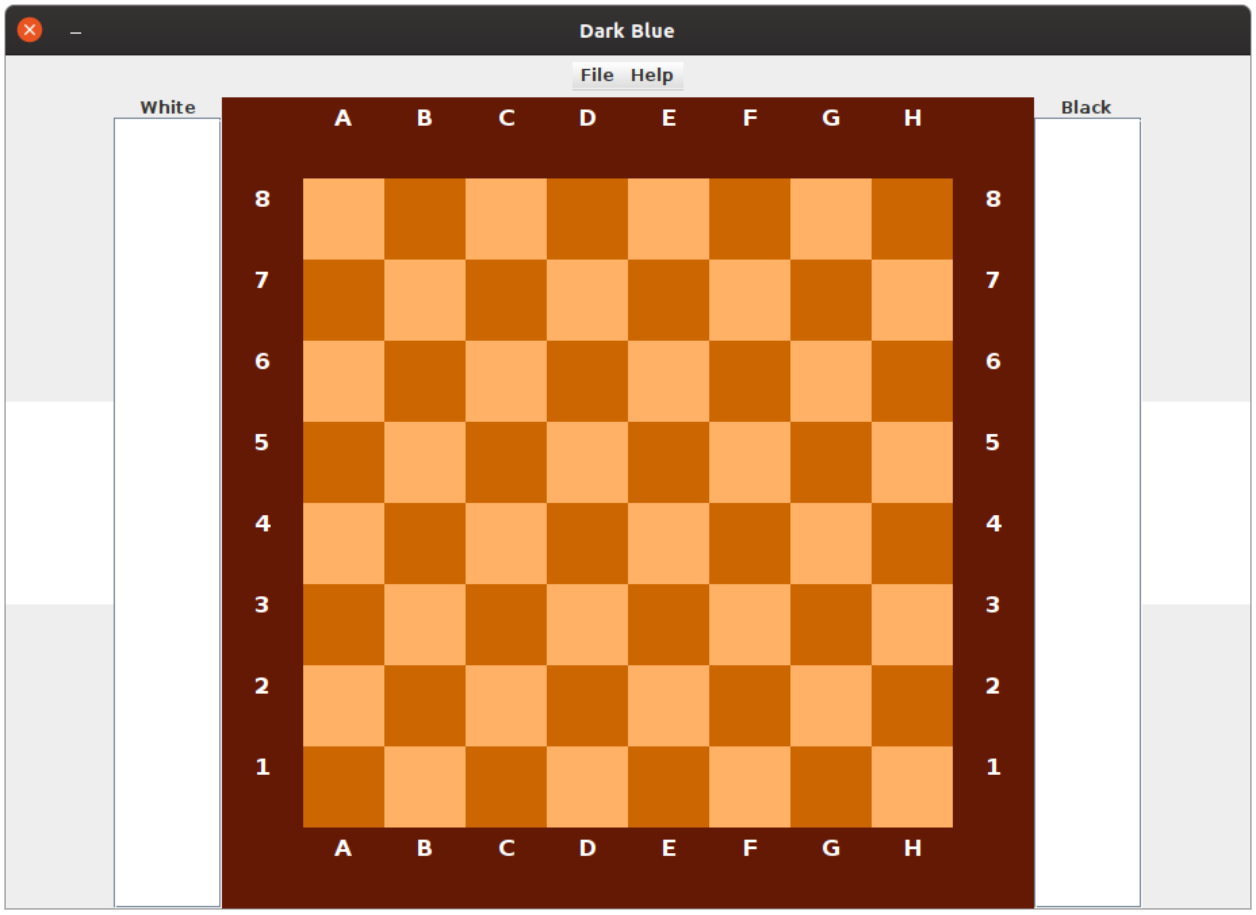
Instruction Manual for the Dark Blue Chess Engine
By Ryan King

The Dark Blue chess engine was designed to be easy to use and assumes a basic knowledge about the rules of chess.

Starting the Program:

Load your Eclipse workspace with the Dark Blue repository, open up the “DarkBlue” project folder, and then go to the package “com.DarkBlue.GUI”. There you will find the driver code for the entire program.

Click the green “play” button at the top of the window that should say “Run DarkBlue” when you hover over it. If you don’t see that, click the dropdown arrow next to the button, then find where it says “Run DarkBlue”. This will start the program, giving you an application window that looks something like this:

