Chess Library
Final GUI Test Plan

—

Sanchay Javeria

21st September, 2016

To run the program, go to src > MVC > game.java > click 'run' on top bar of the IDE.

Chessboard (static GUI)

1. Instructions to test the static board GUI:

   0) Find the class chessBoardGUI.java in the package View, it has a main method, running that should produce the board.
   1) The initial board setup should look like the image below.
   2) All pieces can handle mouse events, hovering over a piece would highlight it with a yellow background, clicking on it would instead highlight it with a green border.
   3) All pieces (squares) are JPanels laid on top of the board which is itself a JPanel. Both these components sit on top of a JFrame window.

2. Image:
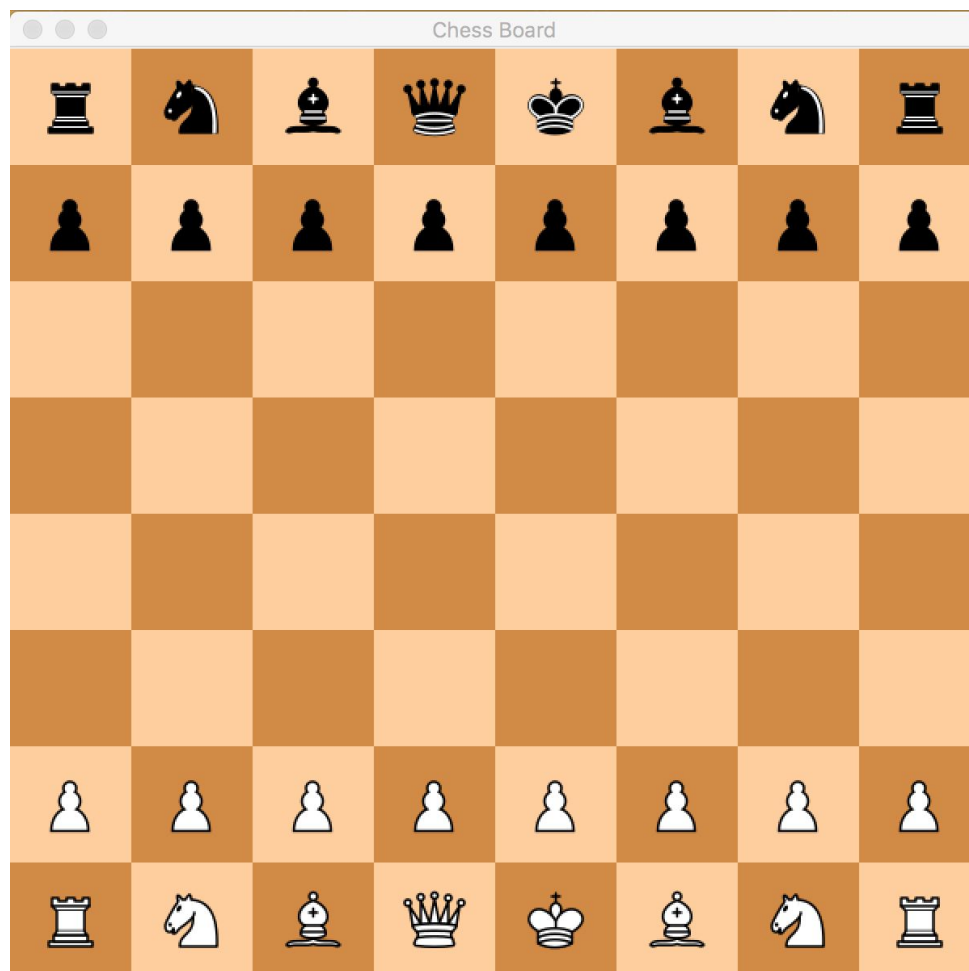
Start/restart/forfeit a game -

- ● A player is allowed to forfeit a game at any point in time

    - ● The game window has a JMenuBar on top, the first JMenu entry is 'Options'. There should be a JMenuItem called 'Forfeit' in it. Clicking on it would allow a user to forfeit the game. It'll look like the picture below.
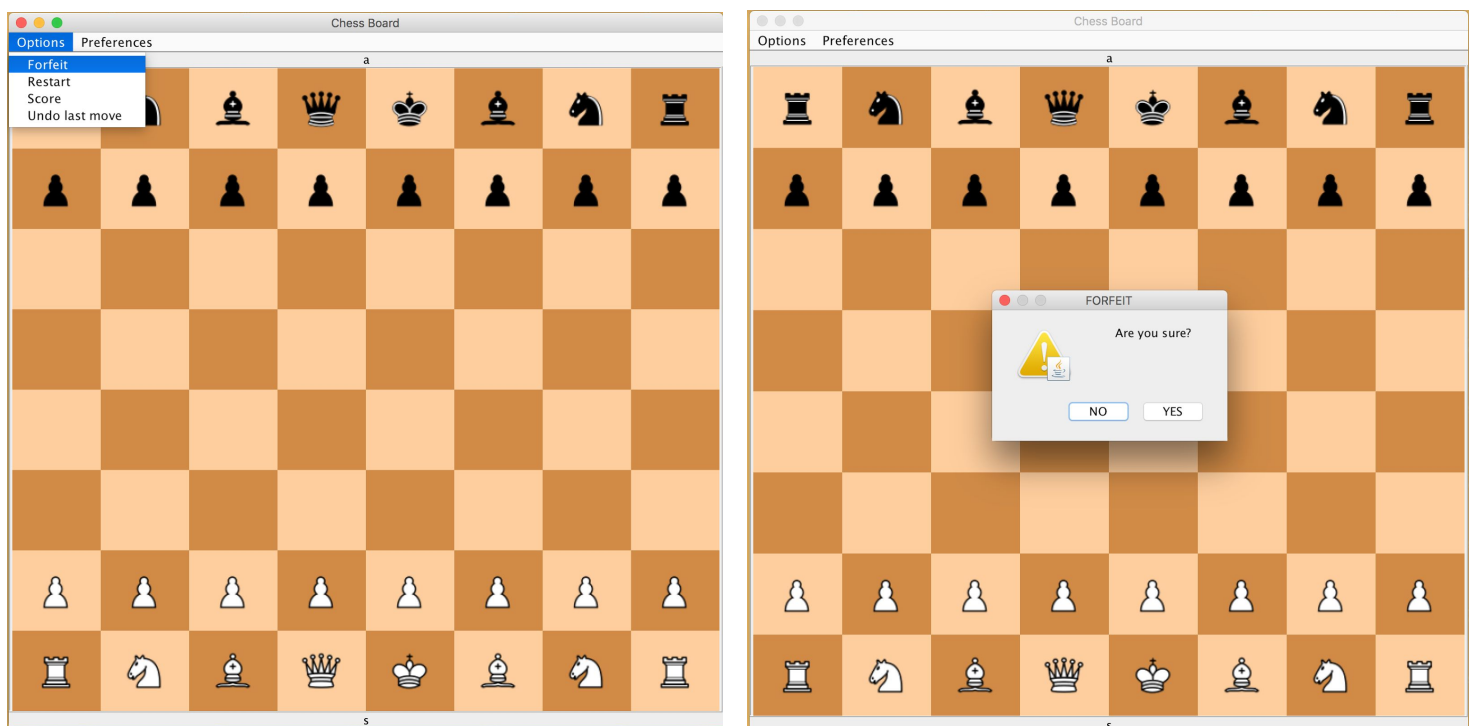

