# Manual Test Plan

Initialization Tests

1. Run the main function in "src/main/view/Main.java". Check if
   a. A chessboard with initial configuration will be initiated in the left of the window. Black pieces should be shown above and white pieces should be shown below. The upper left square should be in a light color, and the color should alternating for each nearby cells. The black king should be put in a light square and the white king should be put in a dark square. On the left of the board, there should be a y-axis labeled 8 to 1, from top to bottom. At the bottom of the board, there should be an x-axis labeled A to H, from left to right.
   b. The player names, scores should be shown at the upper left of the window. In between, there should be a label with text "vs". Black player is at the top and white player is at the bottom. Both players have a score of 0. The lights before their names should be off.
   c. Three button with text "Start / Restart", "Forfeit", "Undo" should be lined up at the lower right of the window.
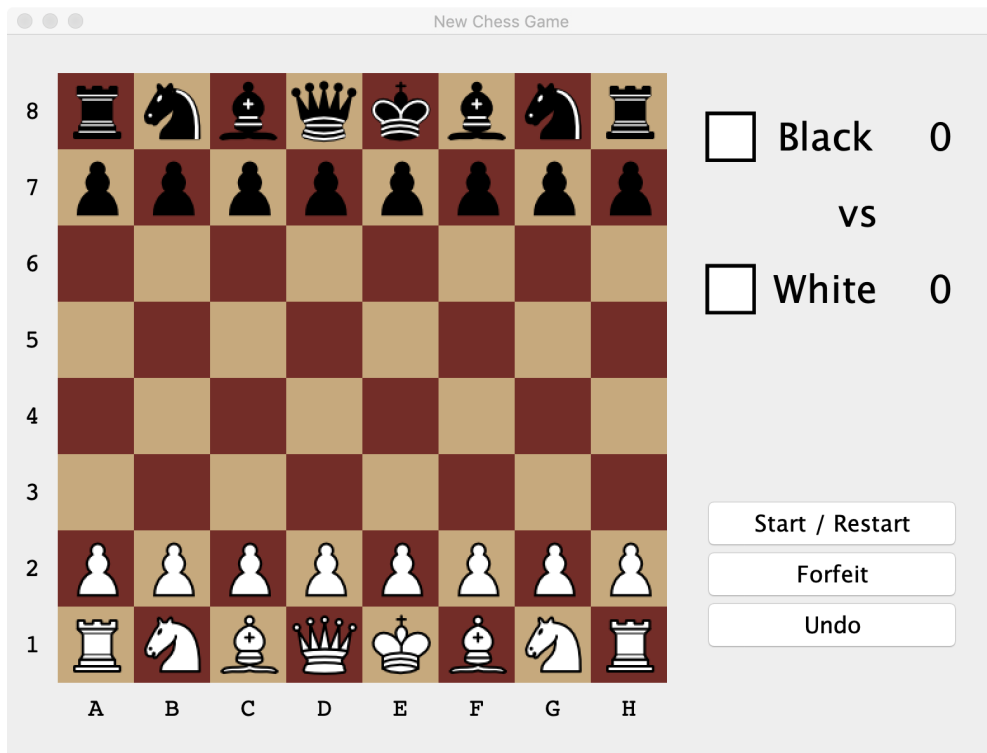
2. Test no operation can be made before clicking "Start / Restart" and there is a pop up window stating that "Game is not started."
   a. Click any piece on the board
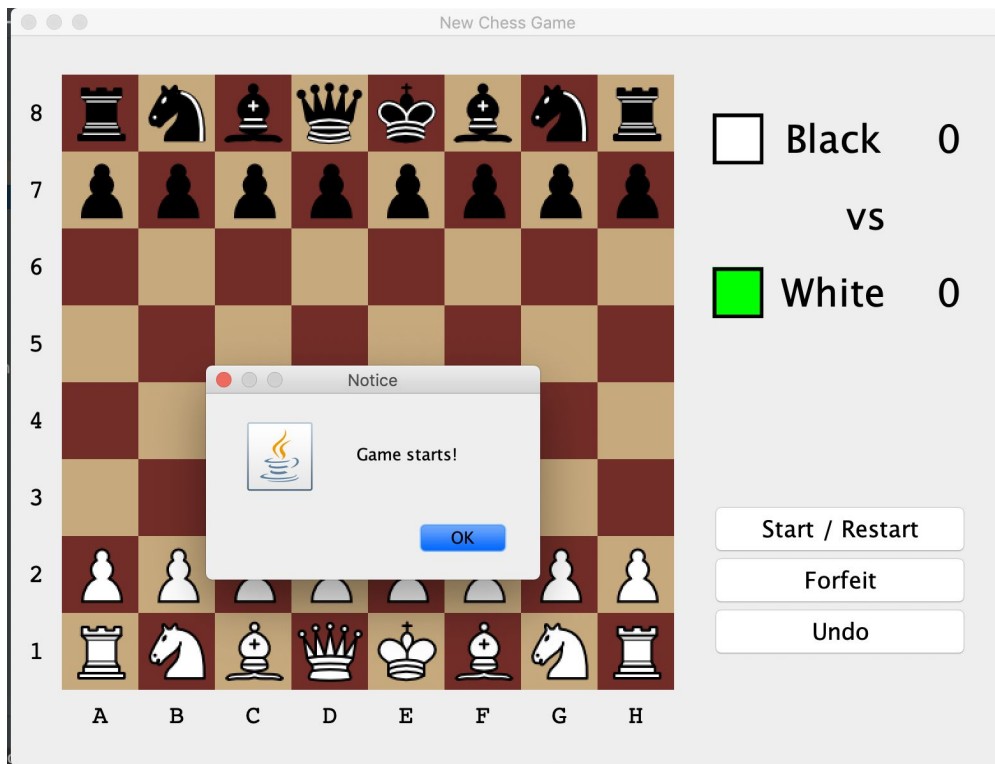   b. Click "Forfeit" or "Undo"
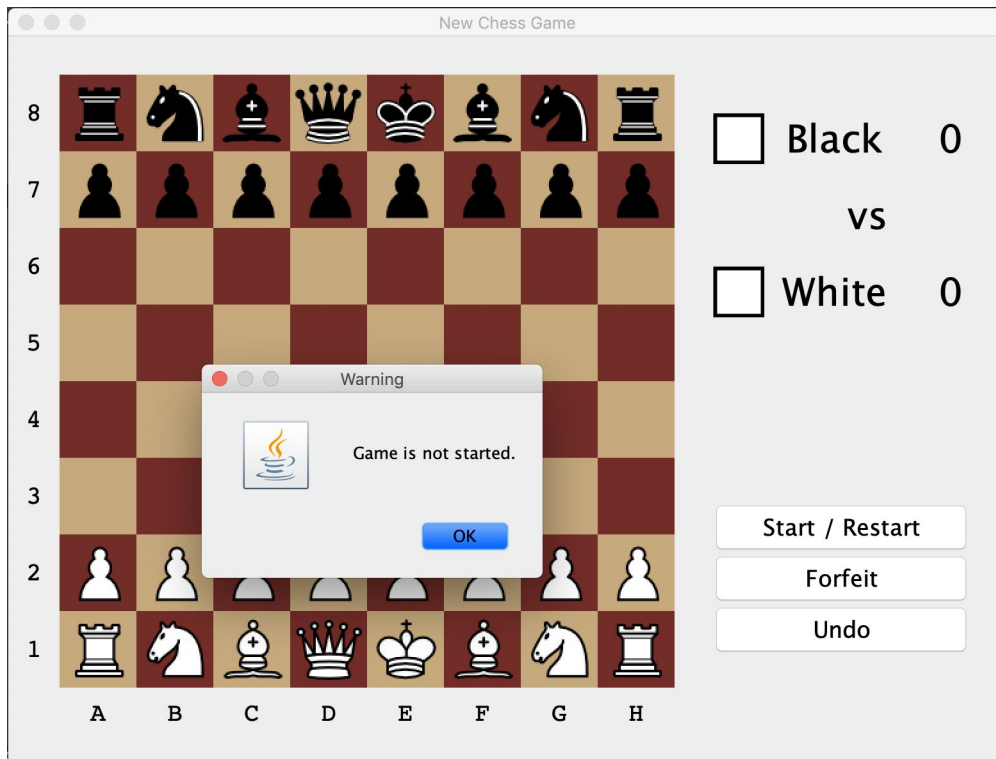
Piece/Board Tests

