I Made Some Paper Puzzles

...and since you're reading this, you might want to see them(?)

Part IV

By Arvi Teikari

Version 1.1

Table of contents:

○ = Idea not at all by me

★ = I especially like this and/or it has received positive comments

✕ = Probably weak

\+ = Has been implemented on pzprxs, puzz.link and/or Puzzle Square

*(credit to **X_Sheep** for puzz.link implementations. Thank you!)*

\+ = Has been implemented in the Kudamono puzzle editor

*(credit for both the editor & the implementation goes to **Pedro**. Thank you!)*

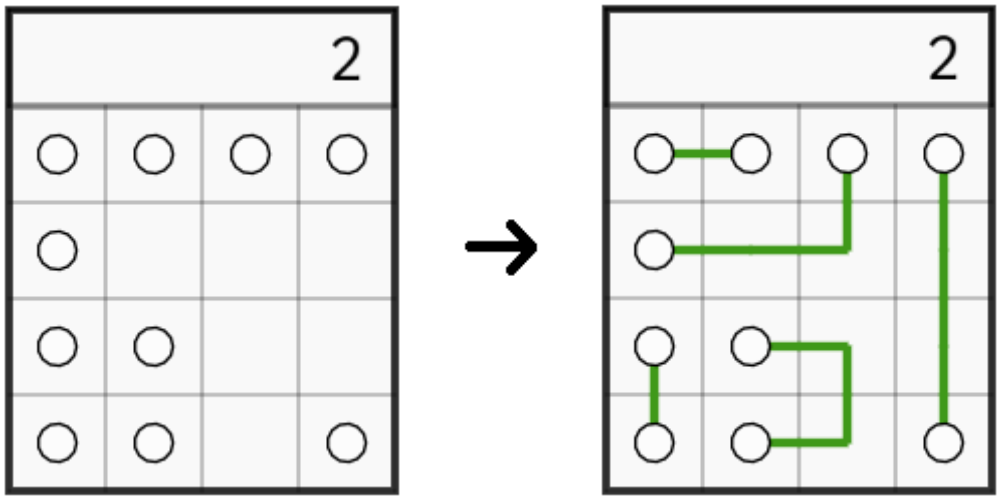
Piirilevy

6/2022

Piirilevy is Finnish for ”circuit board”. I had played the boardgame A Feast for Odin, and was fascinated by the way pentominoes had a large-but-limited set of unique configurations. After a failed attempt at turning those ponderings into a paper puzzle, I came up with this. It's simple but works! Maybe.

Rules:

- Draw paths between dots so that every cell contains a path segment. The paths may not intersect or branch, and each path must start and end on a dot.
- The paths may not cross over dots, or start/end on the same dot (or start/end on a dot another path starts/ends on).
- The number in the top-right corner of the puzzle indicates the maximum number of turns a path can take (i.e. the number of cells where the path performs a 90-degree turn).
- There can never be two orthogonally adjacent paths with the same number of turns.
    - To clarify, two paths are orthogonally adjacent if two cells they visit are next to each other.



Piirilevy puzzles:

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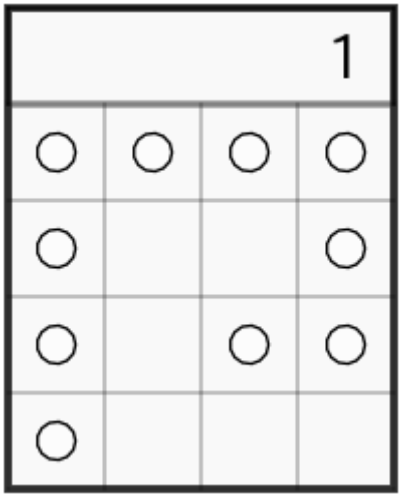

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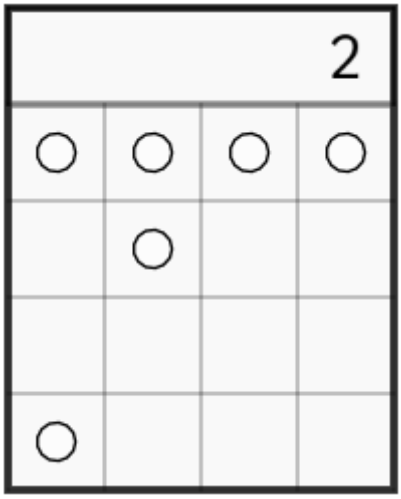

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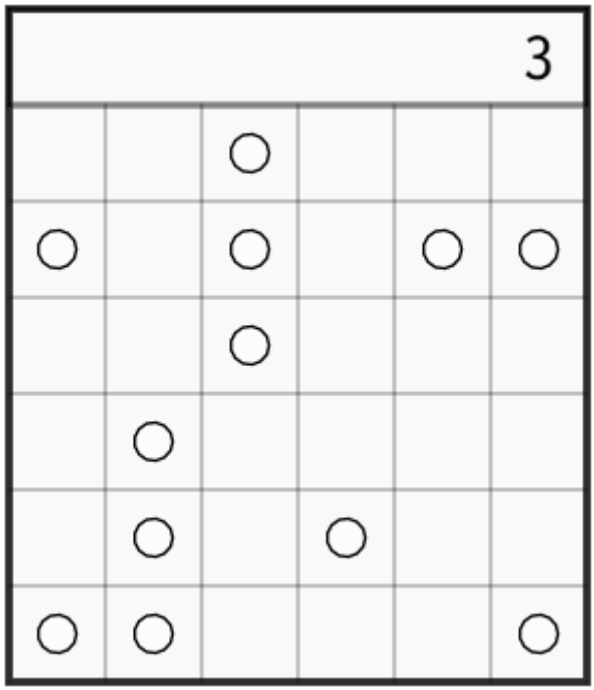

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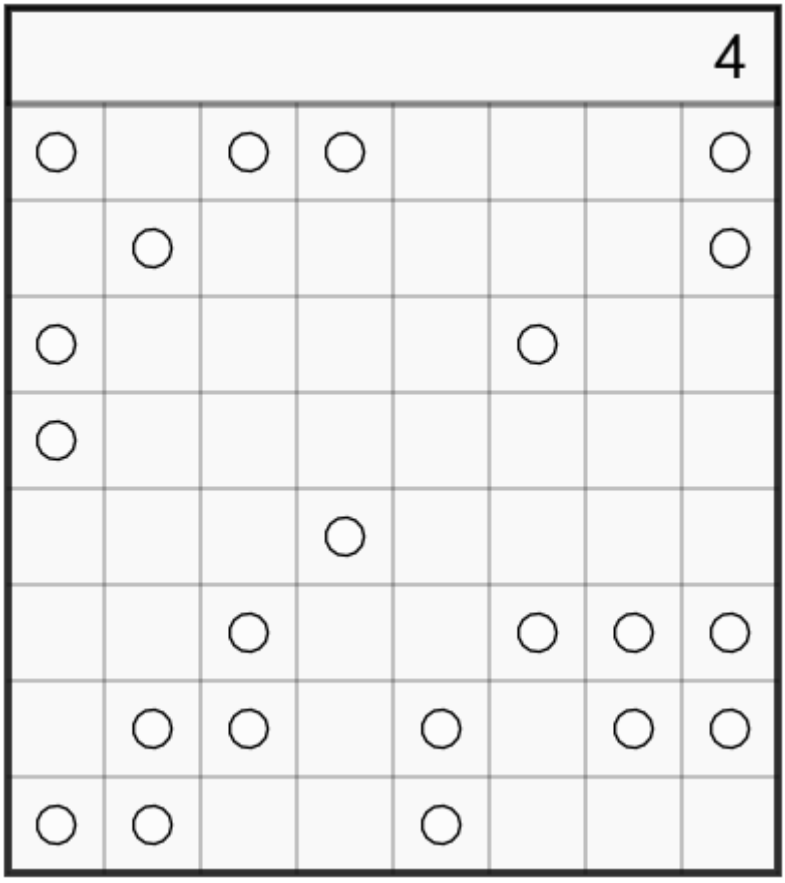


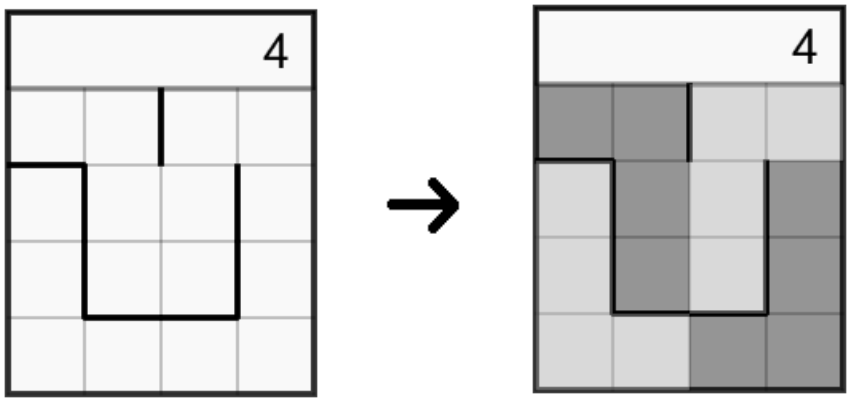
Uncheckers

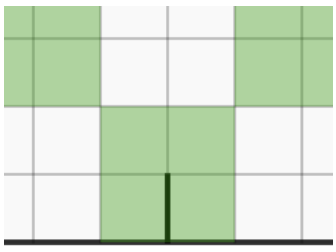
6/2022

This type builds upon things I had tinkered with in e.g. Snake nest and Piirilevy. I was intrigued by the idea of ”two shapes of the same type can't be orthogonally adjacent”, and though that in a shading puzzle environment that restriction in some ways imitates a checkerboard pattern. Quite happy with the result!

Rules:

- Shade every cell in the grid in one of two colours. Shaded cells of the same colour must form clusters/regions of connected cells of the size indicated in the top-right corner of the puzzle.
- Cells in a cluster/region cannot connect through a thick line.
  - Note: the cells in a region can still be adjacent with a thick line between them, as long as the region is connected via other means (see example below).
- Two regions of the same colour can't be orthogonally adjacent, even if there's a thick line between them.
  - For clarification on orthogonal adjacency, look up the rules for Piirilevy.
- Dark cells should be treated like the edge of the puzzle and can't be shaded.





This would be a valid region.

