

SMART PET HOUSE

ELEVATING YOUR PET'S COMFORT!

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WHAT?

We'll designed Smart pet house equipped with technology to remotely monitor and manage the pet's well-being.

A Smart Pet House with:

- Automated cleaning
- Refillable food and water systems
- Smart lighting

WHY?



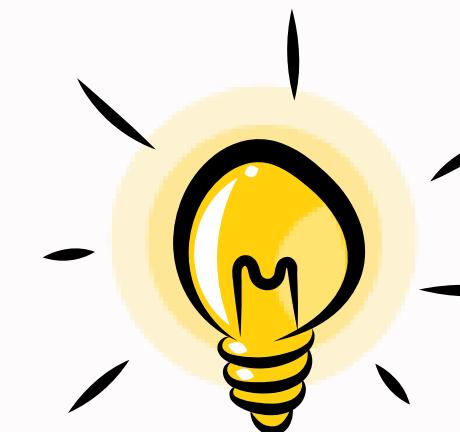
- Home alone



- Cleaning problems



- Feeding problems



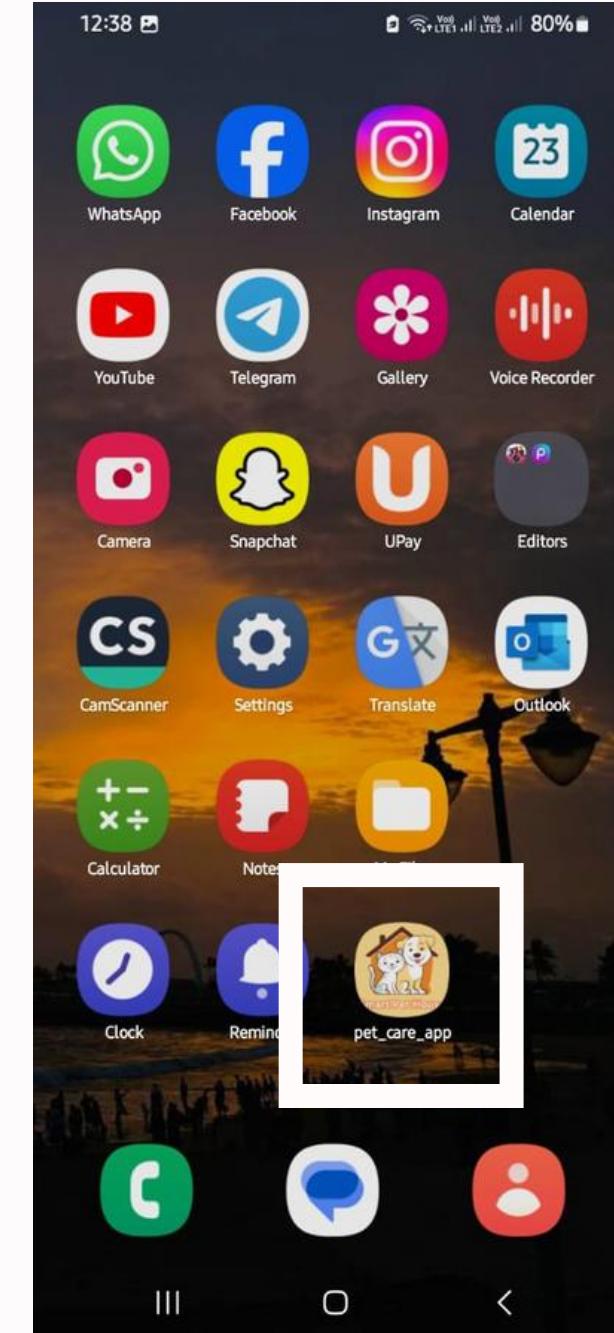
- Lightening problems

HOW?

1

A mobile application

- User creates an account and sets up pet profiles
- Access to automatic cleaning features
- Access to light scheduling features
- Access to food levels
- Access to temperature and humidity features



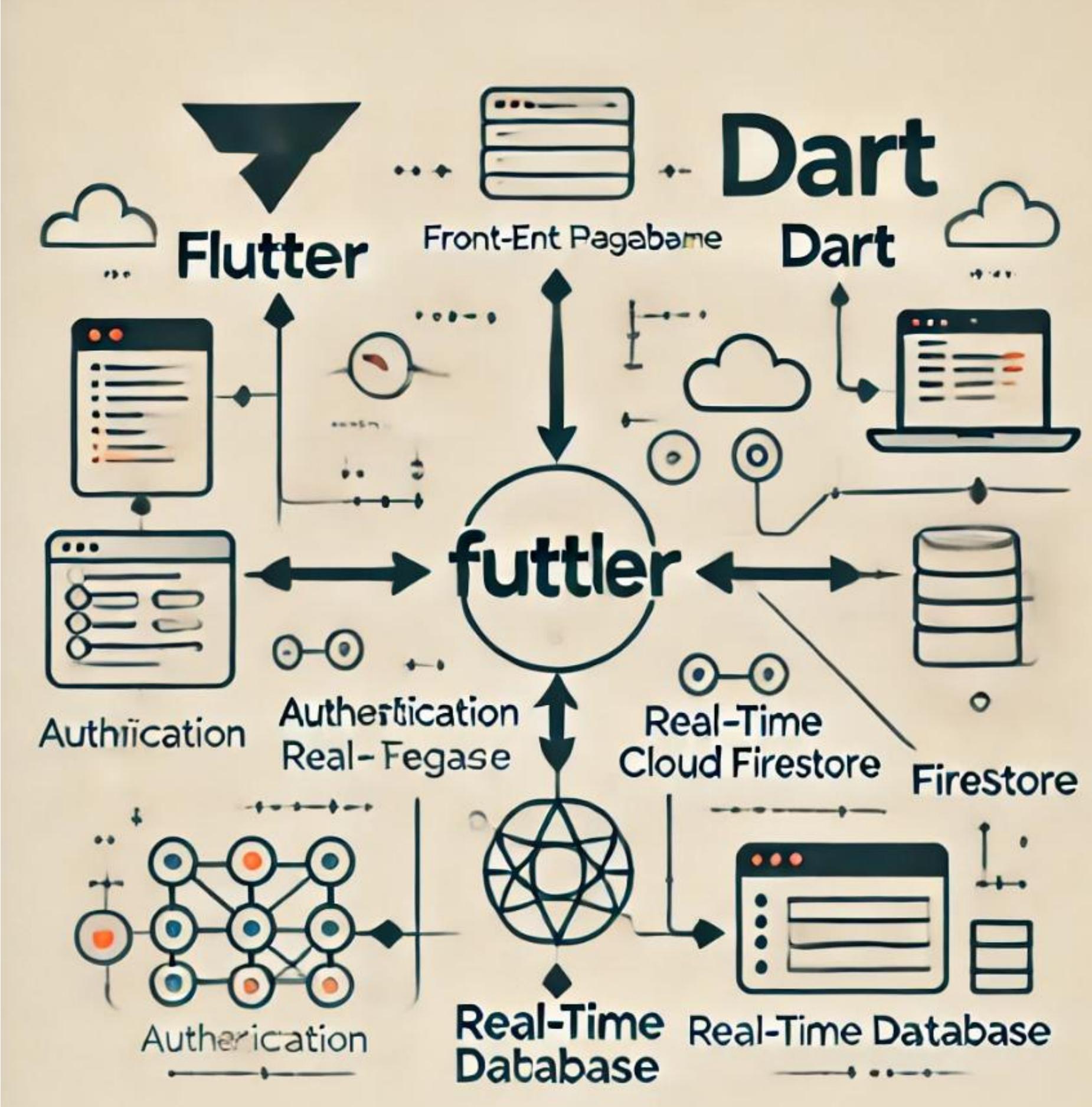


Built using:

- **Flutter as the framework**
- **Dart as the programming language**
- **Firebase as the backend database**

