

CST-350 Milestone 2 Playable Game

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CST-350

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GitHub Link:

[Kdeshun/CST-350](https://github.com/Kdeshun/CST-350)

Video Link for Code Review:

<https://go.screenpal.com/watch/cTnnlznfKdu>

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Application Overview

Screenshots:

Home Page

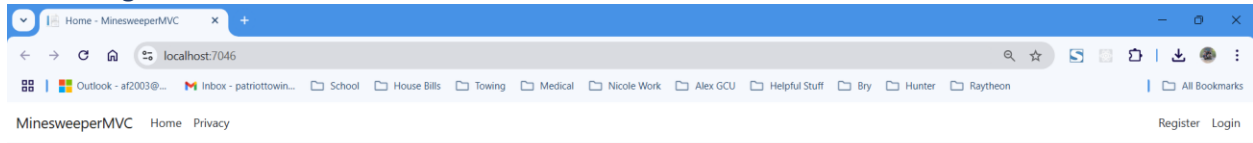


Figure 1: This screenshot displays the home page, which features navigation links for **Login**, **Register**, and **Start Game**.

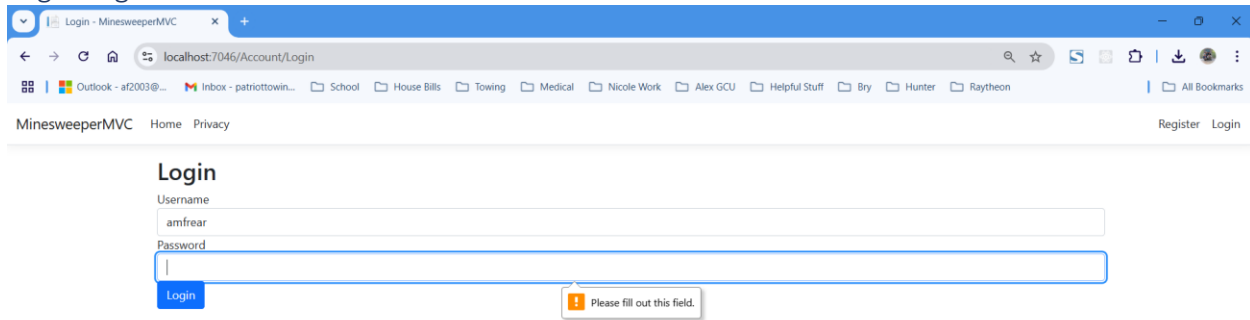
The layout is designed for easy accessibility, allowing users to quickly find the options they need to proceed. Each link is clearly labeled, ensuring an intuitive navigation experience. The overall design prioritizes user friendliness, guiding new and returning users to their desired actions seamlessly.

This structure sets the stage for engaging with the application, making it easy for users to begin their journey, whether they are logging in, creating a new account, or jumping straight into the game.

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 includes various folders and links. The page content features a "Login" heading, followed by a "Username" label and an input field containing the text "amfrear". Below this is a "Password" label and an input field containing "*****". A blue "Login" button is positioned at the bottom of the form. The page footer includes a navigation bar with links for "Home", "Privacy", "Register", and "Login".

Figure 2: This screenshot showcases the Login page, where users can enter their credentials. The interface is straightforward, featuring input fields for the username and password, along with a prominent **Login** button. Clear labels guide users in filling out their information accurately. Additionally, there may be options for password recovery or reminders for new users to register, enhancing accessibility. The overall design focuses on simplicity and efficiency, ensuring that users can quickly authenticate and access their accounts. This streamlined approach contributes to a positive user experience from the very beginning of their interaction with the application.

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 a search for 'localhost:7046/Account/Login'. The page content includes a navigation bar with 'MinesweeperMVC', 'Home', and 'Privacy' links, and a 'Register Login' link. The main content area is titled 'Login' and contains two input fields: 'Username' (containing 'amfrear') and 'Password' (empty). A blue 'Login' button is positioned below the fields. A red border highlights the 'Password' field, and a tooltip message 'Please fill out this field.' is displayed next to it.

