

MINI PROJECT REPORT
(2020-2021)

On

Like Minded Messenger

Submitted by

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Acknowledgement

When I am writing this project, my mood was good because of the topic title I choose, make me interested with what I am writing in this project and research I conducting up to the time If in this project, in the point that now a days the world demand mostly on e-commerce activities in conducting business and online transaction growth everyday as now we are in science and technology century.

I would like to express my special thanks of gratitude to my instructor Mr. Vaibhav Diwan for the support and help he gave me towards the completion of this project, most of time their videos correct me where I am wrong, guide me where necessary, it's so helpful for me and good to working with him.

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I wish to thank my family and outside friends for the encouragement and motivation towards the completion of this project, is so helpful, first my family for financial matter, and outside friends for supporting each other day until now I am writing my final year project.

Lastly, I am really thankful for all I mention above and others who helped me a lot in finishing this project within the limited time.



Certificate





Certificate

of hours of learning

Rachit

Apps with Flutter for begginers by The Net Ninja
00 hours 57 minutes

Month / Year
11 / 2020

Student signature:
Rachit


Adrian Medeiros Dantas
CEO / Director - Cursa

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Abstract

Teleconferencing or Chatting is a method of using technology to bring people and ideas together despite of the geographical barriers. The technology has been available for Years but the acceptance it was quite recent. Our Project is an example of a chat server. It is made up of 2 applications the client application, which runs on any Android Device on the network. To start chatting client should get connected to server where they can do private and group chat security measures were taken during the last one.



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Introduction

Introduction of the Project

Communication is a mean for people to exchange messages. It has started since the beginning of human creation. Distant communication began as early as 1800 century with the introduction of television, telegraph and then telephony. Interestingly enough, telephone communication stands out as the fastest growing technology, from fixed line to mobile wireless, from voice call to data transfer. The emergence of computer network and telecommunication technologies bears the same objective that is to allow people to communicate. All this while, much efforts has been drawn towards consolidating the device into one and therefore indiscriminate the services. Chatting is a method of using technology to bring people and ideas together despite of the geographical barriers. The technology has been available for years but the acceptance it was quite recent. Our project is an example of a chat server. It is made up of applications the client application which runs on the users mobile and server application which runs on any pc on the network. To start chatting our client should get connected to server where they can do Group and private chatting. Teleconferencing or Chatting, is a method of using technology to bring people and ideas “together” despite of the geographical barriers. The technology has been available for years but the acceptance it was quite recent. Our project is an example of a chat server. It is made up of 2 applications the client application, which runs on the user’s Pc and server application, which runs on any Pc on the network. To start chatting client should get connected to server where they can practice two kinds of chatting, public one (message is broadcasted to all connected users) and private one (between any 2 users only) and during the last one security measures were taken.

Problem Statement

This project is to create a chat application with a server and users to enable the users to chat with each other’s. To develop an instant messaging solution to enable users to seamlessly communicate with each other. The project should be very easy to use enabling even a novice person to use it.

Project Scope

- Broadcasting Chat Server Application is going to be a text communication software, it will be able to communicate between two computers using point to point communication.



- The limitation of Live Chat is it does not support audio conversations. To overcome this limitation, we are concurrently working on developing better technologies.
- Companies would like to have a communication software wherein they can communicate instantly within their organization.
- The fact that the software uses an internal network setup within the organization makes it very secure from outside attacks.

Functional Requirements

1. User Registration

User must be able to register for the application through a valid phone number. On installing the application, user must be prompted to register their phone number. If user skips this step, application should close. The users phone number will be the unique identifier of his/her account on Chat Application.

2. Adding New Contacts

The application should detect all contacts from the user's phone book. If any of the contacts have user accounts with Chat Application, those contacts must automatically be added to the users contact list on Chat Application. If any of the contacts have not yet registered on Chat Application, user should be provided with an invite option that sends those contacts a regular text message asking them to join Chat Application along with a link to the Chat Application on Google PlayStore.

3. Send Message

User should be able to send instant message to any contact on his/her Chat Application contact list. User should be notified when message is successfully delivered to the recipient by displaying a tick sign next to the message sent.

4. Broadcast Message

User should be able to create groups of contacts. User should be able to broadcast messages to these groups.



5. Profile Update

User must be able to change its profile Picture through accessing its gallery and About me Section as well

6. Create Group or Join groups

User must be able to Create own group and able to join others group as well and also Leave the group if he/she want

7. Search Feature

User Also Able to search groups as well as users In database

Non-Functional Requirements

1. Privacy

Messages shared between users should be encrypted to maintain privacy.

2. Robustness

In case user's device crashes, a backup of their chat history must be on remote database servers to enable recoverability.

3. Performance

Application must be lightweight and must send messages instantly.



System Specification

Hardware requirements

In hardware requirement we require all those components which will provide us the platform for the development of the project. The minimum hardware required for the development of this project is as follows-

- Ram- minimum 128 MB
- Hard disk—minimum 5 GB
- Processor- Pentium 3

These all are the minimum hardware requirement required for our project. We want to make our project to be used in any. Type of computer therefore we have taken minimum configuration to a large extent. 128 MB ram is used so that we can execute our project in a least possible RAM. 5 GB hard disk is used because project takes less space to be executed or stored. Therefore, minimum hard disk is used. Others enhancements are according to the needs.

Software requirements

Software's can be defined as programs which run on our computer .it act as petrol in the vehicle. It provides the relationship between the human and a computer. It is very important to run software to function the computer. Various software's are needed in this project for its development.

- Operating system—Windows 7 OR ANY VERSION >6
- Others—Visual Studio OR Android Studio

We will be using visual basic as our front hand because it is easier to use and provides features to the users which is used for the development of the project.

Technology Used

1. Flutter

Flutter is an open-source UI software development kit created by Google. It is used to develop applications for Android, iOS, Linux, Mac, Windows, Google Fuchsia, and the web from a single codebase.



2. Firebase

Firebase is Google's mobile application development platform that helps you build, improve, and grow your app. Here it is again in bigger letters, for impact: **Firebase** is Google's mobile application development platform that helps you build, improve, and grow your app

Plug-ins and Dependencies

```
18
19 dependencies:
20   flutter:
21     sdk: flutter
22   google_sign_in: ^4.5.6
23   cloud_firestore: ^0.14.2
24   firebase_auth: ^0.18.2
25   shared_preferences: ^0.5.12+4
26   firebase_core: ^0.5.0+1
27   font_awesome_flutter: ^8.8.1
28   image_picker: ^0.6.7+14
29   cached_network_image: any
30   firebase_storage: ^5.0.1
31   fluttertoast: ^7.1.1
32   splashscreen: ^1.3.4
33
34   # The following adds the Cupertino Icons font to your application.
35   # Use with the CupertinoIcons class for iOS style icons.
36   cupertino_icons: ^0.1.2
37   flutter_bloc: ^2.1.1
```

1. `google_sign_in` : To access Google Sign-In, you'll need to make sure to register your application
2. `Cloud_firestore`: Flutter plugin for Cloud Firestore, a cloud-hosted, noSQL database with live synchronization and offline support on Android and iOS.
3. `Firebase_auth`: Flutter plugin for Firebase Auth, enabling Android and iOS authentication using passwords, phone numbers and identity providers like Google, Facebook and Twitter.
4. `Shared_preferences` : Flutter plugin for reading and writing simple key-value pairs. Wraps `NSUserDefaults` on iOS and `SharedPreferences` on Android.
5. `Firebase_storage`: Flutter plugin for Firebase Cloud Storage, a powerful, simple, and cost-effective object storage service for Android and iOS.
6. `Image_Picker`: Flutter plugin for selecting images from the Android and iOS image library, and taking new pictures with the camera.
7. `Fluttertoast` Toast Library for Flutter, easily create toast messages in single line of code



System Analysis

System Objectives

Communication over a network is one field where this tool finds wide ranging application. Chat application establishes a connection between 2 or more systems connected over an intranet or ad-hoc. This tool can be used for large scale communication and conferencing in an organization or campus of vast size, thus increasing the standard of co-operation. In addition, it converts the complex concept of sockets to a user-friendly environment. This software can have further potentials, such as file transfer and voice chatting options that can be worked upon later.

PROPOSED SYSTEM ANALYSIS (DFD):



SYSTEM IMPLEMENTATION AND MAINTENANCE

The aim of system implementation is to making the new system available to a prepared set of users (the deployment) and positioning on-going support and maintenance of the system with in the performing company (the transition), at a first level of detail, deploying the system involves of executing all steps important to educate the users on the use of the new system, placing the newly developed system into production, confirming that all data required at the start of operations is available and accurate and valid.

SYSTEM MAINTENANCE

System maintenance is a catchall term used to describe various forms of computer or server maintenance required to keep a computer system running properly. It can describe network maintenance which could mean that servers are being physically repaired, replaced, or moved. Network maintenance can also mean that the software for a server is being updated, changed, or repaired. This sort of maintenance is typically performed on a regular or semi-regular schedule, often during non-peak usage hours, and keeps servers running smoothly. System maintenance for system of ordering online in very important because it will keep the system function as it supposed day by day, and to avoid errors which might occur in multi-function use of the system, so maintenance will make system work properly for long time.

TYPES OF SYSTEM MAINTENANCE

- **Adaptive Maintenance**

Adaptive maintenance, is the type of system maintenance where improvements to the system are important for adaption, program functions are changed to enable the information system to satisfy the information needed by the users, this type of maintenance is necessary because company changes which involves change in the company procedures, change in information needs of managers and change in company objectives, goals and policies.

- **Corrective Maintenance**

Corrective maintenance, is the type of system maintenance where ongoing improvements are made (correcting errors) to ensure the system will still meets the original user requirements, if the system shows errors in this situation developers will have to work on the problem immediately.



- **Perfective Maintenance**

Perfective maintenance, is the type of system maintenance where improving of the system takes place therefore it becomes more refined and more efficient at processing stage, also adding new programs or modifying the existing programs to enhance the performance of the system.

- **Predictive Maintenance**

Predictive maintenance, is the type of system maintenance where strategic changes are made involves anticipation of likely changes to technology or working practices in future, developers not only built the system that will be used by the users but also create monitoring tool, it possible for developers to get third party to monitor the system performance of each user.

SYSTEM DEVELOPMENT

Systems development is, fundamentally, a problem-solving activity. A problem in an application domain is transformed by the systems development process into a solution in the computer's implementation domain.

Front-end Phase:

Front-end and back-end are terms used to characterize program interfaces and services relative to the initial user of these interfaces and services. (The "user" may be a human being or a program). A "front-end" application is one that application users interact with directly. A "back-end" application or program serves indirectly in support of the front-end services, usually by being closer to the required resource or having the capability to communicate with the required resource. The back-end application may interact directly with the front-end or, perhaps more typically, is a program called from an intermediate program that mediates front-end and back-end activities.

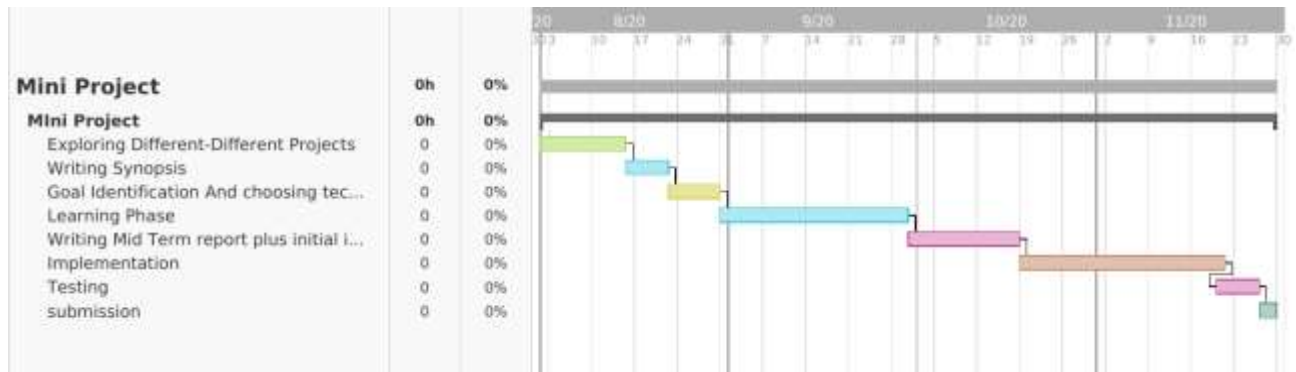
Front-end for the proposed system:

Allows user to order food and send feedback to admin programming language used to develop front-end.



