Coding Area

Number Sort Spell

Problem Description

Let's play the following game with two natural numbers (positive integers): Say, the two numbers are 5 and 6 and display them sorted as below in column A. We then spell the numbers and display them in column B. The spellings are then sorted and displayed in column C while column D displays the numerals corresponding to the sorted spellings:

Column A: Sorted numerals

Column B: Spelt numerals

Column C: Sorted Spelt numerals

Column D: Numerals corresponding to sorted spellings

Table 1:

A	B	C	D
5	Five	Five	5
6	Six	Six	6

Note that "Five" appears before "Six" in sorting order. Hence the numbers 5 and 6 are in the same order even when they are spelt!

Let's now generate two new numbers by adding up the corresponding numbers (in columns A and D) in the two rows in the table above: Table 2:

A	B	C	D
10	Ten	Ten	10
12	Twelve	Twelve	12

Again the spelt numbers appear in the sorted order corresponding to the numbers themselves. Proceeding in this fashion, we get the following tables: Table 3:

A	B	C	D
20	Twenty	Twenty	20
24	Twenty Four	Twenty Four	24

Table 4:

A	B	C	D
40	Forty	Forty	40
48	Forty Eight	Forty Eight	48

Table 5:

A	B	C	D
80	Eighty	Eighty	80
96	Ninety Six	Ninety Six	96

Table 6:

A	B	C	D
160	One Hundred Sixty	One Hundred Ninety Two	192
192	One Hundred Ninety Two	One Hundred Sixty	160

Table 7:

A	B	C	D
352	Three Hundred Fifty Two	Three Hundred Fifty Two	352
352	Three Hundred Fifty Two	Three Hundred Fifty Two	352

We observe that the two numbers 5 and 6 have "converged" to 352.

Here's another example with the two numbers being 100 and 50:

Table 1:

A	B	C	D
50	Fifty	Fifty	50
100	One Hundred	One Hundred	100

Table 2:

A	B	C	D
100	One Hundred	One Hundred	100
200	Two Hundred	Two Hundred	200

Table 3:

A	B	C	D
200	Two Hundred	Four Hundred	400
400	Four Hundred	Two Hundred	200

Table 4:

A	B	C	D
600	Six Hundred	Six Hundred	600
600	Six Hundred	Six Hundred	600

Thus 50 and 100 "converge" to 600. Note that the numbers converge when the spelled order breaks from the numeric order. Write a program to accept two natural numbers n1 and n2, perform the above calculations and output the "converged" number. The following are some example spellings of numbers - spell numbers in a similar fashion:

100: One Hundred

1729: One Thousand Seven Hundred Twenty Nine

99,999: Ninety Nine Thousand Nine Hundred Ninety Nine

output "Out of bounds" if any number exceeds 99,999 during calculations.

(Note: If the input numbers are the same, we would take the output to be that number itself.)

Constraints

N,M<=90000

Input Format

First Line contains two integers delimited by space <N M>

Output

Single line containing Converge number

"Out of bounds" if any number exceeds 99,999 during calculations.

Test Case

Explanation

Example 1: Input: 5 6 Output: 352

Example 2: Input: 1 1 Output: 1

Upload Solution [Question : B]

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