
Cover a board

P16898_en

Dotzè Concurs de Programació de la UPC - Semifinal (2014-07-02)

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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