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**CS 499: Computer Science Capstone**

**September 27, 2025**

**4-2 Milestone Three: Enhancement Two: Algorithms and Data Structure**

I chose the Travel Getaways Web Application again as my artifact to show my skills in Algorithms and Data Structures. In the **trips.js** controller, I added helper functions for faster trip lookups and faster updates. I made enhancements to this artifact by using a **Set** object to manage trip codes better, and I created a helper function in the **tripsUpdateTrip** function to reduce code repetition when making updates to the trip details.

By implementing these enhancements, I optimized the performance for quicker trip lookups when searching for trips and enhanced code maintainability, since the trip details get updated automatically instead of having to manually edit the trip fields. Automated updates of trip fields help reduce the risk of errors by users when editing fields, which ensures data integrity. These showcase my skills in algorithms and data structures, as I planned in Module One. I don’t have any updates to my outcome-coverage plans because all the enhancements that I have made align with my original plan and outcome goals in this course.

I learned that it is important to choose the right data structures because they can affect how the web app performs and impact the code from being maintainable. The only challenge I had was ensuring that the web app functionality remained the same as I was optimizing searches and updates.