I developed my android application with Android Studio 3.3.2. The majority of the program was built on and AMD run computer. This computer is only a few years old, but in a sense it is a dinosaur now. This fact led to the first issue of hardware limitations, the fact that AMD processors earlier than the newest Ryzens do not run emulators well or at all. This made the use of a Git repository even more important. For testing of older Android OS versions I had to move the project to a Laptop that runs and intel processor. This was the second hardware limitation. The processor on the testing computer worked for creating emulators, but not very quickly, and testing became an extremely arduous process.

The application itself is developed for Android Jelly Bean and newer. Trying to develop the application for KitKat proved to be an exhaustive effort as many of the features for SQLite were not added until Jelly Bean. That was a software limitation that was encountered. Also, the testing for devices that old is extremely limited.

The majority of the challenges I faced when developing this application were self induced. The fact that my computer is not quite updated enough to build and test a mobile application is a clear sign that any future development would require hardware upgrades. Other challenges mostly came from the unfamiliarity with Android Studio and backend of an app. This much easier to overcome than the hardware inefficiencies.

I was able to overcome the hardware inadequacies by utilizing multiple development devices. This was definitely not the most efficient method of development, but it got the job done. The familiarity difficulties were handled by the Linda videos provided and the documentation for Android development in Java on the android developer webpage. These resources provided all the knowledge I needed to develop this application.

If I were to do this project again I would ensure my devices are fully upgraded before taking it on. Using up to date hardware would make this development and testing process take half the time. I would also ensure to watch the full videos on Linda prior to jumping in and then trying to find what it was I needed. This is a habit I tend to find myself in when developing something in a new environment that I need to break myself of.

Emulators are used to test applications on operating system versions that may not be available widely anymore to ensure complete compatibility. They are extremely helpful in this, but the way the software works on an emulator will not always mirror that of a device exactly. It is best to use emulators with a grain of salt because something in the software of that device may not be set up exactly the way a hardware development device is which can affect the outcome of the application.