

T128 APPLICATION DEVELOPMENT AND EMERGING  
TECHNOLOGIES

# **PET PAL: A Mobile Application for Pet Adaption**

MAJOR OUTPUT DOCUMENTATION

By: Team Aspirants

May 19, 2024



## BUKIDNON STATE UNIVERSITY

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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.



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# 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.



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## Timeline

Phase	Start Date	End Date
Planning	May 1, 2024	May 2, 2024
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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.



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### 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



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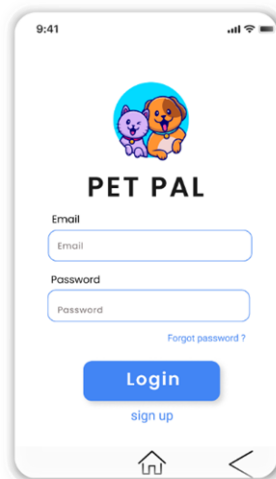
## Design

### Wireframes

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

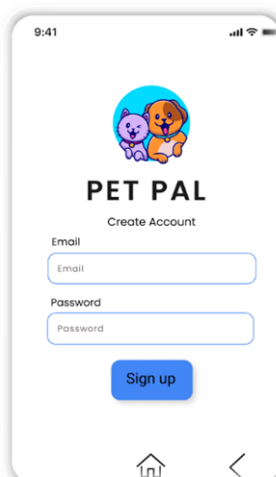
#### 1. Login Page:

- 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







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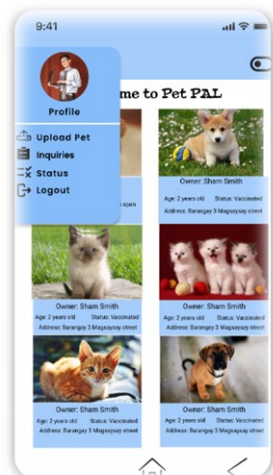
### 3. Home Page:

- 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





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### 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



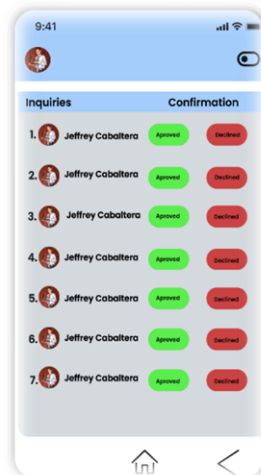
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### 7. Status Page:

- 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.



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### 4. Responsiveness:

- Design the app to be responsive and adaptable to different screen sizes and orientations.

### Color Scheme:

- **Primary Color:** #FFA726 (Orange)
- **Secondary Color:** #42A5F5 (Blue)
- **Accent Color:** #66BB6A (Green)
- **Background Color:** #FFFFFF (White)
- **Text Color:** #212121 (Dark Gray)

### Typography:

- **Font Family:** Roboto
- **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:** High-resolution images for pet photos, optimized for web to ensure fast loading times.



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## 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.



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### 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.



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Special thanks to the following resources and platforms:

- **Firestore:** 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>



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  - Framework: Android Studio
  - Language: Java
  - Purpose: Provides a user interface for pet owners and adapters to interact with the system.
- Backend Server**
  - Platform: Firebase Functions

**PET PAL**

**Dashboard**

**Pet Profile**

**Adoption Form**





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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."

Get it on Google Play Download on the App Store

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Participants: Jessler Albarracin, VINCE ANDREW GICA, JOHN ERICK MANAGKIL, JEFFREY CABALTERA

VINCE ANDREW GICA (Presenting)

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Participants: VINCE ANDREW GICA, JOHN ERICK MANAGKIL, Jessler Albarracin, JEFFREY CABALTERA