



## **SudoKai v4 (*Limited Edition*)**

Here are a few things that is new in SudoKai v4. Many more features and capabilities are to be included in future releases. Please also remember that this is a '*Limited Edition*' and that certain features have been disabled. Additionally, there might be a few bugs and logic bombs lurking around - please let my know if you find any. Other than that - Enjoy.

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

### **Sudoku Puzzle Variants**

SudoKai v4 can now handle many more Sudoku Puzzle Variants and then some. This is mainly why development took so long as I had to solve some nasty Sudoku Programming Challenges I set myself, and yet many more awaits me.

I have included as many Sudoku Variants as I could in order to showcase SudoKai's capabilities. Depending on how well SudoKai v4 is received, more Sudoku games and variants could be included in future releases.

### **New Programming Language**

Yet another reason why development took so long. Although it is still Object Pascal, many components had to be tracked down, libraries and units re-coded, replaced or totally dropped during the transition process.

Previous versions of SudoKai was developed using Delphi 5. This time SudoKai v4 have been developed using Lazarus: [www.lazarus-ide.org](http://www.lazarus-ide.org)

### **Image Export**

Previously SudoKai only offered Bitmap (\*.bmp) image export. Now you are able to export Sudoku Puzzle/Games to other picture formats as well. (\*.jpg, \*.png, \*.gif)

### **Reopen Menu**

Saving or Loading a Sudoku Puzzle/Game will add it the '*Reopen Menu*' for quick access.

### **Number Selection Page**

You are now able to select multiple Pencil entries at a time. And it does not close after setting Sudoku Numbers either, but that option is still available if needed.

### **Hint System**

I have introduced a basic hint system for when you get stuck solving a Sudoku Puzzle/Game. Only available when '*Use Auto Pencil*' is enabled and '*Solve as I go*' is disabled.

### **Software Licence**

Who really knows what people do with software, so I am introducing an '*Ascended Software Licence*'. The idea is to make people think twice about abusing SudoKai, especially when it comes to registration time.

## **SudoKai v4 Issues**

Although many features have been introduced and I solved many more Sudoku Programming Challenges, I inadvertently introduced performance issues which I currently do not yet know how to solve.

### **Zoom Stuff**

The Zoom in/out is very slow, especially with multiple Sudoku Boards.

### **Sudoku Solver & Generator**

This is unfortunately my Kryptonite. The Sudoku Solver is slow and more solving techniques needs to be introduced. The Sudoku Generator have issues with certain puzzles and variants. So this needs allot more work.

### **Sudoku Layout Manager/Builder**

Although I would Love for people to design their own Sudoku Layouts and games, the current version is not user friendly and there are many areas that needs more work done.

Besides this, there are some seriously cool, amazing, and mind blowing Sudoku secrets in the SudoKai Layout Manager/Builder that I am not yet willing to share.

***2019 Update: SudoKai Board Layout Manager/Builder now available***

## **What's Next**

There are many things that still needs to be introduced, sorted out and fixed. So please do not ask me when SudoKai v4 will be completed as it most likely will be the 5th of never.

For now the major Sudoku Programming Challenge is to get the Solver and Generator to sync together seamlessly. Thus I need to add more solving techniques and get the generator to know what to do with certain puzzle variants.

If I am unable to complete my mission then SudoKai v4 (Limited Edition) will be the final release. After that I will decide whether to quit Sudoku Programming for good or reconsider the Open Source route which previously failed to draw any real attention or support. Additional factors that will influence my decision include whether or not people register their copies of SudoKai.

## **Register SudoKai**

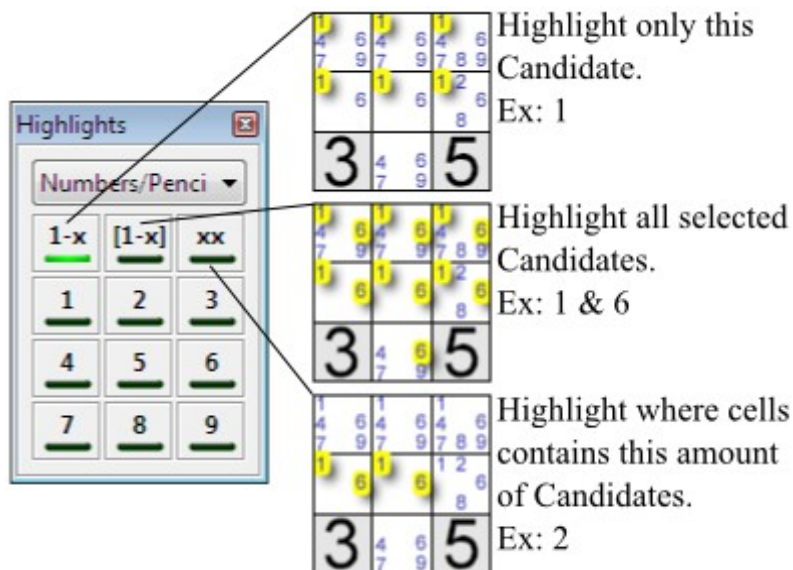
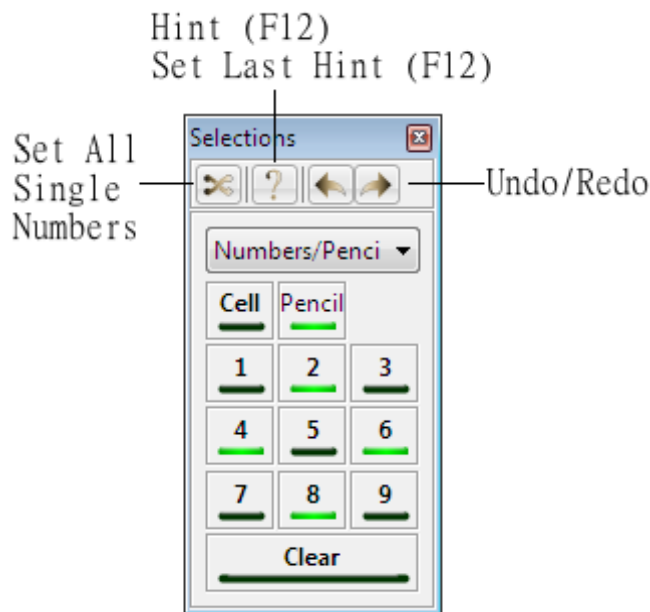
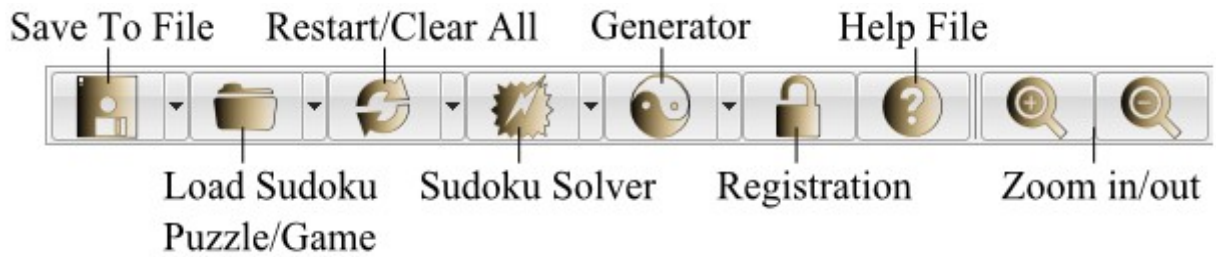
In order to make SudoKai even better, resources are needed.