- ● If both players agree, they can restart a game and the score will be tied

    - ● In the same 'Options' Menu, selecting the option 'restart' would restart the game provided the other player (the one who hasn't chosen the option) agrees to it. It should look like the below images.
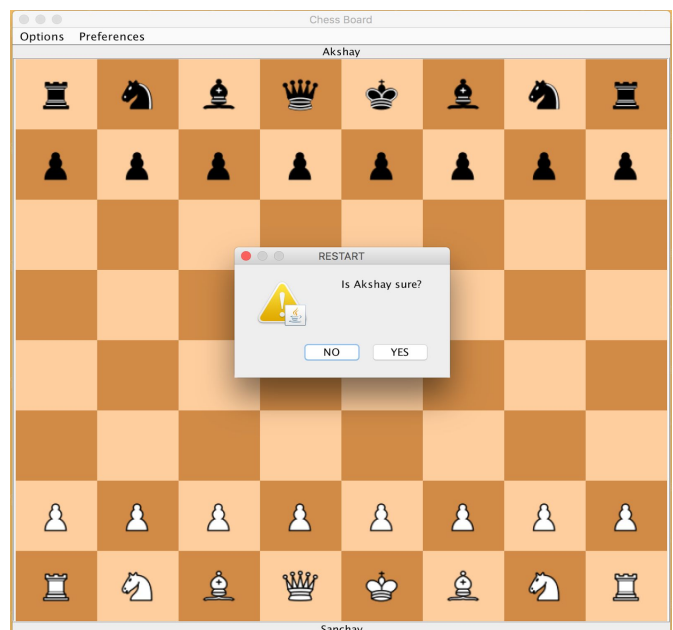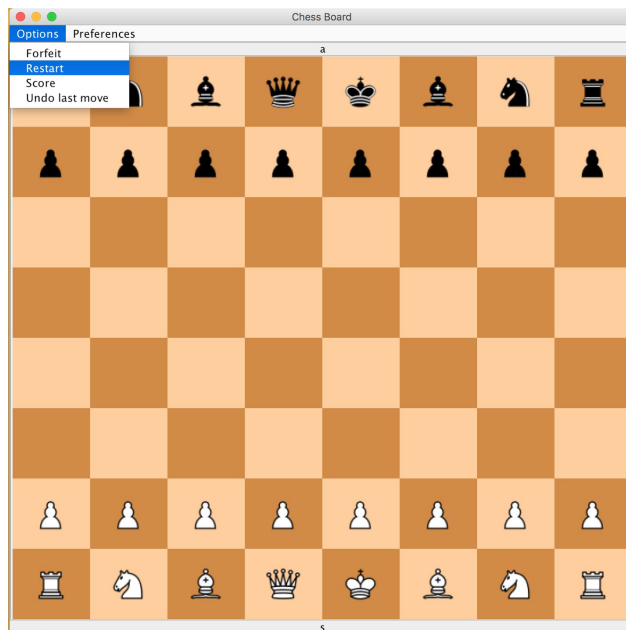
● Each player should be given a unique name

- ● At the start of the game, a JOptionPane pops up which asks players to enter their names in the order of player 1 (white pieces) and player 2 (black pieces). Player 2 cannot enter a name which player 1 has already taken nor can any player enter the fields blank.
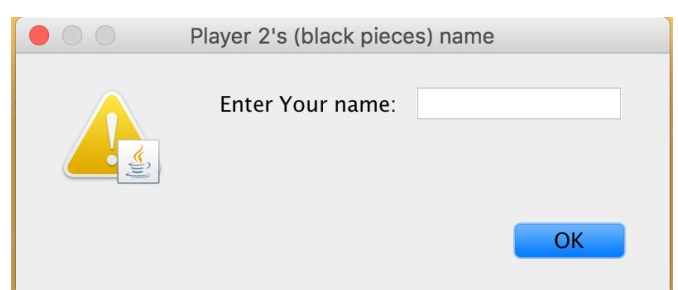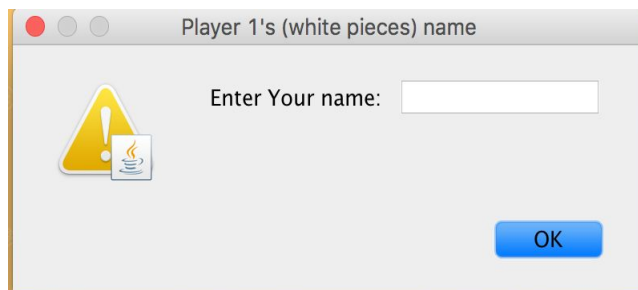
- ## Scores are recorded if a pair of players play several games

