Mobile Application Development

SAYHELLO

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Abstract

Any android application is nothing without chat feature. If we visit different applications like daraz, food order or any learning or E-commerce applications require chatting features so that two people can communicate with each other without. Most likely only from user to user. Every applications of every domain have this necessary feature in all applications. As it is a necessary feature in all applications why should I not develop this feature independently to learn that how it all happens without having any network I.e through a database.

Acknowledgment

It is a great pleasure to learn so much in this project. I will like to say Thanks to Mr.jaleel who guided me in this COVID situation and in online mood and respond and solve problems via zoom and WhatsApp.

Introduction

Sayhello is a secure chat application that enable the user to connect with each other. It is a user to user chat application. In this application user can verify his phone number by receiving an OTP code. If user is not willing to use his/her phone number then there is another option to login or signup using Email and password. User will be able to set his profile information. He can set his profile image and name and can chat with connected users. It also facilitates the user to change locale from English to Urdu and from Urdu to English.

Overview

This report discusses the work done on this project and all the libraries and methodology that comes to be helpful in implementing this project. This discussion will also include all the third part libraries and database that can facilitate in developing such nicer applications. This application runs under android platform which is the most popular operating system in the world.

Motivation

I want to develop this basic chat feature of any android application and as a beginner is was a good choice for me to develop such app.

Methodology:

According to Software Development lifecycle I passed the project from different phases like requirement gathering, planning, designing, testing etc.

Requirement gathering

A project cannot be done if the requirements are not clear. Requirement gathering is a phase in which you analyze that what is required to develop your intended project. Following hardware and software tools were required in implementing this project.

- Android studio (IDE)
- Computer or laptop with minimum 4 Gb RAM
- Java jdk (8 is used)
- Emulator or physical device
- Activities in android that is a user interface
- Third party libraries like glide for images
- Pin view for OTP code.
- Circular view, for making images circular
- Firebase real time database
- Card view

And the analysis that which functionality can be done using which view like textview,recyclerview,imageview etc.

Planning

After requirement gathering, second step is to plan the project and its different modules.

Design

For designing UI, Xml are used Xml stands for is extensible markup language in which you design your user interface in Android studio and implement basic logic in Java or in Katlin and connect backend logic by connecting activities with Java classes. In this project I used **Java** language.

I import different colors from https://material.io/design **Material Design.**

Testing

After designing and implementation next step is to test the application and for testing we test it with physical devices or with built in emulator.

You can test your app in two ways, by using manually by inserting username and password or phone number and code in your firebase test users and you can test your app I used manual test user for testing again and again.

Third Party library integration

Third party libraries are the libraries that is reusable component and is developed by another body except the one who developed the platform. Actually third party libraries are those that facilitate the developer or beginner to use their pre tested and developed software that may save their time and cost

We can easily integrate it in our application by including in dependencies.

In this project I integrated different libraries

- Pin view
- circular view
- Glide

Glide

I used glide library for image loading from firebase and it is the most recommended library by Google best library for caching and loading images. it requires internet connection.

Why glide?

When we get image resource then then we can just pass them in an integer value but in our model class we define image as a string for this purpose we use an image processing library called Glide.

Circular View

To make an image circular I used circular view.

Pin view

Pin view is a feature that enable the Android to find out that it Completed all parameters. There is a limit on length of the code i.e it should be 6 digits in length so for this purpose I used pin view.

Third party libraries links:

Circular image view link

https://github.com/hdodenhof/CircleImageView

Glide link

https://github.com/bumptech/glide

Pin view Link:

https://github.com/mukeshsolanki/android-otpview-pinview

Locale

Locale is an inspiring feature in android studio that gives an option to change the language of android applications so that end users could easily understand it.

User can change language from English to Urdu and from Urdu to English.

Features

- User can use phone number or with email and password to login.
- User can verify his phone number
- Set profile picture with name
- See latest conversation and chats and contacts
- Can communicate user to user
- User can also leave profile image as default profile image of the application.-

Implementation of features

When the user open the application for the first time, it asks to use your phone number or to Signup, next time if the user registered himself he can login to the application and if the user choose to verify with phone number he will be presented with a screen, to enter his/her phone number with country code +92. After entering phone number the user will receive an OTP from firebase and will enter the OTP in pin view, the OTP should be of max 6 digits integer number.

The record will be created in real-time firebase, after this user can set his profile picture by choosing image from gallery and write his name and when he enter name and upload profile image he will be redirected to the activity where he can see his conversation lists.