Implementation and System Testing

Gantt Chart



Implementation Methodology

The user interacts with the tool using a GUI.

- The GUI operates in two forms, the List form & the chat form.
- The List form contains the names of all the systems connected to a network.
- The chat form makes the actual communication possible in the form of text.

Relation to External Environment

This tool helps in two major aspects -

- Resolving the names of all the system connected in a network and enlisting them.
- Used for communication between multiple systems enlisted in the resolved list.

Operation of the application based on the inputs given by the user:

List Form:

- When initialized, returns a list containing the names of all the system connected in a network.
- Contains 11 pages i.e Homepage, My account, Search User, Search Group, About Team, Sign In, Create Account, chatroom, Group Chatroom, Chat Page, About Friend
- When Homepage button pressed it shows User's friends,
- Search User allow User to search friends by name In database



- Search group allow User to Search groups And Join Button Allow to Join User to join group
- When User Click Circle Avtar Of His/her Friend It allows User to get info Of His/her friend Like Name, email, Profile Pic, About Me
- On My account Page User Can Update His/her profile And About Me Section
- When the Message button is clicked or a name is double clicked, the chat form is initialized with a connection between the host and the client machine.

Chat form

- Contains a rich textbox which cannot be edited but only displays the messages from one user to another, including the self-sent message, as in any chat application.
- Contains a textbox for messages to be written that is sent across the network.
- Contains a Send button.
- When the sent button is clicked, in the background, the text in the textbox is encoded
- and sent as a packet over the network to the client machine. Here this message is
- decoded and is shown in the rich textbox.
- To make it more realistic, the self-sent message is shown in the rich textbox as well. Both the messages is differentiated by the help of the identifier name at the beginning of each message in the rich text box.

Chat Application will be the interpreter to bring people and ideas together. We have been designing our Chat Application with well- equipped technology. This project is now at development phase, so readers can read the Software Requirement Specification document for details. As we know, master test plan is a living and breathing document that summarizes the overall effort required to test a software product. Master test plan will actually contain the details of individual tests to be run during the testing cycle like unit test, system test, beta test etc. However, our document will categorize and describe each testcase. It will also outline pass-fail criteria and indicate the planned run day or week. This is a quick-reference tracking document for what has to be tested, the priority of test items, what is left to test etc. We strictly follow the instructions provided by our respective course teacher. This is our first test plan documentation, so we also read some sample test plan to gather knowledge about test plan documentation. The estimated time line for this project is a semester. The testing activities are to be done in parallel with the development process.



OBJECTIVE OF TESTING

The important objectives of system testing are to make system defect less/perfect so that it works properly in any condition means it satisfy all conditions and work for all input. System testing simulates real life scenario that occur in a simulated real-life test environment, and tests all functions of the system that are required real life System testing is deemed complete when actual results and expected results are either inline or differences are explainable or acceptable, based on client input.

UNIT TESTING:

Unit testing is a software development process in which the smallest testable parts of an application, called units, are individually and independently scrutinized for proper operation. Unit testing is often automated but it can also be done manually. This testing mode is a component of Extreme Programming (XP), a pragmatic method of software development that takes a meticulous approach to building a product by means of continual testing and revision.

INTEGRATION TESTING:

Integration testing is a logical extension of unit testing. In its simplest form, two units that have already been tested are combined into a component and the interface between them is tested. A component, in this sense, refers to an integrated aggregate of more than one unit. In a realistic scenario, many units are combined into components, which are in turn aggregated into even larger parts of the program. The idea is to test combinations of pieces and eventually expand the process to test your modules with those of other groups. Eventually all the modules making up a process are tested together. Beyond that, if the program is composed of more than one process, they should be tested in pairs rather than all at once.

ACCEPTANCE TESTING:

User Acceptance Testing is often the final step before rolling out the application. Usually the end users who will be using the applications test the application before ‘accepting’ the application. This type of testing gives the end users the confidence that the application being delivered to them meets their requirements. This testing also helps nail bugs related to usability of the application.

1. Some Blogs
2. GitHub



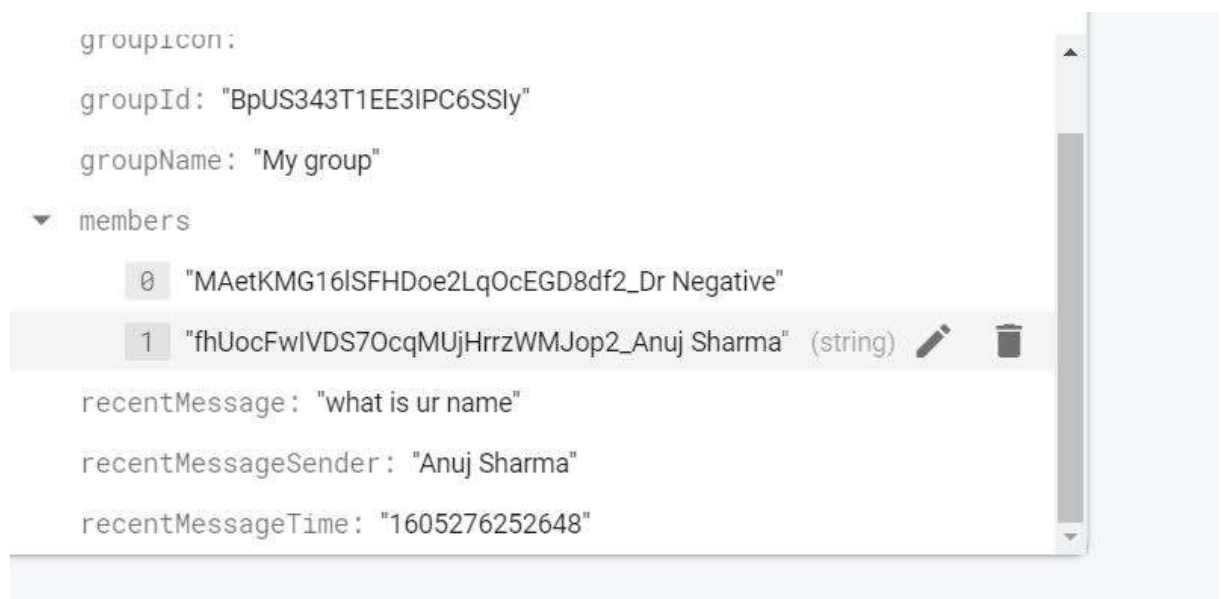
Future Updates And its Progress

1. **Sign In through Google And FaceBook:** it will allow user SignUp and SignIn on Application through its Google And Facebook Account

Progress: We have completed Google Account SignIn And SignUp Feature and Working on Facebook SignIn And SignUp Feature

2. **Recent Message and Recent Message Sender:** This Feature allow user to know who sent recent message and who is sender

Progress: We added these fields into Group Chat Room Database and working on implementation



3. **Group Info:**

this feature allows user to check information regarding group just like for whom this group is made for.

Progress: we have implemented it partially.

4. **Voting for unwanted group members:**

this feature will allow users to remove an unwanted person in group by the help of voting.

Progress: we find a way to accomplish this task but that cannot be implemented because it still has some bugs in it.



5. Saving messages:

this feature will allow a user to save those messages which can be important for him/her in future.

Progress: currently we haven't started to implement it but we are working to find a rigid solution to accomplish this task.

6. Group privacy:

Under this feature we will increase the privacy of groups so that if a newbie wants to join a group, he or she need to take permission from the group members and decision will take place according to majority.

Progress: currently we are working on it.

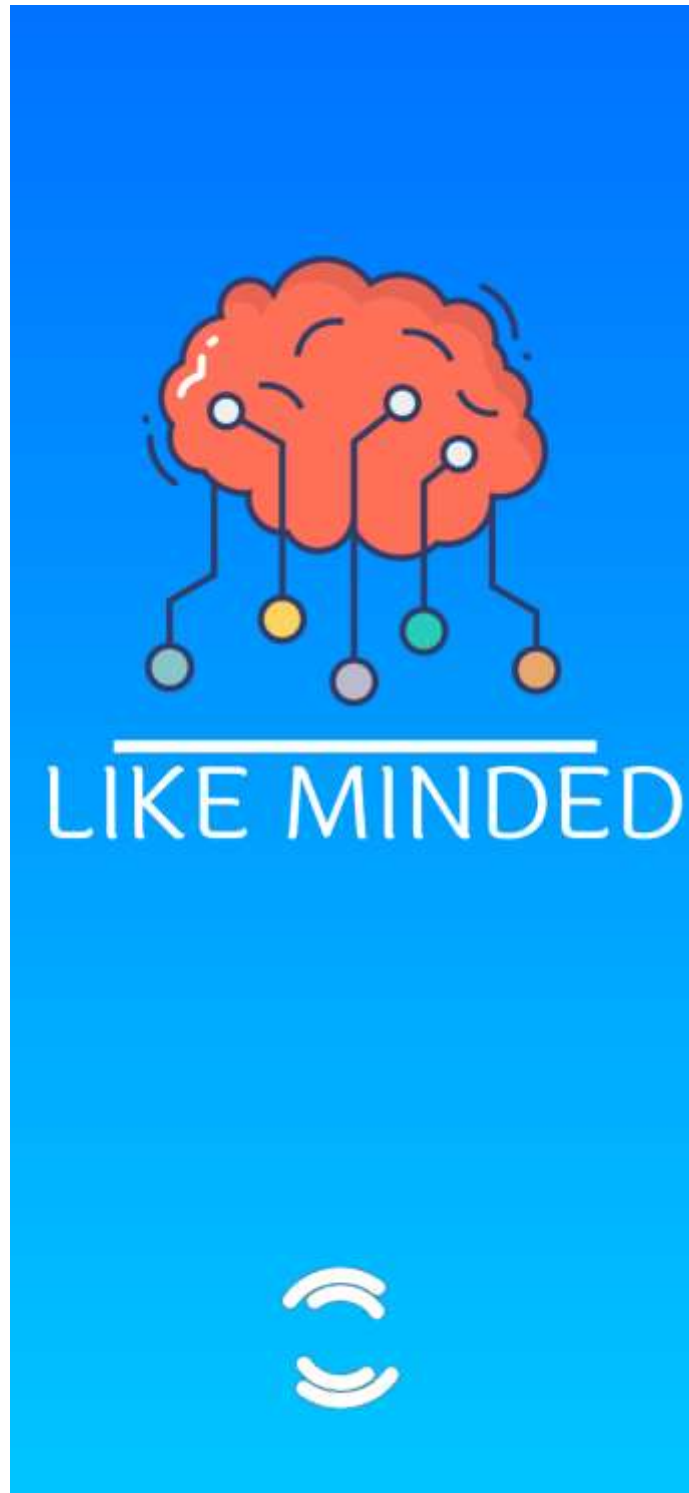
7. Sharing multimedia:

This feature allows a user to share their information in the form of multimedia like images, videos etc.

Progress: we have find a way to share images but still working for rest of other content.



