An Application Project on Mental Healthcare

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled **"An Application Project on Mental Healthcare"**, submitted by Md. Mamun Talukder, ID No: 163-15-8548 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 11 September 2021.

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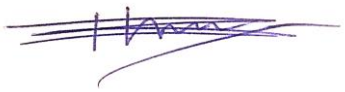

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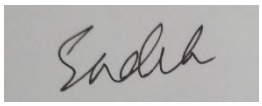

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. Riazur Rahman, Sr. Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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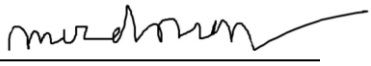

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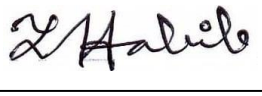

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We really are grateful and wish our profound indebtedness to **Mr. Riazur Rahman**, **Sr. Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*android app development*" to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advices, reading many inferior drafts and correcting them at all stages have made it possible to complete this project.

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

According to a study 20.6% of U.S. adults experienced mental illness in 2019[1]. The percentage is 1 in 5 adults. For children it is 5.2%. That is a very high percentage and it reflects on how much we neglect our mental health. The situation is worse in Bangladesh. Above 18-year-old it is 18.7%. Prevalence was highest among those of 60 years and above at 20.2% [2]. Yet there is not enough talk about this issue in hanging Bangladesh. So, I wanted to work on this issue and make a platform where we can focus on mental health

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CHAPTER 1

Motive

1.1 Introduction

As said in the beginning we hardly pay any attention to our mental health. So, this application will be all about mental health and raise awareness. Suicide is increasing at an alarming late and we want to prevent it. So, we are hoping for it to be a platform and professional treatment place. Also, it'll be online based as we often feel ashamed or hesitant to meet experts for mental health as it isn't seen in a positive light in our country. So, we hope to keep the secrecy while providing a platform and health. So, I named the application Psyche (a home for your soul). Where all can relax and find help.

Figure 1.10: Psyche

1.2 Initial Motive

In our country we seldom pay attention to mental health. But mental health is just as important as physical health. So, with that in my mind, I wanted to create a platform that will make us more aware of mental health's importance and also help us stay healthy mentally. We want everyone to live without stress or depression.

1.3 Motive at Current Situation

Due to lockdown and covid 19 we are always at home and economy is worse than ever. So, we are feeling more and more stressed each progressing day. So, I think this application is needed now more than ever. We already have enough to deal with. We wouldn't want mental health to drag us down even more. So, I think we all should focus on mental health.

Chapter 2

Challenges

2.1 Questions to Answer

As Bangladesh isn't a developed country our education rate might be high in primary level but it gets lower as time progress and we head towards higher education. So, I need to make a platform that everyone can use and gather together for a healthy conversation. It needs to be available for everyone and easy to use. But security cannot be lax. So how do we do that! To reach out to more people and not lose on quality. How to reach out to rural people! People who cannot use internet.

2.2 Challenges to Solve

Here our income is not too high, some people can barely manage to survive. At such situations mental health care can be considered a luxury. So how do we reach out to them and make people willing to care for mental health. Not to mention the issues said. As Bangladesh isn't a developed country our education rate might be high in primary level but it gets lower as time progress and we head towards higher education. So, I need to make a platform that everyone can use and gather together for a healthy conversation. It needs to be available for everyone and easy to use. But security cannot be lax. So how do we do that! To reach out to more people and not lose on quality. How to reach out to rural people! People who cannot use internet. So, we needed to answer those for the app to work. There's also e-commerce to handle.

2.3 Solutions

As most people in Bangladesh use android phone in Bangladesh, I decided to go with android native platform. I used java as I've been using it for a long time. As for people who cannot use Internet, we want to keep an emergency hotline for them. As well as free service for the poor. Bkash or similar method will be used for e-commerce. And we will improve and improvise along the way.

Chapter 3

Tools and Reason for Using

3.1 List of tools

Java, xml, android studio, firebase firestore, firebase database, jitsi, github

3.2 Reasons for using

I'm most comfortable with those tools. They're easy to use but secure. While working with this project, I came to realize how much we need to pay attention to small subtle details. For example, the first problem I faced was which languages to use. There are cross platform languages and multiple native languages. But I know java the most among them so I decided to stick with java. The next issue came right after, while making the log in interface. How to make it simple as most people in our country aren't proficient with internet and smartphone usage. So which login methods should I use to keep it simple but also not make it valuable to crash and exploitation? So, I stayed with firebase authentication. Currently I kept the log in with email and password as the default log in option, but I plan to add phone number authentication to make it simpler for the masses.

I'm also using firebase authentication to assign everyone unique user ID and keeping track of them. But before log in, comes account creation. For that, I used firebase authentication and firebase firestore. To keep track of users and easy search, I stored the username and email in firestore so that we can find a user easily and get in touch with them.

Chapter 4

Design specifications

4.1 Log in And Register

Ever since I was young, I got this one request a lot, "hey help me make a Facebook account. Help me make a WhatsApp account etc.". So, while working with this project I was thinking how do I make it so that it'll be easier to log in and anyone can do it! Cause if I make it unnecessary complex or ask for too much information it might hamper the user experience and make it harder for a majority of them people to make an account, especially the elderly. So, I looked for a solution for that. As I'm using firebase, I looked what solutions it can provide, what log in and registration options it has. And the result was quite a lot [3]. So, I went with some of the simple but secure option. As we need to make sure our app isn't getting spammed with fake accounts and crash or get attacked. So, we need to make a system that'll be easy but also limits users from making too many unnecessary fake accounts and guarantee their safety. That's a tall order to fulfill. So, we're still trying to improvise on it. For now, I've put only Register with email option. But we'll add the log in with phone number option later as it's a lot easier to do but secure. So, this is what we've got for log in and register.

