A Hamiltonian cycle for a chess knight

Cost: 8 | Solved: 12

Memory limit: 256 MBs

Time limit: 3 s

Input: standard input

Output: standard output

Task:

You are given a chessboard of *n* rows and *m* columns.

You should find such path of the knight's movement that would contain every cell of the chessboard (and each cell must be visited *only once*).

Input:

Contains two naturals *n* and *m* – the quantity of rows and columns of the chessboard (4 ≤ *n*, *m* ≤ 26).

Output:

If such path exists, output it. Otherwise write -1.

Example:

Input	Output

	1 1
	3 2
	4 4
	2 5
	1 3
	2 1
	4 2
	3 4
	1 5
	2 3
	3 1
	1 2
4 5	2 4
	4 5
	3 3
	4 1
	2 2
	1 4
	3 5
	4 2