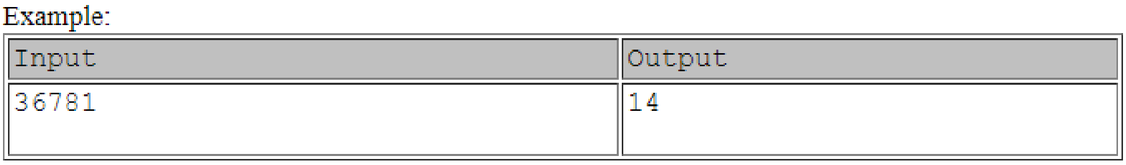
A- Sum even digits

Build a program that calculates the sum of the even digits of a positive integer entered by the user. For example, if the input is number 36781 the output will be 14 (8 + 6).

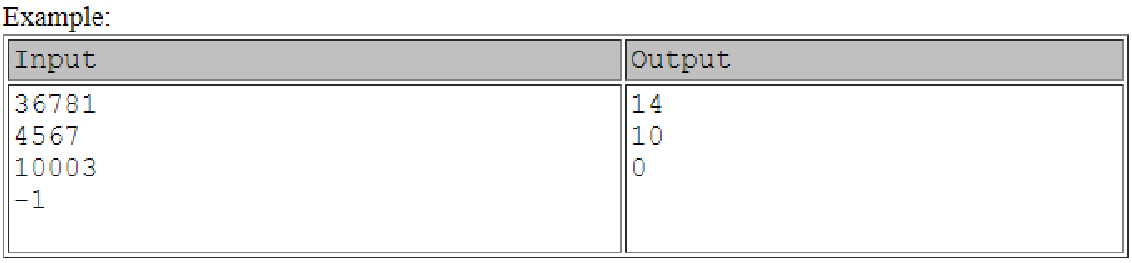


Example:

Input	Output
36781	14

B- Sum even digits (v2)

Build a program that calculates the sum of the even digits of a positive integer entered by the user. For example, if the input is number 36781 the output will be 14 (8 + 6). The algorithm must be applied to a sequence of integers terminated by a non-positive number.

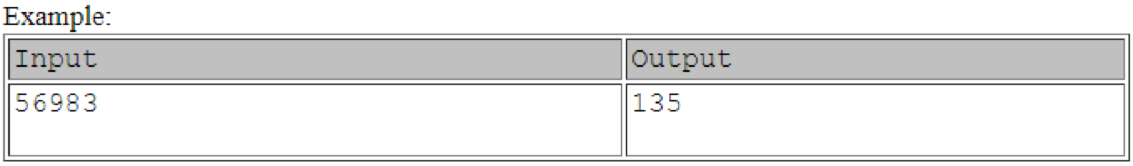


Example:

Input	Output
36781 4567 10003 -1	14 10 0

C- Product of odd digits

Build a program that calculates the product of odd digits of a positive integer entered by the user. For example, if the input is number 56983 the output will be 135 (3 * 9 * 5). If there are no odd digits, it should be displayed the message "no odd digits".

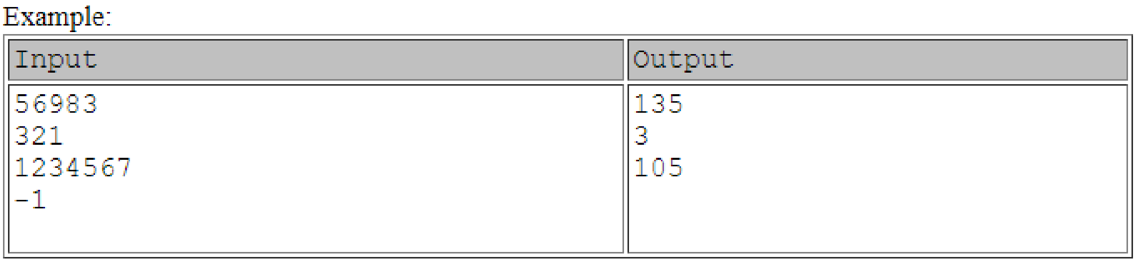


Example:

Input	Output
56983	135

D- Product of odd digits (v2)

Build a program that calculates the product of odd digits of a positive integer entered by the user. For example, if the input is number 56983 the output will be 135 (3 * 9 * 5). If there are no odd digits, it should be displayed the message "no odd digits". The algorithm must be applied to a sequence of integers ending with a non-positive number. Each result should be displayed in separate line.

