

Sudoku User Manual

Sudoku

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2 The Game of Sudoku

2.1 Introduction

Sudoku is a combinatorial placement puzzle. The objective is to fill a $N \times N$ grid so that each column, each row, and each of the N , (of $\sqrt{N} \times \sqrt{N}$ size), zones contains the digits from 1 to N only one time each.

It is worth pointing out that, even if the grid is filled with numbers, Sudoku is not a mathematical game; number properties are never used to solve the game, which is logic based only.

2.2 Running the Sudoku Application

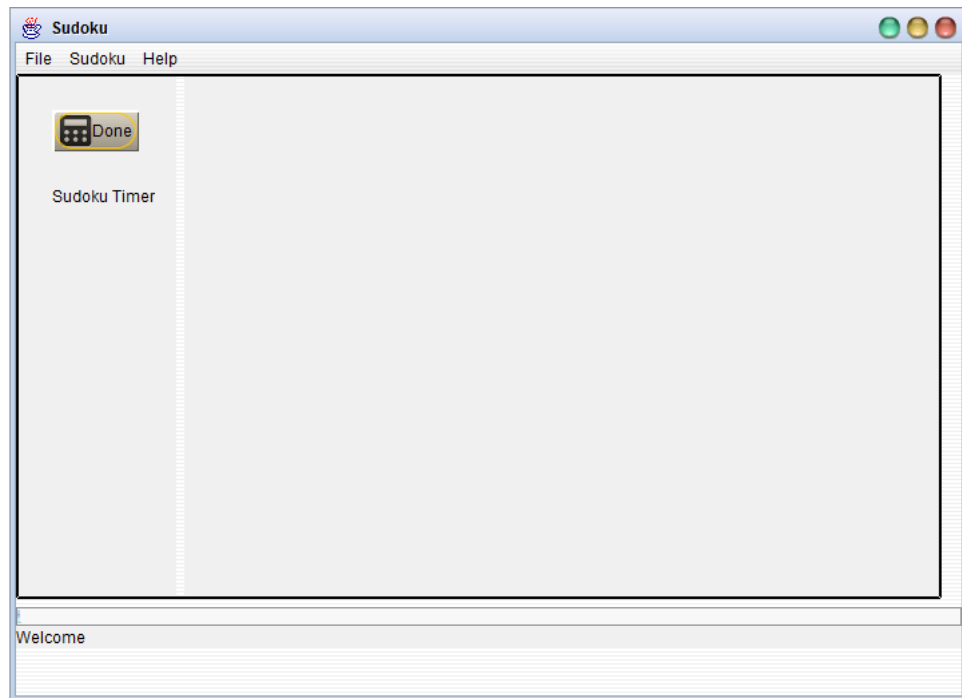
This Sudoku Application is provided under the Apache 2 Open Source license. It can be freely distributed with due acknowledgement to the developers.

The Application is provided as standalone executable jar and requires the java runtime environment of 1.6 and above to run.

It can be run by simply double clicking on the executable jar.

