Droplet Test Login

By: Muhammad AbdulSalam

About App

Droplet Login App is android application that takes Users Data and creates profiles by the information provided. It collects following data from the user

- **Full Name**
- **Email Address**
- **Address**
- **About information**
- **Profile Picture**

It consists of three Major activities where users will interact the Most. Three more activities to handle the functionality and better user experience for the user. Details of these activities can be found in Next section.

App collects users data along with email and password and creates a profile for the user. Users data will be stored in an online database which can be retrieved when needed. Users will be able to upload their profile pictures in the app than can then be changed at any time. Also rest of the details are also changeable.

App is developed in **Android IDE** using macOS. App is completely **JAVA** based. Details of IDE and components are as follows:

Android Studio 3.4
Gradle Version 3.4.0
SDK tools 26.1.1

This is a stable combination of IDE and Tools that are tested before the start of project. I have tried different versions of gradle and tools to start with but I found this to be the most stable version for my expertise. Thus this selection

WorkFlow Choices

Firebase RealTime Database:

FireBase realtime database is NoSql database that takes data as one large Json tree which makes it easier to retrieve and update data. It keeps the data processing efficient and easy. As droplet Login App is will be used to handle a small number of users and data thus using firebase realtime database is a reasonable and straightforward choice. Also it is one of the core requirements of the project.

Login Made with Email and Password

I have used Email and Password to create credentials for the users as this is always the minimum we need for a login security. Other methods include email verification , phone number verification and much more. As part of this project it would be used as a test to evaluate the skills. I had to stay within the test and not add a lot extra features that wont be necessary.
One more reason of not using additional verifications is to make sure I give you an app that can be tested with a number of credentials so you can test it flexibly.

GoogleMap, Google Location, Geocoder

To implement the bonus feature in this app I choose to use google map to show the accurate physical location of the device. Location service provides the app with Location coordinates that are then used by geocoder to convert into postal address.
Address format I have used is House No, Street Name and the post code. There are a number of details about the address that can be retrieved by using geocodes but these are the most essential details that I can think of.

Third Party Libraries

PICASSO:

I have used PICASSO library to load images into ImageViews. It makes it much easier to load external images into Android App, also saves times in coding. Picasso's image quality is better then some of the other famous libraries, it is also one of the widely known library so a lot of documentation and help is available in online community in order to expand the project.

DEXTER:

Dexter is a third party library used to get permissions in realtime. Since Android version Lollipop google made some of the permissions as critical permissions and App have to ask for permissions in real time. There are some other libraries too that provide similar functionality but I prefer dexter as I have previously worked with dexter a lot and have some well tested and well tried libraries in my resources. It helps me build code faster and use well tested libraries.

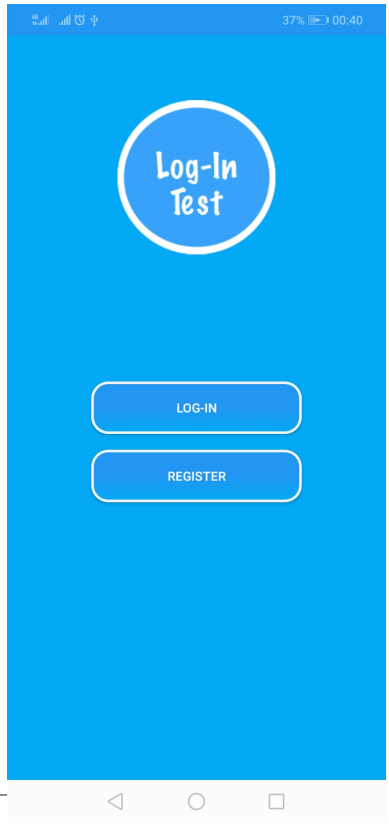
Layout Selection

I have choose **Relative Layouts** for this application. This application is relatively a small and precise app with a limited number of UI elements. It is easy to work with relative layouts and will be perfect for all screen sizes as there are only few items on every screen.

Design Description

Main Activity(First Activity)

-Main Activity consists of 2 buttons that will either let the user Login or Register as a new User.

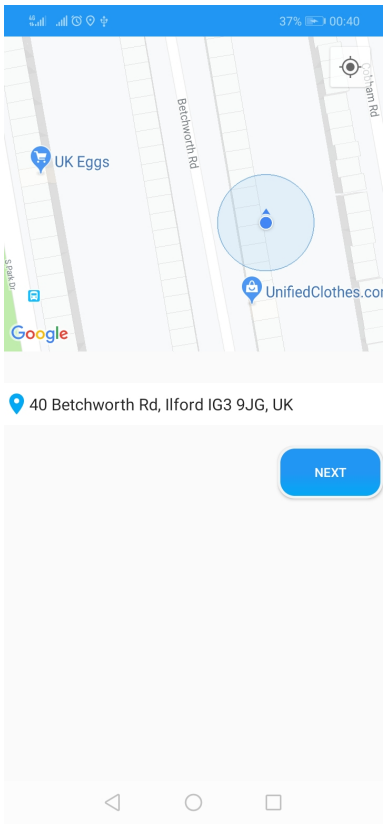


code:

-Main Activity also checks if the user is currently logged in and this Activity will automatically close and take the user to Home Screen or the Main Screen of the App.

Location Activity

Design:
Once user selects to register with the app, first step would be to take his location. User will also be able to see his location on Map. Reason of adding a map for location is demonstrate my experience of using maps in android application.



Note: if location textbook is empty please check you internet connection. As if Map is showing location that means GPS and location is working find but geocoder needs internet to work.

Register Activity

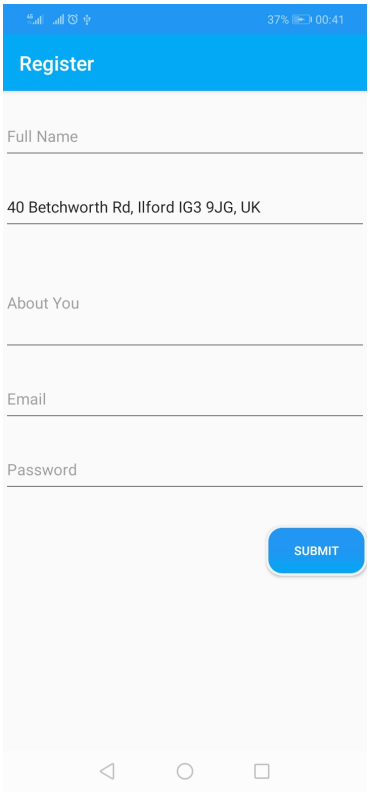
-Input all the data into designated fields

-Location is selected automatically

-once all the data is added press submit button and a profile will be made for user

-Once profile is created user will be logged in automatically for the first time.

-In order to go to login page user will have to logout.



Login Activity

-Simple Login page where user will be able to Login using credentials created

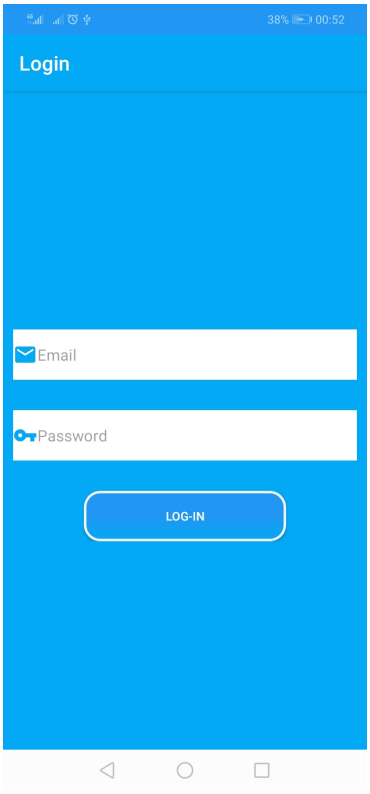
-Use email Address and Password to Login.

Note:

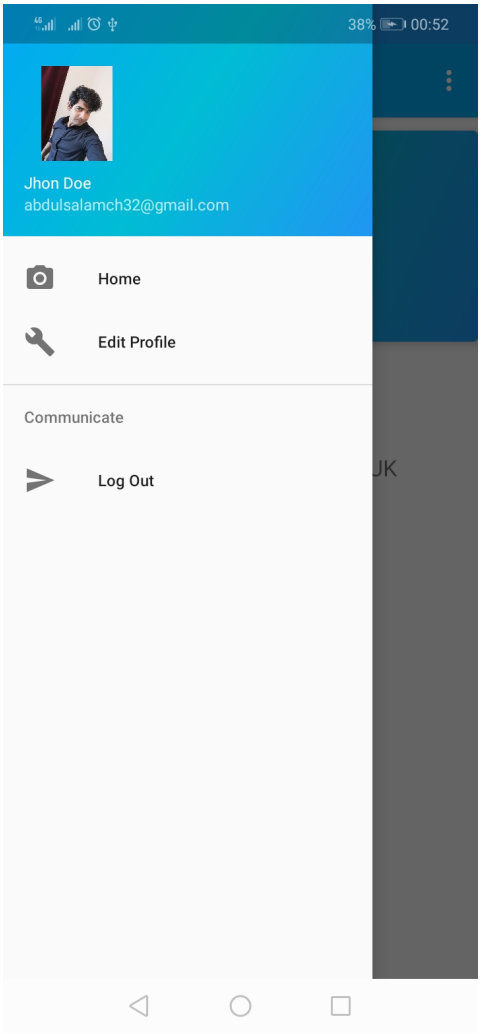
-Do not Forget the password as App do not provide reset password option

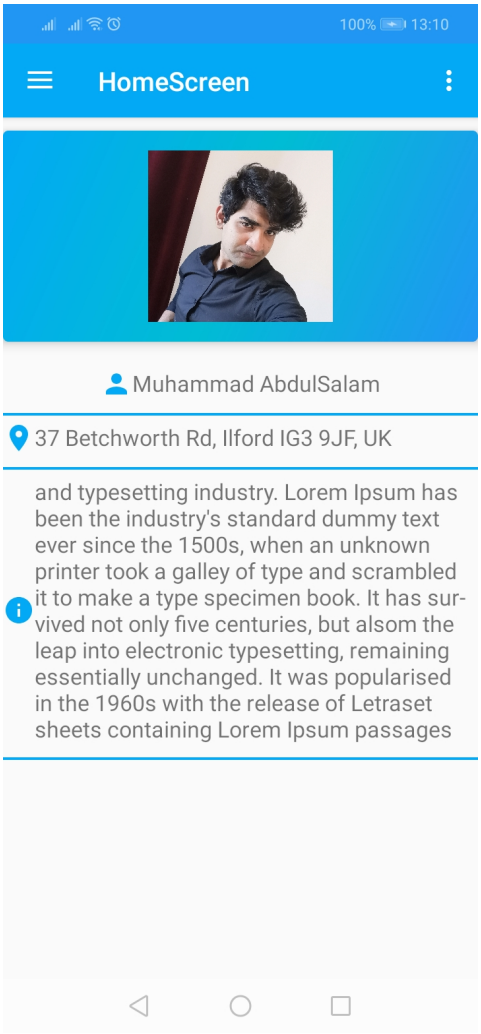
-You can use dummy email ID to test as App do not provide authentications, this is to make sure testing is easy.

-Dummy Emails must use correct Email Format such as dummy@dum.dom



HomeScreen Activity



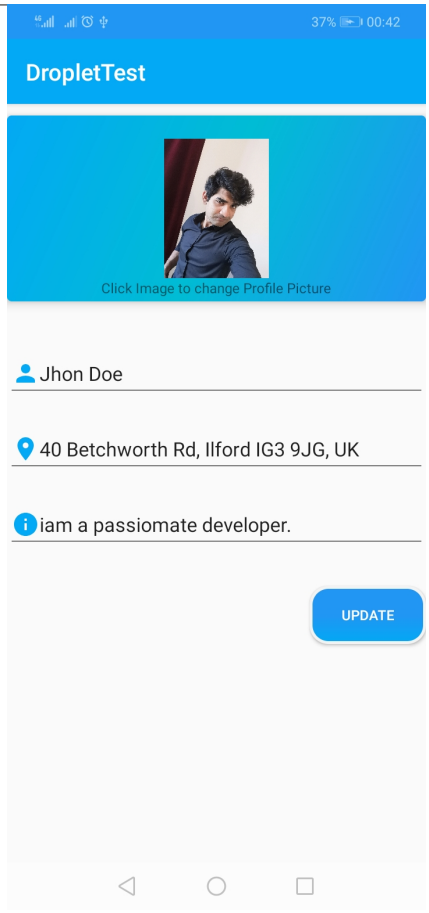


App Makes use of Navigation Drawer on the Main Screen , To demonstrate my ability to use different app bars in android applications. You select from the action menu or nav bar menus to edit profile or to logout. All the information and display pictures of user will be shown in this activity.

Edit Profile Activity

-User will see the existing data in these edit profile textbooks.
-Once changes are made, user can click update button and the changes will be updated.
-To change the profile picture user needs to click on the profile image that will take him to his internal memory.
-once picture is selected the upload process will begin.

Note: I am not obsessed by my face, This was the first picture in my gallery.



Evaluation and Possible Improvements

-Login Authentications using phone numbers or Email.
-Improved map design with ripple effects and place holders.
-Image compression before uploading.
-Animated progress bars.
-Sign-In using social Media accounts such as Google Sign-in, Facebook Sign-In etc.