

## Developer Manual Unit Test Case

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

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:	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:43988112e, Jul 8 2019, 15:29:23) [MSC v.1916 32 bit (Intel)] on win32 Type "help", "copyright", "credits()" or "license()" for more information. &gt;&gt;&gt; RESTART: C:\Users\Le Hong\Desktop\Year 3 sem 2 Desktop\EST\EST-Assignment\main_menu.py 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:           </pre>	
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:" .	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:43988112e, Jul 8 2019, 15:29:23) [MSC v.1916 32 bit (Intel)] on win32 Type "help", "copyright", "credits()" or "license()" for more information. &gt;&gt;&gt; RESTART: C:\Users\Le Hong\Desktop\Year 3 sem 2 Desktop\EST\EST-Assignment\main_menu.py 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:1 Option [1] Read and load maze from file Enter the name of the data file:maze.csv Enter the name of the data file:           </pre>	
3.0	Test the program on input option 2	Enter your input: "2".	['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'A', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'X', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X']  ['X', 'B', 'X', 'X', 'X', 'X', 'X', 'X', 'X']  Enter your input:	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:43988112e, Jul 8 2019, 15:29:23) [MSC v.1916 32 bit (Intel)] on win32 Type "help", "copyright", "credits()" or "license()" for more information. &gt;&gt;&gt; RESTART: C:\Users\Le Hong\Desktop\Year 3 sem 2 Desktop\EST\EST-Assignment\main_menu.py 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 Option [2] Read and load maze from file Enter the name of the data file:maze.csv Number of lines read: 9 Enter anything to return to Main Menu: Enter your input:3 ===== ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'A', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'X', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X'] ['X', 'B', 'X', '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.           </pre>	
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']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'A', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'X', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X']  ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X']  ['X', 'B', 'X', '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.	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:43988112e, Jul 8 2019, 15:29:23) [MSC v.1916 32 bit (Intel)] on win32 Type "help", "copyright", "credits()" or "license()" for more information. &gt;&gt;&gt; RESTART: C:\Users\Le Hong\Desktop\Year 3 sem 2 Desktop\EST\EST-Assignment\main_menu.py 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:3 ===== ['X', 'X', 'X', 'X', 'X', 'X', 'X', 'X', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'A', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'X', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'O', 'X'] ['X', 'O', 'X', 'O', 'X', 'O', 'X', 'X', 'X'] ['X', 'B', 'X', '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.           </pre>	
5.0	Test the program on input option 4	Enter your input: "4".	Invalid choice. Enter 1-5 Main menu <u>display</u> again	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:43988112e, Jul 8 2019, 15:29:23) [MSC v.1916 32 bit (Intel)] on win32 Type "help", "copyright", "credits()" or "license()" for more information. &gt;&gt;&gt; RESTART: C:\Users\Le Hong\Desktop\Year 3 sem 2 Desktop\EST\EST-Assignment\main_menu.py 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:4 Invalid choice. Enter 1-5 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:           </pre>	Option 4 has popup an error <u>message</u> 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.	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:43988112e, Jul 8 2019, 15:29:23) [MSC v.1916 32 bit (Intel)] on win32 Type "help", "copyright", "credits()" or "license()" for more information. &gt;&gt;&gt; RESTART: C:\Users\Le Hong\Desktop\Year 3 sem 2 Desktop\EST\EST-Assignment\main_menu.py 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:0           </pre> 	

## Manual Unit test for Read and load.py

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	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:09359112e, Jul 8 2019, 15 Type "help", "copyright", "credits" or "license()" &gt;&gt;&gt; RESTART: C:\Users\De Rong\Desktop\Year 3 sem 2 Deakt 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:1 Option (1) Read and load maze from file  Enter the name of the data file:maze.csv Number of lines reads: 8  Enter anything to return to Main Menu </pre>	
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"	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:09359112e, Jul 8 2019, 15:29:22) [MC v.1 Type "help", "copyright", "credits" or "license()" for more informati &gt;&gt;&gt; RESTART: C:\Users\De Rong\Desktop\Year 3 sem 2 Desktop\UT1\UT1-Assignm 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:1 Option (1) Read and load maze from file  Enter the name of the data file: Error: please key in an excel file  Enter anything to return to Main Menu </pre>	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