3 Sudoku Application

3.1 The Interface

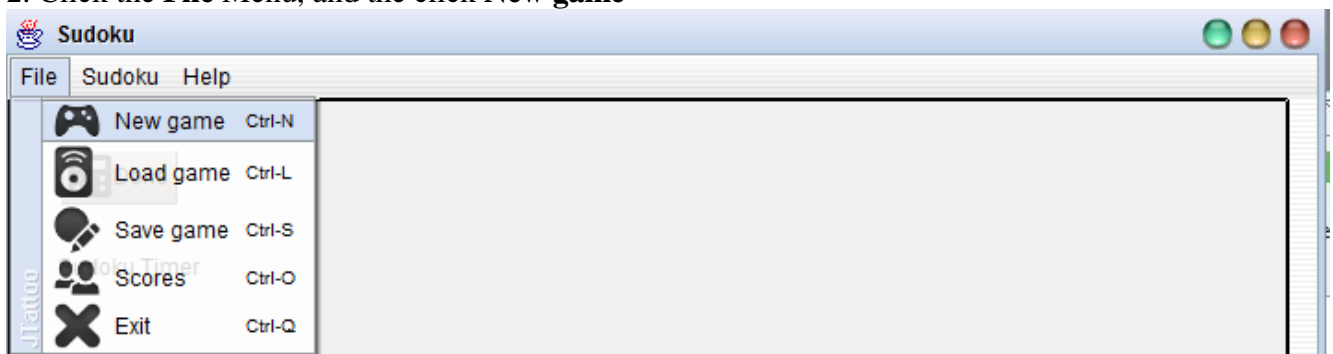


3.2 To Play Sudoku

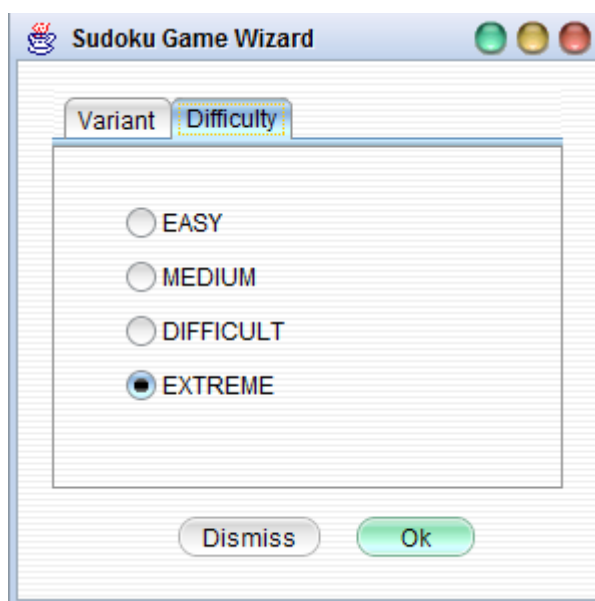
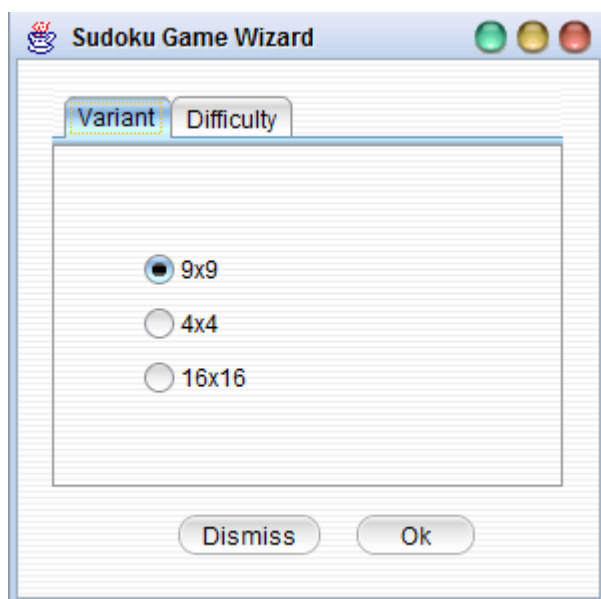
1. Double-click on the Sudoku jar.

- *If the Sudoku jar is not available, you might need to install the game. For more information about installing the Sudoku jar, see the Installation Guide provided*
- *By default you are shown a blank Sudoku empty grid.*

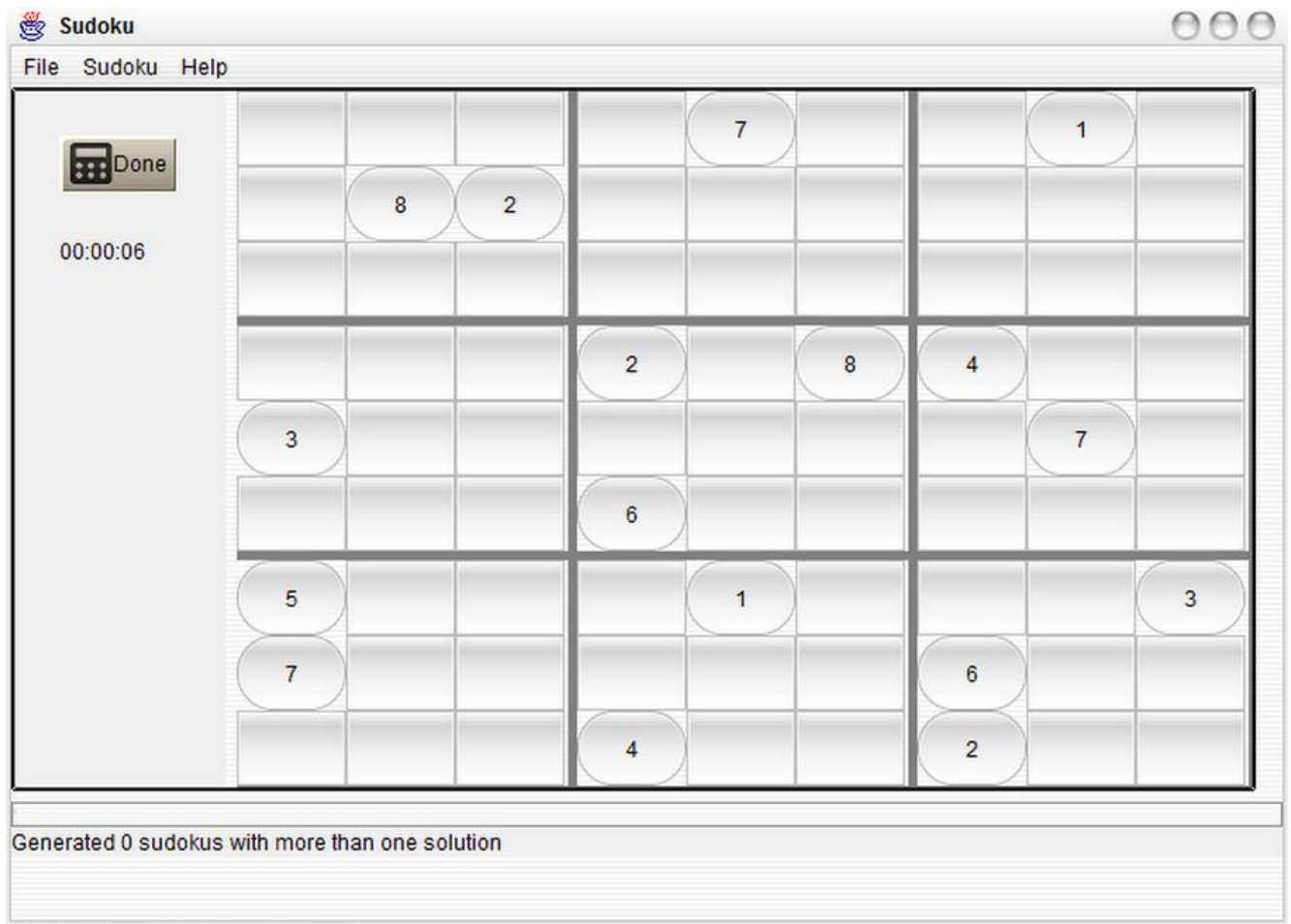
2. Click the **File** Menu, and the click **New game**



- You will be shown options for choosing your Sudoku **Variant** and **Difficulty Level**. By default the Sudoku **Variant** is set to **9x9** and the **Difficulty** level is set to **Extreme**.

