**Project Sprint #1**

The SOS game is described in CS449HomeworkOverview.docx. You should read the description very carefully.

In this assignment, you aim to specify the requirements (i.e., user stories and acceptance criteria) of the target software that allows a human player to play a simple or general SOS game against a human opponent. These requirements will be fully implemented by the end of sprint 3. The minimum features include **choosing the board size,** **choosing the game mode (simple or general)**, **starting a new game**, **making a move (in a simple or general game)**, **determining if a simple or general game is over**. The following is a sample GUI layout.

|  |  |  |
| --- | --- | --- |
| SOS Icon  Description automatically generated Simple game Icon  Description automatically generated General game Board size  8 | | |
| Blue player  Icon  Description automatically generated S  Icon  Description automatically generated O | Chart, line chart  Description automatically generated | Red player  Icon  Description automatically generated S  Icon  Description automatically generated O |
|  | Current turn: blue (or red) | New Game |

Figure 1. Sample GUI layout of the first working program by the end of Sprint 3

Use the following tables to document your user stories and acceptance criteria.

1. **User Stories (3 points)**

* **User Story Template**: As a <role>, I want <goal> [so that <benefit>]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **User Story Name** | **User Story Description** | **Priority** | **Estimated effort (hours)** |
| 1 | Choose a board size | As a player, I need a text box so that I may change the board size. | 1 | 2 |
| 2 | Choose the game mode of a chosen board | As a player, I need to have a pair of selection radio buttons in the GUI, so that I may choose between a general or simple SOS game. | 2 | 2 |
| 3 | Start a new game of the chosen board size and game mode | As a player, I need a new game button, so that I may start a new game with my preferred settings. | 3 | 2 |
| 4 | Make a move in a simple game | As a player, I need an empty cell on the board in simple mode, so that I may make a move (placing a single S or O). | 4 | 2 |
| 5 | A simple game is over | As a player, I need to know if the game is over after each move in simple mode. | 6 | 2 |
| 6 | Make a move in a general game | As a player, I need an empty cell on the board in general mode, so that I may make a move (placing a single S or O). | 5 | 1 |
| 7 | A general game is over | As a player, I need to know if the game is over after each move in general mode. | 7 | 1 |