- If players restart a game/forfeit then on the next round their respective scores will be visible. Go to 'options' and click on 'Scores' to view the player scores.
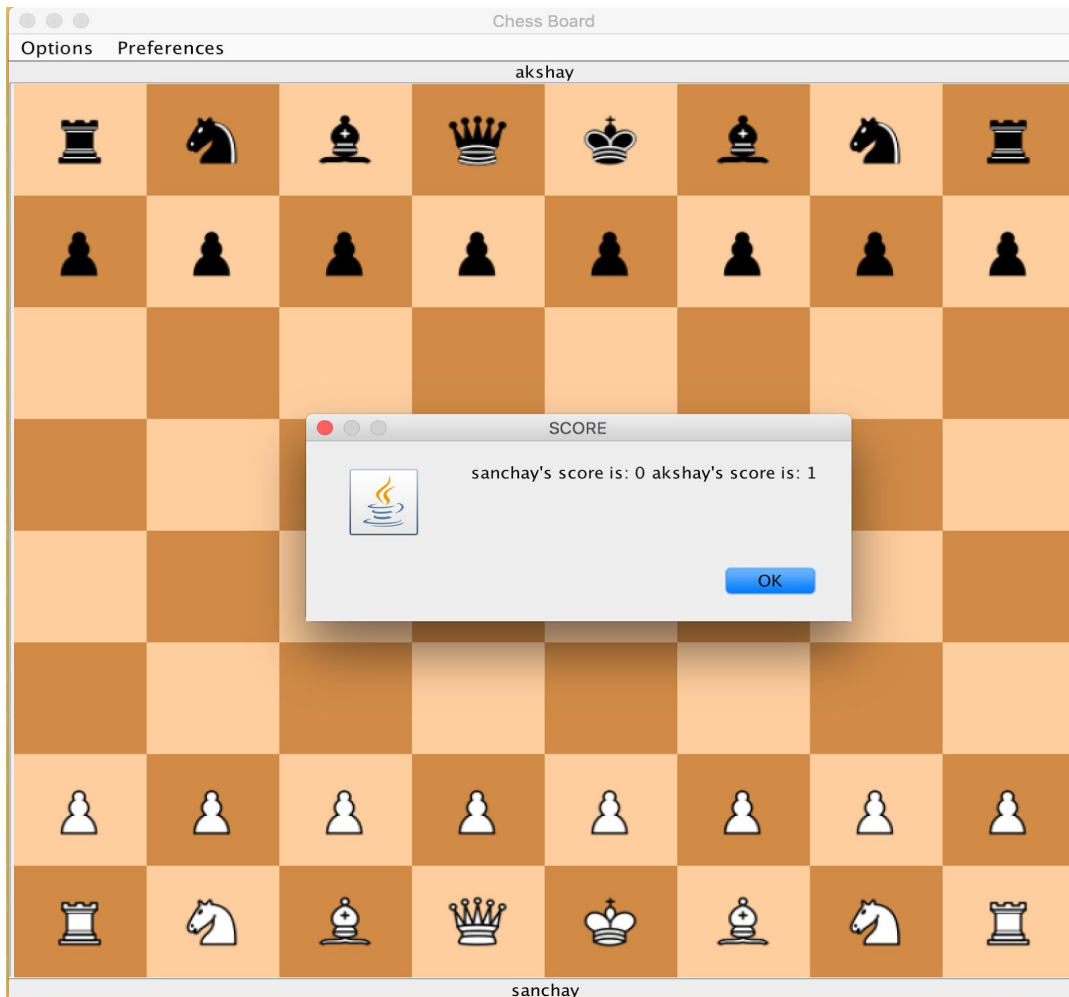
Move a piece -
- ## A player can only move his piece, not the opponent's

- Player 1 (white pieces) always starts the game. If he tries to move a black piece or vice-versa, they'll get an error as below. (The image was produced when Sanchay (me - player 1) tried to move a black piece.
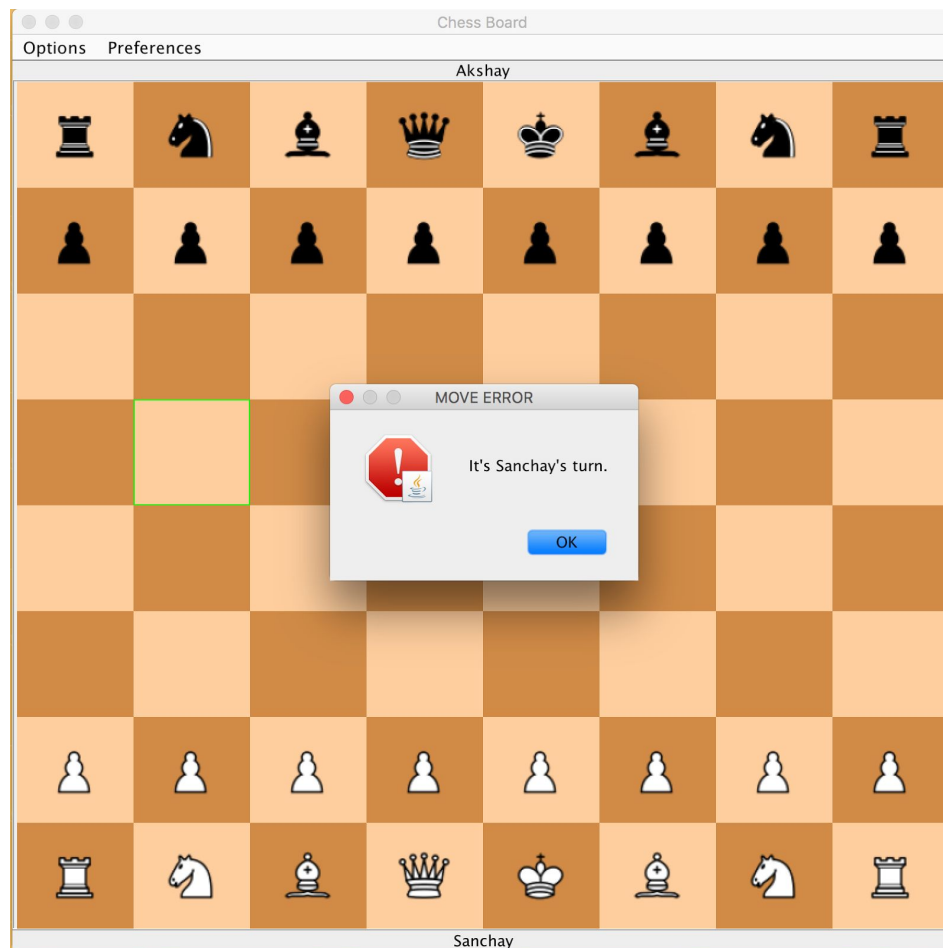
- ## Illegal moves must not be allowed, and a player doesn't lose their turn on doing so

  - All illegal moves will give a visual feedback and turns will not be lost. See below:

This image was produced by trying to move a pawn on (1, 1) to diagonally (2, 2) [NOTE: origin (0, 0) is bottom left of the board]
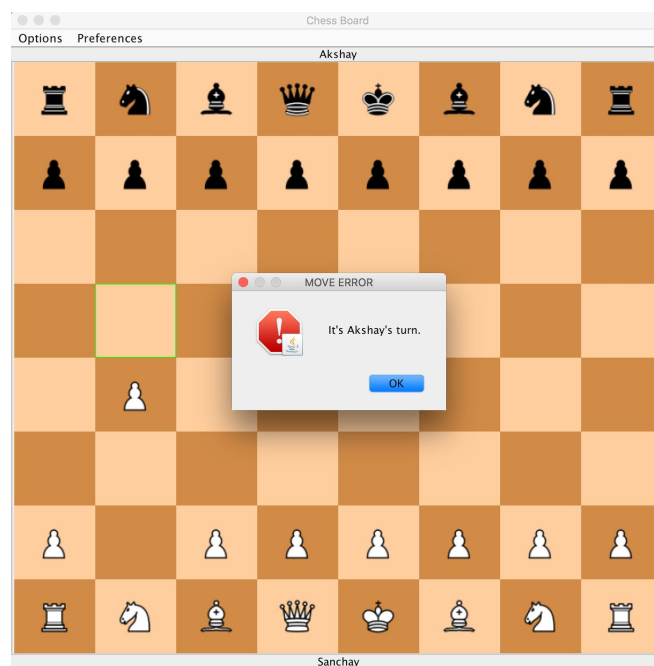
However, on the right hand side image, moving the same pawn two steps forward is valid. (turn is not lost).
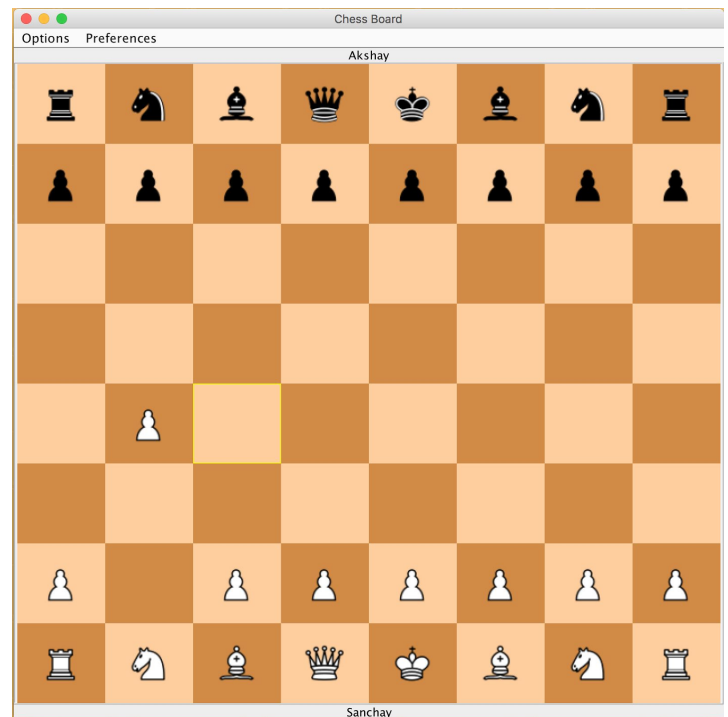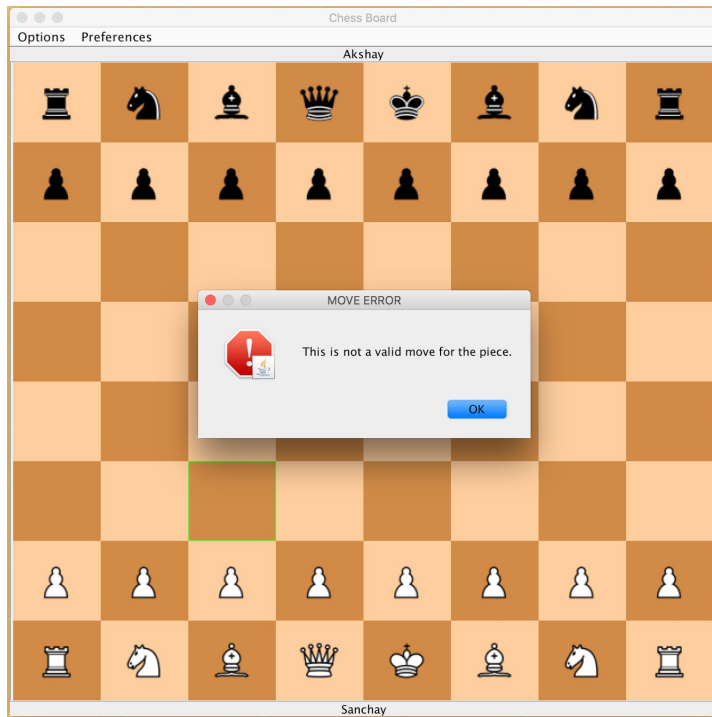
● Turns must alternate

- ● Turns always alternate. If a player tries to move same color piece twice, he'll get an error.