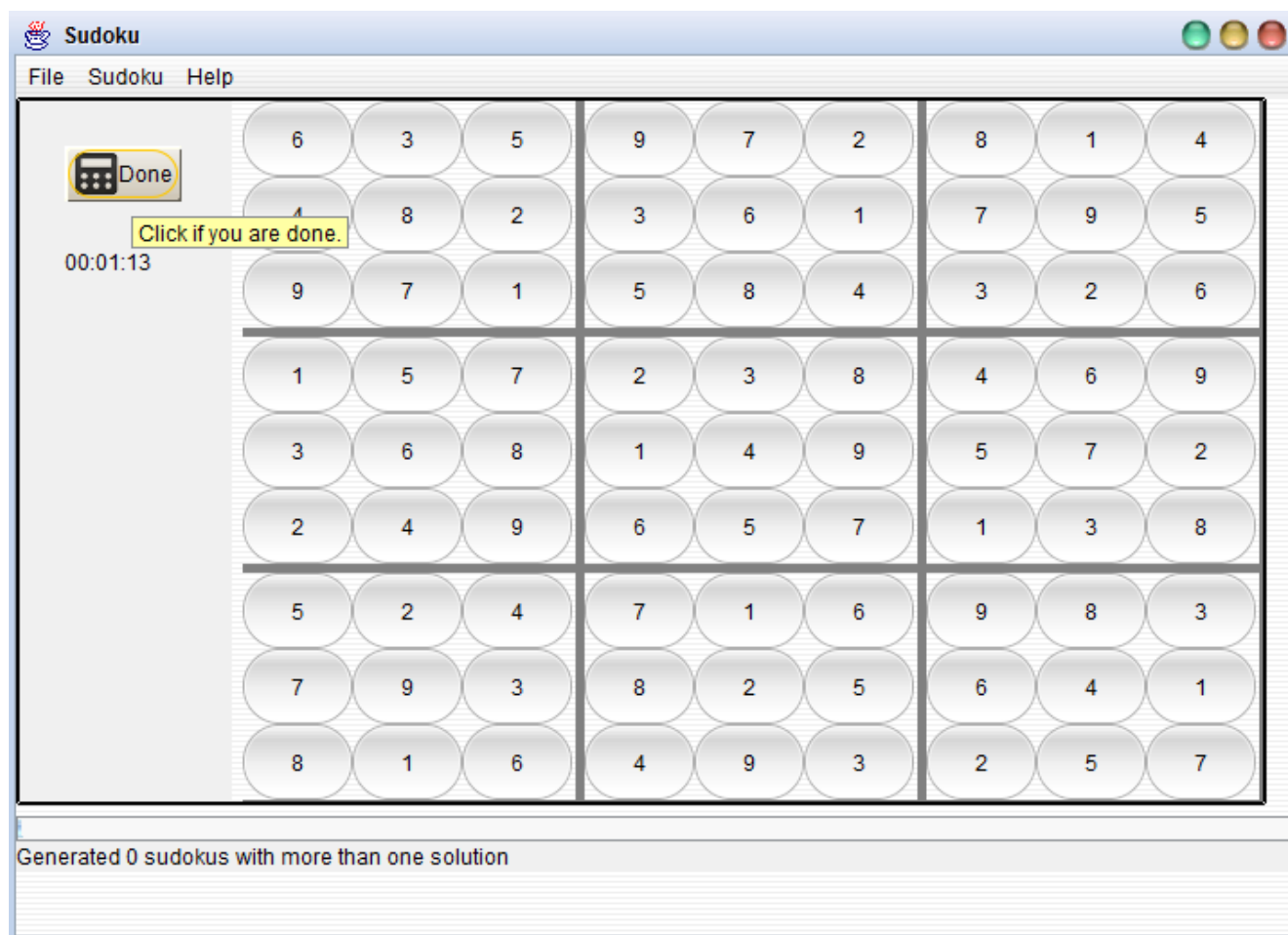


3. Press **Ok** to start a new game
4. The timer will begin immediately

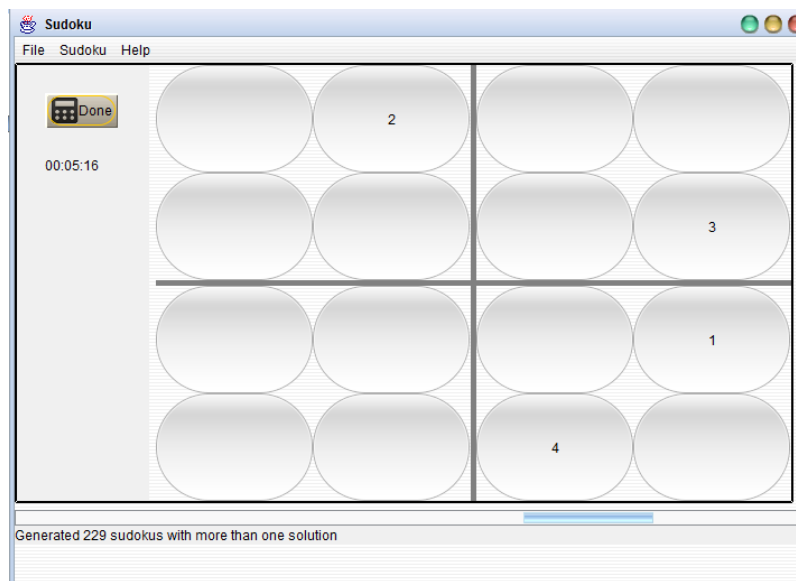


5. Select a square and type in a number. Continue to fill up the grid.

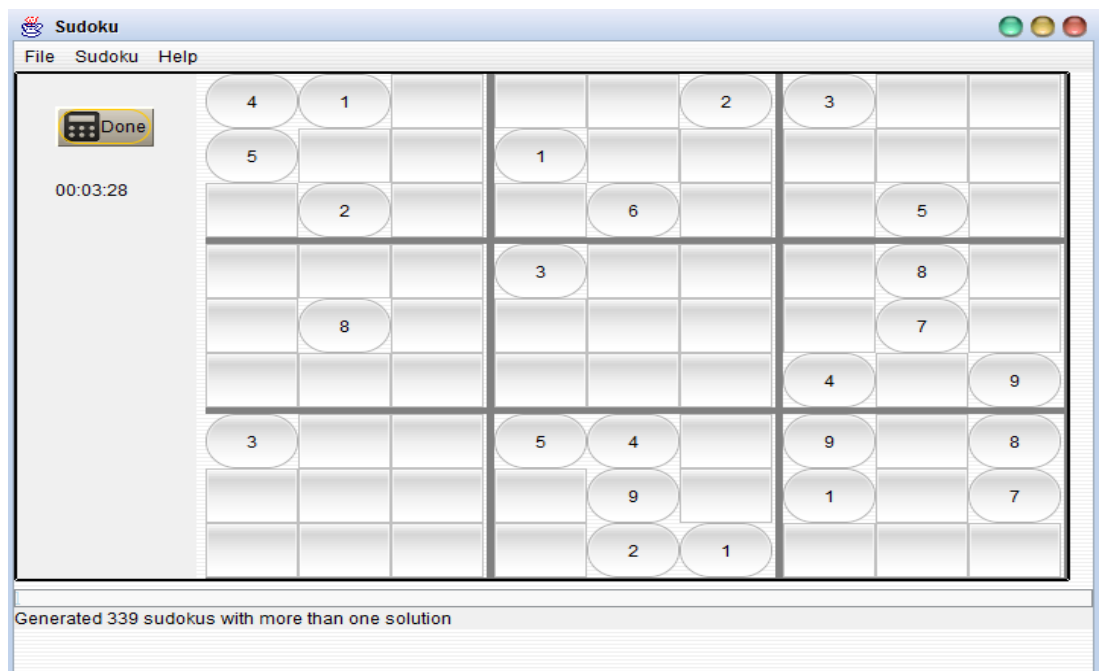
6. When you have completed the **Sudoku** Game click done



3.2.1 A note about Game Generation



