

**MOBILE BASED SEARCH AND RESCUE
I-ANIMAL SEARCHERS APPLICATION**

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**MOBILE BASED SEARCH AND RESCUE
I-ANIMAL SEARCHERS APPLICATION**

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**Report Submitted to fulfil the Partial Requirements
For the Bachelor of Information Technology (Hons)
In Software Engineering
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JANUARY 2020

DECLARATION

I declare that this report is my original work and all work and all references have been cited adequately as required by the University.

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APPROVAL PAGE

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Official Stamp:

Date: 13/11/2020

Signature:

Co Supervisor: Suzana Kasim

Official Stamp:

ACKNOWLEDGEMENT

Alhamdulillah, I have done complete this final year project of Mobile Based Search & Rescue: i-Animal Searchers Application successfully. I would like to thank Allah S.W.T because of His Guidance and Blessings to me that make my project can be completed and be done during the period given.

I would like to express my deepest appreciation to all those who provided me the possibility to complete this report. A special gratitude I give to my beloved supervisor, Madam Suriana Ismail, whose have invested her full effort in guiding me in achieving the contribution in stimulating suggestions and encouragement with helped me to coordinate my project. Also thank you for her motivation and patience during of project implementation.

Last but not least, my sincere thanks also go to my classmates of BSE, who gives positive comments and opinions during making the project. Also, thanks for those who gives support and knowledge sharing to complete this project.

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LIST OF ABBVERATIONS

APP APPLICATION

ABSTRACT

It is a great opportunity for me to have the **BACHELOR OF INFORMATION TECHNOLOGY (HONS) IN SOFTWARE ENGINEERING** In the accomplishment of this degree I am submitting a project report on “Mobile Based Search & Rescue: i-Animal Searchers Application”. This mobile application that has been developed for pet owner and animal lovers with different needs. The whole project has been divided into 6 chapters:

- ❖ Introduction
- ❖ Literature review
- ❖ Methodology
- ❖ Implementation and Testing
- ❖ Testing and Result
- ❖ Conclusion and Suggestions

ABSTRAK

Ia adalah satu peluang yang baik untuk saya yang mempunyai **SARJANA MUDA TEKNOLOGI MAKLUMAT (KEPUJIAN) DALAM KEJURUTERAAN PERISIAN.**

Dalam pencapaian sarjana muda ini saya mengemukakan laporan projek mengenai “Mobile Based Search & Rescue: i-Animal Searchers Application”. Aplikasi mudah alih yang telah dibangunkan ini adalah untuk pemilik dan pencinta haiwan dengan pelbagai keperluan dan kemudahan di dalam aplikasi ini. Seluruh projek telah dibahagikan kepada 6 bab:

- ❖ Pengenalan
- ❖ Kajian kesusasteraan
- ❖ Metodologi
- ❖ Perlaksanaan dan ujian
- ❖ Ujian dan hasil
- ❖ Kesimpulan dan cadangan

CHAPTER 1: INTRODUCTION

1.1 Introduction

Search & Rescue: i-Animal Searchers Application is a mobile application specifically designed for android user that help pet owner and animal lover to find suitable platform or to share useful information about their pet. Nowadays, in Malaysia we often heard about animal stories or news through social media only for example Facebook, Instagram or Twitter. Using this application, it will tell stories about individual animals in a way that makes people laugh, cry happy tears and feel all the feels. It will be turning people all around the world into animal lovers, one video at a time.

More and more, people are realizing that pets are family and animals are more like us than we ever realized. Animals just want to love and be loved and there are heroes all over the world who spend every day helping to give animals the happy lives they deserve. The favorite thing to do is find mainstream, viral ways to tell the stories that people want to share. Animal are experts at tapping into a wide range of human emotions especially the heart-bursting ones. They are always showing us the most inspiring, hopeful and happy ways to live. Using this application, I have built a community where people can escape from all the noise out there, and connect with the pure joy and wonder that animals embody.

1.2 Project Background

This application can only be used in android device only. Using this application user can share stories and information about their pet. For instance, the application allows user to ask for donation and find lost pets. With the platform provided, it will be a lot easier to find lost pets as communication is established.

Besides using the application, it should be able to drastically helps reduce the amounts of stray animals and help their respective owners to find their desired pets at adoption place. Furthermore, this application serves as a platform by allowing users to join volunteer for charity events and activities that related to animal. Moreover, this

application also can help user to find tips, vaccine and diet for every specific animal. Risk in losing user's data, updating application or accidentally, deleting them.

1.3 Problem Statement

Nowadays, most of pet owner or animal lover does not know a suitable platform to share stories, tips or information about their pet and because of this matter it is quite difficult to rescue and find lost pet. People distributed flyers to public and spread the news to the people around the area where the pet is lost. It is also a risk for the owner if there is a reward as scammers might try to scam the reward. Others then that sometime pet owner forgot or do not aware about animal vaccines and medicine due to their busy schedule and they often think that it is quite difficult to find a proper platform to ask or give donation.

Besides, nowadays as we know every day the numbers of stray animals have increased due to the action of people abandoning animals. In order to solve this problem, animal lover or pet owner that are capable of taking in animals should do so. However, there is a need for a proper platform to enable such people to adopt stray animals, whereby they can adopt the animals instead of buying them from the pet shop. In this world are many kind hearted people that love animals and are willing to help but lack of proper platform to protect animal. Volunteers often find it difficult to help the animals without proper guidance and most of the time could not find charity or activities that related to animal that they can join.

1.4 Aim and Objectives

a. Aim

To develop a mobile application for pet owner and animal lover Mobile Based Search & Rescue: i-Animal Searchers Application.

b. Objective

The objectives of the systems are:

1. To help animal find their rightful owner through the adoption platform.

2. To integrate the application become one integrated system that can be used by the pet owner and animal lover to search and rescue animal.
3. To helps pet owner to finding the best recommendations for medicines, vaccines, dietary and tips for every specific animal.
4. To provide suitable platform for animal lover to give and ask for donation and to do volunteers in charity events.

1.5 Scope of the Project

1.5.1 Target User: Pet owner and animal lover.

1.5.2 Client: Animal Adoption center.

1.5.3 Pet owner

- Create account
- Add pet details
- Search and rescue pet.
- View list of medicines, vaccines and dietary for every specific pet.
- Set notification reminder to give medicines, vaccines and dietary for their pet.
- Ask or give donation for their pet.
- Share stories, information or tips about their pet.
- Pet owner can do adoption of their specific animal.
- Send and receive chat from other users.

1.5.4 Animal Lover

- Create account
- Search and rescue animal.
- View list of information about the volunteer events and activities that related to animal.
- Create new volunteer program
- Ask or give donation for animal.

- Share stories, information or tips about animal.
- Send and receive chat from other users.

1.5.5 Admin

- Share recommendations of vaccines and medicines from veterinarian.
- Share and update latest news about charity events, activities and adoption.
- Manage user account.
- Verify donation.

1.5.6 Animal Adoption Centre

- Update list of animals that available for adoption.
- Approve for adoption.

1.6 Expected Product

This application able to integrate with Media Fire.

1.7 Conclusion

In conclusion, there are many ideas from other websites and mobile applications. It will add and create more features that suitable with scope and this project. In conclusion all these features can help users to use this application easily. There are several features that are able to innovate or enhance this application. These features seemed beneficial to the application but were not implemented due to time constraint. Therefore, recommendations were made for those researchers or developers who are interested to continue the research in the future. The following features may help to add value to the system in future are user can buy pet using this application and user can make group chat with others user.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this chapter it will discuss more on literature review and background study of the project. Literature reviews play an important role as a foundation for all types of research and literature review is also important to achieve successful system because it helps to identify problem that occurred in existing system. Besides, it also can serve as a basis for knowledge development, create guidelines for policy and practice. In this chapter it will focuses more on the study of portal usability and comparison of existing system.

2.2 Overview Background of Pet Owner and Animal Lover.

As we know pet owner meaning a person who owns and take care of pet. A pet is an animal that we kept primarily for a person's company or as an entertainment. Popular pets often considered to have intelligence, cute appearances and other interesting personalities, but as we know some pets may be taken in on selfless basis such as a stray animal. Stray animal will be always accepted by the owner regardless of these characteristics.

There are four most popular pets that pet owner love to take care of, the pets are cat, dog, fish and rabbits. The other name for cat lover is an ailurophile and also called felinophile, philofelist or philogalist. Technical term for dog lover is caninophile while there is no technical term for fish and rabbit lover. Others animals that people always love to own are Bird, horse, Hamster, Turtle, Parrot, Reptiles, guinea pigs, snakes and ferrets. Small pets may be grouped together as pocket pets, while the equine and bovine group include the largest companion animals.

When owns a pet usually pet provide their owner or guardians both physical and emotional benefits. For examples walking dog can help the human and the dog itself with social interaction, exercise and fresh air. Pet can give companionship to people who are living alone or elderly adults who do not have adequate social interaction with other people. Based on medical research pet help people live longer and have

healthier lives. Other than that pet can help ease stress and loneliness for elders and help calm pre-exam stress for college students.

The definition of animal lover in the dictionary is a person who feels fondness for animals. Nearly everyone can say that they love animal in different and their own way. Many of people have had a companion animal who touched our lives in some way, or even a chance encounter with a wild animal that gave us a new perspective on life. These animal lovers, the unusual one who are not ever afraid to show how much they love animals. There are many signs shows a person is who actually a true animal lover. The first sign is people willingly to do volunteer at shelters or charity activities that related to animal on a weekly or daily basis. Next is willingly to spent money and give donation to animal.

2.3 Search and Rescue in Animal Field

Many problems are encountered yet ignored in our daily lives. Stray animal likes cat and dog are one of them. Stray animal are usually animals that that would otherwise be pets, but have been separated from a human caretaker by means of escape, missing or a lack of care, or sometimes by natural disaster. As we know the most popular stray animal are cat and dog, this animal is formerly domesticated then they lost or abandoned by their previous owner.

How to solve problem for this matter are by volunteering, adoption, giving donation and give more focus about their healthcare. When we talking about volunteering it will always link with animal lover and animal volunteering it is actually chosen career to work with animals or simply a personal passion. Volunteering with animals is actually decision that will help to change your life and lives of the animals you choose to help. Sometimes it can be really hard to do volunteer with animals because it takes time, efforts and resources and we know that sometimes volunteering involved money. Usually people will join volunteer at animal shelter because this community needs help and support from people to take care and manage all the animal.

According to U.S. Bureau of Labor data show that more than 1.6 million people in the United States volunteered in “environmental or animal care” organizations in 2014, such that is not unreasonable to assume that at least a few hundred thousand people are involved in animal sheltering or rescue organizations (Bureau of Labor Statistics/ U.S. Department of Labor 2015))

Another way to solved this matter is by doing adoption. Pet adoption is the process of taking responsibility for a pet that a previous owner has abandoned or released to a shelter or rescue organization. Common sources for adoptable pets are animal center and rescue groups. Usually pet owner love to doing pet adoption. They will go to animal center and adopt cat or dog rather than buy it from shop.

Some organizations give adopters ownership of the pet, while others use a guardianship model wherein the organization retains some control over the animal's future use or care. Online pet adoption sites have databases of pets being housed by thousands of animal shelters and rescue groups, and are searchable by the public.

People deal with their unwanted pets in many ways. Some people have the pet euthanized also known as putting down or putting to sleep, although many veterinarians do not consider this to be an ethical use of their resources for young and healthy animals, while others argue that euthanasia is a more humane option than leaving a pet in a cage for very long periods of time. Other people simply release the pet into the wild or otherwise abandon it, with the expectation that it will be able to take care of itself or that it will be found and adopted.

a. Benefits of Mobile application

As we know currently half of the world population are online. With the rapid adoption of smartphone and tablets business are faced with more and more opportunities every day that will radically change how their services or product is delivered and accessed. Study show last year more than a million people downloaded a mobile application over a 6 months period.

Several studies suggested that mobile devices are invaluable resources in the teaching and learning process as they can help learners and educators to gather information, access content, communicate, and collaborate (Cheung, 2008; Cui et al., 2008; Cui & Wang, 2008; Farrah, 2011; Ferry, 2008; Helm, Guth, & Farrah, 2012; Huang, 2010; Khaddage, 2012; Kizito, 2012; Mtega et al., 2012; Prensky, 2004; Suwantarathip & Orawiwatnakul, 2015). To sum up, Prensky (2004), Cui and Wang (2008), Kizito.

b. Challenges of using Mobile application

To illustrate, mobile phones do not provide wide screens to facilitate reading. Moreover, users need methods and approaches to use the target applications in teaching and learning. For example, “universities and teachers must investigate mobile technologies and devices and their proper applications, and select one device that they see the most commonly used by students, such as the mobile phone”. There are other challenges that students and instructors may face while using mobile phones and applications (Cui & Wang, 2008; Mtega et al, 2012; Rana, 2014,)

c. Online Adoption using Mobile Application

In this study, an Android-based mobile application has been developed in order to carry out activities related to the animals in the temporary animal shelter more effectively and easily. The system consists of one main component which is mobile application. The location of the animal center, information on the animal center, list of registered animals can that available for adoption. The mobile application part has been developed with the Java programming language that can be used in the Android operating system for the use of local animal protection volunteers and community members. The application is based on location including the selection of provinces, districts, animal shelters. Thus, necessary activities related to temporary animal shelters can be carried out more effectively and easily.

Android is a software platform, and operating system for mobile devices. Android was based on the Linux kernel and was developed by Google/ the Open Handset Alliance. The Open Handset Alliance is comprised of various corporations and companies. Members include, Google, HTC, LG, Samsung, T-Mobile, Vodafone, Nvida, Dell, Intel, Ebay, Garmin, Accenture and much more. A mix of mobile operators, handset manufactures, semi-conductor companies, software companies, and commercialization companies.”- — (Feinbube 2011, Open Handset Alliance 2012).

Based on the data from the International Data Corporation (IDC) Worldwide Quarterly Mobile Phone Tracker, it shows that worldwide smartphone market grew 13.0% year over year in 2015 Quarter 2 with 341.5 million shipments [5]. Android managed to increase gradually until 2014 with 84.8% market share, but it has slope down to 82.8% in Quarter 2 2015.

In conclusion, from this research mobile application is one of the best ways to do an online adoption because a lot of user can install and use in.

2.4 Comparison Features of Existing System

Application Name	Missing Pets	PetBaker	Pet Adoption	i-Animal Searches
Pet Adoption	✓		✓	✓
Vaccines reminder		✓		✓
Dietary		✓		✓
Volunteer				✓
Animal Medicines		✓		✓
Donation				✓
Animal Moments	✓	✓	✓	✓
Location of nearest veterinary		✓		✓

Table 2-1 Show comparison features of system

2.4.1 Strength and weaknesses of existing system

Name of Application	Strengths	Weaknesses
Missing Pets	<ul style="list-style-type: none"> Provided a platform where user can find missing pets. Provide a platform where user can share their pet moments. 	<ul style="list-style-type: none"> Not a user-friendly application. Have poor functionality. Very confusing.
Pet Baker	<ul style="list-style-type: none"> Attractive interface User friendly Provide electronic medical health record Provide a platform where user can share their pet moments. 	<ul style="list-style-type: none"> Do not provide verified information. Some of the functions are unstable. Complicated function.
Pet Adoption	<ul style="list-style-type: none"> User friendly Provide a platform where user can share their moments pets and find missing pets. 	<ul style="list-style-type: none"> Poor functionality Complicated interface. Do not provide enough information.

Table 2-2 Strength and weaknesses

2.5 Purpose of Application

The primary purpose of this application is to provide a platform where we can help animal center to reduce the amount of stray animal by provide an adoption platform. Besides the idea of this application is provide electronic medical health for pets, rather

than we kept paper based medical health record. Others than that this application can help big organization such as Zoo negara to ask a donation from others people. Using this application, we also can help user to join volunteering for charity events and related activities.

2.6 Summary

This chapter has reviewed all the relevant theoretical literature. In this chapter also provide a related case study where it contains advantages and challenges of usage of mobile application. All reviews led to the development of conceptual framework. \

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter it will discuss and explain the flow of this Final Year Project from the beginning until finish this project. This chapter is organised into a few sections. The section will mention every component involved in conducting this research. This chapter will describe what kind of methodology will be used in this study. The will section includes project management, system architecture and limitations of this project.

3.2 Methodology

3.2.1 Rapid Application Development (RAD)

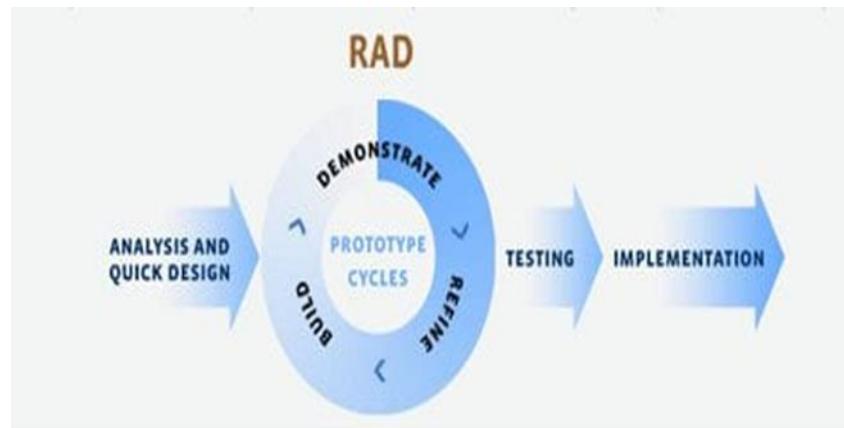


Figure 3-1 RAD process

As we know Rapid Application Development (RAD) is a software development methodology that focuses on rapid prototyping and application development to ensure faster product delivery. Increases reusability of components and quick initial reviews occur.

In my opinion, Rapid application development (RAD) is chosen because it helps to rapidly develop prototypes for testing functions and features, without having to worry about any effects on the end product. With RAD, you can change the design,

add/ remove a functionality, clean it up by removing all the extra fluff that you do not want, all without even harming the end-product.

3.2.2 Steps in Rapid Application Development:

- Analysis and quick design
- Develop, demonstrate and refine.
- Testing
- This application is ready to launch and fully accessible for users.

Step 1: Analysis and quick design

- During this step, you and supervisor sit together to define and finalize project requirements such as project goals, expectations, timelines, and budget. When you have clearly defined and scoped out each aspect of the project's requirements, you can seek for approvals.
- Identify problem
- Research planning
- Meeting and discuss with supervisor
- Prepare a proposal
- Defense proposal
- Design use case diagram
- Design database structure
- Design activity diagram
- Prepare for chapter 1,2, 3, 4, 5 and 6

Step 2: Develop, demonstrate and refine

- As soon as finish scoping the project, we can begin development. Will work closely with supervisor to create and improve upon working prototypes until the final product is ready. In this step, also prototypes and beta systems are converted into working models. Developers then gather feedback from users to tweak and improve prototypes and create the best possible product.
- Starting to develop an application
- Prepare user interface
- Connect application with Firebase.

Step 3: Testing

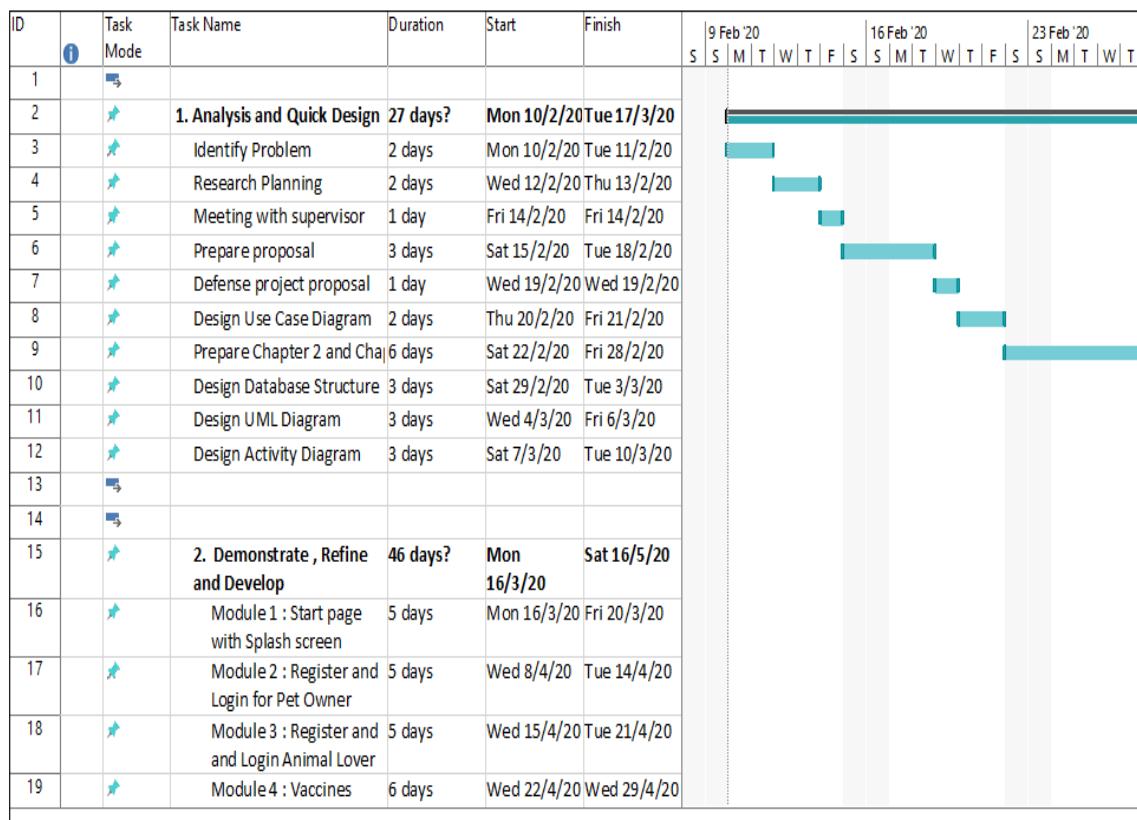
- This step requires to test your software product and ensure that all its moving parts work together as expectations. Continue incorporating supervisor feedback as the code is tested and retested for its smooth functioning.
- Project prototype is prepared
- Present and testing a demo prototype with supervisor and receive a feedback
- Present and testing a demo prototype with assessor and receive a feedback

Step 4: Deployment

- This application is ready to launch and fully accessible for users.
- Demo prototype is ready to be sent.

3.3 Project Management

3.3.1 Gantt chart



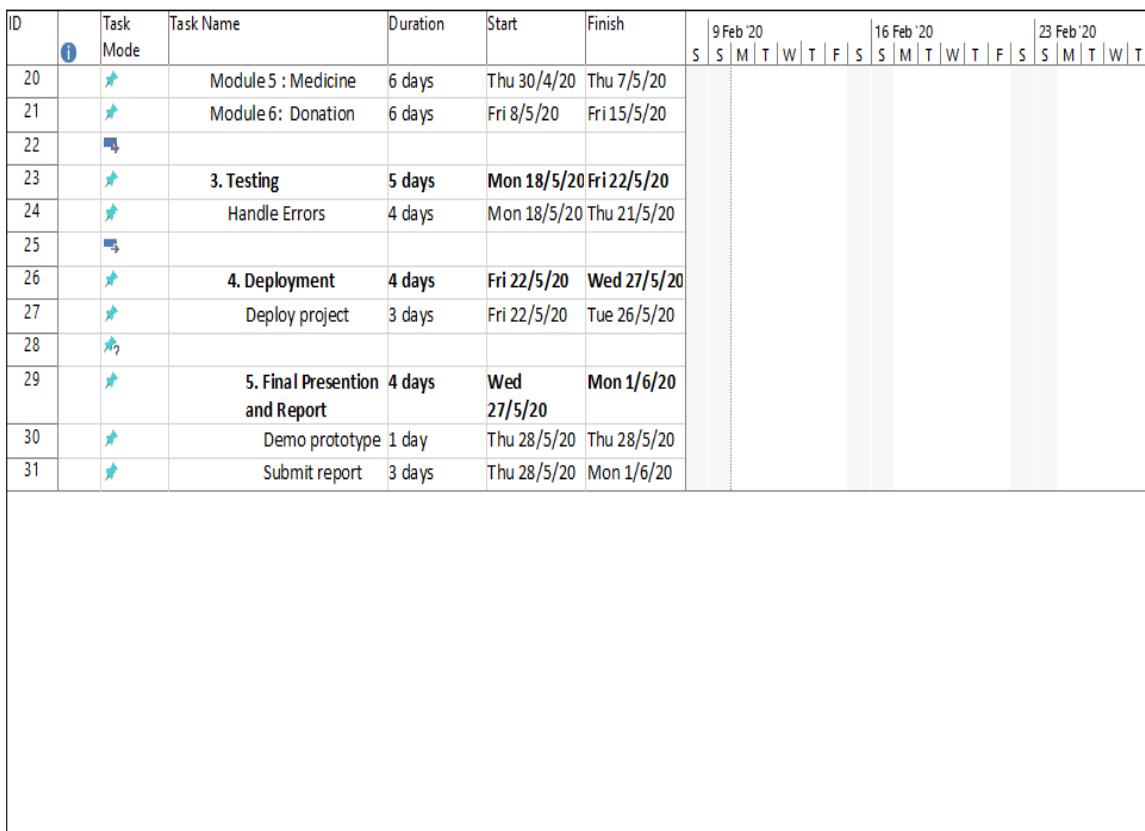


Figure 3.3 Gantt Chart for FYP

3.4 System Architecture

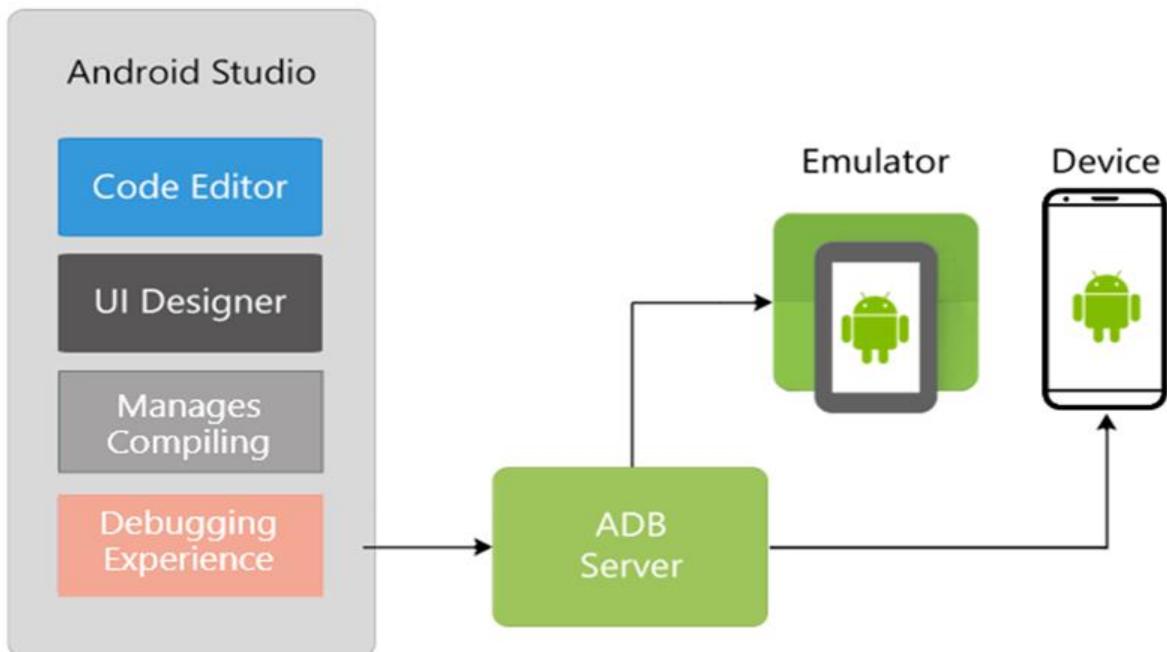


Figure 3-3 System Architecture

3.5 Resources

3.5.1 Budget/Costing

NO	SOFTWARE NAME AND VERSION	BUDGET
1	Android Studio version 3.5.3	Open Source
2	MediaFire	Open Source
3	Google Play Store	(\$25/106.84 Malaysian Ringgit)
4	FRAGMENT	Open Source
5	GITHUB	Open Source
6	Google Firebase version 19.0.1.	Open Source
	Total Budget:	RM 106.84

Table 3-1 Budget for FYP

3.6 Project Requirements

3.6.1 Software Requirement

Android Studio 3.6

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS

and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

	Windows	Mac	Linux
Operating System Version	Microsoft® Windows® 7/8/10 (32- or 64-bit) <i>The Android Emulator only supports 64-bit Windows.</i>	Mac® OS X® 10.10 (Yosemite) or higher, up to 10.14 (macOS Mojave)	GNOME or KDE desktop <i>Tested on gLinux based on Debian (4.19.67-2rodete2).</i>
Random Access Memory (RAM)	4 GB RAM minimum; 8 GB RAM recommended.		
Free disk space	2 GB of available disk space minimum, 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image).		
Minimum required JDK version	Java Development Kit 8		
Minimum screen resolution	1280 x 800		

Figure 3-4 Android Studio Version

Firebase

Firebase is a Backend-as-a-Service — BaaS — that started as a YC11 startup and grew up into a next-generation app-development platform on Google Cloud Platform.

Android Application

An Android app is a software application running on the Android platform. Because the Android platform is built for mobile devices, a typical Android app is designed for a smartphone or a tablet PC running on the Android OS.

Windows 10 Home

Windows 10 is a series of operating systems produced by the American multinational technology company Microsoft and released as part of its Windows NT family of operating systems.

Google Play Store

Google Play Store is one of the Google products it is a pre-installed app-store on Android certified device only. It provides access content on the Play Store such as apps, magazines, books, music and television programs.

3.6.2 Hardware Requirement

Hardware	Cost
Acer Swift 3	RM 2100.00
Vivo V11 pro	RM 1800.00

Table 3-2 Hardware requirement

3.7 Limitation and challenges

There are a few limitations of this application, this application requires an active internet connection. The data may be inaccurate if there are problems with the Internet. Besides this application can be used for android user only and not for user who used an IOS platform. I think that in future enhancement this application not only can be used for Android platform only but also for IOS platform. Furthermore, this application does not provide complete features to user. This application does not have a feature where we can share moments to social media such as Facebook, Twitter or Instagram. This application also does not connect to PayPal platform when user want to make donation and it only connect with online banking website.

Challenges when doing this application are Android Studio always failed to connect with firebase because it requires strong internet connection when doing this project. Other challenge is when doing a project using Android Studio, I always need to update gradle and Android Studio version to enjoy more features in this software.

CHAPTER 4: IMPLEMENTATION AND TESTING

4.1 Introduction

In this chapter will discuss the implementation and testing for i-Animal Searchers application. At finer level of detail, the application consists of executing all steps necessary to educate user to use this application. Besides in this chapter it also introduces the project using different kind of testing environment and the results after testing it.

4.2 The Propose System Implementation

I-Animal Searchers is a mobile based development. The platform to build this application is by using Android Studio. As we know Android Studio is official integrated development environment (IDE) for Android application development. Android studio also uses a Gradle-based build system, emulator, code templates and Github integration. Android Studio is available in Windows, Linux, Mac and desktop platforms. For database this application will be using Firebase. Firebase is a platform that develop by Google for creating mobile applications. In this application both Cloud Firestore and Realtime Database will be used. Cloud Firestore is newest database for mobile app development while Realtime Database is Firebase's original database.

4.3 Use case



4.4 The screenshot of the implementation system



Figure4-1: Show splash screen when user successfully install the application

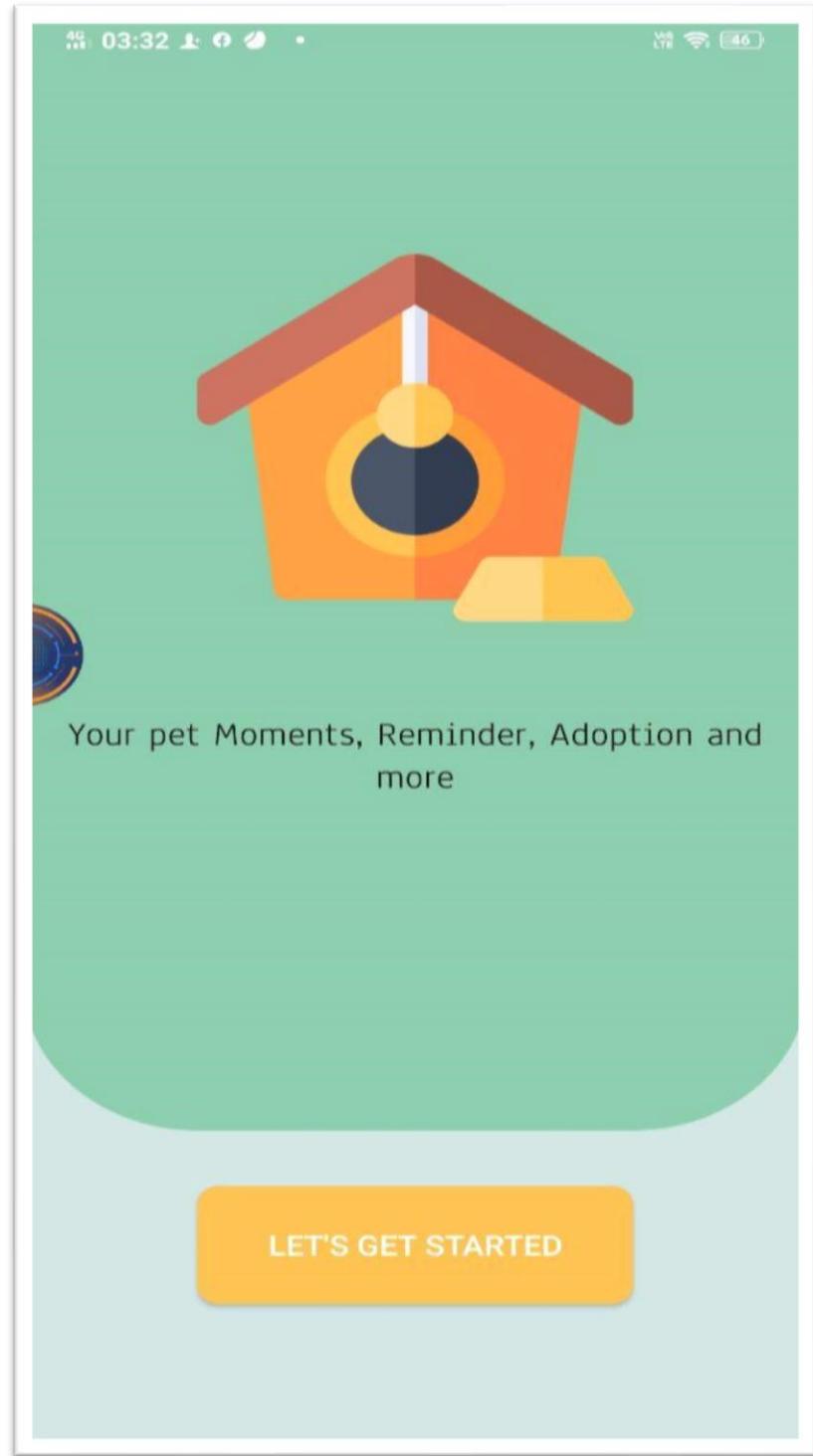


Figure 4-2: Show starting board one and user need to click on button let's get started

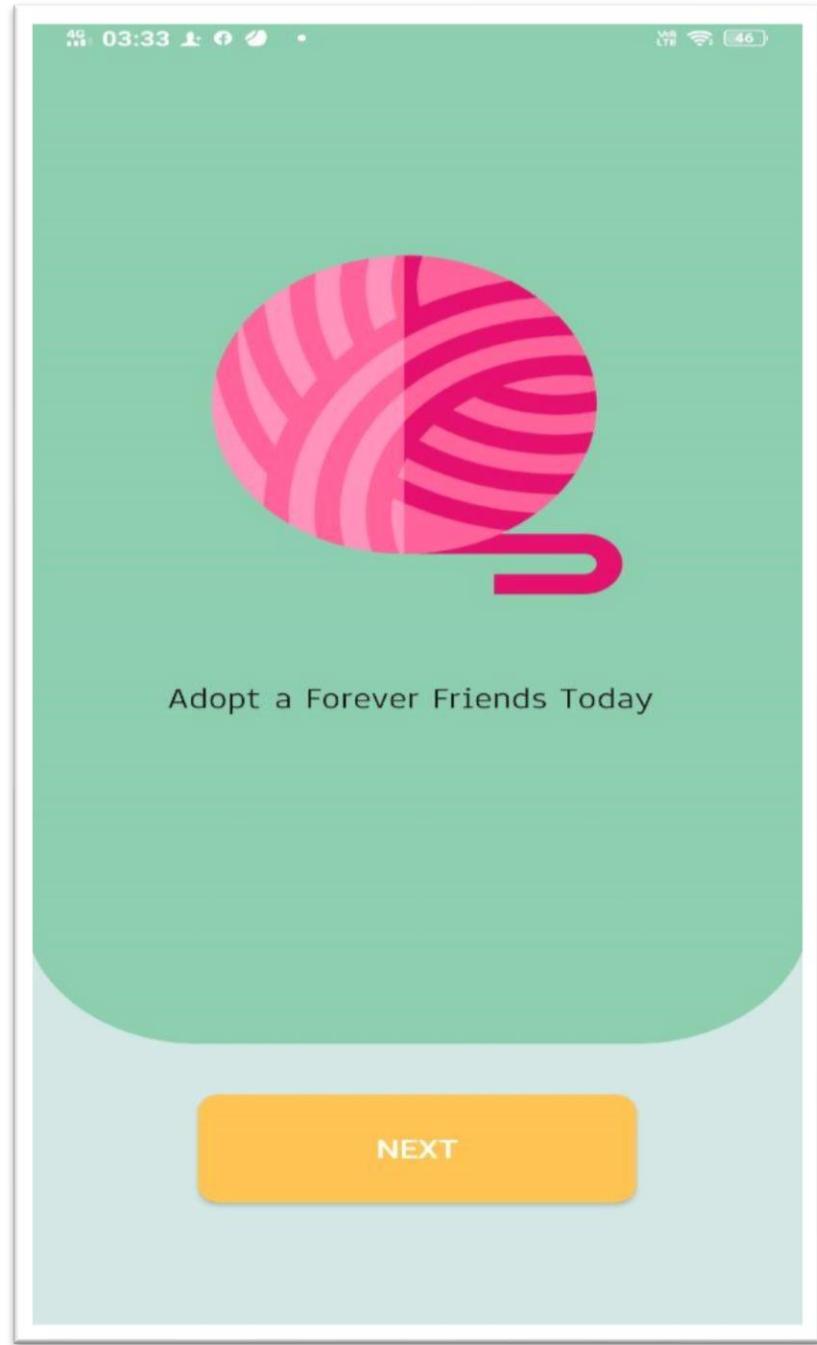


Figure 4- 3: Show starting board two and user need to click on button next to continue.



