Oppawtunity- A Veterinary Tracker for Pets in the Philippines

Application Development and Emerging Technologies (IT 120P)

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1.0 Introduction

1.1 Background of the Study

The number of Filipino pet owners continues to grow in the country. In fact, the Philippine Star has noted that the Filipinos have the highest searches for “pets” in 2021. The number of pet supplies sold in the country has doubled, from almost 400,000 to over a million this year, indicating the number of pet owners has also increased. Furthermore, this supports the rise in Filipino pet adoptions and ownerships.

With this in mind, there are numerous veterinary clinics in the country. Such clinics utilize a pen and paper registration system for their clients. This is in contrast to the practices of most benefits today, who opt to reap the benefits of automation and digitalization that outweigh traditional methods according to the MDPI. Such benefits include saving time, effort, and paper. They also bring about more security to the business and lessen the risks of potential data loss. Hence, an opportunity for an app that keeps digital records of pets for both veterinarian clinics and pet owners will be beneficial, more efficient, and more convenient.

1.2 Statement of Objectives

1.2.1 General Problem

No apps have been designed specifically for the record-keeping of pet information through QR codes. Hence there is a need for an app that will allow both pet owners and veterinary clinics to keep track of their pets easily and quickly. QR codes are a good solution to this, as they are easy to scan and can show information fast. This is vital for emergencies when time is of the essence and information needs to be retrieved quickly. Furthermore, the app aims to reduce the need for pen and paper records employed in most veterinary clinics, as these are prone to data loss.

1.2.1 Specific Problems

Our app aims to solve the typical pen and paper records employed by most veterinary clinics. This could invite the risk of data loss, hence, the need for digitalization. More and more people are using their smartphones as important devices in their daily lives. Tracking applications eliminates the need for the customer or client to bring various important paper documents after their initial registration.

1.2.3 General Objective

Oppawtunity aims to keep track of pet information for the recording purposes of veterinary clinics and pet owners. This is done by making use of a mobile app accessible to both parties.

1.2.4 Specific Objectives

Given the general objective stated, the following specific objectives are:

- The app will provide digitization of records for dog owners and the veterinary clinics (database)
- Utilization of QR codes for pets for easy access of records
- Online Consultation

1.3 Scope and Limitation

The study is limited to the context of the Philippines, as the app will be aimed at Filipino veterinary clinics. With this in mind, the app's language will be English, for ease of understanding. The app will focus on data from small animals, specifically mammals, which include cats, dogs, and rodents. The data collected by the app will be merely available to the clinic and to the pet owner.

2.0 The Proposed System

2.1 System Overview

This will be a mobile application made for veterinarian clinics. The application requires the user or patient to register their pet. After the registration process, a QR code will be made and would be available for the user for the veterinary clinic to scan. The QR code, when scanned by a vet, admin, or staff, will display the registered pet's medical history with the veterinary and the pet's biological record. The information about the patients is stored in a database and would be editable for the appropriate staff. The application also allows the users to chat with an available veterinarian for a free consultation in regards to their pet.

