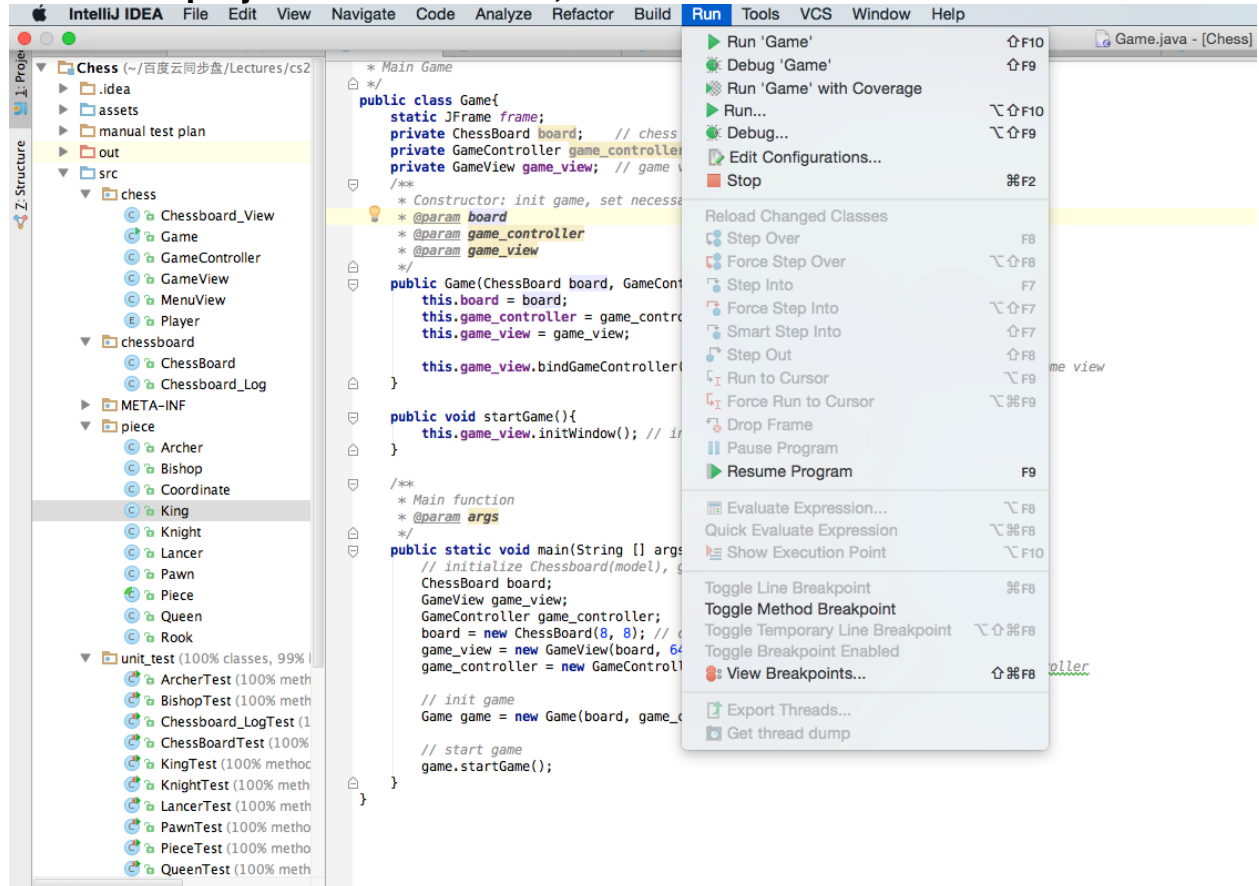# Manual Test Plan for CS242 Assignment 1

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1. **To run the project in IntelliJ IDEA, click "Run" then click "Run 'Game**
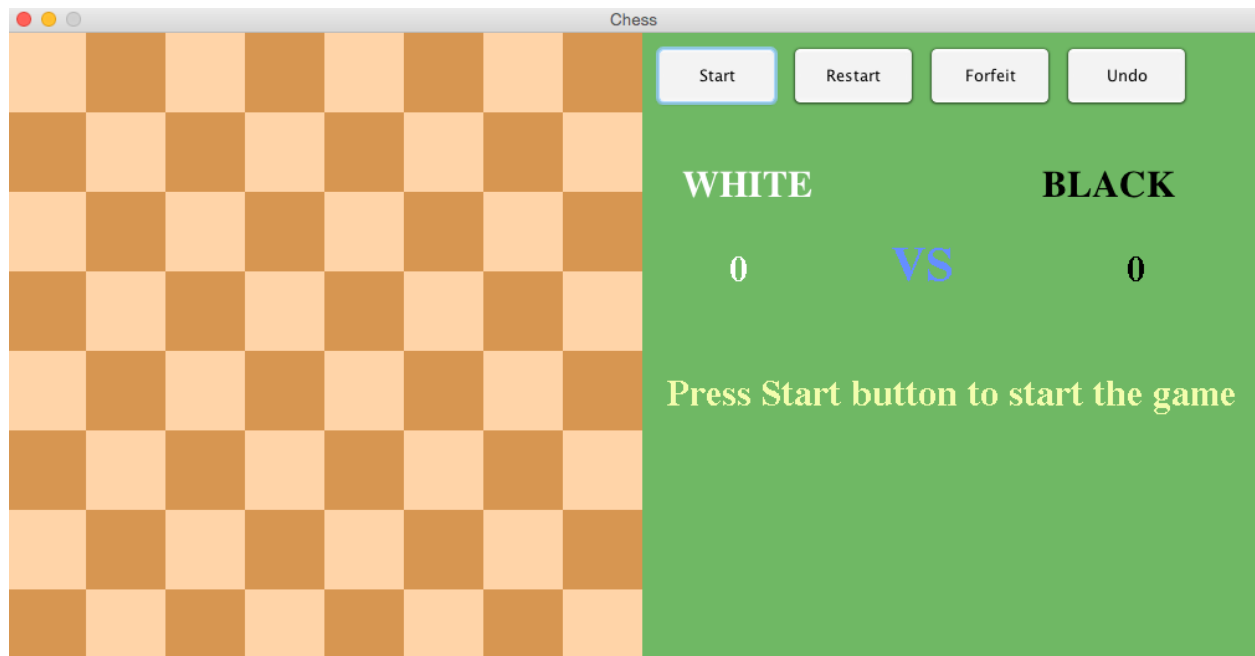
2. The starting page of the game should include:

    ii: Chessboard View
        a. the chessboard
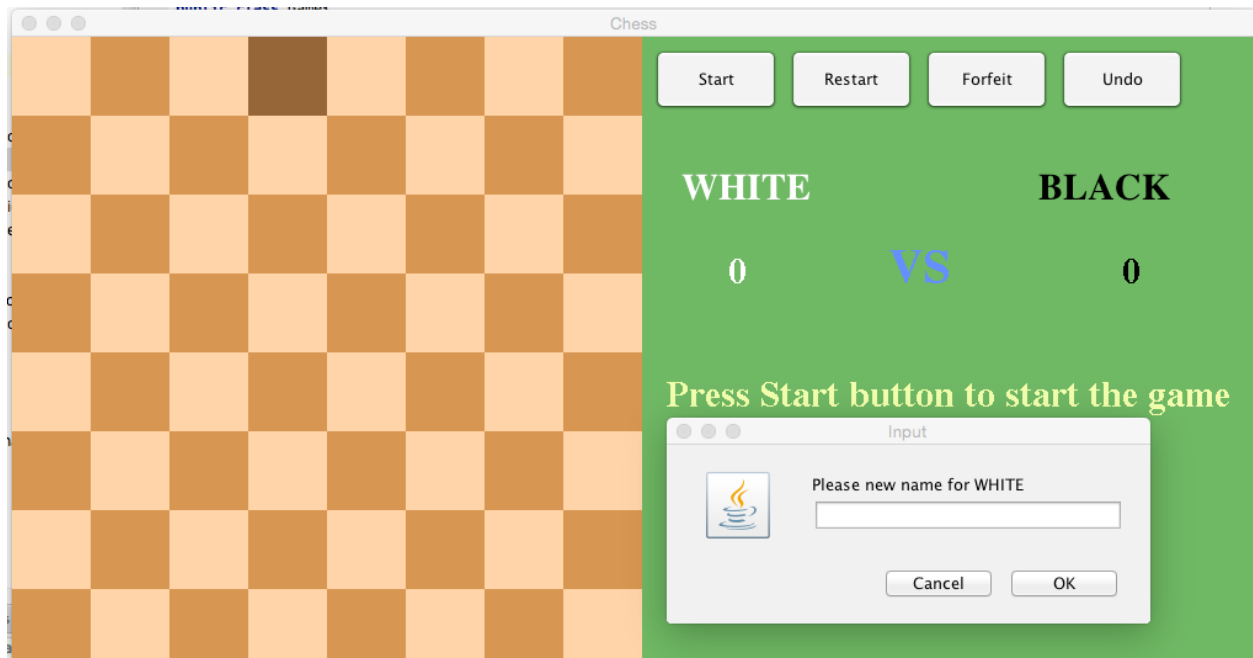   b. pieces (if the game begins)

