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WGU C196

1. Mobile application development is dependent on the architecture of the hardware and software. Mobile application development refers to application software that is designed to run on mobile device such as smartphones and tablets. The design has to take into account hardware limitations like limited CPU, storage, memory and battery life. Applications must be optimized for performance by minimizing power consumption and memory. Mobile devices also have specialized capabilities such as an accelerometer, which could be used for a gaming application that is not traditional found on regular computers. Mobile applications must also run on the OS of the phone, in this case Android, but there are also iOS for iPhones and Windows Mobile for Windows phones. This is similar to desktop application development, when having to account for the Windows , Linux, or OSX operating systems. Another limitation of mobile applications is that the screen size of the mobile device needs to be accounted for. Smaller screens means less information can be displayed and buttons and content must be designed for accessibility. There is also no set standard for screen sizes, so application development must be responsive and react to the different sizes.

1a. The application I created was developed for Android devices with a target API level of 26.

2. Some of the challenges I faced during the development of the mobile application were learning Android specific methods of dealing with data. That involved using SQLite and Shared Preferences and creating a Data Provider that allowed interaction with these. Another challenge, was the limitation of my computer, each run of the application was taxing on the CPU and compiling of the application each time to test functionality added significantly to the development time.

3. I overcame the challenged of dealing with data in Android by watching many videos and reading lots of code. I would find examples that used a Data Provider to access SQLite databases and how Shared Preferences was used in Android devices. After lots of trial and error, getting the application to work was a relief. Dealing with the hardware limitations of the computer, was unavoidable. I did not have an actual Android device to test the application on, so had to make do with the virtual emulator and be patient each time the program had to compile.

4. If I could do the project differently, I would combine different activities so that there were fewer screens in between each function. For example, the list of courses could have been displayed under the Term Detail, and the list of mentors, assessments, and notes could have been added to the Course Detail so that all the information was displayed in one place. I would also buy an actual Android device to test the application on, instead of relying on the virtual emulator.

5. A con when using an emulator versus a device is the fact there is a huge difference between click and dragging with a mouse versus swiping and clicking with a finger. A mouse is more precise so usability could be an issue when translating to a real world device that requires touch. Emulators are also very slow because it has to simulate the hardware and software compared to a real device, which allows you to test in the actual environment under real conditions. Performance is also faster for this reason. Physical issues can also be taken into account such as battery drainage, connection issues, etc. A con of a real device is that there are thousands of mobile devices with different hardware and maintaining a pool of devices to test on is cost prohibitive.