For my database artifact, I selected the Travlr Full Stack Project originally developed in CS-465. The project is a Node.js application that utilizes MongoDB to serve travel-related data via an API. The artifact demonstrates practical use of backend technologies, database interaction through Mongoose models, and RESTful API design. To enhance this project for the CS-499 capstone, I focused on improving the API controller logic for data retrieval and reinforcing error handling to align with industry best practices for secure and maintainable database-backed applications.

The primary enhancement was applied to the trips.js controller in the app\_api/controllers/ directory. I redesigned the tripsList and tripsFindByCode functions to provide more meaningful and structured JSON responses, making it easier to integrate with client applications. These updates include better response formatting (success, count, data, message), type checking of parameters, and detailed status codes for edge cases such as missing or invalid input. This enhancement improves the usability and robustness of the API, and helps support the goal of building scalable and testable backend systems.

Additionally, I enhanced the travlr.js Mongoose schema in the models folder by reviewing data types and ensuring validation is properly enforced. These enhancements ensure data consistency and enforce stricter integrity at the database level. The updated model and API controller work together to create a more secure and reliable database interaction layer.

This artifact now better supports the CS-499 course outcomes by demonstrating my ability to design and evaluate a computing solution using database-driven architecture while managing trade-offs related to performance, maintainability, and error recovery. It also reflects a commitment to secure coding practices and aligns well with modern backend development expectations in a professional setting.