Testing Guidelines

Four Row Solitaire

Playtesting Steps

Version 1.1

# Outline

This document is to lay out a step by step test to check functionality of the Four Row Solitaire game, and ensure sufficient code coverage to reveal any game breaking issues. As such, there will be several instances of repeated actions, checking of all menu functions, and several play-throughs. This is to determine as much of the full range of functionality as possible, and narrow down any areas of the game for further investigation.

# Known Issues

There are several known issues that are beyond the scope of this testing process. A detailed list is attached. If these issues are encountered, please take note of the continuing existence, and complete the remainder of the testing tasks as best as you are capable of.

1. Erratic detection of mouse clicks
   1. This is related to an underlying issue with the core code. As the GUI elements depend on the program ‘listening’ for them, if the program is busy with other tasks, it may not detect actions real-time. This is a known issue when not multi-threading Java GUI programs, and a complete rewrite of the GUI to support multi-threading is not feasible at this time.
2. Win Screen Fireworks
   1. It seems that the win-screen fireworks display is superseded by the dialog to start a new game. The fireworks are completely ignored if the no option is chosen, and only shows after the yes option is chosen. At this time, since this is a merely cosmetic issue, it is not marked for correction.

# Testing Packages

There will be two separate JAR files prepared for testing. Tests shall be performed on the indicated file in each section of this document.

* FourRowSolitaireTest
  + This version of the program is set up to deal the same deck out onto the game board, so that a consistent and repeatable game is instantiated
* FourRowSolitaire
  + This version is the up-to-date release version, as such all play testing functionality is disabled

# Conventions

## Menu Selection

For menu selections the directions will read as follows:

Menu -> Command

This indicates to select the indicated Menu on the Menu Bar, and click on the indicated Command.

## Key Presses

For key presses the directions will read as follows:

<Key-Key>

<Key>

The first option is for combination key presses

The second option is for individual key presses

## Button Click

For buttons to be clicked, the directions will read as follows:

[Button]

Please click the indicated button

## Miscellaneous

When using FourRowSolitaire.jar, there will be times that request a move be made. Please trigger a new game as many times as necessary to reveal a possible move that satisfies the criteria indicated.

Minor differences in button verbiage may appear, please note changes and continue as best as possible.

A button press may be accidentally omitted, please use best judgement as to how to continue. Review prior steps if necessary. If you are unsure how to proceed please reach out to the team.

# Testing Guides

## Series One – Basic Functions

1. Run FourRowSolitaire.jar
2. Game -> New Game
   1. Verify cards have been dealt in a visibly different order each time this is clicked.
3. <F2>
   1. Verify that this functions effectively the same as Select New Game
4. Make a move - you may need to repeatedly select new game until a move is readily available
5. Game -> Undo Last Move
   1. Verify that the move made in step 4 is reversed.
6. Repeat move made in step 4
7. <Ctrl-Z>
   1. Verify that the move made in step 6 is reversed.
8. Game -> Hint
   1. Verify that the move made in step 4 is at least one of the hinted moves, [Close]
9. <h>
   1. Verify that the provided hints match those in step 8.1, [Close]
10. Game -> Statistics
    1. Verify that the statistics window is shown, [Reset]
11. <F4>
    1. Verify that the statistics window is shown, and that the statistics have reset, [Close]
12. Game -> Options
    1. Verify that the game options dialog opens
    2. For each option change:
       1. Verify that a Note dialog opens indicating   
          “Note: Some options will take affect on the next game.”
       2. [OK]
       3. Verify that the game options dialog and the note have closed
    3. Change Card Draw to different option, [Accept Options]
    4. Change difficulty level, [Accept Options]
       1. Verify dialog in 12.a.i is shown, and behaves the same
    5. Select or deselect an option in Extra Settings, [Accept Options]
    6. Repeat step e for each option
13. Game -> Change Appearance
    1. Verify that the Change Appearance dialog opens
    2. Select each deck option, verify that the shown deck background changes
    3. Select different backgrounds, verify that the thumbnail for the background changes
    4. Choose both a different card back and background, [Choose This Setup]
       1. Verify that the game board has changed to match selected options
    5. Repeat d for the last pair of background and deck options
    6. Repeat d for the original pair of background and deck options
14. <F7>
    1. Verify that the Change Appearance dialog opens, [Choose This Setup]
15. Game -> Exit
    1. Verify that the Save Game dialog appears,
    2. Please take a screenshot of the current game board
    3. [Yes]
16. Restart FourRowSolitaire.jar
    1. Verify that the previous game reloaded with the same game board
17. Help -> View Help
    1. Verify that game instructions are presented, [OK]
18. <F1>
    1. Verify that game instructions are presented, [OK]
19. Help -> About Game
    1. Verify an About Game dialog opens, [OK]
20. Help -> Check for Updates
    1. Verify that <https://sourceforge.net/projects/fourrow/> opens in default browser
21. Close FourRowSolitaire.jar

## Series Two – Game Play

Please note any exceptions thrown during the following test steps.

