

CMPS 312 Mobile App Development

Banking App

Lab Assignment 5

Deadline - Wednesday, November 17, 2021

Objective

The objective of this assignment is for you to practice how to,

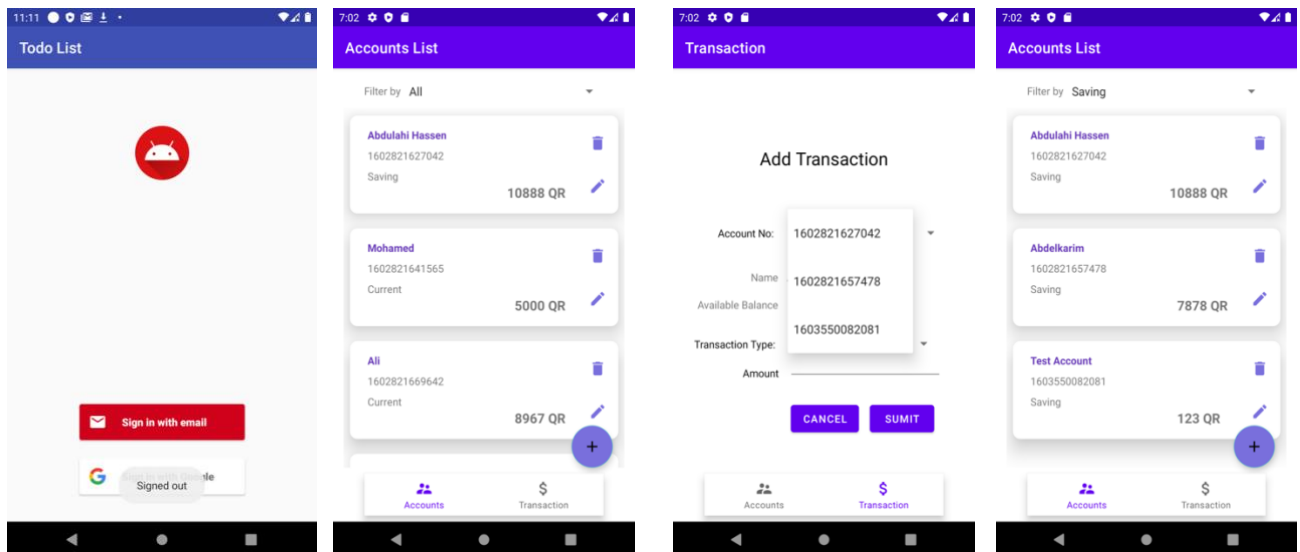
- Read and write data to Firestore from an Android app
- Listen to changes in Firestore data in realtime
- Use Firebase Authentication and security rules to secure Firestore data
- Write complex Firestore queries

Preparation

1. Sync the Lab GitHub repo and copy the **Assignment/Assignment5** folder into your repository.
2. Open the project **Bank App** in Android Studio. The project has the baseline code implementation using Retrofit.
3. You are encouraged to use your assignment 4 solution as the startup code. However, if you do not want to use that, then, please use the same baseline code that was provided for you in assignment 4 as a startup code.

Overview

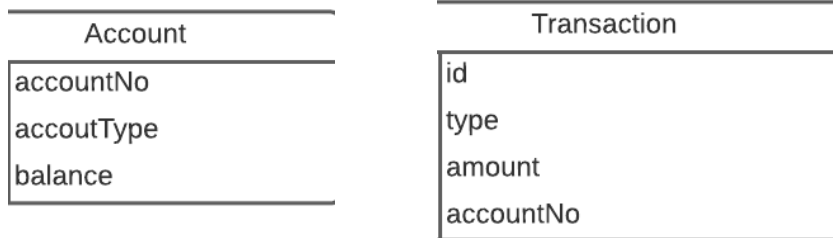
In this assignment, your task is to replace the given baseline solution of **Bank App's** backend which currently uses retrofit to **Cloud Firestore** and achieve similar functionalities as shown in the following web app <https://employee-bank-app.herokuapp.com> .



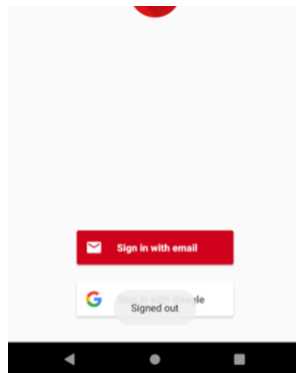
Implementation Instructions

This assignment's functionalities are the same as the previous assignment 4 with one extra feature which is **authentication**. So, if you would like to understand how the application works then please read the assignment 4 pdf file posted here → <https://bit.ly/2Uge2jL>

