Solve Sudoku using SWI Prolog

Output :

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% c:/Users/Prajwal/Desktop/AI Lab/Experiment - 4/practical-4.pl compiled 0.11 sec, 8 clauses
?- sudoku(Rows), maplist(label, Rows).
Rows = [[1, 2, 3, 4, 5, 6, 7, 8|...], [4, 5, 6, 7, 8, 9, 1|...], [7, 8, 9, 1, 2, 3|...], [2, 1, 4, 3, 6|...], [3, 6, 5, 8|...], [8, 9, 7|...], [5, 3|...], [6|...], [...|...]] ,

?- problem(1, Rows), sudoku(Rows), maplist(portray_clause, Rows).
[1, 5, 6, 8, 9, 4, 3, 2, 7].
[9, 2, 8, 7, 3, 1, 4, 5, 6].
[4, 7, 3, 2, 6, 5, 9, 1, 8].
[3, 6, 2, 4, 1, 7, 8, 9, 5].
[7, 8, 9, 3, 5, 2, 6, 4, 1].
[5, 1, 4, 9, 8, 6, 2, 7, 3].
[8, 3, 1, 5, 4, 9, 7, 6, 2].
[6, 9, 7, 1, 2, 3, 5, 8, 4].
[2, 4, 5, 6, 7, 8, 1, 3, 9].
Rows = [[1, 5, 6, 8, 9, 4, 3, 2|...], [9, 2, 8, 7, 3, 1, 4|...], [4, 7, 3, 2, 6, 5|...], [3, 6, 2, 4, 1|...], [7, 8, 9, 3|...], [5, 1, 4|...], [8, 3|...], [6|...], [...|...]].

?- problem(2, Rows), sudoku(Rows), maplist(portray_clause, Rows).
[7, 8, 2, 4, 3, 5, 1, 9, 6].
[6, 4, 9, 8, 2, 1, 7, 3, 5].
[1, 3, 5, 7, 9, 6, 4, 8, 2].
[3, 7, 4, 2, 1, 9, 6, 5, 8].
[9, 6, 1, 5, 8, 7, 2, 4, 3].
[5, 2, 8, 6, 4, 3, 9, 7, 1].
[8, 5, 6, 9, 7, 2, 3, 1, 4].
[2, 9, 3, 1, 5, 4, 8, 6, 7].
[4, 1, 7, 3, 6, 8, 5, 2, 9].
Rows = [[7, 8, 2, 4, 3, 5, 1, 9|...], [6, 4, 9, 8, 2, 1, 7|...], [1, 3, 5, 7, 9, 6|...], [3, 7, 4, 2, 1|...], [9, 6, 1, 5|...], [5, 2, 8|...], [8, 5|...], [2|...], [...|...]].

?- problem(3, Rows), sudoku(Rows), maplist(portray_clause, Rows).
[1, 8, 4, 9, 6, 3, 7, 2, 5].
[5, 6, 2, 7, 4, 8, 3, 1, 9].
[3, 9, 7, 5, 1, 2, 8, 6, 4].
[2, 3, 9, 6, 5, 7, 1, 4, 8].
[7, 5, 6, 1, 8, 4, 2, 9, 3].
[4, 1, 8, 2, 3, 9, 6, 5, 7].
[9, 4, 1, 3, 7, 6, 5, 8, 2].
[6, 2, 3, 8, 9, 5, 4, 7, 1].
[8, 7, 5, 4, 2, 1, 9, 3, 6].
Rows = [[1, 8, 4, 9, 6, 3, 7, 2|...], [5, 6, 2, 7, 4, 8, 3|...], [3, 9, 7, 5, 1, 2|...], [2, 3, 9, 6, 5|...], [7, 5, 6, 1|...], [4, 1, 8|...], [9, 4|...], [6|...], [...|...]].
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|    problem(1, Rows), sudoku(Rows), maplist(label, Rows).
Rows = [[1, 5, 6, 8, 9, 4, 3, 2|...], [9, 2, 8, 7, 3, 1, 4|...], [4, 7, 3, 2, 6, 5|...], [3, 6, 2, 4, 1|...], [7, 8, 9, 3|...], [5, 1, 4|...], [8, 3|...], [6|...], [...|...]].

?- problem(2, Rows), sudoku(Rows), maplist(label, Rows).
Rows = [[7, 8, 2, 4, 3, 5, 1, 9|...], [6, 4, 9, 8, 2, 1, 7|...], [1, 3, 5, 7, 9, 6|...], [3, 7, 4, 2, 1|...], [9, 6, 1, 5|...], [5, 2, 8|...], [8, 5|...], [2|...], [...|...]].

?- problem(3, Rows), sudoku(Rows), maplist(label, Rows).
Rows = [[1, 8, 4, 9, 6, 3, 7, 2|...], [5, 6, 2, 7, 4, 8, 3|...], [3, 9, 7, 5, 1, 2|...], [2, 3, 9, 6, 5|...], [7, 5, 6, 1|...], [4, 1, 8|...], [9, 4|...], [6|...], [...|...]].

?- problem(0, Rows), sudoku(Rows), maplist(portray_clause, Rows).
[9, 8, 7, 6, 5, 4, 3, 2, 1].
[2, 4, 6, 1, 7, 3, 9, 8, 5].
[3, 5, 1, 9, 2, 8, 7, 4, 6].
[1, 2, 8, 5, 3, 7, 6, 9, 4].
[6, 3, 4, 8, 9, 2, 1, 5, 7].
[7, 9, 5, 4, 6, 1, 8, 3, 2].
[5, 1, 9, 2, 8, 6, 4, 7, 3].
[4, 7, 2, 3, 1, 9, 5, 6, 8].
[8, 6, 3, 7, 4, 5, 2, 1, 9].
Rows = [[9, 8, 7, 6, 5, 4, 3, 2|...], [2, 4, 6, 1, 7, 3, 9|...], [3, 5, 1, 9, 2, 8|...], [1, 2, 8, 5, 3|...], [6, 3, 4, 8|...], [7, 9, 5|...], [5, 1|...], [4|...], [...|...]].
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?- Rows = [[_,_,6,5,_,_,_,_,8], [_,9,5,_,_,_,_,2,_], [7,_,_,9,_,_,3,_,_], [_,_,_,_,4,_,2,7,_], [_,_,_,8,7,3,_,_,_], [_,7,9,_,5,_,_,_,_], [_,_,2,_,_,8,_,_,9], [_,5,_,_,_,_,_,8,1,_], [3,_,_,_,_,5,4,_,_]], sudoku(Rows), maplist(portray_clause, Rows).
[1, 3, 6, 5, 2, 4, 7, 9, 8].
[8, 9, 5, 3, 6, 7, 1, 2, 4].
[7, 2, 4, 9, 8, 1, 3, 5, 6].
[5, 8, 3, 6, 4, 9, 2, 7, 1].
[2, 6, 1, 8, 7, 3, 9, 4, 5].
[4, 7, 9, 1, 5, 2, 6, 8, 3].
[6, 4, 2, 7, 1, 8, 5, 3, 9].
[9, 5, 7, 4, 3, 6, 8, 1, 2].
[3, 1, 8, 2, 9, 5, 4, 6, 7].
Rows = [[1, 3, 6, 5, 2, 4, 7, 9|...], [8, 9, 5, 3, 6, 7, 1|...], [7, 2, 4, 9, 8, 1|...], [5, 8, 3, 6, 4|...], [2, 6, 1, 8|...], [4, 7, 9|...], [6, 4|...], [9|...], [...|...]].
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