Testing

Testing at this stage of the program development was conducted in the manner as before. We ran the program acting as the user and checked to ensure each of the requirements was met.

It is required that the game be started from either a standard or custom setup. These two requirements were tested earlier as a part of assignment 1’s deliverables. Changes were made to the start-up menu as the UI now has two different buttons before the standard and custom setup options are given. These two buttons provides the user with the option to start a new game or load a previous game. Functionality of the “Start Game” button was tested by clicking the button and ensuring it put the program into the next desired state (Standard and Custom setup buttons appear). The “Load Game” button was implemented to meet the requirement of being able to save a game. Testing on this feature will be covered below.

During the gameplay, it is required that the pieces be able to make all legal moves. This includes red pieces being able to move forwards and jump black pieces, black pieces to advance down and jump red pieces, and for king pieces to move and jump in all directions. We checked this requirement by running the code from the state in which the board is set up and moving the pieces around. We checked to ensure that red pieces could only move and jump forward, black pieces could only move and jump downward and kings could move and jump in any direction (all within legal black spaces). It is also required that when a piece is legally jumped that it be removed from the board. This was tested by jumping over each type of piece with every other possible one (ie. Red piece jumped by black normal, black king, black piece jumped by red normal, red king, ect) and ensuring the jumped piece was removed from the board. The requirements also specify that a piece be changed from a normal piece to a king piece when advanced all the way across the board. Testing was done on this function by running the code as a user and moving a piece from its second furthest row from starting position to its far end of the board and ensuring it was changed to a king piece. All of these piece movement possibilities were tested from both a standard and custom setup.

As a final requirement, the game must be able to be saved and later resumed. This option was implemented by putting a save game option on the “Menu” drop down menu. This option saves the current layout of the pieces. Once the application is exited, the “Load game” option on the start-up menu would allow the last saved game to be resumed. This was tested by running the code and attempting to save and load from both a standard and custom setup (from various layouts of pieces within each state).

An additional feature we added was the ability for the user to clear the entire board and start fresh while doing a custom setup. This user ability was implemented by putting a “Reset” option under the “Settings” drop down menu in custom setup mode. Functionality of this option was tested by doing various piece layouts and clicking the reset button, ensuring it cleared the board.