CSE389 Final Project Report

Adam Rogers

For this project, I overcame a lot of challenges. I struggled a lot with SQL; trying to make databases with my limited knowledge proved to be difficult, and for that I am thankful that my group was able to assist me in making the database for our project. Speaking of the project, we unfortunately were not able to make nearly as much content as we wanted to. I think this is due to the fact that we had limited time, and too much of a learning curve on the tools we were using. I think with more time and less of other responsibilities, we could have done what we originally set out to do. As for what I did on the project, I made the search bar file on index.html, which was just a proof of concept to see how to do styling, writing html scripts, and a bit of html script by making the search query, that took a while to figure out, as I kept running into issues with the query const, I was unfamiliar with how I was supposed to write it, but w3schools helped with figuring it out. Next, I made the upload and download page called file_manager.php. A lot of then html I found on the internet as templates for starting such as the <!DOCTYPE html> headers and initializing everything because we were short on time, and I didn't really understand what these things did, so I figured it would be more worth my time to actually think about other things, like the php script for this page. The main difficulty with this part was getting the upload part to work, and having the program prompt the explorer or finder to open a file, which took a lot of scrolling through websites to figure out. When I was really stuck on some bugs, I used chatGPT to figure the issues out, which surprisingly worked, and then also used GPT for the weird parts of html and php, such as the download headers. The download part was easier because I didn't have to deal with the explorer/finder part again. Finally, I worked on implementing this file_manager into the dashboard that Peeal made. What I learned from making the search bar that we ultimately did not use was helpful for figuring out how to make an upload button. I did forget about starting the php session for a while a the top of the script which caused issues for a while but it ended up working. In terms of learning, I found it was helpful to have chatGPT tell me what functions to use, and what the variables I needed,

and then I filled in the blanks. For example, with the upload form, telling me that I need the id, method, enctype, style even if I want. I think without that I wouldn't have been able to complete anything. The final project feels rather unfinished, but I think we did a good job with the amount of time and knowledge we had, and I'm happy with the result.

Peeal Islam:

I implemented user registration called **signup_action.php** using PHP and sql as the database. During the signup process, user input is validated, and passwords are hashed securely using **password_hash** with the BCRYPT algorithm before being stored in the database. This ensures that user credentials are protected from unauthorized access. I also wrote the code to insert the validated user data into the database.

For the user to login I also implemented a user login functionality called **login_action.php** I developed a system where the user can provide their username and password, and the credentials are checked against the database. I used prepared statements to retrieve the user's stored information and verified the password using the **password_verify** function. If the password matched, a **session** was started, and the user was redirected to the dashboard page. If the credentials were incorrect, an appropriate error message was displayed. This ensured that only authenticated users could access the dashboard page

Hussein Estevanez Otero

In this project, I was responsible for designing the entire layout and user interface of the dashboard using vanilla CSS. I worked closely with the team to ensure that the design elements in the dashboard.php file were seamlessly integrated with the visual style defined in the dashboard.css file, ensuring a consistent and engaging user experience.

The dashboard.php file provided the structural framework for the dashboard page. I organized the layout into two main sections: a sidebar for navigation and a main content area where the user's key information would be displayed. The sidebar contains a logo, navigation links that lead to different sections such as "Dashboard," "My Notes," "Create Note," and "Account Settings," and a logout button at the bottom for easy access. The

main content area is designed to include a personalized welcome message for the user (e.g., "Welcome, Username!") that dynamically displays the logged-in user's name once integrated with the back-end system. Additionally, I designed the Quick Stats section, which includes cards to display important metrics like "Total Notes," "Shared Notes," and "Collaborators." Lastly, I included a Recent Notes section to show the user's most recent notes with a button to create new notes, further enhancing the user interface.

The dashboard.css file provided the visual styling for the entire layout. I focused on creating a clean, modern, and responsive design. For the sidebar, I used a gradient background and leveraged flexbox to ensure the navigation elements aligned well vertically. Each navigation link was styled to have a smooth hover effect, providing interactive feedback to the user. For the main content area, I designed the Quick Stats section with stat cards with a shadow effect and gradient colors to highlight the metrics. I also ensured the Recent Notes section had a visually appealing and consistent design with rounded corners and padding. The buttons in the dashboard, such as the "Create Note" button, were styled with hover transitions, making them feel dynamic and responsive to user interaction.

