Java Game Suite Project Plan

Revision 8

CMSC 495 6382

August 29, 2021

Group Charlie

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

## **Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision Number** | **Date** | **Description** | **Name** |
| 1 | 8/27 | Creation of Doc and Outline | Oyewole |
| 2 | 8/28 | System Specification | Oyewole |
| 3 | 8/28 | Software Management | Oyewole |
| 4 | 8/29 | Requirement Specifications | Oyewole, Sherry, Wayne, Janee’, Jeff |
| 5 | 8/29 | Added use cases, requirements, team member assignments to tasks | Sherry |
| 6 | 8/29 | Moved User Guide and Test Plan to Week 3 | Sherry |
| 7 | 8/29 | Modified details for the Maze portion and checked the document for errors. | Wayne |
| 8 | 8/30 | Checked document for errors | Janee’, Jeff |

## **I. Overview**

**1.1 Product Description**

The purpose of this software package is to provide entertainment to users by allowing them to play several simple single player computer games.

**1.2 User Characteristics**

The user will have basic computer competencies such as being able to operate a mouse and keyboard. Elementary math abilities are required to play Sudoku.

**1.3 User Scenarios**

1.3.1 Launching the Program

When the user wants to play a game from the suite, they will launch the program. They will be presented with an interface that indicates the available games: a maze, snakes, Sudoku, wordsearch, and a slider puzzle. The user will be able to select a game from the suite and launch it from that interface.

1.3.1 Maze

The user will select a maze to play. They will then use their keyboard to move their character through the maze to the end goal. The user will be able to see how much time it took to complete the maze. The user potentially may have to avoid obstacles or enemy characters. The user can select a new game when finished.

1.3.2 Sudoku

The user first will select a game. There will be a minimum of three games rated by difficulty: beginner, intermediate, and advanced. The difficulties will reflect the amount of numbers provided in the puzzle. The user will be presented with a 9 x 9 grid subdivided into 9 3 x 3 grids. Some of the cells will be filled in with numbers and the rest will be blank. The user will start to solve the puzzle by entering a number into one of the blank cells. The system will alert the user if the number they entered is incorrect. They will have three tries to guess the correct number. If they are unable to guess the number, the game will end. The user will then be able to restart the game or select a new game.

1.3.3 Word search

First, the user will select a theme, such as animals or places, for the puzzle. They will then select a puzzle. The user will be presented with a grid of letters and a list of the words that they must find in the grid. The user will mark on the grid the words that they find in the list. The user will have the option to keep track of the words that they find by marking them off on the provided list. When they believe they are done the user can submit their puzzle. They will be provided with the solution. They will then have an option to restart the puzzle or select a new game. The user will have the ability to remove a mark or clear all markings off of the grid.

1.3.4 Snake

The user will indicate to the system that they are ready to play the game. They will be presented with a snake enclosed in a rectangle that is in continual motion. The user will use their keyboard to maneuver the snake to consume dots inside the enclosure while preventing the snake from eating itself (touching its head to its body). The game will end when the snake eats itself. The user then can restart the game.

1.3.5 Slider Puzzle

When the user launches the program they will be presented with a reference image and twelve scattered tiles. The user will slide the tiles around until they are able to recreate the original image. The user can change the puzzle.

## **II. Requirement Specifications**

|  |  |
| --- | --- |
| **Requirement Number** | **Description** |
| 1 | This suite will have a minimum of 5 mini games to try out. |
| 2 | Five games that will be in the suite:   1. Maze 2. Sudoku 3. Word search 4. Snake 5. Slider puzzle |
| 3 | Launching the Program:  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. |
| 4 | Maze Game:  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. |
| 5 | Sudoku:  The system will allow the user to select one of three games rated  Beginner, intermediate, and advanced.  The level of the games will correspond to the amount of numbers already filled in on the grid.  The user will be able to type 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 system will allow the user three tries to guess a number.  The system will terminate the game if the user is unable to guess the number after three tries.  The system will allow the user to restart the game. |
| 6 | 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. |
| 7 | Snakes:  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. |
| 8 | 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. System Specification**