Figure 4-4: Show starting board three and user need to click on button next to continue.

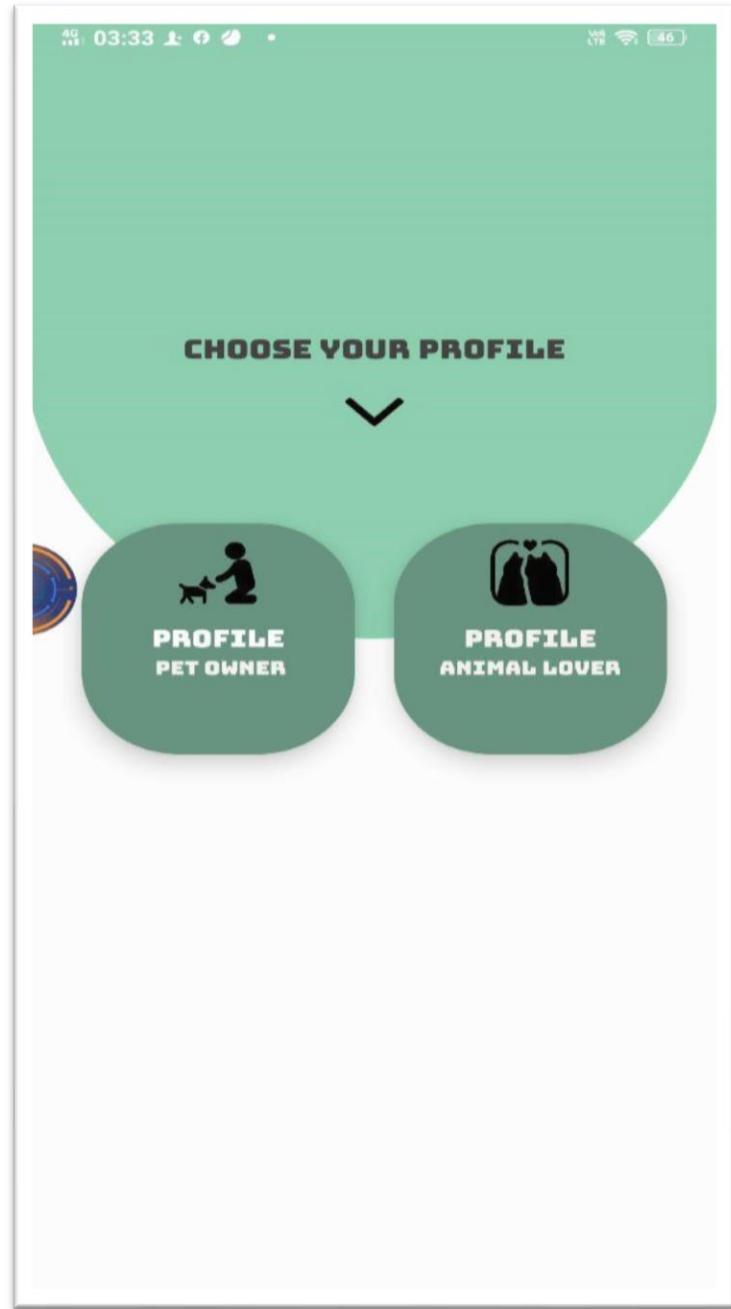


Figure 4- 5: Show page choose profile. Users need to choose their profile whether they want to sign up as pet owner or animal lover.

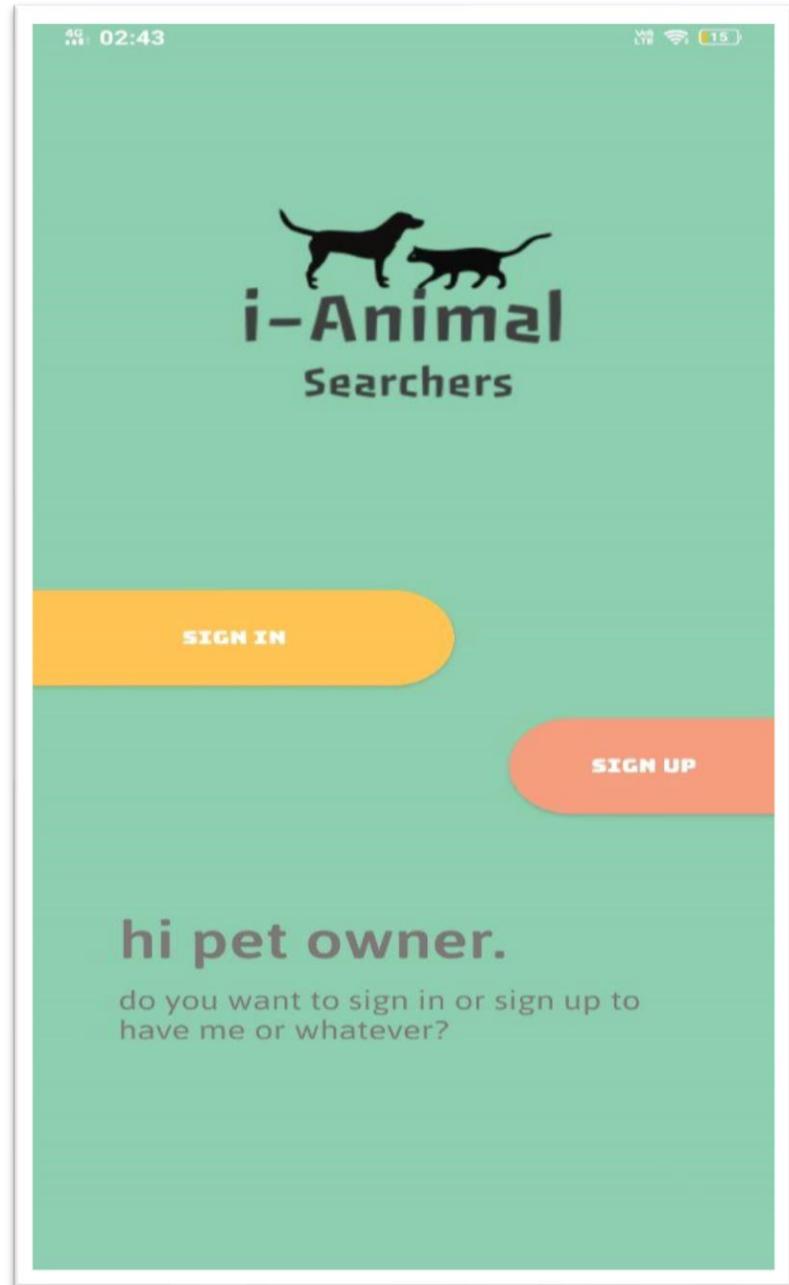


Figure 4- 6: Show start page for pet owner. If user does not have any account in animal lover side user need to register but if user already have an account, they need to sign in.

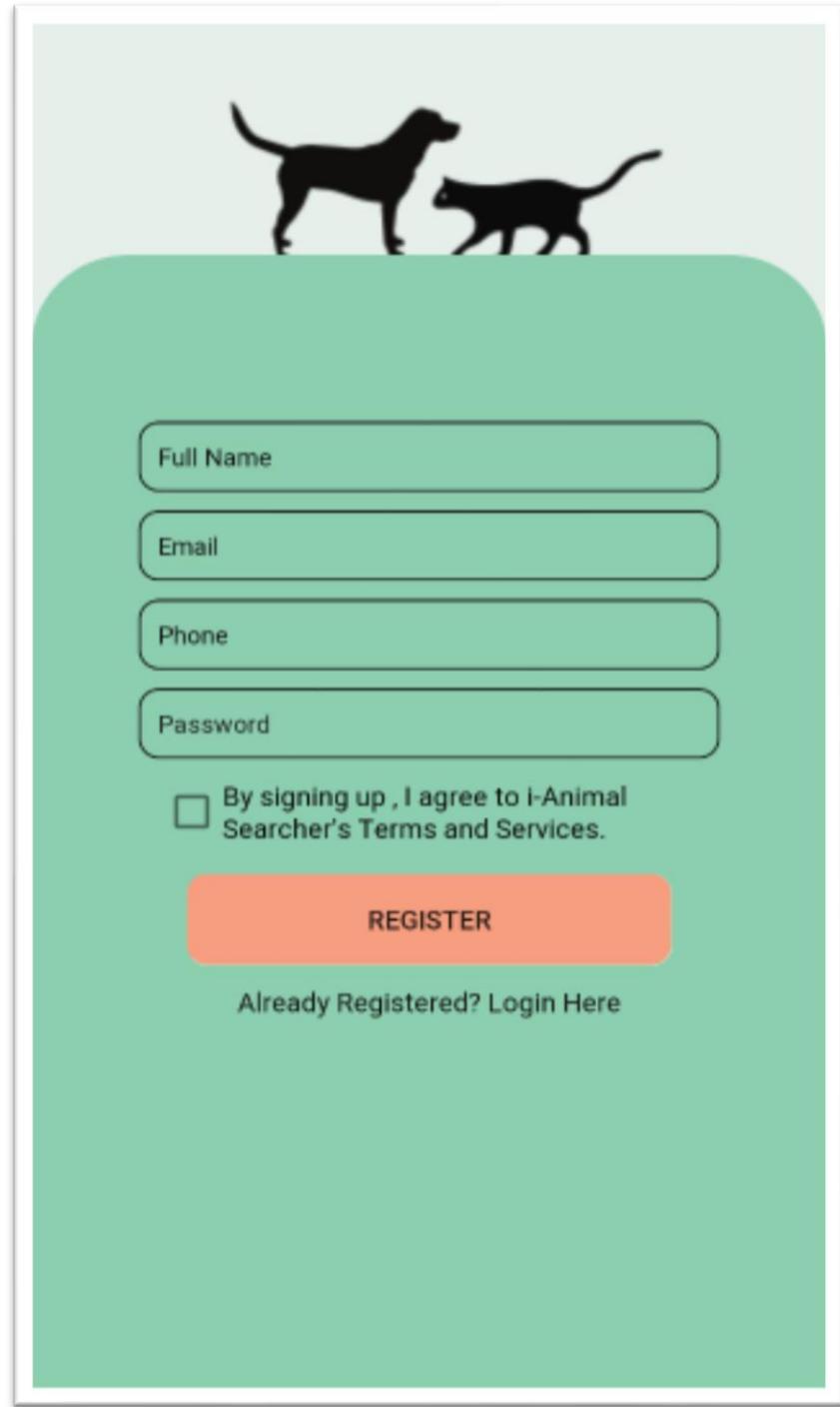


Figure 4- 7: Show register page, if user does not have any account in this application, they need to fill up the form. In the form user need to fill full name, email, phone number and password. Other than that, they need to tick the check box button and agree with i-Animal Searchers terms and condition. After completed, click on register button.

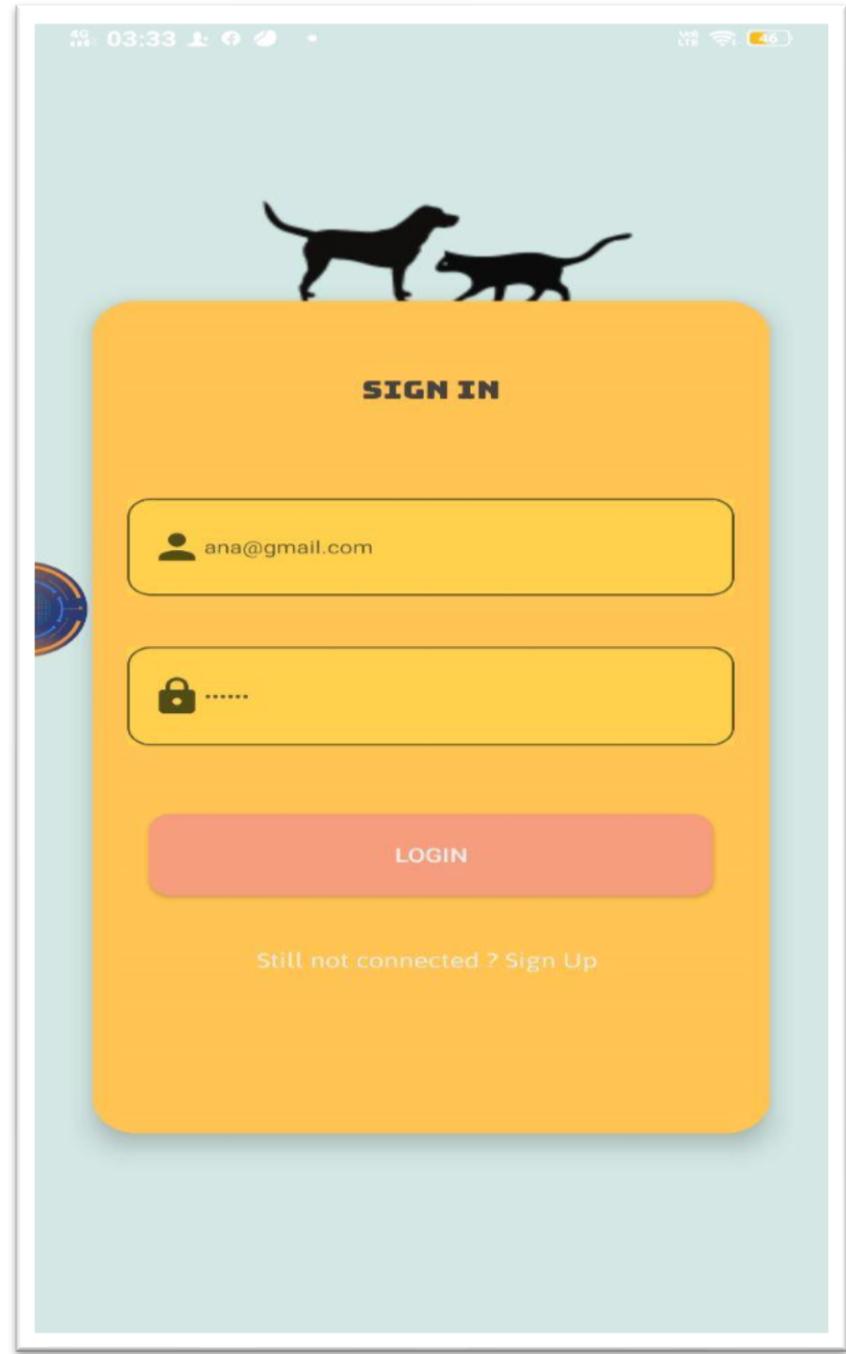


Figure 4-8: Show sign in page, user need to fill correct email and password. Then user need to click login button.

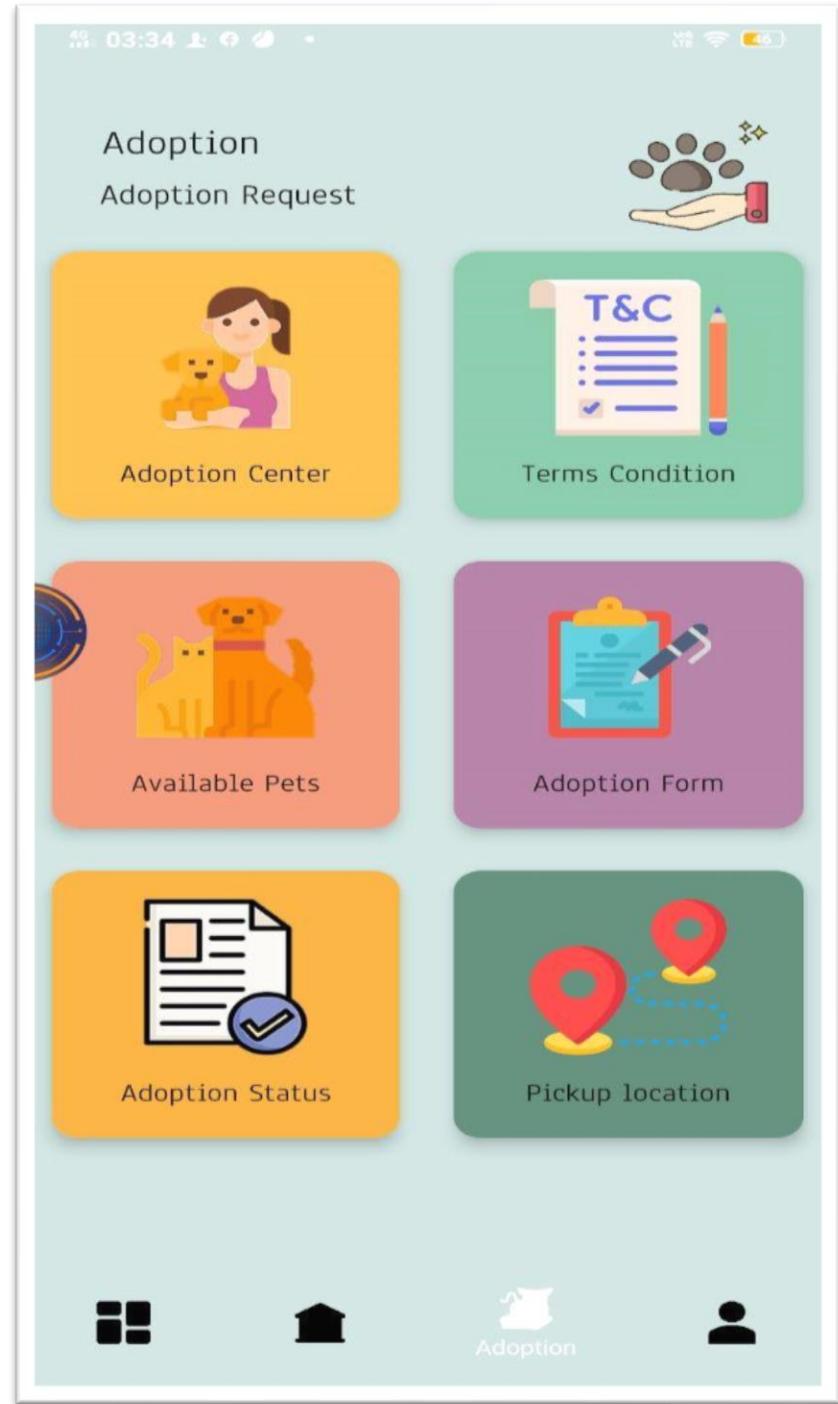


Figure 4- 9: Show adoption page. After user successfully login into the application user will see this page first. In this page it will show the process for adoption. The process for adoption is choose adoption center, choose available pet, read and agree with terms and adoption for adoption, fill out 3 type of form, choose pickup location and view adoption status.

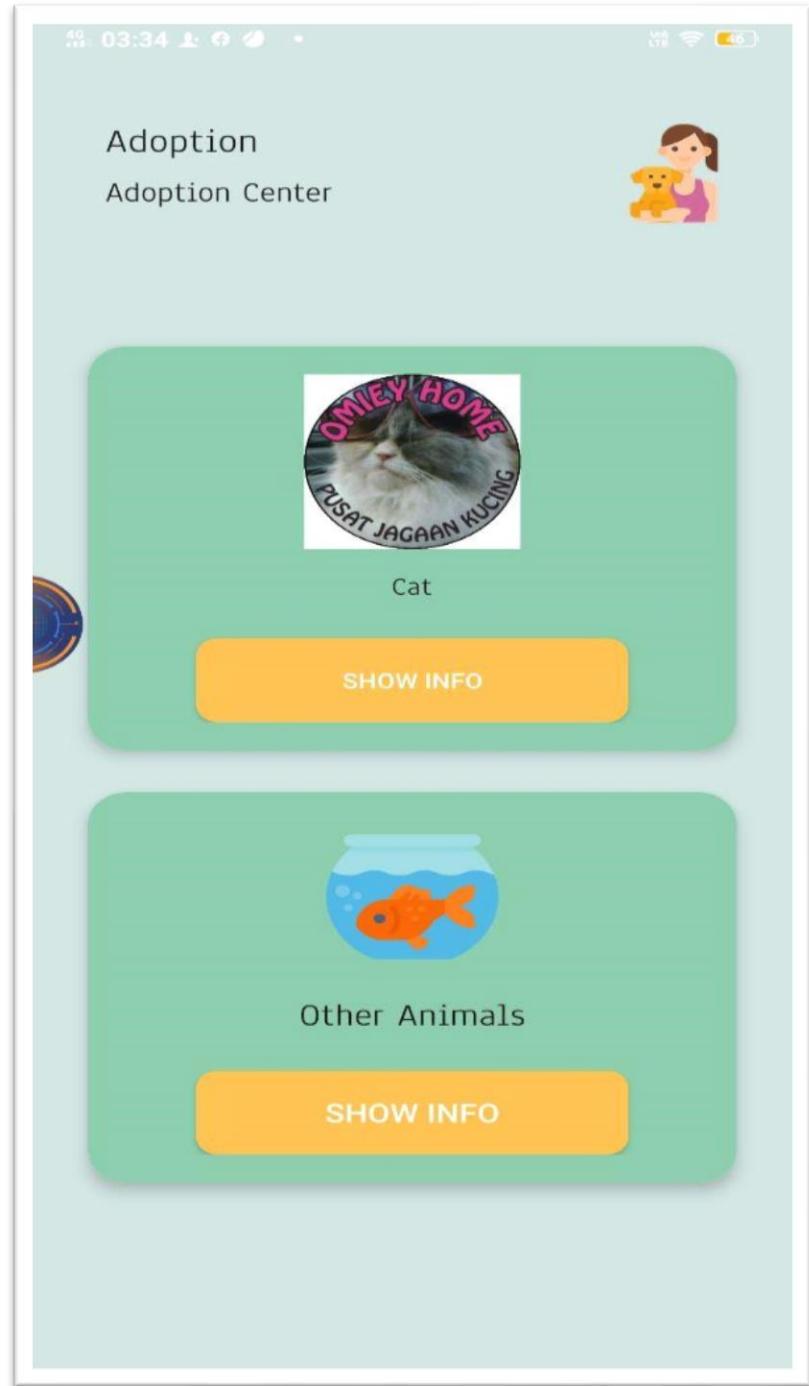


Figure 4-10: Show adoption center page, user can choose their adoption center that available for adoption. When user click on show info button, popup screen will show.



Figure 4- 11: Show popup screen for adoption center, this page will show details about the adoption place. User can see their Facebook and YouTube page name and user also can see their WhatsApp number.

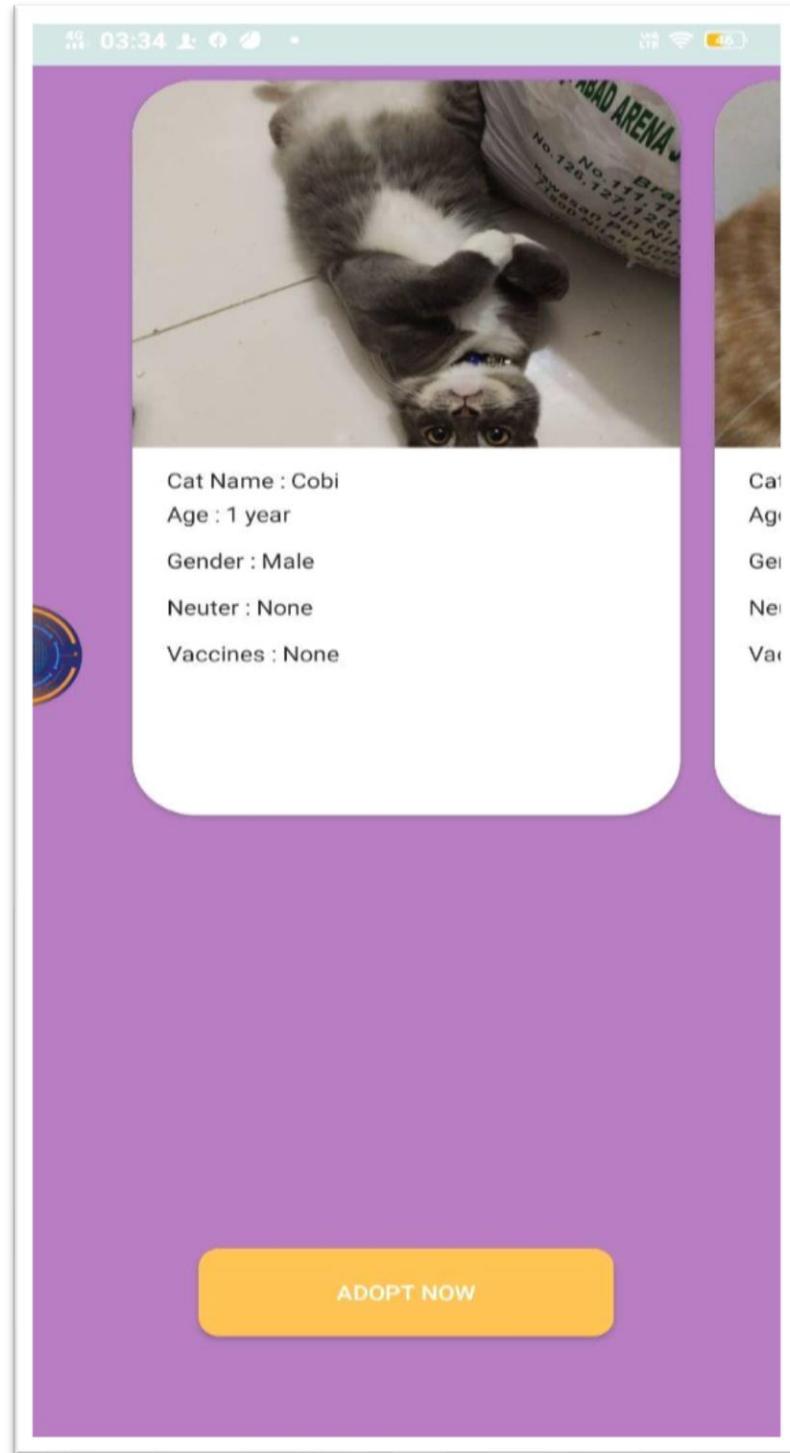


Figure 4- 12: Show list of pets that available for adoption, in this page it will show detail of pet. The details are cat name, age, gender, neuter and vaccines. User need to click on adopt now button after choose pet that they like.

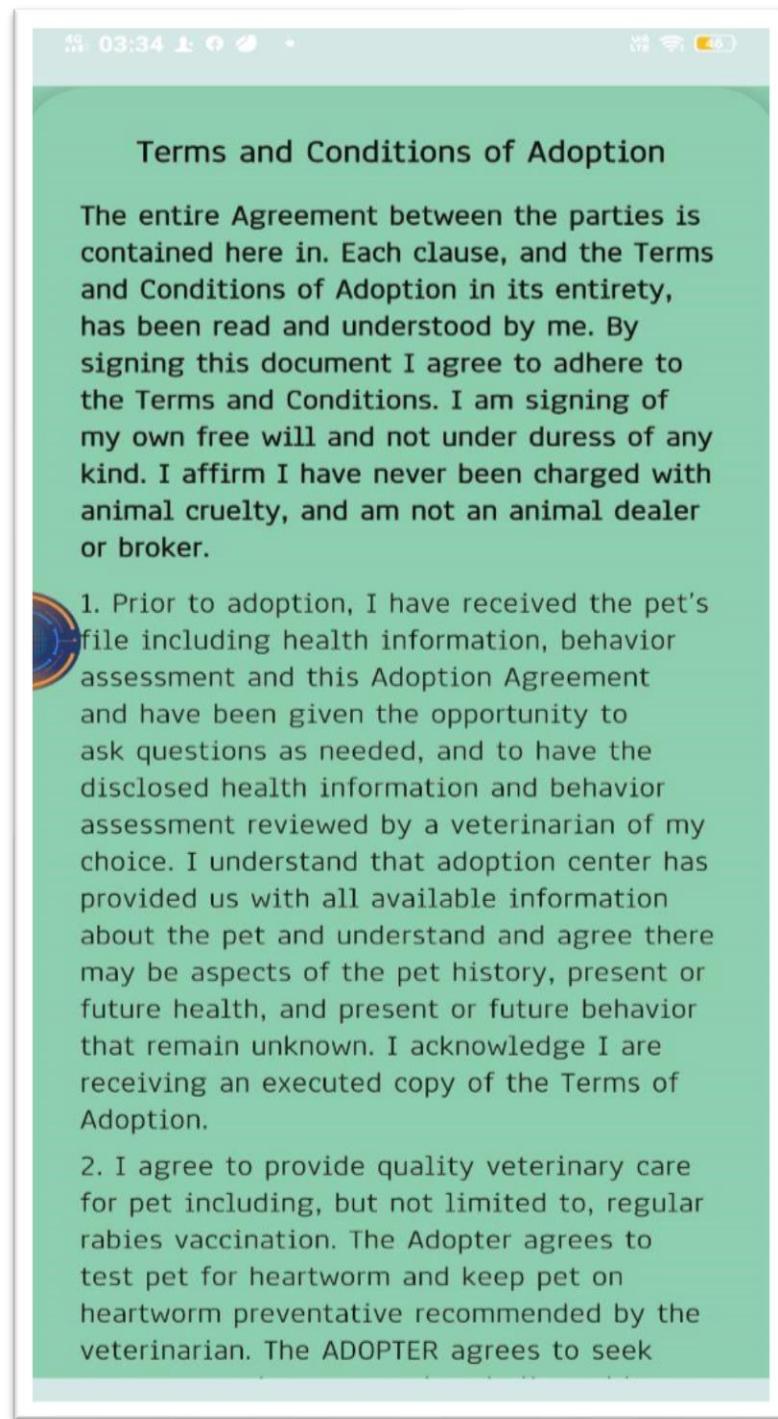


Figure 4- 13: Show terms and condition page. The terms and conditions were provided by the adoption center.

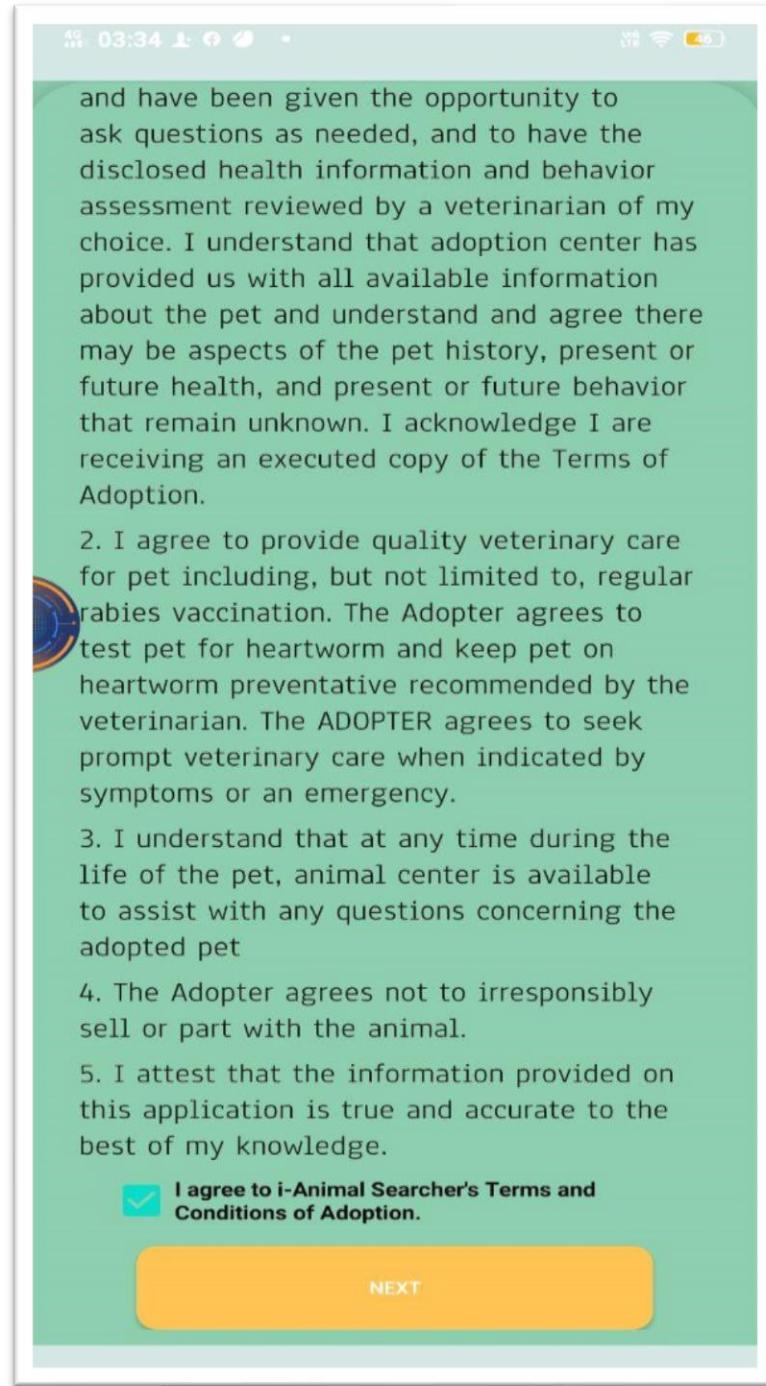


Figure 4- 14: Show term and conditions for adoption. In this page they are 5 conditions that user must read and user need to click on check box button and agree with i-Animal Searcher's terms and condition of adoption. Then user can click on next button to continue.