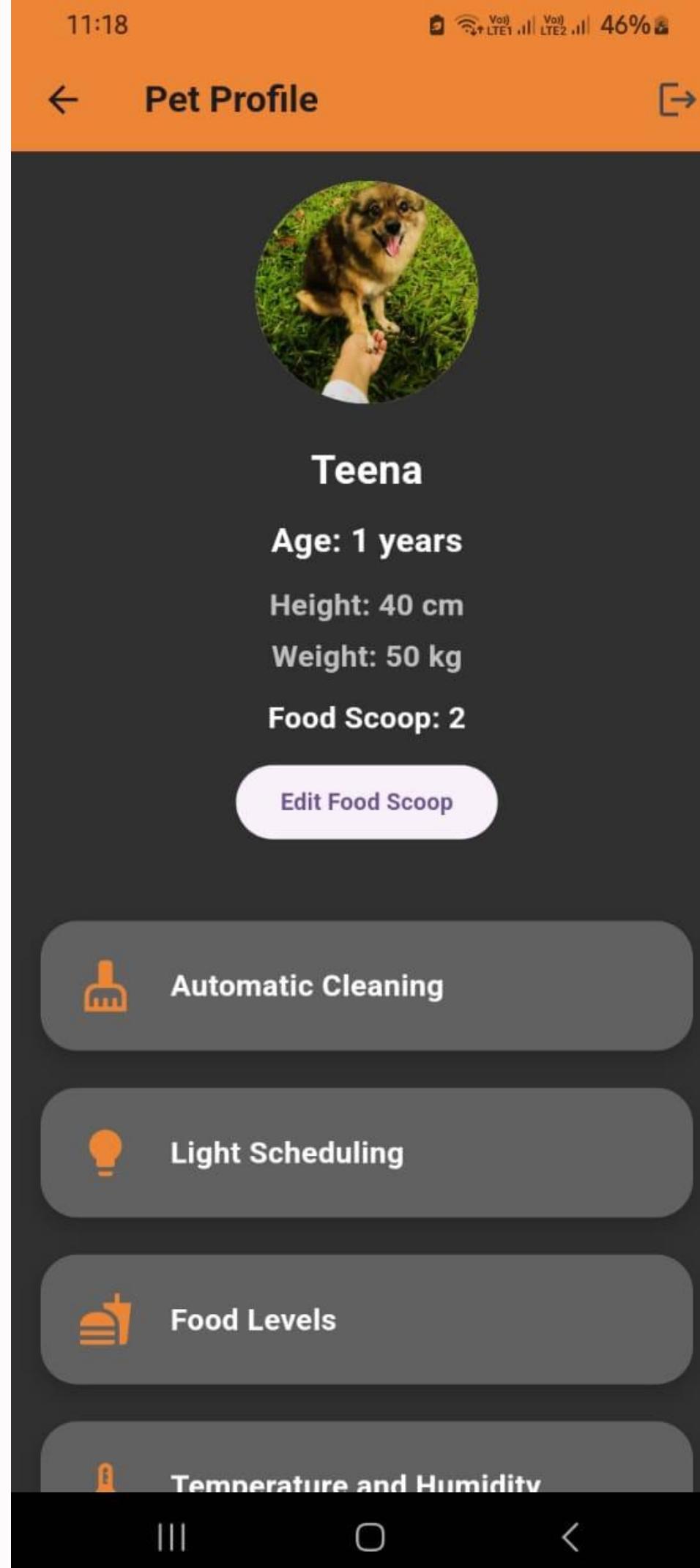
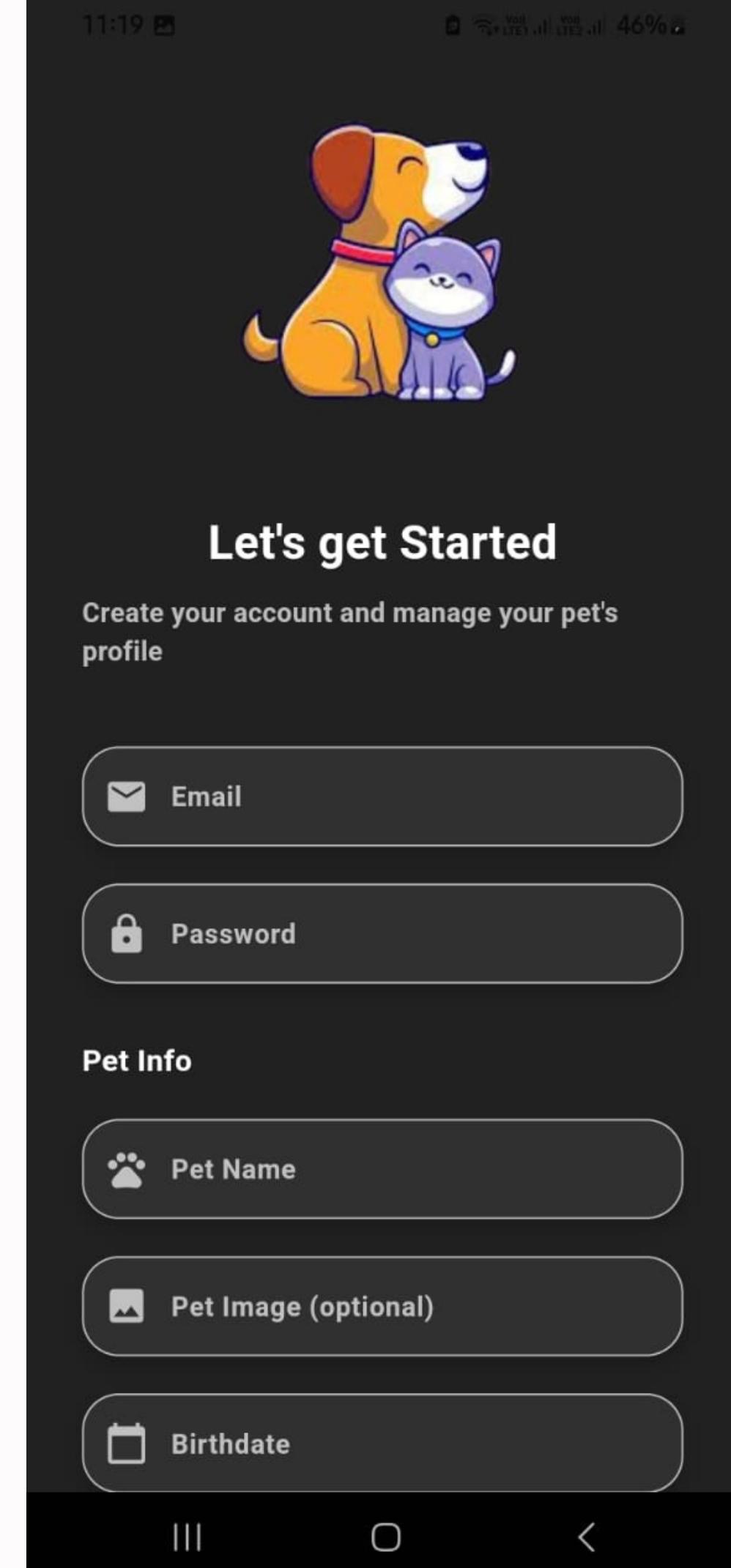
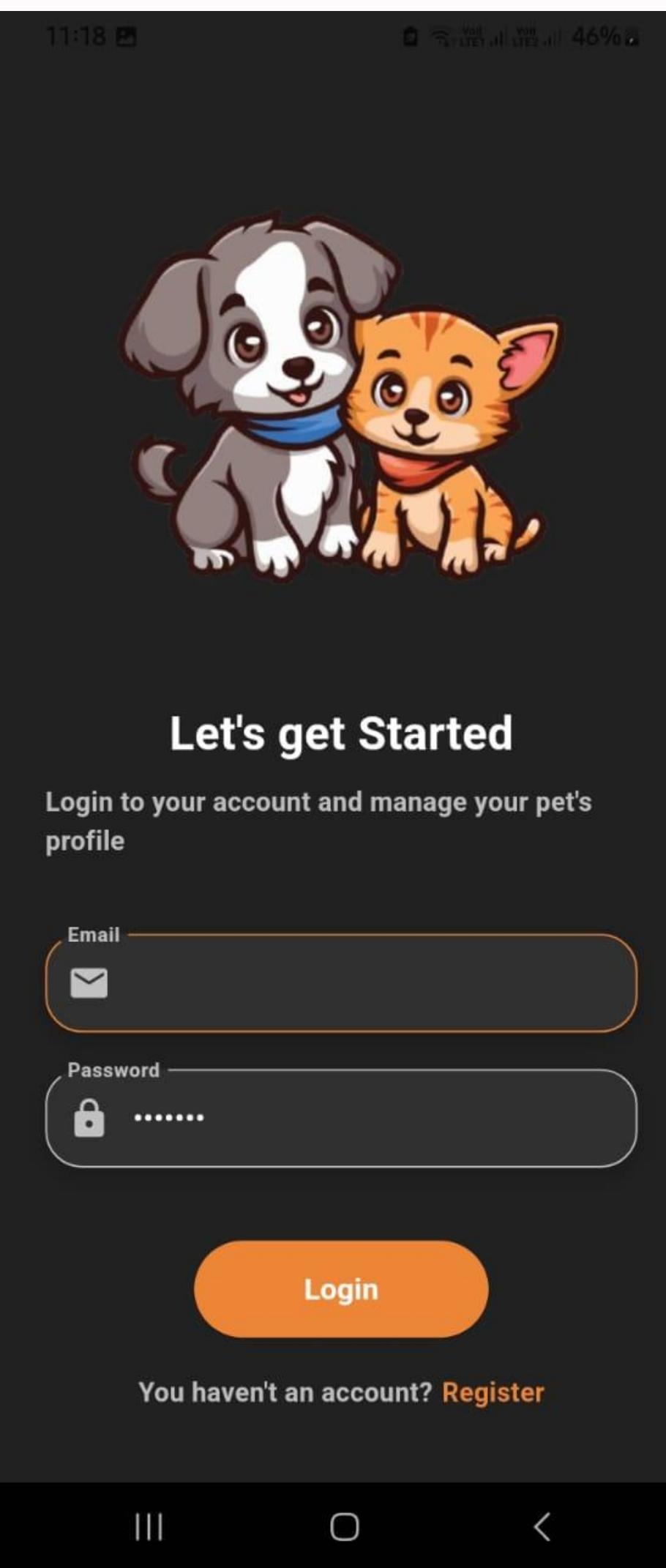


Firebase



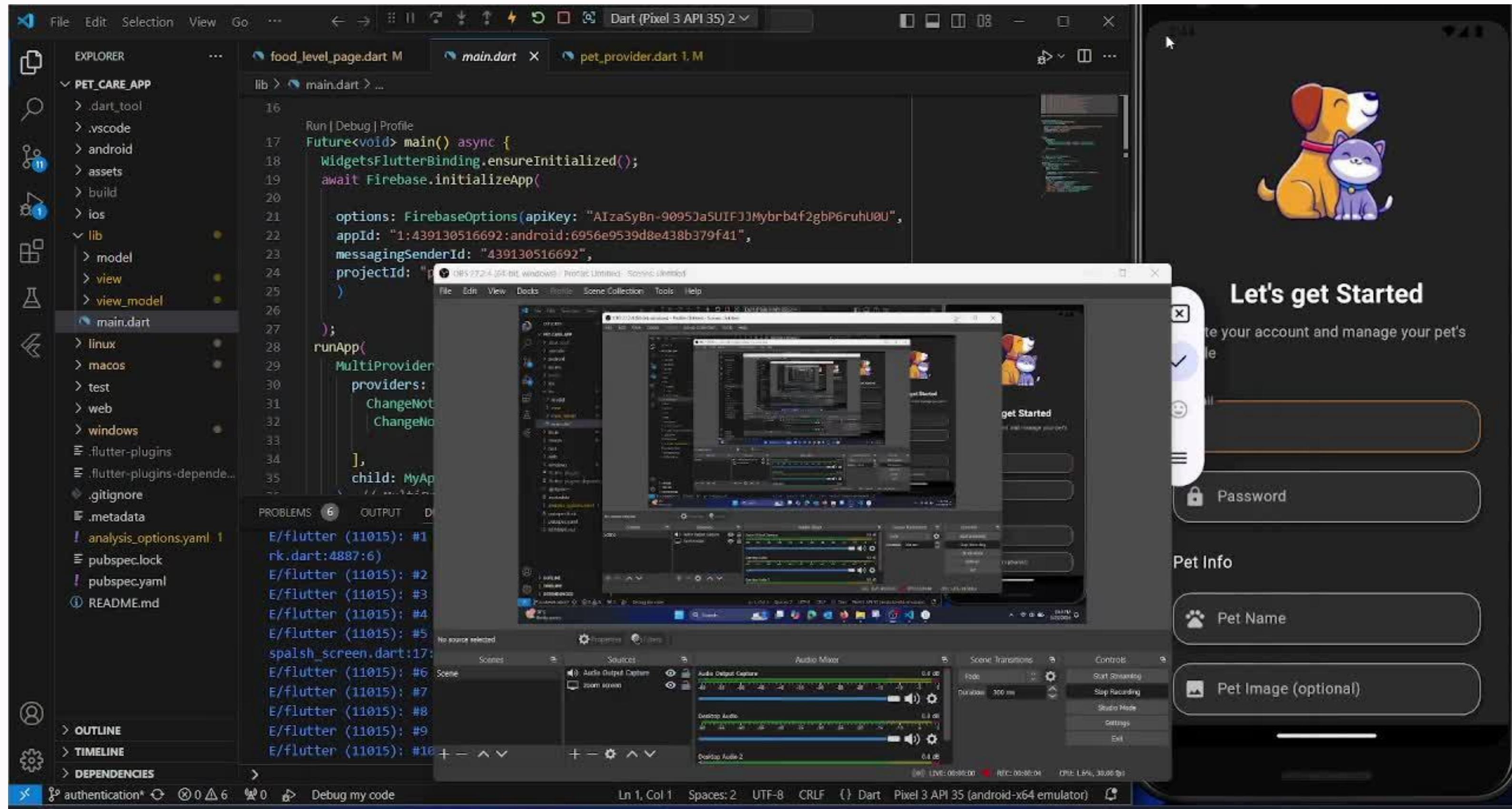
- A visual diagram showing how Flutter, Dart, and Firebase work together within your app.
- Shows the communication between the front-end (Flutter/Dart) and the back-end (Firebase) components, along with data flow and key services.

