CST-350 Milestone 2 Playable Game

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GitHub Link:

https://github.com/amfrear/cst350/tree/main/Milestone_2

Video Link for Code Review:

https://www.loom.com/share/03461e6d9a6f43f4ac14bcae0f10d023

Video Link for App Running:

https://www.loom.com/share/efadc06c765b4378b577955964542ca5

Contents

Application Overview
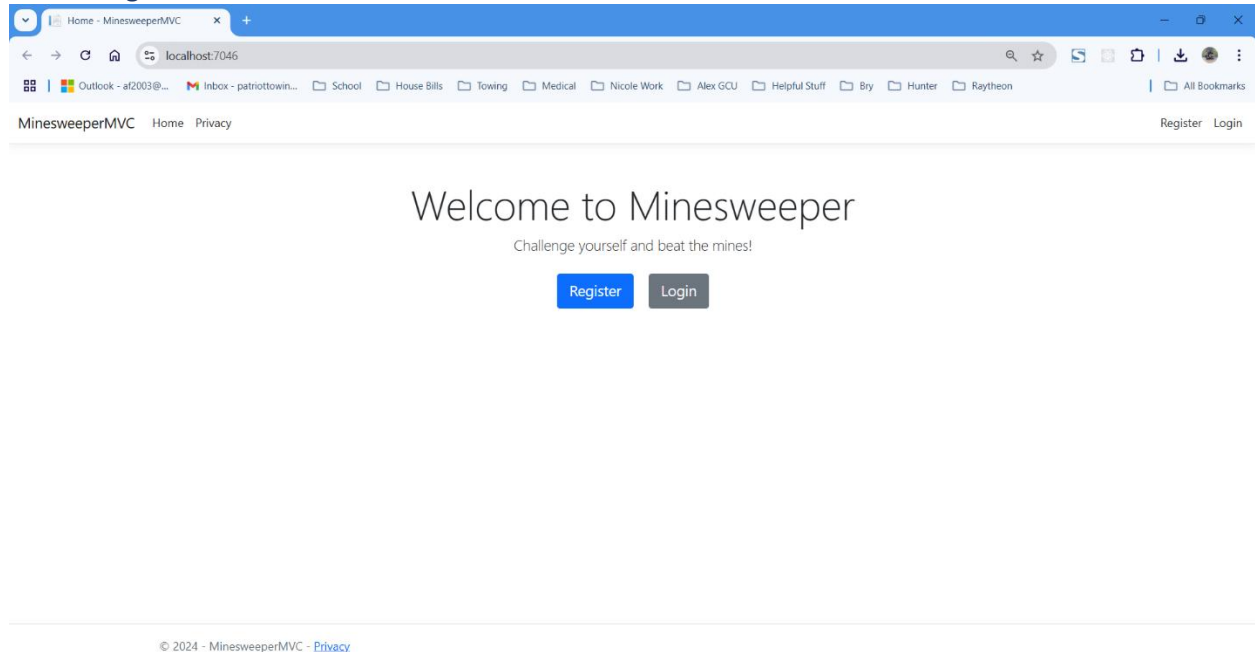## Screenshots:
Home Page

Figure 1 This screenshot shows the home page, providing navigation links for Login, Register, and Start Game.

Login Page

Figure 2 This screenshot shows the Login page where users can enter their credentials.

Login Page with Validation

Figure 3 This screenshot demonstrates input validation on the Login page for incorrect or incomplete entries.

