

## **CST-350 Milestone 2 Playable Game**

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GitHub Link:

[https://github.com/amfrear/cst350/tree/main/Milestone\\_2](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>

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## Application Overview

### Screenshots:

#### Home Page

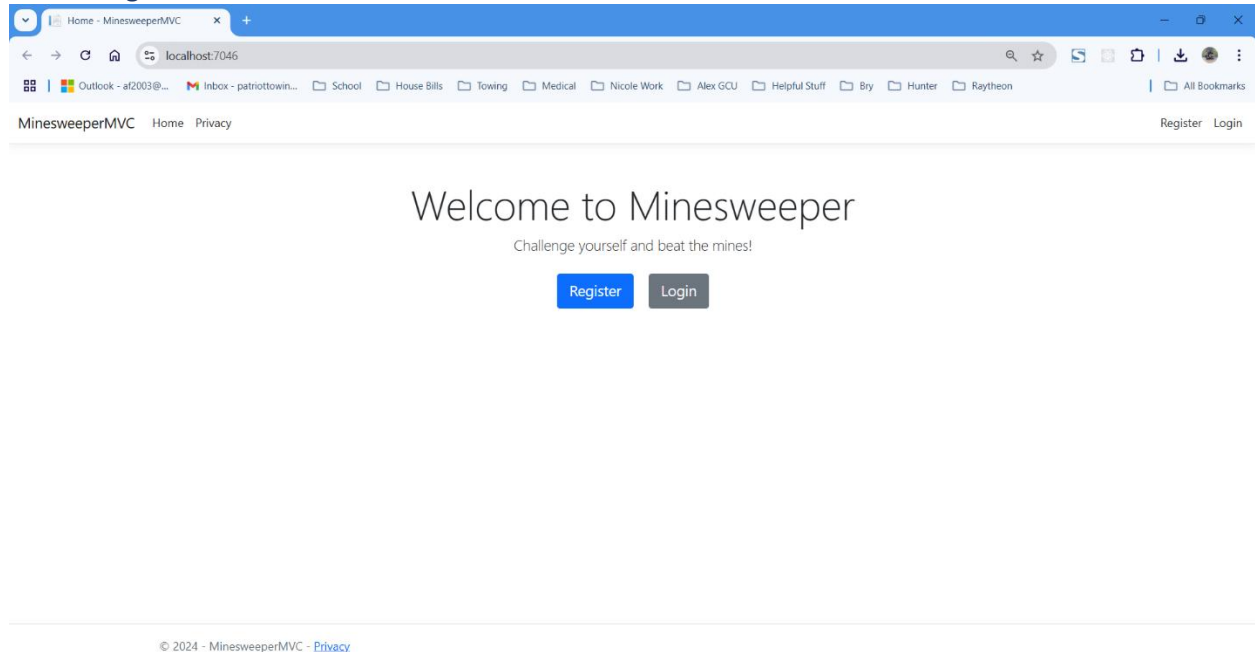


Figure 1 This screenshot shows the home page, providing navigation links for Login, Register, and Start Game.

## Login Page

The screenshot displays a web browser window titled "Login - MinesweeperMVC". The address bar shows the URL "localhost:7046/Account/Login". The browser's bookmark bar contains various links such as "Outlook - af2003@...", "Inbox - patriottowin...", "School", "House Bills", "Towing", "Medical", "Nicole Work", "Alex GCU", "Helpful Stuff", "Bry", "Hunter", "Raytheon", and "All Bookmarks". The page header includes the site name "MinesweeperMVC" and navigation links "Home" and "Privacy". On the right side of the header are links for "Register" and "Login".

The main content area is titled "Login" and contains the following form elements:

- A "Username" label followed by a text input field containing the text "amfrear".
- A "Password" label followed by a password input field containing six dots ".....".
- A blue "Login" button positioned below the password field.

The footer of the page contains the text "© 2024 - MinesweeperMVC - [Privacy](#)".

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

## Login Page with Validation

The screenshot shows a web browser window with the address bar displaying 'localhost:7046/Account/Login'. The page title is 'Login - MinesweeperMVC'. The browser's address bar shows the URL 'localhost:7046/Account/Login'. The page has a navigation bar with 'MinesweeperMVC', 'Home', and 'Privacy' links, and 'Register' and 'Login' buttons. The main content area is titled 'Login' and contains two input fields: 'Username' with the value 'amfrear' and 'Password' which is empty. A blue 'Login' button is positioned below the password field. A validation message 'Please fill out this field.' is displayed below the password field, indicating that the password is required.