Uncheckers puzzles:

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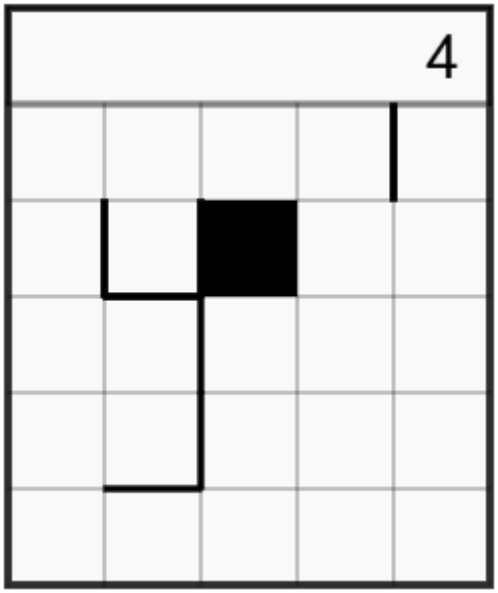

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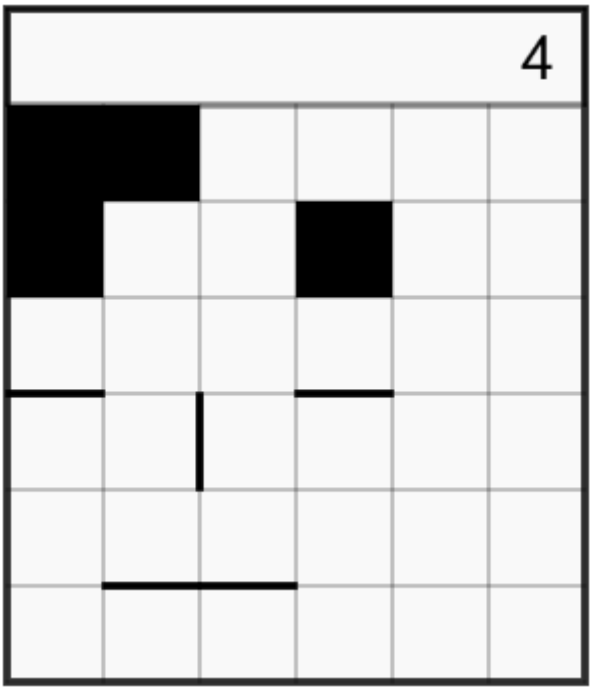

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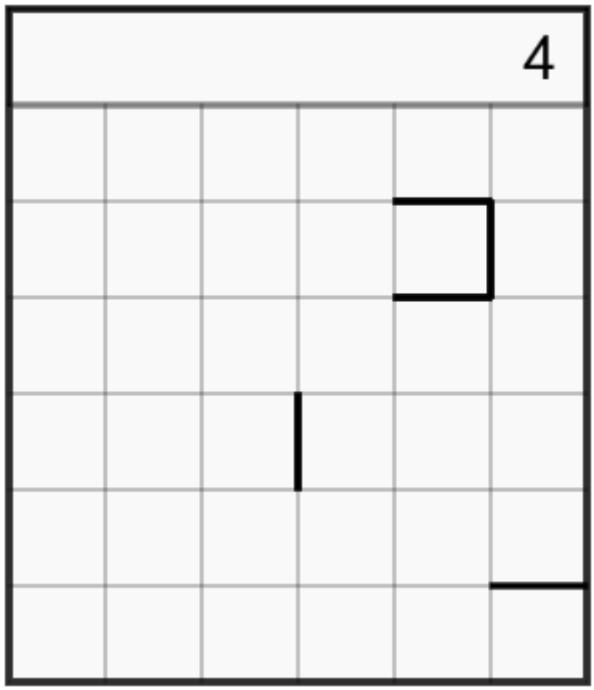

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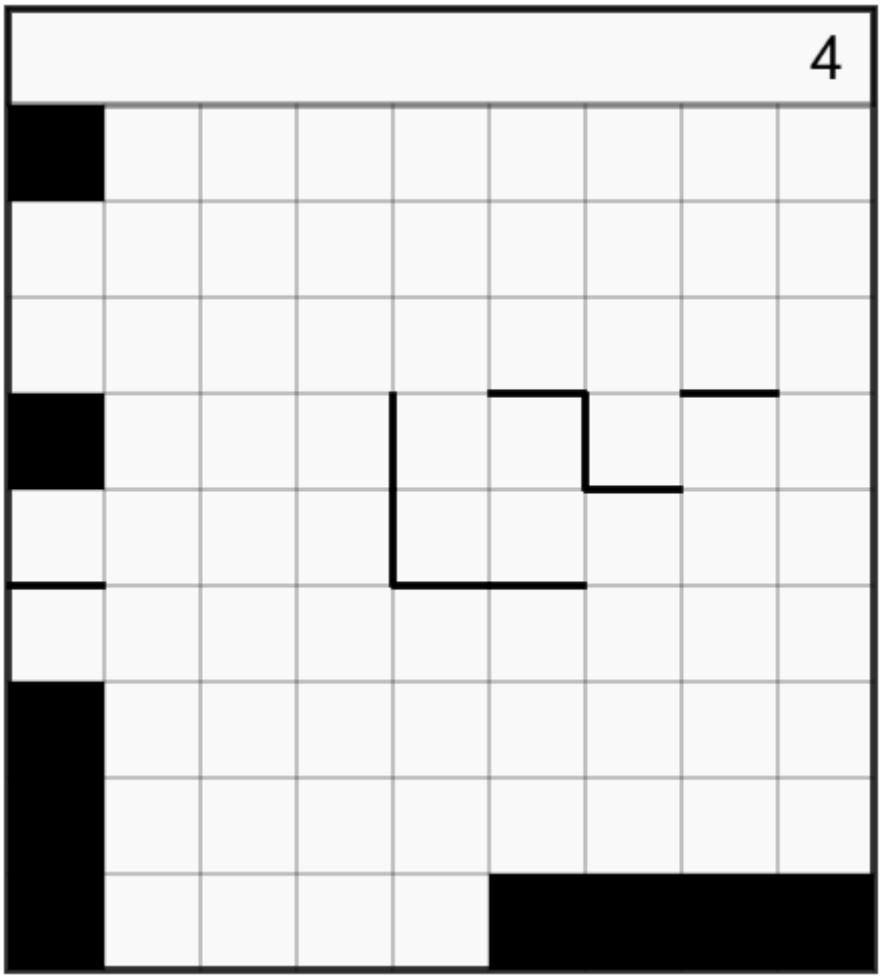


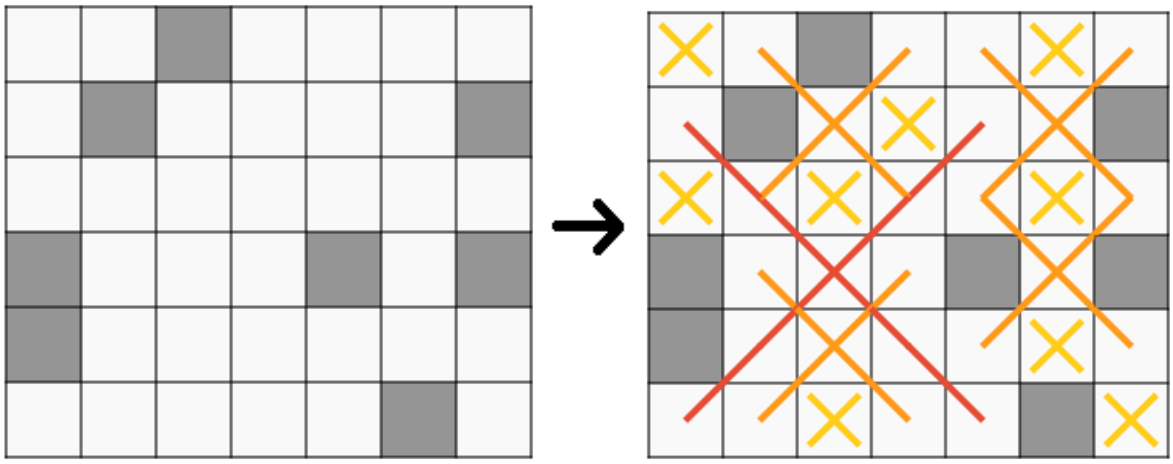
Mark the spot

12/2022

I had pondered about a puzzle type based on drawing crosses on a grid for some time, and this was the first one that felt like it had a bit more potential. Ultimately it turned out to be too complicated, but I'd say the idea has some merit at least.

Rules:

- Draw crosses onto the grid so that every unshaded cell contains a cross segment.
  - The crosses are drawn by extending 4 lines of equal length in all four diagonal directions from the center of a cell.
  - The lines must either terminate within the cell they started from, or at the center of another cell if they extend outside the initial starting cell.
- The crosses may intersect at cell corners.
- Each cross may only intersect with exactly 1 other cross at cell centers. Note that two crosses intersecting like this may intersect in more than one cell, they just may not intersect with any other crosses at cell centers.
- Two crosses may not have their lines overlap.
- No part of a cross may be within a shaded cell.
- The centers of two crosses of equal size may not be orthogonally adjacent, and a cross center may only be diagonally adjacent to a maximum of 1 cross of equal size.
  - Note that the diagonal adjacency rule effectively only applies to the smallest crosses, the lines of which don't extend beyond the starting cell.



Mark the spot puzzles:

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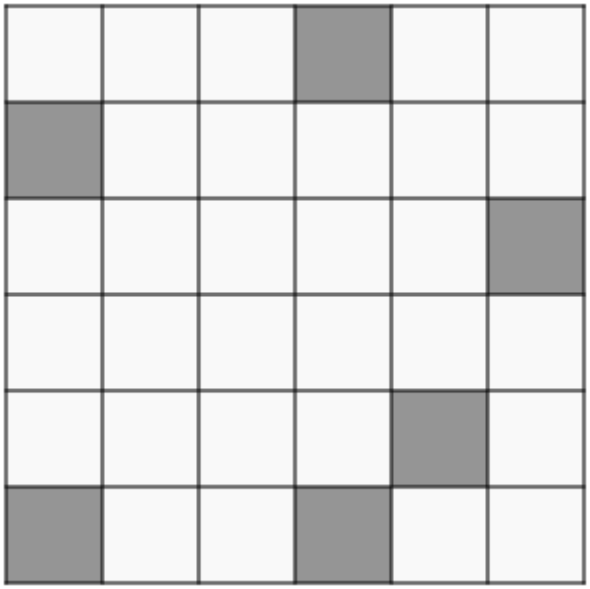

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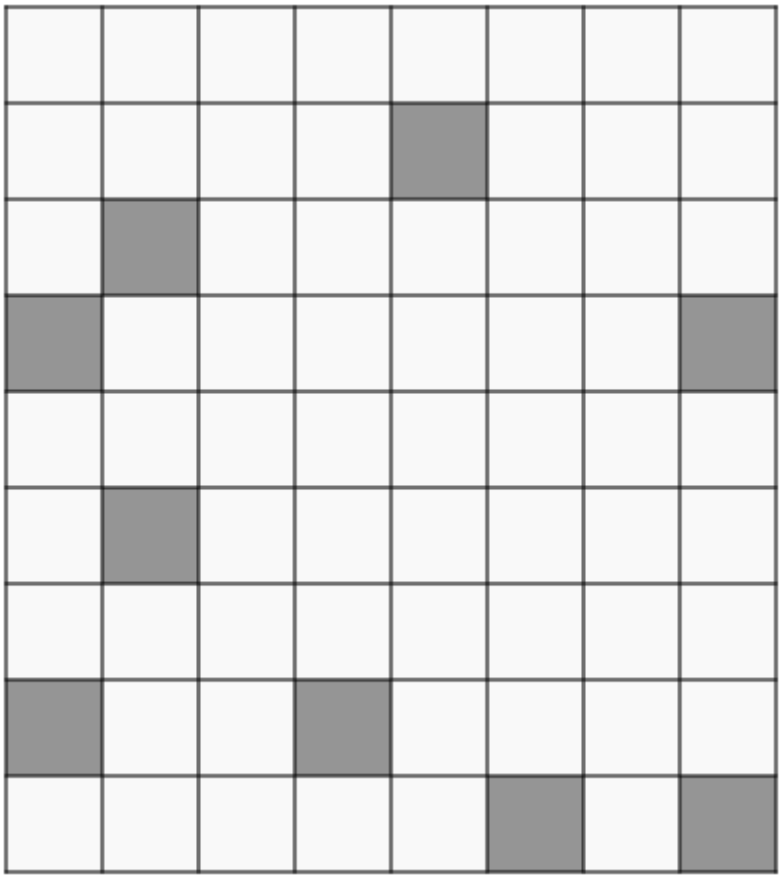