Successful Login

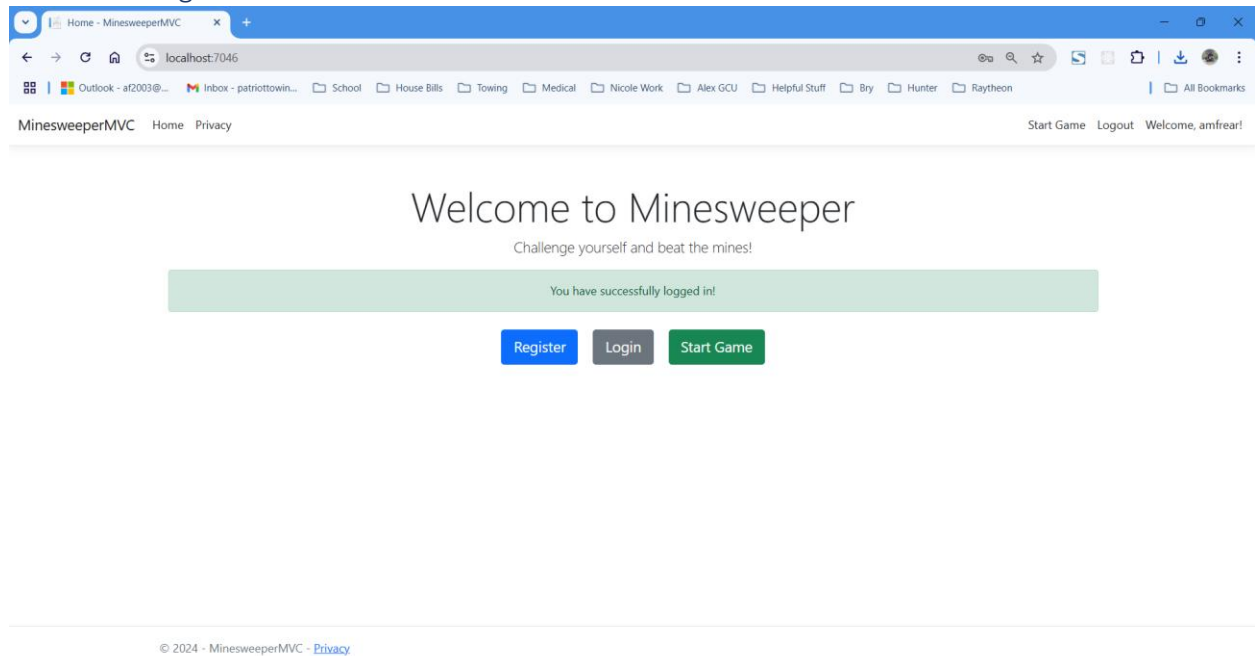*Figure 4 This screenshot shows the page users see after successfully logging in.*

Registration Page

Figure 5 This screenshot shows the Registration page for new users.

Registration Page with Validation

MinesweeperMVC   Home   Privacy   Register   Login

Register

- The First Name field is required.
- The Last Name field is required.
- The Sex field is required.
- The Age field is required.
- The State field is required.
- The Email Address field is required.
- The Username field is required.
- The Password field is required.

First Name

The First Name field is required.
Last Name

The Last Name field is required.
Sex

-- Select Sex --

The Sex field is required.
Age

The Age field is required.
State

The State field is required.
Email Address

The Email Address field is required.
Username

The Username field is required.
Password

The Password field is required.

Register

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Figure 6 This screenshot demonstrates input validation on the Registration page.

Start Game Page

Figure 7 This screenshot shows the Start Game page where users can select board size and difficulty level.

Minesweeper Game Board
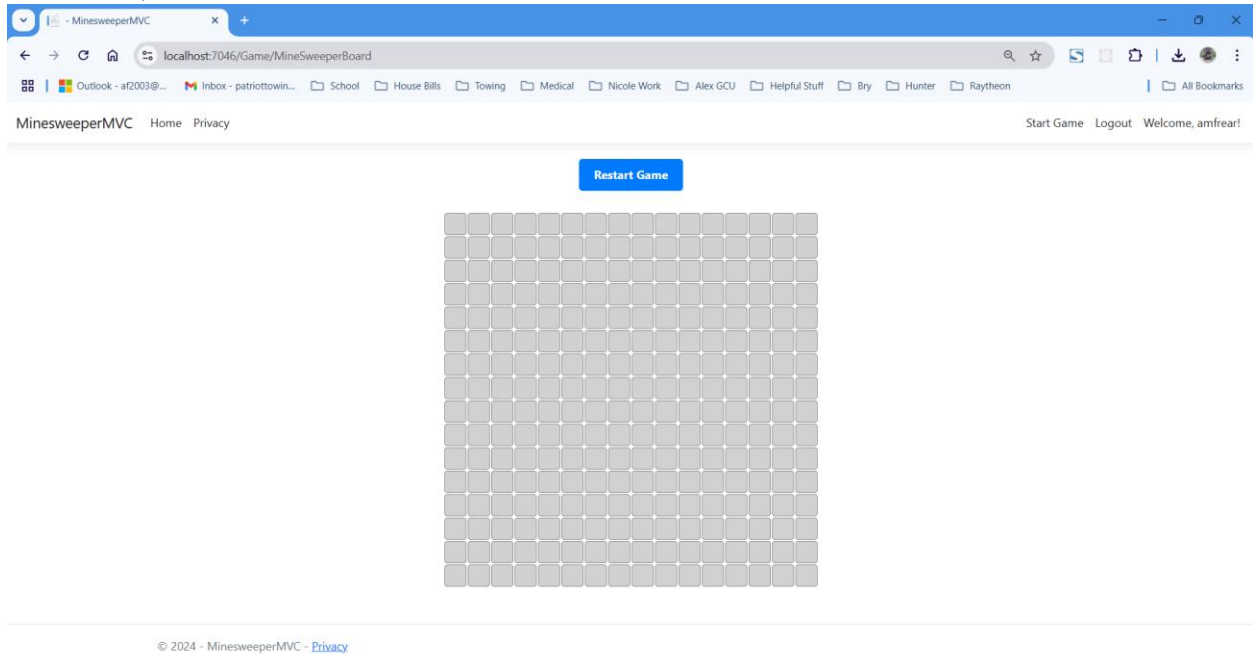
Figure 8 This screenshot shows the Minesweeper game board during gameplay. It includes left-click functionality to reveal cells.

