



## SudoKai v4 - Board Layout Manager/Builder

This software makes it possible to design your own Sudoku Variants other than the classic 9x9 Sudoku game.

Please take note that the SudoKai Board Layout Manager/Builder is provided as is with flaws and all, so there might be a few bugs, quirks, and logic bombs lurking around. In other words it is not User-Friendly.

This version is also incomplete with loads of features and functionality that still needs to be included. This means I have solved some nasty Sudoku Programming Challenges I set myself, and yet many more awaits me. Basically you now use what I use to create Sudoku games and variants.

SudoKai is currently not capable of handling all Sudoku variants and constraints. Just take a look at my Kryptonite list for said limitations.

When opening or importing Sudoku Puzzles that came with SudoKai, please note that sometimes some description or caption is incorrect. Pure laziness on my part for not updating and checking descriptions/captions when creating Sudoku Puzzles. So take note and update where needed.

Please avoid stress testing SudoKai - overall performance does slow down with multiple Sudoku Boards and does crash when exceeding a certain amount.

It has mainly been released for educational purposes as well as an incentive to get more registered users to support the future development of SudoKai.

Additionally you could also ask Sudoku questions at the following forum.  
<http://forum.enjoysudoku.com/>

## Register SudoKai

In order to make SudoKai even better, resources are needed.

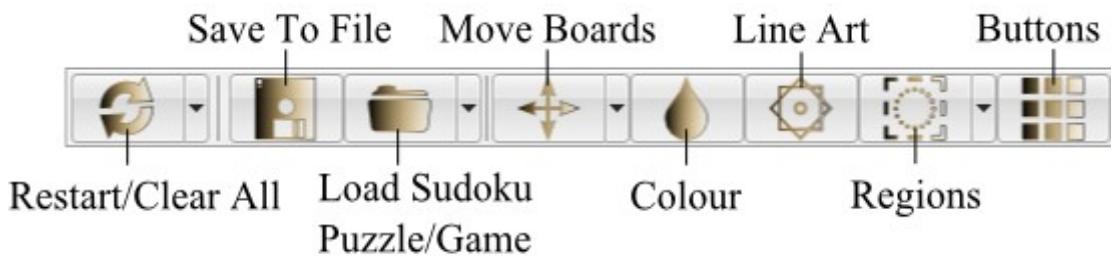
So please register to make me want to continue improving and pushing SudoKai to new levels of awesomeness. Otherwise the lack of interest will make me keep future versions, performance enhancements and additional features to myself. Not to mention the sheer amount of Sudoku Puzzle Variants which you may never get to see/play/solve.

If you can find it in your wallet to register SudoKai - Thank You for your support!

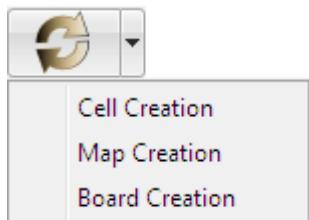
For more information about registering SudoKai please visit: [www.SudoKai.com](http://www.SudoKai.com)

For news and updates follow me on Twitter: [@SudoKaiApp](https://twitter.com/SudoKaiApp)

## Basic Operation and Layout



## Basic Sudoku Board/Variant Creation Process



- 1: Create Cells (\*.sk4c)
- 2: Create Tile Map (\*.sk4m)
- 3: Activate Board Cells (\*.sk4b)
- 4: Create Sudoku Rules/Regions (\*.sk4)
- 5: Update and Beatify where needed
- 6: Save, Load into SudoKai, and Test

Many Sudoku puzzle creators and programmers have their own way of creating Sudoku puzzles and variants. This is how I do it using the SudoKai Board Layout Manager/Builder. There probably are easier ways to create Exotic Sudoku Variants, but unfortunately such software and techniques is virtually non existent and have been missing in the public domain for many years now.

So for educational purposes aimed at current and future puzzle creators and not forgetting programmers who want to create their own Sudoku Software - here is the basic process of creating Sudoku Puzzles using the SudoKai Board Layout Manager/Builder.

# Sudoku Creation Basics

## Step 1: Create Cells (\*.sk4c)

Classic Sudoku have 9 Rows and 9 Columns making 81 Cells to work with. Each classic Sudoku cell is a square of 4 points. But Exotic/Mutant Sudoku Variants changes everything. So the ability to design cells is required. Additional requirements is the ability to set Pencil and Number locations, Sizes, and additional attributes.

### Additional Notes

The cell points are Drag & Drop.

