

Generate Strings

Task

You will receive two positive integers n, k . Print in lexicographical order all strings of length n consisting of the first k letters of the uppercase English alphabet.

Input

The only line of input contains two positive integers n, k separated by a space.

You can assume that $1 \leq k \leq 26$, $1 \leq n \leq 100$, and that the number of strings to be printed will be at most 100,000.

Output

Print all strings of length n consisting of the first k letters of the alphabet, each on a separate line.

Examples

input
2 3

output
AA
AB
AC
BA
BB
BC
CA
CB
CC

input
3 2

output
AAA
AAB
ABA
ABB
BAA
BAB
BBA
BBB

input
10 1

output
AAAAAAAAAA