# L.P.H Sudoku – User Manual

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5	3			7				
6			1	9	5			
	9	8					6	
8				6				3
8 4 7			8		3			1 6
7				2				6
	6					2	8	
			4	1	9			5 9
				8			7	9

#### Introduction

Sudoku is a classic game which can be played in many ways, from on a computer, to on a page in a newspaper. L.P.H Sudoku is an adaptation of this classic game into your browser. This application allows you to fill in Sudoku spots by simply clicking and typing a number. It also includes a timer so that you can keep track of how long it takes you to finish a board.

## Playing L.P.H Sudoku

### Sudoku Instructions

Sudoku is Played on a grid of 9x9 spaces. Within the rows and columns are 9 " sub-squares" made up of 3x3 spaces. Each row, column, and 3x3 sub-squares, must be filled with numbers 1-9 without any repeated numbers. Sudoku boards will come with some spaces already filled in. The placement and amount of spaces filled determine the level of difficulty of the board.

### Valid & Invalid Entries

In Sudoku there is one basic rule that governs whether a number placement is valid: it cannot repeat in its row, column, or in the 3x3 sub-square that it lies in. When playing L.P.H Sudoku you may see a red border around the tile for the number you just entered. This will indicate that the number entered in the space is an invalid entry.

5	3	2		7				
6			1	9	5			
	9	8					6	
8				6				3
8 4 7			8		3			1 6
7				2				6
	6					2	8	
			4	1	9			5 9
				8			7	9

Figure 1: Valid Entry

5	3	3		7				
6			1	9	5			
	9	8					6	
8				6				3
8			8		3			1
7				2				6
	6					2	8	
			4	1	9			5
				8			7	9

Figure 2: Invalid Entry

## Completed Boards

A board is complete when all tiles on the 9x9 grid are filled with numbers 1-9 while following the rules. There can be no repeating numbers in any row, column, or 3x3 sub-square. Once you have met all of the requirements, the timer will stop indicating that you have completed the board.

1	8	4	9	6	3	7	2	5
5	6	2	7	4	8	3	1	9
3	9	7	5	1	2	8	6	4
2	3	9	6	5	7	1	4	8
7	5	6	1	8	4	2	9	3
4	1	8	2	3	9	6	5	7
9	4	1	3	7	6	5	8	2
6	2	3	8	9	5	4	7	1
8	7	5	4	2	1	9	3	6

Figure 3: Completed Sudoku Board

### New Game

Once the board has been completed or you wish to try a different board, you can click the "New Game" button to generate a new board and game. When a new game is generated the timer will also be reset and begin anew.

#### **Timer**

When starting a Sudoku board a timer will also begin allowing you to keep track of the time it takes you to finish a game. Once you have completed the board, the timer will stop. This allows you to test yourself when you attempt future games.

#### Solver

If you are stumped or have given up on trying to solve the Sudoku board, you can click the "Solve" button and the board will be automatically solved for you.