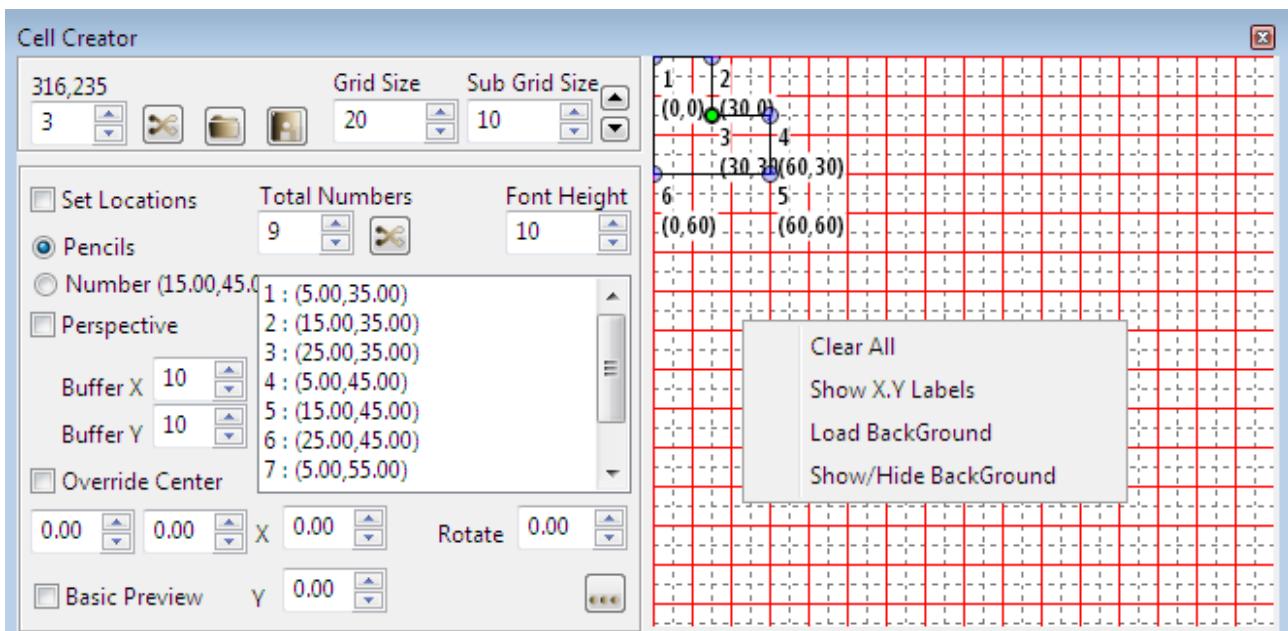
Ctrl + Left Mouse Button changes a line to a curve (*Middle point between 2 other points*)

Point & Click to set Pencil and Number locations.

If at all possible - Please keep the Cell as far Left/Top as possible.

If at all possible - Please keep Cell Point 1 location as far Left/Top as possible.

If at all possible - Please keep Center Location (Green Dot) inside the cell area.



## Step 2: Create Tile Map (\*.sk4m)

Classic Sudoku have a Tile Map of X By Y with fixed Cell Width and Heights. But Exotic/Mutant Sudoku Variants changes this basic concept yet again.

So the ability to create a Tile Map with various Cell sizes and Locations is required. Sometimes this Tile Map is a pattern repeating itself and other times not so much.

### Additional Notes

Basic Drag & Drop capabilities when Map Rules are selected.

F2: Allows the editing of Cell and Map Rule captions.

Some Tile Maps have been included in the '*SudoKai Tile Map Files*' directory.