Figure 3: This screenshot demonstrates input validation on the Login page, highlighting the system's response to incorrect or incomplete entries. When users enter invalid credentials or leave required fields blank, clear error messages are displayed to guide them in correcting their inputs. Visual cues, such as highlighted fields or icons, indicate which areas need attention. This robust validation process not only helps prevent user frustration but also enhances security by ensuring that proper information is submitted. By providing immediate feedback, the design fosters a smoother login experience, encouraging users to successfully access their accounts.

Successful Login

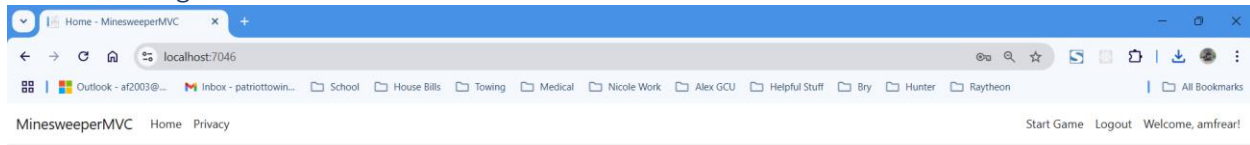


Figure 4: This screenshot displays the page users see after successfully logging in. Upon authentication, users are greeted with a welcoming message, confirming their successful login. The layout typically includes navigation options for accessing different sections of the application, such as the main game area, user profile, or settings. This page is designed to provide a clear pathway for users to engage with the application, emphasizing a user-friendly experience. By ensuring that users feel acknowledged and oriented, this design choice enhances overall satisfaction and encourages further interaction with the platform.

Registration Page

The screenshot shows a web browser window with the address bar displaying 'localhost:7046/Account/Register'. The browser's address bar and tabs are visible at the top. The page title is 'Register - MinesweeperMVC'. The page has a blue header bar with the site name 'MinesweeperMVC' on the left and 'Register Login' on the right. Below the header, the main content area is white and contains a registration form titled 'Register'. The form has the following fields: First Name, Last Name, Sex (a dropdown menu with '-- Select Sex --'), Age, State, Email Address, Username, and Password. A blue 'Register' button is located at the bottom of the form.

Figure 5: This screenshot displays the Registration page for new users.

The page features input fields for essential information, such as username, email, and password, all clearly labeled to guide users through the registration process. Prominent **Register** and possibly **Cancel** buttons provide clear actions for users to complete or exit the registration.

Additionally, there may be hints or requirements listed (e.g., password strength) to assist users in creating valid credentials. This design promotes a straightforward and welcoming experience for new users, making it easy for them to sign up and start their journey within the application.

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

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

When users attempt to submit the form with invalid or incomplete information, clear error messages are displayed next to the relevant fields. Visual indicators, such as red borders or icons, highlight the areas that need correction, guiding users to provide the necessary information.

This validation helps prevent common errors, such as using an already taken username or entering an invalid email format. By offering immediate feedback, the design enhances the user experience, making the registration process smoother and more efficient for new users.

Share

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, amfreak!

Select Your Game Settings

Board Size:

Medium (16x16)

Difficulty Level:

Medium

Start Game

Figure 7: This screenshot displays the Start Game page, where users can select the board size and difficulty level. The interface typically features dropdown menus or sliders for users to choose their preferred board dimensions (e.g., small, medium, large) and difficulty levels (e.g., easy, medium, hard). Clear labels accompany each option, ensuring users understand their choices.

Additionally, a prominent **Start Game** button allows users to begin their session once they have made their selections. This page is designed to be intuitive and engaging, enabling users to customize their gaming experience according to their preferences, which enhances overall enjoyment and satisfaction.

