T128 APPLICATION DEVELOPMENT AND EMERGING TECHNOLOGIES

PET PAL: A Mobile Application for Pet Adaption

MAJOR OUTPUT DOCUMENTATION

By: Team Aspirants

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Introduction

Project Overview

The PET PAL Mobile Application aims to simplify the pet adoption process by connecting both pet owners and potential pet owners through our app. It offers a user-friendly interface for searching and viewing adoptable pets, streamlining the communication between adopters and pet owners.

Objectives

- Provide a platform for easy pet adoption.
- Connect users with nearby shelters.
- Streamline the adoption process with efficient communication tools.

Scope

The project includes the development of a mobile application with features such as pet posting, and adoption application. It does not cover post-adoption support or veterinary services.

Target Audience

The primary audience includes individuals looking to adopt pets and pet owners who wants to find a potential fur parents for their pets.

Project Proposal

Background

With the growing number of stray domestic animals, cities' possibilities to be safe and resilient spaces for their citizens are negatively impacted, thus hindering the attainment of SDG 11, which aims to foster sustainable cities and communities, (Chang et al., 2023). There is a growing need for effective pet adoption platforms. Current systems are often fragmented and inefficient, leading to lower adoption rates and higher shelter populations.

Problem Statement

There is a lack of a centralized, user-friendly platform that connects potential adopters with the pet owners, leading to inefficiencies in the pet adoption process.

Goals and Deliverables

Goals:

- Develop a mobile application that facilitates pet adoption.
- Increase the visibility of adoptable pets.

Deliverables:

- A fully functional mobile application.
- User guides and documentation.
- A database of adoptable pets.

Timeline

Phase	Start Date	End Date
Planning	**May 1, 2024**	**May 2, 2024**
Design	**May 3, 2024**	**May 5, 2024**
Development	**May 6, 2024**	**May 18, 2024**
Testing	**May 19, 2024**	**May 20, 2024**
Deployment	**May 21, 2024**	**May 21, 2023**

System Architecture

System Components

1. **Mobile Application (Frontend)**
   - **Platform:** Android
   - **Framework:** Android Studio
   - **Language:** Java
   - **Purpose:** Provides a user interface for pet owners and adopters to interact with the system.

2. **Backend Server**
   - **Platform:** Firebase Functions
   - **Language:** JavaScript (Node.js)
   - **Purpose:** Hosts the API endpoints, handles authentication, and processes business logic.

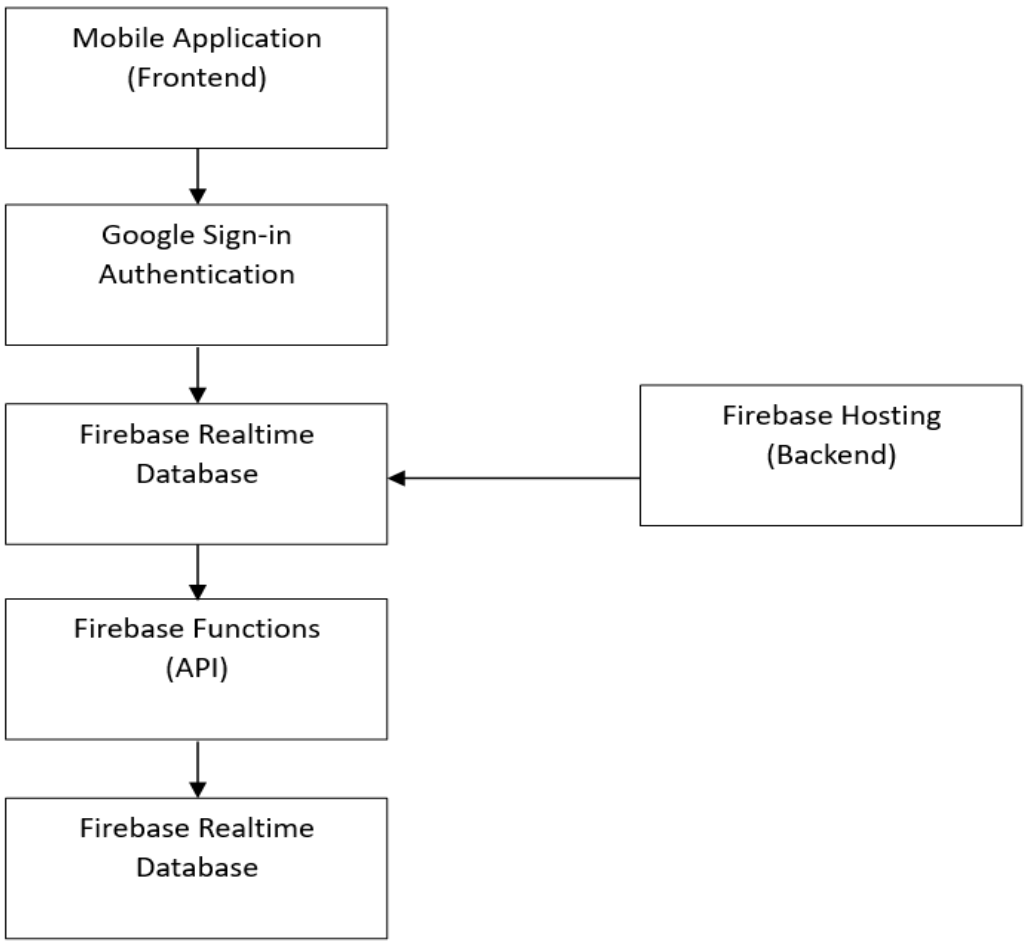
3. **Database**
   - **Platform:** Firebase Realtime Database
   - **Purpose:** Stores user, pet, and inquiry data in real-time.

