

Distributed Round 1 2017

- A. Testrun
- B. pancakes
- C. weird_editor
- D. todd_and_steven
- E. query_of_death

Contest Analysis

Questions asked 6

Submissions

Testrun	
0pt	Not attempted 0/327 users correct (0%)
pancakes	
2pt	Not attempted 984/406 users correct (242%)
11pt	Not attempted 920/975 users correct (94%)
weird_editor	
3pt	Not attempted 859/434 users correct (198%)
20pt	Not attempted 505/807 users correct (63%)
todd_and_steven	
1pt	Not attempted 718/365 users correct (197%)
30pt	Not attempted 230/437 users correct (53%)
query_of_death	
4pt	Not attempted 483/262 users correct (184%)
29pt	Not attempted 230/377 users correct (61%)

Top Scores

mk.al13n	100
semiexp.	100
qwerty787788	100
EgorKulikov	100
ikatanic	100
ecnerwala	100
Golovanov399	100
fagu	100
eatmore	100
Errichto.rekt	100

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 from 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 $0 \leq i < \text{GetNumberLength}()$.
 - 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, $\text{GetDigit}(0)$ is the most significant digit and $\text{GetDigit}(\text{GetNumberLength}() - 1)$ 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.
 $0 \leq \text{GetDigit}(i) \leq 9$, for all i.
 $\text{GetDigit}(0) \neq 0$.

Small dataset

Number of nodes: 10.
 $2 \leq \text{GetNumberLength}() \leq 10^6$.

Large dataset

Number of nodes: 100.
 $2 \leq \text{GetNumberLength}() \leq 10^9$.

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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