

The goal of this senior design project is to create an Android application that I will find helpful to my own learning. Specifically, the application will be a Japanese dictionary where the user, such as myself, can input any Japanese words that they come across along with the definition for later reference. Through development, I will make use of the software development skills that I have collected and grow my ability to create a refined user experience. This project is very closely related to my academic experience, as I have placed a large chunk of my credit hours into learning Japanese, and I took my final co-op rotation in Japan. Given that the application turns out well, it may become one worth sharing with other learners of Japanese at the university. I will be working on the project individually, so the smaller target scope of the project should lead to a high likelihood of it being an overall success.

I will need to rely on what I learned from my coursework for the project to become a quality application. For example, the application will need to be able to store and access words that the user has saved into the dictionary. To accomplish this, I may use a database such as with CS 4092 Database Design and Development. Then if a search query receives multiple results, those results will need to be sorted, a topic covered in CS 4071 Design and Analysis of Algorithms. I will also rely on my learning from the Japanese Language & Culture Certificate academic program. Without knowledge of the Japanese writing systems and grammar, I would not be able to make a useful tool for learning.

I will also draw on my experiences from co-ops. During my first rotation I took part in the Experiential Explorations Program with UC. During that experience I explored using the Godot 3 engine, which I am considering using as the main development environment for this project. My other rotations are less applicable in terms of technical skills. For my third rotation I took part in UC's Professional Practice EEP, during which I created a simple game engine. The technologies involved in creating the engine do not directly apply to this project, however it gave me the experience of working on a larger project from start to finish. For my final co-op rotations, I interned with Omron Healthcare in Kyoto Japan. There I practiced continual development of a product by identifying and improving its weakest points. This strategy will be valuable in creating a positive user experience for my application.

I chose this project because I wanted to make something that would be directly useful to me. I have been studying Japanese since my first semester at the University of Cincinnati, and a major limiting factor in my ability to understand and use Japanese is my vocabulary. I am choosing to make my dictionary app be one where the user inputs the words that they want it to store because I find that a traditional dictionary is not very useful for learning words. A complete dictionary contains too many words to be highly useful, whereas if the user inputs the words that they have discovered they already know that any words in the dictionary are useful to them. The idea is similar to that of a flashcard app, except with a focus on looking up words rather than being assigned words. Other language applications have not been helpful for my learning, so the foremost goal of my project is to make it one that suits my needs.

My approach to developing the project will be to focus on the user interface before writing any logic. I need to determine what features I need and want, and what features I am better off without adding, along with where in the app each of those features fit best. With how busy things will be during these two semesters, effective planning will be key to make the app as good as it can be in the time allotted. At the end I aim to have an app that is useful to me and that I am confident in sharing with others. I will be done either when I have run out of time or when I cannot feasibly improve the app any further. If I have done a good job in the end, it will be the latter.