

Golem Sudoku

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Introduction

Golem Sudoku is a game of sudoku with size variants, powered by the Golem Network.

I decided to build a version of sudoku for golem after some brainstorming for fairly computationally intensive games that do not require short computation times.

Algorithm

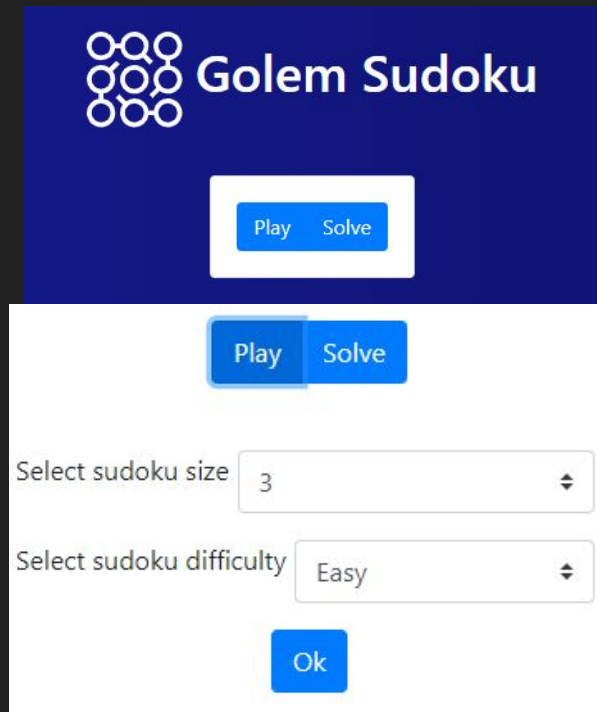
After further research, I decided to use the Dancing Links implementation of Knuth's Algorithm X for solving sudoku puzzles that have been represented as exact cover problems.


For generating puzzles, a solution is first obtained using a grid sparsely filled with random numbers. Then, individual numbers are removed from the sudoku grid and it is again solved to see if the solution is unique. If a number after being removed results in multiple possible solutions, it is put back in the grid. This process is repeated more times if the desired difficulty of the sudoku is higher.

Puzzles are pre-generated and stored on first launch and new puzzles are generated whenever a user consumes a puzzle. This is to prevent users having to wait before playing.

App layout

Main menu



 **Golem Sudoku**

Play Solve

Play Solve

Select sudoku size 3

Select sudoku difficulty Easy

Ok

Puzzle screen

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

Show solution Return to main menu

Solving screen

0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

Solve Return to main menu

Issues

- The network is slow to pick a provider to execute a task, and sometimes providers will fail tasks without providing a reason
- Using my algorithm for generating sudoku puzzles, anything above 25x25 results in all providers failing the task