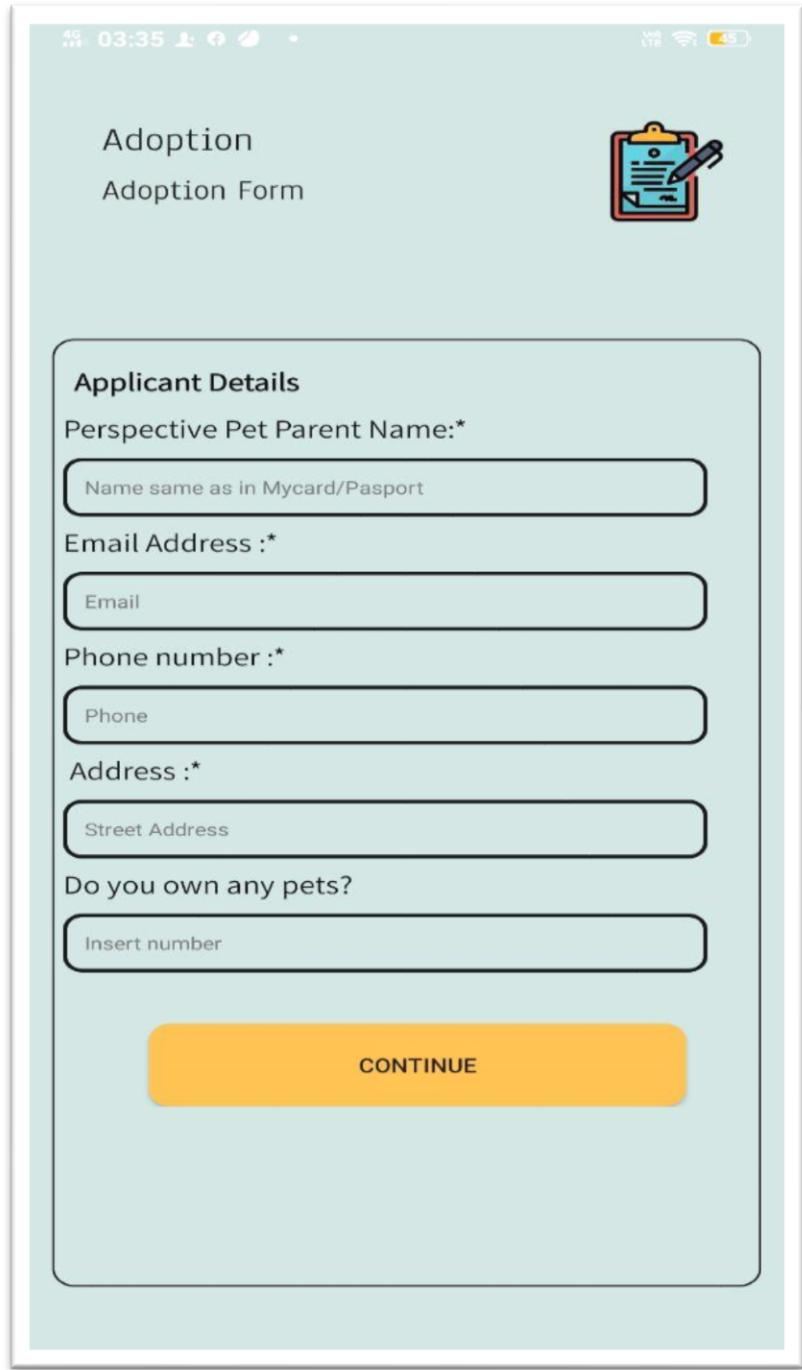


Figure 4-15: Show form for adoption, they are 3 type of adoption they user need to fill. The first form is about applicant details. In this form user need to fill out full name as in Mycard/Pasport, email address, phone number, address and number of pets they have. User need to click on continue button to go to the next form.

03:35

Adoption

Adoption Form

Your household

How many people live in your household?*

Enter number

What best describes your current living situation?*

Enter text

If renting you require your landlord's permission

Landlords name:*

Full Name

Landlords Contact:*

Phone Number

Does anyone in the home suffer from animal related allergies?*

Yes

No

Is a new baby expected in your family?

Yes

No

Figure 4-16: Show second form for adoption. The second form is about applicant household. User need to fill out number of people living in the household, living situation, landlords name, contact number, and others related question. Then user need to click on continue button.

The image shows a smartphone screen displaying an 'Adoption Adoption Form'. The top status bar indicates the time is 03:35 and the battery level is at 45%. The form title is 'Adoption Adoption Form' with a clipboard icon. The main content area is titled 'Planning for a pet in your household'. It contains five text input fields with placeholder text 'Enter text' and five questions. The first question is 'What is your main reason for adopting a pet: *'. The second is 'Where will your pet sleep at night: *'. The third is 'If you go on holiday what will you do with your pet'. The fourth is 'If your pet developed a behavioural issue, what would you do: *'. The fifth is 'If you had to unexpectedly move house, what would you do with your pet: *'. Below these is a question 'Are you aware of the responsibilities and cost of owning a pet: *' followed by two radio button options ('Yes' and 'No') and a large yellow 'SUBMIT' button.

Adoption
Adoption Form

Planning for a pet in your household

What is your main reason for adopting a pet:*

Enter text

Where will your pet sleep at night:*

Enter text

If you go on holiday what will you do with your pet

Enter text

If your pet developed a behavioural issue,
what would you do:*

Enter text

If you had to unexpectedly move house,
what would you do with your pet:*

Enter text

Are you aware of the responsibilities
and cost of owning a pet:*

Yes

No

SUBMIT

Figure 4-17: Show third form for adoption. This form is about planning for a pet in the household. User need to fill out reason to adopt a pet, where pet will stay, pet behavioral issues and cost of owning a pet. Then user need to click on submit button to submit all the form that user fills out.

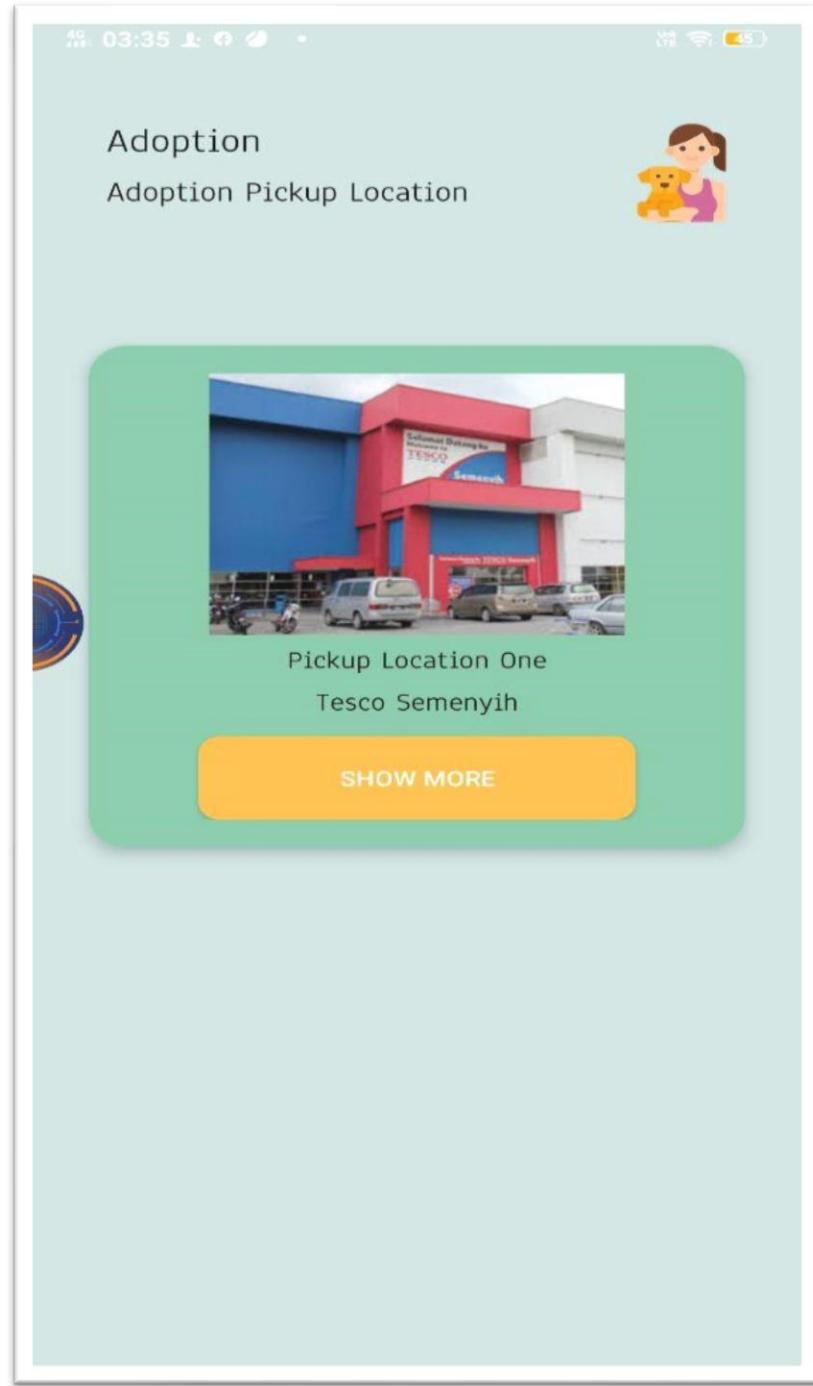


Figure 4- 18: Show pickup location, in this page user can choose their pickup location and if user click on show more button, popup screen will show up.

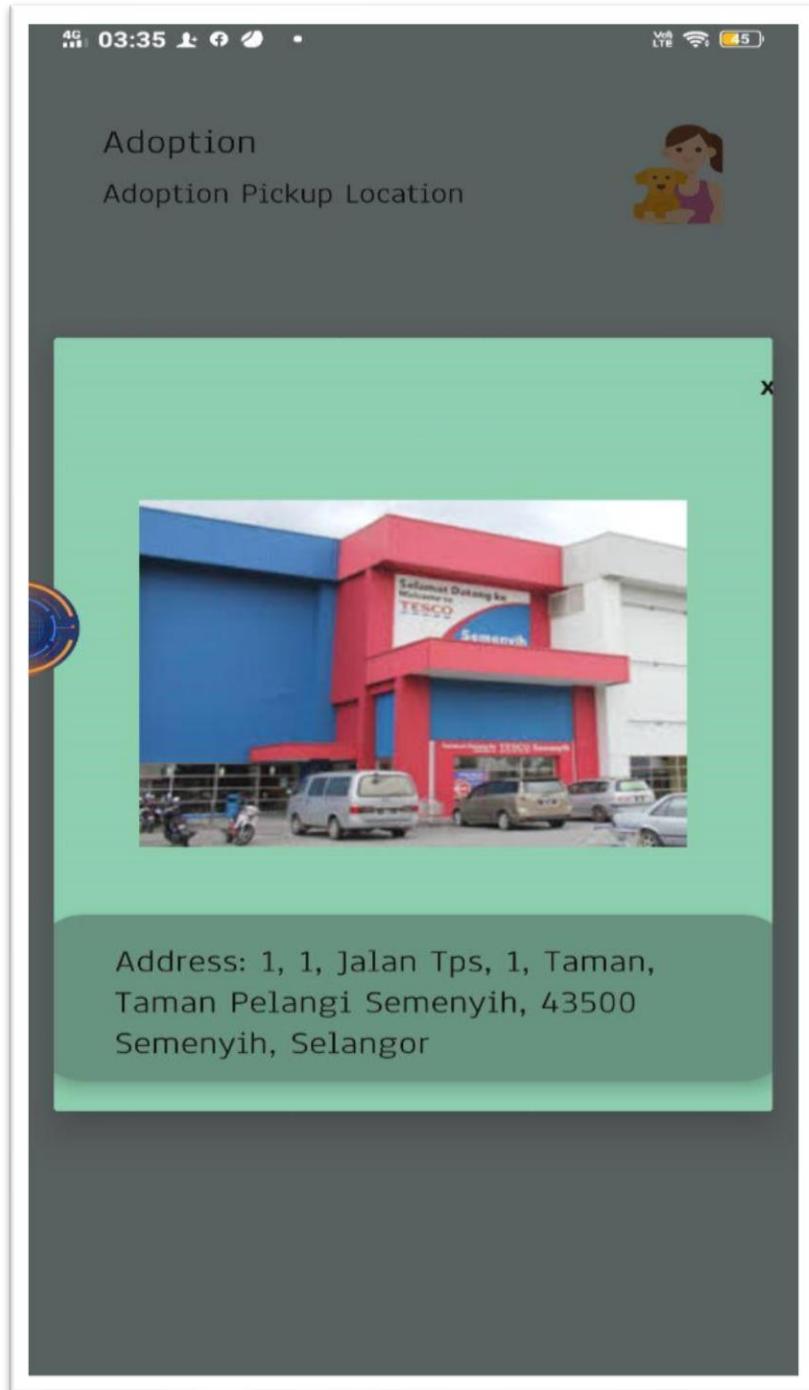


Figure 4- 19: Show popup screen for location. It will show detail of the location.

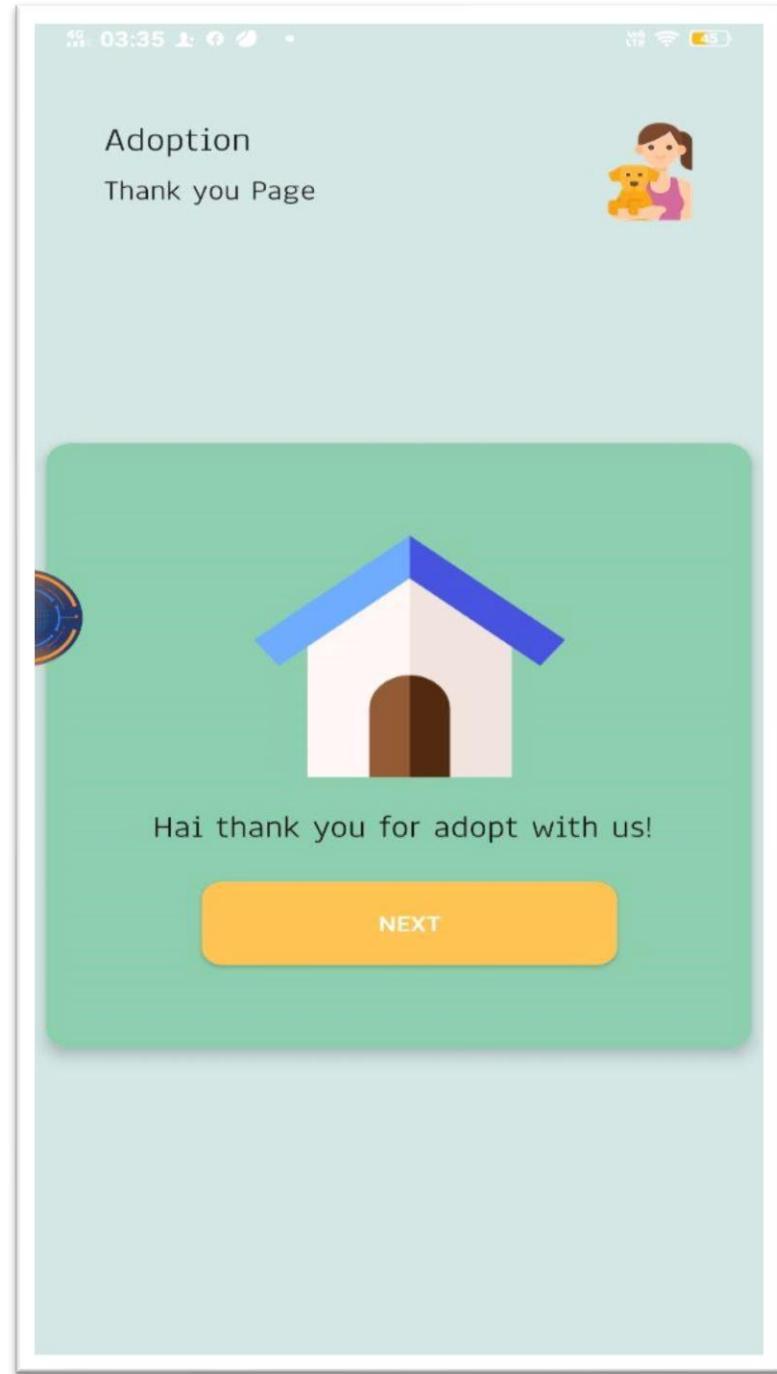


Figure 4-20: Show thank you page after user finish with the adoption process. User need to click on next button to continue.



Figure 4- 21: Show adoption status. When user click on show status button popup screen will show up or user can click on back to homepage button and back to main page.

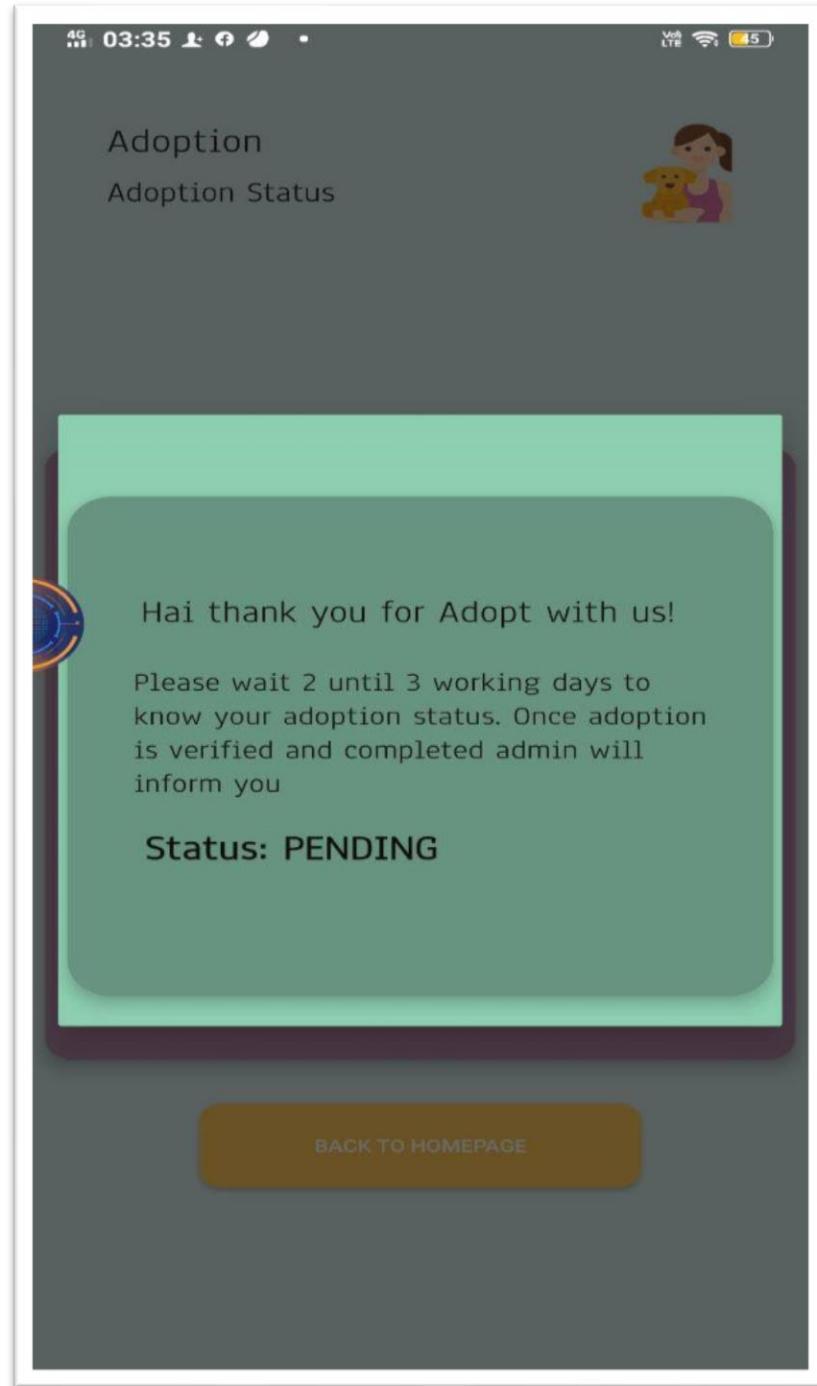


Figure 4- 22: Show popup screen for adoption status. User can check back at the status after 2 until 3 working days and wait for admin and adoption center to approved it.

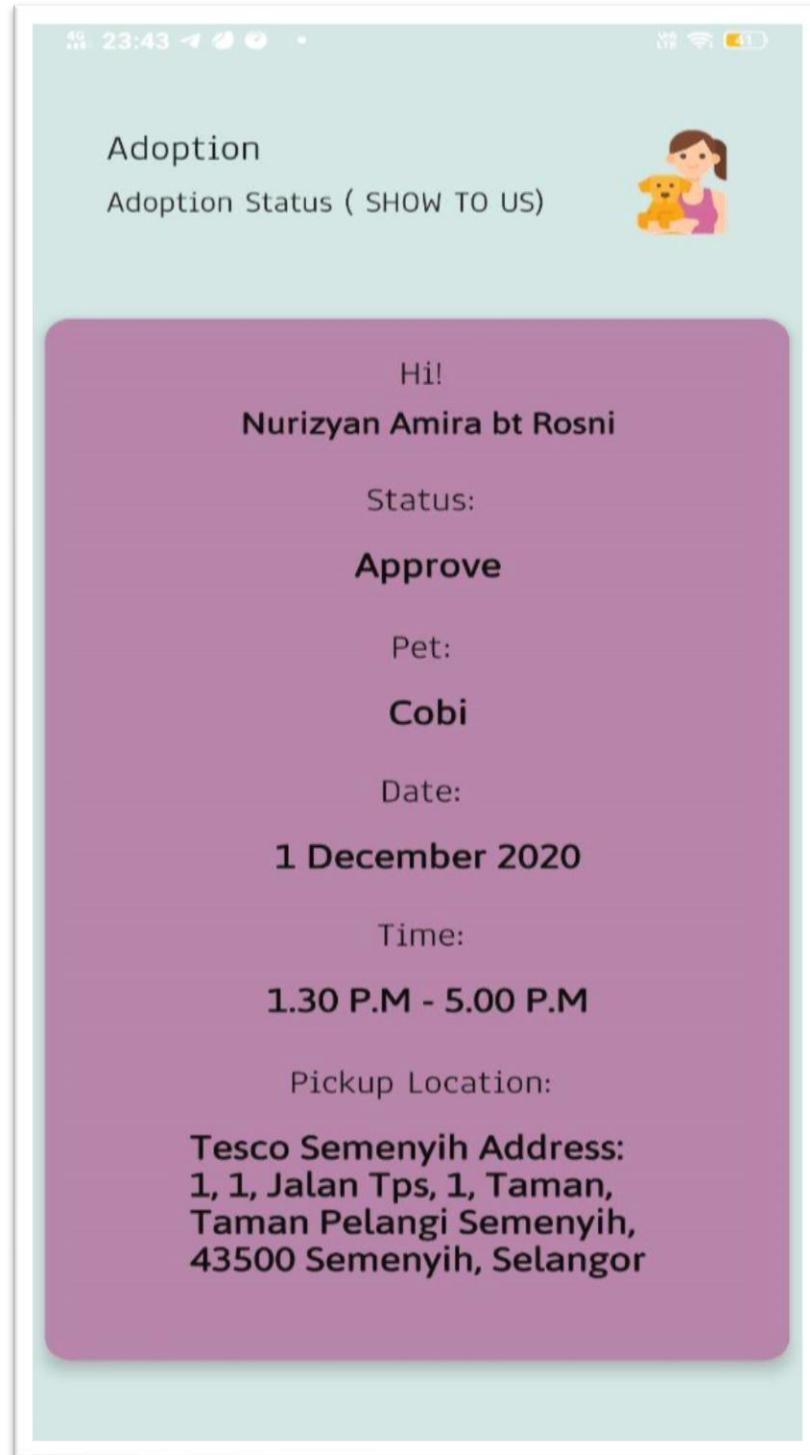


Figure 4- 23: Show approval page. Admin will give details about the adoption process.

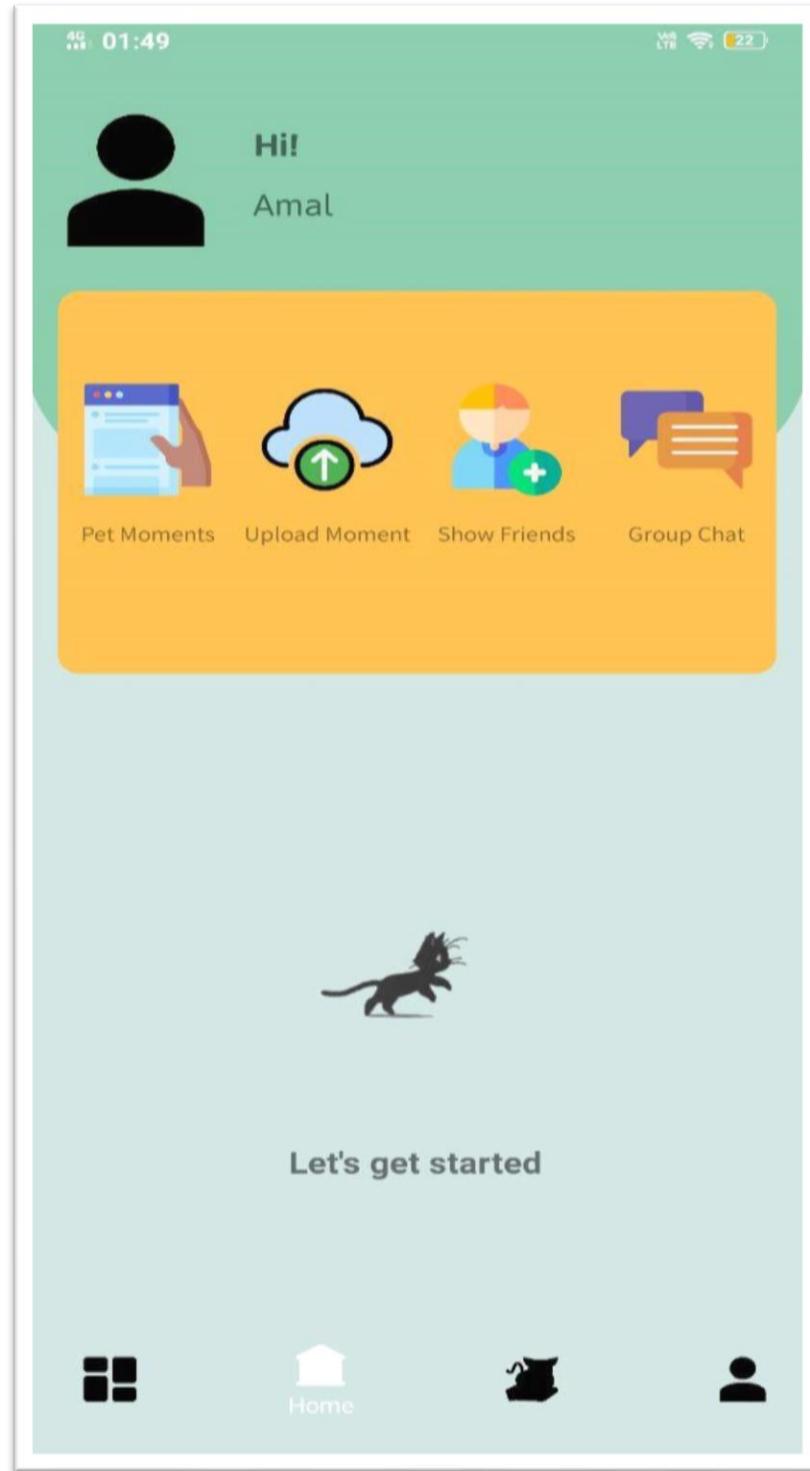


Figure 4- 24: Show home page. In the home page user can see their name. User also can click on pet moment, upload moment, show friends, and group chat buttons.

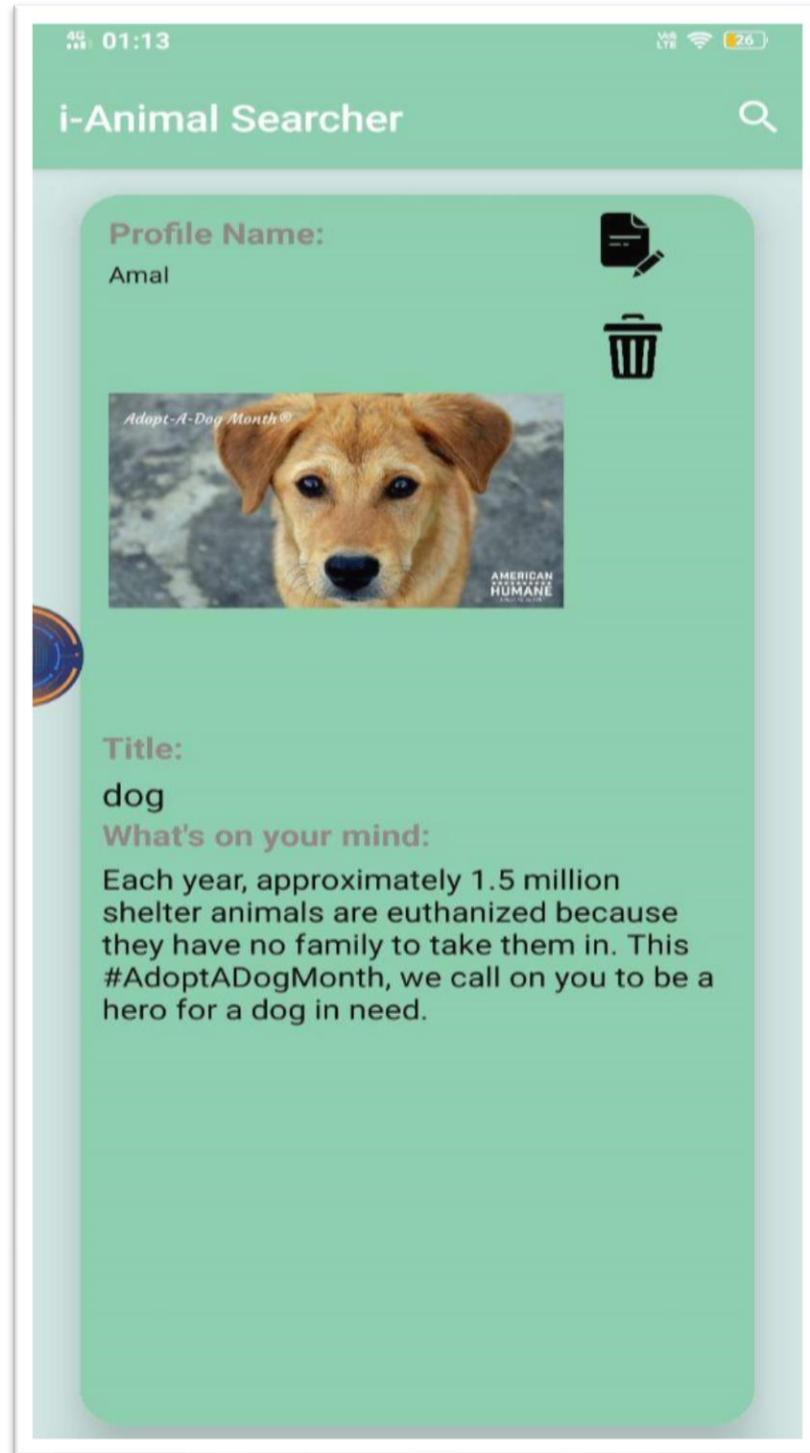


Figure 4- 25: Show pet moment page. In this page user can see profile name, title and status. User also can click on update and delete button. In this page user can see others moments too.

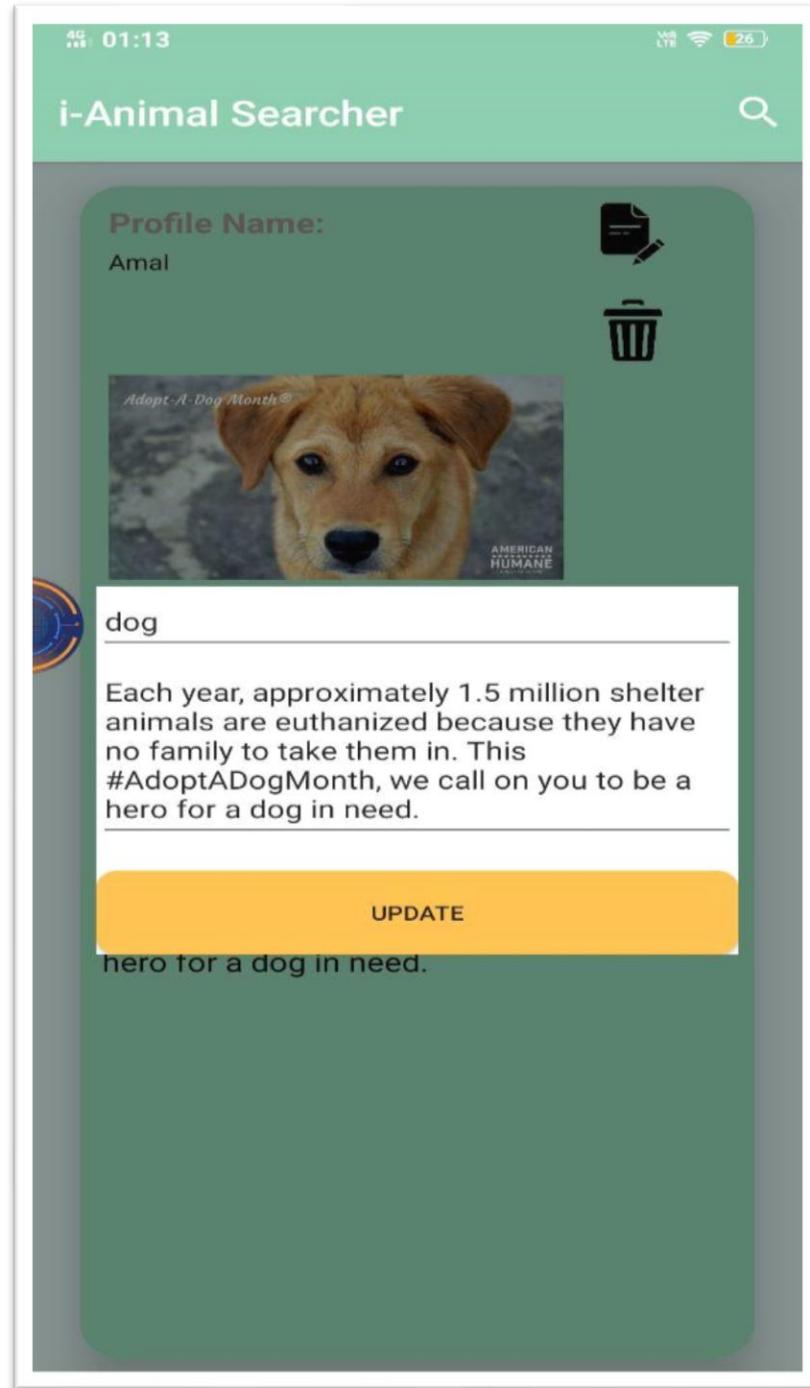


Figure 4- 26: Show update moment. When user click on update button, update page will show up and user can make changes at the moments.