- User creates an account and sets up pet profiles



• Registration and Login

(video include)



- **Firebase authentication**

A screenshot of a web browser displaying the Firebase Authentication console for a project named "pet-home-app". The left sidebar shows navigation links for Project Overview, Generative AI, Build with Gemini, Project shortcuts, Authentication (which is selected and highlighted in blue), Realtime Database, Hosting, Product categories, Build, Run, Analytics, and All products. A "Spark No-cost (\$0/month)" badge is visible at the bottom left. The main content area is titled "Authentication" and has tabs for Users, Sign-in method, Templates, Usage, Settings, and Extensions. A prominent yellow warning banner at the top states: "(!) Cross origin redirect sign-in on Google Chrome M115+ is no longer supported, and will stop working on June 24, 2024." Below the banner is a table listing four users with their email addresses, provider (Email), creation date (Sep 22, 2024), sign-in date (Sep 22, 2024), and User UID. The table includes a search bar, an "Add user" button, and a more options menu. The bottom right corner of the page shows system status icons for battery, signal, and time (1:47 PM, 9/22/2024).

• Emulator with database

The image displays a split-screen view. On the left is the Firebase Realtime Database console for the project "pet-home-app". The "Data" tab is selected, showing a tree structure of database rules and data. A security rule warning is visible: "Your security rules are defined as public, so anyone can steal, modify, or delete data in your database". The data structure includes a user node with email and a petInfo node containing details like name, birthdate, height, humidity, and image URL. On the right is a mobile application emulator showing a "Pet Profile" screen for a dog named "Leo". The profile includes a photo, Leo's name, age (4 years), height (30 cm), and weight (30 kg). Below the profile are four cards: "Automatic Cleaning", "Light scheduling", "Food Levels", and "Temperature and Humidity".

Realtime Database

Data Rules Backups Usage Extensions

Protect your Realtime Database resources from abuse, such as billing fraud or phishing Configure App Check

https://pet-home-app-bc6e3-default-rtbd.firebaseio.com

Your security rules are defined as public, so anyone can steal, modify, or delete data in your database

Learn more Dismiss

email: "eshanmanisha3@gmail.com"

petInfo

- automaticCleaning
- birthdate: "2020-09-22T00:00:00.000"
- height: "30"
- humidity: 0
- imageUrl: "https://fbsstorage.googleapis.com/v0/b/pet-home-app-bc6e3.appspot.com/o/pet_images%2F1726"
- lightSchedule
- petName: "Leo"

Database location: United States (us-central1)

Pet Profile

Leo

Age: 4 years

Height: 30 cm

Weight: 30 kg

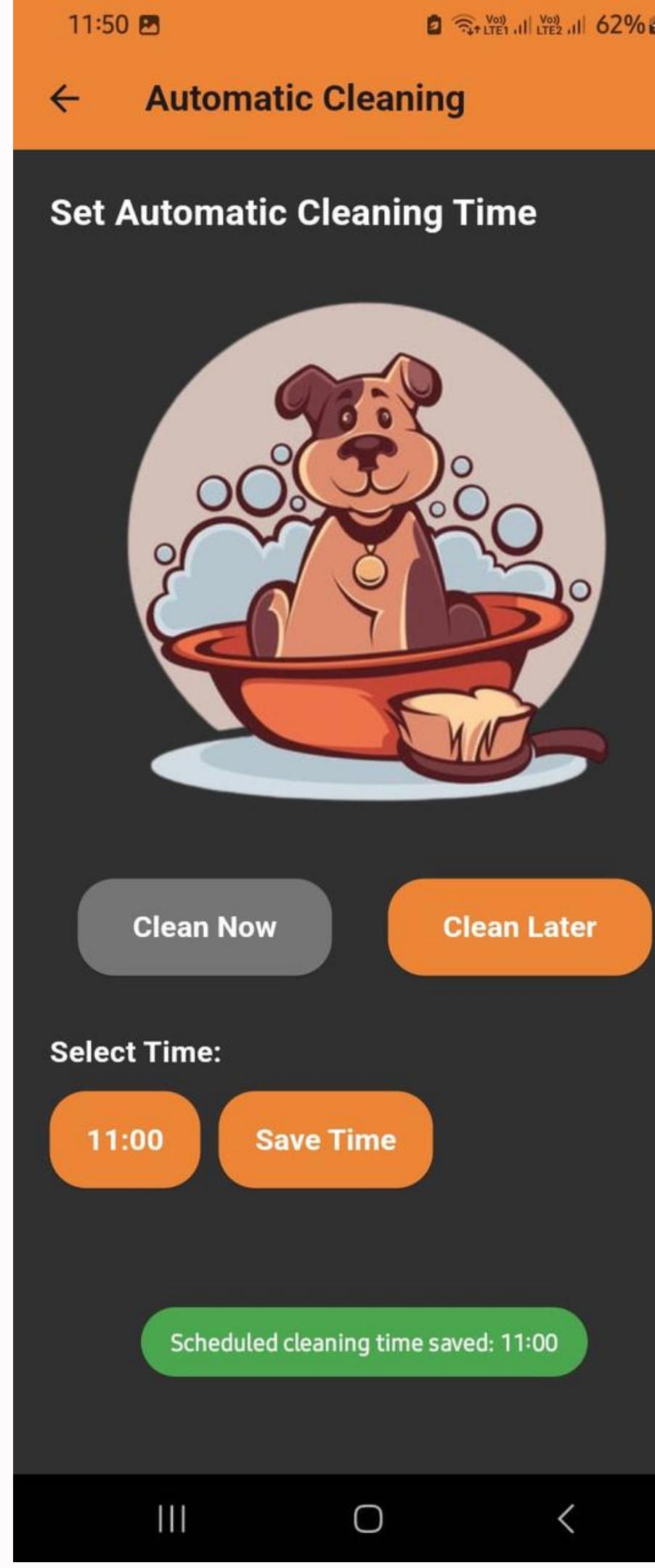
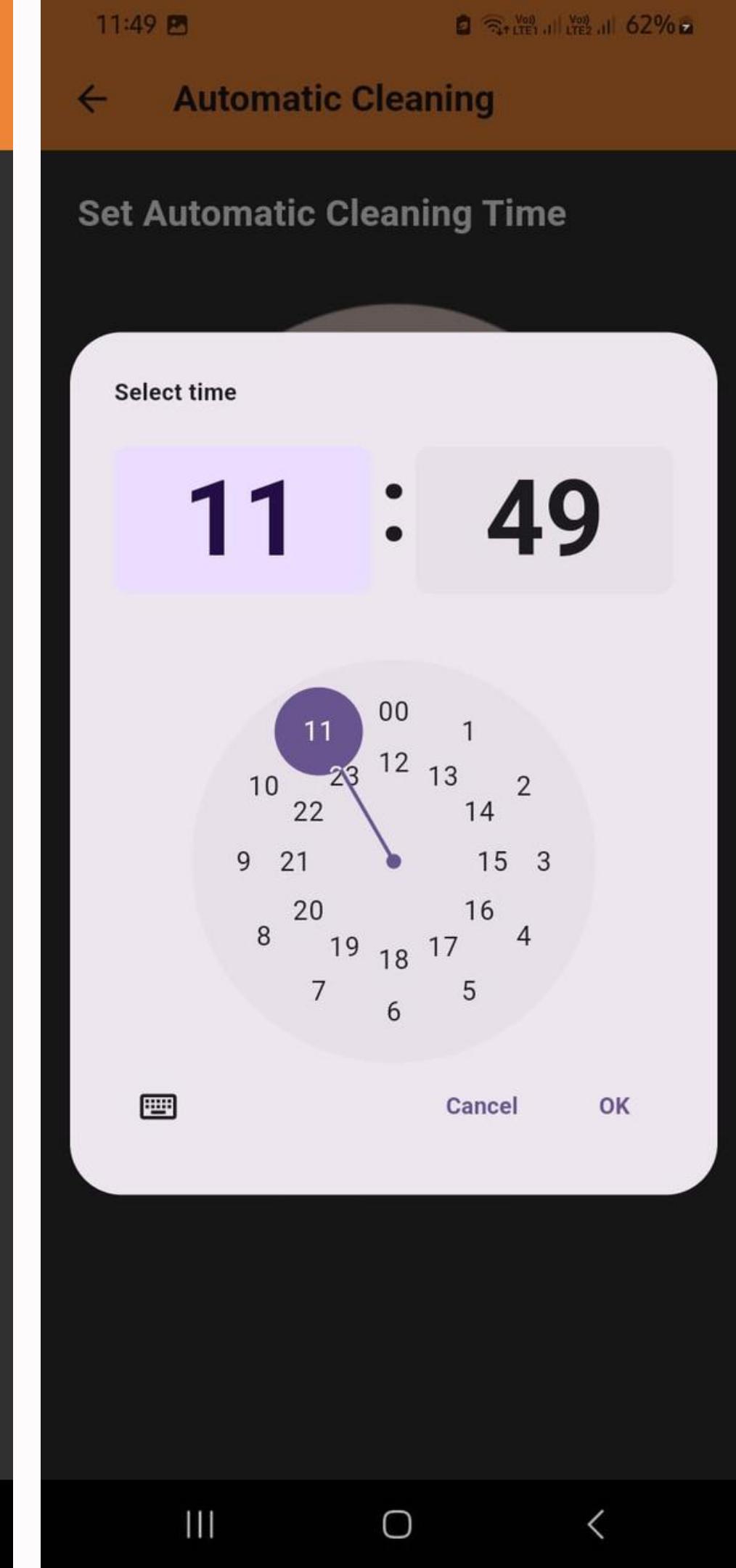
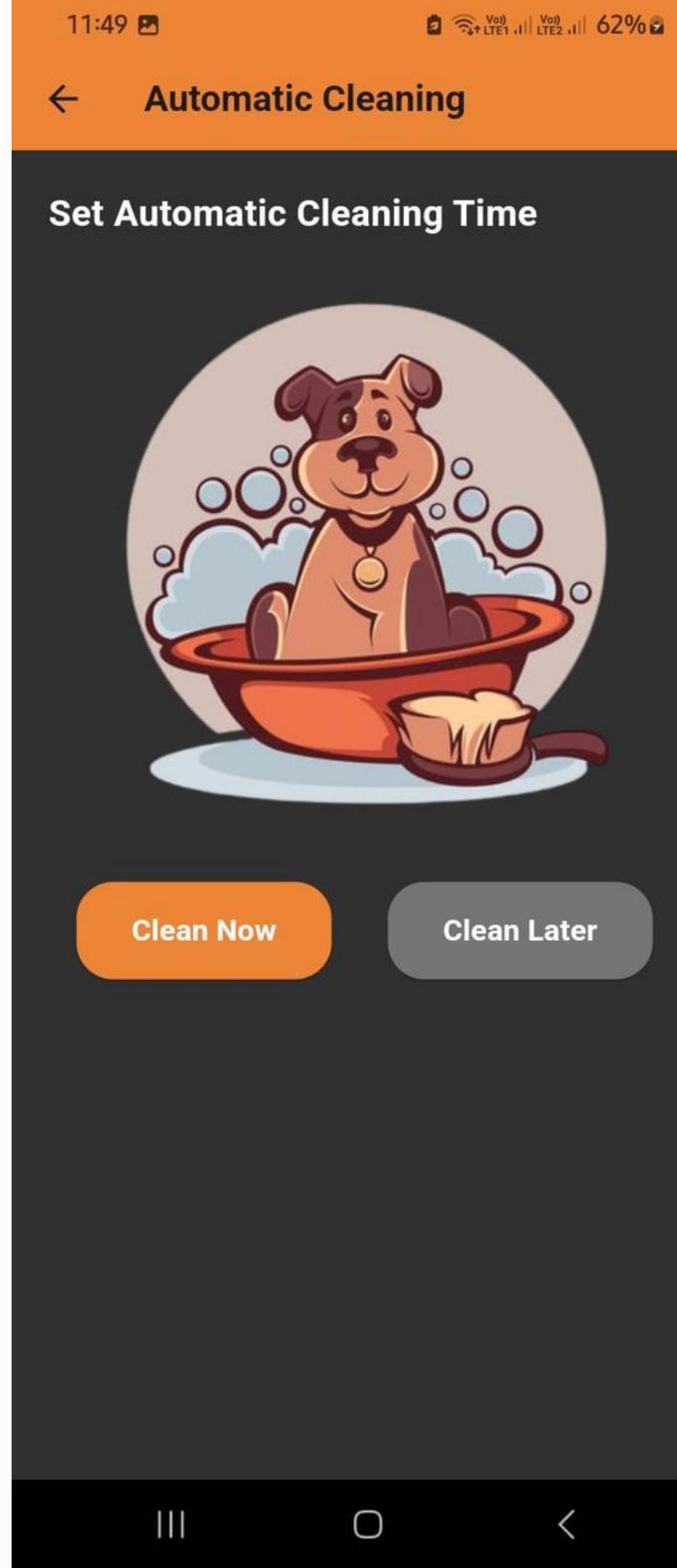
Automatic Cleaning

