

Individual Capstone Assessment

My senior design project is a templated mobile app architecture for Android apps. The company that I have completed all my co-ops with, Performance Electronics, Ltd., as agreed to sponsor my capstone project as it will be beneficial to their company and connects directly to my work. Currently, whenever we want to begin a new mobile app, we have to start more-or-less from scratch. The idea behind this templated app architecture is to start from a template, eliminating as much as 80% of the startup costs that currently exist.

One of the foundational characteristics of this project is design. This architecture is being designed and implemented from the ground up. Thus, a lot of time spent initially will be in the design phase. Creating documents such as the engineering 4+1 approach, class & sequence diagrams, and module diagrams if the project will be comprised of multiple libraries/modules is a necessity. The university has helped me refine these skills through classes like Software Engineering (EECE3093C), Programming Languages (CS3003), & Data Structures (CS2028C), where we got to experiment with some of these exact concepts.

While the university classes were helpful in preparing me to complete my senior design project, my co-op experience was crucial in order to ensure my success with the project. I've completed all of my co-ops with the same company and thus, have been able to navigate through a large variety of situations and projects. Being able to adapt to various customer's, project requirements, technological constraints, and project domains such as mobile versus embedded applications, has undoubtedly been the single greatest fountain of knowledge for me. The skillsets developed on the co-op are what have truly prepared me for the senior design project.

When it comes to my inspiration for this project, I need to make clear my circumstances. I have a co-op employer whom has offered to finance my senior design project as long as it is beneficial to their company at large. Luckily, the exact line of work that I've been doing and the next big area of expertise needed at Performance Electronics align perfectly. Consequently, because of my direct experience with mobile applications & our immediate need as a company, the idea of a mobile-application focused project was born. Moreover, while I am not completely opposed to working with teammates, I do much prefer completing assignments alone. Being able to complete this project through my work allows me to complete it at my own pace and alone, which is somewhat of an incentive as well.

The project idea itself, a templated mobile application architecture, is particularly useful as a foundation for all future mobile apps with the company. To begin designing the project, I need to begin by modularly breaking functionality into separate components or libraries. This is most efficiently communicated through a series of graphical diagrams such as class diagrams, dataflow diagrams, or library relation diagrams. I will be evaluating my progress via regularly scheduled demos and meetings with my supervisor. I also have the opportunity to bounce ideas off of him daily and we often jointly draw out ideas on whiteboards or via some graphical editor online. Breaking the project into set milestones will also help maintain a constant progression, and allow me to visualize progress over the course of the year.