University of North Florida

**Group 4’s Tic-Tac-Toe**

*Version 2*

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# **USE CASE DIAGRAM**

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Description automatically generated**

# **USE CASE LIST**

**USE CASE:** Activate CPU Player

**ACTORS:** Human Player

**GOALS:** To activate CPU control for player 2

**PRECONDITIONS:** None

**STEPS:**

|  |  |
| --- | --- |
| 1. Player selects option to activate CPU player for Player 2 | 1. Game continues |

**USE CASE:** Change Game Board Size and Mark Match Length

**ACTORS:** Human Player

**GOALS:** To change the size of the board (*m x n*) and update how many marks make a match (in a row, column, or diagonal)

**PRECONDITIONS:** None

**STEPS:**

|  |  |
| --- | --- |
| 1. Player enters row size (optional) 2. Player enters column size (optional) 3. Player enters mark match length (optional) 4. Player confirms changes | 1. Board cleared of marks 2. Board size changes according to row x column 3. Timer resets 4. Player 2’s name is de-highlighted (if previously highlighted) 5. Player 1’s name is highlighted |

**USE CASE:** Player Chooses Square to Mark

**ACTORS:** Human Player

**GOALS:** To fill a square with either an ‘X’ or an ‘O’, depending on which actor (player number) clicks

**PRECONDITIONS:** Game started (which occurs when webpage is opened)

**STEPS:**

|  |  |
| --- | --- |
| 1. Player selects a square to mark | * 1. Square is empty - square fills with player’s respective mark (‘X’ / ‘O’)   2. Square is full - nothing occurs (return to step one)  1. Remove highlight from current player’s name and highlight opposing player’s name    1. If opposing player is human – return to step 1 for opposing player    2. If opposing player is CPU       1. Empty square is filled with CPU player’s mark (O, due to being player 2)       2. Remove highlight from CPU player 2’s name and highlight human player 1’s name |

**USE CASE:** Mark Wins the Game (k-in-a-row)

**ACTORS:** Human Player

**GOALS:** Congratulate the winner of the game and increase their score by 1

**RELATED USE CASES:** *Extension of:* Choose Square to Mark… *Includes:* Play New Game

**PRECONDITIONS:** Player or CPU has (k-1) marks in a row, either diagonally, horizontally, or vertically

**STEPS:**

|  |  |
| --- | --- |
| 1. Player selects a square to mark that is the kth in a (horizontal, vertical, diagonal) row | 1. Dialog box appears and…    1. congratulates player number for winning the game    2. asks if players would like to play another game 2. The winning player’s display score goes up by 1 |

**USE CASE:** Mark Ties the Game

**ACTORS:** Human Player

**GOALS:** Alert the players to a tie and ask if they would like to play again

**RELATED USE CASES:** *Extension of:* Choose Square to Mark … *Includes:* Play New Game

**PRECONDITIONS:** Only one box remains unmarked

**STEPS:**

|  |  |
| --- | --- |
| 1. Player selects the final square to mark that doesn’t result in k-in-a-row match | 1. Dialog box appears and…    1. states there was a tie    2. asks if players would like to play again |

**USE CASE:** Play New Game

**ACTORS:** Human Player

**GOALS:** Prepare the game board for a new round

**RELATED USE CASES:** *Included by:* Mark Ties the Game,

Mark Wins the Game,

Player Doesn’t Choose a Square to Mark

**PRECONDITIONS:** Game either ended in a win, tie, or exceeded timer length

**STEPS:**

|  |  |
| --- | --- |
| 1. Player selects ‘Play New Game’ from dialog box | 1. Dialog box disappears 2. Game board clears (all squares are emptied) 3. Timer resets to 30 seconds and displays in time box (in GUI) 4. Player 1’s name is highlighted |

**USE CASE:** Player Doesn’t Choose a Square to Mark

**ACTORS:** Human Player

**GOALS:** End the game due to the preset timer running out and ask if they would like to play again

**RELATED USE CASES:** *Includes:* Play New Game

**PRECONDITIONS:** None

**STEPS:**

|  |  |
| --- | --- |
| 1. Player doesn’t choose a square to mark within allotted time | 1. Dialog appears and… 2. states time ran out 3. asks if players would like to play again |

# **UML CLASS DIAGRAM**

A computer screen shot of a computer

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# **GIT COMMIT LOG**

…TBD