

APP DESIGN AND DEMO



# Check In

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Parshan Teimouri



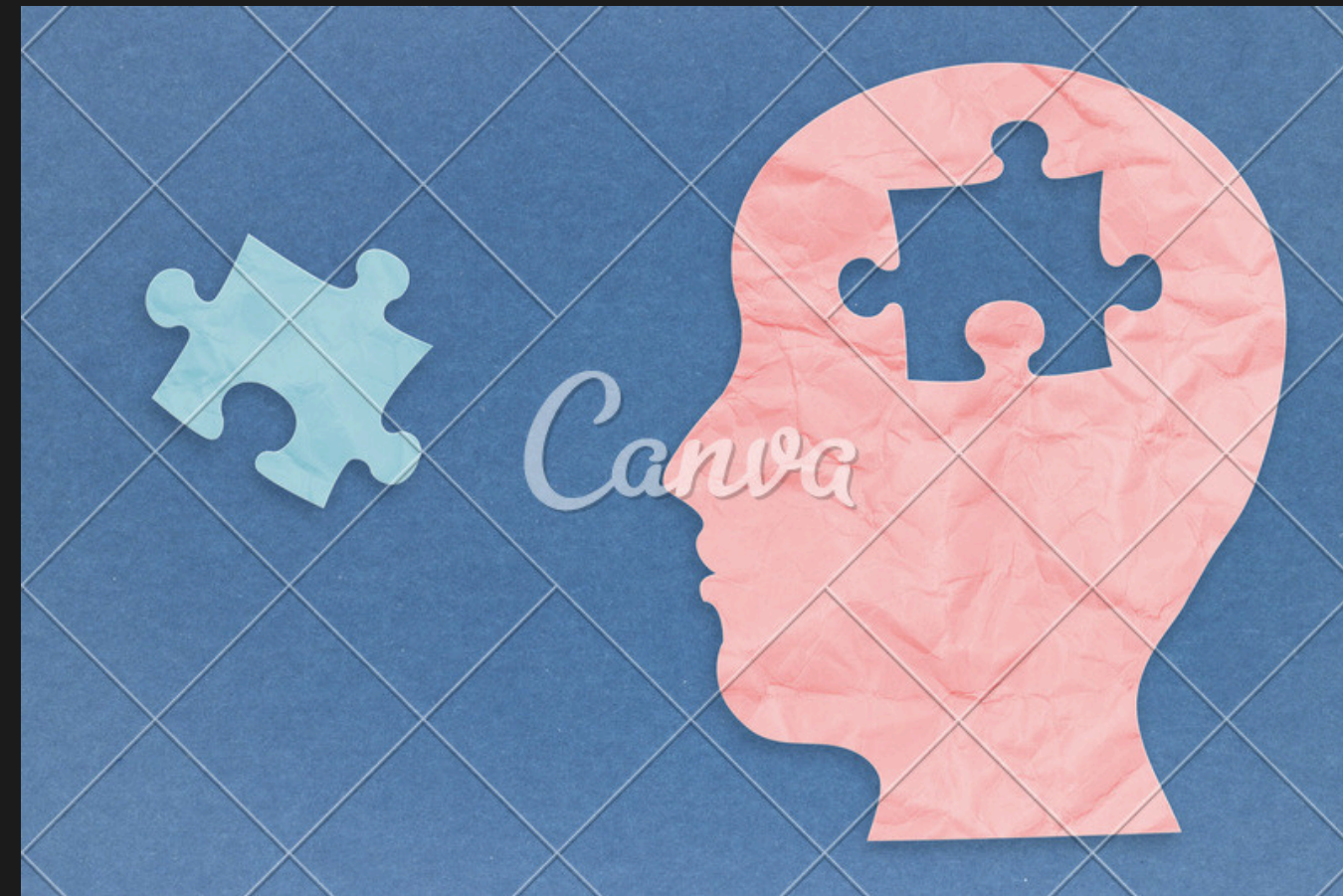
Built on top of  
ChatGPT

Health Analytics  
2023

# Mental Health

Mental health is an essential aspect of overall health and well-being, as it influences how we think, feel, and behave in our daily lives.

Modern lifestyles can adversely affect mental health through increased stress and pressure.



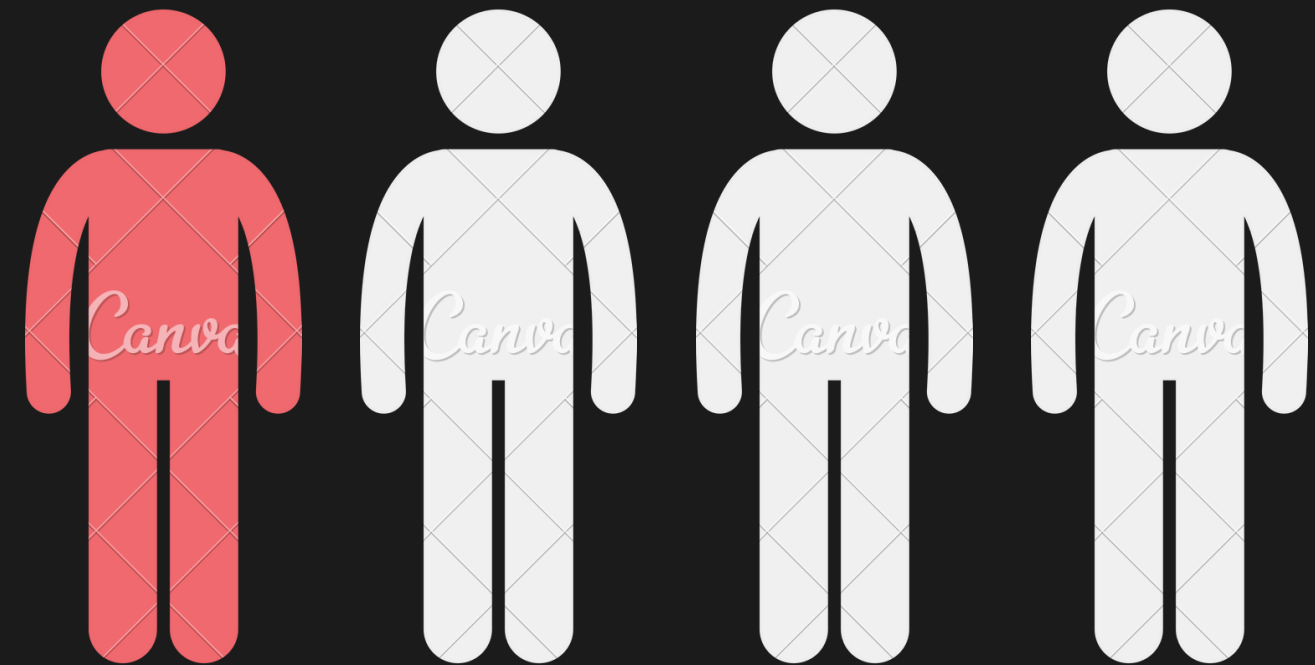
**COVID-19 pandemic triggers  
25% increase in prevalence of  
anxiety and depression  
worldwide**

