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

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** | **Justification** |
| 1 | Display Main menu | Run MainMenu.py | Display:  Main Menu  =========  [1] Read and load maze from file  [2] View Maze  [3] Play maze game  [4] Configure current maze  [0] Exit Maze  Enter your input: | Display:  Main Menu  =========  [1] Read and load maze from file  [2] View Maze  [3] Play maze game  [4] Configure current maze  [0] Exit Maze  Enter your input: |  |
| 2 | Test the program on input option 1 | Enter your input: “1”. | “Option [1] Read and load maze from file”  “Enter the name of the data file:” | “Option [1] Read and load maze from file”  “Enter the name of the data file:”  1-5.” |  |
| 3 | Test the program on input option 2 | Enter your input: “2”. | ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'A', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'O', 'O', 'X', 'X']  ['X', 'B', 'X', 'X', 'X', 'X', 'X', 'X']  Enter your input: | ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'A', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'O', 'O', 'X', 'X']  ['X', 'B', 'X', 'X', 'X', 'X', 'X', 'X']  Enter your input: |  |
| 4 | Test the program on input option 3 | Enter your input: “3”. | Enter your input:3  ========================================  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'A', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'O', 'O', 'X', 'X']  ['X', 'B', 'X', 'X', 'X', 'X', 'X', 'X']  Location of Start (A) = (Row 1, Column 6)  Location of End (B) = (Row 7, Column 1)  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU:. | Enter your input:3  ========================================  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'A', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'O', 'O', 'X', 'X']  ['X', 'B', 'X', 'X', 'X', 'X', 'X', 'X']  Location of Start (A) = (Row 1, Column 6)  Location of End (B) = (Row 7, Column 1)  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU:. |  |
| 5 | Test the program on input option 4. | Enters “4”. | Invalid choice. Enter 1-5 | **Error message shown**:  “Invalid Choice.Enter 1-5. | Option 4 has popup an error message because our option 4 haven’t started coded yet. |
| 6 | Test the program on input option 0. | Enter your input: “0”  Enter “Yes” on the “Kill app” pop-up message | A popup message “Exit” will be shown and the program will close. | A popup message “Exit” will be shown and the program will close. |  |

**Test Cases for Feature #2: 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 #3: 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”  … …]” |