**Connect Four Game**

Test Case Document

Revision 1.0

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Team Name: Team 22

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**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 1: Test to verify that Connect Four main panel opens successfully**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-001

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Verify the main panel position | The main panel should be offset to the left of the monitor |
| 4 | Verify that the main panel’s upper right corner has minimize, maximize, and close functions. | The main panel should have 3 focus-sensitive buttons:   1. Minimize button [ - ] 2. Maximize button [ [] ] 3. Close button [ X ] |
| 5 | Verify that the main panel’s upper right corner minimize, maximize, and close functions perform correctly. | 1. Point and click on the [ - ] button causes the main panel to minimize 2. Point and click on the [ [] ] button causes the main panel to maximize 3. Point and click on the [ X ] button causes the program to exit. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 2: Test to verify that Player 1 text box default value is Player 1**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-002

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**“button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A 6 x 7 matrix of empty, black, circular holes 5. A circular chip matching the player’s color |
| 4 | If “**Player 1’s turn.**” Is not displayed on the upper right corner along with the counts, Drag the circular chip to any black circular column and then single left-click to drop the circular chip into the column stack. | “**Player 1’s turn.**” Message displayed on the upper right corner. |
| 5 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 3: Test to verify that Player 2 text box default value is Player 2**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-003

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | If “**Player 2’s turn.**” Is not displayed on the upper right corner along with the counts, Drag the circular chip to any black circular column and then single left-click to drop the circular chip into the column stack. | “**Player 2’s turn.**” Message displayed on the upper right corner. |
| 5 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 4: Test to verify that “Play Against Computer” button forced Player 2’s name to be “Computer”**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-004

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**Play Against Computer**” button | The Player 2’s text box updated itself with the text “**Computer**” |
| 4 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 5: Test to verify that “PLAY” button closed the main panel and transitioned to the game play panel**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-005

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 6: Test to verify that, in the game play panel, the player’s chip is dropped into any column of the 6 x 7 matrix from the bottom row upward.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-006

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | Drag the circular chip to any black circular column and then single left-click to drop the circular chip into the column stack. | The player’s chip is dropped into any column stack of the 6 x 7 matrix from the bottom row upward, first in, last out. |
| 5 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 7: Test to verify that, in the game play panel, if four of the chips of the same color in the 6 x 7 matrix are lined up linearly and diagonally, then a winning condition is detected.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-007

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | Win the game by arranging for four chips of the same color to line up linearly and diagonally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 5 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**FUNCTIONAL VERIFICATION TESTING**

**TEST CASE 8: Test to verify that, in the game play panel, if four of the chips of the same color in the 6 x 7 matrix are lined up linearly and horizontally, then a winning condition is detected.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-008

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | Win the game by arranging for four chips of the same color to line up linearly and horizontally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 5 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 9: Test to verify that, in the game play panel, if four of the chips of the same color in the 6 x 7 matrix are lined up linearly and vertically, then a winning condition is detected.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-009

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | Win the game by arranging for four chips of the same color to line up linearly and diagonally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 5 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 10: Test to verify that, if Player 1 won and the “Play Again” button is clicked, then the starting player is either Player 2 or Computer (if playing against computer).**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-010

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Enter player 2’s name | The main panel’s text box labeled “Player 2:” accepted the string entered |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Win the game by arranging for four chips of player 1’s color to line up linearly and diagonally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 7 | Click the “Play Again” button | 1. The concluding panel closed out 2. The game play panel opens 3. The game statistics updated 4. The starting turn is “**Player 2’s turn:**” |
| 8 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 11: Test to verify that, if Player 2 or Computer (if playing against computer) won and the “Play Again” button is clicked, then the starting player is either Player 1.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-011

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Enter player 2’s name | The main panel’s text box labeled “Player 2:” accepted the string entered |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Win the game by arranging for four chips of player 1’s color to line up linearly and diagonally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 7 | Click the “Play Again” button | 1. The concluding panel closed out 2. The game play panel opens 3. The game statistics updated 4. The starting turn is “**Player 1’s turn:**” |
| 8 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 12: Test to verify that, if Player 1 won and the “Play Again” button is clicked, then the starting player is Computer.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-012