4. **Authentication Service**
    - **Platform:** Google Sign-In API.
    - **Purpose:** Manages user authentication and provides secure login/logout functionality.

5. **Hosting Service**
    - **Platform:** Firebase Hosting.
    - **Purpose:** Hosts the backend server and static assets of the application.

Data Flow Diagram

Below is a simplified Data Flow Diagram (DFD) illustrating the main interactions within the Pet Pal system:



Technology Stack

1. **Frontend:**
    - **Platform:** Android
    - **Language:** Java
    - **IDE:** Android Studio

2. **Backend:**
    - **Platform:** Firebase Functions
    - **Language:** JavaScript (Node.js)

3. **Database:**
    - **Platform:** Firebase Realtime Database

4. **Authentication:**
    - **Service**: Google Sign-In API

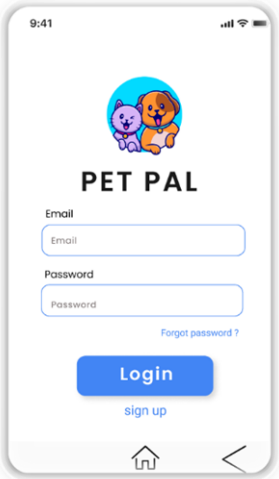
5. **Hosting:**
    - **Service:** Firebase Hosting

Design

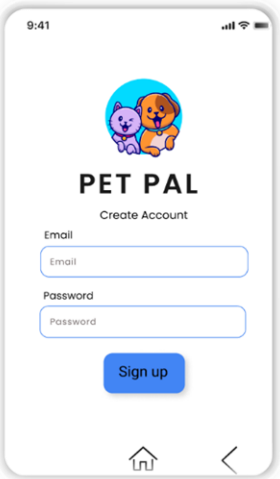
Wireframes

Wireframes are visual guides that represent the skeletal framework of the application. Below are the key wireframes for the Pet Pal application:

1. **Login Page:**
    - Fields for Email and Password
    - Option to login with Google
    - Sign Up link



2. **Sign Up Page:**
    - Fields for Name, Email, Password, Address, Birthdate, Phone Number
    - Sign Up button



3. **Home Page:**
    - List of available pets for adoption
    - Navigation bar with links to Profile, Upload Pet, Inquiries, Status

4. **Profile Page:**
    - Fields to update Name, Address, Birthdate, Phone Number
    - Profile Picture upload

5. **Upload Pet Page:**
    - Fields for Pet Name, Age, Sex, Status, Contact Number, Address, Description
    - Photo upload section

6. **Inquiries Page:**
    - List of inquiries received for user's pets
    - Option to respond to inquiries

7. **Status Page:**
    - Global status of all inquiries
    - Filters for Approved and Declined inquiries

UI/UX Design

The UI/UX design focuses on creating a user-friendly and aesthetically pleasing experience for users. Key design principles include:

1. **Consistency:**
    - Consistent use of colors, fonts, and button styles throughout the application.