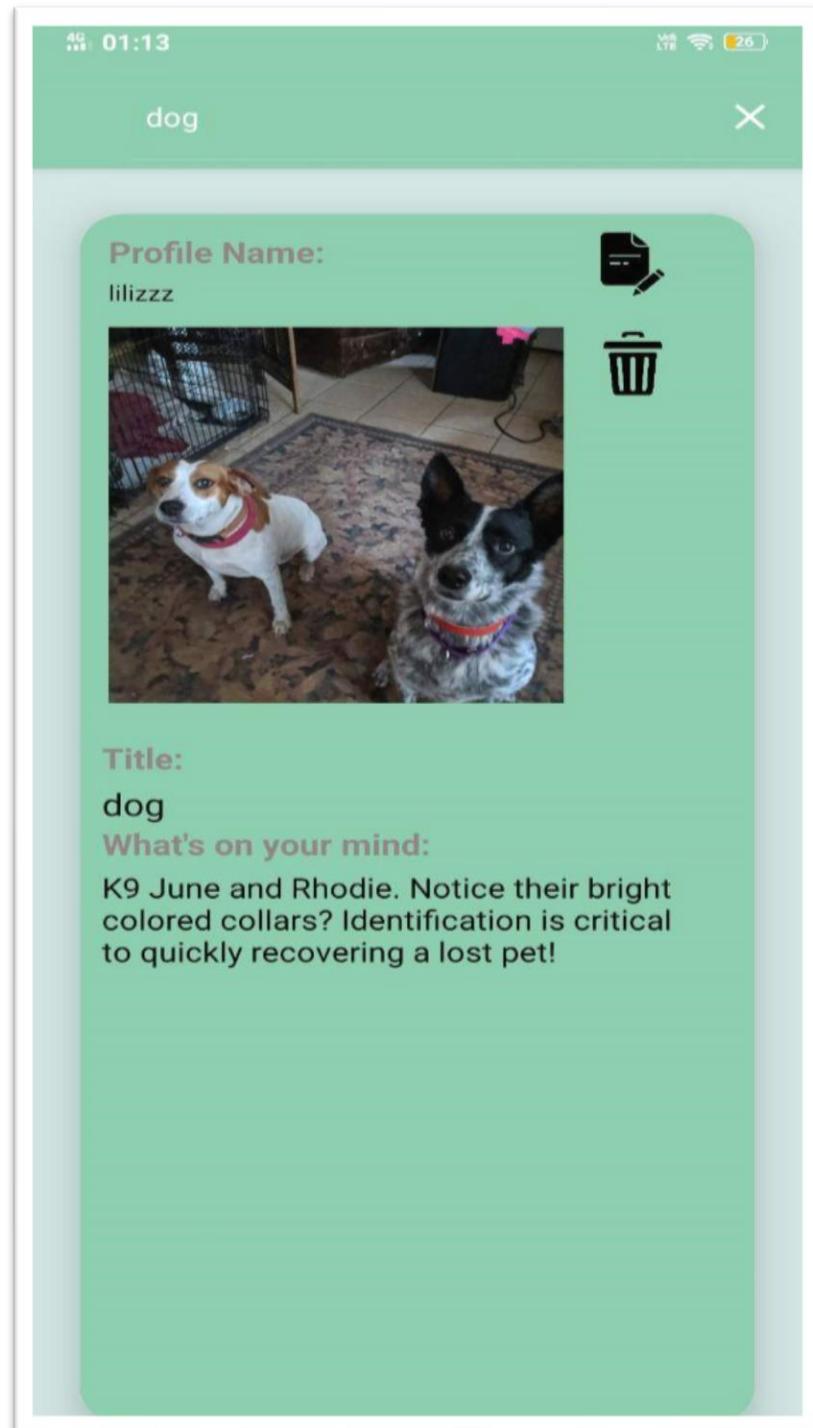


Figure 4- 27: Show search moment. User can search based on title every moment.

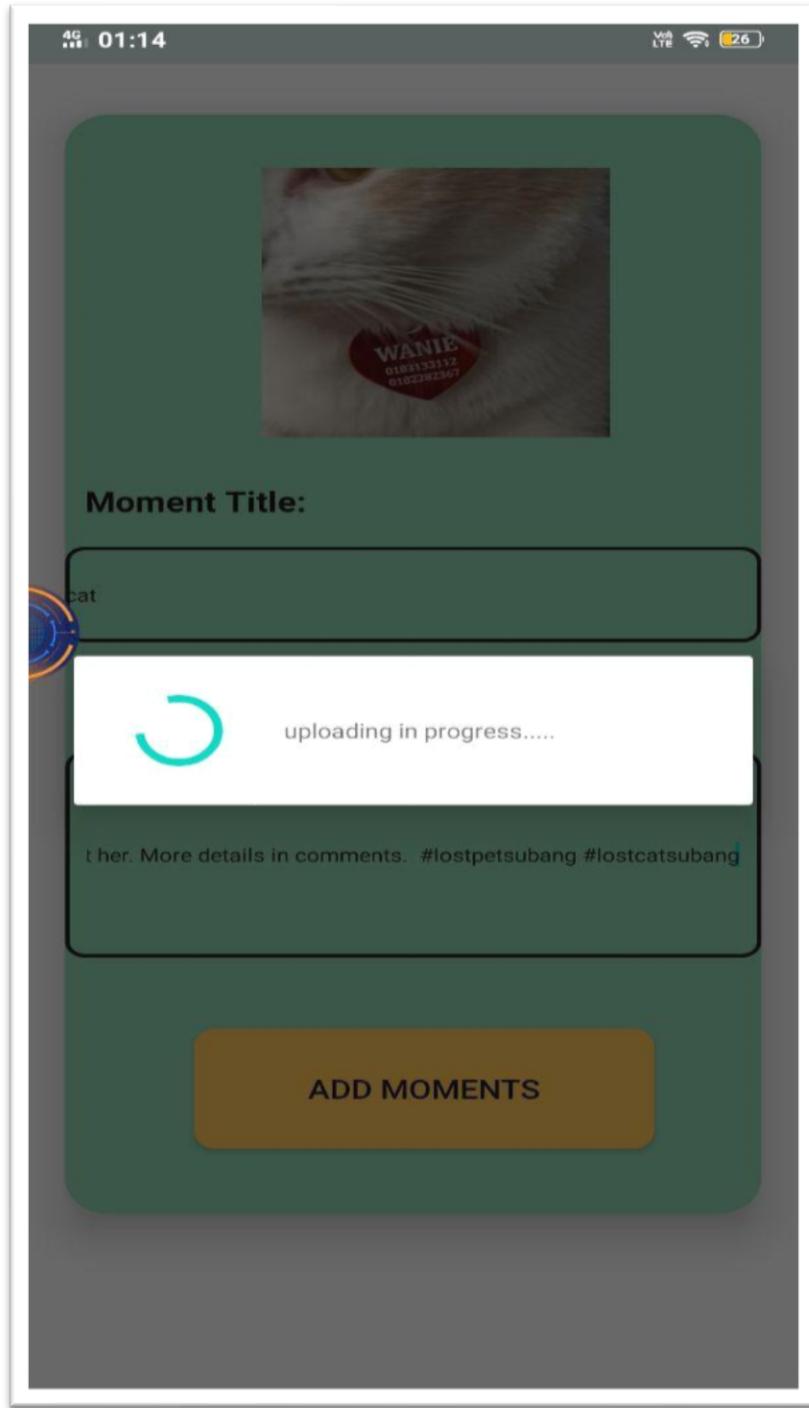


Figure 4- 28: Show upload moment. In this page user can fill out moment title and status. Then user can click on add moments button and progress bar will popup.



Figure 4- 29: Show moments page after user done upload moment.

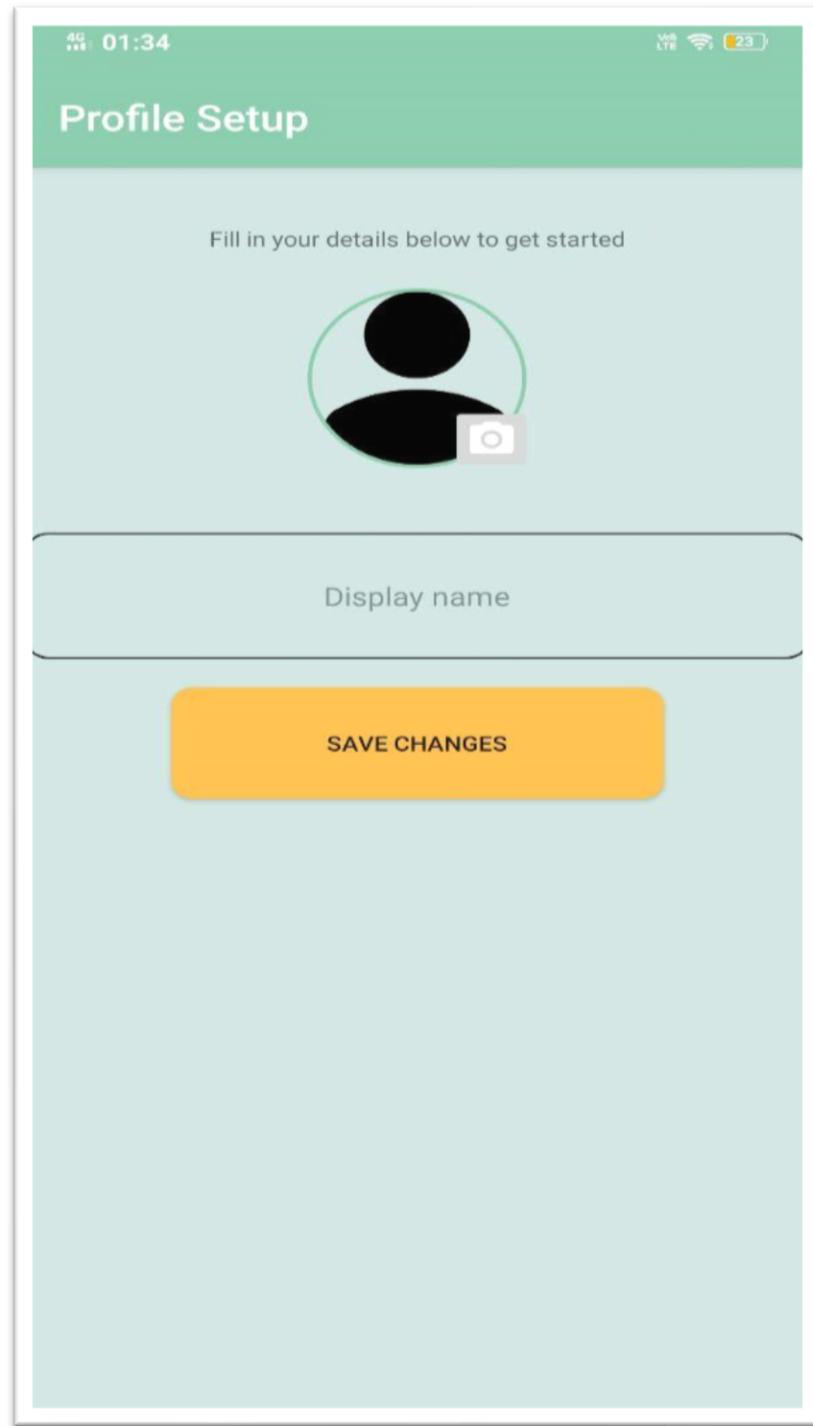


Figure 4- 30: Show profile setup page. User need to create their display name before start using group chat function.

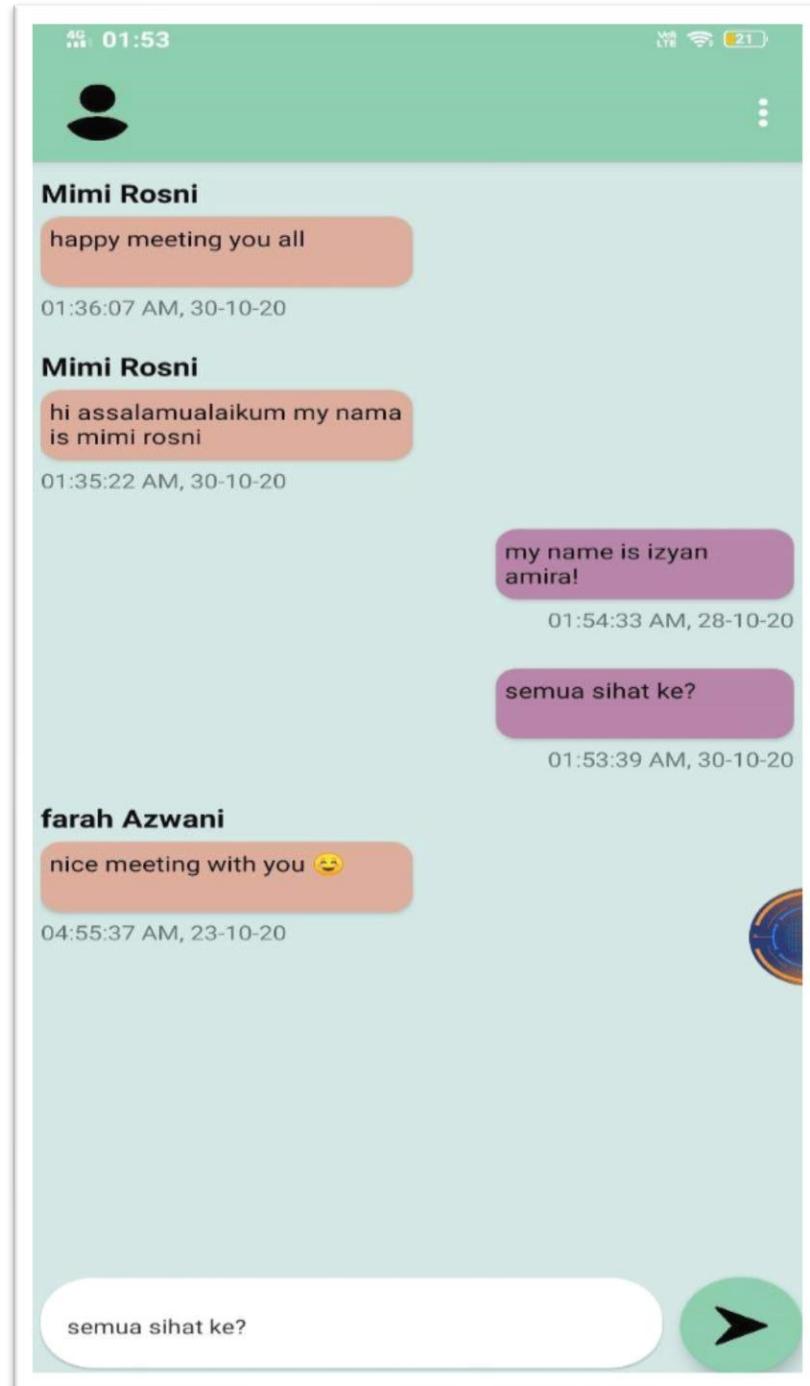


Figure 4- 31: Show chat page. When user successfully create their display name user can starting to chatting with others users. User need to type new message and click on send symbol to send message to other users.

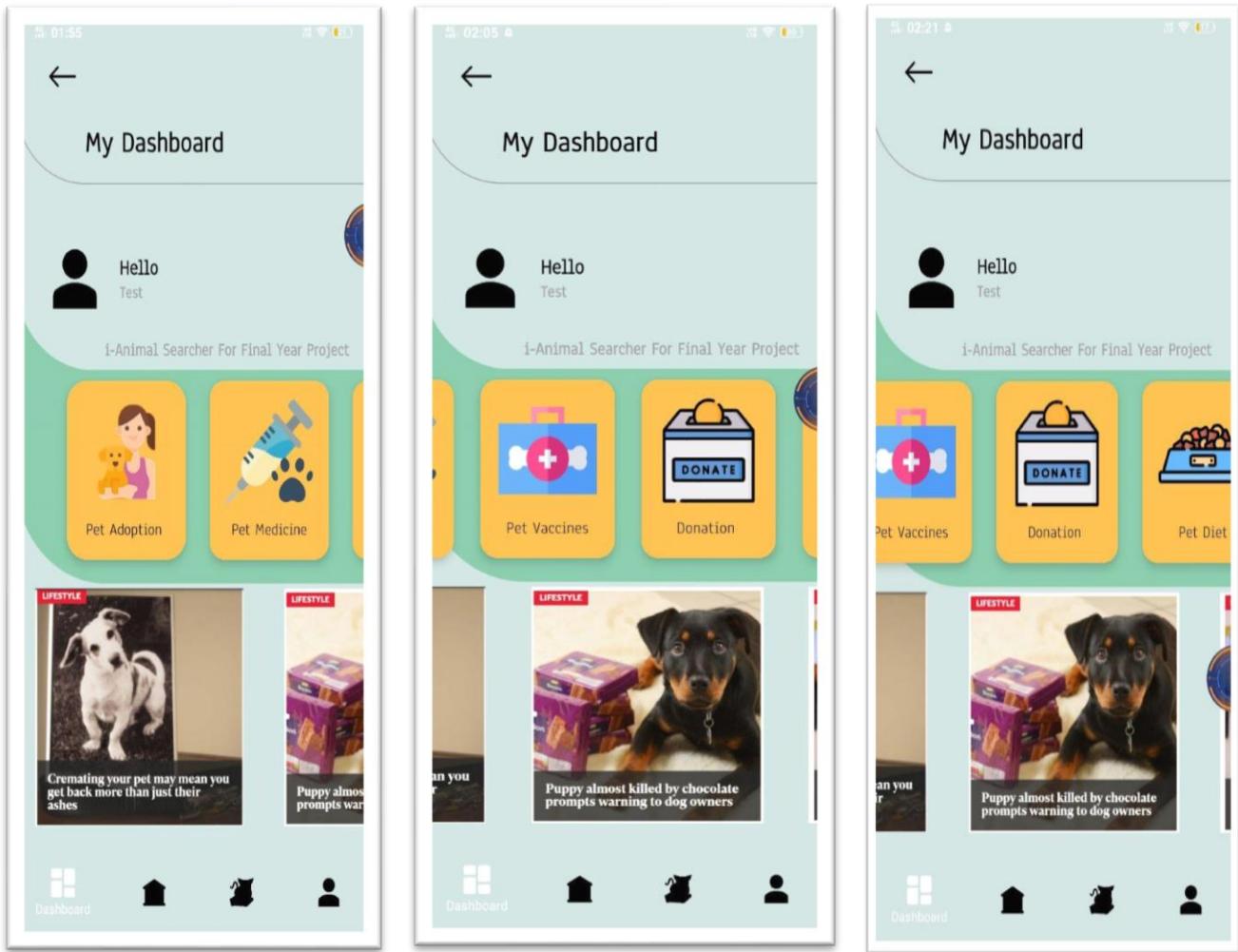


Figure 4- 32: Show main dashboard page. In this page user can slide view all the button and user also can slide view all the related article about animals.

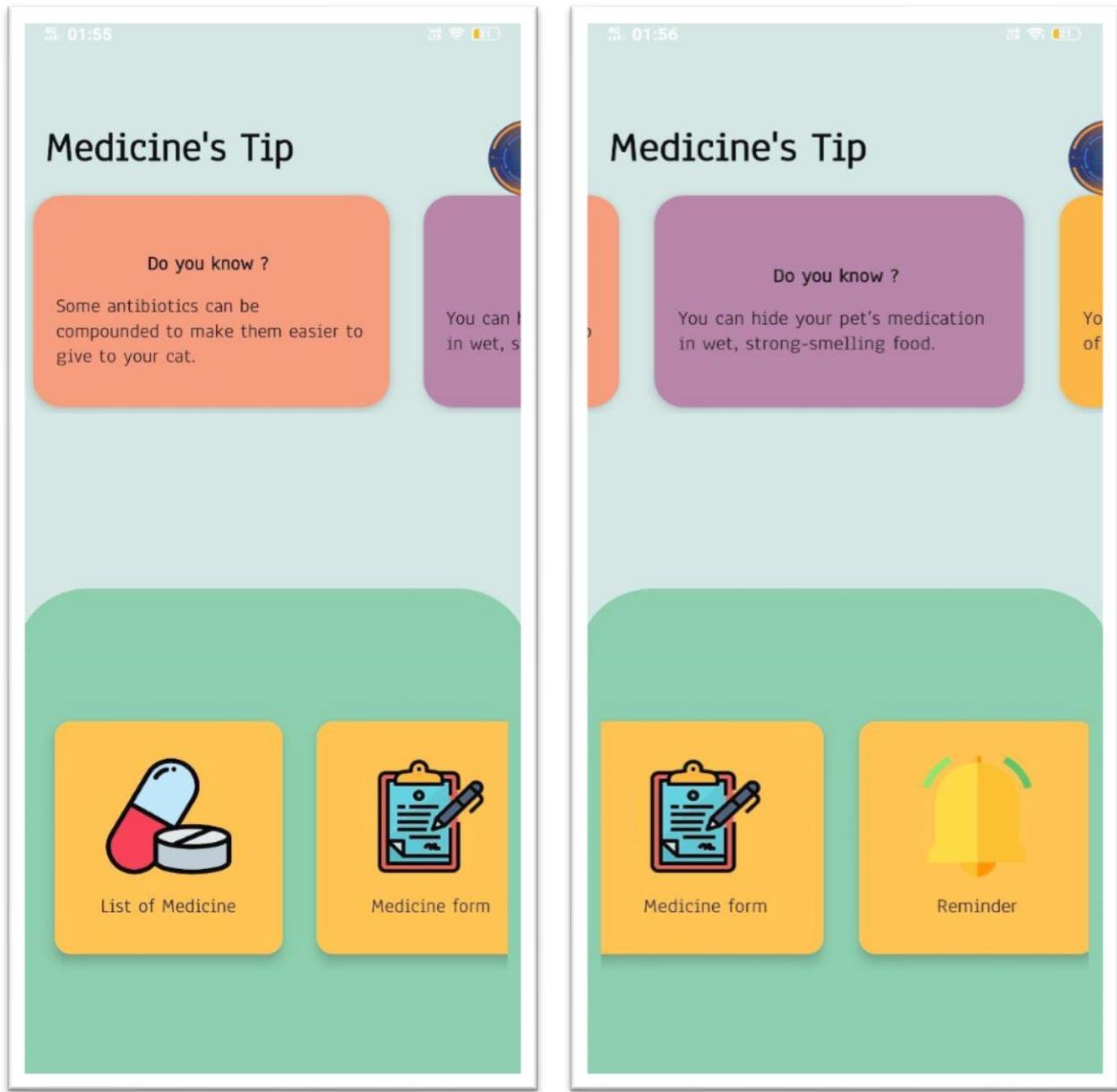


Figure 4- 33: Show medicine dashboard. When click on list of medicine button it will directly link to medicine page and if user click on medicine form it will directly link to medicine form page. If user click on reminder button it will link to medicine reminder page.

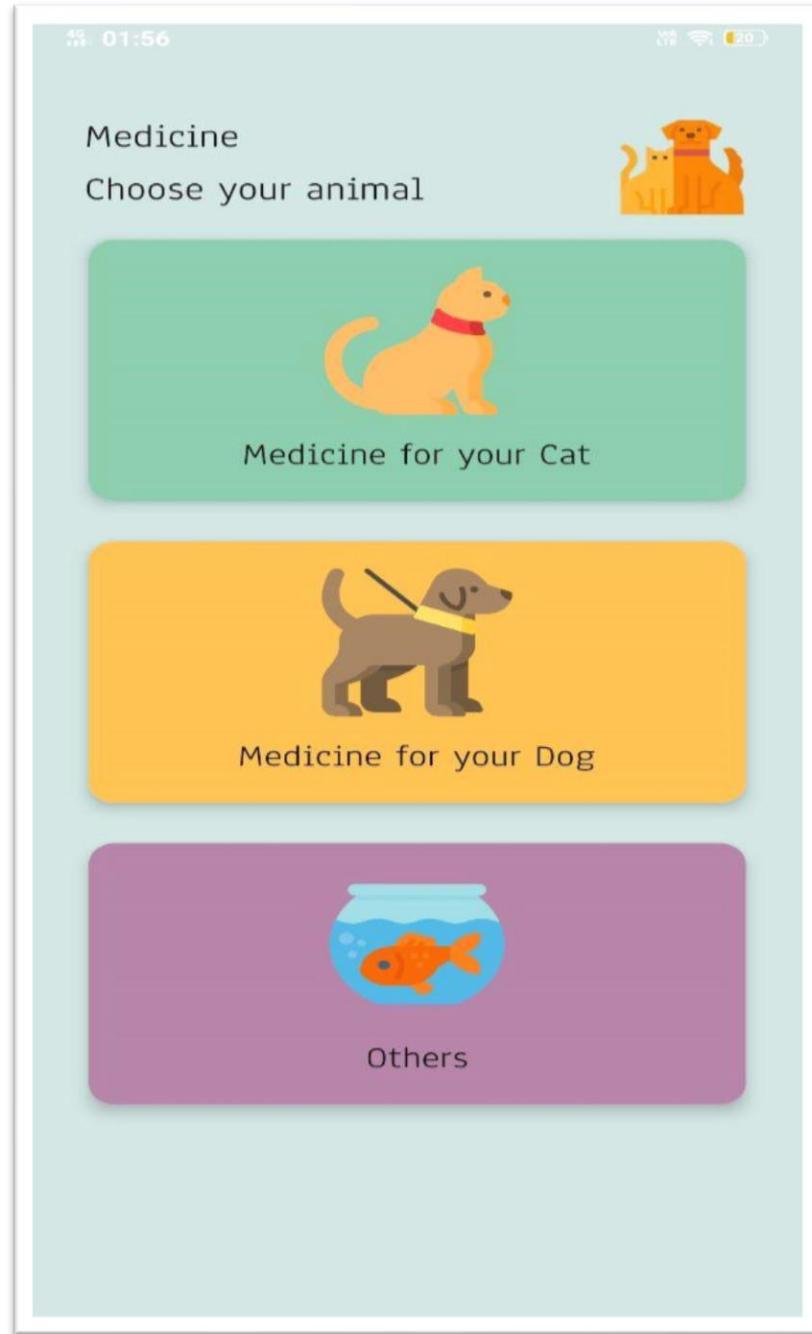


Figure 4- 34: Show list of medicine page. User can choose their specific pet. For instance, when user want to know medicine about cat user need to click on medicine for your cat button.



Figure 4- 35: Show list of medicine for cat page. In this page user can choose information for every specific illness. For instance, when the pet has respiratory illness user can click on 'baytril' button.

4G 01:56

4G LTR 20%

Baytril®
(enrofloxacin)
Taste Tabs® 68 mg Antibiotic Tablets
68
For the Treatment Of Susceptible Bacterial Infections In Dogs And Cats
Each tablet contains 68 mg of enrofloxacin USP. A 1 tablet results in approximately 10 mg of enrofloxacin USP.
† Please see package insert for complete product information.
Bayer

What are Baytril Taste Tabs?

Baytril Taste Tabs are used to treat many types of bacterial infections. It's a fluoroquinolone antibiotic used for infections of the urinary tract, skin, prostate, GI tract, liver, and lungs. Baytril Taste Tabs are sold per tablet and require a prescription from your veterinarian.

NOTE: Baytril is also available as Baytril Otic (ear)
For: Cat and Dog

Benefits:

- a) Treats bacterial infections
- b) Chewable tablets are flavored so your pet will enjoy
- a) Treats bacterial infections

How do Baytril Taste Tabs work?

Baytril is a fluoroquinolone antibiotic. Fluoroquinolones interfere with bacterial DNA metabolism to kill the bacteria.

Caution

Figure 4- 36: Show baytril page. In this page user can read detail information about the medicine. This information is provided by trusted veterinarian.

The image shows a smartphone screen displaying a mobile application for a 'Medicines Form'. The top status bar indicates it's 01:57, there's 4G connectivity, and the battery level is at 20%. The app interface has a light blue header with the text 'Medicines' and 'Medicines Form'. In the top right corner, there are icons of a clipboard with a pen and a circular progress bar. The main content area contains several questions and input fields:

- What is the last date your pet meet with Doctor?
dd/mm/yy
- Does your pet often throw up or have lice?
Everyday/Often/Never
- Does your pet have any illness?
Enter illness or symptom
- How often you give your pet supplement/vitamin?
Everyday/Often/Never
- How often your pet get sick?
Everyday/Often/Never
- Do you neuter your pets?
Yes/No

At the bottom of the form is a large yellow 'SUBMIT' button.

Figure 4- 37: Show medicine form page. User need to fill out the last date meeting with doctor, pet condition, pet illness, pet diet, pet health, and neuter question and click on submit button all the data will automatically will be saved into the database and shown on profile page.

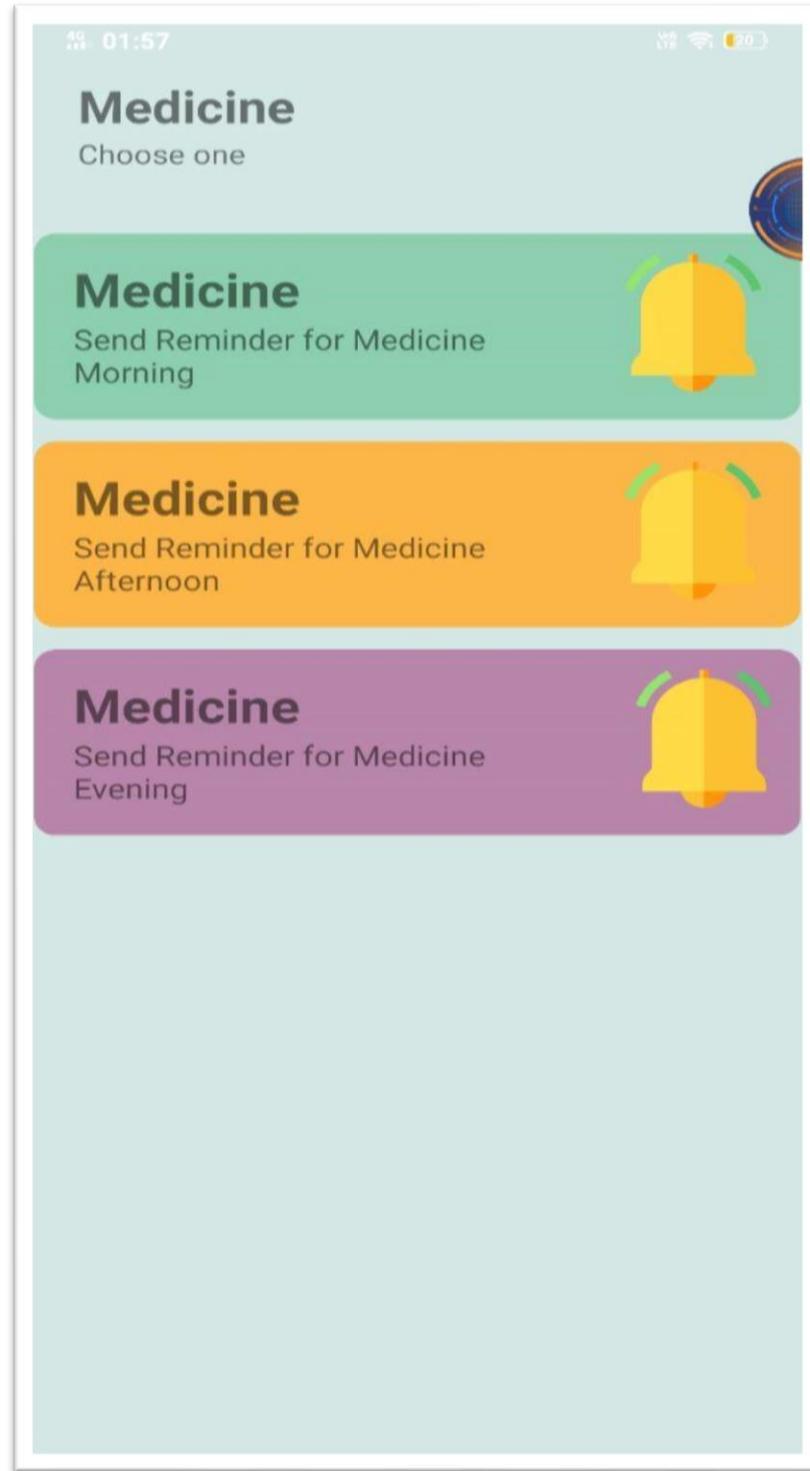


Figure 4- 38: Show reminder page for medicine. User can choose their specific time to give medicine for their pet. For instance, when user click on send reminder for medicine morning button notification reminder will show up.

