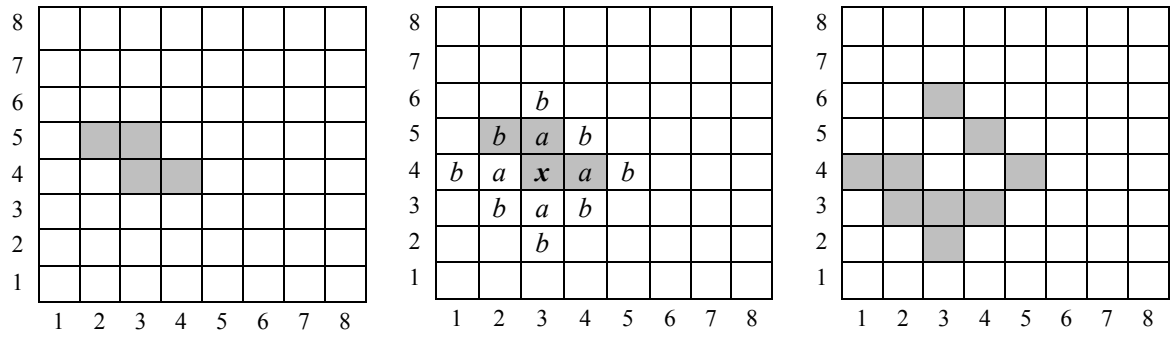
ACSL
American Computer Science League

2016-2017 **Contest 3**

ACSL Lights Out
Senior Division

PROBLEM: Lights Out is a board game in which tiles can be either turned on or turned off. When a tile is pressed, then that tile along with all the horizontally and vertically adjacent tiles *and* those adjacent to the original adjacent tiles (again, just horizontally and vertically) are inverted. The starting board is an 8x8 grid and all tiles are off.

In the board on the left below, 4 tiles have been turned on; they are indicated by gray squares. In the middle diagram, we're getting ready to press the tile marked with an *x* (at row 4, column 3). The adjacent tiles are labeled with an *a*, and those adjacent to the *a* tiles are labeled with a *b*. The board at the right shows the board after the *x* tile is pressed.



In this problem, you be given the configuration of two boards. You need to report which tile was pressed to go from the first board to the other board.

INPUT: There will be 6 lines of input. The first line is the initial configuration of the board. This is followed by the board configuration after a tile has been pressed on each of the first five boards. Each board is encoded in hexadecimal, starting in the bottom left corner and proceeding from left to right, bottom to top. There is a single space between every 4 hex digits. The first line of the sample data corresponds to the leftmost board above; the second line corresponds to the rightmost board above after 43 is pressed.

OUTPUT: Print the tile that was pressed to go from Input #1 to Input #2; from Input #2 to Input #3; and so on. The tile must be printed as a 2-character string, row followed by column. We guarantee that a single pressed tile will advance the board from one line to the next.

SAMPLE INPUT:

1. `0000 0030 6000 0000`
2. `0020 70C8 1020 0000`
3. `0020 70D8 285C 3810`
4. `072F 77DA 285C 3810`
5. `0020 70D8 285C 3810`
6. `0020 70D8 285D 3B17`

SAMPLE OUTPUT:

1. 43
2. 64
3. 27
4. 27
5. 88