I moved the pawn two steps forward from (1, 1) to (3, 1) then tried to move it a step forward to (4, 1) [see green highlight on that tile] and an error was produced.
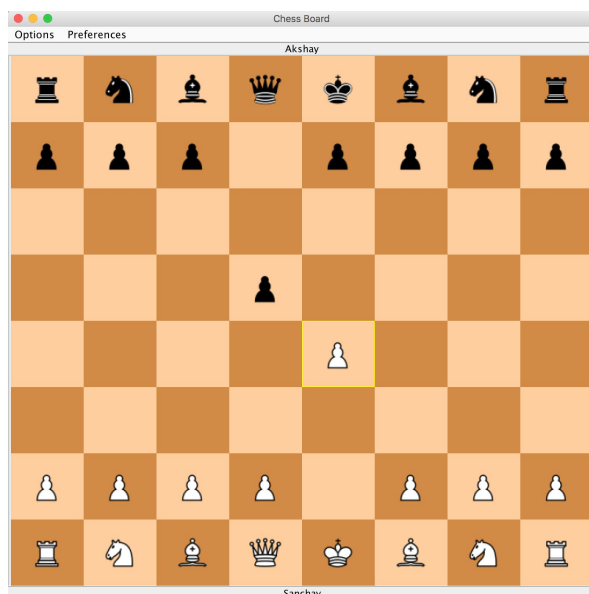
- Check, checkmate, illegal moves should provide a visual feedback to players
- A <u>check</u> stimulation is as under: I'm including images of all the moves made such that it gives an idea of the piece movement:
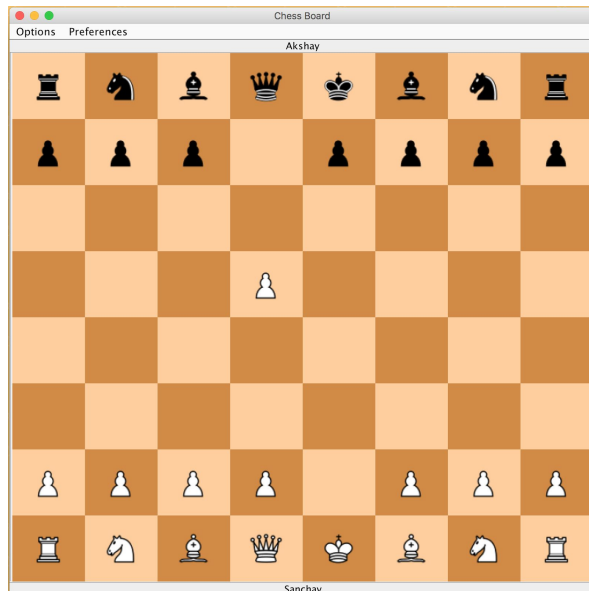
Move white pawn (1, 4) to (3, 4).
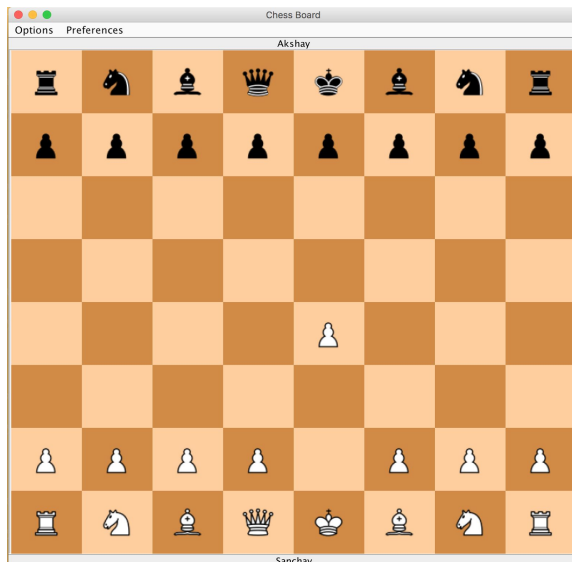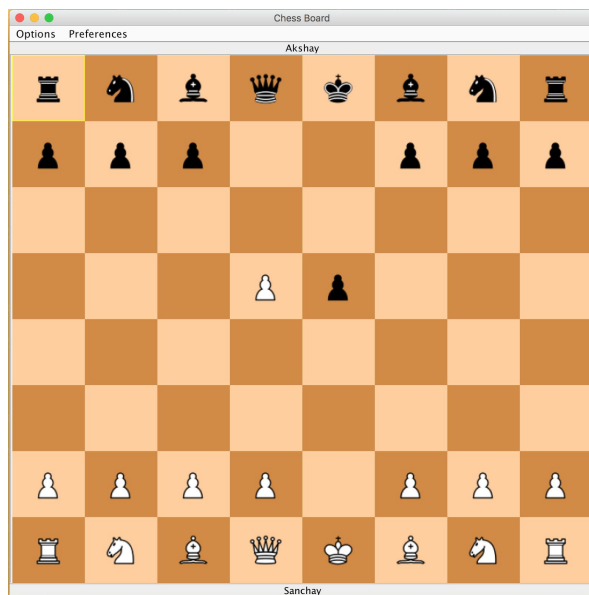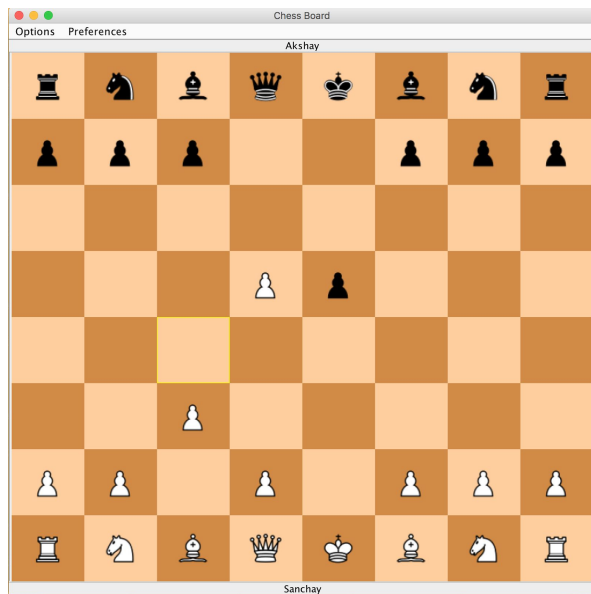

Move black pawn (6, 3) to (4, 3).

Kill the black pawn at (4, 3) with white pawn at (3, 4).
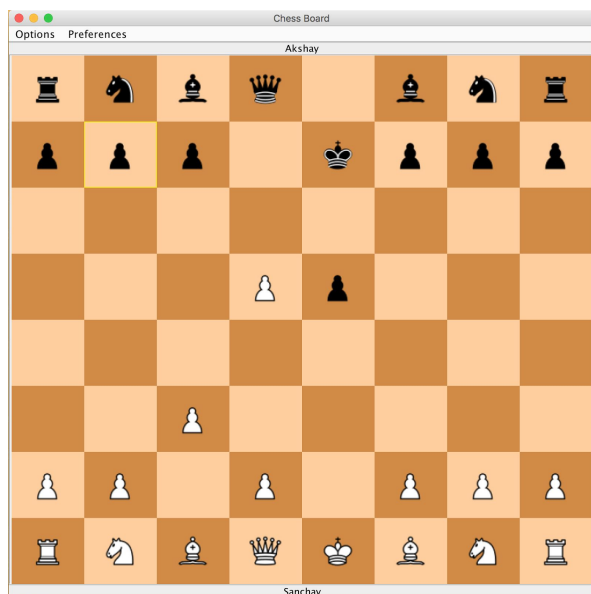