User Access Restriction
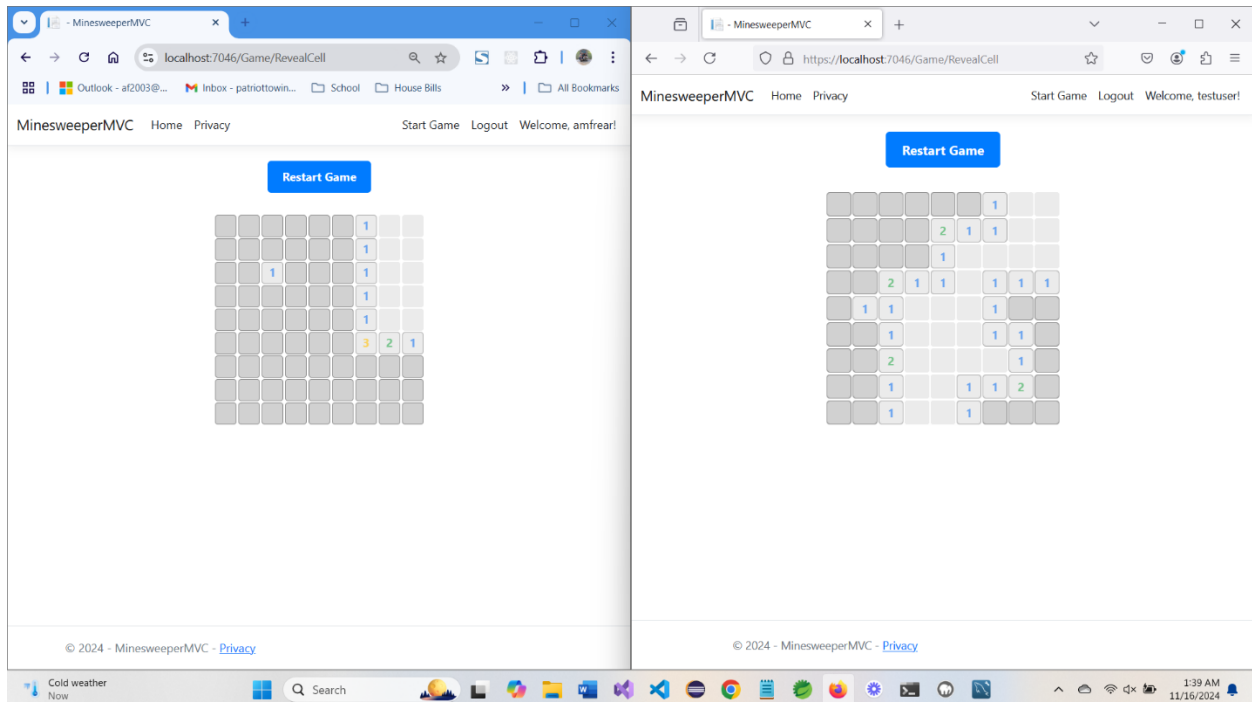
Figure 9 Each user's game session is stored separately. Logging in as a different user allows them to start a new game without affecting the other user's session.

