

Tic Tac Toe Use Case Description

Use Case 1: Start game

Iteration: 1

Primary Actor: Player

Goal in Context: To start a new tic tac toe game.

Preconditions:

- Player has accessed an online multiplayer game platform
- Tic tac toe is available to play

Trigger: Player selects the option to start the game.

Scenario:

1. The player selects “start game”.
2. The system prepares the Tic Tac Toe game board.
3. Each player is assigned an “X” or an “O” randomly.
4. The game shows the starting player to begin the game

Post Conditions: The game board is ready, and the first player can make a move.

Exceptions: The system fails to load the game.

Priority: High priority

When Available: Always available

Frequency of Use: Used once every game session

Channel to Actor: The user interface, using a mouse and/or a keyboard

Secondary Actors: None

Channel to Secondary Actors: N/A

Open Issues: N/A

Use Case 2: Make a move

Iteration: 1

Primary Actor: Player

Goal in Context: To place the player's mark (X or O) in the selected cell in the game board.

Preconditions:

- The Game has started.
- It is the player's turn to a move

Trigger: There are still empty slots and the player clicks on an empty slot in the game board.

Scenario:

1. The player selects an empty slot on the game board.
2. The system places the player's mark on the selected slot.
3. The system updates the game board and switches turns to the other player.

Post Conditions:

- The selected slot is updated with the player's mark.
- The system is prepared for the next player's move.

Exceptions: The player selects a non-empty slot, and the system denies the move.

Priority: High priority

When Available: Always available during a game

Frequency of Use: Used multiple times a game

Channel to Actor: The user interface, using a mouse and/or keyboard

Secondary Actors: None

Channel to Secondary Actors: N/A

Open Issues: N/A

Use Case 3: Check if a player won the game

Iteration: 1

Primary Actor: Game system

Goal in Context: To check if a player has won the game by achieving three of the same mark in a row, column or diagonal.

Preconditions:

- The player has completed their turn
- There are at least 5 moves made on the game board.

Trigger: A player has completed their turn.

Scenario:

1. Player makes moves on the game board leaving their marks on the played slots (X or O)
2. A player has at three of the same mark in a row, column or diagonal
3. The game system verifies the win

Post Conditions: The game verifies a player has won and prepares to end the game

Exceptions: The system fails to evaluate a win (anything other than 3 of the same mark in a row, column or diagonal)

Priority: High priority as this determines the outcome of the game session

When Available: Always available during a game

Frequency of Use: Used after a player move, if valid

Channel to Actor: Automatic System Procedure

Secondary Actors: None

Channel to Secondary Actors: N/A

Open Issues: N/A

Use Case 4: Check if the game is a draw

Iteration: 1

Primary Actor: Game System

Goal in Context: To check if the game has ended in a draw, where all slots are filled with players' marks (X or O)

Preconditions:

- The player has completed their turn
- All slots are filled with players' marks (X or O)

Trigger: The player completes their turn, and no win condition is met

Scenario:

1. Player makes moves on the game board leaving their marks on the played slots (X or O)
2. The game board evaluates to see if all slots are filled
3. If all game slots are filled with no signs of a player's mark that is three in a row, column, or diagonal
4. If the board is not full, the next player makes a move

Post Conditions: The game verifies it ends with a draw and prepares to end the game

Exceptions: The system fails to evaluate a draw

Priority: medium as this determines the outcome of the game session if a player does not win

When Available: Always available during a game session

Frequency of Use: Used after a player move, if valid

Channel to Actor: Automatic System Procedure

Secondary Actors: None

Channel to Secondary Actors: N/A

Open Issues: N/A

Use Case 5: End game

Iteration: 1

Primary Actor: System

Goal in Context: To conclude the game session and provide the player with end-game options

Preconditions: Players have completed all of their turns ending the game with a winner or a draw

Trigger: The game detects a win or a draw

Scenario:

1. The system declared the results of the game
2. The system offers the player with an option to play again(the system resets the game board) or exit the game(the systems navigates the player out of the game)

Post Conditions: The game board has reset or the player has exited the game

Exceptions: The game system fails to reset the game board or fails to exit

Priority: High priority as this determines the outcome of what to do next at the end of the game

When Available: Always available at the end of the game session

Frequency of Use: Used once at the end of every game session

Channel to Actor: Automatic System Procedure

Secondary Actors: None

Channel to Secondary Actors: N/A

Open Issues: N/A