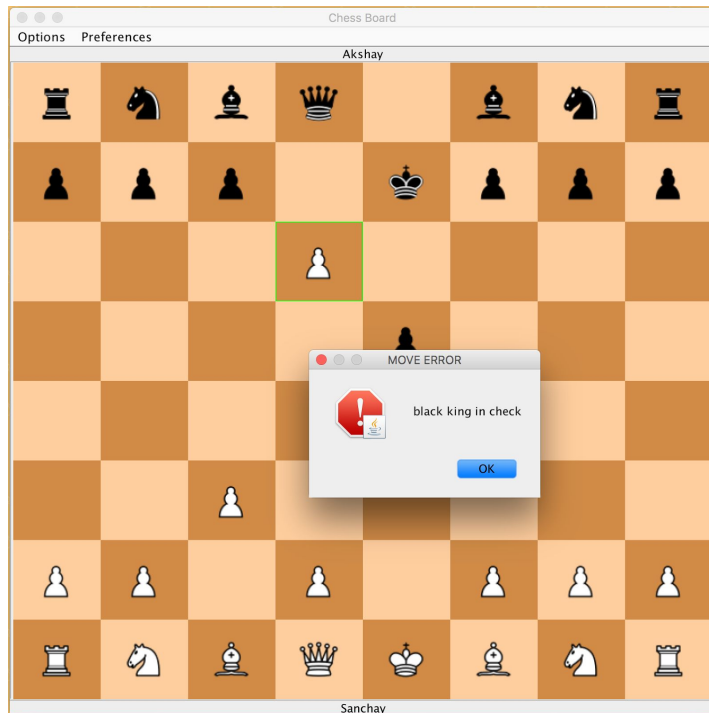Move black pawn at (6, 4) to (4, 4).
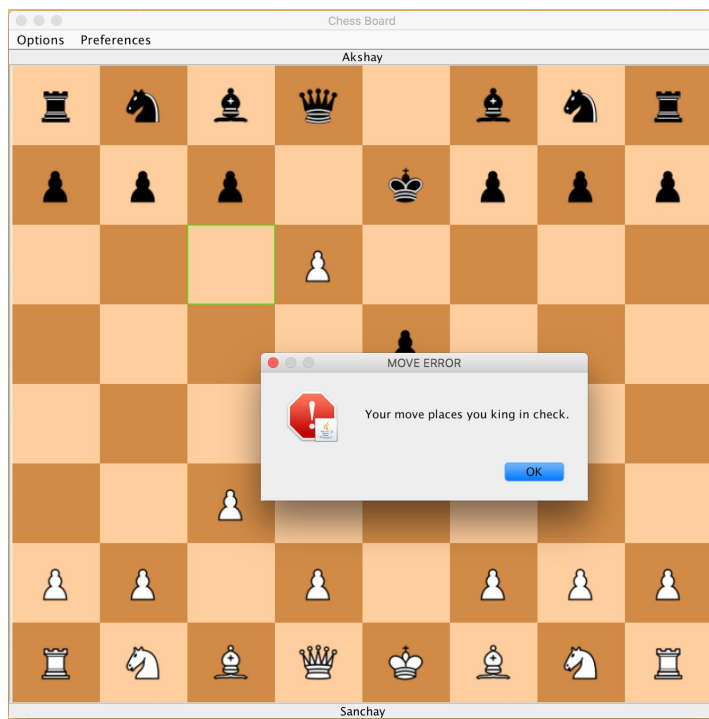

Move white pawn at (1, 2) to (2, 2).

Move black king from (7, 4) to (6, 4).

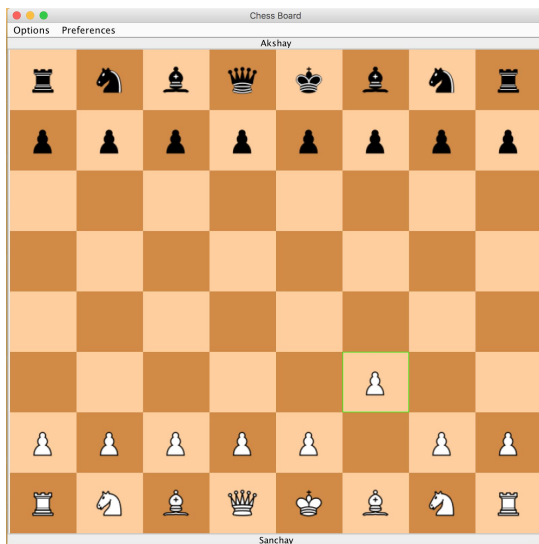Now, move white pawn at (4, 3) to (5, 3) and hence we have a check!

Furthermore, in the next turn a black piece cannot be moved if the king remains in check (invalid move). So, the player has to move the king itself.
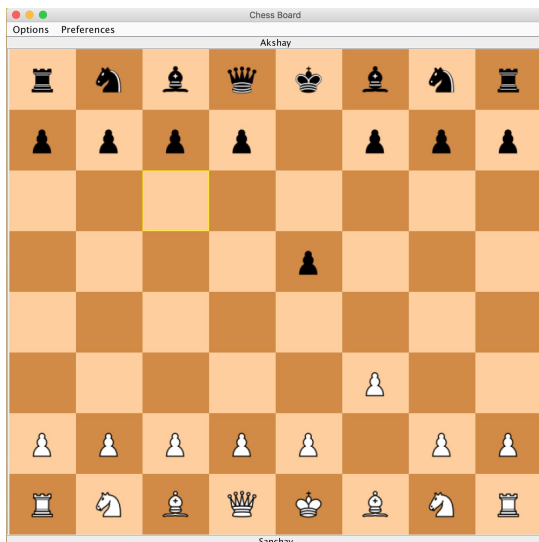
- A <u>checkmate</u> stimulation is as under: I'm including images of all the moves made such that it gives an idea of the piece movement:
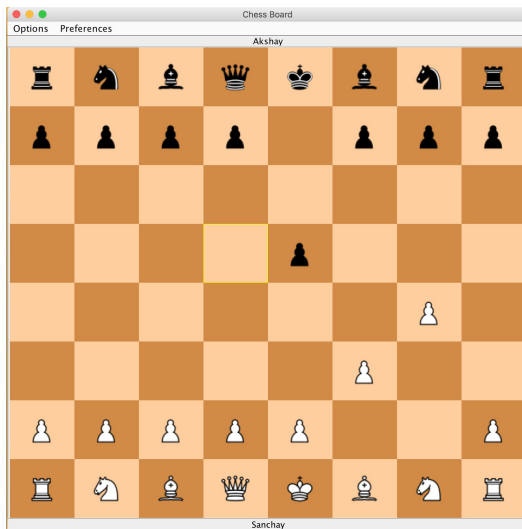
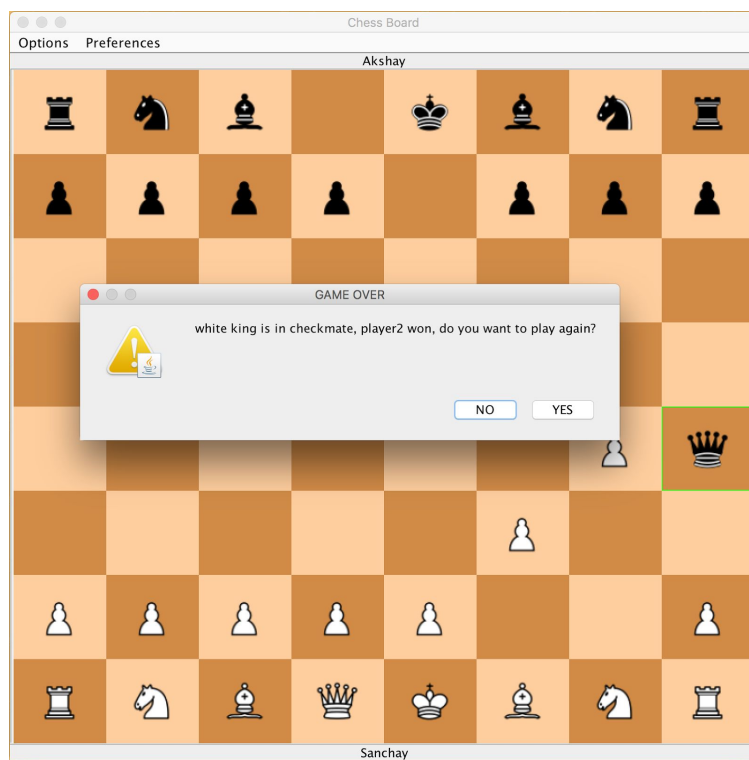Move white pawn from (1, 5) to (2, 5)

