E-sale

Presented by

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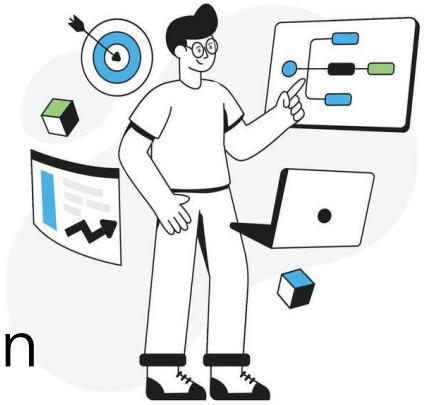
Agenda

- Easy trade
- User friendly interface
- Interactive seller-buyer information
- Seamless product management

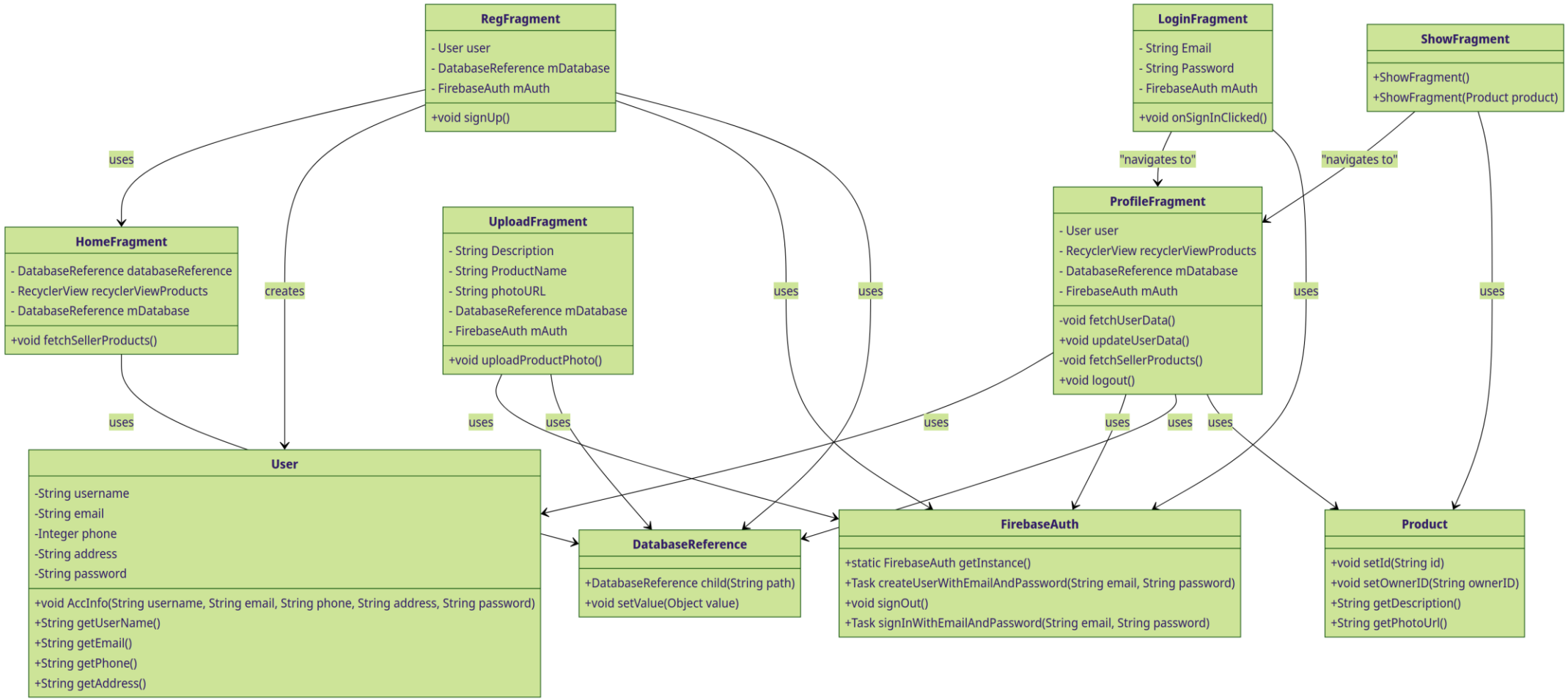


Introduction

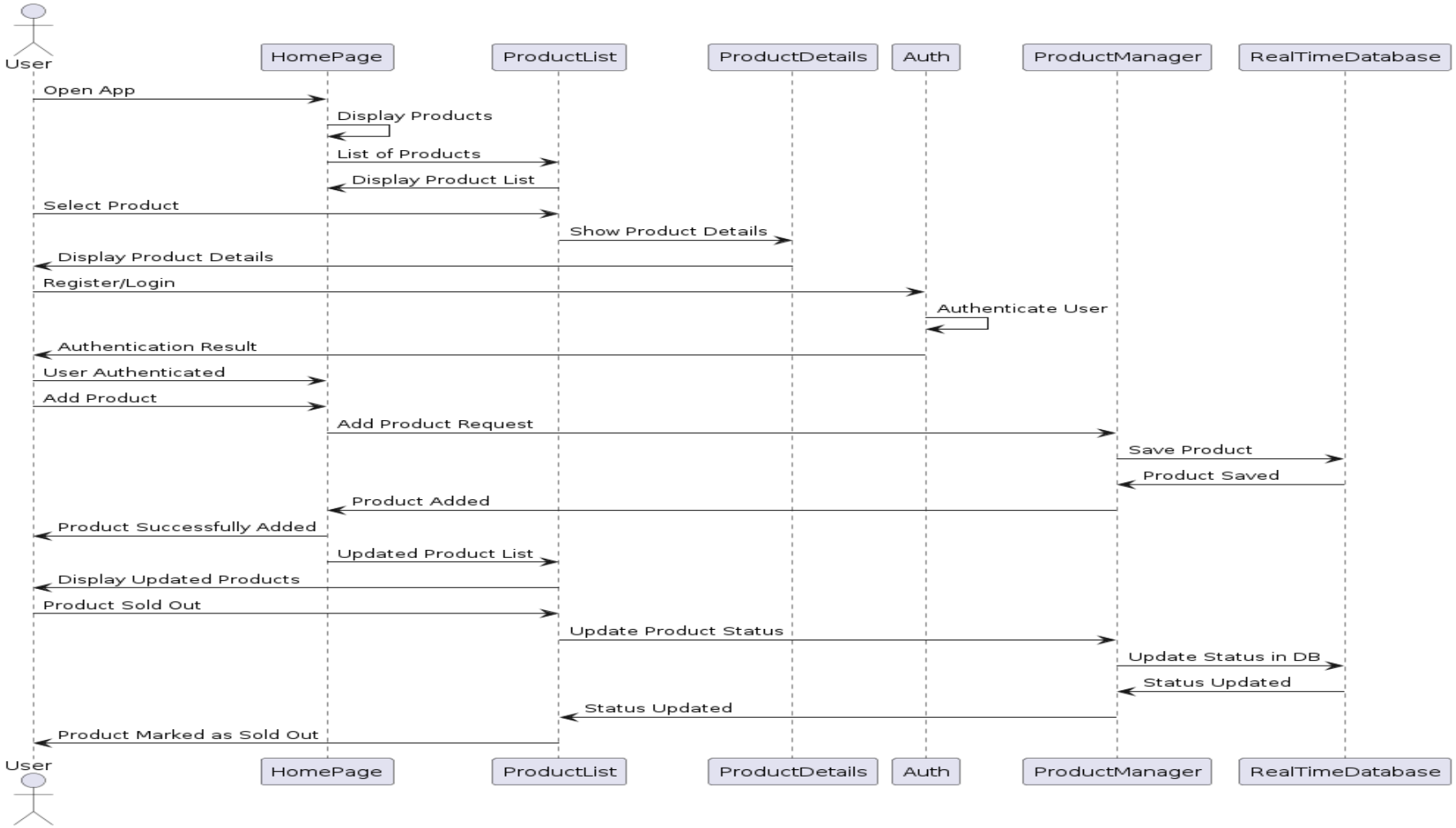
E-sale is an ecommerce android application that simplifies user registration, profile and product management and sales activities

APP OVERVIEW

UML Diagram


RegFragment
- User user
- DatabaseReference mDatabase
- FirebaseAuth mAuth
+void signUp()
LoginFragment
- String Email
- String Password
- FirebaseAuth mAuth
+void onSignInClicked()
ShowFragment
+ShowFragment()
+ShowFragment(Product product)
uses
"navigates to"
"navigates to"
HomeFragment
- DatabaseReference databaseReference
- RecyclerView recyclerViewProducts
- DatabaseReference mDatabase
+void fetchSellerProducts()
creates
UploadFragment
- String Description
- String ProductName
- String photoURL
- DatabaseReference mDatabase
- FirebaseAuth mAuth
+void uploadProductPhoto()
ProfileFragment
- User user
- RecyclerView recyclerViewProducts
- DatabaseReference mDatabase
- FirebaseAuth mAuth
-void fetchUserData()
+void updateUserData()
