

# CS4530: FINAL PROJECT: UNO, SSO, ACCESSIBILITY

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## UNO, SSO & ACCESSIBILITY

In the original FakeStackOverflow, we observed that users, once logged in, could engage in a multitude of activities. They could join communities, ask questions, and even play games. However, we could not help but notice that there were limited options for customizability, user authentication, and multiplayer experiences.

Thus, we developed three exciting new features: an SSO login, an accessibility page, and a new Uno game. The SSO authentication allows the user to login with Google and Microsoft alongside the regular username and password fields. The accessibility settings page allows the user to enter greyscale or dark mode and allows the user to change the font. An Uno lobby can be created through the old “Games” page, and allows 2 or more players to engage in a synchronous game of Uno.

## SOURCE

Our site can be accessed through our link [here](#), and our code can be accessed [here](#).

## OUR DESIGN

Our designs for Uno, SSO, and Accessibility are all extensions of the original FakeStackOverflow codebase.

For Uno, we leveraged the existing gameService, gameManager, and gameController in the backend. By adding uno types, such as a “Card” and “UnoPlayer” to the backend, we were able to create the game logic, which was then represented in the frontend with “PlayerHand” and “CardComponent” components.

For Accessibility, we created a new “ThemeContext” that saved greyscale, dark mode, and font size settings for the particular user. These changes were made through global CSS variables, and a new settings page was added to the sidebar for easy access.

For SSO, the Google and Microsoft authentication, account creation, user lookup, and username generation was handled by the “findOrCreateSSOUser” service, powered by Node.js, Express, and Passport’s OAuth 2.0 strategies.

## FUTURE WORK

We found integrating these backend heavy features into FakeStackOverflow and ensuring compatibility with the accessibility updates most challenging. If we had more time, we would have implemented a heartbeat mechanism that detected player inactivity. We would also have liked to implement a more robust accessibility page that gave access to different page themes and color schemes. Finally, an authentication system that occasionally checks for suspicious activity would also be a viable extension.

