Research/Programming Project Proposal #2

Title: Heuristic Quarto Player

Quarto is a two player strategy board game. The board is a 4x4 of squares and there are 16 pieces which can be played. The pieces have 4 attributes:
- Color (Blue or Red)
- Shape (Square or Circle)
- Height (Tall or Short)
- Style (Solid or Hollow)

Each turn consists of choosing a piece to give to the opposing player who then must place it somewhere on the board. The game ends when a player places a piece which makes a line of 4 pieces all with one of the attributes being the same, for example all 4 are tall. If all of the pieces are played with no lines being made the game ends in a tie.

Quarto can be played heuristically, players can see the state of the board and recognize the plays that would put them in a better position to win the game.

This beginning of the project would entail the making of the board, creating a way to model the pieces, creating functionality to place the pieces on the board, and making a way to choose a piece to give to the other player.

There would be three players in this project, a human player providing input on the moves, a player who makes moves randomly, and a player who uses a set of rules to play the game heuristically.