Testing:

Step 1:
These killer Sudoku puzzles have been taken from the examples provided in the specification.

9by9:

The following shows the solved 9 by 9:

```
bash-4.3$ ./sudoku 09by9p.txt 09by9s.txt
Whole grid is filled
 2 1 5 6 4 7 3 9 8
 3 6 8 9 5 2 1 7 4
 7 9 4 3 8 1 6 5 2
 5 8 6 2 7 4 9 3 1
 1 4 2 5 9 3 8 6 7
 9 7 3 8 1 6 4 2 5
 8 2 1 7 3 9 5 4 6
 6 5 9 4 2 8 7 1 3
 4 3 7 1 6 5 2 8 9
SOLVED
```

The following shows an Invalidsol:

```
bash-4.3$ ./sudoku 09by9p.txt invalidSol.txt
Whole grid is filled
 2 2 5 6 4 7 3 9 8
 3 6 8 9 5 2 1 7 4
 7 9 4 3 8 1 6 5 2
 5 8 6 2 7 4 9 3 1
 1 4 2 5 9 3 8 6 7
 9 7 3 8 1 6 4 2 5
 8 2 1 7 3 9 5 4 6
 6 5 9 4 2 8 7 1 3
 4 3 7 1 6 5 2 8 9
INVALIDSOL
0
1
0
0
0
0
INVALIDSOL
```

The following shows an Invalidproblem:

```
bash-4.3$ ./sudoku invalidProb.txt 09by9s.txt
INVALIDPROBLEM
```

The following shows an Incomplete solution file:

```
bash-4.3$ ./sudoku 09by9p.txt incomplete.txt
Whole grid is filled
 2 0 5 6 4 7 3 9 8
 3 6 8 9 5 2 1 7 4
 7 9 4 3 8 1 6 5 2
 5 8 6 2 7 4 9 3 1
 1 4 2 5 9 3 8 6 7
 9 7 3 8 1 6 4 2 5
 8 2 1 7 3 9 5 4 6
 6 5 9 4 2 8 7 1 3
 4 3 7 1 6 5 2 8 9
Incomplete
1
1
1
1
0
1
INCOMPLETE
```

4by4:

The following shows the solved 4by4:

```
bash-4.3$ ./sudoku 4by4p.txt 4by4s.txt
Whole grid is filled
 3 2 4 1
 4 1 3 2
 2 4 1 3
 1 3 2 4
1
1
1
1
1
1
SOLVED
```

The following shows an Invalidsol:

```
bash-4.3$ ./sudoku 4by4p.txt invalidSol4by4.txt
Whole grid is filled
 3 3 4 1
 4 1 3 2
 2 4 1 3
 1 3 2 2
INVALIDSOL
0
1
0
0
0
0
INVALIDSOL
```

The following shows an Invalidproblem:

```
bash-4.3$ ./sudoku invalidprob4by4.txt 4by4s.txt
Error in input file
 3 2 4 1
 4 1 3 2
 2 4 1 3
 1 3 2 4
1
0
1
1
1
1
INVALIDPROBLEM
```

The following shows an Incomplete 4by4 solution file:

```
bash-4.3$ ./sudoku 4by4p.txt incomplete4by4.txt
Whole grid is filled
 3 0 4 1
 4 1 3 2
 2 4 1 3
 1 3 2 0
1
1
1
1
0
1
INCOMPLETE
```

Step 2:

9by9 Solved by the solver:

```
bash-4.3$ ./SudokuSolver 09by9p.txt
Whole grid is filled
 2 1 5 6 4 7 3 9 8
 3 6 8 9 5 2 1 7 4
 7 9 4 3 8 1 6 5 2
 5 8 6 2 7 4 9 3 1
 1 4 2 5 9 3 8 6 7
 9 7 3 8 1 6 4 2 5
 8 2 1 7 3 9 5 4 6
 6 5 9 4 2 8 7 1 3
 4 3 7 1 6 5 2 8 9
```

4by4 Solved by the solver:

```
bash-4.3$ ./SudokuSolver 4by4p.txt
Whole grid is filled
 3 2 4 1
 4 1 3 2
 2 4 1 3
 1 3 2 4
```