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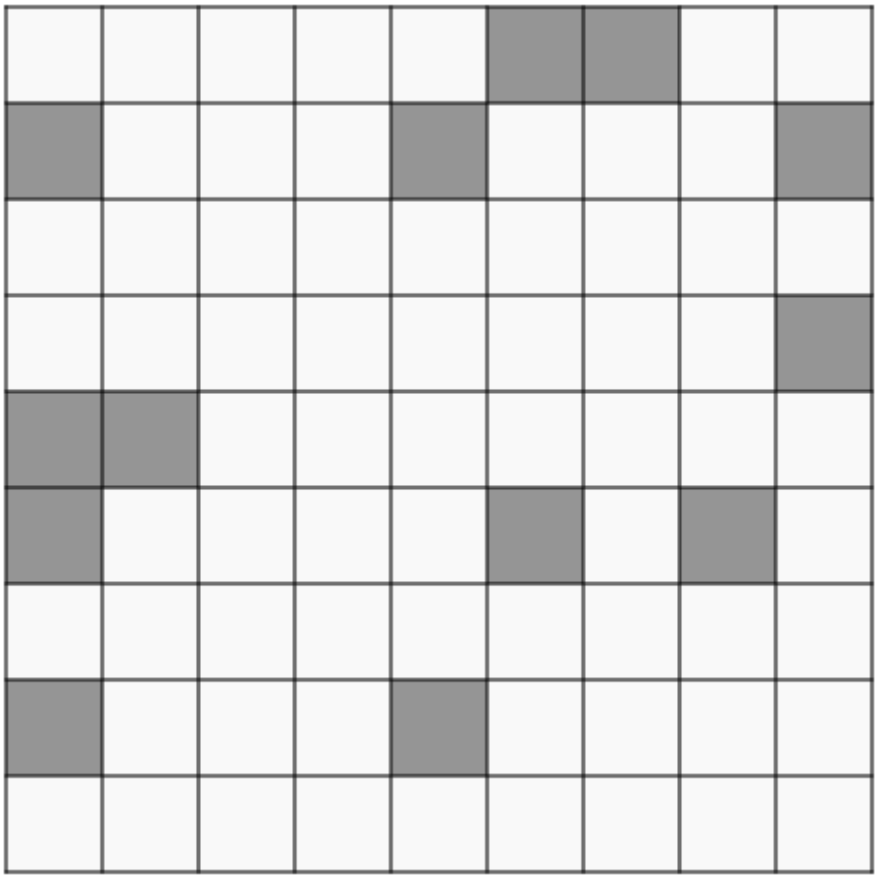


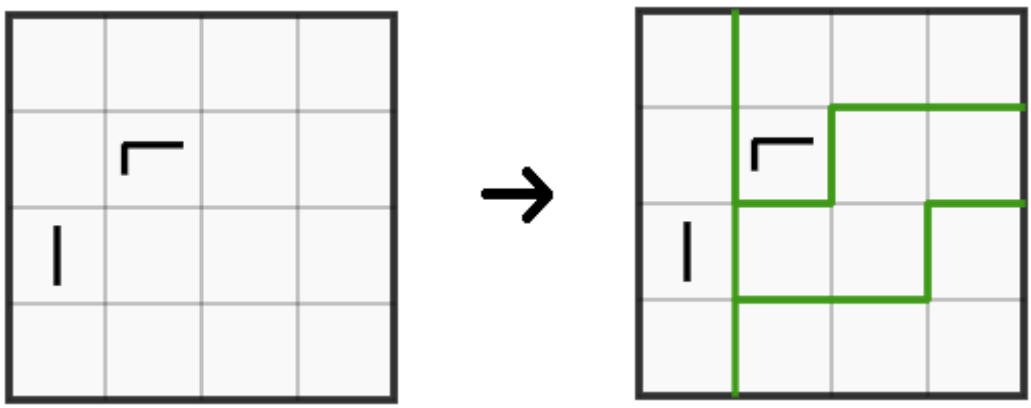
LITOS

12/2022

This is pretty much what the previously-mentioned LITSalike was building for! It was fun to get to use a clue type I hadn't ever utilized before.

Rules:

- Divide the grid into tetromino-shaped areas so that every cell is part of a tetromino. The tetrominoes may be in any orientation, flipped etc.
- Two tetrominoes of the same basic shape can't be orthogonally adjacent to each other, even if they're rotated/flipped/mirrored differently.
  - Note that L/J tetrominoes are are of the same basic shape, same for S/Z.
- The clues indicate that the clue cell must be part of a tetromino area of the same shape and orientation as shown on the clue.
  - Each tetromino may contain a maximum of 1 clue.



LITOS puzzles:

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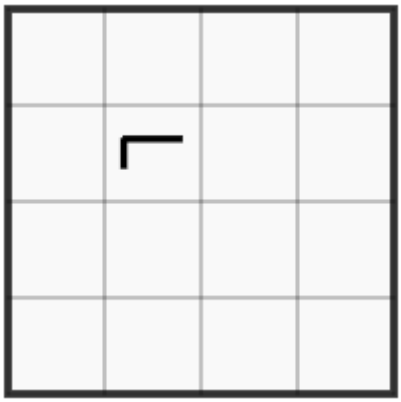

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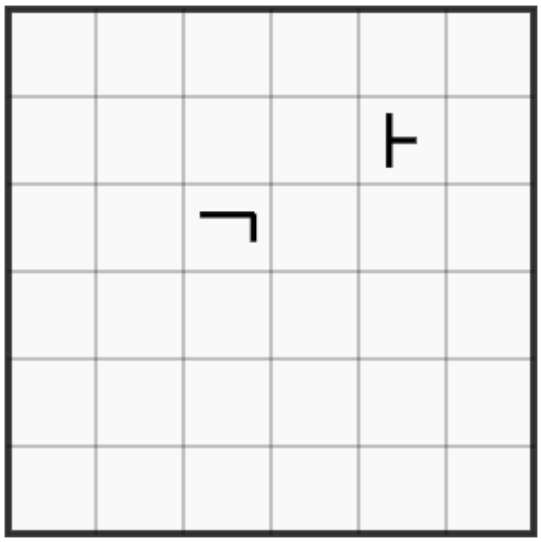

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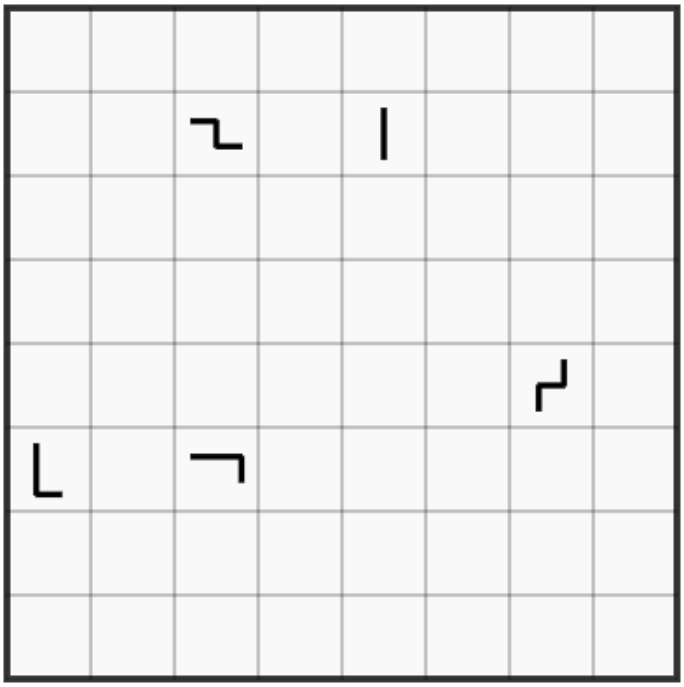

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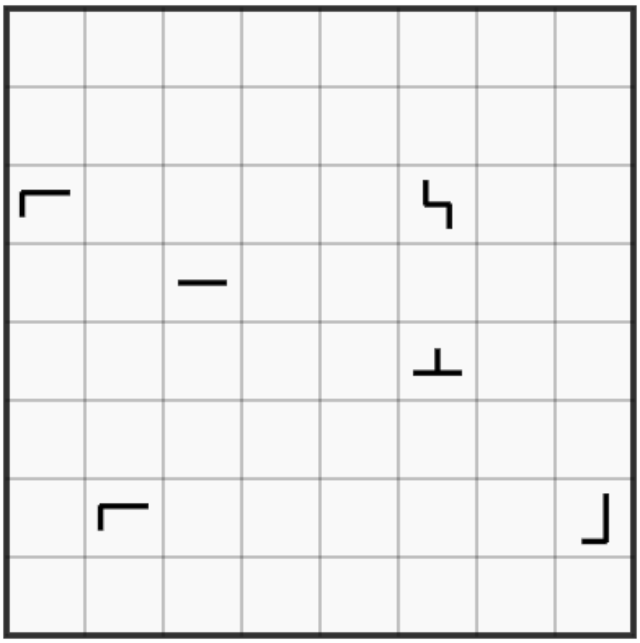

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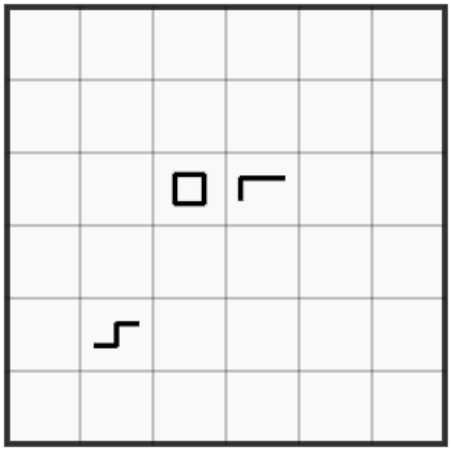

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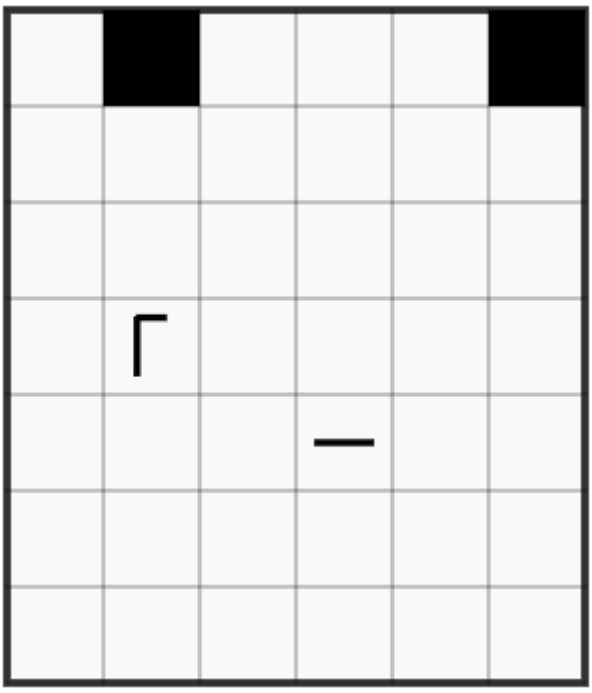