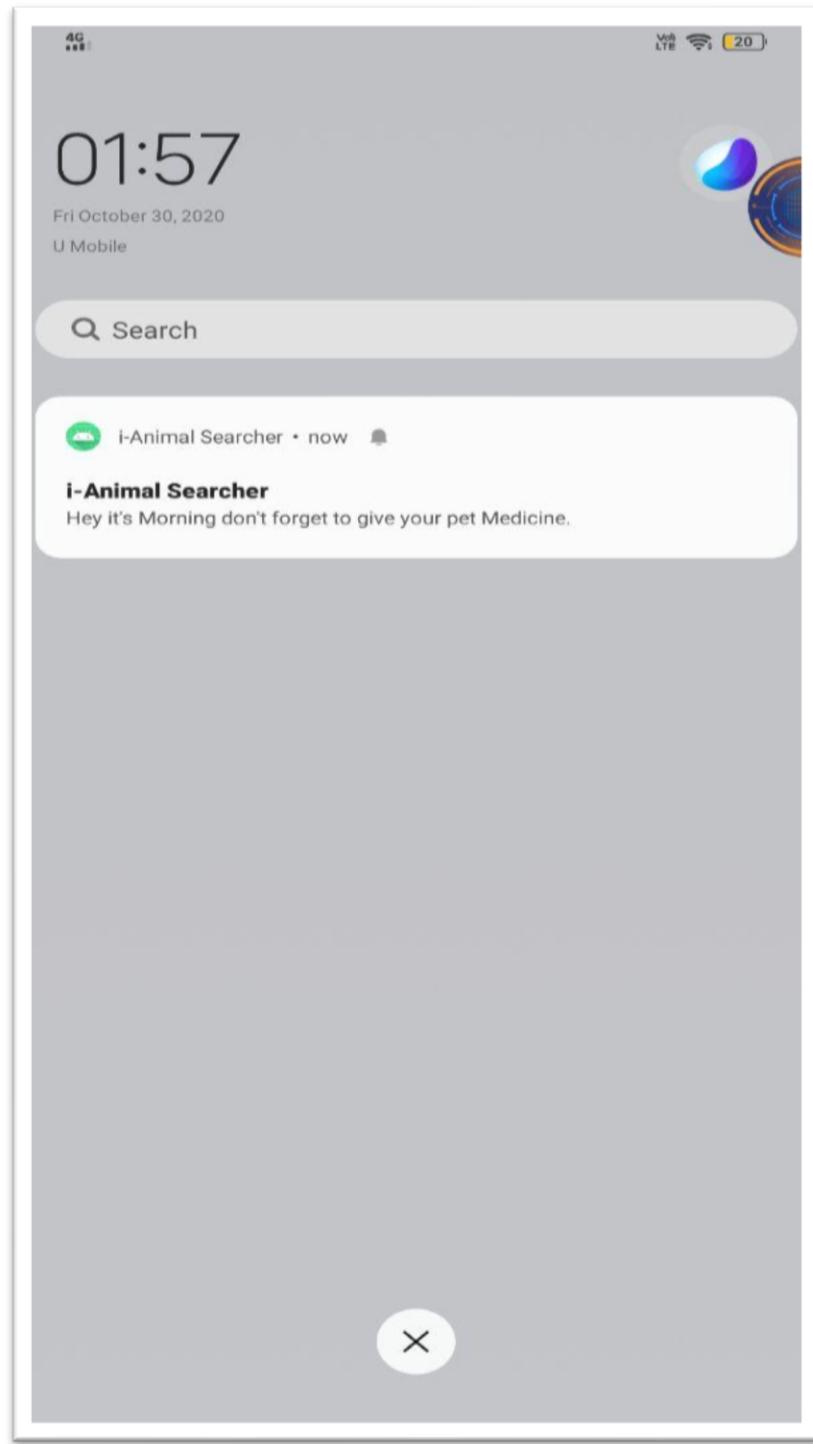


Figure 4- 39: Show notification reminder for medicine. The notification reminder will display specific message.

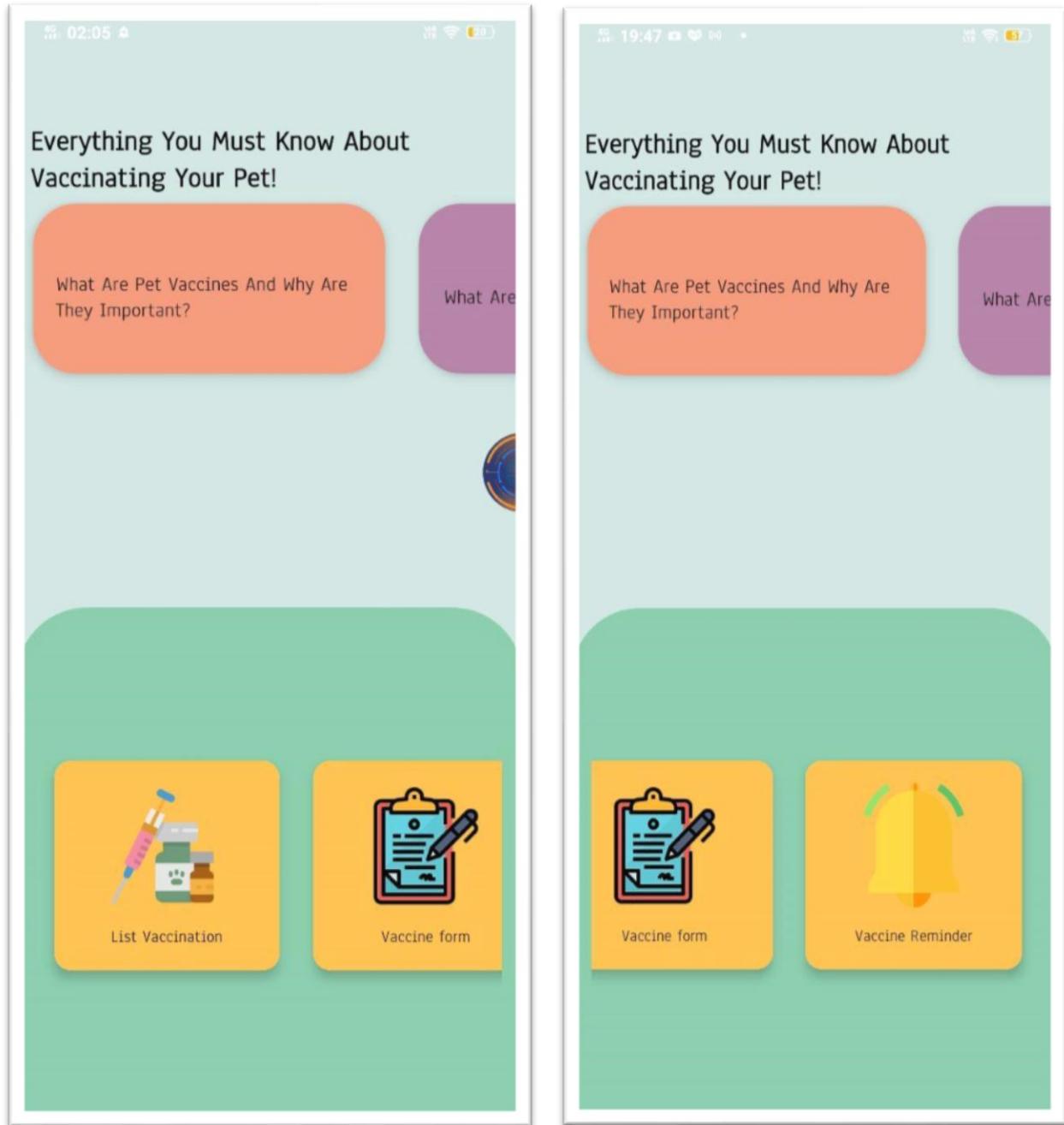


Figure 4- 40: Show vaccine dashboard. In this dashboard user view tips and extra information about vaccines and when user click on the information popup message will show up. User can click on list of vaccination button and it will directly link to vaccine page. When user click on vaccine form it will directly link to vaccine form and when user click on vaccines reminder it will bring user to the vaccine reminder page.

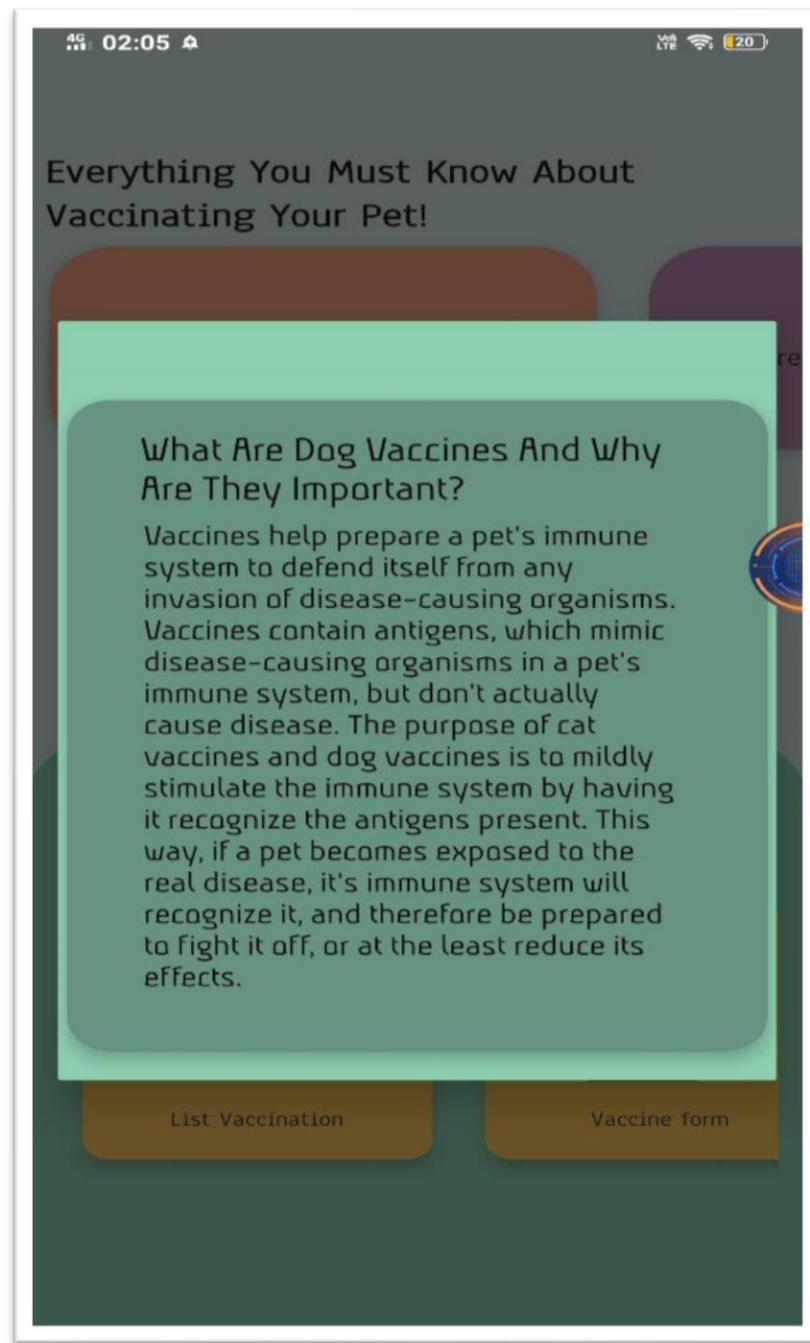


Figure 4- 41: Show popup message for vaccines. It will give detail information about vaccines.

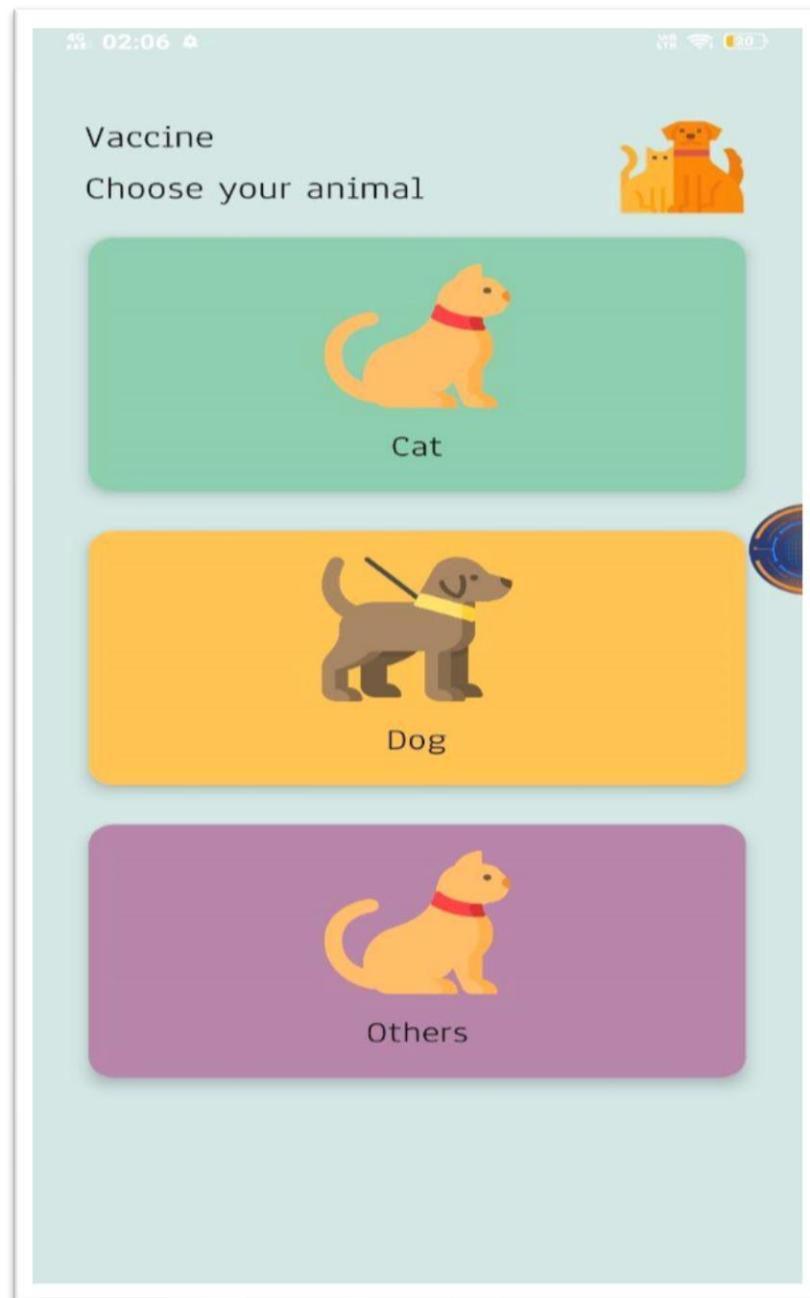


Figure 4- 42: Show list of vaccine page. User can choose their specific pet. For instance, when user want to know vaccines about cat user need to click on cat button.



Figure 4- 43: Show list of vaccine for cat page. In this page user can choose information for every specific age. For instance, when user want to know what kind on vaccines that a cat should take for 6 months user need to click on 6-month button.

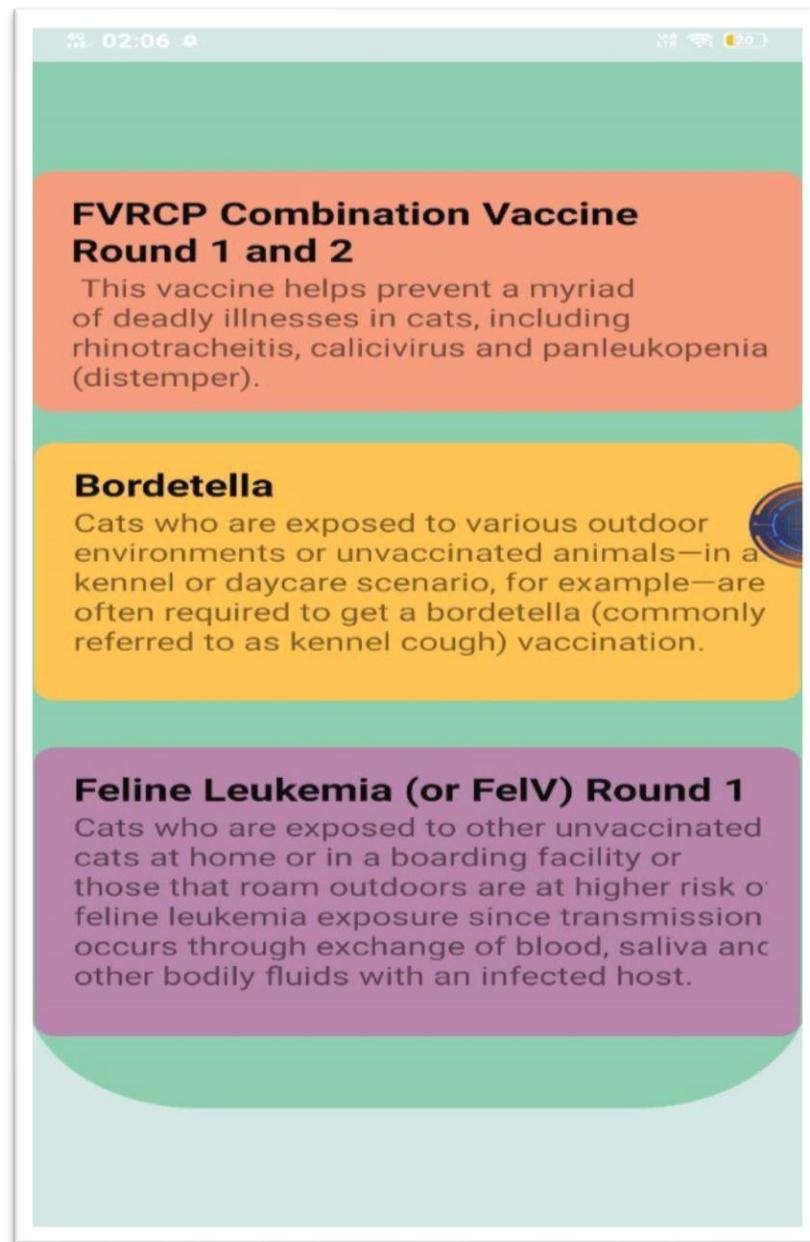


Figure 4- 44: Show recommendation vaccines. User can see detail lists of recommendation for vaccines for 6 months years old cat.

The image shows a smartphone screen displaying a mobile application for a 'Vaccines Form'. The top status bar indicates it's 02:06, there's 4G connectivity, and the battery level is at 19%. The app has a light blue background. At the top left, it says 'Vaccines' and 'Vaccines Form'. On the top right is a red clipboard icon with a white pen writing on it. Below the title, there are several input fields:

- A large rectangular input field labeled 'Answer'.
- A question 'Date of last vaccines' followed by a smaller input field labeled 'Day/Month/Year'.
- A question 'Has your pet ever had a negative reaction to vaccines?' followed by a smaller input field labeled 'Yes (with reason)/No'.
- A question 'Has your pet bitten anyone in the last 10 days?' followed by a smaller input field labeled 'Yes/No'.
- A question 'Does your pet get carsick?' followed by a smaller input field labeled 'Yes/No'.
- A question 'If you have a female pet, is it possible that she is pregnant?' followed by a smaller input field labeled 'Yes/No'.
- A question 'Where do your dogs/cats stay?' followed by a smaller input field labeled 'Indoor / Outdoor'.

At the bottom center is a large yellow 'SUBMIT' button.

Figure 4- 45: Show vaccine form. User need to answer question about pet condition, pet habitat, date of last vaccine and reaction to vaccines and click on submit button.

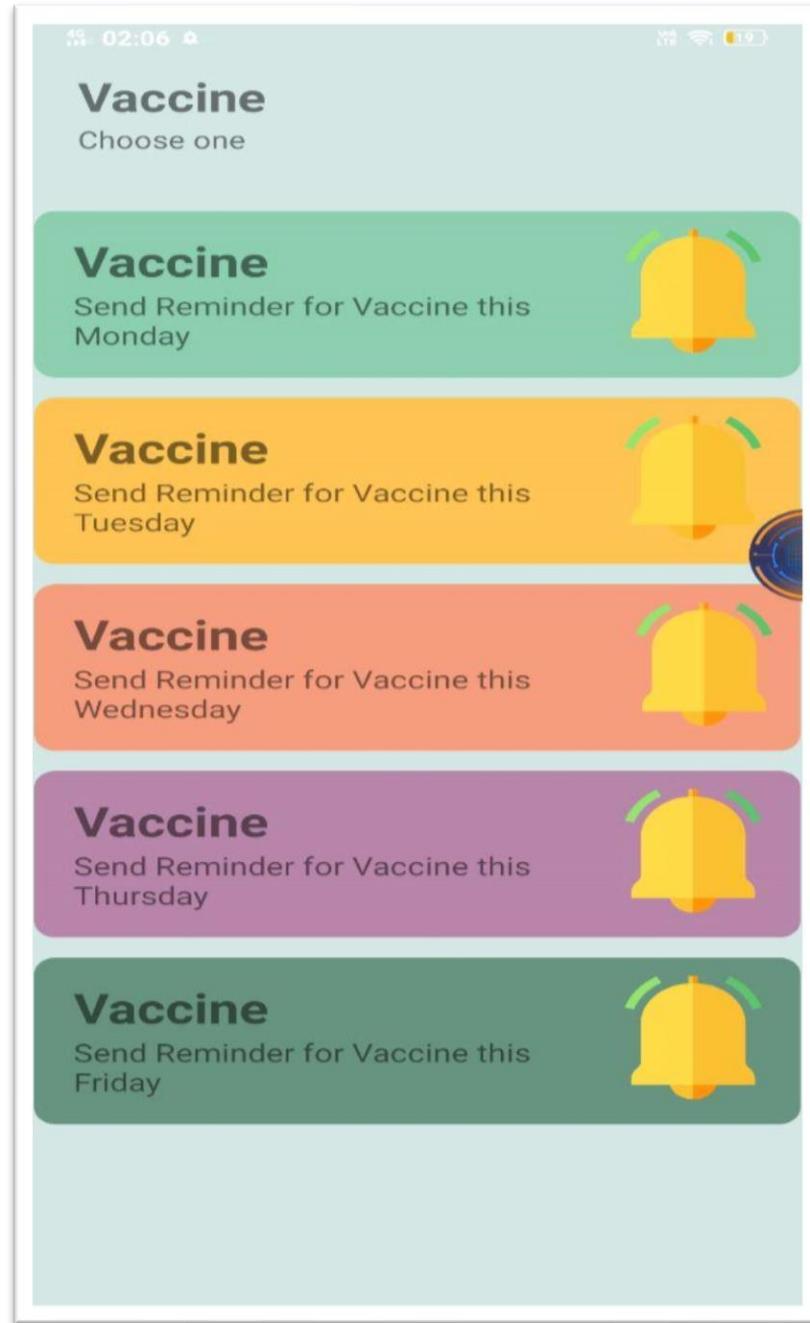


Figure 4- 46: Show reminder page for vaccine. User can choose their specific day to remind them to give vaccines for their pet. For instance, when user click on send reminder for vaccine this Monday button notification reminder will show up.

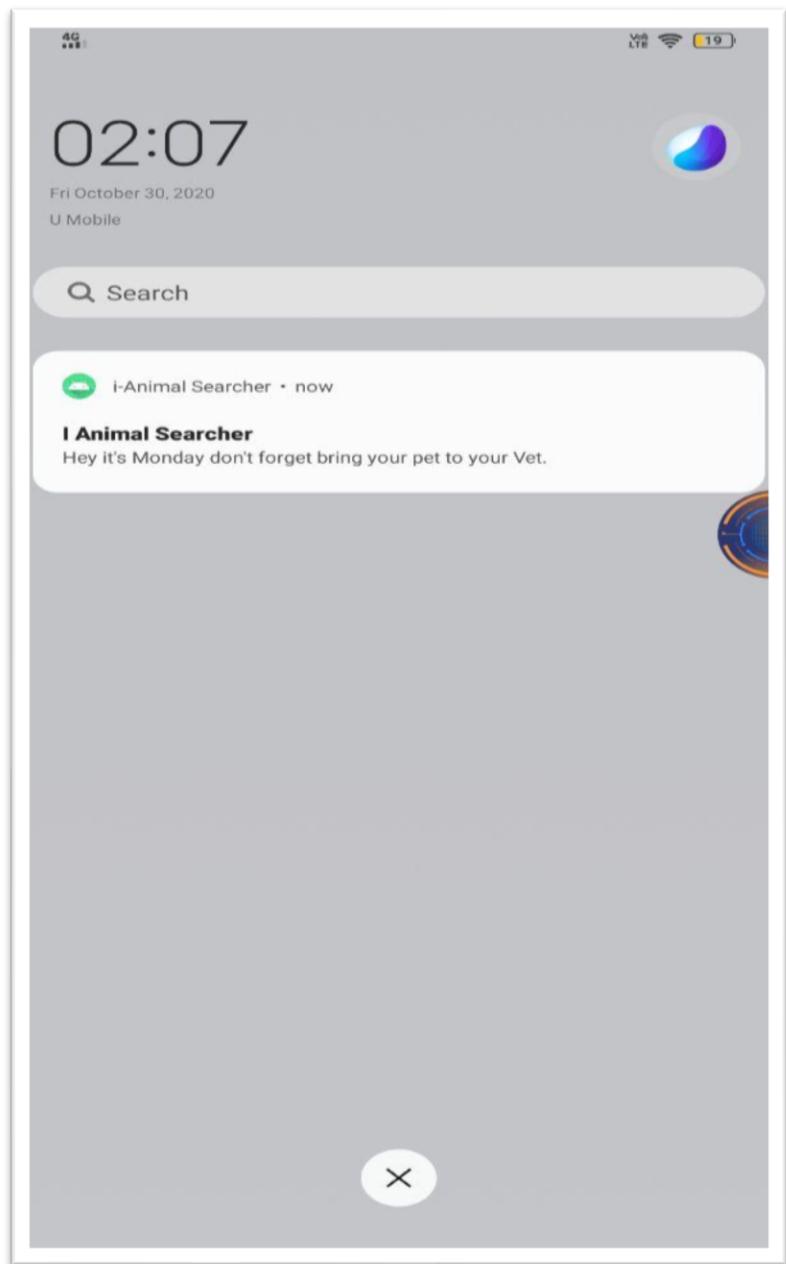


Figure 4- 47: Show notification reminder for vaccine. The notification reminder will display specific message.

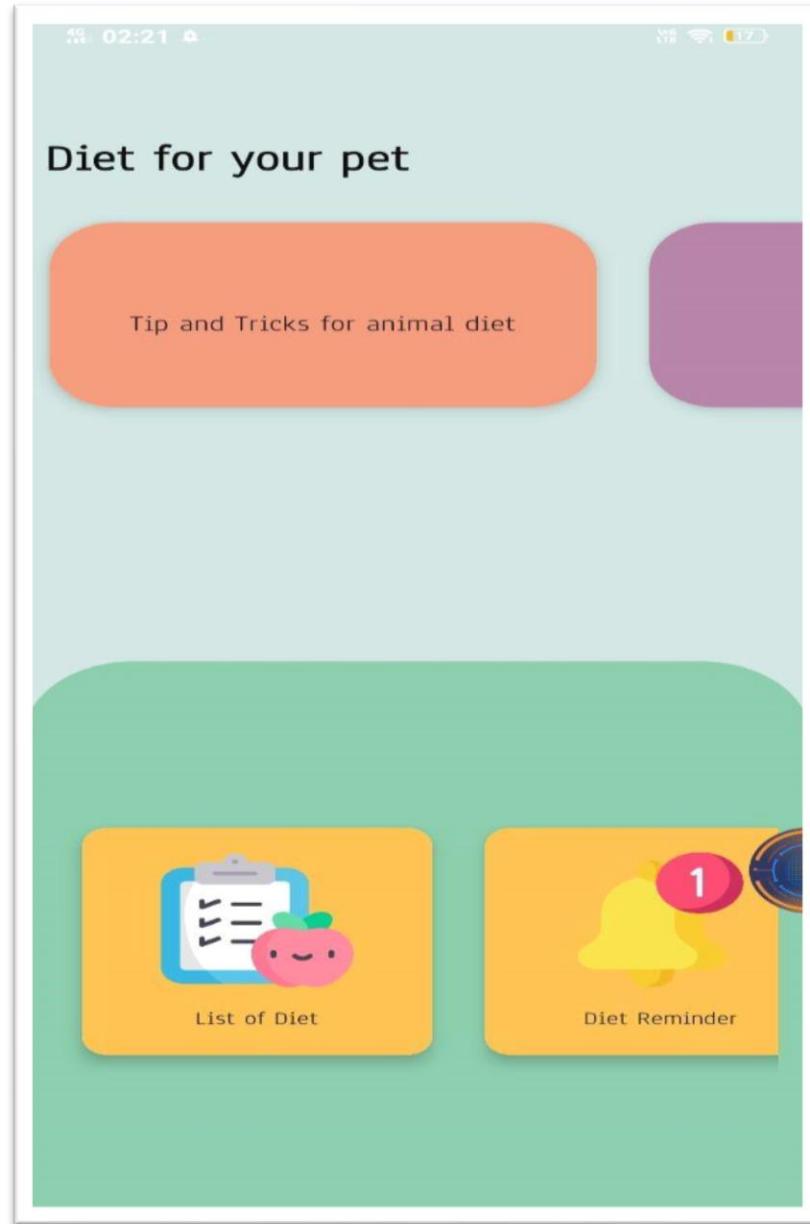


Figure 4- 48: Show diet dashboard. User can click on list of diet and it will link to next page.
User also can click on diet reminder button and it will link to reminder page.

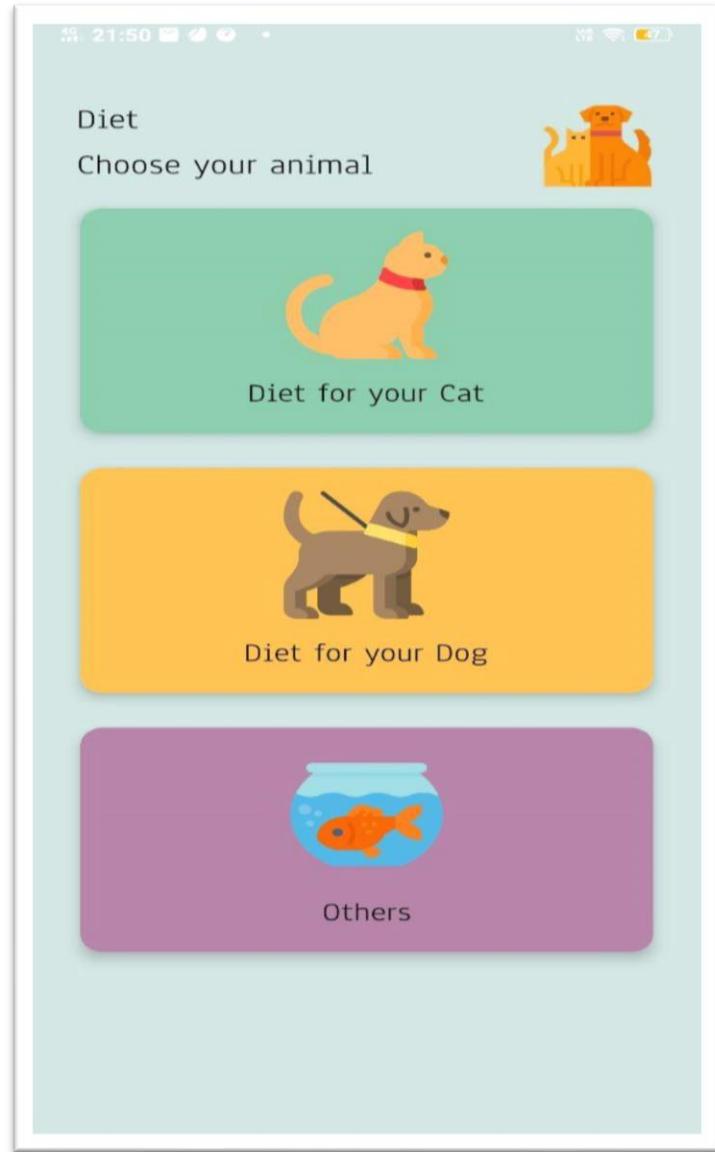


Figure 4- 49: Show list of diet page. User can choose their specific pet. For instance, when user want to know diet about cat user need to click on diet for your cat button.



Figure 4-50: Show list of diet for cat. In this page user can choose information for cat.

For instance, when user want to know what kind on diet that a cat should take for every breed user need to click on choose your cat breed button.

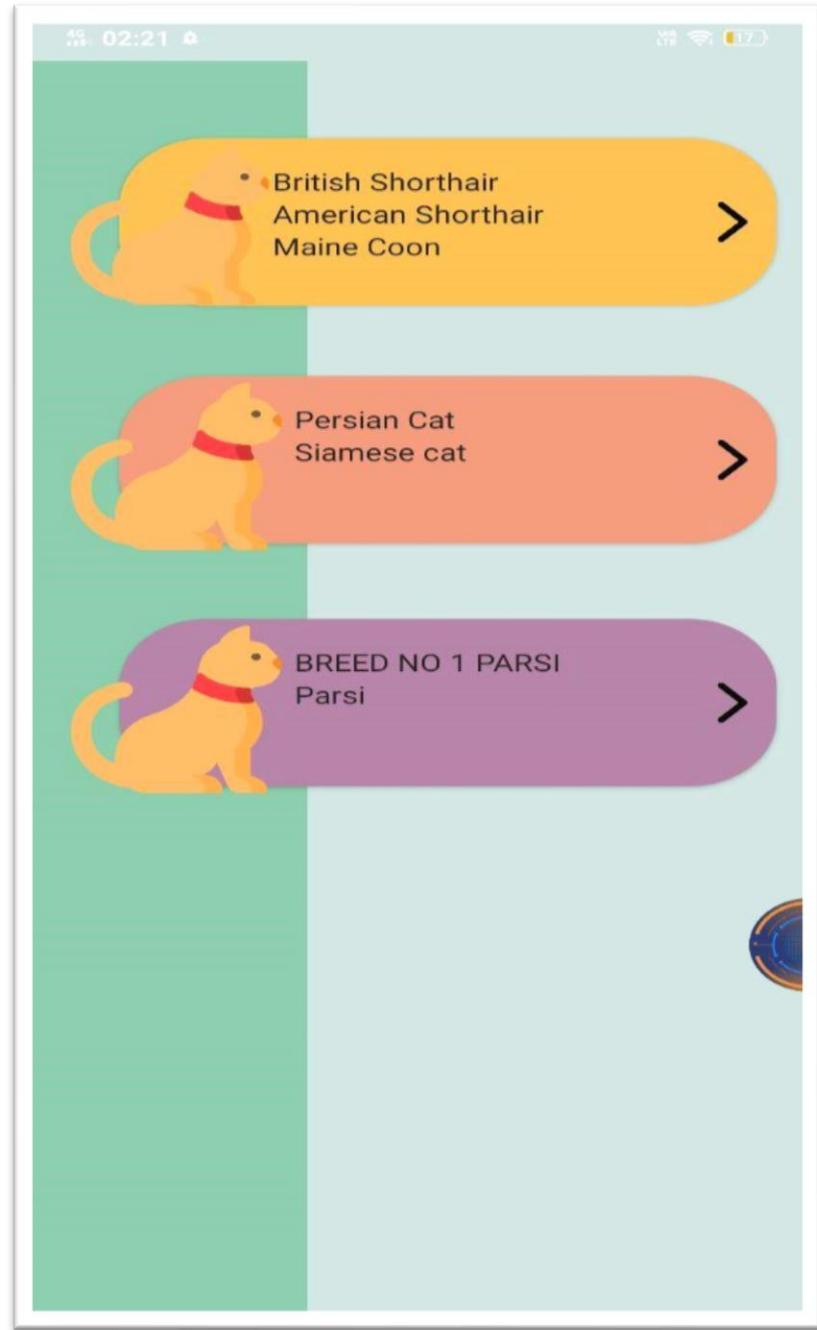


Figure 4- 51: Show list of cat breed. User can choose their specific breed. For instance, user want to know about British Shorthair, American Shorthair and Maine coon cat so user need to click on ‘>’ symbol.



Figure 4- 52: Show recommendation diet. This page will give a recommendation and suggest how much a cat should take for every meal.