Minesweeper Game Board

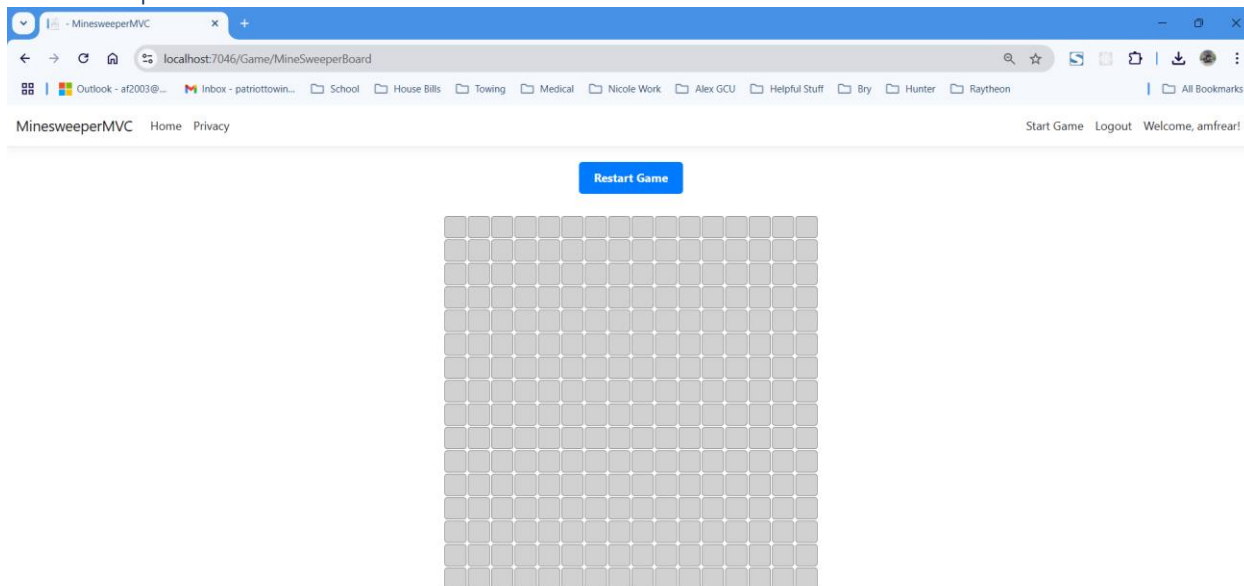


Figure 8: This screenshot showcases the Minesweeper game board during gameplay. The board features a grid of cells, some of which are revealed, indicating the presence of numbers that represent adjacent mines. Users can left-click on cells to uncover them, with visual feedback provided for safe cells and mines. Additionally, the interface may display a timer and a mine counter, enhancing the gameplay experience. The design is focused on clarity and responsiveness, ensuring that players can easily interact with the board, strategize their moves, and enjoy the challenge of the game.

