Java Game Suite Test Plan & IWD

Revision 12

CMSC 495 6382

August 30, 2021

Group Charlie

Sherry Funches, Oyewole Sanusi, Janee’ Jones, Wayne Mack, Jeffrey McGlinn

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision Number** | **Date** | **Description** | **Name** |
| 1 | 8/30 | Creation of Doc and Outline | Oyewole |
| 2 | 9/4 | Adding Context Diagram and Citations | Janee’ |
| 3 | 9/4 | Add test plan for Snakes | Oyewole |
| 4 | 9/5 | Add test plan for Slider Puzzle and minor edits | Jeff |
| 5 | 9/5 | Add test plan for word search | Sherry |
| 6 | 9/5 | Add test plan for Sudoku | Janee’ |
| 7 | 9/5 | Add test plan for Maze | Wayne |
| 8 | 9/5 | Enter and format all test plans into unified document | Sherry |
| 9 | 9/5 | Updating IWD | Janee’ |
| 10 | 9/6 | Edit and add test cases to Main Menu and Word search. Added Requirements specification numbers | Sherry |
| 11 | 9/6 | Modified details for Test Plan, Removed IWD tables, and Checked for errors | Oyewole |
| 12 | 9/6 | Checked document for errors | Sherry, Wayne, Janee’, Jeff |
| 13 | 9/7 | Added Images for Word search Test Plan |  |
| 14 | 9/7 | Checked document for errors | Sherry, Wayne, Janee’, Jeff, Oyewole |

**I. Test Plan**

**A. Main Menu**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Requirement Number(s)** | **Test Description** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| 1 |  | Startup of application | GUI in ready state with no unexpected hardware issues or system failure. |  |  |
|  |  |  |  |  |  |
| 2 |  | User initiated termination of application | Program terminated and all items are deconstructed. |  |  |
|  |  |  |  |  |  |
| 3 |  | About button displays information about the game package | Clicking the “about” button displays information about the game package. |  |  |
|  |  |  |  |  |  |
| 4 | 2,3 | Maze button launches maze game in a new window | Clicking the maze button launches the maze game in a new window. |  |  |
|  |  |  |  |  |  |
| 5 | 2,3 | Snake button launches snake game in a new window | Clicking the snake button launches the snake game in a new window. |  |  |
|  |  |  |  |  |  |
| 6 | 2, 3 | Sudoku button launches Sudoku game in a new window | Clicking the Sudoku button launches the Sudoku game in in a new window. |  |  |
|  |  |  |  |  |  |
| 7 | 2, 3 | Word search button launches word search game in a new window | Clicking the word search button launches the word search game in a new window. |  |  |
|  |  |  |  |  |  |
| 8 | 2, 3 | Slider button launches slider game in a new window | Clicking the slider button launches the slider puzzle game in a new window. |  |  |

**B. Maze**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Requirement Number(s)** | **Test Description** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| 1 |  | Startup of Program | Program Starts from main menu |  |  |
|  |  |  |  |  |  |
| 2 | 4 | Control Scheme | Program Controls with keyboard arrows |  |  |
|  |  |  |  |  |  |
| 3 | 4 | Alternate Control Scheme | Program Controls with W,A,S,D Characters |  |  |
|  |  |  |  |  |  |
| 4 | 4 | Enemy AI | Enemy responds to AI |  |  |
|  |  |  |  |  |  |
| 5 |  | Screen Refresh | Screen Refreshes seamlessly |  |  |

**C. Snake**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Requirement Number(s)** | **Test Description** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| 1 |  | Startup of application | GUI in ready state with no unexpected hardware issues or system failure. |  |  |
|  |  |  |  |  |  |
| 2 |  | User initiated termination of application | Program terminated and all items are deconstructed. |  |  |
|  |  |  |  |  |  |
| 3 | 7 | User maneuvers the snake using keys on their keyboard (←, ↑, →, ↓). | Snake moves up using the ↑ arrow, down using the ↓, left using the ←, and right using the → arrow on the keyboard. |  |  |
|  |  |  |  |  |  |
| 4 | 7 | Apple is consumed and the snake length increase by one dot. | Apple is consumed and the snake length increase by one dot. |  |  |
|  |  |  |  |  |  |
| 5 | 7 | Troubleshooting: triggering a “Game Over” with snake consuming itself | “Game Over” is triggered when snake consumes itself |  |  |