Screenshots



4:44 PM | 1.3KB/s P P

VoLTE

4G

57

Sign Up

First Name

Enter your First Name

Last Name

Enter your Last Name

Email

Enter your Email

Password

Create New Password


Create Account

4:44 PM | 0.6KB/s P P


VoLTE 4G 57

Sign In

Email

 Enter your Email

Password

 Enter your Password



[Forgot Password?](#)

☐ Remember me

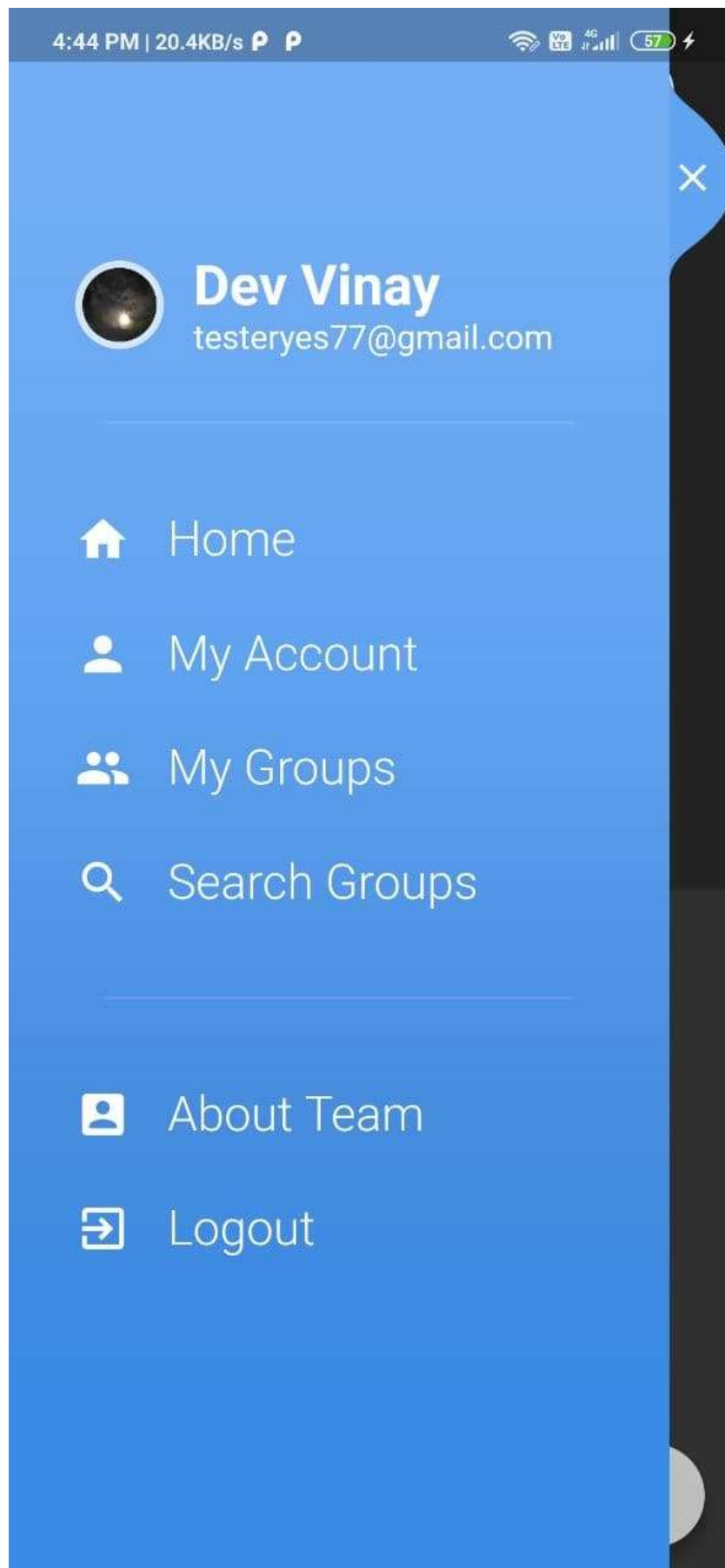
LOGIN

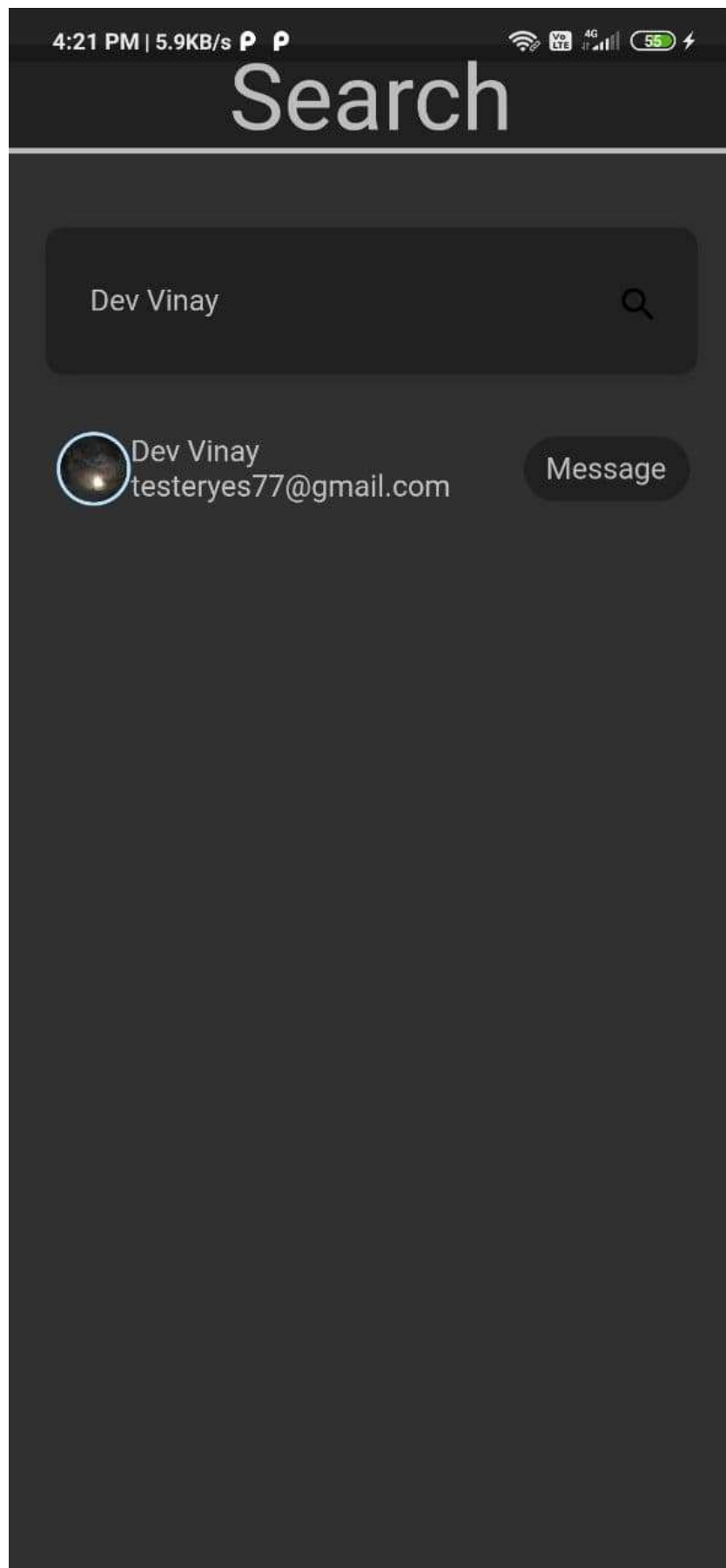
- OR -

Sign in with



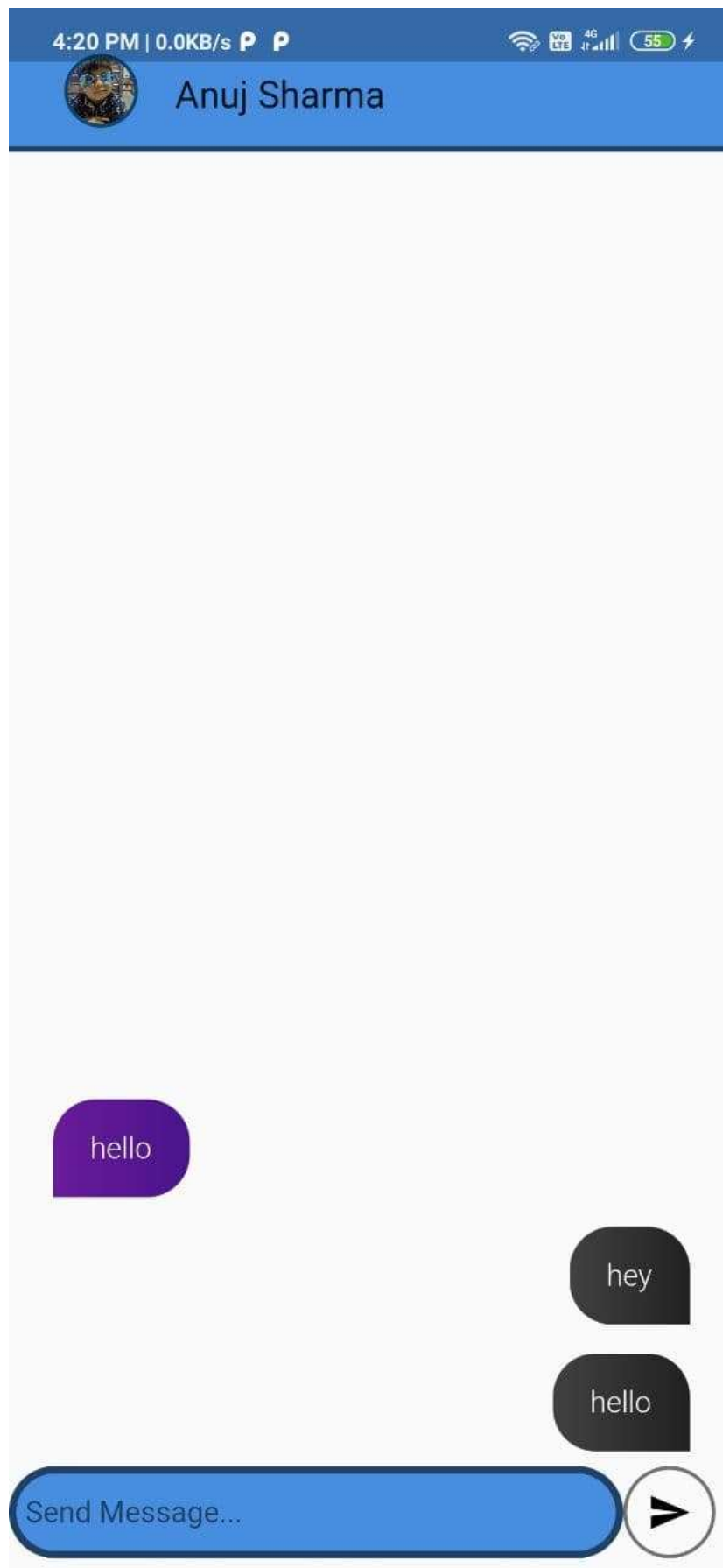
Don't have an Account? [Sign Up](#)