## DEMO

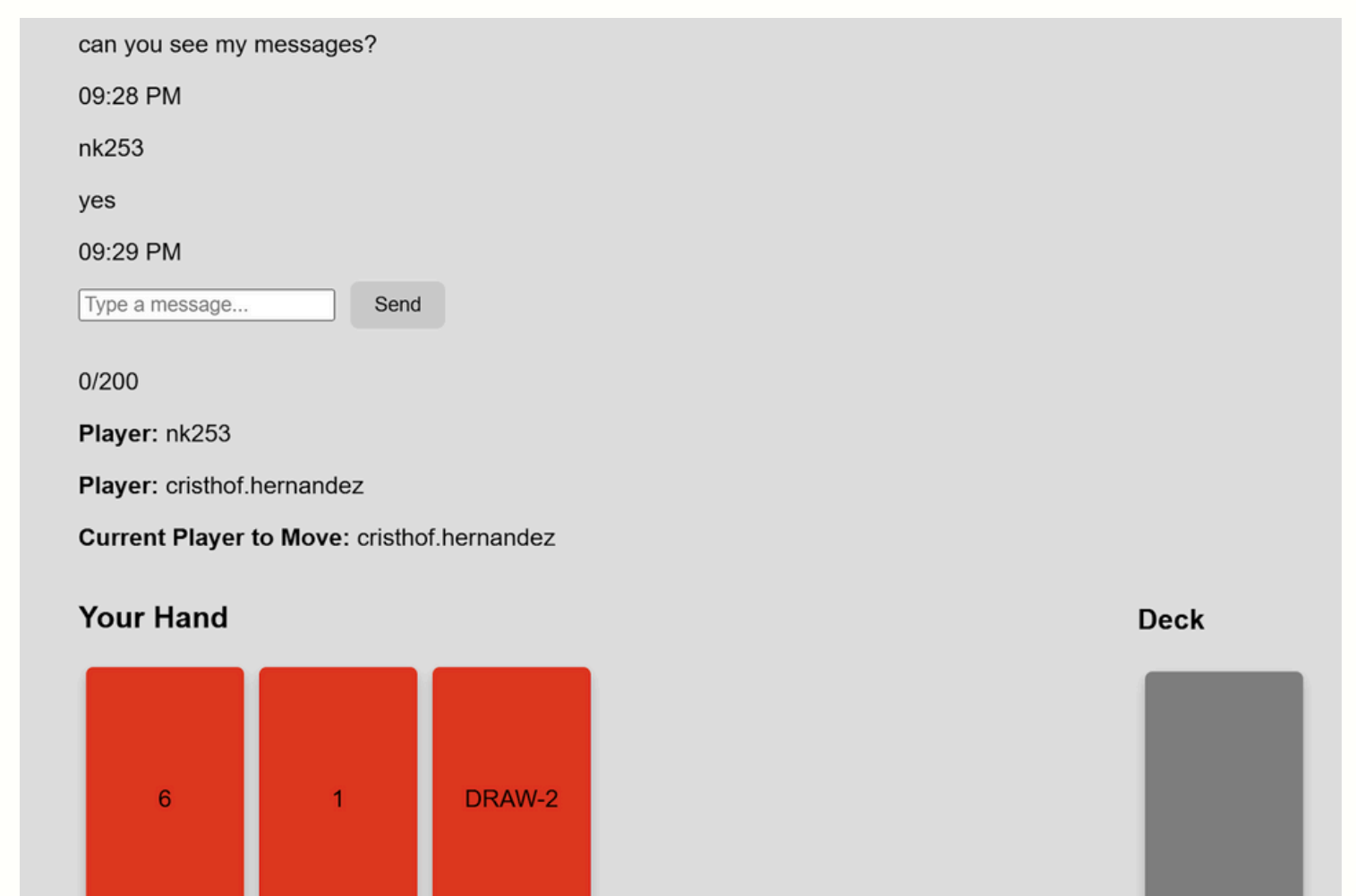


Figure 1: active Uno game and game chat

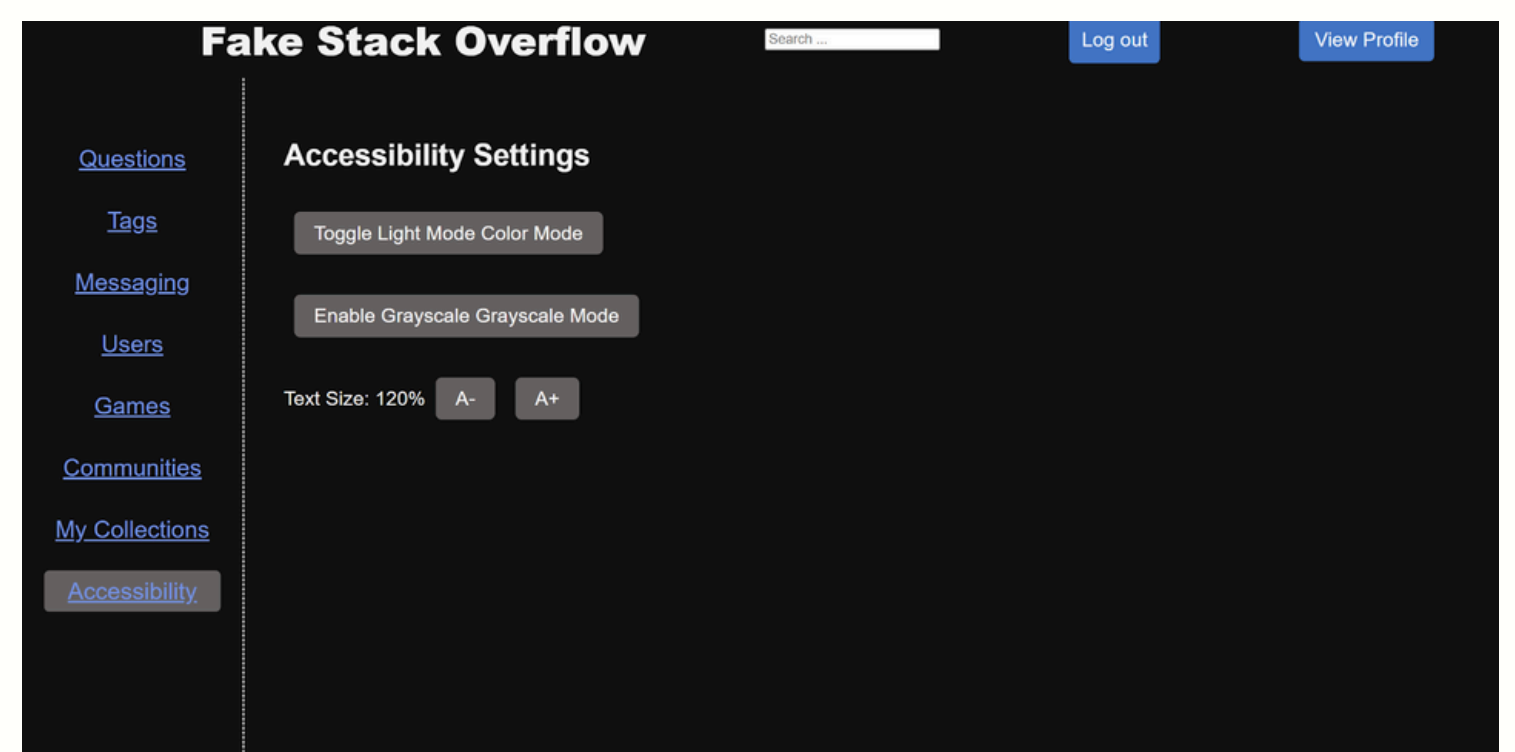