1. Start FourRowSolitaireTest.jar
2. <F5>
   1. Only the following settings selections should be chosen:
      1. Select Card Draw: Draw One
      2. Select Difficulty: Easy
      3. Select Extra Settings: Timer
3. <F2>
   1. Verify that a game with a stacked deck is presented. Each row should be one suit starting with King at bottom through the 9. Single cells above should have the number 8 cards. Discard pile is empty next to the deal stack of face down cards.
4. Right click on the deal pile, verify that no card face is shown.
5. Click on the deal stack, verify that one card is dealt to the Discard pile, note card dealt should be the 7 of Hearts, and verify that the timer has started.
6. Click on the deal stack again to deal the 7 of Diamonds. Right click on the 7 of Diamonds, verify that the 7 of Hearts is shown.
7. Click on the deal stack again to deal the 7 of Clubs. Right click on the 7 of Clubs, verify that 7 of Diamonds is shown.
8. Select the 8 of Hearts, attempt to place the 8 of Hearts on an Ace pile. This should not be allowed, and the 8 of Hearts will be deselected.
9. Select the 8 of Diamonds, place on either the 9 of Clubs or 9 of Spades
10. Select the 7 of Clubs, place on the 8 of Diamonds
11. Select the 8 of Diamonds, attempt to place into the empty Single cell, this should not be allowed.
12. Select the 7 of Clubs, place into an empty Single cell, this should be allowed.
13. Click completely through the deal pile until the Ace of Spades is shown.
14. Select the Ace of Spades, attempt to place into the Diamonds Ace pile, this should not be allowed.
15. Select the Ace of Spades, place on Spades Ace pile.
16. Click on the empty Deal pile, verify that the discard pile is removed, and that the Deal stack is repopulated.
17. Click the Deal stack three times, verify that the 7 of Spades is shown.
18. Click through the entire Deal stack, then when empty, click the Deal stack again.
19. Repeat 18, verify that upon clicking the Deal stack again, a message dialog appears showing “You have reached your deck through limit.” [OK]
20. <F5>
    1. Select Card Draw: Draw Three
    2. Select Difficulty: Hard
    3. Deselect Extra Settings: Timer
    4. Select Extra Settings: Win Sounds
    5. Select Extra Settings: Win Animation
    6. [Accept Options] [OK]
21. <F2>
    1. Verify that a Continue dialog is shown reading:  
       “Quitting the current game will result in a loss. Do you wish to continue?” [No]
    2. Verify that the dialog has closed, and the game board has not changed
22. <F2>
    1. Verify previous Continue dialog is shown
    2. [Yes]
23. Verify that the board is now showing exactly as in 3.a
24. Click once on Deal pile
    1. Verify that 3 cards have been dealt
    2. Verify that the Timer reads: OFF
25. Click once on Deal pile
    1. Verify that another 3 cards have been dealt
    2. Right click on each of the revealed cards in the Discard pile, verify that no cards change to an underlying card.
26. Click through the entire Deal pile thrice, verify that you can only go through the deck 1 time before the limit dialog appears.
27. <F5>
    1. Select Difficulty: Medium
    2. [Accept Options] [OK]
28. Click through the entire Deal pile twice, verify that you can only go through the deck twice before the limit dialog appears.
29. Game -> Options
    1. Select Difficulty: Easy
    2. [Accept Options] [OK]
30. <F2> [Yes]
31. Click through the entire Deal pile three times, verify that you can only go through the deck 3 times before the limit dialog appears.
32. <F2>[Yes]
33. Click through the entire Deal pile until the Ace of Spades is shown.
34. Double click the Ace of Spades, verify that the card is placed in correct Ace pile.
35. Proceed through the remainder of the Discard pile, randomly double clicking or clicking and placing cards in correct slots. Every 5th card, attempt to place in the incorrect Ace Pile.
36. Proceed through all remaining cards until the 7 of Spades is placed on its Ace pile.
37. Select the 8 of Hearts, place on the 9 of Clubs
38. Select the 7 of Spades, place on the 8 of Hearts
39. Place the 8 of Diamonds on correct Ace pile
40. Place the 9 of Diamonds on correct Ace pile
41. Select the 9 of Clubs, verify that both the 9 of Clubs, the 8 of Hearts, and the 7 of Spades are selected
42. Click on the 10 of Diamonds, verify that the stack is placed on the 10 of Diamonds.
43. Select the 10 of Diamonds, attempt to place on the 9 of Spades. This should not be allowed.
44. Proceed to complete the remaining moves until the Queen of Hearts and all four Kings remain. Place the Queen of Hearts on the King of Spades. Play the King of Diamonds and King of Clubs to their respective Ace piles
45. Select the King of Spades, then move this stack to an empty column. Verify that this works.
46. Select the Queen of Hearts. Attempt to move this card to an empty column, this should not be allowed.
47. Select the King of Hearts, move this to an empty column. Verify that this works.
48. Select the Queen of Hearts, move this card to an empty Single cell.
49. Select the King of Hearts, attempt to stack this card onto the Queen of Hearts. This should not be allowed.
50. Select the King of Spades, move this card to an empty Single cell.
51. Select the Queen of Hearts, attempt to stack this card onto the King of Spades. This should not be allowed.
52. Select the King of Spades, move this card to a different Single Cell.
53. Select the King of Hearts, attempt to move this card to the Discard pile, this should not be allowed.
54. Select the King of Hearts, attempt to move this card to the Deal pile, this should not be allowed.
55. Play all remaining cards to correct Ace piles
56. Verify that sounds are played.
57. Verify that the You Won dialog is displayed.
58. [Yes]
59. Verify that a fireworks display is now shown. (This fireworks display is blocked by the You Won modal dialog, and is only revealed at this point).
60. Click on the red click to close text.
    1. Verify that a new game board showing the stacked deck is displayed.
61. Play through another entire game, until the You Won dialog is displayed. [No]
    1. Verify that the game closes.

# Results

Please submit results and any impressions of the game that you had to the team for review.