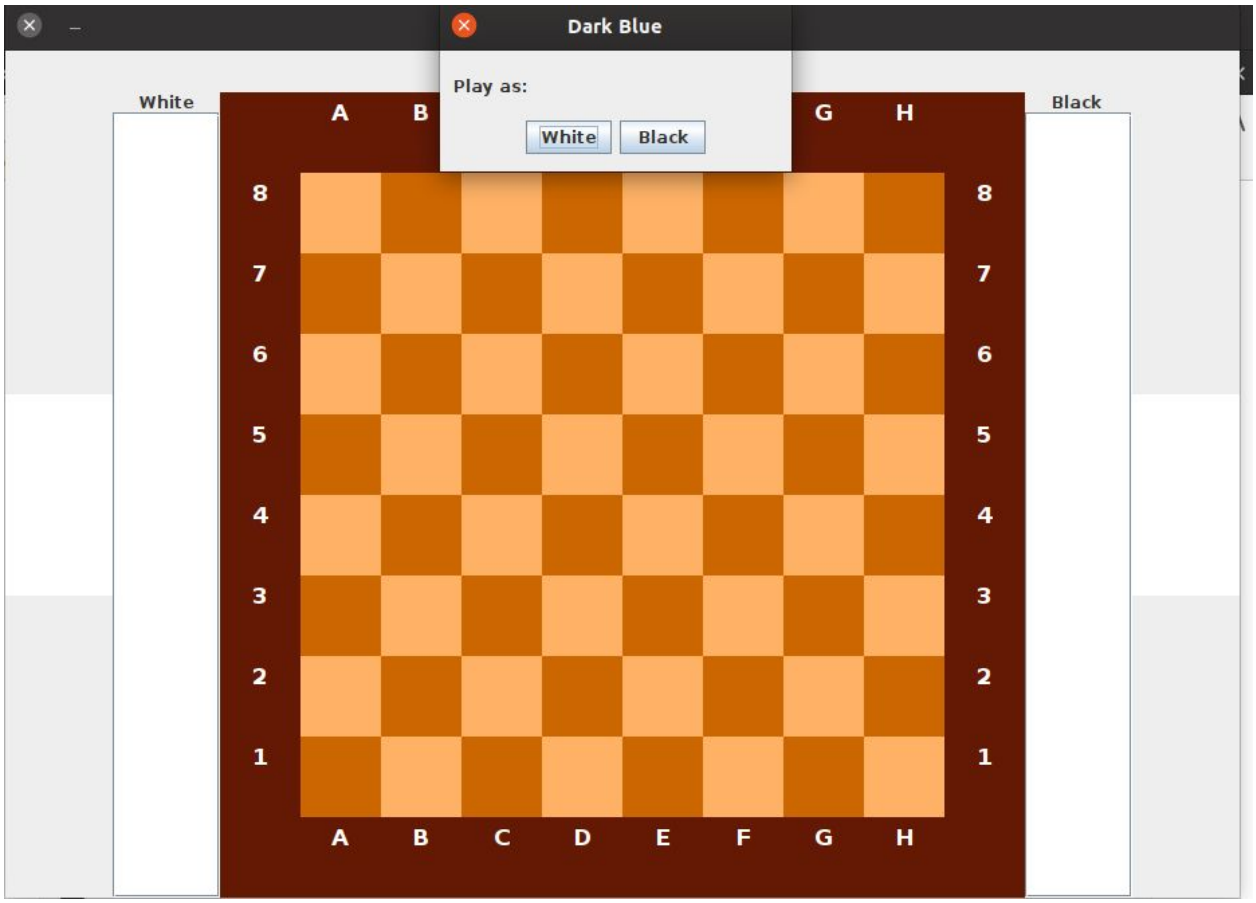


Please note that certain Java components may appear differently on different operating systems.

Starting a New Game:

In order to start a new game, click on the File menu or press the letter “F” on your keyboard. From there, click the “New Game” button or simply press the “N” key.

This will pull up a popup box with the following options:



One of these options must be selected. You cannot click the X button at the top left corner to close this box because the box will simply continue to respawn.

After you have made your choice of color, one of the following situations will occur:

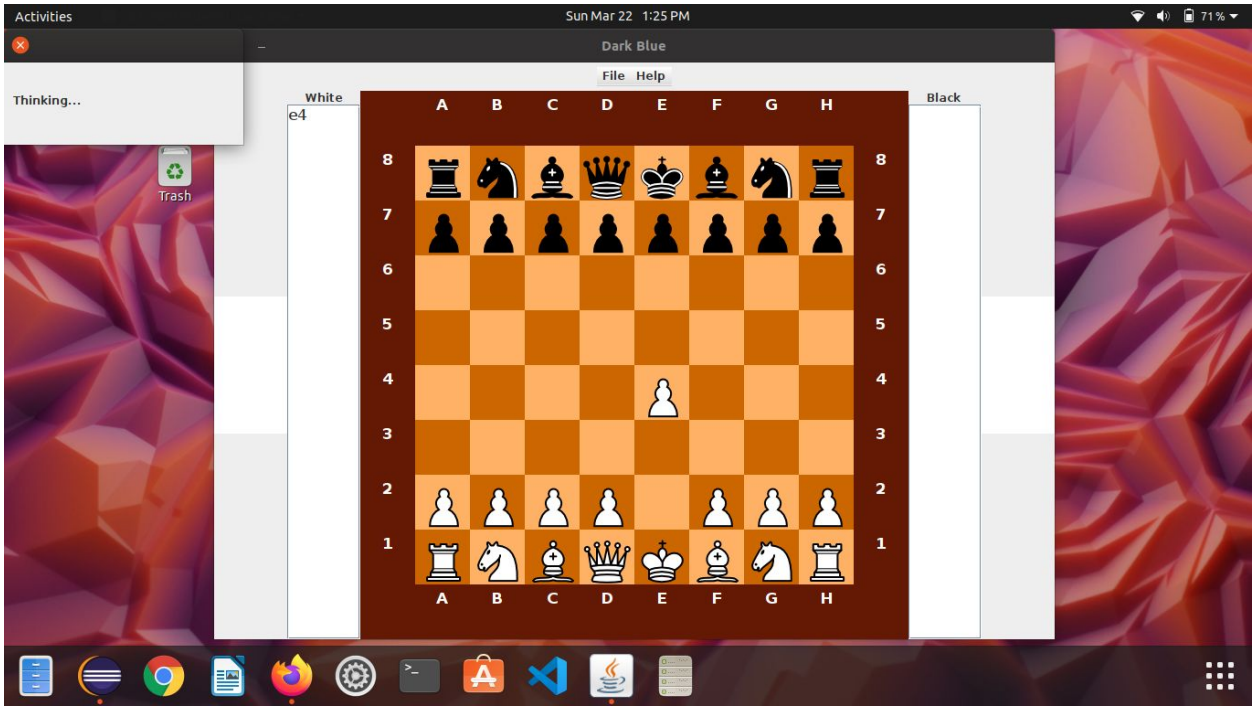
Playing as White:

If you chose to play as white, the board should now look like this:

Nothing will happen because the computer is waiting for you to make your move. Click the primary mouse button on any piece to see what legal moves it has. The pieces with legal moves will have their source tiles as well as their legal move tiles highlighted in green, like so:

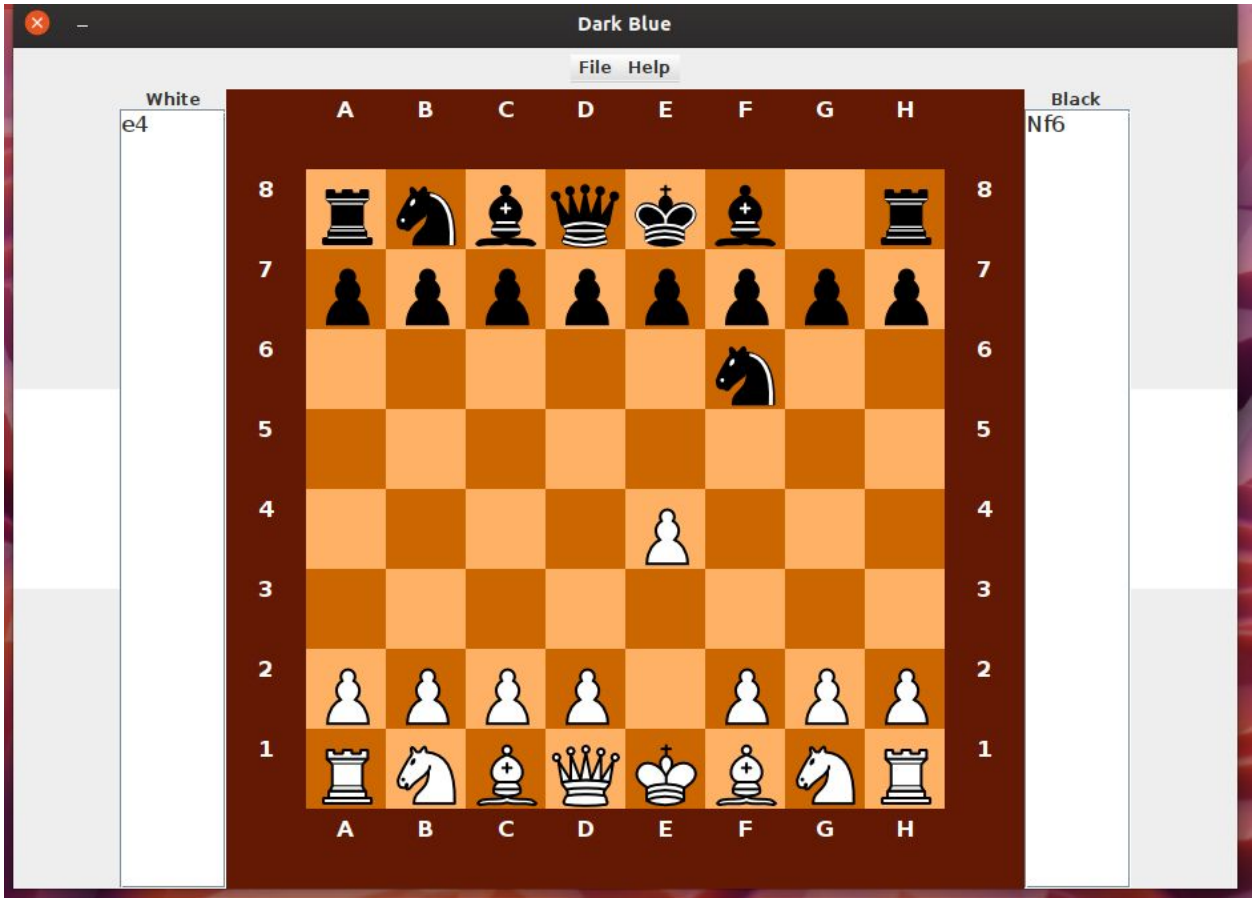
Pieces that don’t have any legal moves will not light up at all.
Only one piece can be selected at a time.
To deselect a currently selected piece, simply click the piece again. This will undo the highlighting and allow you to select a new piece. There is no limit on how many pieces you may select per turn.

Now that we have our piece selected, let’s move it.
To do this, click on one of the green-colored tiles.
Let’s see what happens when we move the king’s pawn from e2 to e4:



Notice how our move is listed in a text field in algebraic notation.

See how the pawn we selected just moved? This automatically triggers the computer to think about its move. Let’s see the result of that:



The computer has just made its move, which has been recorded in another textbox. Now control passes back to the human and you can take as long as you like to decide which move you want to make.

Playing as Black:

This engine was designed for both kinds of players who like playing as either side. When playing as black, you may notice that the board looks different:

This is done to give a more realistic perspective as if this were a real chessboard. The computer automatically makes its move once you click Black. All algebraic notation on the perimeter of the board is reversed as well. This does not have any effect on changing sides for a new game.

Undoing a Move:

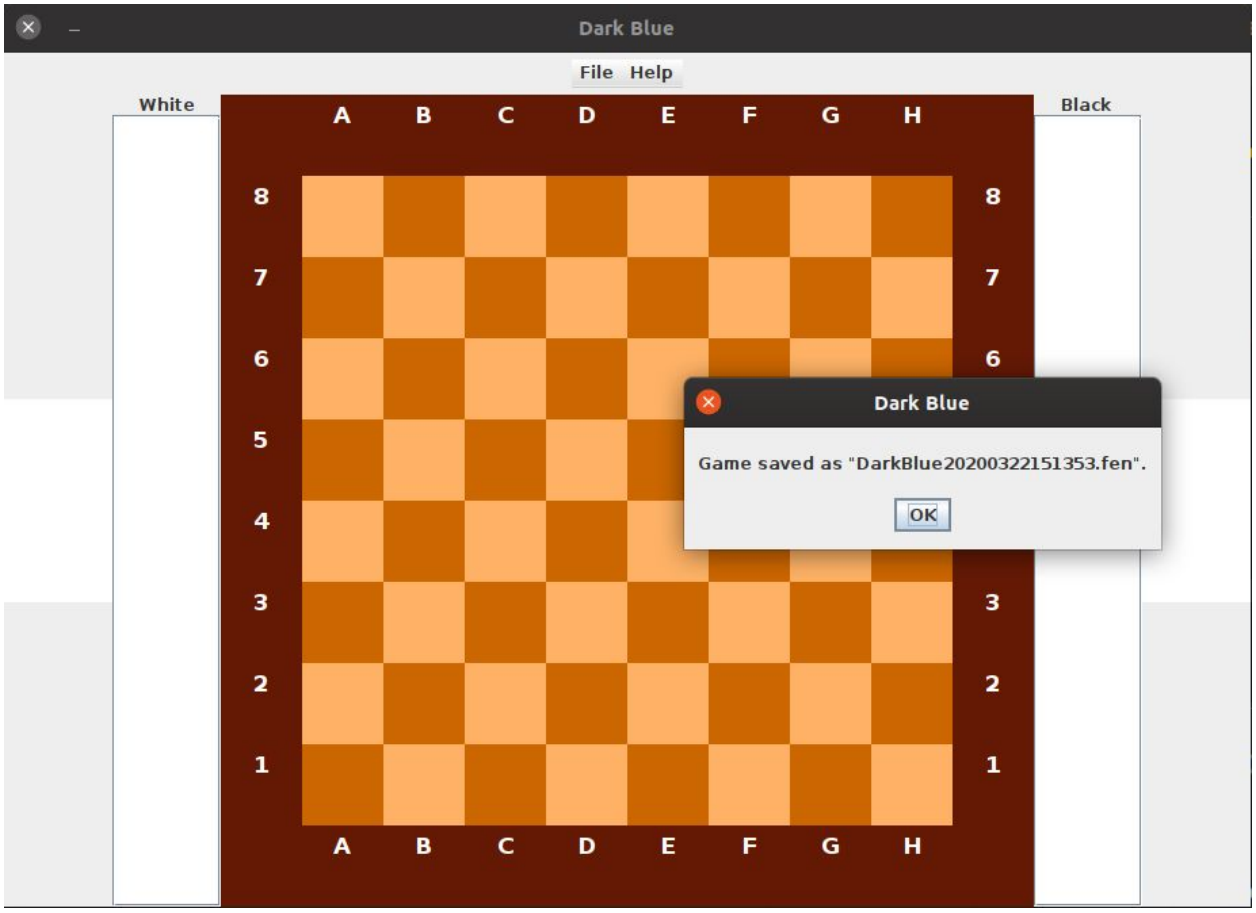
Let's say you made a terrible move that you want to take back. Go up to the File menu, and click the button that reads "Undo". This will remove the previous two halfmoves that were made and allow you to resume and find a better position. Undoing cannot be done on the first turn of either player. A message will pop up showing a warning. This will also not work when a serialized game is resumed and not enough turns have passed.

Getting Help:

If you need a suggestion on how to make a move, the computer will give you some help. To get help, go up to the Help menu and select “Help Me Move”. The computer will think just like it does when making its move but will show you a popup window with its suggested move. There is no limit on how many times you can ask for help.

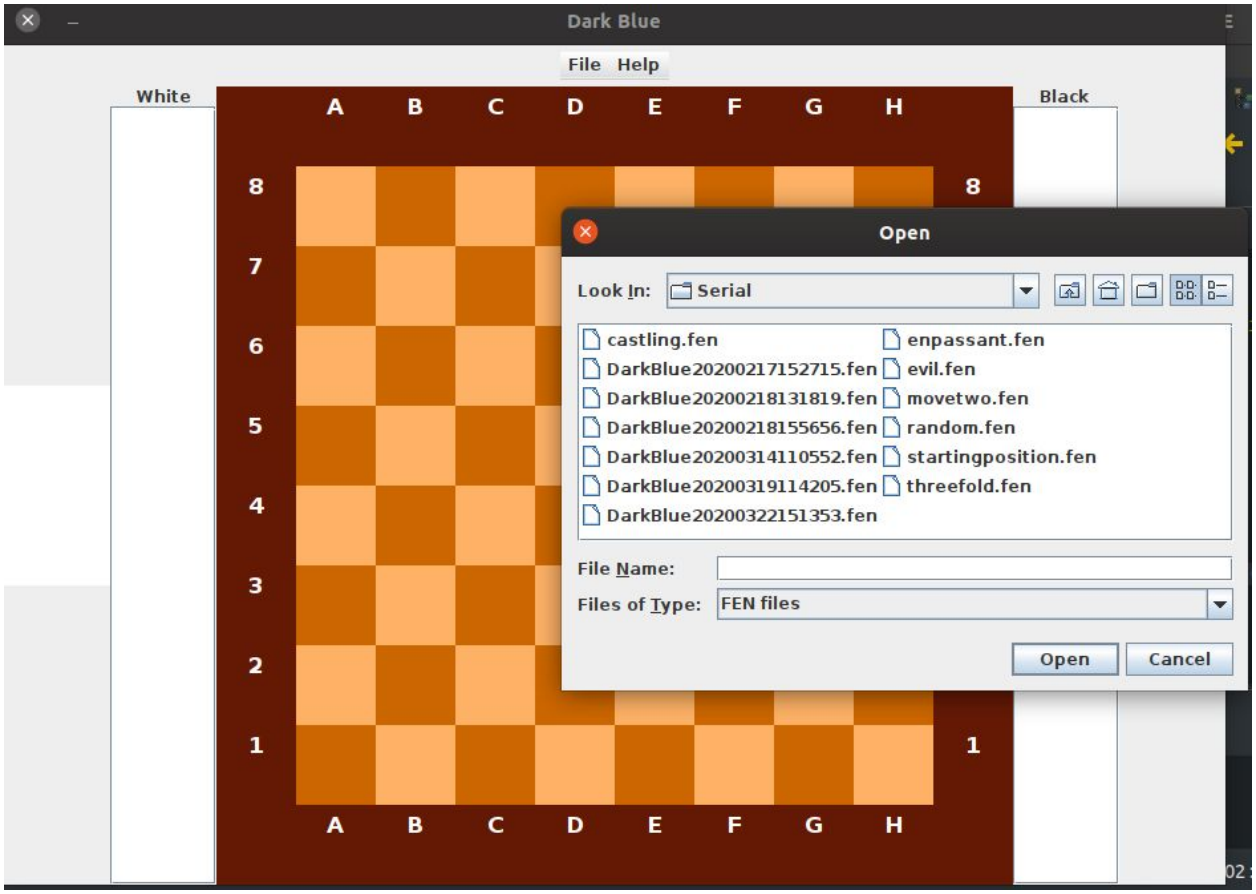
Saving a Game:

Save a game that's already in progress by clicking on the File menu. Then click "Save". The board will be cleared and the automatically-generated filename will show up in a textbox so you can record it for future reference.



