

Final Capstone Self-Assessment

It's so surreal to have come this far over this last year on this project. It feels like so recently we were in the planning phase of the project, and now I've presented the project at the expo and finished it to a state I'm satisfied with.

For this project, I handled the Android side of things. My main focus was programming the functionality of the application, its UI, communication with the SQL database, and the like. It was a lot more difficult than I thought it would be, at one point I had to throw out the whole codebase because I wrote it in Kotlin, and then I rewrote it in Java. It was a massive learning experience – most of which I learned I'm reeeeeeally not the biggest fan of Android. But seriously, I used the time management skills and some skills involving PHP I had learned last fall to be able to help me get the app running and communication working properly. The Android portion was all straightforward, I used Volley and PHP to help in connecting to a remote SQL database hosted using XAMPP.

From this experience, I first and foremost learned more about programming in Android. I had some experience with the language prior to this, but this was my first deep dive into the language. I also learned more about communication between android and other applications – some of the libraries you have to use and how you would need to utilize asynchronous processes or running the app as a service to assure it communicates as it needs even when closed. Which leads me to a big obstacle – having the application run in the background. Running the app as a service to allow for notifications was something I just couldn't get ironed out before the expo. However, I am still satisfied with how the app turned out. It communicates with the SQL database properly, the UI is simplistic and easy to understand, and I'm very happy with how the app can grab data from the database fairly frequently to keep the app up to date.

As a group, we created a decent method for keeping your plant watered automatically and knowing how much water and sunlight it needs regularly. The SQL database works as a bridge between the Raspberry Pi and app, and Raspberry Pi automatically waters like expected, and everything works comprehensively. I've known this for a while, but when it comes to teamwork I tend to like carrying the most work I can handle to not burden others. It is a fault I will admit, however I'm still happy with how our group worked together. There were times I wished I had delegated my teammates more work, but I had set myself up to work like this so I just pushed through it, knowing that when it comes to writing out some of the documentation I was the most well versed.

I won't be humble at the moment; I know I was effectively the backbone of my group. I handled most of the documentation, communication with or advisor, and figuring out the front end of the app put some amount of pressure on myself to be sure I delivered. However, that isn't to say that my teammates didn't do their fair share of work. The SQL database is the backbone of the entire project, and I had no prior experience with Raspberry Pi so I'm fortunate Kevin had experience and handled it, plus during the expo he did a lot of the talking which I do appreciate. I don't think anyone deserves special recognition either, not even myself. At the end of the day,

we all worked as a team to bring this project to fruition, and I think we all did what we could to make it as good as we could.