Figure 4.1.0: Loading screen

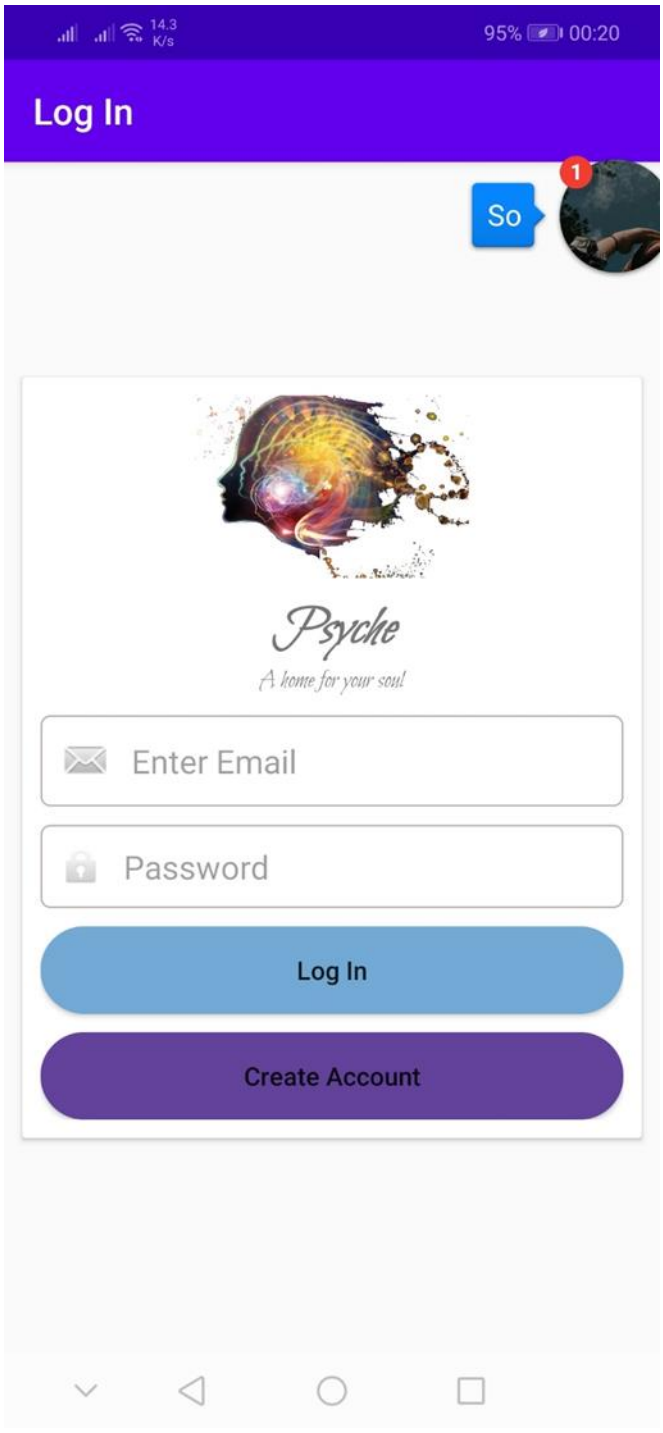


Figure 4.1.1: Log in

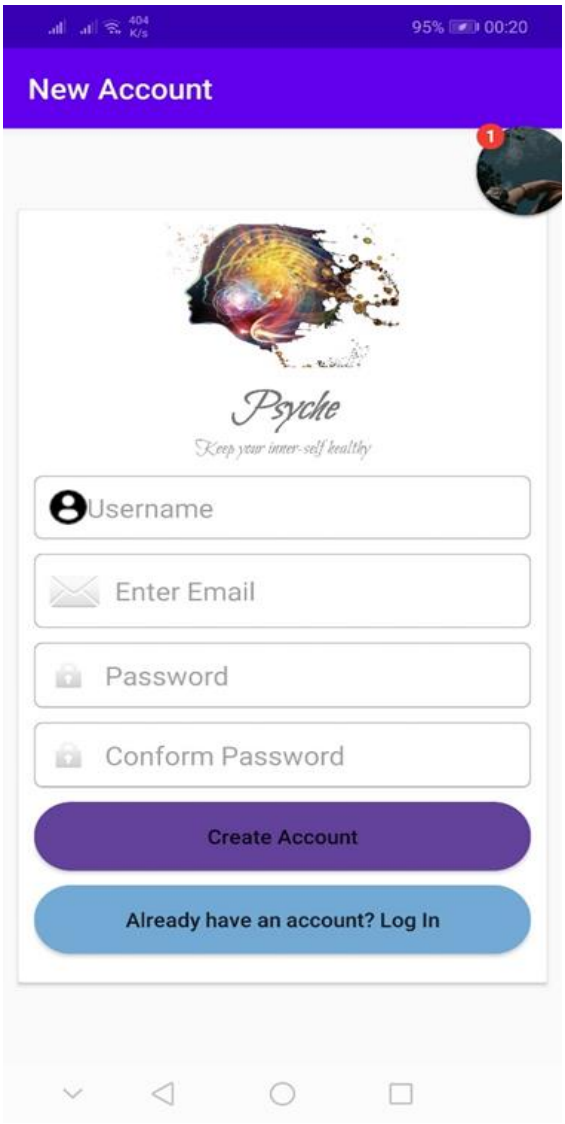


Figure 4.1.3: User register

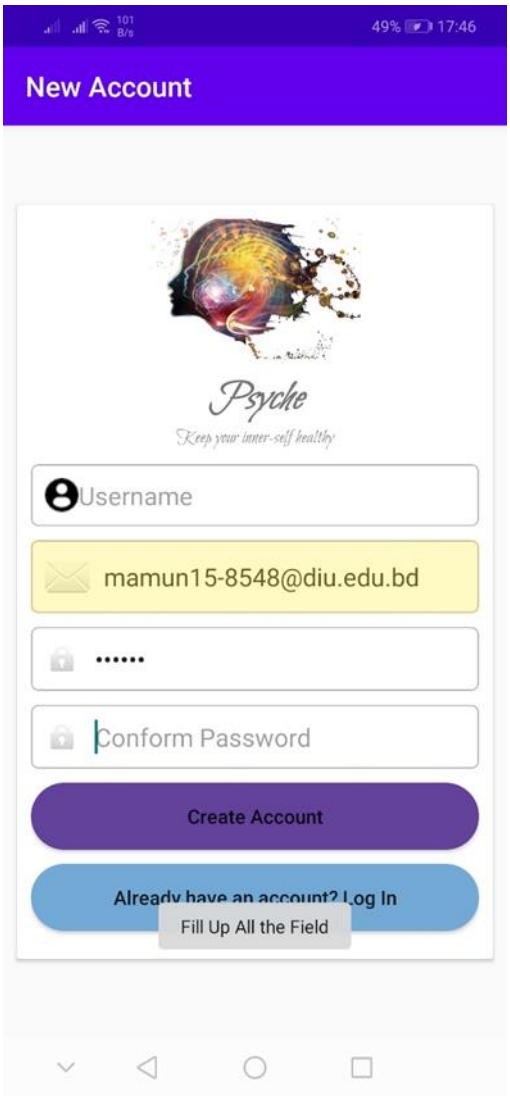


Figure 4.1.3: User register

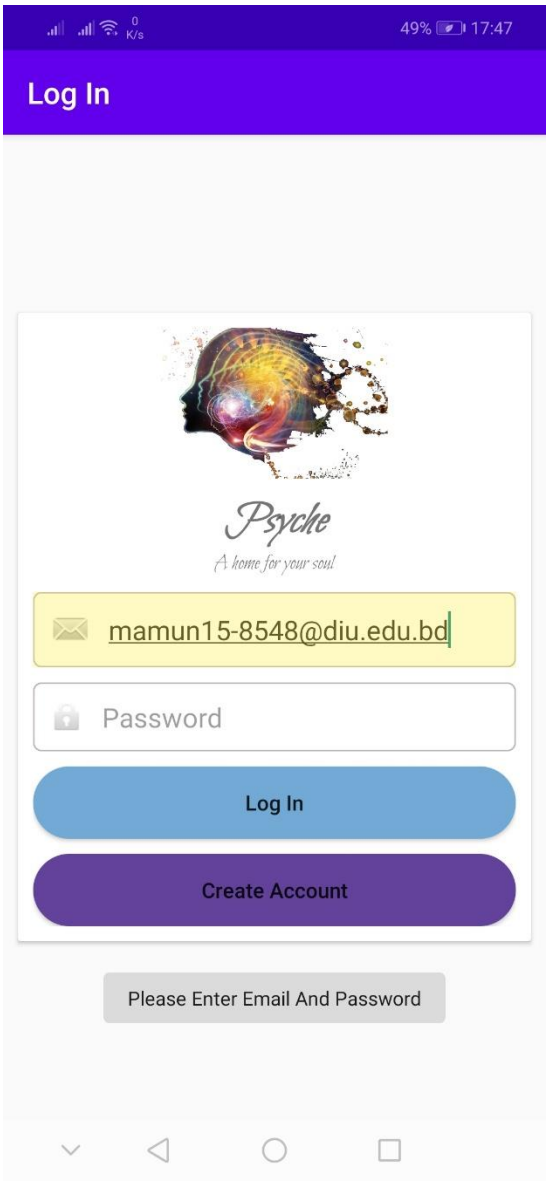


Figure 4.1.4: Log in authentication

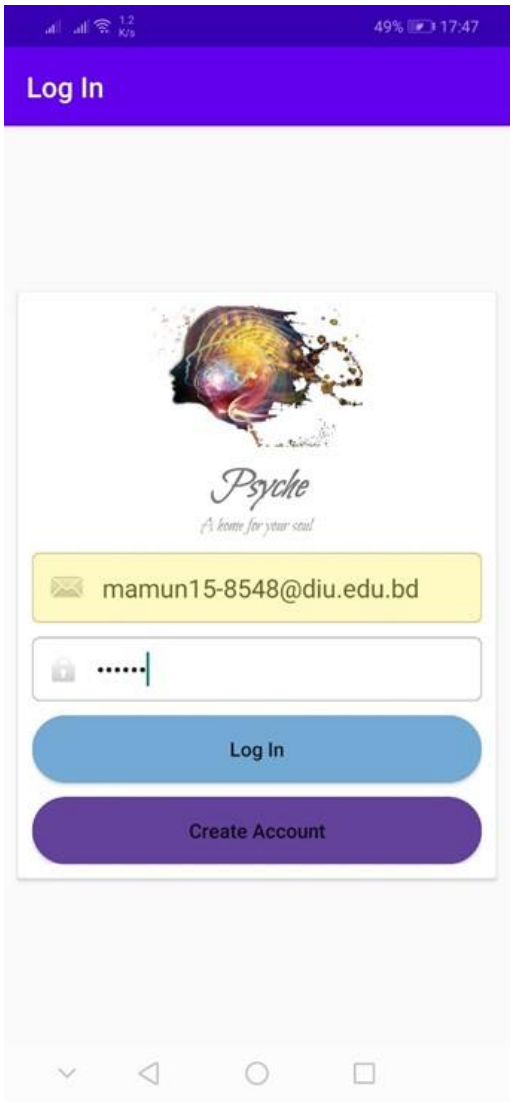


Figure 4.1.4: Log In Authentication

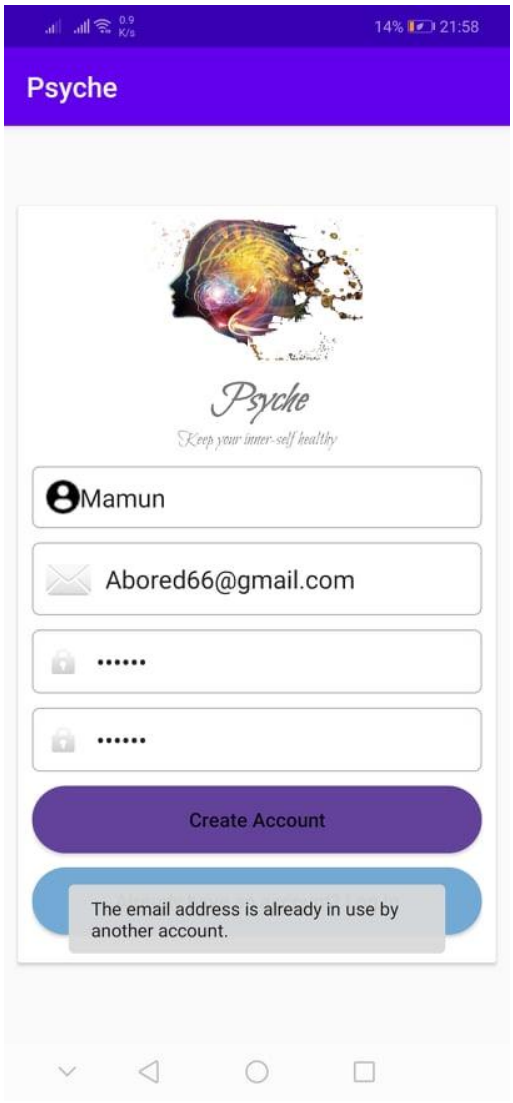


Figure 4.1.6: Only One Account per e-mail

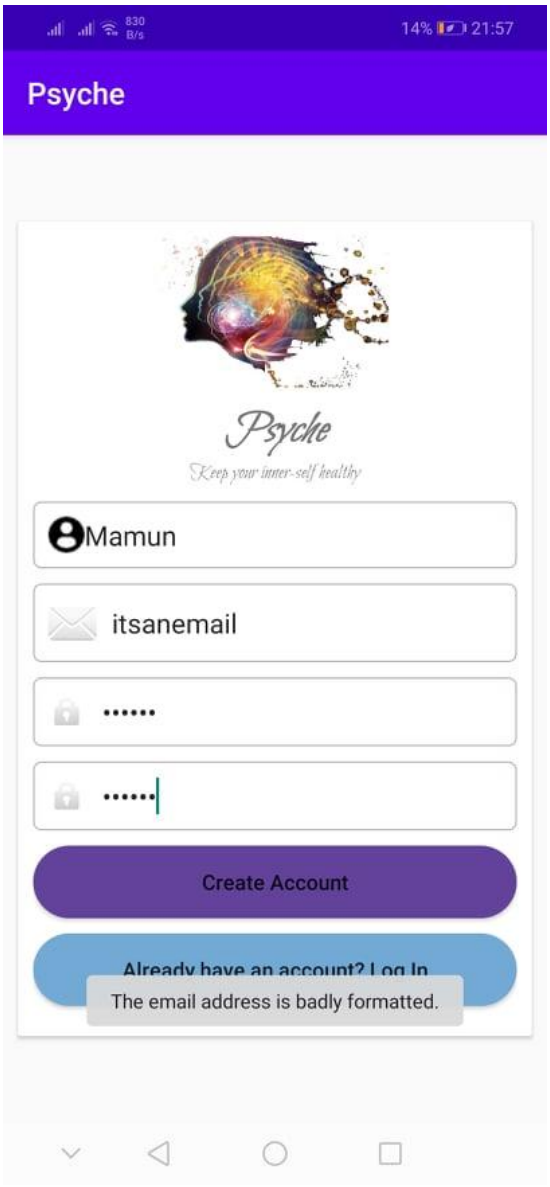


Figure 4.1.7: Correct E-mail Format

4.2 Homepage

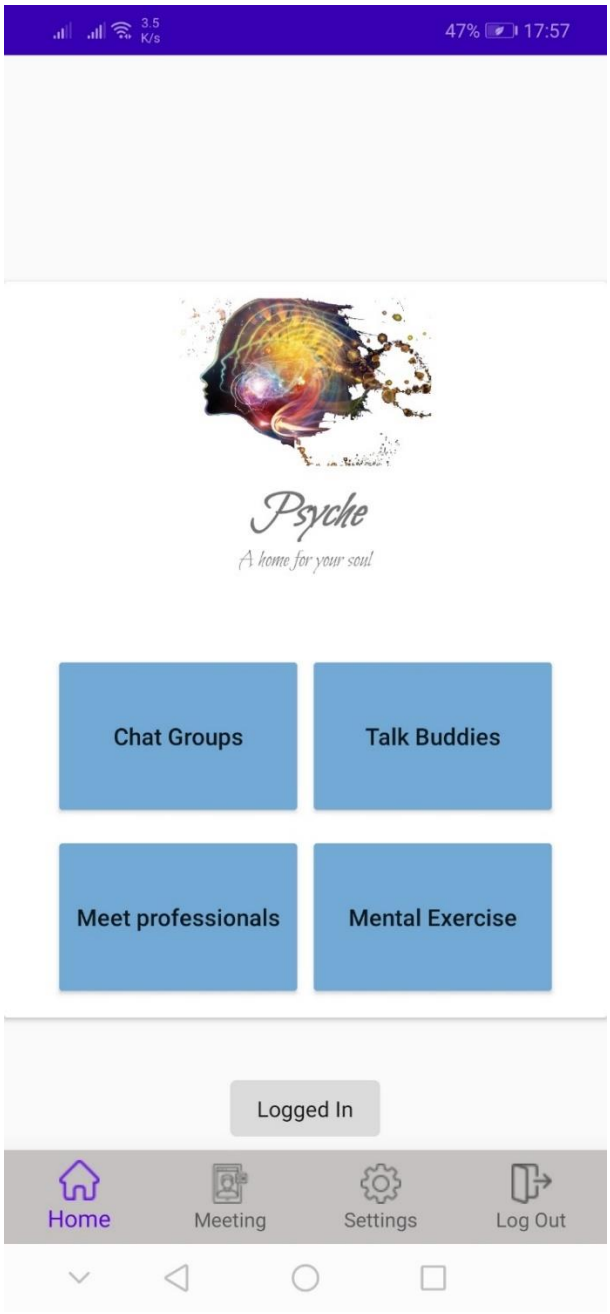


Figure 4.2: Main Menu

