Southern New Hampshire University

CS 499

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4-1 Journal: Career Choice and Artifact Update

Part One: Career Reflection

**1. Have you changed your career plans? If so, what prompted this change? If not, why have** you remained with your original plan?

I have not significantly changed my career plans since starting the Computer Science program. From the beginning, my goal has been to establish a career in software development, particularly in software engineering and application development. However, as I have progressed through the program, my interest in full-stack development and database management has grown. The work I’ve done in projects like the To-Do List application and the Library Management System has reinforced my interest in designing scalable and efficient applications. While my core career path remains the same, I have expanded my focus to include more backend development and database optimization.

**2. How has your thinking about your career evolved?**

When I first entered the program, my main focus was on learning how to code and understanding the fundamentals of software development. As I advanced, I realized that programming alone is not enough—understanding system architecture, security principles, and efficient database management is just as important. The enhancements I have made to my artifacts, such as integrating a graphical user interface (GUI) and adding SQLite database storage, have given me a deeper appreciation for building real-world applications. My thinking has evolved from simply wanting to "write code" to creating well-structured, scalable, and secure applications that solve real problems.

**3. Have you completed any research about your choice of career? How has this impacted your thinking? Have you thought about seeking an advanced degree or certification after earning your undergraduate degree?**

Yes, I have researched career paths in software engineering, full-stack development, and database administration. My findings have shown that industry certifications such as AWS Certified Developer, Oracle Database Certification, or Certified Kubernetes Administrator can be highly beneficial. Additionally, many job postings emphasize the importance of knowledge in cloud computing, DevOps practices, and cybersecurity.

While I do not plan to pursue a master’s degree immediately after graduation, I am considering obtaining industry certifications to strengthen my resume. Certifications in cloud computing and database management would complement my current skill set and make me more competitive in the job market.

**4. Which course outcomes have you achieved so far, and which ones remain?**

So far, I have achieved the following course outcomes:

* Software Design and Engineering: By refactoring and enhancing the To-Do List application, I have demonstrated my ability to create modular, maintainable, and scalable software solutions.
* Algorithms and Data Structures: My work on the Sorting Algorithms Comparison project has expanded my knowledge of algorithm efficiency, data structure implementation, and performance analysis.
* Database Management: I have successfully integrated SQLite into my To-Do List application and have begun migrating the Library Management System from MySQL to MongoDB to improve scalability.

The remaining areas I need to refine include enhancing security measures in my applications and ensuring all artifacts in my portfolio adhere to best practices in secure software development.

Part Two: Artifact Update

**Software Design and Engineering**

I have made substantial progress on the To-Do List application. The initial refactoring is complete, and the graphical user interface (GUI) has been implemented using JavaFX. The next step is finalizing the SQLite database integration, which will allow for persistent task storage.

**Algorithms and Data Structures**

For the Sorting Algorithms Comparison project, I have successfully implemented Radix Sort and Heap Sort, expanding the range of algorithms tested. Additionally, I am currently working on visualizing the sorting process to make it more interactive and educational.

**Databases**

The Library Management System is undergoing a database migration from MySQL to MongoDB. This transition will improve scalability and allow for better handling of unstructured data. I am also developing a web-based interface to make it more user-friendly. The next step is refining the database queries and ensuring the web interface functions efficiently.

Conclusion

This journal entry highlights the progress I have made both in my career development and in enhancing my ePortfolio artifacts. My career focus remains in software development, but I have expanded my interests to include database management and full-stack development. Moving forward, I will continue refining my artifacts while researching industry certifications to strengthen my technical skill set.