-void fetchSellerProducts()
+void logout()
User
-String username
-String email
-Integer phone
-String address
-String password
+void AccInfo(String username, String email, String phone, String address, String password)
+String getUserName()
+String getEmail()
+String getPhone()
+String getAddress()
DatabaseReference
+DatabaseReference child(String path)
+void setValue(Object value)
FirebaseAuth
+static FirebaseAuth getInstance()
+Task createUserWithEmailAndPassword(String email, String password)
+void signOut()
+Task signInWithEmailAndPassword(String email, String password)
Product
+void setId(String id)
+void setOwnerID(String ownerID)
+String getDescription()
+String getPhotoUrl()

Sequence Diagram



Homepage

Frontend

- Image: Product image
- Title: Product name

Backend

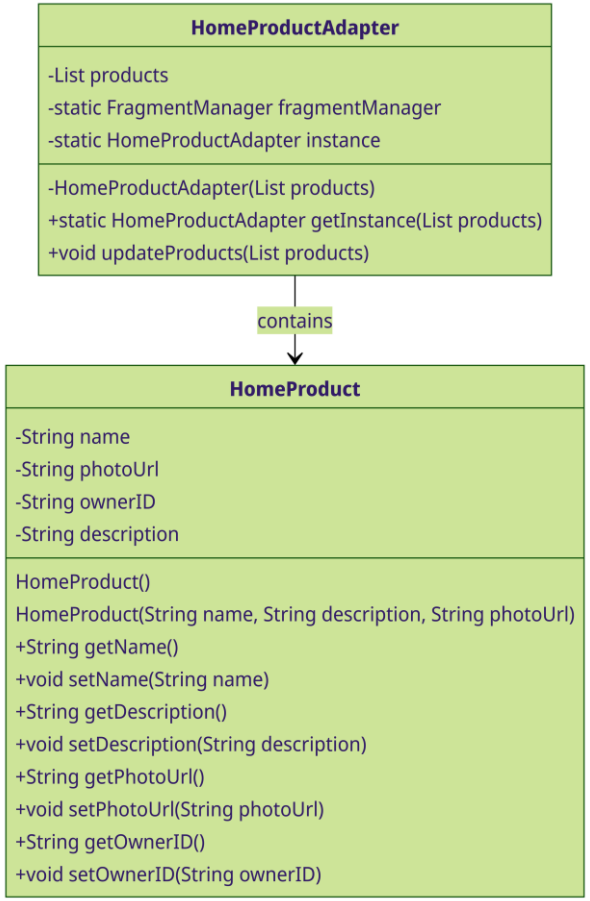
- HomeFragment: A class that sets up the layout and data fetching mechanisms for displaying the products.
- HomeProduct: A class that models a product with attributes for name, photo URL, owner ID, and description.
- HomeProductAdapter: An adapter that displays a list of HomeProduct objects in a RecyclerView, allowing users to see product details and images, and navigate to a detailed view of the selected product.

