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NEW MEXICO

CS108L Spring 2018 Final Exam: Part 2 (60 Points)

Part 2: NetLogo Programming: The programming part is designed to take about 30 min. It needs to be coded in class. On part 2 only, students may use the on-line NetLogo documentation, books, and/or their notebook.

| Score | Possible | Item |
|-------|----------|---|
| | | Your Name and Info (3 points) |
| | 3 | Your name, school and date must be commented at the top of the code. |
| | | The World (3 points) |
| | 1 | Set the world to max-pxcor, max-pycor of 50. |
| | 1 | Patch size: 3 |
| | 1 | Turn both vertically and horizontally wrapping off. |
| | | The Interface (7 points) |
| | 3 | Create a slider called NumTurtles that ranges from 2 to 50 inclusively. |
| | 3 | Create a slider called NumPatches that ranges 10 to 100 inclusively. |
| | 1 | Create a 'setup' and 'go' button. |
| | | The 'setup' Button (7 points) |
| | 1 | Make sure the world starts from scratch at a push of this button. |



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| | 1 | Set all patches 'blue' |
| | 2 | Randomly sets patches 'magenta' based on the slider NumPatches. |
| | 1 | Creates the number of turtles specified by the NumTurtles sliders and change their shape (cannot be default agent shape) |
| | 2 | Turtles initial position and facing are set at random (they may face any direction in any location, specify in code, do not leave this to default) with a size of 2.5 and are 'white' in color. |
| | | The 'go' Button (40 points) |
| | 5 | The 'go' procedure must be recursive and needs to include a condition to break from the recursive loop (note: you cannot use a forever button to run the program). |
| | 5 | If a turtle is on the same patch as another turtle, both turtles will change their color to yellow and turn to opposite directions (does a 180 degree turn). |
| | 6 | If a turtle enters a magenta patch, the turtle's color is set to 'white.' |
| | 6 | If a turtle is on a patch at the world's edge, the turtle's color is set to 'red'. |
| | 6 | A turtle whose color is 'red' will turn in the opposite direction and moving using wiggle walk. |
| | 6 | A turtle whose color is 'yellow' will do a random walk. |
| | 6 | A turtle whose color is white will use a wiggle walk. After 5 |



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| | | steps, the turtle will change its color to red. |
| | | Extra-Credit |
| | 3 | Extra-Credit may be obtained by submitting clean (properly indented with consistent whitespace and no right scrolling required), properly commented (informative non-trivial comments) and well organized (use of helper procedures) code. Extra-credit will only be counted if the code runs! A max of 3 points may be obtained. |