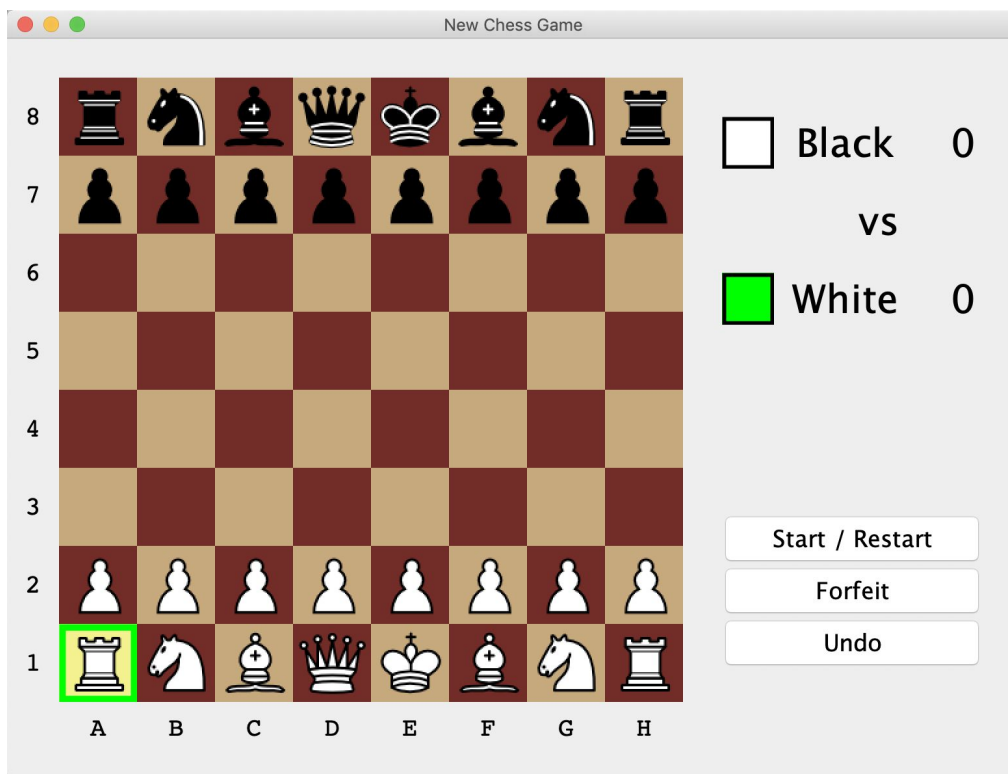Preview (Which steps are testing each type of piece):
- Pawn: 4, 5, 6, 7, 8, 9, 14
- Rook: 3, 11
- Knight: 3, 12
- Bishop: 3, 10
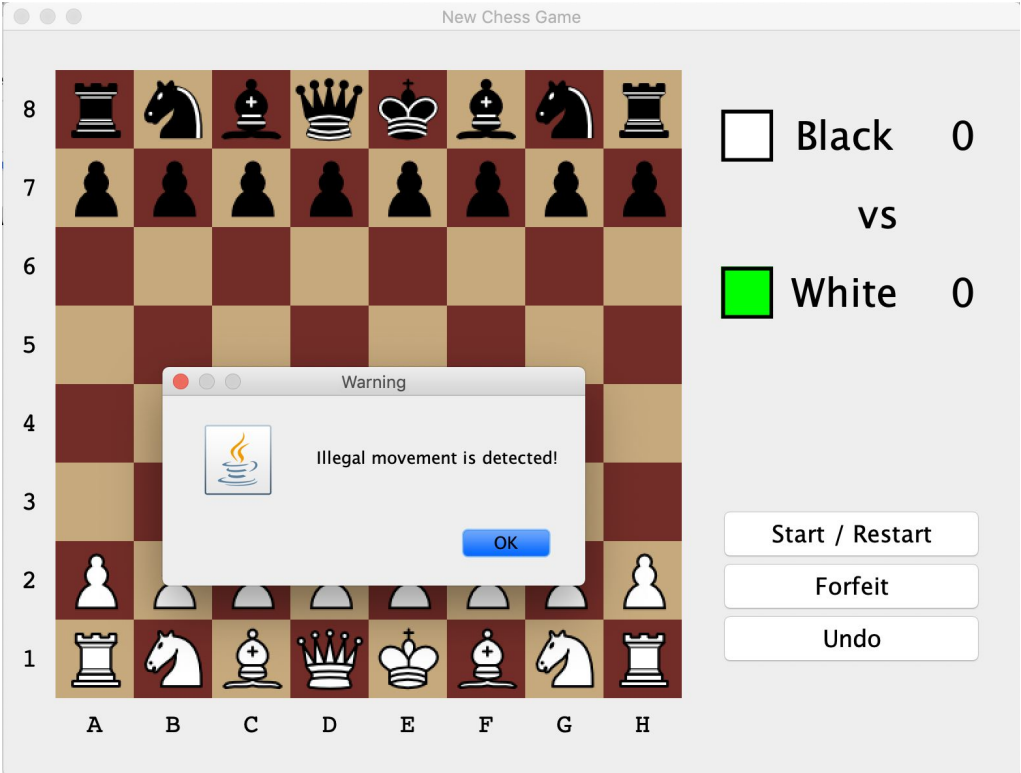- Queen: 3, 13, 15
- King: 3, 12, 13, 15

1. Click "Start / Restart". Check if the light of white player is on.


2. Click on black pieces. Check if nothing happens.

3. Click on White Rook, Bishop, Queen, King in sequence. Check if they cannot cross pieces. There should be a pop up window stating "Illegal movement is detected!". The light should still be on at white player's side.
    a. Click on Rook at A1. Only itself should be highlighted. Then click A2 and check if there is warning.
    b. Click on Bishop at C1. Only itself should be highlighted. Then click D2 and check if there is warning since it cannot capture a piece of the same color.
    c. Click on Queen at D1. Only itself should be highlighted. Then click D1 again to cancel the selection. Same operation for King at E1.

New Chess Game

8
7
6
5
4
3
2
1

A B C D E F G H

☐ Black   0

vs

🟩 White   0

Warning

Illegal movement is detected!