2.2 Use Case Diagram

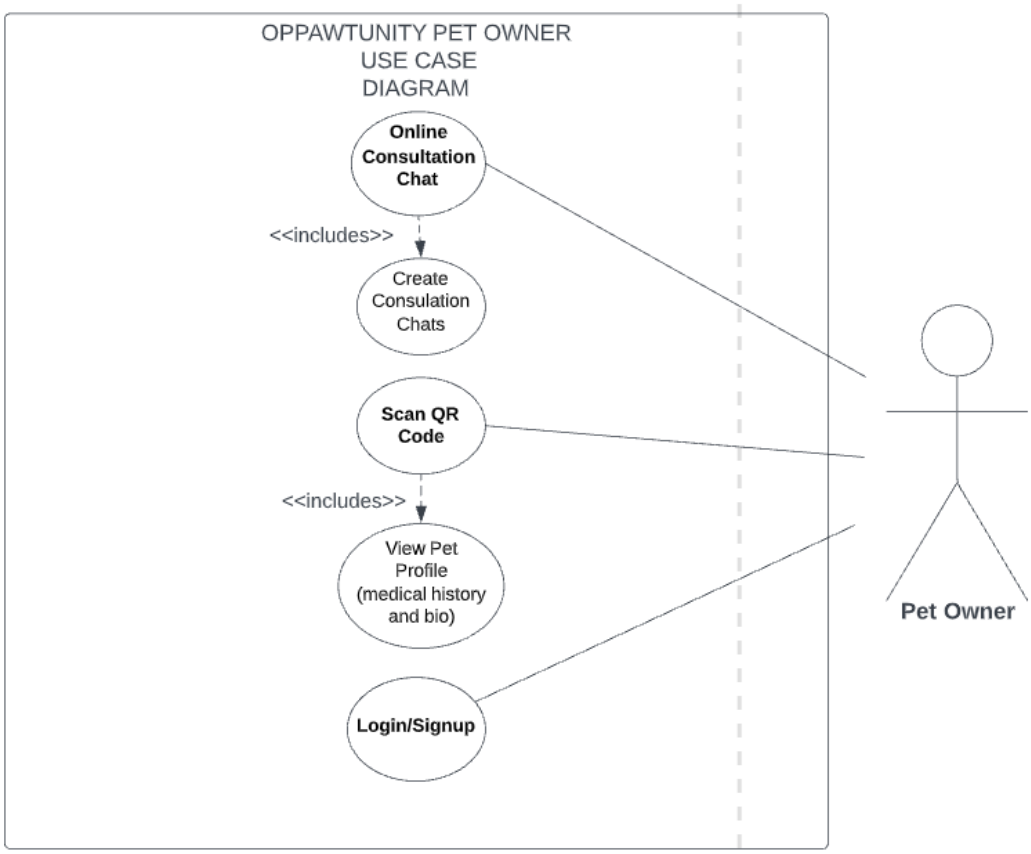

Figure 1. Use Case of Pet Owner

The Use Case Diagram for the Pet Owner is composed of three features, these are the Login and Signup form, Scan QR Code, and the Online Consultation Chat. The Scan QR Code feature allows the Pet Owner to give the vet a scan of the QR code of the Pet which automatically gives the information of the medical history and biological data of the owner's Pet. The Online Consultation Chat gives the pet owner access to talk to the vet about concerns about their pet through online chat.