Figure 2: Accessibility Settings Page

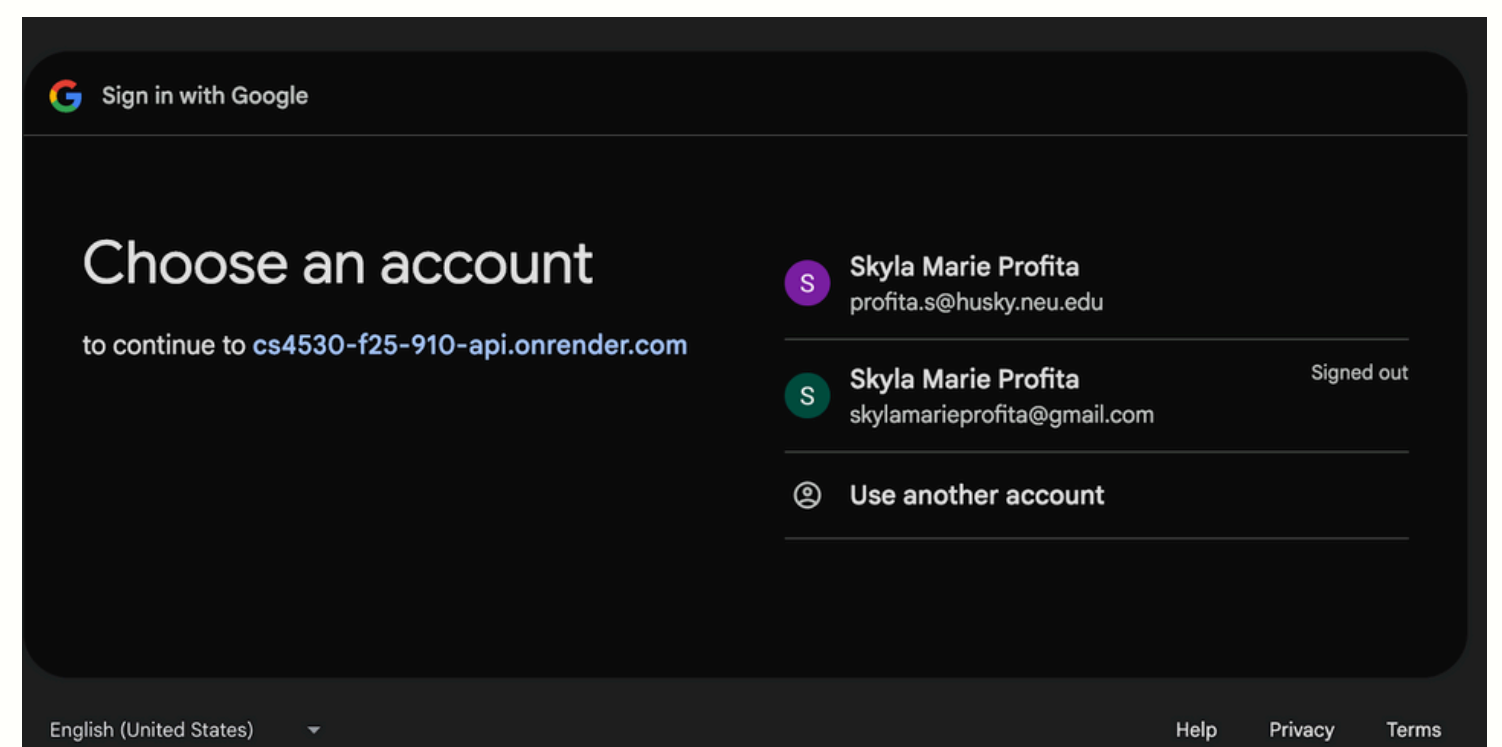


Figure 3: Google SSO authentication portal