Wake-up call to all countries to step up mental health  
services and support

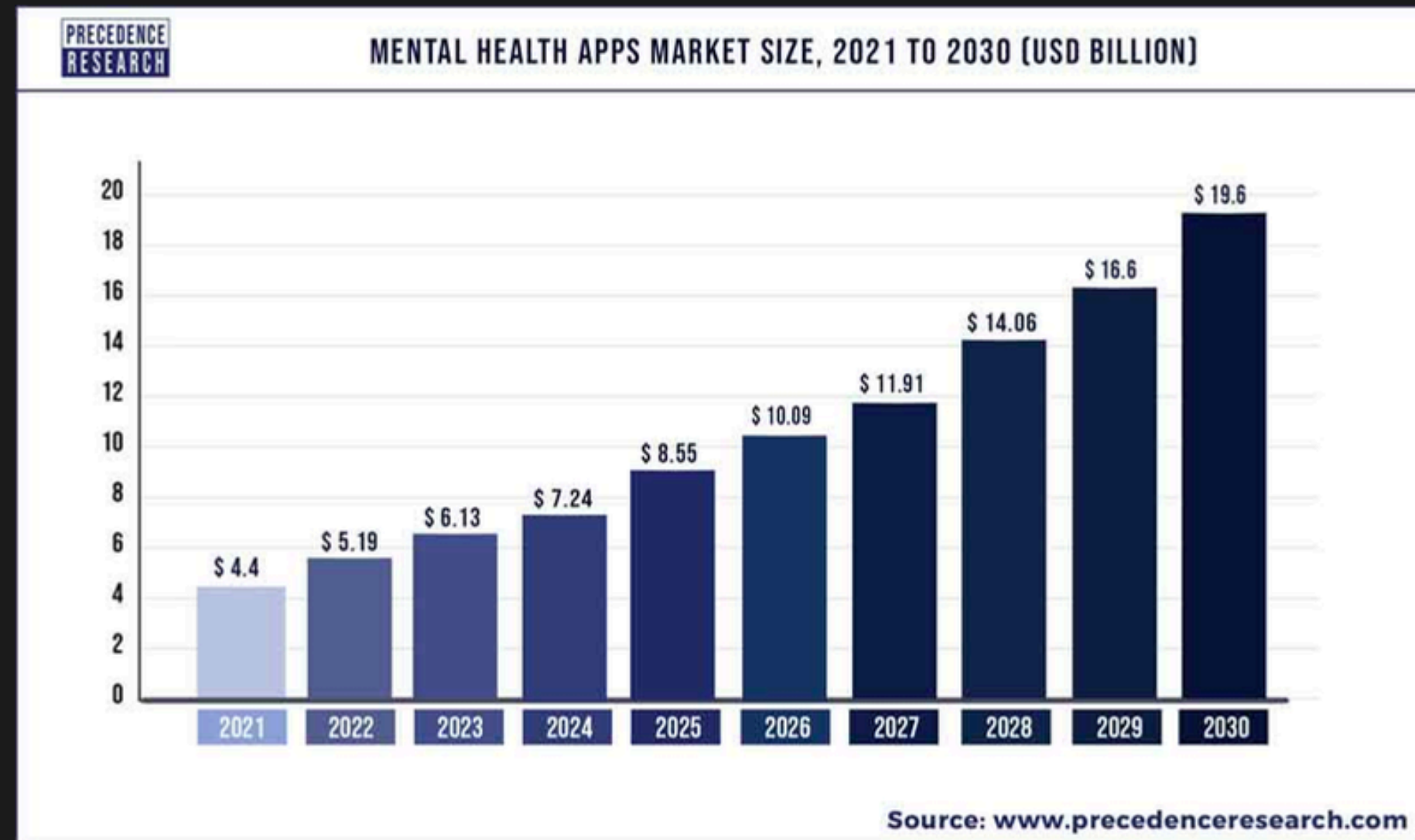
CHECK IN APP

An estimated 26% of Americans aged 18 and older - about 1 in 4 adults - suffers from a diagnosable mental disorder in a given year.

Nearly **800 million** people worldwide live with a Mental Health Condition



# Market Size



The market size of Mental Health apps in the U.S. was valued at the massive amount of **\$5.19bn** in 2022, and is predicted to increase to **\$19.6bn** in 2030





# Check(ing) In

Health  
Analytics  
2023



## ASSESS

Obtain a breakdown of your daily mental health statistics, as analyzed by our machine learning models.



## CONNECT AND TRACK

Keep track of your family's and friends' mental health statistics on an easy-to-use map-based user interface.



