**Developer Manual Unit Test Case**

**Manual unit test for Main\_Menu.py**

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** | **Justification** |
| **1.0** | Display Main menu | Run maze | 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: |  |  |
| 2.0 | 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:”  . |  |  |
| 3.0 | 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: |  |  |
| 4.0 | 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:. |  |  |
| 5.0 | Test the program on input option 4 | Enter your input: “4”. | Invalid choice. Enter 1-5  Main menu display again |  | Option 4 has popup an error message because our option 4 haven’t started  coded yet. |
| 6.0 | Test the program on input option 0. | Enter “Yes” on the Kill app pop-up message box | App close. |  |  |

**Manual Unit test for Read and load.py**

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** | **Justification** |
| 1 | Open maze.csv file | Enter the name of the data file: maze.csv | Display:  Number of lines reads: 8  Enter anything to return to Main Menu |  |  |
| 2 | Leave Null on “Enter the name of the data file” | Enter the name of the data file: | Display error message “Please key in any excel file” |  | User didn’t key in any input on the name of the data file and press enter error message will occur. |

**Manual unit test for View\_Maze**

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** | **Justification** |
| 1 | Display maze from store memory after open maze.csv file from option 1 | Enter your input:2 | Display:  ['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: |  |  |
| 2 | Display maze from option 2 without read and load maze.csv file in option 1 | Enter your input: 2 | Display:  Enter your input: |  | Maze didn’t display because the user didn’t go option 1 to read and load the maze.csv file first. Without read and load the csv file first, maze will not be able to display because the csv file have not read yet and the stored memory will be empty. |

**Manual unit test for Play Maze**

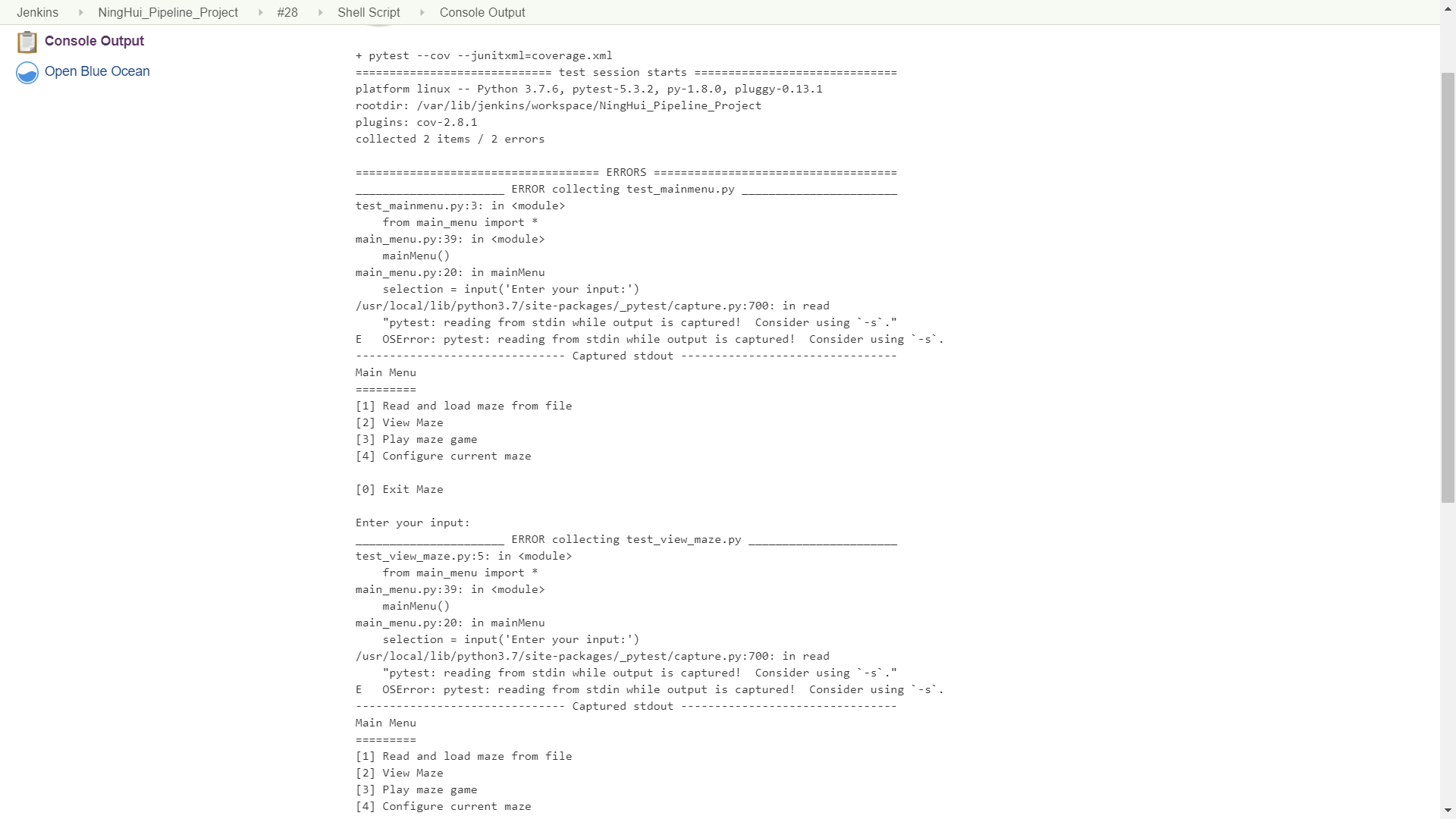
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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** | **Justification** |
| **1** | Play maze from store memory after open maze.csv file from option 1 | Enter your input: 3 | Display:  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: |  |  |
| **2** | Test play maze left function. | Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: A | Display:  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: A  Move Successful!  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'A', 'O', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: |  |  |
| **3** | Test play maze down function | Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: S | Display:  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'A', 'O', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: S  Move Successful!  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'A', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: |  |  |
| **4** | Test play maze right function | Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: D | Display:  Move Successful!  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'A', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: D  Move Successful!  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'A', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: |  |  |
| **5** | Test play maze on up function | Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: W | Display:  Move Successful!  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'X', 'A', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: W  Move Successful!  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'A', 'X', 'O', 'O', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: |  |  |
| **6** | Test play maze if user control player(A) to the wall(X) | Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: D | Display:  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'A', 'X', 'O', 'O', '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']  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: D  Invalid Movement. Please Try again  Press 'W' for UP, 'A' for LEFT, 'S' for DOWN, 'D' for RIGHT, 'M' for MAIN MENU: |  | The error message occurs when the user control the player(A) to the wall(X) |