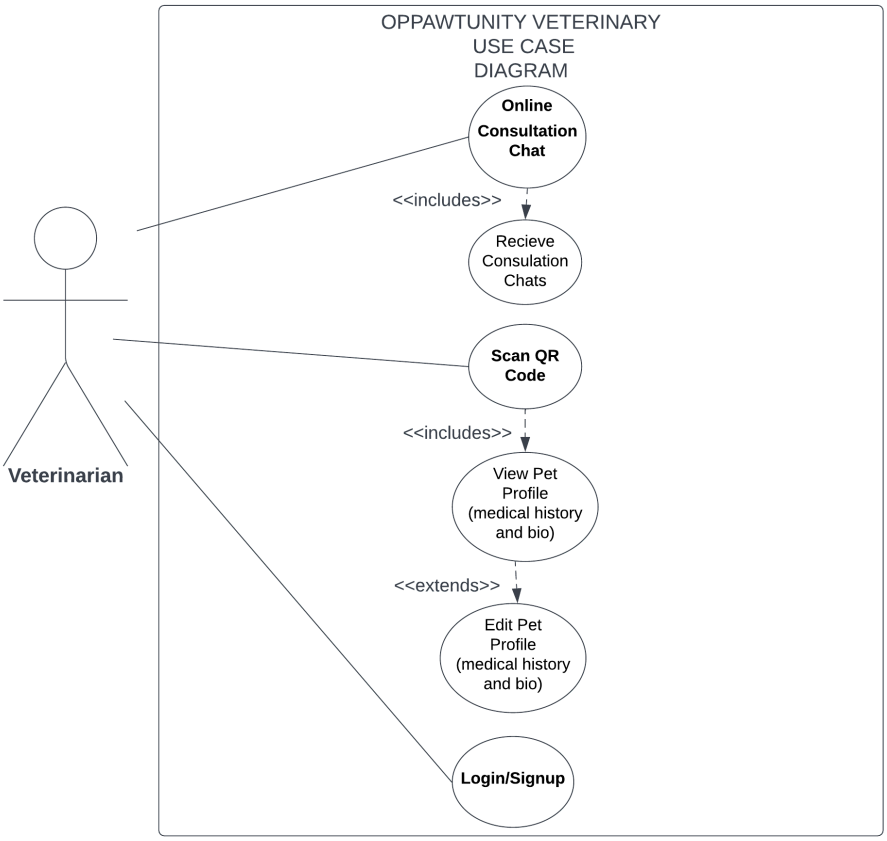

Figure 2. Use case of Vet

The Use Case of the Vet in the Oppawtunity App is almost the same as the Pet Owner, the major difference is the editable medical history and biological data of the pets which the Pet Owners have. Vets can scan QR codes and edit the data within them, while the Pet owner is limited to being only able to view these records. Meanwhile, the vet has access as well as in managing the consultations that he/she must receive through the chat.

2.3 Screen Layout

Using Android Studio, the researchers made use of a ConstraintLayout. The appearance of the app depends on whether the user is a client (a pet owner) or part of a veterinary clinic. The Home Page presents the QR Code or QR Code scanner, the Online Consultation Chat, and in the case of the veterinary clinic, the list of clients.