Light scheduling

Food Levels

Temperature and Humidity

- Access to automatic cleaning features



pet-home-app - Realtime Data X +

Import bookmarks... Getting Started Course: FCT Student F... OpenAI API pet-home-app - Auth... Introducing ChatGPT (837) YouTube Inbox (318) - kasundsa...

Firebase pet-home-app ▾

Project Overview

Generative AI

Build with Gemini NEW

Project shortcuts

Authentication

Realtime Database

Hosting

Product categories

Build

Run

Analytics

All products

Spark No-cost (\$0/month) Upgrade

Database location: United States (us-central1)

https://console.firebaseio.google.com/u/1/project/pet-home-app-bc6e3/database/pet-home-app-bc6e3.json

Need help with Realtime Database? Ask Gemini

Data Rules Backups Usage Extensions

Integrate Gemini models into your applications

Configure App Check

https://pet-home-app-bc6e3-default.firebaseio.com

petInfo

automaticCleaning

- scheduleNowEnabled: false
- scheduleTime: "6:00 PM"
- birthdate: "2020-09-22T00:00:00.000"
- height: "30"
- humidity: 10
- imageUrl: "https://firebasestorage.googleapis.com/v0/b/pet-home-app-bc6e3.appspot.com..."

lightSchedule

petName: "Leo"

Automatic Cleaning

Set Automatic Cleaning Time



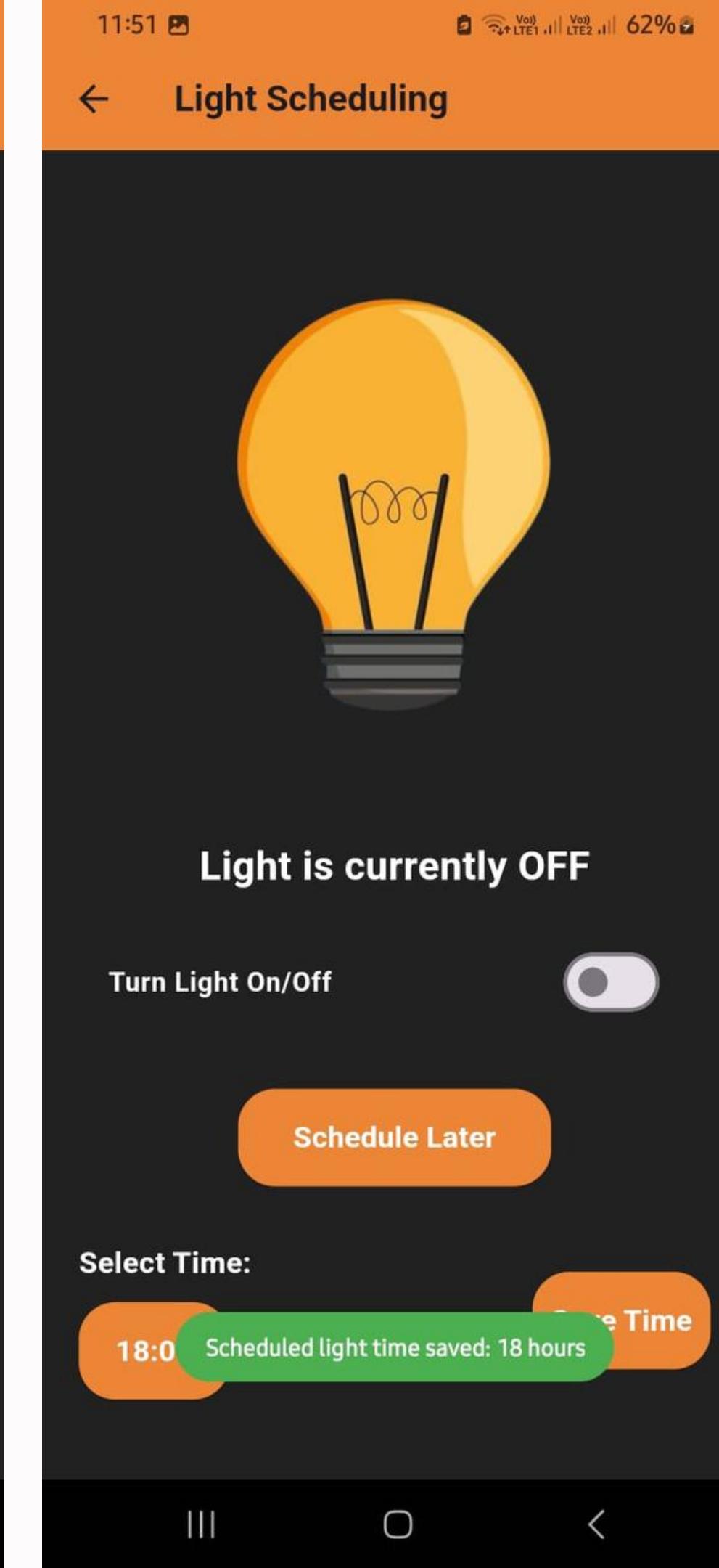
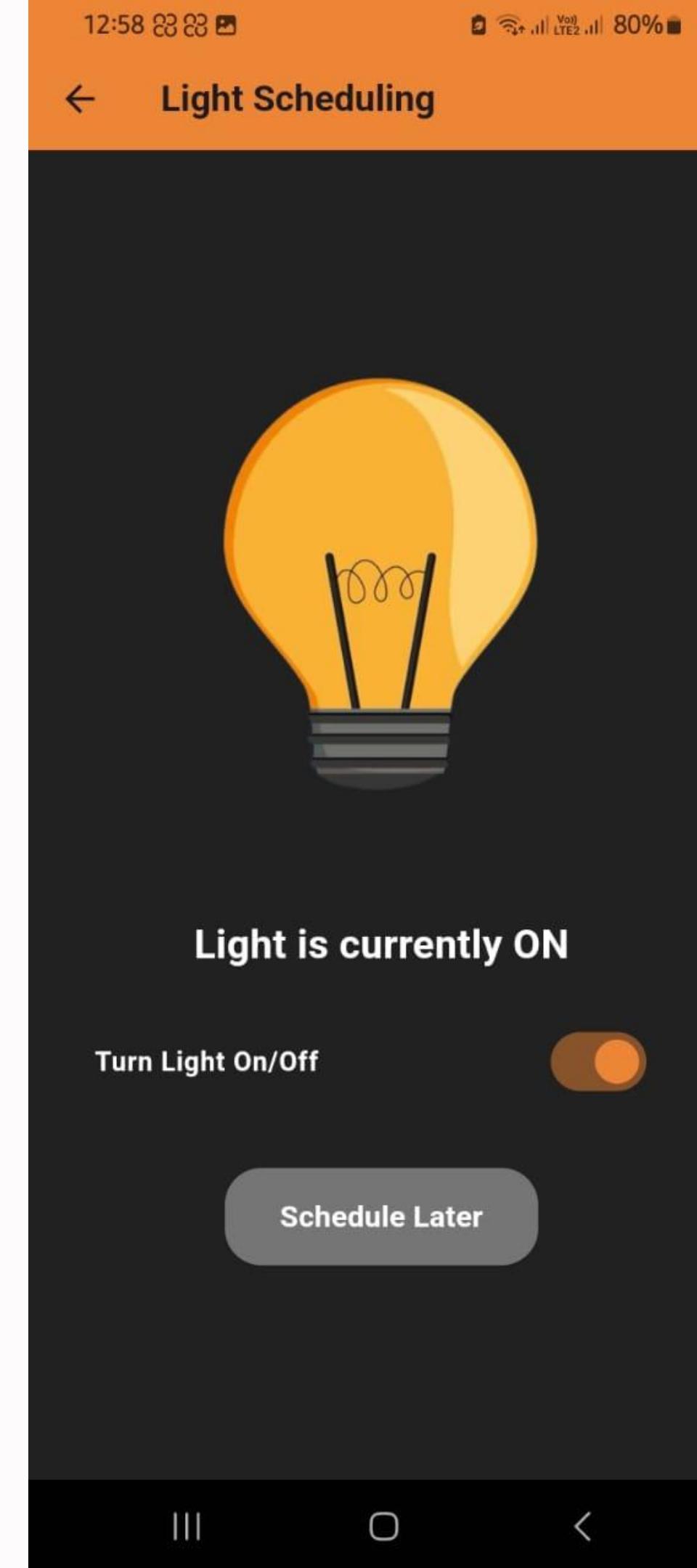
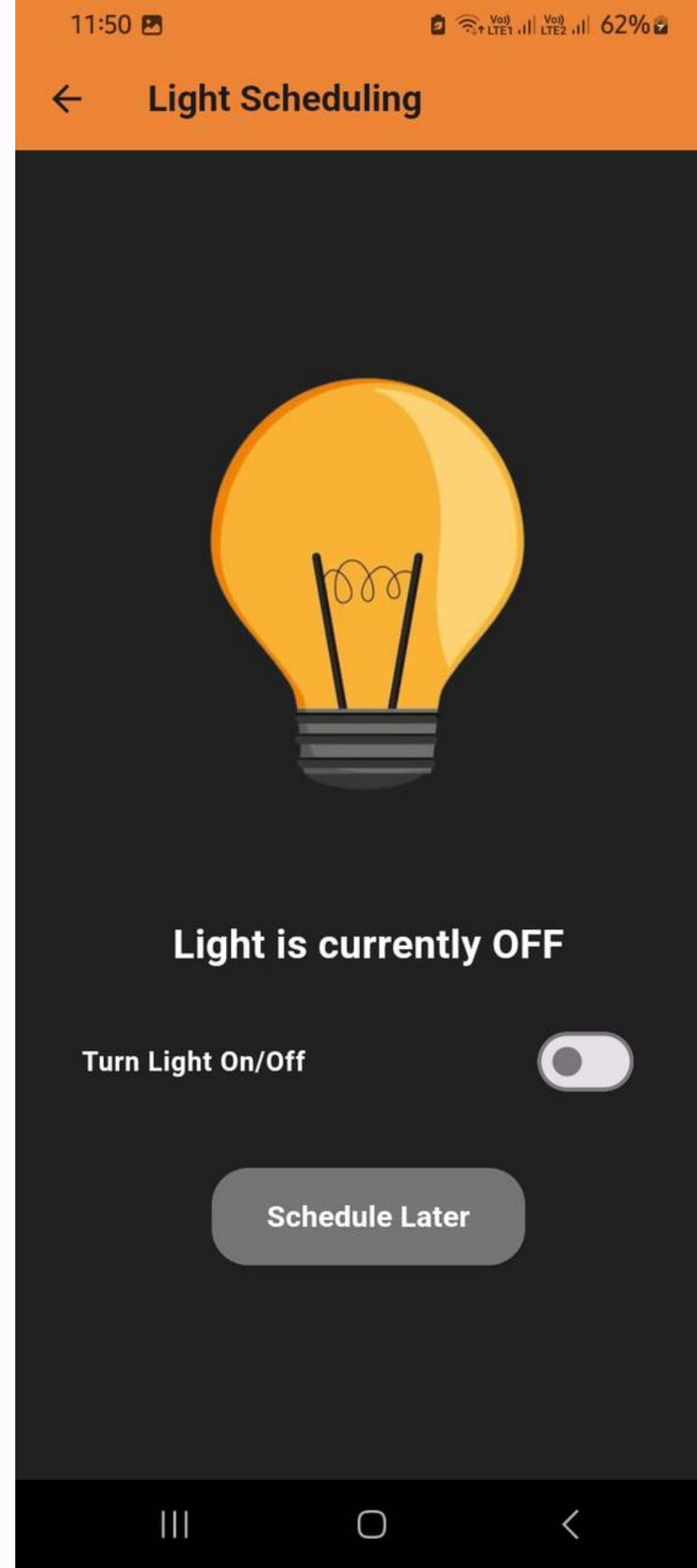
Clean Now Clean Later