One of the challenges I encountered was ensuring that the layout was responsive across various screen sizes. To address this, I carefully used Flexbox to make the design adaptable and applied appropriate padding to maintain spacing consistency. Additionally, I had to ensure that the dynamic content, such as displaying the user's name and the statistics, would integrate smoothly with the static HTML structure. This required ongoing collaboration with the back-end team to align the design with the server-side data.

The final dashboard is not only visually appealing but also functional, with a responsive layout that works well across different devices. Integrating CSS styling and HTML structure provides a user-friendly experience, allowing users to navigate seamlessly between sections and interact with the application. This project has been an excellent opportunity to refine my skills in CSS, responsive design, and user interface design, and I look forward to applying these skills in future projects.

Adam contributed to the debugging process. He focused on identifying and fixing issues within the signup and login code, particularly related to database connections, statement preparation, and error handling. Debugging statements, such as **error_log**, were added to trace specific parts of the code execution and ensure that errors could be

identified and resolved effectively. Adam's contribution in debugging was essential to ensure the smooth operation of the signup and login processes.

Throughout the development process, I faced challenges in understanding the use of PHP for handling server-side functionality since I had previous experience with JavaScript and Node.js. Adapting to PHP, particularly the use of POST and GET methods to send and retrieve data from the database, required effort and learning. However, I successfully implemented both functionalities, ensuring that data is securely stored and retrieved from the Sql database.

Overall, the login and signup functionalities were completed, and the system works as our group members expected.

Zichen Shen:

In this project, I was responsible for integrating different program modules created by my team members into a cohesive system. Each member's program was well-developed, but combining them required setting up appropriate interfaces and making necessary adjustments to ensure the functionality. Additionally, I optimized the login and signup interfaces to enhance user experience and functionality.

My Contributions

1. **System Integration**

   I worked on integrating the different modules developed by my team members, ensuring compatibility and smooth data flow between them.

   To achieve this, I designed and implemented the necessary APIs and interfaces to connect the various functionalities, such as user authentication, dashboard navigation, and data storage.

2. **Database Unification**

Each program used a different database configuration, which posed a significant challenge. To address this, I set up a unified database schema that could accommodate all the data requirements of the individual modules.

I migrated data from the existing databases into the unified schema and ensured that the system could handle database queries efficiently.

3. **Login and Signup Optimization**

   I improved the visual and functional aspects of the login and signup pages to make them more user-friendly.

   This included refining the form layouts, adding helpful input validation messages, and ensuring consistent styling throughout the pages.

Challenges

1. **Database Integration**

   Combining different database configurations into a single unified environment required careful planning and execution. Each program's database had unique settings, and I had to analyze their structures to design a comprehensive schema.

   Resolving conflicts between data types and relationships was time-consuming, but essential for ensuring system stability.

2. **API Design and Interface Development**

   Setting up interfaces to connect the modules involved a learning curve, as I needed to ensure that data was passed securely and correctly between the programs.

Debugging issues related to data flow between modules was particularly challenging. I relied on error logs and feedback from my team to identify and resolve these issues effectively.

3. **Learning and Adaptation**

   Adapting to the project's technical requirements, especially in integrating different technologies and frameworks, required me to seek external resources and guidance. I frequently consulted ChatGPT for advice on best practices for designing APIs and managing databases.

Shortcomings

Due to limited time and lack of experience in website design, the final product fell short of our initial expectations. Website design is a complex task, and we initially underestimated the effort required to implement it successfully. Moving forward, I hope to develop more comprehensive skills to complete a fully functional website on my own.

Additionally, this project made me realize that teamwork is essential, as it is difficult for one person to handle all tasks alone.

Thanks to effective teamwork and my efforts in integration and optimization, the system now functions as expected. The modules developed by my team members have been successfully combined, and the unified system provides a seamless user experience. The challenges I faced during the process helped me grow my technical and problem-solving skills, particularly in database management and API development.

Team Contribution:
Adam: 25%
Peeal: 25%
Hussein: 25%
Zichen: 25%