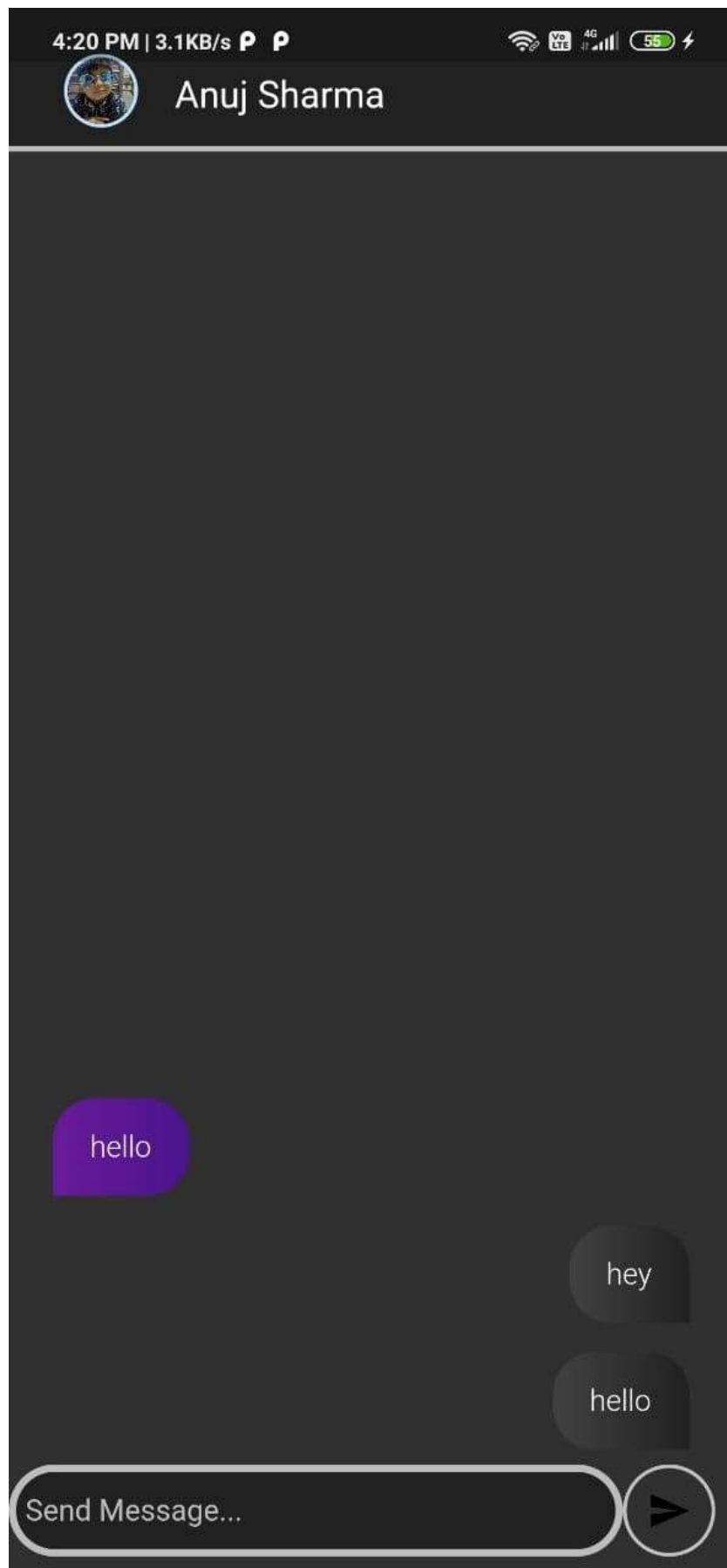


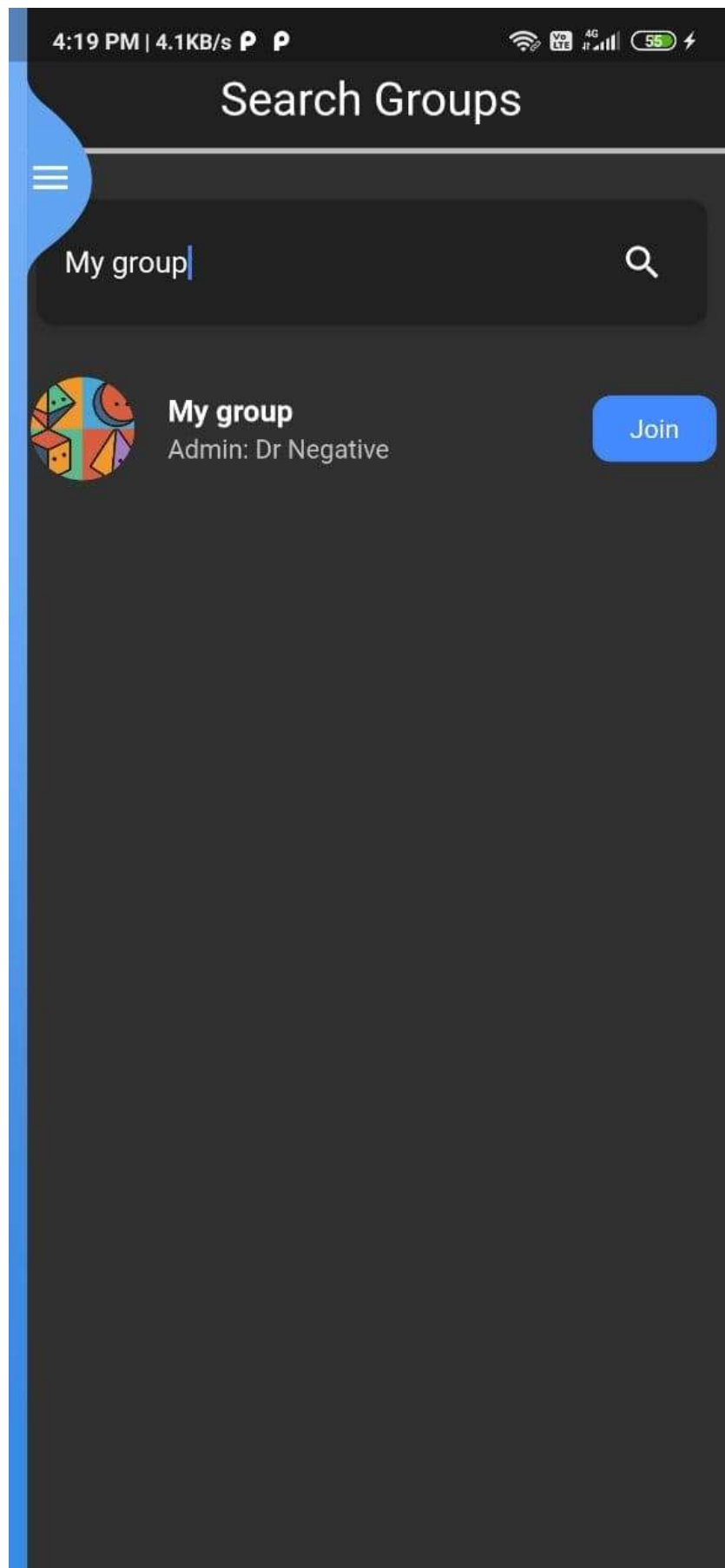


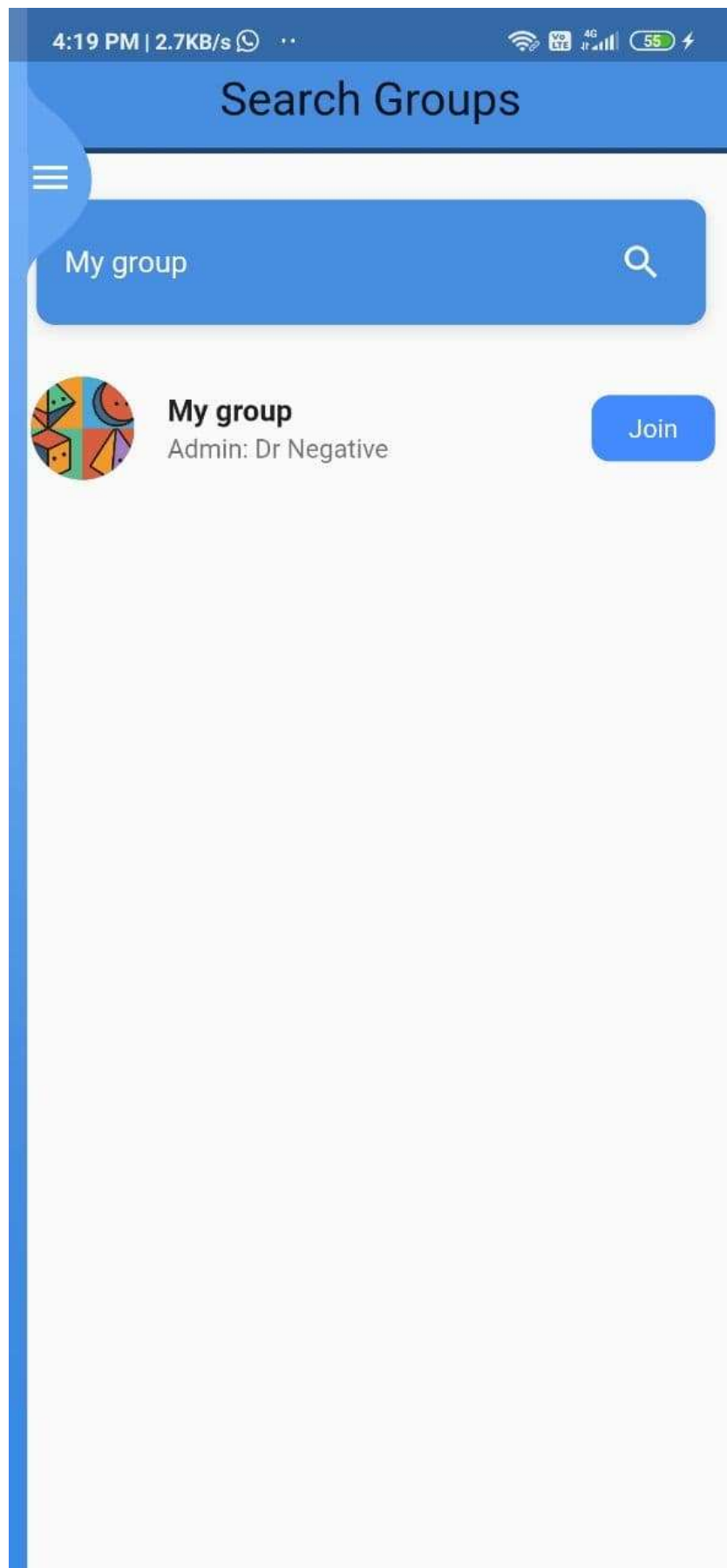


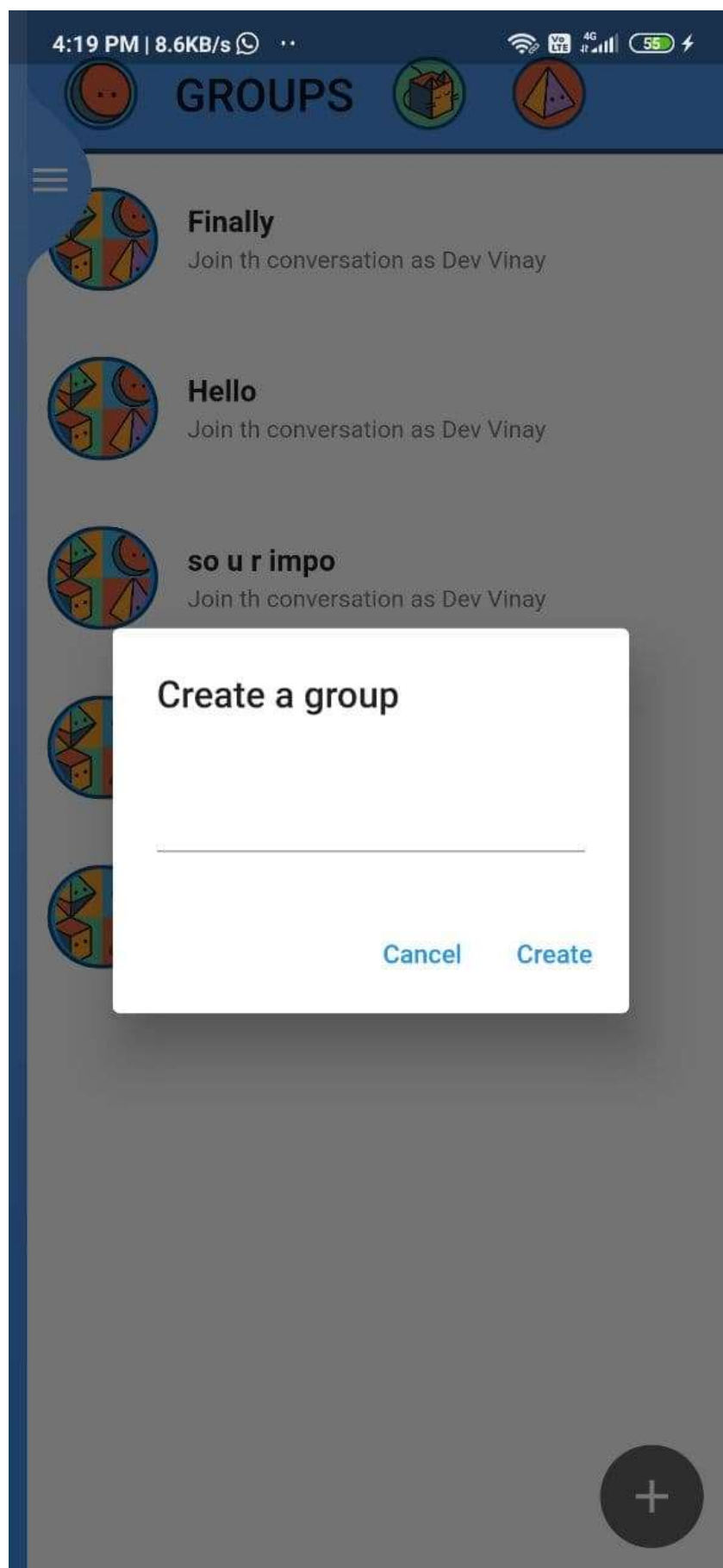


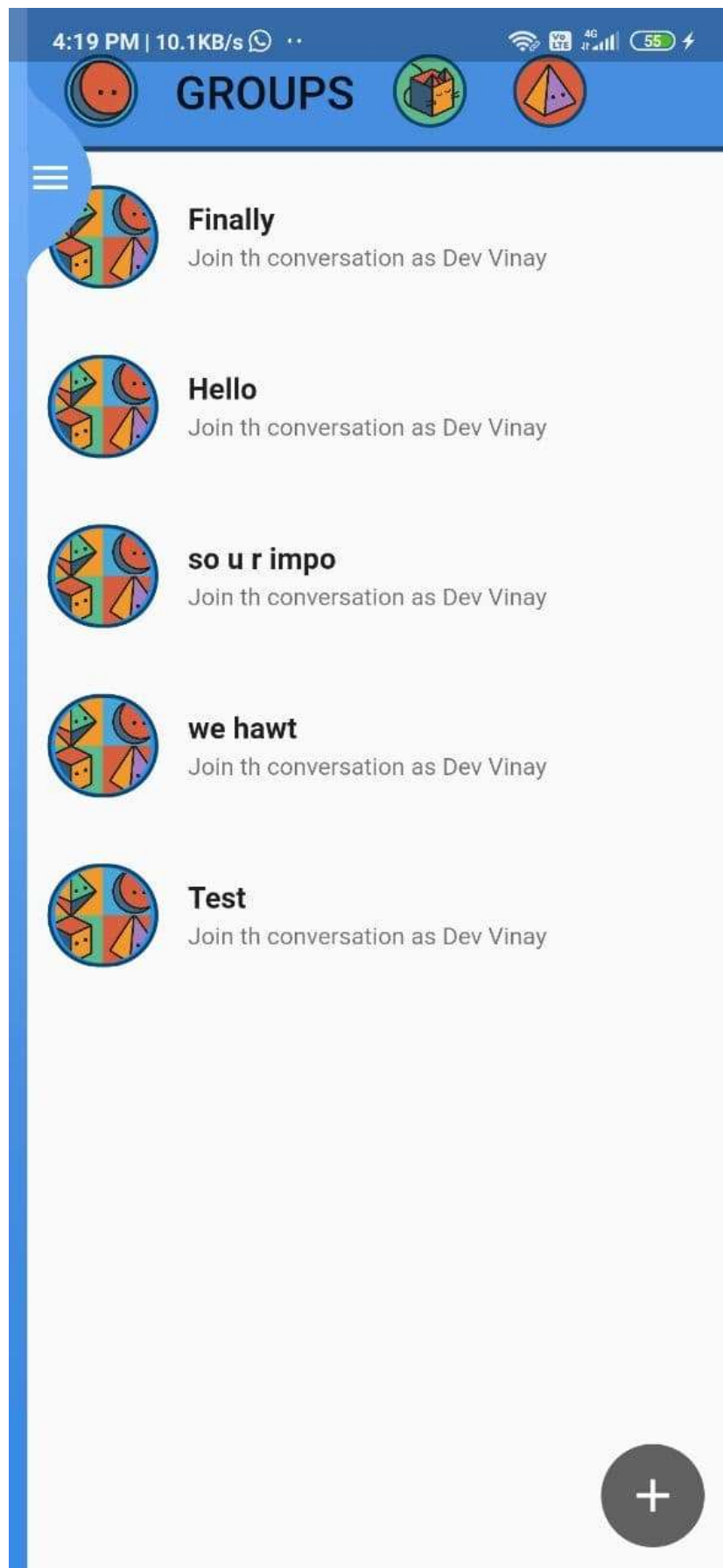


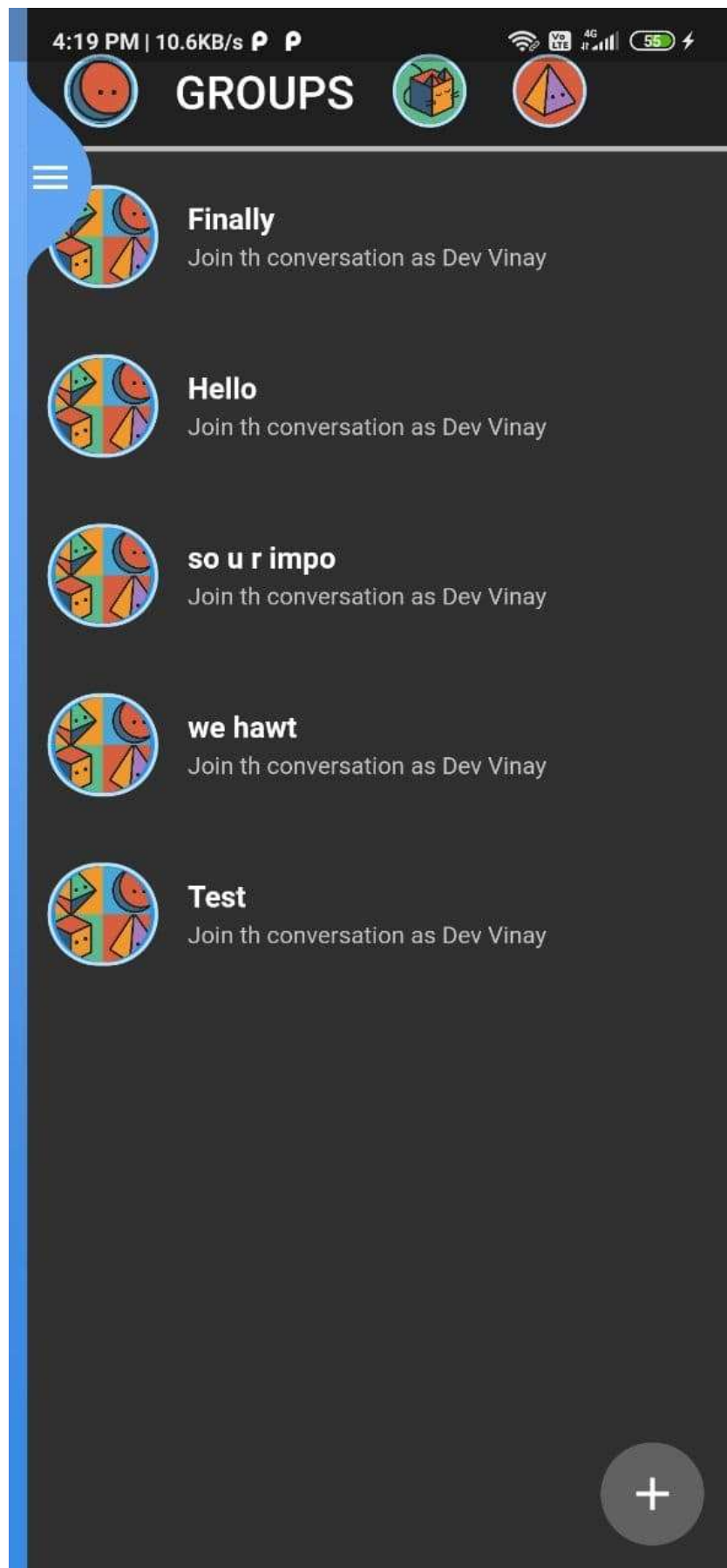


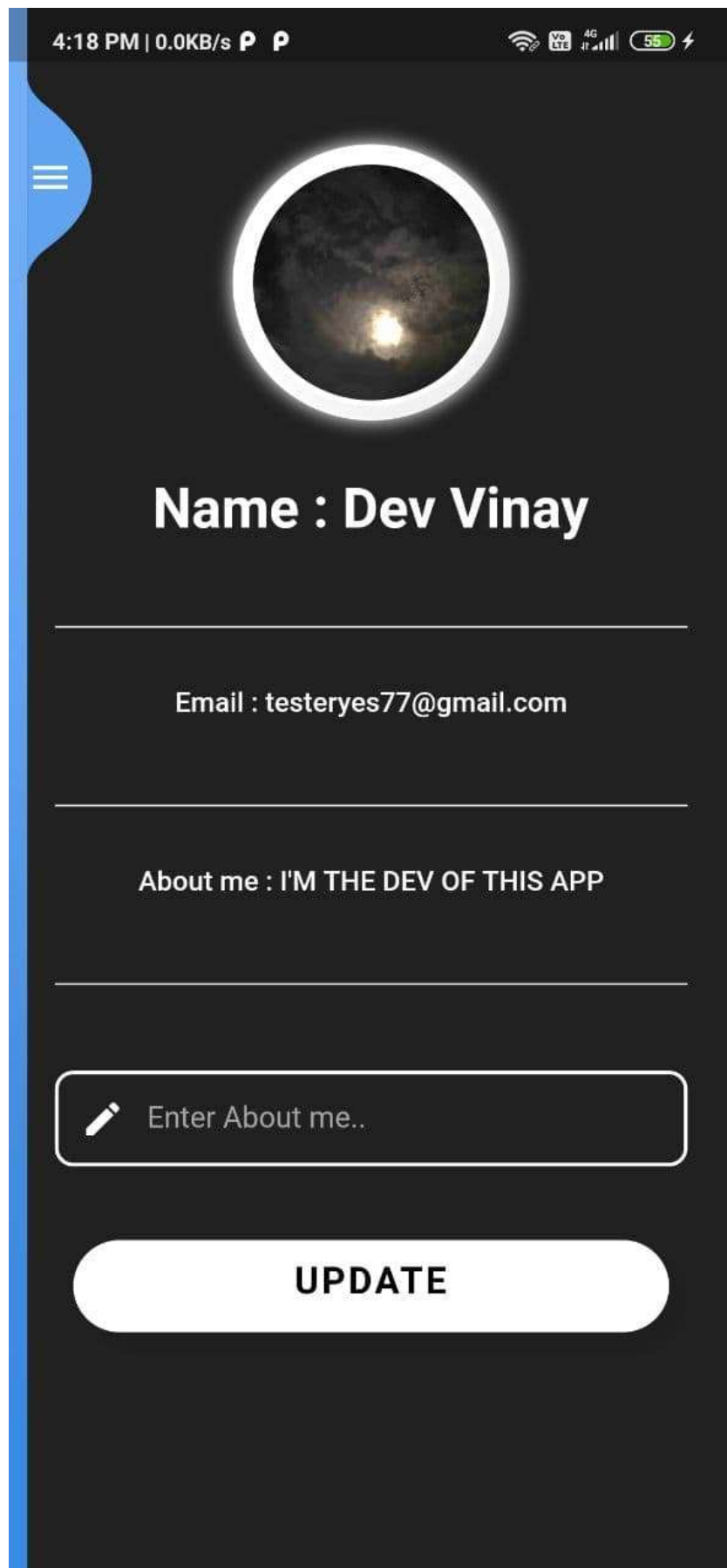













The screenshot shows a mobile application interface with a dark theme. At the top, a status bar displays the time as 4:18 PM, data usage as 0.0KB/s, and battery level at 56%. A blue sidebar on the left contains a hamburger menu icon. The main content area features a circular profile picture of a starry night sky. Below the image, the name 'Name : Dev Vinay' is displayed in large white text. This is followed by the email 'Email : testeryes77@gmail.com' and the bio 'About me : I'M THE DEV OF THIS APP'. A text input field with a pencil icon and the placeholder 'Enter About me..' is positioned below the bio. At the bottom, a large white button with the text 'UPDATE' is centered.

