Group 5

Sudoku

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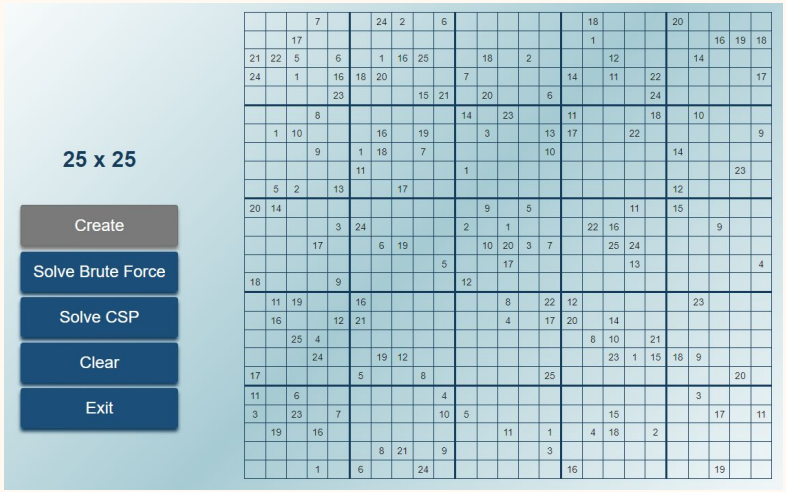
LANGUAGES AND TOOLS USED

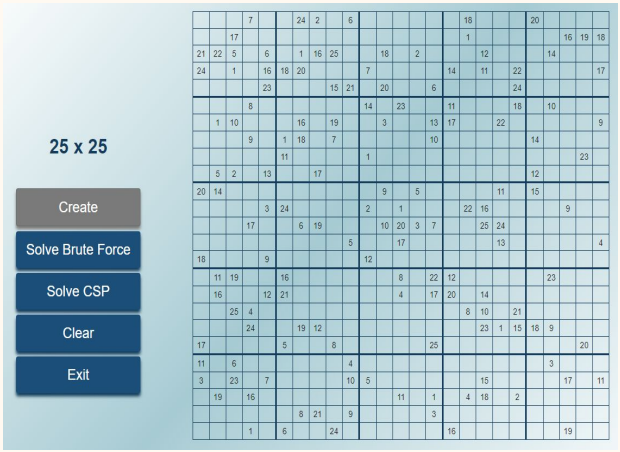
- Javascript
- Next.js - Frontend
- Node - Backend

BF TECHNIQUES



- BF: DFS with a Stack
  (stack = unassigned cells)
- 5 min timeout

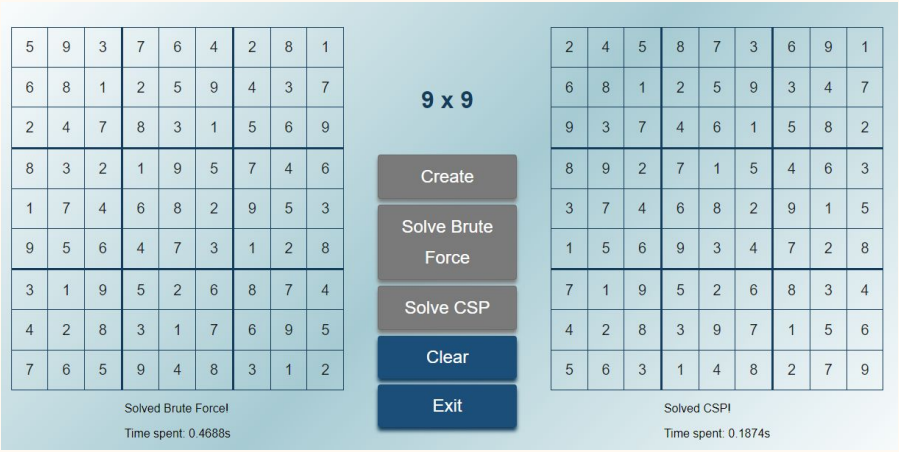
CSP TECHNIQUES



- CSP: Backtracking + AC3
- MRV - smallest domain
- Degree - most unassigned neighbouring cells
- LCV - order which we are testing numbers
- 5 min time out

INPUT FILES

Created manually, randomly took out 75% of numbers



BRUTE FORCE

Puzzle Size	Average for 15 samples	Standard Deviation	Number of puzzles solved
9x9	0.024s	0.0026s	15/15
12x12	0.044s	0.026s	15/15
16x16*	758.27s	1447.74s	9/15
25x25	Unable to solve in time	N/A	0/15

CSP

Puzzle Size	Average for 15 samples	Standard Deviation	Number of puzzles solved
9x9	0.03s	0.004s	15/15
12x12	0.024s	0.0038s	15/15
16x16*	0.29s	0.520s	7/15
25x25*	Unable to solve in time	N/A	0/15
100x100	Unable to solve in time	N/A	0/5

DEMO

FFT

Every piece of the puzzle
that doesn’t fit gets you
closer to the answer