We can navigate to any place from here. Making it an easy transit point. We can access any place of the app from there.

4.3 Emergency Talking Friends

Sometimes, we lose all hope and just want to give up. As a result, suicide rate increases. For such times we have this emergency helpline of volunteers to listen to people at any time and help them get through tough times.

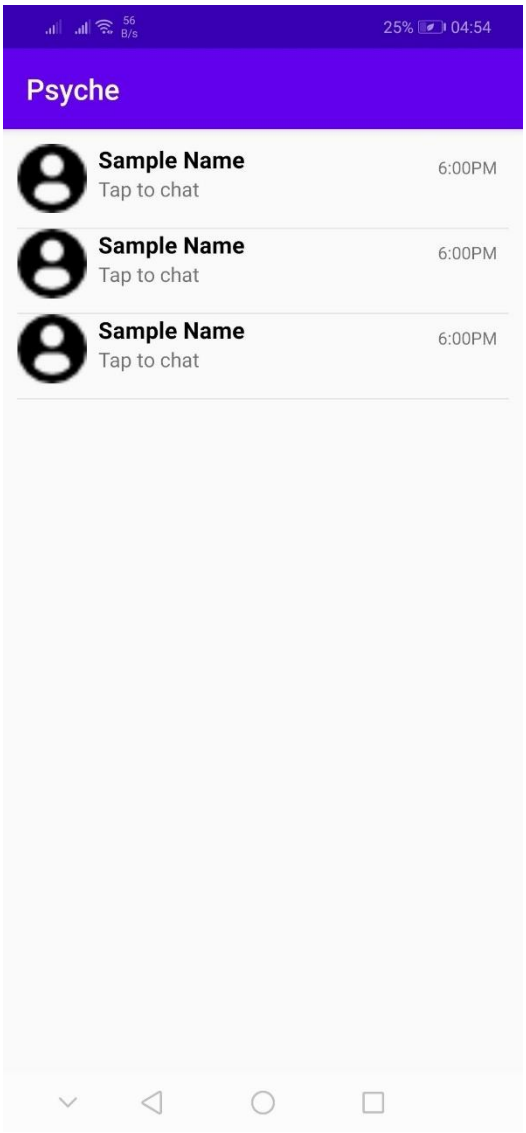


Figure 4.3.1: Emergency lines

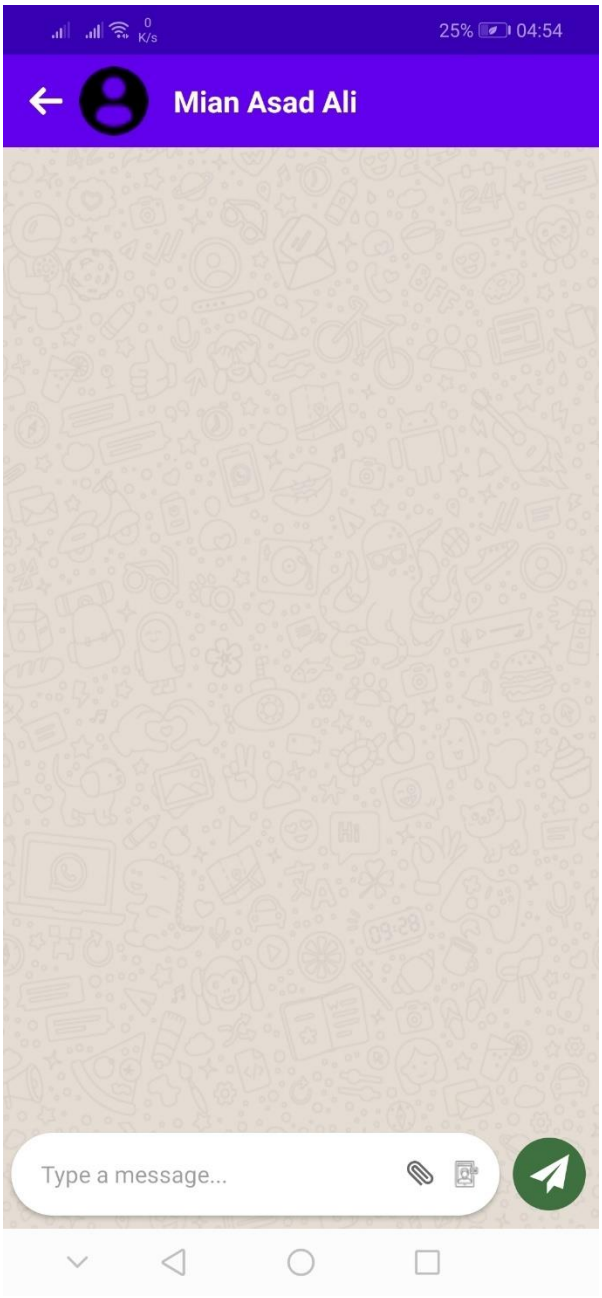


Figure 4.3.2: Quick Chat

4.4 Find and Meet Professionals

Here we can find list of available professionals and seek their help and know about their schedule. We can appoint and arrange a meeting.