User Access Restriction

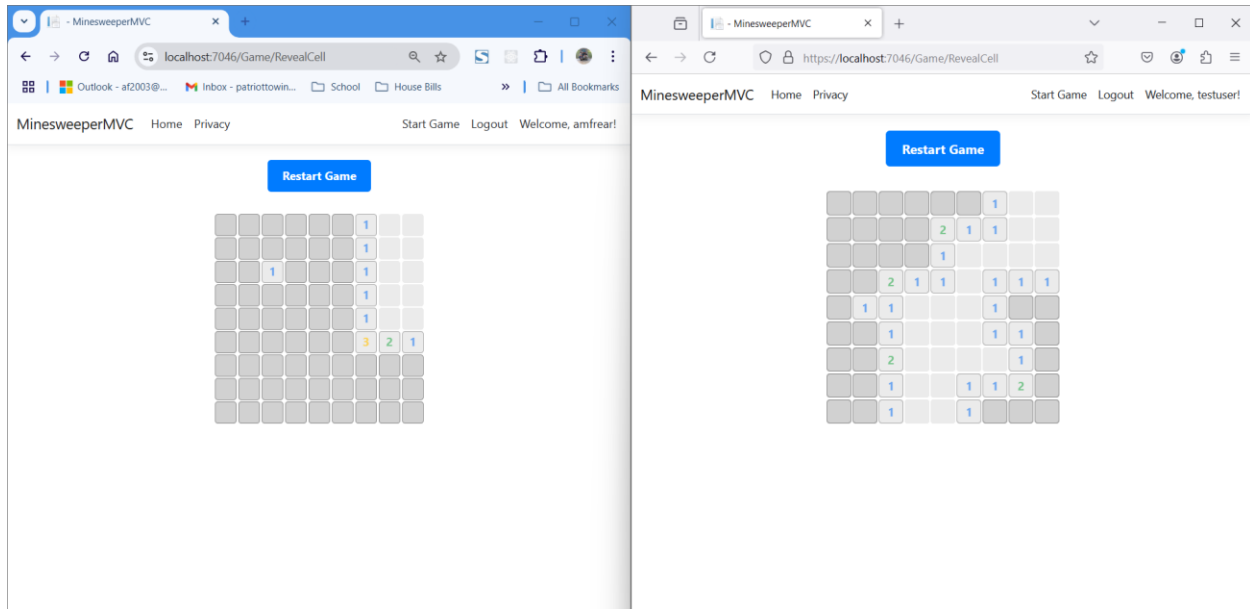


Figure 9: This screenshot illustrates that each user's game session is stored separately. When a user logs in, their individual game progress, settings, and preferences are preserved, allowing them to start a new game without impacting other users' sessions. This feature is crucial for maintaining personalized experiences and ensuring that progress is not lost when switching between accounts. The interface may include options to view past games or statistics, reinforcing the sense of personalization and continuity. This design choice enhances user satisfaction by providing a tailored gaming experience for each player.

Win Page

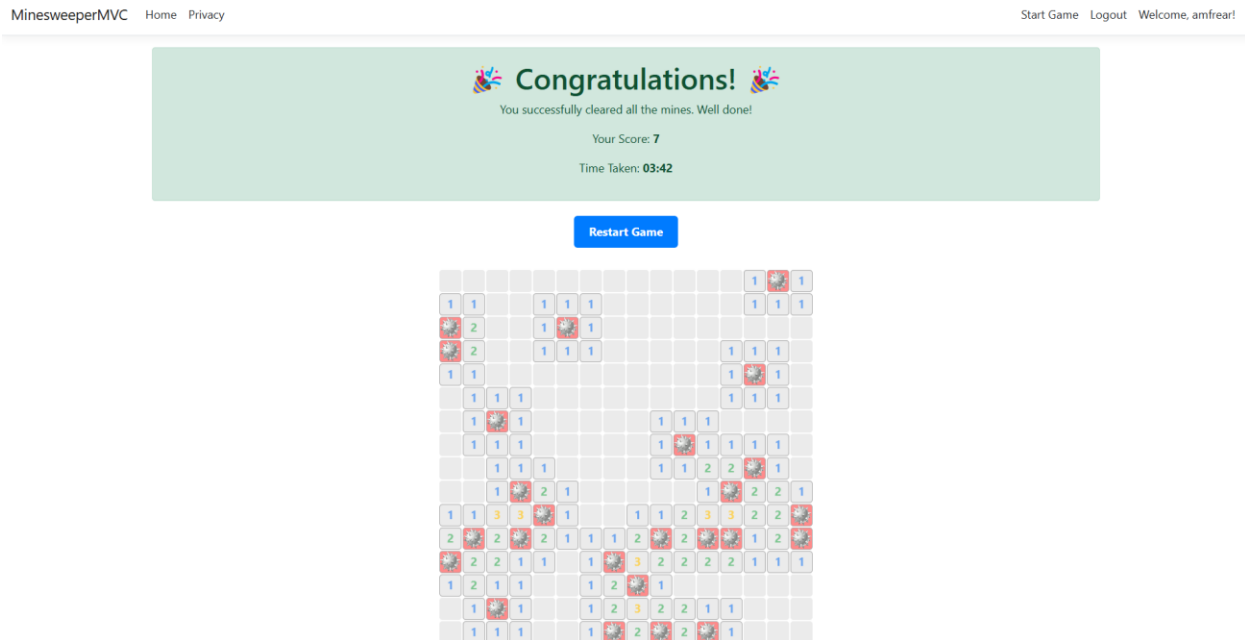


Figure 10: This screenshot displays the Win page shown when the user successfully completes the game. The page features a celebratory message congratulating the player on their victory, along with their calculated score prominently displayed. Additional details may include the time taken to complete the game and the number of moves made, providing players with a sense of accomplishment and feedback on their performance. Options to restart the game or return to the main menu may also be available, encouraging continued engagement. This design fosters a positive experience by recognizing the player's achievement and inviting them to play again.

