



DEPRESSION DETECTION APP

PROF. HENRY WONG
CS 692

AGENDA

1

Project Description and problem statement

2

Description of minimal viable product and all attributes,
including product backlog

3

Acceptance Criteria & user stories

4

Sprint 7 backlog and test cases

5

Team metrics for every sprint

6

Application screenshot & ML model description

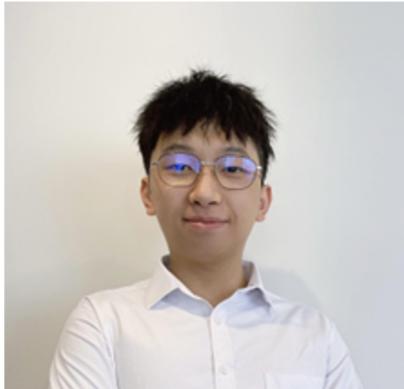
7

API and Retrospective & plans for future development

OUR TEAM



Omkar Shitole
Developer & DBA



Yuxiang Liu
Lead Software
Engineer



Shivani Chavan
Developer



Wangbo Gu
Developer



Artem Kolmogorov
Developer & Project Manager



Siddarth Ravirala
Developer



IMPROVEMENTS MADE FROM PROFESSOR'S FEEDBACK

IMPROVEMENT OF TEAM VELOCITY AND SPRINT BURNDOWN CHARTS

We have improved burndown chart with story points using only Fibonacci numbers as well as introduced ideal burndown line (Slide 42).

IMPROVEMENT OF PROBLEM STATEMENT AND PROJECT DESCRIPTION

We have reduced the size of problem statement and project description leaving only essential parts in. (Slide 6, 7).

PROJECT DESCRIPTION

Project Name	StressOut
Team	Bug Terminator
Project Description	<p>Detecting early signs of depression based on users' pictures and quizzes</p> <p>For customers</p> <p>Who want to manage their mental health</p> <p>The StressOut app</p> <p>Is a mobile app</p> <p>That analyzes user's images and quiz results and provides accurate assessment</p> <p>Unlike traditional way of visiting specialists.</p> <p>Our application provides accessible, accurate and daily measurement of person's mental state</p>
Benefit Outcomes	<p>Users can check their mental state anywhere and anytime</p> <p>Users can track their mental state over long period of time</p> <p>Users can receive useful tips for managing depression</p>
Github Link	https://github.com/htmw/2023S-Team2

PROJECT DESCRIPTION

We are developing depression detection system that uses artificial intelligence model to analyze person's face with images or current mood with text, to help find depression sings. Our detection system is trained with a unique dataset depression faces from messages and images. We believe that certain linguistic traits can be examined and linked to possible depressive symptoms as well as used to forecast self-destructive behavior. The training result we want to achieve is the system capable of analyzing the input (messages and images) from users, and detect the type of depression such as anxiety, bipolar or paranoia.



PROBLEM STATEMENT

Depression is a prevalent mental health disorder that affects millions of people worldwide. The condition is characterized by a persistent feeling of sadness, hopelessness, and loss of interest in daily activities. It significantly impairs a person's ability to function and can lead to a range of physical and emotional problems. Early detection of depression is crucial for effective treatment, as it can reduce the severity and duration of symptoms and improve a person's quality of life.

However, traditional methods of detecting depression, such as self-report questionnaires or clinical interviews, have several limitations. Self-report questionnaires rely on a person's ability to accurately report their symptoms, which can be influenced by various factors, such as social desirability bias, memory recall bias, and language barriers. Clinical interviews can also be subjective and may vary depending on the clinician's experience and training.

As a result, there is a need for an objective and reliable method of detecting depression. One potential solution is the use of machine learning algorithms to analyze various data sources, such as speech patterns, facial expressions, and physiological signals, to identify indicators of depression. By developing accurate and reliable detection systems, we can improve the lives of millions of people who suffer from depression worldwide.

TEAMWORK AGREEMENT

CS-691

Team Agreement

Communication

- The team will communicate with each other through a variety of channels. For weekly meetings for meaningful team discussions, zoom meetings will be used. All the team members are highly encouraged to keep their cameras on, which will be able to build trust between the team members and reflect transparency;
- To discuss regarding minute details and doubts or anything urgent, a WhatsApp messenger group will be used.
- To share the final deliverables, Google docs will be used where all the team members can edit the document.
- A common platform called Trello has been set up for all team members, where designated groups have been created, such as Developers, Business Analyst, Product Owner.
- Database management, bugs, attendance, weekly plan, and meeting minutes. This manages all the bits and pieces of the project and makes the project management efficient.

Work division and Participation

- The entire project work should be divided into equal parts, and equal responsibilities should be given to all the team members.
- Each team member should complete their division of work before the deadline. If they are unable to complete the work on time, that hinders the performance of the entire team. If in case a team member is facing trouble and issues at some point, they can share it with others so that they can help each other and complete the work before the deadline.
- All the team members are expected to attend the meetings promptly.
- Absence during multiple meetings will affect the team's performance and efficiency. The team member can discuss beforehand with the team leader if he/she is going to miss the meeting or make it up for it before the next meeting is scheduled.
- Work is separated between members of the group separated voluntary, however if members lack participation product owner is entitled to assign necessary tasks to absentee members.
- In case member is absent during meetings, member pledges to support whichever decision is approved during that meeting.

Meetings

- All the team members will meet on zoom virtually every Tuesday and Friday. All the team members have to be present, as attendance is mandatory unless there is an exceptional case.
- The team leader would be responsible for sending meeting details and conducting the meeting.
- A meeting track or meeting minutes report would be listed after every meeting to keep track of the project and its progress.
- Every team member is expected to come up with ideas, participate in the discussion, and give an update on their progress for their part of the work.

Respect

- Making sure all team members always have chance to share their opinion

- All members agree to respect each other's personal time and try not to bother members during night time unless it is urgently required by the project.

Team Member	Email
Shivani Chavhan	shivani.chavhan@pace.edu
Yuxiang Liu	y126417@pace.edu
Omkar Shinole	o133654@pace.edu
Wangbo Gu	w10154@pace.edu
Siddharth Ravindra	s164119@pace.edu
Artem Kolmogorov	ak7177@pace.edu

PERSONAS

JACK

Profile

Jack, a 35-year-old software engineer who has a history of depression and anxiety. He often finds himself feeling overwhelmed at work and is struggling to balance his job and personal life. He wants to find a way to manage his symptoms so that he can be more productive and happier.

Name: Jack

Age: 35

Location: Chicago, MI

Job: Software Engineer

Salary: 92 000 – 110 000\$/annually

Family: Single



Interests

- Riding Bike
- Goes Kayaking
- Attending live concerts

Frustration

- Managing depression
- Wants to change job, but unable

Goals

- Moving to south
- Finding friends
- Buying a bigger house



PERSONAS

SARAH

Profile

Sarah, a 25-year-old graphic designer who has been feeling down for the past few months. Despite her successful career and supportive friends and family, she feels unfulfilled and struggles to find joy in her everyday life. She wants to find a way to manage her depression and is open to using technology to help her do so.

Name: Sarah

Age: 25

Location: Los Angeles, CA

Job: Graphic Designer

Salary: 66 000 - 70 000\$/annually

Family: Single

Interests

- Writing own comic books
- Everyday swimmer
- Loves animals
- Watching series

Frustration

- Traffic in Los Angeles area
- Living alone for a long time

Goals

- Buying her own house
- Building lifelong relationships
- Finding friends



PERSONAS

LISA

Profile

Lisa, a 40-year-old stay-at-home mom who is feeling overwhelmed and exhausted. She is struggling to keep up with the demands of taking care of her children and household, and she often feels like she is failing as a mother. She wants to find a way to manage her stress and feelings of inadequacy.

Name: Lisa

Age: 40

Location: New-York, NY

Job: Unemployed

Salary: N/A

Family: Married, two kids

Interests

- Reading romantic novels
- Going for beach holidays
- Loves animals
- Watching series

Frustration

- Her husband going for a long business trip
- Having troubles with her kids

Goals

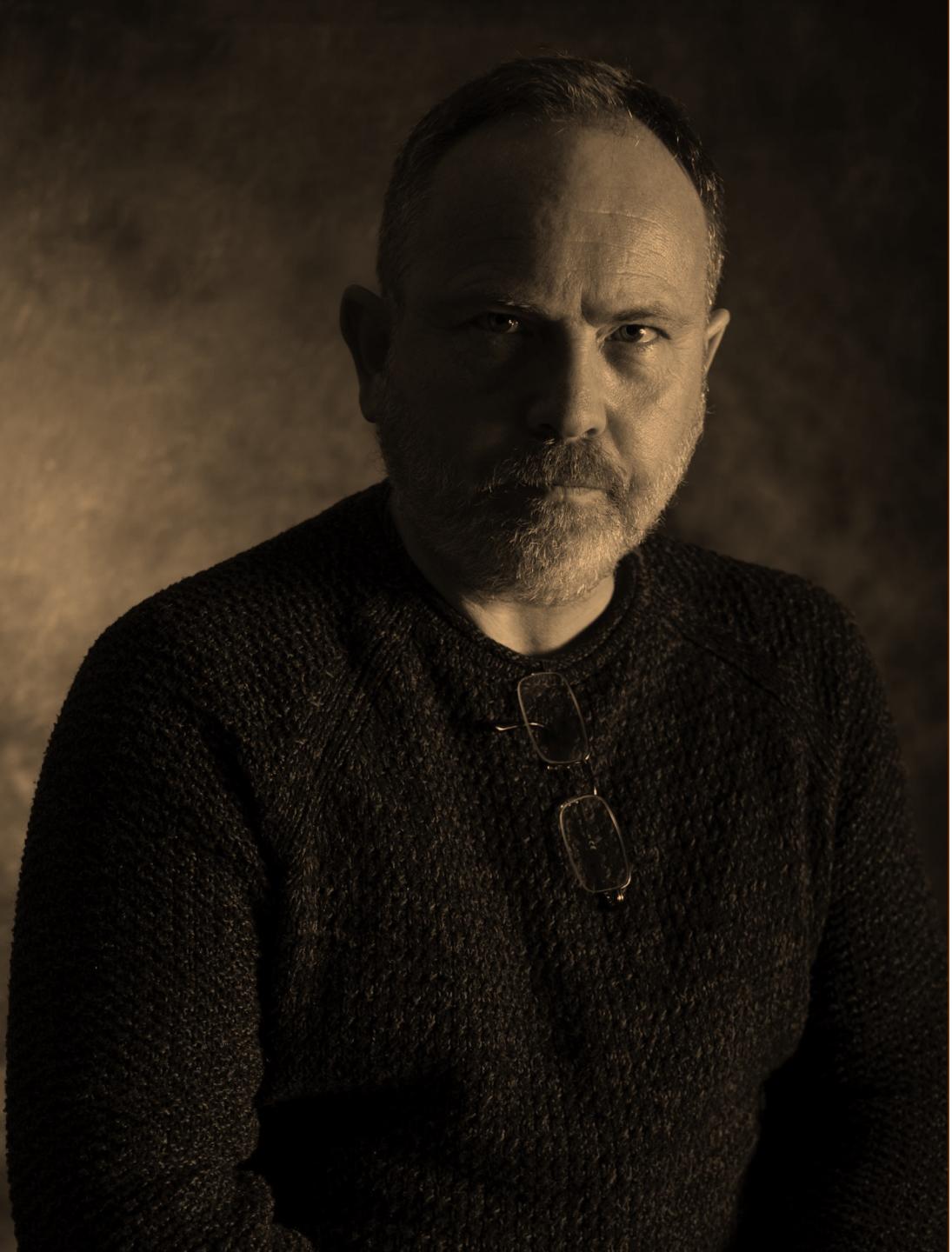
- Taking dog from shelter
- Helping kids with college

PERSONAS

TOM

Profile

Tom, a 50-year-old small business owner who is feeling stressed and burnt out. Despite the success of his business, he is feeling overwhelmed by the responsibilities and pressure of running it. He wants to find a way to manage his stress and anxiety so that he can enjoy his success and have a better work-life balance.



Name: Tom

Age: 50

Location: Austin, TA

Job: Self-Employed

Salary: 150 000 \$/annually

Family: Divorced

Interests

- Going hunting & fishing
- Taking rides in his chopper

Frustration

- Declining business profits
- Having health problems

Goals

- Building strong portfolio for his 401-k
- Finding new friends

MVP, TECHNOLOGIES & ALGORITHMS

MINIMAL VIABLE PRODUCT



Home Page

- A welcome message that briefly introduces the app and its purpose
- A button or link to create an account or log in if you already have one
- A list of features and resources available within the app, such as self-assessment questionnaires, mood trackers, and mental health resources
- A prominent call-to-action encouraging users to take a self-assessment or start tracking their mood



Profile/History of Consultation

- A section where you can edit your personal information, such as your name, email address, and password

MINIMAL VIABLE PRODUCT



Image upload/Take Picture

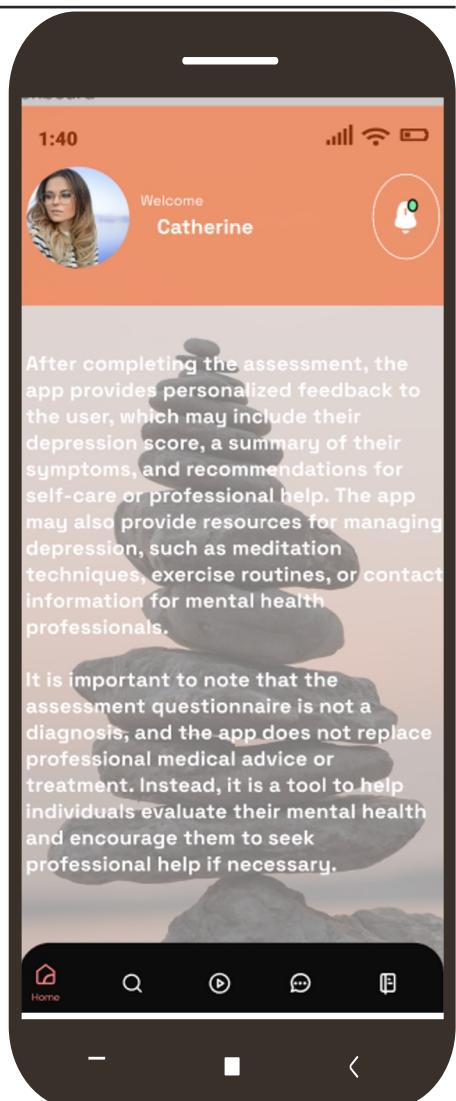
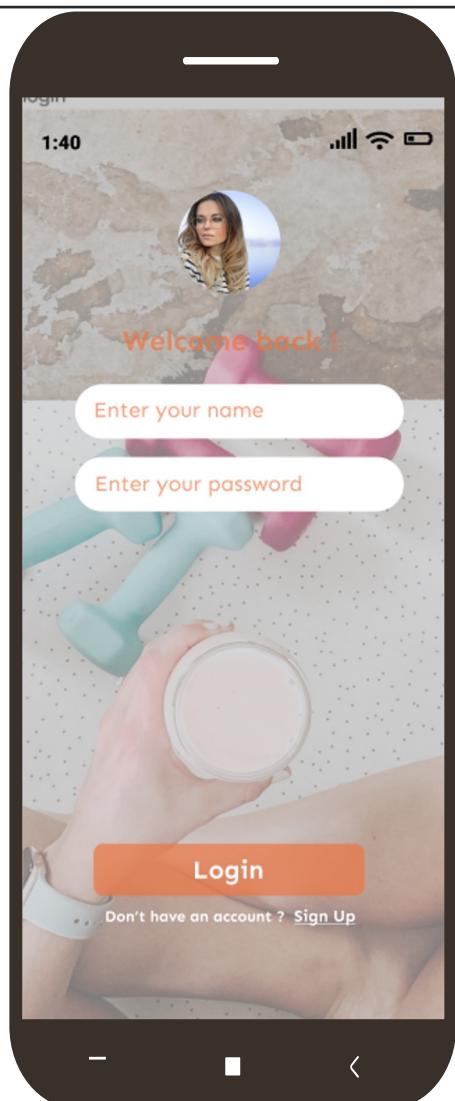
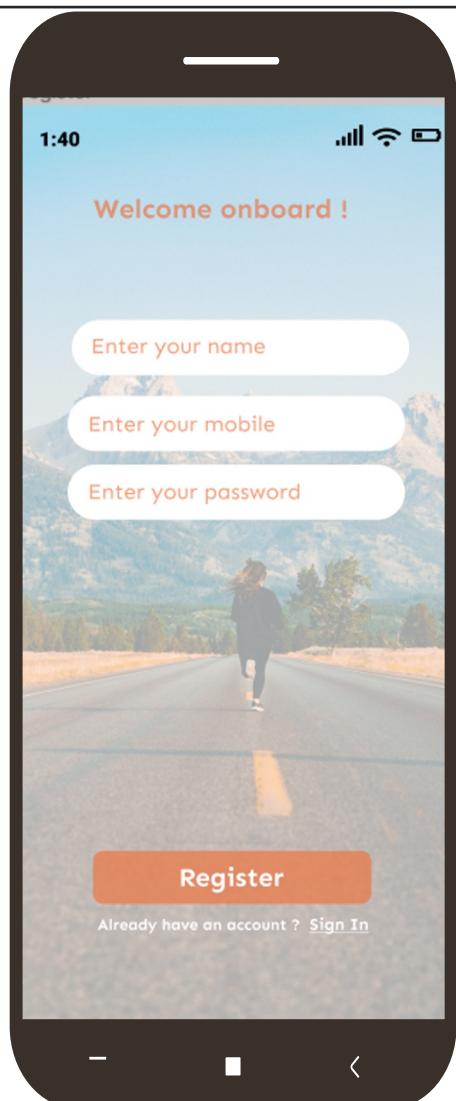
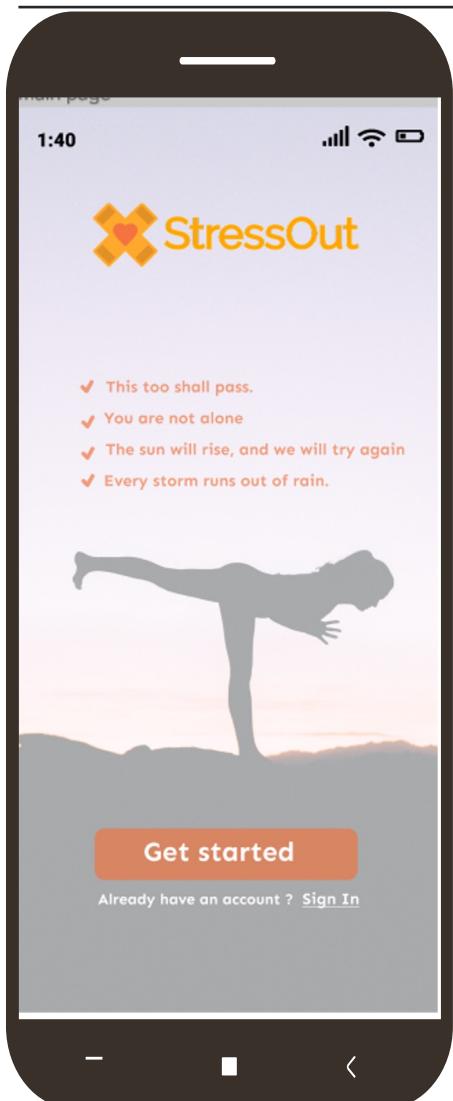
- A camera button that allows you to take a picture directly within the app
- A gallery button that allows you to upload pictures from your camera roll
- An option to add captions or notes to each image, to help you remember important details or context



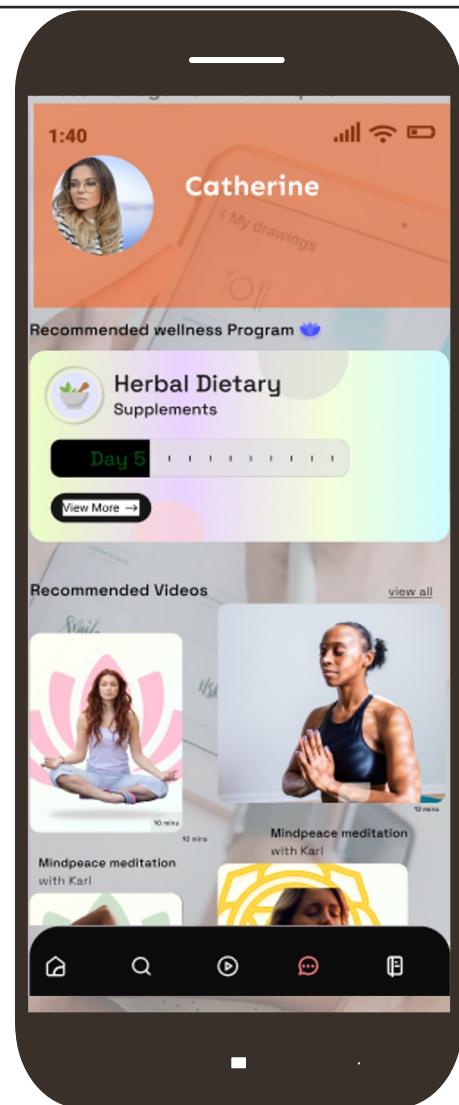
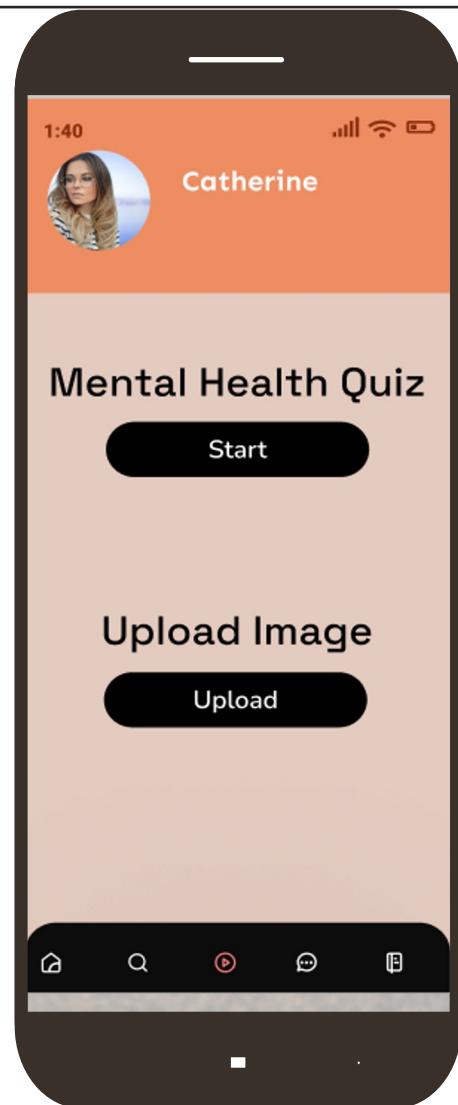
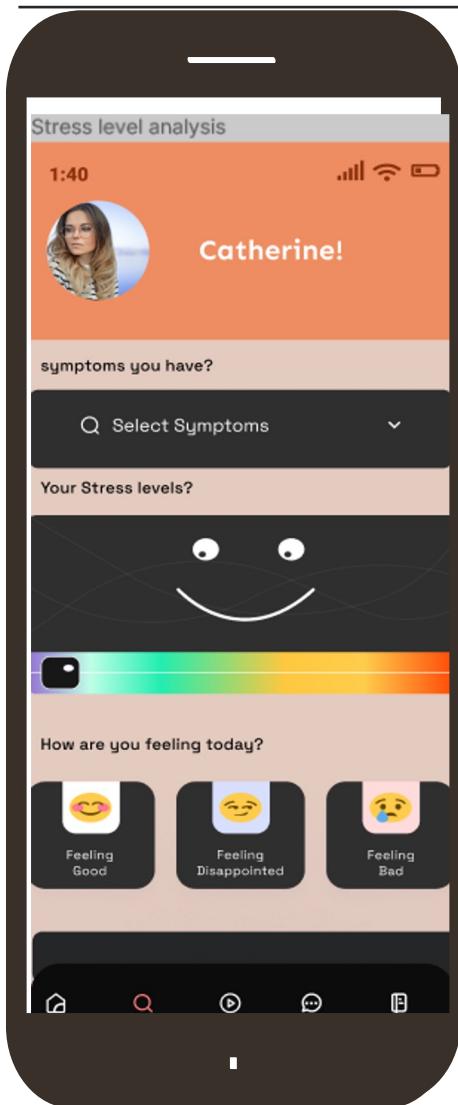
Recommendation

- A dashboard that displays any recommendations or next steps based on your self-assessment results, including suggestions for lifestyle changes, self-care practices, or professional treatment options

PROTOTYPE



PROTOTYPE



ALGORITHMS & TECHNOLOGIES



TensorFlow



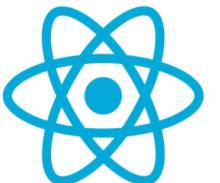
Keras



render



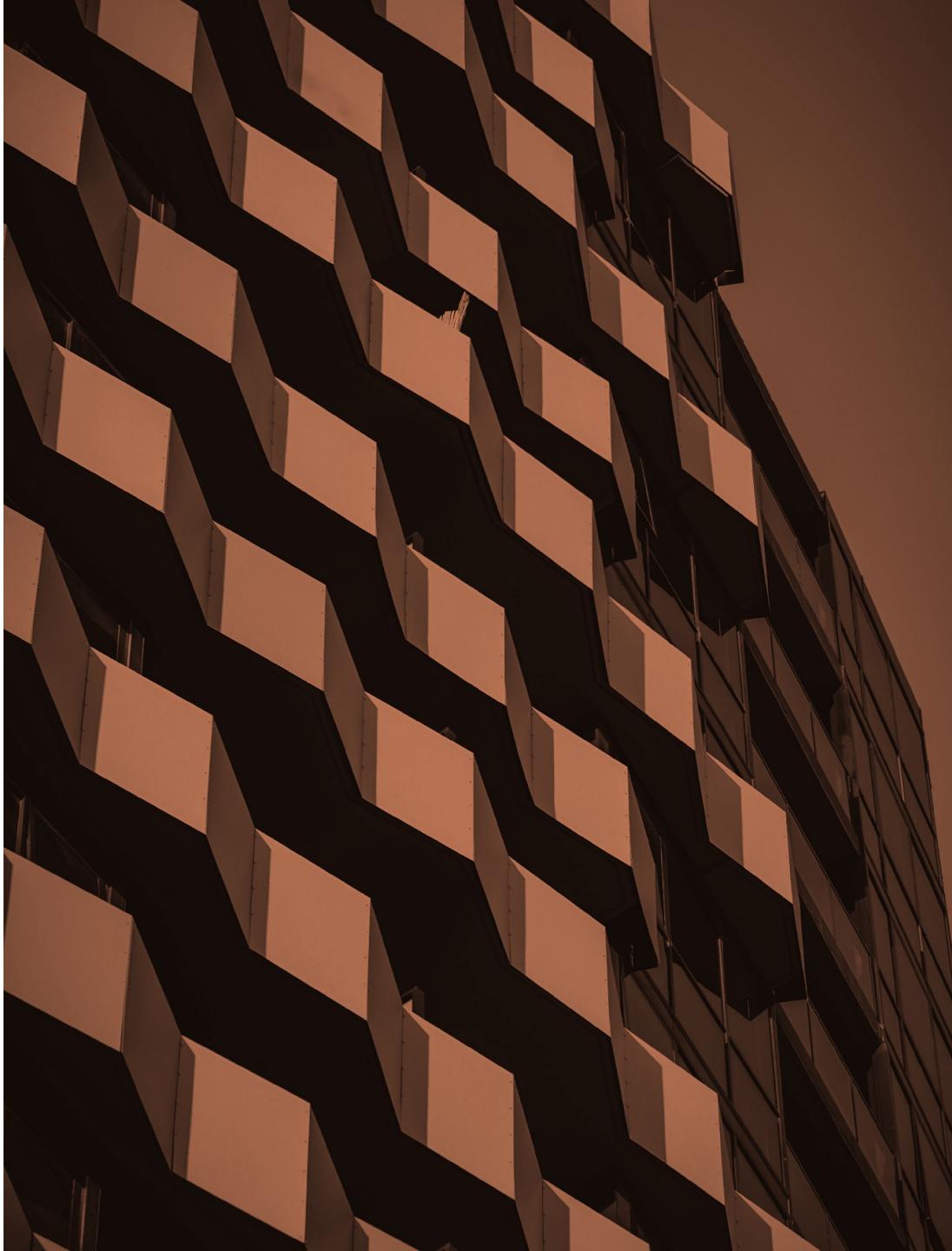
FastAPI



React Native

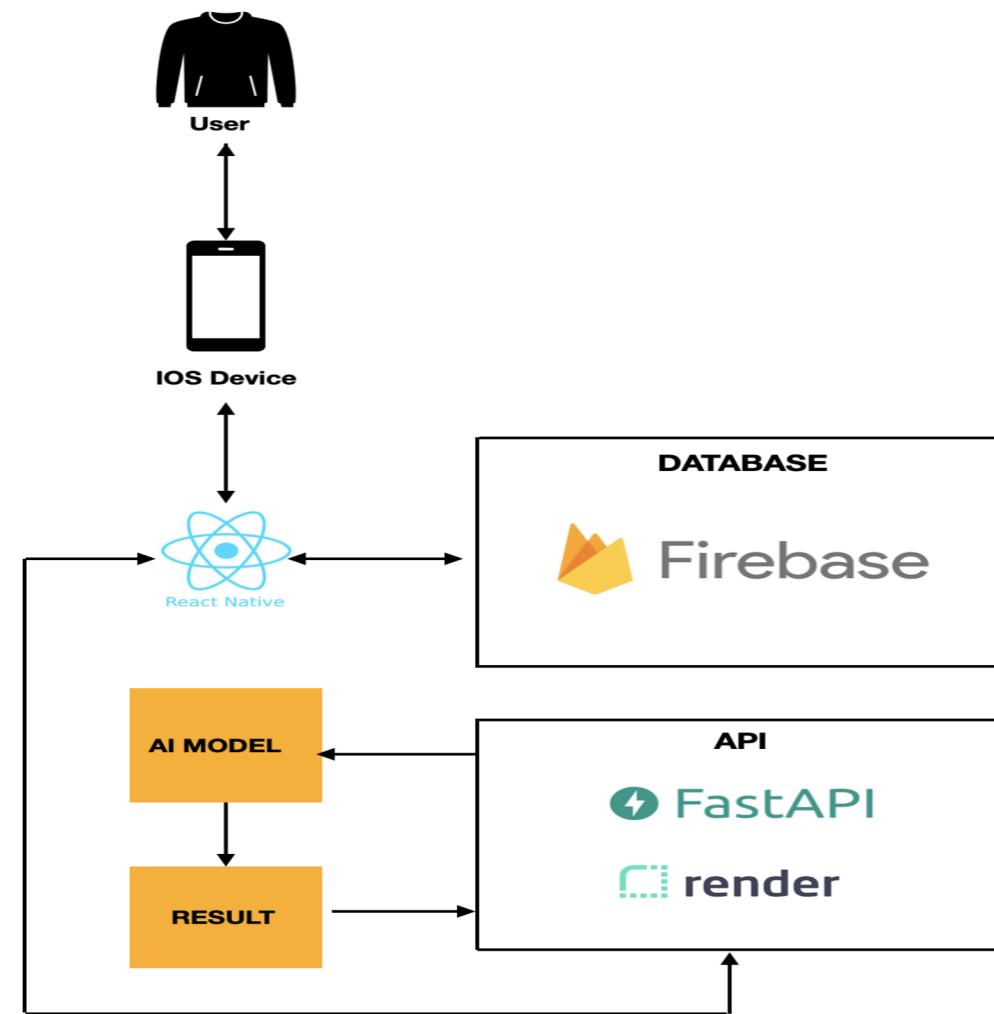


Firebase

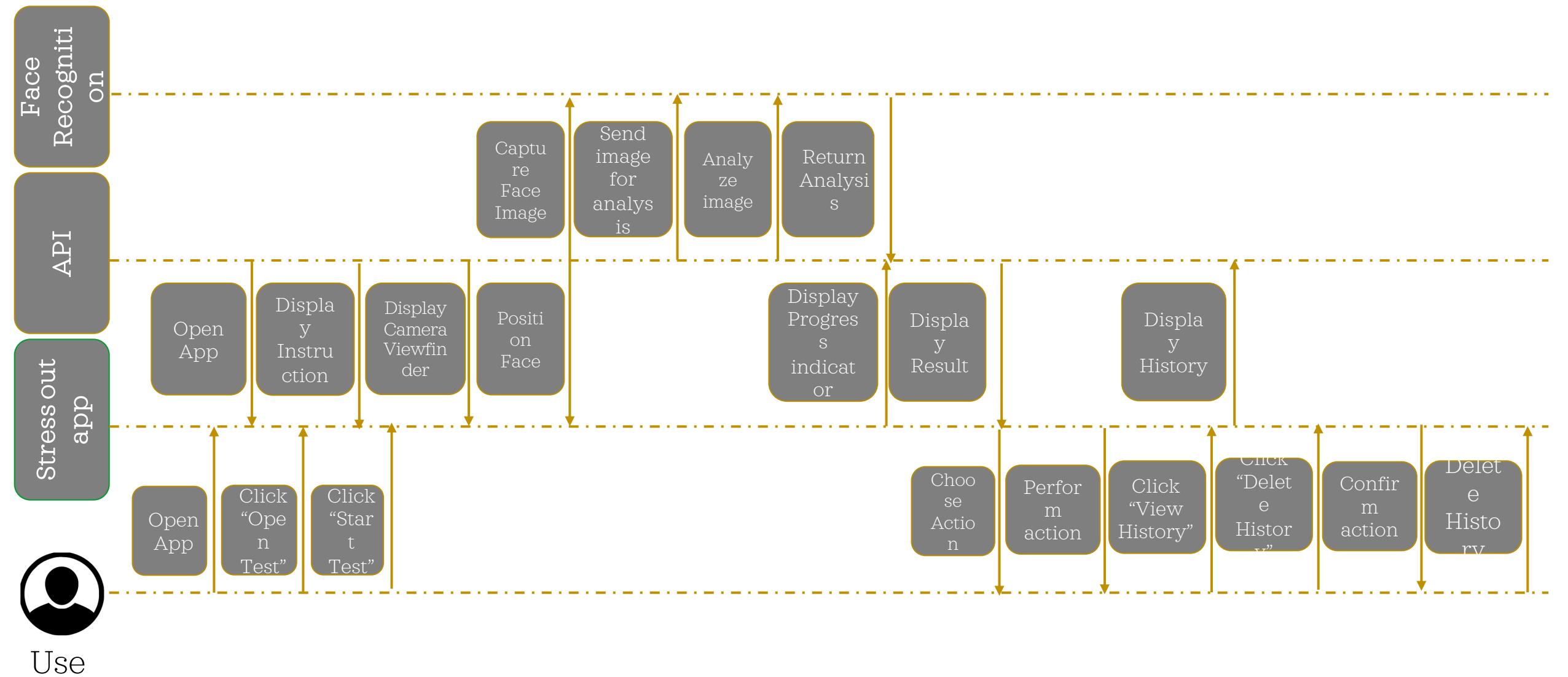




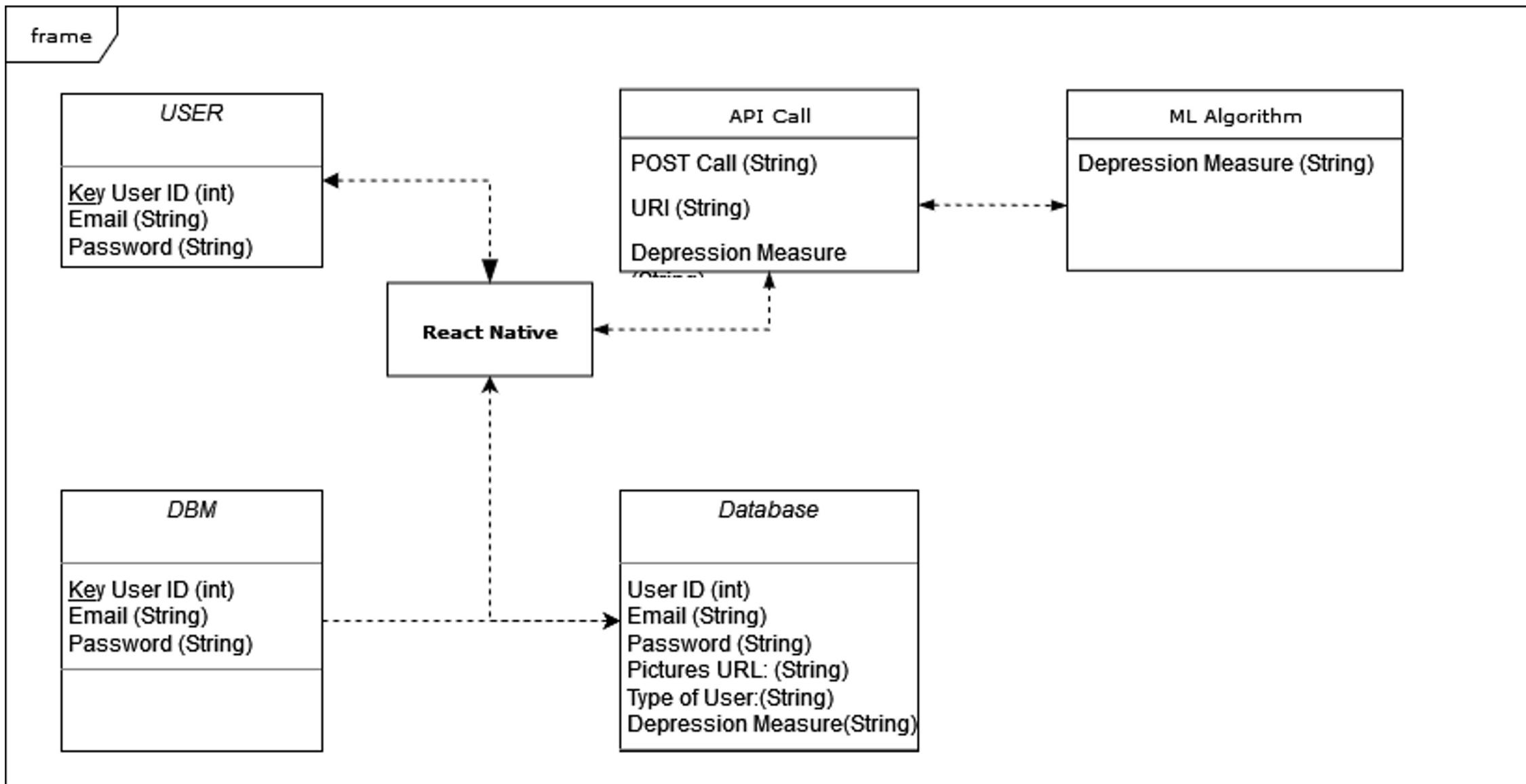
CONCEPTUAL ARCHITECTURE DIAGRAM



SEQUENCE DIAGRAM

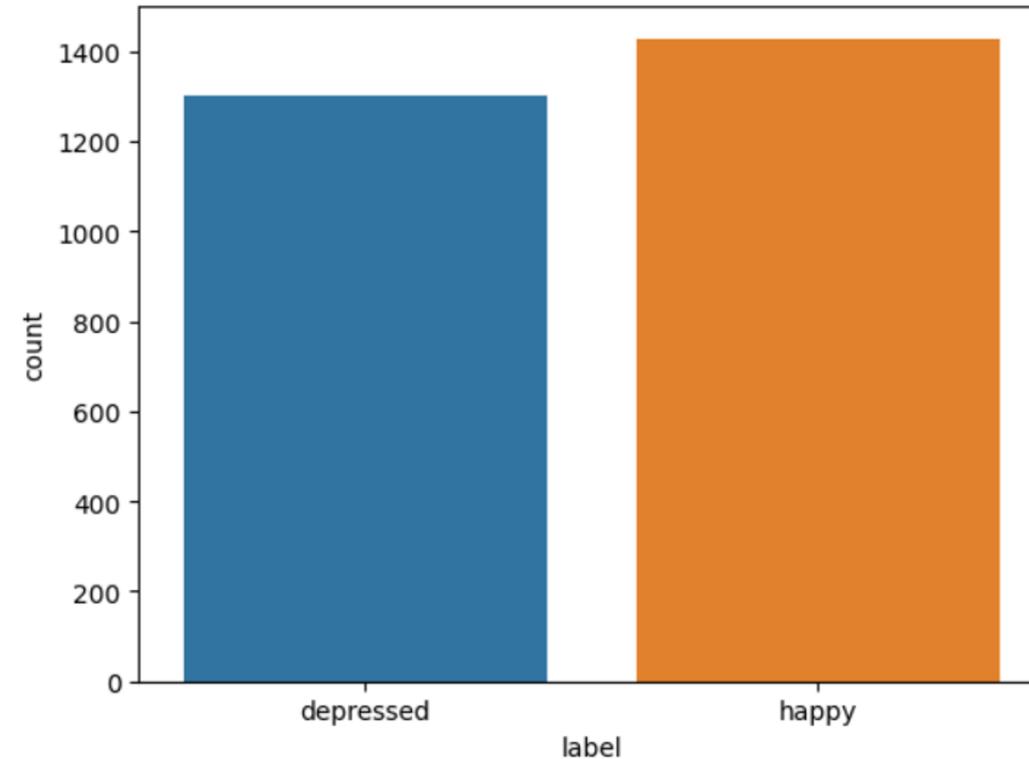


UML CLASS DIAGRAM



Machine Learning Model

- Dataset contains over 2700 facial images
- Classified by happy or depressed



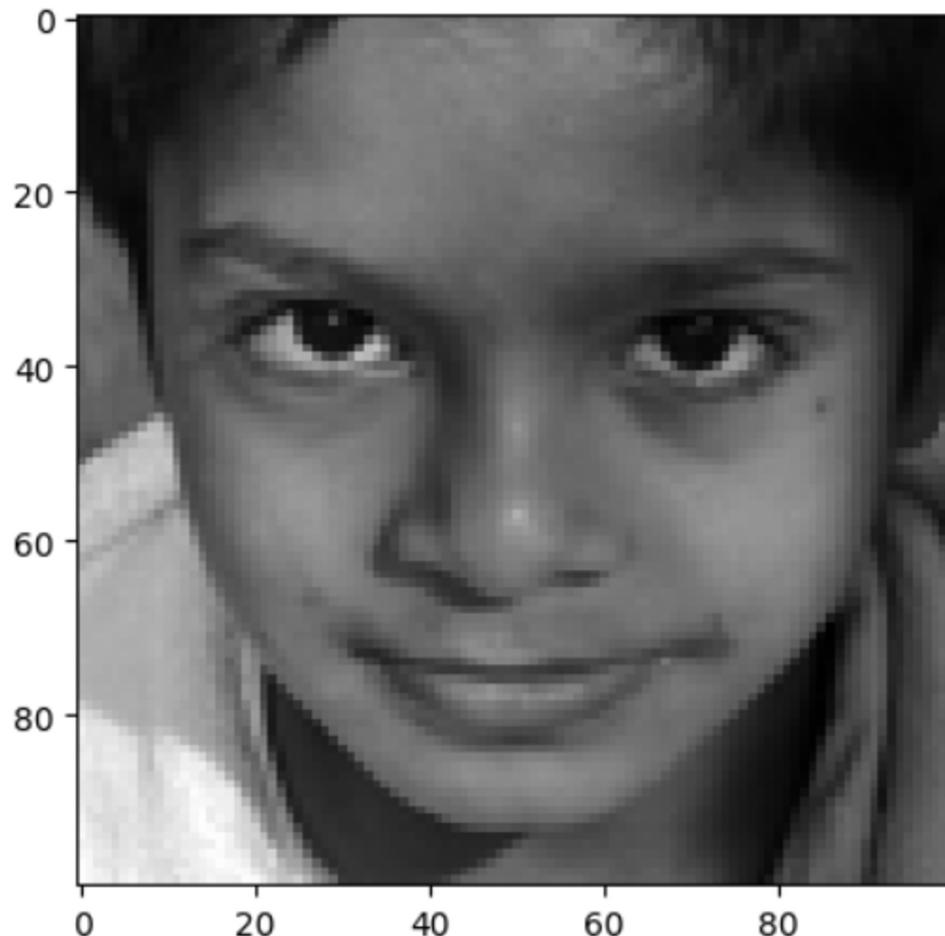
Machine Learning Model – Pre-process

Training dataset: 70% of the images

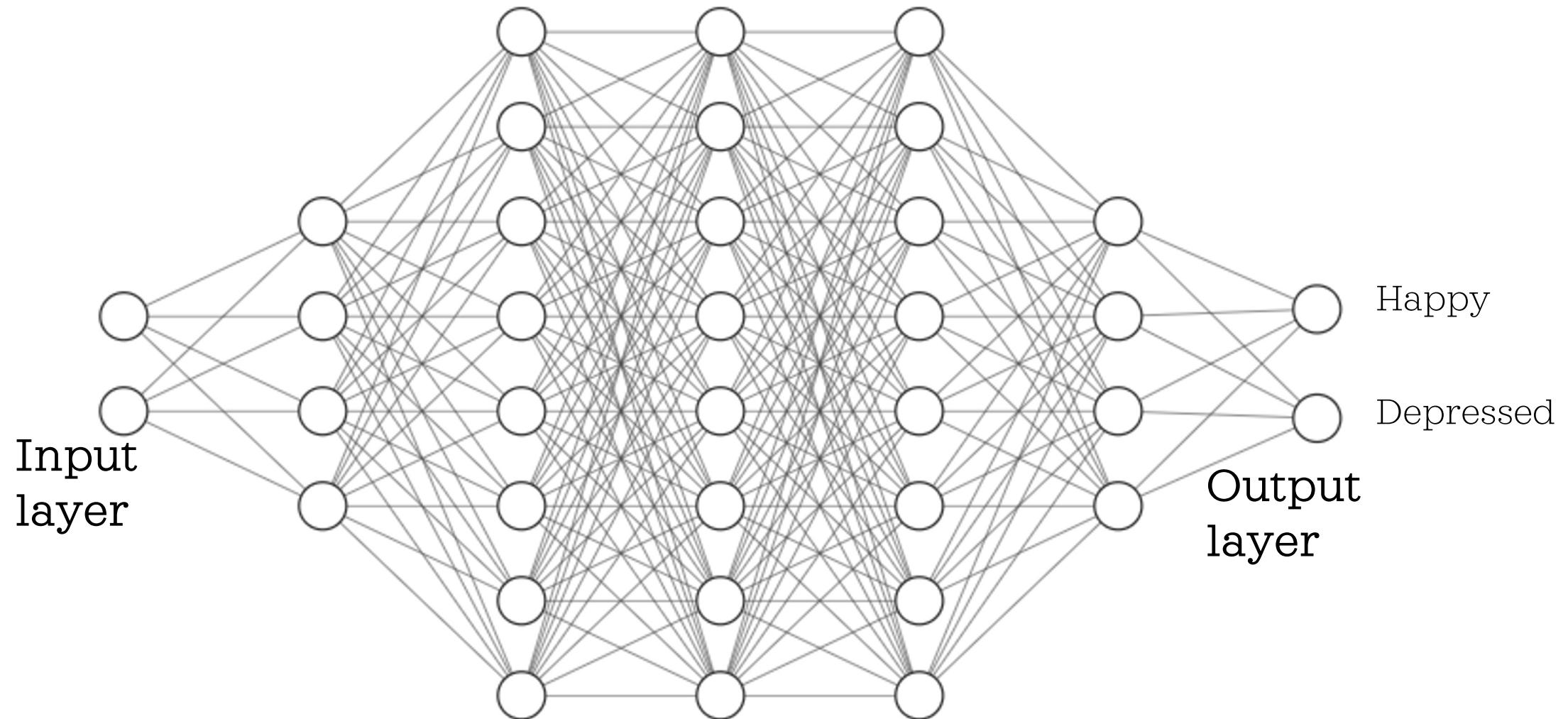
Testing dataset: 30% of the images

Resizing all images to 100x100 pixels

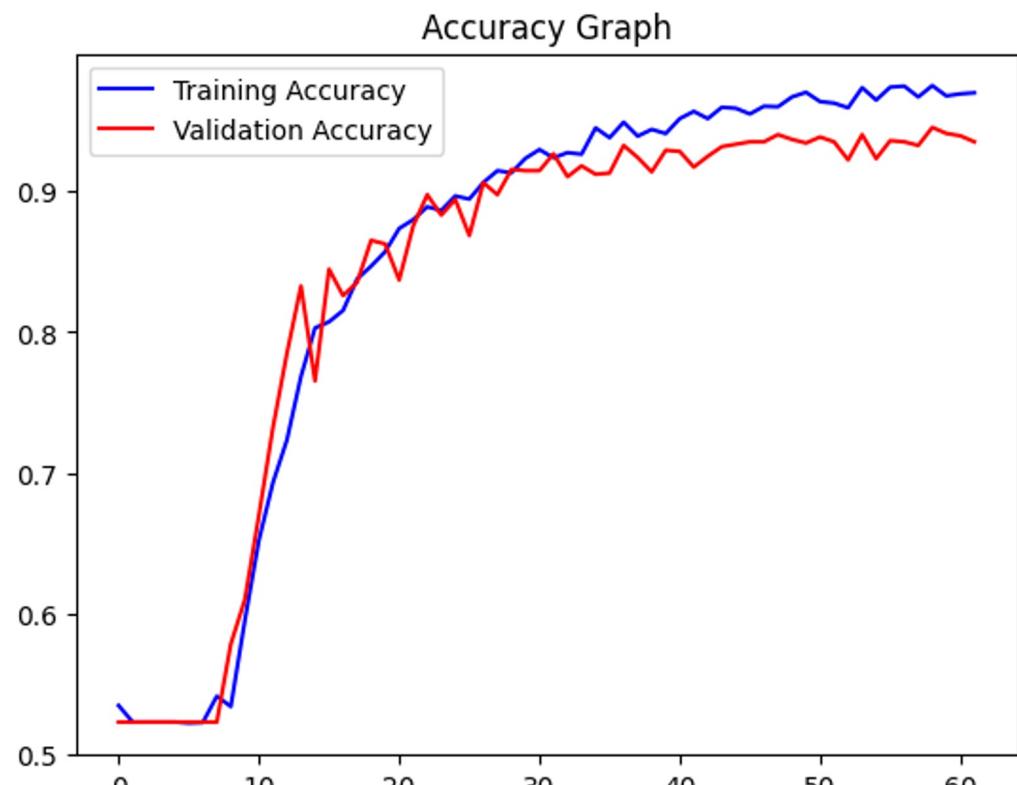
Grayscaling all images



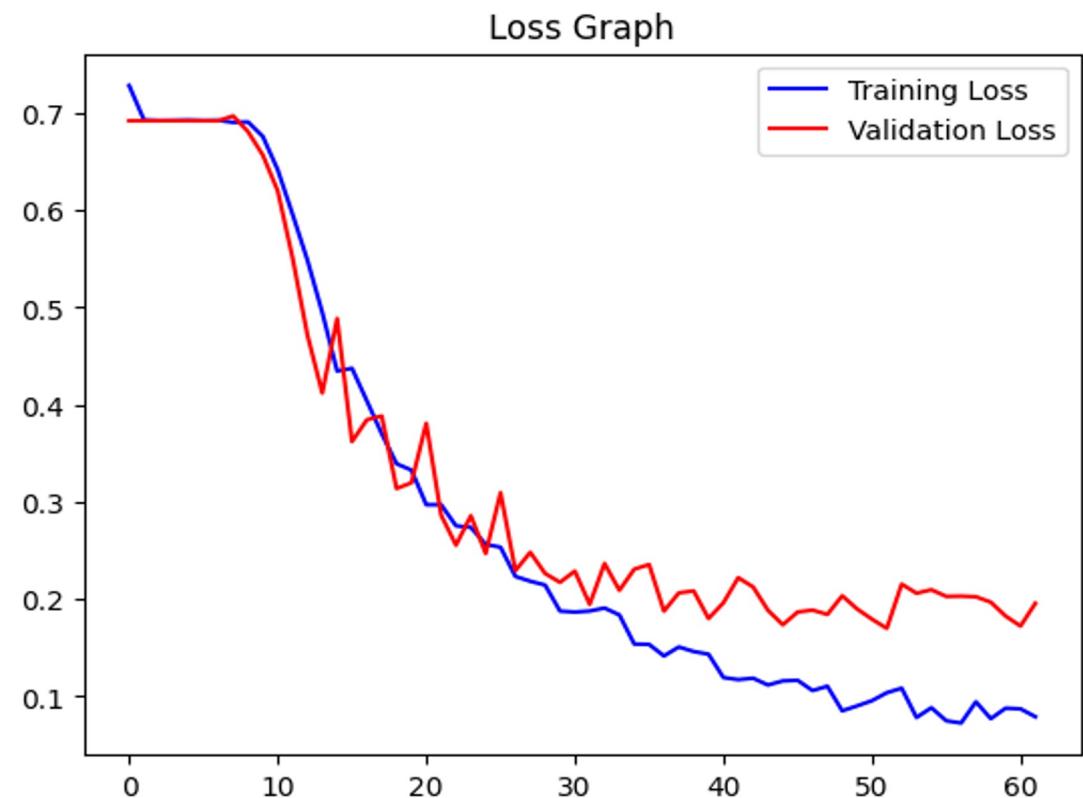
Convolutional Neural Network (CNN)



Model Training

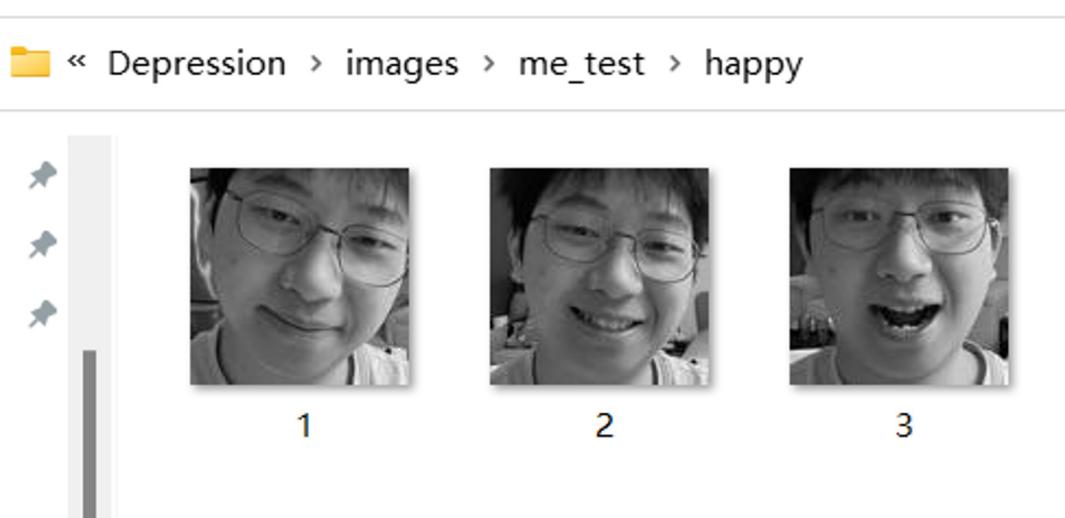
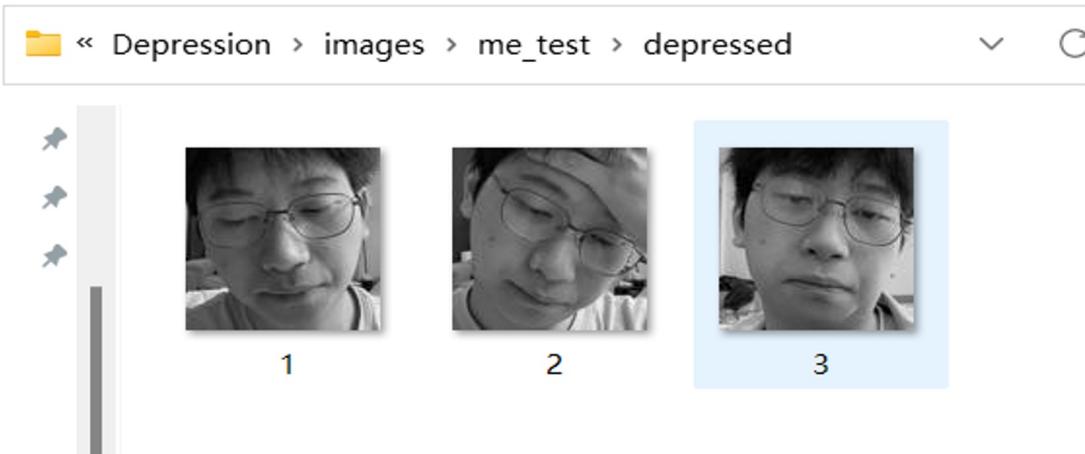


Training accuracy: 97%, Validation Accuracy: 94%



Training loss: 8%, Validation loss: 20%

Model Testing



```
.. 1/1 [=====] - 33s 33ms/step
Original : Predicted, depressed : depressed
1/1 [=====] - 0s 47ms/step
Original : Predicted, depressed : depressed
1/1 [=====] - 0s 12ms/step
Original : Predicted, depressed : depressed
1/1 [=====] - 0s 12ms/step
Original : Predicted, happy : happy
1/1 [=====] - 0s 41ms/step
Original : Predicted, happy : happy
1/1 [=====] - 0s 13ms/step
Original : Predicted, happy : happy
1/1 [=====] - 0s 12ms/step
Original : Predicted, happy : happy
{}
Overall Accuracy: 1.0
```

- Testing with my selfies
- Achieving 100% accuracy

MACHINE LEARNING API

Packaging the system into an API
Configuring the RESTful services
Setting up Render environment
Solving Libraries incompatibility
Deploy the API



MACHINE LEARNING API

```
Sep 25 03:13:04 PM ==> Uploading build...
Sep 25 03:13:48 PM ==> Build uploaded in 24s
Sep 25 03:13:48 PM ==> Build successful 🎉
Sep 25 03:13:50 PM ==> Deploying...
Sep 25 03:14:32 PM ==> Using Node version 14.17.0 (default)
Sep 25 03:14:32 PM ==> Docs on specifying a Node version: https://render.com/docs/node-version
Sep 25 03:14:36 PM ==> Running 'uvicorn model_API:app --host 0.0.0.0 --port 10000'
```

```
Sep 25 03:14:50 PM ==> Detected service running on port 10000
Sep 25 03:14:50 PM ==> Docs on specifying a port: https://render.com/docs/web-services#port-detection
Sep 25 03:14:52 PM INFO:      Started server process [52]
Sep 25 03:14:52 PM INFO:      Waiting for application startup.
Sep 25 03:14:52 PM INFO:      Application startup complete.
Sep 25 03:14:52 PM INFO:      Uvicorn running on http://0.0.0.0:10000 (Press CTRL+C to quit)
```

Upload and deploying the API on Render

MACHINE LEARNING API

⊕ WEB SERVICE

Render_Detection_API

Python 3 Free

👤 YuxiangLiuGC / Detection_API ✏ main

<https://render-detection-api.onrender.com> ↗



```
{"Hi there": "You reached the endpoint!"}
```

- Testing the API by sending HTTP GET request
- Receiving predefined greeting



MACHINE LEARNING API

The screenshot shows a Postman interface for testing a machine learning API. The URL is <https://render-detection-api.onrender.com>. The method is set to POST. The Headers tab shows 9 items, and the Body tab is selected, showing JSON format with the following content:

```
1 "image": "/9j/4AAQSkZJRgABAQAAAQABAAAD/  
2 ... 2wBDAAYEBQYFBAYGBQYHBwYIChAKCgkJChQDwwQFxQYGBcUFhYaHSUfGhsjHBYWICwgIyYnKSopGR8tMC0oMCUoKSj/  
2wBDAQcHBwoIChMKChMoGhYaKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCgoKCj/  
wAARCPoBkADASIAAhEBAXB/8QAHAAAAwADAQEAAAAAAAAAAAAACAwQFBgcI/  
8QASBAAgECBAQEAvYEBAUDAwMFAAECAxEEEiEiTBEyQQYTQ1FSYXEUI2KBkaEHM3KxFUPB8CSC0eHxNFOSFm0iCCVEshdz  
0oP/xAAbAQEBAQEBAQEAAAAAAAAAAQIDBAUGB//  
EAC8RAQEAAgICAQEEAgICAQUBAAABhEDIQQxEkEEFyJRYQYyFHEjgUIzUmKRsaH/2gAMAwEAAhEDEQA/APHsLAhpntUa  
+4WKJbAEimhR6QsA0xXGJgMVguMBWFcr0sajtuAlu1KTCC2jQDEwY0EKyGNk2CmS3llYdkEluATRLTKBoBJmSJEVlLALdwY
```

The response status is 200 OK, time taken is 12.64 s, and size is 345 B.

- Testing the API by sending an HTTP POST Request
- Along with an image encoded in base 64 format
- Receiving response with a prediction for the probability of depression

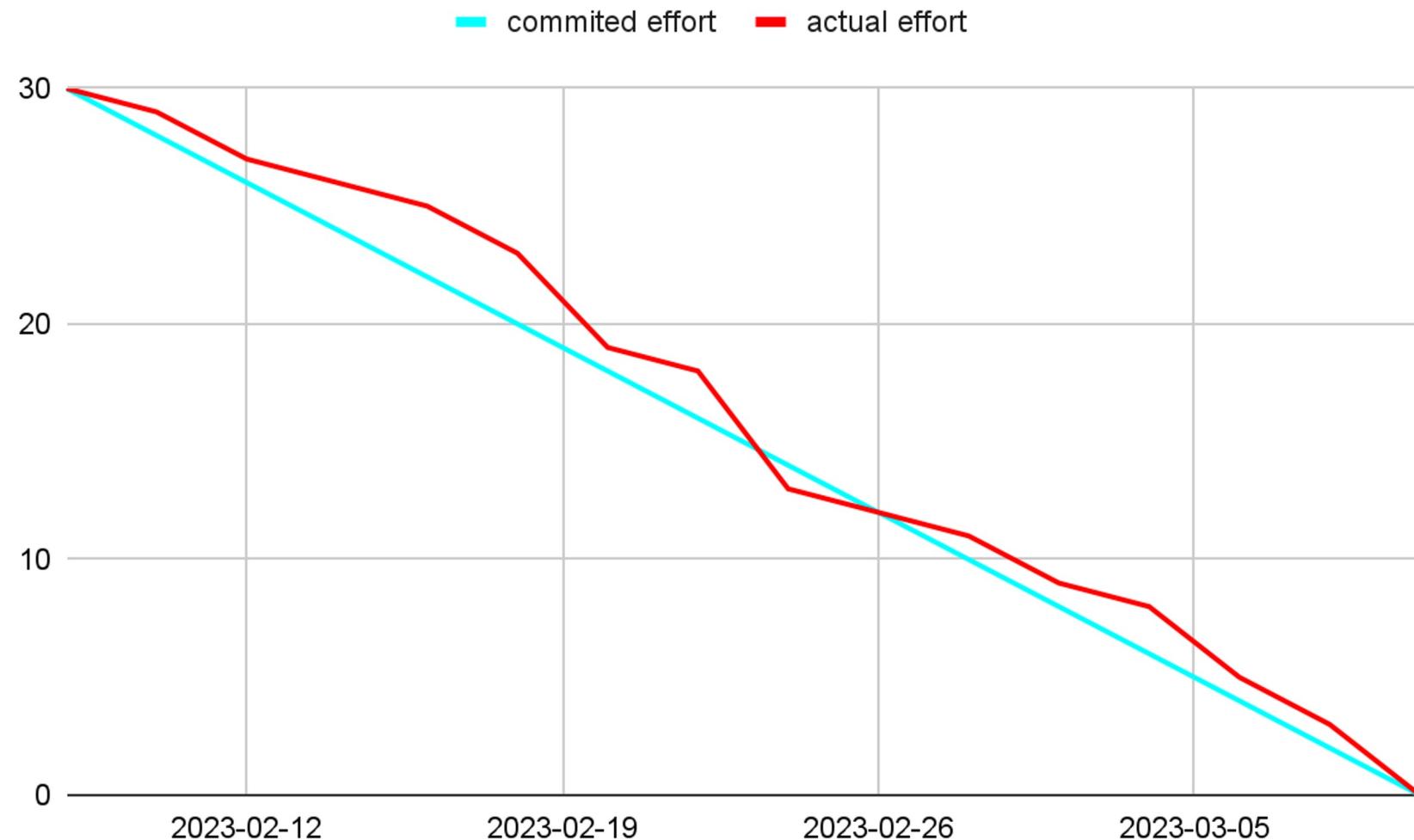
SPRINT 1 RECAP

Issue type	Key	Name
STRES-1	task	Establish teamwork agreement
STRES-2	task	Establish team roles
STRES-6	task	Work on deliverable 1 presentation.
STRES-5	task	Establish weekly meeting
STRES-3	task	Set up development tools

SPRINT 2 RECAP

Issue type	Key	Name
STRES-8	story	As a customer, I want to register myself to the application So That I can keep account private and login using email/phone and password
STRES-9	story	As a customer, I want to login and see the user page
STRES-11	story	As a customer, after login I want to store all my information
STRES-12	story	As a signed-in customer, I want to log out So that I can have my privacy in the app.
STRES-14	task	Create MVP Prototype

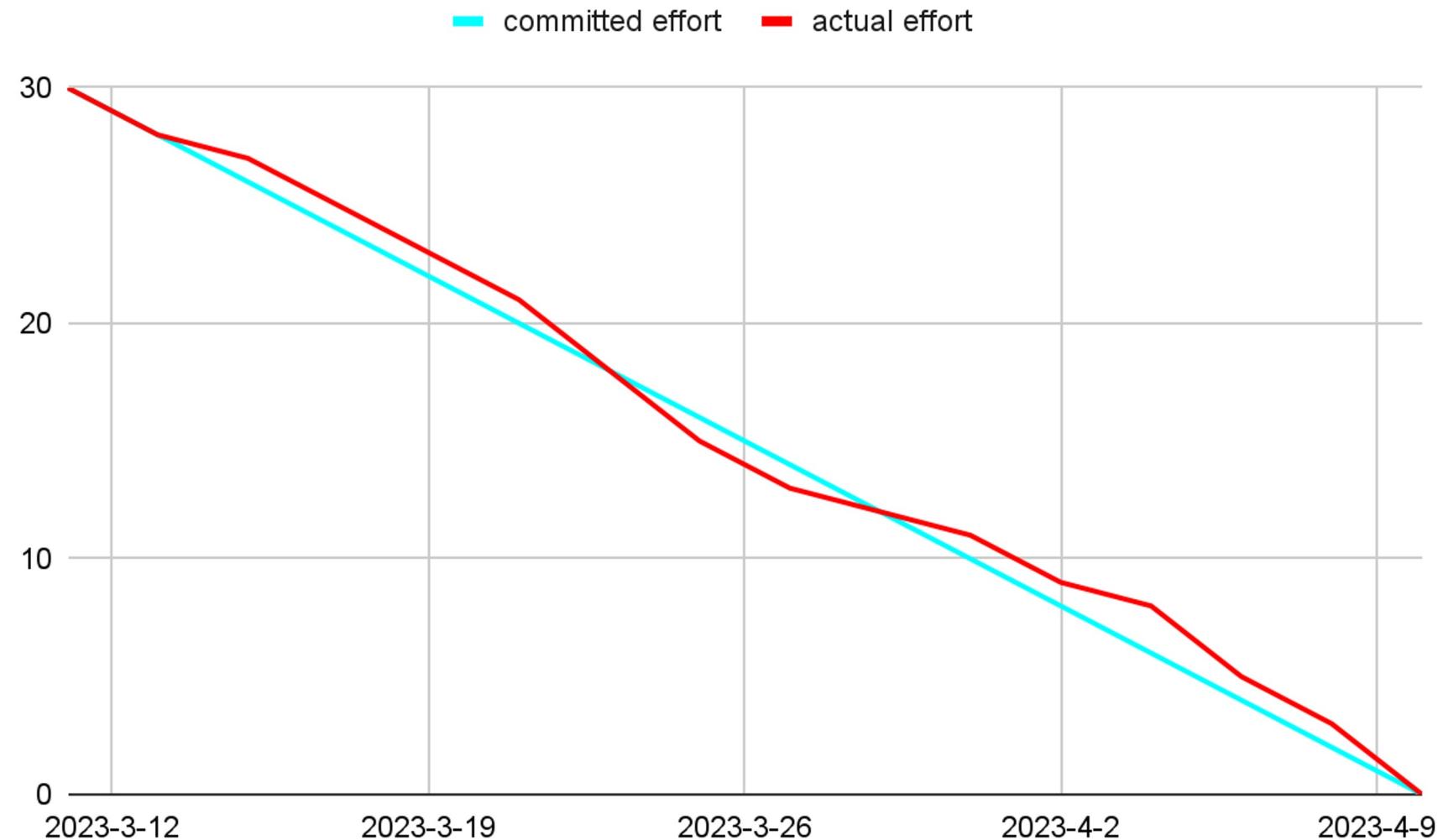
SPRINT 2 BURNDOWN CHART



SPRINT 3 RECAP

Issue type	Key	Name
STRES-20	story	As a customer, I want to create my profile. So that I can store my basic information
STRES-19	story	As a customer, I want to browse all the services provided by the app, So that I know what to do next after login
STRES-25	story	As a customer, I would like to have a landing page explaining all the features of the platform
STRES-27	story	As a customer, I want to take the picture. So that I can start to analyze my mood
STRES-22	story	As a signed-in customer, I want to see some recommendation for my mental health

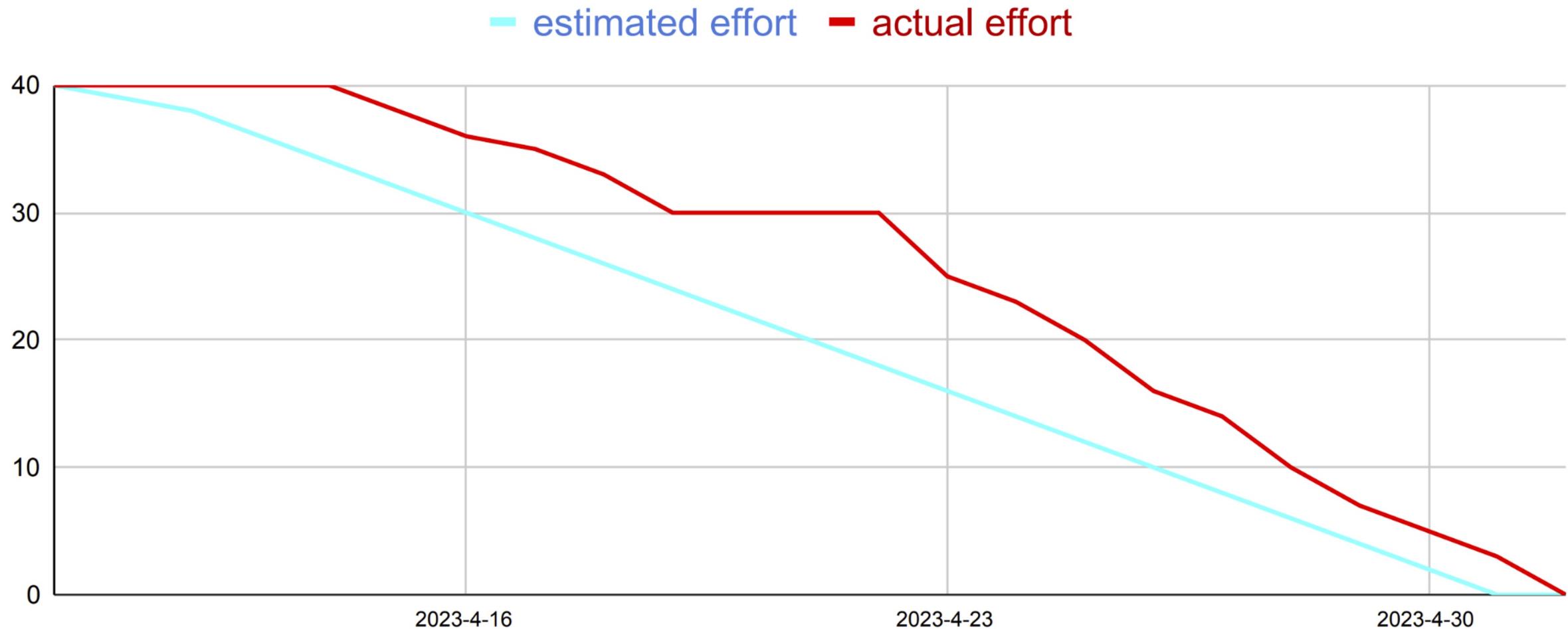
SPRINT 3 BURNDOWN CHART



SPRINT 4 RECAP

Issue type	Key	Name
STRES-26	story	As a signed-in customer, I want to upload pictures from my phone, so that I can finish my profile
STRES-38	story	As a customer, I want to take the quiz, so that I can understand my state of mind right now
STRES-30	story	As a customer, I would like to track my mood, so that I know the state for the whole week
STRES-32	story	As a customer, I want to be encouraged to track the mood, so that I may not forget to take a self-assessment
STRES-32	task	Work on technical paper
STRES-35	story	As a customer, I want to edit my profile, so that I can update my information

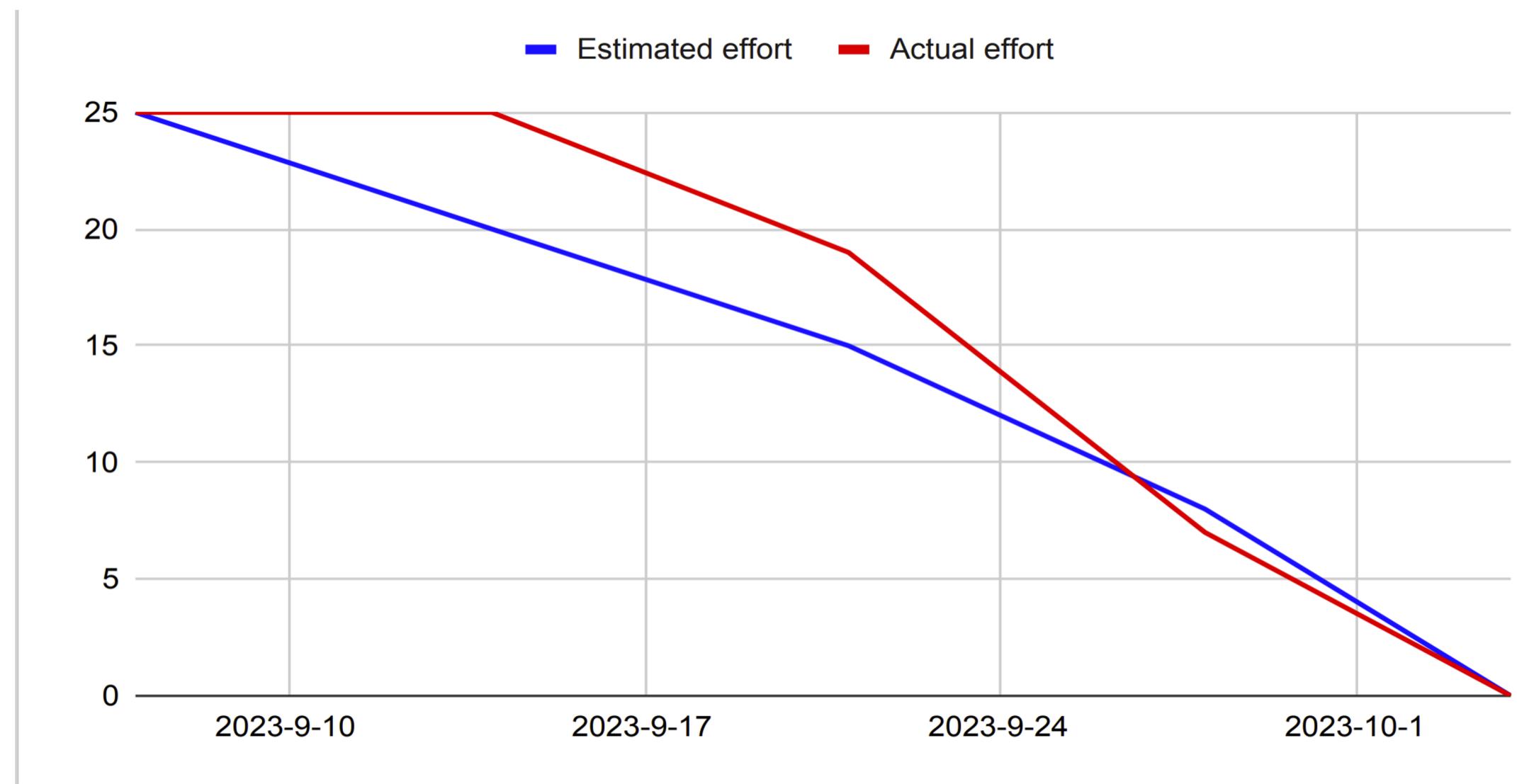
SPRINT 4 BURNDOWN CHART



SPRINT 5 RECAP

Issue type	Key	Name
STRES-40	task	Deploy the ML model API on Render
STRES-53	task	As a customer, I want my results to be saved in the firebase
STRES-48	task	Improvement the UI of the app
STRES-55	task	Saving User Images to the firebase storage
STRES-42	story	As a customer, I want to add note to my pictures, so that it can help me to remember important details

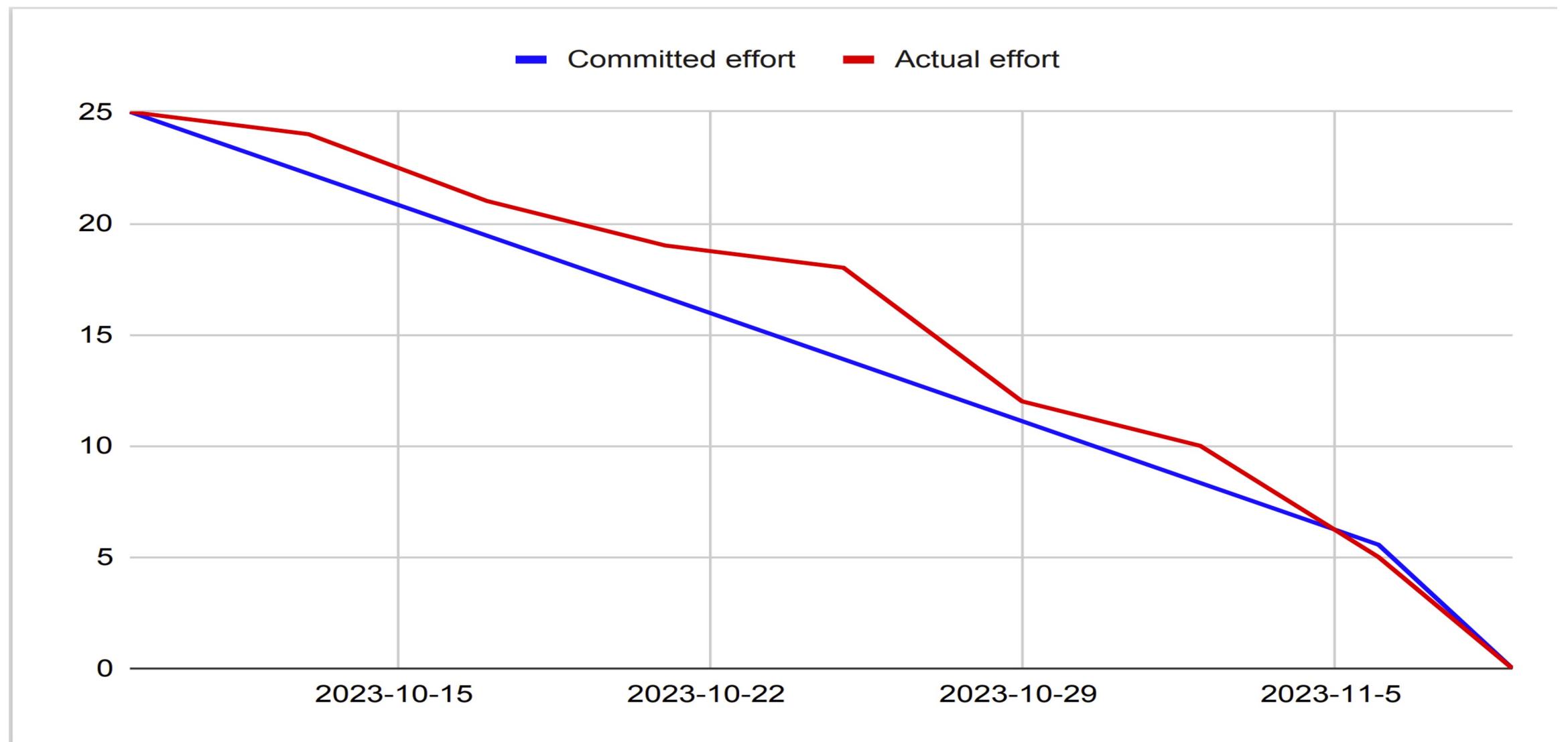
SPRINT 5 BURNDOWN CHART



SPRINT 6 RECAP

Issue type	Name	Story points
STRES-60	Make an API Call	5
STRES-61	As a customer, I want to an app to save and update my details automatically	5
STRES-50	Improvement the UI of the app	5
STRES-57	As a customer, I want my picture to be resized automatically without resizing it myself	5
STRES-62	Improving database on firebase	5

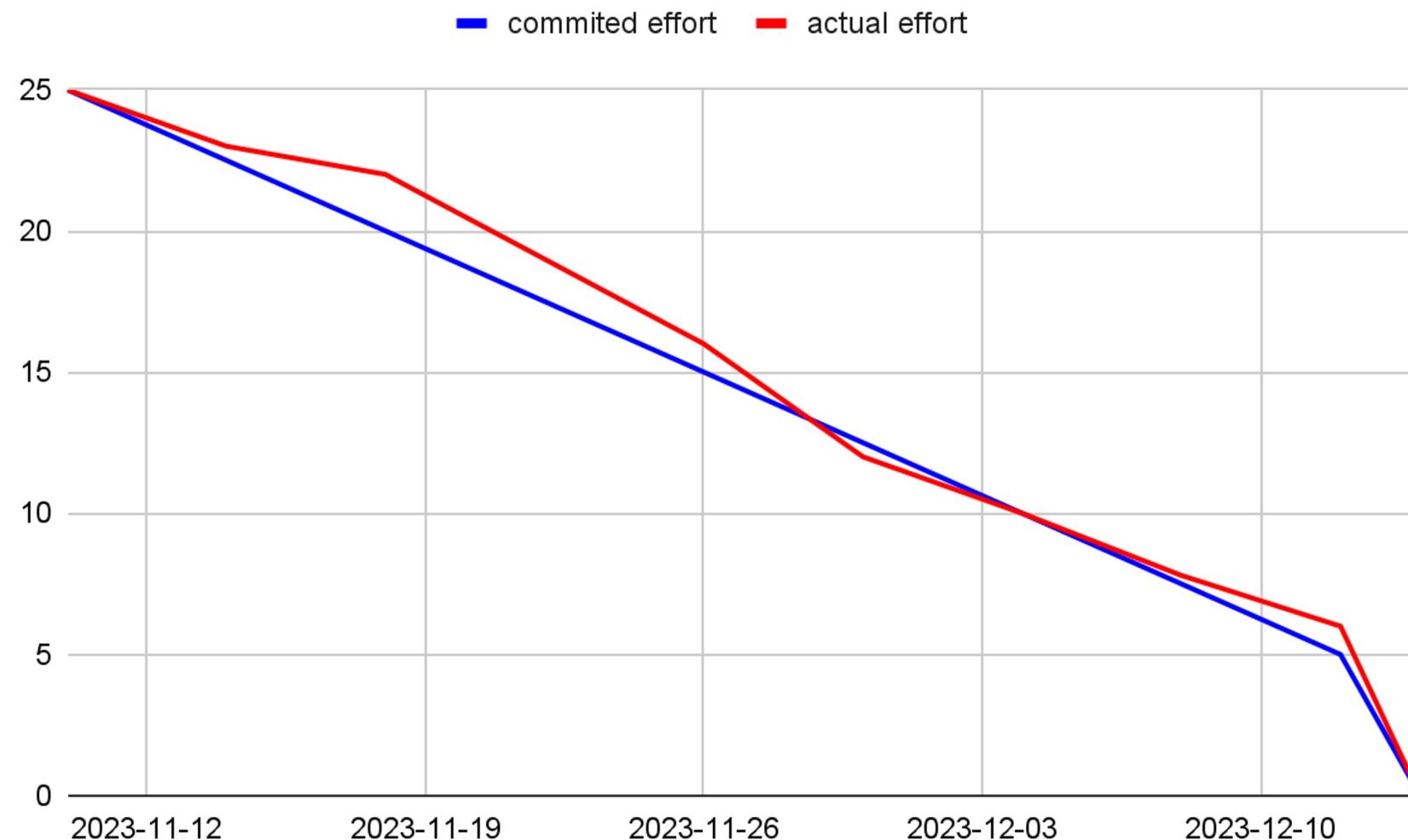
SPRINT 6 BURNDOWN CHART



SPRINT 7 BACKLOG

Key	Name	Story points
STRES-63	Improve the UI of the app	5
STRES-59	As a user, I want an app to display correct information across all pages	5
STRES-58	As a user, I want to see results of analysis within 2 seconds after providing picture	5
STRES-65	As a user I want to see the instruction for the analyze image	5
STRES-66	Finish the technical paper	5