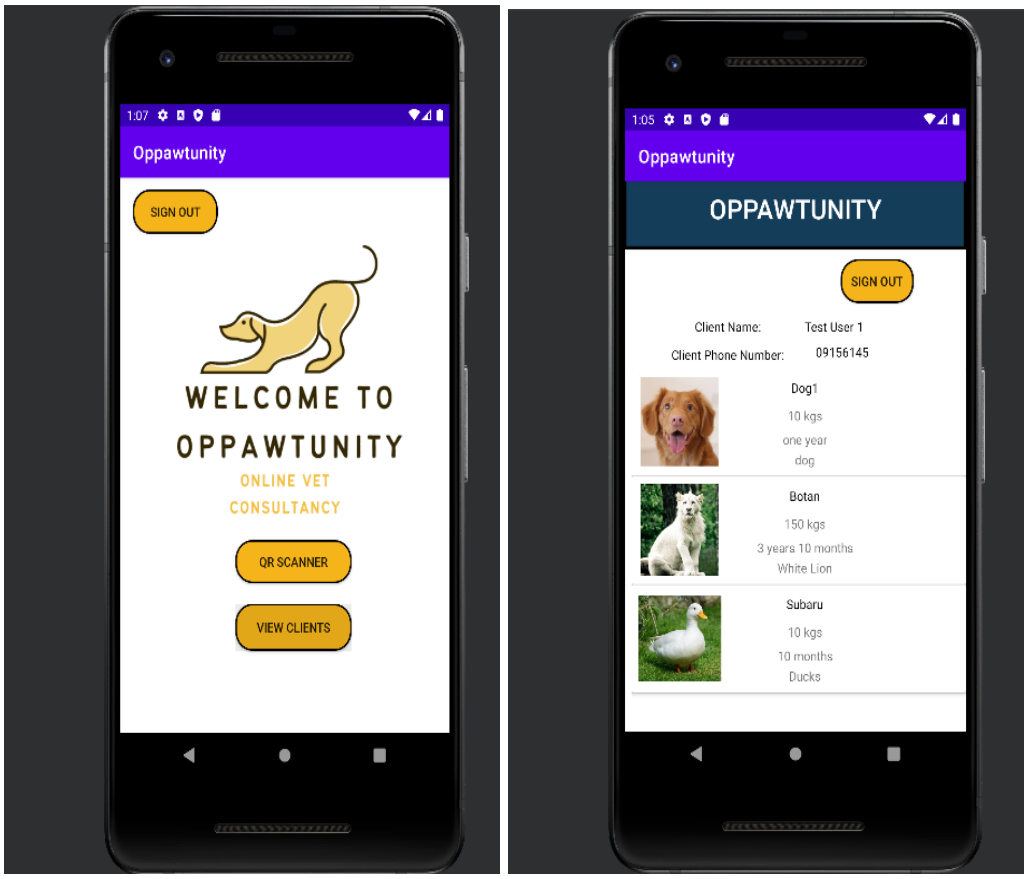

Figure 3. Screen Layout

The profile of the pets is view-only for the clients, while it is editable for the veterinary clinic. The same applies to the view medical history feature of the app.

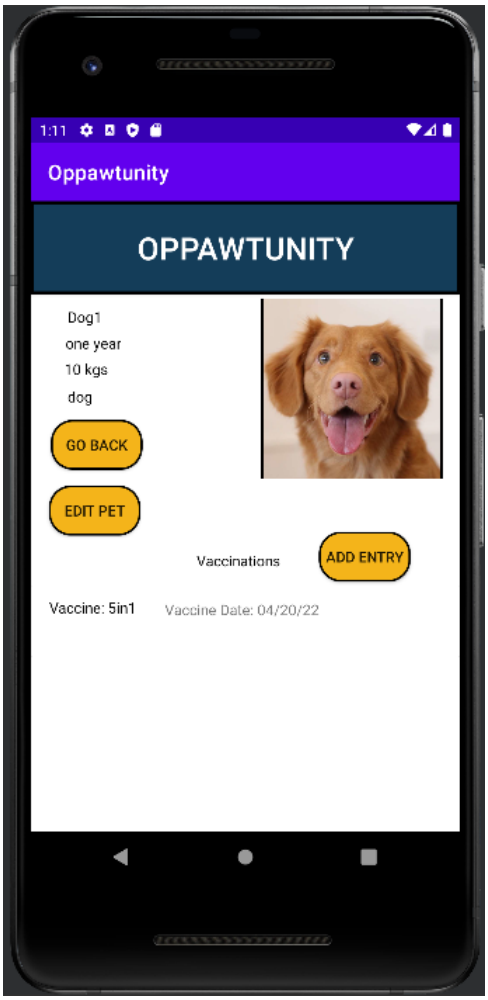

Figure 3.1 Pet Profile

2.4 Reports/Forms

The application will have two specific forms that need to be accomplished. The first is for the pet, and the second is for the owner.

The form for the pet requires the entry of basic information about the animal. The form will require the input of the pet's name, sex, breed, age, and weight. Other information to be added is the names and doses of the pet's medication and past medical history, including vaccine history. The date, purposes, and other necessary information regarding its visit will be recorded separately but will be considered as part of its record.

Meanwhile, the form for the owner requires a different set of information. Basic information shall be asked, and this includes the owner's name, address, cell phone number or email, and the pets under his or her care.

Both forms will be sent to the clinic for the staff to review the information. This is for them to have a brief knowledge of what they have to expect.

2.5 Modules

2.5.1 Login and Signup

The client can register their pet inside the application and can view their pet's various biological information and also their medical history. The administrative control, which features a QR Scanner and edit of the current pet's information, will be for the veterinarians. The information will be stored in the database.

2.5.2 QR Code Generator and Scanner

After the registration phase of the client has been done, the client will have a QR Code generated for their pet. This QR Code can be scanned by the veterinarian through the scanner in the application. This scanner is only available through the veterinarian side of the application. The QR Code will contain information about the client's pet and also its medical history with the veterinary clinic. This QR Code will point to the database entry of the pet that is editable by the veterinarian assigned.

