

# **Recursive Digit Sum ☆**

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We define super digit of an integer  $\boldsymbol{x}$  using the following rules: Given an integer, we need to find the super digit of the integer.

Submissions

• If  $m{x}$  has only  $m{1}$  digit, then its super digit is  $m{x}$ .

**Problem** 

ullet Otherwise, the super digit of  $oldsymbol{x}$  is equal to the super digit of the sum of the digits of  $oldsymbol{x}$ .

Leaderboard

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

You are given two numbers n and k. The number p is created by concatenating the string n k times. Continuing the above example where n = 9875, assume your value k = 4. Your initial p = 9875 9875 9875 9875 (spaces added for clarity).

All of the digits of p sum to 116. The digits of 116 sum to 8.8 is only one digit, so it's the super digit.

## **Function Description**

Complete the function superDigit in the editor below. It must return the calculated super digit as an integer.

superDigit has the following parameter(s):

- n: a string representation of an integer
- k: an integer, the times to concatenate  $m{n}$  to make  $m{p}$

#### **Input Format**

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

## Constraints

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

#### **Output Format**

Return 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)
Sample Input 1
  9875 4
Sample Output 1
  8
Sample Input 2
  123 3
Sample Output 2
  9
Explanation 2
Here n=123 and k=3, so P=123123123.
  super_digit(P) = super_digit(123123123)
              = super_digit(1+2+3+1+2+3+1+2+3)
              = super_digit(18)
              = super_digit(1+8)
              = super_digit(9)
              = 9
```

```
Change Theme C++

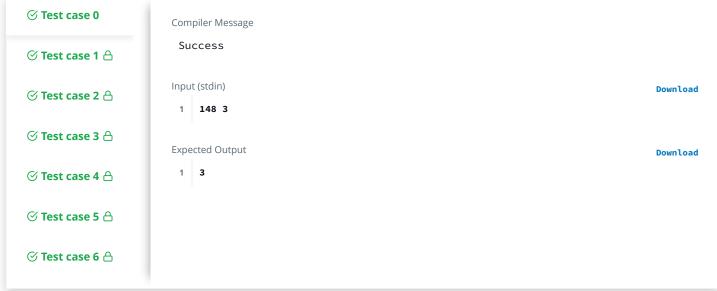
Unit No. 157 (a)

using namespace std;

vector<string> split_string(string);

// Complete the superDigit function below.
```

```
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                                                                Recursive Digit Sum | HackerRank
            int superDigit(string n, int k) {
   long sum=0;
       8
      10
                 for(char &i: n){
      11
                     sum += i - '0';
      12
                 }
      13
                 sum*=k;
      14
                if(sum<=9) return sum;</pre>
      15
      16
                 return superDigit(to_string(sum), 1);
      17
            //https://www.youtube.com/watch?v=Z8jUZLxCxeM&ab_channel=nexTRIE
      18
      19
            }
      20
            int main()
      21
      22
            {
                 ofstream fout(getenv("OUTPUT_PATH"));
      23
                                                                                                                           Line: 13 Col: 12
    1 Upload Code as File
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                                  Compiler Message
                                    Success
```



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