Reflection

My experiential learning activity, research on a database management project, helped me build confidence in my area of study and beyond. Looking back, I met the goals I laid out for myself at the start of the quarter. I built technical skills: I began the quarter working on a codebase in a language with which I had no experience, and ended the quarter making contributions to the project. I also built soft skills in time management: every week, I had to balance the tasks I'd planned for the research project with my coursework and other obligations.

My motivations for this activity have also developed. I was initially interested in the research because of its applications, but now that I've worked on it, I've realized that the implementation is fascinating as well. For example, my current task is transitioning from a system of storing video data in files within the directory of the stored video to a system with a single database for video layout data. This reduced the pre-processing work since the program just connects to the database rather than iterating over a directory and reading in each file. Responding to a query, however, such as getting the file location of a tile in a video, is slightly more complicated with the new version.

Considering tradeoffs is not only interesting, but also connects to my current coursework. In my Data Structures & Parallelism class, we focus on the efficiency of different algorithms. Throughout the layout-database modifications, this class prompted me to be in an efficiency-oriented mindset. The project was a real-world application of the analysis and discussions from class, helping me get more out of the class. At the start of the quarter, I had anticipated my coursework applying to the project, but I hadn't predicted that working on a technical project would deepen my appreciation of my coursework.

After spending a quarter reading unfamiliar code, sifting through error messages, and learning new concepts, I am more confident - confident in my ability to jump into a new project and confident that I chose a field of study that I enjoy. I am more excited to take on new challenges and engage with my major. For example, I began the project with no familiarity with C++. The first modifications I made were difficult, and I encountered a lot of bugs. But as I got more confident, I became better at debugging and noticed my common mistakes. It was an iterative process, and when the test I was trying to fix finally passed, it was incredibly gratifying.

Though my contributions have been small, they have implications for the whole project. A reduction in query time improves the user's experience, enabling them to focus on their own research rather than the tool they are using. I've also gained practice with design decisions. When making modifications, I need to consider the best option based on actual use cases for the project - not just based on what I feel like implementing.

I hope to continue the project and continue to make improvements, especially now that I have more familiarity with the codebase. I've learned how much I enjoy doing research and being part of a larger project. I am excited for more opportunities to be part of technical projects, whether through research, internships, or beyond.