**Test Case**

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| **ID/Title:** | | TC#001 – Mastermind | | | |
| **Type:** | | White Box | | | |
| **For System:** | | Mastermind | | | |
| **Use Case:** | | Game Play | | | |
| **Prerequisites:** | | User has launched the App (Game) In each case where a specific control is tested, the values of all other controls were known and valid. | | | |
| **Form Element Test Listing:** | | | | | |
| **Test #** | **Form Element Function/Purpose** | | | **Form element type (e.g. Text Box)** | |
| 1 | Select number of players | | | Button (1 Player or 2 Players) | |
| 2 | Select difficulty | | | Button (Easy, Medium, or Hard) | |
| 3 | Select color guess | | | Table cell (clickable represented by color) | |
| 4 | Remove previously selected color | | | Button (Remove) | |
| 5 | Check user guess (compare to generated solution) | | | Button (Check) | |
| **Form Element Test: Select Number Players** | | | | | |
| **Test #** | **Scenario** | | **Expected Result** | | **Actual Result** |
| 1 | User selects a “1 player” game | | Player proceeds to difficulty selection | | Executed as expected |
| User selects a “2 player” game | | Player 2 is prompted to enter solution to be guessed | | Player two is expected to enter in a solution. |
| **Form Element Test: Select Difficulty** | | | | | |
| **Test #** | **Scenario** | | **Expected Result** | | **Actual Result** |
| 2 | User selects “Easy” game mode | | User is presented with the game board with 12 guesses to solve solution | | 12 rows display |
| User selects “Medium” game mode | | User is presented with the game board with 10 guesses to solve solution | | 10 rows display |
| User selects “Hard” game mode | | User is presented with the game board with 8 guesses to solve solution | | 8 rows display |
| **Form Element Test: Select Color Guess** | | | | | |
| **Test #** | **Scenario** | | **Expected Result** | | **Actual Result** |
| 3 | No previous guess made | | Color choice is placed in 1st spot for player guess | | Colour placed in first cell |
| 1 previously established guess | | Color choice is placed in 2nd spot for player guess | | Colour placed in second cell |
| 2 previously established guesses | | Color choice is placed in 3rd spot for player guess | | Colour placed in third cell |
| 3 previously established guesses | | Color choice is placed in 4th spot for player guess | | Colour placed in fourth cell |
| 4 previously established guesses | | Nothing happens | | Nothing happens |
| **Form Element Test: Remove Previously Selected Color** | | | | | |
| **Test #** | **Scenario** | | **Expected Result** | | **Actual Result** |
| 4 | No previous guess made | | Nothing happens | | Nothing happens, no errors in console |
| 1 previously established guess | | The first guess is removed | | First guess is removed |
| 2 previously established guesses | | The second guess is removed | | Second guess is removed |
| 3 previously established guesses | | The third guess is removed | | Third guess is removed |
| 4 previously established guesses | | The fourth guess is removed | | Four guess is removed |
| **Form Element Test: Check User Guess (Compare to Generated Solution)** | | | | | |
| **Test #** | **Scenario** | | **Expected Result** | | **Actual Result** |
| 5 | Player has guessed solution | | Player is presented with a winning screen | | Win screen displays |
| Player has not guessed the solution and no more attempts are available | | Player is presented with a “try again” screen (they are not told they are a loser as that is mean) | | Solution displays, along with a message and a restart button. |
| Player has not guessed and correct colors positions nor have they guessed correct colors (more attempts available) | | No colors are placed in the solution side of the table and user proceeds to their next attempt | | Nothing is displayed |
| Player has guessed a correct color position with no other correct colors (more attempts available) | | A black peg is placed in the first solution position with the remaining positions left blank | | One black peg displays |
| Player has guessed a correct color position with one other correct color (more attempts available) | | A black peg is placed in the first solution position, a white peg is placed in the second position with the remaining positions left blank | | One black peg, one white peg |
| Player has guessed a correct color position with two other correct color (more attempts available) | | A black peg is placed in the first solution position, a white peg is placed in the second and third positions with the remaining position left blank | | One black peg, two white pegs |
| Player has guessed a correct color position with three other correct color (more attempts available) | | A black peg is placed in the first solution position, a white peg is placed in the second, third and fourth positions. | | One black peg in first, three white pegs in positions 2, 3, and 4 |
| Player has guessed two correct color position with no other correct colors (more attempts available) | | A black peg is placed in the first and second solution positions with the remaining positions left blank | | A black peg is placed in the first and second slots |
| Player has guessed two correct color position with one other correct color (more attempts available) | | A black peg is placed in the first and second solution positions, a white peg is placed in the third position with the remaining position is left blank | | Two black pegs, one white peg |
| Player has guessed two correct color position with two other correct color (more attempts available) | | A black peg is placed in the first and second solution positions, a white peg is placed in the third and fourth positions. | | Two black pegs, two white pegs |
| Player has guessed three correct color position with no other correct color (more attempts available) | | A black peg is placed in the first, second and third solution positions, a white peg is placed in the third position with the remaining position left blank | | Three black pegs (this should also be the expected result) |
| Player has guessed a correct color but no positions are correct (more attempts available) | | A white peg is placed in the first solution position with the remaining positions left blank | | One white peg, three empty spots |
| Player has guessed two correct color but no positions are correct (more attempts available) | | A white peg is placed in the first and second solution positions with the remaining positions left blank | | Two white pegs, two empty spots |
| Player has guessed three correct color but no positions are correct (more attempts available) | | A white peg is placed in the first, second and third solution positions with the remaining position left blank | | Three white pegs, one empty spot |
| Player has guessed four correct color but no positions are correct (more attempts available) | | A white peg is placed in all four solution positions | | Four white pegs are placed |
| **Bugs: Restart after lost was a little finicky. Just needed to add a few lines of code that were already pre-added** | | | | | |
| **Notes, questions and suggested improvements:**  **Add the “how many rounds would you like to play” option? Maybe add some text to say the difference between the selection side and the black/white sides. Maybe display something to say that check did happen, but there was just no right colours.** | | | | | |