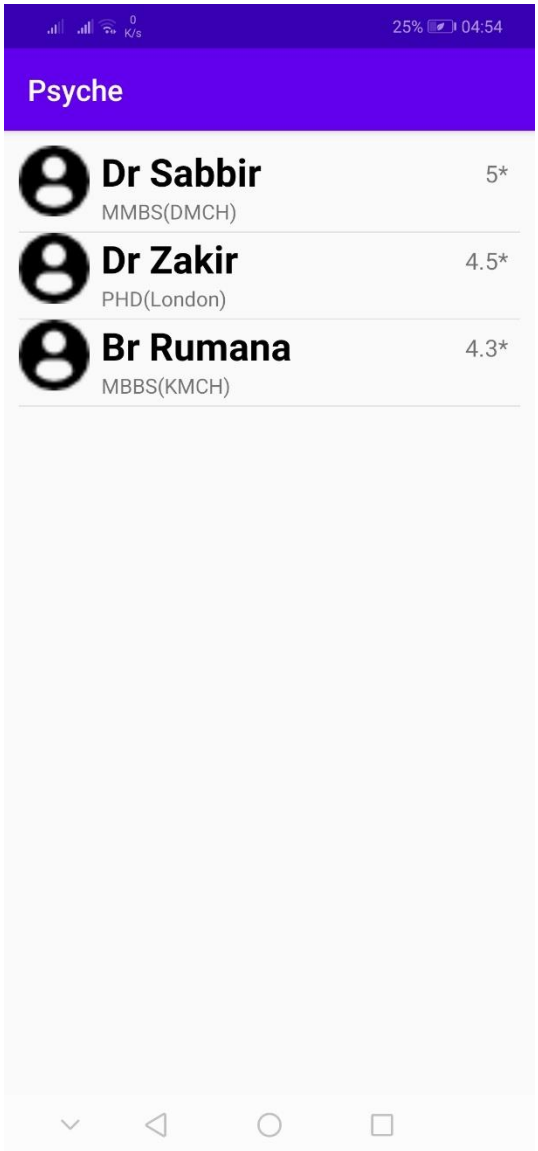


Figure 4.4.1: List of professionals

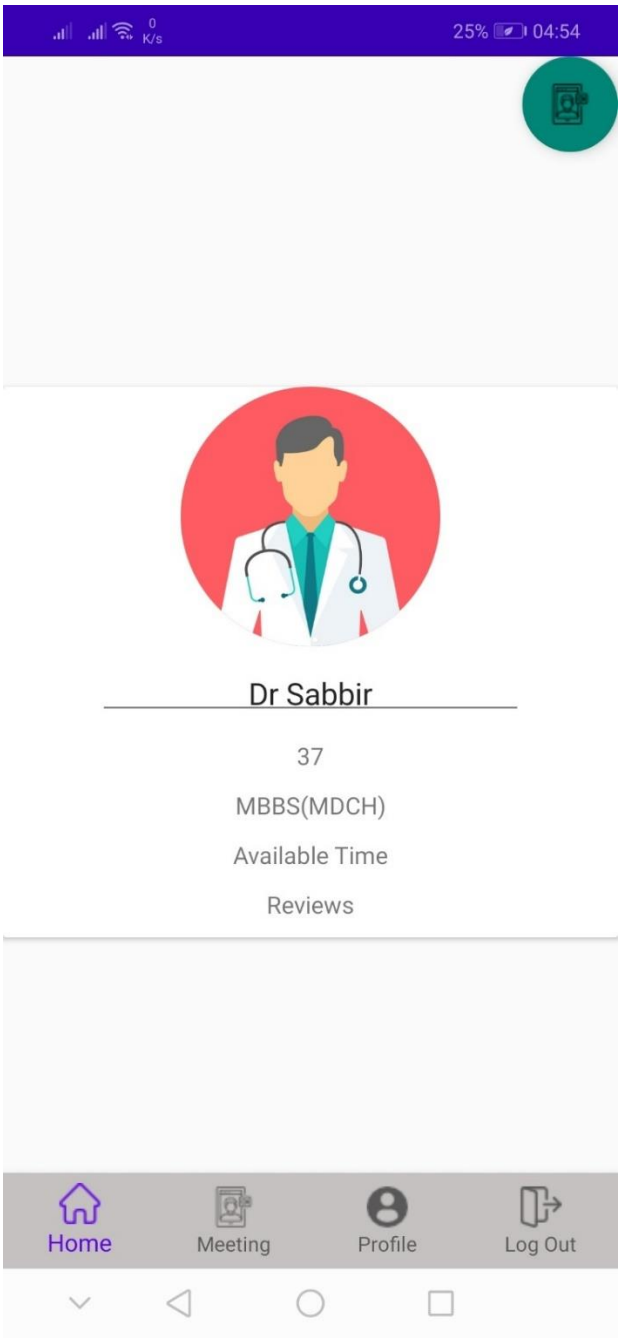


Figure 4.4.2: Find the best doctor for you

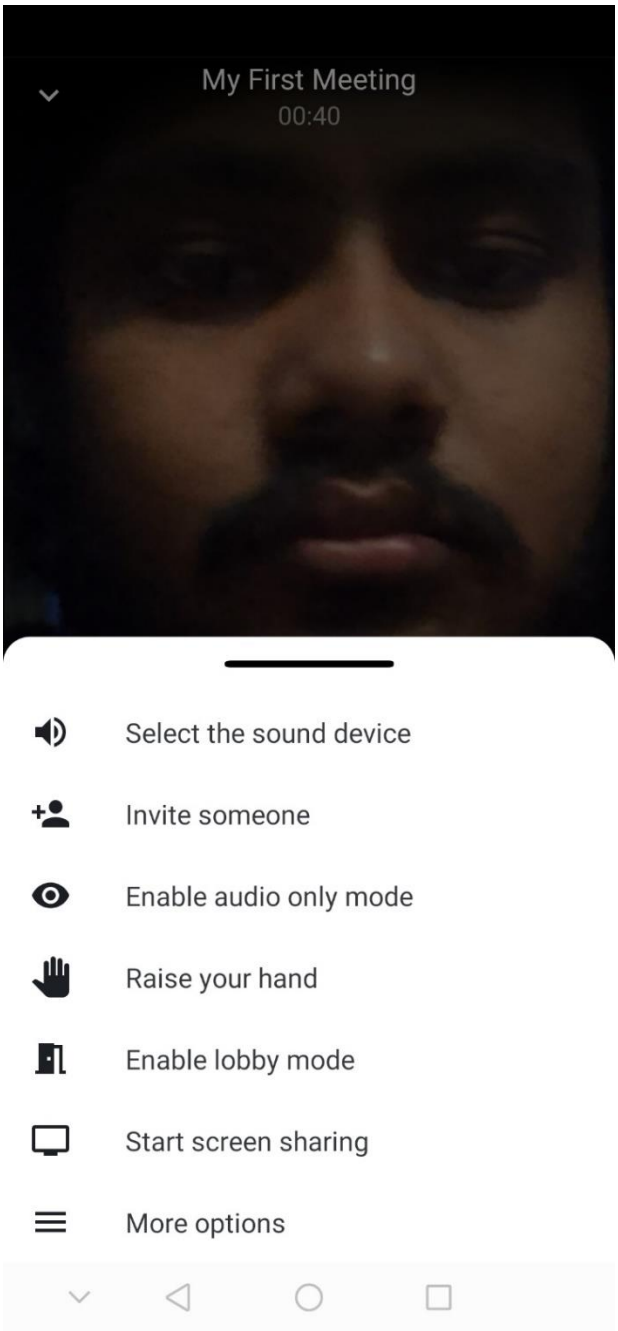


Figure 4.4.3: Hold a meeting

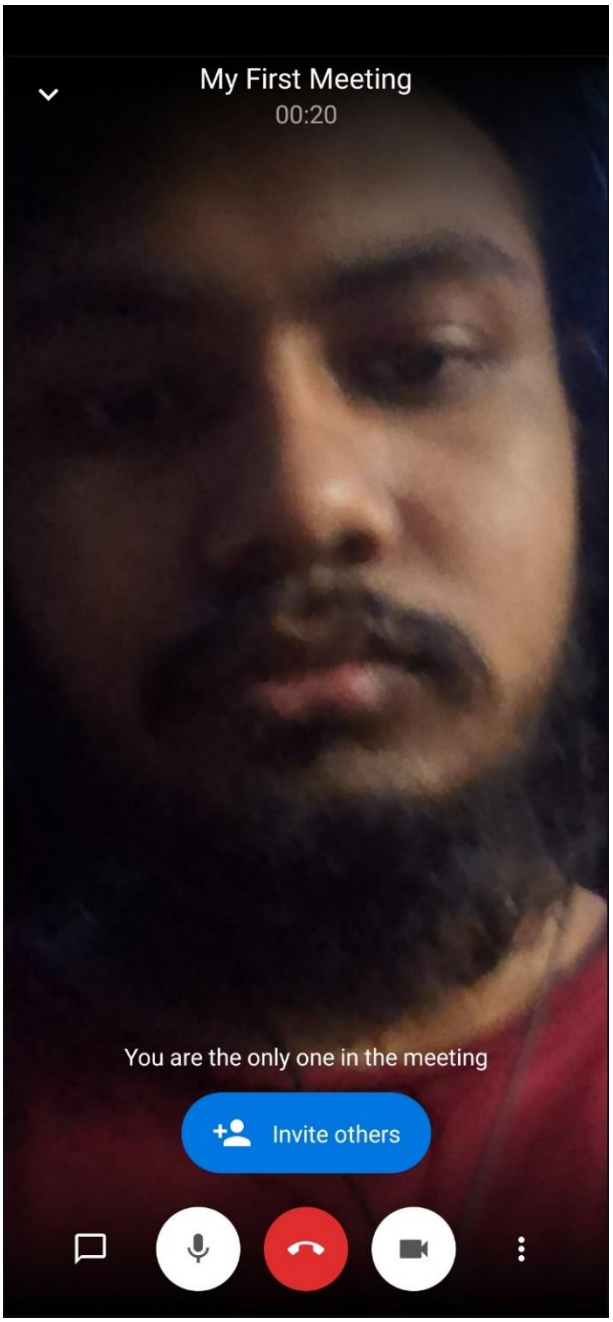


Figure 4.4.4: Hold A meeting

4.5 A Social Platform

A place where everyone can gather and have group chats or group calls.

