**Test Cases for Feature : Display Main Menu**

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** |
| 1.0 | Test the program when a user enters an alphabet. | Enters “abc” | **Error message will be shown.**  “Invalid option. Enter the correct option.Please try again.” | **Error message is shown:**  “Invalid syntax. Enter 1-5.” |
| 2.0 | Test the program when a user enters a random symbol. | Enters “%”. | **Error message will be shown.**  “Invalid option. Enter the correct option.Please try again.” | **Error message shown:**  “Invalid syntax.Enter 1-5.” |
| 3.0 | Test the program when a user enters an invalid number. | Enters “8”. | **Error message will be shown.**  “Invalid option. Enter the correct option.Please try again.” | **Error message shown:**  “Invalid choice.  Enter 1-5.” |
| 4.0 | Test the program when a user enters a word of the valid correspond number. | Enters “Three”. | **Error message will be shown.**  “Invalid option. Enter the correct option.Please try again.” | **Error message shown**:  “Invalid syntax.Enter 1-5. |
| 5.0 | Test the program when a user enters a valid number twice at the same time. | Enters “3 3”. | **Error message will be shown.**  “Invalid option. Enter the correct option.Please try again.” | **Error message shown**:  “Invalid Choice.Enter 1-5. |
| 6.0 | Test the program when a user enters a negative number. | Enters “-3”. | **Error message will be shown.**  “Invalid option. Enter the correct option.Please try again.” | **Error message shown**:  “Invalid choice..Enter 1-5. |
| 7.0 | Test the program when a user enters a valid number. | Enters “1”. | Program proceed to run option 1. Message “Option [1] Read and load maze from file”  will be shown.. | Message shown: “Option [1] Read and load maze from file”. |
| 7.1 | Test the program when a user enters a valid number. | Enters “2”. | Program proceed to run option 2. A message “Option [2] View Maze”  will be shown. | Message shown: “Option [2] View Maze”. |
| 7.2 | Test the program when a user enters a valid number. | Enters “3”. | Program proceed to run option 3. A message “Option [3] Play maze game”  will be shown.  The options for configuration will be visible for viewing. | Message shown: “Option [3] Play maze game”. |
| 7.3 | Test the program when a user enters a valid number. | Enters “4”. | Program proceed to run option 4. A message “Option [4] Configure current maze” will be shown. The options for configuration will be visible for viewing. | Message shown: “Option [4] Configure current maze”. |
| 7.4 | Test the program when a user enters a valid number. | Enters “0”. | Program proceed to run option 0. Program will stop running and a message “Exit” will be shown. | Message shown: “Exit Maze”. |

**Test Cases for Feature #1: Unit Tests for Read and load files**

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| Test Scenario | Test Description | Test Values | Expected Outcome | Actual Outcome | Justification |
| 1 | Test option 2 on “Enter the name of the data file” with input. | Enter the name of the data file: maze.csv | Number of lines read: 8  Enter anything to return to Main menu | Number of lines read: 8  Enter anything to return to Main menu |  |
| 2 | Test option 2 on “Enter the name of the data file” with no input. | Enter the name of the data file: | “Error: please key in the name of the data file:”  Enter anything to return to Main Menu | “Error: please key in the name of the data file:”  Enter anything to return to Main Menu | There is no input on the file name  So the error message will appear to tell the user to type in name |

**Test Cases for Feature #2: Unit Tests for View maze stored in memory**

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** |
| 1. | Test for displaying maze when the list is empty. | mazeList = [ ] | Error messages will be shown.  “No maze loaded.” Program will exit back to the main menu. | Message shown:  “Option [2] View Maze  =========================================” |
| 2. | Test for displaying maze when list is loaded. | mazeList = [“X”, “X”,”X”, “X”, “O” ,”X”  … …] | The maze would be loaded  and displayed. | Maze displayed  “[“X”, “X”,”X”, “X”, “O” ,”X”  … …]” |