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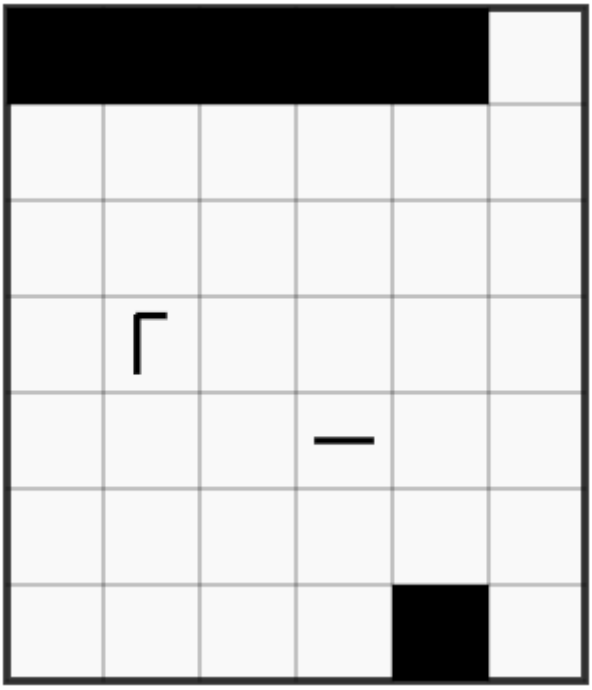


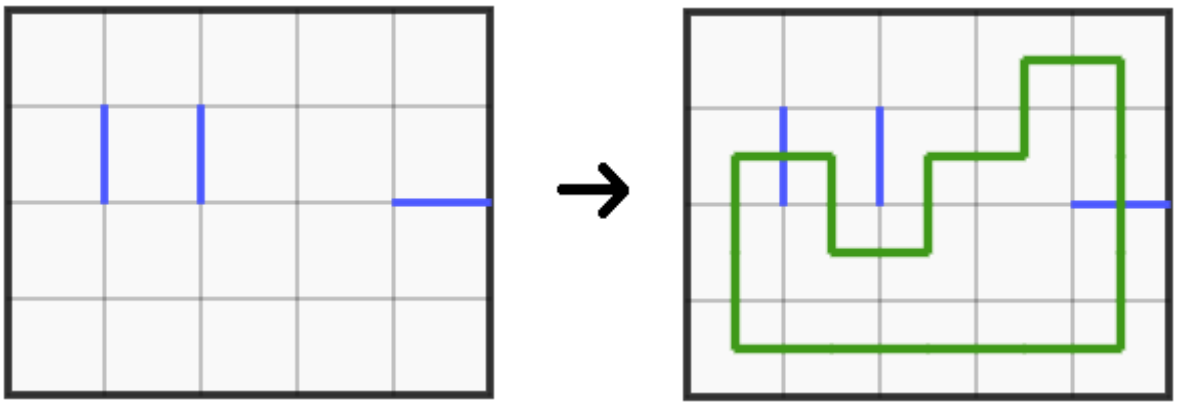
Mirror loop

3/2023

I think the idea for this came from a random puzzle game screenshot that reminded me that mirrored shapes are interesting. I've pondered about the concept previously with e.g. galaxy-type shading puzzles; this seemed like a fairly different-but-elegant ruleset.

Rules:

- Draw a single unbranching loop from cell to cell; the loop doesn't have to visit every cell.
- The blue thick lines are 'mirrors'. The cells extending from a mirror must be symmetrical to the equivalent cells on the other side of the mirror, up to the nearest edge of the puzzle or another mirror.
  - Note that a mirror doesn't only reflect the nearest cell on either side, but rather all cells up to the nearest other mirror/puzzle edge.
  - Note also that this means that if a mirror is e.g. 2 cells away from the nearest other mirror (or the puzzle edge), only 2 cells on either side of the mirror need to be symmetrical.
- Every mirror must reflect at least one loop segment.
- The loop may pass through the mirror lines (and this must be taken into account in how the mirror reflects the loop segments).



Mirror loop puzzles:

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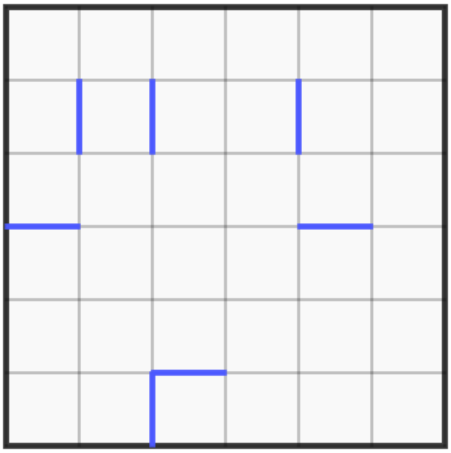

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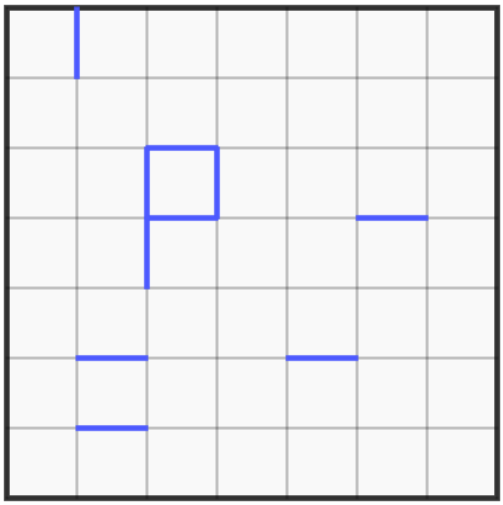

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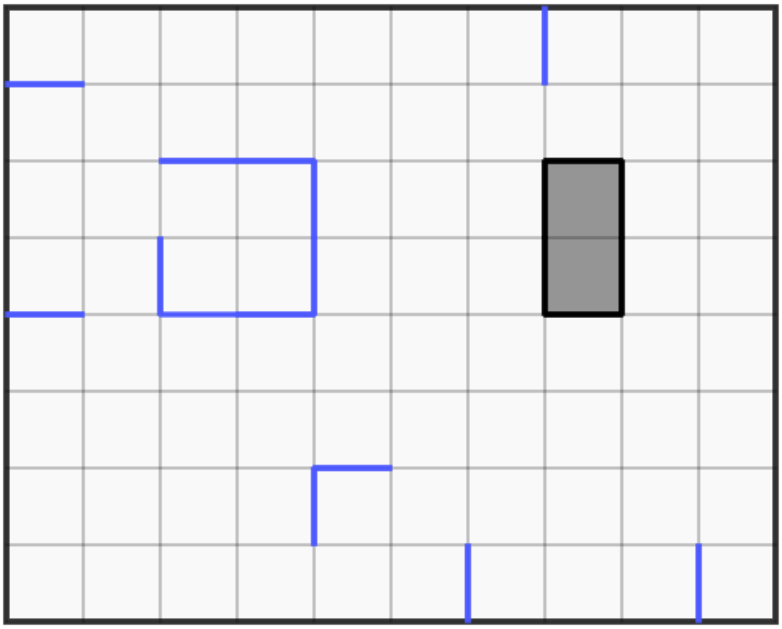


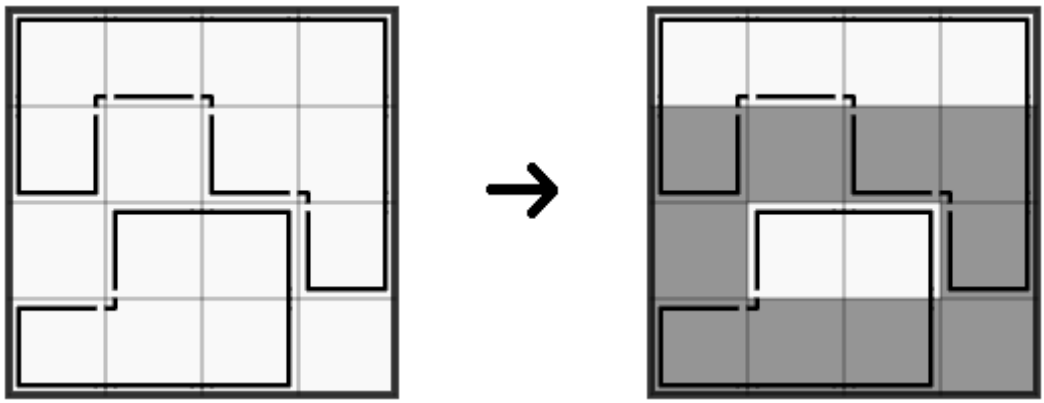
Equal measures

6/2023

There was a bit of a break between this type and the one before it. At first I attempted to make the format use a grid divided fully into regions, like Alike and such, but people pointed out that a different approach using ”cages” would make more sense. People have seemed to like this one a bunch, which is cool!

Rules:

- Shade cells so that they form a single unbranching loop. The loop may not form 2x2 fully shaded structures, and two shaded cells may not touch diagonally unless there's a third shaded cell directly connecting the two to form a 90° turn.
- Even-sized regions must have an equal number of shaded and unshaded cells. Odd-sized regions have an additional shaded or unshaded cell, but otherwise follow this same rule.
    - For example, a region of size 5 would have either 2 shaded and 3 unshaded cells, or 3 shaded and 2 unshaded cells.
    - Outside of the marked regions there are no limitations to the numbers of unshaded/shaded cells.
    - Note that the puzzle itself doesn't count as a region, only the specifically defined ones within the puzzle.



Equal measures puzzles:

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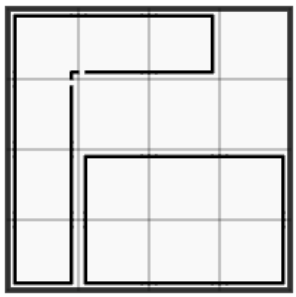

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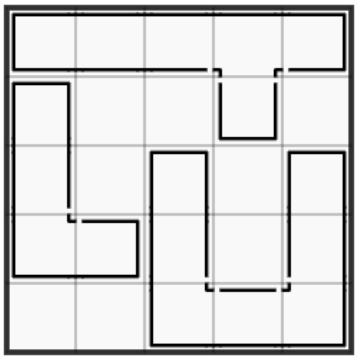

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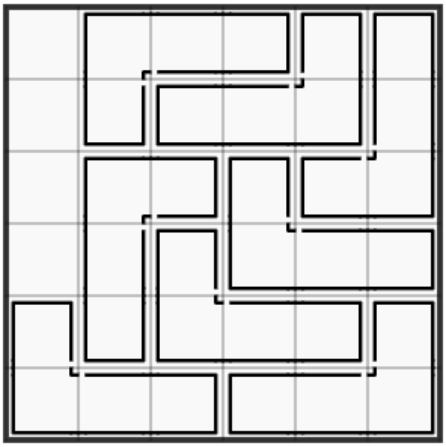

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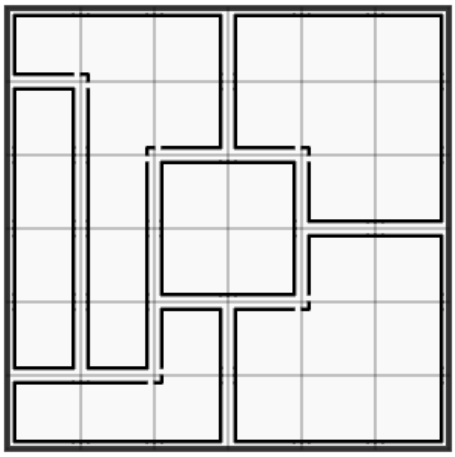

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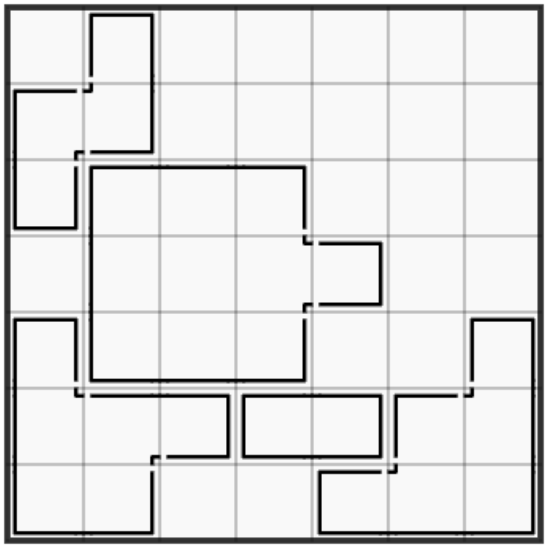

