

Sudoku Solver Manual.

1. Entering sudoku.

Please type into the text field below the large window.

A sudoku puzzle is a 9×9 square (matrix) partially filled with numbers. An example of sudoku is:

```
5, 0, 0, 0, 9, 7, 0, 8, 0;  
7, 0, 3, 2, 0, 0, 0, 9, 0;  
0, 0, 0, 0, 0, 0, 5, 2, 0;  
0, 0, 1, 9, 0, 0, 0, 0, 0;  
0, 0, 0, 4, 0, 3, 0, 0, 0;  
0, 0, 0, 0, 0, 6, 1, 0, 0;  
0, 6, 5, 0, 0, 0, 0, 0, 0;  
0, 4, 0, 0, 0, 8, 6, 0, 9;  
0, 7, 0, 3, 0, 0, 0, 0, 4;
```

where "0" denotes unfilled element.

To enter sudoku type the following in the program window

```
set(sudoku, [  

```

Then enter sudoku by entering numbers in the first row, separating them by "," symbols. Enter "0" symbol for an unfilled element. Once the first row is entered, put ";" symbol and enter the second row separating numbers by "," symbols, put ";" symbol at the end of second row.

Follow the same procedure for the first eight rows. For the ninth row, follow the same procedure except do not put ";" at the end of the row.

Instead close the brackets by typing ")]".

Press ENTER. The sudoku is entered.

Entering the above sudoku will look like this

```
U:/[0:0.0]:/MAIN>set(sudoku, [5,0,0,0,9,7,0,8,0; 7,0,3,2,0,0,0,9,0; 0,0,0,0,0,0,  
5,2,0; 0,0,1,9,0,0,0,0,0; 0,0,0,4,0,3,0,0,0; 0,0,0,0,0,6,1,0,0; 0,6,5,0,0,0,0,0,  
0; 0,4,0,0,0,8,6,0,9; 0,7,0,3,0,0,0,0,4])  
[ 5, 0, 0, 0, 9, 7, 0, 8, 0;  
 7, 0, 3, 2, 0, 0, 0, 9, 0;  
 0, 0, 0, 0, 0, 0, 5, 2, 0;  
 0, 0, 1, 9, 0, 0, 0, 0, 0;  
 0, 0, 0, 4, 0, 3, 0, 0, 0;  
 0, 0, 0, 0, 0, 6, 1, 0, 0;  
 0, 6, 5, 0, 0, 0, 0, 0, 0;
```

```

0, 4, 0, 0, 0, 8, 6, 0, 9;
0, 7, 0, 3, 0, 0, 0, 0, 4;
]

```

3. Solving sudoku

Type "solveSudoku" and then press ENTER. All of the solutions for the puzzle will be displayed. Normally the sudoku will have only one solution. Thus in the above example we have:

```

U:[0:0.0]:/MAIN>solveSudoku
[ 5, 2, 4, 6, 9, 7, 3, 8, 1;
  7, 8, 3, 2, 5, 1, 4, 9, 6;
  9, 1, 6, 8, 3, 4, 5, 2, 7;
  6, 3, 1, 9, 8, 5, 7, 4, 2;
  2, 5, 7, 4, 1, 3, 9, 6, 8;
  4, 9, 8, 7, 2, 6, 1, 3, 5;
  8, 6, 5, 1, 4, 9, 2, 7, 3;
  3, 4, 2, 5, 7, 8, 6, 1, 9;
  1, 7, 9, 3, 6, 2, 8, 5, 4;
]

```

However if the example is modified by removing "4" in position (9,9) the sudoku will have two solutions:

```

U:[0:0.0]:/MAIN>set(sudoku, [5,0,0,0,9,7,0,8,0; 7,0,3,2,0,0,0,9,0; 0,0,0,0,0,0,0,
5,2,0; 0,0,1,9,0,0,0,0,0; 0,0,0,4,0,3,0,0,0; 0,0,0,0,0,6,1,0,0; 0,6,5,0,0,0,0,0,
0; 0,4,0,0,0,8,6,0,9; 0,7,0,3,0,0,0,0,0])
[ 5, 0, 0, 0, 9, 7, 0, 8, 0;
  7, 0, 3, 2, 0, 0, 0, 9, 0;
  0, 0, 0, 0, 0, 0, 5, 2, 0;
  0, 0, 1, 9, 0, 0, 0, 0, 0;
  0, 0, 0, 4, 0, 3, 0, 0, 0;
  0, 0, 0, 0, 0, 6, 1, 0, 0;
  0, 6, 5, 0, 0, 0, 0, 0, 0;
  0, 4, 0, 0, 0, 8, 6, 0, 9;
  0, 7, 0, 3, 0, 0, 0, 0, 0;
]

```

```

U:[0:0.0]:/MAIN>solveSudoku
[ 5, 2, 4, 6, 9, 7, 3, 8, 1;
  7, 8, 3, 2, 5, 1, 4, 9, 6;

```

```
9, 1, 6, 8, 3, 4, 5, 2, 7;  
6, 3, 1, 9, 8, 5, 2, 7, 4;  
2, 5, 7, 4, 1, 3, 9, 6, 8;  
4, 9, 8, 7, 2, 6, 1, 5, 3;  
8, 6, 5, 1, 4, 9, 7, 3, 2;  
3, 4, 2, 5, 7, 8, 6, 1, 9;  
1, 7, 9, 3, 6, 2, 8, 4, 5;  
][ 5, 2, 4, 6, 9, 7, 3, 8, 1;  
7, 8, 3, 2, 5, 1, 4, 9, 6;  
9, 1, 6, 8, 3, 4, 5, 2, 7;  
6, 3, 1, 9, 8, 5, 7, 4, 2;  
2, 5, 7, 4, 1, 3, 9, 6, 8;  
4, 9, 8, 7, 2, 6, 1, 3, 5;  
8, 6, 5, 1, 4, 9, 2, 7, 3;  
3, 4, 2, 5, 7, 8, 6, 1, 9;  
1, 7, 9, 3, 6, 2, 8, 5, 4;  
]
```

Note: the program will solve one puzzle at each run. To solve another puzzle reload the applet.

Enjoy!