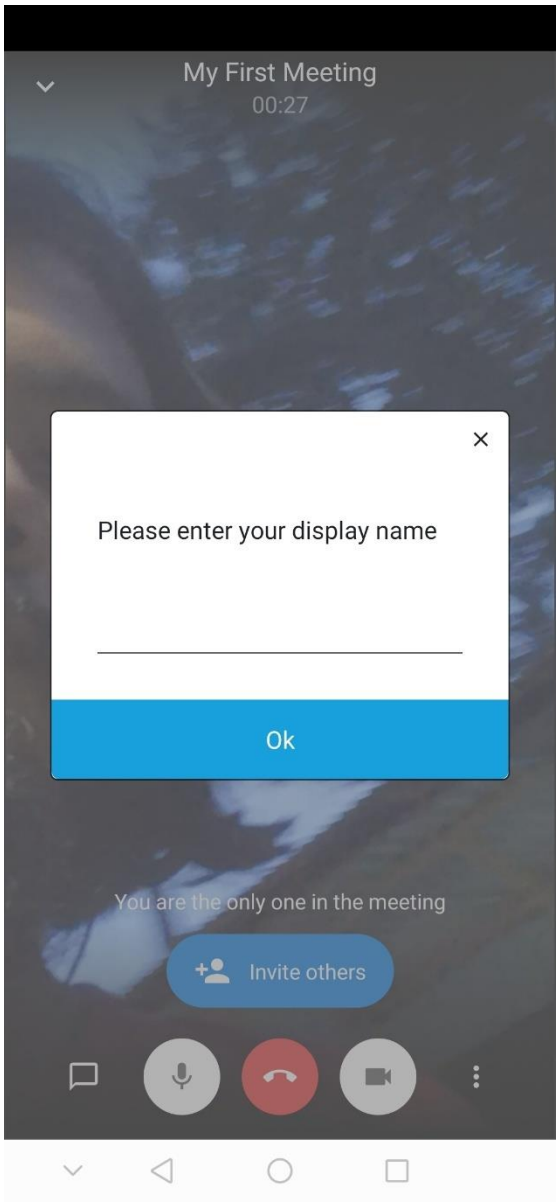


Figure 4.5.1 Gather

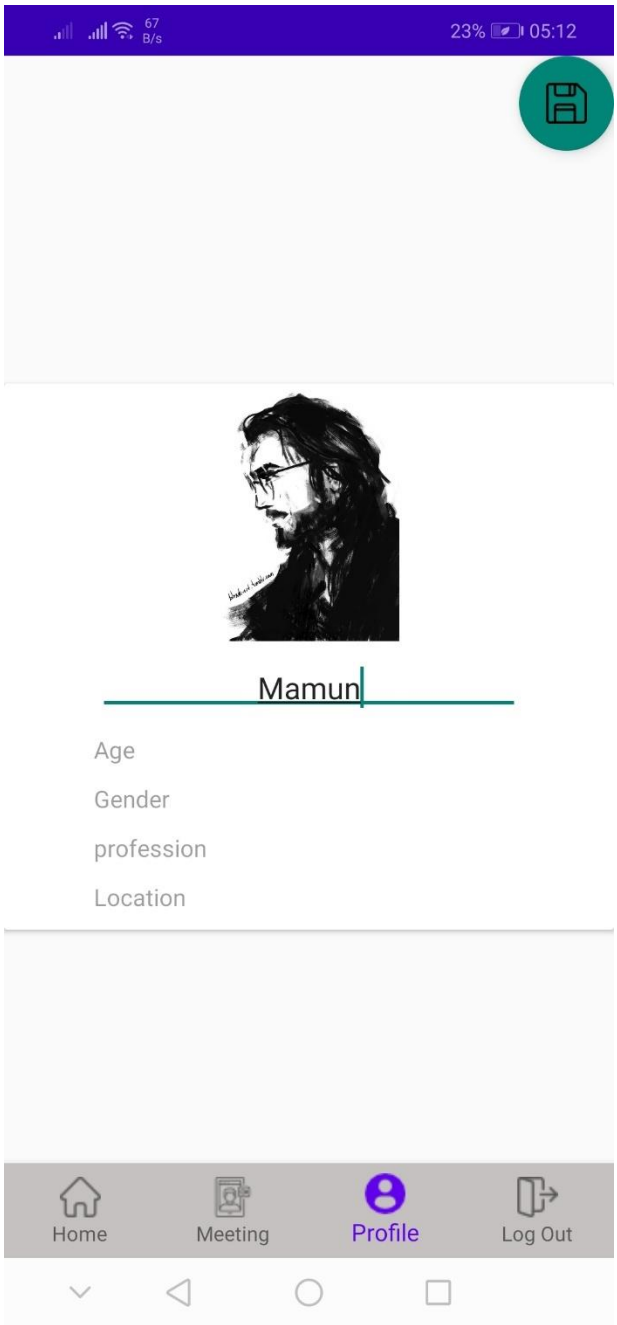


Figure 4.5.2: Customize

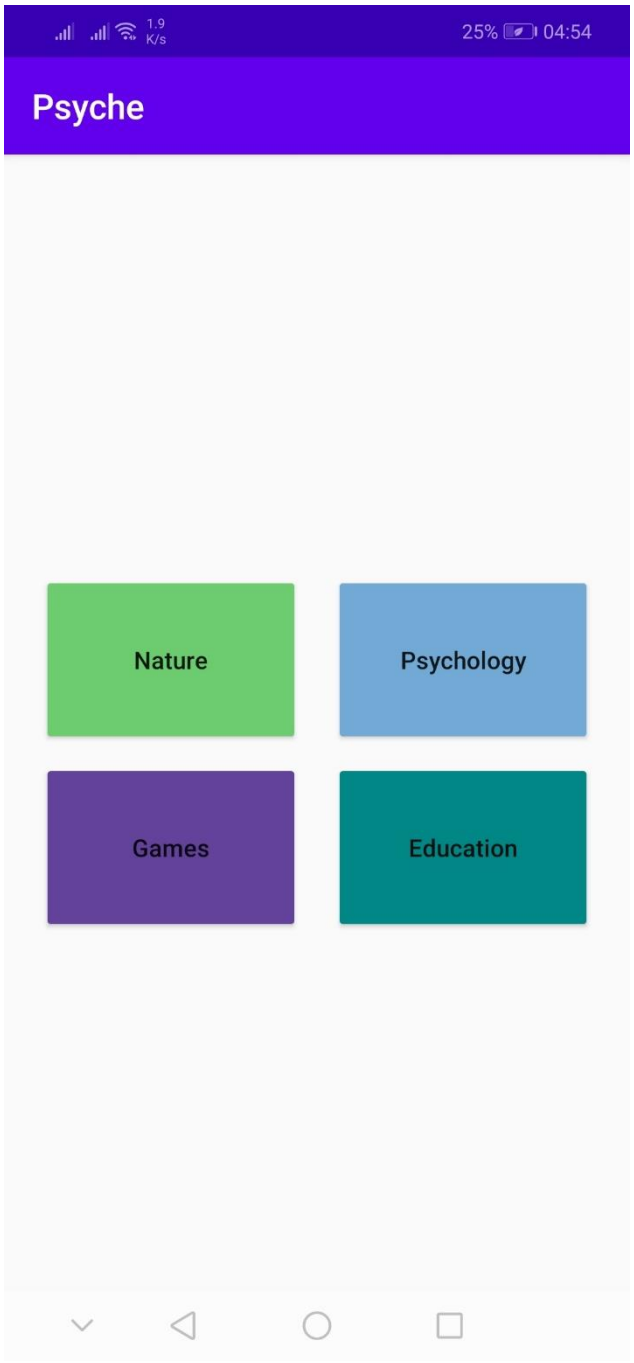


Figure 4.5.3: Talk about common interests

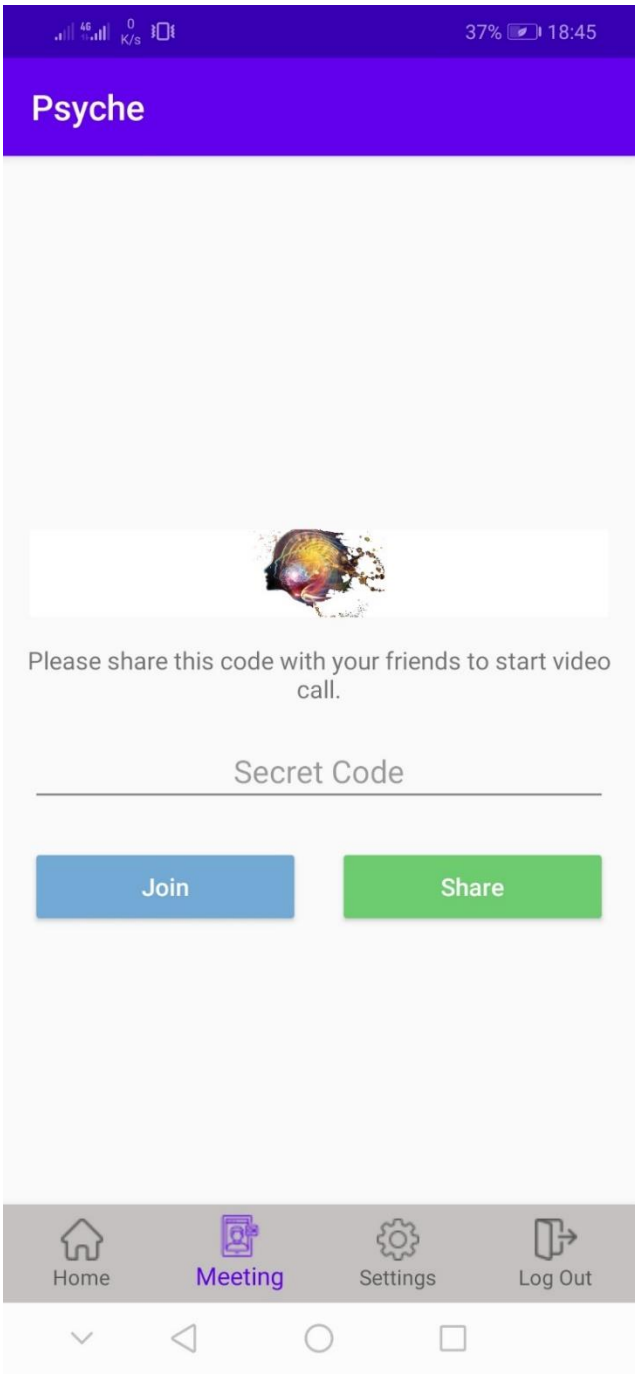


Figure 4.5.4: call your friends

4.6 Mental health exercise

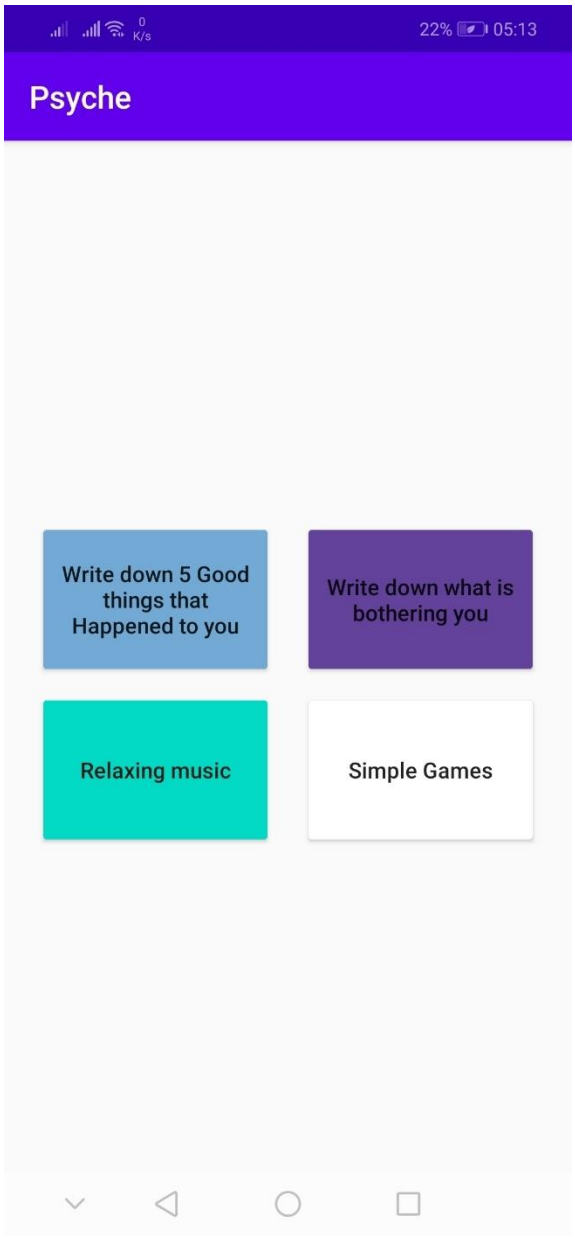


Figure 4.6.1: Exercise

Chapter 5

Backend Works

5.1 User Authentication

The user interface and outlook may be important and can turn down users from using the application. But user interface is just an empty shell without proper backend programming. If backend programming isn't fluid and balanced then the app can be very laggy. Managing data can be extremely hard if not sorted correctly. So, we need to be careful how we collect and sort data and how we code the inside. So, finding the best ways to code the functions without making it complicated and long is a hard task to do. We also need to make it secure. Using too much external API can make code easier but it makes the security weaker. So how do we decide what to use or not. Those are hard decisions to make.

So, I used very less external API to ensure security. I also used a lot of string to make the future translation easier. And many more.