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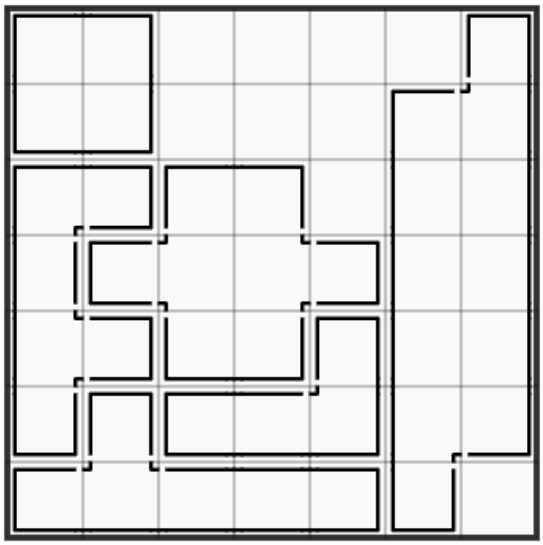

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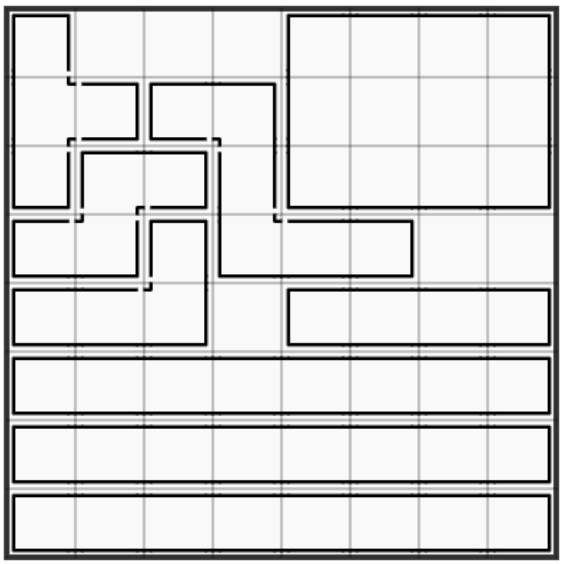


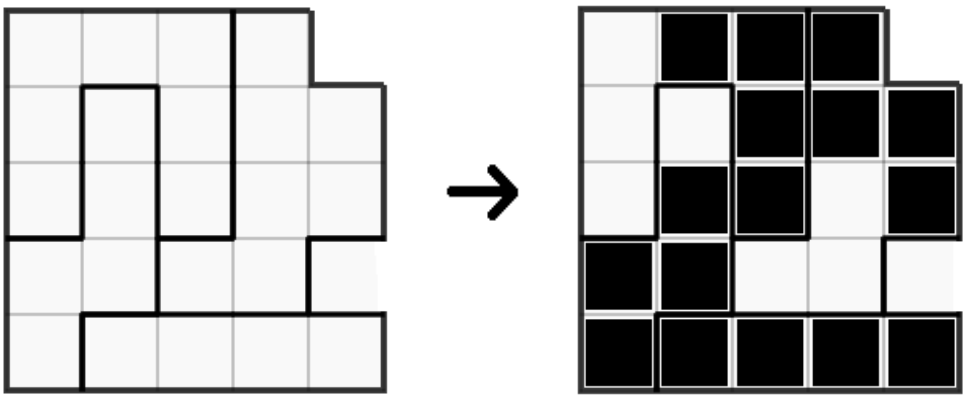
LITSilly

12/2023

After half a year of not really coming up with new paper puzzle ideas, I somewhat randomly pondered about a LITS variant that ”broke the rules” and came up with this. It has seemed pretty good in my opinion!

Rules:

- Shade cells so that each region contains a tetromino shape. Square tetrominos are not allowed. Each region must contain exactly 4 shaded cells, i.e. the cells that make up the tetromino in said region.
- The shaded tetrominos must form a connected whole.
- Two tetrominos of the same basic shape (L, I, T or S) may not be orthogonally adjacent.
    - Note that for the purposes of this, mirrored/flipped versions of L and S tetrominos count as the same basic shape.
- Each tetromino must contribute to exactly one 2x2 shaded square.
    - In contrast, in traditional LITS 2x2 shaded squares are not allowed at all.
    - A 3x2 shaded region is impossible to construct under these rules without at least one of the tetrominos it's made of contributing towards more than one 2x2 shaded region, so 3x2 shaded regions are never possible.
    - A single 2x2 shaded region can be formed by 2, 3 or 4 separate tetrominos.



LITSilly puzzles:

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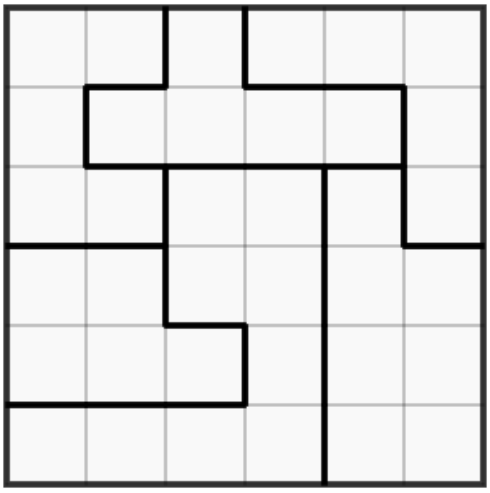

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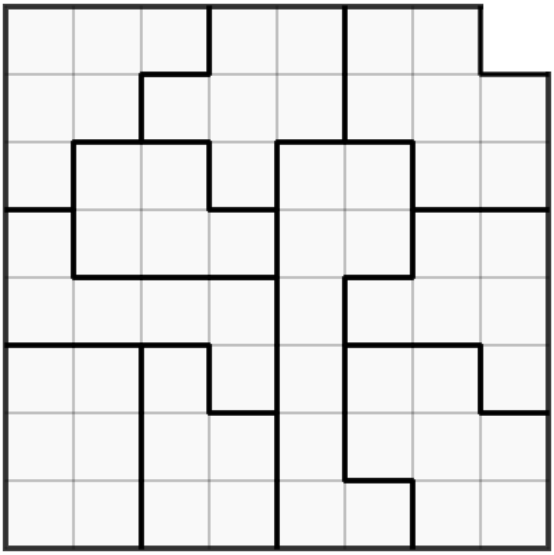

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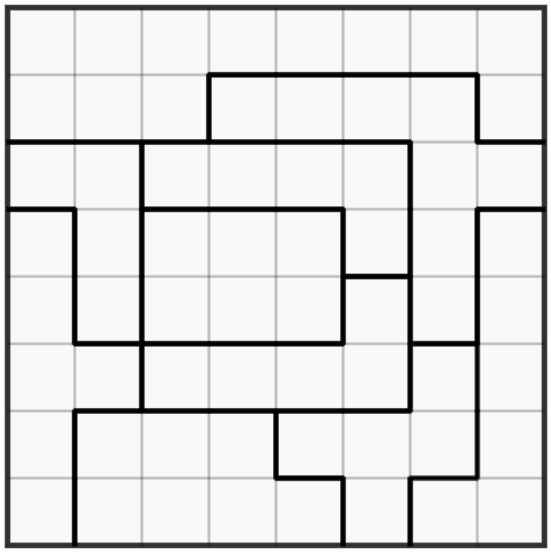

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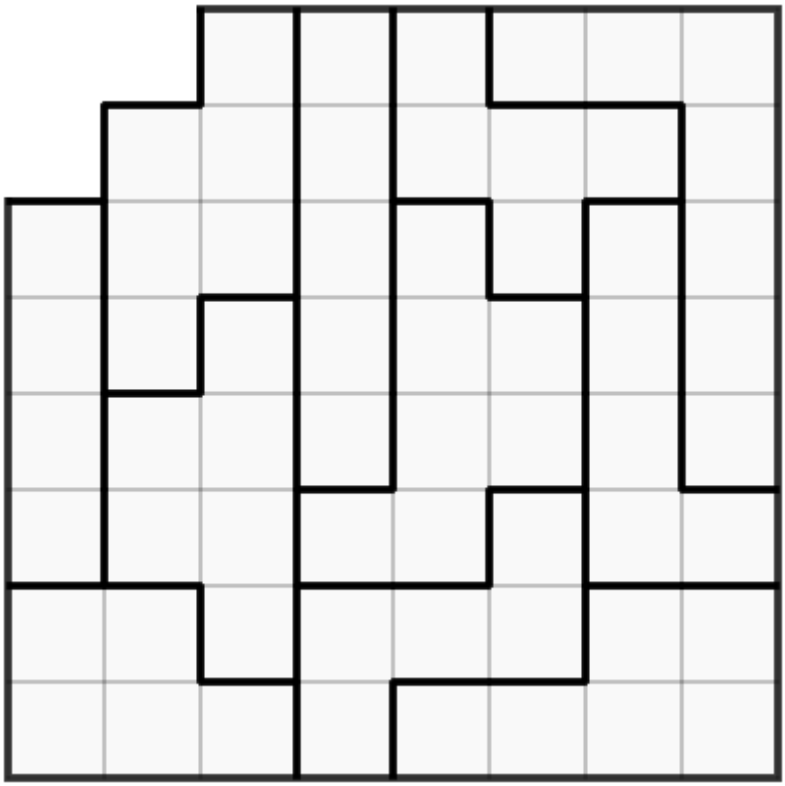

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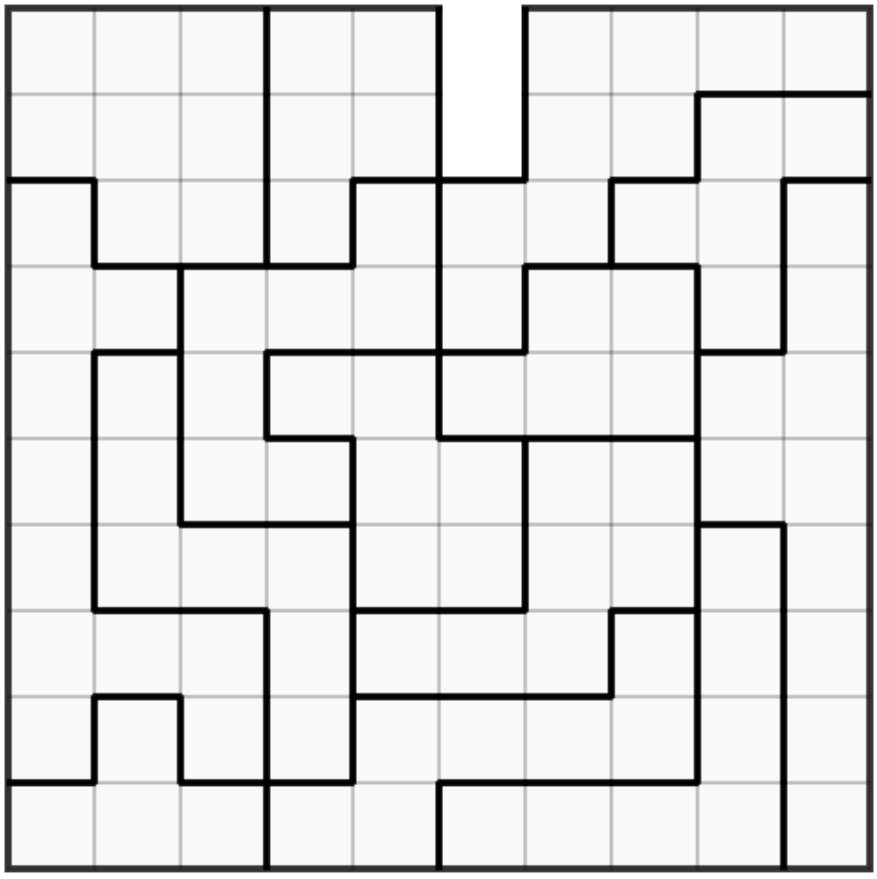