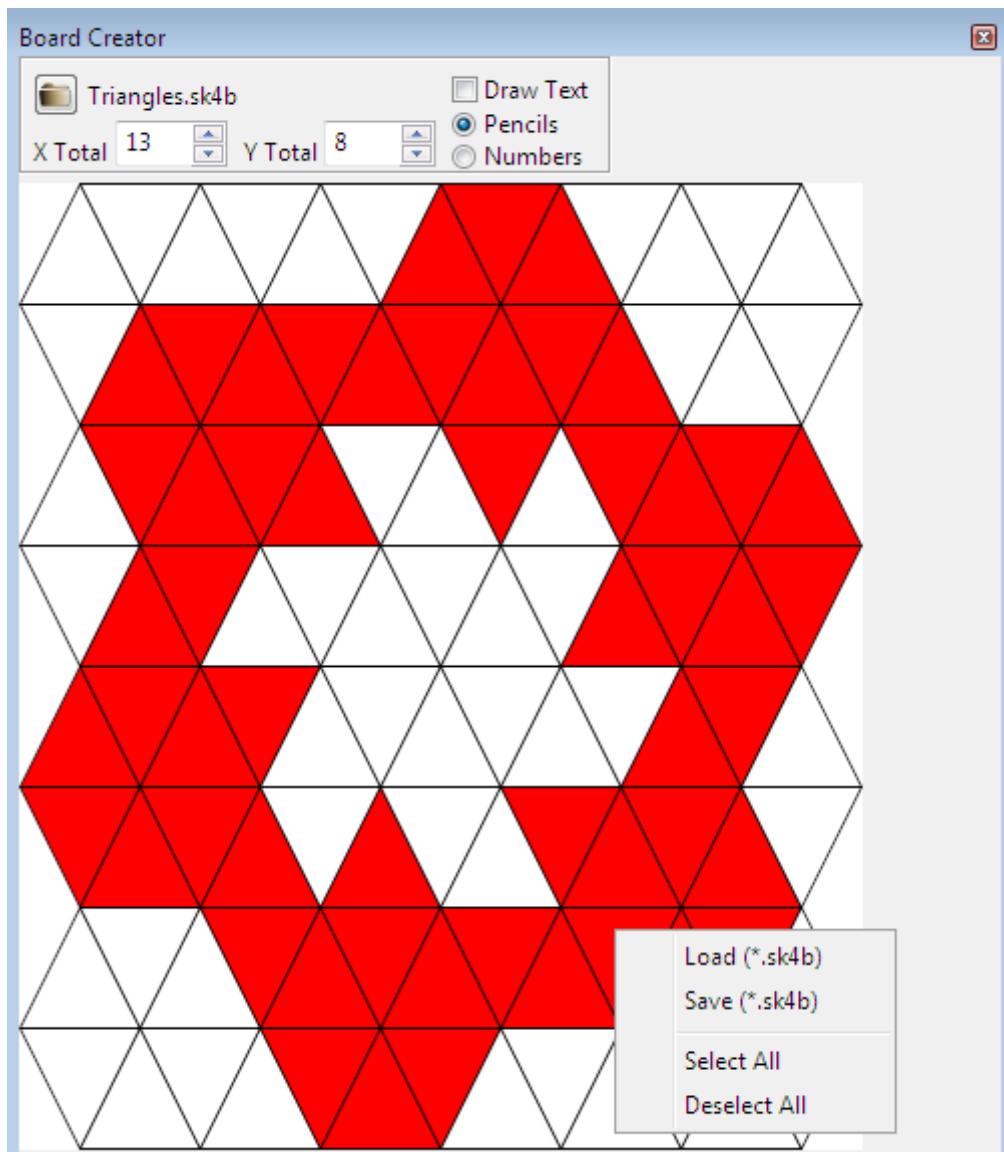


### Step 3: Activate Board Cells (\*.sk4b)

Classic Sudoku have a Board Layout where all 9x9 cells are visible. This is not always the case with Exotic/Mutant Sudoku Variants.

So the ability to select visible cells are required in defining a Sudoku Board Layout. This is also an awesome hack when 2 or more overlapping Sudoku Boards are required to define a Sudoku Variant.

- See Tight Fit Sudoku, TreDoku™, Isometric/Cubic, Kakuro, and Sudokuro.



## Step 4: Create Sudoku Rules/Regions (\*.sk4)

Classic Sudoku rules are to enter numbers 1-9 in such a way that Rows, Columns, and Squares/Boxes contains each number exactly once. But Exotic/Mutant Sudoku Variants changes these rules to new heights. So the ability to define custom rules and constraints is indispensable.