OK

Start / Restart

Forfeit

Undo

3. Click Knight at B1. Check if A3 and C3 is highlighted. Click C3 and check if Knight is moved to C3. Then check if light is on at the black player's side.
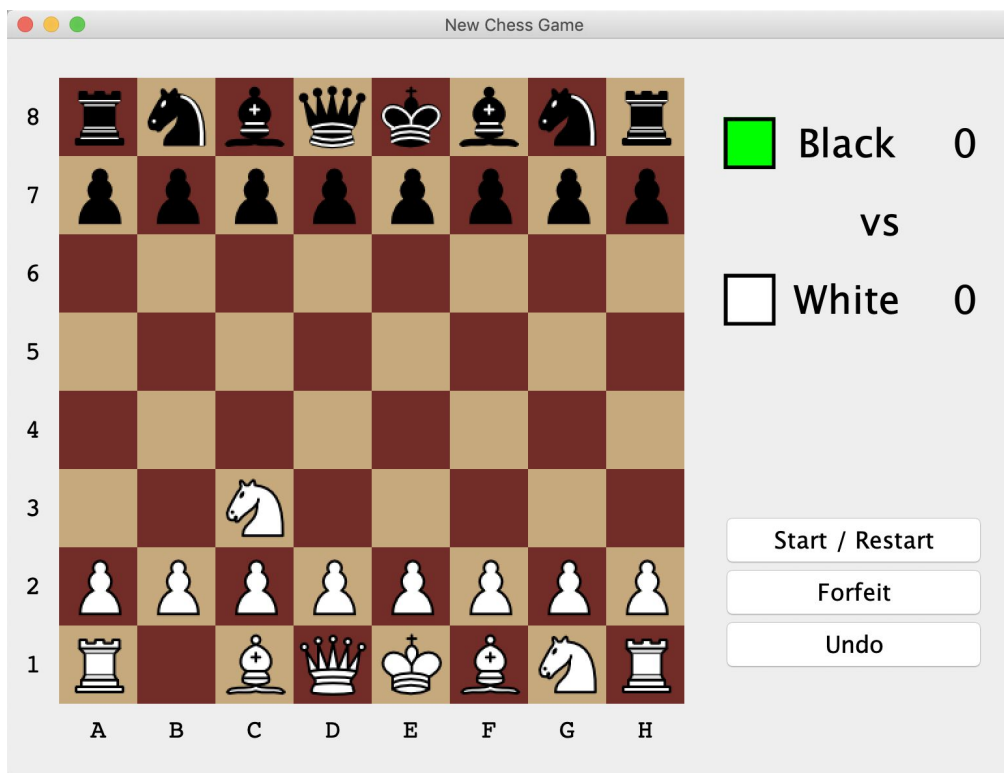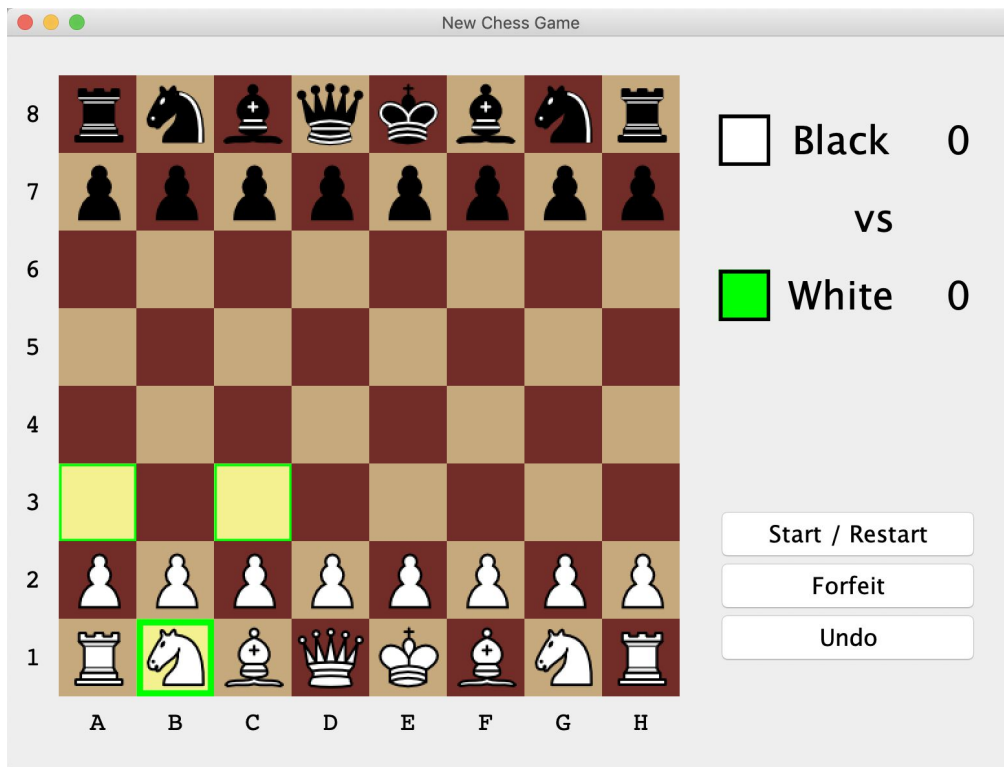
4. Click Pawn A2 and check if nothing happens. If so, the round is actually alternating.
5. Click Pawn at A7 and check if A6 and A5 is highlighted. Click on A5 and check if Pawn is moved to A5. The light should be on the white side.
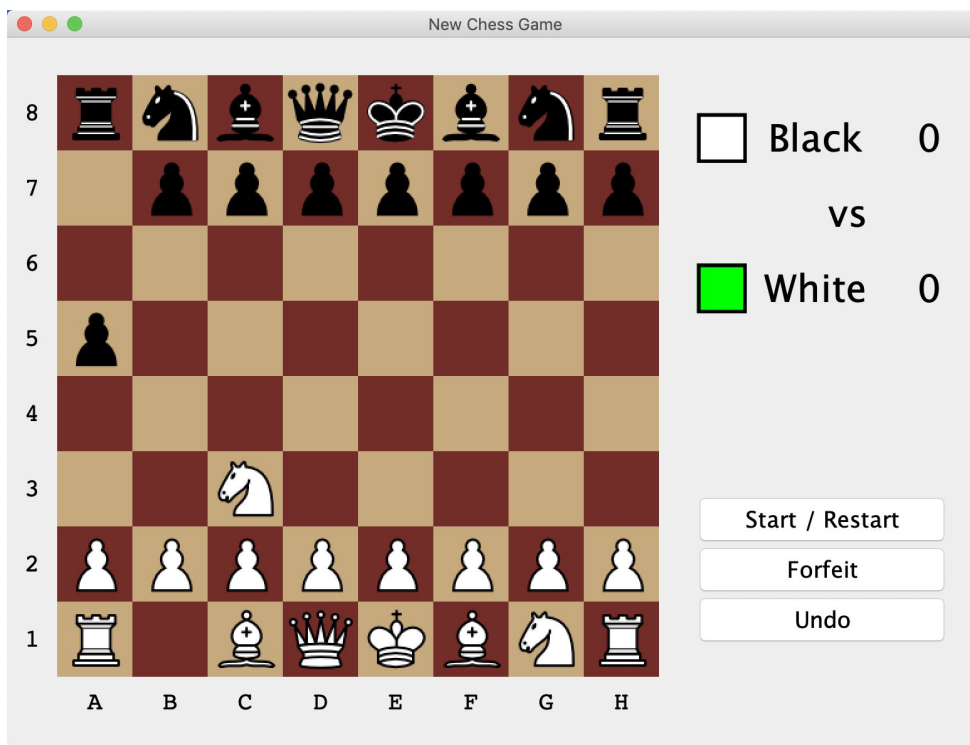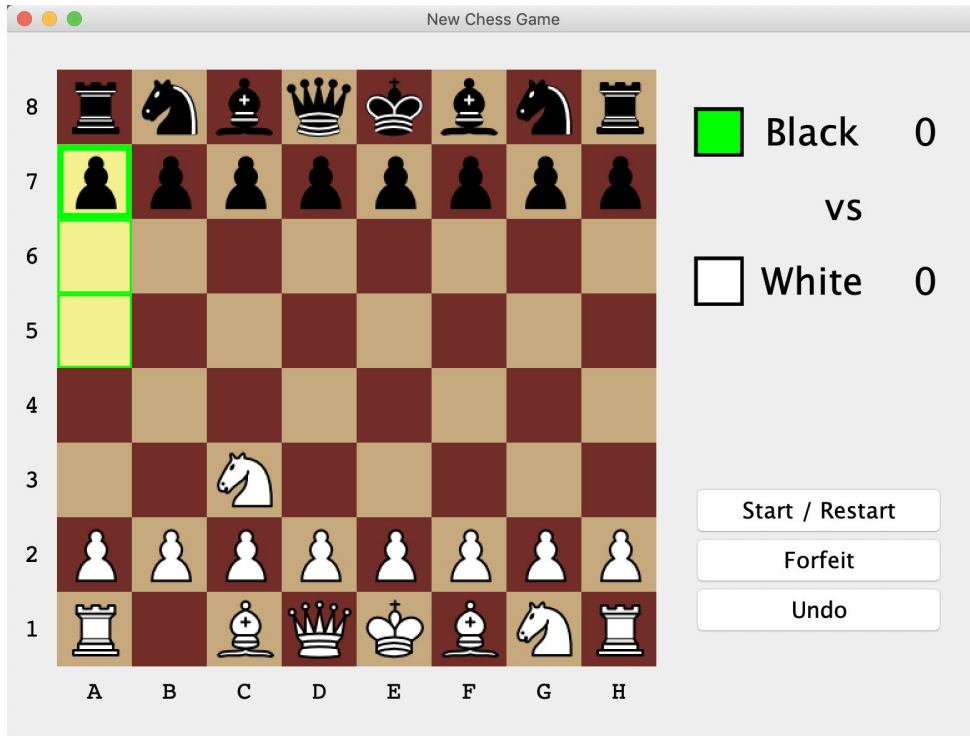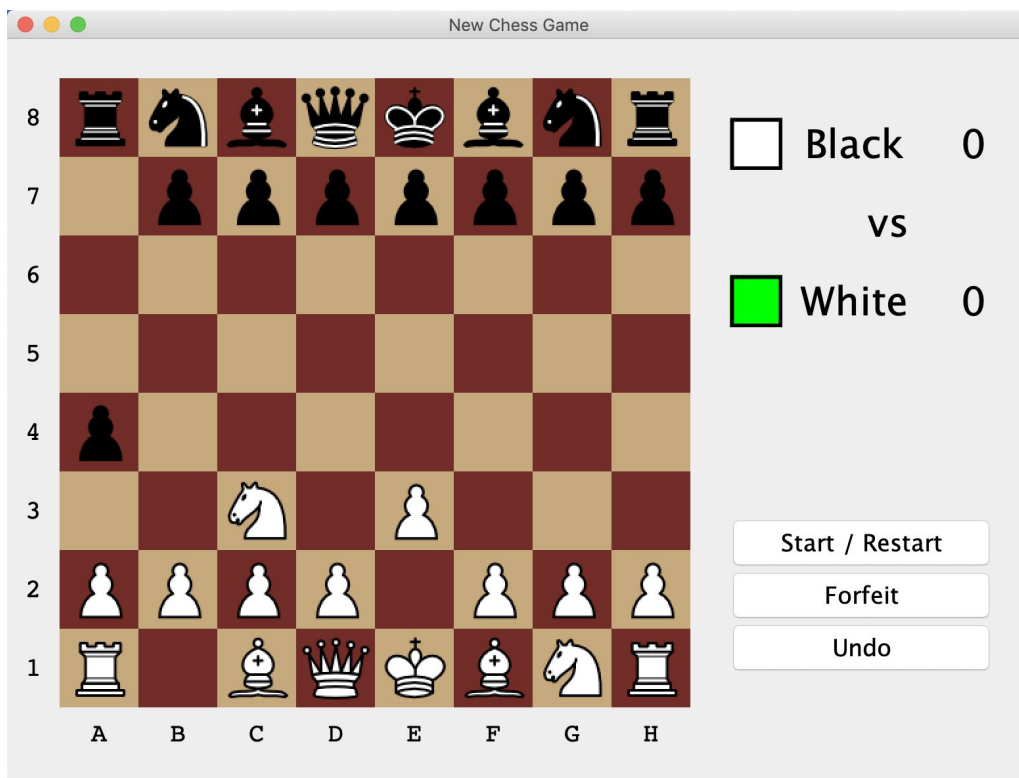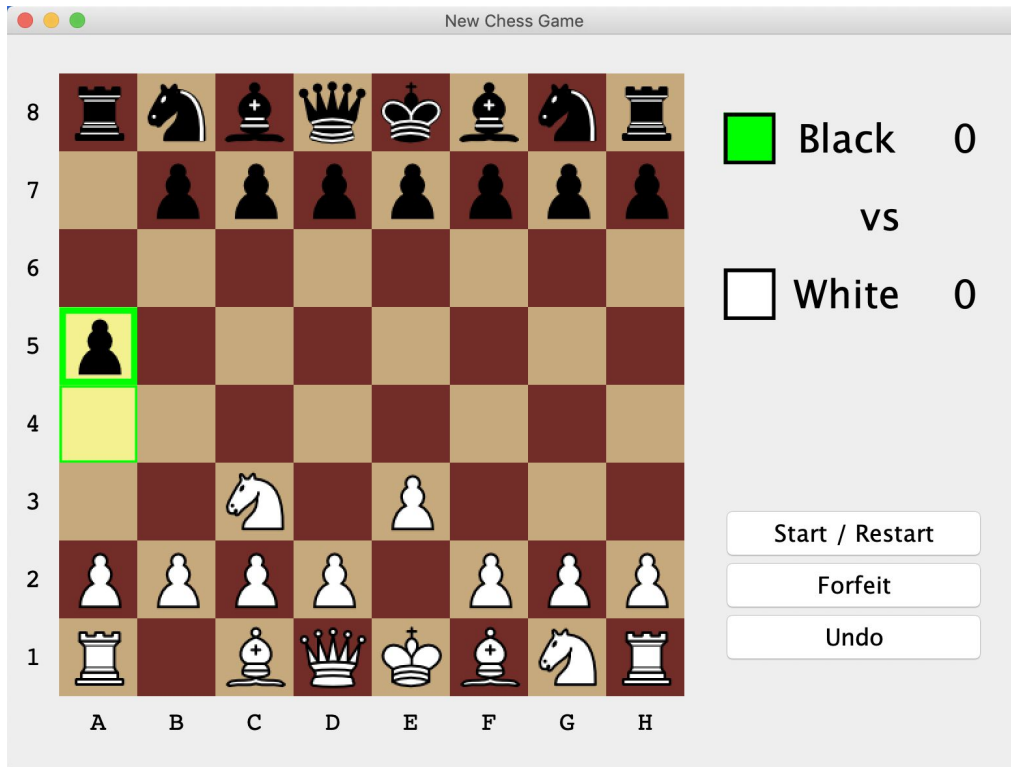