Move black pawn from (6, 4) to (4, 4)

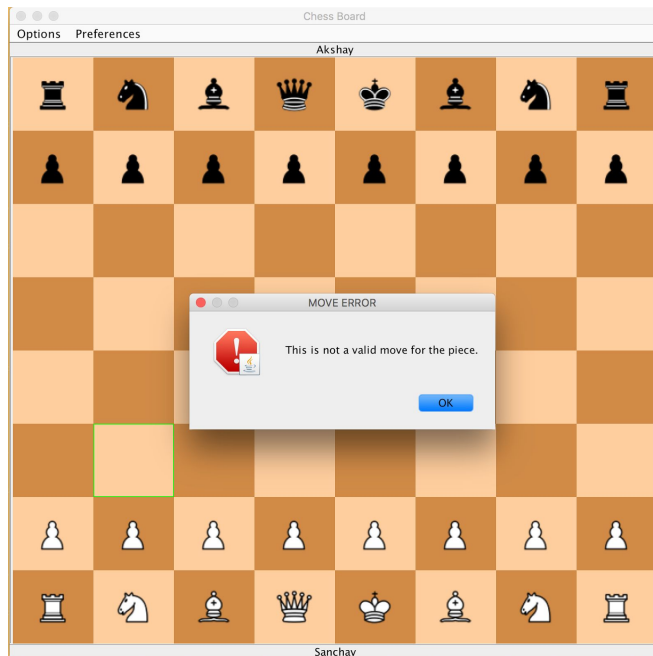Move white pawn from (1, 6) to (3, 6)

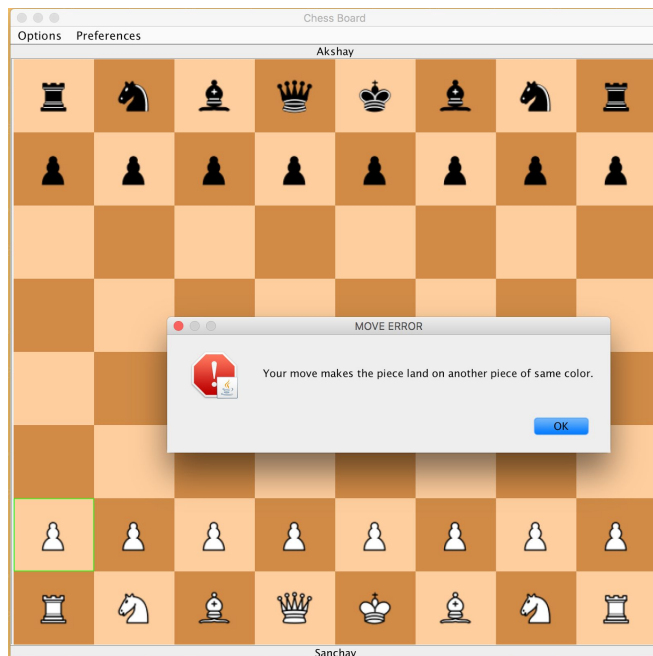Now move black queen from (7, 3) to (3, 7) and we have a checkmate!

● Illegal moves should give a visual feedback

Here are some illegal moves:

Invalid move attempt by making a white horse move from (0, 1) to (2, 1).
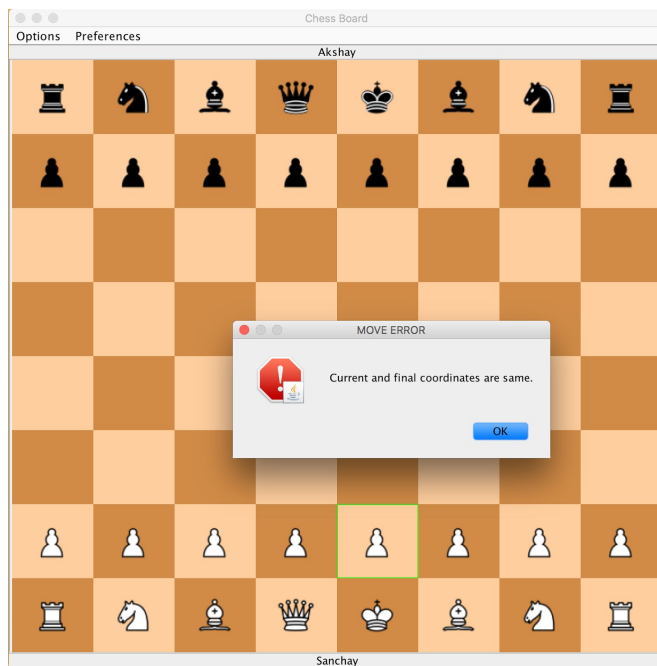

Trying to move a white rook on (0, 0) on a white pawn on (0, 1).

Trying to make a bishop leap over a white pawn from (0, 2) to (2, 4)

Trying to move a piece nowhere by selecting same coordinate twice.