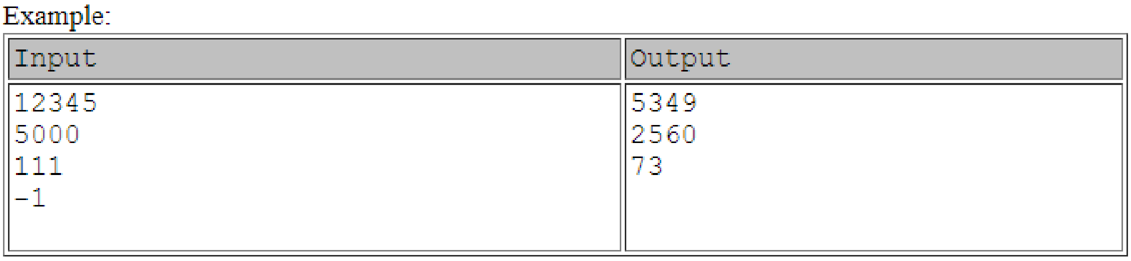


Example:

Input	Output
56983 321 1234567 -1	135 3 105

E- Convert from base 8 to decimal

Build a program that takes an integer in base 8 and converts it to the decimal system. The algorithm must be applied to a sequence of integers ending with a non-positive number. Each result should be displayed on a separate line.

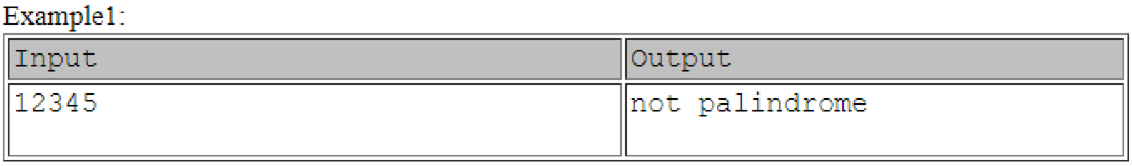


Example:

Input	Output
12345 5000 111 -1	5349 2560 73

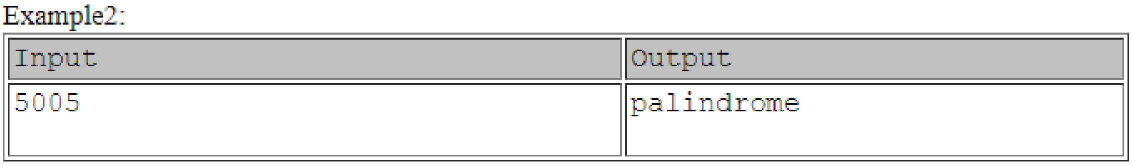
F- Palindrome

Build a program that receives a positive integer and check whether or not it is a palindrome. A palindrome is a sequence that reads the same backward as forward, e.g., "madam" or "kayak". The result should be the message "palindrome" or "not palindrome".



Example1:

Input	Output
12345	not palindrome

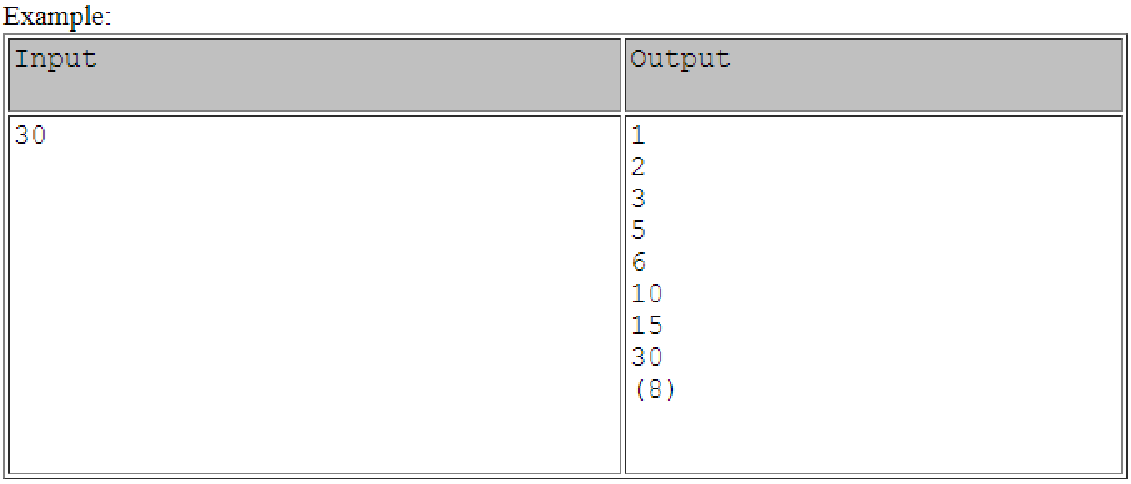


Example2:

Input	Output
5005	palindrome

G- Dividers of a number

Build a program that, given a positive integer, writes all its dividers and, at the end, the number of dividers in parentheses. All values must be written on separate lines.

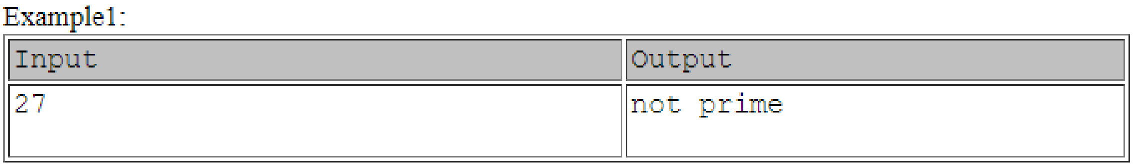


Example:

Input	Output
30	1 2 3 5 6 10 15 30 (8)

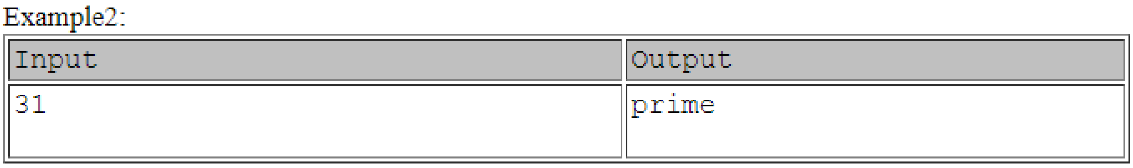
H- Prime Number

Build a program that given a positive integer checks whether or not it is a prime number. A number is prime if it is an integer greater than 1 and is only divisible, by itself and by 1. The result should be the message "prime" or "not prime".



Example1:

Input	Output
27	not prime

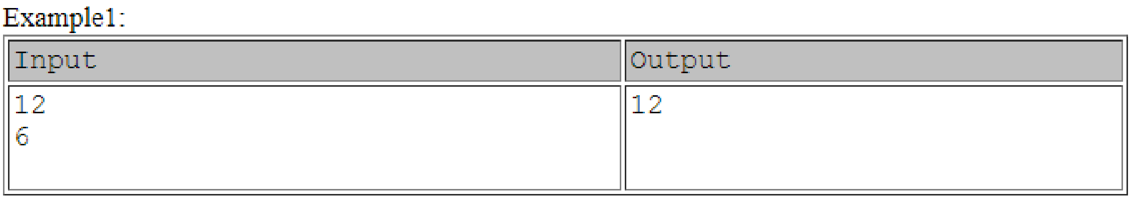


Example2:

