1. Explain mobile application development through the context of the architecture involved, including hardware and software capabilities and limitations.

a. Identify the version of the operating system your application was developed under and is compatible with.

This application was developed and compiled with SDK API 30: Android 11 R with a minimum SDK or 26. The application was tested on two different emulators one running API 29 and the other running API 30.

 It is important to consider the devices and software that an application will possibly run on during the development process. Developing for the most current SDK will extremely limit the devices that can run the application, developing on too old of an SDK can introduce security issues and lack features. Considering the physical hardware is also important to take for example large phones, tablets, or even watches these are all different devices with very different physical displays and limitations that need to be considered using the development phase.

2. Describe *(suggested length of 1–2 paragraphs)* the challenges you faced during the development of the mobile application.

There were several challenges I faced during the development of this mobile application, from errors introduced during the development of the application, to issues with planning out the application, and changes to the application to address some issues causing errors. Take for example in AssessmentDetail there was an error where whenever you went to save it would crash. Or how I was not sure how to handle the optional notes in the beginning.

3. Describe *(suggested length of 1–2 paragraphs)* how you overcame *each* challenge discussed in part F2.

I address the optional notes by starting development well continuing thinking on the further development and then redoing the storyboard. I ended up giving the notes two activities that you assess Course Activity. Since I changed this mid-project, it did introduce errors as stated in F2. Those errors I had to take a step back and troubleshot then go back through the code to identify. I used in-line Log.d to help troubleshoot some of these errors. The AssessmentDetails error was caused by a field that is now null where I had .toString.

4. Describe *(suggested length of 1–2 paragraphs)* what you would do differently if you did the project again.

If I had to the project again, I would read through the project requirement in more detail instead of jumping right in. I would also take more time in the planning stage and have a clear plan for all the need requirements not just most of them. I would also reach out for help sooner and try not to get as embarrassed by my errors.

5. Describe how emulators are used and the pros and cons of using an emulator vs. using a development device.

Emulators are used early in the development process as part of manually testing. Emulators are generally free and easy to set up. Which will allow you to test several different virtual devices/OS(es) and have assessed the logs. Unfortunately, emulators do not make up for real devices when it comes to testing. Emulators are unable to test for many real-time/real-life issues such as how the application affects battery heat, or how it is indifferent lighting/locations.