needed to set the value.

Note: For Javascript programmers, it is recommended to use of "input.trim().split('\n')" to avoid some known problems.

A red numbers on a white background

Description automatically generated

**Input**

The input contains an integer **N**,**(1 ≤ N ≤ 2000)** corresponding to the number of test cases, followed by **N** lines, each line containing a number**(1 ≤ V ≤ 10100)**corresponding to the value that John wants to set with the leds.

**Output**

For each test case, print one line containing the number of LEDs that John needs to set the desired value, followed by the word "leds".

**Mjölnir**

By Ricardo Martins, IFSULDEMINAS BR Brazil

**Timelimit: 1**

Odin created to Thor the most faithful and powerful possible weapon, Mjolnir hammer. Made of a special mystical ore called Uru and forged in the heart of a star by blacksmiths Gods of Asgard , Brokk and Eitri , blacksmiths legendary.

One day , Thor challenged his friends to see who could raise the Mjölnir .

Write a program that , given a name , and the force in Newtons applied to try to lift the Thunder Hammer , inform the person succeeded in lifting it .

**Input**

An integer C shall be informed , which is the amount of test cases. Each test case begins with one word , which is the first name of who is trying to raise Mjölnir , and an integer N ( 1 ≤ N ≤ 25000 ), indicating the force applied upward in Newtons to pull the hammer of so try to lift it.

**Output**

For each test case print a 'Y' character , if the person has managed to raise or 'N' if you have not achieved .

**Diving**

By Leonardo Fernandes, IFSC BR Brazil

**Timelimit: 1**

In a given diving competition, each dive has a degree of difficulty and is evaluated by seven judges. After each jump, the judges, who don't communicate with each other, show their scores. A dive is evaluated between zero and ten by each judge. After the scores are presented, the highest and the lowest scores are discarded. The remaining scores are added and the sum is multiplied by the degree of difficulty of the dive, which is a number between 1.2 and 3.8 defined before the dive. So, for example, assuming a diver's jump has difficulty 2.0 and his scores are 6,0, 5,0, 5,0, 5,0, 5,0, 5,0 and 4,0. Discarding the highest and lowest scores, we get to a result of 25.0. This result is then multiplied by the degree of difficulty 2.0 for a final score of 50.0. You program must display the results of a competition following these rules.

**Input**

The first row of input has the number of divers**N** (0 ≤ **N** ≤ 100). Next, the name of each competitor is followed by the degree of difficulty **D** (1.2 ≤ **D** ≤ 3.8) of the dive and, in the next line, the seven scores **S1** to **S7** (0 ≤ **S1** to **S7** ≤ 10)given by the judges.

**Output**

The output must show the results of the competition, with the name of each diver followed by the final score, in the order in which the data was input.

**Dijkstra**

By Abner Samuel P. Palmeira, IFSULDEMINAS BR Brazil

**Timelimit: 1**

In the game The Witcher, Sigismund Dijkstra is the leader of the Redanian Secret Service, because of this he is one of the most important people in the world.

In addition Dijkstra has a large treasure, which has several types of jewelry.

Dijkstra is very curious to know how many different types of jewelry his treasure has.

Knowing that you are the best programmer on the continent Dijkstra hired you to check how many different types of jewelry he has in his treasure.

**Input**

The entry consists of several lines and each contains a string describing one of Dijkstra's jewels. This string is composed only of the characters '(' and ')', the sum of the length of all the string does not exceed 106.

**Output**

Print how many different kinds of jewelry Dijkstra has.

**Bean**

By André da Cruz BR Brazil

**Timelimit: 1**

It is said in the surroundings of Montes Claros that, long ago in the municipal market, Sebastião and his companions of work always play a game of divination after the delivery of agricultural products harvested in the week that happened. The game, "Guess Where the Bean is", consists in hiding a grain of beans in one of four opaque glasses, and after shuffling them, the bettor must guess in which glass the vegetable is.

A black background with a black square

Description automatically generated with medium confidence

This year, due to the great cultural and historical success and the enormous amount of people who practice this game in the municipal market, the city council decided to hold a "Guess Where the Bean is '' championship. However, she needs a program to show viewers where the beans were after the end of a game. Knowing that the next Programming Marathon will take place in the city, she soon commissioned a solution from the excellent programmers. In this way, you should assist the organization in this mission with a program that will inform, at the end of a match, where the beans were.

**Input**

The entry will contain only one line with four integers, C1, C2, C3 and C4 separated by a space. The value Ci = 1 indicates that the beans were in cup number i, and Ci = 0 indicates that the ith cup was empty at the end of the game. There will always be exactly one glass with the beans.

**Output**

Write in the output a line containing an integer between 1 and 4, corresponding to the position where the beans were.

