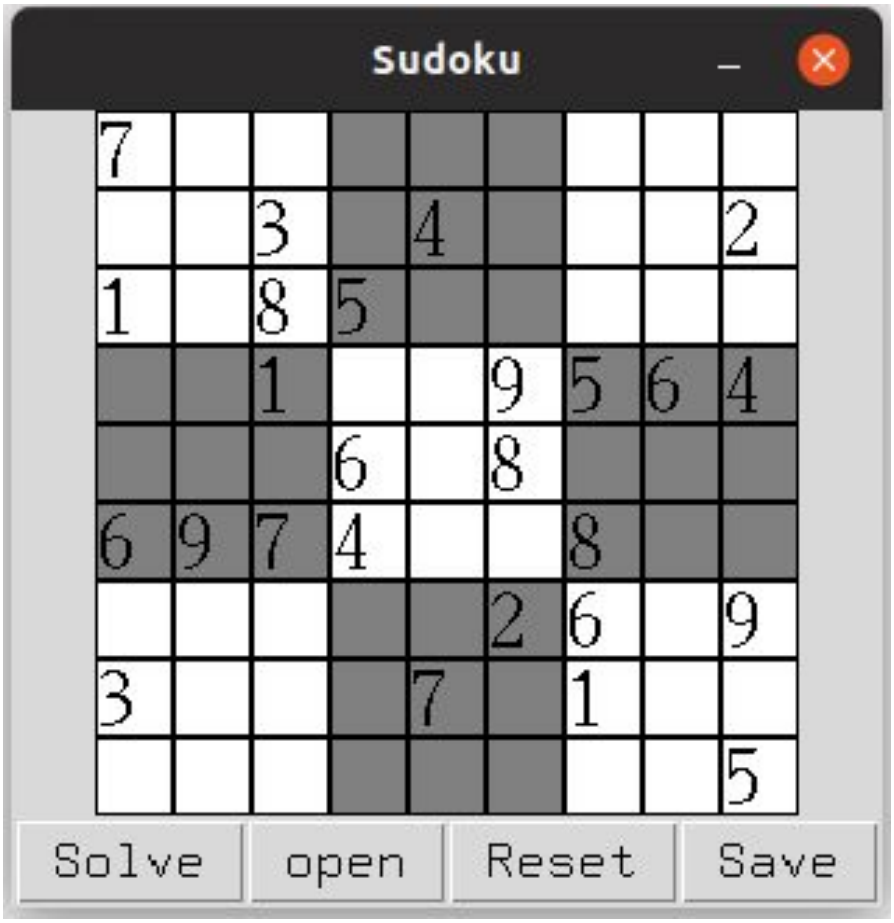
Sudoku Solver

Artificial Intelligence Assignment - 2



By,

Akshay Malav (B16C003)
Ashutosh Jatav (B16CS004)

1. Introduction:

Sudoku board contains 81 squares in which some of the boxes are initially filled range from 1 to 9. Here the problem is to fill the remaining boxes such that no value repeats in a row, column or 3*3 box. This problem can be easily solved using **Backtracking** and **Constraint Satisfaction.**

2. Heuristics:

- Domain Reduction Using AC3
- Minimum Remaining Value Heuristic(Partially implemented):
  In MRV Heuristic that cell has been filled first which has smallest domain after applying AC3 on all the cells. After filling the cell AC3 has been applied again on all the cells.

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

Let a cell has reduced domain: {5, 9}
And b cell has reduced domain: {2,4,5}

Then MRV heuristic will select a cell to fill first instead of b and then AC3 will update all the domain affected by a

3. Special Features:

- Interactive GUI.
- User can play or it can press the solve button and computer can solve it.
- User can reset the sudoku board.