## GET IN TOUCH

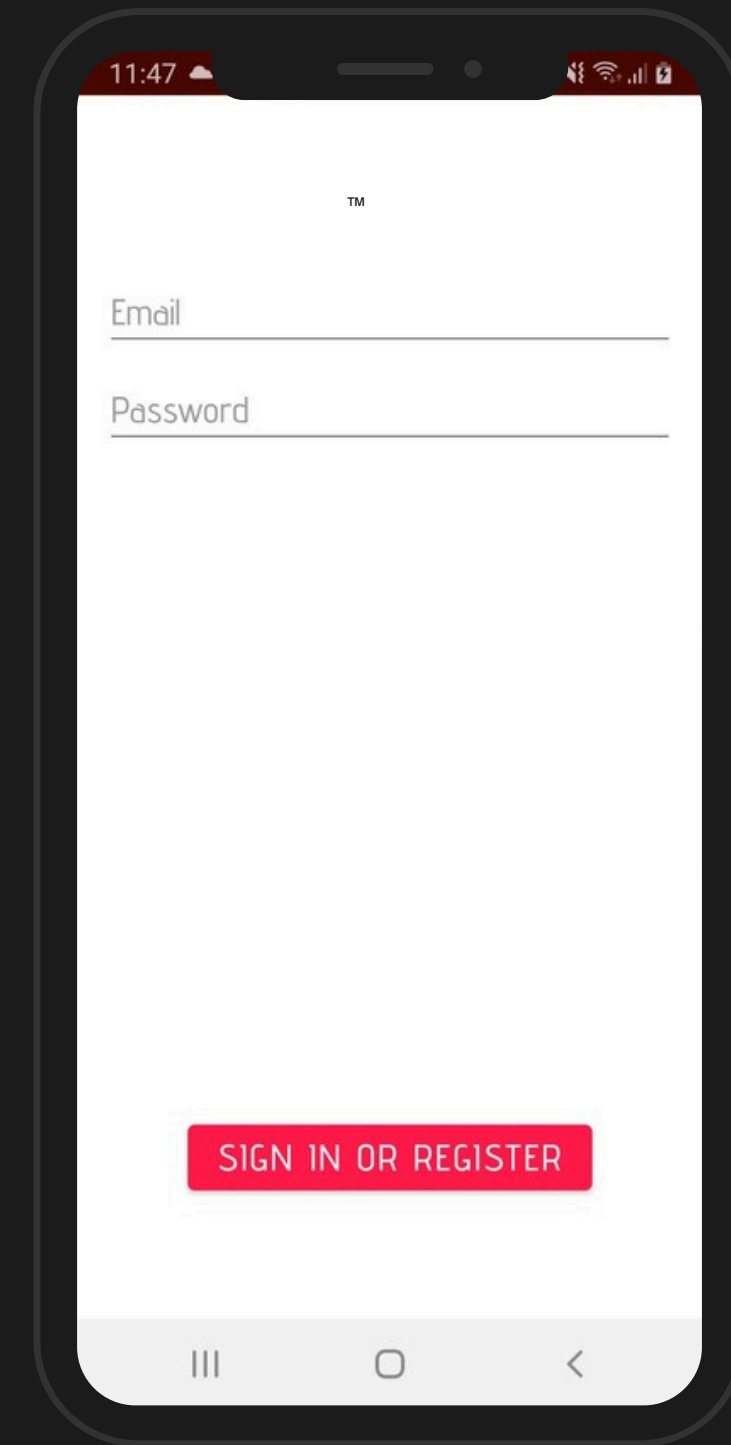
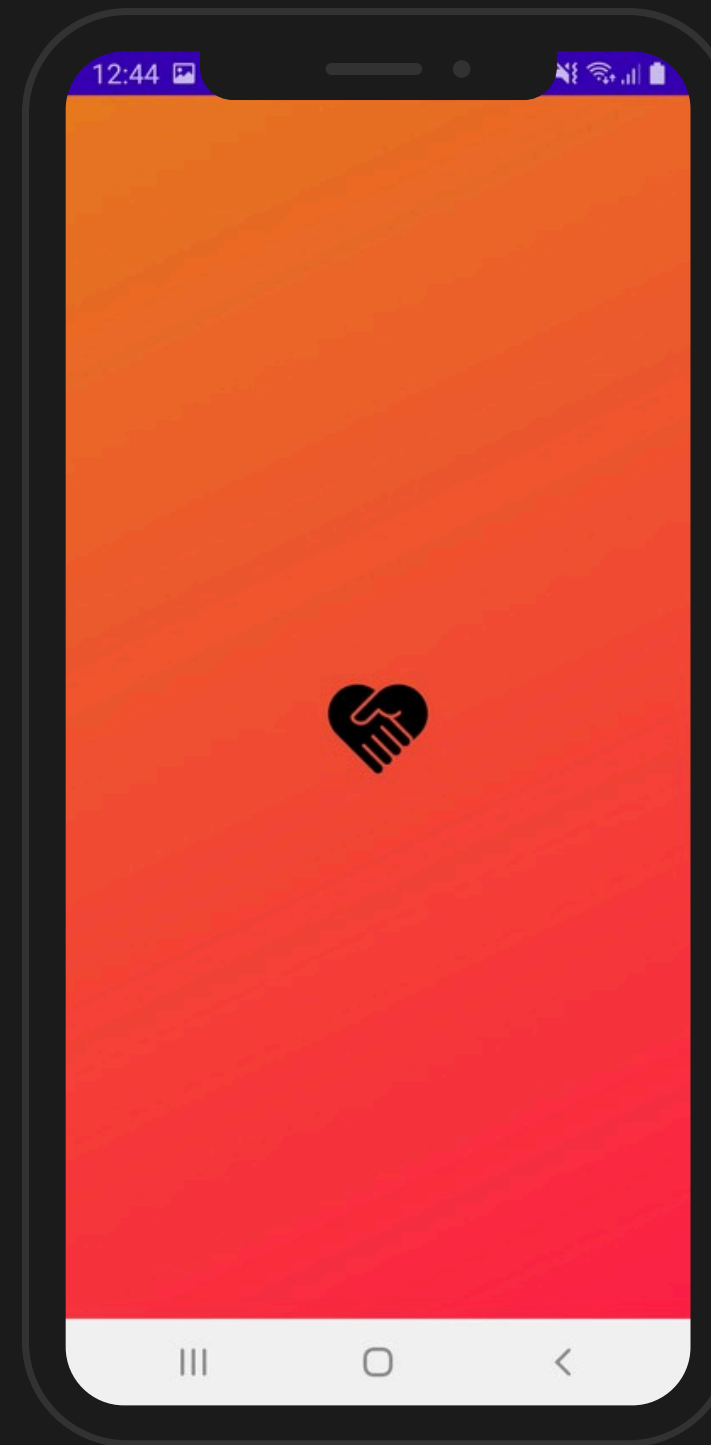
Reach out to people in need. While we provide some advice, there is no replacement for human-human interaction.



Application Experience	07
Language Models, Datasets	11
Challenges	14
Demo	15
Future Directions	19

