Object Oriented Analysis and Design
Project 6 update

Team members:
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Project name:
SimplifyDebt

Work done:

- Login and Registration feature, Users can login/register using their emails or google account
- The app home screen with friends, groups list with expenses
- Add expense feature
- Create groups feature, creating groups

Work breakdown:
Rakshith - Setup the Android project, Created UI and code for the dashboard, expenses, friends, groups, and settle the debt
Rakesh - Set up the Firebase project, created the database, and integrated the Rest Api setup in the app. Also implemented the app login feature.
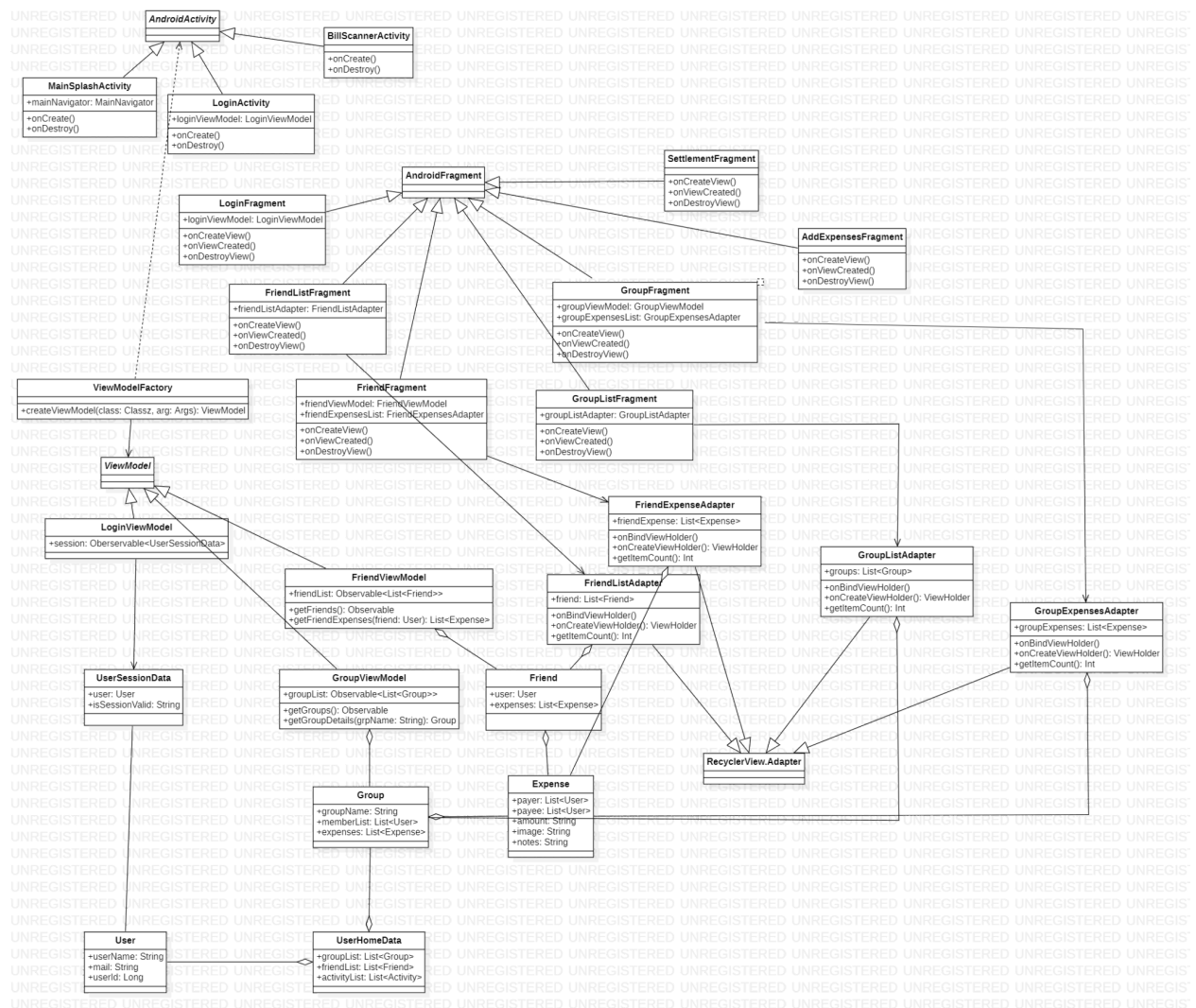
Challenges faced:
- The app's modularization strategy is to build each feature as a separate component with maximum cohesion and as minimal coupling as possible. We have yet to be able to achieve this.
- Data persistence of the user session and data handling in the API
- Adding friends for the app and adding friends to the group is challenging as we are yet to add deep link support for the app. If that is possible, we will implement a QR code to invite.

Patterns (Also in the class diagram) :
- Adapter: All the View Adapters of Android, RecyclerView.Adapter and FragmentStateAdapter implement the adapter pattern. They wrap the data to be displayed in the RecyclerView.ViewHolder interface to display a view.
- Observer: We have used the observer pattern with the help of Android LiveData and RxKotlin's Observables. We use them to observe the network call data, observe the internal UI events
- Factory: We use the factory pattern to create instances of Activity's/Fragment's view models with different arguments. Activities inherently have a ViewModelProvider factory. We customize this factory to create a view model.

Class Diagram:

Plan for the next iteration:

- Improve the app modularization to improve cohesion and reduce coupling. We want to create singleton feature objects for every feature during the app initialization and a feature holder/ Navigator that handles the feature communication with minimal coupling.
- Complete the Settle up feature
- Decide and add invite friends and add friends to groups either by a deep link or a QR code
- We also want to try and add an OCR reader feature for users to scan the bills while creating an expense
- Try and add the notification service to the app to notify all activities that involve the app user