**D. Sudoku**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Requirement Number(s)** | **Test Description** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| 1 |  | Startup of application | GUI in ready state with no unexpected hardware issues or system failure. |  |  |
|  |  |  |  |  |  |
| 2 |  | User initiated termination of application | Program terminated and all items are deconstructed. |  |  |
|  |  |  |  |  |  |
| 3 | 5 | User starts the game by choosing a number from the list and input where appropriate | Number user chooses is inputted into the appropriate box |  |  |
|  |  |  |  |  |  |
| 4 | 5 | User enters number into box of choice where number belongs | Blue hint box should disappear once user enters number |  |  |
|  |  |  |  |  |  |
| 5 |  | User can check progress by clicking the check button | User clicks check button, and it will display either green for correct or red for incorrect |  |  |
|  |  |  |  |  |  |
| 6 | 5 | User completes game by entering in all the numbers in the blank boxes | User clicks check button, and it will display all numbers in green that are correct and all numbers in red that are incorrect |  |  |

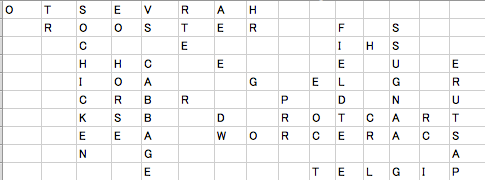
**E. Word Search**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Requirement Number(s)** | **Test Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| 1 |  | Startup of application |  | GUI in ready state with no unexpected hardware issues or system failure |  |  |
|  |  |  |  |  |  |  |
| 2 |  | Drop down list “Select Puzzle” contains a list of all puzzles. |  | (Exact list of puzzles to be determined.) |  |  |
|  |  |  |  |  |  |  |
| 3 |  | Drop down list has default puzzle selected so that null values cannot be loaded. |  | Default puzzle “Farm 1” is selected. |  |  |
|  |  |  |  |  |  |  |
| 4 | 6 | Program generates and displays each puzzle when “Load Puzzle” button is clicked. | Test File 1: Farm 1 | See Image 1A below. |  |  |
|  |  |  |  |  |  |  |
| 5 | 6 | All words hidden in the puzzle are displayed on GUI’s word list panel | Test File 1: Farm 1 | The following words appear on the word list panel:  ORCHARD  ROOSTER  CHIKEN  HORSE  CABBAGE  PIGLET  TRACTOR  PASTURE  ANGUS  FIELD  SHEEP  SCARECROW  GEESE  HARVEST |  |  |
|  |  |  |  |  |  |  |
| 6 |  | All words in the list are in the correct position on the search grid | Test file 1: Farm 1 | See Image 1B Below. |  |  |
|  |  |  |  |  |  |  |
| 7 | 6 | When the user clicks on a word in the list, the word is crossed out. |  | Line appears through word when clicked |  |  |
|  |  |  |  |  |  |  |
| 8 | 6 | When the user clicks on a crossed out word on the list the line is removed |  | Line is removed from word when the word is clicked |  |  |
|  |  |  |  |  |  |  |
| 9 | 6 | The user can drag their cursor over letters in the grid to highlight a word |  | Letters are highlighted in yellow when the cursor is dragged over them. |  |  |
|  |  |  |  |  |  |  |
| 10 | 6 | Clicking “Submit” button produces a message regarding the number of correctly identified words | Test File1: Farm 1. All words except Geese and Pasture are highlighted. | Dialog box appears with message “12 words out of 14 words correctly identified.” |  |  |
|  |  |  |  |  |  |  |
| 11 | 6 | Clicking “Submit” causes all unfound words to appear in red font on the grid. | Test File1: Farm 1. All words except Geese and Pasture are highlighted. | Puzzle words that are not highlighted when “Submit” clicked (Geese and Pasture) appear in red font. |  |  |
|  |  |  |  |  |  |  |
| 12 |  | Program rejects highlighted words when the correct letters plus additional letters are highlighted | (Test File 1: Farm 1): All terms are correctly Highlighted except ROOSTER, which is highlighted as “ROOSTERI,” | The final score will be 13/ 14 indicating this word is incorrect. |  |  |
|  |  |  |  |  |  |  |
| 13 |  | Program rejects words when all the letters are not highlighted | (Test File 1: Farm 1): All terms are correctly highlighted except “TELGIP” which is highlighted as “GIP” | The final score will be 13/ 14 indicating this is incorrect. |  |  |
|  |  |  |  |  |  |  |
| 14 |  | Program rejects words when the highlight does not pass through the center of each letter in a continuous stroke | (Test File 1: Farm 1): All terms are correctly highlighted except CHICKEN, which is highlighted on a slant. | The final score will be 13/ 14 indicating this is incorrect. |  |  |
|  |  |  |  |  |  |  |
| 15 | 6 | Clicking the “Clear” button removes all highlights from the grid and cross lines from words in the word list. |  | All highlights removed from the grid when “Clear” button clicked. |  |  |
|  |  |  |  |  |  |  |
| 16 | 6 | Clicking the “Undo” button removes the last highlight from the grid. |  | The last highlight is removed from board when “Undo” is clicked. |  |  |
|  |  |  |  |  |  |  |
| 17 |  | Exiting the window returns to main menu |  | The main menu screen appears when window exited. |  |  |