Mechanism used for chatting

I have used a recycler view for chatting, the text is bind to Recycler View on the basis of view type and view type will be an integer value, if current user ID is sender iD then in adapter class, data is bind to recycler view of the sender sample layout according to the ItemViewType and if current user ID matches to receiver UID, then data is bind to receiver's sample layout.

On the basis of ID'S and current user we are sending and receiving messages through firebase.

Portrait or landscape mode

The application is based on portrait mode because I don't think so there is a need to implement it in landscape and user will do chatting in landscape mode.

Model view controller:

There are different architecture in android, I used model view architecture.

Model:

Java model classes.

View

Xml widgets

Controller

Java classes

Firebase Real time database

The Firebase Realtime Database is **a cloud-hosted NoSQL database** that lets you store and sync data between your users in real-time. NEW: Cloud Fire store enables you to store, sync and query app data at global scale.

Firebase storage

I used firebase storage while uploading profile picture of user and store them in firebase storage. With firebase storage you can easily reference to the file, upload the file and can download links of the profile image.

User interface Design

Following are the Ui designs of Sayhello

Verify +923331111111

Enter Code

CONTINUE

ذاتی معلومات

براہ کرم اپنا نام اور پروفائل تصویر ترتیب دیں .

اپنا نام ٹائپ کریں

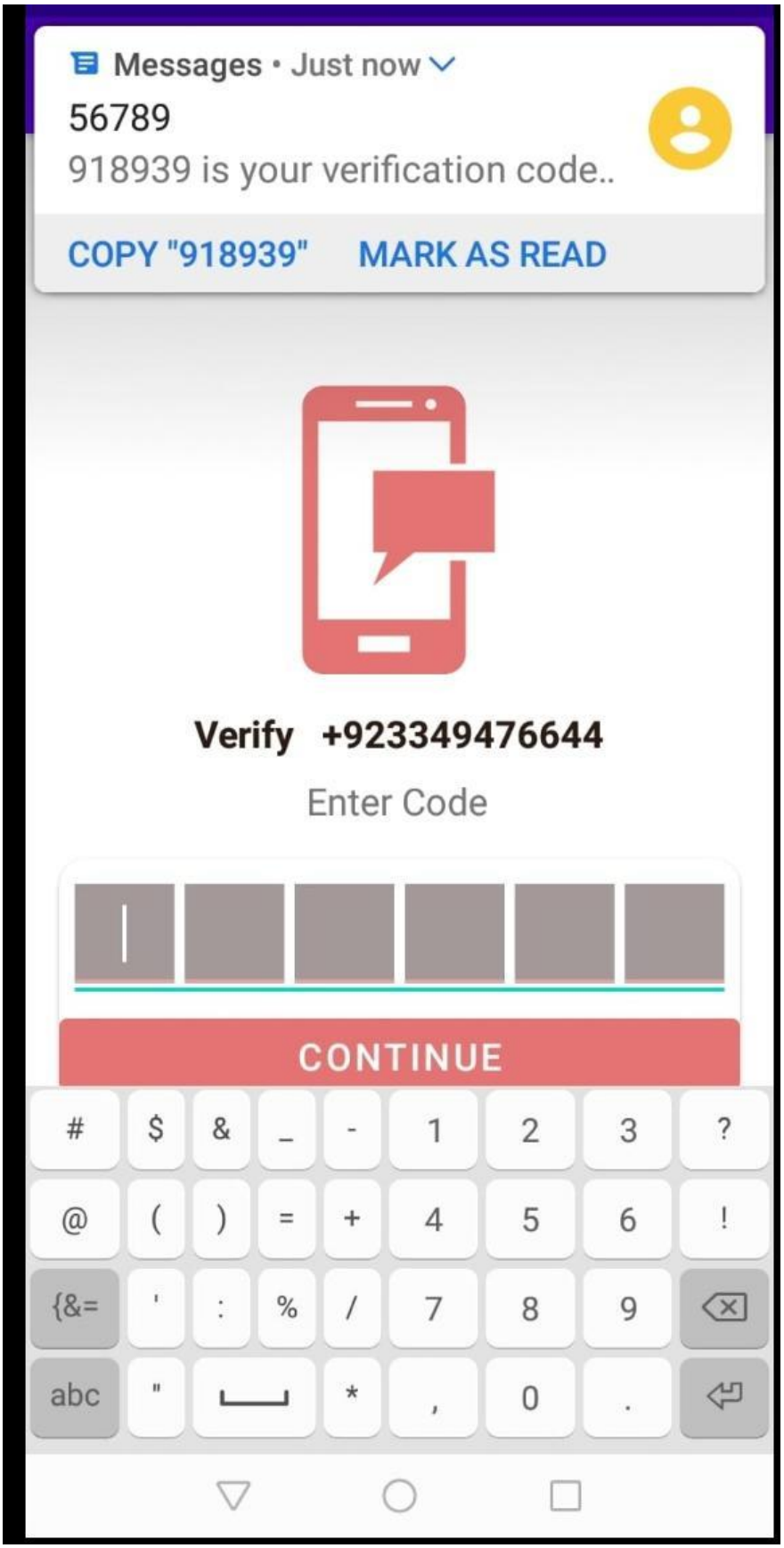
پروفائل مرتب کریں E

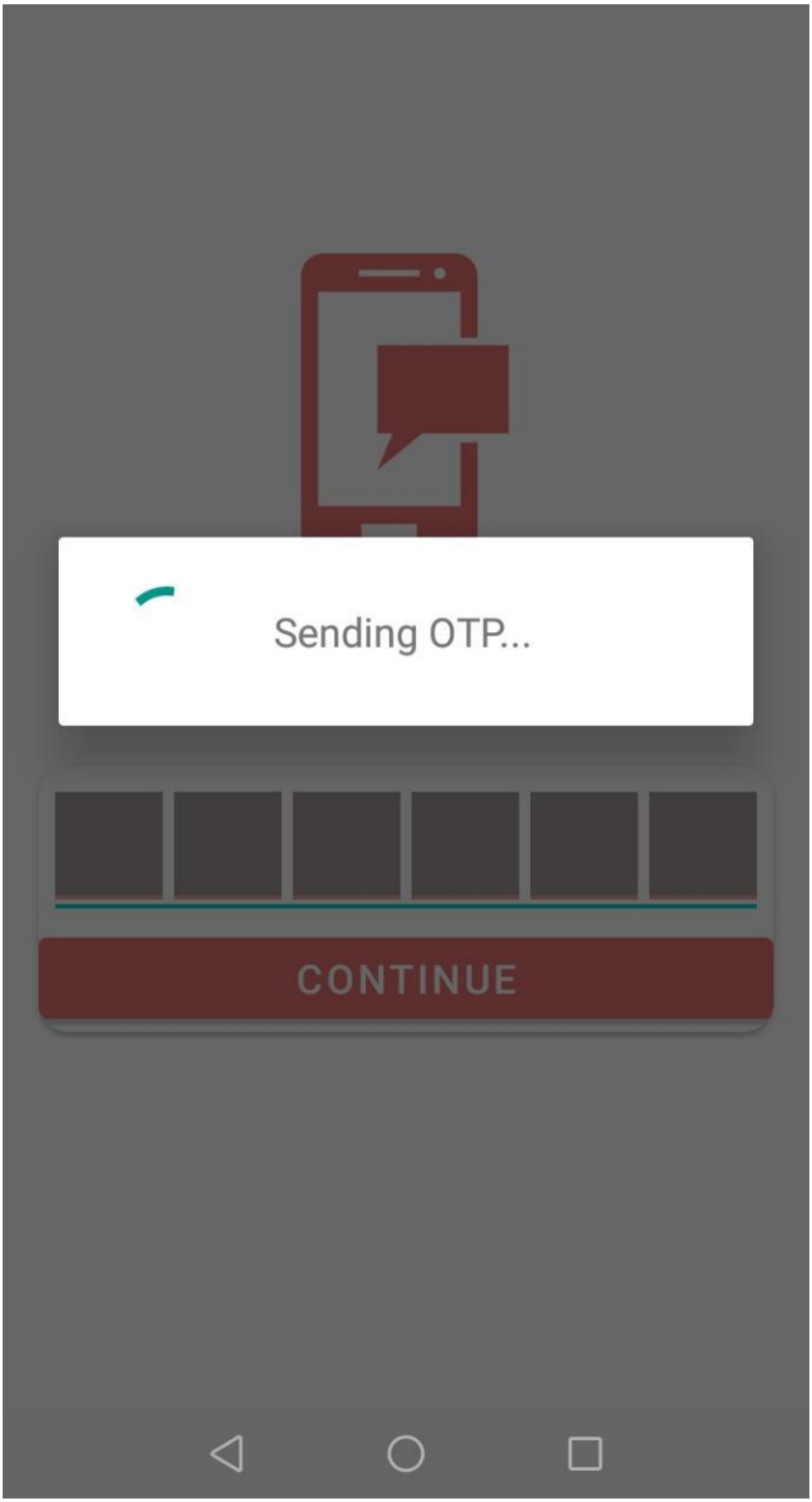
Profile Info

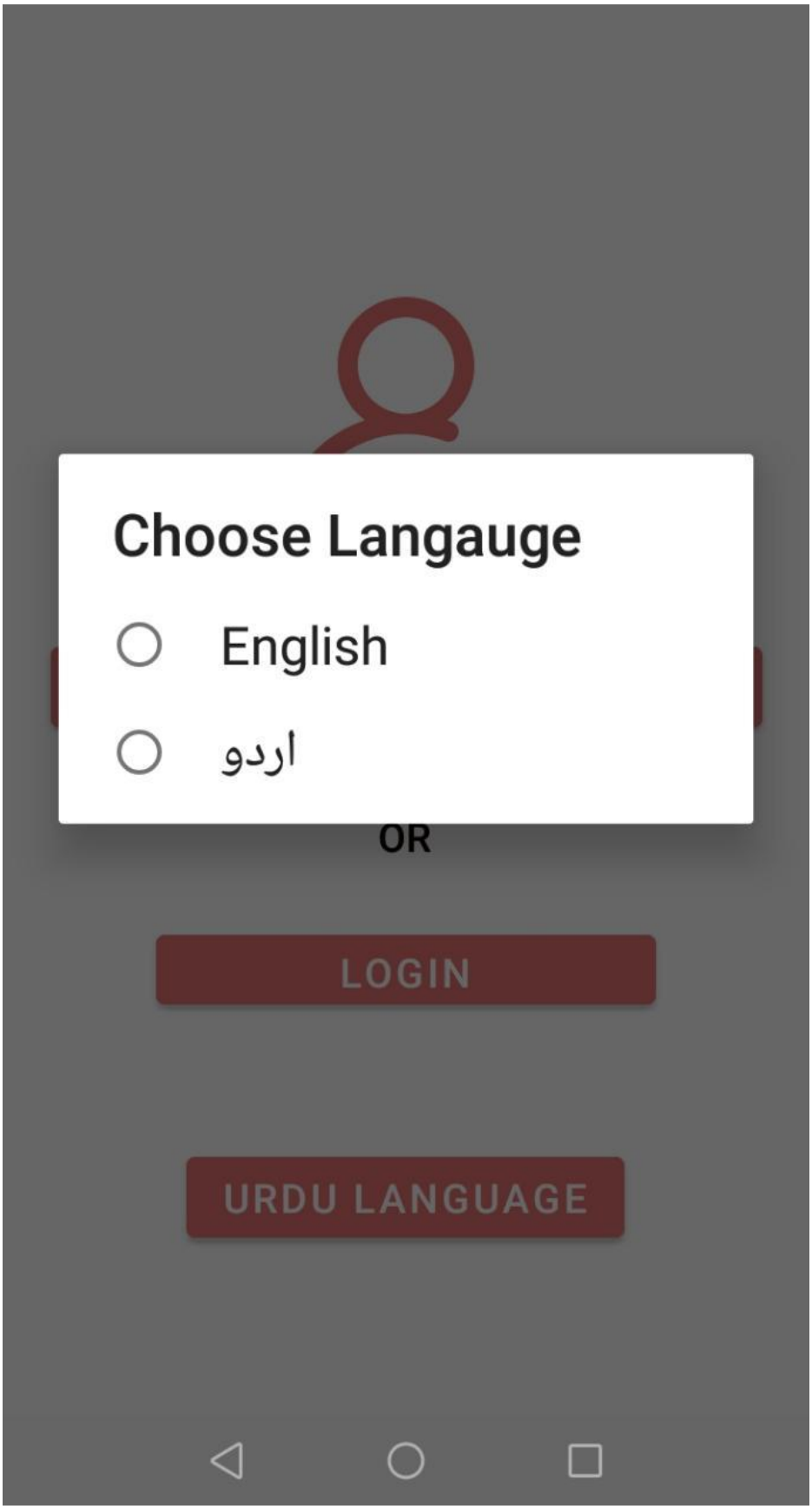
Please set your name and Profile Picture.