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:  <pre> [X, 'X', 'X', 'X', 'X', 'X', 'X', 'X'] [X, 'O', 'O', 'O', 'X', 'O', 'A', 'X'] [X, 'O', 'X', 'O', 'O', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'B', 'X', 'X', 'X', 'X', 'X', 'X'] </pre> Enter your Input:	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:09359112e, Jul 8 2019, 15:29:22) [MC v.1914 32 bit (Intel)] on win32 Type "help", "copyright", "credits" or "license()" for more information &gt;&gt;&gt; RESTART: C:\Users\De Rong\Desktop\Year 3 sem 2 Desktop\UT1\UT1-Assignment\main_menu.py 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 Option (2) View Maze  Enter the name of the data file:maze.csv Number of lines reads: 8  Enter anything to return to Main Menu  Enter your input:2 [X, 'X', 'X', 'X', 'X', 'X', 'X', 'X'] [X, 'O', 'O', 'O', 'X', 'O', 'A', 'X'] [X, 'O', 'X', 'O', 'O', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'O', 'X', 'O', 'X', 'X', 'O', 'X'] [X, 'B', 'X', 'X', 'X', 'X', 'X', 'X']  Enter your input: </pre>	
2	Display maze from option 2 without read and load maze.csv file in option 1	Enter your input: 2	Display:  Enter your input:	<pre> Python 3.7.4 Shell File Edit Shell Debug Options Window Help Python 3.7.4 (tags/v3.7.4:09359112e, Jul 8 2019, 15:29:22) [MC v.1914 32 bit (Intel)] on win32 Type "help", "copyright", "credits" or "license()" for more information &gt;&gt;&gt; RESTART: C:\Users\De Rong\Desktop\Year 3 sem 2 Desktop\UT1\UT1-Assignment\main_menu.py 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 Enter your input: </pre>	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.

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	<p>Display:</p> <p>Enter your input:3</p> <pre>===== [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', 'X', 'X'] [X, 'O', 'X', 'O', 'X', 'O', 'X', 'X'] [X, 'O', 'X', 'O', 'X', 'O', 'X', 'X'] [X, 'O', 'X', 'O', 'X', 'O', 'X', 'X'] [X, 'O', 'X', 'O', 'X', 'O', 'X', 'X'] [X, 'O', 'X', 'O', 'X', 'O', 'X', 'X'] [X, 'O', 'X', 'O', 'X', '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:</pre>	<pre>A Maze Solver ===== Python 3.7.4 (tags/v3.7.4:43088c4e, Jul 9 2019, 13:09:21) [AMD64] on win32 File "maze_solver.py", line 1, in &lt;module&gt;   from maze_solver import * ImportError: cannot import name 'maze_solver' from 'maze_solver' (unknown location) ===== [0] Read and load maze from file [1] Solve maze game [2] Display maze game [3] Exit maze game [4] Back Menu  Enter your input: 3  Option [1] Read and load maze from file Enter the name of the maze file name: Name of Maze: maze_3  Enter anything to return to Main Menu  Enter your input: 3  [1] [0] [1] [2] [3] [4] [5] [6] [7] [0] [1] [2] [3] [4] [5] [6] [7] [1] [0] [1] [2] [3] [4] [5] [6] [7] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] 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[14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] 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[53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [64] [63] [62] [61] [60] [59] [58] [57] 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[7] [67] [66] [65] [64] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [68] [67] [66] [65] [64] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [69] [68] [67] [66] [65] [64] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [70] [69] [68] [67] [66] [65] [64] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [71] [70] [69] [68] [67] [66] [65] [64] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4] [5] [6] [7] [72] [71] [70] [69] [68] [67] [66] [65] [64] [63] [62] [61] [60] [59] [58] [57] [56] [55] [54] [53] [52] [51] [50] [49] [48] [47] [46] [45] [44] [43] [42] [41] [40] [39] [38] [37] [36] [35] [34] [33] [32] [31] [30] [29] [28] [27] [26] [25] [24] [23] [22] [21] [20] [19] [18] [17] [16] [15] [14] [13] [12] [11] [10] [9] [8] [7] [6] [5] [4] [3] [2] [1] [0] [1] [2] [3] [4</pre>	

## 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` and `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.

[illegible]

## Coverage Report

```
C:\Users\Ze Rong\Desktop >
file:///C:/Users/Ze%20Rong/Desktop/Year%203%20sem%202%20Desktop/E1/E1-Assignment/Developer%20test%20case%20and%20unit%20test/Coverage.html

Coverage HTML

----- coverage: platform linux, python 3.7.6-final-0 -----
Name                               Stmts  Miss  Cover
-----
main_menu.py                        25     13    48%
play_maze.py                       103    101     2%
read_and_load.py                   27     24    11%
test_mainmenu.py                    5       3    40%
test_play_maze.py                   6       2    67%
test_read_and_load.py              16       7    56%
test_view_maze.py                   9       5    44%
view_maze.py                        4       2    50%
-----
TOTAL                               195    157    19%

!!!!!!!!!!!!!!!!!!!! Interrupted: 2 errors during collection !!!!!!!!!!!!!!!!!!!!!
===== 1 warning, 2 errors in 1.86s =====
```