Trace Bailey

Dr. Maciosek

CS-499-19502-M01

Mar. 30 2025

Algorithms Narrative

For this category, I stuck with the backend for Swiftside Rentals, the car rental app I’ve been building. Since my last update, I’ve made some real progress especially in areas that show off my understanding of how to work with logic and data. I added the ability to edit and delete vehicles through modals in the admin dashboard, used bcrypt to hash passwords, and set up role-based access control using JWTs.

I chose this project because it gave me a chance to build real features that mirror what developers do in the industry. The way the admin panel handles vehicle data like updating state when a car is edited or deleted, confirming deletions through a modal, and validating user roles all gave me a chance to think through how data flows and how to build logic around it. It’s not just about creating routes, but about making the app behave the right way depending on who’s logged in and what they’re allowed to do.

This artifact still lines up really well with the course outcomes I planned to hit in this area. I wanted to show that I could design and improve a system using solid logic and structured thinking, and I think these enhancements do exactly that. I don’t have any major changes to my outcome goals, just more confidence now that I’m applying those skills in a real project.

Enhancing this part of the app definitely taught me a lot. I learned how to keep the UI in sync with backend changes, how to manage state cleanly between components and modals, and how to make sure everything works smoothly without overcomplicating the code. One challenge was keeping things organized as the app grew more complex especially with multiple features sharing space in the admin dashboard. But working through that made me better at planning how to structure logic from the start.

Overall, this version of the project feels much smarter and more functional than where I started due to the fact that all of the data was static, and I’m proud of how it’s come together. It’s a strong example of how I use algorithms and data structure principles to build things that actually work.