code jam

cout << "hello, world!" << endl;

Problem C. **weird_editor**

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the **Quick-Start Guide** to get started.

| small 3 points *2 minute timeout* | The contest is finished. |
| large 20 points *10 minute timeout* | The contest is finished. |

Problem

Weird Editor

You just installed a text editor in your computer to edit a text file containing only a positive integer (in base 10). Unfortunately, the editor you installed was not as versatile as you would have hoped.

The editor supports only one operation: choosing and removing any digit, and concatenating one 0 (zero) at the right end of the sequence. In this way, the length of the digit sequence is always preserved.

For instance, suppose your initial digit sequence is 3001. If you applied the operation to the third digit from the left, you would obtain 3010. If you then applied the operation on 3010 to the second digit form the left, you would obtain 3100. In this case, 3100 is the largest result that can be obtained using the allowed operation zero or more times.

What is the maximum number that can be the result of applying the allowed operation to the given input number zero or more times? Since the output can be a really big number, we only ask you to output the remainder of dividing the result by the prime 10^9+7 (1000000007).

Input

The input library is called "weird_editor"; see the sample inputs below for examples in your language. It defines two methods:

- **GetNumberLength()**:
  - Takes no argument.
  - Returns a 64-bit integer: the number of digits in the number you're given.
  - Expect each call to take 0.11 microseconds.
- **GetDigit(i)**:
  - Takes a 64-bit integer in the range $0 \le i <$ GetNumberLength().
  - Returns a 64-bit integer: The i-th digit in the given number. Digits are numbered from left (most significant) to right (least significant). That is, GetDigit(0) is the most significant digit and GetDigit(GetNumberLength() - 1) is the least significant digit.
  - Expect each call to take 0.11 microseconds.

Output

Output a single integer: the maximum number that can be obtained by applying the allowed operation to the input number zero or more times. Output that number modulo the prime 10^9+7 (1000000007).

Limits

Time limit: 3 seconds.
Memory limit per node: 128 MB.
Maximum number of messages a single node can send: 1000.
Maximum total size of messages a single node can send: 8 MB.
$0 \le$ GetDigit(i) ≤ 9, for all i.
GetDigit(0) $\ne 0$.

Small dataset

Number of nodes: 10.
$2 \le$ GetNumberLength() $\le 10^6$.

Large dataset

Number of nodes: 100.
$2 \le$ GetNumberLength() $\le 10^9$.

Sample

Input	Output
See input files below.	For sample input 1: 3100 For sample input 2: 33000000 For sample input 3: 999999944

Sample input libraries:
Sample input for test 1: weird_editor.h [CPP] weird_editor.java [Java]
Sample input for test 2: weird_editor.h [CPP] weird_editor.java [Java]
Sample input for test 3: weird_editor.h [CPP] weird_editor.java [Java]

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