4:18 PM | 0.0KB/s P P

56%


☰



Name : Dev Vinay






Email : testeryes77@gmail.com

About me : I'M THE DEV OF THIS APP


 Enter About me..


UPDATE

4:18 PM | 5.0KB/s P P



55






Name : Dev Vinay

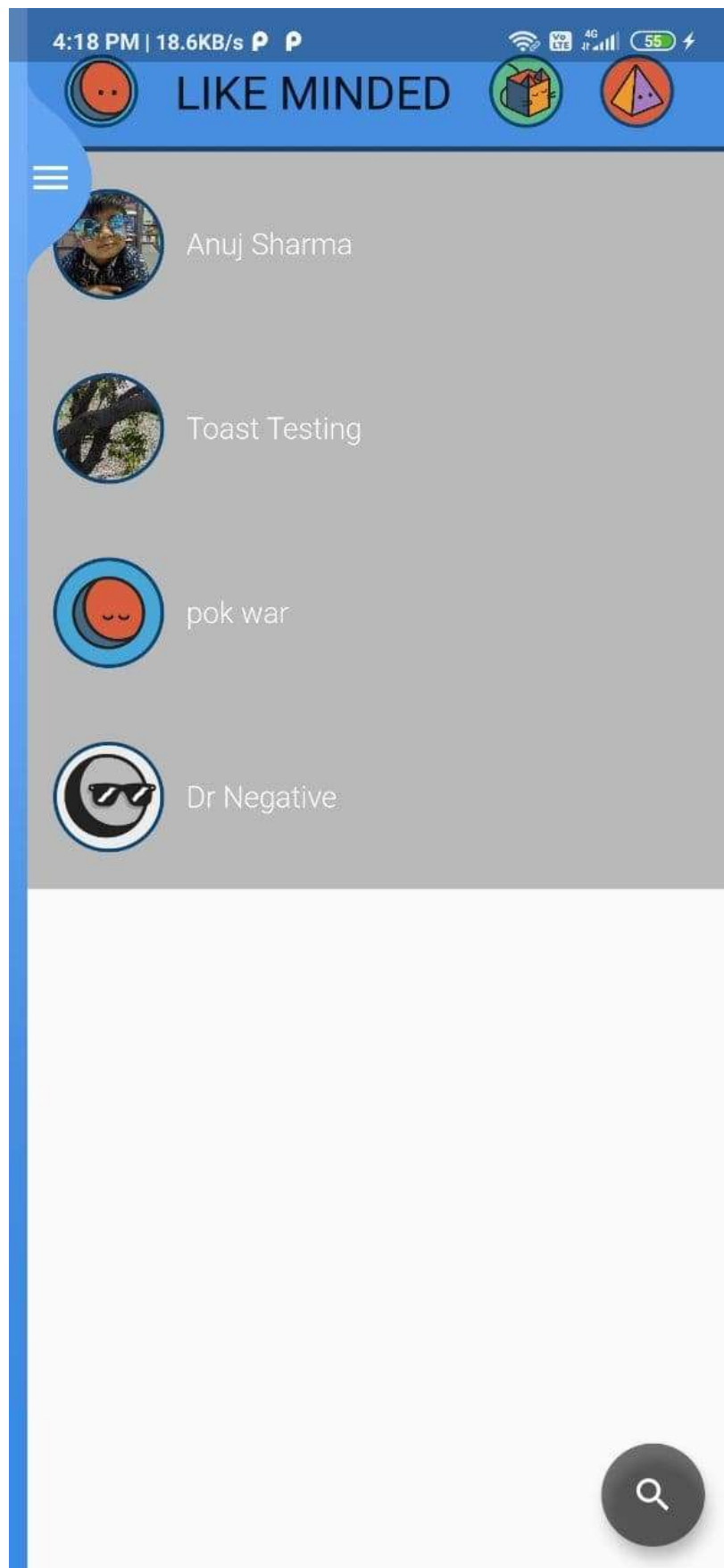
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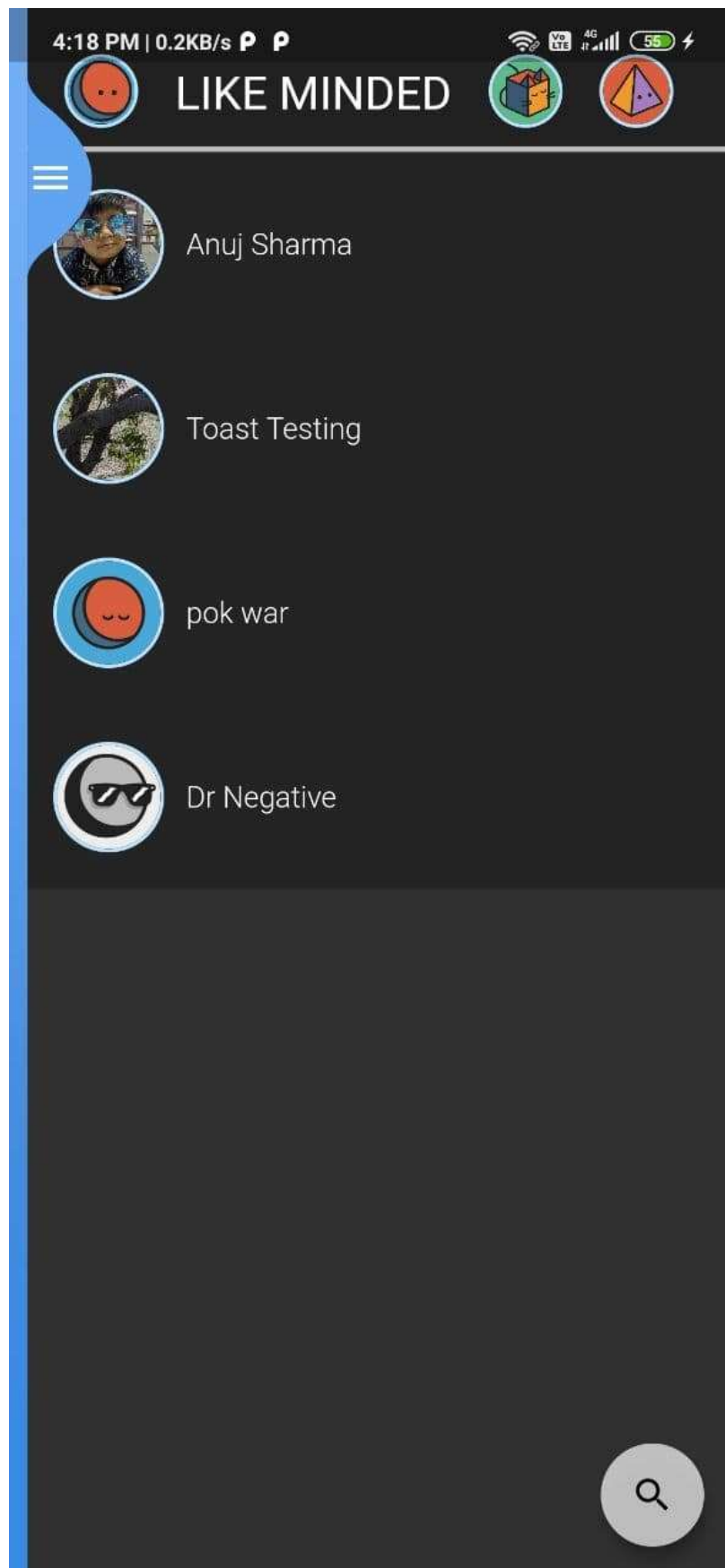
About me : I'M THE DEV OF THIS APP

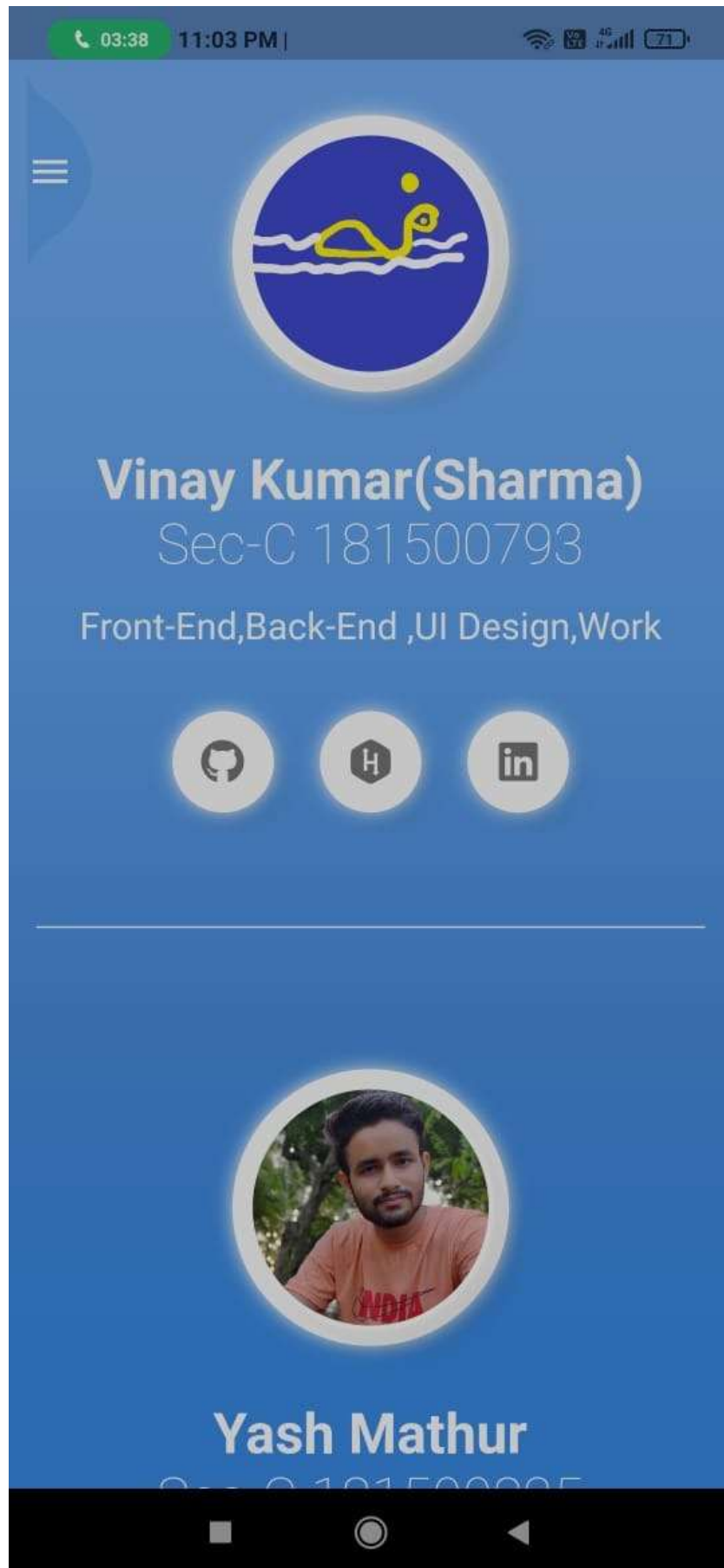
 Enter About me..