Homepage (Design pattern)

- **Singleton**

HomeProductAdapter class implements singleton pattern to ensure that only one instance of product list is active on homepage despite the list being frequently updated by the sellers

Homepage (Design pattern)



Singleton (class diagram)

Homepage (Design patterns)

Single tap

(Transition from homepage to product details)

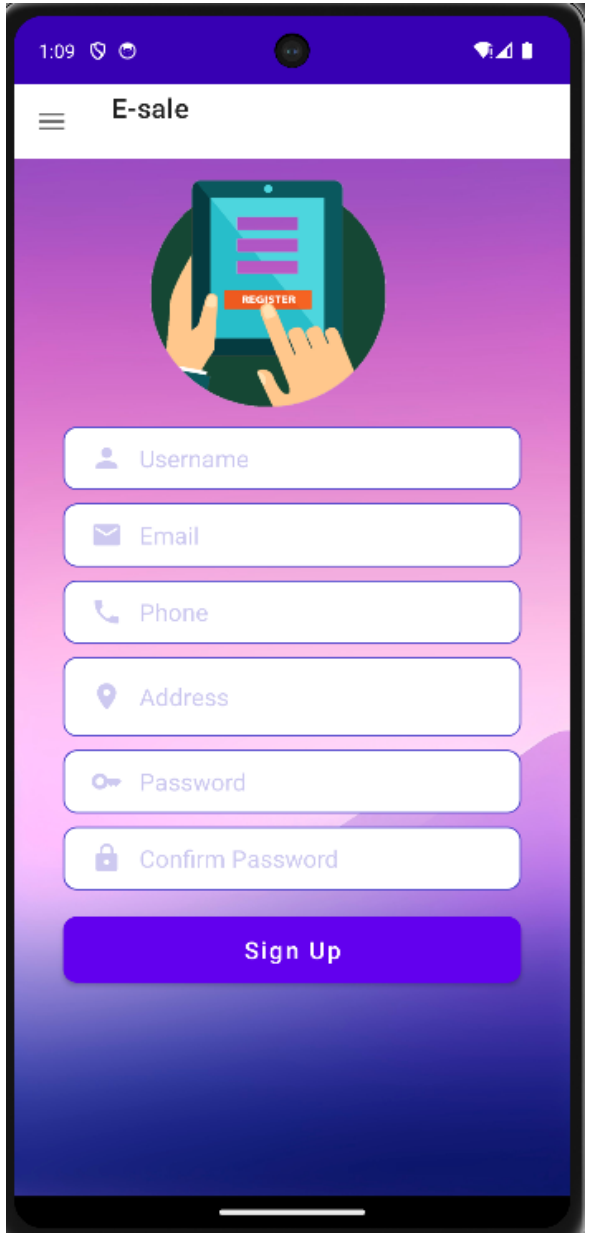
Product and Seller Details

Frontend

- Image: Product image
- Details: Product name, description and Seller's profile information

Backend

- HomeShowFragment: The class displays detailed information about a selected product, including the product's name, description, image, and the seller's contact information, and provides a button to navigate back to the HomeFragment.



Signup

Frontend

- Fields: Username, Email, Phone, Address, Password and Confirm password fields
- Signup button: Button dedicated for signup action

Backend

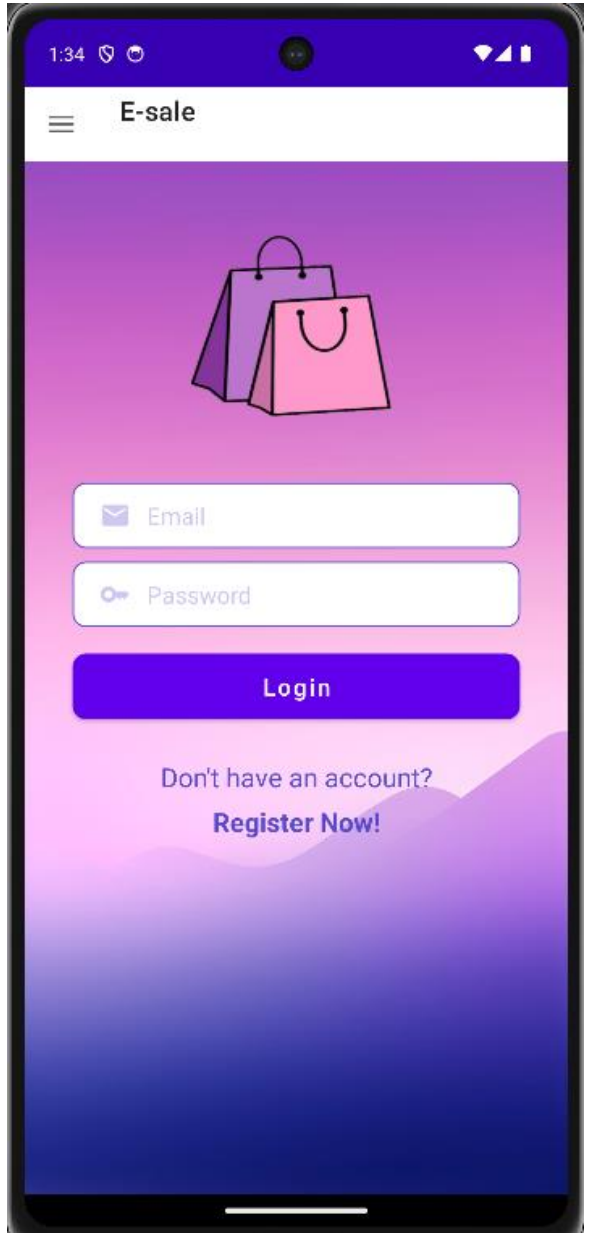
- RegFragment: A class for -

  - Collecting user details

  - Creating a new user with Firebase Authentication

  - Saving user information in Firebase Realtime Database

- User: A class for a user's account information, including their username, email, phone, address, and password.



Login

Frontend

- Fields: Email and password fields
- Login button: Button dedicated for login action

Backend

- LoginFragment: A class for -

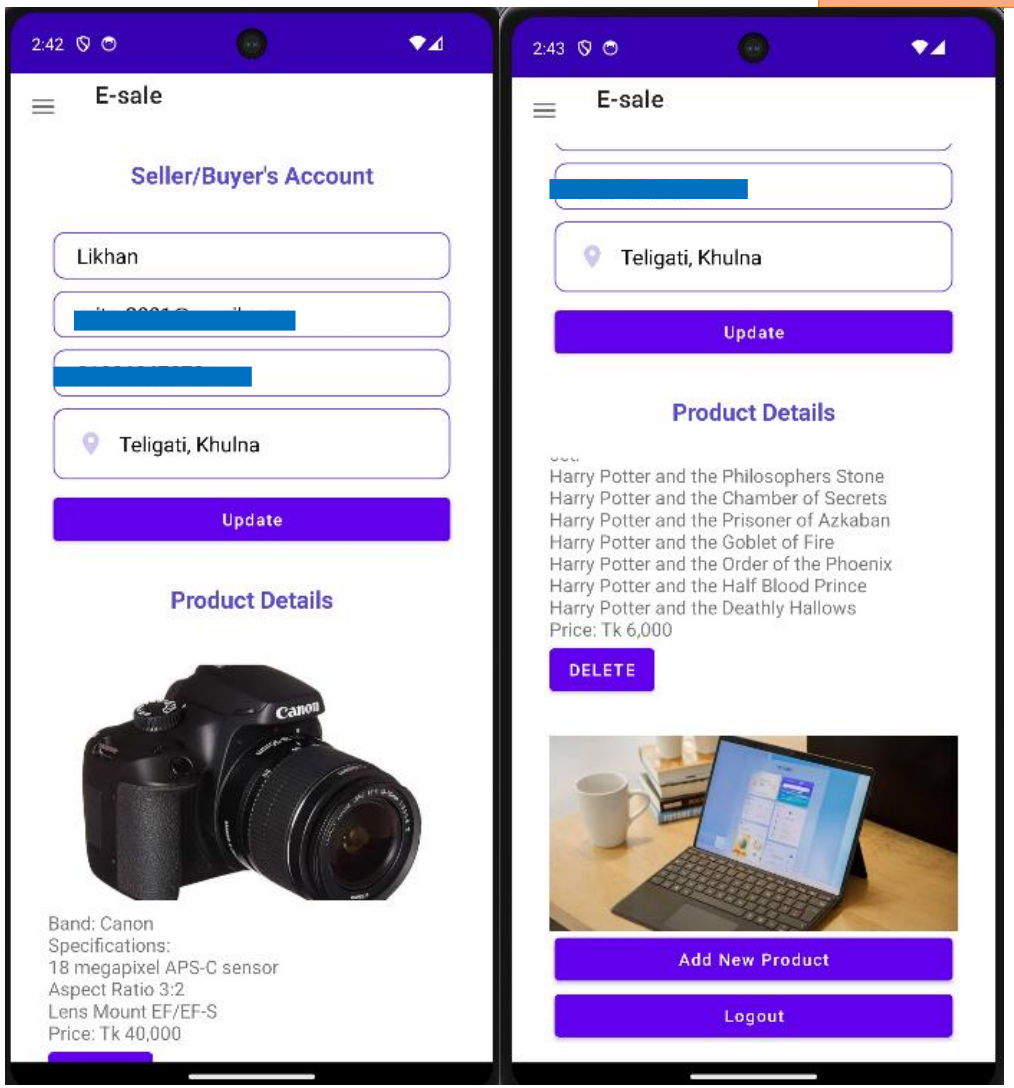
  - Collecting user details

  - Authenticating user using Firebase Authentication

  - Navigates to ProfileFragment upon successful login

  -Shows failure message if not authenticated

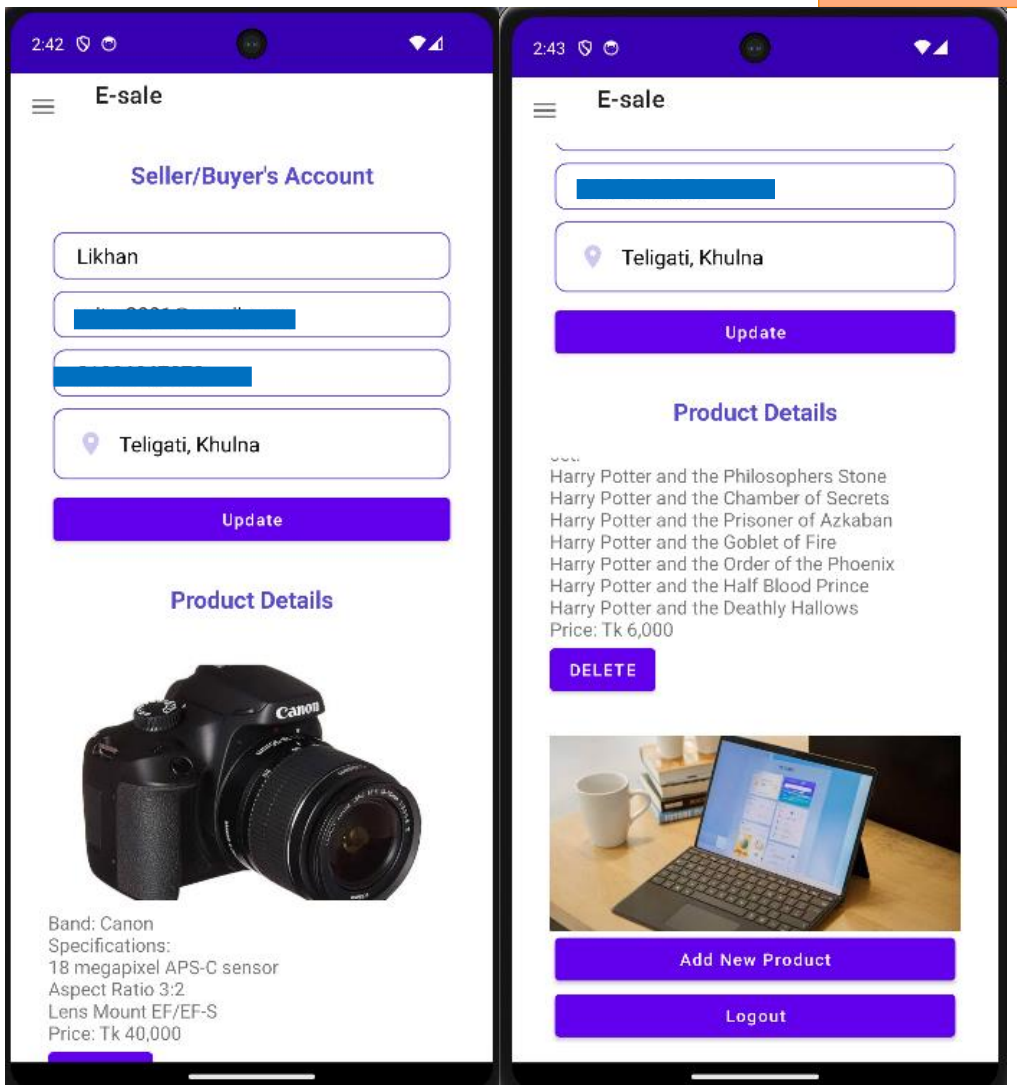
Profile



Frontend

- Fields: Username, email, phone and address fields
- Update button: Button dedicated for profile info update
- Image with description: Each product's image and its description including price, deletion is allowed
- Add New Product button: Button for adding new product
- Logout button: For logging out the user

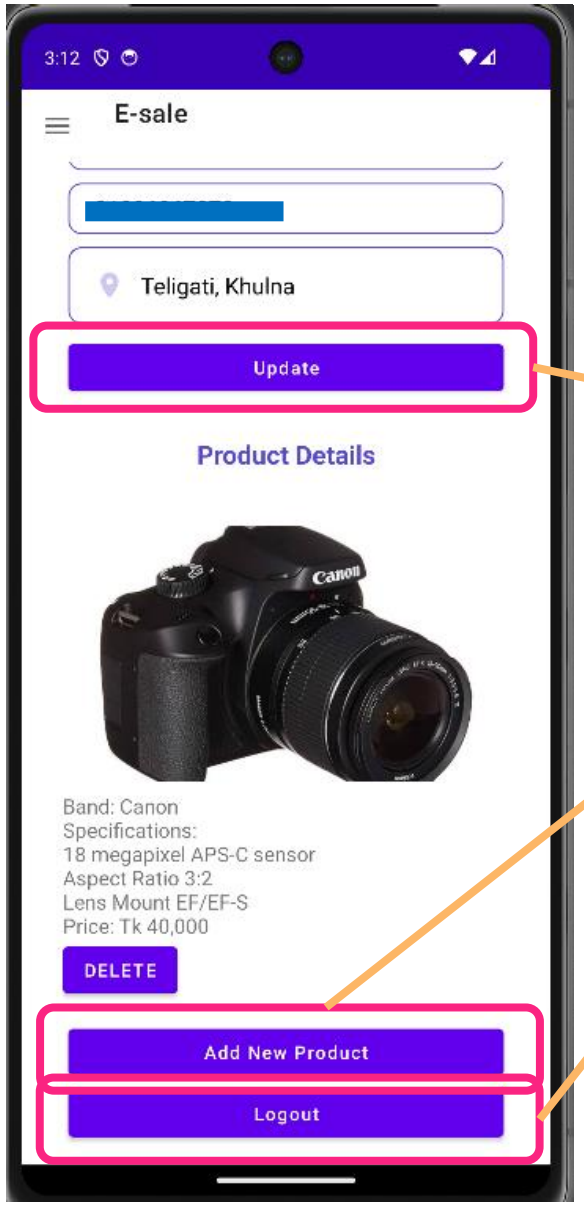
Profile



Backend:

- ProfileFragment: The class enables a user to –
  - view and update their profile information
  -view a list of their products
  -add new product
  - log out
- Product: The class represents a product with properties (unique ID, description, photo URL, and owner ID).
- ProductAdapter: A class that manages a list of `Product` objects in a `RecyclerView`, displaying their details and allowing users to view more details or delete products, with interactions supported by a `FragmentManager`.

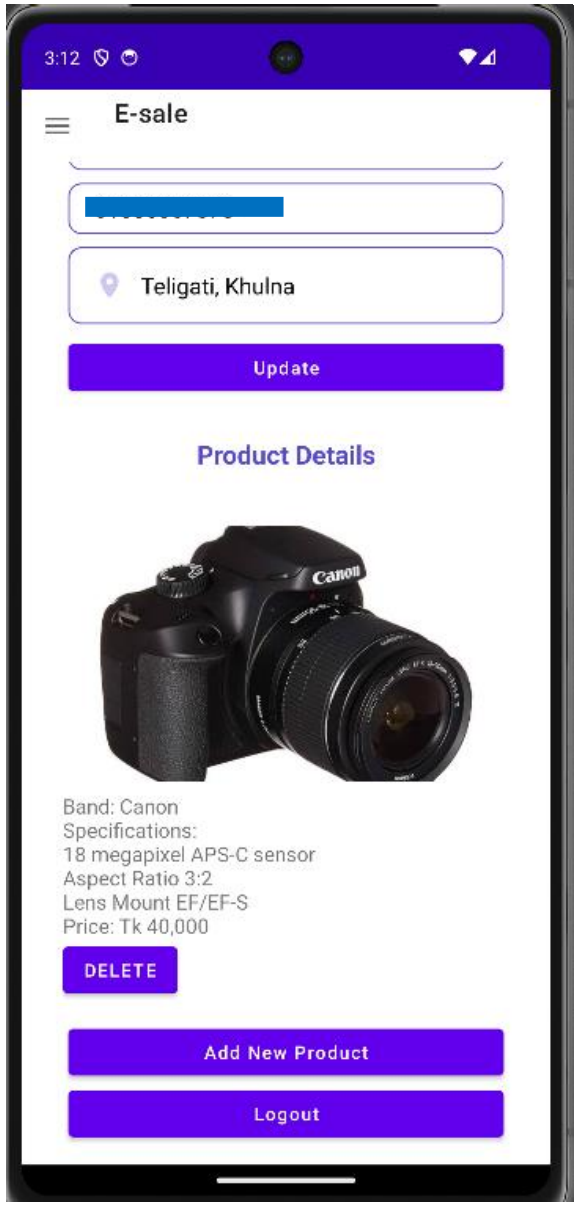
Profile (Design pattern)

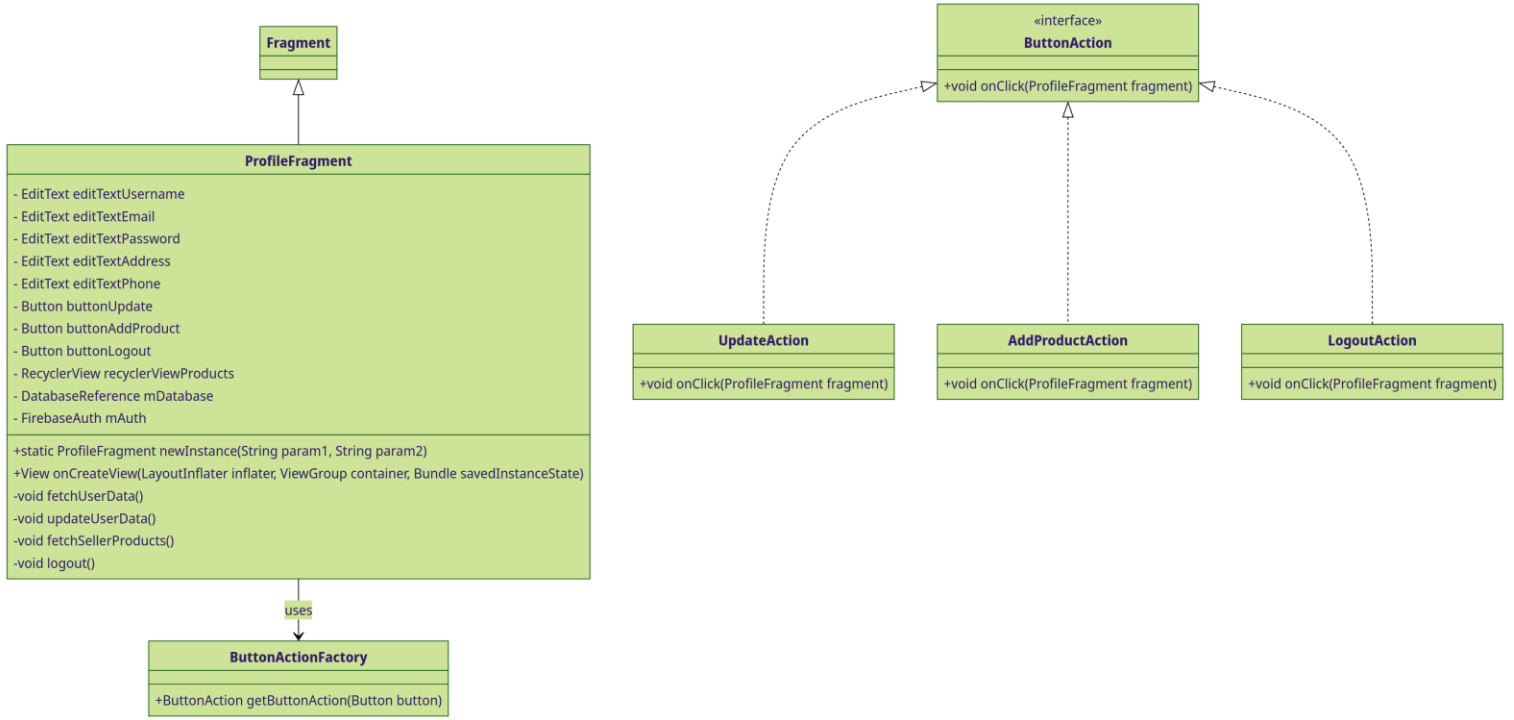


- **Factory**

The factory pattern is implemented in the **ButtonActionFactory** class, which creates instances of different **ButtonAction** implementations (**UpdateAction**, **AddProductAction**, **LogoutAction**) based on the button that was clicked.

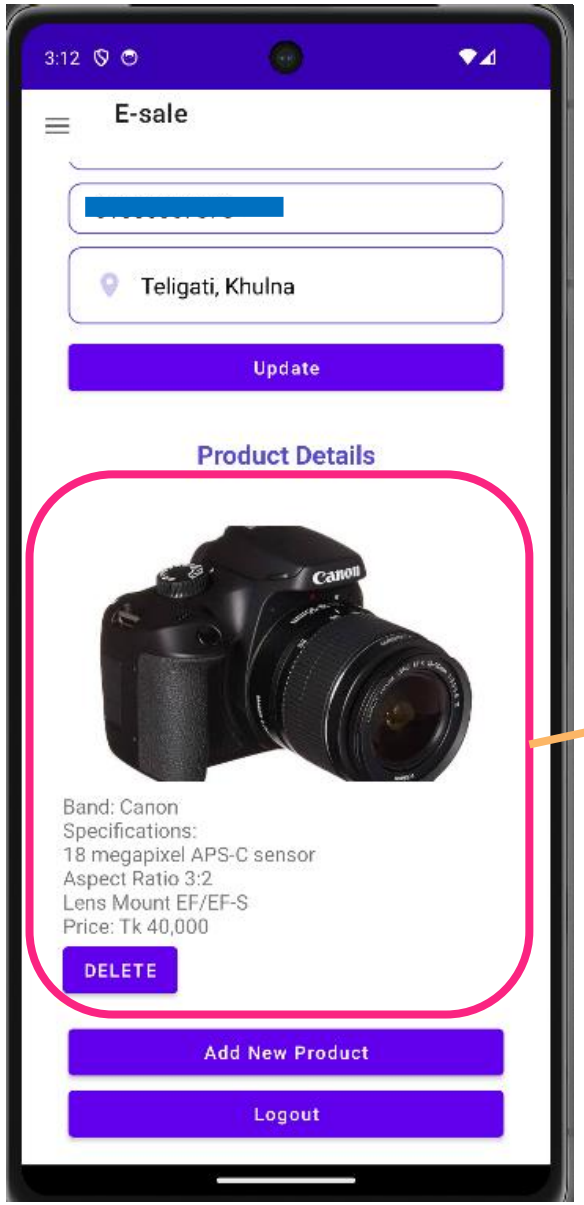
Profile (Design pattern)





Factory (class diagram)

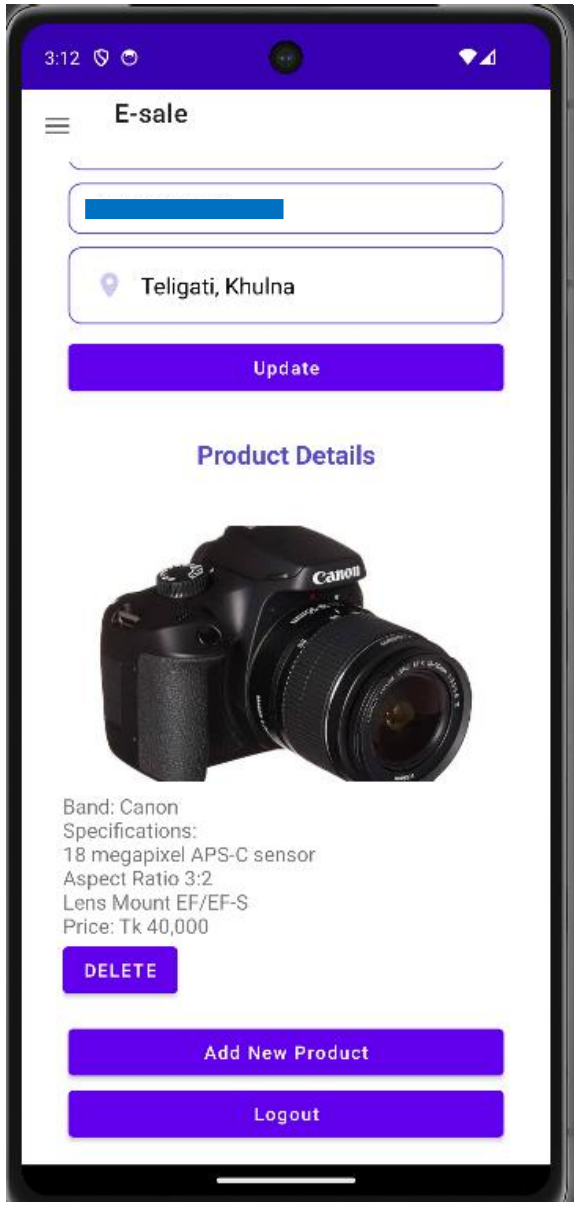
Profile (Design pattern)

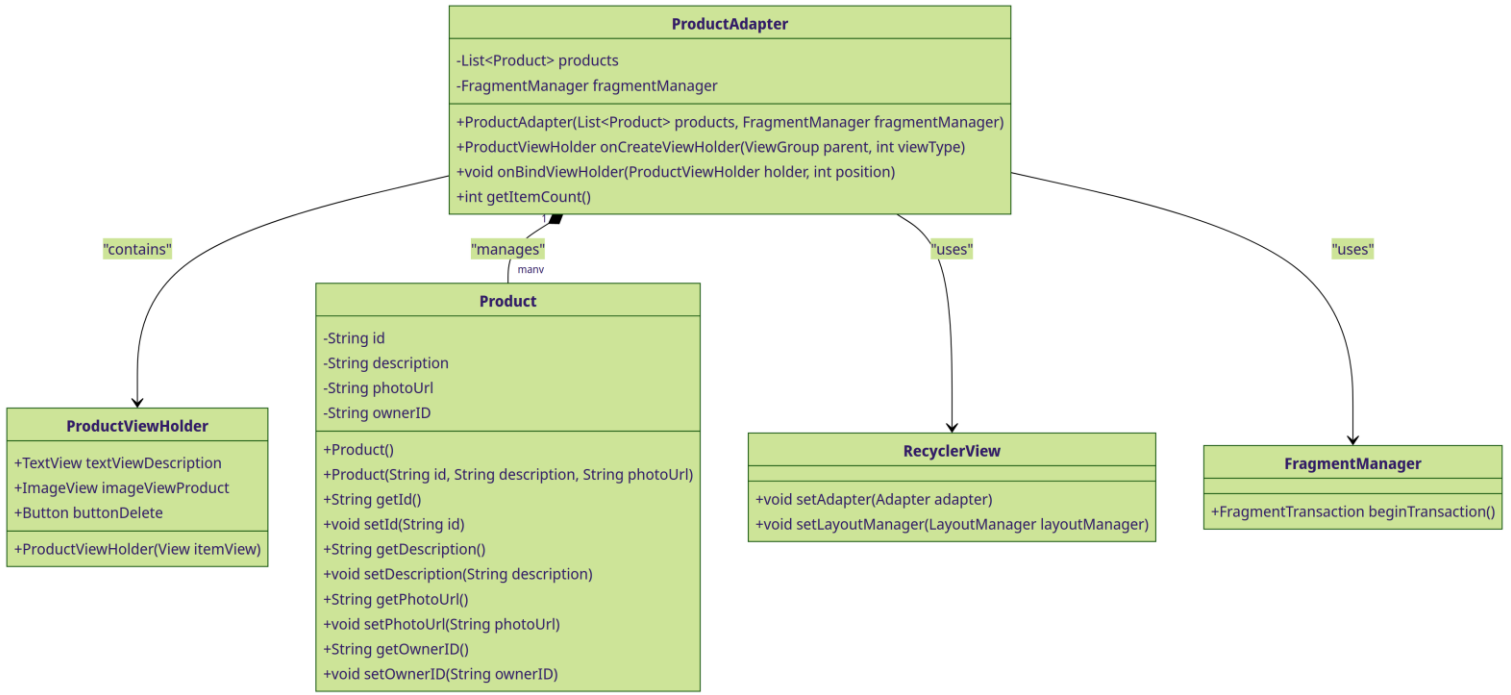


- **Adapter**

The adapter design pattern is implemented in the **ProductAdapter** class, which acts as an intermediary to fit in a list of **Product** objects into individual list items displayed by the **RecyclerView**.

Profile (Design pattern)





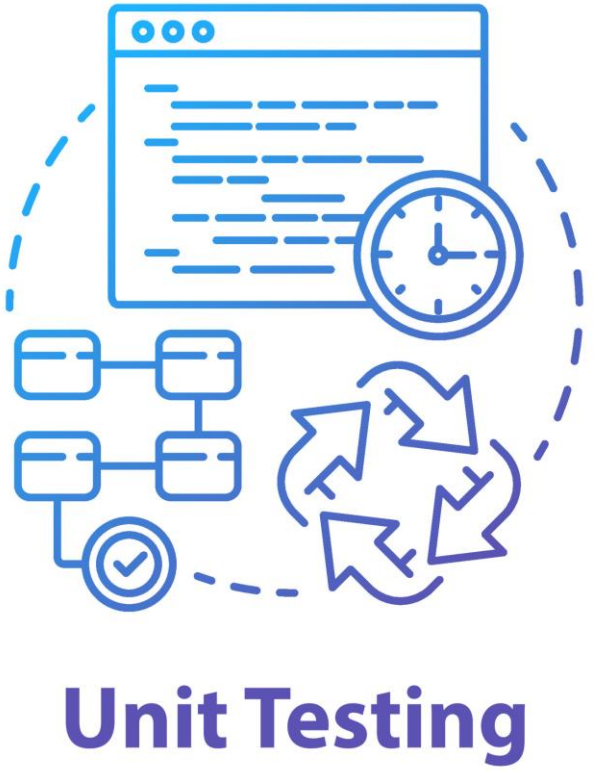
Adapter (class diagram)

Unit Testing

Verifies the correct instantiation of the fragments and classes and the presence of interactive components within the fragments' layouts.

Unit test classes:

- HomeProductTest
- HomeProductAdapterTest
- HomeShowFragmentTest
- ShowFragmentTest
- LoginFragmentTest
- ProductTest
- RegFragmentTest
- UploadFragmentTest



Integration Testing

Verifies that all the components within a fragment are working correctly together to serve the expected purpose.

Integration test classes:

- LoginFragmentIntegrationTest
- ProfileFragmentIntegrationTest
- RegFragmentIntegrationTest

UI Testing

Verifying the user interface of the application to ensure it behaves as expected and provides a good user experience.

UI test classes:

- HomeFragmentUITest
- HomeProductAdapterUITest
- ProductAdapterUITest
- ProfileFragmentUITest
- LoginFragmentUITest
- RegFragmentUITest
- UploadFragmentUITest

Thank you