Mobile Application Development (SOFE 4640U)

Assignment 2: LocationFinder Application

Name	Student ID
Rohan Radadiya	100704614

Due Date: November 6, 2024

GitHub Link: https://github.com/rohanradadiya/MOBILE-APPLICATIONS-ASSIGNMENT-2

To start, this assignment for the Mobile Application Development course was very useful in terms of being able to understand more features that can be implemented in Android Studio and the true capabilities of the software. Through this assignment, previous knowledge from labs and other aspects of the course was very helpful in the completion of this assignment. There was also a better understanding of the functionality of databases with Android Studio, and the various capabilities of having such a tool.

In terms of this assignment, the LocationFinder app was developed as part of an assignment for the Mobile Application Development course. The main purpose of the application is to be able to find the details of various locations through the different screens available on the app. Strictly for this assignment, all of the locations are based in the Greater Toronto Area, or other words, the GTA. For this specific assignment, there was an instruction to have 100 different locations in the system, all of them varying by region, etc. One of the main purposes of this assignment was to be able to understand the importance and functionalities of databases and how they can be implemented into our applications as students and programmers using Android Studio. With that, the application utilizes and leverages a database, local in this case, to be able to store various location data which allows the user to perform various functions which will be further explained. With these functionalities, the user can explore the different locations in the GTA area and utilize the functionality of the database leveraged into this application.

Moving on, the LocationFinder application has many functionalities in terms of the different locations throughout the GTA. Specifically, the user can search for specific locations by a specific address, and they will be able to see the corresponding latitude and longitude values. The user is also able to modify existing locations with the “Modify” button and save it afterward. For this assignment, there were 100 different locations throughout the GTA embedded into the code, which

can be seen on the emulator screen when the user enters the “VIEW LOCATIONS” screen. On this screen, the user can “modify” or “delete” a location, another few of the app’s crucial functionalities. Furthermore, the user can easily add a location by clicking the “ADD LOCATION” button on the main screen. On that screen, the user can input an address, a latitude, and a longitude in the corresponding fields. The application has a functionality where if there are any fields blank, for example, the address, latitude, or longitude fields, there is a message displayed on the screen stating “All fields must be filled”, and the toast functionality is used to make this happen, which provides a small feedback or pop up to the user in regards to an operation, in this case, blank fields. Lastly, the “SEARCH BY QUERY” button takes the user to another page where the user can input the address they would like to search in the database. The address must be the same, including characters, and with the corresponding matching id. If there is an exact match, the latitude and longitude values are portrayed, otherwise “Not found” will be displayed.

The database contains different column names such as TABLE_LOCATIONS, COLUMN_ID, COLUMN_ADDRESS, COLUMN_LATITUDE, and COLUMN_LONGITUDE. Each of these columns contains the related data of the locations and with the use of the SQLite database which was used for this application, for local storage. The app utilizes various operations such as creating, reading, updating, and deleting for the locations, used through the SQLite database. The layout designs throughout the app were done through the use of .xml files, providing a user-friendly experience.

One challenge faced through this assignment was to incorporate the data retrieval and modification functionality for modifying locations and saving them, but this was fixed by debugging, iterative testing, and improving the overall code structure along with proper indexing. Overall, the assignment was successful in allowing me to apply the knowledge regarding databases and the implementation of locations based on various user inputs within an application.