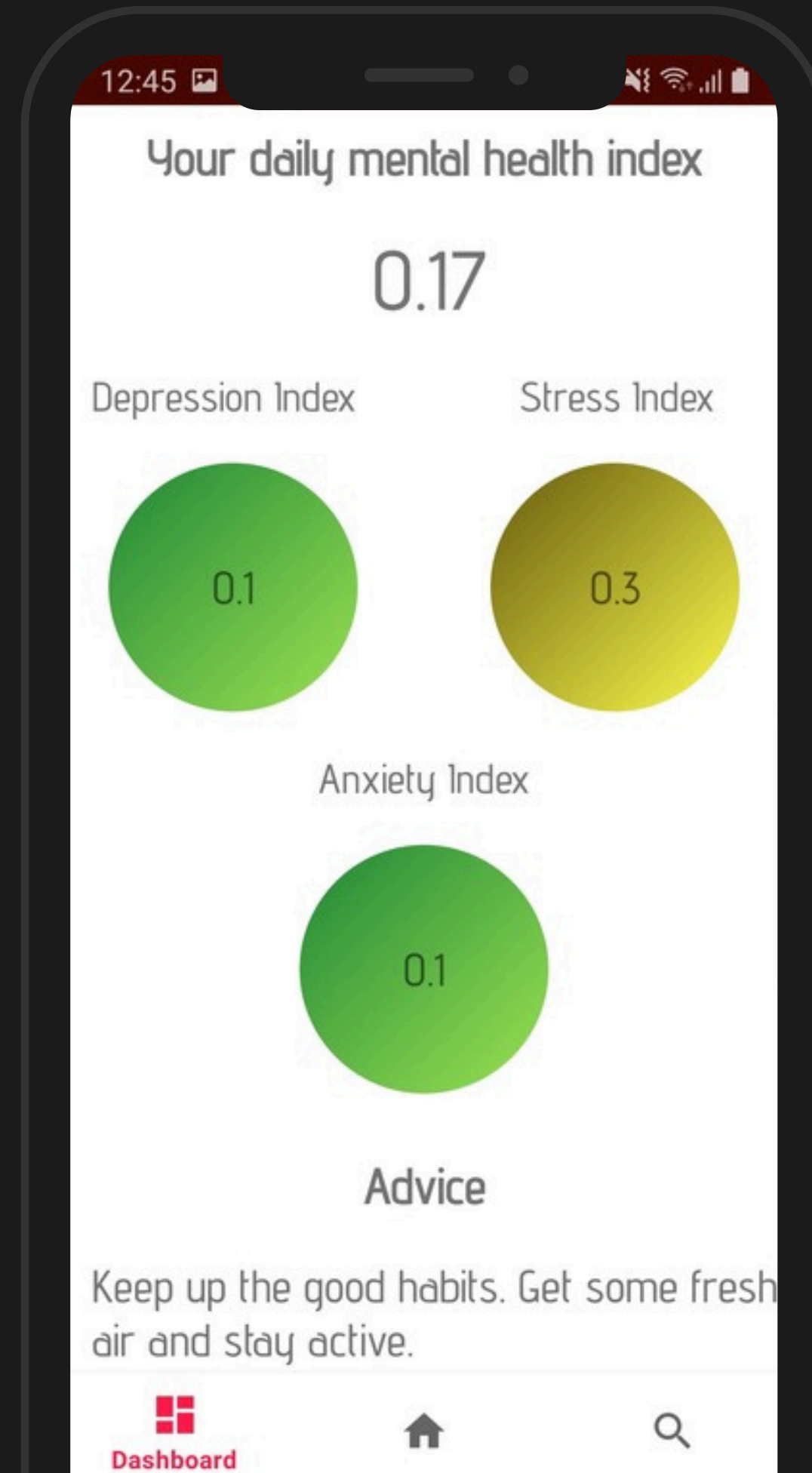
# Rest of The Lecture

# Application



# Mental Health Dashboard

In the Dashboard, each user can access the personal evaluation of their **mental health metrics**, and an overall shareable Mental Health score.



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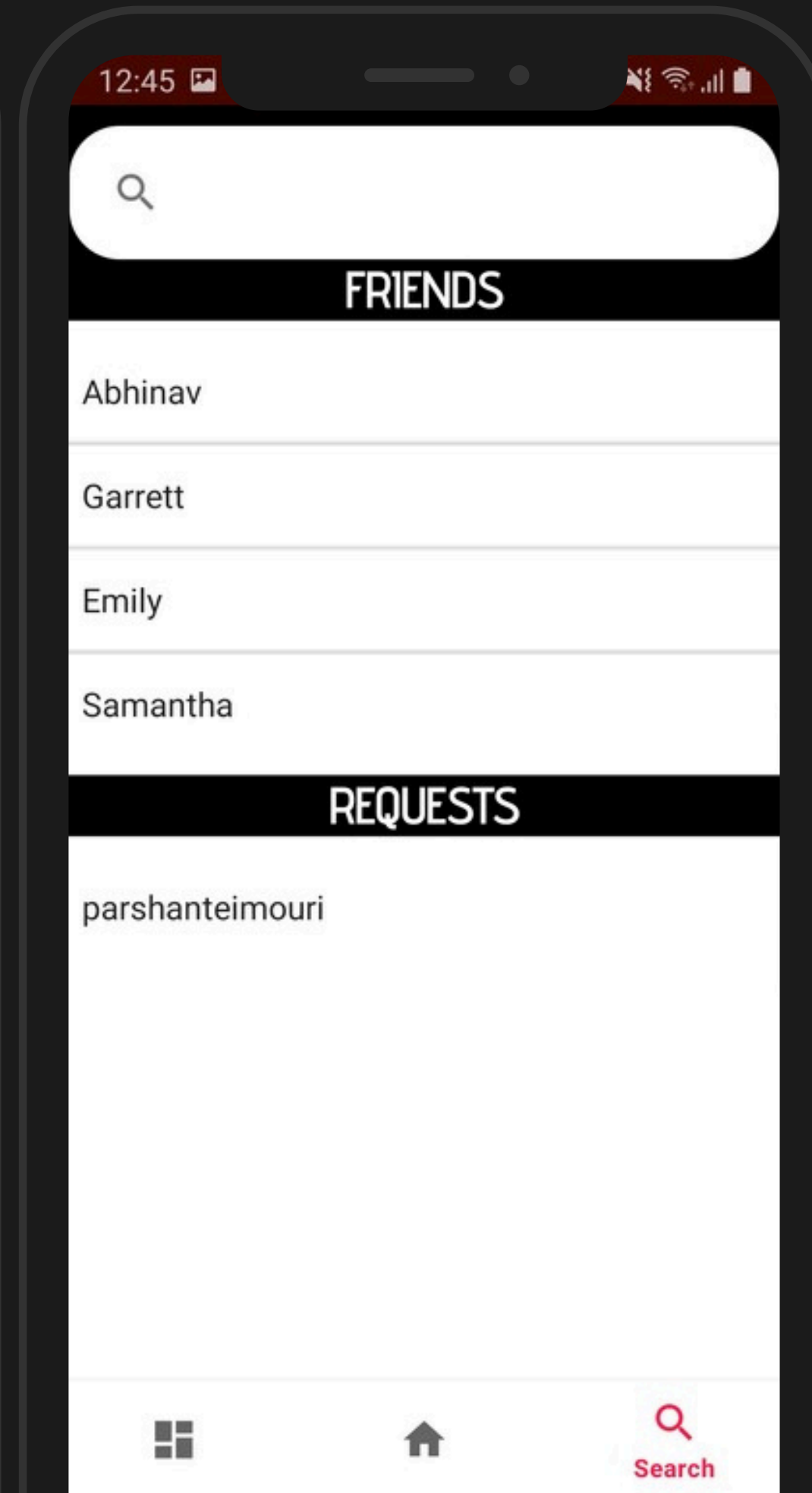
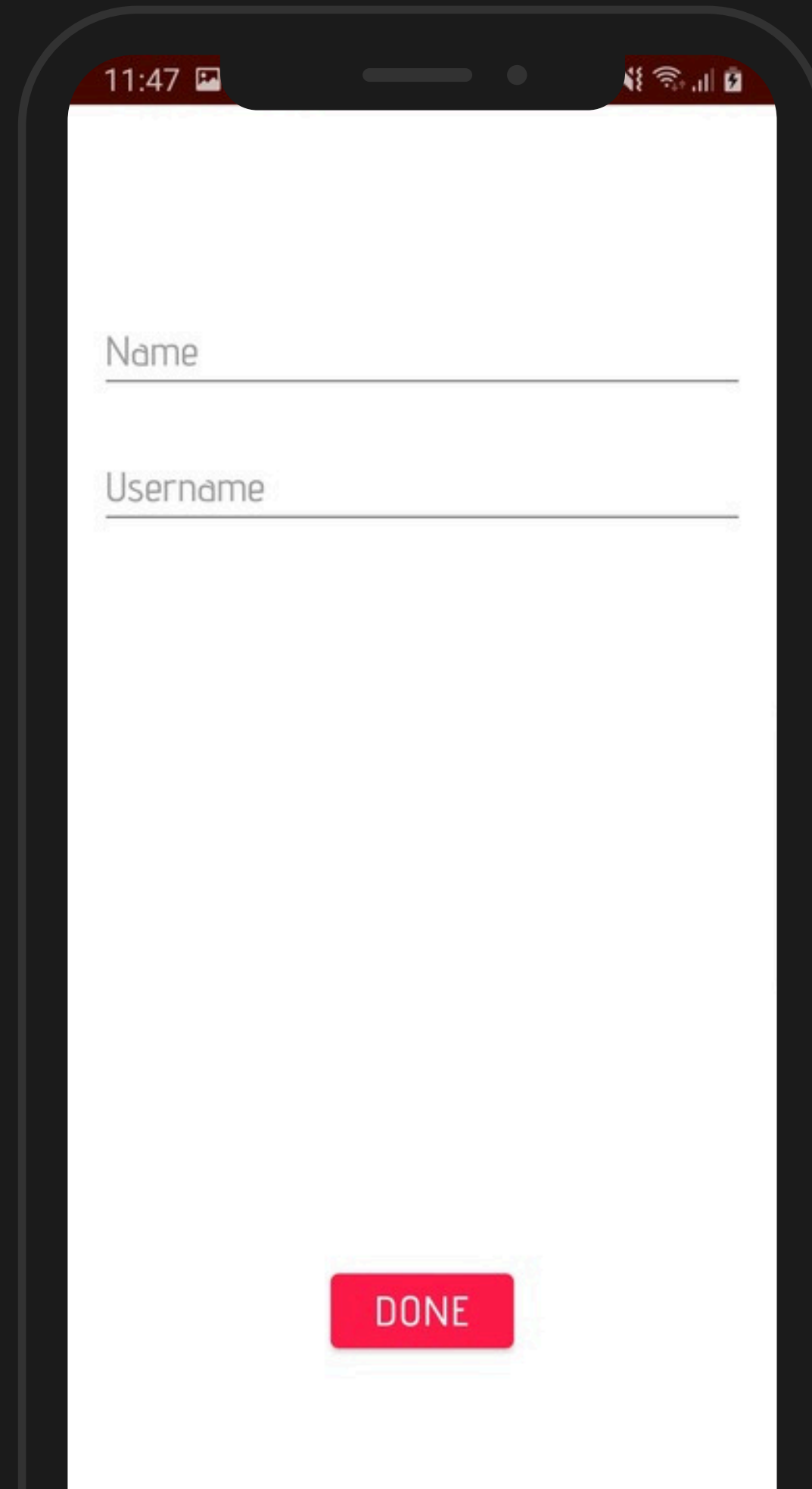
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# Friends List

Users can create profiles, send friend requests and respond to the same.

Powered by  
Firebase.



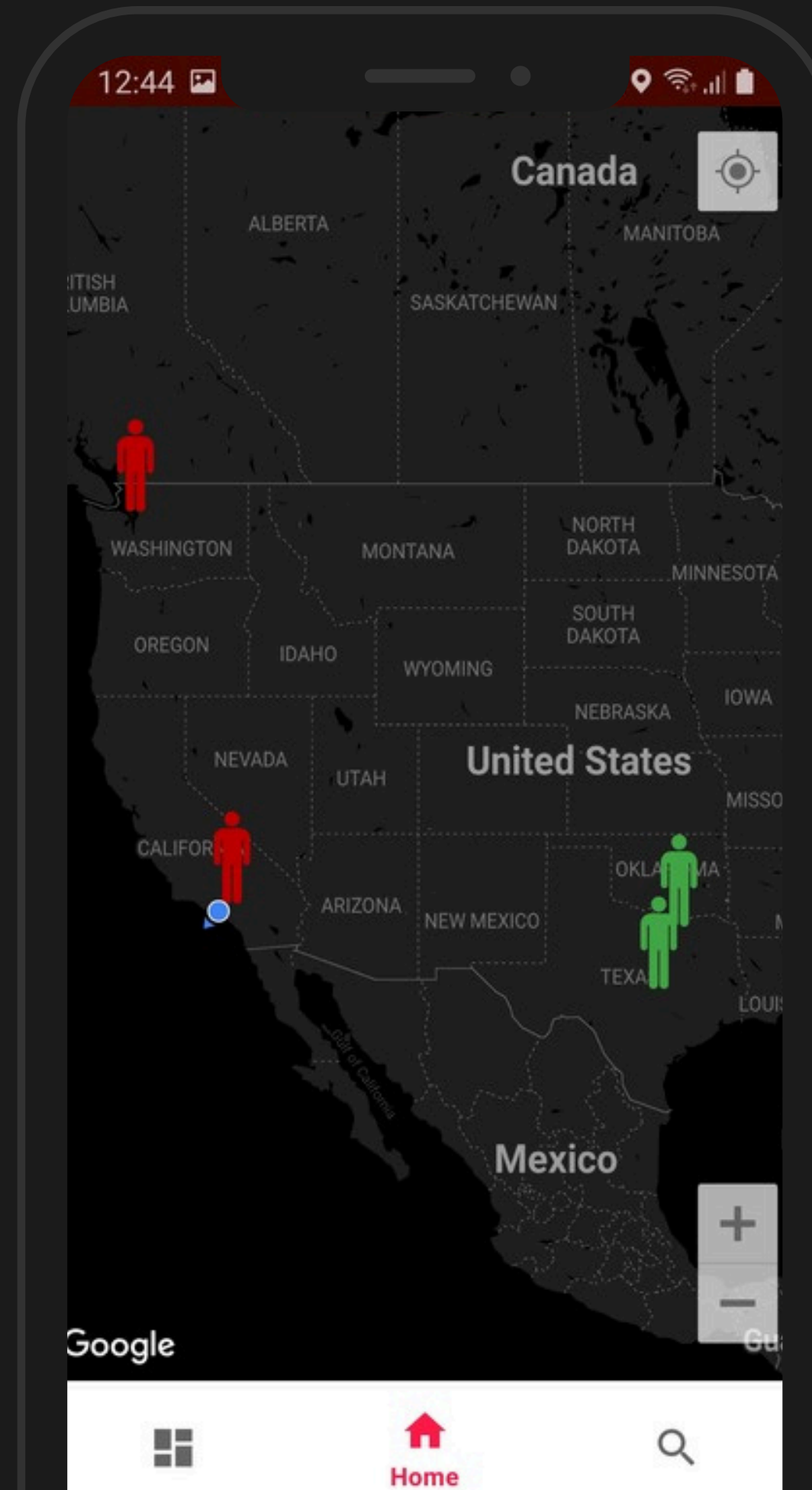
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# Map Interface

Each user can access the location of their added friends and their Mental Health score on the map, and reach out to them in case of need.

Powered by Google Maps API.



//10

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# Mental Health Assessment

## Depression Score

FINE-TUNED ROBERTA AND CHATGPT

## Stress Score

BASED ON CHATGPT

## Anxiety Score

BASED ON CHATGPT



# RoBERTa-Based Language Models

RoBERTa (Robustly Optimized BERT approach) is a transformer-based language model developed by Facebook that improves BERT's training process. RoBERTa uses a larger corpus of text, removes the next sentence prediction task, and trains the model for longer with dynamic masking, resulting in improved performance on a wide range of NLP tasks.

## CLPsych 2015

A shared task and workshop that focused on computational approaches to understanding mental health

## eRisk Shared Task 2016

eRisk shared task 2016 was a competition that focused on the development of natural language processing and machine learning models for identifying individuals at risk of suicide based on their social media posts.

## HuggingFace Dataset

HuggingFace is a repository containing numerous models and datasets.

# Datasets

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# Challenges

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## Dataset and APIs

Due to infeasibility of clinically verifying scraped Twitter datasets and increased wait times and cost for Twitter API, collecting relevant data and labels is a difficult task.

## Bias

Relying solely on Twitter data for the user, or any social media data, creates a biased outlook of their mental health. As we will cover in upcoming sections, a more holistic approach with various data sources would be more accurate.

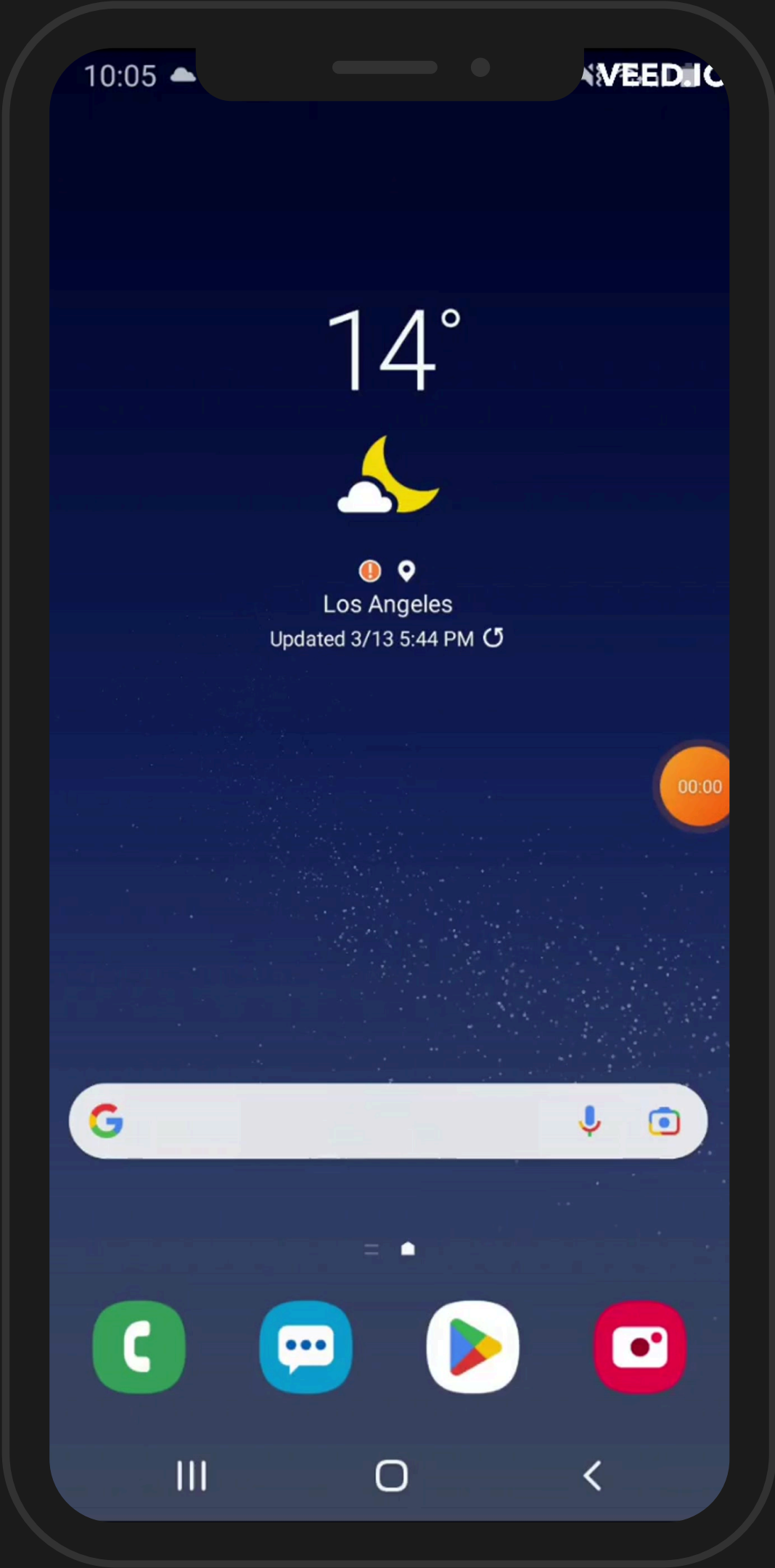
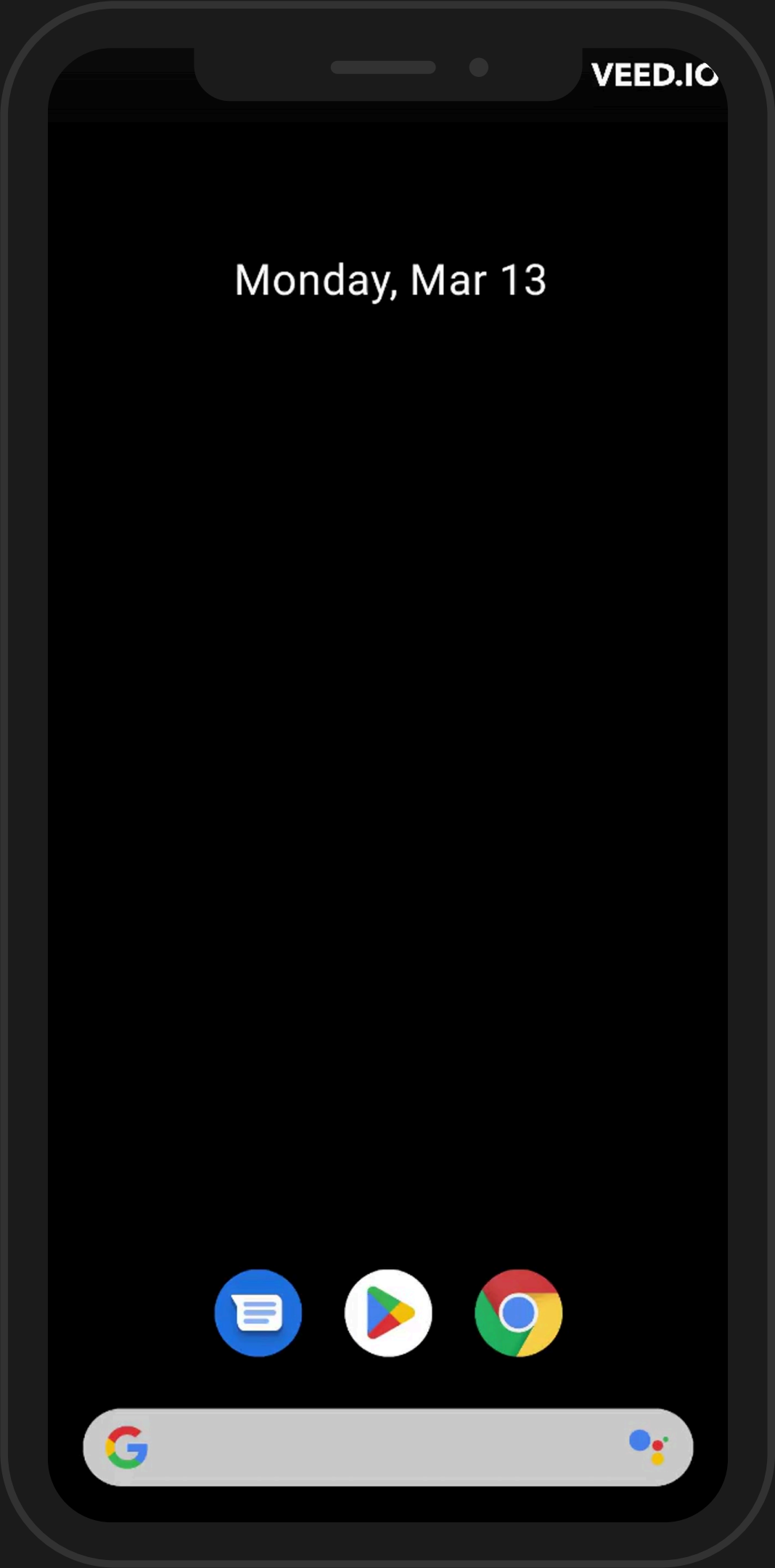
## Privacy

Currently, our application is setup to use publicly available Tweets for the user. However, we need to consider pre-processing techniques to remove sensitive information when transitioning to private Tweets.



# Demo

Garvit (Emulator)



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David  
(Samsung)

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# Demo

## David (Samsung) Tweets

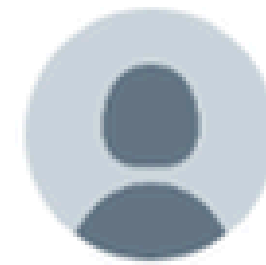


**David**

@fakedavid

This covid stuff is really getting on my nerves. Please someone do something! :/

11:36 PM · Mar 13, 2023



**David**

@fakedavid

What a nice day out!

10:31 PM · Mar 13, 2023



**David**

@fakedavid

Thinking back to that insane Oscars moment last year. Still don't believe it lmao

10:36 AM · Mar 13, 2023



**David**

@fakedavid

LETS GOOOO PATS!! That's my goat 🐐

5:40 PM · Mar 13, 2023

# Demo

## Garvit (Emulator) Tweets



Garvit

@fakegarvit

I've got SOOO much work to do. One more all-nighter oof!

11:17 PM · Mar 13, 2023



Garvit

@fakegarvit

Another terrible rainy day. Thanks LA, I guess I'll just sit at home alone.

1:22 PM · Mar 13, 2023



Garvit

@fakegarvit

Missing my mom [@FakeMom](#) a lot more today. Homesickness is a SICKNESS people!