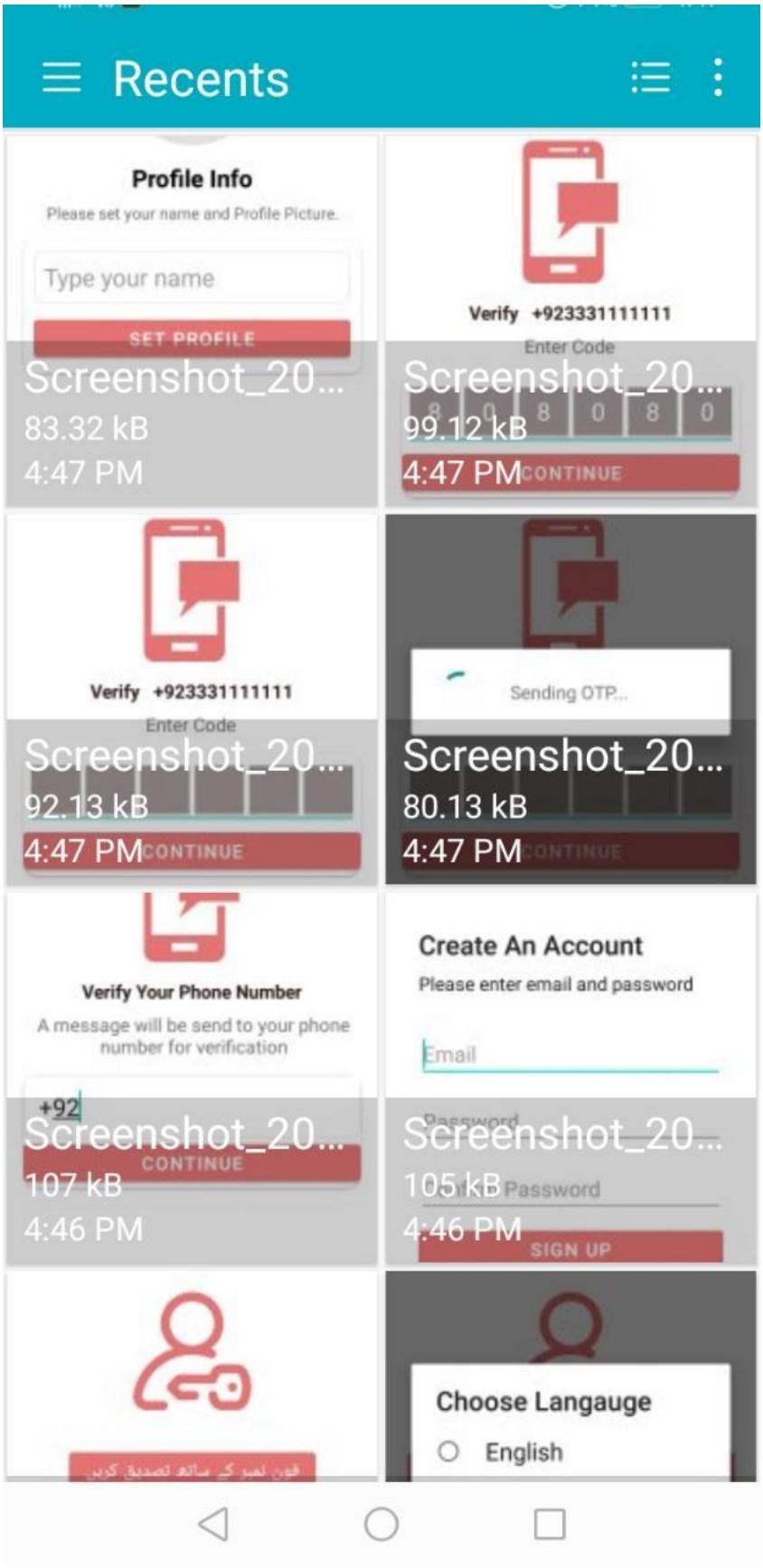
Type your name

SET PROFILE


Messages • Just now
56789
918939 is your verification code..
COPY "918939"
MARK AS READ
Verify +923349476644
Enter Code
CONTINUE


Sending OTP...
CONTINUE


Choose Langauge
English
اردو
OR
LOGIN
URDU LANGUAGE


Recents
Profile Info
Please set your name and Profile Picture.
Type your name
SET PROFILE
Screenshot_20...
83.32 kB
4:47 PM
Verify +923331111111
Enter Code
CONTINUE
Screenshot_20...
99.12 kB
4:47 PM
Verify +923331111111
Enter Code
CONTINUE
Screenshot_20...
92.13 kB
4:47 PM
Sending OTP...
Screenshot_20...
80.13 kB
4:47 PM
Verify Your Phone Number
A message will be send to your phone number for verification
+92
CONTINUE
Screenshot_20...
107 kB
4:46 PM
Create An Account
Please enter email and password
Email
Password
Password
SIGN UP
Screenshot_20...
105 kB
4:46 PM
Choose Langauge
English

Create An Account

Please enter email and password

Email

Password

Confirm Password

SIGN UP

LOG IN

Conclusion and design principles:

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