README

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INTRODUCTION

The Maze Solver is a project developed in C that utilizes GTK for a graphical user interface (GUI). This program allows users to generate mazes and solve them using pathfinding algorithms A* and Dijkstra's Algorithm. The application also includes login and registration functionality to ensure secure access and personalized experiences.

PROJECT STRUCTURE

ICS-project/

main.c   //includes code

style.css   //for stylisation

users.txt   //for storing login data

FEATURES

- **LOGIN AND REGISTRATION:** using concept of file handling for account registration and login
- **CUSTOMISABLE MAZE GENERATION:** option to input custom maze size
- **INTERACTIVE GUI:** built using GTK
- **MAZE SOLVING:** using Dijkstra and A*
- **COMPARISON:** using runtimes of both the algorithms
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REQUIREMENTS

Compiler: GCC (MinGW for Windows)

Libraries

- GTK 3.0
- pkg-config / MSYS2 (for compilation)
- C standard library

INSTALLATION

1. **INSTALL GTK**: We recommend using MSYS terminal on Windows. It creates a Linux-like terminal on Windows which makes installing libraries and compiling the program easier

   IN MSYS 2, RUN THE FOLLOWING COMMANDS

   ```
   pacman -Syu
   pacman -S mingw-w64-x86_64-gtk3
   pacman -S mingw-w64-x86_64-pkg-config
   Locate the MinGW directory and add it to system path
   ```

2. **COMPILE:** Run the following command in MSYS2 MinGW

   ```
   gcc -o maze_solver main.c $(pkg-config --clags gtk+-3.0) $(pkg-config --libs gtk+-3.0)
   ```

3. **RUN:** ./maze_solver.exe