2. **Simplicity:**
    - Clean and simple interface, avoiding unnecessary elements and focusing on essential functionalities

3. **Accessibility:**
    - Ensure the app is accessible to all users, including those with disabilities. This includes proper contrast ratios, readable fonts, and intuitive navigation.

4. **Responsiveness:**
    - Design the app to be responsive and adaptable to different screen sizes and orientations.

Color Scheme:

- **Secondary Color:** #A5CDFC (Sky blue)
- **Background Color:** #FFFFFF (White)
- **Text Colors:** #000000 (Black), #CB4242 (Red)
- **Approved and Done Button:** #5AEE4D (Green)
- **Declined Button:** #CB4242 (Red)

Typography:

- **Font Family:** Poppins
- **Font Sizes:** 14px, 16px, 18px (for different text elements)
- **Font Weight:** Regular, Medium, Bold (for emphasis)

Icons and Images:

- **Icon Pack:** Material Icons
- **Image Guidelines:** Use high-resolution images for pet photos, optimized for web to ensure fast loading times.

Conclusion

Project Recap

The Pet Pal project aimed to develop a mobile application that facilitates pet adoption by connecting pet owners with potential adopters. The project involved:

- Designing and developing an Android application using Java and Android Studio.
- Implementing a secure authentication system using Google Sign-In API.
- Integrating Firebase Realtime Database to manage and synchronize application data in real-time.
- Hosting the backend services using Firebase Functions and Firebase Hosting.

Lessons Learned

1. **Effective Use of Firebase:**
    - Firebase Realtime Database and Firebase Functions provide robust solutions for real-time data synchronization and serverless backend services, respectively.

2. **Importance of User-Centered Design:**
    - Focusing on UI/UX design significantly improves the user experience, making the app more intuitive and accessible.

3. **Security Considerations:**
    - Implementing secure authentication mechanisms and proper data encryption is crucial for protecting user data.

4. **Team Collaboration:**
    - Effective communication and collaboration among team members are essential for successfully managing and completing the project.

Acknowledgments

We would like to express our gratitude to everyone who contributed to the Pet Pal project:

- **Development Team:** For their dedication and hard work in building the application.
- **Design Team:** For creating user-friendly and visually appealing designs.
- **Project Managers:** For coordinating the project and ensuring timely delivery.
- **Testers:** For their meticulous testing and valuable feedback.
- **Users:** For their input and support during the development process.

Special thanks to the following resources and platforms:

- **Firebase:** For providing comprehensive backend services.
- **Google Sign-In API:** For enabling secure user authentication.
- **Material Design:** For design guidelines and icon resources.

The Pet Pal project has been a collaborative effort, and we are proud of the results. We look forward to seeing the positive impact it will have on pet adoption.

REFERENCES

Chang, M., & Cañarte, G. (2023). Agapet: Supporting A Responsible Adoption Process for Stray and Abandoned Pets in Urban Areas.

https://doi.org/10.1145/3544549.3583845

Documentation

User Manual

System Requirements

- Operating System: Android 5.0 (Lollipop) and above
- Internet Connection: Stable internet connection required.
- Installation

1. Visit this website Pet-pal (pet-pal-nu.vercel.app).

2. Click on the "Download" button.

3. Once you have downloaded the APK, you can proceed with the installation.

User Guide

Sign Up and Login

1. **Sign Up:**
    - Open the Pet Pal app.
    - Click on "Sign Up".
    - Fill in the required details: Email and Password.
    - Alternatively, click on "Sign Up with Google" to use your Gmail account for automatic login.

2. **Login:**
    - Open the Pet Pal app.
    - Enter your registered email and password

Profile Customization

- Navigate to the "Profile" section.
- Update your name, profile picture, and other personal details.
- Click "Save" to update your profile.

Main Features

Upload a Pet

- Go to the profile icon click it and select "Upload a Pet.
- Fill in the details of the pet (owner name, age, sex, status, contact#, address, description).
- Upload clear photos of the pet.
- Click "Upload" to post your pet for adoption.

Inquiries

- Go to the profile icon click it and select "Inquiries".
- View inquiries from potential adopters for your posted pets.
- Respond to inquiries directly within the app.