    iii: Menu View
        a. Start Button
        b. Restart Button
        c. Forfeit Button
        d. Undo Button
        e. 2 Players' names
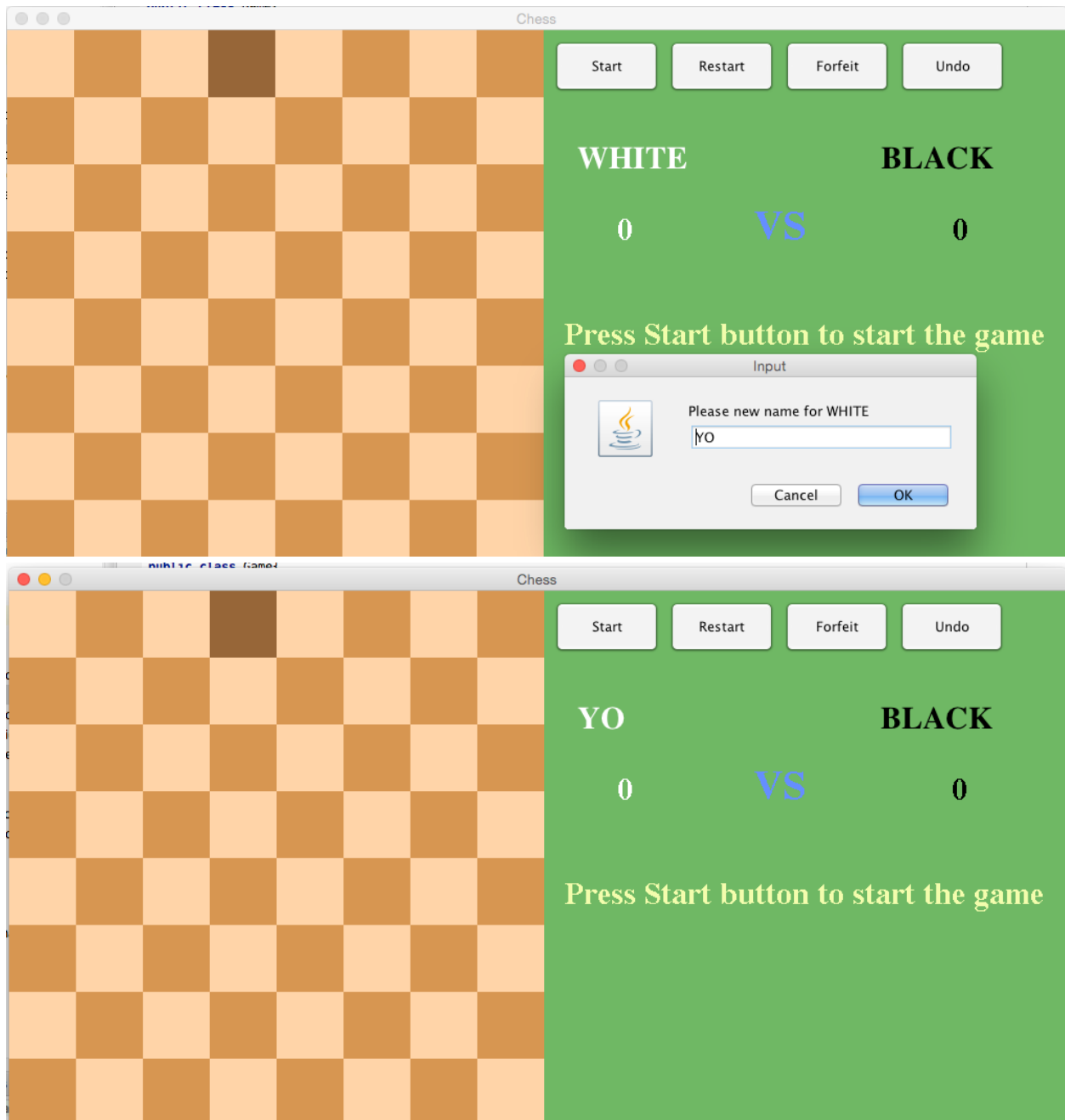   f. 2 Players' scores
        g. game message

3. The program should allow players to change their names

To change one player's name(below buttons), click their names in menu.
An input dialog should show up

Then enter new name in input, then click OK to confirm.
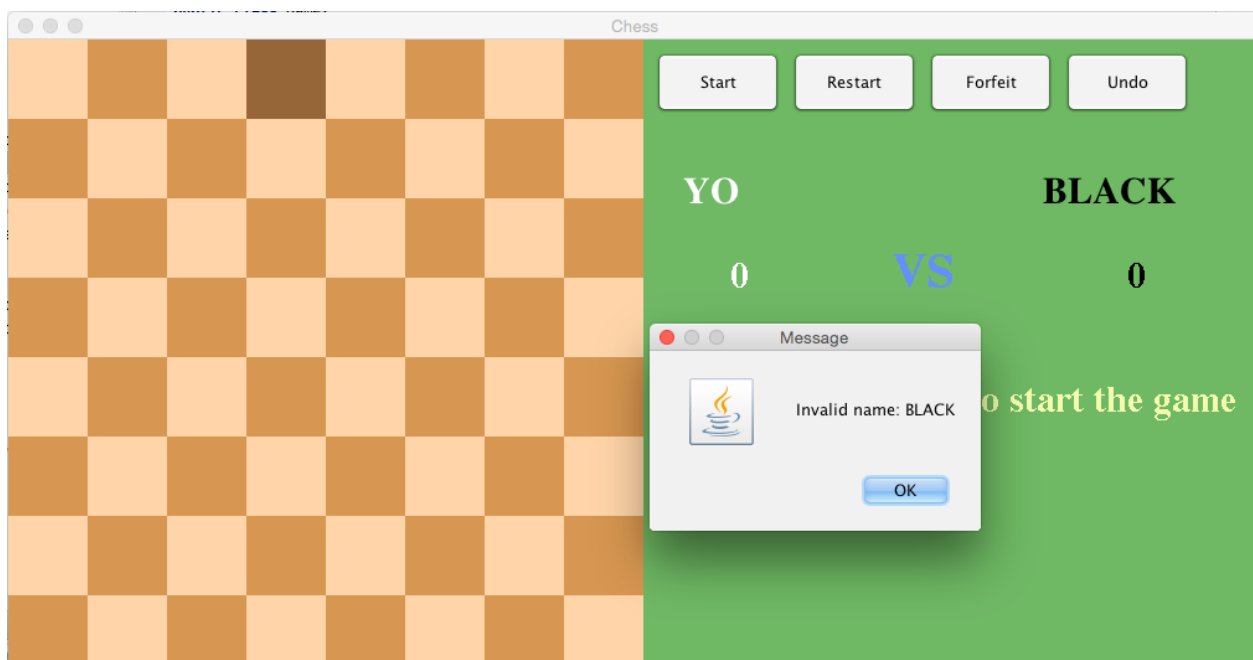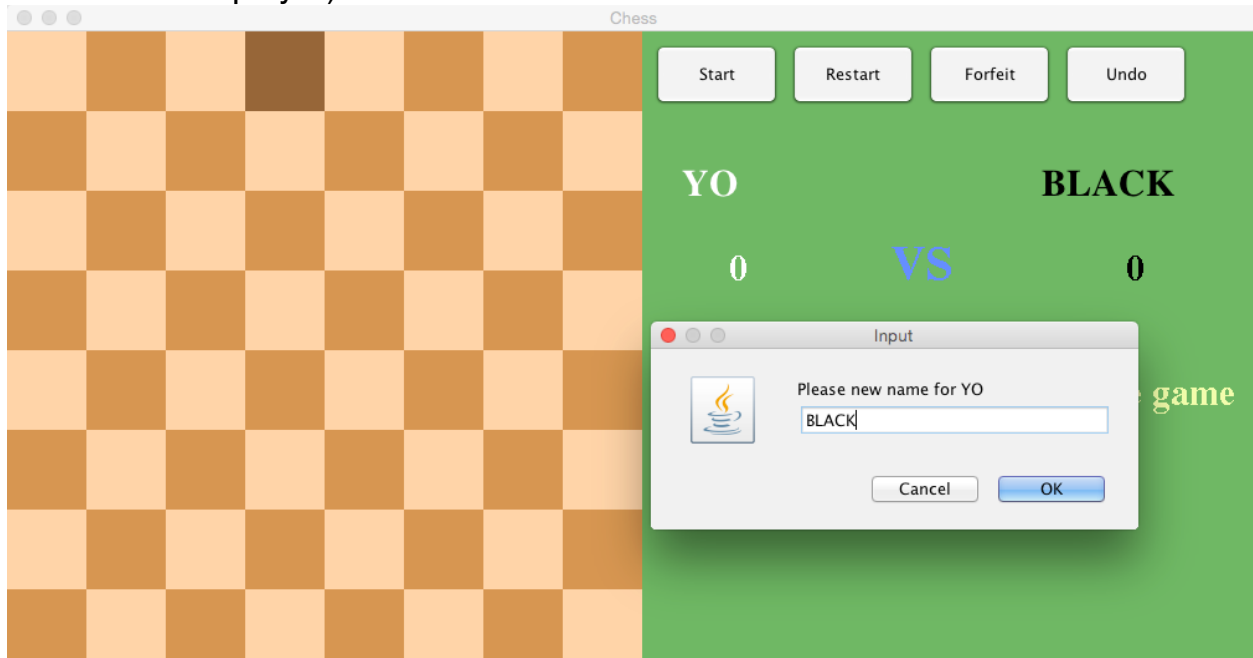And player's name should be updated.

