
Design Document for **EDU Swap**

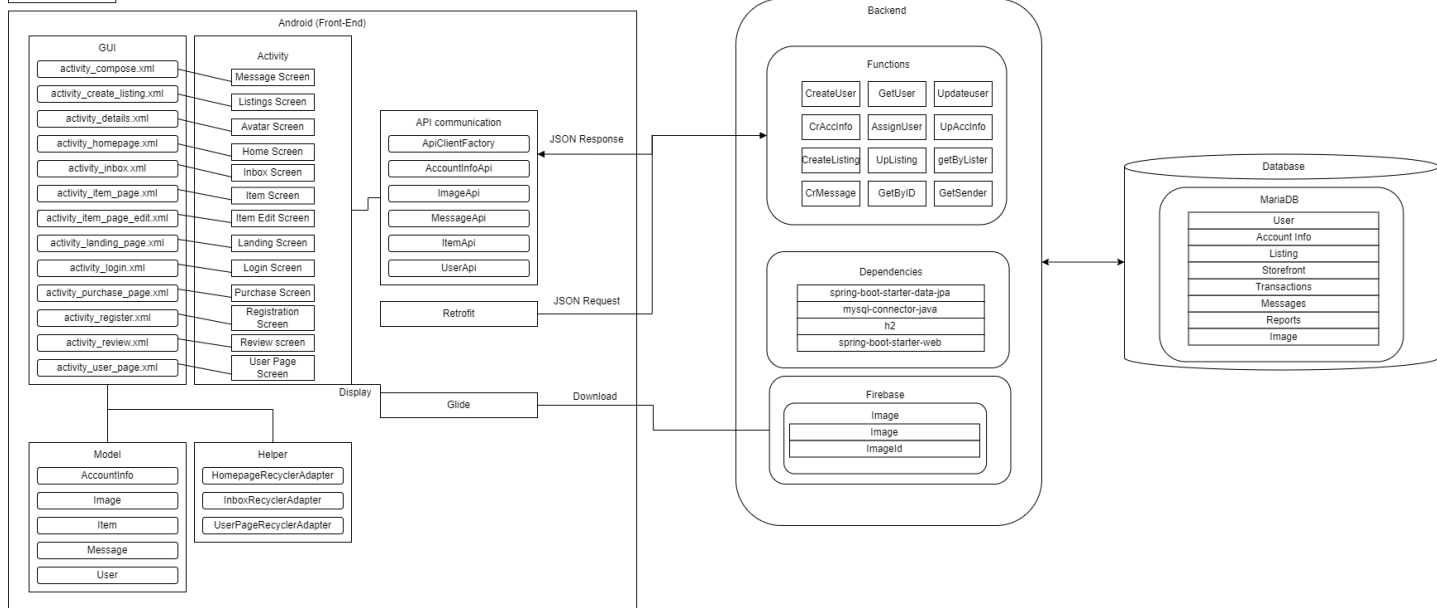
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Design Description

1. Android User GUI
 - a. EduSwap has XML file layouts for each screen of the app. XML files describe graphical elements to be displayed on the screen. They are all associated with their own activity class file in the main java folder.
2. Android User Activity
 - a. EduSwap has Java class files dedicated to each screen of the app. A class file that represents the actions, logic, and api calls of a screen is called an activity. Each activity has an associated XML file that dictates the screen's graphics.
3. Android User Model
 - a. EduSwap models every JSON object that can be requested as its own class file under a model folder. When retrofit calls receive a JSON response object, they are transformed into a new instance of one of the model classes so that we may access its information with getters.
4. Android User Helper
 - a. The helper classes serve to assist in displaying activity content. The three helper classes in question are all unique adapters that display RecyclerView layouts for three different activity screens.
5. Android User Communication
 - a. API
 - i. ApiClientFactory is a factory class which produces retrofit api objects to be used. The remaining api interfaces contain endpoint calls to the backend unique to its associated model object.
 - b. Retrofit
 - i. Retrofit is what EduSwap uses to communicate over the internet with the database.
 - c. Glide
 - i. Glide is an image loading/media management library that makes retrieving and displaying images from Firebase's cloud storage much more efficient.
6. Backend Functions
 - a. These functions are all used to send and receive data from the MariaDB instance on our server.
 - i. CreateUser, GetUser, and UpdateUser are used to modify the User Table.
 - ii. CrAccInfo, AssignUser, and UpAccInfo are all used to modify the AccountInfo Table and the User object relating to it.
 - iii. Createlisting, UpListing, and getByLister are all used to modify the Listing Table along with the User associated with it.
 - iv. CrMessage, GetById, and getSender are all used in order to modify the message table and the users associated with the message.
7. Database/MariaDB

- a. MariaDB is the sql framework used on the server that works with the different functions to store data in different tables. The specific tables are: User, AccountInfo, Listing, Storefront, Transactions, Messages, Reports, and image.
 - b. Each of these Tables has many different attributes including a unique way of identifying each column and any additional info that is required to store.
- 8. Backend Dependencies
 - a. The backend dependencies are the different libraries that are used on the server that are required in order to properly query and add/modify/delete tables and columns on the Database
- 9. Backend Firebase
 - a. EduSwap utilizes Firebase in conjunction with Glide for sending, storing, downloading and displaying all images across our application.