**Manual unit test for Configuration Maze**

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| **Test Scenario** | **Test Description** | **Test Values** | **Expected**  **Outcome** | **Actual**  **Outcome** | **Justification** |
| **1** | Test option 4 after open and load the maze.csv file from option 1 | Enter your input:4 | Display:  ========================================  ['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']  Configuration Menu  ========================================  [1] Create Wall  [2] Create Passageway  [3] Create start point  [4] Create end point  [0] Exit Main Menu  Enter your options to configure: |  |  |
| **2** | Testing the ‘B’ functions on mainORconfig input | 'B' to return to ConfigureMenu.  'M' to return to Main Menu:B | ========================================  ['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']  Configuration Menu  ========================================  [1] Create Wall  [2] Create Passageway  [3] Create start point  [4] Create end point  [0] Exit Main Menu  Enter your options to configure: |  |  |
| **3** | Testing ‘M’ functions on mainORconfig input | 'B' to return to ConfigureMenu.  'M' to return to Main Menu:M | Display:  Enter your input: |  |  |
| **4** | Test Choice 1 and create a wall(X) on the passageway(O). | Enter your options to configure: 1  'B' to return to ConfigureMenu.  'M' to return to Main Menu:  Enter  Enter Row: 2  Enter Col: 3 | Display:  ========================================  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'A', 'X']  ['X', 'O', 'X', 'X', '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']  Configuration Menu  ========================================  [1] Create Wall  [2] Create Passageway  [3] Create start point  [4] Create end point  [0] Exit Main Menu  Enter your options to configure: |  |  |
| **5** | Test Choice 2 and creating a passageway(O) on the wall(X), | Enter your options to configure: 2  Press Enter if you wish to change an item.  'B' to return to ConfigureMenu.  'M' to return to Main Menu: Enter  Enter Row: 2  Enter Col: 2 | Display:  ========================================  ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'A', 'X']  ['X', 'O', 'O', 'X', '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']  Configuration Menu  ========================================  [1] Create Wall  [2] Create Passageway  [3] Create start point  [4] Create end point  [0] Exit Main Menu  Enter your options to configure: |  |  |
| **6** | Test Choice 3 and creating a start point (A). | Enter your options to configure: 3  Press Enter if you wish to change an item.  'B' to return to ConfigureMenu.  'M' to return to Main Menu: Enter  Enter Row: 0  Enter Col: 1 | Display:  ========================================  ['X', 'A', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'O', 'X', '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']  Configuration Menu  ========================================  [1] Create Wall  [2] Create Passageway  [3] Create start point  [4] Create end point  [0] Exit Main Menu  Enter your options to configure: |  |  |
| **7** | Test Choice 4 and creating a end point (B). | Enter your options to configure: 4  Press Enter if you wish to change an item.  'B' to return to ConfigureMenu.  'M' to return to Main Menu: Enter  Enter Row: 0  Enter Col: 2 | Display:  ========================================  ['X', 'A', 'B', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'O', 'O', 'X', 'O', 'O', 'X']  ['X', 'O', 'O', 'X', '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', 'O', 'X', 'X', 'X', 'X', 'X', 'X']  Configuration Menu  ========================================  [1] Create Wall  [2] Create Passageway  [3] Create start point  [4] Create end point  [0] Exit Main Menu  Enter your options to configure: |  |  |
| **8** | Testing creating a wall with the current wall position and display a error message | Enter your options to configure: 1  Press Enter if you wish to change an item.  'B' to return to ConfigureMenu.  'M' to return to Main Menu:  Enter  Enter Row:0  Enter Col:0 | Display:  Error message: “It is already a wall.” |  | The error message have occur because the user trying to create a wall on the position that a wall is already created there. |

**Reason for manual unit testing instead of auto for developer team**

This is the error while doing automation test on mainmenu.py, view\_maze.py, read and load.py amd play\_maze.py (if you are wondering why read and load and play maze.py got no error because the whole py is not really entirely right. It should be under manual unit test because we had tried multiple way still got the same error. Therefore, we had switched to manual unit test. I hope this had answer your doubt. If got time we are still trying to solve it.



**Coverage Report**

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