When choosing game levels of larger NxN Sudokus to generate a valid Sudoku Game might take some time. The progress of the number of totally random Sudoku invalidated is updated in the progress bar.



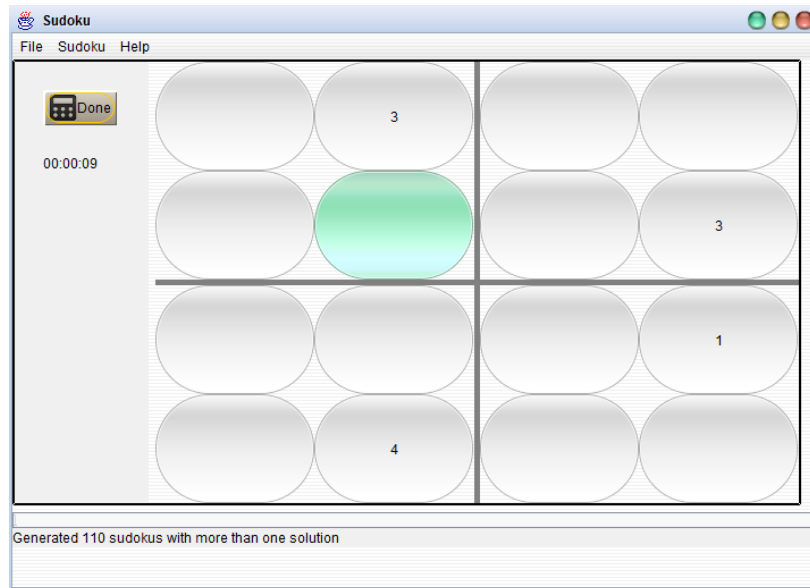
Also when the game has been generated the final number of Sudokus invalidated is shown below.

For player convenience Sudoku's of GameVariant 9x9 and of GameLevel Extreme have been pre-generated and will load quickly.