Select Time:

6:00 PM Save Time

Scheduled cleaning time saved: 6:00 PM

- Access to light scheduling features



pet-home-app - Realtime Data X +

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Firebase pet-home-app ▾

Realtime Database

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Protect your Realtime Database resources from abuse, such as billing fraud or phishing Configure App Check

https://pet-home-app-bc6e3-default.firebaseio.com

```
automaticCleaning
birthdate: "2020-09-22T00:00:00.000"
height: "30"
humidity: 10
imageUrl: "https://firebasestorage.googleapis.com/v0/b/pet-home-app-bc6e3.appspot.com/o/pets%2fLeo%2fimage?alt=media&token=...&t=1695440000000"
lightSchedule
  scheduleNowEnabled: true
petName: "Leo"
temperature: 23
weight: "30"
```

Database location: United States (us-central1)

Light Scheduling

Light is currently ON

Turn Light On/Off

Schedule Later

Lightbulb icon

• Light scheduling manual emulator

The image displays two screens illustrating a light scheduling feature. On the left, the Firebase Realtime Database console shows a database structure with a node for a pet named 'Leo'. The 'lightSchedule' node contains 'scheduleNowEnabled: false' and 'scheduleTime: "06:00"'. On the right, a mobile application titled 'Light Scheduling' shows a large lightbulb icon. The status message says 'Light is currently OFF'. A toggle switch labeled 'Turn Light On/Off' is shown in the off position. Below it is a button labeled 'Schedule Later'. A green notification bar at the bottom indicates 'Scheduled light time saved: 06:00'.

pet-home-app - Realtime Data X

https://console.firebaseio.google.com/u/1/project/pet-home-app-bc6e3/database/pet-home-app-bc6e3

Firebase

Project Overview

Generative AI

Build with Gemini NEW

Project shortcuts

Authentication

Realtime Database

Hosting

Product categories

All products

Spark No-cost (\$0/month) Upgrade

Database location: United States (us-central1)

32°C Partly sunny

Search

Light Scheduling

14:28

Light is currently OFF

Turn Light On/Off

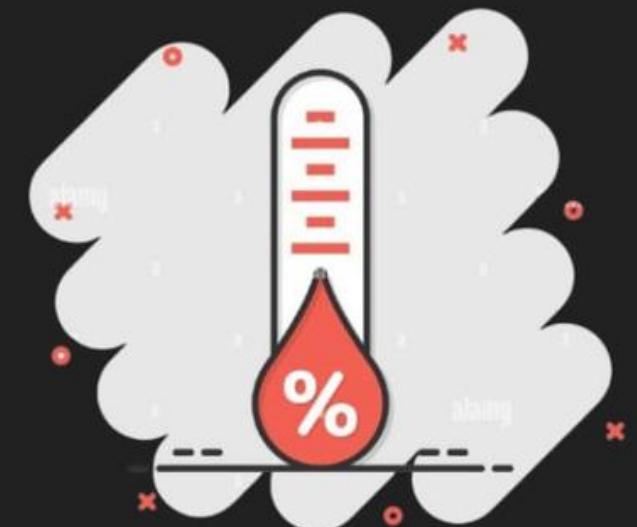
Schedule Later

Select Time:

06:00 Scheduled light time saved: 06:00 Time

Temperature and Humidity

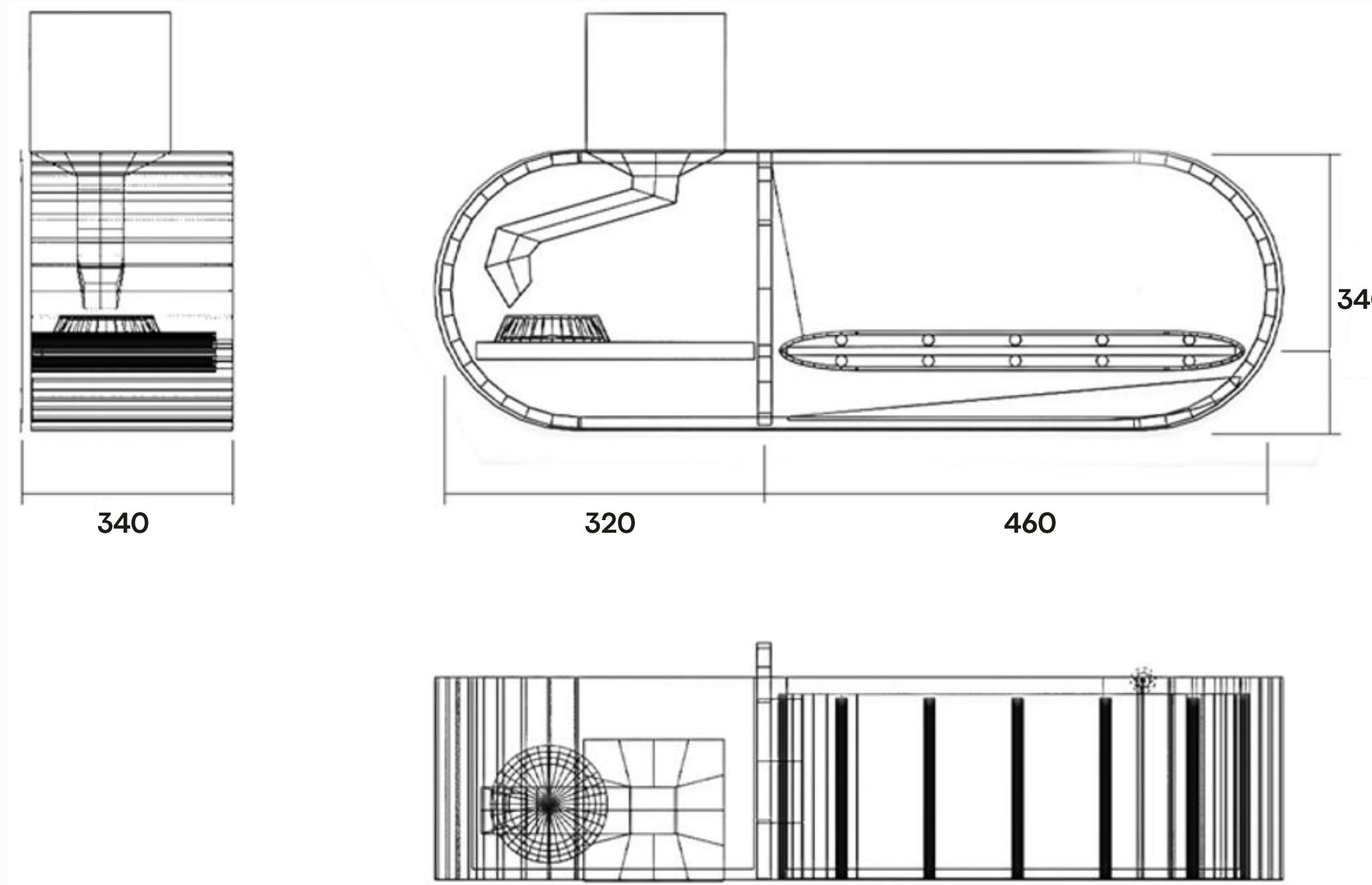
- Access to temperature and humidity features



