CMSC 447

Software Requirements Specification (SRS)

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| Name | Role | Signature |
| Holly Bennett | Customer/Sponsor |  |
| Khaled Elgendy | POC, Student Developer |  |
| Rachael McKenzie | Student Developer |  |
| Ryan Miller | Student Developer |  |
| Aarti Patel | Student Developer |  |
| Connor Thomas | Student Developer |  |
| Jie Zhou | Student Developer |  |

TODO: Table of Contents, Scope, Referenced Documents, Qualification Provisions, Notes.

1. Scope

2. Referenced Documents

3. Requirements

3.1 User Access

User story: As a user, I want to be able to access the website from the latest version of chrome on my macbook.

3.1.1 Chrome Accessibility

The website shall be accessible from chrome version 72.

3.1.2 Mac Accessibility

The website shall be accessible from a macbook. *(Vaguely concerned about the vaguery of this. Like, I feel like the intent is clear, but we’re definitely missing specifics)*

3.2 Website Capabilities

User story: As a user, I want to be able to observe Conway’s game of life, manipulate the basic rules, and customize aspects of the display.

3.2.1 Conway’s Game of Life Rules and Implementation

3.2.1.1 The game shall implement the rule, by default, “If a cell has 1 or 0 living neighbors, it will die from solitude.”

3.2.1.2 The game shall implement the rule, by default, “If a cell has 4 or more living neighbors, it will die from overpopulation.”

3.2.1.3 The game shall implement the rule, by default, “If a dead cell has 3 living neighbors, it will be revived.”

3.2.1.5 The game shall be implemented on a square grid.

3.2.1.6 The game shall display in a 1080p resolution.

3.2.1.7 The game shall display nodes at a fixed size, regardless of the size of the world.

3.2.1.8 The game shall feature nodes which are visually distinguishable from one another.

*Upon reflection, that is a terrible requirement to test.*

3.2.1.9 The game shall parse grid coordinates to determine a starting state.

3.2.2 Parameter Tuning

3.2.2.1 The website shall implement the ability to adjust the number of neighbors for a cell to die from solitude.

3.2.2.2 The website shall implement the ability to adjust the number of neighbors for a cell to die from overpopulation.

3.2.2.3 The website shall implement the ability to adjust the number of neighbors for a cell to be revived.

3.2.2.4 The website shall implement the ability to adjust the background color of the game using 16 bit colors.

3.2.2.5 The website shall implement the ability to adjust the color of cells using 16 bit colors.

3.2.2.6 The website shall implement the ability to select the shape of the cells. The default shape shall be circles. Additional selectable shapes shall include triangles and squares.

3.2.2.7 The website shall implement the ability to change the size of the grid in the game.

3.2.2.8 The website shall run the game for a default of 1 million iterations.

3.2.2.9 The website shall implement the ability to change the number of iterations to a value between 1 and 2,147,483,647. *(max int32)*

3.2.2.10 The website shall accept a text file containing grid coordinates as input for the game.

3.2.2.11 The website should be able to run the game at multiple speeds.

3.2.2.12 The website should allow the user to adjust the speeds between selectable options.

3.2.3 Data Display

3.2.3.1 The website shall display how many iterations the game has been running.

3.2.3.2 The website shall display a count of how many cells are alive.

3.2.4 Stable State Detection

3.2.4.1 The game shall stop if it is in the same state for two iterations.

3.2.4.2 The game shall stop if it is oscillating between two states.

4. Qualification Provisions

5. Requirement Traceability

All requirements observed in section 3 are derived from user specifications.

6. Notes