IMT 3662 - Mobile Development Theory

Assignment 1

UI, the Web, persistent storage

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-Description of the Application

The application I had to build was a location application. I started in a Map Activity which served as the main activity. When you open the layout you can see the three different UI widgets: map fragment, History button and 2 text Views. If it is the first time you open the application it will by default point in Sydney. There is a custom button that when pressed locates the user. Every time that the location changes it is stored in SQLite. The user can see the history of his location by pressing the Go To History button. This opens a new activity which will display the records in the SQLite. The text views in the main activity will display the information about the user current location such as latitude, longitude, altitude and the address based on the GPS Coordinates. The app needs permission to access Fine and Course Location and Internet as well. When the user closes the application and opens it again the app remembers the last location and will also display the corresponding information .If the current location is different from the last known location then the app will try to update the information.

During the development I used the instructions of the android developing web page for the setting location and youtube tutorials.

- Discussion of the use of stored data when restarting from shutdown.

Every time the location is updated it is stored in the SQLite. So when the user opens the app again the information of his last known location is displayed, but the flow is that the map remains positioned to the default location in Sydney. The map is supposed to be directed to the current location and add a marker there, but instead of this the user has to move and zoom the map to get to the last known location. So even though the marker points in Sydney the information is displayed for the last known location.

Also if the user does not close the app, but it runs on the background and later the user goes back to the app it will still remember and display the Last Known Location.

- Discussion of the difference between native Apps and web Apps

We can build the app as a native or a web app.

A native app is usually found in an App Store such as Google Play and it is downloaded directly in the phone. Meanwhile a web app is accessed through a browser and it does not have to be installed in the device.

In the user interface there are not too many differences but when it comes to the process of developing the app there are many. Each mobile application development platform has its own native programming language: Java (Android), Objective-C (iOS) so you each requires its own development process. For a web app you can use languages such as HTML and JavaScript to develop for all platforms, but there are no standard software development kits (SDKs) that developers are required to use to make a mobile web app. Tools, support and standard development best practices provided by device manufacturers can help speed up development of the native apps.

As for the updates for native apps users must manually install updates, but in the web apps the updates are made in the web server and the user is not required a permission. This is a plus because all user will use the same version of the app, but if there is an update in a native app the user may just choose to ignore it. So users will be on different versions and can make your app harder to maintain and provide support for.

The native app can work much faster by using the power of the processor. It can also access specific hardware like GPS. The web requires internet access and its operation speeds are dependent on the quality of cell signal or the speed of the Wi-Fi broadband you are connected to.

Native apps can be used offline, which makes them faster to open and access anytime.
In some cases, the performance is faster because they store information locally and only synchronize with the server after the user is done using the app. Web apps are unavailable when offline, even as a basic version.

But on the other hand native apps are more expensive to develop, especially when the app needs to be compatible with multiple mobile operating systems, thus multiplying the development costs.

The location app for this assignment is a native app. It can be downloaded from a Play store. It requires the access of the GPS.

- Explanation of how the app could be extended.

This is a simple app that only performs basic functions.

This app can be extended so that the user can search for a specific location. It can use the geo coordinates or search by address. From this it can be used to get instructions to go from one place to another and by accessing the GPS and Accelerometer it can give step by step instructions and follow the user around. Give him the estimated time of arrival or measure the distance from one place to another.

When the user searches for a place we can display him information of the area and maybe even photos for touristic areas for example.

We can give the user the option to choose from different types of maps. The gestures can be exploited. For example when he double taps in a place in the map we can put the marker there. Or we can even let him save that place in the app and add his note for that place. For example he can save the place as the location of a meeting.

The user can choose to delete records from the database or give him an option to disable the app from remembering his location.

We can even display information on the weather.