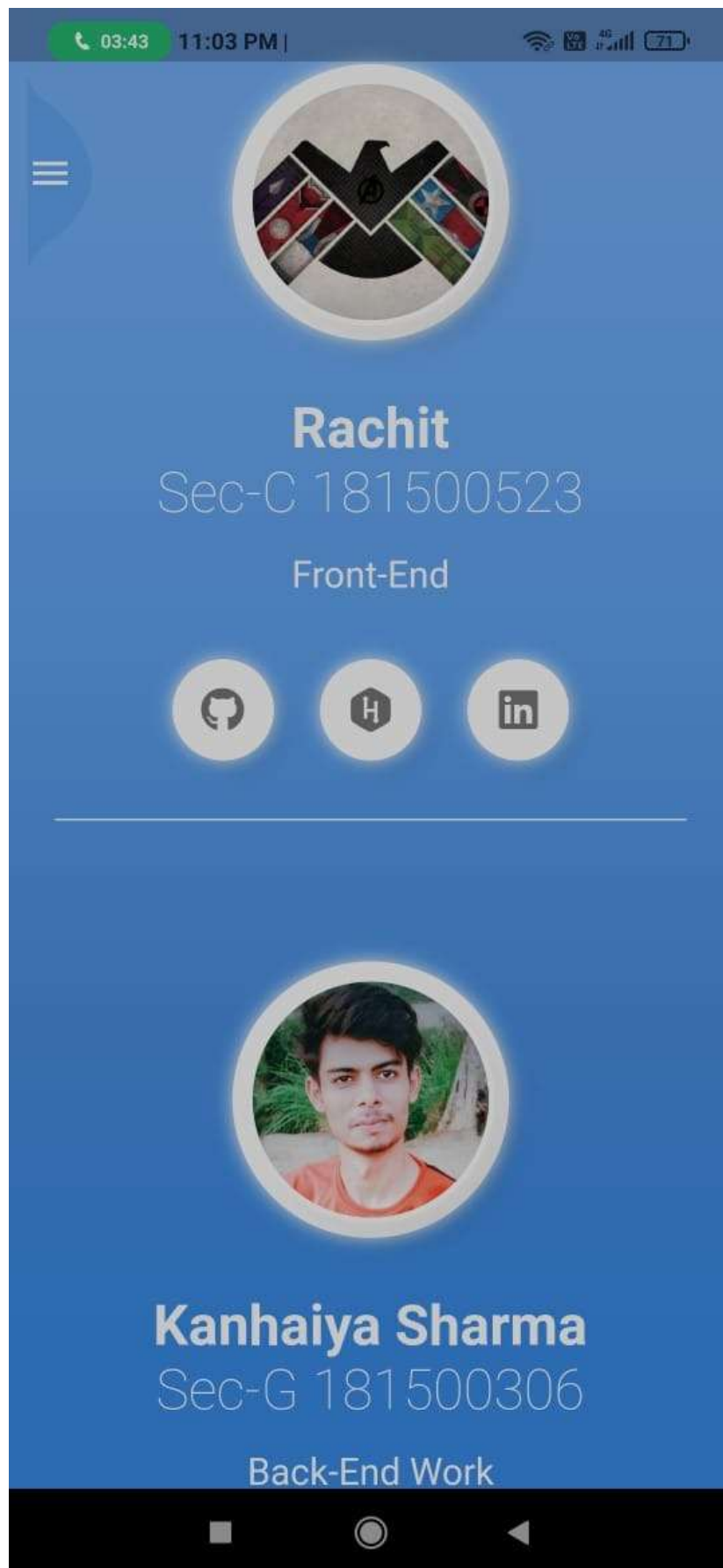
UPDATE

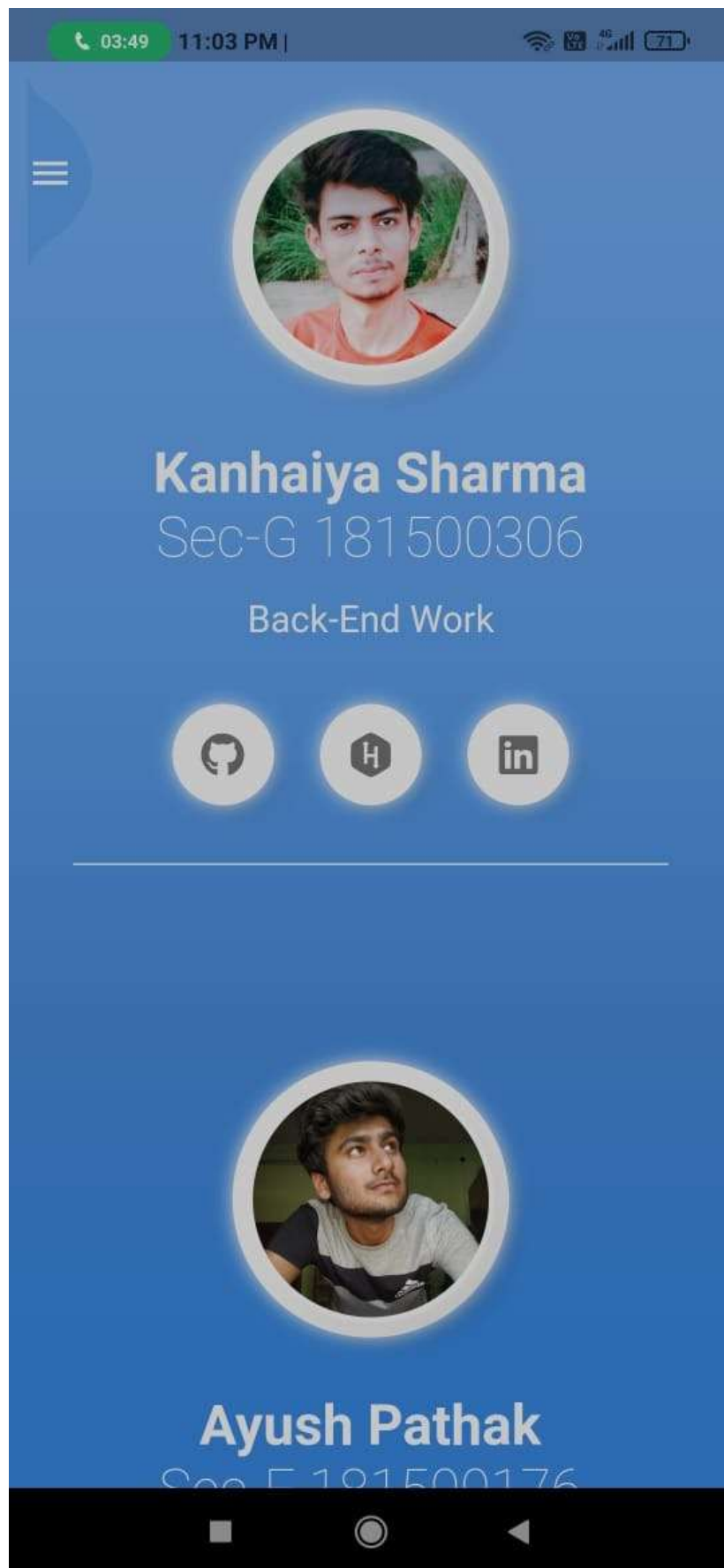


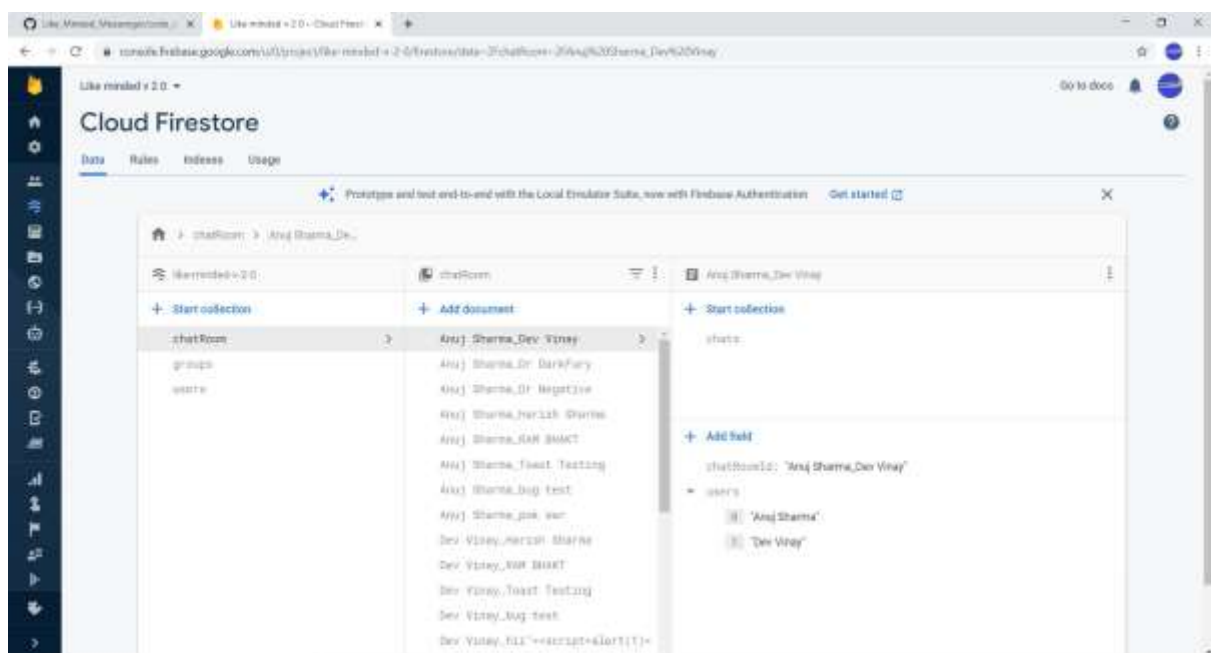
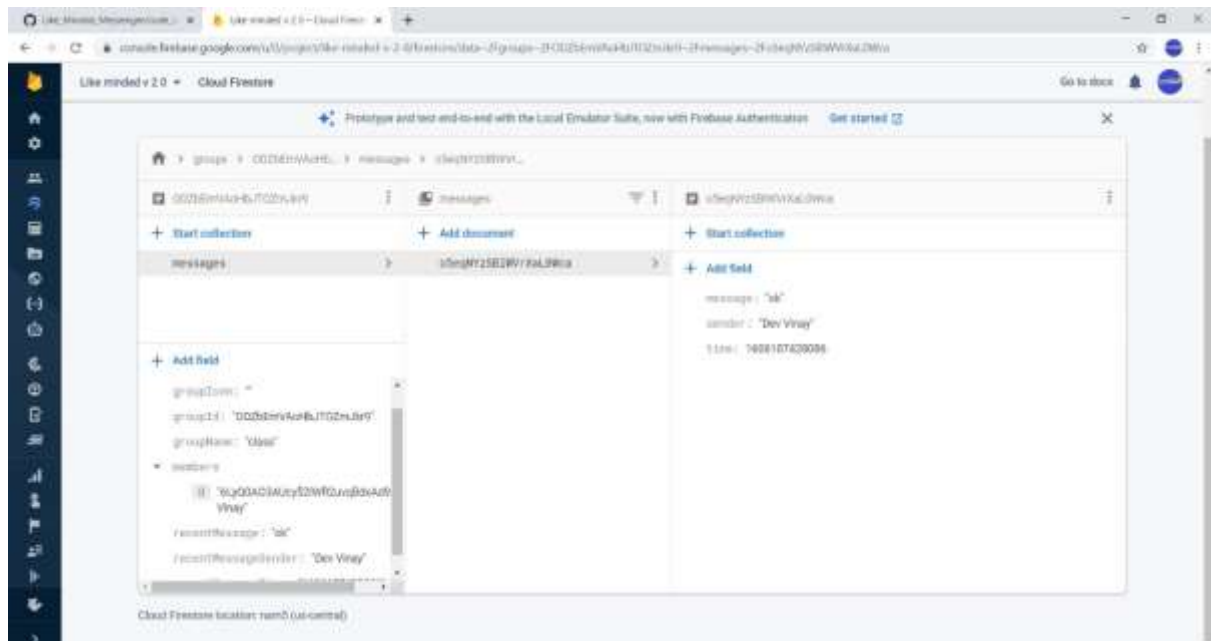