Temperature 0°C

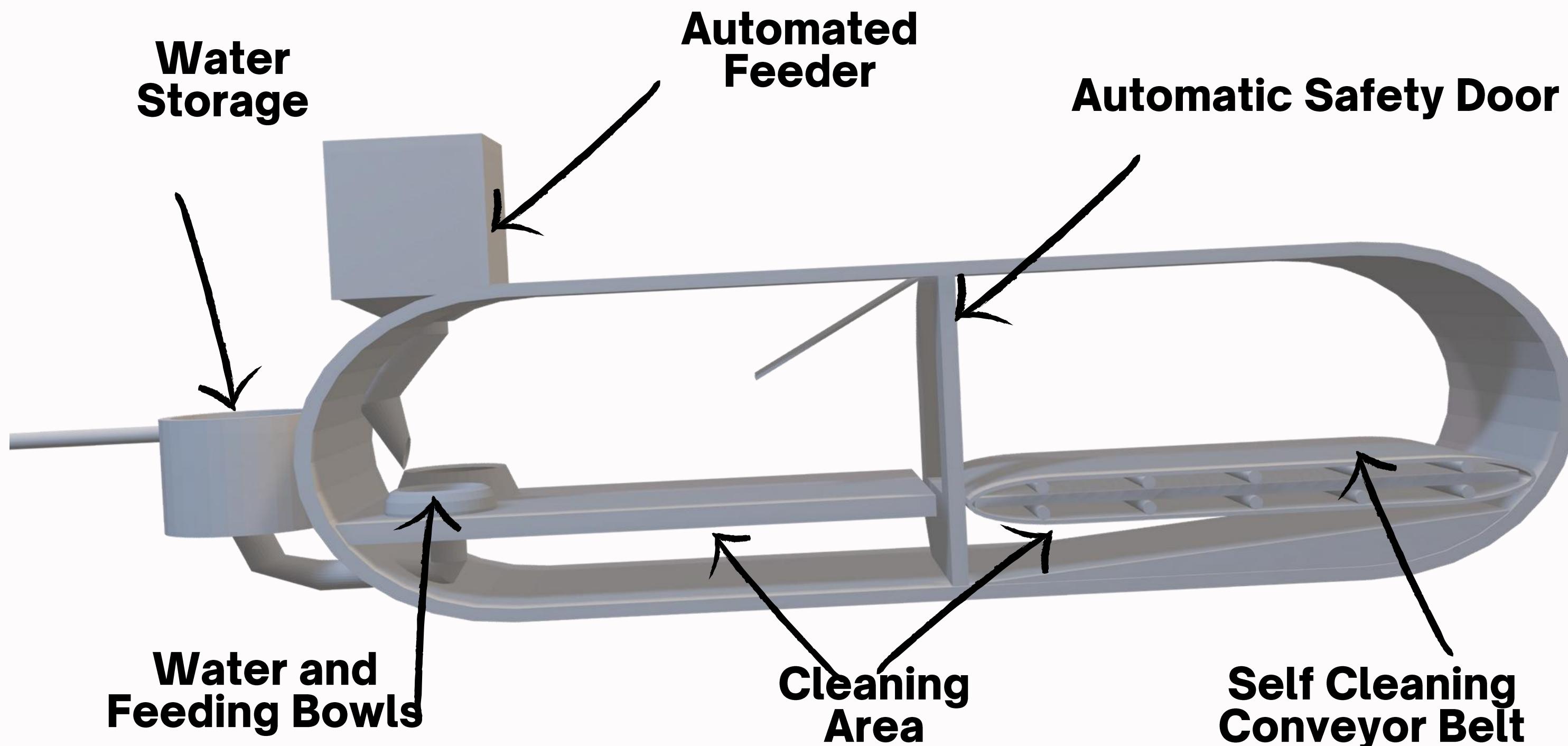
Humidity 0%

A working prototype of the pet house



First Angle Projection of the Prototype

Sketch and design





- Front elevation

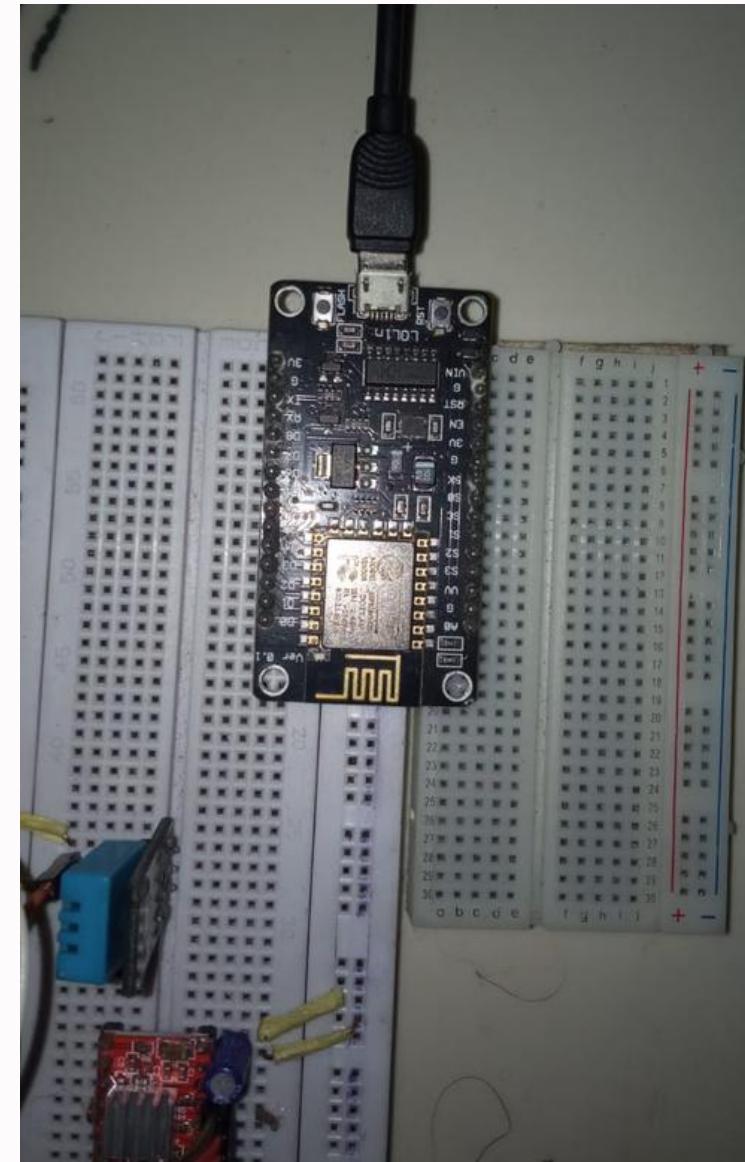


- Plan / Top view

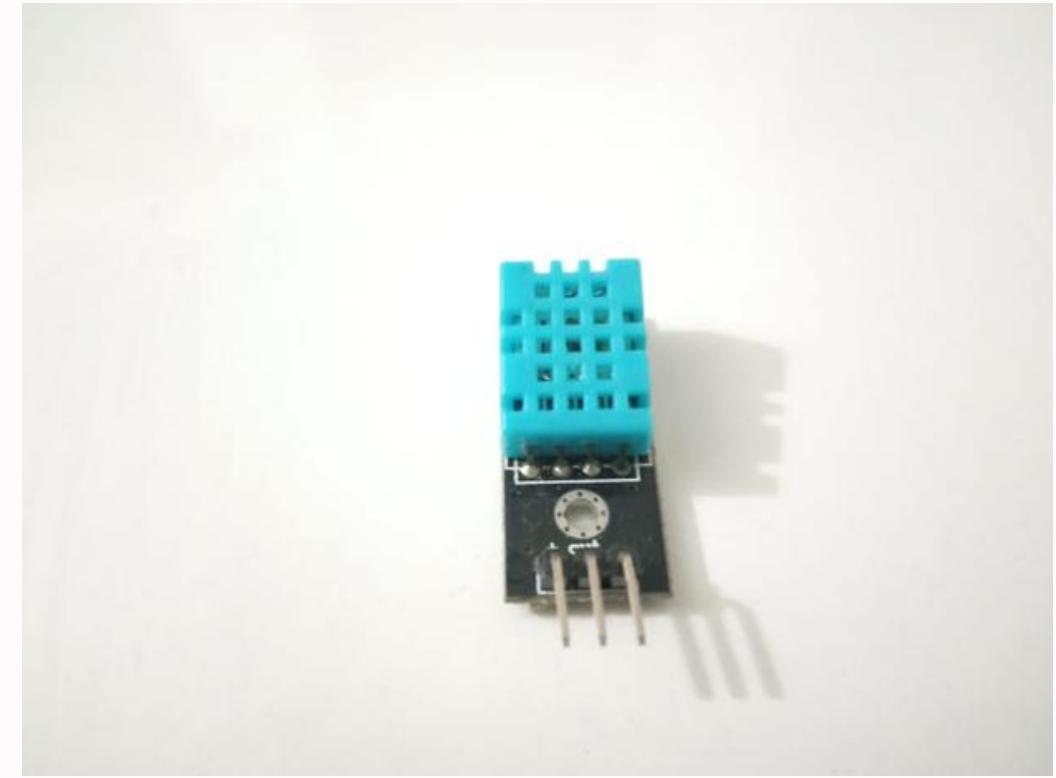
Modules



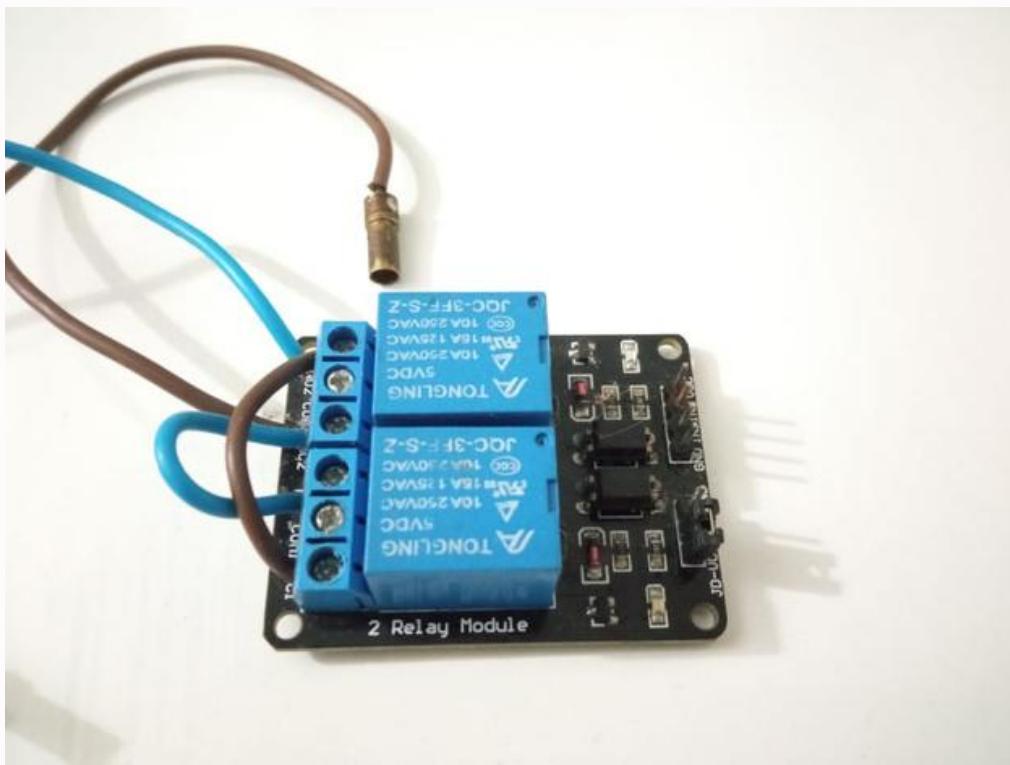
- Water pump