Loss Page

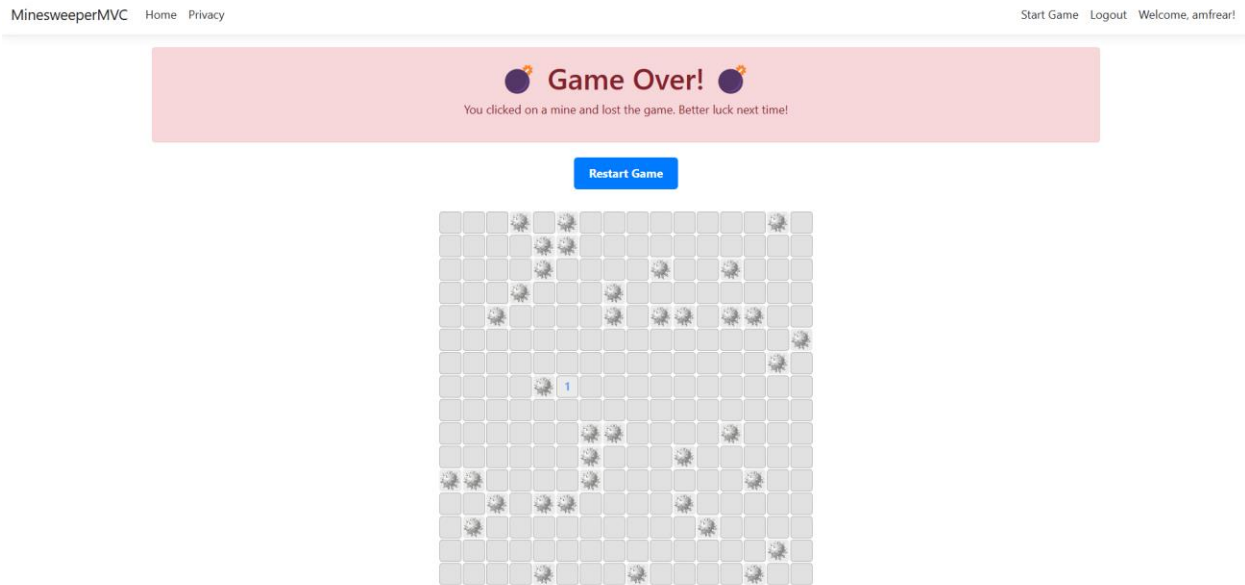


Figure 11: This screenshot displays the Loss page shown when the user uncovers a mine. The page features a clear failure message, informing the player that they have lost the game. Revealed mines are prominently displayed, providing visual feedback on the locations of the mines and enhancing the learning experience for the player.

Additionally, there may be options to restart the game or return to the main menu, encouraging users to try again. This design aims to create a balanced experience by combining the disappointment of losing with the opportunity for immediate engagement in another round.

Summary of Key Concepts

In Milestone 2, I expanded the functionality of the MinesweeperMVC application by implementing core gameplay features:

- **Interactive Game Board:** Developed a fully interactive Minesweeper game board as a 2D grid using Razor pages. Applied image resources to enhance the interface's visual appeal and intuitiveness.
- **User Interaction:** Implemented left-click functionality, allowing users to interact with the cells. Each click updates the button state according to game logic, enhancing user engagement.
- **Game Configuration:** Enhanced the Start Game page to allow users to customize their gaming experience by selecting the board size and difficulty level.
- **User-Specific Sessions:** Restricted access to the game board to the user who initiated the session, ensuring a personalized gameplay experience. Each user's game session is stored separately, enabling different users to start new games without affecting one another.
- **Win and Loss Pages:** Created dedicated pages for win and loss outcomes, displaying scores calculated based on time elapsed, board size, and difficulty level.

Technical Implementation

- **ASP.NET Core MVC Architecture:** Utilized this architecture to separate concerns between Models, Controllers, and Views, resulting in clean, maintainable code and effective user interaction handling.
- **Static Resources:** Incorporated CSS and images to improve the visual design and overall user experience.

Future Enhancements

This milestone builds on the foundational login and registration functionality from Milestone 1 and sets the stage for future enhancements, including:

- Right-click actions for flagging cells.
- Ability to save and restore game progress.

These improvements aim to further enrich the user experience and gameplay dynamics.