MVC with GUI

In this part we were asked to add fairy pieces to board, in the 'Preferences' Menu on the menu bar, there is an option saying 'Play with fairy pieces..', clicking on it would restart the game with new pieces in place of rook and bishop (the pieces are wazir and ferz).
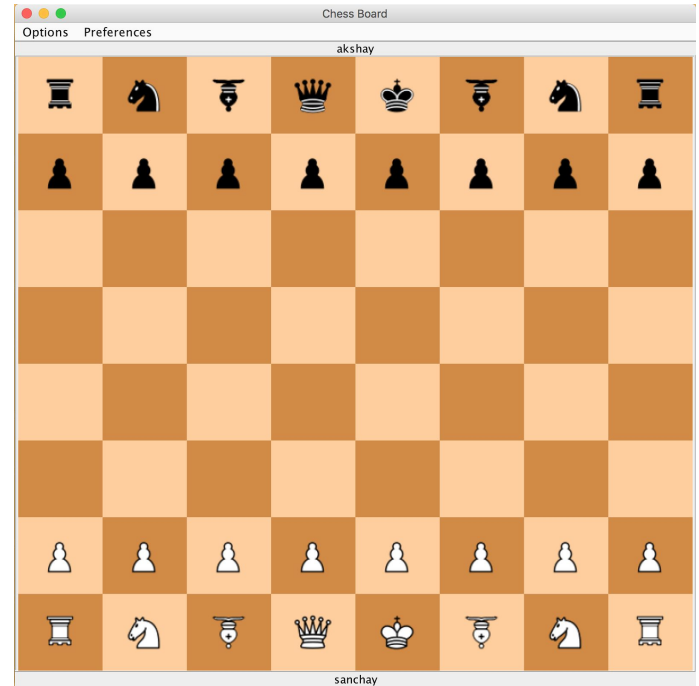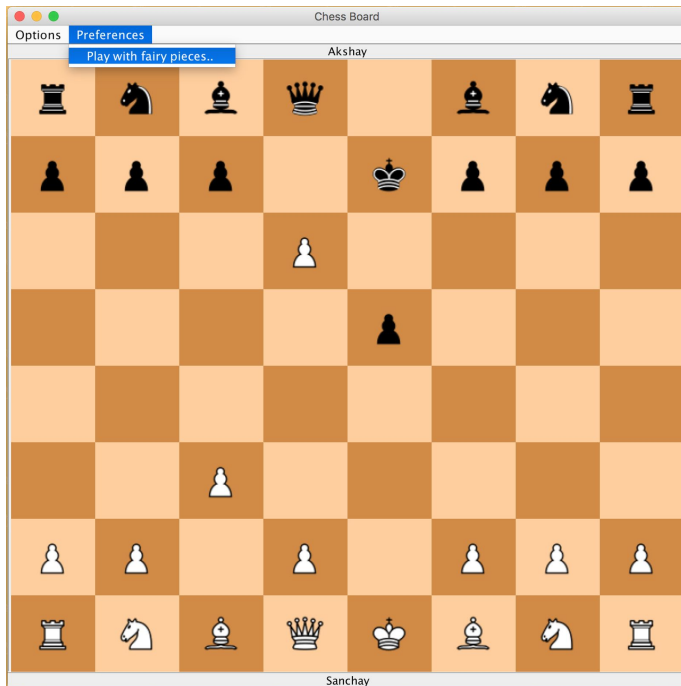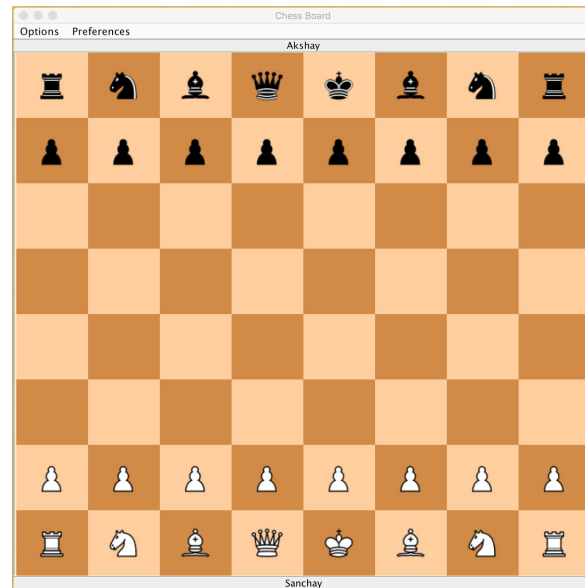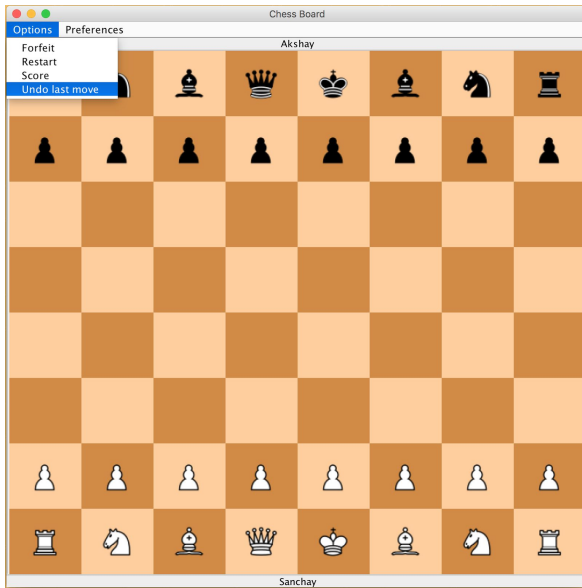

Undo a move

A player can undo a move by clicking 'Undo last move' under 'options' menu on top Menu bar.

A knight was moved from (0, 1) to (2, 2) and then undo-ed back as under -
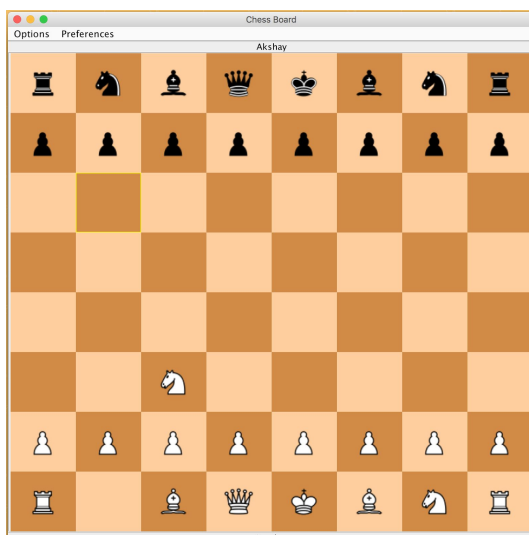
Conclusion

Additional features implemented:

- On trying to close the window, a user is prompted if he's sure to quit the game. Clicking no would do nothing and clicking yes would quit the game.
- Pawns can move two steps ahead on their first move and not otherwise.
- All tiles are highlighted green when selected and yellow when hovered.
- A tile can be de-selected by a mouse 'left click'. The green border would get removed to a no-border.
- Player names are highlighted on NORTH and SOUTH of the JFrame right next to their pieces.