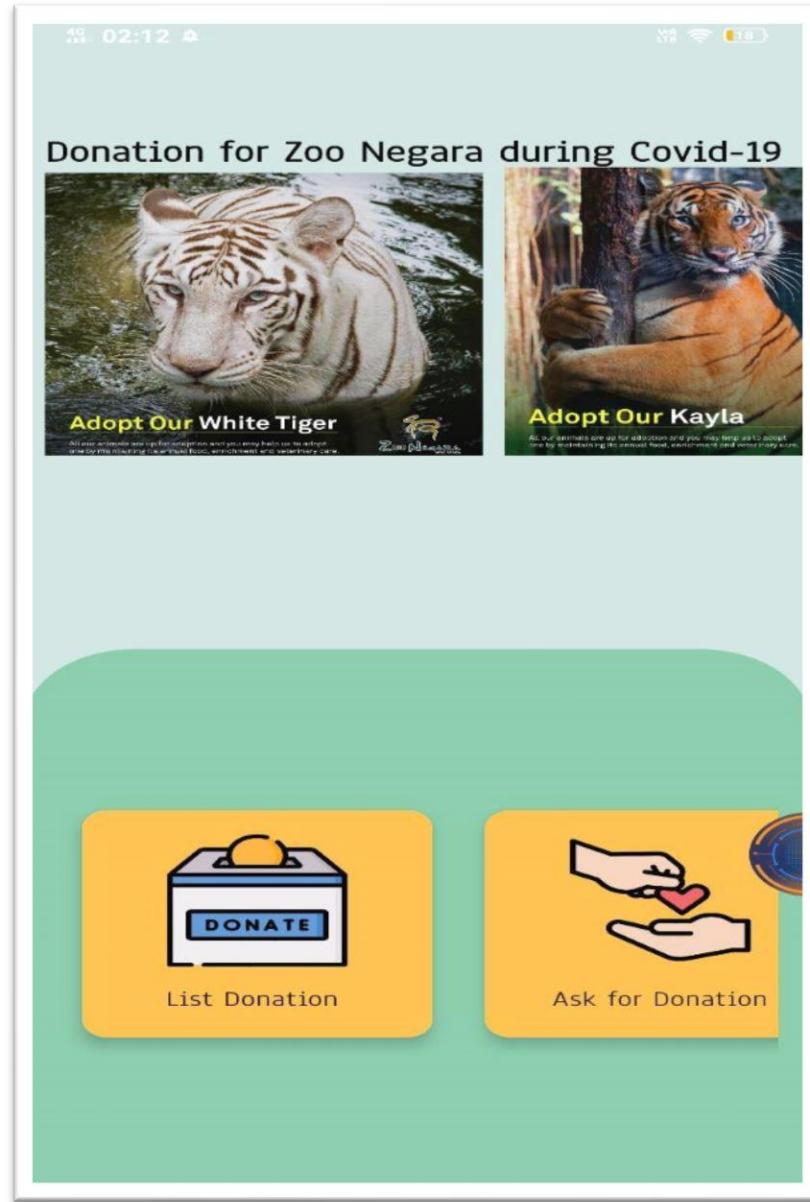


Figure 4- 53: Show donation dashboard. User can click on adopt our white tiger image and popup message will show up. At the bottom user can see list of donations and ask for donation button.

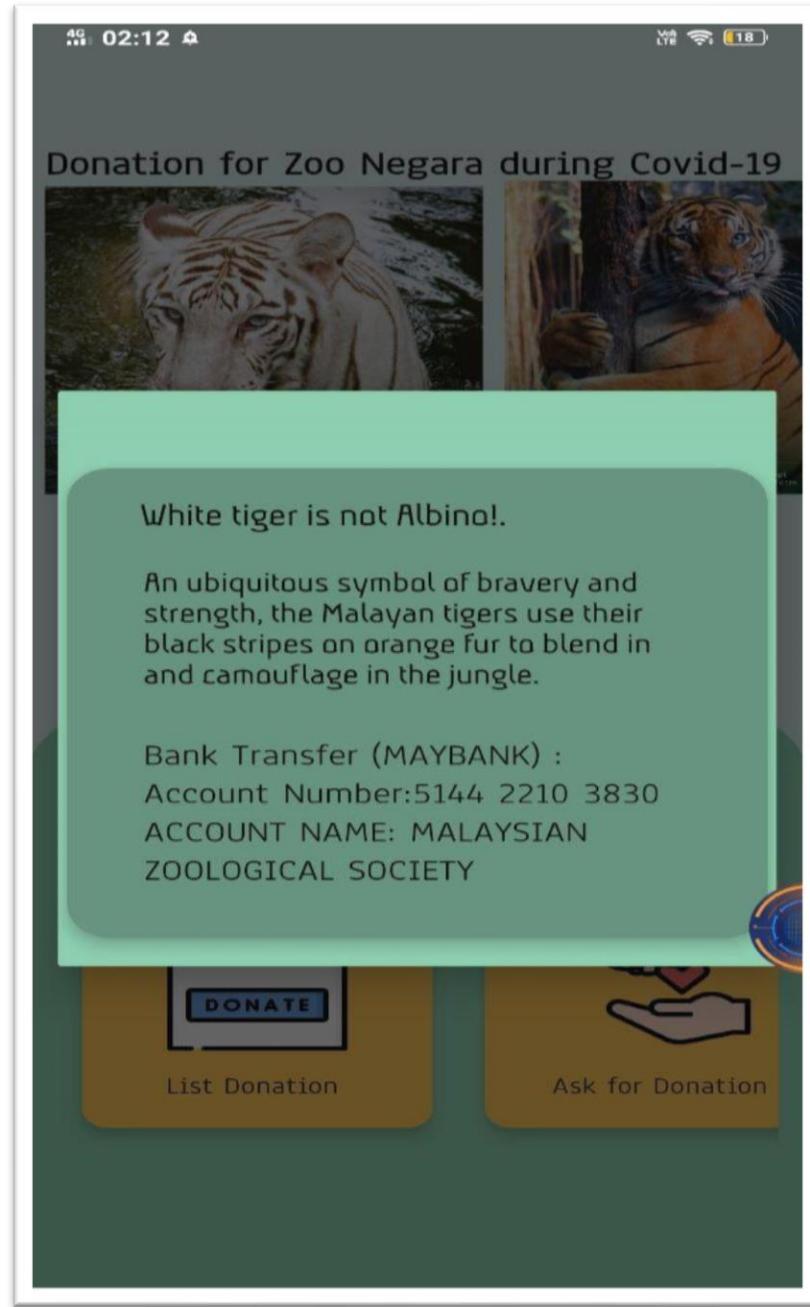


Figure 4- 54: Show popup message when user click on the image. User can see detail and need to transfer manually to the bank account.

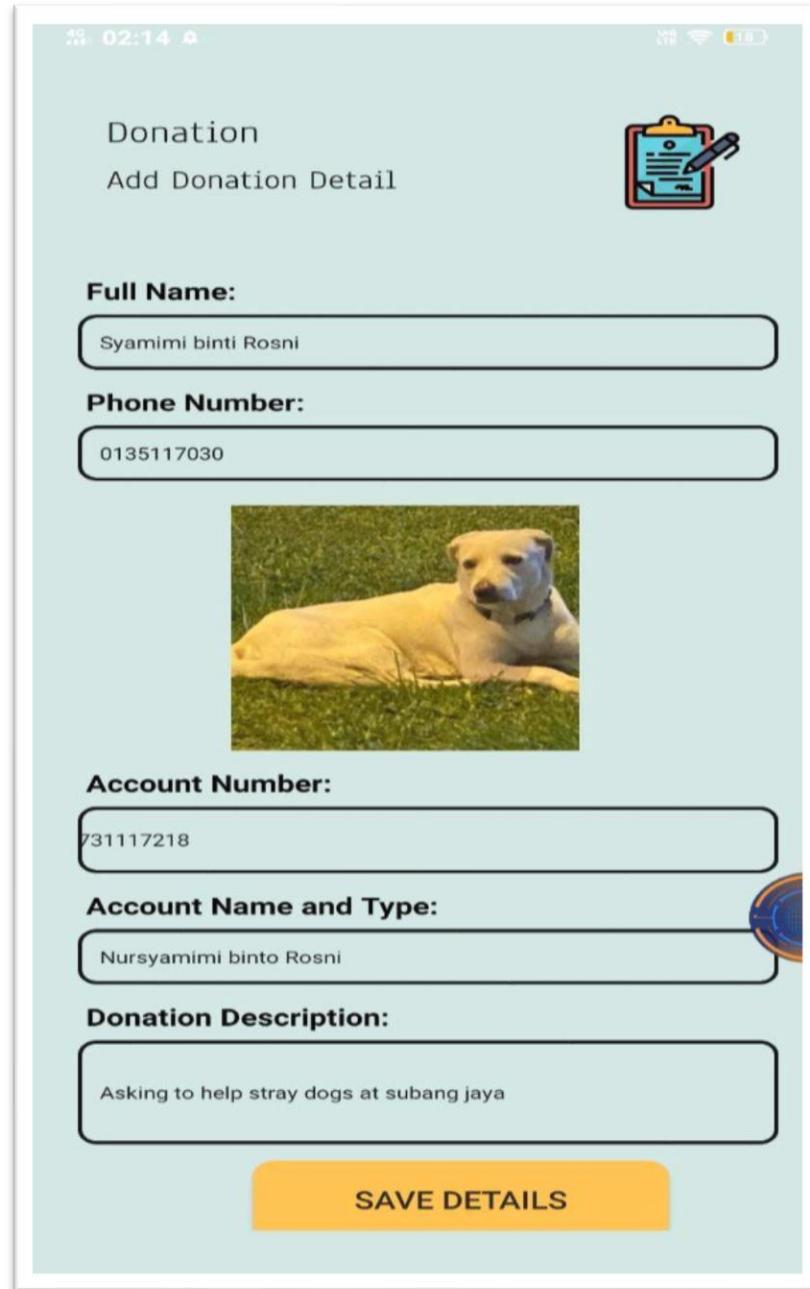


Figure 4- 55: Show ask for donation page. In this page user has to fill out the details. User need to enter their full name, phone number, account details, and description and need to click on save details button and it will automatically will be saved into the database and it will show into list of donation page.

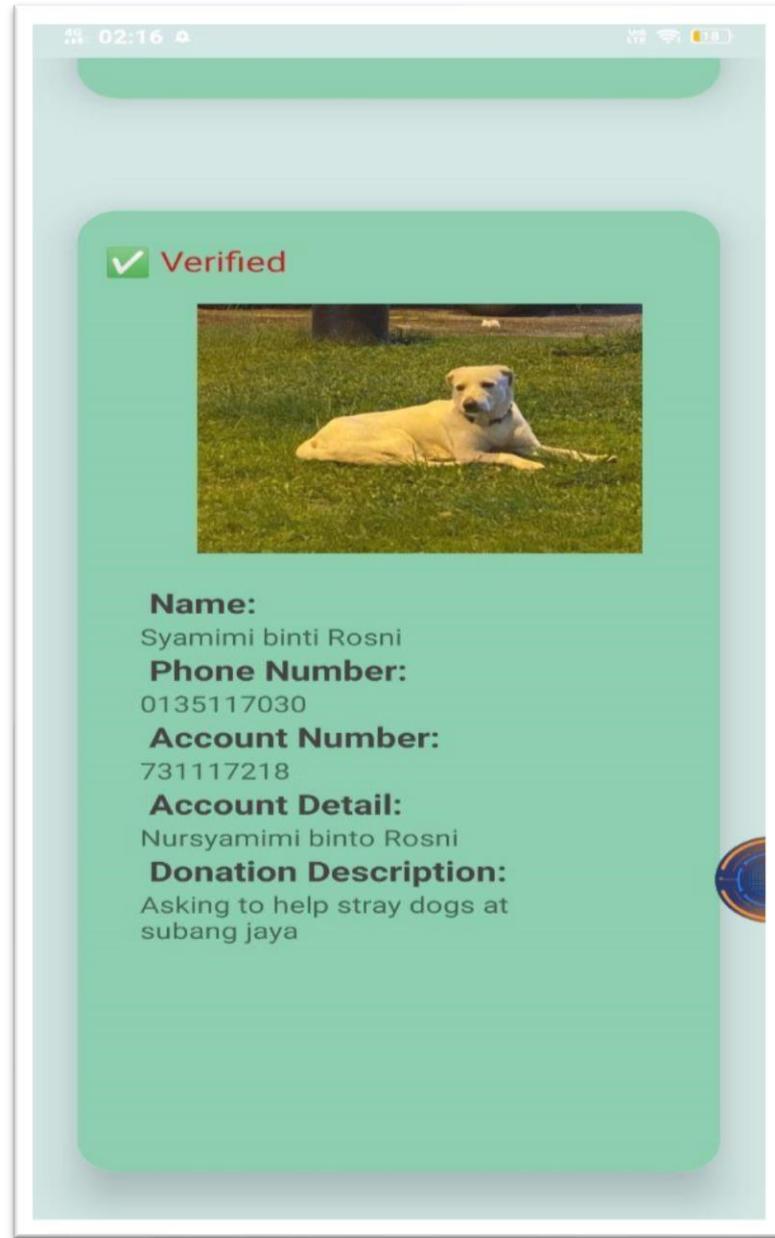


Figure 4- 56: Show list donation that already verify by admin. User need to wait for admin to verify the donation and then they can transfer it manually.

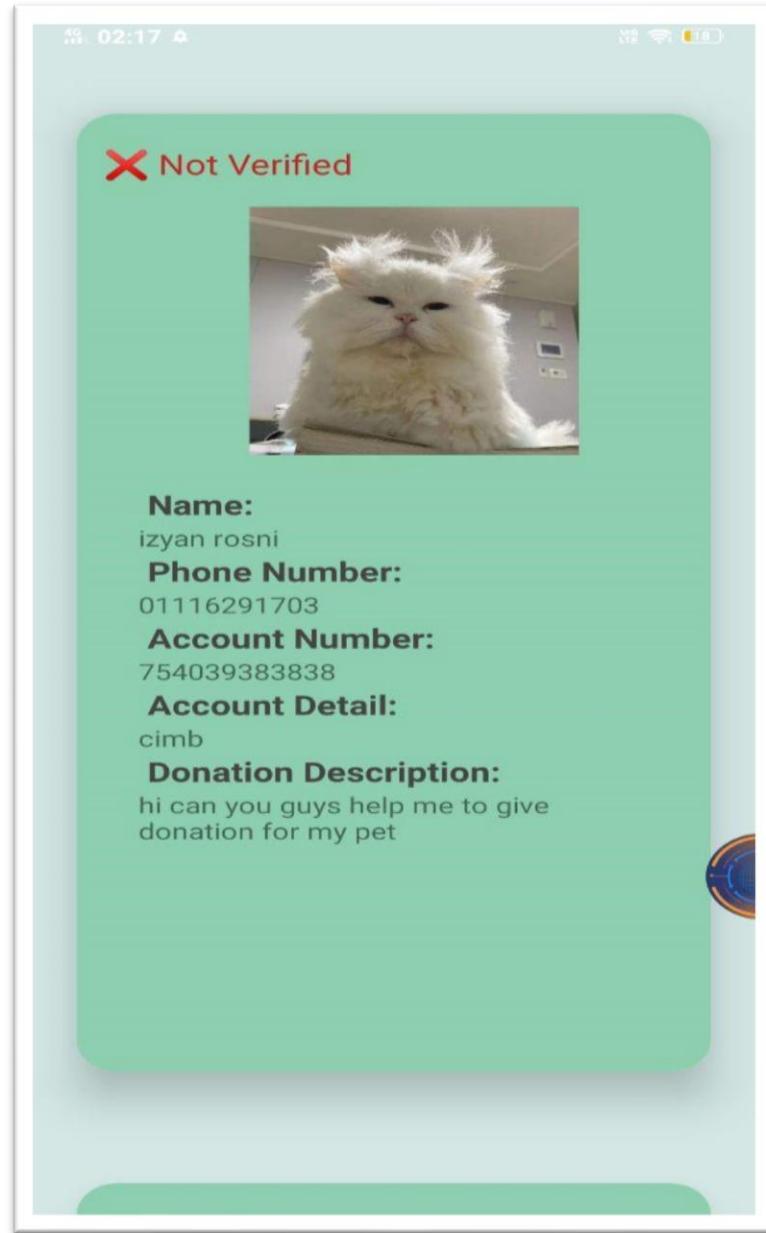


Figure 4- 57: Show list of not verified donation.

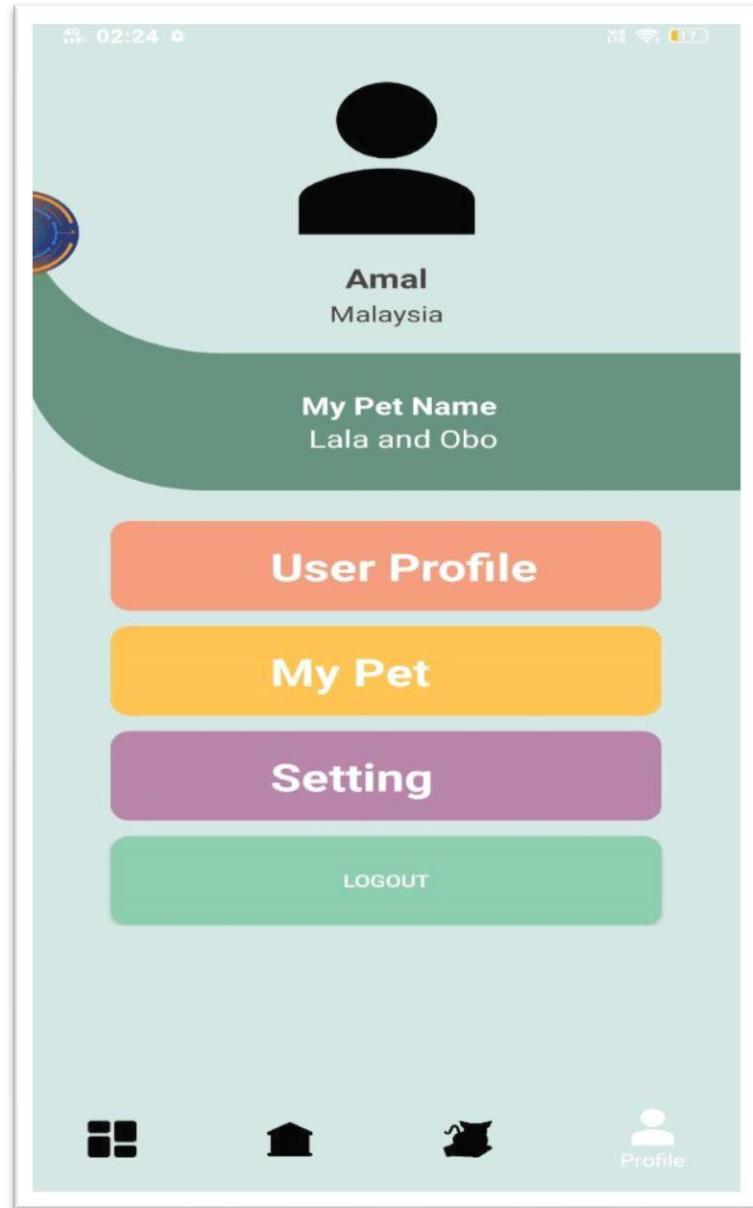


Figure 4- 58: Show profile page. In this page user can see their name that they already registered and see a few buttons which is user profile, my pet, setting and logout button.

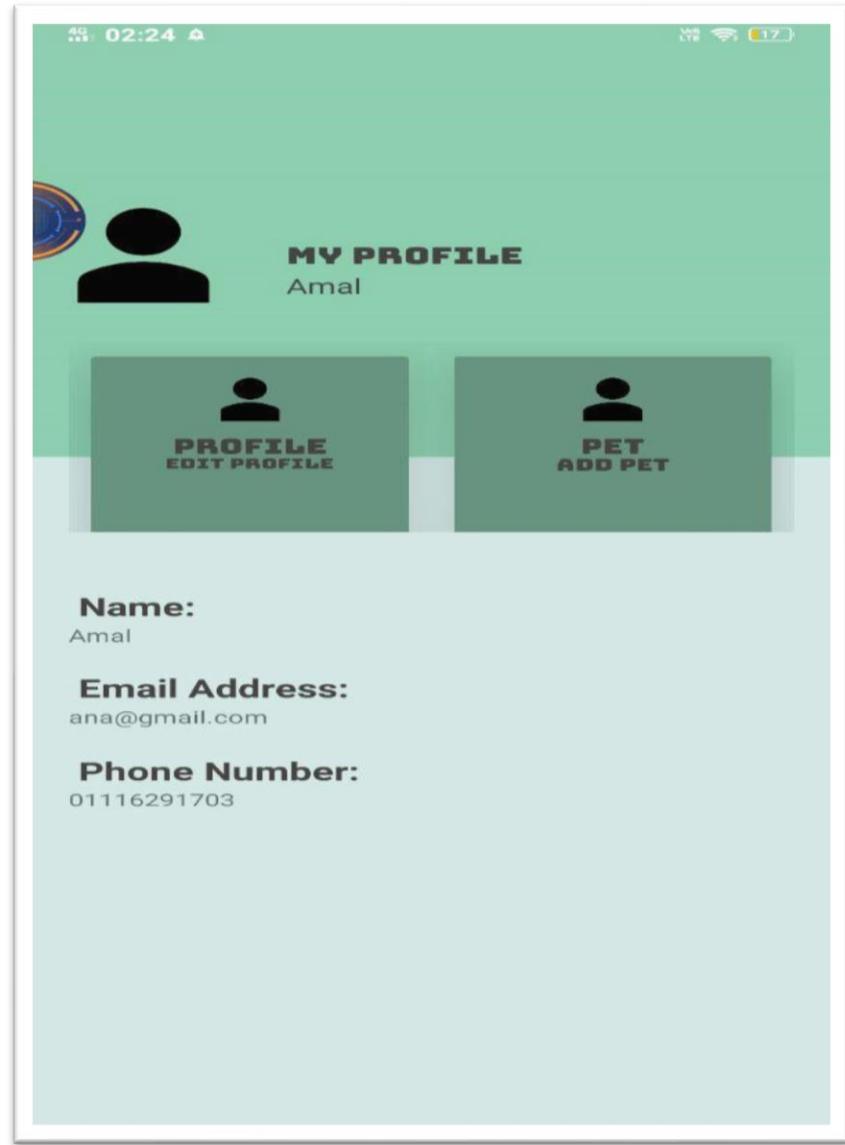


Figure 4- 59: Show user profile button. In this page user can see their name, email address, and phone number. User also can click on edit profile and add pet button.

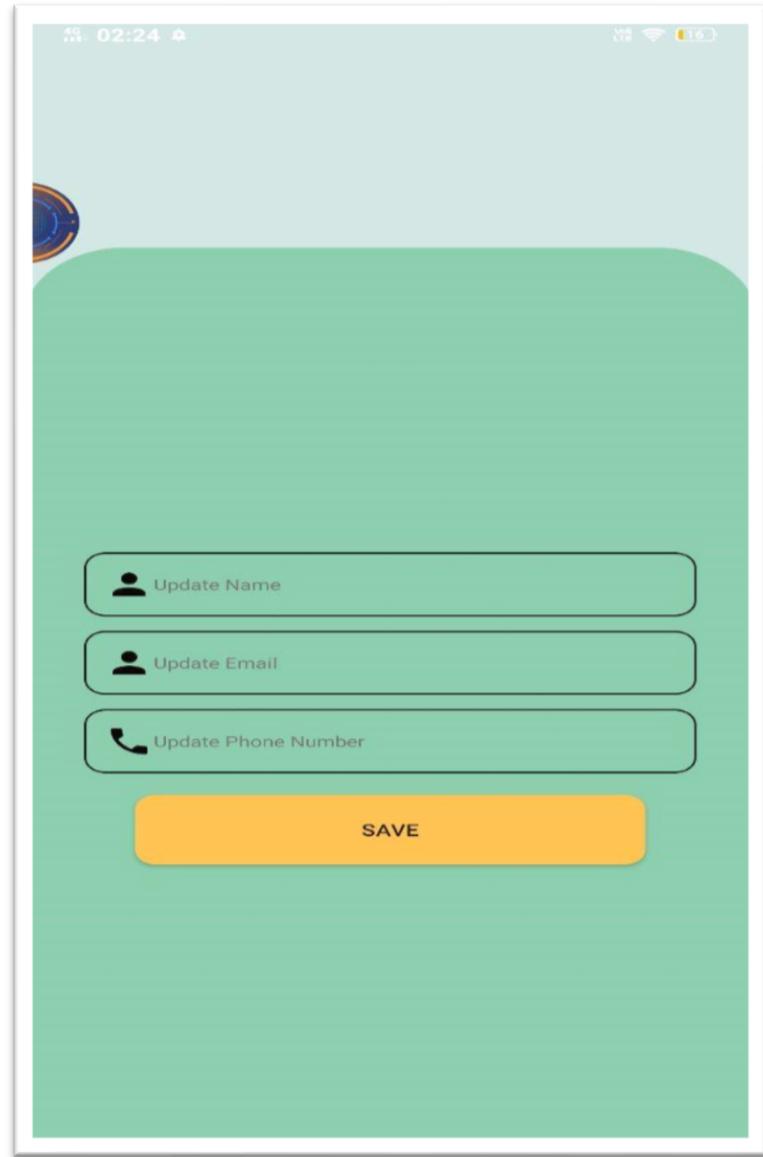


Figure 4- 60: Show edit profile. In this profile user can change back all their information and need to click on save button so it will update the data.

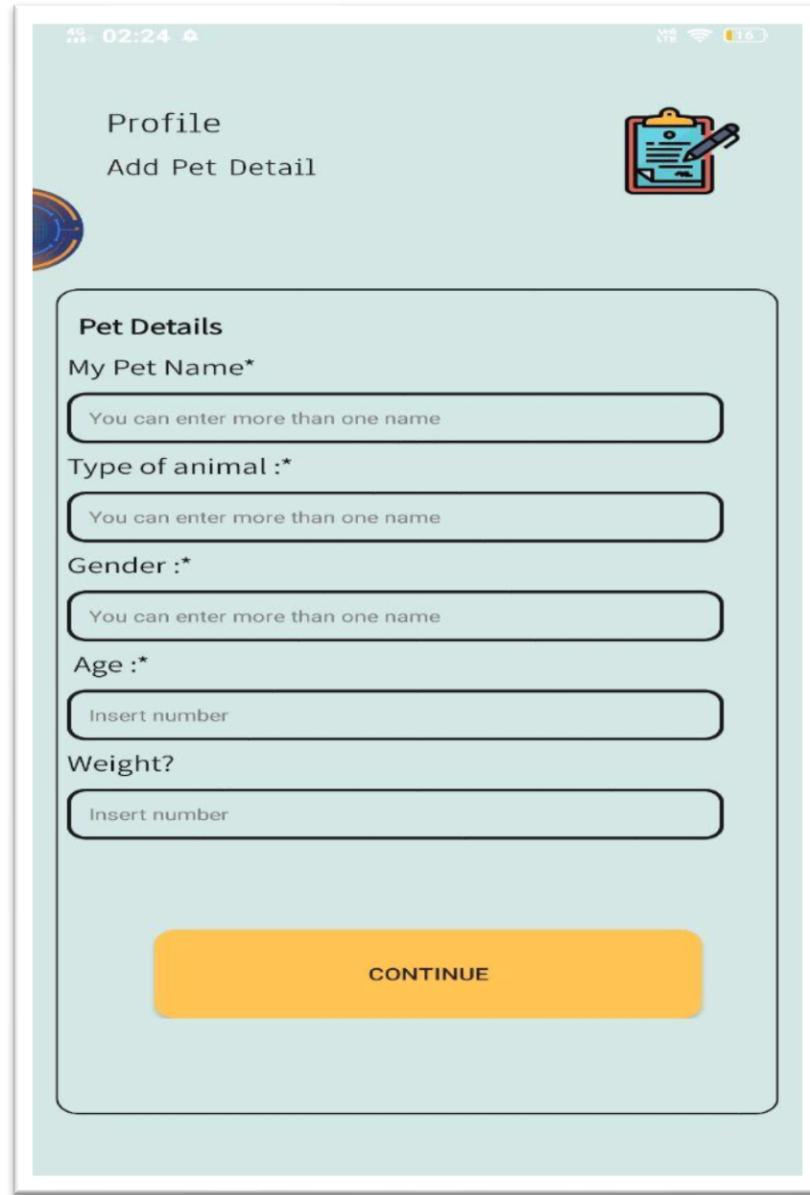


Figure 4- 61: Show add pet detail. For instance, if the user has a pet, they need to fill out their pet name, type of animal, gender, age and weight.

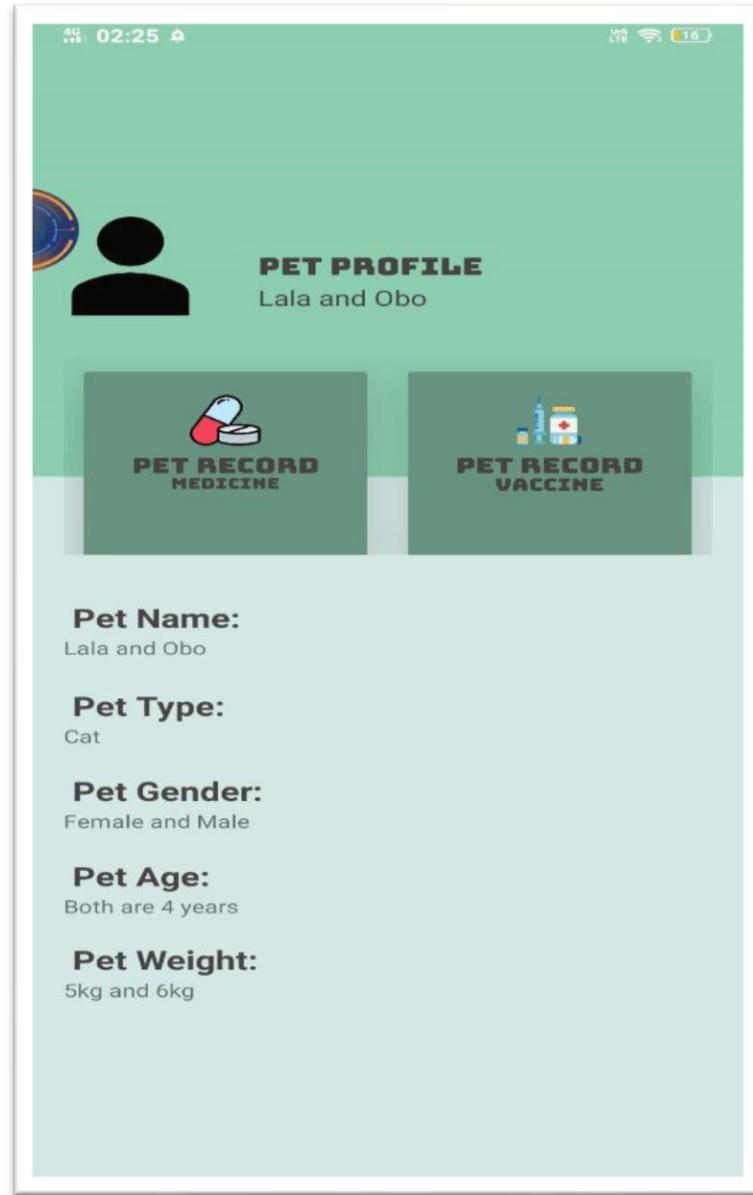


Figure 4- 62: Show my pet profile. In this page after user finish fill out the form it will went directly to this page. It will display back all the information that user fills out. In this page also user can click on medicine and vaccines record button.

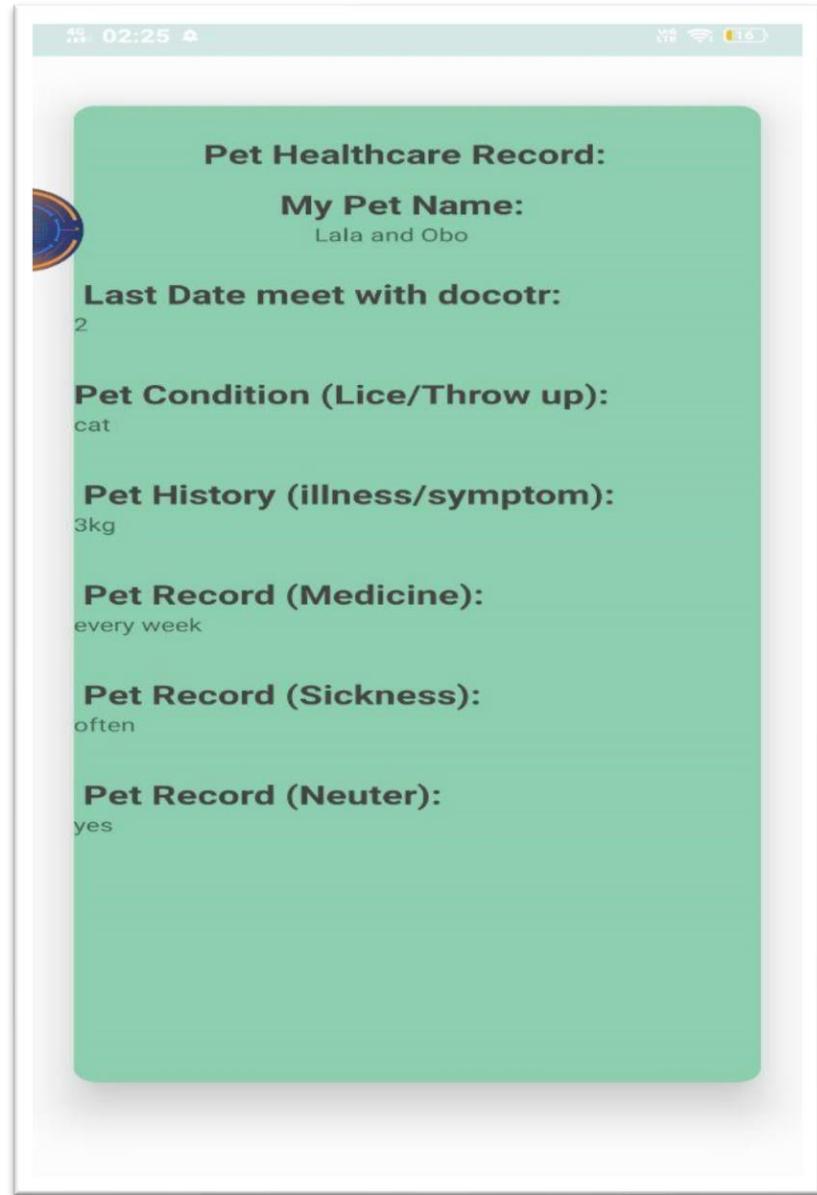


Figure 4- 63: Show pet healthcare record for medicine. Basically, this information was from medicine form. User must fill out the medicine form and they can view this page.



Figure 4- 64: Show pet healthcare record for vaccine. Basically, this information was from vaccine form. User must fill out the vaccine form and they can view this page.

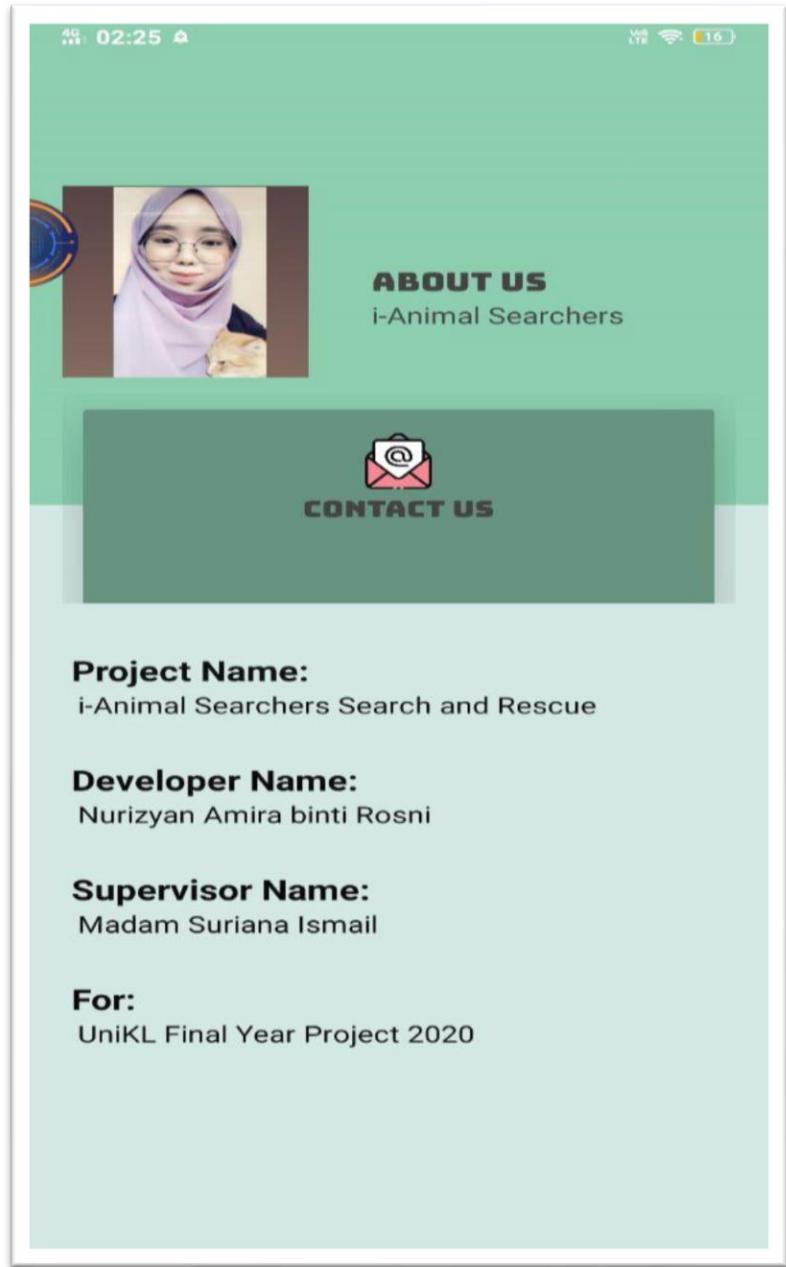


Figure 4- 65: Show about us page. In this page user can see details information about i-Animal Searchers application. User also can click on contact us button.

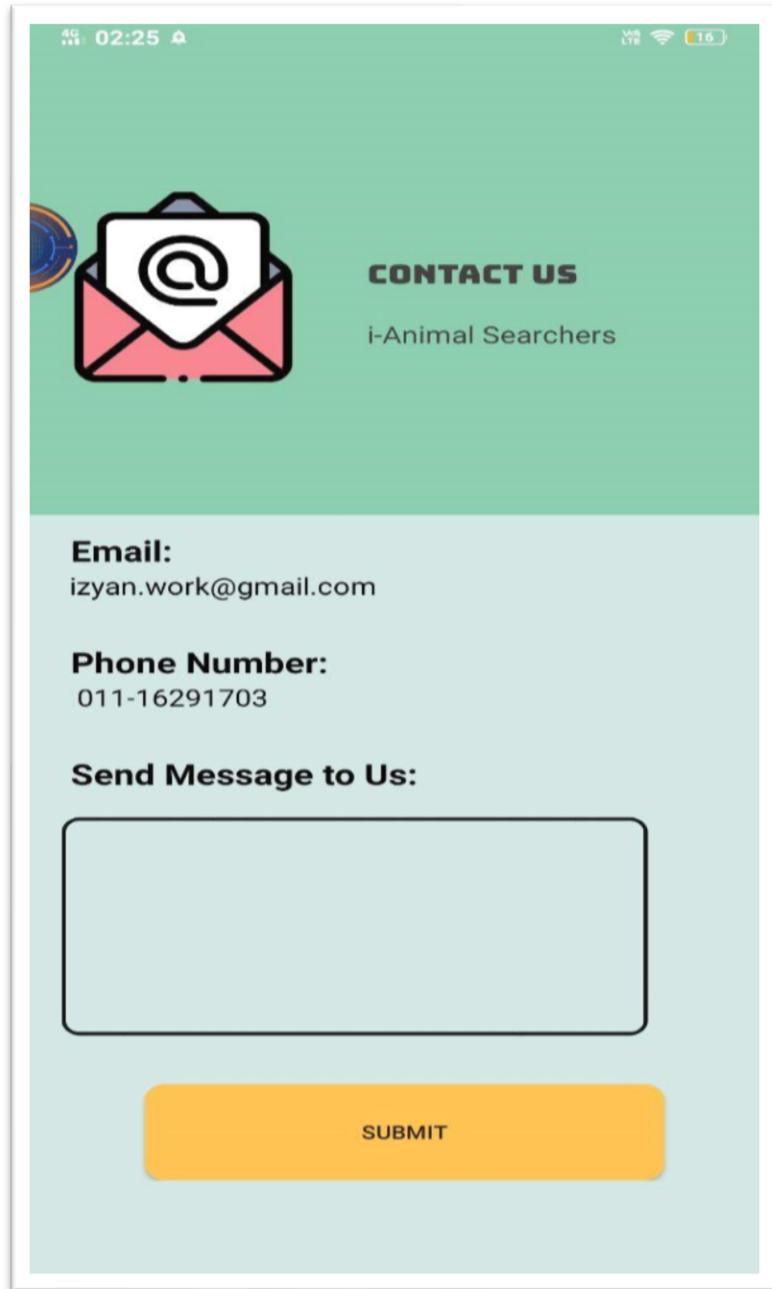


Figure 4- 66: Show contact us page. In this page user can send message to admin if they have any feedback or complaint.

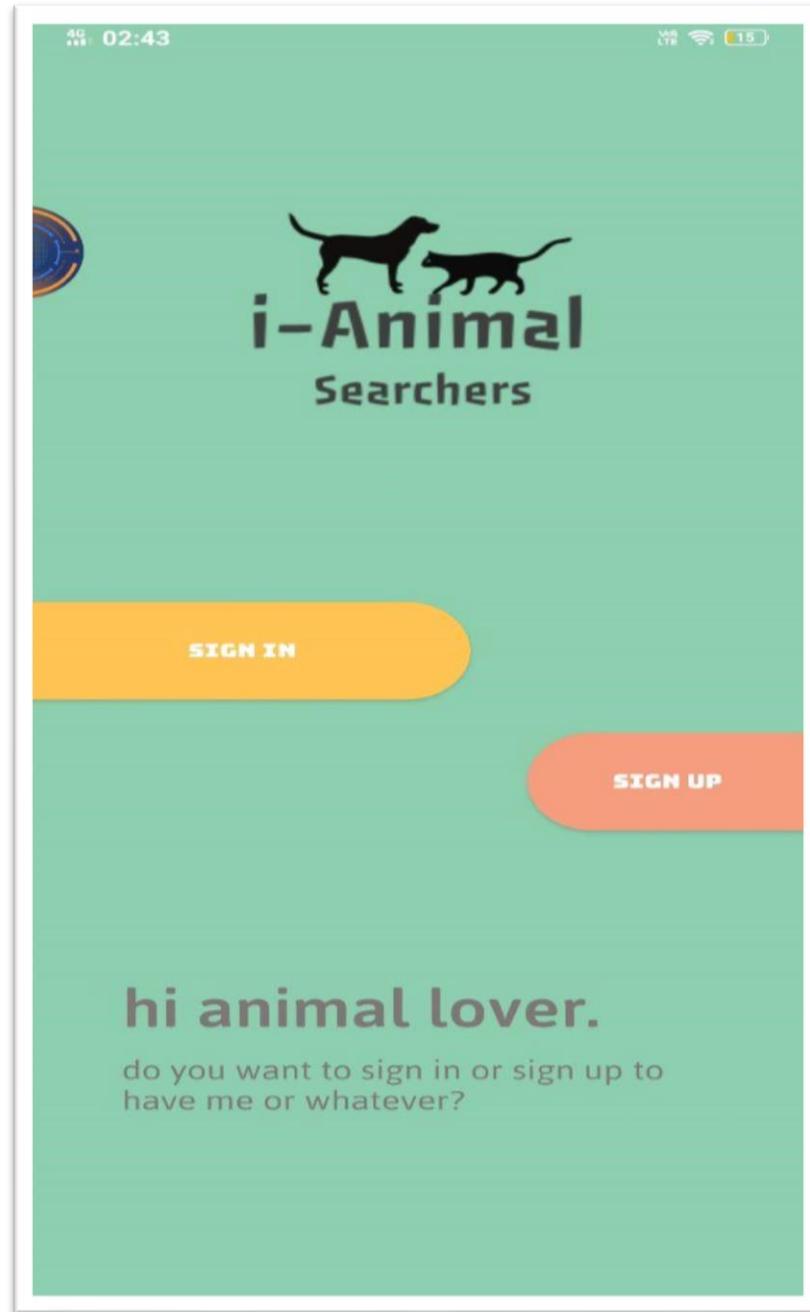


Figure 4- 67: Show start page for animal lover. If user does not have any account in animal lover side user need to register but if user already have an account, they need to sign in.

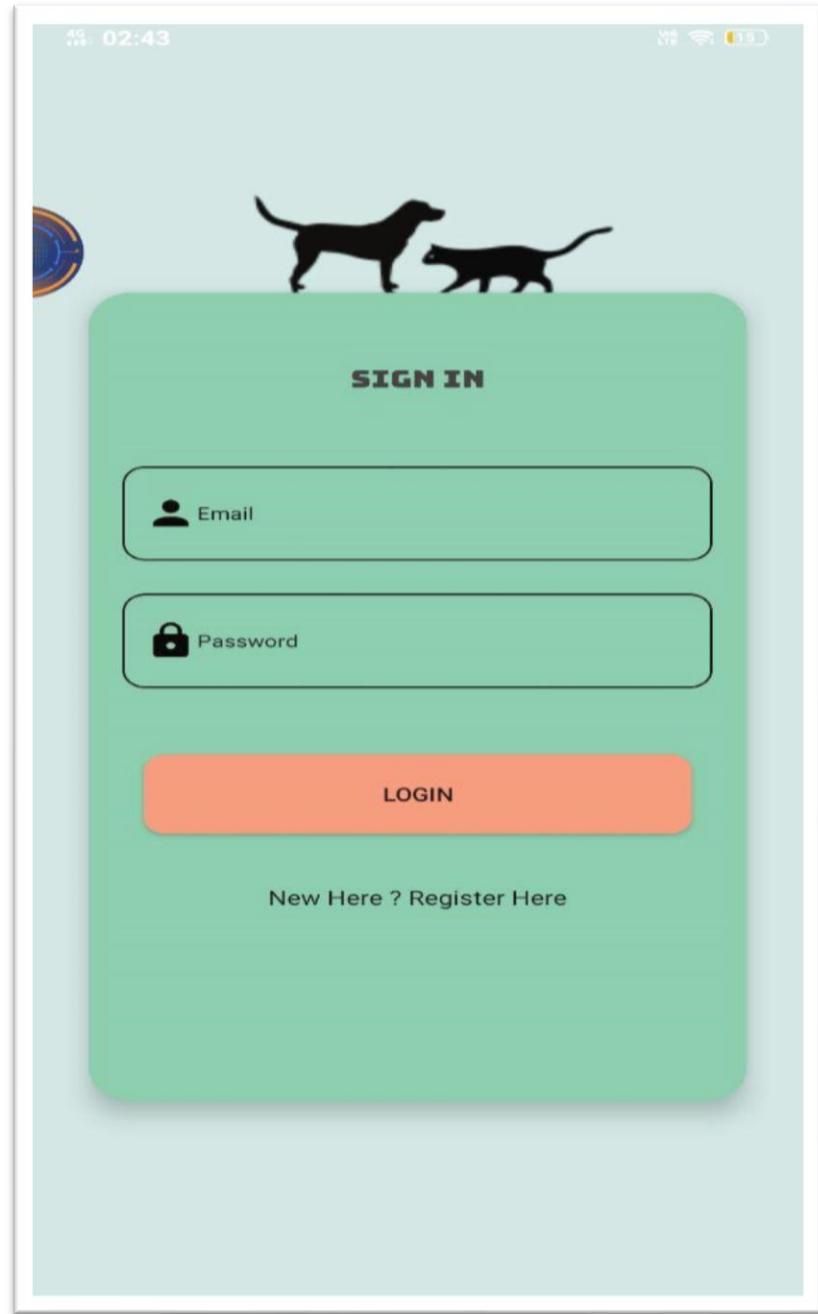


Figure 4- 68: Show sign in page for animal lover. User need enter their animal address and password and need to click on login button.

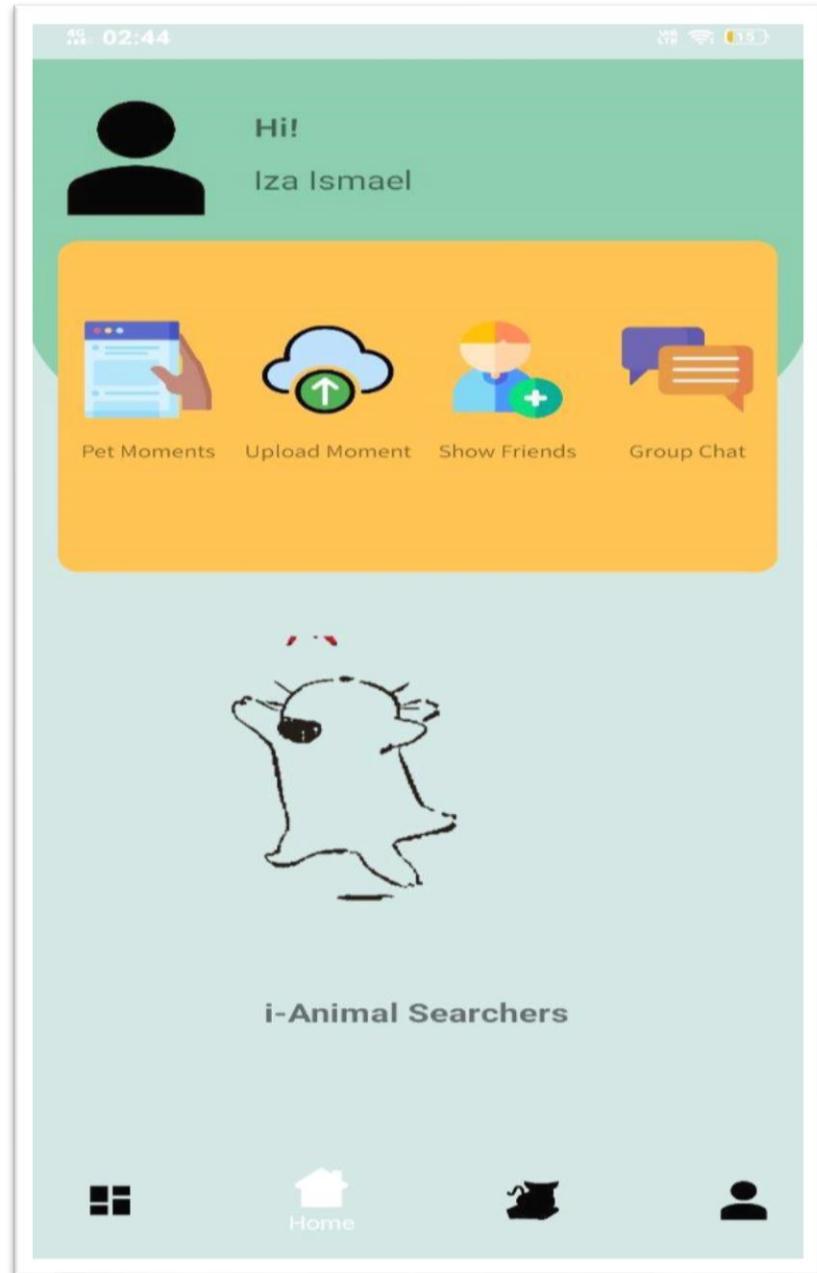


Figure 4- 69: Show home page for animal lover. Basically, user in animal lover can view the same main menu as pet owner. User also can upload moment, show friends, view pet moments and group chat and user also can see list of donations and ask for donation.

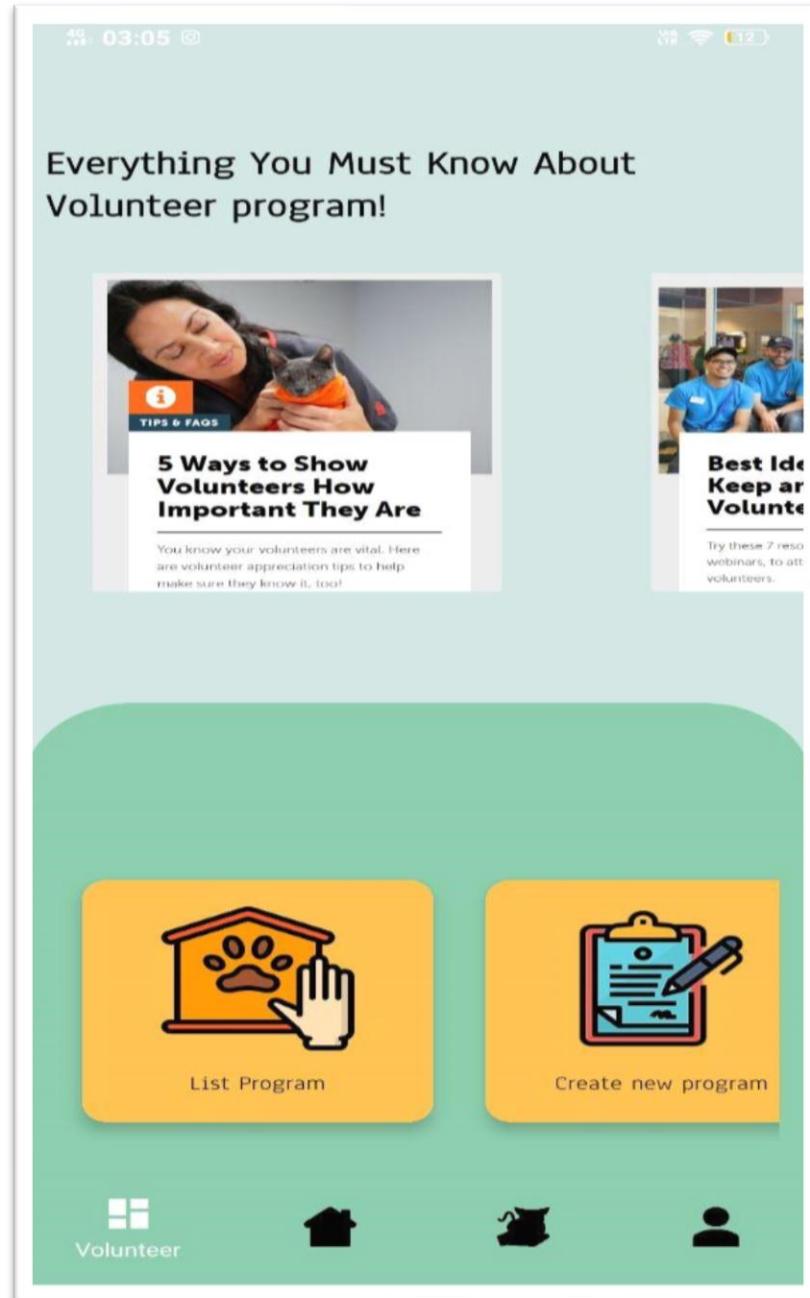


Figure 4- 70: Show volunteer page. User can see news on the top of the page and at the bottom user can click on view list program and create new volunteer program button.

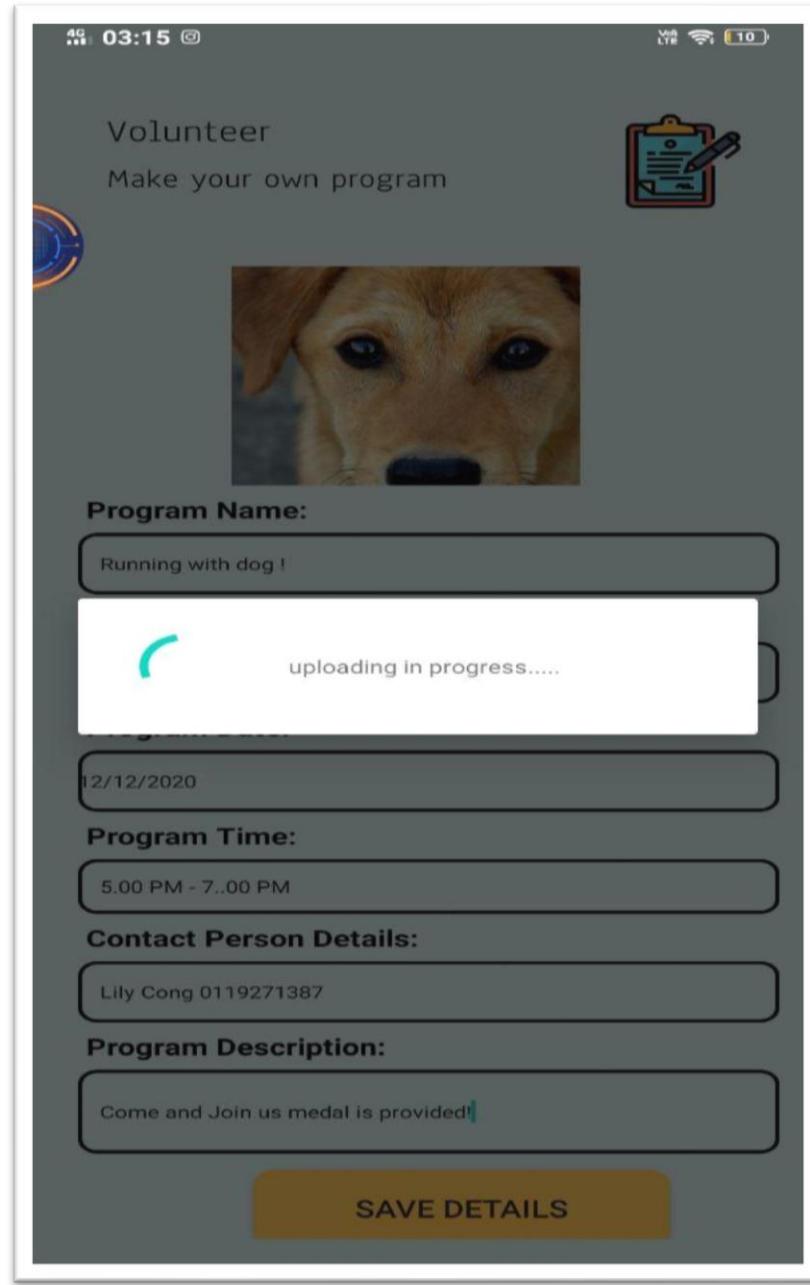


Figure 4- 71: Show make your own program. In this page user can fill out details if they wish to create new volunteer program. User need to fill program name, address, date, time, description and contact person then user need to click on save details and progress bar will show up.

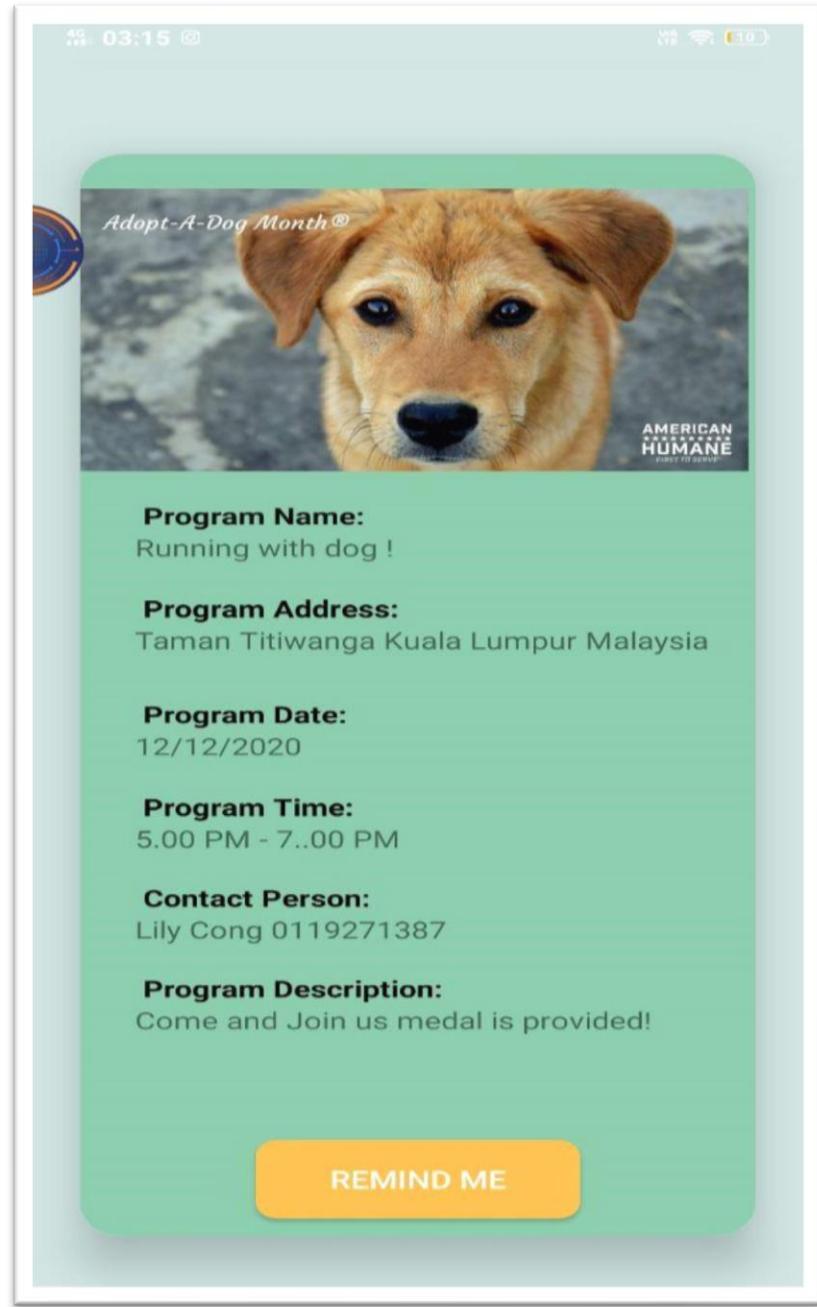


Figure 4- 72: Show list of volunteer program. In this page user can click on remind me button to remind then to join the volunteer program.

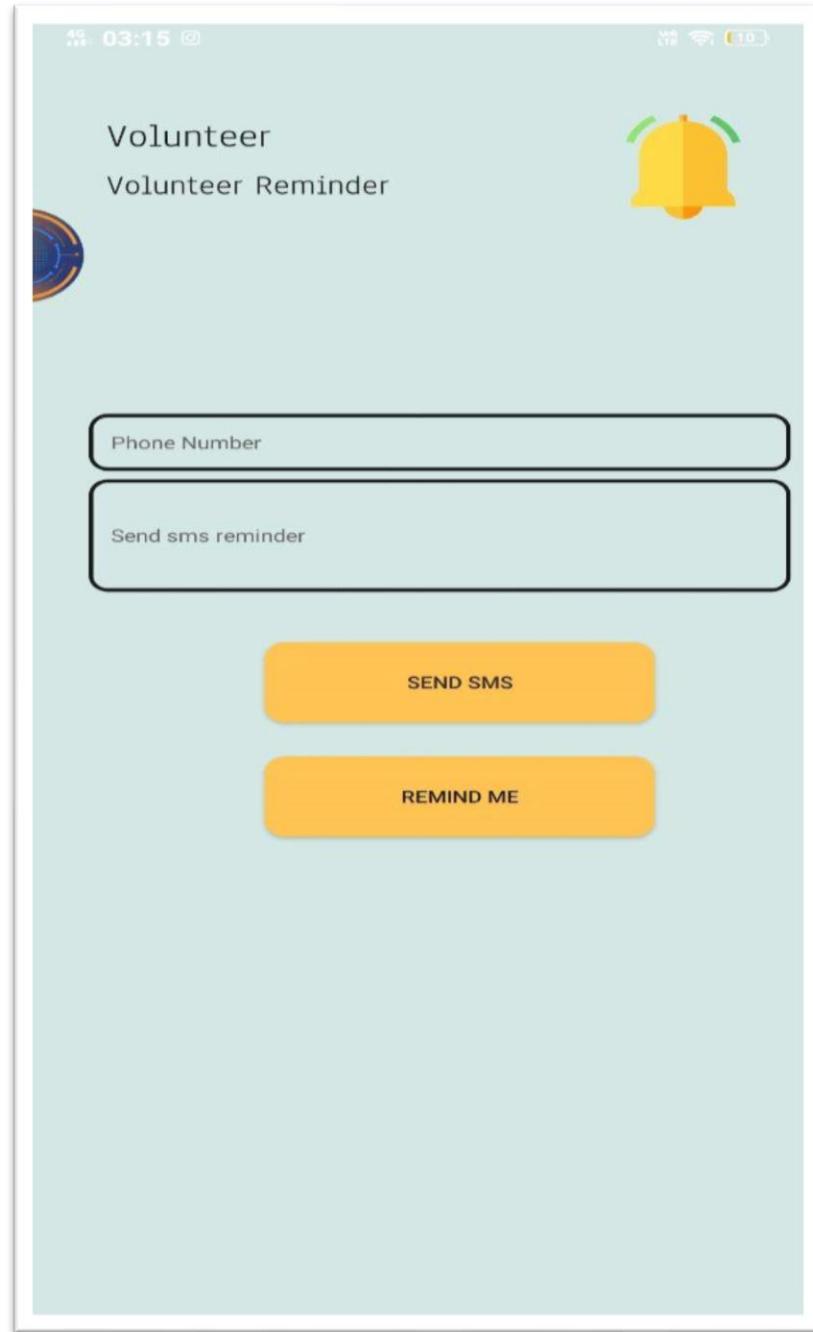


Figure 4- 73: Show volunteer reminder. User can choose to send SMS or click on remind me button.

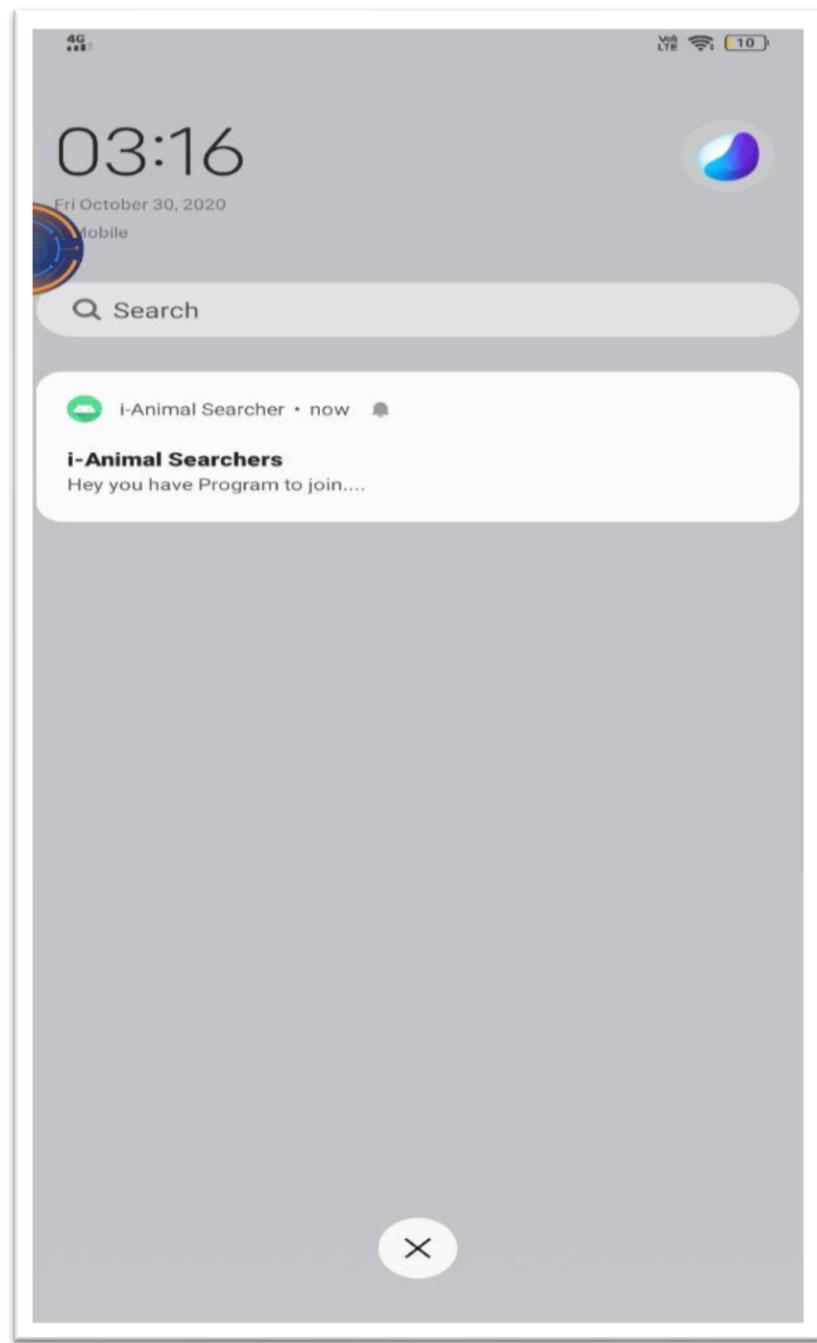


Figure 4- 74: Show notification reminder for volunteer. The notification reminder will display specific message.

4.5 Limitations

This mobile application has a few limitations and does not provide complete features to user. The limitation is this application require stable internet connection to be able to pull recent data from the server. This application only will be available on android operating system. Others than that the notification reminder also relies on stable internet to be able notify user when triggered. In this application the language will be limited to English only. I think in future enhancement this application will have GPS function where user can click on the location and GPS will directly bring them to the specific place. Other than in future enhancement I think in list of moments page user can comments and likes every post. Besides I think in future this application will have function where user can chat with veterinarian and directly make appointment with them and find the nearest animal clinic using this application.

4.6 Conclusion

In conclusion, the proposed system implementation is very important when creating a system. It will help developer understood how the system will be. Besides we can conclude that the proposed of system implementation is for helping developer to know how the system should be built and meets quality standard. In conclusion I can said that i-Animal Searchers application has been complete. The testing phase will be the next step of development, which is to evaluate the quality attributes of the application in accordance with the user's needs.