6. Click Pawn at C2 and check if only itself is highlighted. Click C2 again to cancel the selection.
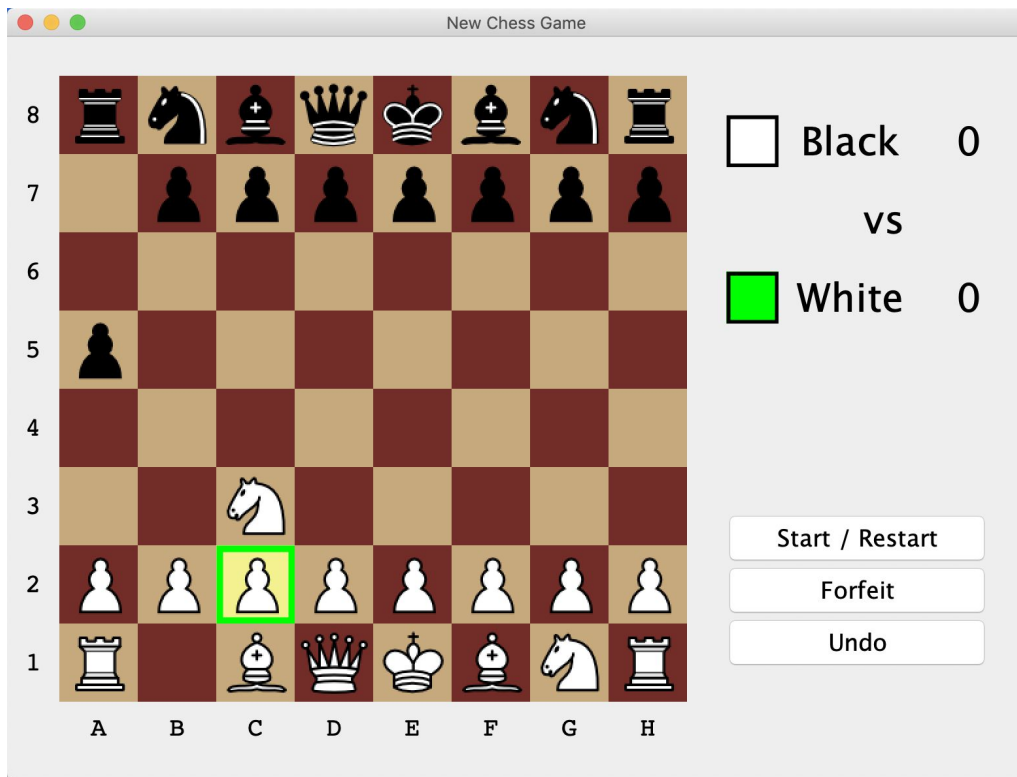
7. Click Pawn at E2 and check if E3 and E4 are highlighted. Click E3 and check if Pawn is moved to E3. The light should be on the black side.
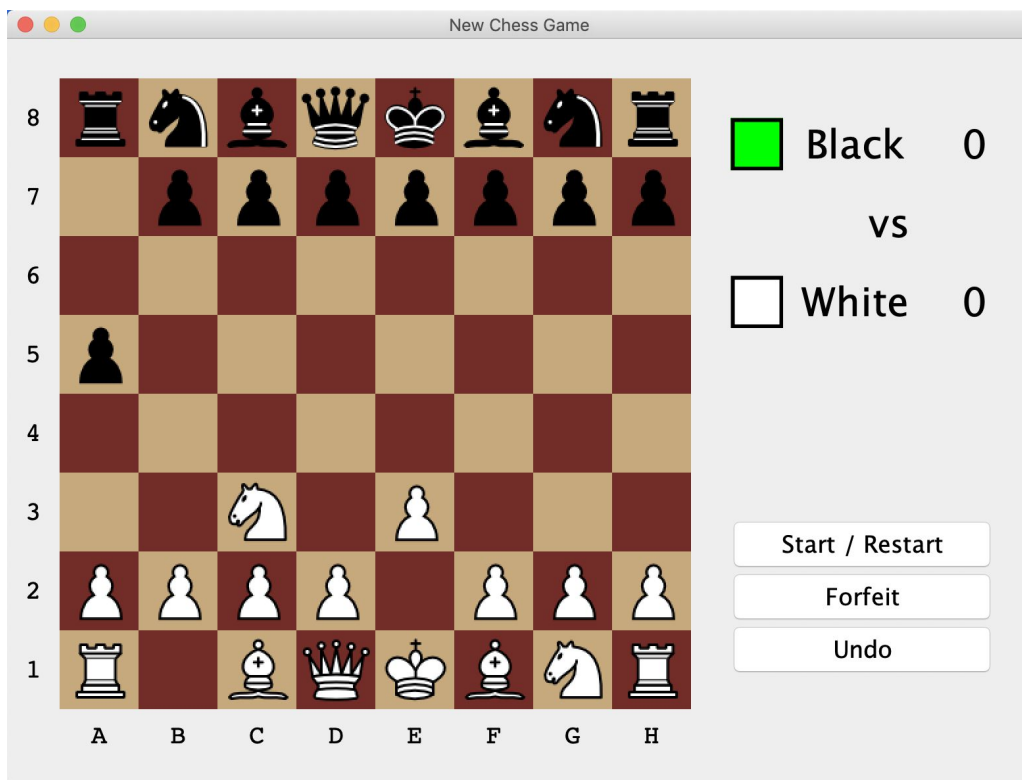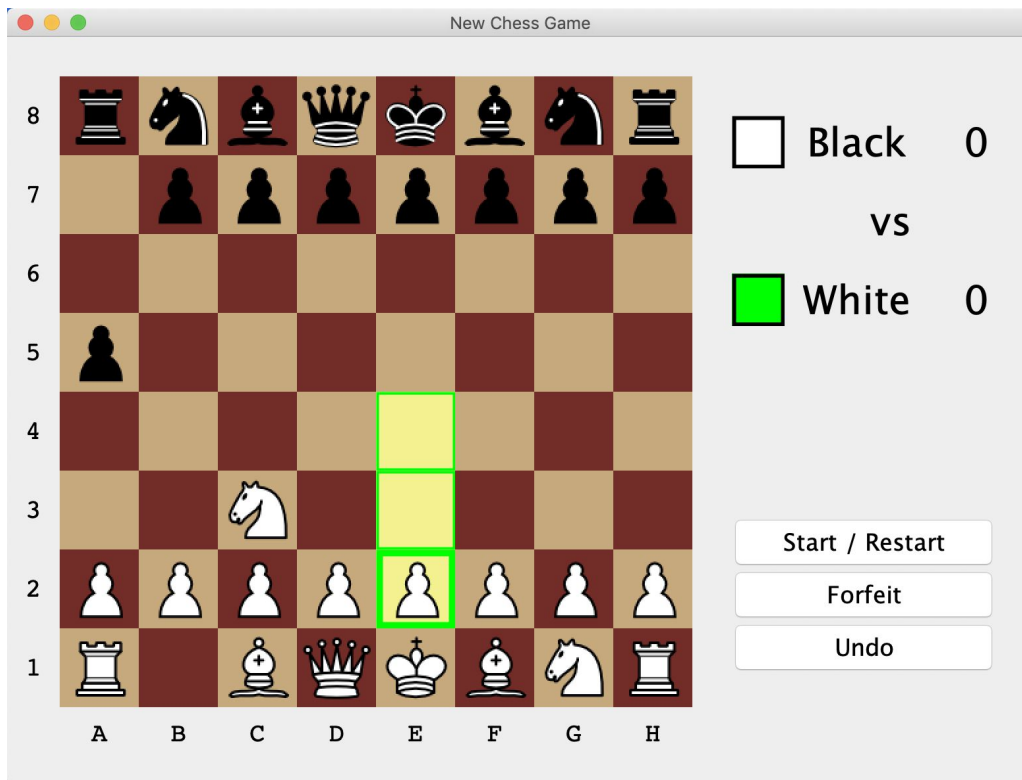
8. Click Pawn at A5 and check if only itself and A4 are highlighted. Click A4 and check if Pawn is moved to A4. The light should be on white side.