Status

- Go to the profile icon click it and select "Status" section.
- View the global status of all inquiries, including approved and declined requests.
- Stay updated on the adoption status of pets you inquire.

Technical Documentation

Architecture

- Platform: Android Studio
- Language: Java
- Database: Firebase for real-time data synchronization
- APIs: Google Sign-In API for authentication

Database Schema

Users Collection

Field	Type
User ID	String
Name	String
Address	String
Birthdate	String
Phone number	String
Email	String
Profile picture	String

Pets Collection

Field	Type
Pet Id	String
Owner Id	String
Name	String
Age	String
Sex	String
Status	String
Contact	Number
Address	String
Description	String
Photos	[String] (array of URLs)

API Endpoints

User Endpoints:

- **POST /signup**: Register a new user.
- **POST /login:** Authenticate a user.
- **PUT /profile:** Update user profile.

Pet Endpoints:

- **POST /pets:** Upload a new pet.
- **GET /pets:** Retrieve all pets.
- **GET /pets/:id:** Retrieve a specific pet.

Inquiry Endpoints:

- **POST /inquiries:** Submit a new inquiry.
- **GET /inquiries:** Retrieve all inquiries for a user.
- **PUT /inquiries/:id:** Update the status of an inquiry.

Security

- **Authentication:** Google Sign-In API for secure user authentication.
- **Data Encryption:** Firebase Realtime Database secures data in transit and at rest.
- **Access Control:** Firebase rules to ensure users can only access their data.

Troubleshooting

- **Cannot Login:** Ensure your email and password are correct. Use the "Forgot Password" feature if needed.
- **App Crashes Restart:** the app and check for updates. Contact support if the issue persists.

Profile Update Fails: Verify internet connection and retry.

FAQs

1. **How do I reset my password?**
   - Use the "Forgot Password" link on the login page.

2. **Can I edit my pet's information after uploading?**
   - Yes, navigate to your pet's profile and make the necessary changes.

3. **How do I delete my account?**
   - Contact support to request account deletion.

