Self-Assessment

While working on the Hackademia Emulator module, I focused mainly on backend development. At the beginning of the spring semester, I researched two key project components: the extraction of hex data from an object file using Linux command line tools and existing decoder libraries. Through my research, I created a step-by-step process to fetch hex data from the object file and passed this information on to my teammate Preston to implement. Although difficult at first, I eventually discovered the library iced-x86, which is an instruction decoder, disassembler, and assembler with JavaScript binding capabilities. With the help of our advisor, I was able to build an iced-x86 bundled library with specific features appropriate to utilize in our project. Following this, I created a process to take in the hex code data from Linux and return assembly instructions. I would consider this my biggest success, as it was crucial to the development of the rest of the project. I also incorporated both AT&T and Intel syntax and 32- and 64-bit output. I assisted with outputting this data on the user interface, and the development of the backend stack and register functionality as well.

In my initial assessment in the fall, I mentioned my experience in backend C++ development, database querying, and dynamic UI automation. Although not in C++, I continued to enhance my lower-level development skills. Even though I did not primarily work on front end development, I improved my UI and animation skills as well. We ended up bypassing the database element of the application, as it was not crucial to our success, so I did not maximize those skills. Throughout this project, I gained competencies in Typescript and React, as well as assembly level programming. I also now feel more confident with Linux, GitHub, yarn, and general object-oriented programming concepts. Overall, I am thrilled with the development we made on the project and the growth I observed during the process.