9. Click Pawn at A2 and check if only itself and A3 are highlighted. Pawns cannot capture straight. Click A2 again to cancel the selection.
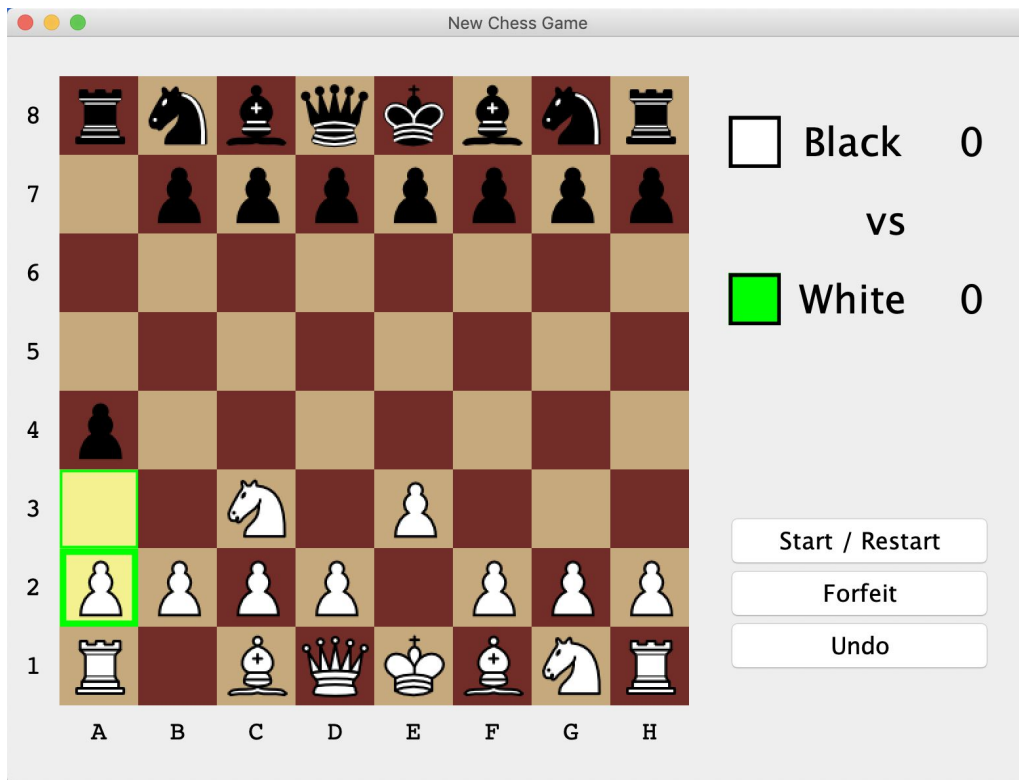
10. Click Bishop at F1 and check if E2, D3, C4, B5 and A6 are highlighted. Click on A6 and check if Bishop is moved to A6. The light should be on at the black side.
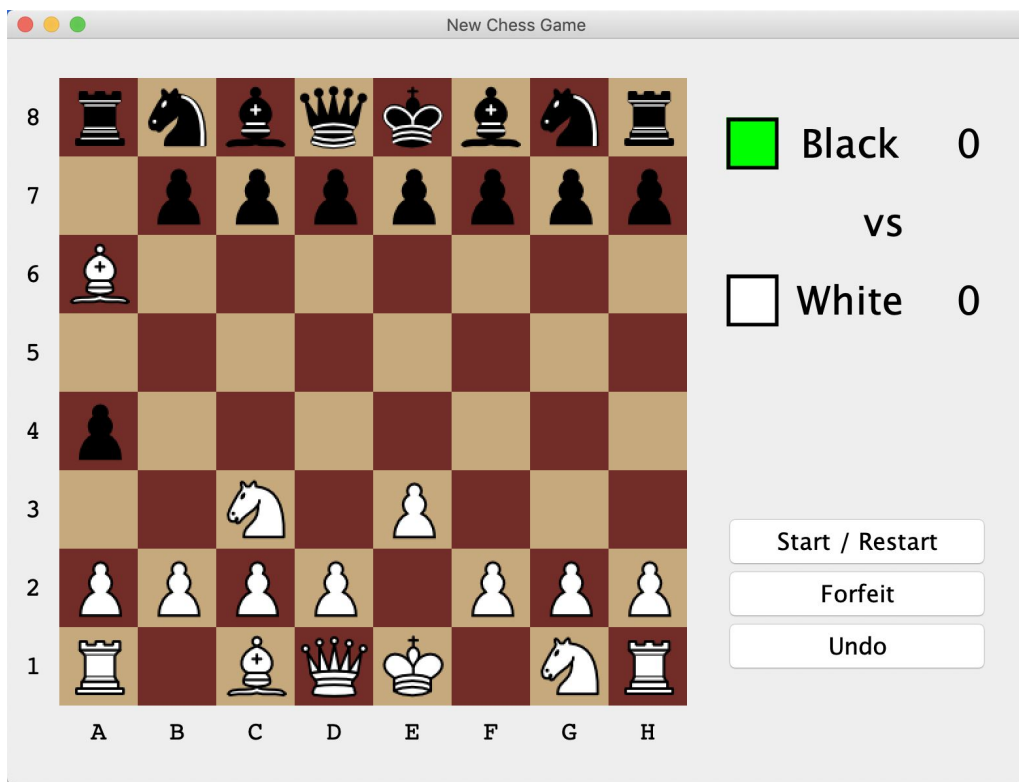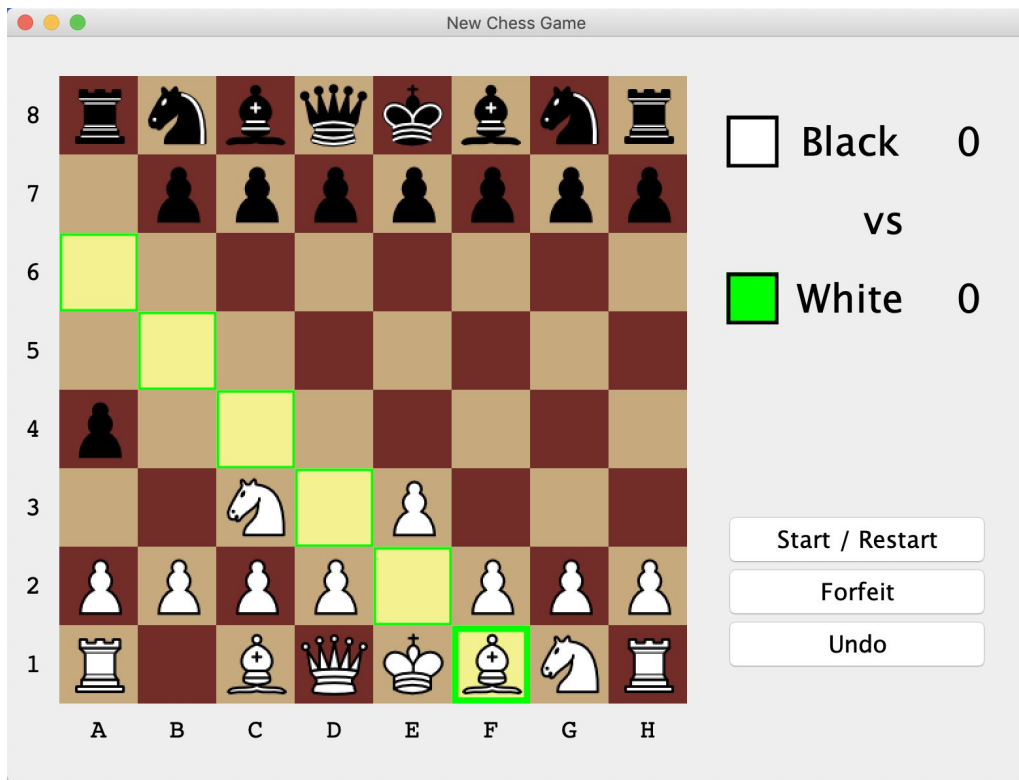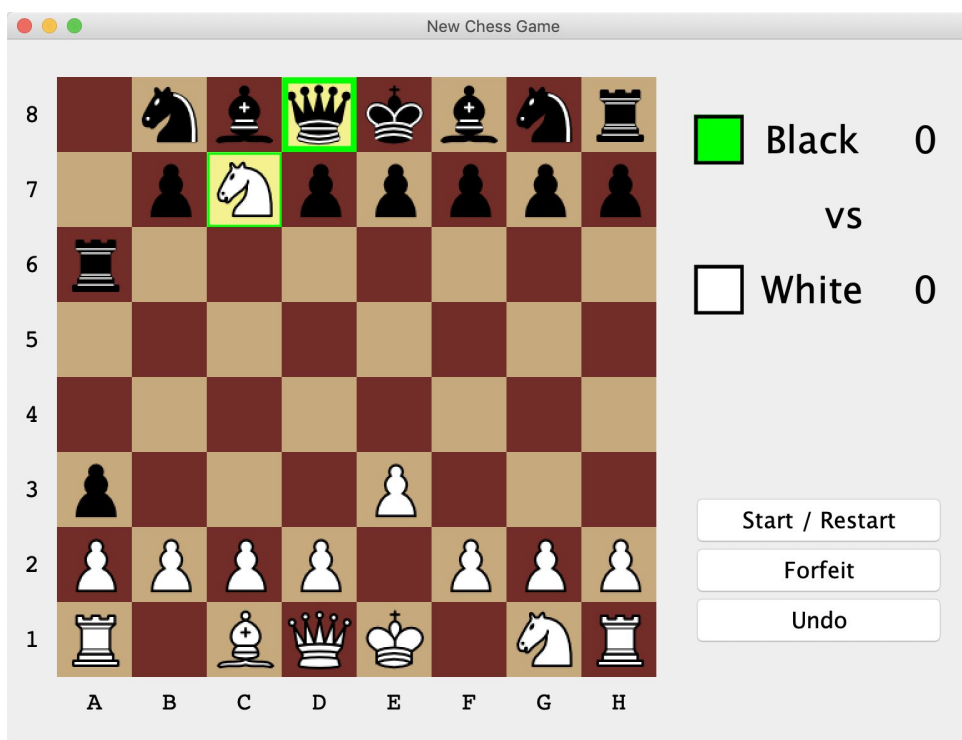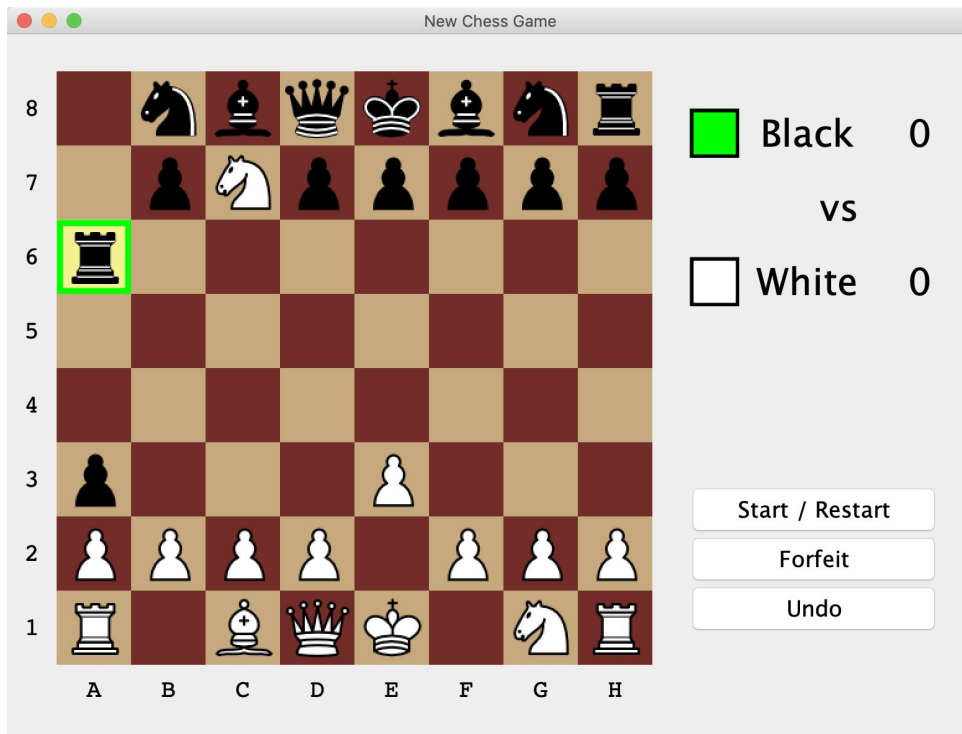
11. Click on Rook at A8 and check if only A7, A6 and itself are highlighted. Click on A6 and check if Rook is moved to A6 and Bishop at A6 disappears. The light should be on the white side.
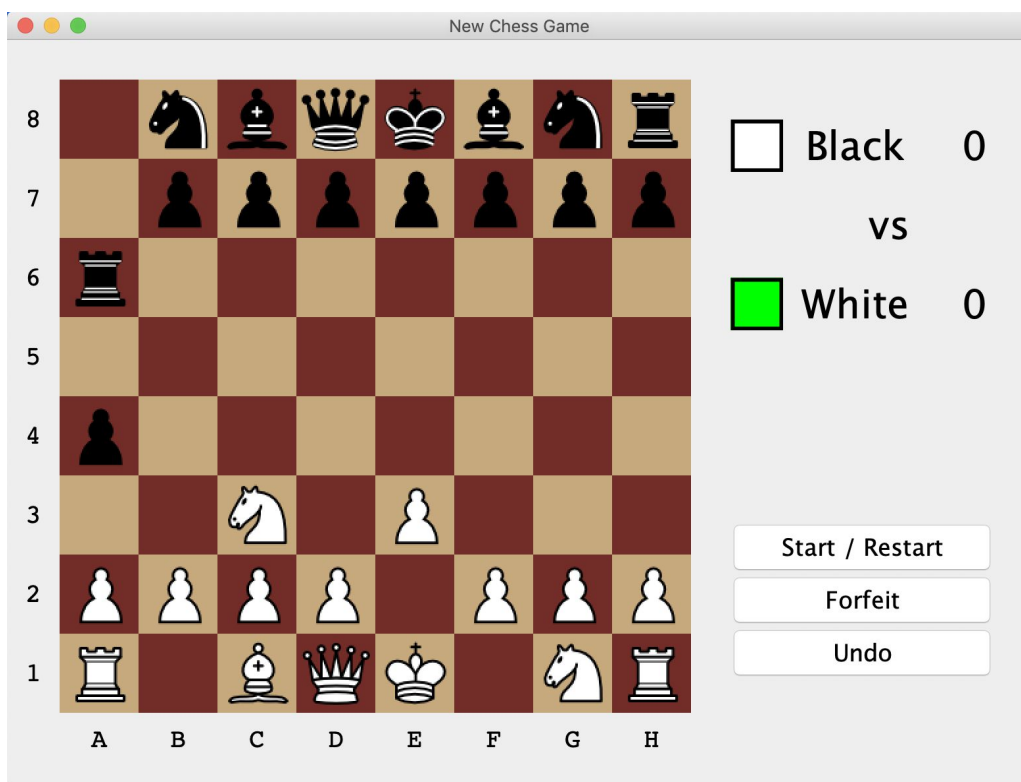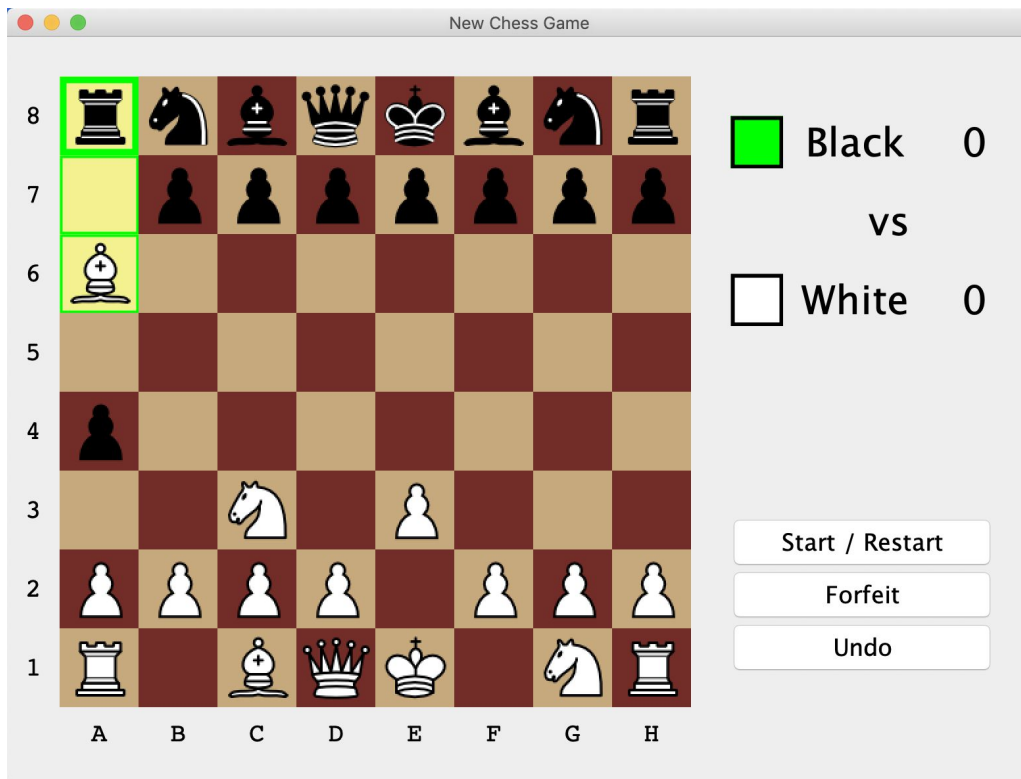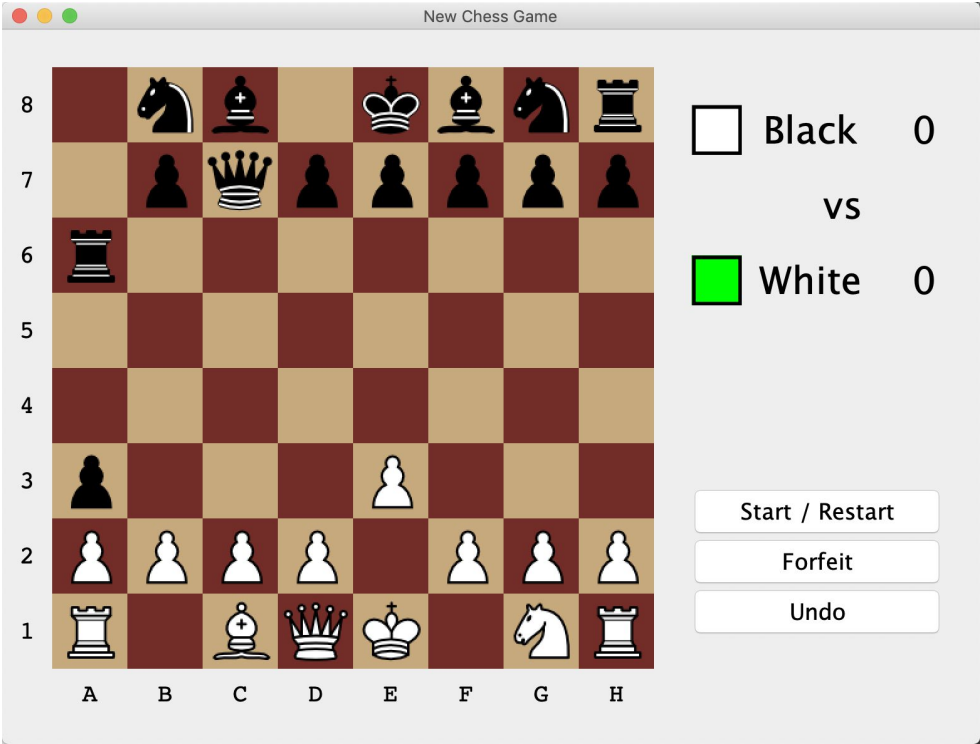
