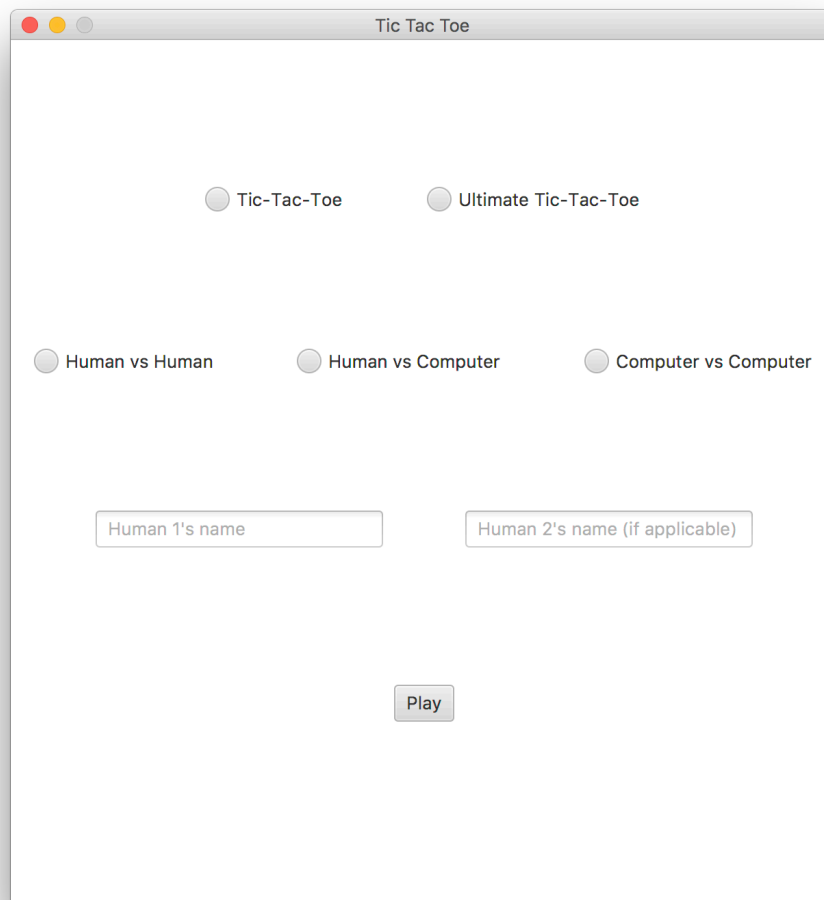# Ultimate Tic-Tac-Toe

User Guide – CS015 Indy Final Project

(Download the JAR file <u>here</u>)

The application first presents the user with a settings pane to choose the nature of the game to play. There are three settings to fill – the game mode, the player mode and the names of players. The game mode is a set of radio buttons to decide whether to play Basic or Ultimate Tic-Tac-Toe. The player mode is also a set of radio buttons to decide between Human v Human, Human v Computer or Computer v Computer play. The third setting consists of two text fields. Depending on the player setting, these may or may not have to be filled. This is due to the fact that only human players need names (all the computers are called "Computer". If any of the settings fields are not properly filled by the time the user presses the play button, the form will not be submitted and an error message will inform the user that some of the fields are not filled. The settings pane looks like this:

If all is in order, the game screen then appears. The game randomly assigns each player a piece and also randomly chooses which player to begin. If a human is first to play, the board will remain empty until the player clicks on a square. This will cause a piece to be placed in that square. After moving, the next player (human or computer) will go. If the computer is to play, it will make a move automatically, after an anthropomorphising delay. Moves will be made until the game is finished. The boards look like this for the Basic and Ultimate games respectively:
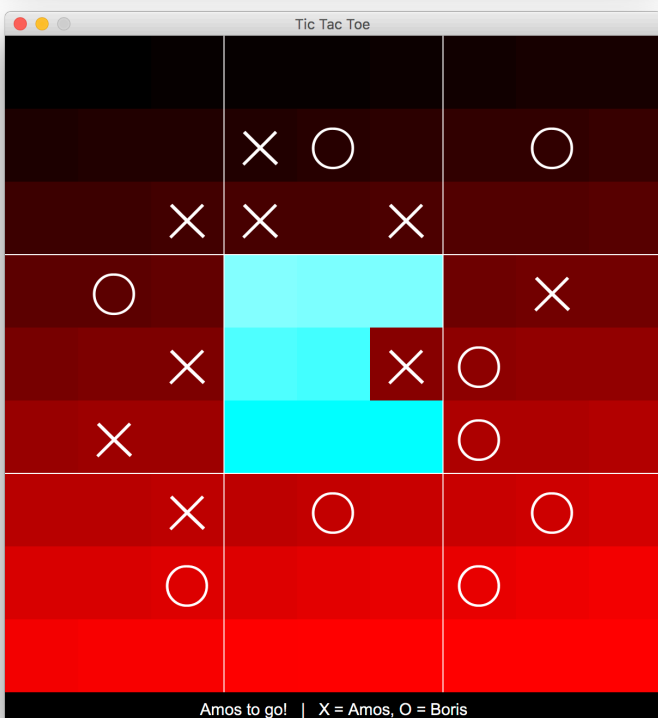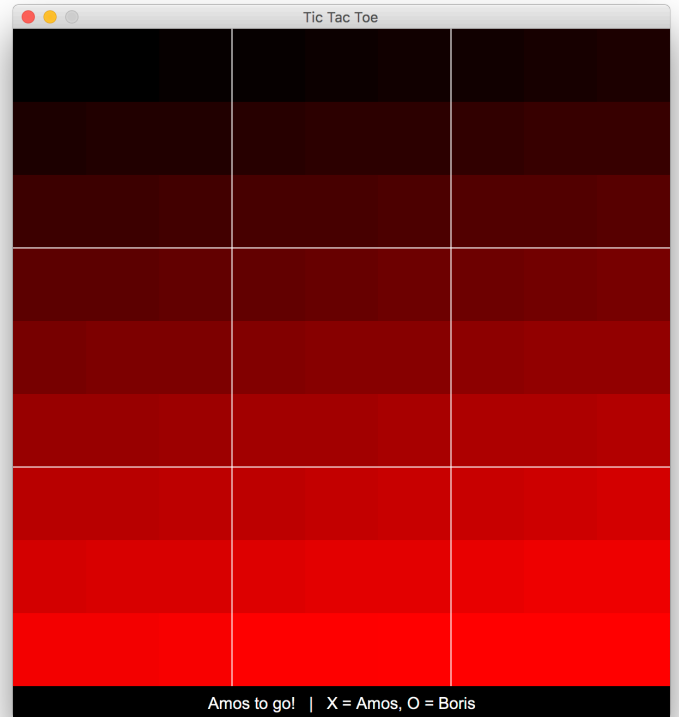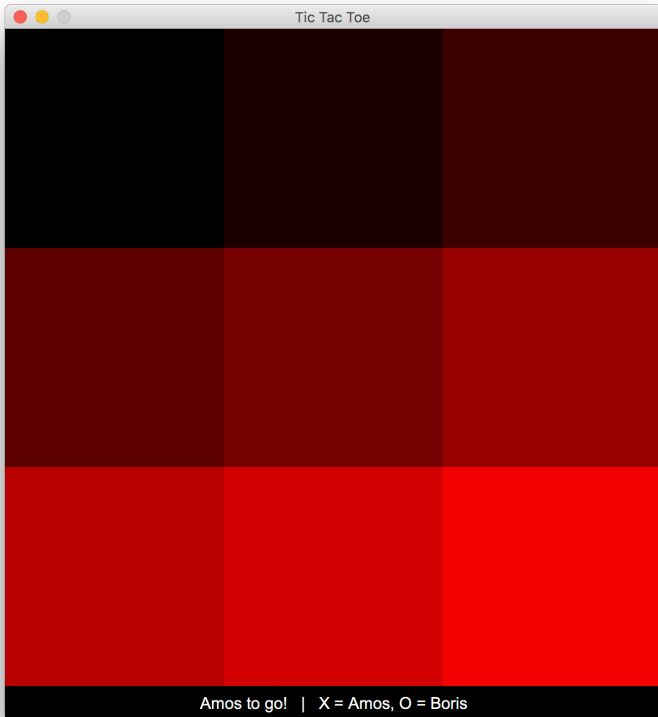
In the Ultimate game, to aid the human, legal moves are highlighted when the human is the next player to go. This highlighting is performed by inverting the colours of the squares. Highlighting does not occur in the Computer v Computer game and does not occur when it is the computer's turn in the Human v Computer game. Highlighting is pictured to the left.

Furthermore, in the Ultimate game, a pane is superimposed over small games which

are finished. If they are won or lost, the piece which won is added. This is to make the board clearer. Such superposition is shown to the right.

Once the game is finished, a game over screen will be shown. This will display the player who won and some statistics about their previous games if they are a human. This screen also provides a message telling the user that they can restart by pressing any key. An example of a game over screen is down to the right.