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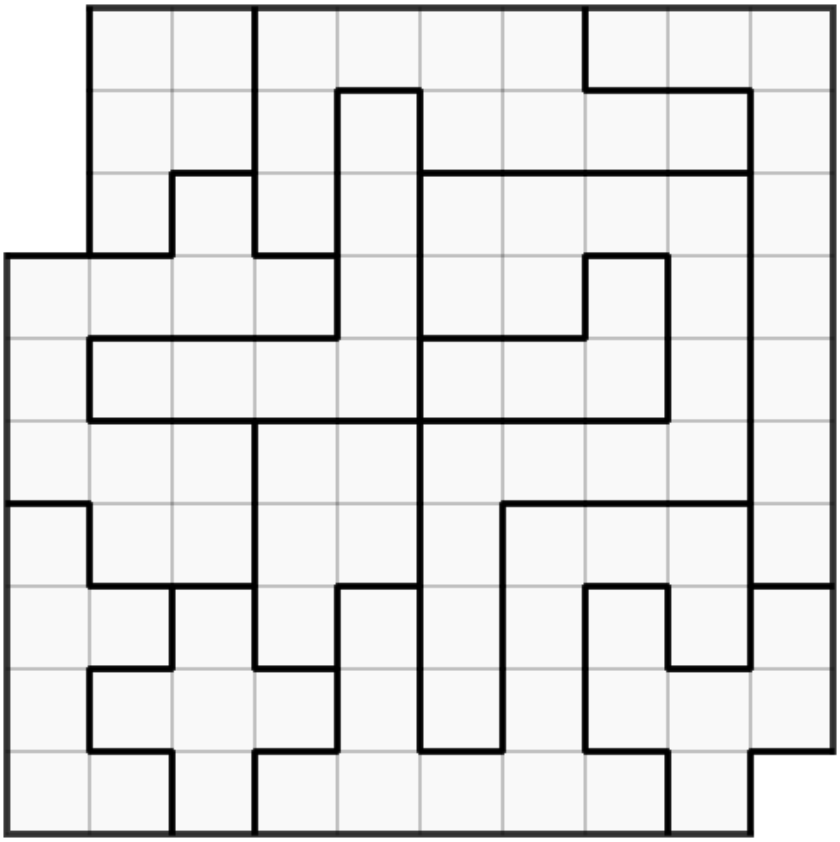

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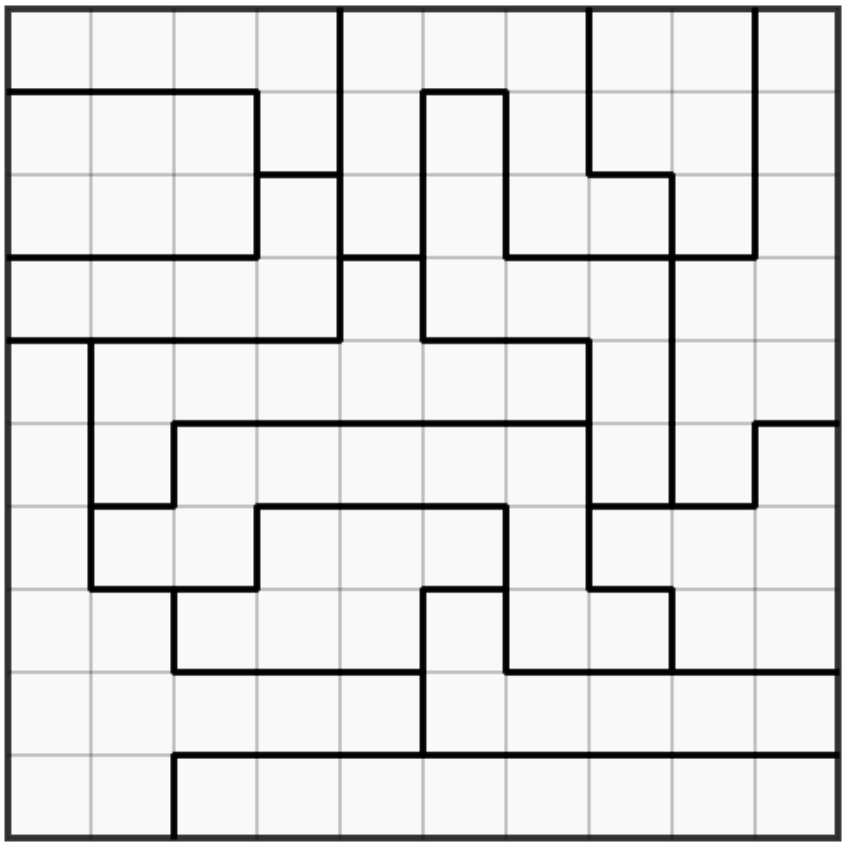


Forceloop

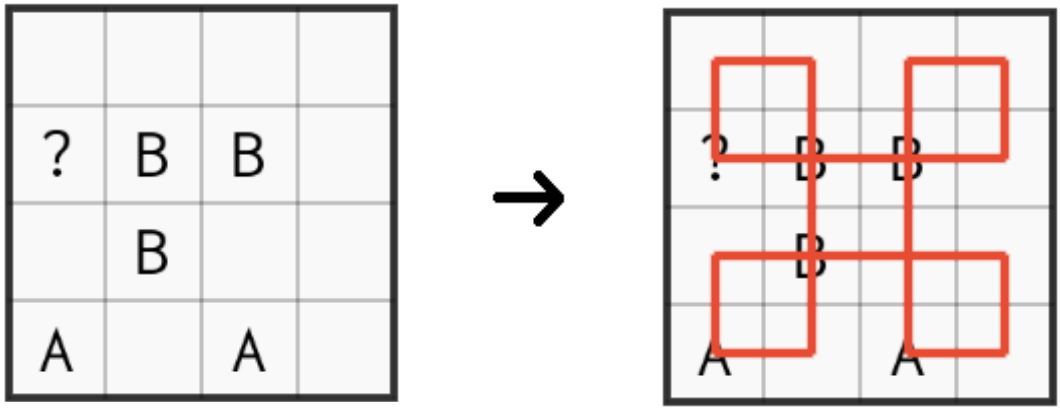
4/2024

After months of not coming up with new paper puzzle types, I kinda finalized some thoughts I had built up over time, inspired largely by the Nikoji puzzle type. Turns out this type is almost identical to Gemini Loop, but there are some slight differences too. I'm quite happy with this!

Puzzle Square: https://puzsq.logicpuzzle.app/?kind=892
Kudamono: https://pedros.works/kudamono/pages/forceloop.html

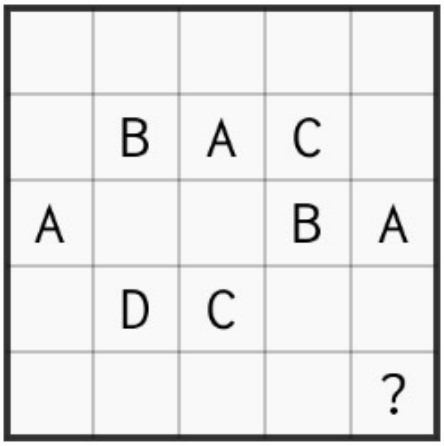
Rules:

- Draw a single, unbranching loop that visits every cell with a clue. The loop may intersect itself.
- Each cell with the same clue letter must contain the same loop segment, and no two cells with a different clue letter may contain the same loop segment.
  - For clarity, 'loop segment' here refers to the specific configuration of lines within a cell. There are 7 unique loop segments: 4 90-degree turns, a horizontal & a vertical line, and an intersection.
- Questionmarks indicate unknown clue letters among the letters given on the grid. In other words, if you can see letters A-C on the grid, a questionmark must be either an A, a B, or a C.



Forceloop puzzles:

1.



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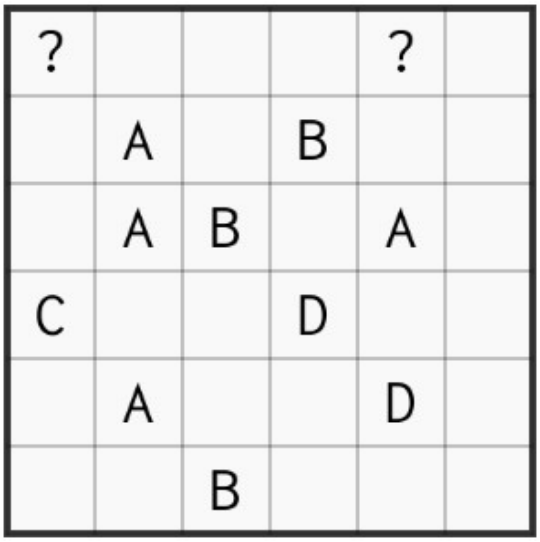

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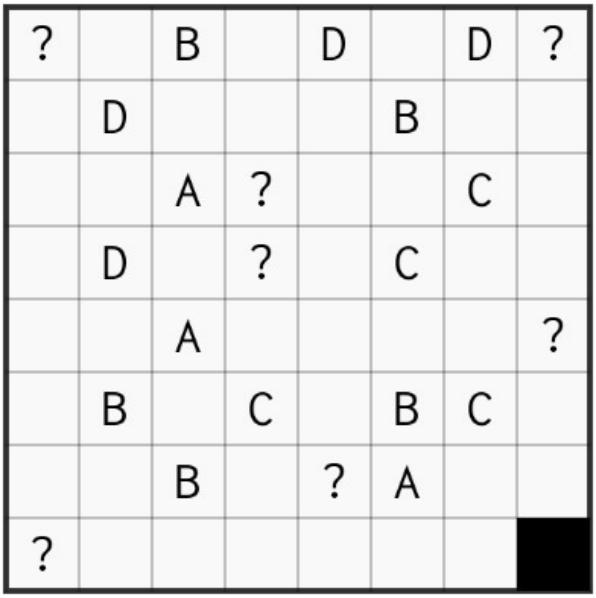

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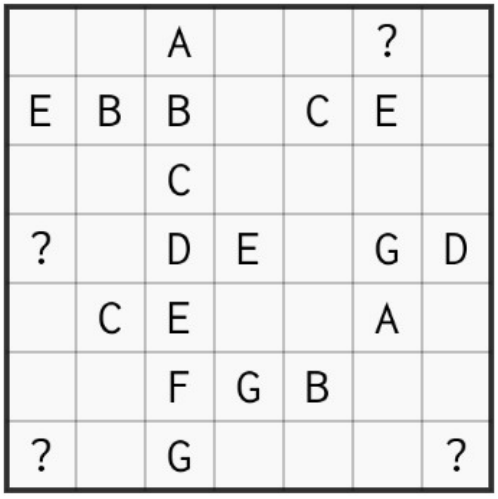

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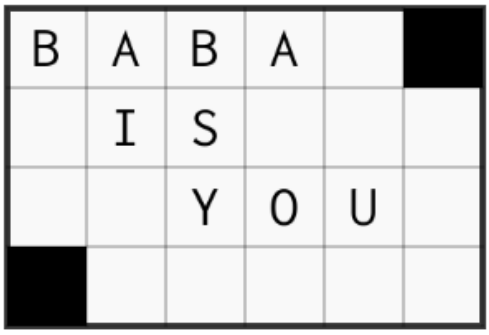