2.5.3 Online Consultation Chat

The application will provide consultation through chat between the client and the veterinarian. This consultation with the veterinarian will be free for the client and the messages can be viewed by the veterinarian even without them being online. The messages will only be available between the client and the veterinarians.

3.0 System Coding

3.1 Programming Language

Oppawtunity was developed using Android Studio and Google Firebase for its database. Java was the main programming language used for the backend development of the app, supported with XML files for the front-end part of the application.

3.2 Database

Oppawtunity uses a simple means of database wherein admins can see registered users and their pets, this makes tracking easy not only for the admins but also for the owners of the pets to see if they are scheduled for a checkup with the vet. After everything is complete and the owners are satisfied, the admins can then remove the pets from the registry to avoid any confusion at a later time.

4.0 Resource Requirements

4.1 Hardware Requirements

Oppawtunity does not have any particularly complicated hardware requirements. An android phone is necessary for running the app for pet owners. A Google Pixel 2 was used as the virtual device to test the project, though the app can run on any Android phone. The admins, or the veterinary clinic, can use a phone to manage the app, though a laptop or a desktop computer is the recommended devices for managing the database.

4.2 Software Requirements

Software Requirements	Features
Admin must be able to add pets to a user	Administrators can input pets to the profile of a pet owner. This is done by inputting information into a QR code and scanning it.
Admin must be able to edit pet details	Administrators can check and edit the biological details of the pet.
Admin must be able to edit pet history	Administrator can add/edit visitations, medications, and vaccinations of the pets.
Users must be able to add their pets	The user or the pet owner is capable of registering his or her pet by inputting the necessary details and information.
User is able to edit profile of their pets	The user is capable of editing the information under his or her pet's profile.
User must be able to generate QR code	User must be able to generate QR code for

	their Pet profile for easy scanning of admin
Admin is able to Scan the QR code	The admin or the veterinary clinic staff is capable of scanning the QR code with the app to check and update the pet's details.
Admin is able to delete pet profile	The admin is capable of removing the pet profile from the owner for any reason applicable.

4.3 Human Resources Requirements

Human resource requirements are not necessary for Oppawtunity, as there is no need for a system administrator or similar roles. The veterinary clinic staff can easily serve as the admins themselves. Hence, the users and admins are enough to maintain the app's functionality.