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

## Successful Login

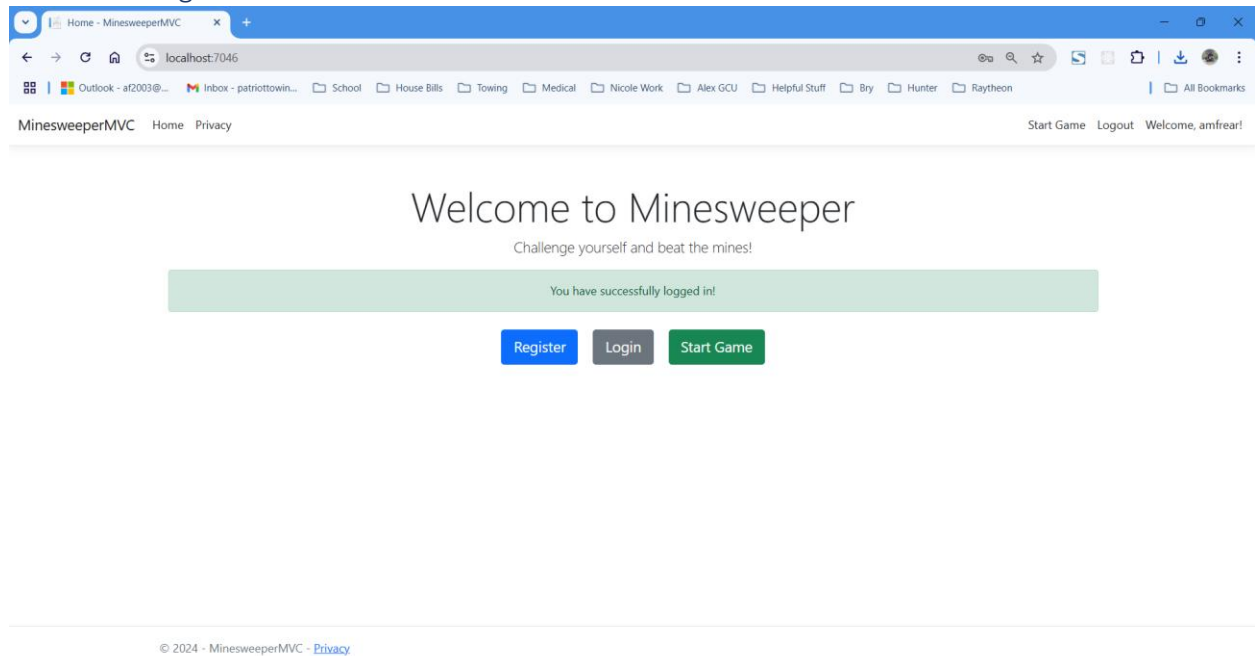


Figure 4 This screenshot shows the page users see after successfully logging in.

## Registration Page

The screenshot shows a web browser window with the address bar displaying 'localhost:7046/Account/Register'. The page title is 'Register - MinesweeperMVC'. The main content area is titled 'Register' and contains a registration form with the following fields:

- First Name
- Last Name
- Sex (dropdown menu with '-- Select Sex --')
- Age
- State
- Email Address
- Username
- Password

A blue 'Register' button is located at the bottom of the form. The footer of the page displays '© 2024 - MinesweeperMVC - [Privacy](#)'.

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

Start Game - MinesweeperMVC

localhost:7046/Game/StartGame

Outlook - af2003@... | Inbox - patriottowin... | School | House Bills | Towing | Medical | Nicole Work | Alex GCU | Helpful Stuff | Bry | Hunter | Raytheon | All Bookmarks

MinesweeperMVC Home Privacy Start Game Logout Welcome, amfrear!

### Select Your Game Settings

Board Size:

Medium (16x16)

Difficulty Level:

Medium

Start Game

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

## Minesweeper Game Board

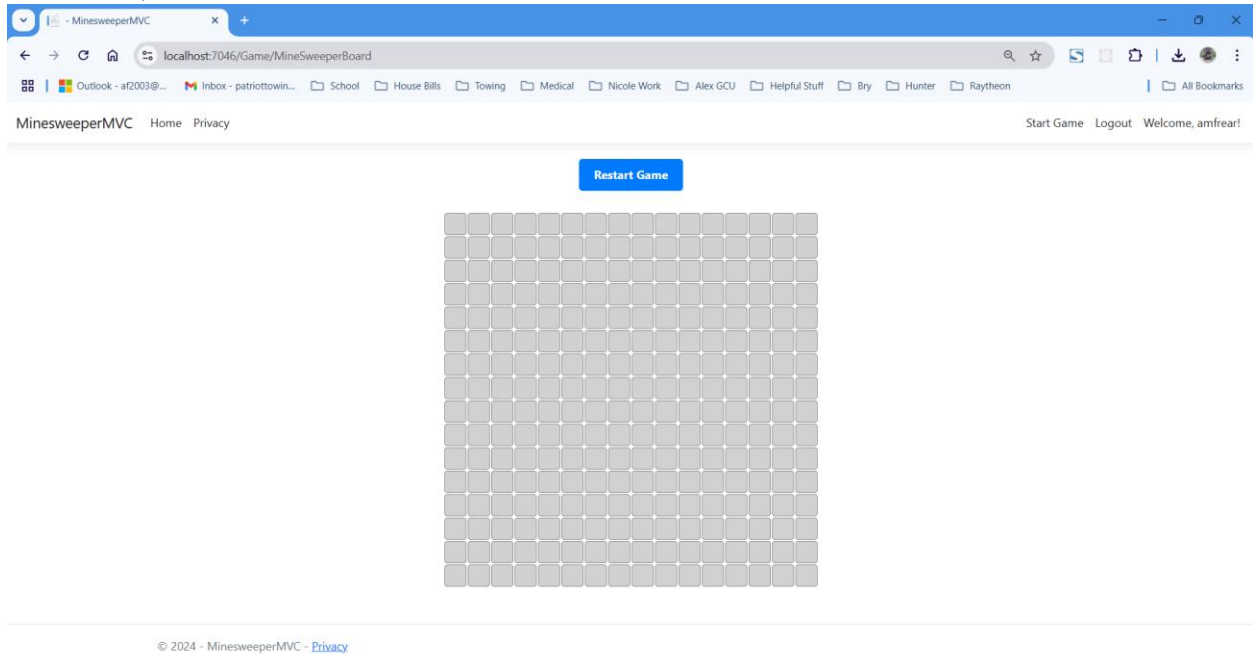


Figure 8 This screenshot shows the Minesweeper game board during gameplay. It includes left-click functionality to reveal cells.

