System design document for training tracking app (android)

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1 Introduction

The purpose of this document is to introduce an overview of the architecture and design patterns used for the development of the app.

1.1 Definitions, acronyms

- PB/PR “Personal best/Personal record”
- reps “repetitions”
- sets “is the multiplier of repetitions separated by rest ex. 3 sets of 12 repetitions”
- 1-rep max “what is the heaviest someone can lift only 1 time”

2 System Architecture

Because of using the Android Framework, we use MVVM and our application consists of four parts:

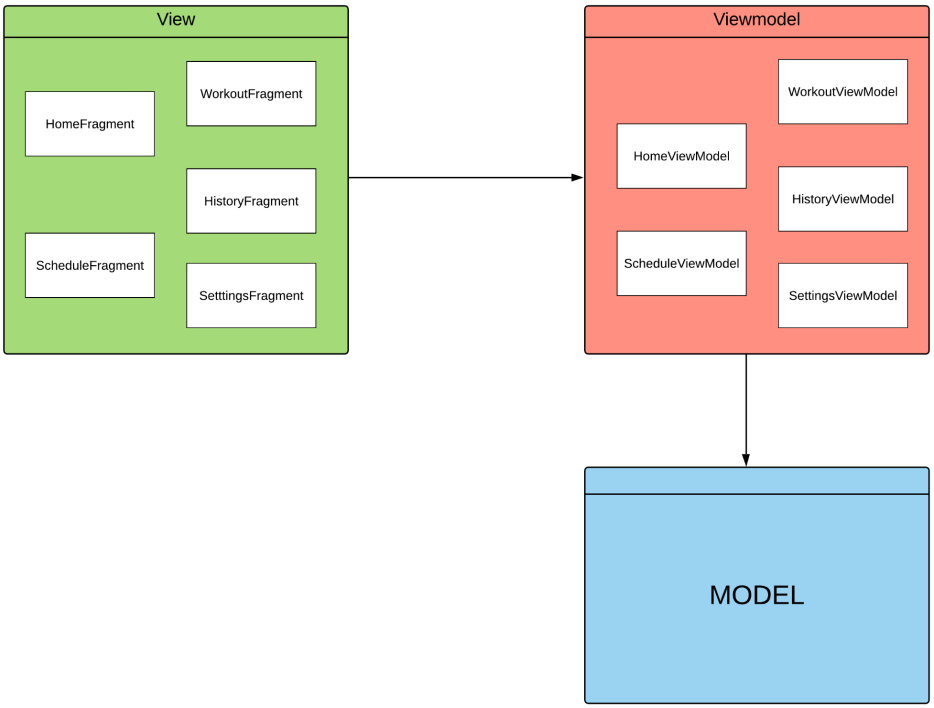
- The **Model**, containing the business logic for the application
- The **View** package, handling the display and user interface - a presentation.
- The **ViewModel**, handling commands and sending/recieving updates.
- The **Database**, used for storing the various data used in the application.

2.1 Application Flow

In our application, we have decided on using fragments for almost everything, instead of separating the application into different activities and then connecting fragments to their specific activity. The first page shown when launching the application is our homepage, since that is where our mainActivity is declared to start.

3 System Design

3.1 MVVM Structure



- SoC

3.2 Model

3.3 View

3.4 ViewModel

3.5 Design Patterns

3.5.1 - Adapter

3.5.2 - Factory

4 Persistent Data Management

Data persistence in Android

- SharedPreferences:store primitive private data on key-value pairs.

- Internal Storage: store private data in the device memory. (With object persistence)
- External Storage: store public data on the shared external storage.
- SQLite Databases: store structured data in a private database.

In our case, we use a MockDatabase to store the various data in our application which means that when you exit the application, the current data saved during the session will not be available the next time you start the application. If we would want the data to be available throughout sessions, an online database would have to be created and be running.

5 Quality

5.1 Access control and security

6 References