3.2.2 Game Variant and Game Difficulty

a) The following Game Variants are supported

- 4x4, a Sudoku with 2x2 zones
- 9x9, a Sudoku with 3x3 zones
- 16x16, a Sudoku with 4x4 zones

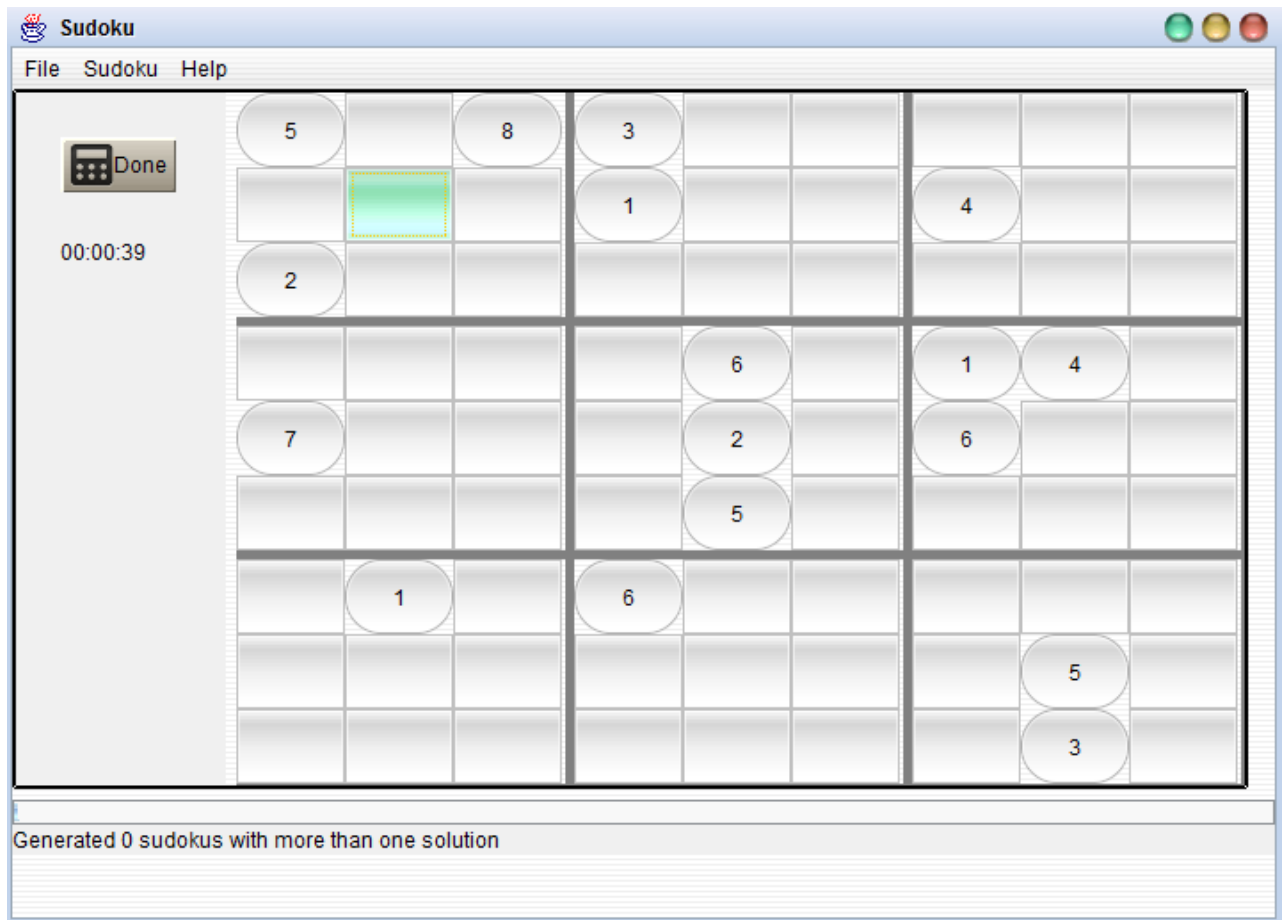


b) These Game Variants have the following Difficulty Levels

- EASY
- MEDIUM
- DIFFICULT
- EXTREME

3.2.3 To Enter and Delete Values from a Cell

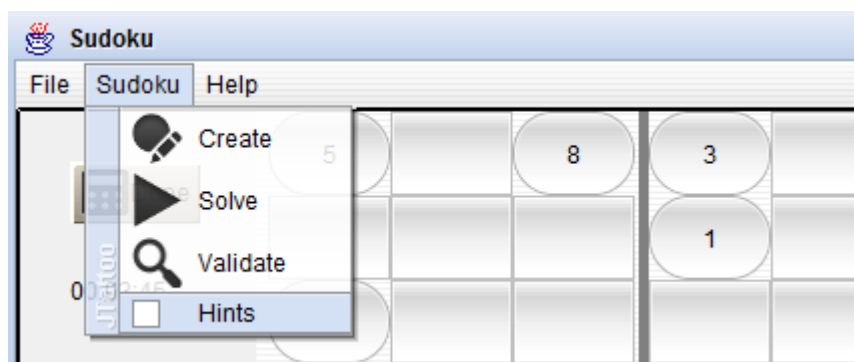
a) Select a Cell by clicking on it



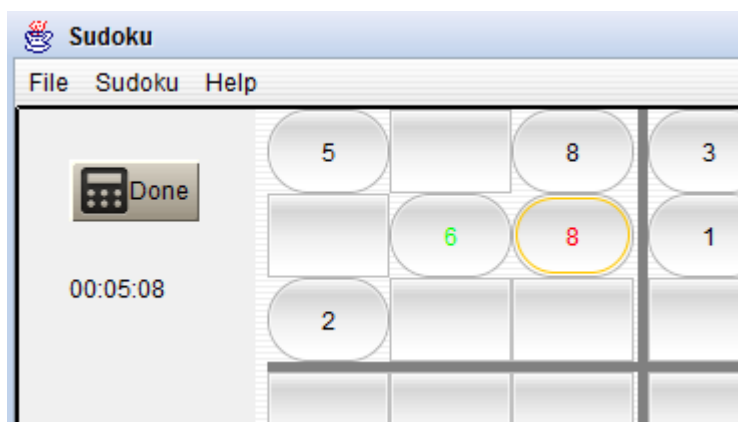
- b) Enter a number from 1 to N using the keyboard (for a NxN puzzle).
- c) Press Enter
- d) To remove a number from a Cell, select the cell by clicking on it
- e) You can use the *delete*, *backspace* and the *spacebar* to remove the value from the cell

3.2.1 Tips for Game Play

- a) If you wish to turn on hints, click on the **Sudoku** Menu and click on **Hints** to check the box against it.

