

## User Manual

For our CSCI 205 final project we wanted to create a chess game implementation that models playing chess in real life. To solve this problem we plan on making a visual representation using javaFx, of a chess board and all the pieces that go along with it. In order to make this life like, when it is your in the game you should be able to select a piece and choose from the options presented to where you would like to move it to. To solve this we will follow a Model View Controller model. We will store all the rules and pieces of the game in the model. The visual representation will be done using a model, and the controller will deal with the interaction between the two.

To make this even more life-like we plan on allowing the user to select a 3d option, and view the program in a 3d mode. We will do this using 3d libraries and javaFX. We also wanted to allow for you to play over a network with someone else. Making it more life like in that you do not have to use the same mouse and computer to play. This we will use sockets and multithreading.

### Background/Motivation:

The game of chess is a test of mental superiority between two players. It requires strategic movement and advanced forward thinking. Each player in a game of chess, starting with the white team, gets to move a piece on the board based off of the pieces specific movement patterns. Important things to know is what it means to capture a piece and how checkmate works. Capturing a piece is when you move your piece to a position on the board where the opponents team occupies, the opponent's piece is removed from play. If any of your pieces have a potential move to capture the opponent's King, than that King is in checkmate. The opponent must make a

move to eliminate the threat on its King by capturing a piece, or by moving their King. If they are not able to do so, this is a checkmate, and the player who checkmate's the other wins. Each type of piece has specific movement. As shown below:

The Pawn - Can move 1 space forward ( can move 2 spaces forward on left turn), can only capture a piece by moving 1 space diagonally.

The Bishop- Can move in any diagonal direction until limits of the board.

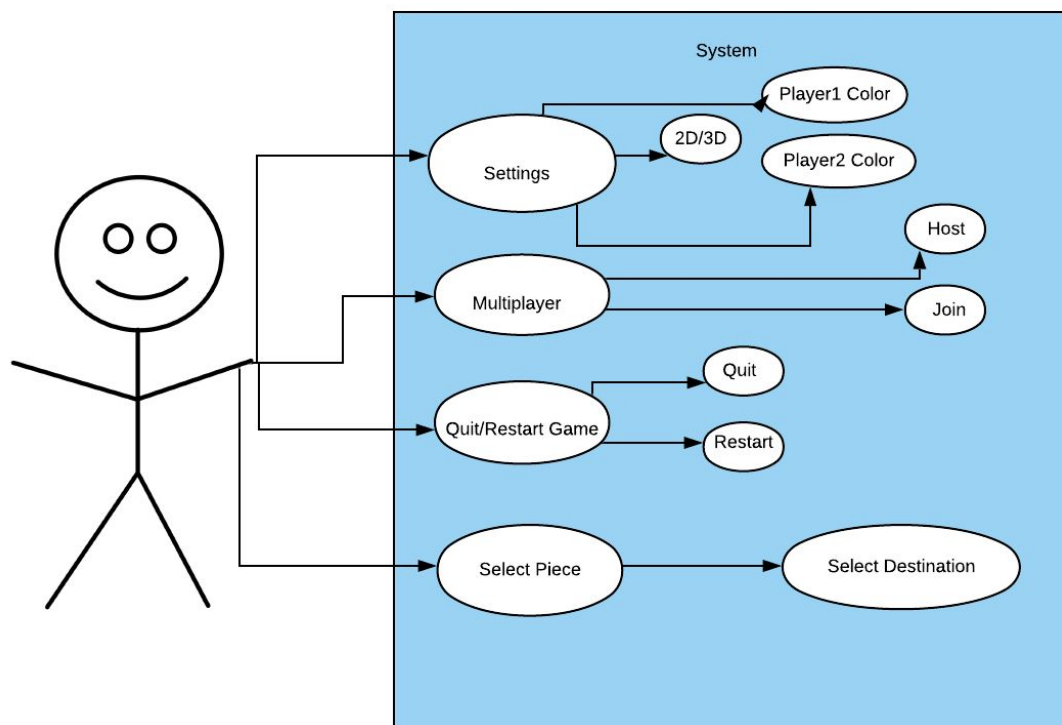
The Knight- Can move in L shape, ex. 2 forward 1 left, or 2 right 1 forward.

The Rook - Can move horizontally or vertically any amount of spaces until limits of board.

The Queen - Can move in any direction, any amount of spaces

The King - Can move in any direction, only one space

Not only do we allow the player to just play chess, we allow them to customize the visuals on the screen, either 2D or 3D, and the color of the pieces, we also allow them to initiate network play.



Our motivation for choosing this project was that we wanted a methodologically simple game like Chess, so that we could get the basics down and then have time to explore our interests with regards to computing. We did not want to get bogged down in complex games that are more difficult to implement, so that we could use the time to pursue things such as the 3D implementation and the Networking aspects.

### **Instructions:**

In order to play select one of the pieces at the bottom, and select a destination to move. After selecting a piece, potential squares you can move to will be highlighted in green. It is now the other teams turn, select one of the pieces that started at the top and choose where to move it. If playing with a friend on the same system you can take turns with the mouse, the goal is to capture your opponent's king. To play on a network one player must host and the other must join. See below "Multiplayer" instructions. After connecting, a message in the window will instruct if it is your turn or not. If you hosted, you are the top team, and the message should read, "Waiting...". Once your opponent makes a move it should automatically update on your screen, and you will see the instruction, "Your Turn...", it is now your turn to make a move, select one of the top pieces and choose where to move it to. Continue playing like this. If you joined a game, you should see a message saying, "Your Turn..", the user who joins the game is the bottom team, make your move and continue play as explained above

There are 3 Menu Bars in the top left of the screen, that display drop down menus when clicked.

- **Settings:**

View(2D/3D) - The check mark indicates the current viewing mode, user can click what view they would like to see.

Player 1 Piece Color - Controls the color of the pieces that started at the bottom, there are 9 colors to choose from, current color has a check mark.

Player 2 Piece Color - Controls the color of the pieces that started at the top, there are 9 colors to choose from, current color has check mark.

- **Multiplayer:**

Host a Game - Initiates networking functionality, will display the host's IP address, the user will have to get this information to the player who is joining. Select ok.

Join a Game - Initiates networking functionality, enter in the IP address of the host, you can receive this information when they select to host a game. Select ok.

- **Quit/Restart Game:**

Quit - Will end the program

Restart - Will reset all of the pieces on the board, return dead pieces, and uncheck any kings that were checked.

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