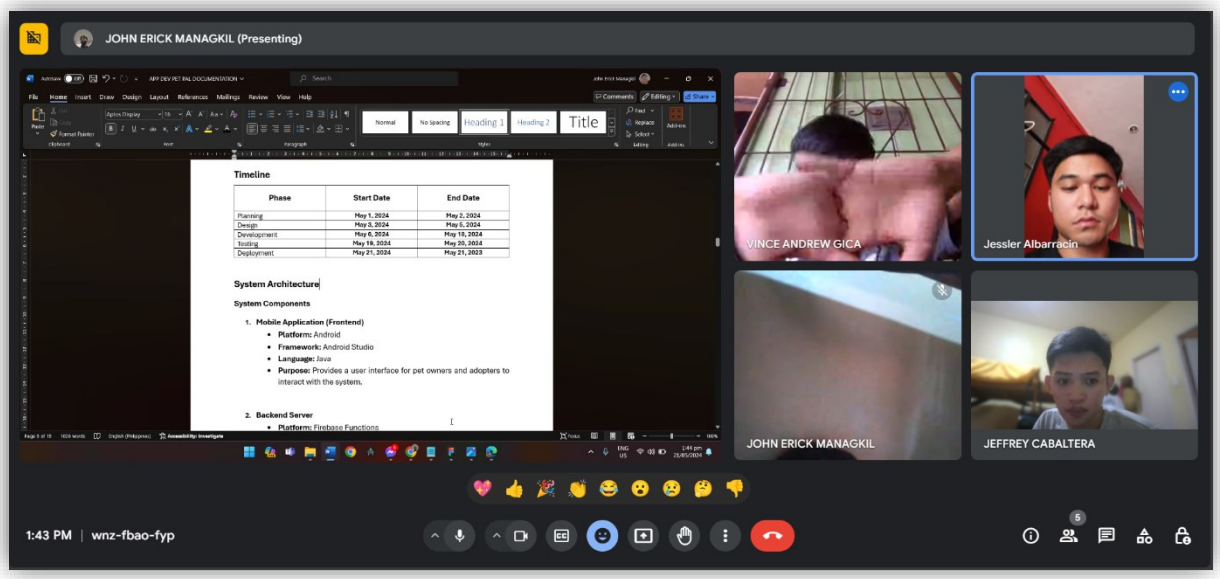
Support

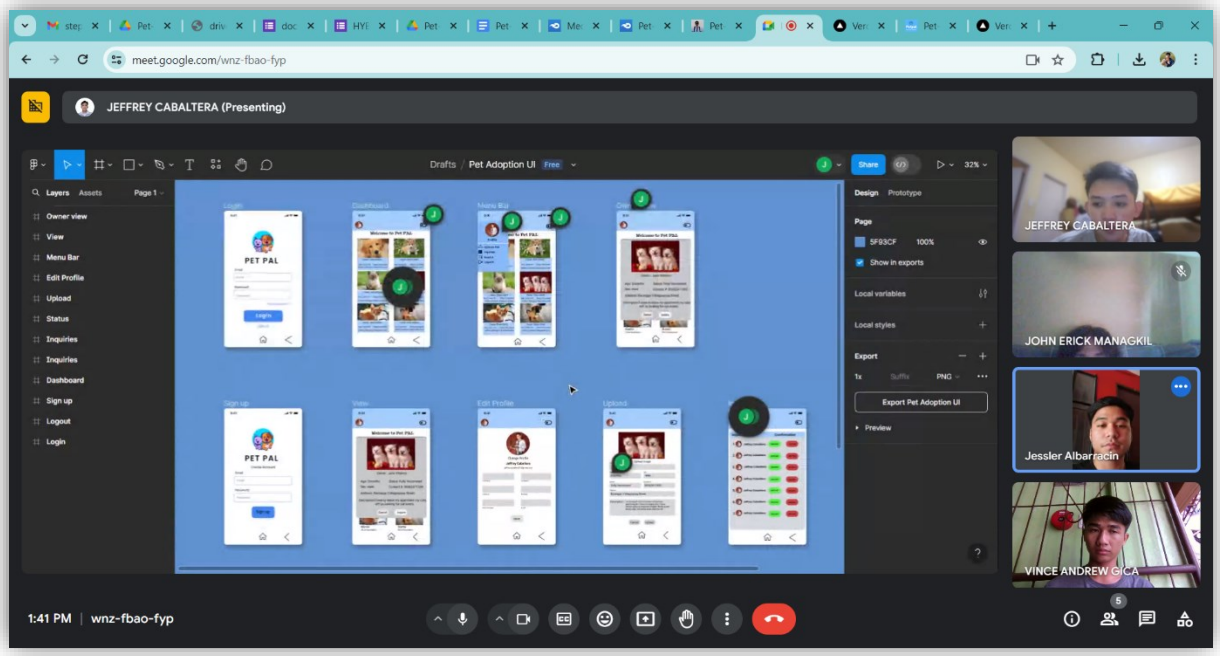
For additional support, contact us at:

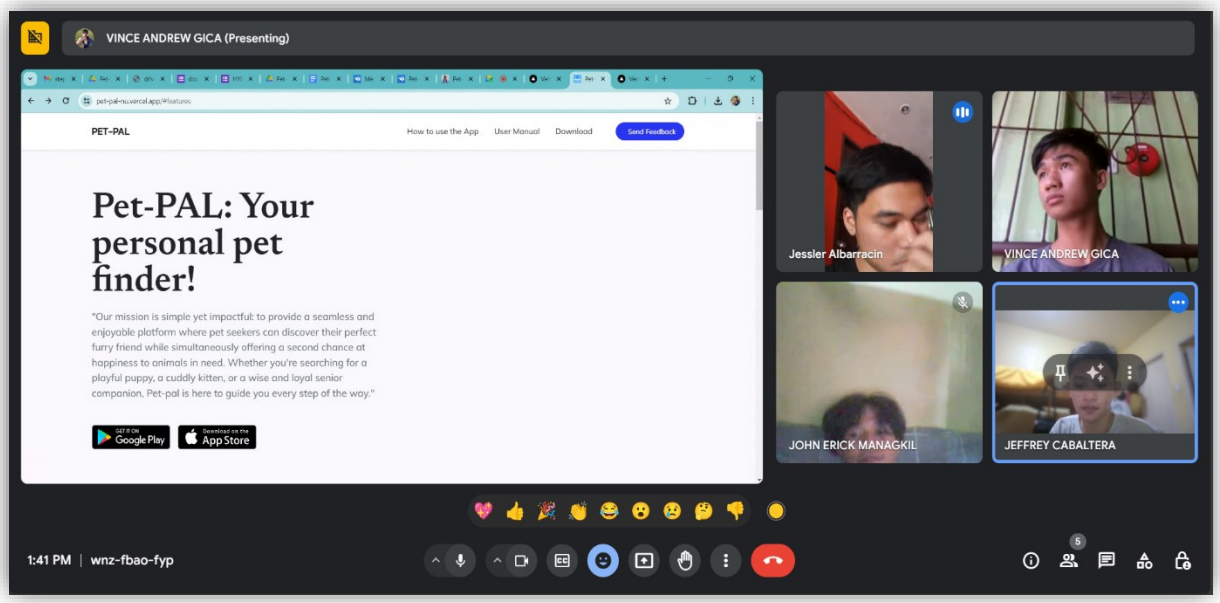
- **Email:** jeffreycabaltera21@gmail.com
- **Phone:** 09362411300 PET-PAL

BUKIDNON STATE UNIVERSITY
Malaybalay City, Bukidnon 8700
Tel (088) 813-5661 to 5663; Telefax (088) 813-2717, www.buksu.edu.ph

PHOTO DOCUMENTION






VINCE ANDREW GICA (Presenting)
PET-PAL
How to use the App
User Manual
Download
Send Feedback
Pet-PAL: Your personal pet finder!
"Our mission is simple yet impactful: to provide a seamless and enjoyable platform where pet seekers can discover their perfect furry friend while simultaneously offering a second chance at happiness to animals in need. Whether you're searching for a playful puppy, a cuddly kitten, or a wise and loyal senior companion, Pet-pal is here to guide you every step of the way."
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JOHN ERICK MANAGKIL
JEFFREY CABALTERA
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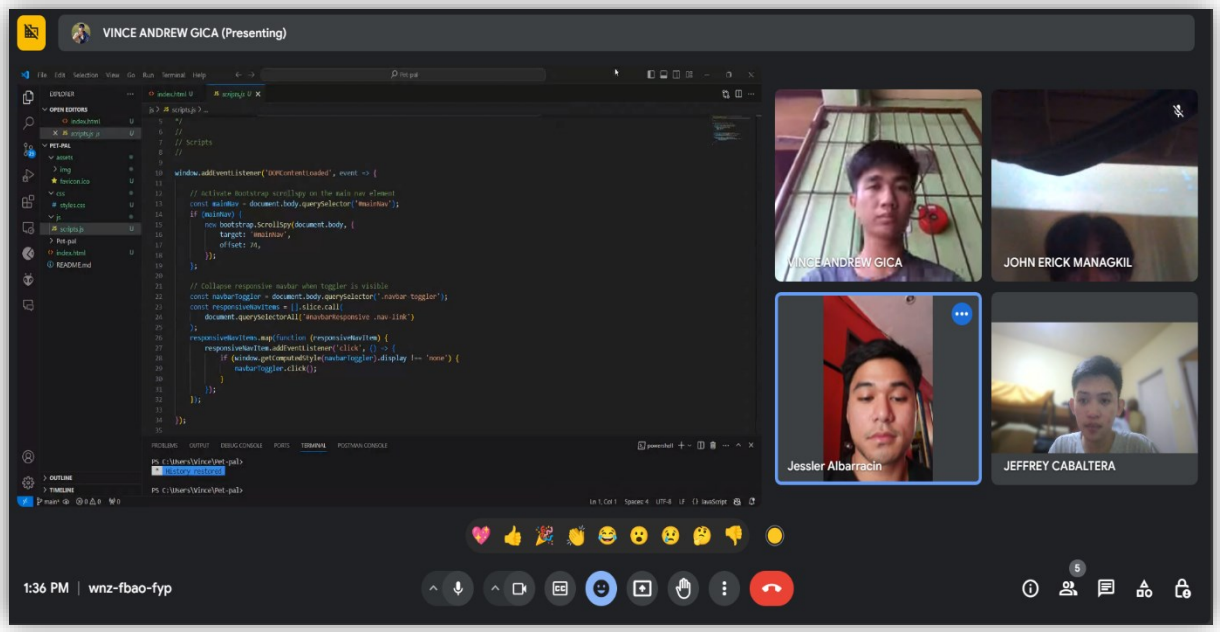
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