

## Sudoku Puzzle Generator/Solver

Sudoku is a well known, number logic puzzle that typically involves a 9x9 grid that is sectioned into 6 3x3 squares. The rules are simple: only the integers 1-9 can be used and each number can only appear once in each row, column, and 3x3 section of the larger grid. The grid is pre-filled with enough numbers to be solvable, and the user must determine, by means of elimination, what numbers go where to completely fill the grid.

Sudoku puzzles are the basis of our project idea. We (Kurt McLane, Kathleen Near, Tanya Olivas, and Jared Peterson) intend to generate a Sudoku puzzle, output it to the user via GUI, and provide a platform by which the user can attempt to solve it. The user will also be able to check their answer through the use of a submit button (the feedback the program will give is still under determination). Depending upon time constraints, we may also provide live error-checking and even a choice of difficulty levels. The fact that Sudoku charts follow specific rules leaves a lot of room for customization and automation.

Programming a Sudoku generator/solver may utilize multiple algorithms (such as searching, backtracking, etc.), providing a good challenge for the team and a solid platform for gaining experience developing in a team. User interface also poses unique challenges in transforming raw functionality into something easy to use, intuitive, and visually appealing. Not to mention the need to differentiate the product to stand out, since there are so many nearly identical applications available online/for mobile/etc.