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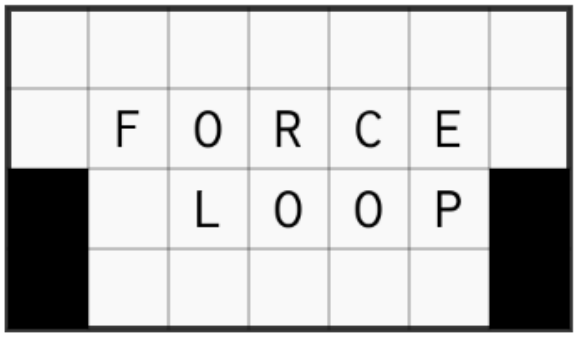

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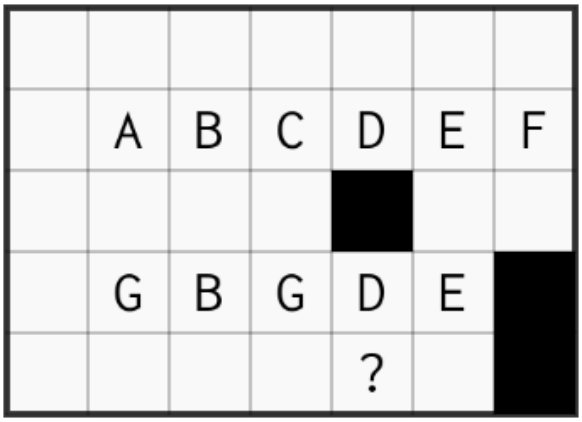


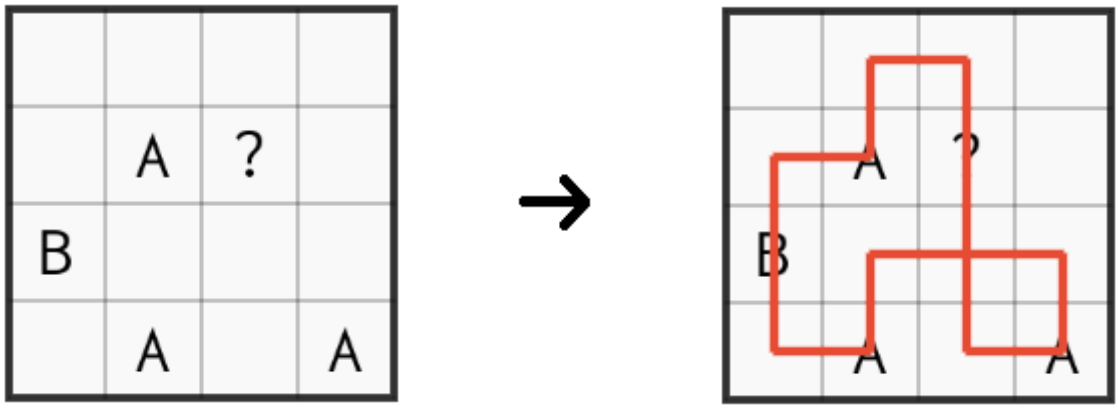
Super Forceloop

5/2024

This seemed like a somewhat obvious continuation on the Forceloop idea, and upon experimentation turned out to be quite an interesting thing of its own right!

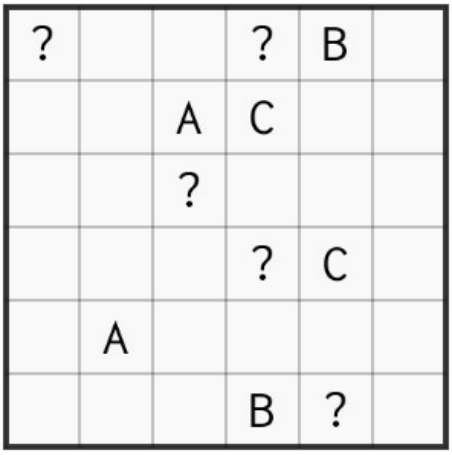
Rules:

- Otherwise identical to Forceloop, except the loop segments in clue cells may not appear *anywhere* else on the grid, instead of just not on clue cells with a different clue letter.
    - In other words, if clue A corresponds to a vertical line passing through the cell, only cells with clue A may contain that specific configuration of lines.



Super Forceloop puzzles:

1.



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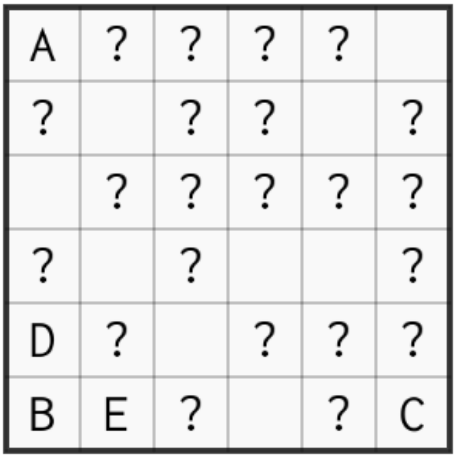

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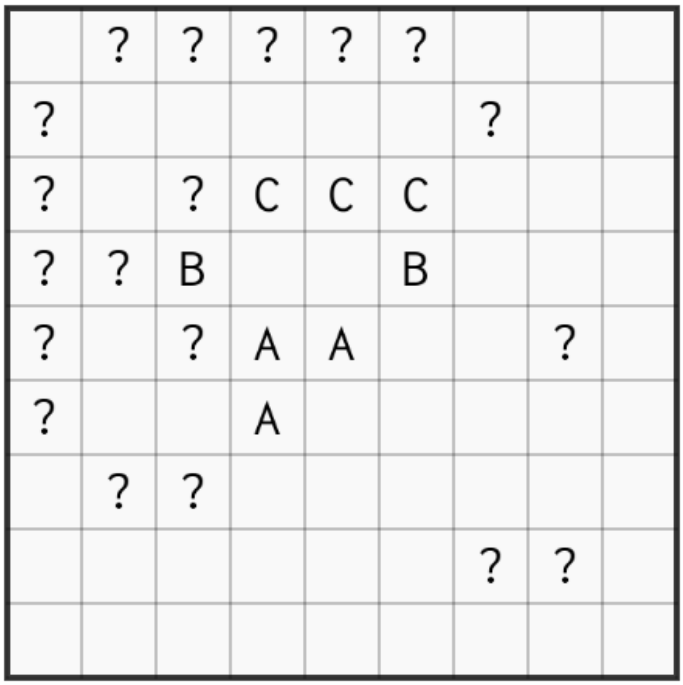


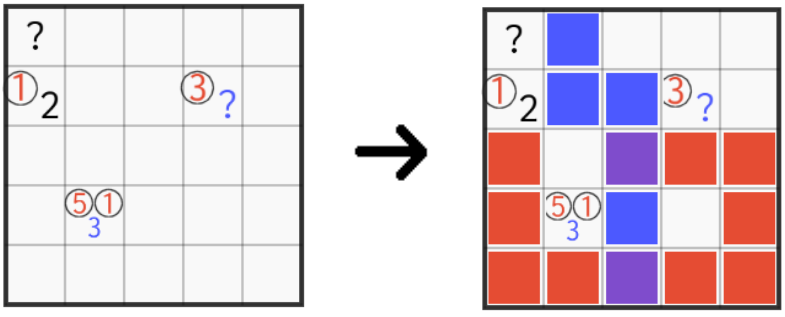
Multitapa

8/2024

Huh, I can barely remember anything about the origin of this puzzle type. Whatever else might be the case, Tapa is one of my favourite paper puzzle genres, so trying to make a funky take on its ruleset seems like something I'd do. I didn't want to spend the effort to update my paper puzzle editor to support the notation required for these rules, which explains why the puzzles are a bit more messy visually. Apologies!

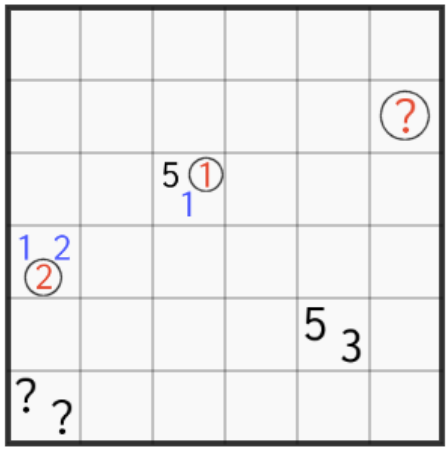
Rules:

- Shade cells in 2 colours to form 2 shaded cell networks that are contiguous between cells of their own colour. Some of the shaded cells from these two networks may overlap.
  - For the example puzzle, red and blue shaded cells are used to differentiate the two networks, and purple shaded cells are used to indicate overlapping cells.
- There may never be 2 orthogonally adjacent cells in which the networks overlap.
- There may never be a 2x2 shaded formation, even if some cells in the formation were from different shaded cell networks.
- Clue cells indicate the number and size of connected shaded cell formations in the 8 cells around the clue.
  - Coloured clue numbers are specific to the shaded cell network of that colour, and black clue numbers can be for either network. Red clue numbers are circled to help differentiate them from the blue ones.
  - Two shaded cell formations of the same colour accounting for different clue numbers may not be connected to each other.
  - If a clue cell doesn't have a clue for a specific colour (or an ambiguous clue), there may be no shaded cells of that colour in the 8 cells around the clue.
  - A ? clue can't be zero.
- Clue cells may not be shaded.



Multitapa puzzles:

1.



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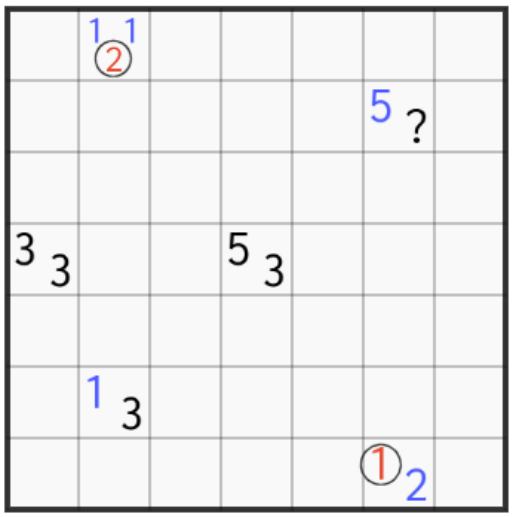

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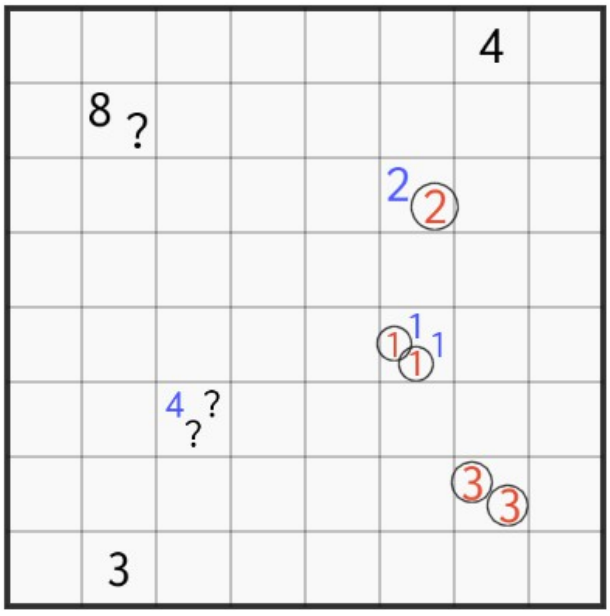


