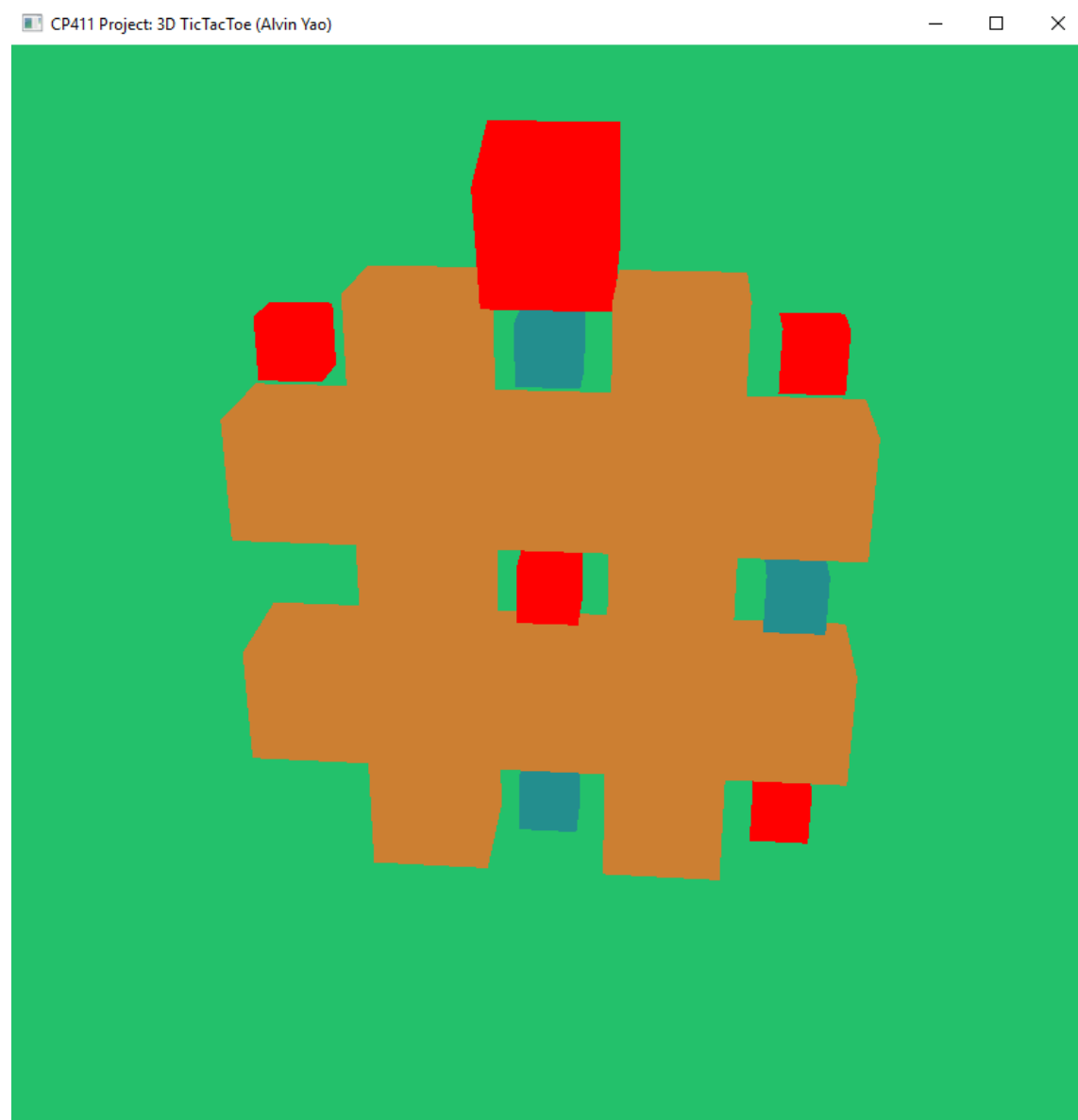3D TicTacToe

Project Documentation

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Description:

This project features a simple rock paper scissors game made in OpenGL using C++ using the glut library. Each player will take turns placing a piece using the keyboard controls on a 3x3 grid trying to complete a line of in a single direction. Each piece will be given a different colour based on the player. The player will see a ghost piece as their controller to determine which position they would like to place a piece. The ghost piece will change colours based on whichever player's turn it is. It will display red for player 1 and blue for player 2. Upon victory, the ghost piece will move to the top of the screen, taking on the colour of the winning team, and play a simple win animation and sound effect.

Features:

The TicTacToe game allows for features such as camera angle changes, such that you can view the board and pieces at a different angle. The lighting can also be changed to the players liking. Upon a tie, victory or at any point in the game, a player can reset the game using the menu generated upon right clicking. Additionally, the player can animate choose to enable the piece animations through a submenu in the main menu. The piece animation will make all game pieces spin at their own unique angle. Upon placing a successful piece, the game will play a sound effect. When the game is complete, the game will play a sound if a player has won. Lastly, the camera rotation will not effect the direction the arrow keys move the ghost piece.

```
Reset Game
Rotate Camera               ▶
Light Transformations       ▶
Animations                  ▶
Quit
```
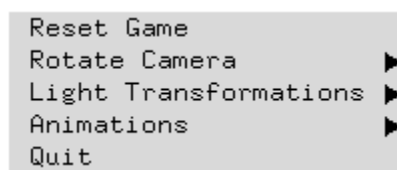
Controls:

The camera and lighting controls are accessed through mouse movement. If you would like to rotate or translate the camera, you would simply choose the option in the menu and then hold down the left mouse button while moving the mouse. The same can be done with the lighting options.

In order to play the game, a player can use the arrow keys to move the ghost piece around until they find a section of the board they would like to place a piece on. After they are satisfied with their selection, they can press the space bar in order to place a piece. The game system will not place a piece if there is an existing piece in that location. They will have unlimited attempts to place their piece until a place is placed into an empty square.

Upon reaching a tie in the game, the player will have to reset the game using the menu option in order to start a new game.