Accomplishments:

It has been an enriching experience. I started the assignment with little web development experience and only had some HTML/CSS knowledge. For me, there were three main takeaways from the assignment.

The first was learning web development technologies and skills. It was exciting learning about the technology stack to create web applications quickly. Learning React taught me to write more modular code, which I feel is very beneficial in keeping code easily maintainable, preventing code reuse, and making code easier to understand. I was also familiar with the common architectures for web applications- notably REST- and how the React client and Rails server interact to transfer data correctly.

Secondly, I learnt how to deploy the RESTful web application with Heroku. By deploying the client and server in separate Heroku apps, I had a better understanding of the client-server architecture: how the application server receives HTTP requests through various HTTP methods, and data entries are stored in the PostgreSQL database. I was also more familiar with how the Internet works, how deployment services like Heroku provide the domain name and URLs for DNS servers to locate.

Lastly, I learnt about containerization and the convenience and efficiency that Docker brings about. Docker is a powerful tool for software development because it makes applications portable. Because the development environment can be encapsulated using Docker, by containerizing the app, not only could I work on it conveniently on different machines, but the code was much easier to run and deploy.

User Manual:

A task has 3 fields: task title, due date and an optional tag (choose from "School", "Work", "Personal" and "Important"). Adding tasks is intuitive by clicking the 'Add' tab, while all tasks can be viewed under the 'Tasks' tab. Updating and deleting tasks is intuitive as well by clicking on the respectively buttons next to each task item.

The tasks are sorted in chronological order, and due tasks are displayed in red. The tasks can be filtered by their tags via the dropdown selection on the right. The search bar can be used to search for tasks by the task title.