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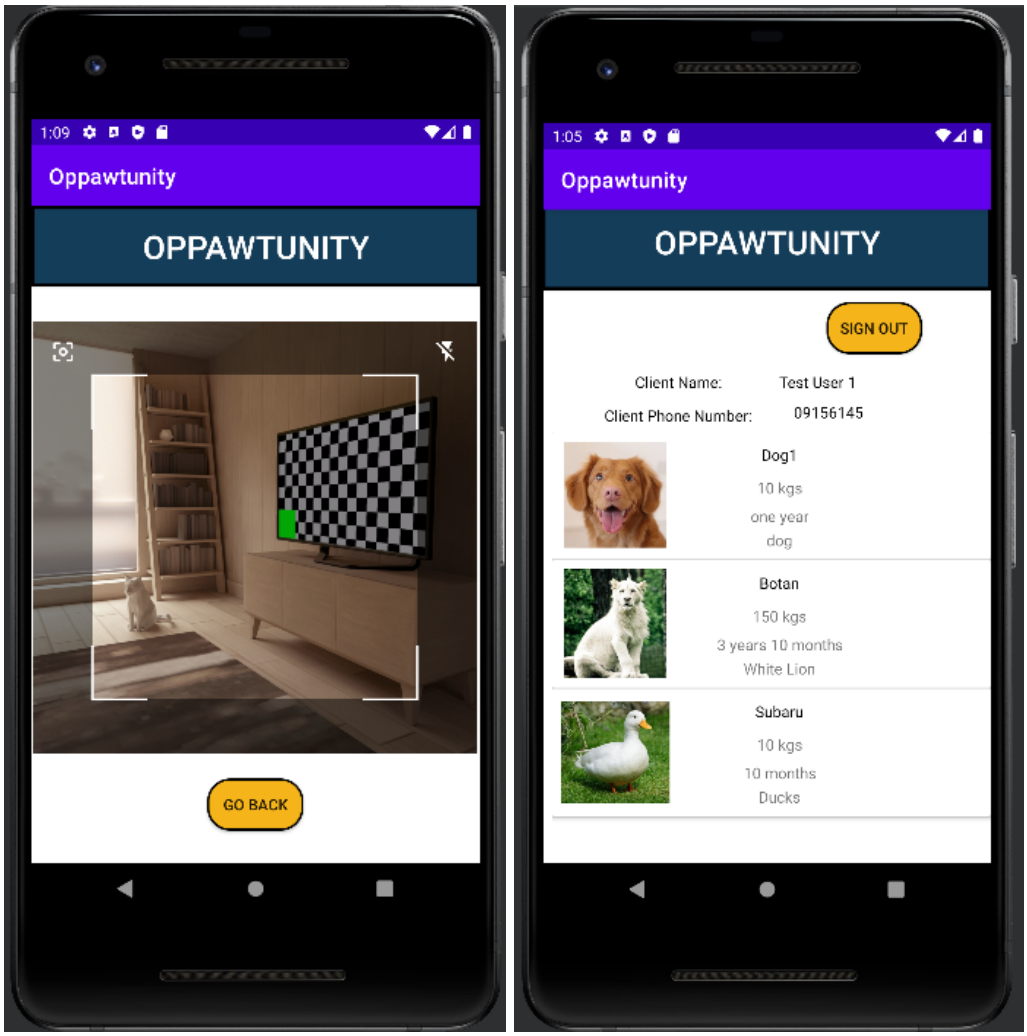
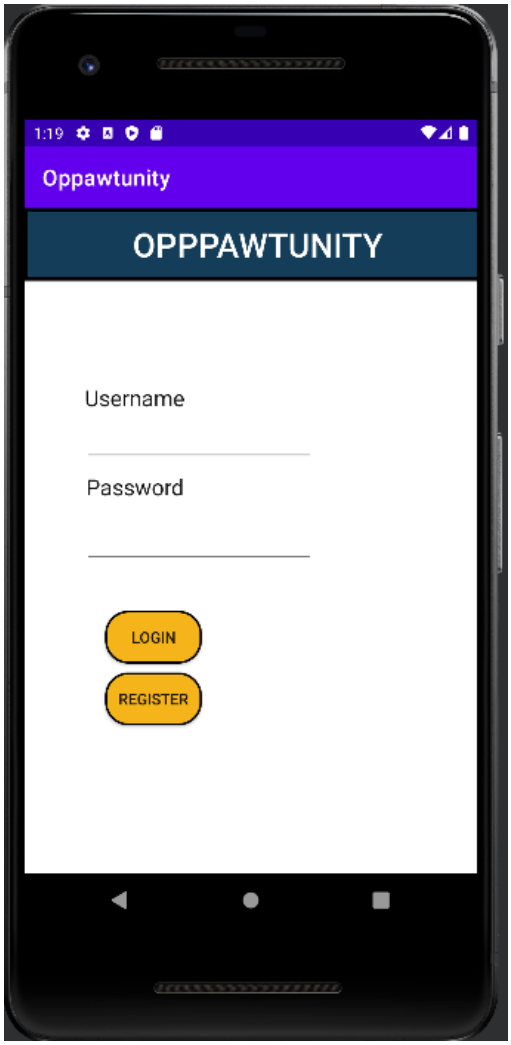
Github code of Oppawtunity:

https://github.com/Dave-Paga/Oppawtunity

Screenshots of the Application:

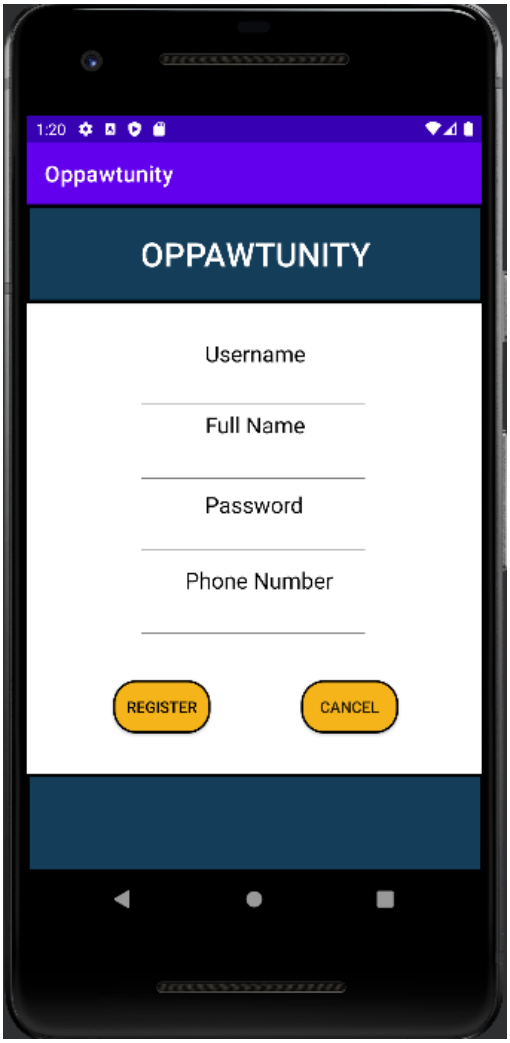


QR Scanner

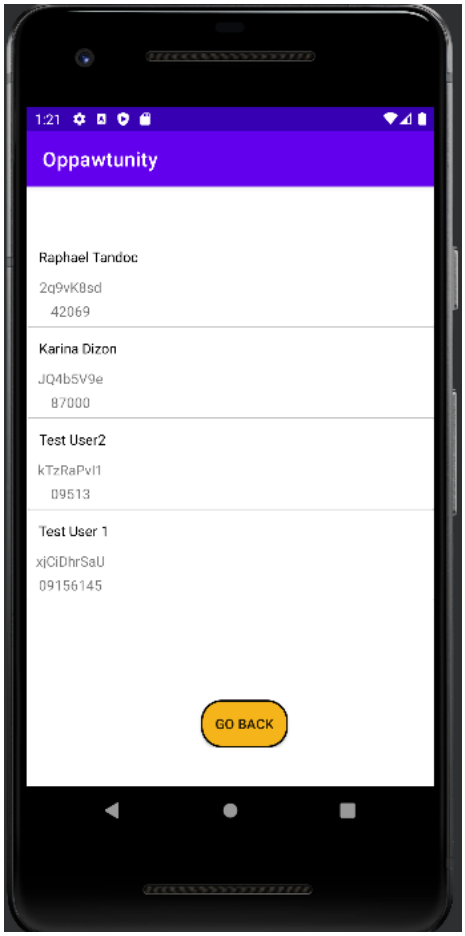


Login/Registration Page

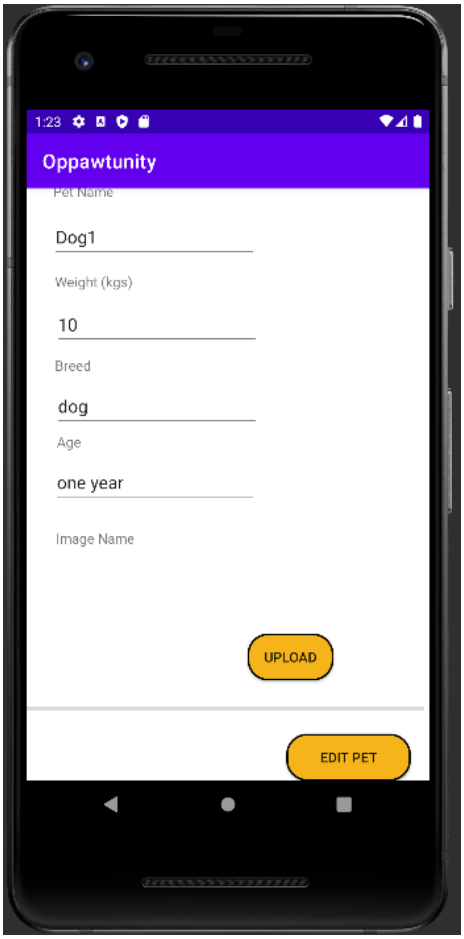
User Pet Main Menu