1. **Acceptance Criteria (AC) (12 points): Add/delete rows as needed.**

|  |  |  |  |
| --- | --- | --- | --- |
| **User Story ID and Name** | **AC**  **ID** | **Description of Acceptance Criterion** | **Status (completed, toDo, inProgress)** |
| 1. Choose a board size | 1.1 | AC 1.1 Valid Board Size  Given a textbox.  When an integer (n) is entered.  And the integer (n) is greater than 2.  Then the player can start a new game.  And the board will be size n \* n. | toDo |
| 1.2 | AC 1.2 Invalid Board Size: Less than or equal to 2.  Given a textbox.  When an integer (n) is entered.  And the integer (n) is less than or equal to 2.  Then the player cannot start a new game. | toDo |
| 1.3 | AC 1.3 Invalid Board Size: Non-integer entered.  Given a textbox.  When a non-integer is entered.  Then the player cannot start a new game. | toDo |
| 2. Choose the game mode of a chosen board | 2.1 | AC 2.1 Simple Game Selected  Given two radio buttons (Simple and General).  When Simple is selected.  Then General is unselected.  And the player can start a new Simple game. | toDo |
| 2.2 | AC 2.2 General Game Selected  Given two radio buttons (Simple and General).  When General is selected.  Then Simple is unselected.  And the player can start a new General game. | toDo |
| 2.3 | AC 2.3 No Game Selected  Given two radio buttons (Simple and General).  When neither is selected.  Then the player cannot start a new game. | toDo |
| 3. Start a new game of the chosen board size and game mode | 3.1 | AC 3.1 Start of Simple Game  Given a selected Simple radio button.  And an unselected General radio button.  And a valid board size is entered.  When the new game button is hit.  Then a Simple Game will start.  And the board will be size n \* n. | toDo |
|  | 3.2 | AC 3.2 Start of General Game  Given a selected General radio button.  And an unselected Simple radio button.  And a valid board size is entered.  When the new game button is hit.  Then a General Game will start.  And the board will be size n \* n. | toDo |
|  | 3.3 | AC 3.3 Game Failure: Unselected mode.  Given an unselected General radio button.  And an unselected Simple radio button.  And a valid board size is entered.  When the new game button is hit.  Then the game will not start. | toDo |
|  | 3.4 | AC 3.4 Simple Game Failure: Invalid board size.  Given a selected Simple radio button.  And an unselected General radio button.  And an invalid board size is entered.  When the new game button is hit.  Then the game will not start. | toDo |
|  | 3.5 | AC 3.5 General Game Failure: Invalid board size.  Given a selected General radio button.  And an unselected Simple radio button.  And an invalid board size is entered.  When the new game button is hit.  Then the game will not start. | toDo |
| 4. Make a move in a simple game | 4.1 | AC 4.1 A valid S move by Player Blue (Simple Game).  Given an ongoing Simple game with Player Blue’s turn.  When Player Blue selects an unoccupied cell.  And S radio button is selected.  And O radio button is unselected.  Then an S is placed.  And it becomes Player Red’s turn. | toDo |
|  | 4.2 | AC 4.2 A valid O move by Player Blue (Simple Game).  Given an ongoing Simple game with Player Blue’s turn.  When Player Blue selects an unoccupied cell.  And O radio button is selected.  And S radio button is unselected.  Then an O is placed.  And it becomes Player Red’s turn. | toDo |
|  | 4.3 | AC 4.3 A valid S move by Player Red (Simple Game).  Given an ongoing Simple game with Player Red’s turn.  When Player Red selects an unoccupied cell.  And S radio button is selected.  And O radio button is unselected.  Then an S is placed.  And it becomes Player Blue’s turn. | toDo |
|  | 4.4 | AC 4.4 A valid O move by Player Red (Simple Game).  Given an ongoing Simple game with Player Red’s turn.  When Player Red selects an unoccupied cell.  And O radio button is selected.  And S radio button is unselected.  Then an O is placed.  And it becomes Player Blue’s turn. | toDo |
|  | 4.5 | AC 4.5 A invalid move by Player: Occupied Cell (Simple Game).  Given an ongoing Simple game.  When a Player selects an occupied cell.  Then nothing will happen.  And it is still that Player’s turn. | toDo |
|  | 4.6 | AC 4.6 A invalid move by Player: Out of bounds (Simple Game).  Given an ongoing Simple game.  When a Player tries to move outside the board.  Then nothing will happen.  And it is still that Player’s turn. | toDo |
|  | 4.7 | AC 4.7 A invalid move by Player: Unselected S/O (Simple Game).  Given an ongoing Simple game.  When a Player tries to select a cell.  And S radio button is unselected.  And O radio button is unselected.  Then nothing will happen.  And it is still that Player’s turn. | toDo |
| 5. A simple game is over | 5.1 | AC 5.1 A Simple Game Win by Player Blue.  Given an ongoing Simple game without an S-O-S.  And it is Player Blue’s turn.  When Player Blue picks an unoccupied cell to form an S-O-S.  Then the game will end.  And Player Blue wins. | toDo |
|  | 5.2 | AC 5.2 A Simple Game Win by Player Red.  Given an ongoing Simple game without an S-O-S.  And it is Player Red’s turn.  When Player Red picks an unoccupied cell to form an S-O-S.  Then the game will end.  And Player Red wins. | toDo |
|  | 5.3 | AC 5.3 A Simple Game Continues after Player Blue’s move.  Given an ongoing Simple game without an S-O-S.  And it is Player Blue’s turn.  When Player Blue picks an unoccupied cell that doesn’t form an  S-O-S.  Then the game will continue.  And it’s Player Red’s turn. | toDo |
|  | 5.4 | AC 5.4 A Simple Game Continues after Player Red’s move.  Given an ongoing Simple game without an S-O-S.  And it is Player Red’s turn.  When Player Red picks an unoccupied cell that doesn’t form an  S-O-S.  Then the game will continue.  And it’s Player Blue’s turn. | toDo |
| 6. Make a move in a general game | 6.1 | AC 6.1 A valid S move by Player Blue (General Game/No SOS).  Given an ongoing General game with Player Blue’s turn.  When Player Blue selects an unoccupied cell.  And S radio button is selected.  And O radio button is unselected.  And such a move will not form an S-O-S.  Then an S is placed.  And it becomes Player Red’s turn. | toDo |
