AI Assignment ll

Sudoku Solver (Java)

In this this sudoku solver code the input can be taken in 2 ways, either the user can input the sudoku himself, or the user can import a csv (comma separated value) file. The main motive of this assignment was not just to solve the Sudoku correctly, but to solve it efficiently. The main algorithm used here constraint satisfaction approach with backtracking at the end. Firstly, the input is passed through *reduceDomain* where the domain of every square is reduced based on the numbers that are present in its respective row, column and the 3x3 square.

The input is then passed through the *checkConstraints* method, and after checking the possibility of filling in that square, the number is filled keeping in mind the reduced domain of that square. Then, this process keeps going on until a point comes where when there is no possibility left with the given domain. In that case, the function backtracks and changes the value of the previous square and checks for the constraints there.

After number of iterations, the Sudoku is finally made and that is assigned to the respective buttons in that square using the *showSolutions* method.