Input	Output
31	prime

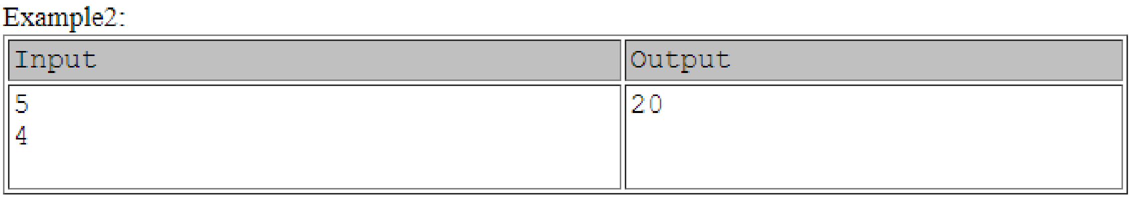
I- Least common multiple

Build a program that given two positive integers calculates the least common multiple. The least common multiple (LCM) of 2 numbers is the smallest positive number that is a multiple of these two numbers.



Example1:

Input	Output
12 6	12



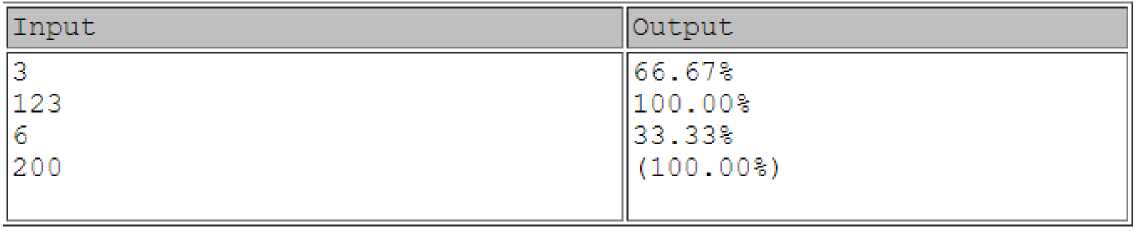
Example2:

Input	Output
5 4	20

J- Percentage of digits that are divisors of the number to which they belong

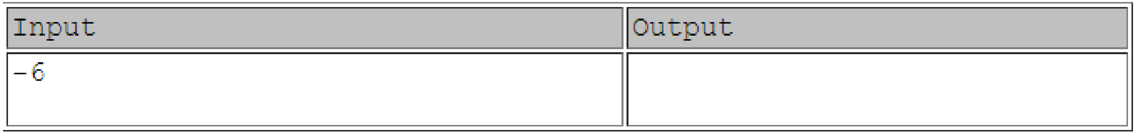
Build a program that reads a sequence of N positive integers, where N is entered by the user. If the value of N is negative the algorithm terminates immediately. The program must display on a separate line, for each of the numbers read, the percentage of digits that are divisors of the number itself (using 2 decimal places). The digit zero (0) should not be considered as potential divisor but should be counted as digit. At the end, the highest of these percentages should be displayed in brackets (using 2 decimal places).

Example1:



Input	Output
3 123 6 200	66.67% 100.00% 33.33% (100.00%)

Example2:

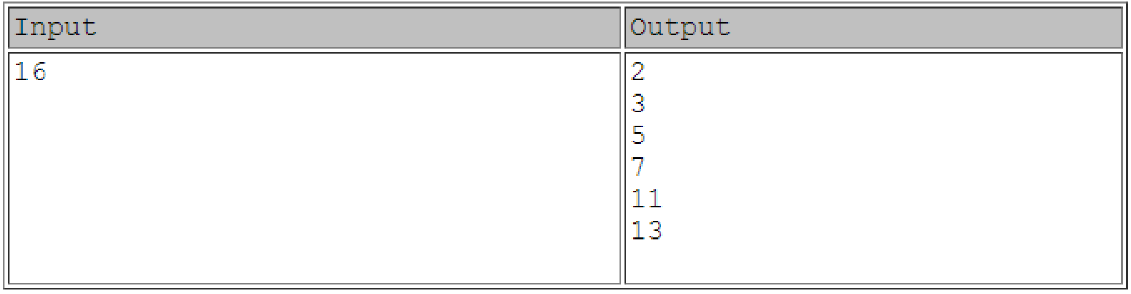


Input	Output
-6	

K- Prime numbers below a limit

Build a program that determines and displays prime numbers up to a certain N value entered by the user. A number is prime if it is integer, greater than 1, and only divisible, by itself and by 1. Each number must appear on a separate line.