|  | 6.2 | AC 6.2 A valid S move by Player Blue (General Game/SOS).  Given an ongoing General game with Player Blue’s turn.  When Player Blue selects an unoccupied cell.  And S radio button is selected.  And O radio button is unselected.  And such a move will form an S-O-S.  Then an S is placed.  And it is still Player Blue’s turn. | toDo |
|  | 6.3 | AC 6.3 A valid O move by Player Blue (General Game/No SOS).  Given an ongoing General game with Blue’s turn.  When Player Blue selects an unoccupied cell.  And O radio button is selected.  And S radio button is unselected.  And such a move will not form an S-O-S.  Then an O is placed.  And it becomes Player Red’s turn. | toDo |
|  | 6.4 | AC 6.4 A valid O move by Player Blue (General Game/SOS).  Given an ongoing General game with Blue’s turn.  When Player Blue selects an unoccupied cell.  And O radio button is selected.  And S radio button is unselected.  And such a move will form an S-O-S.  Then an O is placed.  And it is still Player Blue’s turn. | toDo |
|  | 6.5 | AC 6.5 A valid S move by Player Red (General Game/No SOS).  Given an ongoing General game with Player Red’s turn.  When Player Red selects an unoccupied cell.  And S radio button is selected.  And O radio button is unselected.  And such a move will not form an S-O-S.  Then an S is placed.  And it becomes Player Blue’s turn. | toDo |
|  | 6.6 | AC 6.6 A valid S move by Player Red (General Game/SOS).  Given an ongoing General game with Player Red’s turn.  When Player Red selects an unoccupied cell.  And S radio button is selected.  And O radio button is unselected.  And such a move will form an S-O-S.  Then an S is placed.  And it is still Player Red’s turn. | toDo |
|  | 6.7 | AC 6.7 A valid O move by Player Red (General Game/No SOS).  Given an ongoing General game with Player Red’s turn.  When Player Red selects an unoccupied cell.  And O radio button is selected.  And S radio button is unselected.  And such a move will not form an S-O-S.  Then an O is placed.  And it becomes Player Blue’s turn. | toDo |
|  | 6.8 | AC 6.8 A valid O move by Player Red (General Game/SOS).  Given an ongoing General game with Player Red’s turn.  When Player Red selects an unoccupied cell.  And O radio button is selected.  And S radio button is unselected.  And such a move will form an S-O-S.  Then an O is placed.  And it is still Player Red’s turn. | toDo |
|  | 6.9 | AC 6.9 A invalid move by Player: Occupied Cell (General Game).  Given an ongoing General game.  When a Player selects an occupied cell.  Then nothing will happen.  And it is still that Player’s turn. | toDo |
|  | 6.10 | AC 6.10 A invalid move by Player: Out of bounds (General Game).  Given an ongoing General game.  When a Player tries to move outside the board.  Then nothing will happen.  And it is still that Player’s turn. | toDo |
|  | 6.11 | AC 6.11 A invalid move by Player: Unselected S/O (General Game).  Given an ongoing General game.  When a Player tries to select a cell.  And S radio button is unselected.  And O radio button is unselected.  Then nothing will happen.  And it is still that Player’s turn. | toDo |
| 7. A general game is over | 7.1 | AC 7.1 A General Game Win by Player Blue (Last Move by Blue).  Given an ongoing General game with an available cell.  And it is Player Blue’s turn.  When Player Blue picks the last unoccupied cell.  And Player Blue formed more SOSes than Player Red.  Then the game will end.  And Player Blue wins. | toDo |
|  | 7.2 | AC 7.2 A General Game Win by Player Blue (Last Move by Red).  Given an ongoing General game with an available cell.  And it is Player Red’s turn.  When Player Red picks the last unoccupied cell.  And Player Blue formed more SOSes than Player Red.  Then the game will end.  And Player Blue wins. | toDo |
|  | 7.3 | AC 7.3 A General Game Win by Player Red (Last Move by Red).  Given an ongoing General game with an available cell.  And it is Player Red’s turn.  When Player Red picks the last unoccupied cell.  And Player Red formed more SOSes than Player Blue.  Then the game will end.  And Player Red wins. | toDo |
|  | 7.4 | AC 7.4 A General Game Win by Player Red (Last Move by Blue).  Given an ongoing General game with an available cell.  And it is Player Blue’s turn.  When Player Blue picks the last unoccupied cell.  And Player Red formed more SOSes than Player Blue.  Then the game will end.  And Player Red wins. | toDo |
|  | 7.5 | AC 7.5 A General Game Continues after Player Blue’s move (no SOS).  Given an ongoing General game with available cells.  And it is Player Blue’s turn.  When Player Blue picks an unoccupied cell that doesn’t form an  S-O-S.  And there is another unoccupied cell.  Then the game will continue.  And it’s Player Red’s turn. | toDo |
|  | 7.6 | AC 7.6 A General Game Continues after Player Blue’s move (SOS).  Given an ongoing General game with available cells.  And it is Player Blue’s turn.  When Player Blue picks an unoccupied cell that does form an  S-O-S.  And there is another unoccupied cell.  Then the game will continue.  And it’s still Player Blue’s turn. | toDo |
|  | 7.7 | AC 7.7 A General Game Continues after Player Red’s move (no SOS).  Given an ongoing General game with available cells.  And it is Player Red’s turn.  When Player Red picks an unoccupied cell that doesn’t form an  S-O-S.  And there is another unoccupied cell.  Then the game will continue.  And it’s Player Blue’s turn. | toDo |
|  | 7.8 | AC 7.8 A General Game Continues after Player Red’s move (SOS).  Given an ongoing General game with available cells.  And it is Player Red’s turn.  When Player Red picks an unoccupied cell that does form an  S-O-S.  And there is another unoccupied cell.  Then the game will continue.  And it’s still Player Red’s turn. | toDo |
|  | 7.9 | AC 7.9 A General Game Draw (Last Move by Blue).  Given an ongoing General game with an available cell.  And it is Player Blue’s turn.  When Player Blue picks the last unoccupied cell.  And both players have formed the same amount of SOSes.  Then the game will end.  And the game ends in a draw. | toDo |
|  | 7.10 | AC 7.9 A General Game Draw (Last Move by Red).  Given an ongoing General game with an available cell.  And it is Player Red’s turn.  When Player Red picks the last unoccupied cell.  And both players have formed the same amount of SOSes.  Then the game will end.  And the game ends in a draw. | toDo |