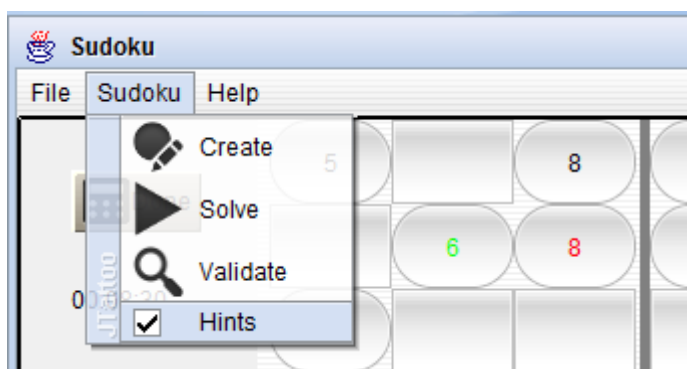


- Now the numbers that you add will be hinted, i.e they will be green if it is possible to put the number in that cell or red if its not possible. Note though that feature only works against the actual givens and not the values that have been input by you. This is to ensure that the game does not cease to become a logic game.

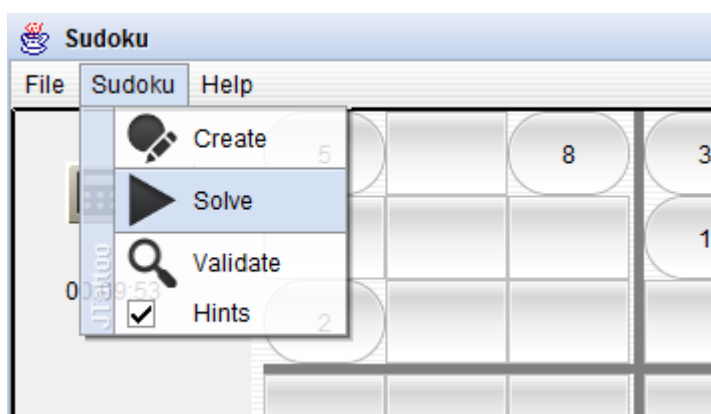


- If you wish to turn off hints simply click on Hints again to uncheck the box next to it.

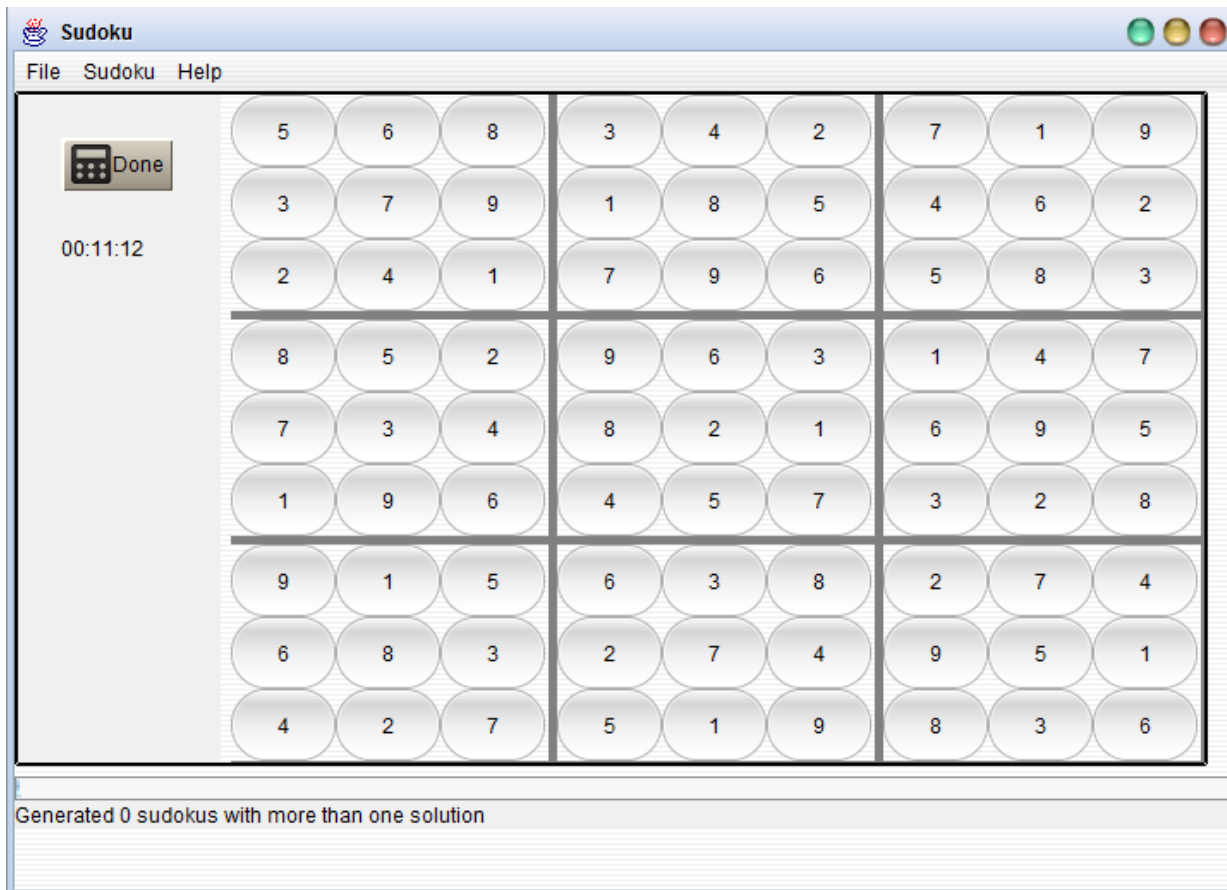
b) If you wish to turn off hints simply click on **Hints** again to uncheck the box next to it.