- Nord MCU



- Temperature and Humidity sensor



- Relay Module



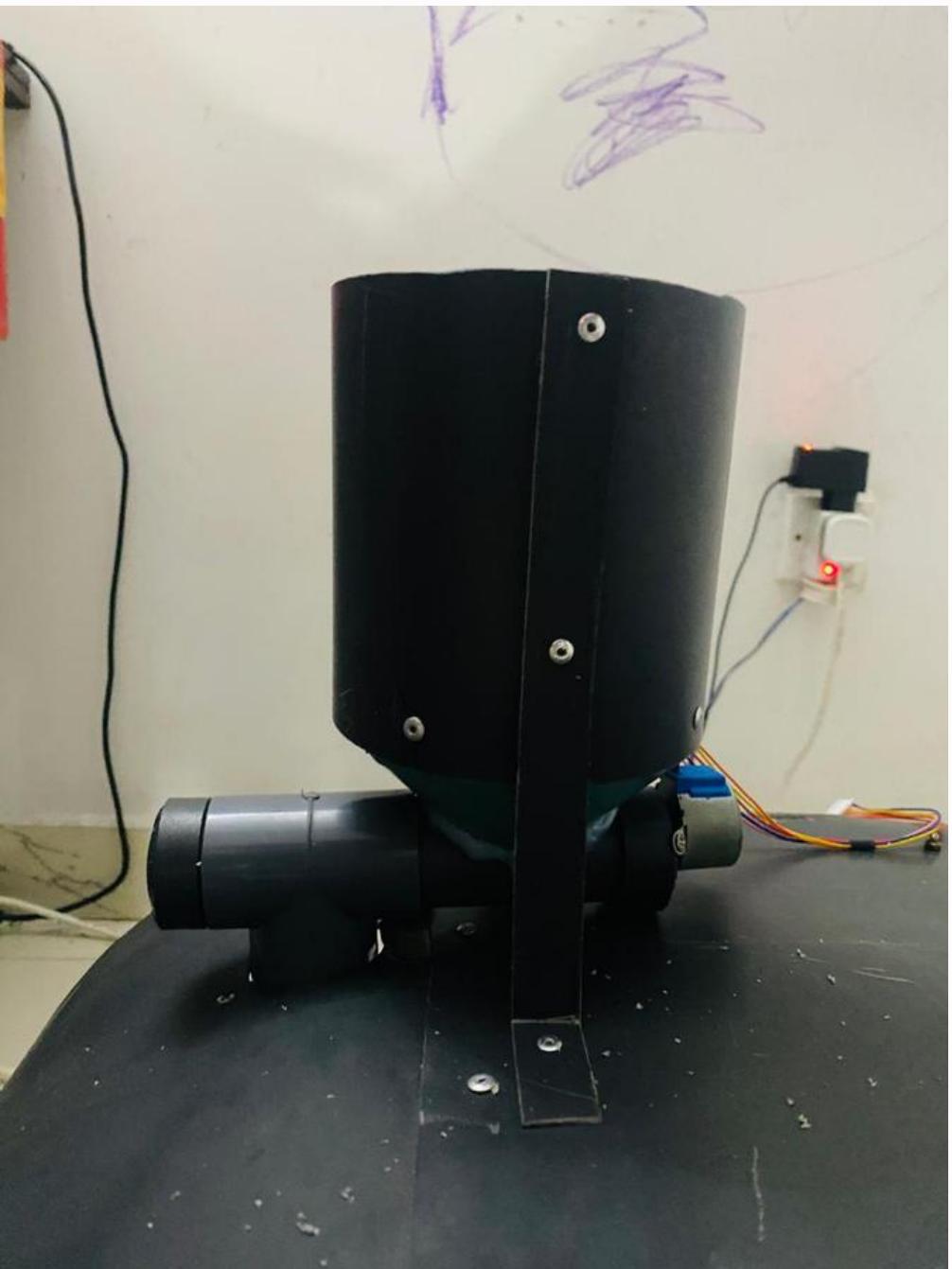
- PIR sensor



- Buck converter



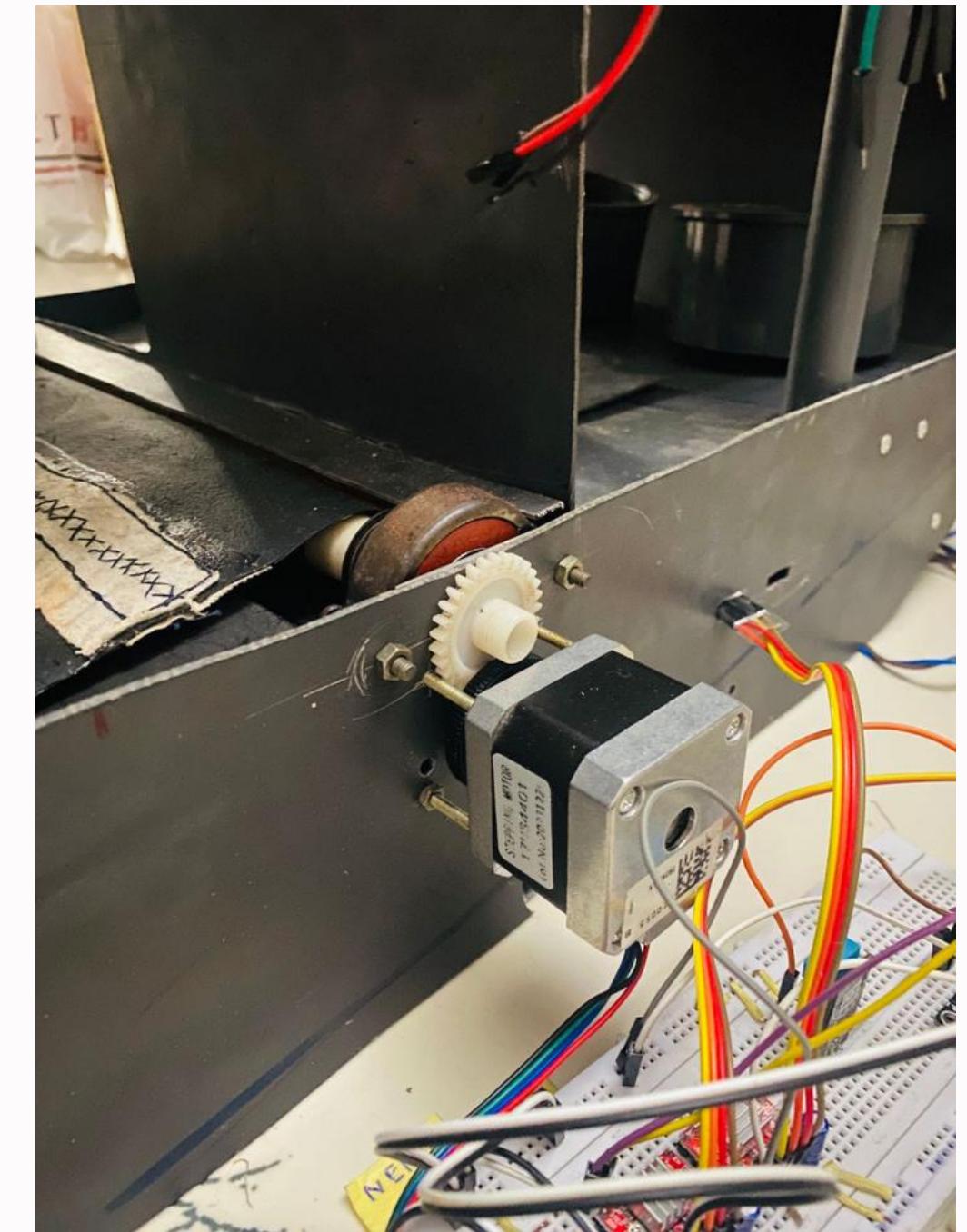
- Stepper motor



- Food dispenser



- Water tank



- Belt motor



- Cleaning conveyer belt



- Door mechanism

- Cleaning conveyer
belt mechanism and
door mechanism

(video include)

