WI21 CS325 Portfolio Project: README

Leah In

0. Index

1. General

0. Run sudoku.py by entering $ **python3 sudoku.py** in the terminal.

1. It will ask Run solver? (y/n). (fig. 1)

Enter y to run the solver.

Enter n to solve manually.

```
====================
Puzzle #23: Sudoku
====================
 -------------------------
 | 4     |       |   1   |
 |   1 5 |   4   | 6     |
 |       |     7 |       |
 -------------------------
 |       | 2 1   |     8 |
 |       | 7 3 4 |     2 |
 |   3   |   8   |       |
 -------------------------
 | 8   1 | 9     |   4 5 |
 |   4   |       | 7     |
 | 2     |     3 |       |
 -------------------------
Run solver? (y/n):
```

Fig 1 run solver?

2. If you enter n, it will ask for a row number, a column number, and a number to enter. (fig.2)

All numbers should be integers between 1 and 9, inclusive.

Please enter integers, non-integer values will crash the program.

```
Run solver? (y/n): n
Enter a row number between 1 and 9: 1
Enter a column number between 1 and 9: 2
Enter a number between 1 and 9: 2
```

Fig 2 row/column/number prompts

When you enter row/column/number you can replace a cell you previously entered by re-passing the same coordinate. However, you cannot replace the initial, hint numbers. (fig.3)

```
 -------------------------
 | 4 2   |       |   1   |
 |   1 5 |   4   | 6     |
 |       |     7 |       |
 -------------------------
 |       | 2 1   |     8 |
 |       | 7 3 4 |     2 |
 |   3   |   8   |       |
 -------------------------
 | 8   1 | 9     |   4 5 |
 |   4   |       | 7     |
 | 2     |     3 |       |
 -------------------------
Enter a row number between 1 and 9: 1
Enter a column number between 1 and 9: 1
Enter a number between 1 and 9: 2
You cannot replace a hint number.
```

Fig 3 replace number – hint error

3. Once you filled all empty cells, it will validate your solution.

If your solution is right, it will show 'Congratulation. You've solved the puzzle!.' (fig.4)

If not, it will show 'Not Solved. Try Again.' (fig.5)

```
 -------------------------
 | 8 7 1 | 9 2 6 | 3 4 5 |
 | 3 4 9 | 8 5 1 | 7 2 6 |
 | 2 5 6 | 4 7 3 | 8 9 1 |
 -------------------------
Congratulation. You've solved the puzzle!
```

Fig 4 solved message

```
 -------------------------
 | 8 1 1 | 9 1 1 | 1 4 5 |
 | 1 4 1 | 1 1 1 | 7 1 1 |
 | 2 1 1 | 1 1 3 | 1 1 1 |
 -------------------------
Not Solved. Try Again.
```

Fig 5 not solved message

2. To run the program with a different sudoku board

1. Add your list to around line 359. If you want, you can use the empty_list prepared.

```
349     empty_list = [['', '', '', '', '', '', '', '', ''],
350                   ['', '', '', '', '', '', '', '', ''],
351                   ['', '', '', '', '', '', '', '', ''],
352                   ['', '', '', '', '', '', '', '', ''],
353                   ['', '', '', '', '', '', '', '', ''],
354                   ['', '', '', '', '', '', '', '', ''],
355                   ['', '', '', '', '', '', '', '', ''],
356                   ['', '', '', '', '', '', '', '', ''],
357                   ['', '', '', '', '', '', '', '', '']]
358
359     # add sudoku board here.
360
```

2. then pass the list to puzzle = Sudoku(your_list) (line 362)

```
361     # start sudoku
362     puzzle = Sudoku(preset)  # change board here.
```

If you want to check sudoku validation, you can pass a complete board and enter 'n' when Run solver? (y/n) prompted. Then the program will directly validate the board without asking row/column/number.

```
 -------------------------
 | 4 9 6 | 1 7 5 | 3 2 8 |
 | 2 1 8 | 3 6 9 | 4 5 7 |
 | 7 5 3 | 2 4 8 | 9 6 1 |
 -------------------------
 | 8 2 7 | 5 9 4 | 1 3 6 |
 | 6 4 9 | 8 1 3 | 5 7 2 |
 | 5 3 1 | 6 2 7 | 8 4 9 |
 -------------------------
 | 9 6 2 | 4 5 1 | 7 8 3 |
 | 1 8 5 | 7 3 6 | 2 9 4 |
 | 3 7 4 | 9 8 2 | 6 1 5 |
 -------------------------
Run solver? (y/n): n
Congratulation. You've solved the puzzle!
```