

Assignment 04 (Due: Monday, November 28, 2016, 11 : 59 : 00PM (Central Time)))

CSCE 322

Contents

1	Instructions	1
1.1	Data File Specification	1
1.2	percentageSpaces(Game)	2
1.3	columnsAndSpaces(Game)	2
1.4	solveGame(Game,Vertical,Horizontal,SpacesAndValues)	2
1.5	checkGame(Game,Vertical,Horizontal) (15% Extra Credit)	2
2	Compilation & Execution	2
3	Webgrader Warning	2
4	Naming Conventions	3
5	Point Allocation	3
6	External Resources	3

List of Figures

1 Instructions

This assignment will use Prolog to extract certain information about the state of a variation of **Greater Than Sudoku**.

1.1 Data File Specification

The game will be represented as a list of lists of symbols.

```
[11,3,10,13,13,12,2,14,8,13,15,3,4,12].
[1,1,4,1,4,3,3,4,3,4,3,1,3,4].
[3,2,1,-].
[-,4,-,-].
[-,1,-,-].
[-,-,-,1].
[-1,1,1,-1].
[1,-1,-1,1].
[-1,1,1,-1].
[-1,-1,1].
[1,-1,-1].
[-1,1,1].
[1,1,-1].
```

1.2 percentageSpaces(Game)

The query `percentageSpaces(Game)` will be successful when the number of unfilled spaces in the game does not exceed 25% of all spaces.

1.3 columnsAndSpaces(Game)

The query `columnsAndSpaces(Game)` will be successful when the game state has an odd number of columns and an odd number of open spaces in the game, or an even number of columns and an even number of open spaces in the game.

1.4 solveGame(Game,Vertical,Horizontal,SpacesAndValues)

The query `solveGame(Game,Vertical,Horizontal,SpacesAndValues)` will be successful when `SpacesAndValues` is unified with the moves that would solve the current state of the game.

1.5 checkGame(Game,Vertical,Horizontal) (15% Extra Credit)

The query `checkGame(Game,Vertical,Horizontal)` will be successful when `Game` is a correctly solved game according to the rules of Greater Than Sudoku.

2 Compilation & Execution

Your program will be tested on `cse.unl.edu`, using `pl`. `hw04tests.pl` will include test cases for testing your program. You can run the test cases with the commands:

```
[hw04tests].
loadHelpers.
part01.
```

3 Webgrader Warning

Prolog programs can take some time to run. The webgrader is limiting individual processes to 5 minutes.

4 Naming Conventions

You will be submitting at least 3 .pl files. The filenames should be `csce322hw04pt01.pl`, `csce322hw04pt02.pl`, `csce322hw04pt03.pl`, and, maybe `csce322hw04pt04.pl`. If you modify `helpers.pl`, upload that as well. Otherwise, the default `helpers.pl` will be provided.

5 Point Allocation

Component	Points
<code>csce322hw04pt01.pl</code>	30
<code>csce322hw04pt02.pl</code>	30
<code>csce322hw04pt03.pl</code>	40
Total	100

6 External Resources

[Prolog - Wikibooks](#)

[Learn Prolog Now!](#)

[Prolog Tutorial Category:Prolog - Rosetta Code](#)