Fitness Application

Team Members: Dawn Dixon, Sabrina Djeddi, Vlad Dubrovenski, Nikoloz Dzidzava

Group: 9

Github Link: https://github.com/vladi7/Mobile-Project-Exam

Prepared for Web and Mobile Design Class, Summer 2020

The Motivation Behind the Idea and Significance:

Keeping your body in shape is very important to many people, but it is hard to maintain and a lot of people do not know where to start. In addition, there is a pandemic and many gyms are closed. We designed an app which helps record physical activities, control your diet, get healthy recipes with limiting the amount of calories, and view the current weather(in case someone wants to go for a run). Having everything in one place makes this app convenient for everyday use. Due to the limited deadline and limited availability, lots of other cool features could not be implemented, but we strongly believe we completed a lot in this project, and of course fulfilled all the requirements.

Objectives, Features, and Approaches:

Our app consists of multiple views. The Home Page is where the user can navigate to the other views: the Workout Tracker, the Food Tracker, the Calories for Recipes Finders, and the Weather Page. In our project, we utilized three types of layouts: Relative, Linear, and Constraint. From Home Page, the user can access all of the other views. The Workout Tracker is where the user can record what activities they plan to complete on a specific day, in a weekly format. The user can view and update their activities on this page. This data will be saved in a database – SQLite. We made our database persistent just so we create it only once, and then we utilize the saved SQLite. We create the database from the SQL file. The Food Tracker is where the user will be able to keep track of what food they ate in the week, so that they can calculate their calories. This data will be also saved in an SQLite database and the user will be able to view and update it. The food and workouts are two different tables residing in the same database. Another page is serving as our healthy recipe finder. The healthy recipes will be found by calling the Edamam Recipe Search API. The Weather Page displays the weather in

the user's current city. The user can input their city and we use the Open Weather Map API to retrieve the weather information.

Work Sharing Between Teammates:

Our work was separated very evenly. Vlad handled the back end and structured the front end. Dawn helped with structuring the front end and writing the documentation. Sabrina handled the front end, making the pages attractive and interactive. Nikoloz helped with handling the coding on both back end and front end, as well as documentation and testing. As always, we all contributed to the project evenly.

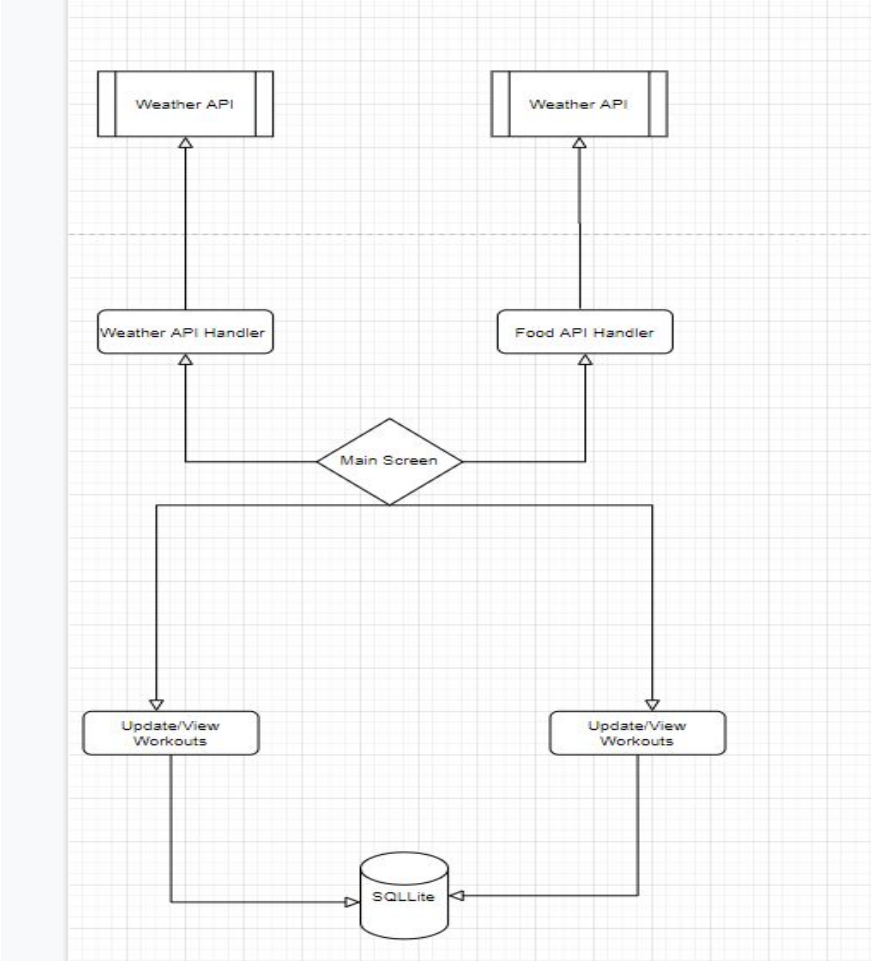
Issues and Blockages with the Project:

Since none of our team members had experience making advanced Android applications before, we struggled with the more difficult aspects of our project. Creating a dynamic front end was a challenge because we did not have experience. We also had an issue with using our database where it did not save its state. We also had only fourteen days to complete this assignment, which was not ideal especially because we all are taking other classes this term. We also had to spend time on documenting our project so we had even less time to work on the app.

Workflow:

The following diagram explains the workflow. As we mentioned in this paper, none of us had a lot of experience programming android, so we decided to keep things simple. Four views (Food Update/List and Workout Update/List) are using the Database Handler component to connect to the database (Database Handler component is not shown on the below diagram).

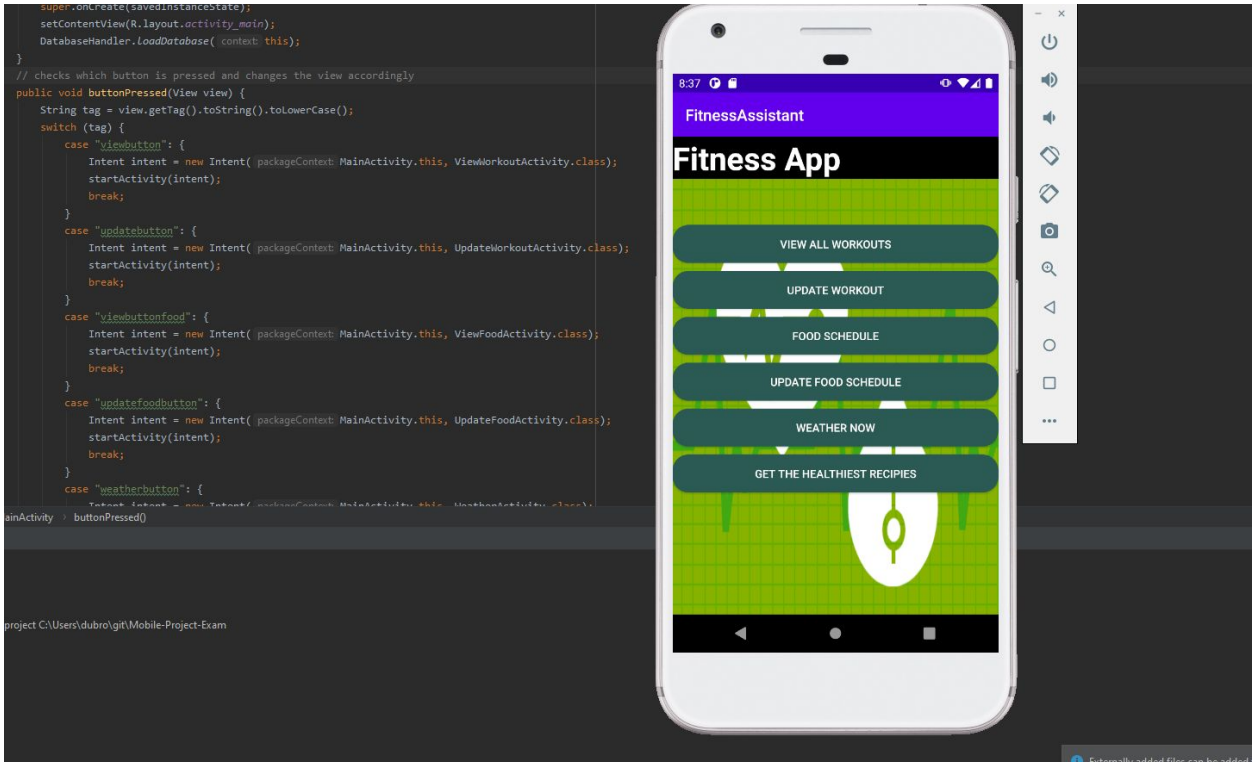
We also used 2 external APIs to get the weather and healthy recipes with the specified amount of calories. For our hardware component, we used voice recognition which helps us input the value to the calories finder. And finally, our main screen handles all the buttons to go to different views. Also, we decided to keep things simple and just used Java threads for our API calls.