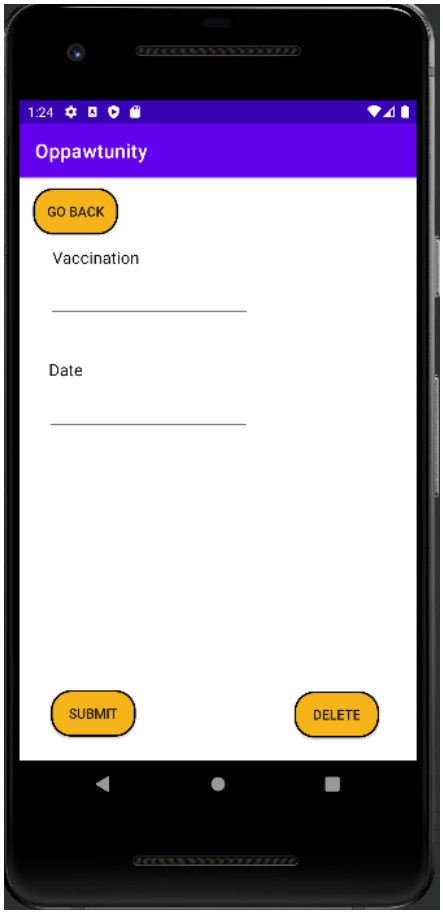
Registration Page



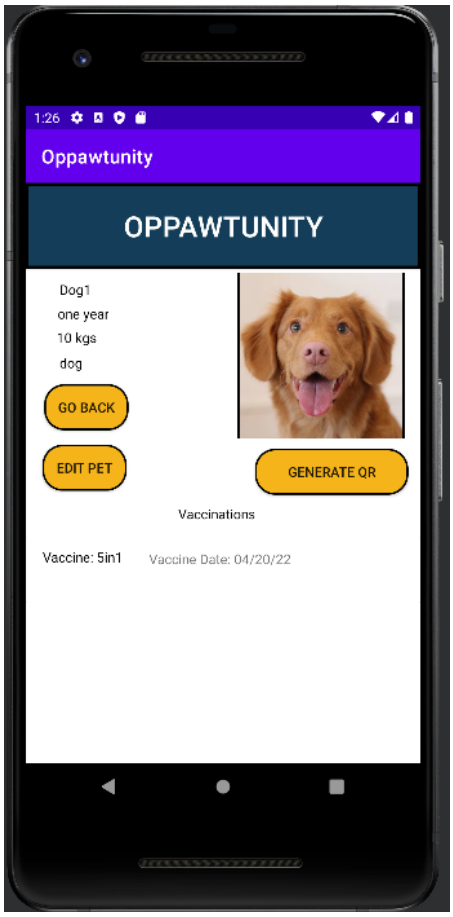
Admin View Clients



Admin/User has Edit Pet



Admin Edit History



User Pet Profile

User Generate QR Code