

Individual Capstone Assessment

Our project, ULang, is a web application to aid users that are trying to learn a new language. As opposed to teaching a new language, this application will be used for note taking/keeping and practice to be used alongside some other teaching method. This project will allow for practice in full-stack development, as well as utilizing cloud technology, which I am interested in. Another one of my areas of interest is audio processing which will be used for the verbal practice functionality planned to be included in the app. Seeing as the application will be accessed through the web, user experience will need to be an area of focus in both the design and production phases of the project. Also, this project will give me experience with creating and using a functional database for a specific project instead of theoretical uses.

There are multiple classes whose curriculum will be beneficial for completing this project. One of these classes is CS 5167 - User Interface I, where I learned about creating user interfaces in the context of user experience and accessibility. This will be useful when creating the web interface itself in a way that is easy for anyone to use as learning a new language is not limited to a specific userbase. Another class that I took that will be useful is CS 4092 - Database Design. Using the theory and practicality of using a database learned in this will help when we need to design and utilize a database for user accounts and vocabulary sets for use in the application. A course I am currently taking, CS 5165 - Cloud Computing, will teach me how to select a certain cloud platform based on our specific needs and how to properly utilize the cloud for our web application and database.

My co-op experiences will also help in the completion of this project. At my first co-op position at Standard Textile, my position was Process Optimization Software Developer, where I created an application architecture diagram that visualized the different applications in use around the company and how they were interconnected. This knowledge of how to properly document and display information such as this will be beneficial when designing our application so that all facets are properly utilized and when documenting the app. I also created a simple database for tracking products and orders for Standard Textile's home division. Building the applications database will be more complicated, but the little experience I have will be useful in having an idea of where to start. My second co-op position was a Software Engineer at GatesAir, where I mainly tested an audio over IP transmitter/receiver and its accompanying web interface. My experience with testing this application will be beneficial when we need to test our own application as well as having an understanding of the importance of testing from a user's perspective in order to make your application as user-proof as possible. I also created documentation for this product and integrated it into the web interface, which will be useful for creating some kind of descriptions for the different functionalities of the web app so the user is not completely lost when navigating our application.

I am excited to work on this project because there is not a flashcard app that is specifically geared towards language retention and I am interested in doing full-stack development including a cloud platform. The idea of a flashcard app is not new, but I find the idea of making a flashcard app specifically for languages is a unique challenge that will be interesting to design in such a way that is more beneficial for language learners. I especially look forward to working on the verbal practice functionality because I am very interested in transferring and processing audio data. User experience is also always in the front of my mind, so I anticipate focusing on that for the project as well. Using the cloud to process the audio data sounds like the best option for it, so I will enjoy implementing that since I have never done it before. Developing a complete application from scratch has been a goal of mine, so completing this project will also help me achieve that goal.

The initial approach will be to research other flashcard applications available and effective ways for effectively memorizing different words or rules of different languages before designing anything in order to see how we can improve on other apps and how to most effectively present ours. After that would be designing and implementing the web interface and the database in the cloud. The expected result would be a completed web application being hosted on a cloud platform that anyone could use to practice many of the popular languages, with hopefully the vocal practice function implemented. The main objective would be the base flashcard app, and depending on the circumstances, some additional components that would make the app stand out from a basic flashcard app like Quizlet. I will base my self-evaluation of the quality of my contributions in the result, as in how close it is to the desired functionality and design. If my portion does not work like we say it should in the design phase or teammates have to take away from what they are doing to pick up my slack, I know that I could do a better job.