The "Rat in a Maze"

The "Rat in a Maze" problem is a classic computer science problem that can be approached using various algorithms, with one common objective: to find a path from the starting point to the destination in a maze. The maze is represented as a grid, where certain cells are blocked (walls) and others are open.Here's a simple explanation of the problem:• Objective: The rat has to find a path from the starting point to the destination.• Rules: The rat can move in any of the four directions (up, down, left, right), but it cannot pass through walls.• Input: A maze with blocked and unblocked cells, a starting point, and a destination.One common algorithm to solve this problem is the recursive backtracking algorithm. Here's a high-level overview of the algorithm:1. Start from the initial position.2. Move to an adjacent cell (up, down, left, right).3. If the cell is the destination, the path is found.4. If the cell is unblocked, mark it as part of the solution path and recursively explore from that cell.5. If the recursive exploration from that cell doesn't lead to a solution, unmark the cell and try another direction.6. Repeat steps 2-5 until a solution is found or all possibilities are explored. but in this project there is an exception the mouse is only bound to move forward or down so we are using dfs to create a function to make the rat explore the next questionable cells in the matrix as he moves toward the ending cell

If it ever encounters a 2 possible solution it should continue left and creates a thread in the down direction to explore the possible routes to the ending cell   
  
the user will have the facility to define the blocked cells in the maze also it’s size as it is presented in the form of a 2d matrix   
will it ever not find a solution or find the way to the ending cell blocked it shal retr=urn no solution

The in real time progress is represented by a simple gui using java swing and colorizing the threads with differents colors to define the fork in the routes to the ending

We hope you find this description useful.,