If a player wants to get a new name that is the same as opponent's name, the error dialog should popup.

(In this case, WHITE color player wants to have name "BLACK", which is the name of black player)

Players should not be allowed to change their names if the chess game already starts.
In this case, an error dialog should popup.

4. the "Start" button

To start a new game, player can click the "Start" button.

Then player will be asked to choose a game mode.

If player chooses "Let me think..", nothing should happen; otherwise a new chessboard should be drawn, and the game will begin.
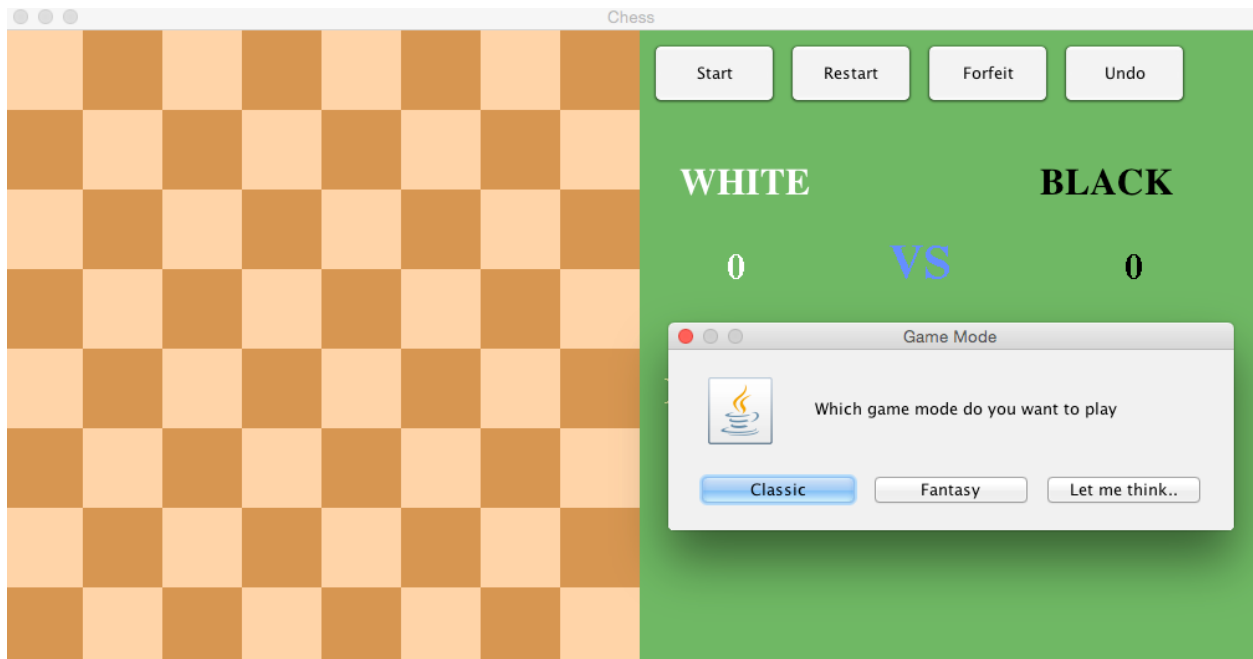
If the game is already started, and player clicks the "Start" button, then the error
dialog should popup

5. the "Restart" button

    Player can click the "Restart" button to restart the game.