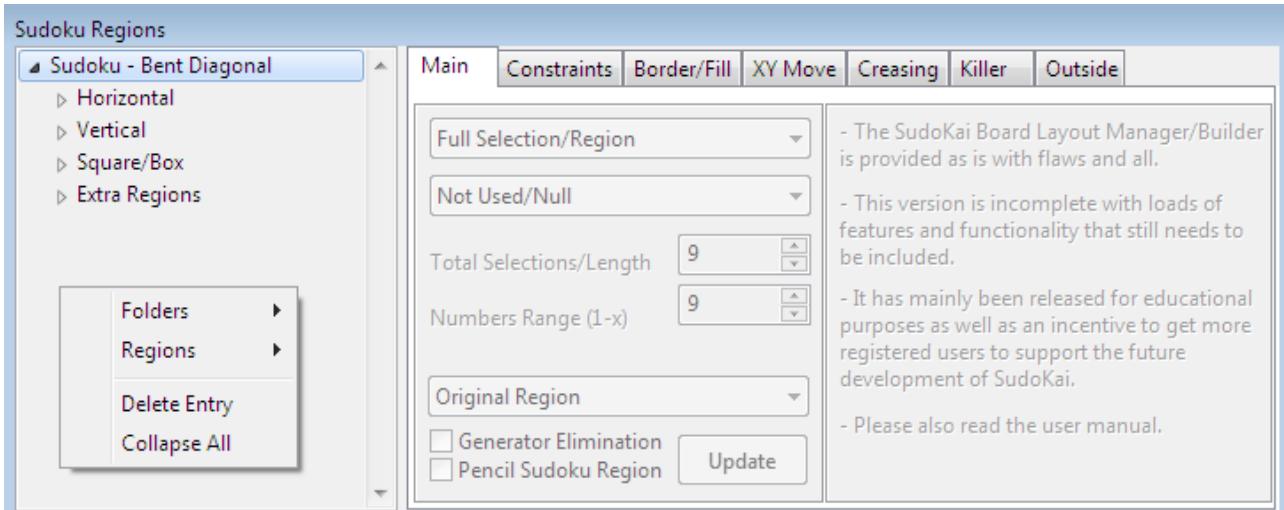
### Additional Notes

Point & Click on Sudoku Board Cells to define Sudoku/Regions entries

F2: Allows the editing of Folder and Region captions.

Shift + Up/Down Key moves Folders/Regions up and down the list.

Basic Drag & Drop capabilities exist as well.



### Regions Definitions

#### Full Selection/Region

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Used by all Sudoku Variants.

#### Argyle Selection/Region

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Some Examples located at:

[Main](#) | [Sudoku](#) | [9x9](#) | [Argyle](#)

#### Argyle Cell (Anti-Knight, Non Cons., Cons., Anti-Touch, NoTwo, etc)

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Ctrl + Left Mouse Button to select multiple entries on the Argyle Cell List.

Some Examples located at:

[Main](#) | [Sudoku](#) | [9x9](#) | [Special Rules](#)  
[Main](#) | [TriDoku](#)

#### Fortress

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Some Examples located at:

[Main](#) | [Sudoku](#) | [9x9](#) | [Fortress](#)

## Selection Constraints (Trio/Even/Odd)

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Some Examples located at:

[Main](#) | [Sudoku](#) | [9x9](#) | [Constraints](#)

## Duplicate/Mirror Cells

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Some Examples located at:

[Main](#) | [Sudoku](#) | [9x9](#) | [More Special Rules](#) | [Clone Sudoku](#)

## Creasing Region

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Some Examples located at:

[Main](#) | [Sudoku](#) | [9x9](#) | [Palindrome](#)

[Main](#) | [Kryptonite](#)

## Killer Cage

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
------	-------------	-------------	---------	----------	--------	---------

Some Examples located at:

[Main](#) | [Kryptonite](#)

## Outside Cells (Frame/Skyscraper/Outside)

Main	Constraints	Border/Fill	XY Move	Creasing	Killer	Outside
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Some Examples located at:

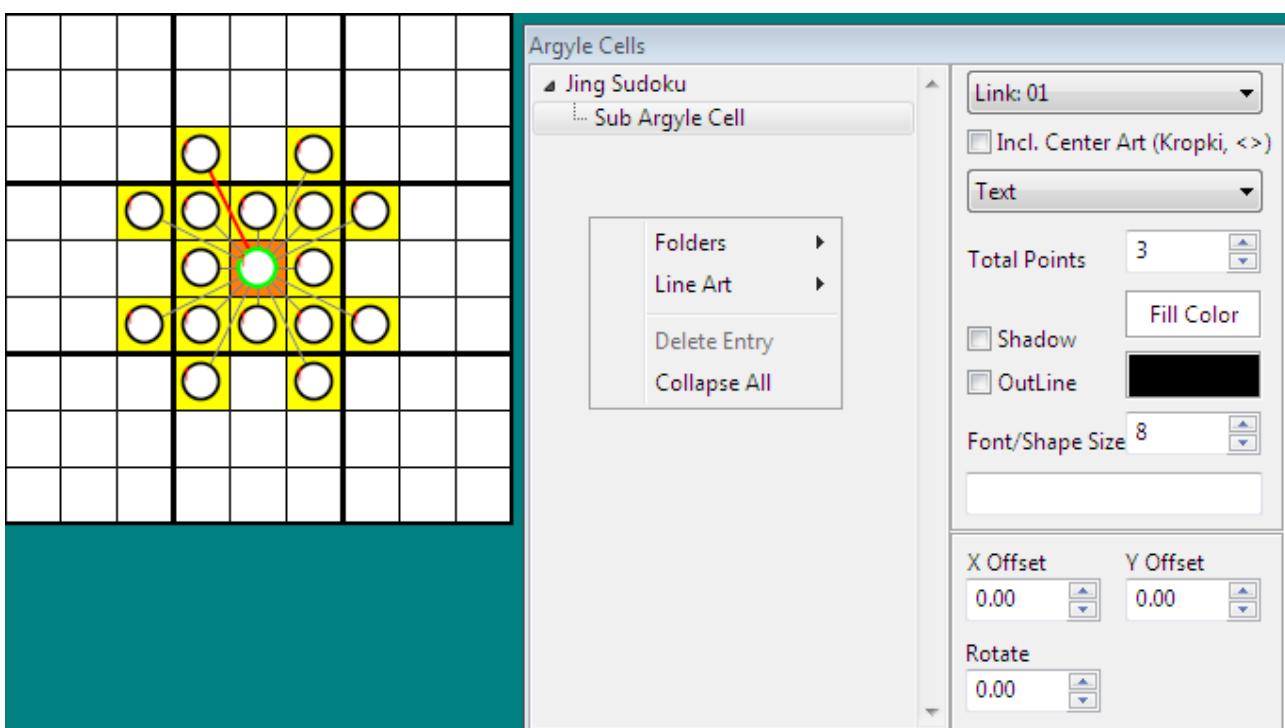
[Main](#) | [Kryptonite](#)

## Argyle Cells

Point & Click on Sudoku Board Cells to define Argyle Cell entries.

F2: Allows the editing of Captions.

[Note: Argyle Cells don't always work as intended with complex patterns like Parquet]



## Step 5: Update and Beatify where needed

Exotic/Mutant Sudoku Variants sometimes require additional attention to detail. Sometimes it is coloured cells, lines that need to be drawn, or buttons that need to be reorganized.



### Colour Page

Point & Click on Sudoku Board Cells to change Cell Colours

## Line Art Page

The line points are Drag & Drop.

Text available with a line consisting out of 2 points

Ctrl + Left Mouse Button changes a line to a curve (*Middle point between 2 other points*)

F2: Allows the editing of Captions.

The screenshot shows a 9x9 grid of colored cells (pink, yellow, green) on the left, representing a Sudoku board. On the right is a control panel titled 'Line Art'. The panel includes:

- A tree view showing categories: 'Low Medium High', 'Set 01', 'Set 02' (selected), 'Set 03', 'Sudoku X', 'XLine 1', and 'XLine 2'.
- A 'Points' input field set to 2, with a dropdown menu and a 'Close EndPoints' checkbox.
- A 'Middle Layer' dropdown menu.
- A 'Line Color' button.
- A line style selector.
- A 'Line Width' input field set to 2.
- A 'Linked 2 Sudoku Board' checkbox.
- A dropdown menu for 'Folders' and 'Line Art'.
- A 'Delete Entry' button.
- A 'Collapse All' button.
- Checkboxes for 'Increase Work Area', 'Add Text', 'Hide Line Art', 'Shadow', and 'Text OutLine'.
- An 'Font Size' input field set to 25.
- A text input field containing '4,5,6'.

## Buttons Layout Page

Basic button layout and Text override.

1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8
9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B
C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8
9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B
C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8
9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B
C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8
9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B
C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8	5 6 7 8
9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B	9 0 A B
C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F	C D E F

Selections/Buttons Layout

01 :: Sudoku 16x16


4
▲ ▼
X
4
▲ ▼

incl. on Pencil/Numbers Page

1
2
3
4

5
6
7
8

9
0
A
B

C
D
E
F

Clear

Text Override (incl. Board)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	2	3	4	5	6	7	8	9	0	A	B	C	D	E

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III
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## SudoKai Layers

Basic Layer Manager useful when working with multiple Sudoku Boards.

### Additional Notes

F1: Highlights the associated Sudoku Board.

F2: Allows the editing of Captions.

Shift + Up/Down Key moves Entries up and down the list.

