water235

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

Given an $N \times M$ matrix, your task is to fill all the cells with water, using the least amount of water possible.

According to the rules of `Minecraft`, if a cell is empty and at least two of its neighboring cells (a neighboring cell is a cell that shares an edge) are filled with water, then this cell will be filled with water.

The water-filling process continues until there are no more empty cells adjacent to at least two cells with water.

Input

The first line of the input contains two integers N and M ($1 \leq N \times M \leq 10^6$), indicating the size of the matrix.

Output

The first line of the output contains a single integer, indicating the minimum number of 1.

The next N lines contain a 0/1 matrix of $N \times M$. In the matrix, 1 represents you will fill the water in this grid initially, and 0 means empty.

If there exists multiple solutions, you may print any of them.

Examples

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