Test Plan for Program 4

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1. Evaluating Maze Class Functionality

These tests are to be performed on the Maze class to check to see if the class functions as expected. The tests include checking to see if the constructor loads a file (valid or not) correctly, checking to see if the Solve method performs correctly, checking the RecSolve method for proper functionality, and checking the show method for proper functionality. All tests should be performed on an instance of the Maze class.

* 1. Constructor
     1. Method: Creating new instance of Maze class
     2. Pass Criteria: Maze instance is successfully created
     3. Comment: If the maze file is invalid, will set valid to false.
  2. Solve Method
     1. Method: Calling Solve method
     2. Pass Criteria: Maze is successfully solved
     3. Comment: If the maze has no solution from given point, no path to exit will be displayed.
  3. RecSolve Method
     1. Method: Calling RecSolve method
     2. Pass Criteria: Method successfully solves the math from a given point
     3. Comment: Is recursive/must handle all cases.
  4. Show Method
     1. Method: Calling the show method.
     2. Pass Criteria: Maze is successfully displayed
     3. Comment: Maze is displayed on a panel.

1. Evaluating Main Form Functionality

These tests are to be performed on the Main Form to test for functionality. Tests include testing the opening a file, closing the program, clicking on a displayed maze, and showing the original version of the maze.

* 1. Open file
     1. Method: Open file from menu selection
     2. Pass Criteria: Maze is successfully opened or an appropriate error message is displayed
     3. Comment: If the file is not in a proper format, the program will display an error.
  2. Close
     1. Method: Close the program
     2. Pass Criteria: Program closes with all components correctly deconstructed.
     3. Comment: Separate method will be created for handling the close event.
  3. Click on maze
     1. Method: Click on a point on the maze.
     2. Pass Criteria: Proper paths will be displayed from the clicked point.
     3. Comment: Not all clicked positions lead to the maze exit.
  4. Show original
     1. Method: Click on the show original button
     2. Pass Criteria: original maze is displayed
     3. Comment: If there isn’t a maze load, the button will not work.

1. Evaluating Error Handling Functionality

These tests are to see if the program handles errors correctly. Tests include causing an error in the maze class and causing an error in the main form.

* 1. Error handling in Maze class
     1. Method: Load an incorrect file to the Maze class
     2. Pass Criteria: maze classes valid data member is set to false.
     3. Comment: This would also cause an error in the Main Form
  2. Error handling in Main Form
     1. Method: Load an invalid file to the program.
     2. Pass Criteria: Error message is displayed
     3. Comment: This error message can be displayed as a popup window.