Individual Capstone Assessment

My senior design project is CodeColosseum, a web application that aims to “gamify” programming by creating a space for real-time programming competition between players. The planned minimum viable product for our application is to have two playable modes: a mode for real-time competition between two individuals and a mode for completing questions on your own as practice. I believe this would not only spark more interest in software development for those looking for a bit of competition in the development space, but also helps you learn how to solve problems in a technical way and improve on those skills.

Throughout college, I’ve taken quite a few courses relating to software development, both required and elective. I’ve learned about major development patterns in Software Engineering (**EECE 3093C**), which will help us with coordinating our efforts and making steady progress throughout the semester. I’ve also gotten group project experience from within Database Design and Development (**CS 4092**) and Programming Languages (**CS 3003**), which will help smoothen the dev process when working on this project. Having taken these courses makes general team project work a lot simpler. On top of that, as this project will require realtime transmission of data between two users during their competition, both the Database Design and Development course and Computer Networks (**CS 4065**) will be especially important for both handling the realtime traffic and storing / accessing that data as necessary.

Outside of college courses, I’ve also accumulated a lot of experience throughout my previous co-op rotations. During my first two co-ops, I worked as a full stack developer on my own. This taught me a lot about the basics to web development as well as full stack development in general. It also gave me a lot of experience, as I had to become familiar with all the “moving parts” since I started the project from scratch and wasn’t working on a team. On top of that, my third co-op rotation was through UC’s EEP program, and for the majority of the experience I worked on my own full stack project as well. Finally, for my last two rotations I worked as a web and cloud developer, where I was able to get a lot of experience working on web projects with a team, as well as learning a lot of new web-related technologies and frameworks.

One of the big reasons I’m motivated and excited to work on this project is because this application is something I want. I feel like many of the popular websites related to programming are more focused on the educational aspect (aka teaching you how to program), leaving much more to be desired from a social and “gamification” standpoint. I want to be able to casually compete with my peers within CS and have fun, while also being able to play against others online in a more “competitive” aspect. Our approach to working on this project is to roadmap out and tackle each problem step by step without worrying too much about how we will solve the more “technically advanced” problems. This gives us a metric to track our progress with and see as the semester passes how much progress we are making.

For results, my expectation is to have all of our core mechanics as specified within our final project. I expect to have at least two playable modes: a mode for users to be able to practice and work on improving their development and problem solving skills, as well as a real-time competitive game-mode where two users can compete to solve a problem within a given time frame. Outside of that, we have other ideas created and written down as a team for future potential game-modes and features that we’d like to add, but it isn’t going to be guaranteed to be in the final product. We will evaluate our contributions based on a number of factors, such as features added, project time invested, coordination efforts, etc.