**3-2 Milestone Two: Enhancement One: Software Design and Engineering**

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**Narrative**

**Briefly describe the artifact. What is it? When was it created?**

The artifact is a full-stack SPA (Singular Page Application) developed during CS-465: Full Stack Development. Within the project, the SPA was built using the front-end framework Angular as a part of the MEAN stack. The objective of the SPA was to allow server-side operations to be conducted through more user-friendly means, with the ability to perform CRUD commands on an admin accessible webpage. CRUD commands were for the manipulation and viewing of trip data stored within a MongoDB database to continue compliance with the MEAN stack.

**Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved?**

The SPA artifact was chosen specifically because the project was incomplete due to conflicts with the Angular framework. The course provided a guide for the project, but there were some inconsistences in logic due to mismatched versions of Angular in the guide and the one used in development. Therefore, I wished to address the current logic errors during this capstone course and add a functional full-stack SPA to my ePortfolio. As for specific components, a full-stack web application contains a wide range of software development skills in both front and back end development. This includes the ability to develop in multiple languages such as HTML and JavaScript, designing and implementing databases, developing database management tools, designing user-friendly UI components, establishing RESTful APIs, and more. Other general skills include the ability to use and adapt different technologies to communicate with one another, and problem-solving capabilities to overcome the technical challenges of doing so. So far, the milestone has been progressing well with few roadblocks. I have not yet completed refactoring and debugging the code, but I have addressed many of the errors and logic problems throughout the various components. Few warnings remain when running the application through the command prompt, package versions have been updated and correctly implemented, and images are now recognized by the application for display. These are some examples at the time of writing, but I am continuing to work on the artifact before submission. This is because it will be revisited in Module Five as it is also the artifact being used for the database enhancement. My current objective is to fix the login screen so that the page with trip information becomes viewable. From there, I will continue with the enhancement until it is completed.

**Did you meet the course outcomes you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans?**

I would say that I have only partially met the course outcome I originally selected when planning this enhancement. The chosen outcome being the fourth, which demonstrates the ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals. At the current stage of enhancement, different skills and tools have been utilized to implement solutions to the logic errors present with the components of the SPA. But the overall goal of the project and value of it is still lacking since it remains incomplete. No updates to mention in coverage of the planned outcomes, just that I will continue enhancing the SPA until the original selected outcome is fully met.

**Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?**

While enhancing the artifact, I learned that besides the logic errors present within the code, there were also a few small mistakes of my own making in the original submission. Things like variable name inconsistencies or obscure definitions that needed to be cleaned up alongside the major functionality errors. These were not picked up as errors by the Visual Studio Code IDE being used for development, so I did not pick up on them before. But consistent code review has helped me correct these mistakes in the components I have conducted it on. Most of the challenges faced during enhancement were quickly remedied with some help online or through small tweaks to the code. There is one challenge currently stopping progress from continuing with the enhancement at the time or writing. This is from the login page not loading the proper elements for username and password credential input. Login is required to access the rest of the SPA’s features and I have reviewed the login component files. I have yet to determine why this page does not display any UI elements, since it does not rely on any information retrieved from the MongoDB database for display. Hopefully, I will be able to address this issue before submission. But as mentioned, I will need to continue working on this artifact as part of the database enhancement as well, giving more opportunity to correct errors.