

Cover a board**P16898_en**

You have an $n \times m$ board. In how many ways can you cover it with 1×2 pieces?

Input

Input consists of n and m . Assume $2 \leq nm \leq 40$, and that nm is even.

Output

Print in lexicographical order all the ways to cover the board. To distinguish the pieces, the two cells of the same piece must have the same digit, and two adjacent pieces must have different digits. Apart from that, digits should be as small as possible. (See the sample output 3.) Print a blank line after every solution.

Sample input 1

1 2

Sample output 1

00

Sample input 2

2 2

Sample output 2

00

11

01

01

Sample input 3

2 4

Sample output 3

0010

2210

0011

1100

0100

0122

0101

0101

0110

0220

Problem information

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