

CMSC 447

Software Requirements Specification

(SRS)

Name	Role	Signature
Daniel Sachs	Junior New Grad Associate Software Development Engineer I	
Innocent Kironji	Junior New Grad Associate Software Development Engineer I	
Sarah Alvarez	Junior New Grad Associate Software Development Engineer I	
Jason Schuler	Junior New Grad Associate Software Development Engineer I	
Pablo Burgos	Junior New Grad Associate Software Development Engineer I	
James Walls	Junior New Grad Associate Software Development Engineer I	

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1 Scope

1.1 Identification

“Game of Life: The Game”, henceforth referred to as “the game” is a software package developed and distributed by Group 2, also known as “As Long as We Graduate” and “Anything Goes” in Russell Cain’s CMSC 447 Spring ‘19 class. The game was developed to meet the specifications provided by Dr. Susan Mitchell, henceforth referred to as “the customer”

1.2 System overview

The game is a desktop application. It is intended for use as a standalone tool on a single machine that allows two users to play against each other. The game runs a Game of Life simulation for each user with the object of “painting” a larger area than the opponent.

1.3 Document overview

The purpose of this document is to identify a comprehensive list of requirements that the software must fulfill in order to be successful.

2 Requirements

The following list of requirements is divided into major components or areas of functionality of the game.

1. General Software Configuration

- 1.1:** The game shall be a desktop application
- 1.2:** The game shall operate on Windows
- 1.3:** The game shall be launched from a binary executable file
- 1.4:** The game’s distribution shall not exceed 500MB in size

2. The main menu

- 2.1:** The main menu shall have an “Exit” button
 - 2.1.1:** The “Exit” button shall cause the game to stop running when clicked

3. The pre-game screen

- 3.1:** The pre-game screen shall have two color selection menus

3.1.1: The color selection menus shall allow a user to select one of the the following colors: red, blue, green or purple

3.1.2: Choosing a color from the first menu shall change Player 1's color selection

3.1.3: Choosing a color from the second menu shall change Player 2's color selection

3.2: The pre-game screen shall have a "Start Game" button

3.2.1: The button shall do nothing if one or more players have not selected a color

3.2.2: If both players have selected a color, the button shall cause the game screen to be displayed

4. The game screen

4.1: The game screen will feature one grid of cells for each player

4.1.1: Cells shall have a possible state of "Alive"

4.1.1.1: Cells that are alive shall be colored in with the player's chosen color

4.1.2: Cells shall have a possible state of "Dead"

4.1.2.1: Dead cells shall have a possible state of "Painted"

4.1.2.2: Any dead cell that has previously been alive shall be painted

4.1.2.3: Dead, painted cells shall be colored a lighter hue of the player's chosen color

4.1.2.4: Dead cells that are not painted shall be colored white

4.1.3: The grids shall be 35x35 cells

4.2: The game shall allow players to edit their grids before starting a turn

4.2.1: The player who edits first shall alternate each turn

4.2.2: When it is a player's turn to edit, the player shall have 15 credits

4.2.3: Editing one's own cell shall consume 1 credit

4.2.4: Editing an opponent's cell shall consume 2 credits

4.2.5: Editing a living cell shall switch it to dead and painted

4.2.6: Editing a dead cell shall switch it to living

4.2.7: A player shall have the ability to stop editing without consuming all of the credits

4.2.8: Unused credits shall be lost

4.2.9: The player who edits second shall begin editing when the first player is finished

4.2.10: The player's remaining credits shall be displayed

4.3: The game screen shall have a "Start Turn" button

4.3.1: The button shall do nothing if either player has not finished editing

4.3.2: If editing is complete, the button shall begin one turn

4.3.2.1: A turn shall consist of 20 "ticks" of the game of life simulation on both boards.

4.3.2.2: The simulated ticks shall follow the rules of the game of life as described on Wikipedia

4.4: The game shall display a "Total Claimed" statistic for each player

4.4.1: The number shown shall be equal to the sum of the player's living cells and the player's painted dead cells.

4.5: The game shall display a "Total Unclaimed" statistic for each player

4.5.1: The number shown shall be equal to the player's number of dead cells that are not painted

4.6: The game shall have an option to change the speed of the simulation

4.6.1: The speed chosen shall be between 1-1000 ms between ticks of the simulation

4.7: If one and only one player's unclaimed cells are equal to zero at any time, that player shall be proclaimed the winner

4.8: If both players reach zero unclaimed cells in the exact same tick, the game shall end in a tie

4.9: If a player wins or a tie is reached, the game shall return to the main menu

3 Notes

For more information on the original Game of Life and its rules, visit

https://en.wikipedia.org/wiki/Conway%27s_Game_of_Life