SPRINT 7 BURNDOWN CHART



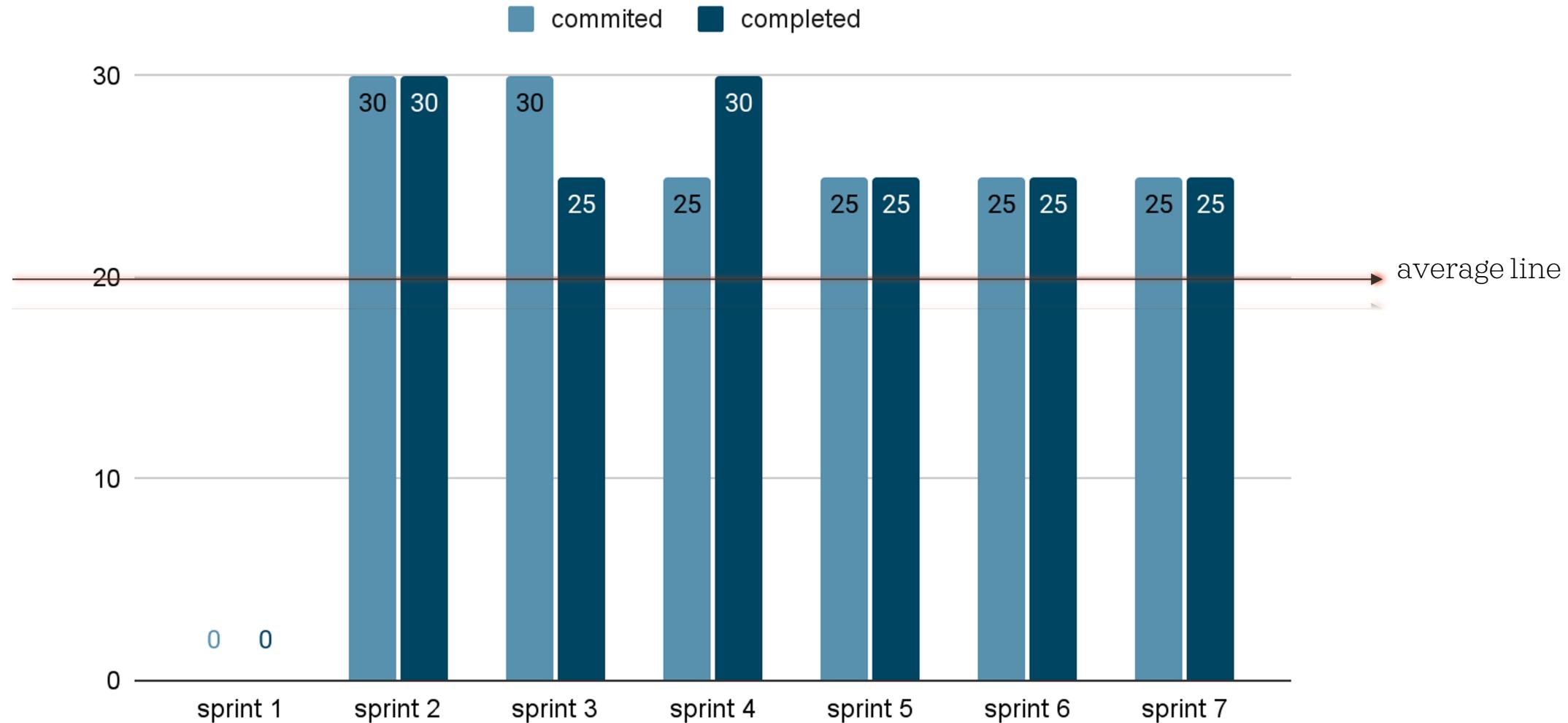
TEST CASES

Test case for	Key	Test case id	Test data	Expected results	Actual results	Pass/fail
User page	STRES-65	Test-75	email: test@gmail.com password:test123	Customers can know how to see the instruction	After login , question mark is shown behind the analyze button	P
User page	STRES-65	Test-76	email: test@gmail.com password:test123	Customers can read the instruction	Click the question mark button, the page show the instruction	P
Analyze image	STRES-59	Test-68	email: test@gmail.com password:test123 one of the photo from phone	Customers can see the image is analyzing	Click the analyze image button, app shows analyzing and the loading circle	P
History page	STRES-58	Test-62	email: test@gmail.com password:test123 quiz grade	Customers can check the past result	Click the history and click other details, show the previous quiz grade	P
Take picture page	STRES-55	Test-64	email: test@gmail.com password:test123	After customers take pictures, pictures will be stored and found	Take the picture, it showed in history and can be found in firebase storage	P

Stories / tasks Completed and not completed

Key	Name	Status
STRES-63	Improve the UI of the app	Done
STRES-59	As a user, I want an app to display correct information across all pages	Done
STRES-58	As a user, I want to see results of analysis within 2 seconds after providing picture	Done
STRES-65	As a user, I want to see the instruction for the analyze image	Done
STRES-66	Finish the technical paper	Done

TEAM'S HISTORICAL VELOCITY (AVERAGE)



PRODUCT BACKLOG

User Stories		
Key	Summary	Place
STRES-19	As a user, I want to register myself to the application. So that I can keep my account private and login using email/phone and password.	Home Page
STRES-20	As a user, I want to login in app. So that I can use it to store all my information.	Home Page
STRES-42	As a user, I want to upload my picture from phone gallery to analyze so that get more accurate information.	Image Upload/Take Picture
STRES-22	As a user, I want to take a picture from my front and back camera to upload so that the app can analyze	Image Upload/Take Picture
STRES-23	As a user, I want to view my upload history and their results	Profile/History of consultation
STRES-24	As a signed in user, I want to log out So that I can have my privacy in the app.	Logout/Login
STRES-25	As a user I want to be able to find contacts for professional help	Recommendation
STRES-26	As a user I want to be able to view history of my recommendation	Recommendation
STRES-27	As a user, I want to create my profile So that I can store my account information.	Profile/History of consultation
STRES-28	As a user, I want to be able to edit my information detail	Profile/History of consultation
STRES-29	As a user I want to be able to add captions for pictures I have uploaded	Image Upload/Take Picture
STRES-30	As a user, I want to be able to view personalized tips and strategies for managing symptoms	Recommendation
STRES-31	As a user, I want to know the sign of depression, and the risk of depression	Recommendation
STRES-48	As a user, I want to link to the hospital so that I can make a appointment with doctor	Recommendation
STRES-52	As a user, I want the app to keep checking my depression level so that I know when my depression level is worse	Profile/History of consultation
STRES-34	As a user, I want to know the risk of depression about me after I take pictures	Image Upload/Take Picture
STRES-35	As a user, I want to know some tips for relieving depression so that I can become better	Recommendation

PRODUCT BACKLOG

User Stories		
Key	Summary	Place
STRES-59	As a user, I want an app to display correct information across all pages	Home Page
STRES-58	As a user, I want to see results of analysis within 2 seconds after providing picture	Home Page
STRES-65	As a user, I want to see the instruction for the analyze image	Image Upload/Take Picture
STRES-61	As a customer, I want to an app to save and update my details automatically	Image Upload/Take Picture
STRES-57	As a customer, I want my picture to be resized automatically without resizing it myself	Profile/History of consultation

STORIES AND ACCEPTANCE CRITERIA

Scenario	User Story	Status
<p>1. customers want to know how to analyze their images Given I'm in the role of customer When I open the app Then I want to see how to analyze the image And I click the question mark Then I can see the instruction</p>	<p>As a customer I want to know how to analyze the image so that I can know which kind of pictures I should upload</p>	<p>Done</p>

APP SCREENSHOTS

Home Page

App has 5 Functionality Buttons

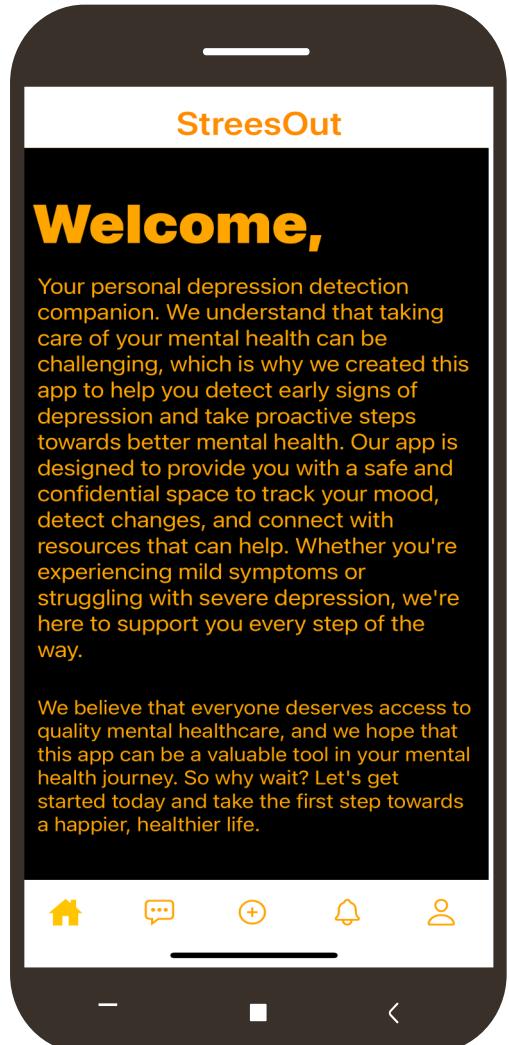
Onboarding Screen: A screen that welcomes the user to the app and provides an overview of its app.

Stress level analysis screen: A screen that displays the user's stress level based on the biometric data collected.

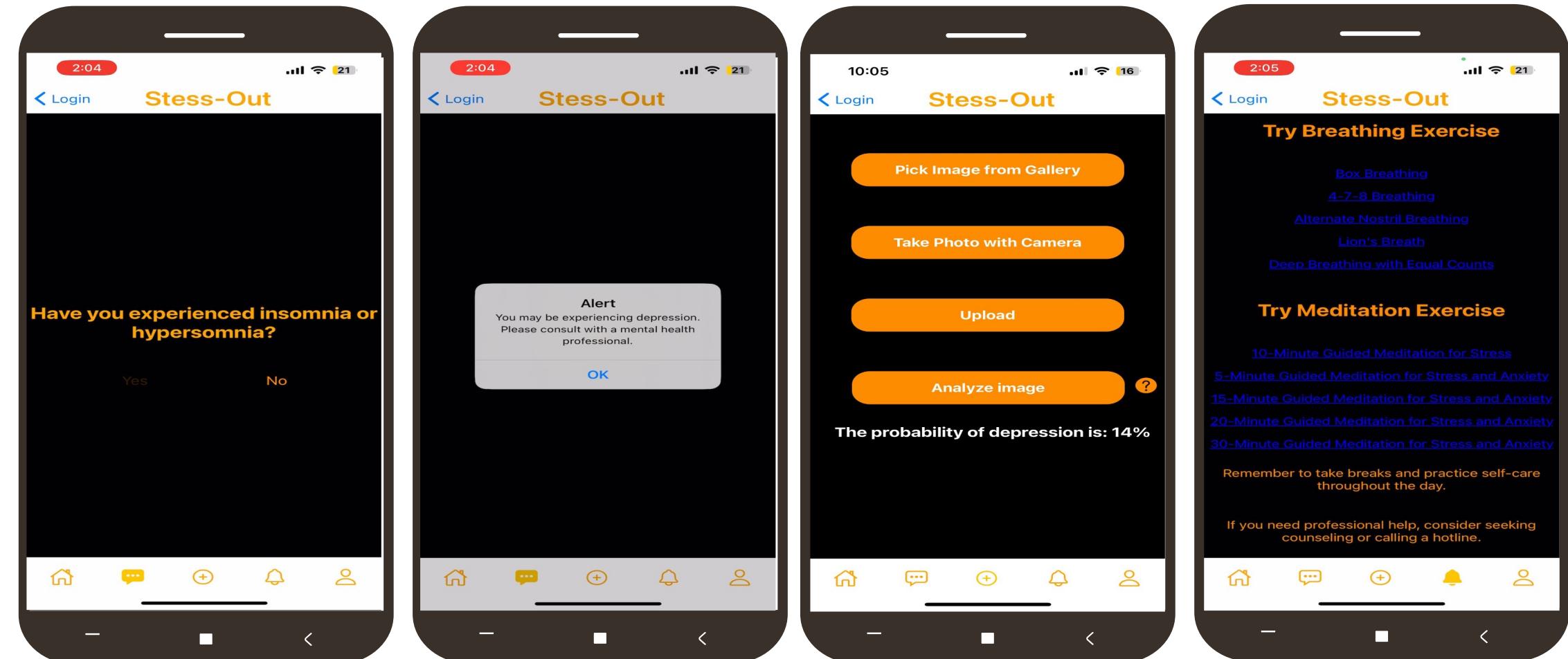
Quiz / Upload Images Screen: Quiz screen that asks the user questions to identify their sources of stress. Upload screen that allows the user to upload images

Stress management techniques Screen: A screen that provides stress management techniques, such as breathing exercises, meditation, or cognitive behavioral therapy.

Registration / Login Screen: A screen that allows the user to create an account or log in to an existing one.



