Problem F. Full Clue Problem

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	1024 megabytes

Slitherlink is a puzzle game played on a $n \times n$ grid. Some cells of the grid contain numbers (called *clues*). The solver must draw lines along the edges of some cells to form a loop, such that:

- The loop does not branch off or cross itself.

- The number written in a cell is equal to the number of edges surrounding the cell that are visited by the loop.
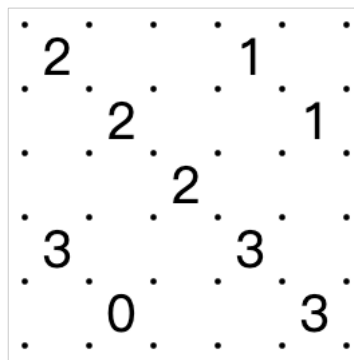
Example Problem
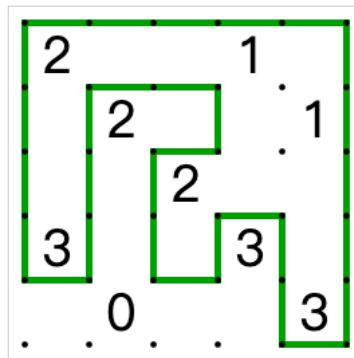
Solution

Construct a $n \times n$ slitherlink problem with full clues but multiple solutions. Moreover, there must be a pair of different solutions that satisfy all clues but share at most four edges.

Note: "full clues" means every cell in the problem should be filled with a clue number from $0, \ldots, 4$. "Two solutions share x edges" means that exactly x edges appear in both solutions.

Input

In the first line, n ($2 \le n \le 20$). It is guaranteed that an answer always exists.

Output

First, output an $n \times n$ matrix — the problem.

Then, output two solutions — two $n \times n$ matrices. For each cell, if it is inside the loop, output "1", otherwise output "0".

Example

standard input	standard output
5	2 2 2 1 2
	2 2 3 1 1
	2 2 2 1 1
	3 2 3 3 2
	1 0 1 1 3
	1 1 1 1 1
	1 0 0 1 1
	1 0 1 1 1
	1 0 1 0 1
	0 0 0 0 1
	1 1 1 1 1
	0 0 0 0 0
	0 0 0 0 0
	0 0 0 0 0
	0 0 0 0 0

Note

The example just shows how to output the problem and solutions. It will get a Wrong Answer verdict. These two solutions share 9 edges and the second solution doesn't satisfy all clues.