**WERTYU**

By Gordon V. Cormack  Canada

**Timelimit: 1**

A keyboard with letters and numbers

Description automatically generated

A common typing error is to place the hands on the keyboard one row to the right of the correct position. So "Q" is typed as "W" and "J" is typed as "K" and so on. You must decode a message typed in this manner.

**Input**

Input consists of several lines of text. Each line may contain digits, spaces, upper case letters (except Q, A, Z), or punctuation shown above [except back-quote (`)]. Keys labelled with words [Tab, BackSp, Control, etc.] are not represented in the input. You are to replace each letter or punction symbol by the one immediately to its left on the QWERTY keyboard shown above. Spaces in the input should be echoed in the output.

**Output**

For each input line, print a corresponding output line with the decoded message.

**Deciphering the Encrypted Card**

By Hamilton José Brumatto BR Brazil

**Timelimit: 1**

The oldest known cipher is the Cipher of Caesar. Caesar wrote his letters by exchanging each letter for the next in the alphabet, to avoid that, when the letter was intercepted, enemy could read it. Over time, encryption has acquired better quality, but encryption based on substitution is still an interesting child's play, for example:

ZEN I T  
POLAR

In this child's play, when writing a letter, the letter Z is replaced by the letter P and vice versa, as well as: E by O and so on. The phrase coded as follows: "**Osro roxre osri caftide**" can be deciphered as: "**Este texto esta cifrado**". As the game got serious, you were prompted for a program that decrypts encrypted messages from a supplied key.

**Input**

The input contains several test cases. Each test case begins with a line indicating two integers **C** and **N**, 0 < **C** < 21 and 0 < **N** < 100. **C** is the size of the cipher. On the next two lines is the **C**-sized cipher indicating which characters from the first line will be replaced by characters from the second line, a character appears only once, on the first or second line.

The cipher can contain letters from 'A' to 'Z', numbers from '0' to '9' plus white space and some punctuation symbols: '.' ',' ';' ':' '(' ')' '!' and '?'. In the next **N** lines are sentences and sentences encrypted by the cipher provided, which you must decipher. Each line contains a minimum of 1 and a maximum of 1000 characters. Any printable ASCII (non-extended) characters are allowed, in this case no accented characters are present, not even 'ç'.

**Output**

For each input test case your program must generate for each sentence line at the input a sentence line with the deciphered output, respecting the capitalization of the letter (capital letters are deciphered as case-sensitive when it is possible to apply, If it is not possible then it will be deciphered as lowercase letters). After each test case, a blank line should be printed, including after the last one.

**VaiNaSort**

By Ricardo Martins, IFSULDEMINAS BR Brazil

**Timelimit: 1**

Professor Odracir Snitram studied various methods of ordering, as well as their respective complexities. One day, he decides to make a test, creating a method, with a box and **N** stones, numbered from 1 to N. The idea was to draw all the stones, one at a time, so that the sequence of numbers drawn was exactly 1 to **N**, that is, by drawing the number 1 first, then the number 2, then the 3, and so on, until the last one, which would be **N**. After drawing everything, if the attempt did not work, all the stones were Returned in the box, and the draw began again until it worked out. This method was named VaiNaSort!

Write a program that, given the amount of stones, and all attempts until you draw correctly, count the attempts.

**Input**

The input has several test cases. Each one starts with an integer **N** (2 ≤ **N** ≤ 10000), representing the amount of stones in the box. Next, there will be a few draw attempts, each formed with the numbers from 1 to N, in any order, until the expected order is achieved. The entry ends with **N** = 0.

**Output**

For each test case, print the total number of attempts.

**Encrypted Christmas Letter**

By Jessica Dagostini, beecrowd BR Brazil

**Timelimit: 1**

Mister Klaus receives the most diverse letters from children all over the world. Every year, with no exceptions, he selects some of the cooler Christmas letters to give them more attention. This year, one of these letters caught the eye of Klaus for a particular reason the letter was encrypted! Inside the envelope, there was the letter with the Christmas request and an attached note that said:

"Mister Santa Klaus: I imagine that you must receive thousands of Christmas letters every year, and maybe it must be annoying to read all of them without a challenge. I hope that my letter brings you a bit of fun! I changed all word vowels by symbols. Use this table to correctly read my request!"

A white rectangular box with black letters

Description automatically generated

Let's help Santa to translate this letter?

**Input**

The input consists of several test cases and ends with **EOF.** Each test case corresponds to a phrase **F** (5 < **F** < 256), composed by lower letters, the symbols from the decryption table and white spaces. Each test case is ended by a line break.

**Output**

Prints the decrypted phrase, with the help of the table given by the author of the letter.