Elastic loop

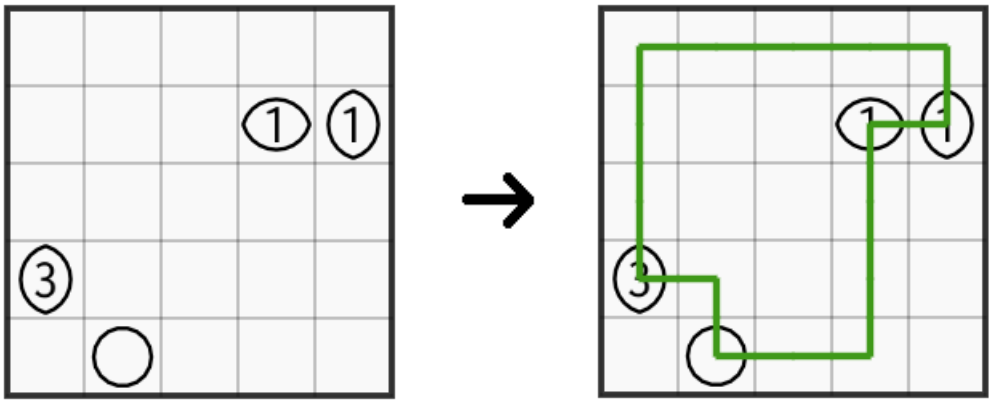
3/2025

There was another lengthy break between this and the previous type. I had pondered about loops where each segment must be a different length than the one before/after it, or where each segment must differ in length from both the preceding & following segments by exactly 1, and so on, and eventually brainstorming led to this concept. People have seemed to enjoy this type, which is cool! Also thanks to **X_Sheep** for a suggestion on how to improve the clue icons.

Kudamono: https://pedros.works/kudamono/pages/elastic-loop.html
Puzzle Square: https://puzsq.logicpuzzle.app/?kind=1006

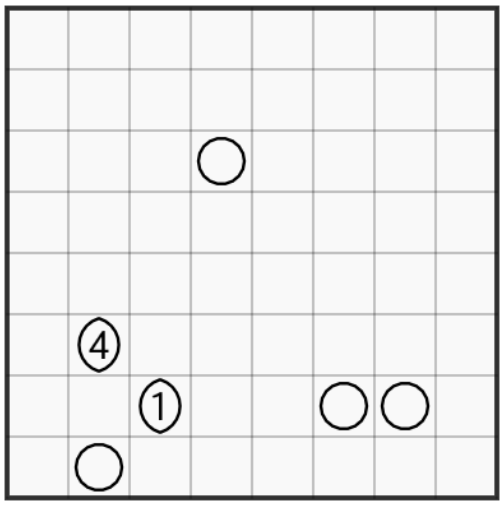
Rules:

- Draw a single, unbranching & nonintersecting loop onto the grid that visits every clue cell. The loop must turn at each clue cell.
- Each individual horizontal segment of the loop must be a different length than the horizontal segments before and after it. The same applies to vertical segments.
- The number in a clue indicates the length of the horizontal or vertical segment extending from that clue. In the eye-shaped clues the orientation of the eye indicates which axis the number is referring to, and in circular clues the number can refer to either axis.



Elastic loop puzzles:

1.



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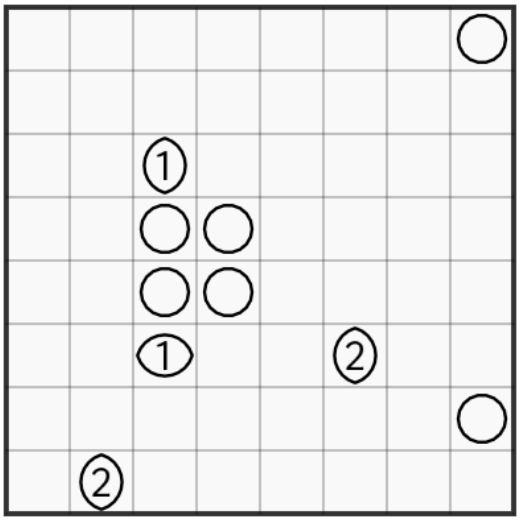

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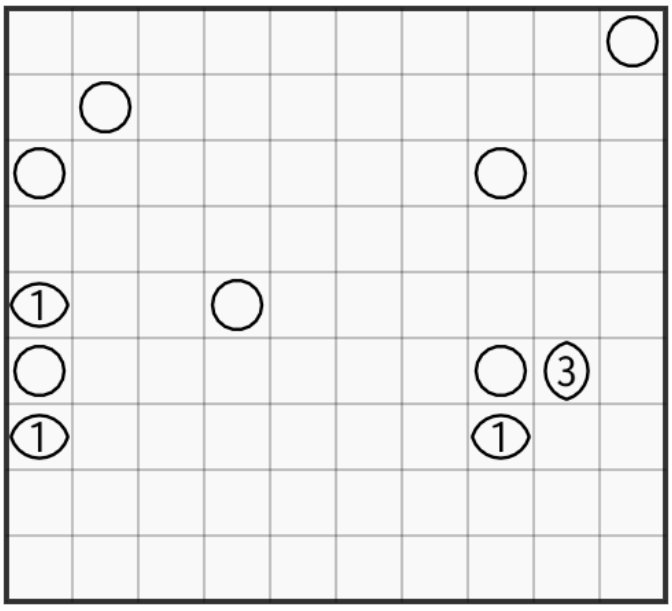


T-junction

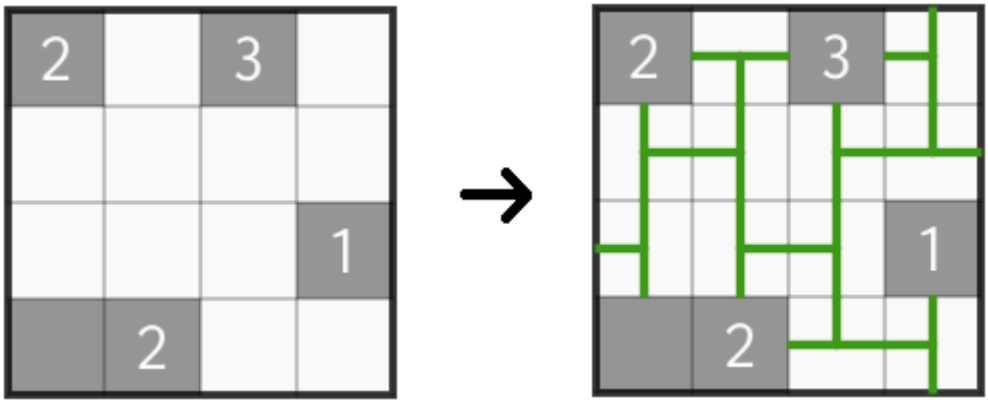
3/2025

I was going through some old posts, and came across a paper puzzle type I had tested and then given up on. It seemed promising, so I tested the general idea again, and this time it ended up working... ok, I'd say? I quite like it, anyhow.

Editor by X_Sheep: https://pzprxs.vercel.app/p?tjunction

Rules:

- Draw a 3-way intersection ('T-junction') in every unshaded cell so that they form a fully connected network.
- There may be no dangling lines; each line must terminate either at the grid edge or at a shaded cell.
- There may not be two orthogonally adjacent T-junctions with the same orientation.
- A shaded cell may not have two T-junctions with the same orientation connect to it. This applies even if the shaded cell has no number on it.
- Numbers in shaded cells indicate how many T-junctions connect to them.



T-junction puzzles:

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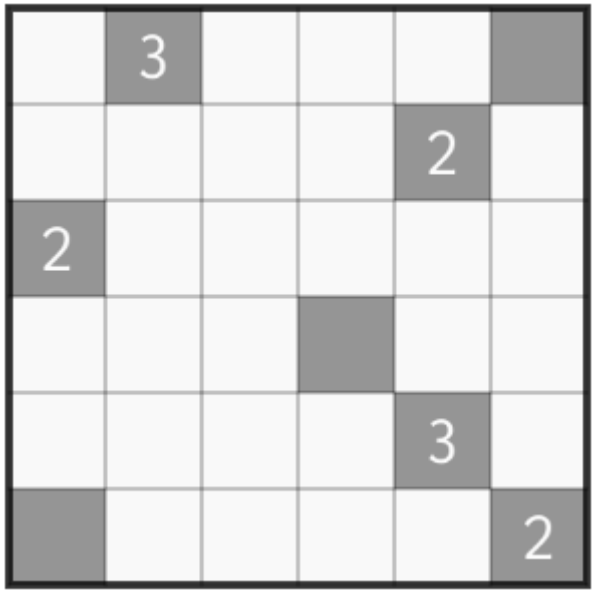

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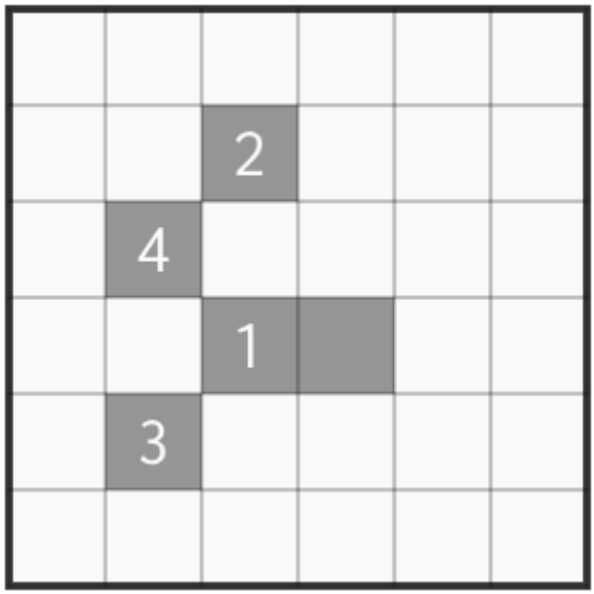

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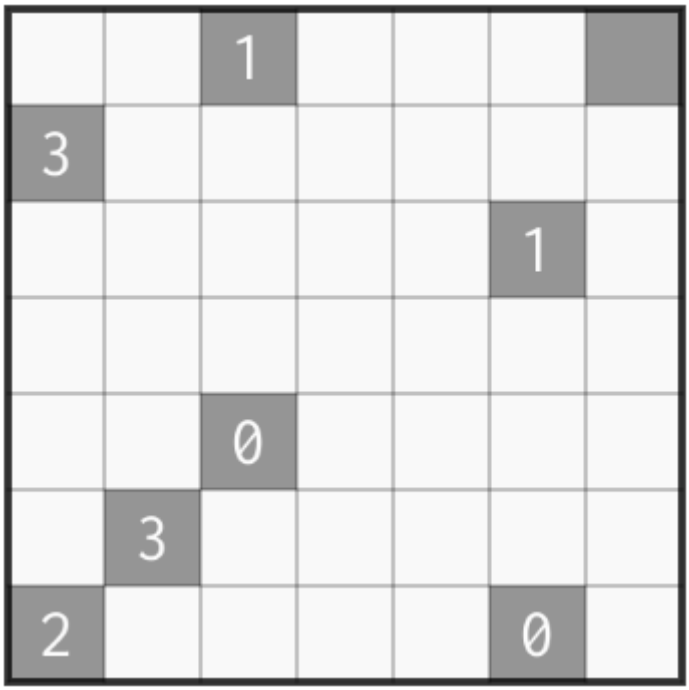

4.