Problem A. Palette

Input file:	`stdin`
Output file:	`stdout`
Time limit:	2 seconds
Memory limit:	512 megabytes

One not so famous artist Palevich is trying to use up-to-date technologies in his paintings. To make the process of creating his masterpieces easier, he decided to create a palette which contains all combinations of basic colors. In case you are new to this, there are exactly n basic colors. In this problem we will denote them by capital English letters `'A'`, `'B'`, `'C'`, ..., n-th letter of the alphabet.

He has already decided that his palette will have the form of table $r \times c$, $rc = 2^n$. Each cell of the table should contain unique combination of basic colors. By combination we mean a subset of colors. So there are 2^n combinations in total, including one special combination of zero colors.

Before making a real palette, Palevich is going to see how it will look. He will draw it in his favourite graphics editor. The editor provides some simple tools that Palevich will use to draw the palette. First, he creates n layers, one layer per basic color. In the first layer, he selects simple (without self-crossings and self-intersection) polygon. The edges of the polygon should be parts of grid lines of the table. Then he fills all cells of the table that are inside the selected polygon with color `'A'`, creating solid connected figure of the color 'A'. He repeats this process for every other color (in a separate layer), and then merges the layers. This causes colors to mix and create different combinations.

Consider the following example: there are three basic colors `'A'`, `'B'` and `'C'`, and Palevich wants to create palette in 2×4 table. First, he creates three layers and paints them like in the picture.

A	
A	
A	
A	

B	B
B	B

C	C
C	C

Then he merges all layers into one, producing the following palette. It is easy to see that each cell of the table contains unique combination of colors.

A	
A,C	C
A,B,C	B,C
A,B	B

As you see, Palevich has managed to create 2×4 palette, and even a 4×4 one, but he is completely unable to create larger palettes. Your task is to help him.

Input

Input contains two integer numbers r and c ($4 \le r, c \le 256$, $rc = 2^n$ for some integer n).

Output

Print n layers, the first one should correspond to the color `'A'`, the second layer — to the color `'B'`, and so on. Print each layer as r lines of c characters each. Print the cells that are inside the filled polygon as letter of corresponding color, all other cells print as `'.'` (dot). Print a blank line between consecutive layers. If there are multiple solutions, output any of them.

Examples

stdin	stdout
4 4	AAAA AAAA .... BBB. B... BBBB .... .CCC .C.. CC.. CC.. .D.. DDD. D.D. D.D.