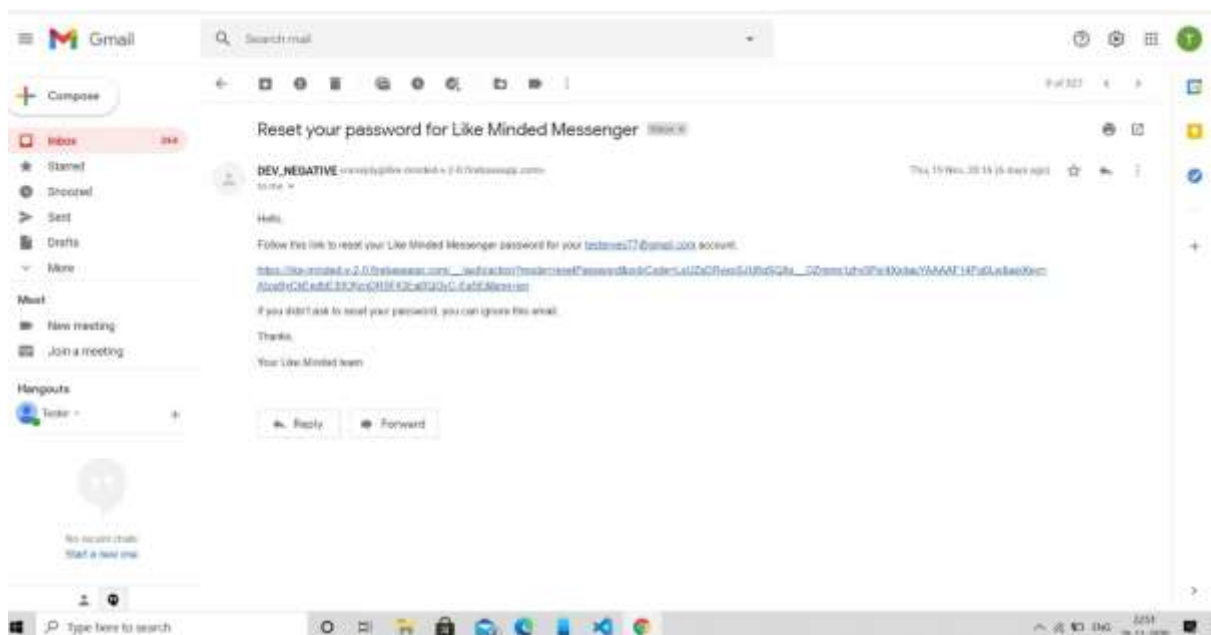
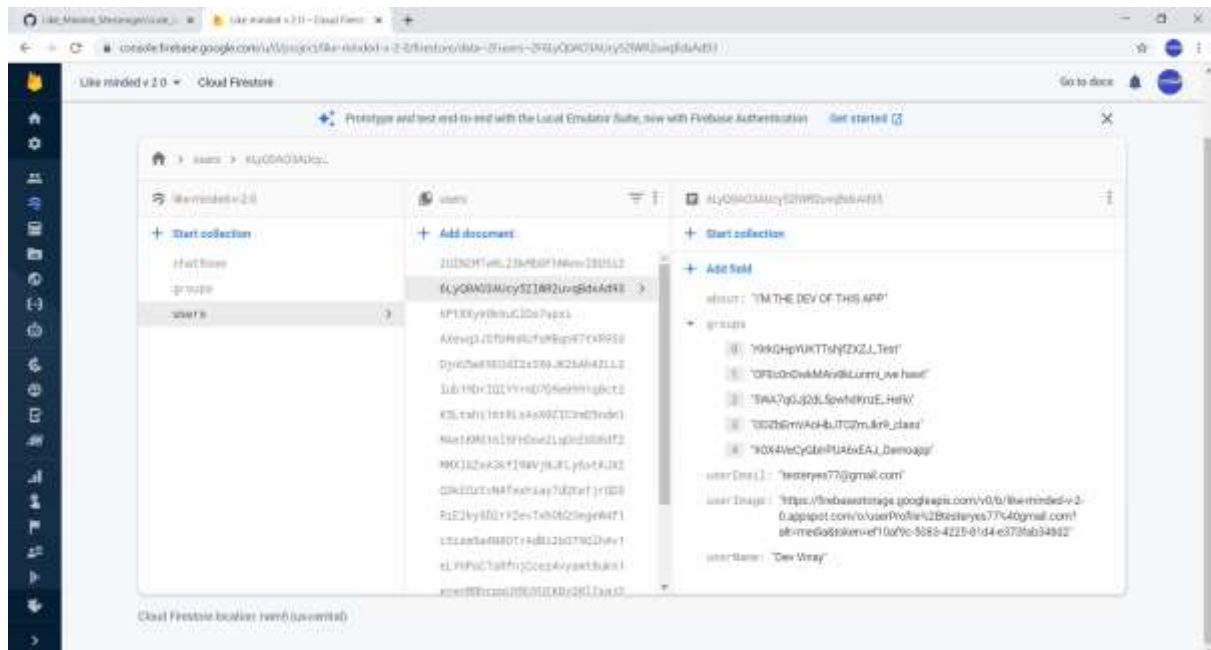















```

//custom

static Future<bool> saveUserEmailSharedPreference(String userEmail) async {
  SharedPreferences preferences = await SharedPreferences.getInstance();
  return await preferences.setString(sharedPreferenceUserEmailKey, userEmail);
}

/// fetching data from sharedPreference
static Future<bool> getIsLoggedInSharedPreference() async {
  SharedPreferences preferences = await SharedPreferences.getInstance();
  return await preferences.getBool(sharedPreferenceIsLoggedInKey);
}

static Future<String> getUsernameSharedPreference() async {
  SharedPreferences preferences = await SharedPreferences.getInstance();
  return await preferences.getString(sharedPreferenceUsernameKey);
}

static Future<String> getUserEmailSharedPreference() async {
  SharedPreferences preferences = await SharedPreferences.getInstance();
  return await preferences.getString(sharedPreferenceUserEmailKey);
}

//custom

```

OUTPUT TERMINAL DEBUG CONSOLE PROBLEMS 1/2

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell <https://aka.ms/powershell>
PS C:\dev_negative\lm_login

```

import 'package:shared_preferences/shared_preferences.dart';

class HelperFunctions {
  static String sharedPreferenceIsLoggedInKey = "ISLOGGEDIN";
  static String sharedPreferenceUsernameKey = "USERNAMEKEY";
  static String sharedPreferenceUserEmailKey = "USEREMAILKEY";
  //custom
  //static String sharedPreferenceUserImageKey = "USERIMAGEKEY";

  /// saving data to sharedPreference
  static Future<bool> saveIsLoggedInSharedPreference(
    bool isLoggedInIn) async {
    SharedPreferences preferences = await SharedPreferences.getInstance();
    return await preferences.setBool(
      sharedPreferenceIsLoggedInKey, isLoggedInIn);
  }

  static Future<bool> saveUsernameSharedPreference(String username) async {
    SharedPreferences preferences = await SharedPreferences.getInstance();
    return await preferences.setString(sharedPreferenceUsernameKey, username);
  }

  //custom
  //static Future<bool> saveUserImageSharedPreference(String userImage) async {
    //SharedPreferences preferences = await SharedPreferences.getInstance();
  }
}

```

OUTPUT TERMINAL DEBUG CONSOLE PROBLEMS 1/2

Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/powershell>
PS C:\dev_negative\lm_login


```

24 // create group
25 future createGroup(String username, String groupName) async {
26   documentReference groupDocRef = await groupCollection.doc().
27     getGroup() ? groupDocRef : groupDocRef;
28   update({ username,
29     members: [] },
30     { username: username,
31       groupName: groupName,
32       recentMessage: '',
33       recentMessageIndex: 0 });
34   // update groupDocRef
35   await groupDocRef.update({
36     members: FieldValue.arrayUnion([username]),
37     groupName: groupName,
38     recentMessage: '',
39     recentMessageIndex: 0 });
40   // logging the user group info
41   documentReference userDocRef = userCollection.doc(username);
42   return await userDocRef.update({
43     groups: FieldValue.arrayUnion([groupDocRef.id + ' ' + groupName])
44   });
45 }

```

OUTPUT TERMINAL DEBUG CONSOLE

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PS C:\dev\negative\like_minded>

```

50 void initState() {
51   getInitialChatData();
52   user.initState();
53 }
54
55 getInitialChatData() async {
56   FirebaseFirestore.instance.collection('chatrooms').doc(chatroomId).get().then((chatroom) {
57     setState(() {
58       chatrooms = chatrooms;
59       print('we got the data: $chatrooms.toString() this is name: ${Constants.myName}');
60     });
61   });
62 }
63
64 customAppBar() {
65   return Container(
66     child: Container(
67       decoration: BoxDecoration(
68         border: Border(
69           bottom: BorderSide(
70             color: Theme.of(context).accentColor, width: 1), // bottomside // border
71             color: Theme.of(context).primaryColor,

```

OUTPUT TERMINAL DEBUG CONSOLE

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Try the new cross-platform PowerShell <https://aka.ms/powershell>
PS C:\dev\negative\like_minded>

```

1 // dart-sdk/lib/_internal/main.dart
2
3 import 'dart:io';
4 import 'dart:ui' as ui;
5 import 'package:flutter/foundation.dart';
6 import 'package:flutter/material.dart';
7 import 'package:flutter/services.dart';
8 import 'package:flutter/widgets.dart';
9 import 'package:flutter/rendering.dart';
10 import 'package:flutter/cupertino.dart';
11 import 'package:flutter/painting.dart';
12 import 'package:flutter/cupertino.dart';
13 import 'package:flutter/cupertino.dart';
14
15 //void main() async {
16   WidgetsFlutterBinding.ensureInitialized();
17   await Future.delayed(Duration.zero);
18   runApp(MaterialApp(debugShowCheckedTreeBanner: false, home: Authentication()));
19 }
20
21 //void main() async {
22   WidgetsFlutterBinding.ensureInitialized();
23   await Future.delayed(Duration.zero);
24   runApp(MyApp());
25 }
26
27 class MyApp extends StatelessWidget {
28   //void main() {
29     Authentication.ensureInitialized();
30   }
31 }
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```

```

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8 import 'package:flutter/widgets.dart';
9 import 'package:flutter/rendering.dart';
10 import 'package:flutter/cupertino.dart';
11 import 'package:flutter/painting.dart';
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