CHAPTER 5: TESTING AND RESULT

5.1 Introduction

In this chapter it will discuss more on software testing where software testing is a method to check whether the actual software product matches expected requirements and to ensure that the software product is defect free. In this chapter it also will involve any activity aimed at evaluating an attribute or capability of a system and determining that it meets required results.

In this chapter every function will be tested and the result will be recorded so it matches with the expected results. The aim is to make sure this application is free from error or defect before delivered the application to the end user. The testing is very important to make sure is application is suitable for user to use and it meet user requirements. There are a few testing methods that will be used in this system and the method used are:

5.2 Unit testing

In unit testing every level of software testing where individual units or components of software are tested. The purpose of unit testing is validating that each unit of the software performs as designed. A unit is the smallest testable part of the software. It usually has one or a few inputs and usually it will a single output.

5.3 Integration testing

In integration testing it contains two module which is bottom up and bottom down. Integration testing is done when two modules is combined. In this case when pet owner module and animal lover module are combined and tested as a group. Behavior and functionality of both modules is test after the integration. This testing is occurring after finished unit testing.

5.4 User Acceptance Testing

User acceptance testing (UAT), known as Beta application or End-User testing. We can conclude that UAT is the last phase of development process. For instance, this application will go through UAT process before final release of the application for the client, or final distribution of it.

5.4.1 White box testing

In this project white box testing will be used. White box is methodology that used program source code to design tests and test cases. White box testing is different from black box testing because we need to understand the structure of the code first. For instance, in this application tester need to observe and understand how the codes work. White box testing can be applied in unit testing and integration testing.

5.5 List of Test Cases

Test Case	Test Case Description	Pass/Fail	Priority
TC-01	Pet owner should be able to login in to the application using email and password	Pass	High
TC-02	Pet owner should be able to login in to the application using email and password	Pass	High
TC-03	Pet owner shall be able to update their profile.	Pass	High
TC-04	Pet owner shall be able to add pet details.	Pass	High
TC-05	Pet owner shall be able to send message to admin.	Pass	High

TC-06	Pet owner shall be able to choose adoption centre.	Pass	High
TC-07	Pet owner need to agree with terms and condition after choosing pet.	Pass	High
TC-08	Pet owner need to fill out three type of forms for adoption	Pass	High
TC-09	Pet owner shall be able to view adoption status.	Pass	High
TC-10	Pet owner shall be able to upload new moment	Pass	High
TC-11	Pet owner shall be able to update moment	Pass	High
TC-12	Pet owner can create new display name before join group chat.	Pass	High
TC-13	Pet owner can fill out vaccine form for their pet.	Pass	High
TC-14	Pet owner can receive notification reminder for vaccines.	Pass	High
TC-15	Pet owner can fill out medicine form for their pet.	Pass	High
TC-16	Pet owner can receive notification reminder for medicine.	Pass	High

TC-17	Pet owner can ask new donation.	Pass	High
TC-18	Animal lover shall be able to register new account before using this application	Pass	High
TC-19	Pet owner should be able to login in to the application using email and password	Pass	High
TC-20	Animal lover shall be able to update their profile.	Pass	High
TC-21	Animal lover shall be able to send message to admin.	Pass	High
TC-22	Animal lover shall be able to upload new moment.	Pass	High
TC-23	Animal lover shall be able to update moment	Pass	High
TC-24	Animal lover can create new display name before join group chat.	Pass	High
TC-25	Animal lover can ask new donation.	Pass	High
TC-26	Animal lover make new volunteer program.	Pass	High
TC-27	Animal lover can receive notification reminder to join volunteer program.	Pass	High

5.6 Test cases for Pet owner and Animal lover

Test Case	TC-01	Test Case Name	Pet owner register new account	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	5/2/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	8/2/2020	
Test Case Description	Pet owner should be able to login in to the application using email and password			
Test Data	Name, email, phone number and password.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Izyan Rosni <u>izyanR@gmail.com</u> 01116291703 123456	Pet owner shall be able to register new account. User can fill in the password using alphabet and numeric and need to enter more than 6 characters. User submit the fill in form by click on register button. New user's details will be saved in Firebase database.	Pass	
Procedural Steps				
1	Pet owner open mobile application register page.			
2	Enter name, email and phone number.			
3	Enter 6 character for password and click register button.			

Table 5-1: Pet owner register new account

Test Case	TC-02	Test Case Name	Pet owner login	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	8/2/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	10/2/2020	
Test Case Description	Pet owner should be able to login in to the application using email and password			
Test Data	Email and password			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	<u>IzyanR@gmail.co</u> m 123456	Pet owner should be able to login into the application as long as they are using email and enter 6 character for password. It will bring directed to the homepage.	Pass	
Procedural Steps				
1	Pet owner open mobile application login page.			
2	Enter email.			
3	Enter 6 character for password.			
4	Click login button.			

Table 5-2: Pet owner login

Test Case	TC-03	Test Case Name	Pet owner update user profile	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	15/2/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	18/2/2020	
Test Case Description	Pet owner shall be able to update their profile.			
Test Data	New name, email and password			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	User need to enter new email, name or phone number. Izyan Amira Rosni <u>izyanNew@gmail.com</u> 01116291704	If user want to update their name, email or phone number user need to click on edit profile button and enter new details. After enter new detail user need to click on save button. The details will be saved into database.	Pass	
Procedural Steps				
1	View profile page.			
2	Click on user profile.			
3	View profile details and click on edit profile button.			
4	Enter new details and click on save button.			

Table 5-3: Pet owner update user profile

Test Case	TC-04	Test Case Name	Add pet details	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	19/2/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	24/2/2020	
Test Case Description	Pet owner shall be able to add pet details.			
Test Data	Pet name, age, gender, weight and pet type.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Oyen 3 years Female 5kg cat	If user want to add new pet, user need to go to my profile and click on add pet button. User need to add all the details and click on continue button. All the details will be saved into the database.	Pass	
Procedural Steps				
1	Click on user profile.			
2	Click on add pet.			
3	Fill out all details and click on continue button to save.			

Table 5-4: Add pet details

Test Case	TC-05	Test Case Name	Pet owner contact us page	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	1/3/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	5/3/2020	
Test Case Description	Pet owner shall be able to send message to admin.			
Test Data	Send message			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Message: Hey good apps!	User can send any complaint or feedback to the developer. User need to click on submit button after finish typing message and data will be saved into the database.	Pass	
Procedural Steps				
1	Click on profile page			
2	Click on setting button.			
3	Click on contact us button			
4	Enter new message and click on submit button.			

Table 5-5: Pet owner contact us page

Test Case	TC-06	Test Case Name	Choose adoption centre.	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	10/3/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	15/3/2020	
Test Case Description	Pet owner shall be able to choose adoption centre.			
Test Data	Adoption centre and choose pet that available for adoption.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Choose adoption centre. Choose pet.	Pet owner shall be able to choose adoption centre and choose their pet. All pet details are available. User need to click on adopt now button if they already decide which pet they want.	Pass	
Procedural Steps				
1	Open adoption page.			
2	Choose adoption centre and click on that button.			
3	Choose available pet and read details.			
4	Click on adopt now button.			

Table 5-6: Choose adoption centre.

Test Case	TC-07	Test Case Name	Adoption terms and conditions	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	16/3/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	18/3/2020	
Test Case Description	Pet owner need to agree with terms and condition after choosing pet.			
Test Data	Terms and condition check box button.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Read terms and condition and tick agree.	After user choosing their specific pet, they need to read all terms and condition and tick agree on the check box button and user need to click on next button otherwise they can't continue to the next page.	Pass	
Procedural Steps				
1	Choose pet.			
2	Read term and conditions.			
3	Agree on term and condition.			
4	Click on next button.			

Table 5-7: Adoption terms and conditions

Test Case	TC-08	Test Case Name	Adoption form	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	18/3/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	25/3/2020	
Test Case Description	Pet owner need to fill out three type of forms for adoption			
Test Data	Fill out first form (Applicant details), fill out second form (Household details) and fill out third form (Reason to adopt).			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	<ul style="list-style-type: none"> • First form (Input name, phone number, address). • Second form (living situation and others related household questions). • Third form (reason to adopt a pet, and others related question about pets.) 	<p>User need to fill out three type of form for adoption. All the information must be correct and they need to answer all the questions without fail.</p> <p>User need to click on submit button after finish fill out the details.</p> <p>All the details will be saved in the database and adoption centre will view and read applicant details.</p>	Pass	
Procedural Steps				

1	Agree with term and conditions.
2	Fill out first form and click on next button.
3	Fill out second form and click on next button.
4	Fill out third form and click on submit button.

Table 5-8: Adoption form

Test Case	TC-09	Test Case Name	Adoption status
System	i-Animal Searchers application	Subsystem	Pet owner
Designed By	Nurizyan Amira Rosni	Designed Date	1/4/2020
Executed By	Nurizyan Amira Rosni	Execution Date	3/4/2020
Test Case Description	Pet owner shall be able to view adoption status.		
Test Data	Adoption status		
No	Input	Expected System Results Response	Pass/Fail
1.		After user finish with the adoption process user can click on adoption status button. The status will be update after 2 until 3 working days. User will be able to see all details about the adoption.	Pass
Procedural Steps			
1	Go to adoption page and click on adoption status button and view details.		

Table 5-9: Adoption status

Test Case	TC-10	Test Case Name	Pet owner upload new moment	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	5/4/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	15/4/2020	
Test Case Description	Pet owner shall be able to upload new moment			
Test Data	Moment image, title and status.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Image Cat Wanie is missing. Last seen SS13. Please contact the owner if you spot her. More details please whatapps her. #lostpetsubang #lostcatsubang	User need to go to homepage and click on upload moment button. User need to choose image from gallery and insert title and status for moment. Click on add moments button and wait for progress bar to popup. All the detail will be saved into the database. User can view list of moments after successfully upload moment.	Pass	
Procedural Steps				
1	Go to homepage and click on upload moment button.			
2	Upload image from gallery and insert title and status.			
3	Click on add moments and view list of moments.			

Table 5-10: Pet owner upload new moment

Test Case		TC-11	Test Case Name	Pet owner update moment
System		i-Animal Searchers application	Subsystem	Pet owner
Designed By		Nurizyan Amira Rosni	Designed Date	16/4/2020
Executed By		Nurizyan Amira Rosni	Execution Date	22/4/2020
Test Case Description		Pet owner shall be able to update moment		
Test Data		Moment title and status.		
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Image Cat Wanie is missing. Last seen SS13. Please contact the owner if you spot her. More details please WhatsApp her.	User need to go to homepage and click on moment button. Go to post and click on edit button and edit title and status. Click on update button to save change.	Pass	
Procedural Steps				
1	Go to homepage.			
2	Click on pet moment button.			
3	Click on update symbol.			
4	Type new status or title and click on button update.			

Table 5-11: Pet owner update moment

Test Case	TC-12	Test Case Name	Pet owner create name for group chat.	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	25/4/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	10/5/2020	
Test Case Description	Pet owner can create new display name before join group chat.			
Test Data	Display name			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Izyan	User need to click on group chat button and create new display name. User can send message to other users and received message from other users.	Pass	
Procedural Steps				
1	Go to homepage.			
2	Click on group chat button.			
3	At the profile setup create new display name. Click on save changes button.			
4	Start to send messages to other users.			

Table 5-12: Pet owner create name for group chat.

Test Case	TC-13	Test Case Name	Vaccine form	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Pet owner can create new display name before join group chat.	Designed Date	11/5/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	15/5/2020	
Test Case Description	Pet owner can fill out vaccine form for their pet.			
Test Data	Pet health, reaction to vaccines, history (bite/hurt) others pet, history (carsick), history (female cat pregnant) and habitat (indoor/outdoor).			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Yes, my cat seems healthy to me Already 3 years 20/10/2020 No, my cat does not have any negative reaction to vaccines My cat never hurt or bite anyone My cat does not have any carsick I do not have any female cat My cat is indoor cat	User need to go vaccines dashboard and click on vaccine form button and answer all the questions and click on submit button. All the questions will be saved into the database.	Pass	
Procedural Steps				
1	Go to dashboard and click on pet vaccines button.			
2	At the vaccine dashboard click on vaccine form.			
3	Fill out vaccine form and click on submit button after answer all the questions.			

Table 5-13: Vaccine form

Test Case	TC-14	Test Case Name	Notification reminder for vaccine			
System	i-Animal Searchers application	Subsystem	Pet owner			
Designed By	Nurizyan Amira Rosni	Designed Date	18/5/2020			
Executed By	Nurizyan Amira Rosni	Execution Date	19/5/2020			
Test Case Description	Pet owner can receive notification reminder for vaccines.					
Test Data	Notification reminder					
No	Input	Expected System Results Response	Pass/Fail	Comment		
1.		User need to vaccines dashboard, click on vaccine reminder button. At the reminder page user need to choose day for vaccines. For instance, they click on button Monday and wait for notification reminder to show up.	Pass	Notification reminder message will show up		
Procedural Steps						
1	Go to medicine dashboard.					
2	Click on vaccine reminder button choose day for reminder.					
3	After choose day wait for notification reminder message to show up.					

Table 5-14: Notification reminder for vaccine

Test Case	TC-15	Test Case Name	Medicine form	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	1/6/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	3/6/2020	
Test Case Description	Pet owner can fill out medicine form for their pet.			
Test Data	Last date pet meeting with doctor, pet condition, illness, supplement, pain and neuter			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	20/10/2020 My pet does have lice and often throw up Flu I give treats 2 times a week My pet often getting sick Yes, I neuter my pet	User need to go to medicine dashboard and click on medicine form button and answer all the questions and click on submit button. All the questions will be saved into the database.	Pass	
Procedural Steps				
1	Go to dashboard and click on pet medicine button.			
2	At the medicine dashboard click on medicine form.			
3	Fill out medicine form and click on submit button after answer all the questions.			

Table 5-15: Medicine form

Test Case	TC-16	Test Case Name	Notification reminder for medicine	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	5/6/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	6/6/2020	
Test Case Description	Pet owner can receive notification reminder for medicine.			
Test Data	Notification reminder			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.		User need to vaccines dashboard, click on vaccine reminder button. At the reminder page user need to choose day for vaccines. For instance, they click on button Monday and wait for notification reminder to show up.	Pass	Notification reminder message will show up.
Procedural Steps				
1	Go to medicine dashboard.			
2	Click on vaccine reminder button choose day for reminder.			
3	After choose day wait for notification reminder message to show up.			

Table 5-16: Notification reminder for medicine

Test Case	TC-17	Test Case Name	Pet owner ask new donation	
System	i-Animal Searchers application	Subsystem	Pet owner	
Designed By	Nurizyan Amira Rosni	Designed Date	10/6/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	14/6/2020	
Test Case Description	Pet owner can ask new donation.			
Test Data	Full name, phone number, donation image, account number, account details and donation description.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Izyan Rosni 0135117030 Image 7061287659 Izyan Rosni CIMB Asking to help stray dogs at Subang Jaya.	User need to go to donation dashboard click on ask new donation button. Fill out all the details and click on save details wait for progress bar to show up. Then user can view back the details at the list of donation page. All the data will be saved into database.	Pass	
Procedural Steps				
1	Go to donation dashboard.			
2	Click on ask new donation button.			
3	Fill out details and click on save changes button to save it.			

Table 5-17: Pet owner ask new donation

Test Case	TC-18	Test Case Name	Animal lover register new account	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	1/7/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	3/7/2020	
Test Case Description	Animal lover shall be able to register new account before using this application			
Test Data	Name, email, phone number and password.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Abu <u>abu@gmail.com</u> 0198272020 12345678	Animal lover shall be able to register new account. User can fill in the password using alphabet and numeric and need to enter more than 8 characters. User submit the fill in form by click on register button. New user's details will be saved in Firebase database.	Pass	
Procedural Steps				
1	Animal lover open mobile application register page.			
2	Enter name, email and phone number.			
3	Enter 8 character for password and click register button.			

Table 5-18: Animal lover register new account

Test Case	TC-19	Test Case Name	Animal lover login			
System	i-Animal Searchers application	Subsystem	Animal lover			
Designed By	Nurizyan Amira Rosni	Designed Date	5/7/2020			
Executed By	Nurizyan Amira Rosni	Execution Date	6/7/2020			
Test Case Description	Pet owner should be able to login in to the application using email and password					
Test Data	email and password					
No	Input	Expected System Results Response	Pass/Fail	Comment		
1.	<u>Abu@gmail.com</u> 12345678	Animal lover should be able to login into the application as long as they are using email and enter 8 character for password. It will bring directed to the pet owner page.	Pass			
Procedural Steps						
1	Pet owner open mobile application login page.					
2	Enter email.					
3	Enter 8 character for password.					
4	Click login button.					

Table 5-19: Animal lover login

Test Case	TC-20	Test Case Name	Animal lover update user profile	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	8/7/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	10/7/2020	
Test Case Description	Animal lover shall be able to update their profile.			
Test Data	New name, email and password			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	User need to enter new email, name or phone number. Abu bin Ali <u>abuR@gmaail.co</u> m 0198272020	If user want to update their name, email or phone number user need to click on edit profile button and enter new details. After enter new detail user need to click on save button. The details will be saved into database.	Pass	
Procedural Steps				
1	View profile page.			
2	Click on user profile.			
3	View profile details and click on edit profile button.			
4	Enter new details and click on save button.			

Table 5-20: Animal lover update user profile

Test Case	TC-21	Test Case Name	Animal lover contact us page			
System	i-Animal Searchers application	Subsystem	Animal lover			
Designed By	Nurizyan Amira Rosni	Designed Date	12/7/2020			
Executed By	Nurizyan Amira Rosni	Execution Date	15/7/2020			
Test Case Description	Animal lover shall be able to send message to admin.					
Test Data	Send message					
N o	Input	Expected System Results Response	Pass/Fail	Comment		
1.	Message: Hey I love your apps!	User can send any complaint or feedback to the developer. User need to click on submit button after finish typing message and data will be saved into the database.	Pass			
Procedural Steps						
1	Click on profile page.					
2	Click on setting button.					
3	Click on contact us button.					
4	Enter new message and click on submit button.					

Table 5-21: Animal lover contact us page

Test Case	TC-22	Test Case Name	Animal lover upload new moment			
System	i-Animal Searchers application	Subsystem	Animal lover			
Designed By	Nurizyan Amira Rosni	Designed Date	16/7/2020			
Executed By	Nurizyan Amira Rosni	Execution Date	20/7/2020			
Test Case Description	Animal lover shall be able to upload new moment.					
Test Data	Moment image, title and status.					
No	Input	Expected System Results Response	Pass/Fail	Comment		
1.	Image Dog Each year, approximately 1.5 million shelter animals are euthanized because they have no family to take them in. This #AdoptADogMonth, we call on you to be a hero for a dog in need.	User need to go to homepage and click on upload moment button. User need to choose image from gallery and insert title and status for moment. Click on add moments button and wait for progress bar to popup. All the detail will be saved into the database. User can view list of moments after successfully upload moment.	Pass			
Procedural Steps						
1	Go to homepage and click on upload moment button.					
2	Upload image from gallery and insert title and status.					
3	Click on add moments and view list of moments.					

Table 5-22: Animal lover upload new moment

Test Case	TC-23	Test Case Name	Animal lover update moment	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	21/7/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	22/7/2020	
Test Case Description	Animal lover shall be able to update moment			
Test Data	Moment title and status.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Dog Each year, approximately 1.5 million shelter animals are euthanized because they have no family to take them in.	User need to go to homepage and click on moment button. Go to post and click on update symbol button and edit title and status. Click on update button to save change.	Pass	
Procedural Steps				
1	Go to homepage.			
2	Click on pet moment button.			
3	Click on update symbol.			
4	Type new status or title and click on button update.			

Table 5-23: Animal lover update moment

Test Case	TC-24	Test Case Name	Animal lover create name for group chat.	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	25/7/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	28/7/2020	
Test Case Description	Animal lover can create new display name before join group chat.			
Test Data	Display name			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Abu	User need to click on group chat button and create new display name. User can send message to other users and received message from other users.	Pass	
Procedural Steps				
1	Go to homepage.			
2	Click on group chat button.			
3	At the profile setup create new display name. Click on save changes button.			
4	Start to send messages to other users.			

Table 5-24: Animal lover create name for group chat.

Test Case	TC-25	Test Case Name	Animal lover ask new donation	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	1/8/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	5/8/2020	
Test Case Description	Animal lover can ask new donation.			
Test Data	Full name, phone number, donation image, account number, account details and donation description.			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.	Ali 01116291703 Image 746324354343 Ali bin Abu Maybank Can you guys helps me with my sick cat.	User need to go to donation dashboard click on ask new donation button. Fill out all the details and click on save details wait for progress bar to show up. Then user can view back the details at the list of donation page. All the data will be saved into database.	Pass	
Procedural Steps				
1	Go to donation dashboard.			
2	Click on ask new donation button.			
3	Fill out details and click on save changes button to save it.			

Table 5-25: Animal lover ask new donation

Test Case	TC-26	Test Case Name	Volunteer program.	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	10/8/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	15/8/2020	
Test Case Description	Animal lover make new volunteer program.			
Test Data	Image, program name, address, date, time, contact person details and program description.			
N o	Input	Expected System Results Response	Pass/Fail	Comment
1.	Image Taman Titiwangsa, Kuala Lumpur Malaysia 12/12/2020 5.00 PM – 7.00 PM Lily Cong 0123273846 Come and join us medal provided!	User need to go to volunteer dashboard. Click on create new program button, fill out all the details. Click on save details after finish fill out form. Wait for progress bar to show up and user can view back the details after successfully upload the donation. All the data will be saved into the database.	Pass	
Procedural Steps				
1	Go to volunteer dashboard.			
2	Click on create new program button.			
3	Fill out details and click on save changes button to save it.			

Table 5-26: Volunteer program.

Test Case	TC-27	Test Case Name	Notification reminder to join volunteer	
System	i-Animal Searchers application	Subsystem	Animal lover	
Designed By	Nurizyan Amira Rosni	Designed Date	18/8/2020	
Executed By	Nurizyan Amira Rosni	Execution Date	19/8/2020	
Test Case Description	Animal lover can receive notification reminder to join volunteer program.			
Test Data	Notification reminder			
No	Input	Expected System Results Response	Pass/Fail	Comment
1.		User need to volunteer dashboard, click on list of volunteer button. View and read list volunteer and click on button remind me. After click on button remind me wait for notification reminder to show up.	Pass	Notification reminder message will show up
Procedural Steps				
1	Go to volunteer dashboard.			
2	View list of volunteer program.			
3	Click on remind me button if interested to join the program.			

Table 5-27: Notification reminder to join volunteer

5.7 Conclusion

All the test case is archived in this chapter completely and pass successfully and all the data also successfully saved into the database. In conclusion, software testing is an important part of the software development process. It is not a single activity that takes place after code implementation, but is part of each stage of lifecycle. A successful test strategy will begin with consideration during requirement specification. Testing details will be fleshed though high-level and low-level system designs and testing will be carried out by developers and separate test groups after code implementation.

As with the other activities in the software lifecycle, software testing has its own unique challenges. As software systems become more and more complex day by day, the importance of effective, well planned efforts will only increase.

CHAPTER 6: CONCLUSION AND SUGGESTIONS

6.1 Introduction

In this chapter, the content will contain the summarization of the complete system. This part will also come along with potential suggestion for the enhancement of the system for future use.

6.2 Conclusion

This chapter conclude the whole research of Mobile Based Search and Rescue: i-Animal Searchers application. The objectives to be achieved at the end of the development cycles are:

- To help animal find their rightful owner through the adoption platform.
- To integrate the application become one integrated system that can be used by the pet owner and animal lover to search and rescue animal.
- To helps pet owner to finding the best recommendations for medicines, vaccines, dietary and tips for every specific animal.
- To provide suitable platform for animal lover to give and ask for donation and to do volunteers in charity events.

I can conclude, all the objectives stated earlier has been successfully achieved by the time given within eleven months and I have done my best in developing the system. This project had meet user requirement which is the designed for user friendly so that users can view the mobile application without any difficulties.

6.3 Recommendation and suggestion

6.3.1 Comment and like

This mobile application can improve by adding comment and like function in moments. For like function is a way for user to give positive feedback or to connect with things that they care. For comment function is for when user have something to say about the post. For instance, when user want to comment about missing cat, they can go to the post can start to commenting about it.

6.3.2 Online appointment with veterinarian

Besides, in future using this application user can make online appointment with veterinarian. User can choose their specific clinic and can choose date and time of every appointment. For online appointment it is all digital process, this means that no double booking or human error can occur in this process.

6.3.3 Provide list of pet services

In future this application also will provide list of shops that provide pet services such as grooming, boarding, taxi, sitting, and training. All these services are really need by pet owner because sometimes they think it is quite hard to find all this service

References

GUENTHER, K. M. (2017). VOLUNTEERS' POWER AND RESISTANCE IN THE STRUGGLE FOR SHELTER ANIMAL SURVIVAL. *SOCIOLOGICAL FORUM*, 32(4), 770-792. DOI:10.1111/SOCF.12376

"IDC: SMARTPHONE OS MARKET SHARE", WWW.IDC.COM, 2016. [ONLINE]. AVAILABLE: <HTTP://WWW.IDC.COM/PRODSERV/SMARTPHONE-OS-MARKET-SHARE.JSP>.

ANIMALS MAKE OUR JOBS EASY. (2019). RETRIEVED FROM <HTTPS://WWW.THEODODO.COM/ABOUT>

Y., K., & W. (2015). 2015 APPLICATIONS AND INNOVATIONS IN MOBILE COMPUTING (AIMOC) [PROCEEDINGS]. 2015 APPLICATIONS AND INNOVATIONS IN MOBILE COMPUTING (AIMOC). DOI:10.1109/AIMOC.2015.7083815
FILE:///C:/USERS/IZYAN%20ROSNI/DOWNLOADS/GUEST_EDITORIAL - INNOVATIONS_IN_DESIGNING_MOBILE_.PDF

CHAPTER 1 - LITERATURE REVIEW - KARENMITCHELL.YOLASITE.COM. (N.D.). RETRIEVED JUNE 12, 2020, FROM <HTTP://KARENMITCHELL.YOLASITE.COM/RESOURCES/LITERATURE%20REVIEW%20FINAL.PDF>

TRANSITIONAL WORDS AND PHRASES. (N.D.). RETRIEVED FROM <HTTP://WRITING2.RICHMOND.EDU/WRITING/WWEB/TRANS1.HTML>

FINDING "WHAT PET IS RIGHT FOR ME", IS THE KEY TO FUN AND SUCCESSFUL PET OWNERSHIP! (1998). RETRIEVED 2020, FROM <HTTPS://ANIMAL-WORLD.COM/ENCYCLO/INFORMATION/TYPES-OF-PETS.PHP>

MAKKAR, H. P. S. (2013). ENHANCING ANIMAL WELFARE AND FARMER INCOME THROUGH STRATEGIC ANIMAL FEEDING: SOME CASE STUDIES. ROME: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS.

E. WEISS, M. SLATER AND L. LORD, "FREQUENCY OF LOST DOGS AND CATS IN THE UNITED STATES AND THE METHODS USED TO LOCATE THEM", ANIMALS, VOL. 2, NO. 4, PP. 301-315, 2012..

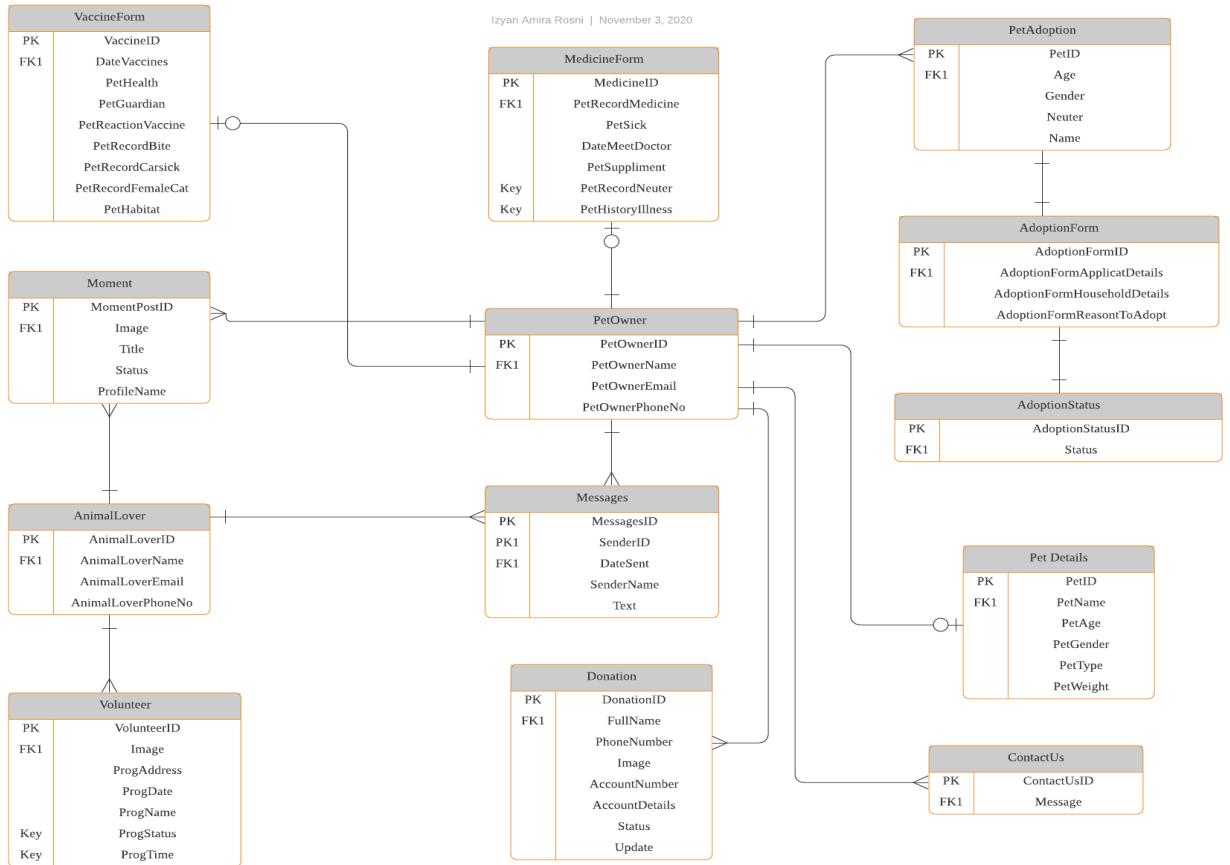
PRESSMAN, ROGER (2010). SOFTWARE ENGINEERING: A PRACTITIONER'S APPROACH. BOSTON: MCGRAW HILL

HINTON, M. H., ROWLINGS, C., & SNIJDERS, J. M. A. (1996). FACTORS AFFECTING THE MICROBIAL QUALITY OF MEAT. DISEASE STATUS, PRODUCTION METHODS AND TRANSPORTATION OF THE LIVE ANIMAL: PROCEEDINGS OF A MEETING HELD AT CONFERENTIECENTRUM KAAP DOORN, THE NETHERLANDS, 1995.

TRANMER, M. (2015). ANIMAL SOCIAL NETWORKS. ANIMAL BEHAVIOUR, 106, 121. DOI: 10.1016/J.ANBEHAV.2015.05.015

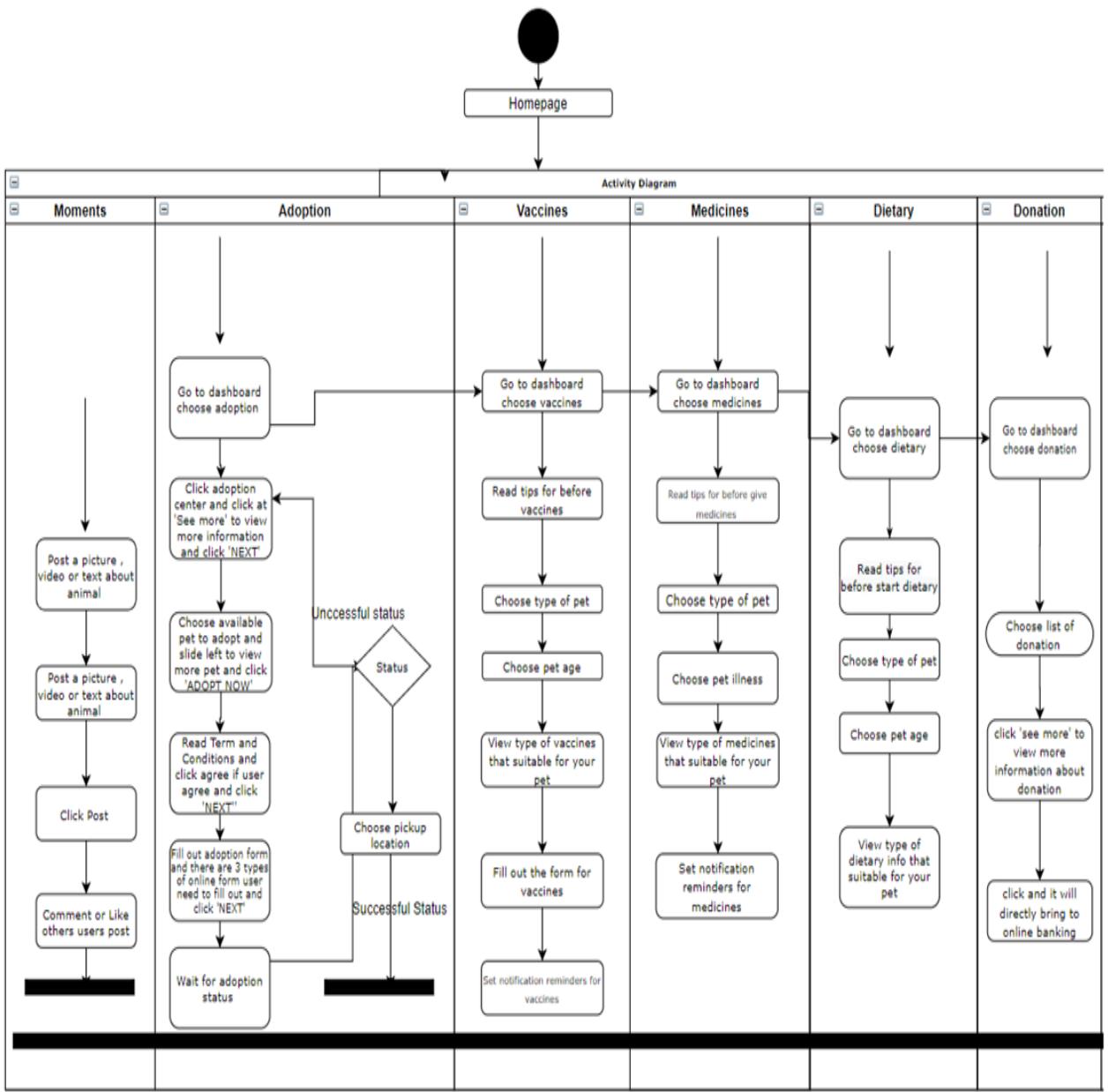
APPENDIX A

Database Structure



APPENDIX B

Activity Diagram



APPENDIX C

STORY BOARD

