

# **The Game of Sudoku Project**

## Project Summary

The goal of this project was to develop a program to solve Sudoku puzzles automatically, without using brute force. The program prompts the user to enter the filename containing the Sudoku puzzle, read in the puzzle, display the initial state of the puzzle, solve the puzzle by filling in the empty cells of the grid, and display the final solution.

The Sudoku puzzle consists of a 9x9 grid, divided into 3x3 smaller grids, with each cell of the grid containing a digit between 1 and 9. The puzzle is filled so that each row, column, and smaller grid contains the digits 1 through 9 with no repeats or omissions.

To solve the puzzle, the program is logically considering the possibilities for each cell, eliminating possibilities until only one is left for a cell. The program is not simply considering every possible configuration until it finds one that works, as that would not finish in a reasonable amount of time.

After completion, the program is able to solve any given Sudoku puzzle provided in the correct format, and display the initial and final states of the puzzle.