Assignment 3

Program to find path through the maze

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1.0 Abstract

This assignment is about helping a robot to find the path to the door through the maze.

2.0 Implementation Tools and languages

Ruby 1.9.3

Browser for execution

3.0 Implementation Steps

1. The first cell of the table is the start index and the last cell of the table is the last index
2. The path from the first to last is traversed by using depth first search algorithm
3. Each time when the cell is visited, the adjacent cells are pushed to the stack
4. The last vertex is popped and marked as visited
5. In the map the predecessor to the cell is mapped, to track the visited path

4.0 Execution Steps

1. Copy the maze.rb and style.css to a folder
2. Copy the sample input file, images to the same folder
3. Give *ruby maze.rb* on command prompt
4. On execution, the ruby file create a file maze.html in the same folder
5. Output should be displayed on the console
6. On opening the maze.html file on the browser the path should be display if any

5.0 Test Cases

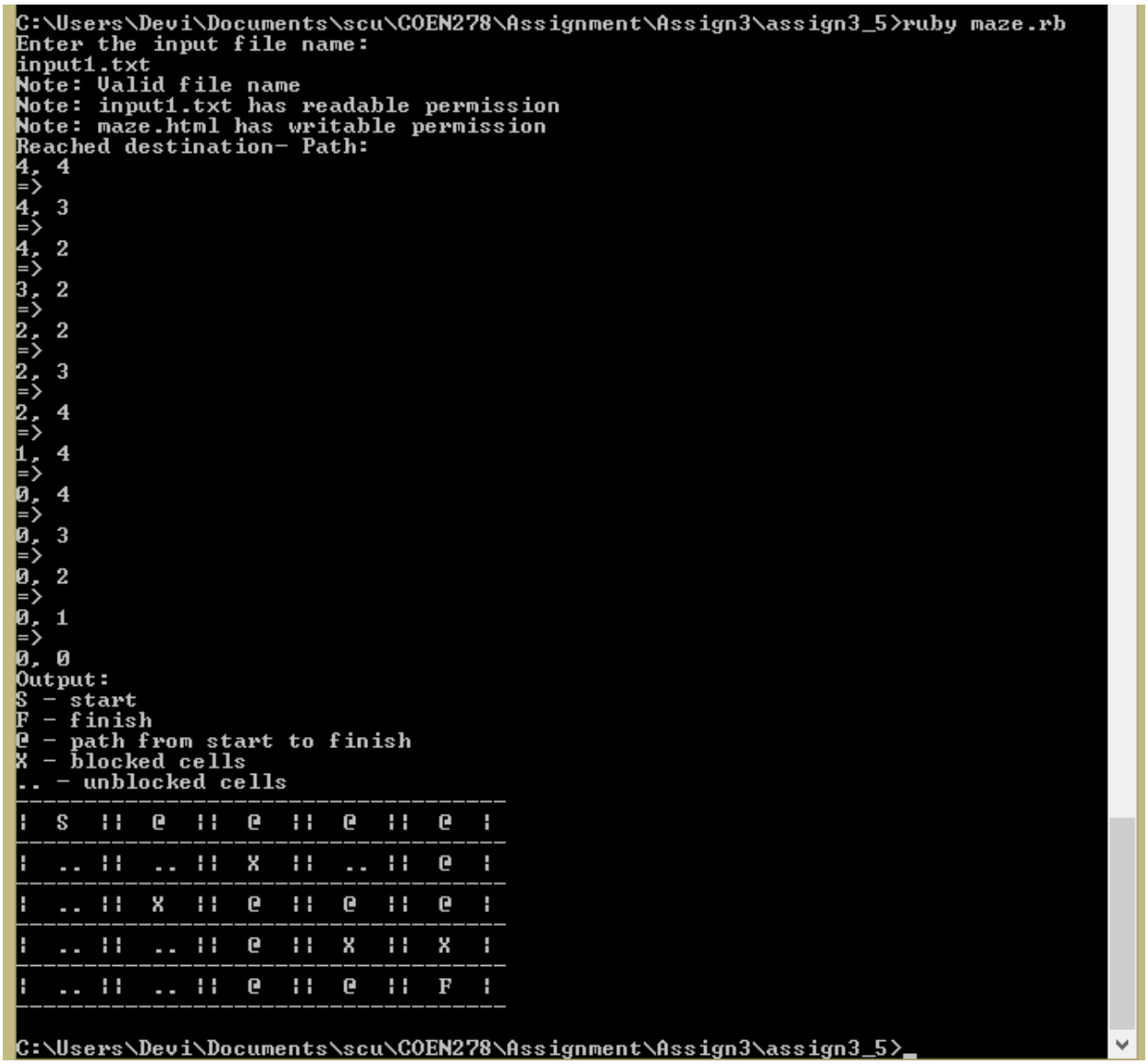
S.No	Test Cases	Result
1	Verify the existence of the input file	Pass
2	Verify the permission of the input file	Pass