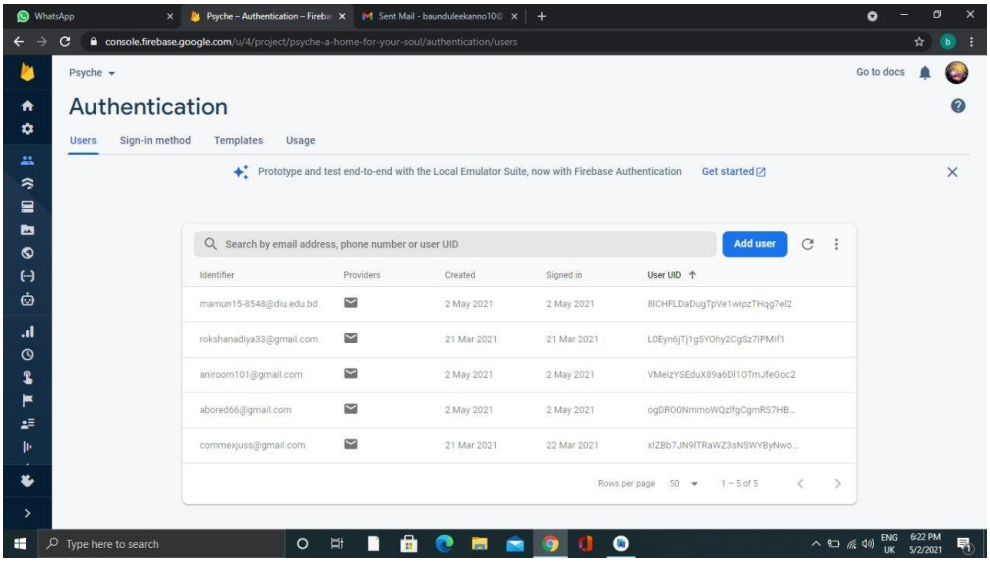


Figure 5.1.1: User authentication

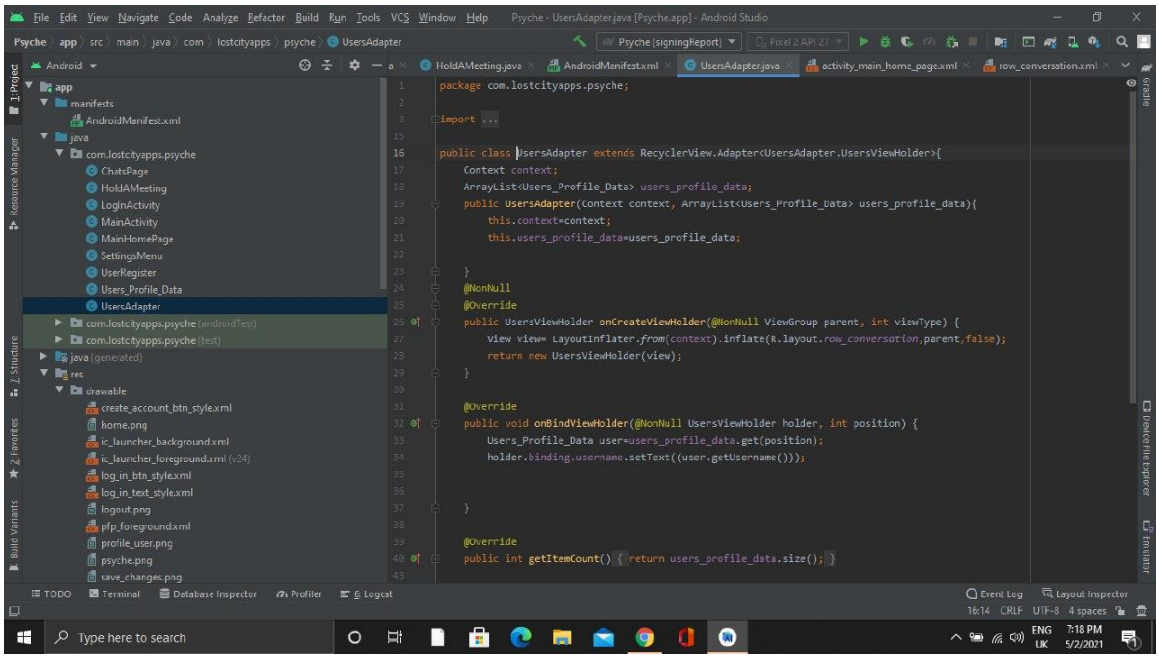
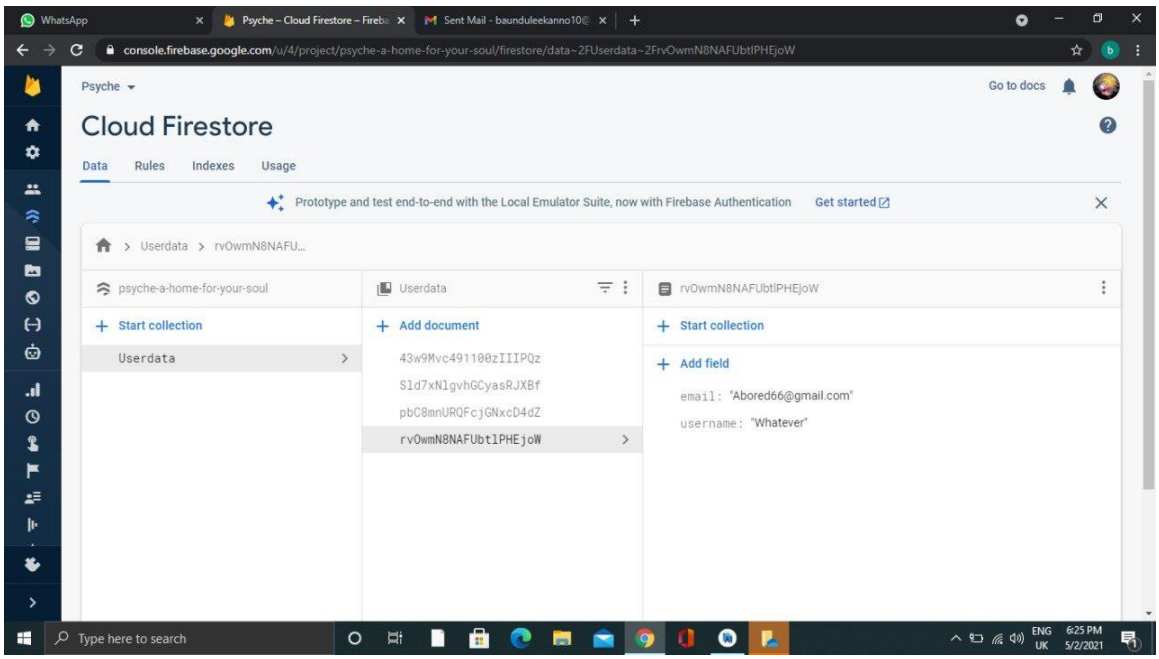
