Project Testing

1. Game Presentation
   1. Performance Tests
      1. Ensure that when the game begins, the grid is 8x8
         1. Ensure that spaces on the grid are viewable at all times
         2. Ensure that the grid colors are visually distinct
         3. Ensure that the grid is viewable from 1 to 2 feet away
      2. Ensure that the two players’ pieces are two different colors
         1. Ensure the pieces are visually distinct from each other
         2. Ensure that the pieces are visually distinct from the grid
         3. Ensure that the regular pieces are visually distinct from the kings
2. Game Mechanics
   1. Functional Tests
      1. Ensure that at the beginning of the game all of the pieces are in the proper location
      2. Ensure that the black player gets the first move
      3. Ensure that there is a surrender option
      4. Ensure that after surrendering the game ends and a loss is counted
      5. Ensure that jumping a piece results in its removal
      6. Ensure that forced jumps are properly handled
      7. Ensure that multi-jumping works correctly
      8. Ensure that pieces are kinged when they reach the other side of the board
      9. Ensure that kings can properly move forward and backward
      10. Ensure that only valid moves are permitted by the game
      11. Ensure that the game lets the user know if an attempted move is invalid
      12. Ensure that the end of the game is properly determined
      13. Ensure that the player can only move on their turn
   2. Performance Tests
      1. Ensure that turn-taking determined by the computer in an unnoticeable amount of time
      2. Ensure that an invalid move is determined in an unnoticeable amount of time
      3. Ensure that losses are determined in an unnoticeable amount of time
      4. Ensure that the game timer keeps accurate time
      5. Ensure that the player can play a new game upon the completion of a game
      6. Ensure that the game does not ever crash or freeze
3. GUI
   1. Functional Tests
      1. New Game
         1. Ensure the user has the option to play against the computer or another user
         2. Ensure the game board is 8x8
         3. Ensure pieces are in their proper starting position
         4. Ensure no pieces are in the center of the board
         5. Ensure all 24 pieces are on the board
      2. Save Game
         1. Ensure that the user is prompted for a save when the exit a game
      3. Load Game
         1. Ensure that the game correctly loads a saved game
      4. Surrender Game
         1. Ensure that the surrender option functions correctly
         2. Ensure surrendering results in a recorded loss
         3. Ensure that on surrender the user is prompted to exit the game or start a new game
         4. Ensure that if the user exits all statistics are saved
      5. Ability to Exit Game
         1. Ensure that the user is prompted for a save when they exit
         2. Ensure that the user is notified that an unfinished game is counted as a loss
         3. Ensure that the game then reprompts for a save
         4. Ensure that statistics are properly saved
      6. Options Menu
         1. Ensure that the Options Menu contains New Game, Load Game, Surrender Game, Exit Game, Show Statistics, and Help.
         2. Ensure that selecting each option results in the proper action
      7. Mouse Interaction
         1. Ensure that the mouse moves according to the user mouse
         2. Ensure that clicking the board results in the intended action
      8. Display Player’s Turn
         1. Ensure that the current turn is displayed
   2. Performance Tests
      1. Platform Independence
         1. Ensure that the game can be played on Windows XP, Windows 7, GL Linux Servers
         2. Ensure that the look of the game remains the same on all platforms
      2. Steady Frame Rate
         1. Ensure that the game moves fast enough to not hinder gameplay
         2. Ensure that game updates do not appear instantaneous
      3. Pieces move to correct locations
         1. Ensure that pieces move according to the player’s clicks
4. AI
   1. Performance Tests
      1. The AI shall have a response time of less than, or equal to one second.
      2. The AI shall limit the amount of memory used for calculating moves in order to perform efficiently.
      3. The call to the AI shall be simple and require little preparation.
      4. The AI shall always produce a "difficulty appropriate" move under most circumstances.
5. Statistics
   1. Functional Tests
      1. Ensure that the statistics are recorded properly
      2. Ensure that the statistics can be viewed properly
      3. Ensure that the fastest game time can be viewed by the user
      4. Ensure that statistics for AI and Human are maintained separately
      5. Ensure that a loss is recorded on the event of a game exit or surrender
   2. Performance Tests
      1. Ensure that the statistics file is located in the project directory and is smaller than 1 MB
      2. Ensure that the statistics are loaded and saved in under 2 seconds