12. Click on Knight at C3 and check if there are six possible destinations. Click on B5 and check if Knight is moved to B5. Next, click on Pawn at A4 and click A3. Then click on Knight at B5 and click C7 to capture the Pawn.
There should be a pop up window stating that "Black Player is in check!". The light should now be on the black side.
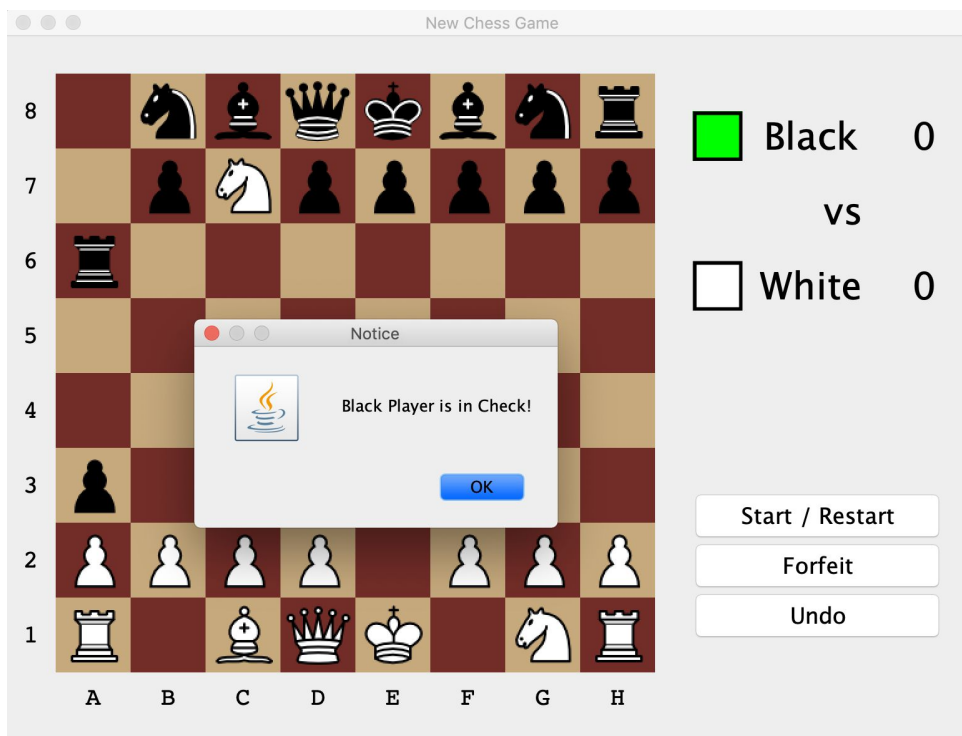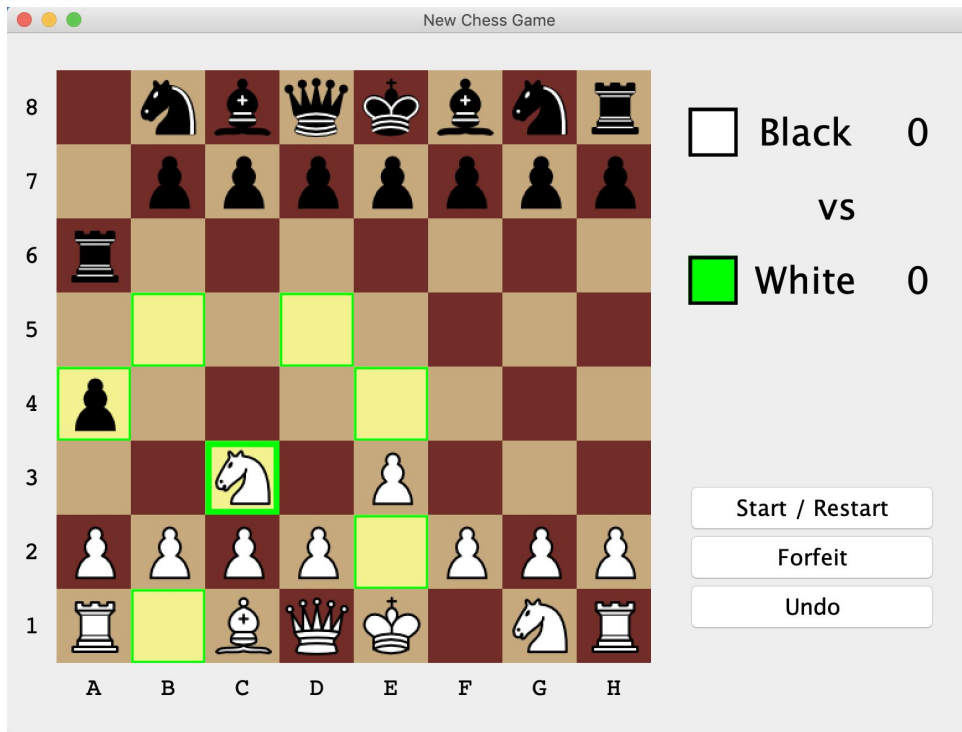
13. Click on Rook at A6 and check if only itself is highlighted. Click A6 again to clear the selection. You cannot leave the King in check if solvable.
Click on Queen at D8 and check if only C7 and itself are highlighted. Click C7 and check if Queen is moved to C7 and Knight is captured. The light should be on white side now.