    2 players will be asked to confirm the restart; if one of them disagree, the game will not restart.

Ask White Player

Ask Black Player

Choose restart game mode, and then restart the game.
If player chooses "Let me think" Option, nothing should happen, and the game
shouldn't restart.

If the game is not started yet, clicking "Restart" button should show up an error.
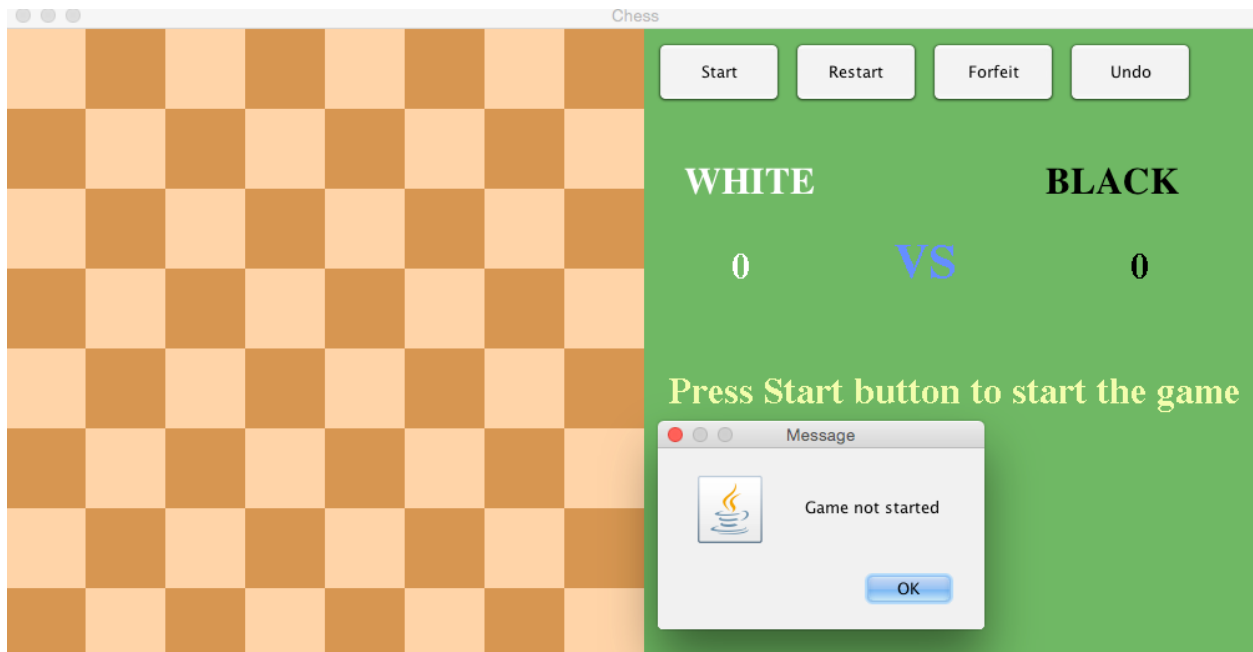
6. the "Forfeit" button

Player can click "Forfeit" button to give up the game.

If player confirm to abandon, opponent should get 1 more score. The game message should the message about winner.

If the game is not started yet, and the player clicks "Forfeit" button, an error message should show up.

7. Moving of each piece.
When player click his/her own piece, the chessboard should show all possible moves.

A possible capture move should be shown in red color.
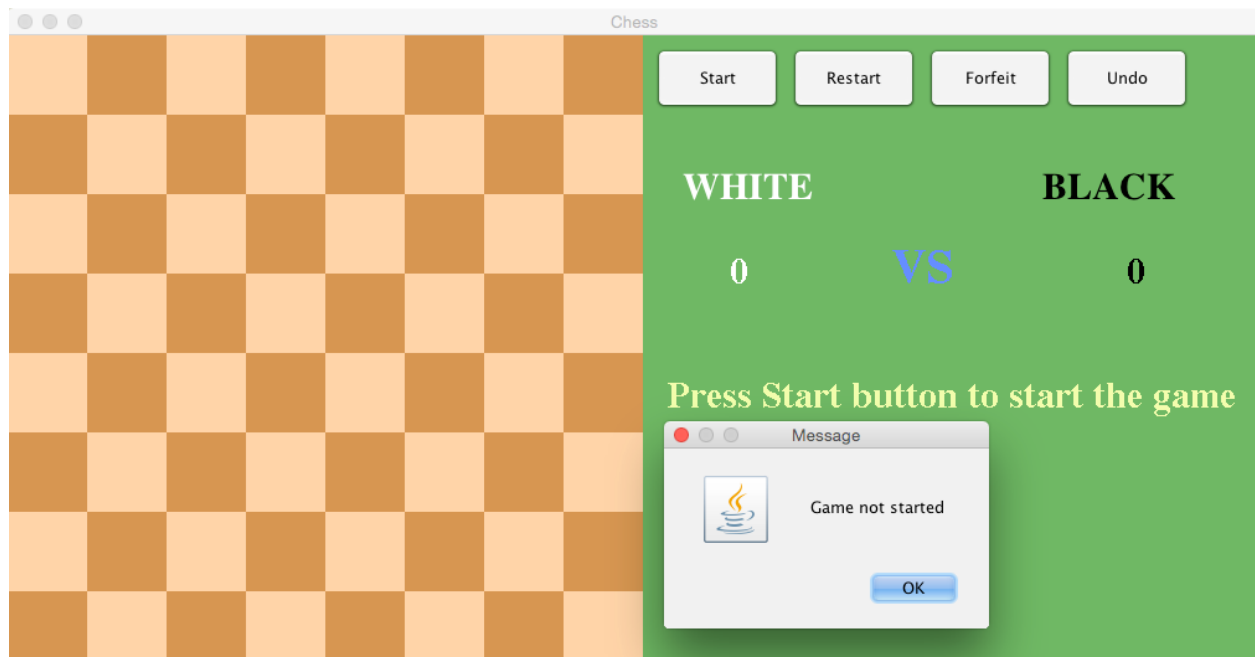A possible move to empty spot should be shown in purple color.
All illegal moves should be prevented and not shown on chessboard.

