# CS 499 Module 4-2 Narrative

# Algorithms and Data Structure

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

The artifact is an Inventory Management System initially created as an Android mobile app during a course project for CS-360, focusing on Android development. This project, developed using Java and Android SDK, allowed users to manage inventory by adding, updating, and deleting items. Recently, I translated this mobile app into a web application using the MEAN stack, which includes MongoDB, Express.js, Angular, and Node.js.

**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 algorithms and data structure? How was the artifact improved?**

I included this artifact because it demonstrates my ability to adapt and enhance software across different platforms, showcasing my growth as a developer. The transformation highlights my proficiency in data structures and algorithms, particularly through the efficient handling of CRUD operations in MongoDB and the implementation of RESTful APIs with Node.js and Express.js. The web application improved on the original by aligning with MVC principles, utilizing Angular for dynamic UI, and incorporating robust data handling techniques.

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

Yes, I met the course objectives by showcasing advanced technical skills and problem-solving abilities through this enhancement. Specifically, I demonstrated proficiency in both client-side and server-side development, effective data handling, and the integration of user authentication and notification systems. I plan to continue focusing on developing a security mindset and ensuring data privacy and security in my future projects.

**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?**

Enhancing and modifying the artifact taught me the intricacies of full-stack development and the importance of efficient data handling in a NoSQL database. The primary challenges included navigating the complexities of the project structure, implementing real-time updates in the Angular frontend, and managing user preferences for notifications. Overcoming these challenges enhanced my understanding of integrating different technologies and improved my ability to deliver high-quality software solutions.