Image 1 A: Expected Puzzle Display



Image 1 B: Locations of Hidden Words



**F. Slider Puzzle**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Requirement Number(s)** | **Test Description** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| 1 |  | Startup of application | Display GUI. |  |  |
|  |  |  |  |  |  |
| 2 | 8 | Select a new puzzle. | Display a new puzzle. |  |  |
|  |  |  |  |  |  |
| 3 | 8 | Select the image on the puzzle that has the power to swap with adjacent tile until the puzzle is complete. | Once selected, the image will shift to the adjacent tile. Repeat until puzzle is complete. |  |  |
|  |  |  |  |  |  |
| 4 |  | Display a message once the user completes the puzzle. | Message displayed once the user has completed the puzzle. |  |  |
|  |  |  |  |  |  |
| 5 | 8 | Select a “puzzle hint” to display the puzzle’s final image. | Once a puzzle hint is selected, display the final image of the puzzle. |  |  |
|  |  |  |  |  |  |
| 6 | 8 | Select a new puzzle. | Display a new puzzle for the user to complete. |  |  |
|  |  |  |  |  |  |
| 7 |  | Exit slider puzzle window to return to main menu. | Once exited, the user is returned to the main menu. |  |  |

**II. Inner Working Details (IWD)**

**Between User and GameSuiteGUI**:

The system will provide an interface in which the user can select a game. The system will launch the selected game from that interface. The system will allow the user to return to the main interface at any time and to select a new game.

**Between GameSuiteGUI and Maze:**

The system will have built in maze levels that become progressively larger and features more obstacles. The system will allow the user to maneuver their character through the maze using keys on their keyboard (arrow keys or WASD.) The system will display to the user the time it took to complete the maze if successfully completed and maintain a leaderboard for every level. The system will allow the user to replay a completed maze. The system will allow the player to advance to the new maze

Potential Features:

The system will present obstacles within the maze that the user must avoid. The system may present enemy characters that could pursue the user through the maze.

**Between GameSuiteGUI and Sudoku:**

The system will allow the user to play a game. The user will have the option to choose new game, check the status, and exit the game. The user will be able to select a number into a blank cell. The system will check each number as it is inserted. The system will inform the user that a number is incorrect. The user will be able to have the help on if they choose to do so. The user can make mistakes and continue to play until the full game is solved.

**Between GameSuiteGUI and Word Search:**

The system will allow the user to select a theme for a game. The system will allow the user to select a new game corresponding to the theme. The system will display a grid of letters. The system will display a list of words hidden in the grid. The system will allow the user to optionally mark off words from the list. The system will allow the user to mark on the grid the words that they find. The system will allow the user to submit the puzzle when complete. The system will respond to the user if they were successful or provide the correct solution. The system will allow the user to remove the last mark on the grid. The system will allow the user to remove all marks on the grid.

**Between GameSuiteGUI and Snake:**

The system will provide the user an option to start the game. The system will provide a GUI with a snake enclosed in a rectangle/square. The snake will be in constant motion. The system will provide dots or shapes the user will maneuver the snake to eat. The game will end when the snake consumes itself. The system will allow the user to maneuver the snake using their keyboard. The system will provide an option to reset the game when the game ends.

**Between GameSuiteGUI and Slider Puzzle:**

The system will initially present the user with a new puzzle. The system will provide the user with an image of the solution/original picture as reference. The system will divide that image into twelve scattered tiles. The system will allow the user to slide the tiles to form the original image. The system will allow the user to change the reference image.

**III. Context Diagram**

Diagram

Description automatically generated

**IV. Citations**

*Context diagrams*. Cs.uct.ac.za. (2021). Retrieved 5 September 2021, from https://www.cs.uct.ac.za/mit\_notes/software/htmls/ch06s06.html.