Loading a Saved Game from a File:

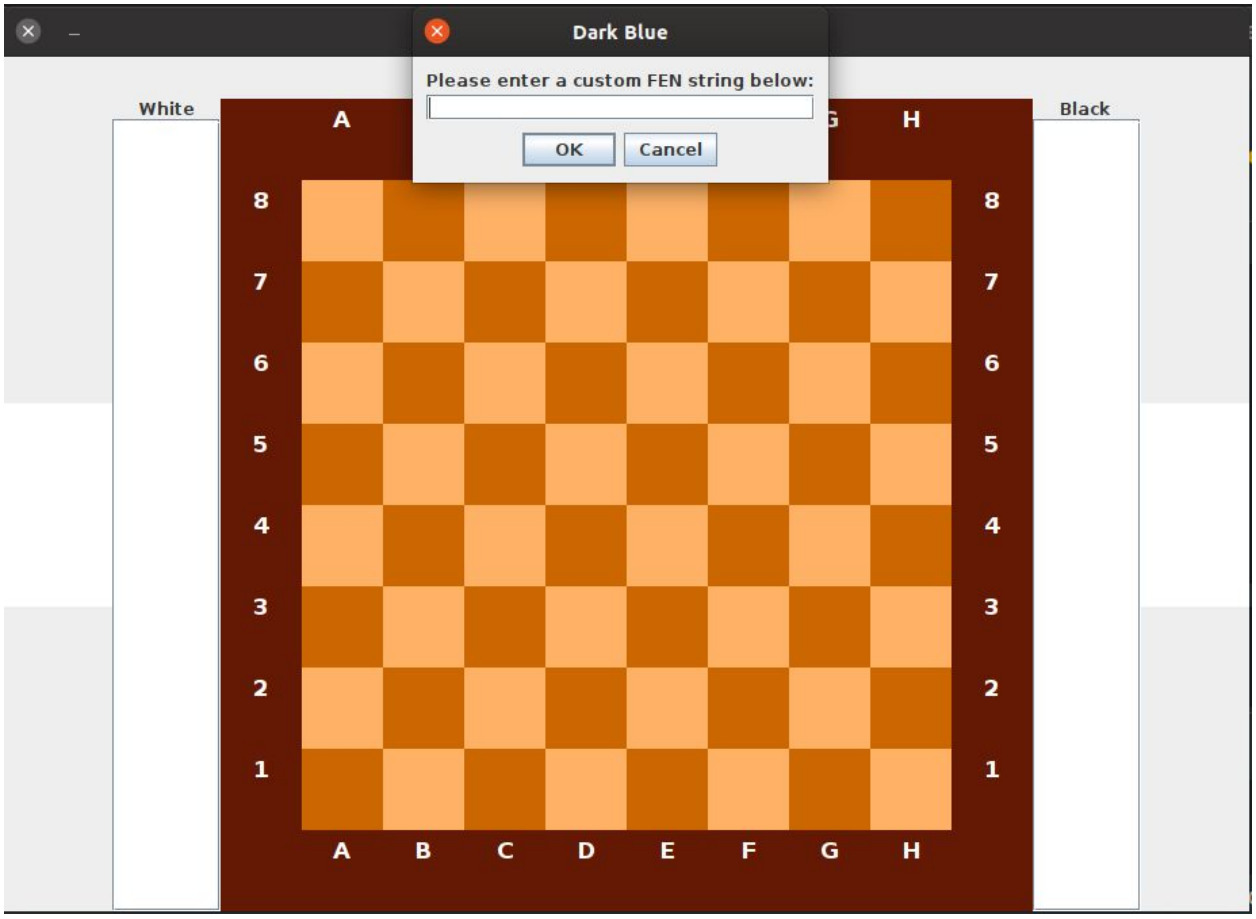
To load a saved game from a file, click the File button and then navigate to the “Load Game…” submenu. This will show two options: “From File” and “From Custom FEN…”. Choose the option that says “From File”.



A JFileChooser will pop up. Navigate to the desired directory and then click on the file you want to load. Note that any file that shows up must have the extension “.fen”. Once the file has been clicked, the engine will parse it. If this file is invalid, the board will remain the same and an error will be displayed in a dialog box. If this file is valid, the user will be able to choose white or black and then the game will resume as normal.

Loading a Saved Game from a Custom FEN String:

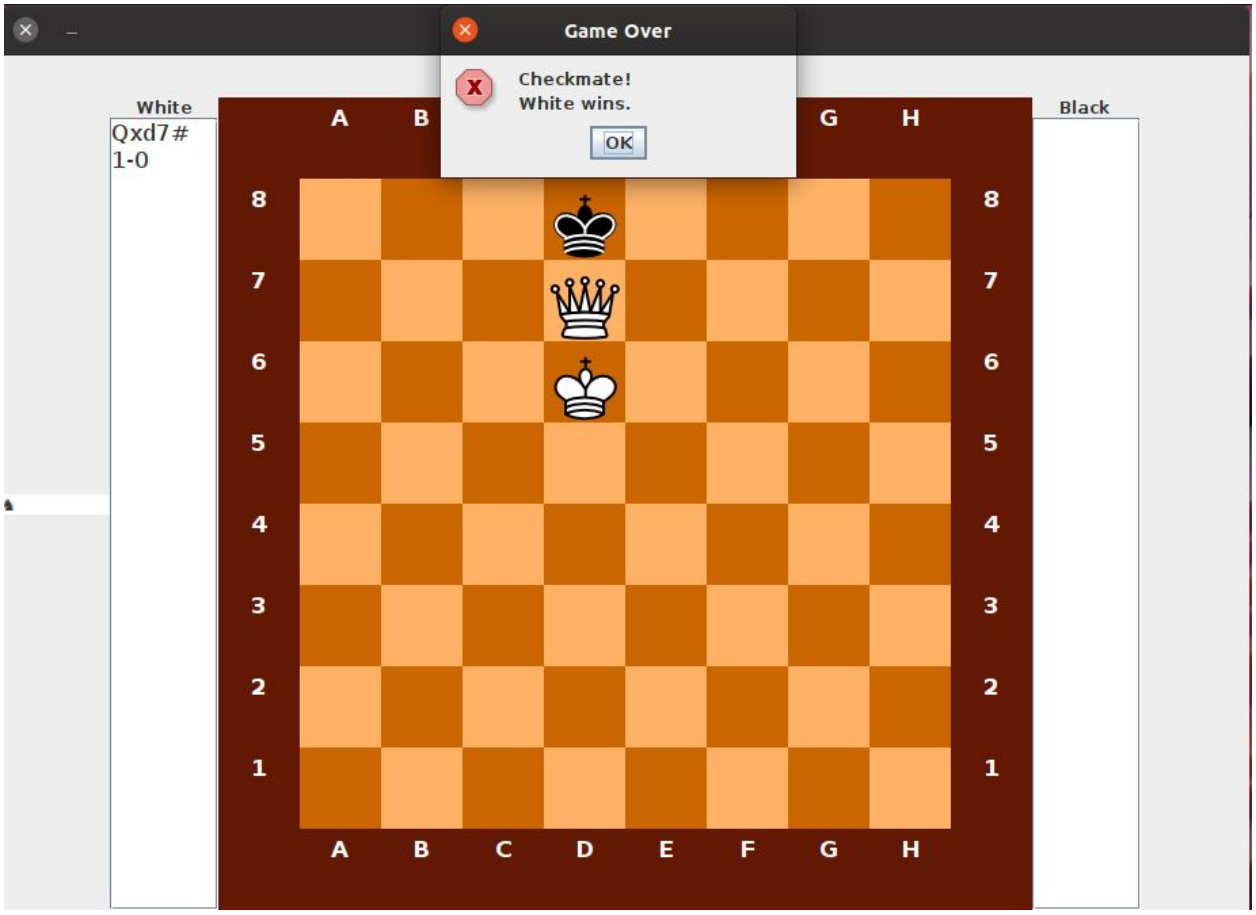
To load a saved game from a custom user-inputted string, click the File button and then navigate to the “Load Game…” submenu. This will show two options: “From File” and “From Custom FEN…”. Choose the option that says “From Custom FEN...”.



A dialog box will pop up prompting you to enter a string. Just like before, the program will show an error message and not do anything if the string is invalid. Otherwise, the user can choose a color and continue playing as normal.

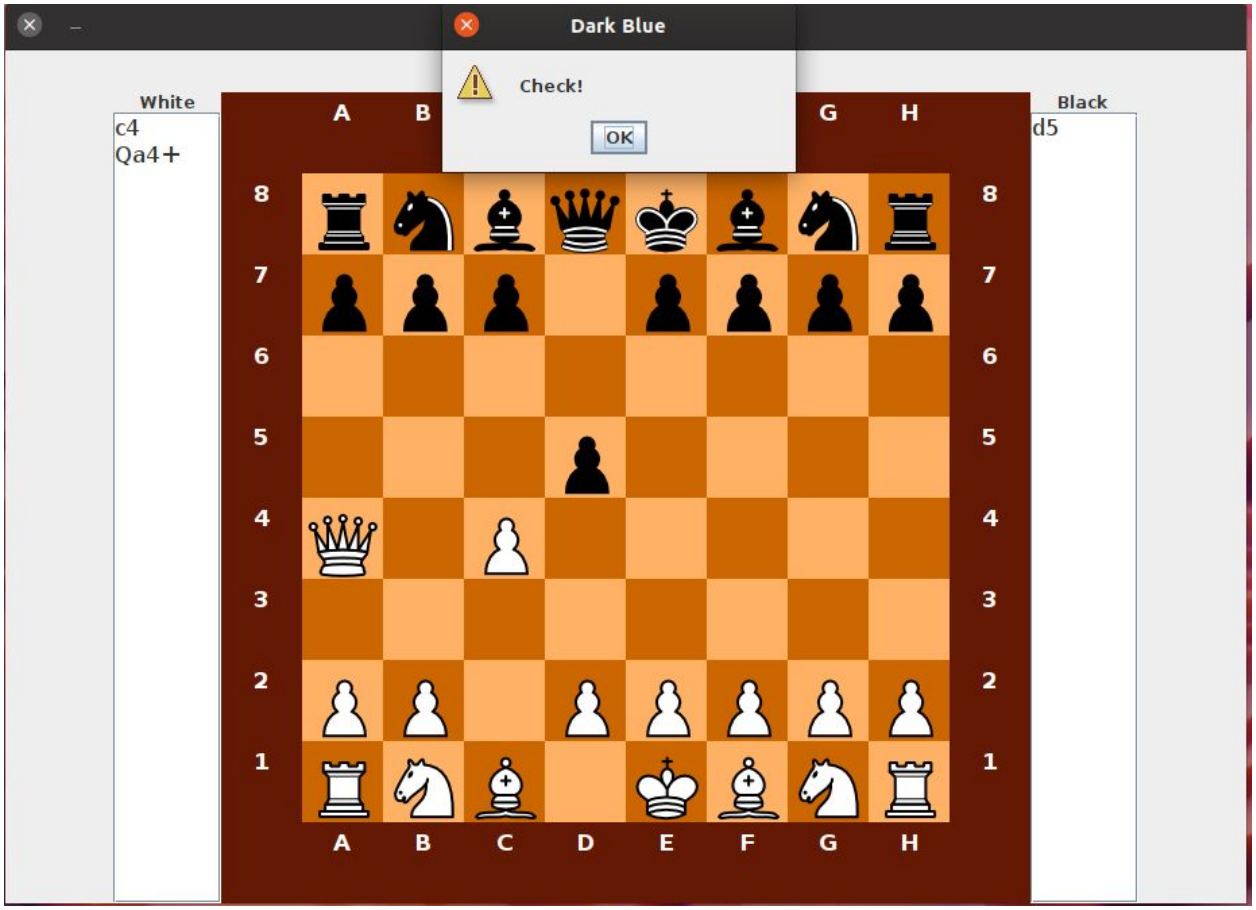
Ending Conditions and Other Differences:

Once the game ends, a message will pop up. This displays the type of ending as well as the outcome of the game. Games that have ended will not be clickable and cannot be saved or undone.