## User Access Restriction

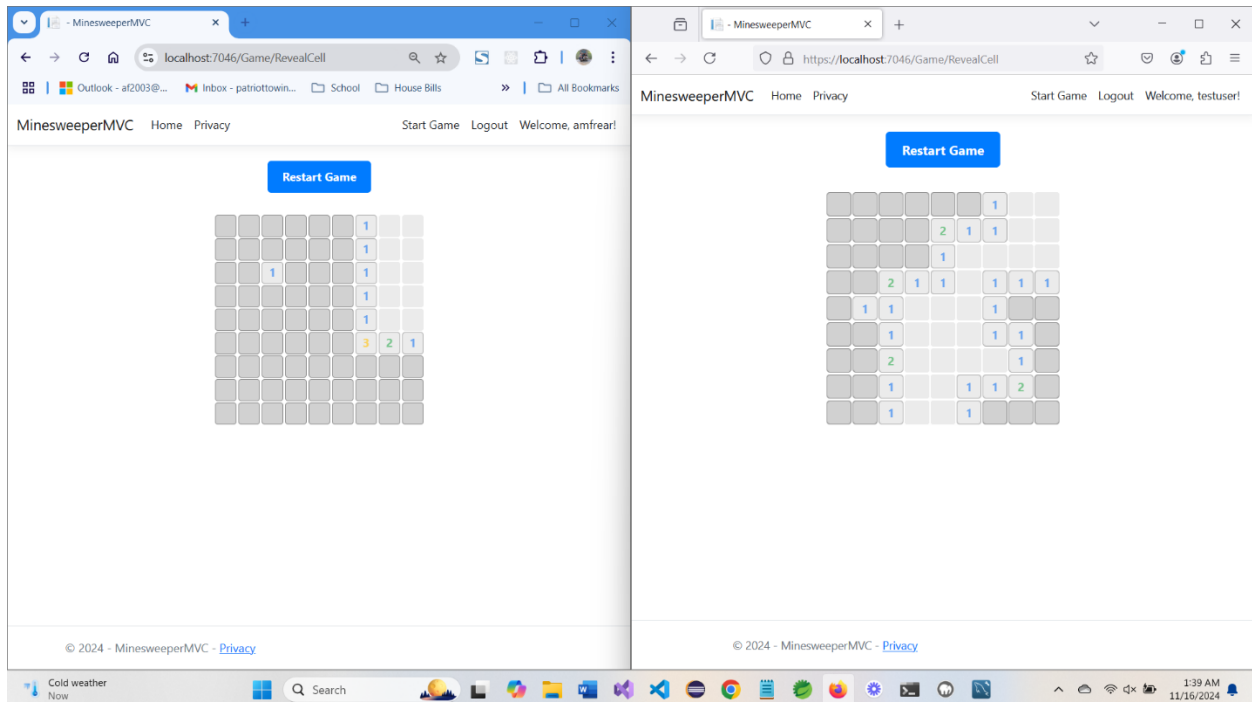



Figure 9 Each user's game session is stored separately. Logging in as a different user allows them to start a new game without affecting the other user's session.

## Win Page

MinesweeperMVC Home Privacy

Start Game Logout Welcome, amfreak!

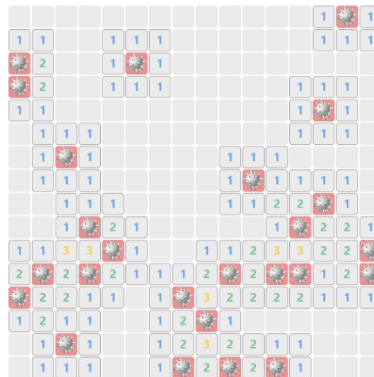
 **Congratulations!** 

You successfully cleared all the mines. Well done!

Your Score: 7

Time Taken: 03:42

Restart Game



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

## Loss Page

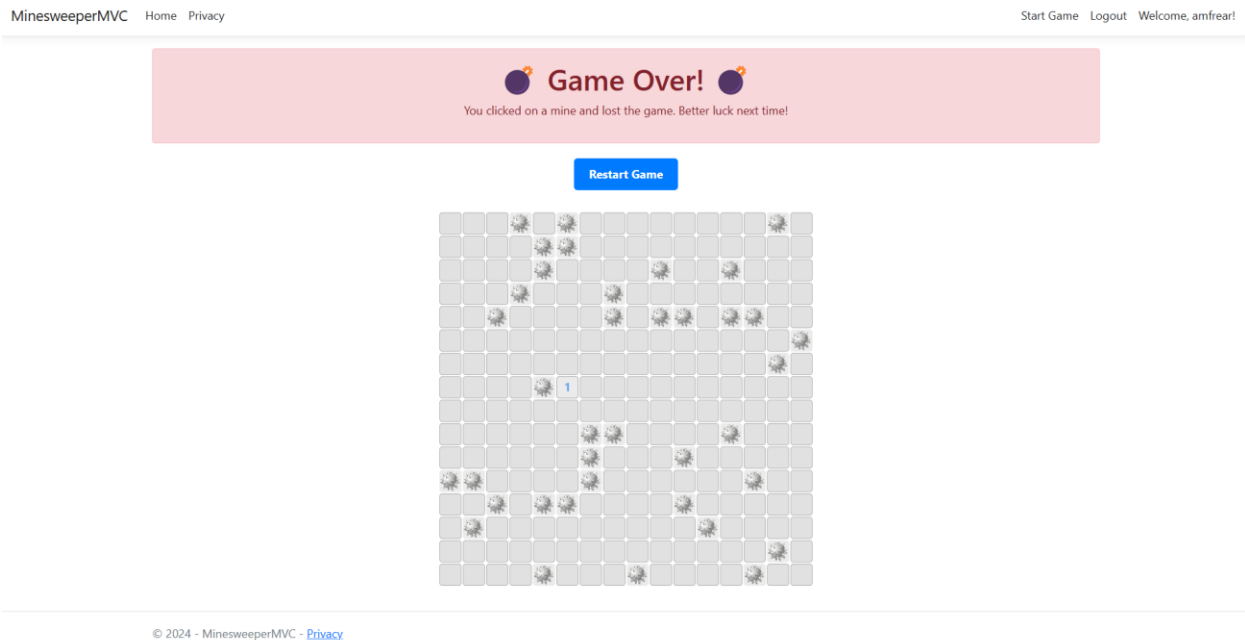


Figure 11 This screenshot shows the Loss page displayed when the user uncovers a mine. It includes revealed mines and a failure message.

## 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.