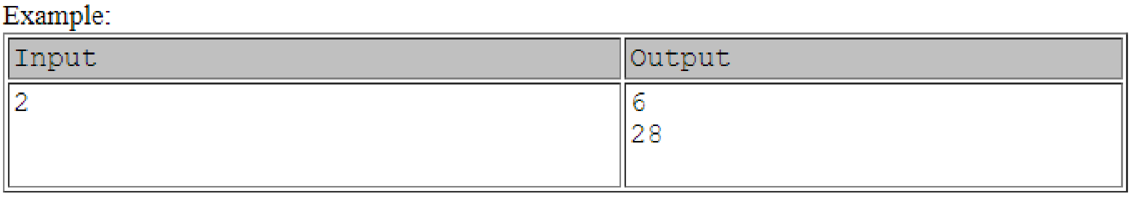
Example:



Input	Output
16	2 3 5 7 11 13

L- Perfect Numbers

Build a program that determines and visualizes the first N perfect numbers. A number is perfect if it is natural and equals to the sum of all its divisors (excluding the number itself). Each number should appear on a separate line.

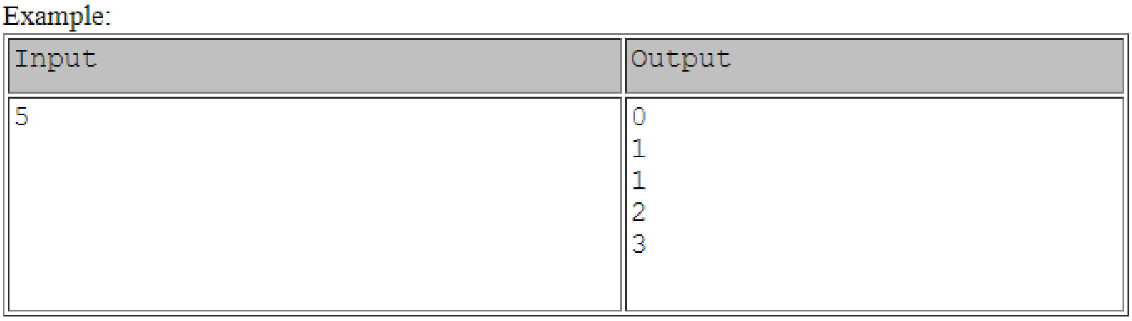


Example:

Input	Output
2	6 28

M- Fibonacci Sequence

Build a program to display the first N terms of Fibonacci's succession. In this sequence, the first term is zero (0), the second term is one (1), and any of the other terms is equal to the sum of its previous two terms. Each number should appear on a separate line.

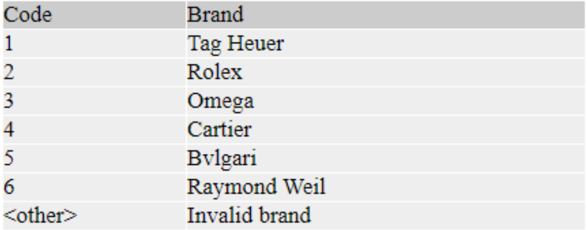


Example:

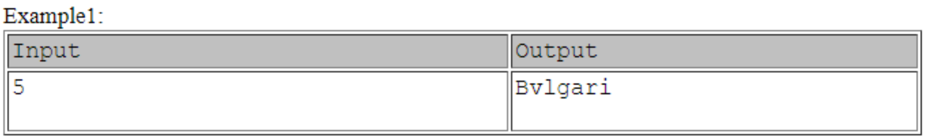
Input	Output
5	0 1 1 2 3

X- Clock

Build a program that based on an integer value, representative of a clock code, indicates the clock brand. The following table indicates the correspondence between the clock code and the clock brand.



