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CS-499

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Milestone Three Narrative

Artifact Description and Justification:

The artifact updated for the second category is the enhanced trips management functionality within the trips.js file of the Travlr Getaways program, focusing on the Software Design and Engineering and Data Structures and Algorithms categories. This functionality allows users to list, add, update, and filter trips based on various criteria such as trip name, location, and duration. The initial version was created during the development of the Travlr Getaways program for CS-370, and the enhancements were made following a detailed code review and feedback session. I selected this artifact for inclusion in my ePortfolio because it demonstrates my ability to implement and enhance algorithms for search and filtering, manage data structures effectively, and ensure robust user authentication and authorization. The specific components of the artifact that showcase my skills include the enhanced search functionality, improved error handling and validation, and the integration of JWT-based authentication. These improvements demonstrate my capability to design, develop, and deliver professional-quality computing solutions.

Course Objectives and Learning Reflection:

I met the course objectives planned for this enhancement in Module One, particularly the objective of designing and evaluating computing solutions using algorithmic principles and

computer science practices. The primary goal was to demonstrate proficiency in algorithms and data structures, which was achieved through the successful implementation and enhancement of the search functionality. This enhancement aligns with the learning outcomes related to creating efficient algorithms and effectively managing data structures. Additionally, the enhanced search functionality showcases my ability to use innovative techniques and tools in computing practices to deliver valuable and industry-specific solutions, meeting the program outcome of using well-founded techniques and tools in software engineering, design, and databases.

Learning Process and Challenges:

The process of enhancing and modifying the artifact was a valuable learning experience. I gained deeper insights into the importance of designing efficient algorithms and the impact of performance optimization on user experience. One of the main challenges I faced was ensuring that the search functionality remained efficient and responsive while handling a larger dataset and multiple filtering criteria. Through this process, I learned how to balance performance with functionality and how to implement advanced features such as case-insensitive searches and regular expression matching. Additionally, I learned the importance of thorough testing and validation to ensure the reliability and accuracy of the search results. This enhancement not only improved my technical skills but also reinforced the importance of user-centric design and continuous improvement. Furthermore, the experience emphasized the importance of designing, developing, and delivering professional-quality communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts, supporting the program outcome of effective communication in the field of computer science.