**TIC TAC TOE (v1.3)**

Use Case, UML, Sequence Diagrams

**UML Diagram**

**Use Case Diagram**

**Sequence Diagrams**

System Test Cases

**Test Case 1**

Purpose: Verify that menu buttons are working

Setup: Obtain TicTacToe v1.3 (latest version). Follow directions below

Test Data:

|  |  |  |
| --- | --- | --- |
| **Action** | **Input** | **Output** |
| Launch Game |  | The game’s main menu should appear with four button options to choose from |
| Check that the ‘Single Player’ button works | Click the ‘Single Player’ button | Verify that the game transitions to the appropriate startup menu scene where a player can choose the difficulty |
| Select back from the startup menu | Click the ‘back’ button | The game transitions back to the main menu with four options |

Notes:

1. Do not check for colors, positions, labels, spelling.
2. The ‘Quit’ button is not checked.
3. The remaining buttons (multiplayer and settings) can be checked by applying the concept of this same system test

**Test Case 2**

Purpose: Verify that game start up elements work and are applied to the game

Setup: Obtain TicTacToe v1.3 (latest version). Follow directions below

Test Data:

|  |  |  |
| --- | --- | --- |
| **Action** | **Input** | **Output** |
| Select Single Player | Click the ‘Single Player’ Button | The game shows the startup menu scene where a player can customize their game |
| Check that selecting the difficulty functions correctly | Click and toggle between the basic and advanced difficulty | Verify that only one option can be checked at a time  When the game starts, the difficulty of the computer player should be applied and function accordingly |
| Check that the board size and win condition functions correctly | Enter three numbers indicating the desired width and height of the board, as well as the number in a row for the win condition | When the game starts, these conditions should be applied and function accordingly |
| Check that selecting either X or O functions correctly | Click and toggle between the X and O selection | Verify that only one option can be checked at a time  When the game starts, either X or O should show on the gird first depending on what was selected |

Notes:

1. The multiplayer startup menu can be checked by applying the concept of this same system test, minus the difficulty.
2. Testing the ‘Start Game’ button is implied when testing to make sure selected conditions are applied to the game.
3. Do not check for colors, positions, labels, spelling.

**Test Case 3**

Purpose: Verify that changing the game themes in settings functions

Setup: Obtain TicTacToe v1.3 (latest version). Follow directions below

Test Data:

|  |  |  |
| --- | --- | --- |
| **Action** | **Input** | **Output** |
| Select Settings | Click the ‘Settings’ Button | The game shows the settings menu where the theme can be changed from three buttons |
| Select Theme1 | Click the ‘Theme1’ Button | By clicking the button, verify that theme is automatically changes and is applied to the game |
| Select Original | Click the ‘Original’ Button | By clicking the button, verify that the theme automatically reverts to the original style of the game |

Notes:

1. Do not check for colors, positions, labels, spelling.

**Test Case 4**

Purpose: Verify that in-game elements function correctly

Setup: Obtain TicTacToe v1.3 (latest version). Follow directions below

Test Data:

|  |  |  |
| --- | --- | --- |
| **Action** | **Input** | **Output** |
| Select start game | Click the ‘Start Game’ button | Transitions to the in-game screen with a grid, timer, and pause button |
| Verify that clicking the grid functions | Click a space on the grid | Clicking a space on the grid should show a player piece that fits inside square.  Clicking anywhere else on the screen should NOT spawn a player piece |
| Verify that clicking the pause button functions | Click the ‘Pause’ button | Clicking the button should pause the timer and disable clicking inside the grid |
| Verify that clicking the resume button functions | Click the ‘Resume’ button | Clicking the button should un-pause the timer and re-enable clicking inside the grid |
| Verify that clicking the quit button functions | Click the ‘Quit’ button | Clicking the button should trigger a pop-up confirming to leave to the game. Yes brings the player back to the main menu. No resumes the game |
| Verify that the game transitions to a “timer ran out” scene when the timer hits 0 | Wait for the timer to hit 0. | After the timer hits 0, the game transitions to a timer ran out scene with an option to play again or to return to the menu |

Notes:

1. Testing the ‘play again’ and ‘return to menu’ buttons will be done in a different system test case
2. Game logic is not tested.
3. Do not check for colors, positions, labels, spelling.

**Test Case 5**

Purpose: Verify that end-game scenes and elements function correctly

Setup: Obtain TicTacToe v1.3 (latest version). Follow directions below

Test Data:

|  |  |  |
| --- | --- | --- |
| **Action** | **Input** | **Output** |
| Allow player piece X to win on purpose | Satisfy win condition for X on grid | Transitions to end-game screen where X is the winner and options to play again or return to menu |
| Test play again | Click ‘play again’ button | Should return to in-game screen this time with O getting the first turn |
| Test return to menu | Click the ‘return to menu’ button | Should return to the game’s main menu |

Notes:

1. The player piece O can be tested with the same concept using this same system test case.
2. Do not check for colors, positions, labels, spelling.

Code Coverage Report

README File Contents

Contributions and Time Spent

**Jeremiah** – ( hours)

**Rural** – ( hours)

**Kymberlee** – ( hours)

Commit Log