The Vault

White-hat hackers at M.O.T.H.E.R. (and black-hat hackers from elsewhere) are testing the security of the company's top-secret database, nicknamed The Vault. This database is secured with 6ft-thick steel blast-doors and 24-hour security, written in binary code.

To access The Vault, a string of **k**-ary digits must be typed into a non-descript terminal in the basement of the M.O.T.H.E.R. headquarters. If the string contains the **n**-digit long access code, the blast-doors swing open (metaphorically speaking, of course).

The hackers have obtained the integers **n** and **k** and want to determine the shortest **k**-ary string that contains all possible *n*-digit access codes. Because they're flashy show-offs, the hackers want to enter the first such string in lexicographic order.

INPUT   You will be given two integers on a single line, **n** and **k**.

$1 \leq n \leq 20$
$2 \leq k \leq 10$
$k^n \leq 2{,}000{,}000$

OUTPUT   Output the shortest **k**-ary string that contains all possible **n**-digit access codes. Since multiple possible strings exist, output the one that comes first in lexicographic order.

SAMPLE   For example, suppose **n** = 3 and **k** = 2. The hackers would want to enter the string 0001011100 as it contains all possible 3-digit access codes: 000, 001, 010, 101, 011, 111, 110, 100. This string has the shortest possible length, and comes first in lexicographic order.

INPUT	OUTPUT
3 2	0001011100
3 3	0001002011012021022111212200
1 9	012345678