

Patent Application - Description

Title

1. Rulo Squares – a sliding puzzle app

Applicant

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Inventor

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Title of the Invention

5. Rulo Squares – a sliding puzzle app

Technical Field

6. Recreation and entertainment

Technical Problem

7. The puzzle consists of square grids of colored squares, each within a larger square grid. Initially the squares in each of the smaller grids are a uniform color, with each smaller grid having different color from the others. The squares can be slid horizontally or vertically to shuffle them. The aim is to restore the smaller grids each to a single color. [See Drawing A]
8. The examples shown in this application utilize smaller 3 x 3 grids of squares, within a larger 2 x 2 grid. Other dimensions are also possible.

Technical Solution and mechanics

9. The puzzle is delivered in the form of a computer application (“app”). This can be deployed on smartphone, tablet, or other form of personal computing platform. Sliding can be done via touch gestures on a touch screen, mouse movements, stylus control, or other interface options based on the devices being deployed.
10. The mechanics of the sliding squares are that if a row is slid horizontally, then all squares in that row across the larger puzzle are also slid together. [See Drawing B]
11. Squares flow into the adjacent grids, and squares at the very end “wrap-around” to the beginning of the grid when sliding right, (and vice-versa when sliding to the left). [See Drawing B]

12. If a row is at the top or bottom of its smaller grid, then the adjacent row in the next grid also slides with it. The row at the very top of the puzzle moves the row at the very bottom of the puzzle (and vice versa). Rows in the middle of their grids just move on their own. [See Drawing C]
13. Corresponding rules apply for sliding columns vertically. [See Drawing D]
14. The puzzle is initialized by sliding a few rows and columns at random. The application can also automate this using by performing multiple -- slides each using a random direction, distance and target row or column.
15. The application can be reset at any time to restore the puzzle to the starting state of uniform colors.
16. The puzzle can be set to use different numbers of squares and grids via the "Settings" control on the app.
17. A timer and a move counter keep track on how long one has been on the current puzzle, and how many moves one has taken. These are reset whenever one presses "Shuffle" or "Reset", or if one changes the puzzle settings.
18. As an intermediate stage, puzzle can be partially solved, eg by just attempting to restore some of the grids, rather than all of the grids.
19. Puzzle can also be done using non-square (ie rectangular) grids, for both smaller and larger grids.
20. Rather than using colors, squares can be denominated using numbers or pixelated images so that they have to be returned to the exact original positions (rather than just the same colors)
21. Puzzle can use different number of squares and grids.

Advantageous Effects of Invention

22. The puzzle is for recreation purposes, and is intended to test a person's logical and puzzle solving abilities

Claims

1. The smaller grids within a larger grid design
2. The sliding mechanism, whereby squares flow into adjacent grids, and where squares at the end of the row or columns “wrap around” to the start of the row or column, and vice versa
3. The mechanism whereby rows (or columns) on the side of a smaller grid cause the adjacent rows (or columns) in the adjacent grids to also move.
4. The mechanism whereby rows (or columns) on the side of the larger grid cause the rows (or columns) at the opposite end of the larger grid to also move.
5. The objective of the puzzle to restore the original patterns, fully or partially, and/or within the fastest time, or least number of moves.
6. Variations of the basic puzzle including different dimensions, and using alternatives to colored squares.