3	Verify if the input file has content	Pass
4	Verify if the row and column of the 2D array has non-zero values	Pass
5	Verify if the vertices to block are within the row and column range	Pass
6	Verify if the .html file has writeable permission	Pass
7	Verify if the maze displays path, if path available	Pass
8	Verify if the maze display no path, if no path available	Pass
9	Verify if the output is displayed on the console	Pass
10	Verify if the output is displayed on the html page	Pass

6.0 Screenshots

6.1 Console

Has Path:



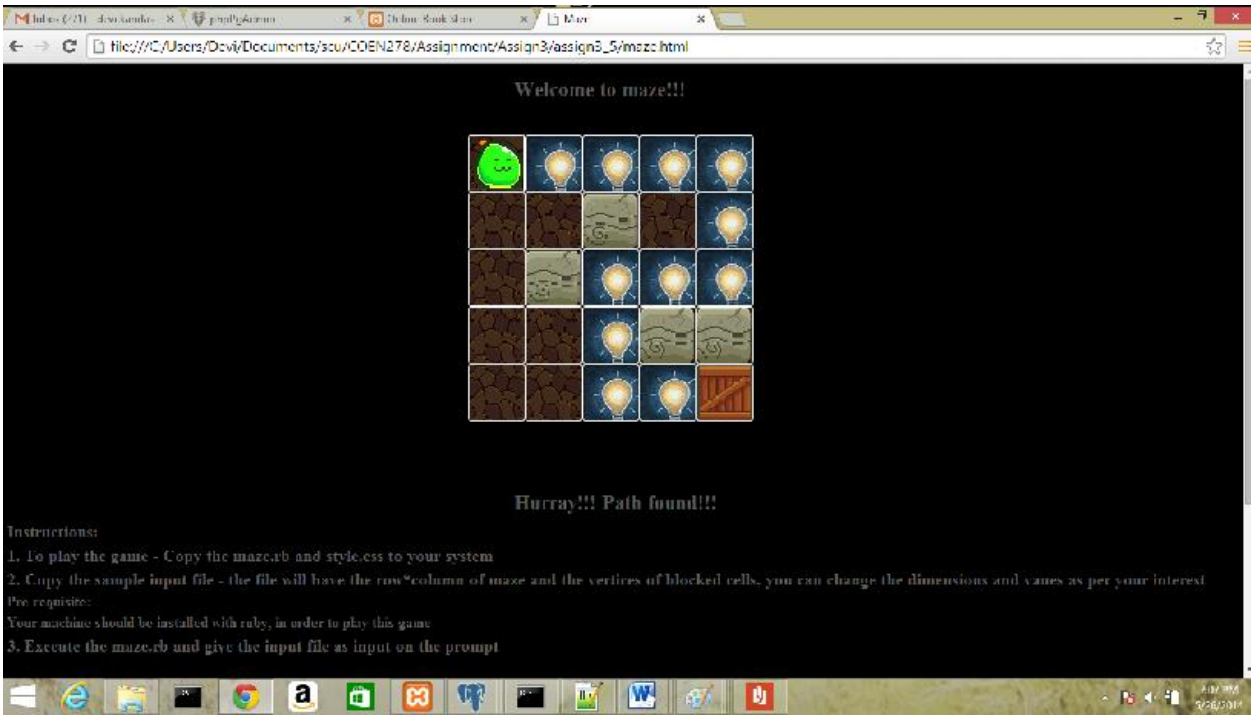
No Path:

```
C:\Users\Devi\Documents\scu\COEN278\Assignment\Assign3\assign3_5>ruby maze.rb
Enter the input file name:
input4.txt
Note: Valid file name
Note: input4.txt has readable permission
Note: maze.html has writable permission
Oops!!! No path to reach the finish
Better luck next time!!!
Output:
S - start
F - finish
@ - path from start to finish
X - blocked cells
.. - unblocked cells
-----------------------------------
|  S  ||  X  ||  X  ||  X  |
-----------------------------------
|  X  ||  .. ||  .. ||  X  |
-----------------------------------
|  X  ||  .. ||  .. ||  X  |
-----------------------------------
|  X  ||  X  ||  X  ||  F  |
-----------------------------------
```

6.2 Html Page

- start - Finish - Path - blocked cells - unblocked cells

Has Path:



No Path:

Welcome to maze!!!
Oops!!! No Path found,
Better luck next time!!!
Instructions:
1. To play the game - Copy the maze.rb and style.css to your system
2. Copy the sample input file - the file will have the row*column of maze and the vertices of blocked cells, you can change the dimensions and values as per your interest
Pre-requisite:
Your machine should be installed with ruby, in order to play this game
3. Execute the maze.rb and give the input file as input on the prompt
Algorithm: