The universal number

Input file:	`stdin`
Output file:	`stdout`
Time limit:	1 second
Memory limit:	256 megabytes

In the Italian city of Mikel Angelo lived a famous sculptor. Cutting off excess, he created a beautiful. "Everything perfect in the world is measured by universal numbers", he said. The *universal* number is the smallest natural number $U(n)$ with the magic feature: after removing some digits one can obtain any natural number from 1 to n. For example, for $n = 10$, the universal number is $U(10) = 1023456789$.

Your task is to learn how to calculate universal numbers for any natural number n.

Input

The single line contains a positive integer n, it's decimal notation contains no more than 10^5 digits.

Output

In a single line output the universal number $U(n)$.

Examples

stdin	stdout
1	1
2	12
10	1023456789