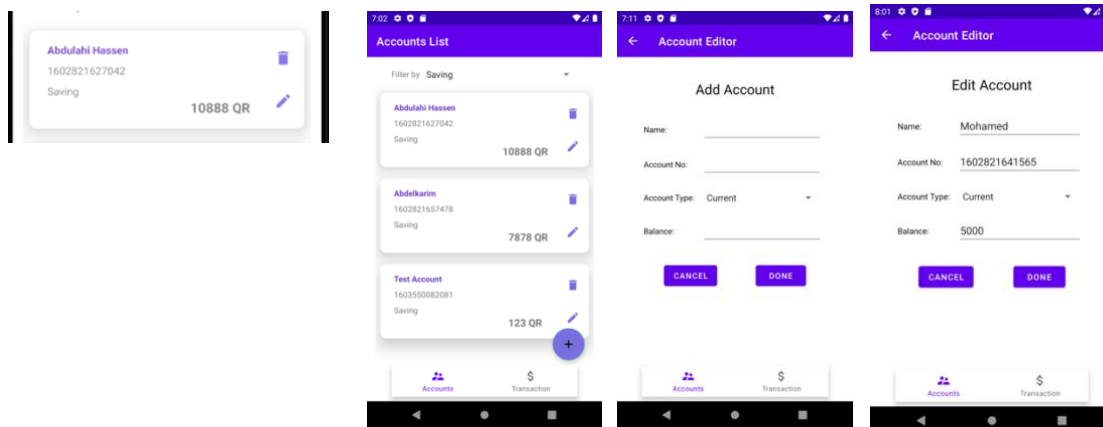
1. You should have the following model classes [**Account and Transaction**] provided to you. You are free to add any extra properties to the application.



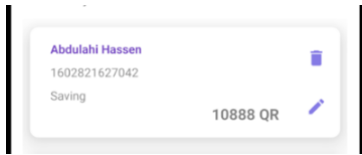
2. Implement the authentication and login component of your app. **You should only allow logged-in users to read and write data.** Also, the data should only be viewed by logged-in users.
3. When a user logs out, you should navigate the user to the login screen and remove all the listeners to the cloud firestore collections.



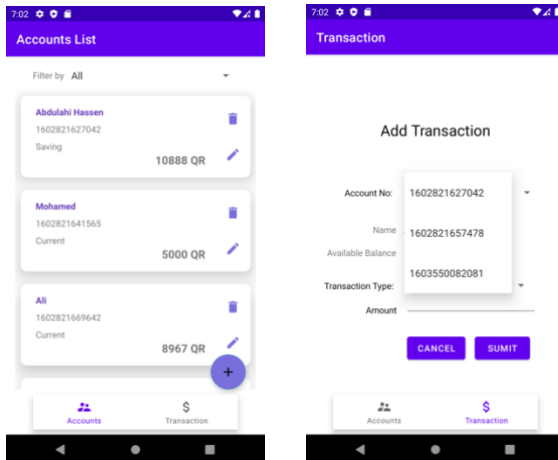
4. Implement the add and update accounts functionalities.
5. As soon as any changes happen to the online collections these changes must be immediately reflected on your app without refreshing. Hint → add listeners to your collections



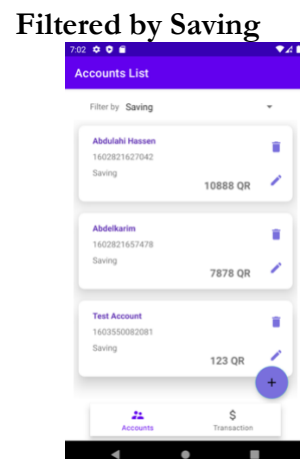
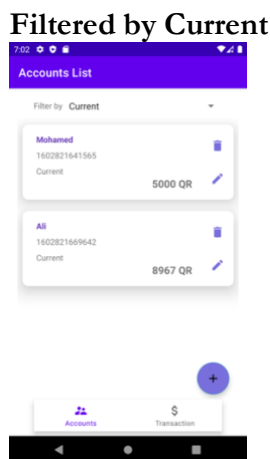
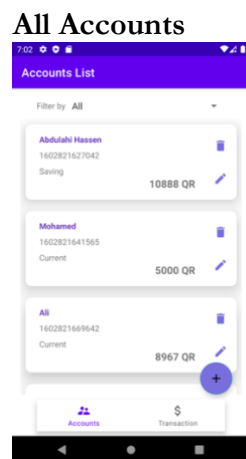
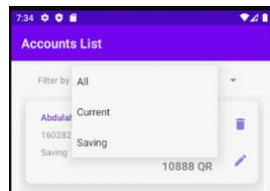
- Implement the delete accounts functionalities. When a user deletes an account you should also delete all his related transactions from the transaction collection.



- Implement the add transaction functionality.



- Implement the filtering by different account types functionality of your banking app.



Important It is expected that each student to have a **unique app** that accomplishes the tasks. You are free to use any theme/font/colour/icons that you would like to use. Also, discussing with your colleagues is allowed, however, please avoid sharing your code. If any plagiarism is detected then both parties will get zero.

Submit the testing sheet as well as the code under “**your_repository/assignments/assignment5**”