eg:
Pawn:

```
*        @              X @ X           @: possible moves
*     X @ X                P            P: pawn
*        P                              X: opponent's pieces.
*
```

If it is pawn's first time to move, pawn should be allowed to move 2 spots forwards.

If it is not pawn's first time to move, pawn should be allowed to only move one spot ahead.

Pawn should be allowed to captures enemy's piece on its top left or top right diagonal spot. The possible capture move should be shown in red color.

Bishop:

Bishop should be allowed to move diagonally.
A possible capture move should be shown in red color.
A possible move to empty spot should be shown in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*        @              @
*         @           @
*          @        @
*            @     @
*              @ @
*               P
*             @ @
*           @    @
*         @         @
*       @              @
```

P: bishop
@: possible moves

Knight:

Knight should be able to move L shape.
A possible capture move should be marked in red color.
A possible move to empty spot should be marked in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*               @       @
*       @                       @       P: knight
*               P                       @: possible moves
*       @                       @
*               @       @
```

Rook:

Rook should be able to move horizontally or vertically.
A possible capture move should be marked in red color.
A possible move to empty spot should be marked in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*               @
*               @               P: rook
*               @               @: possible moves
*       @ @ @ P @ @ @
*               @
*               @
*               @
```

Queen:

Queen should be moving both diagonally and straight.
A possible capture move should be marked in red color.
A possible move to empty spot should be marked in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*           @   @       @
*             @   @   @          P: queen
*               @ @ @            @: possible moves
*           @ @ P @ @
*               @ @ @
*             @   @   @
*           @       @       @
```

King:

King should be able to move straight and diagonally by one step
A possible capture move should be marked in red color.
A possible move to empty spot should be marked in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*                        P: king
*                        @: possible moves
*        @ @ @
*        @ P @
*        @ @ @
```


In this case, king **cannot** move to right-bottom spot, as this is a illegal and
suicide move. If king moved there, the black knight would capture it. So this kind
of illegal move should not be shown on chessboard.

Archer:

Archer should be able to move one step top, down, left or right, and has a high range attack area.
A possible capture move should be marked in red color.
A possible move to empty spot should be marked in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*
*          # # #                    #: is enemy, attack area
*        #   @   #                  @: is possible move area
*        # @ P @ #                  P: archer
*        #   @   #
*          # # #
```

Lancer:

Lancer should be able to move in triangular shape.
A possible capture move should be marked in red color.
A possible move to empty spot should be marked in purple color.
All illegal moves should be prevented and not shown on chessboard.

```
*                 #
*              # # #
*           # # p # #              #: possible moves
*                                  P: lancer
```

Prevent illegal/suicide move.

In this case, the selected black pawn is not allowed to move, because the black king is in check. if we move the selected black pawn, next turn the white queen can capture that black king.