10:17 AM · Mar 13, 2023



Garvit

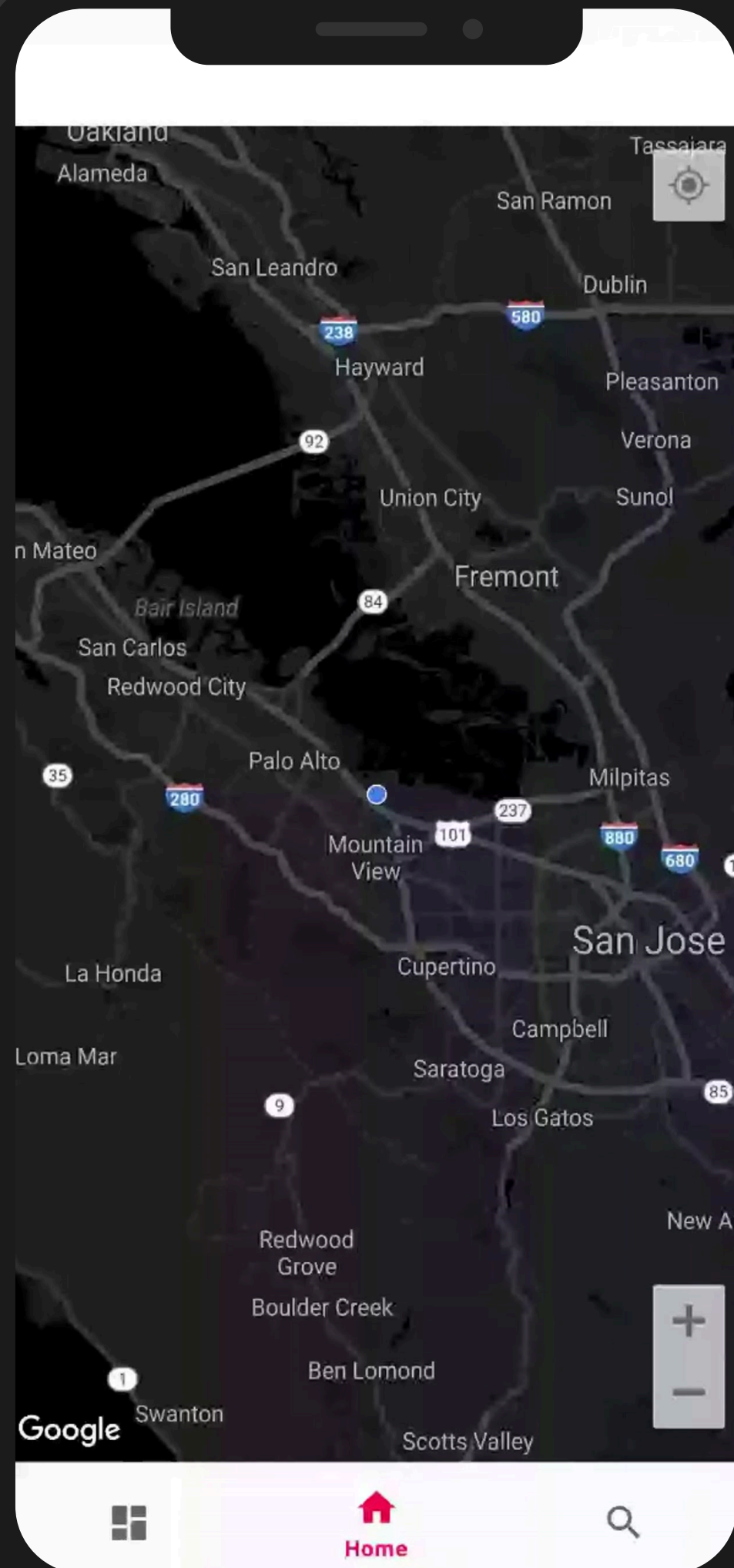
@fakegarvit

Need to google 'How to deal with procrastination?' but I'll do it tomorrow

9:31 PM · Mar 13, 2023

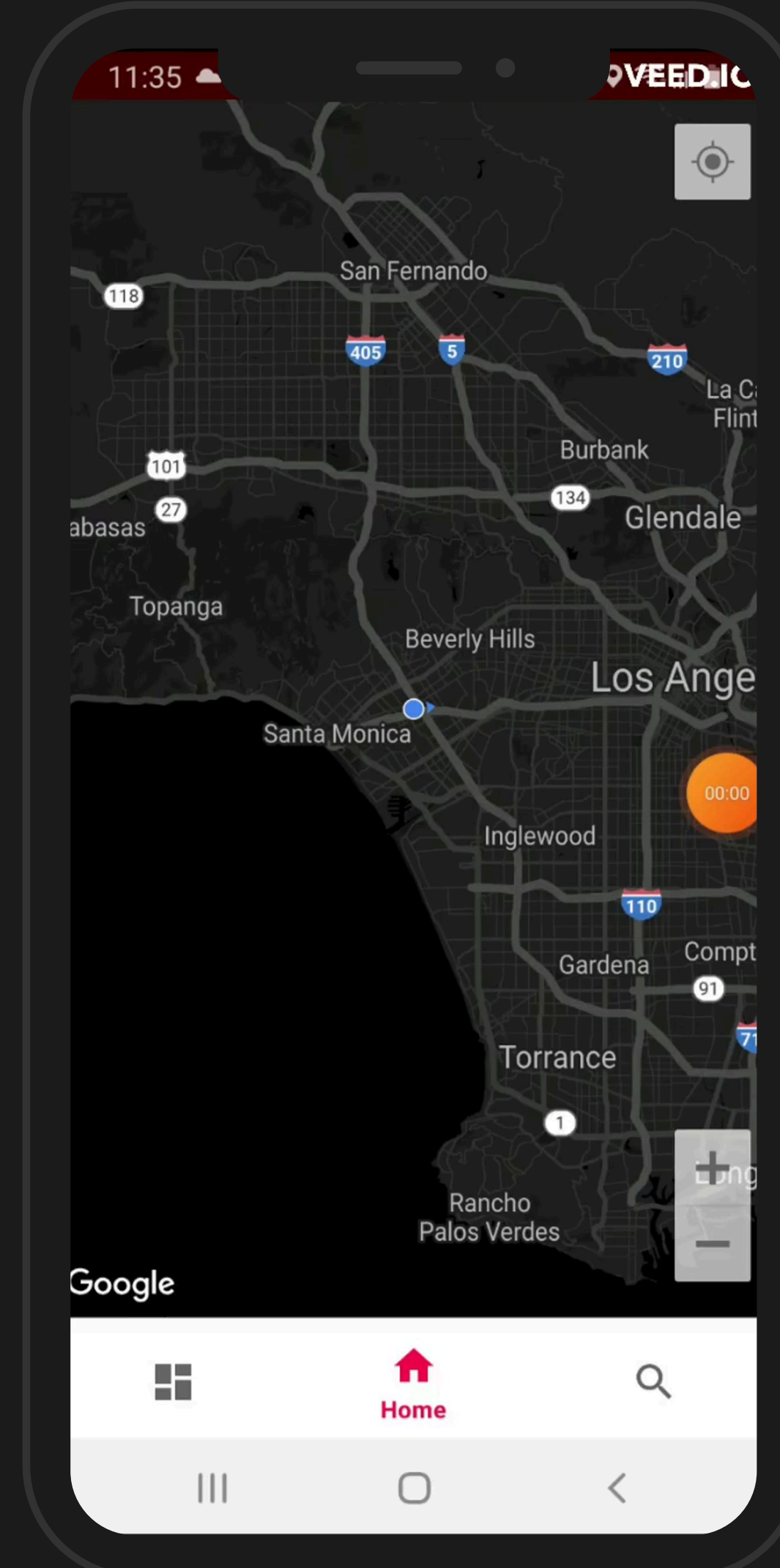
# Demo

Garvit (Emulator)



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David  
(Samsung)



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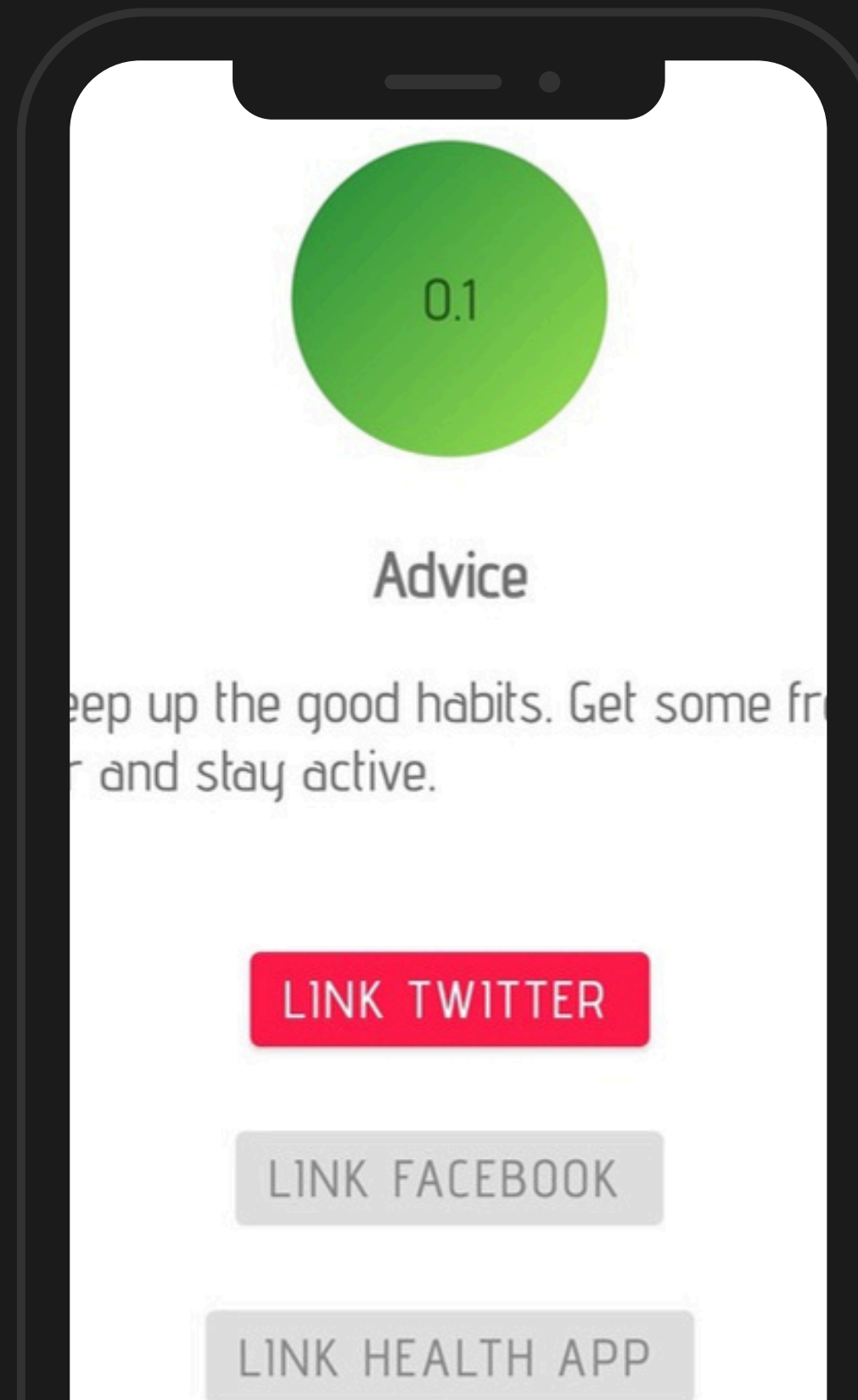
# Future Directions

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## Incorporating other user data

Using Firebase simplifies the process of linking other social media accounts to the user.

We also plan to connect to Health applications to procure activity and sleep data for a more holistic view of mental wellness.



## Building better models

We use pre-trained models that perform well for the specified tasks. However, there is always opportunities to improve and create our own models as we gather more data.

# Thank you for your attention

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