c) To solve a **Sudoku** game click on the **Sudoku** Menu and click on **Solve**

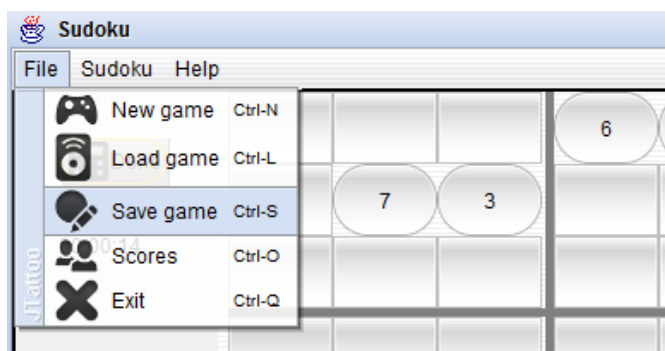


- And the game will be solved instantly.

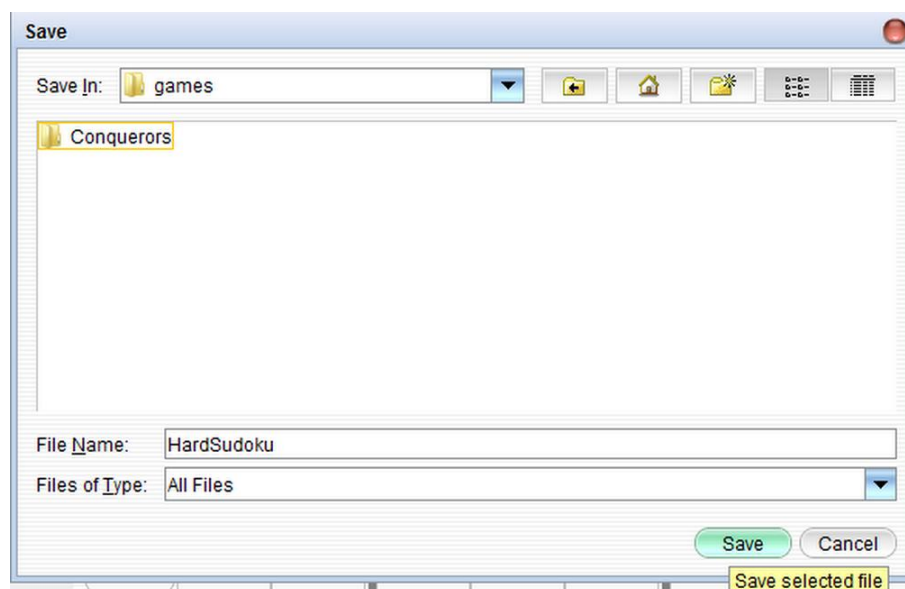


3.3 To save Sudoku Games and Continue saved games

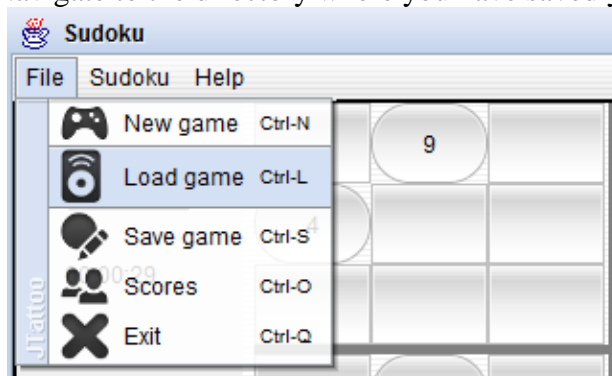
1. If you need to finish a game later just click on the **File** Menu and click **Save game**



2. Enter a name for the file to save your Sudoku game into and select the directory to save it into
3. Click Save



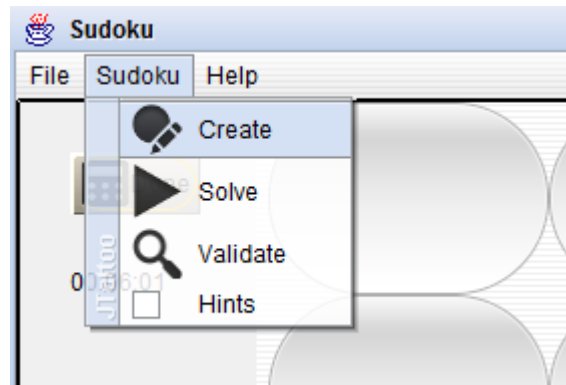
4. To continue with a saved game, click on the File Menu and click Load game
5. Navigate to the directory where you have saved your previous game and select the file.