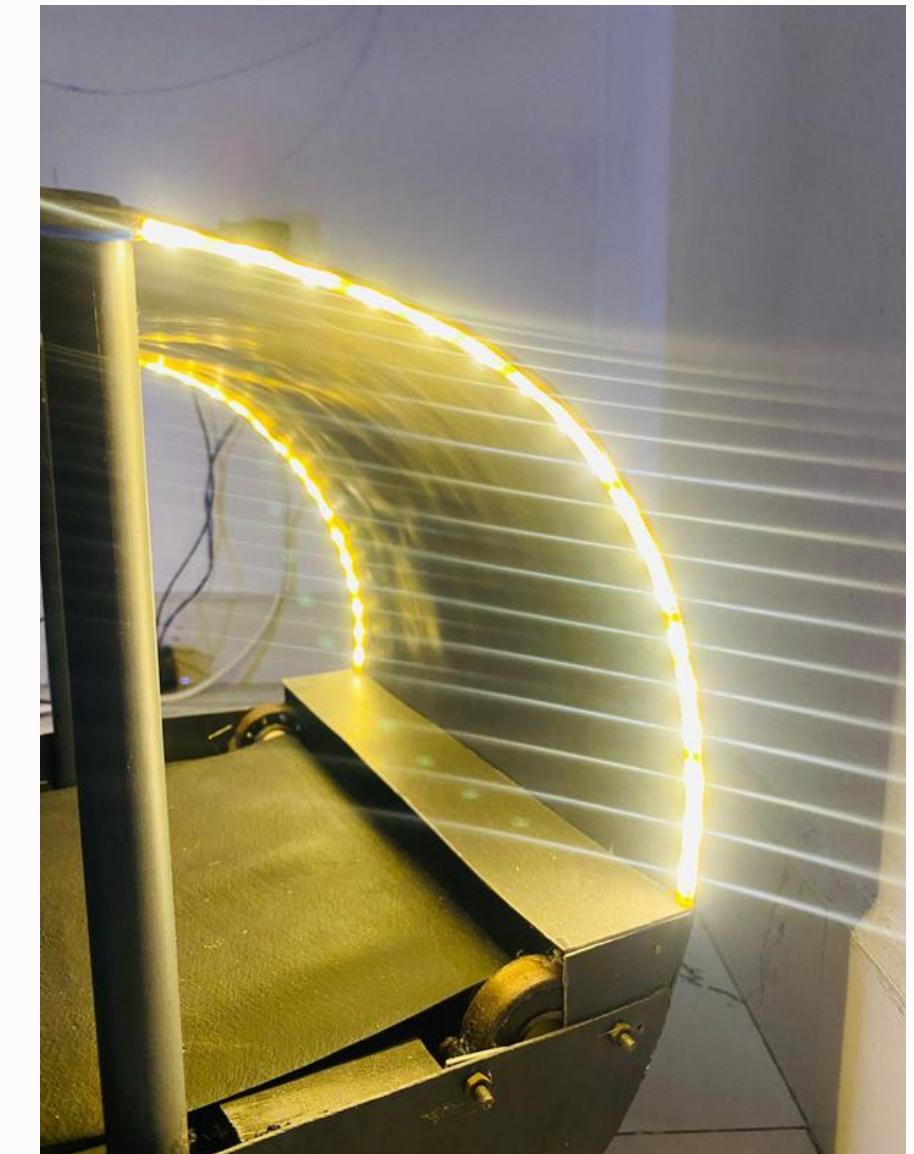
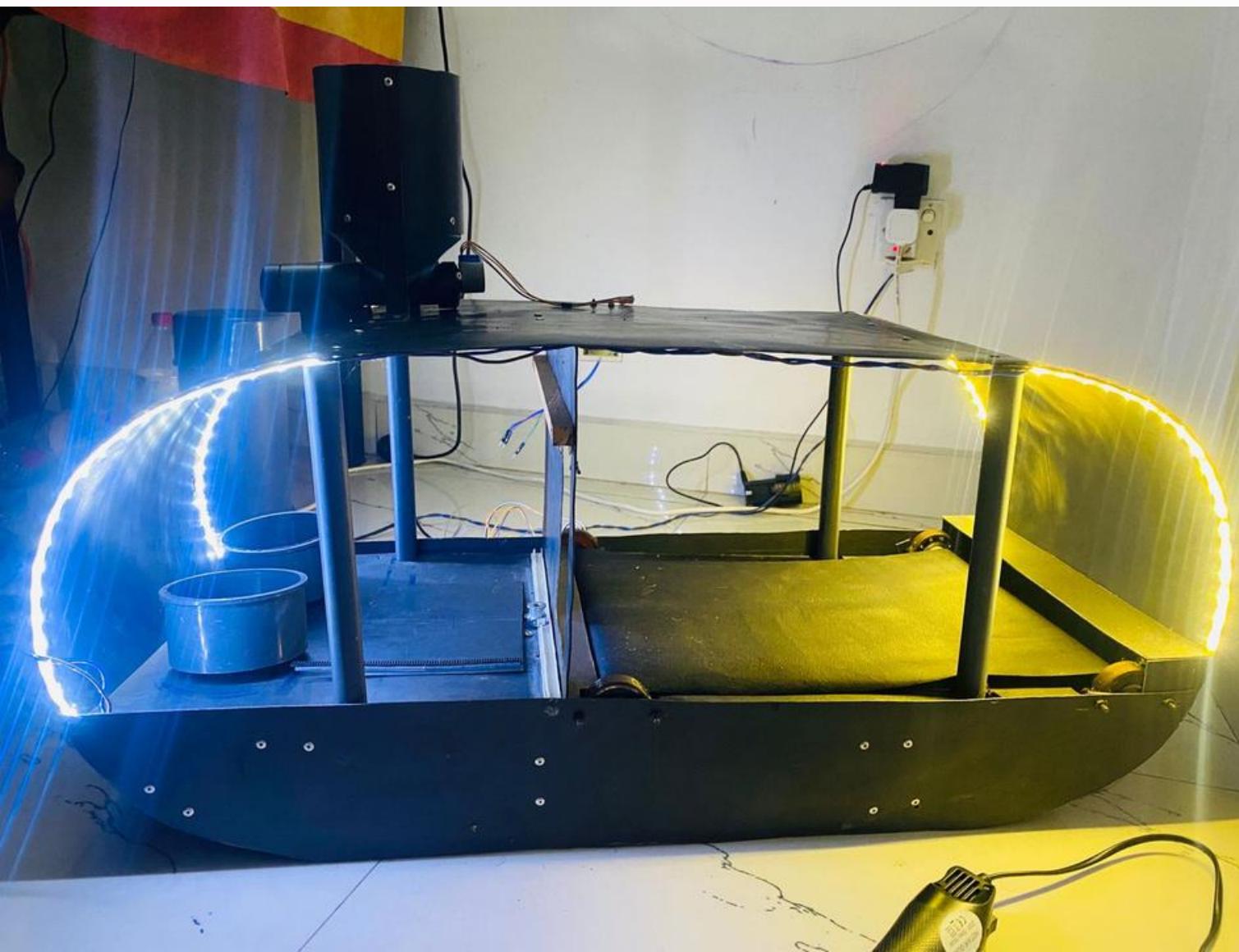
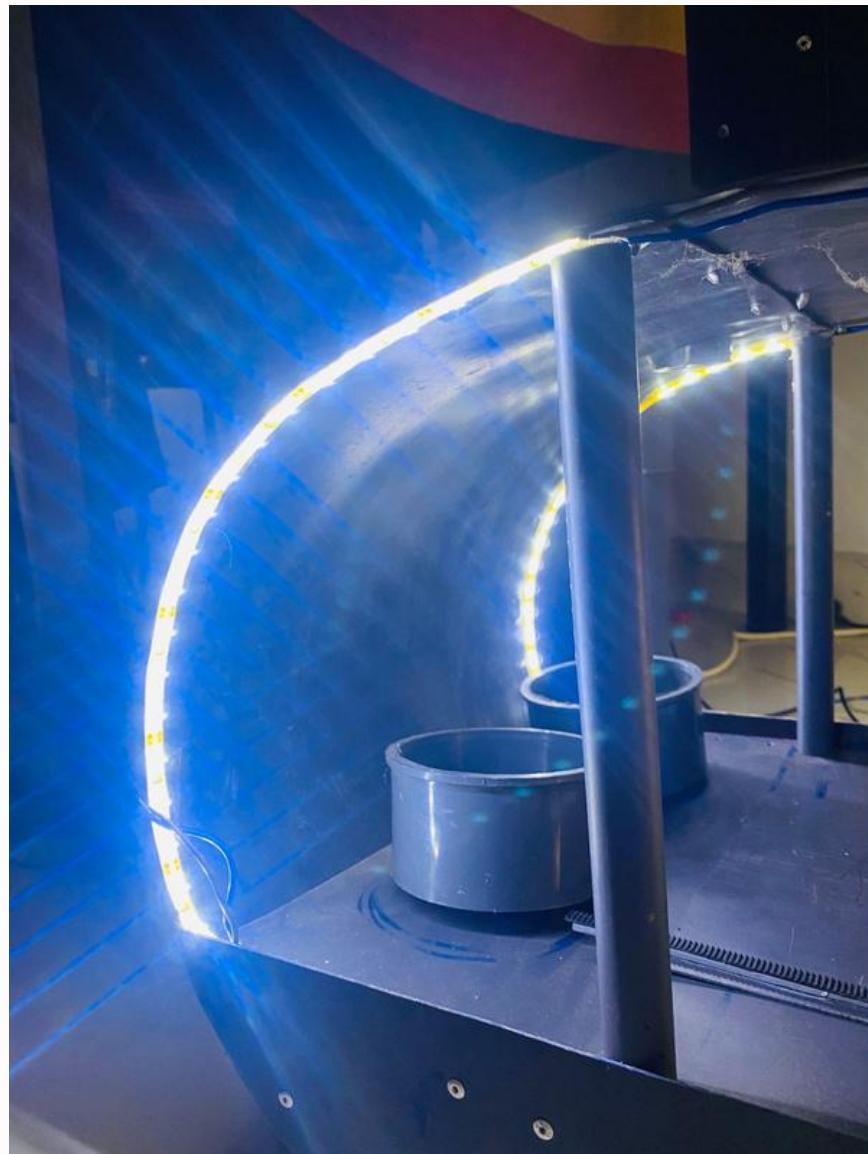


- Food dispenser

(Video include)



- Lightening system



Advantages of the Smart Pet House



Automatic Cleaning

Reduces the need for frequent manual cleaning, ensuring a hygienic environment for pets.



Automated Feeding

Ensures pets have continuous access to food and water with food and water refilling system.



Smart Lighting

Allows owners to schedule lighting times and manually control it through the app, creating a comfortable environment that can help reduce anxiety in pets.



Mobile App Integration

Offers remote access to monitor and manage pets, allowing owners to control the pet house features from anywhere.

Conclusion

Innovative Solution

The Smart Pet House addresses the challenges faced by pet owners who need to leave their pets alone for extended periods, providing peace of mind through technology.

Improved Pet Welfare

With automated cleaning, feeding, and smart lighting, the well-being of pets is prioritized, ensuring they are comfortable and cared for in their owners' absence.

Convenience for Owners

The mobile application offers remote monitoring and management, allowing pet owners to stay connected with their pets and ensure their needs are met.

User-Friendly Design

The seamless integration of the pet house and mobile app makes it easy for pet owners to control all features effortlessly.



THANK YOU

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