In this case, the selected black queen can only go right or top right to protect the black king, or go right bottom to capture enemy's white queen. The black queen is not allowed to move anywhere else. All illegal moves are prevented.
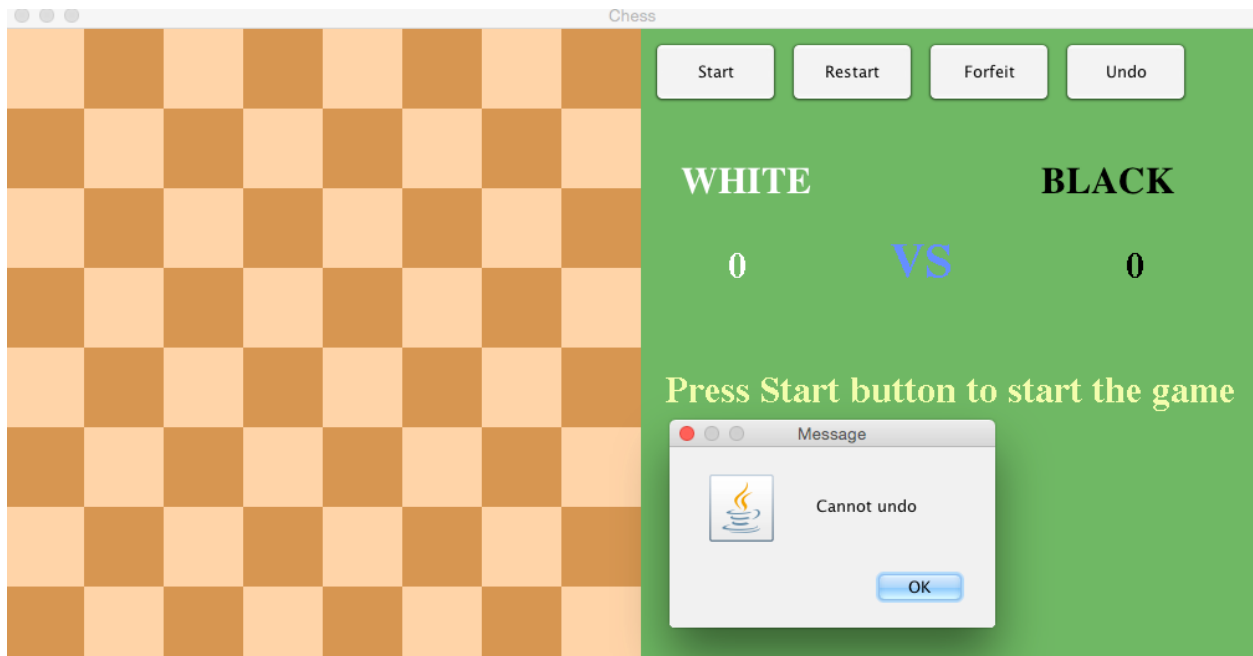
8. Undo

"Undo" button can undo a series of actions
Player can click "Undo" button to undo last action.

a. If the game is not started yet, clicking "Undo" button should popup an error message.

