**Milestone Four: Database Enhancement Narrative**

The artifact I selected for the database category is the TRAVLR Getaways Full Stack Web Application from CS 465. Originally built using the MEAN stack (MongoDB, Express.js, Angular, and Node.js), this app allows users to view and book travel options while giving administrators the ability to manage trip listings. The original version included a basic structure for storing trip and user data, but lacked more advanced logic for differentiating user roles or tailoring content based on user input. It was created in a prior term as part of the CS 465 final project. Again, I have combined all other artifacts into this project. Enhancing each one, and using them all to create a great relationship.

I chose this artifact for my ePortfolio because it highlights my ability to work with NoSQL databases, RESTful API design, and full-stack integration. For this milestone, I focused on improving backend functionality tied to the MongoDB layer and enhancing the user experience through personalized content retrieval. The enhancements I completed include:

* Implementing role-based registration, allowing users to register as either regular users or admins by supplying an optional admin code. This information is stored securely in the database and used for access control.
* Creating a new dashboard API endpoint (/api/users/:username/dashboard) that queries MongoDB to return customized data. Admins receive all available categories, while regular users only see completed travel items.
* Adding a front-end dashboard view (/users/dashboard/:username) that connects to this endpoint, allowing users to view personalized summaries from the database.
* Refactoring code for readability and consistency, including fixing missing trailing newlines and standardizing formatting.

These updates improved the artifact’s overall structure, functionality, and user experience. They also showcased my understanding of conditional MongoDB queries, authentication middleware, and route-level access control.

This enhancement demonstrates progress in multiple program outcomes. Specifically, it reflects my ability to design and evaluate computing solutions using database principles, and to apply innovative techniques that deliver value to users (Outcome 3 and Outcome 4). I also made progress on Outcome 5 by limiting data exposure through role-aware query responses, adding a basic security layer to safeguard data.

While implementing these changes, I deepened my understanding of user-specific data flow in full-stack systems. One challenge I faced was structuring the dashboard queries to correctly distinguish between admin and non-admin users while avoiding duplicate logic. I resolved this by abstracting the logic into a service layer, which made the backend cleaner and more maintainable.

Overall, I feel this enhancement reflects solid progress in both technical and professional development. The updated TRAVLR application now includes personalized dashboards, better user management, and more meaningful interaction with MongoDB, making it a strong artifact for my final ePortfolio.