**Development Platform**

|  |  |
| --- | --- |
| OS | Windows 10 / Mac OS |
| Processor | Intel Core i5 4.1GHz |
| Development Software | Apache Netbeans 11.3 / Intellij IDEA 2020.2 / Java JDK 9 |
| Memory | 8 GB RAM |
| Storage | At least 4.0 GB of disk space |

**Production Platform**

|  |  |
| --- | --- |
| OS | Windows 7 or better, Mac OS |
| Processor | 1.8 GHz or faster |
| Storage | At least 4.0 GB of disk space |

## **IV. Software Management**

Version control will be handled through a repository at GitHub. The link for the project repository is:

<https://github.com/tsanusi/CMSC495-Group-Charlie-Java-Game-Suite>

This repository will hold all documents relating to the project, as well as all versions of the project. It is publicly accessible. Please refer to README in the repository for more information.

## **V. Project Schedule**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task** | **Duration(days)** | **Start Date** | **End Date** | **Personnel** |
| 1. Project Requirements    1. Requirement Specifications    2. System Specification    3. Software Management    4. Project Schedule    5. Group Revision | 7  5  5  5  5  2 | 8/23  8/25  8/25  8/25  8/25  8/28 | 8/29  8/29  8/29  8/29  8/29  8/29 | Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey |
| -Week 3- |  |  |  |  |
| 1. Project Analysis    1. Context Diagram    2. Inner Working Details    3. Test Plan    4. User Guide    5. Group Revision | 7  5  5  5  5  2 | 8/30  8/30  8/30  8/30  8/30  9/4 | 9/5  9/3  9/3  9/3  9/3  9/5 | Janee’  Janee’  Sherry  Oyewole  Oyewole, Sherry, Janee’, Wayne, Jeffrey |
| -Week 4- |  |  |  |  |
| 1. Project Design    1. Class Diagram    2. Sequence Diagram    3. Pseudo Code    4. Performance Estimates    5. Group Revision | 7  5  5  5  5  2 | 9/6  9/6  9/6  9/6  9/6  9/11 | 6/15  9/10  9/10  9/10  9/10  9/12 | Wayne  Jeff  Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole  Oyewole, Sherry, Janee’, Wayne, Jeffrey |
| -Week 5- |  |  |  |  |
| 1. Project Test Plan & ICD    1. Test Plan    2. Interface Control Document (ICD)    3. Group Revision | 7  5  5  2 | 9/13  9/13  9/13  9/18 | 9/19  9/17  9/17  9/19 | Sherry  Janee’  Oyewole, Sherry, Janee’, Wayne, Jeffrey |
| -Week 6- |  |  |  |  |
| 1. Implementation and Testing (Sprint 1)    1. GUI coding    2. Other Required Classes coding    3. Testing    4. Group Revision | 7  5  5  5  2 | 9/20  9/20  9/20  9/20  9/25 | 9/26  9/24  9/24  9/24  9/26 | Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole  Oyewole, Sherry, Janee’, Wayne, Jeffrey |
| -Week 7- |  |  |  |  |
| 1. Further Implementation and Testing (Sprint Two)    1. Further coding    2. Testing    3. User Guide    4. Group Revision | 7  5  5  5  2 | 9/27  9/27  9/27  9/27  10/2 | 10/3  10/1  10/1  10/1  10/3 | Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole  Oyewole, Sherry, Janee’, Wayne, Jeffrey |
| -Week 8- |  |  | Due Early for Peer Review (Saturday 10/9) |  |
| 1. Final Sprint - Delivery    1. Finishing Touches    2. Update all Documents with any Changes    3. Group Revision | 5  3  3  2 | 10/4  10/4  10/4  10/7 | 10/8  10/6  20/6  10/8 | Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey  Oyewole, Sherry, Janee’, Wayne, Jeffrey |