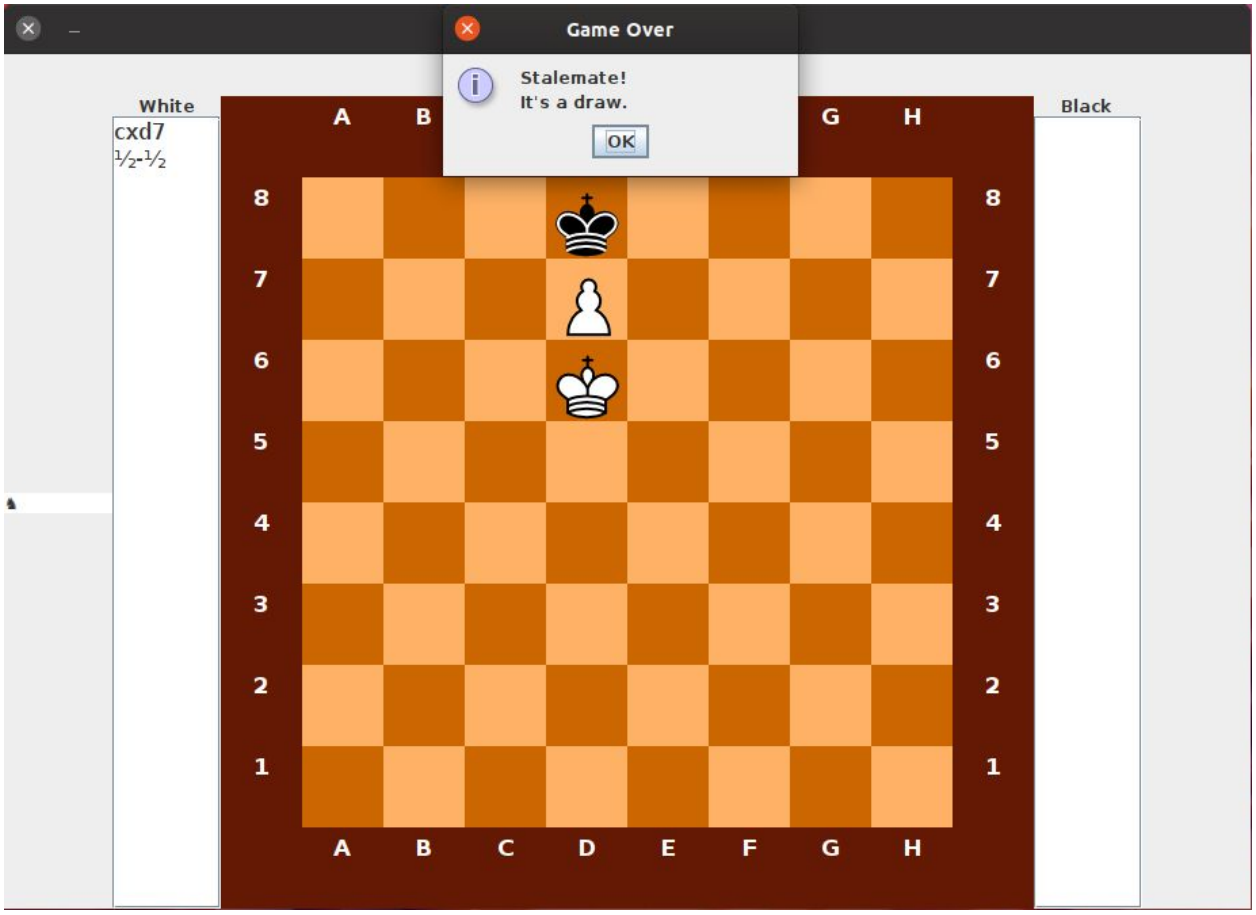


White wins by checkmate.

