Internship Reflection Report

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EDI & Interoperability Systems

November 14, 2025

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Learning Objectives

Objective 1: Gain Proficiency in an Enterprise Backend Framework (Spring Boot)

My first learning goal for this rotation was to move from a basic, academic understanding of Java to an intermediate-level proficiency in the Java Spring Boot framework. This was the primary framework used by my team for developing backend services. I achieved this by being directly embedded in a largerxc project: building a full-stack debugging tool for the team's FHIR database. I spent the initial weeks learning the structure of a large, existing enterprise project, understanding concepts like dependency injection, repository patterns, and building RESTful APIs to interact with the FHIR data. This hands-on experience was vital and allowed me to be comfortable enough to contribute meaningful code to the project.

Objective 2: Understand and Work with CI/CD Processes

My second goal was to get familiar with Continuous Integration and Continuous Delivery (CI/CD), a process that was new to me but is critical to my team’s workflow. I learned how the pipeline is structured, observing how code committed to Git automatically triggers builds, executes automated tests, and (once approved) is deployed to different environments. I gained hands-on experience by ensuring my own code for the debugging tool successfully passed these automated checks, which reinforced my understanding of its importance for maintaining software quality in a large, active project.

Objective 3: Develop Skills in Writing Maintainable and Reliable Code

Finally, I wanted to further develop my skills in writing code that is not just functional, but also maintainable and reliable. Working on critical software that interfaces with health data, it’s extremely important that code is understandable, testable, and robust. I developed these skills

by adhering to the team's established coding standards, learning how to properly structure and document my code, and participating in code reviews. This (sometimes-tough) feedback from senior developers was invaluable and taught me to think about the long-term lifecycle of code, not just the immediate task.

Application of Coursework

Several courses I have completed directly contributed to this rotation, especially through my knowledge of databases and front- & back-end programming.

- **Object-Oriented Programming** and **Server-Side Web Programming** gave me the essential foundation in Java-like languages and API concepts. This base was critical for understanding the complex architecture of how to design RESTful endpoints. Even though I didn't know Spring Boot specifically, these classes gave me the knowledge I needed to quickly pick it up.
- **Fundamentals of Database** and **Database Advanced Topics** provided the necessary context for working with the team's FHIR database. While FHIR itself was a newer standard to me, my academic knowledge of database principles, query logic, and data structures allowed me to grasp the tool's purpose quickly. Using this knowledge, I was quickly able to write my own database queries and understand its structure.
- **Software Engineering I & II** were directly applicable. These courses taught me Agile methodologies, Scrum, and the importance of version control with Git, which were all core components of my team's daily operations and the CI/CD pipeline. This class also helped me in collaborations and communication within a development team.

- **Essentials of Web Development** provided the core HTML, CSS, and JavaScript knowledge that, while not specific to SvelteKit, made picking up the new frontend framework for the debugging tool much more manageable. This course also helped me understand how frontend pages interact with backend systems.
- **Health Information Systems** was perhaps the most crucial course for context. Here I learned about many concepts of healthcare IT, especially around interoperability and data exchange protocols such as FHIR. This knowledge gave me direct knowledge for working with FHIR databases and APIs.

Career Goals

Short-Term Goals (Next 1-2 Months)

My primary short-term career goal for this rotation was to get more familiar with collaborative code editing, specifically using Git in a team setting. I achieved this quickly, moving beyond basic commits and into the team's full workflow: creating feature branches, submitting pull requests, handling merge conflicts, and participating in code reviews. Not only did this help me learn the tools, but how to communicate and use them in a collaborative setting. This skill is transferable to literally any role in IT, not just programming, as it's also used for documentation and configuration management.

Mid-Term Goals (Next 6–12 Months)

In the mid-term, I want to find a role that allows me to continue this steep learning curve. This rotation solidified my interest in software engineering. I genuinely enjoyed the entire process, from analyzing a problem (needing a better FHIR debugging tool) to building a functional, full-stack solution. Over the next year, I want to keep developing these specific

technical skills (in backend, frontend, and DevOps) and strengthen the soft skills that make them effective in a team.

Long-Term Goals (3–5 Years)

Similar to my previous rotation, my long-term goal is to find a stable, challenging position where I feel like I'm constantly learning and contributing. This experience on the Interoperability team showed me exactly what that can look like in a software engineering context. In the next few years, I hope to secure a full-time role at a company where I can dig in, gain deep experience over 3-5 years, and build a strong professional network. Meeting and learning from the senior developers on this team really demonstrated the value of having mentors you can learn and grow from.

Reflection and Conclusion

This rotation on the Interoperability systems team was a massive step forward for me, both professionally and technically. It’s one thing to write code for a class project. It's another thing entirely to design and build a full-stack application, using Spring Boot and SvelteKit, that will be used by other engineers to debug a critical, live FHIR database. This was, honestly, intimidating at first, but it proved to be an incredible learning experience.

I now have much greater confidence in my ability to tackle unfamiliar frameworks, integrate into a high-functioning development team, and take ownership of a complex technical task from design to deployment. I’ve had the chance to connect my academic knowledge directly to real-world applications, reinforcing the importance of both technical fundamentals and the collaborative processes that make enterprise software possible.

As I reflect on the past few weeks, I'm proud of the progress I have made and the functional tool I am helping build. I am grateful for the support and mentorship of my team, and I look forward to applying everything I've learned in my future career.