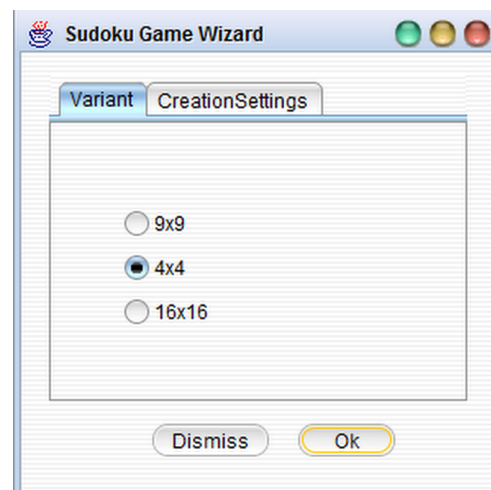
6. Click **Open**

3.4 To create your own Sudoku

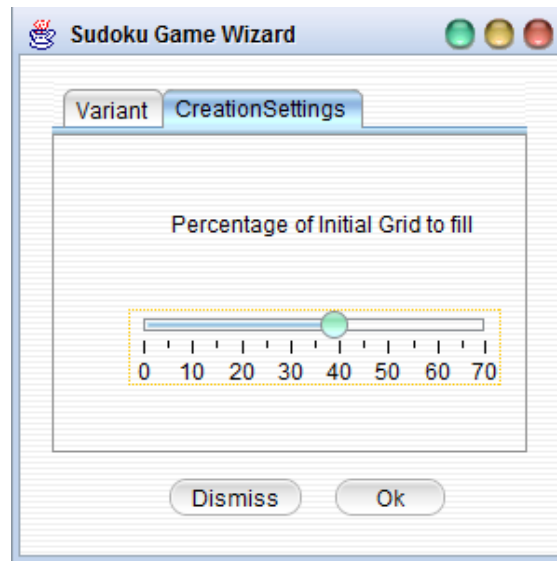
1. If you wish to create your own Sudoku click on the **Sudoku** Menu and click **Create game**



2. Choose the variant of the Sudoku which you wish to create. The options will be
 - 4x4, a Sudoku with 2x2 zones
 - 9x9, a Sudoku with 3x3 zones
 - 16x16, a Sudoku with 4x4 zones



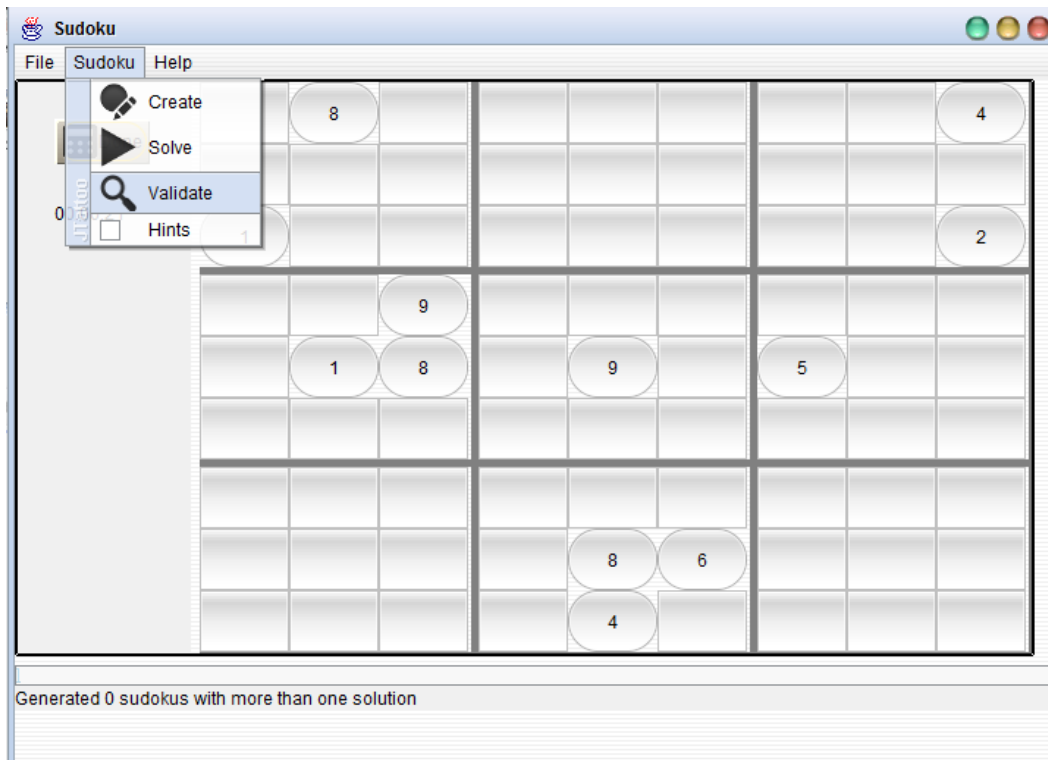
3. Click on **CreationSettings** Tab.



4. Choose the percentage of the **Sudoku** grid that you would want to fill by dragging the slider.
 - You can leave the grid blank by choosing 0 percent and fill upto 70 percent.
 - The numbers filled in would be placed in all valid positions according to the rules of **Sudoku**.
5. Click **Ok**
 - You will be presented with a grid with a few given numbers according to your **Creation** settings.
6. Now you can start filling in numbers into the Grid.

3.4.1 Tips for Creation

1. Click on **Sudoku** Menu and Click on **Validate** .



- This will tell you if your partially filled **Sudoku** grid is a valid Sudoku or not, that is it has one solution or not.