Win Page

🎉 **Congratulations!** 🎉
You successfully cleared all the mines. Well done!

Your Score: **7**

Time Taken: **03:42**

Restart Game

Figure 10 This screenshot shows the Win page displayed when the user successfully completes the game. It includes the calculated score.

Loss Page
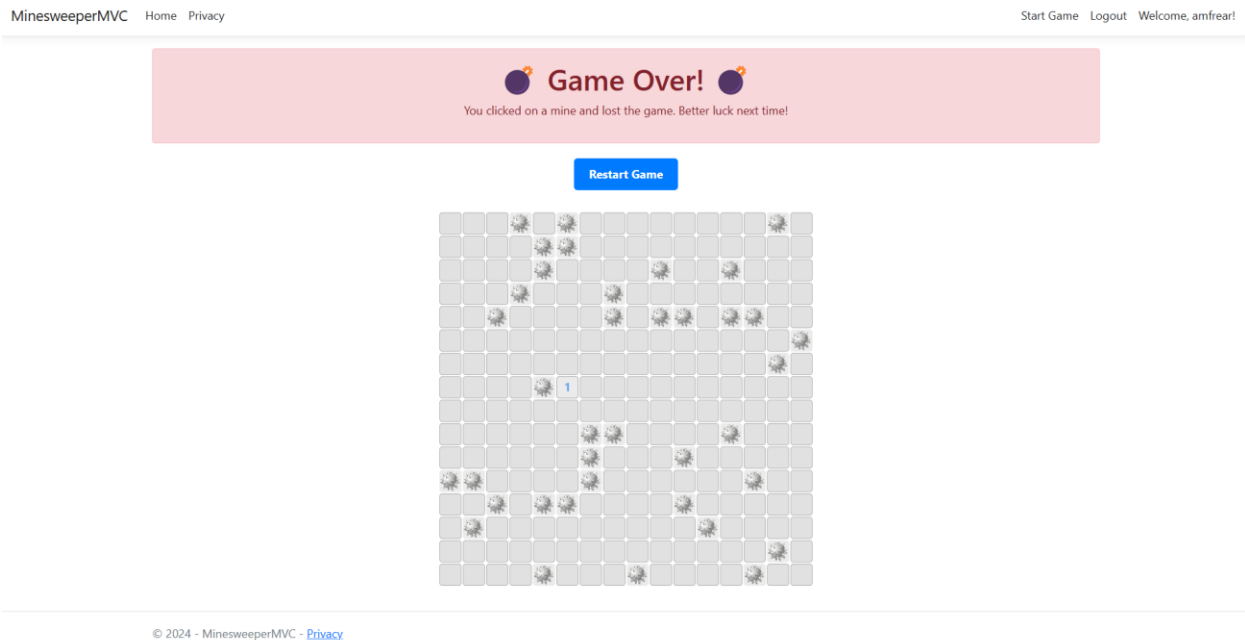
Figure 11 This screenshot shows the Loss page displayed when the user uncovers a mine. It includes revealed mines and a failure message.

Summary of Key Concepts

In Milestone 2, I expanded the functionality of the MinesweeperMVC application by adding core gameplay features. I developed a fully interactive Minesweeper game board as a 2D grid using Razor pages, applying image resources to make the interface both visually appealing and intuitive. I implemented left-click functionality so that users can interact with the cells, and each click updates the button state according to the game logic. The Start Game page was enhanced to allow users to configure the game by selecting the board size and difficulty level.

I ensured that access to the game board was restricted to the specific user who initiated the session, which maintained a personalized gameplay experience. Each user's game session is stored separately, so logging in as a different user allows them to start a new game without interfering with others' sessions. Additionally, I created dedicated pages for both win and loss outcomes, with scores calculated based on factors like time elapsed, board size, and difficulty level.

To achieve these features, I utilized ASP.NET Core MVC architecture, separating concerns between the Models, Controllers, and Views. This structure allowed me to write clean, maintainable code and handle user interactions effectively. I also incorporated static resources such as CSS and images to improve the visual design and overall user experience. This milestone builds on the foundational login and registration functionality from Milestone 1, paving the way for future enhancements, such as right-click actions for flagging cells and the ability to save and restore game progress.