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)

# Basic Operation and Layout

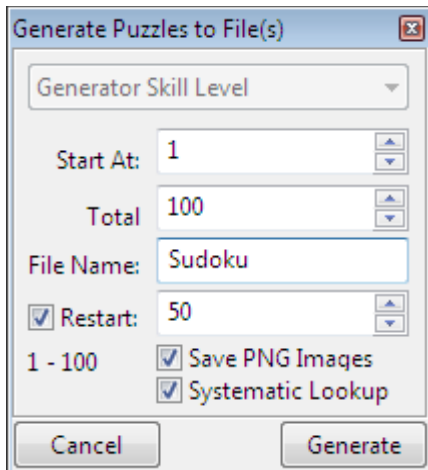


## Sudoku Generator Notes

Please take note that the Sudoku generator is not 100% flawless nor is it super fast.

There are a few issues with certain puzzles and variants which will either take forever to generate or a Sudoku Puzzle will not be generated at all. Also see '**SudoKai v4 Issues**' above.

Because of this, a '**Generate to Files**' was created as a means to bypass some of these issues.



The '**Restart**' value is used by the Back Tracking System to know how many times numbers have been Set/Cleared. If this number is reached then it clears everything and starts again.

Many variants do not need this enabled, but if you find a Sudoku variant takes forever to generate than you can play around with this value.

[Ex: Argyle, Non-Consecutive, NoTwo, and a few more]

The '**Systematic Lookup**' is used to know what generation system to use. Again if you find a Sudoku variant takes forever to generate than you can Enable/Disable this option.

### Maximum Elimination

SudoKai will go through the current Puzzle and see if there are any Sudoku numbers which can be removed and yet still be a valid Puzzle/Game. This is useful when you want SudoKai to create a Sudoku game from your own completed board.

# Keyboard Shortcuts

## 1 to 9 Number Keys

Quickly set numbers using the numbers keypad. The number 0 is used to clear a specific number that have been set. Char Keys (A-F) can be used for 16x16 Sudoku Puzzle types.

## F1 to F9 Keys

Depending on whether you have Auto-Pencil enabled, pressing a specific key will either set or remove that number from the available list of candidates to choose from. An example would be to move the mouse to a location/cell and by pressing the F5 key will then remove the number 5 from the list of numbers to choose from. Pressing the F5 key again will restore the number 5 to the list of candidates.

Shift + Char Keys (A-F) can be used for Sudoku Puzzle types bigger than 9x9.

**F10 Key:** Reset candidates for a specific cell.

**F11 Key:** Reset all Sudoku cell candidates.

**F12 Key:** Seek Hint, Pressing **F12** again will set the last hint found.

## Undo/Redo Last Action(s)

Undo: CTRL + Z

Redo: CTRL + SHIFT + Z

## **Sudoku Solving Techniques**

These are the Techniques used by SudoKai v4 for now.

Singles

Naked Pairs, Triples, Quads

Hidden Pairs, Triples, Quads

Common Peer Elimination

Locked Candidates

Basic Information sync routines

For an explanation about these and other Sudoku Solving Techniques please visit.

[http://www.sudokuwiki.org/Strategy\\_Families](http://www.sudokuwiki.org/Strategy_Families)

Additionally you could also ask Sudoku questions at the following forum.

<http://forum.enjoysudoku.com/>

## **Generated Sudoku Games**

Many of the Sudoku games have been generated using SudoKai version 4 with various skill levels. Others have been imported from versions 2 and 3 in order to save valuable time.

If you find any Sudoku games/puzzles that is not valid, please let me know so that I can find out why they slipped through.

Thank You and Enjoy becoming a Sudoku Master.