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# Super Digit

Problem

Submissions

Leaderboard

Discussions

We define super digit of an integer  $x$  using the following rules:

- If  $x$  has only 1 digit, then its super digit is  $x$ .
- Otherwise, the super digit of  $x$  is equal to the super digit of the digit-sum of  $x$ . Here, digit-sum of a number is defined as the sum of its digits.

For example, super digit of **9875** will be calculated as:

```
super_digit(9875) = super_digit(9+8+7+5)
                  = super_digit(29)
                  = super_digit(2+9)
                  = super_digit(11)
                  = super_digit(1+1)
                  = super_digit(2)
                  = 2.
```

You are given two numbers  $n$  and  $k$ . You have to calculate the super digit of  $P$ .

$P$  is created when number  $n$  is concatenated  $k$  times. That is, if  $n = 123$  and  $k = 3$ , then  $P = 123123123$ .

## Input Format

The first line contains two space separated integers,  $n$  and  $k$ .

## Constraints

- $1 \leq n < 10^{100000}$
- $1 \leq k \leq 10^5$

## Output Format

Output the super digit of  $P$ , where  $P$  is created as described above.

## Sample Input 0

```
148 3
```

## Sample Output 0

```
3
```

## Explanation 0

Here  $n = 148$  and  $k = 3$ , so  $P = 148148148$ .

```
super_digit(P) = super_digit(148148148)
                = super_digit(1+4+8+1+4+8+1+4+8)
                = super_digit(39)
                = super_digit(3+9)
                = super_digit(12)
                = super_digit(1+2)
                = super_digit(3)
                = 3.
```

[f](#) [t](#) [in](#)

Contest ends in an hour

Submissions: 0

Max Score: 20

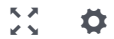
Difficulty: Medium

Rate This Challenge:

☆☆☆☆☆

[More](#)

Scala



```
1 object Solution {
2
3   def main(args: Array[String]) {
4     val inputed = scala.io.StdIn.readLine();
5     var arrayed = inputed.split(' '); // println(arrayed.mkString(" ")) to show array
6     var n = sum(arrayed(0));
7     var k = arrayed(1).toInt
8     var results=(for (i <- 1 to k) yield n).mkString("");
9     println(sum(results)) ;
10  }
11
12  def sum(n:Any):Any ={ // Outside of main so it executes first.
13    if (n.toString.length == 1) {
14      n
15    }
16    else {
17      sum(n.toString.map(_.asDigit).sum);
18    }
19  }
```

Line: 9 Col: 36

[Upload Code as File](#) ☐ Test against custom input

Run Code

Submit Code

Testcase 0 ✓

**Congratulations, you passed the sample test case.**Click the **Submit Code** button to run your code against all the test cases.

Compile Message

warning: 1 deprecation (since 2.13.0); re-run with -deprecation for details

Compile Time

Input (stdin)

148 3

Your Output (stdout)

3

Expected Output

3

Run Time