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Click on the “**Play Against Computer**” button | The Player 2’s text box updated itself with the text “**Computer**” |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Win the game by arranging for four chips of player 1’s color to line up linearly and diagonally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 7 | Click the “Play Again” button | 1. The concluding panel closed out 2. The game play panel opens 3. The game statistics updated 4. The starting turn is “**Computer’s turn:**” |
| 8 | Close out the game play panel by single left-clicking the focus sensitive [ X ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 13: Test to verify that, if the Computer won and the “Play Again” button is clicked, then the starting player is Player 1.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-013

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Click on the “**Play Against Computer**” button | The Player 2’s text box updated itself with the text “**Computer**” |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Play the game and let the Computer player win. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 7 | Click the “**Play Again**” button | 1. The concluding panel closed out 2. The game play panel opens 3. The game statistics updated 4. The starting turn is “**Computer’s turn:**” |
| 8 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 14: Test to verify that, during game play, the “Round number” value is updated every time the players make their move, and the players’ turns are alternating.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-014

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Enter player 2’s name | The main panel’s text box labeled “Player 2:” accepted the string entered |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Play the game by dropping chips onto the 6 x 7 matrix of black circular holes. | 1. The game play panel updates the “Round number” value before a player makes the move. 2. The players’ turns are alternating. |
| 7 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 15: Test to verify that the game statistics are updated correctly to reflect players’ winning scores.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-015

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Enter player 2’s name | The main panel’s text box labeled “Player 2:” accepted the string entered |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Win the game by arranging for four chips of player 1’s color to line up linearly and vertically. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 7 | Click the “**Play Again**” button | 1. The concluding panel closed out 2. The game play panel opens 3. The game statistics updated with **CURRENT WINS** showing **Player 1: 1** and **Player 2: 0** |
| 8 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 16: Test to verify that the game statistics are updated correctly to reflect players’ winning scores.**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-016

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Enter player 1’s name | The main panel’s text box labeled “Player 1:” accepted the string entered |
| 4 | Enter player 2’s name | The main panel’s text box labeled “Player 2:” accepted the string entered |
| 5 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 6 | Win the game by arranging for four chips of player 2’s color to line up linearly and vertically. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “Play Again” button 4. The “Main Menu” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 7 | Click the “**Play Again**” button | 1. The concluding panel closed out 2. The game play panel opens 3. The game statistics updated with **CURRENT WINS** showing **Player 1: 0** and **Player 2: 1** |
| 8 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |

**TEST CASE 17: Test to verify that “Main Menu” button closed the concluding panel and transitioned to the main panel**

* Method of Testing : Manual
* Compiler: JDK SE 8 installed in Eclipse IDE Mars release.
* Feature / Requirement: UC-CF-041916-BR-017

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| **S.N** | **EXECUTION STEPS** | **EXPECTED RESULTS** |
| 1 | Open the Connect Four project in Eclipse IDE | Eclipse IDE opened the ConnectFour project successfully |
| 2 | Click the run (green play) button to execute the ConnectFour program | The ConnectFour main panel opens, showing the following items:   1. A window filled with black 2. Connector Four white label on top 3. Player 1: white label 4. Black Player 1 default value in white text box 5. Player 2: white label 6. Black Player 2 default value in white text box 7. Play Against Computer button 8. PLAY button |
| 3 | Click on the “**PLAY**” button | The main panel closed out.  A game play panel opens. The following items are displayed on the upper right corner of the game play panel:   1. Winning counts 2. Round played counts 3. Player’s turn 4. A circular chip matching the player’s color   There is also a 6 x 7 matrix of empty, black, circular holes displayed on this panel |
| 4 | Win the game by arranging for four chips of any player’s color to line up linearly and horizontally. | The game play panel closed out and the concluding panel opens with the following items:   1. The “GAME OVER” Message 2. The name of the winner 3. The “**Play Again**” button 4. The “**Main Menu**” button 5. Minimize button [ - ] 6. Maximize button [ [] ] 7. Close button [ X ] |
| 5 | Click the “**Main Menu**” button | The concluding panel closed out and the main panel opens, showing the following items:   1. A window filled with black Connector Four white label on top 2. Player 1: white label 3. Black Player 1 default value in white text box 4. Player 2: white label 5. Black Player 2 default value in white text box 6. **Play Against Computer** button 7. **PLAY** button |
| 6 | Close out the game play panel by single left-clicking the focus sensitive [ **X** ] button located on the upper-right corner of the game play panel | The program exits gracefully. |