CMSC 447

Software Test Report (STR)

|  |  |  |
| --- | --- | --- |
| 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 |  |

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# 1. Scope

## 1.1 Identification

This document applies to the latest version of the Conway’s Game of Life simulation developed by Team Segmentation Fault and sponsored by Holly Bennett. Currently the software is in the testing stage of development.

## 1.2 System Overview

The purpose of the software is to model Conway’s Game of Life, a cellular automaton that evolves based upon its initial state. The software will take the form of a website that is accessible and executable by a Chrome browser. It will possess the ability to adjust various factors of the simulation, such as initial state, factors for the cell survival, reproduction, death, and be able to identify and halt the simulation when a stable state is reached. The sponsor and user of the software is Holly Bennett, while the developers consist of Khaled Elgendy, Rachael McKenzie, Ryan Miller, Aarti Patel, Connor Thomas, and Jie Zhou, henceforth collectively referenced as Team Segmentation Fault or simply Segmentation Fault.

## 1.3 Document Overview

The purpose of this document is to review the results of the tests used to ensure that the software meets requirements and offer recommendations to improve said software.

# 2. Referenced Documents

Software Requirements Specification for Team Segmentation Fault’s Game of Life, Ver. 1.0, Last Updated: 4/20/2019

Software Design Description for Team Segmentation Fault’s Game of Life, Ver 1.0, Last Updated: 4/20/2019

# 3. Overview of Test Results

## 3.1 Overall Assessment of the Software Tested

## 3.2 Impact of Test Environment

## 3.3 Recommended Improvements

# 4. Detailed Test Results

## 4.1 Test 1: Cell Survival

### 4.1.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Result |
| 1-1: Cell Survival | All results as expected |
| 1-2: Cell Death | All results as expected |
| 1-3: Cell Revival | All results as expected |

#### 

## 4.2 Test 2: Grid Parameters

### 4.2.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Result |
| 2-1: Grid Size | All results as expected |
| 2-2: Grid Resolution | All results as expected |
| 2-3: Grid Node Size | All results as expected |
| 2-4: Node Distinction | All results as expected |

#### 

## 4.3 Test 3: Website Options

### 4.3.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Result |
| 3-1: Cell Solitude | All results as expected |
| 3-2: Cell Overpopulation | Case 3--- 3 neighbor minimum, (1,1), (5,5), and (10,10) all die?(description  Might be wrong). Other results as expected. |
| 3-3: Cell Revival | revival set at 0, then Cells Alive increase to 179, other 2 test also show wrong result. And steps in STD have number like “neighbors 54”,tester’s input might be wrong, then make output wrong, will ask at 5/5 afternoon |
| 3-4: Background Color | All results as expected |
| 3-5: Cell Color | All results as expected |
| 3-6: Cell Shape | All results as expected |
| 3-7: Grid Size | All results as expected |
| 3-8: Maximum Iterations | All results as expected |
| 3-9: Change Iterations | All results as expected |
| 3-10: File Upload | All results as expected |
| 3-11: Multiple Speeds | All results as expected |

### 4.3.2 Problems encountered [if there are problems]

#### 4.3.2.1 Project-unique identifier of a test case

### 4.3.3 Deviations from test cases/procedures [if there are deviations]

#### 4.3.3.1Project-unique identifier of a test case

## 4.4 Test 4: Stable State Detection

### 4.4.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Result |
| 4-1 Same State | All results as expected |
| 4-2 Oscillating States | All results as expected |

#### 

## 4.5 Test 5: Error Detection

### 4.5.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Result |
| 5-1: Grid Size Error | Problems encountered |
| 5-2: Iteration Selection Error | All results as expected |
| 5-3: File Errors | All results as expected |

### 4.5.2 Problems encountered

#### 4.5.2.1 Test 5-1: Grid Size Error

The purpose of this test case was to ensure that, when grid sizes are entered into the website which are not valid, that an error message would be displayed and that the game grid would default to 15 by 15. This was the behavior observed when an integer that was outside the specified range (i.e. -1) was entered, or when a value that is not an integer (‘a’) was entered. However, when a number containing a decimal was entered (15.1), the game grid defaulted to 15 by 15 but did not display an error message. This occurred during step 6 of our testing procedure using inputs (15.1,15), (15,15.1), and (15.1,15.1).

Each input value was repeated twice. During this additional testing, the proper error message did occur. It was subsequently discovered that, when the web page is refreshed properly between tests the error message will function correctly. However, if this step is omitted, the grid will default as expected, but an error message will not be displayed.

### 4.5.3 Deviations from test case procedure

#### 4.5.2.1 Test 5-1: Grid Size Error

During testing, step 3 (refreshing the web page) was omitted through human error. The omission of this step led to an incorrect result where it appeared that the proper error message was not displaying despite the game grid defaulting to the correct values. When the test was repeated with the proper procedure followed, the error message was displayed correctly. Thus, the earlier results are invalid. In addition, a flaw in how the website handled subsequent errors was exposed.

## 4.6 Test 6: Hardware and Software Accessibility

### 4.6.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Results |
| 6-1 Mac Accessibility | All results as expected |
| 6-2 Chrome Accessibility | All results as expected |

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## 4.7 Test 7: Website Display

### 4.7.1 Summary of Test Results

|  |  |
| --- | --- |
| Test Case | Result |
| 7-1: Display Number of Cells | All results as expected |
| 7-2: Display Number of Iterations | All results as expected |

#### 

# 5. Test Log

## Test 1

### Test 1-1

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 7:15 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

### Test 1-2

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 7:23 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

### Test 1-3

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 7:32 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

## Test 2

## Test 3

## Test 4

### Test 4-1

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 4:54 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

### Test 4-2

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 5:17 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

## Test 5

### Test 5-1

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 5:53 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

### Test 5-2

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 5:59 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

### Test 5-3

Performed by: Rachael Mckenzie

Date: May 4, 2019

Time: 6:10 pm

Location: UMBC

Hardware: MSI GL62M

Software: Chrome Ver. 74

Witnesses: None

## Test 6

## Test 7