New Chess Game

	A	B	C	D	E	F	G	H
8		♞	♝		♚	♝	♞	♜
7		♟	♛	♟	♟	♟	♟	♟
6	♜							
5								
4								
3	♟				♙			
2	♙	♙	♙	♙		♙	♙	♙
1	♖		♗	♕	♔		♘	♖

☐ Black   0

vs

🟩 White   0
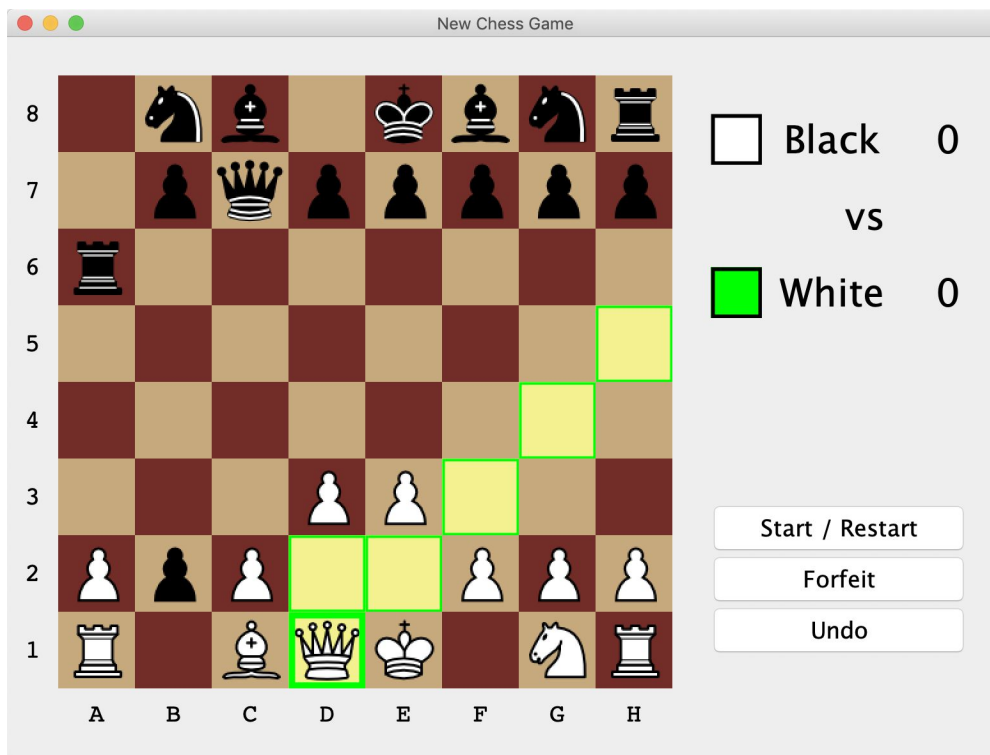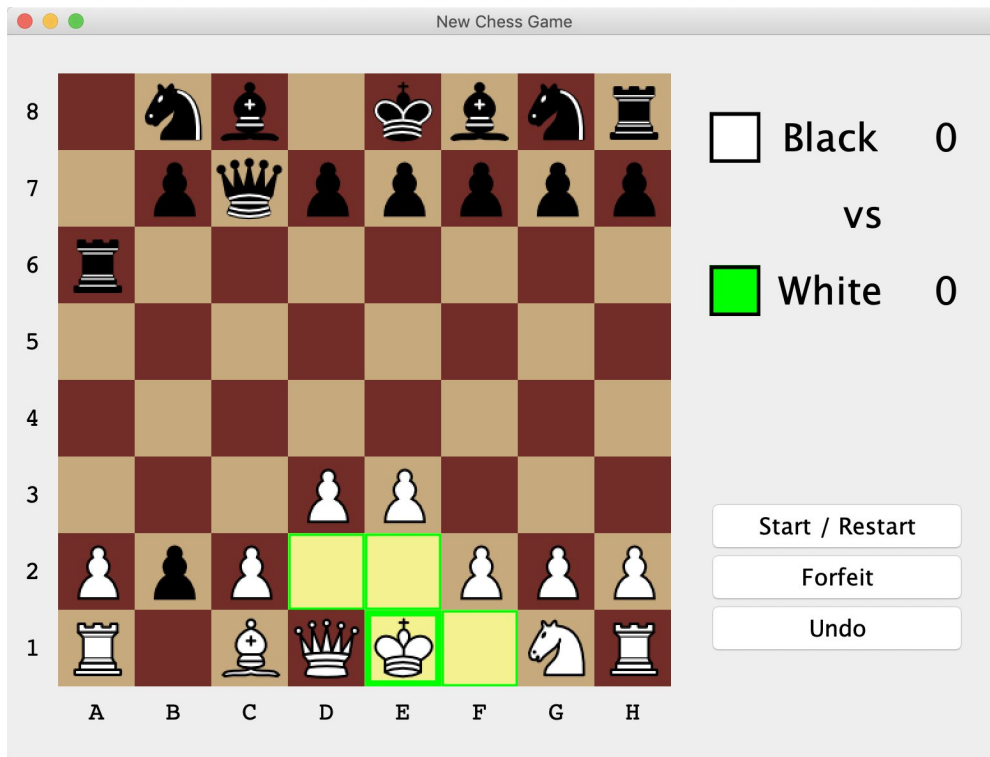
Start / Restart

Forfeit

Undo

14. Click on Pawn at D2 and click D3. Then click on Pawn at A3 and check if only B2 and itself are highlighted. Click on B2 and check if Pawn is moved to B2 and White Pawn disappears. The light should be on the white side now.
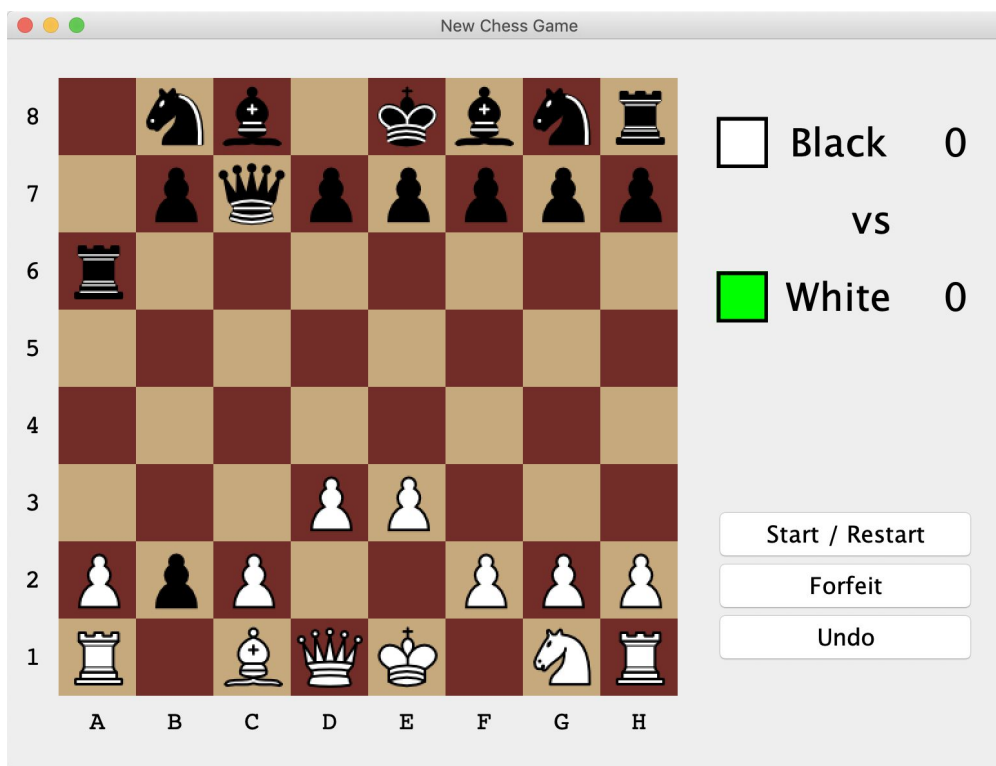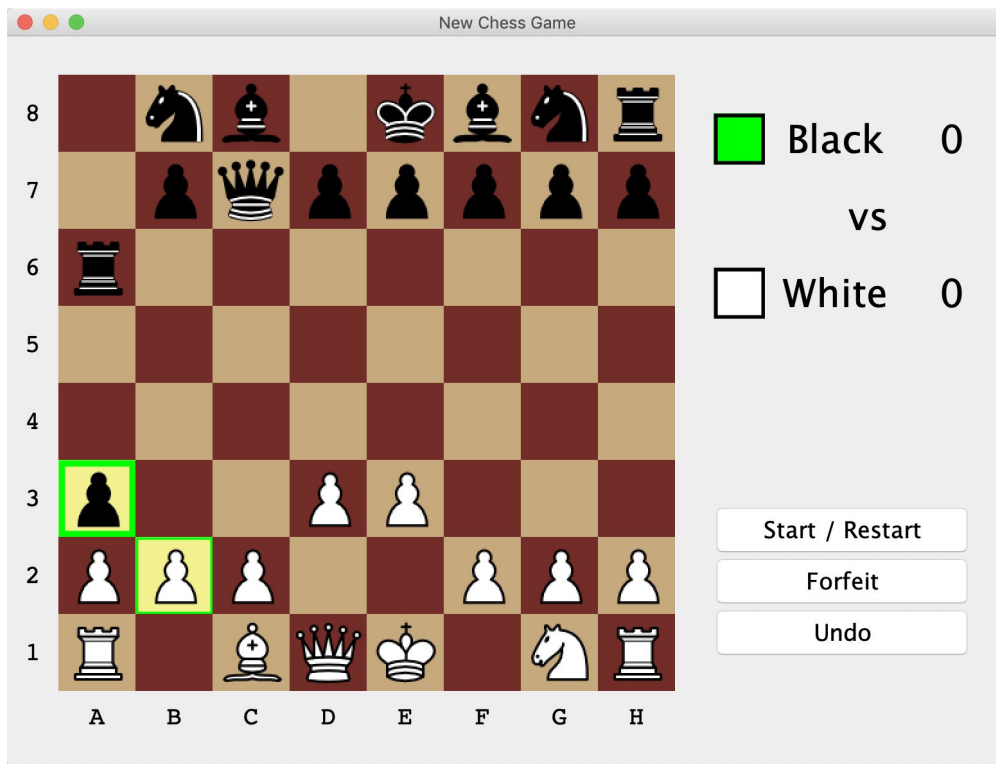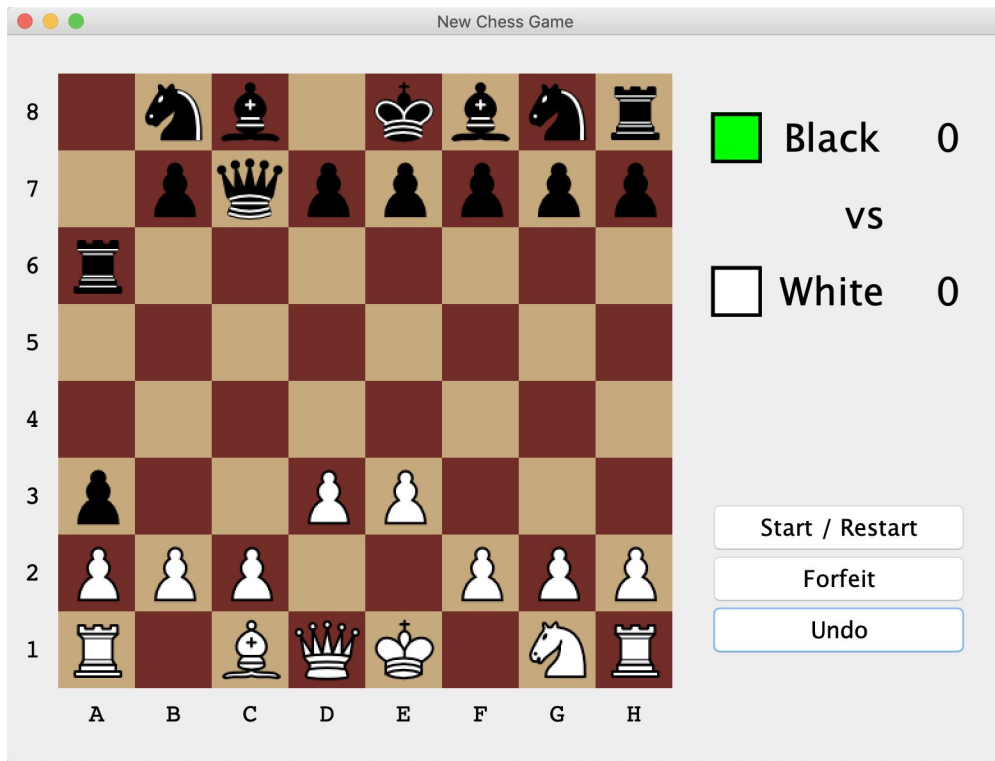
15. Click on King at E1 and check if only D2, E2, F1 and itself are highlighted. Click E1 again to clear the selection.
Click on Queen at D1 and check if only D2, E2, F3, G4, H5 and itself are highlighted. Click D1 again to clear the selection.
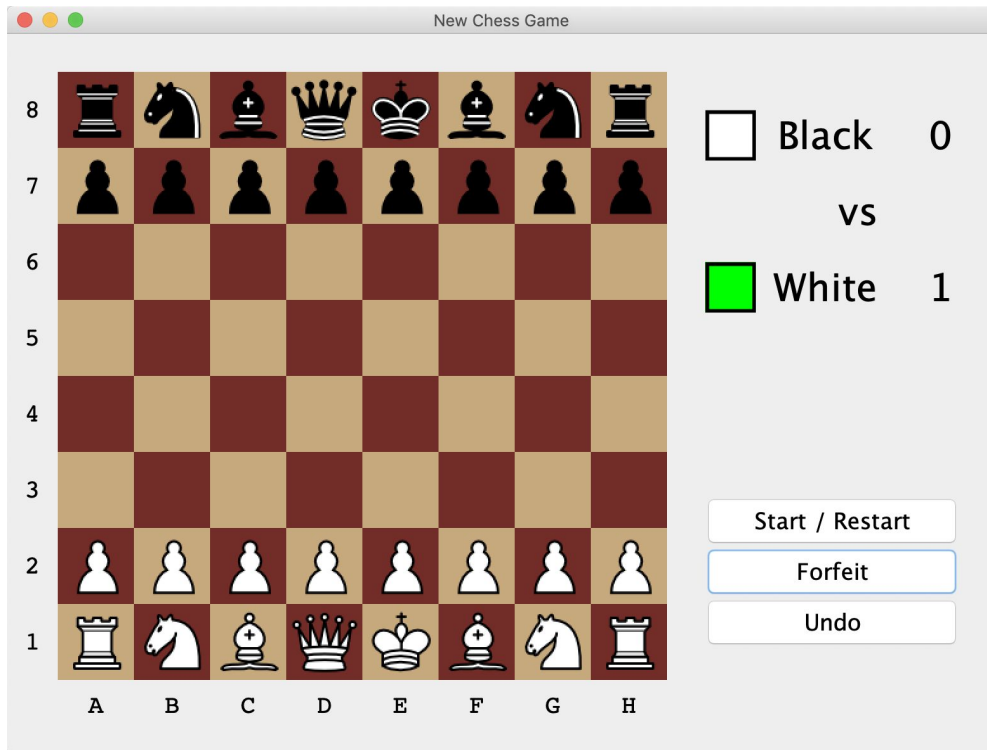
Restart/Forfeit/Undo Tests

