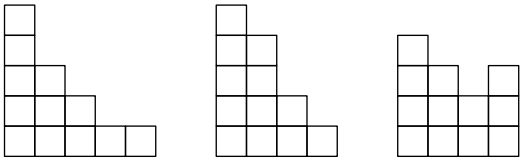
Problem B. Building a Stair

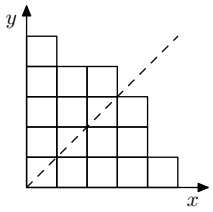
Time limit: 3 seconds
Memory limit: 512 megabytes

Little Barney just got a new toy cube set from his parents. His set contains n identical cubes. Barney immediately started building various objects with these cubes.

The latest thing Barney built is a *stair*. A stair consists of one or more towers of cubes, where the heights of towers are *non-increasing* from left to right. In the following picture, you can see three different shapes with 12 cubes each. The first two are stairs and the third one is not a stair.



Barney noticed that for some stairs you can turn your head 90 degrees to the right and you will see the same stair, but reversed! He calls such stairs *symmetric*. For example, the first stair above is symmetric, but the second one is not. Formally, a stair is symmetric if and only if when you reflect the picture over the $x = y$ line, you get the same stair (where the x-axis is horizontal and oriented to the right, and the y-axis is vertical and oriented upwards).



Barney wants to build a symmetric stair using all of his n cubes. Show him how to do it!

Input

The single line of the input contains an integer n — the number of cubes at Barney's disposal ($1 \le n \le 100$).

Output

If there is no symmetric stair with n cubes, output a single integer -1.

Otherwise, in the first line, output one integer m — the number of rows and columns in the picture of the stair ($1 \le m \le 100$). Then, output m lines describing the stair. Each line must contain exactly m characters '`o`' (a lowercase English letter) or '`.`', where '`o`' describes a cell with a cube, and '`.`' describes an empty cell. There must be exactly n '`o`' characters in total. The cell in the bottom left corner must contain a cube. If there is more than one solution, output any of them.

Examples

standard input	standard output
3	3 ... o.. oo.
17	5 o.... ooo.. oooo. oooo. ooooo