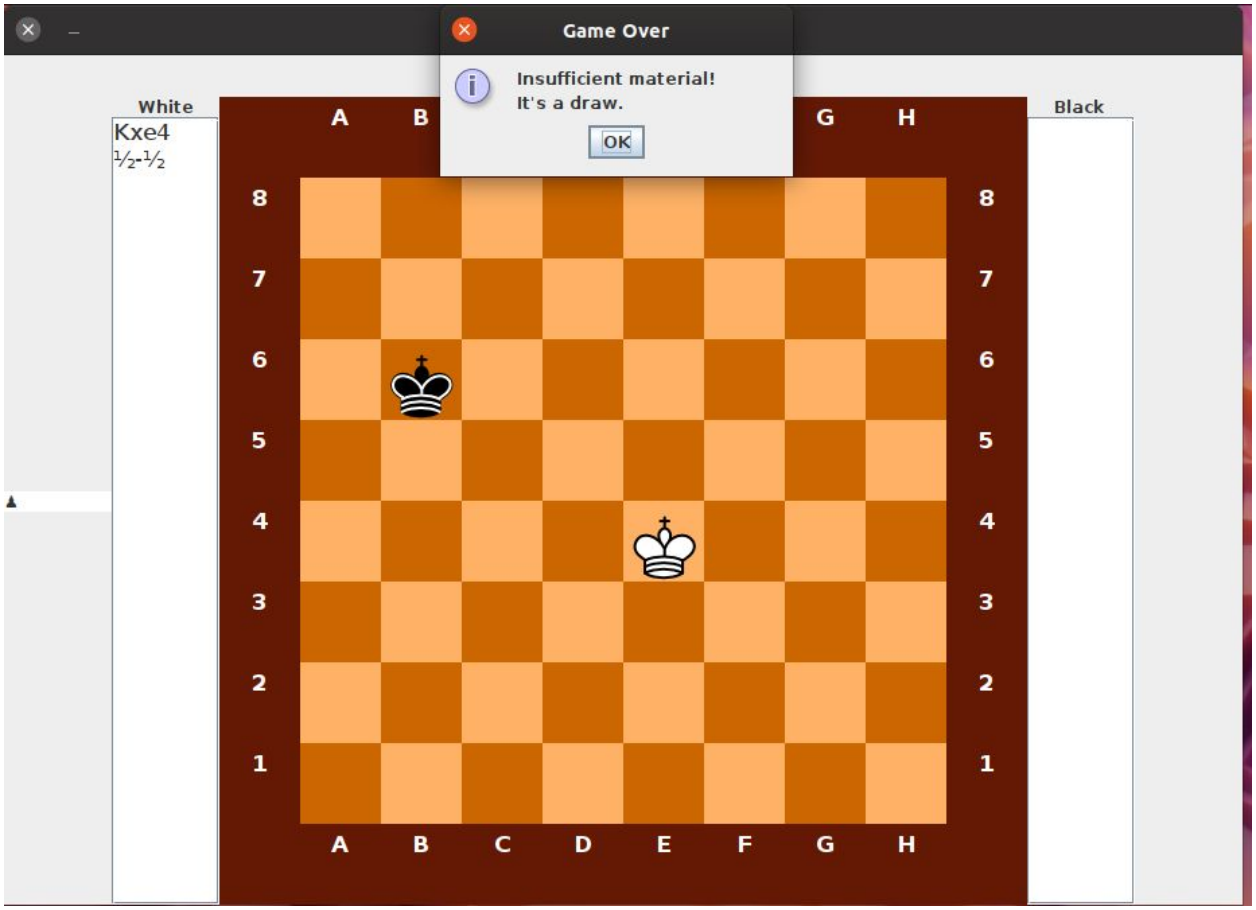
Black wins by checkmate.



The human player is placed into check.

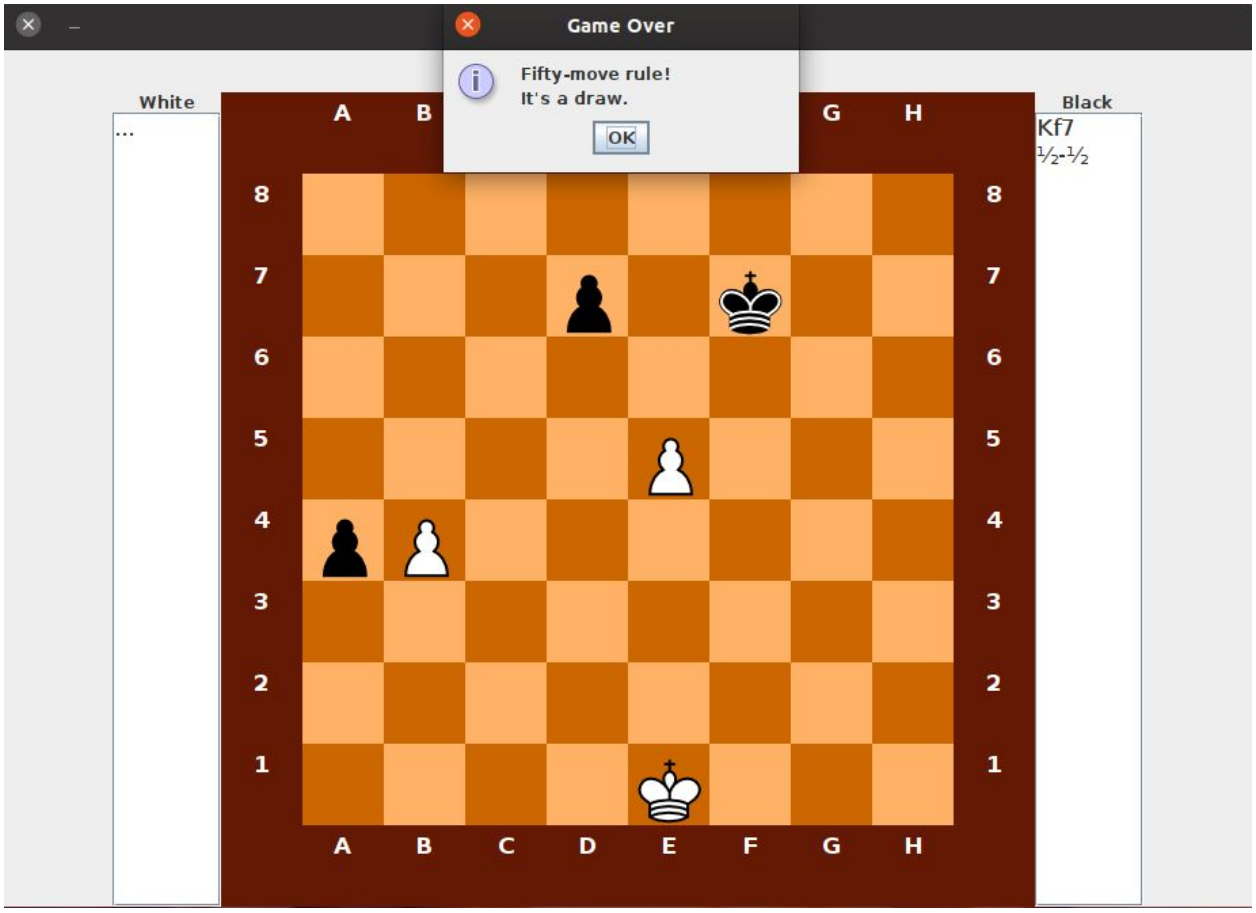


The game is drawn by stalemate.



The game is drawn by insufficient material (bare kings).

The game is drawn by threefold repetition.



The game is drawn by the fifty-move rule.