1. Click on "Undo" and check Black Pawn at A3 and White Pawn respawning at B2. The light should be at the black side now.
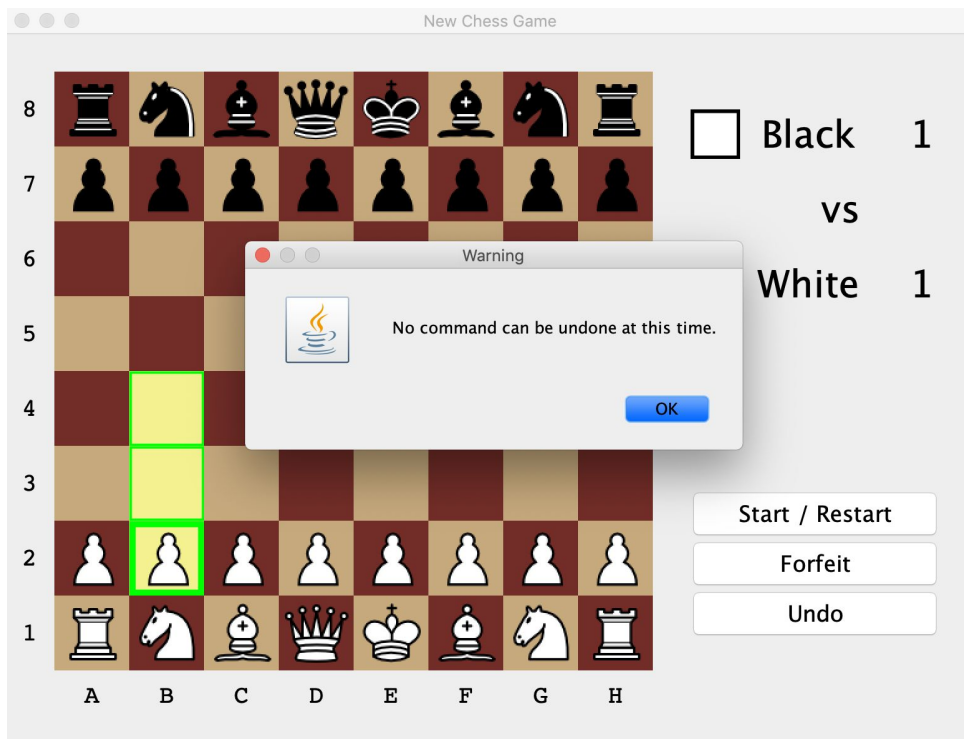
2. Click on "Forfeit" and check if the board is reset. Check if the score of white player is 1. The light should be at the white side now.
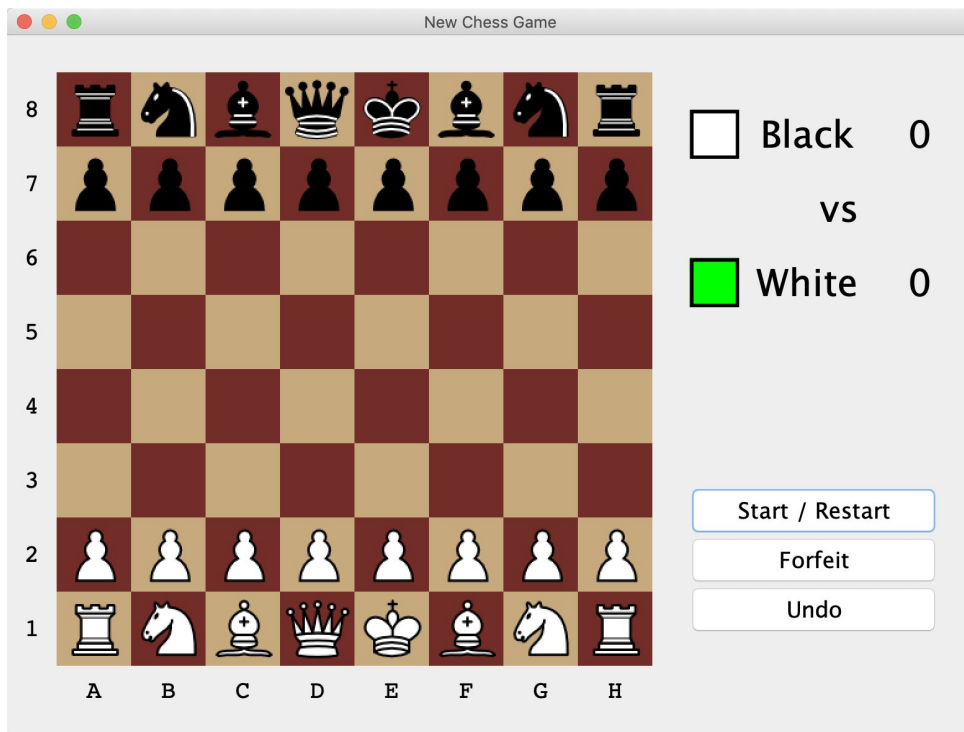

3. Click on Pawn at B2 and click on "Forfeit". Check if the score of black player is 1. Check if no piece is highlighted.
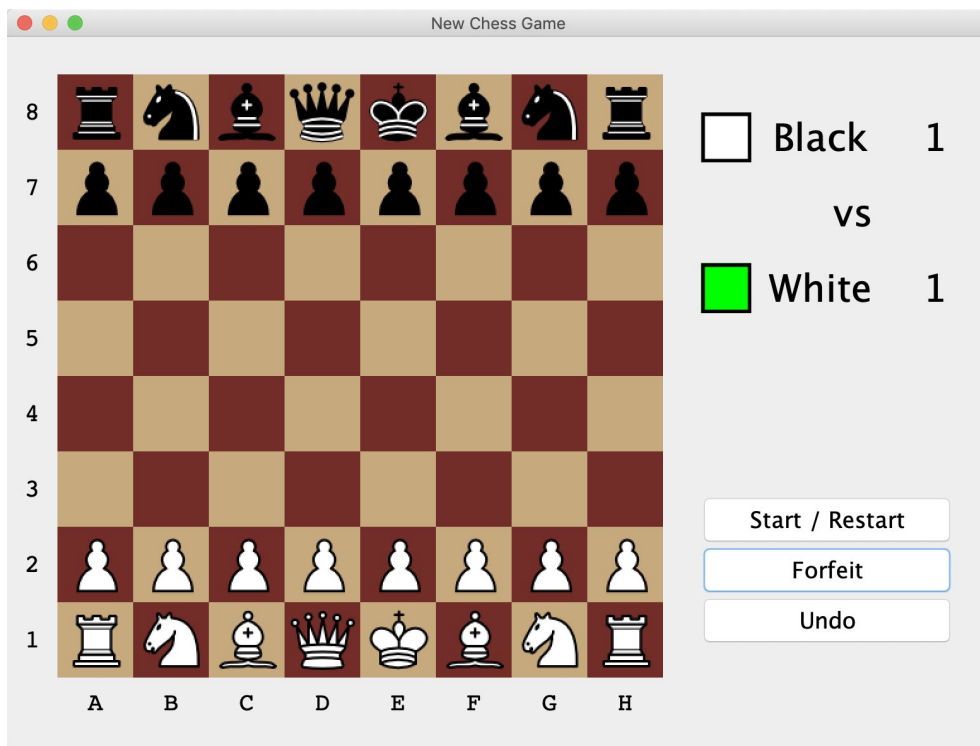
4. Click on Pawn at B2 and click on "Undo". There should be a pop up window stating that "No command can be undone at this time.". Pawn at B2 should remain highlighted.

5. Click on "Start / Restart". Check if both players has 0 score. Check if the board is reset and no piece is highlighted.

Checkmate Test

Stalemate Test