APP SCREENSHOTS



USER DETAILS

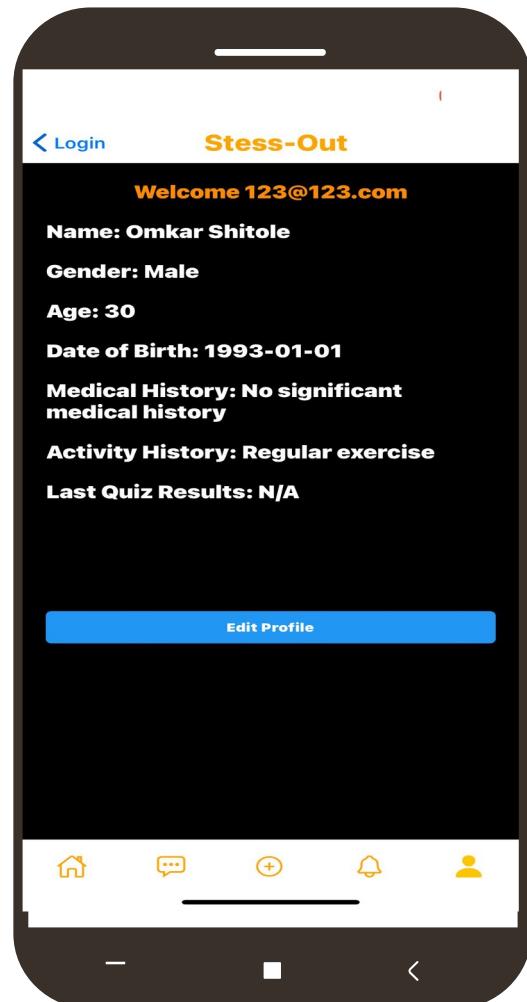
Profile Screen

In this screen user can edit and save profiles information like name, gender, age, DOB, medical history, and activity history.

User quiz results are saved in real-time to a Firestore database as part of their profile data.

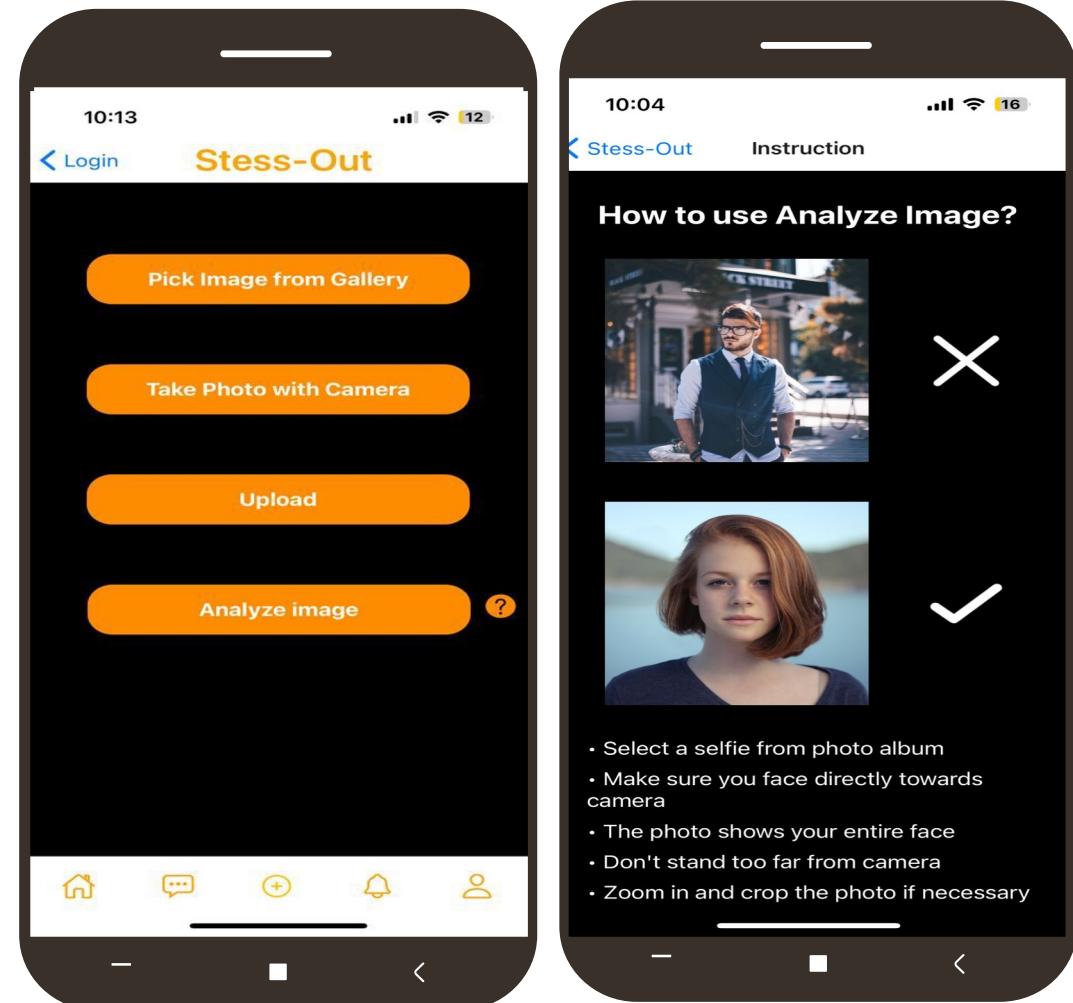
The app's profile screen provides a comprehensive overview of the user's personal information and quiz results, aiding in stress assessment.

By combining facial recognition technology and profile data storage, the app aims to offer effective stress detection and management.

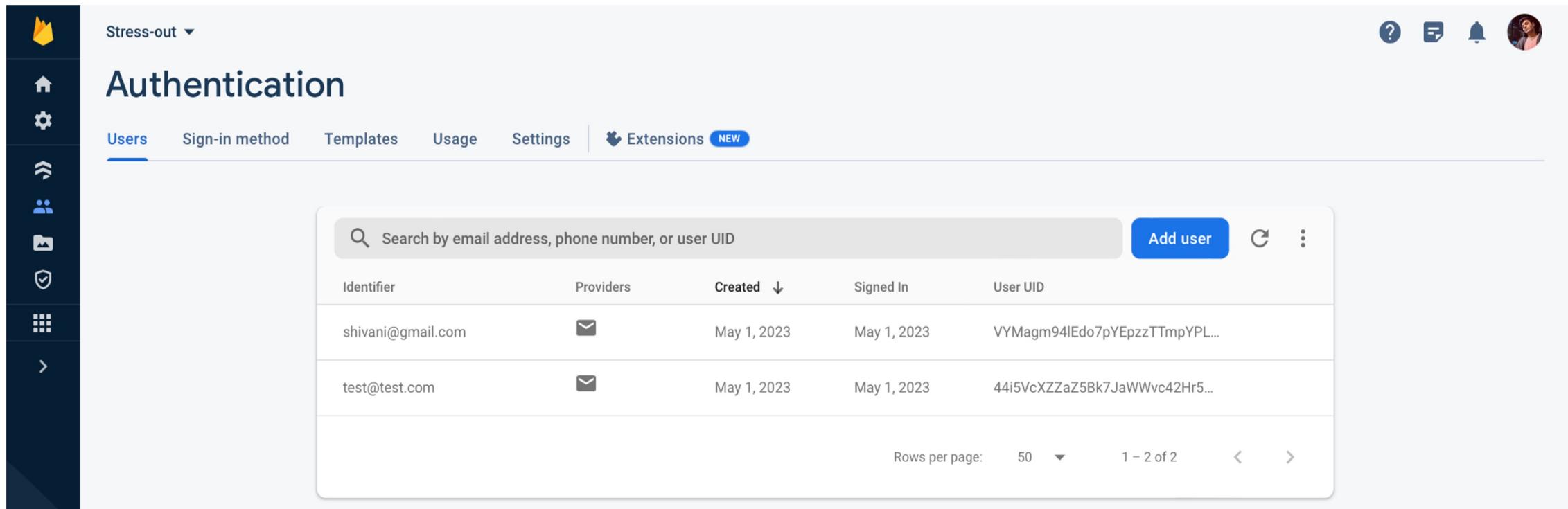


INSTRUCTION

In Stress-Out app, there is a question mark symbol next to the "Analyze Image" button. When users click on this symbol, an instruction page is displayed, providing guidance on how to upload a photo and specifying the recommended angles for the photos. The instructions also include dos and don'ts for the users to follow.



FIREBASE AUTHENTICATION



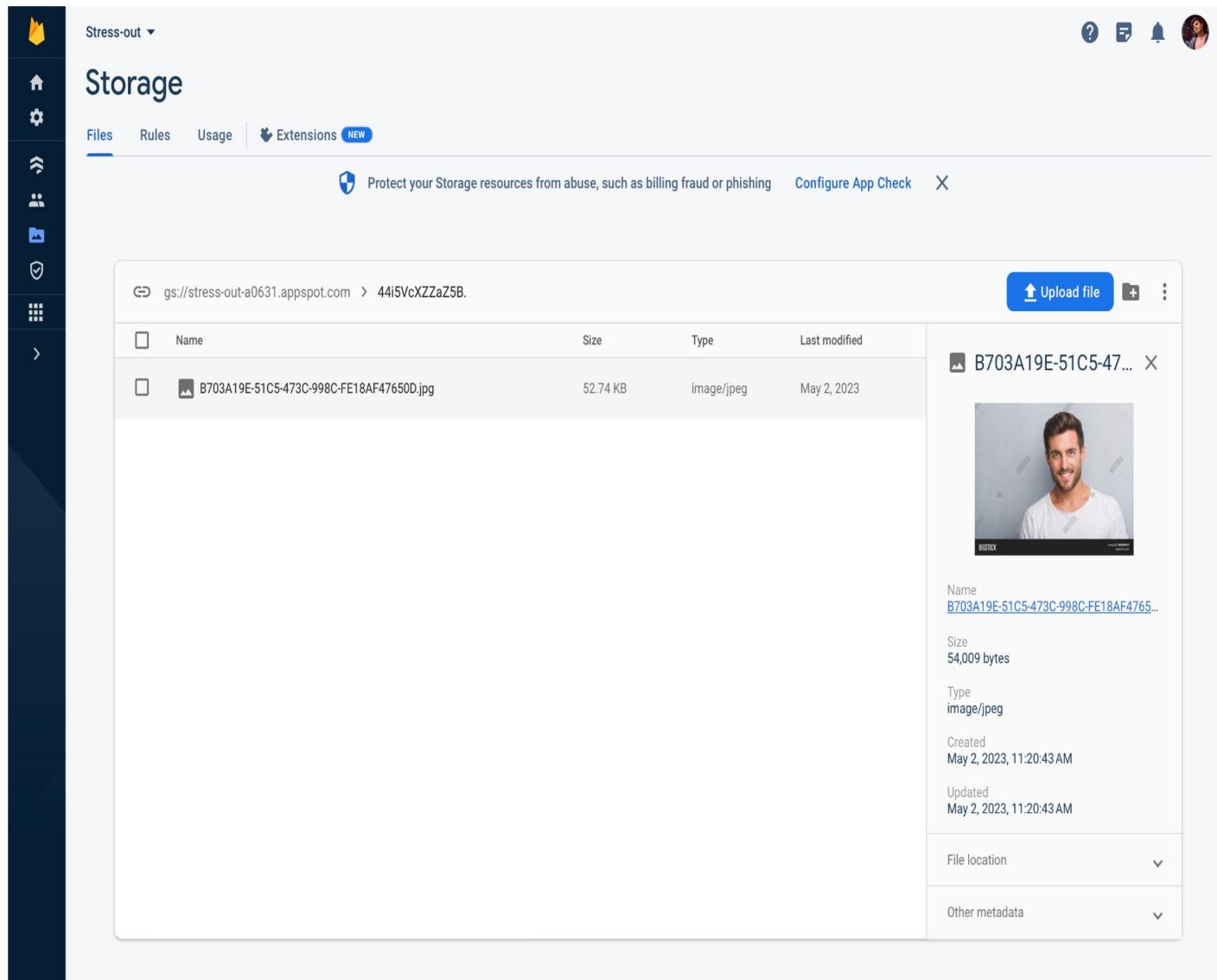
The screenshot shows the Firebase Authentication console interface. On the left is a dark sidebar with icons for Home, Projects, Functions, Storage, Database, Firestore, Cloud ML, and a gear icon. The main area has a header with 'Stress-out' and a dropdown, followed by navigation tabs: 'Users' (selected), 'Sign-in method', 'Templates', 'Usage', 'Settings', and 'Extensions NEW'. Below is a search bar and an 'Add user' button. A table lists two users:

Identifier	Providers	Created	Signed In	User UID
shivani@gmail.com	✉️	May 1, 2023	May 1, 2023	VYMagm94lEdo7pYEpzzTTmpYPL...
test@test.com	✉️	May 1, 2023	May 1, 2023	44i5VcXZZaZ5Bk7JaWWvc42Hr5...

At the bottom are pagination controls for 'Rows per page: 50', '1 - 2 of 2', and arrows.

When a new user creates an account using Firebase Authentication in our app, the user's email address and a unique user ID (UID) are automatically generated and stored securely in the Firebase Authentication server.

FIREBASE AUTHENTICATION



The screenshot shows the Firebase Storage console interface. At the top, there are navigation icons for Stress-out, Home, Settings, and Help. The main header says "Storage". Below it, tabs for "Files", "Rules", "Usage", and "Extensions" are visible, with "Extensions" being the active tab. A banner at the top right encourages protecting storage resources from abuse. The main area displays a file list with one item: "B703A19E-51C5-473C-998C-FE18AF47650D.jpg". This file is a 52.74 KB image/jpeg file uploaded on May 2, 2023. To the right of the file list is a detailed view of the same file, showing its name, size (54,009 bytes), type (image/jpeg), creation date (May 2, 2023, 11:20:43 AM), update date (May 2, 2023, 11:20:43 AM), and file location. An "Upload file" button is located at the top right of the main file list area.

When a user uploads or takes a picture in our app, the image is stored in Firebase Storage using the Firebase Storage client SDK. To maintain a separation between different users' data, we create a separate folder for each user in Firebase Storage, with the user's UID associated with that folder. This ensures that each user's data is stored in separate location. Firebase Storage generates a unique URL for each file that is stored, which can be used to retrieve the file later.



RETROSPECTIVE

What went well: Team has quickly introduced all the improvements and finished working on the app.

What needs improvement: The team needs to be more ambitious with future tasks. We must be focused on adding new features for the future.

Next Steps: We plan to review our app and attempt to push project further.

Plans for future improvement

1. Introduction of reinforcement learning to the model – this will enable constant improvement of accuracy for any given individual.
2. Introduction of video conferencing with mental health professional – the app should strive to become one stop shop for people to diagnose and solve their mental health issues
3. Posting app on google play and app store – release the app to the public





THANK YOU

[Wiki page link](#)

[Updated Technical Paper](#)

[Deployment Manual Link](#)

