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

Tomas J. Estanislao

Southern New Hampshire University

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Instructor Maryann Krupa

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Part 1:

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

I have my original artifact, which is a python web scraper that I created to source some original data. I created this a couple months ago to add to my resume and to be able to re-use this data for various learning purposes. I am using this original work to modify an existing artifact from one of my previous courses, CS 465. It is a full stack web application that I completed over a month ago. This app includes a front end SPA that allows administrators to interact with an e-commerce database.

1. 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?

I selected my original artifact because I wanted to learn with it. It was a recent, spur of the moment side-project that aligns with a personal interest of mine: web-novels. Because I wanted to create project with real-world value, I decided to adapt it with my existing web app from CS 465. This specific use case is developing skills with API’s and system design as a backend developer, as well as potential exploring database aspects— such as data cleaning— later on. For this enhancement, I focused on developing the API to interact with the scraped dataset. I improved the artifact by adapting it to a new dataset. I introduced new routes which focused on viewing the original data, in addition to routes serving custom user lists. The existing app already had functionality to create multiple accounts, and my goal was to allow each of those accounts the ability to create and maintain their own custom lists— with that data persisting in the database in a new collection. I used apps like Kindle and Goodreads as inspiration.

1. 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?

I believe that I hit most of my goals with this enhancement. I developed an industry specific solution to interacting with data over a client and server. I was also surprised that there were some security concerns that popped up that I wasn’t expecting. I had to consider things such as safely handling the data and protecting the original forms stored in the novels collection. I had to also think about how I wanted to access and search for novels. Overall, this impacted how I designed my routes, including protecting them with authentication tokens. Updating and deletion were also removed from the primary dataset, while ObjectId’s were used both for querying and storage within the users’ list. This cut down on duplicate data, and also avoided any confusion with modification.

1. 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?

I had to adjust as I went about changing the artifact. An example of a challenge I faced was in implementing the Get requests. I originally wanted to search by Novel Title, but then I realized problems such as: long names, misspellings, white spaces, and speed. I adjusted to use the default \_id given to each MongoDB document due to the benefits of uniqueness and indexing. Another challenge was figuring out how to design my new lists schema and connect each controller function. It took a lot of googling’ pulling up different error messages and debugging my code. As a result, I tried to standardize the styling and formatting for each of my files. This included adding try/catch blocks with error messages. The main lesson that I have learned is that I have good instincts. I have a vision for how I want to design a solution, while making changes as needed on the fly. On the other hand, I struggle with setting hard deadlines and tasks to accomplish— or knowing when to stop.

I decided to add my enhancements onto my previous course repository for now, due to having the project libraries already installed and set up. All changes are within the **“app\_api**” directory in the “**Enhance1”** branch.

Repository: <https://github.com/Testanislao/cs465-fullstack/tree/Enhance1>

Below are screenshots of my running enhancement:

**Get all novels**

A screenshot of a computer

Description automatically generated

**Get single novel**

A screenshot of a computer

Description automatically generated

**Register new user**

A screenshot of a computer

Description automatically generated

**Login**

A screenshot of a computer

Description automatically generated

**Add 3 individual novels to user list**

A screenshot of a computer screen

Description automatically generated

**Get user list**

A screenshot of a computer

Description automatically generated

**Delete novel from user list**

A screenshot of a computer

Description automatically generated

**Register new user, add new novels, delete novel, show list**

A screenshot of a computer

Description automatically generated