Screenshots of the Project:

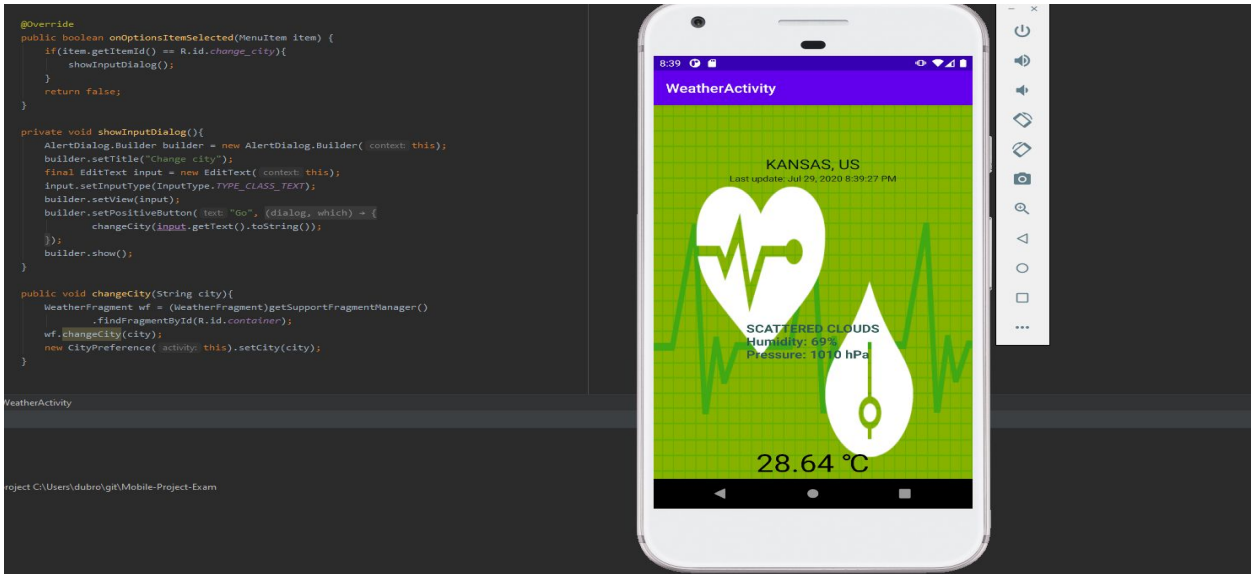
Main Page:

The first screenshot is of the main page. You may see all the buttons for our views in the app:



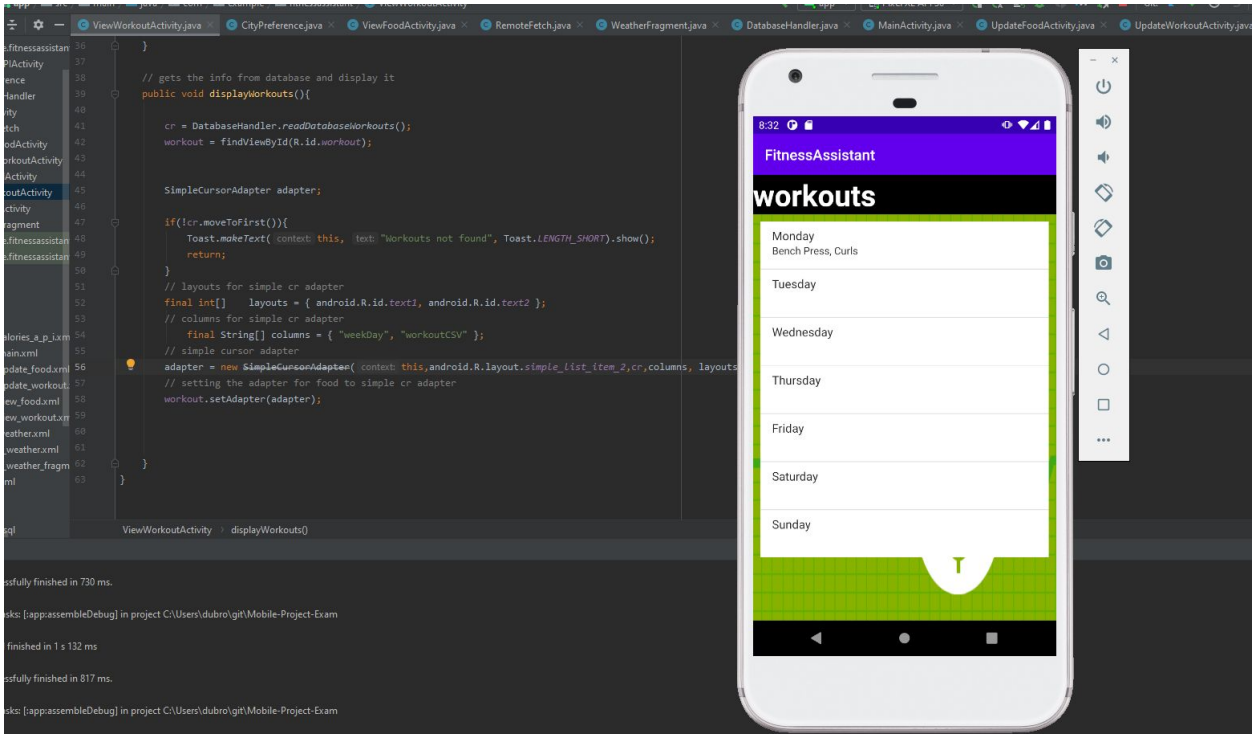
Weather Page:

The following demonstrates the weather view and the current weather in Kansas:

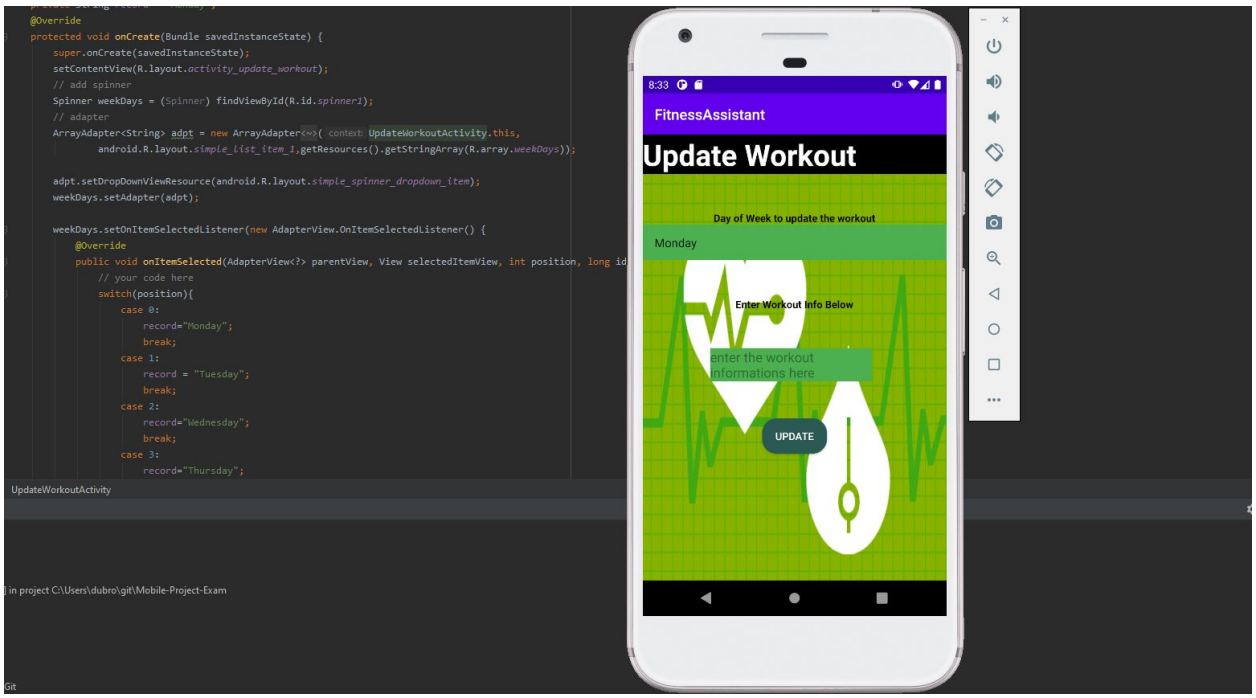


Workout Tracker:

This screenshot demonstrates the list of workouts as well as the Java code to create this list:

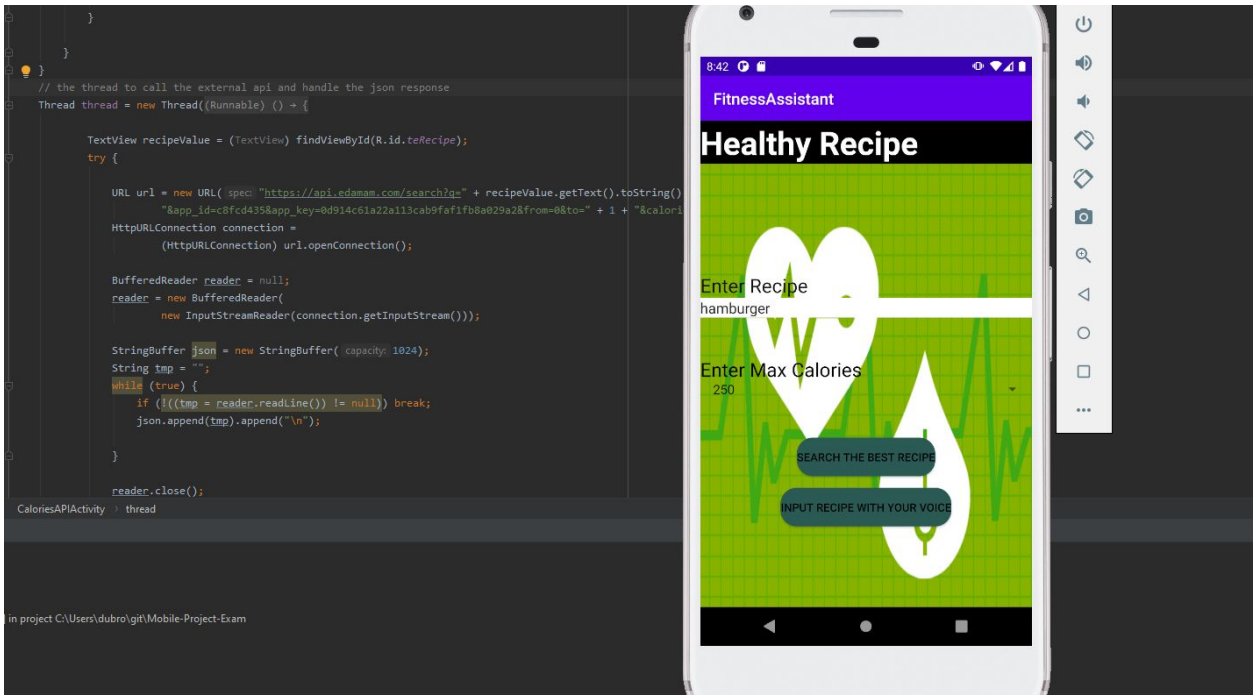


The following demonstrates the code and UI for the update of the workouts:



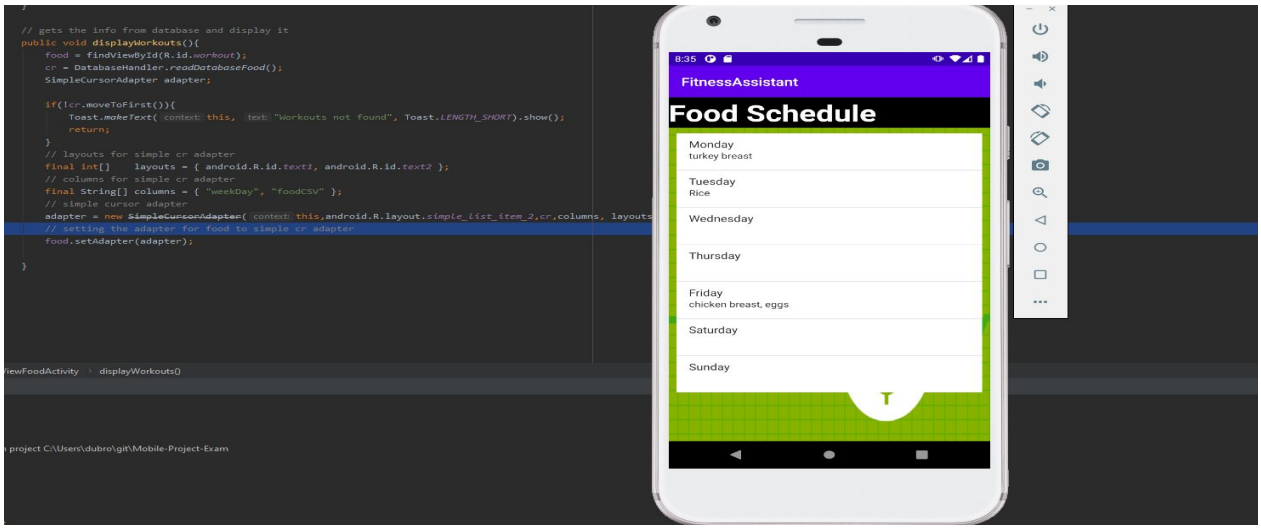
Healthy Recipe Finder:

The next screenshot is about the healthy recipe finder and the API call and json response handling:

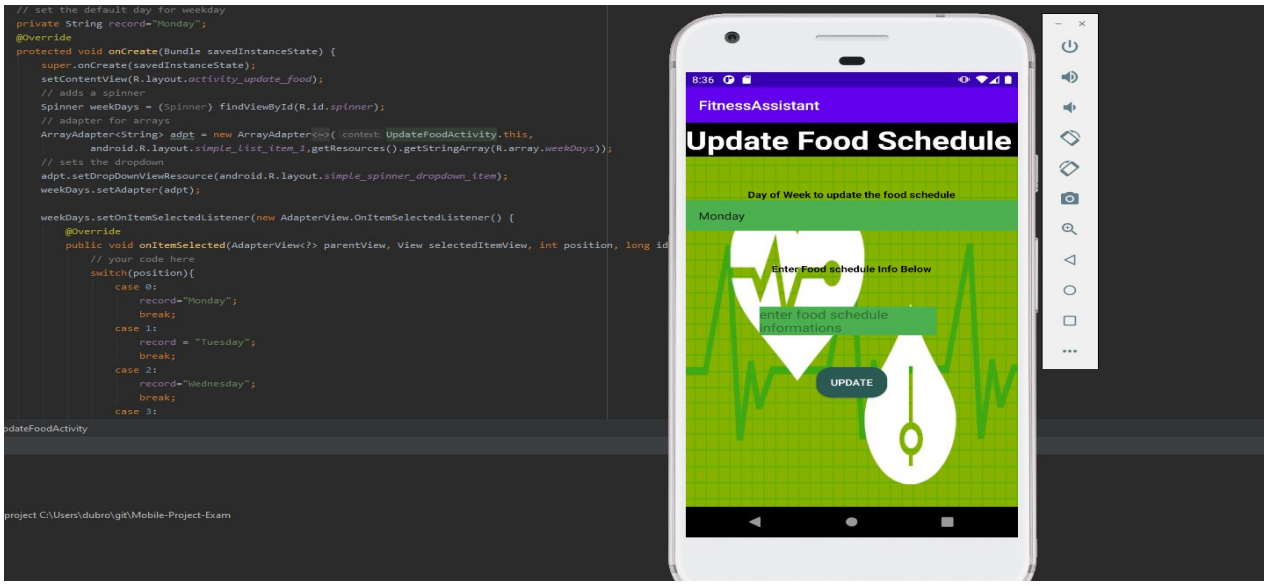


Food Tracker:

The following screenshot demonstrates the code and the UI for the list of food:



And this one is about the UI for updating the food schedule:



Conclusion:

In this project, we accomplished a lot of things. First of all, any project requires a large amount of learning. First, we understood how to create an application from scratch. Then, we learned how to connect SQLLite to this application and make it persistent, meaning that we do not lose any data when restarting the app. After that, we had to utilize our knowledge to create calls to 2 external APIs. We choose weather and food, since they make sense for workouts. The weather can affect whether a particular person can run outside, while the food directly affect the results of the hard work in the gym.

Bibliography

Hathibelagal, A. (2014, September 01). Create a Weather App on Android. Retrieved July 30, 2020, from https://code.tutsplus.com/tutorials/create-a-weather-app-on-android--cms-21587

Write and View Logs with Logcat ： Android Developers. (n.d.). Retrieved July 30, 2020, from https://developer.android.com/studio/debug/am-logcat

Gunawardana, B. (2019). Android SQLite Database CRUD s with Example Application. Retrieved July 29, 2020, from https://medium.com/@bhawanthagunawardana/android-sqlite-database-crud-s-with-example-application-4f5a841da8f6