The status bar at the bottom gives the user information about the current player and who is who. The right hand side is static and explains which piece belongs to which player. The left hand side changes depending on who is playing. If the computer is determining a move, it gives the message "Computer is thinking…"

Ultimate Tic-Tac-Toe Rules

If you do not already know the rules of the game Ultimate Tic-Tac-Toe, below is the an extract from the game's Wikipedia page explaining the rules:

> "Each small 3-by-3 tic-tac-toe board is referred to as a local board, and the larger 3-by-3 board is referred to as the global board.
> The game starts with X playing wherever he wants in any of the 81 empty spots. This move 'sends' his opponent to its relative location. For example, if X played in the middle of his local board, then O needs to play next in the local board in the middle of the global board. O can then play in any
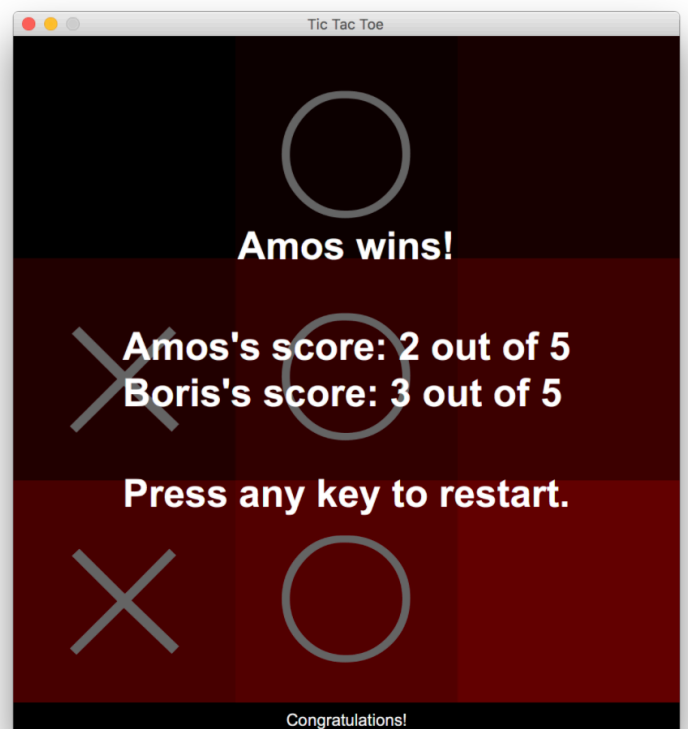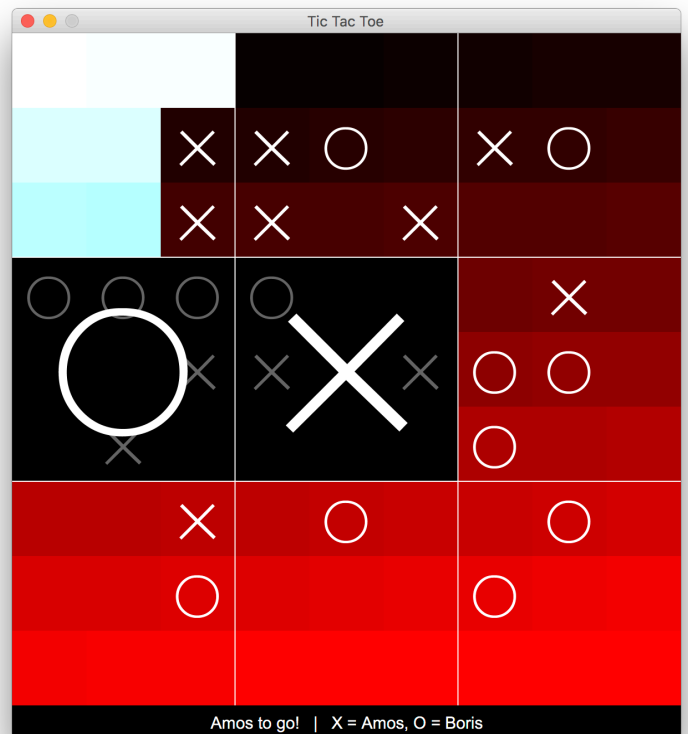
one of the nine available spots in the top-right local board, each move sending X to a different local board.

If a player is sent to an already completed local board (either won by either player or tied), then that player may play in any square in that board (as long as the move is legal).

If a move is played so that it is to win a local board by the rules of normal tic-tac-toe, then it wins that local board. Game play ends when either a player wins the global board, or there are no legal moves remaining."