

The Boring Game

The game that strictly adheres to the Assignments design specifications

How to Execute the Program

1. Move to the directory that contains the file build.xml
2. Enter the command “ant boring” (without quotation marks)
3. A Popup window will appear select one of the three options:
 - a. Selecting Create a Game start a game client and a server on your computer
 - b. Selecting Join a Game will start only the game client on your computer
 - c. Selecting Quit or clicking on the close button in on the window will terminate the program without starting a server or client.

Create a Game:

4. The server will run as a thread (in the background) and will print it's IP address to stdout.
5. You will now see a blank game board, and will be unable to begin the game until another player connects to your server. (Please see the Join a Game choice below for more information)
6. When another client successfully joins your game, the status bar at the bottom of the game board will change to reflect that it is now your turn to make a move.

Join a Game:

4. You will receive a second popup window that prompts you for the IP address of the server that you wish to connect to.
 - Take a look at the stdout stream on the computer that is running the server. It should contain a line that reads “My IP is : X”
 - Type in X (the full IP address) into the input box
 - Press OK
 - Pressing Cancel instead will terminate the program
5. If a server that is waiting for one more client is currently running at that IP address, You will now see a blank game board. The game can now begin. Your opponent makes the first move.

How to Play the Game

Unmarked (free) squares are white.

Your marked squares are blue, and your opponent's marked square are yellow.

The status bar will indicate what is currently happening in the game. It will display one of the following:

- Waiting for an opponent = you are waiting for another player to join and make a move
- Your turn to make a move = you may now select a square to place your mark
- Waiting for your opponent's move = It is now your opponents turn to place a mark
- You Win !!!
- You Lose ...
- Tie

The Creative Game

The version of the game that tastefully improves on the assignment's color scheme

How to Execute the Program

1. Move to the directory that contains the file build.xml
2. Enter the command "ant" (without quotation marks)
3. A Popup window will appear select one of the three options:
 - d. Selecting Create a Game start a game client and a server on your computer
 - e. Selecting Join a Game will start only the game client on your computer
 - f. Selecting Quit or clicking on the close button in on the window will terminate the program without starting a server or client.

Create a Game:

4. The server will run as a thread (in the background) and will print it's IP address to stdout.
5. You will now see a blank game board, and will be unable to begin the game until another player connects to your server. (Please see the Join a Game choice below for more information)
6. When another client successfully joins your game, the status bar at the bottom of the game board will change to reflect that it is now your turn to make a move.

Join a Game:

4. You will receive a second popup window that prompts you for the IP address of the server that you wish to connect to.
 - Take a look at the stdout stream on the computer that is running the server. It should contain a line that reads "My IP is : X"
 - Type in X (the full IP address) into the input box
 - Press OK
 - Pressing Cancel instead will terminate the program
5. If a server that is waiting for one more client is currently running at that IP address, You will now see a blank game board. The game can now begin. Your opponent makes the first move.

How to Play the Game

Backstory:

You are a cow living happily on a farm. One day, the farmer decides that he would really like to turn you into some nice juicy steaks. The only way to stay alive is to drive the farmer off his own farm. It is time to go to war, a TicTacToe war that is!

- Blank squares are grass
- Your marked squares contain an angry cow
- Your opponent's marked squares contain a man with a knife and fork

The status bar will indicate what is currently happening in the game. It will display one of the following:

- Waiting for an opponent = you are waiting for another player to join and make a move
- Your turn to make a move = you may now select a square to place your mark
- Waiting for your opponent's move = It is now your opponents turn to place a mark
- You Win !!!
- You Lose ...
- Tie

Functionality

Current Functionality

- The boring version of my program adheres to all of the assignment specifications.
- The creative version of my program changes only the design aspects of the spec to create a more immersive and fun experience
- You may only run one server on a computer at a time
- You may only have ONE game running per server
- Players alternate turns marking a game board
 - The GUI displays whose turn it currently is
- the players are informed when the game has been won / lost / is a tie
 - I chose not to terminate the game by using popup information dialog that says "you win" then kills the program because I find popups irritating.
 - Instead, I interpreted terminating the game as preventing the game from continuing, which I accomplish by removing the game grid
- The two clients may be run from either two different computers or the same computer if you so desire
- I have implemented some error handling. eg.
 - creating a dialog that terminates the "joining" client if they cannot connect to the server
 - Preventing the game from continuing if one client disconnects or the server dies

Augmentation Ideas

- Display if your partner has disconnected (eg. rage quit)
 - While it is very easy for the server to tell if a client has disconnected, it is quite difficult for the other client to know that their partner has disconnected. I started implementing a system by which a descriptive message is sent to the remaining client, but it is flawed at present and will require more time than I have to debug.
- Add more themes to the game!

- Allow users to dynamically change the appearance (theme) of their game.
 - I created a theme class to try to implement the strategy design method, but completely ran out of time. The theme is now static and cannot change after the program is run. Given more time I would like to make the theme changeable on the fly, given a top menu for example.
- Allow the server to accept more than one pair
 - I would like to find a way such that after accepting 2 clients, the server forks off another thread that just facilitates the game between those two, thus allowing more clients to connect
 - This really does not sound complex, It is just so far removed from what the assignment requirements were that I did not feel it was worthwhile to implement it given the time constraints

Known Bugs

- There is no way to tell if your partner disconnects
 - The game will still halt, but the message displayed is perpetually that you are waiting for your partner to make a move.
 - I tried to implement this feature and just did not have enough time to debug it.