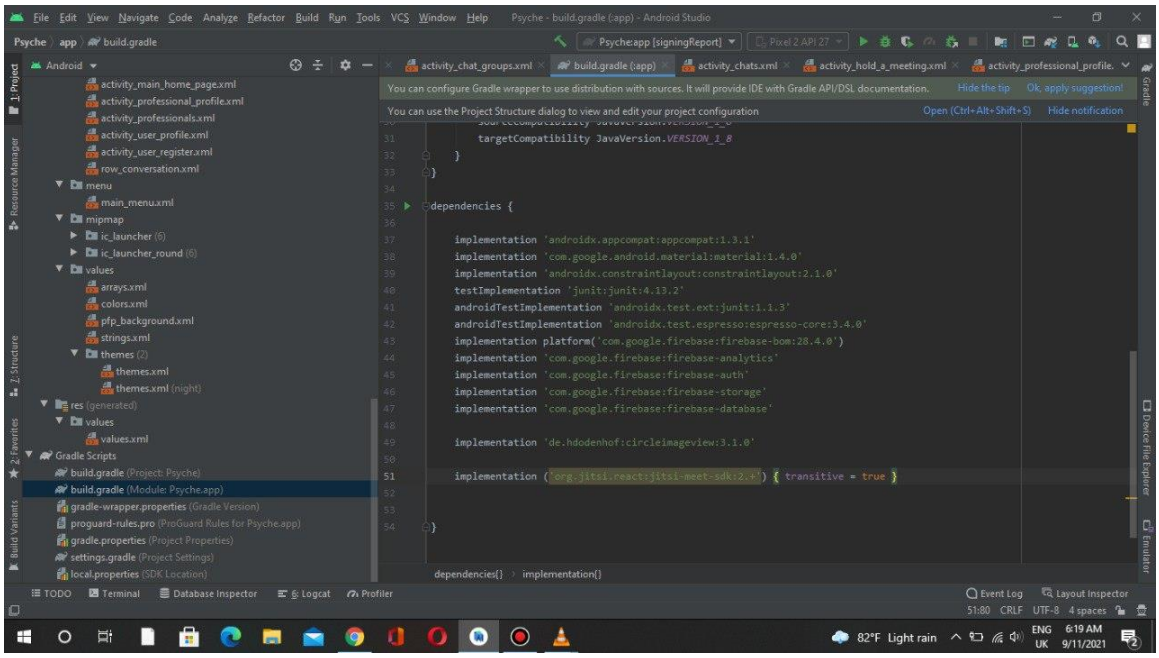


Figure 5.1.2: Authentication Code

5.2 Managing Database





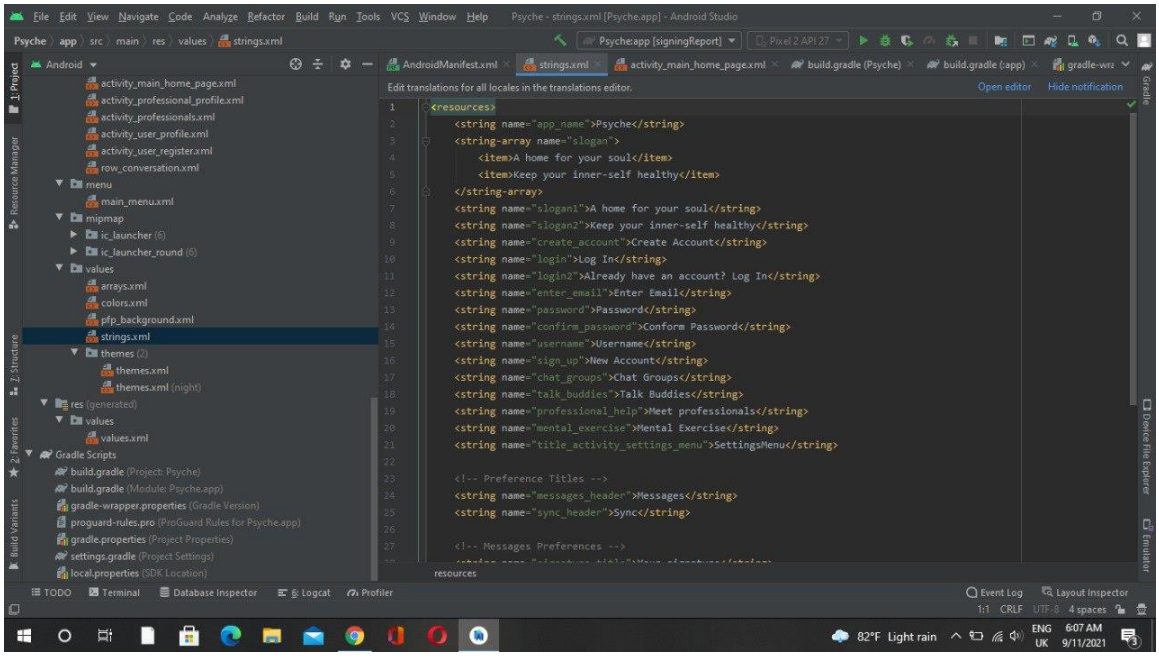
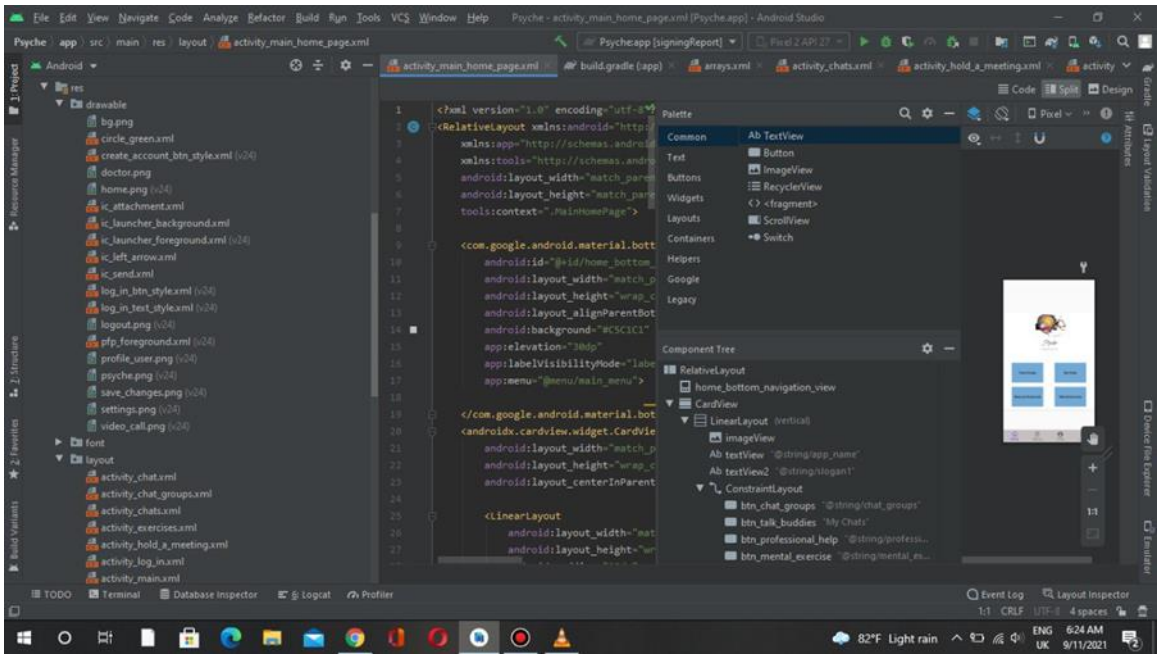