Code	Brand
1	Tag Heuer
2	Rolex
3	Omega
4	Cartier
5	Bvlgari
6	Raymond Weil
<other>	Invalid brand

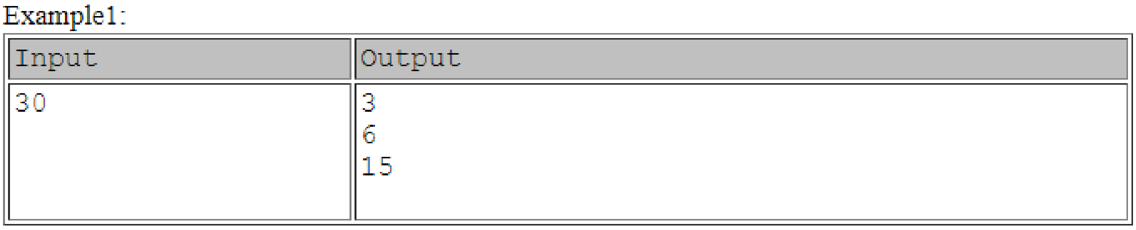


Example1:

Input	Output
5	Bvlgari

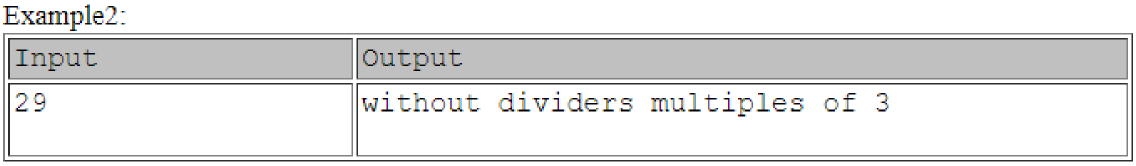
Y- Dividers multiples of 3

Build a program that reads a positive integer and displays all of its dividers that are multiples of 3. Each divider should be displayed per line. If there are no dividers, the message "without dividers multiples of 3" should be displayed.



Example1:

Input	Output
30	3 6 15

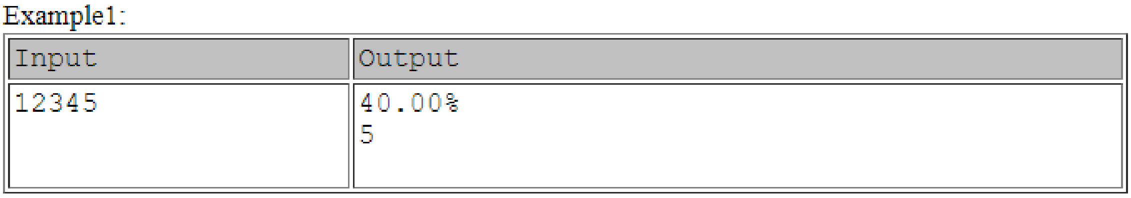


Example2:

Input	Output
29	without dividers multiples of 3

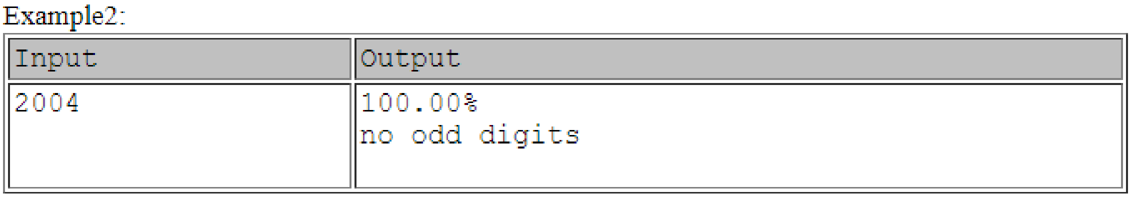
Z- Percentage of even digits and the greatest odd digit

Build a program that reads a positive integer, and determines the percentage of even digits and the greatest odd digit. The percentage must be displayed using to 2 decimal places. If there are no odd digits, the message "no odd digits" should be displayed. Each output value should be displayed on separate lines.



Example1:

Input	Output
12345	40.00% 5



Example2:

Input	Output
2004	100.00% no odd digits