b. If there is **no** undo history, clicking "Undo" button should popup an error message.
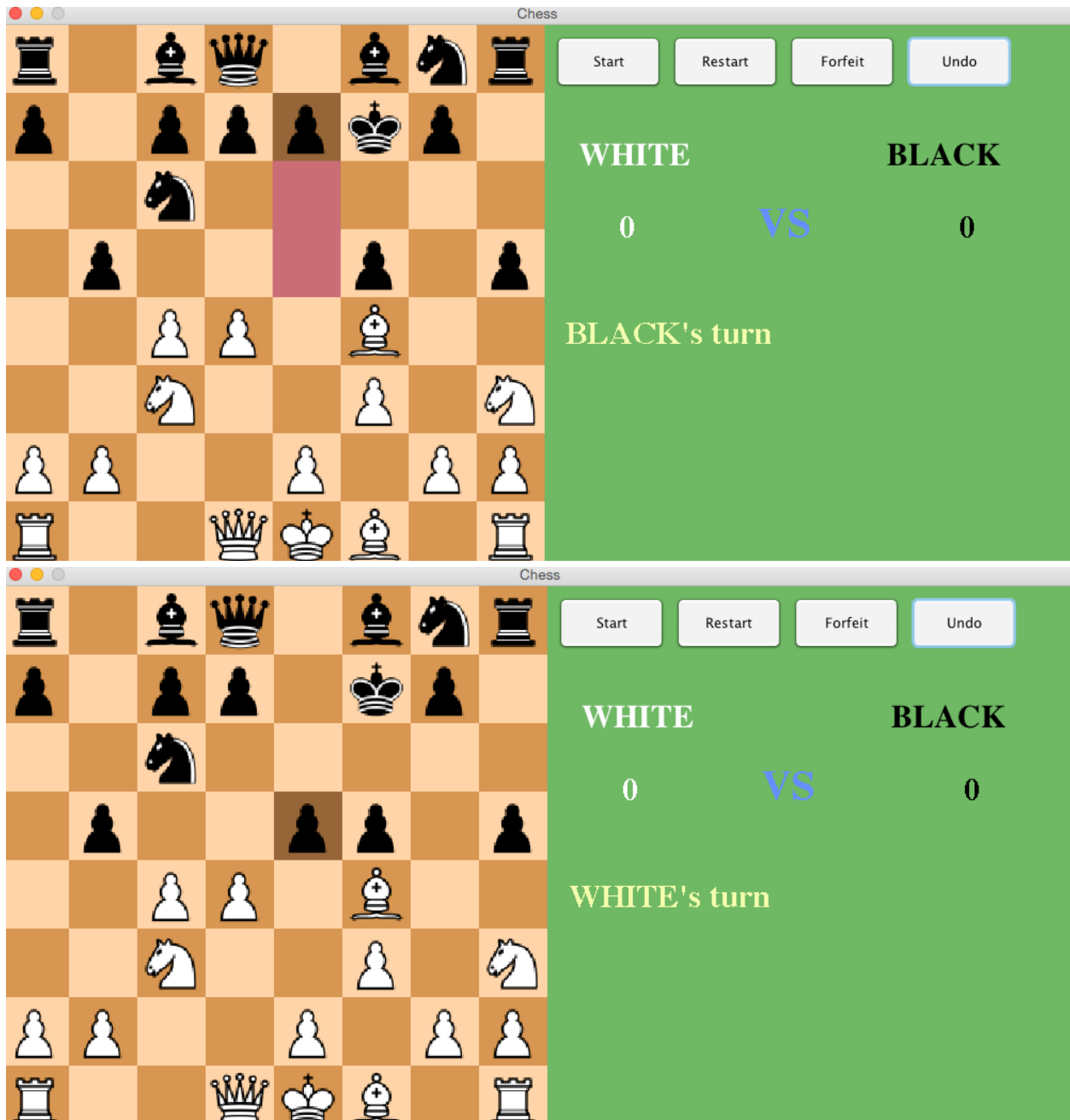
      eg: in this case, the game just started, and there was no move occurred yet, so we couldn't undo.
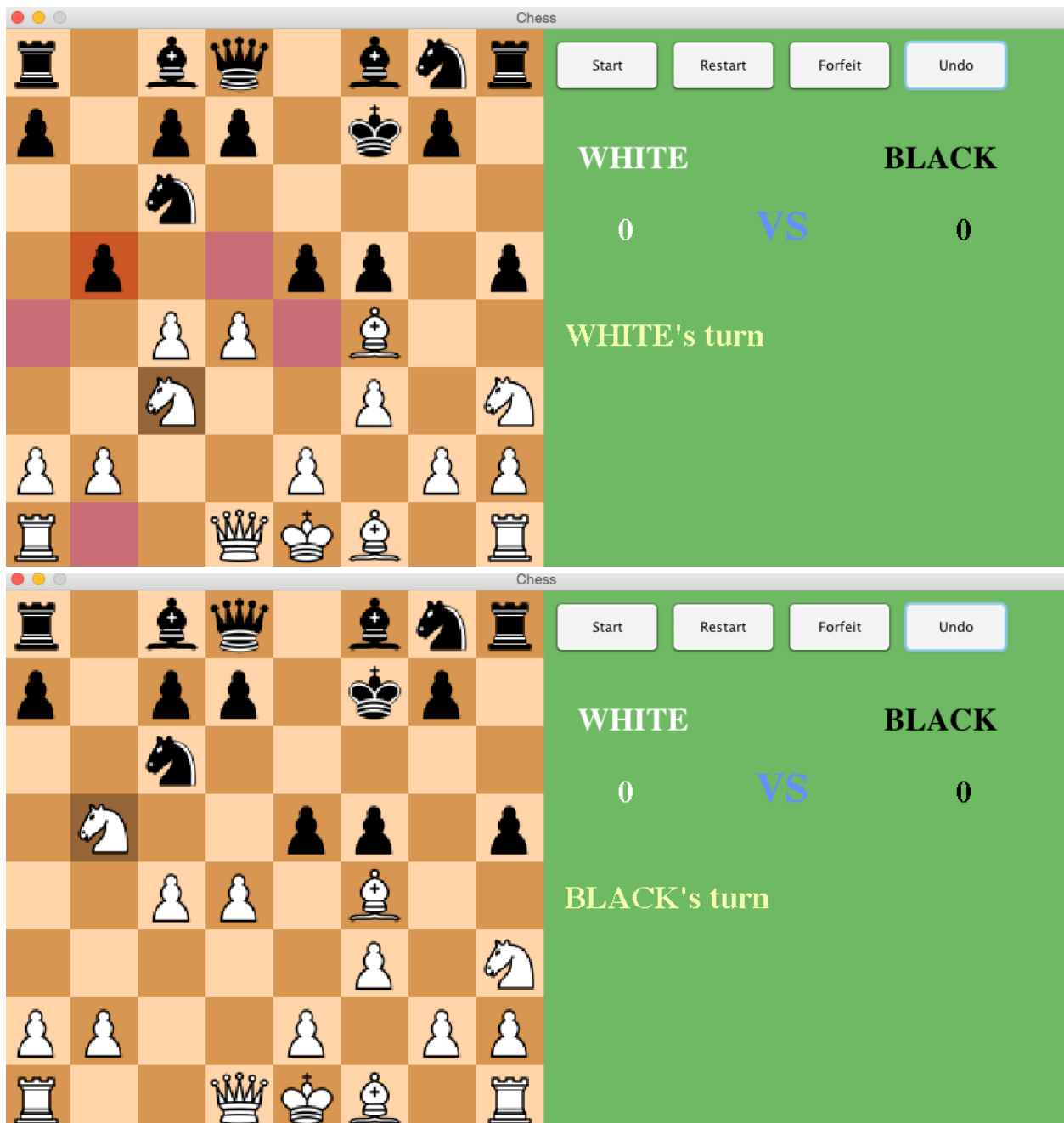
c. undo last move
    eg:
    now I move the selected black pawn one stop forwards:

Then I move the selected white knight to capture the pawn.

Next, I clicked the "**Undo**" button, the captured black pawn was restored, and the knight was put back to its original spot.

I clicked "**Undo**" button again, the black pawn that I just moved was put back.

9. Game Message

a. Game message should show "Have fun" and whose turn to play when new game starts.

b. Game message should show right now whose turn to play.
eg: picture below shows it is WHITE's turn to move.

c. Game message should show warnings when the king is in **check**.
eg: picture below shows that WHITE's king is in check by black pawn.

d. When **checkmate** happened, the game should be paused(stopped), and the game message should show who is the winner. The winner should get 1 more score.
Also, when checkmate happened, "Restart", "Forfeit", "Undo" buttons should not be working, because the game is already over.
Player can click "Start" button to start a new game

e. When **stalemate** happened, the game should be paused(stopped), and the game message should show "Stalemate". Nobody should get score.

Also, when stalemate happened, "Restart", "Forfeit", "Undo" buttons should not be working, because the game is already over.

Player can click "Start" button to start a new game

In this case, WHITE player already won one game before the stalemate(so score is 1:0), and now the stalemate happened, both players didn't get score(so score now is still 1:0).