Figure 5.2 Gathering and managing Data



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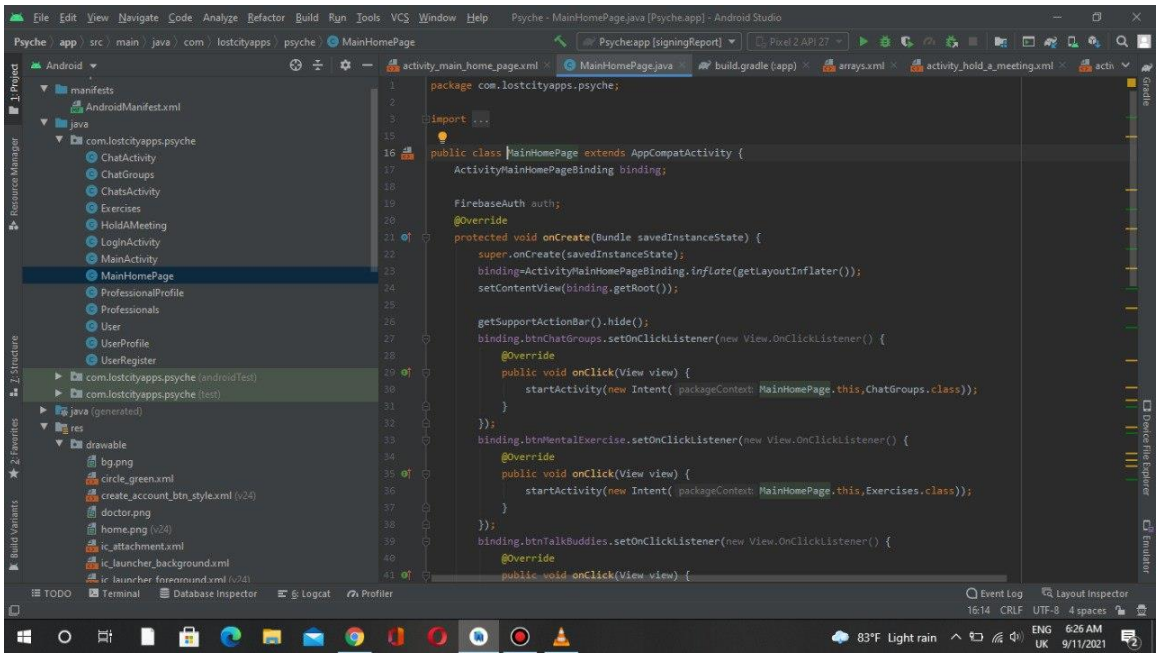


Figure 5.2 Gathering and managing Data

5.3 Ban and Account deletion

It’s to keep the environment safe and peaceful. Or else it’ll cause everyone more stress.

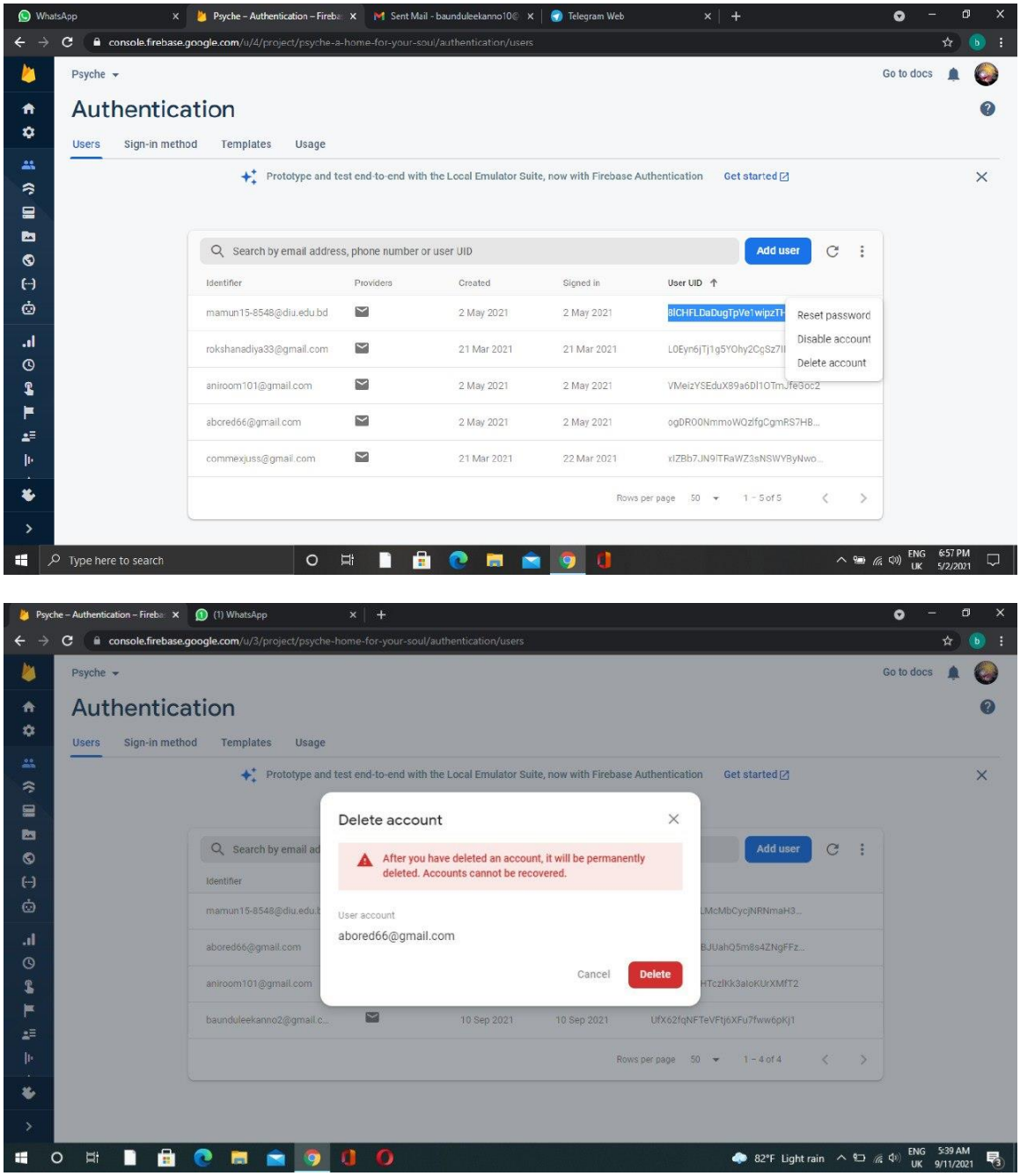


Figure 5.3: ban and account deletion

Chapter 6

Conclusion and Future Scope

6.1 Conclusion

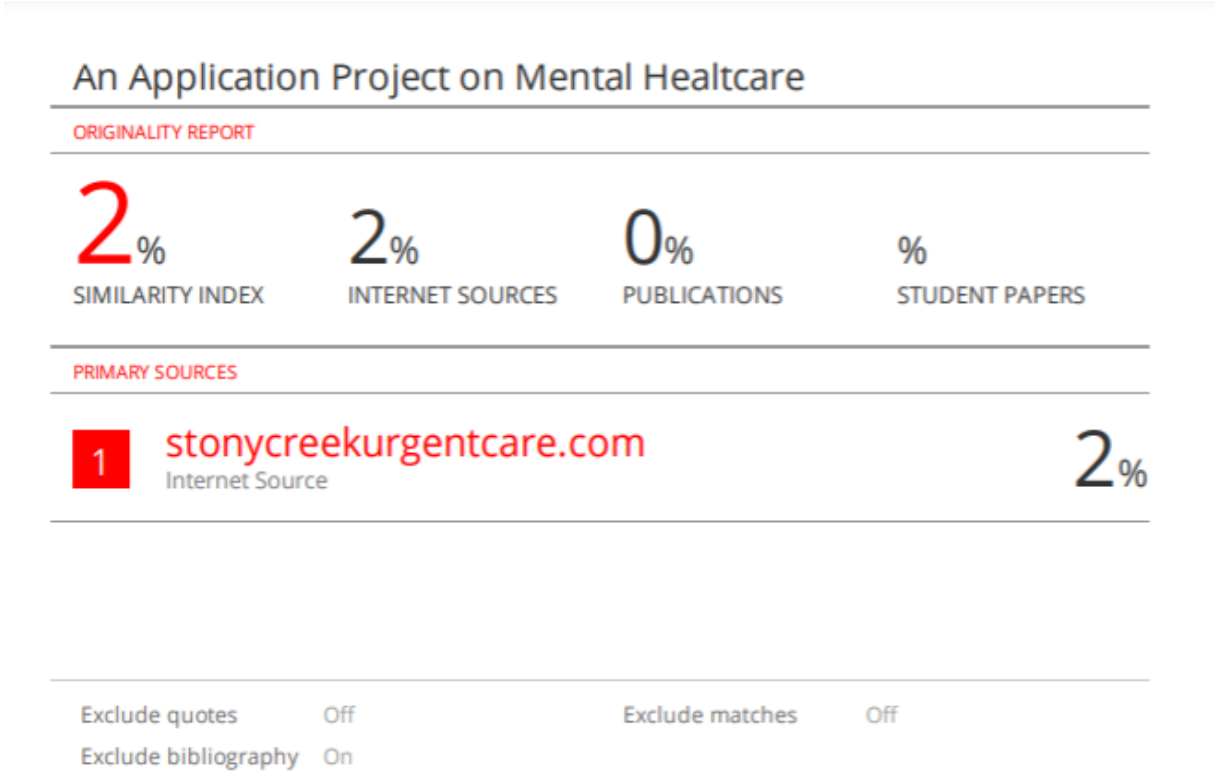
Overall, the work is progressing. It might be processing slowly but steadily. Another reason for slow progress is I tried to use external dependencies as less as possible to keep the app trustworthy and reduce external threats. With the speed I'm progressing I think I will be able to produce the final application very soon.

6.2 Future Direction

A lot of backend process is unfinished and it has lot more potential. Mental health care is a sector that needs a lot more attention and so we have a lot of room to grow so I wish to work in that direction and make it a platform widely known to all.

References

1. https://www.nami.org/mhstats
2. https://www.aa.com.tr/en/asia-pacific/bangladesh-mental-health-stigma-a-barrier-to-care/2208229
3. https://firebase.google.com/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