THE DESIGN OF THE APPLICATION E-PET SOLUTION BASED ANDROID

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ABSTRACT

Cats are animals that are often kept at home. Caring for cats certainly requires special attention starting from food, health, and also the cat's biological needs. Now when animal owners want to marry their cats, cat owners often have difficulty finding people who also have cats that they want to mate. Then when cats show things that are not natural, cat owners who do not have acquaintance with veterinarians are confused to ask who to consult about their cats. Animal owners who often do not know whether the product for their pet cat is in a pet store near their home or does not make the animal owner have to check with the pet store whether or not they want it. The purpose of this study is to help cat owners make it easier to meet the needs of their pet cat. By utilizing the technology that is already available on an Android smartphone, the Global Positioning System (GPS) and the second web service technology, it can be used to get a position and store data using an Android smartphone device. After testing with the black box method and conducting a questionnaire, the conclusions obtained are the need for an application that can find a cat owner whose cat wants to be mated, an application that can facilitate cat owners to consult with veterinarians, as well as applications that can facilitate cat owners in finding products the needs of her pet cat without having to come to the pet store.

Index Term: Cats, Smarthphone, Global Positioning System (GPS), Android.

1. INTRODUCTION

1.1 Background

Nowadays many people keep cats as a pet at home. Many people are aware that keeping the cats can be used as a way to reduce nervous tension or stress. By looking at the doings and tingkahnya, people will feel happy and satisfied. The love of a person on the animals brought more peaceful inner atmosphere.

Based on the results of an online questionnaire conducted on 16 september 2018 gained 47 known respondents, there were 80.9% of people have cats, it can be concluded from these data that many who love cats as pets. Interested in making pet pet owners should pay attention to the needs of pet animals ranging from feeding, health, animal behaviour and also the peliharaanya.

Yet the existence of a media-specific information to conduct a search of existing pet shop locations around the US, who also can simultaneously see what stuff is in store and in accordance with their needs. This can be traced to the 47 respondents that 72.3% difficulty locating the nearest pet shop that provides information that dipetshop stuff. From these data known to the owners of pets is still the difficulty of knowing whether the desired item there at where and how much they cost but with the nearest distance from the position of the owner of the animal.

Caring for animals is not only a grant of food and drinks but also to be aware of health and affection [1]. By doing an online questionnaire against the deployment of 47 respondents, there is the fact that 80.9% difficulty to consult a veterinarian because no vet contacts. Flurry also became factors that make pet owners do not have to go to the vet. Pet health is the most important thing for every pet owner, even for pet owners that its economy is high, the granting of vitamins, vaccines, and health checks are routinely done in order for animals his favorite remains healthy.

Other problems encountered from the 78.7% of respondents 47 people still confusion when her cat like to dipacak (mated). When cats want to mate, there is a change in behavior to animals cats, some of his behaviour disruptive enough pet owners, one of whom frequently meows at night day and waste water. In addition, the owners of the animals like to pet animals in kawinkan with that one race so that pet animals have the same lineage and funny. But the difficulty of finding other pet owners who also have animals who are want to mated is a problem often encountered the owner of the animal.

Current mobile applications has been widely used over the more easy it is to get smart phone devices [2]. Android provides an open platform for developers to mrnciptakan their own applications for use by various mobile device [3]. There are some technologies that can help build media namely by using GPS and LBS. in this study, GPS technology was later integrated into the mobile device-based Android operating system [4].

Based on the above problem can be inferred that the pet owners need applications that can search the nearest pet shop location, find fellow pet owners who wish to hewannya on the upside and also applications that facilitate the pet owners consult with veterinarians.

1.2 Android

According to Fachrul K & Gianto W in his book titled "quick Programming Menguasi Android" Android, that is one of the operating systems which at first, then develop into a much sought after programming language and is used by the programmer. Basically android is a linux-based operating system. Android user on awalna is only used to complete operating system on mobile gadgets-gadgets such as Smartphones that use the touch screen. But because of the open source system developed, inevitably the development and acceptance of the world IT industry become faster as well [5].

1.3 Firebase

Firebase Cloud Messaging (FCM) is a cross-platform messaging solution that allows you to send messages and notifications with the trusty no cost. For use cases such as instant messaging, the message payload can transfer up to 4 KB to the client application. Implementation of FCM include server applications in the environment of users who interact with the FCM through HTTP protocol or XMPP, and the client application. In addition, the FCM include console Notifications, which you can use to send notifications to the client application.

To be able to implement the layananan Push Notification required cloud server, one of the usual cloud server used is Firebase [7]. Firebase Notifications made on Firebase Cloud Messaging and have the same SDK FCM for client development. For tryout or send marketing messages or engagement with targeting innate and powerful analytical, user can use the Notifications.

1.4 Goal and Purpose

Based on the issues examined, then the point of writing this final project is building an app e-pet mobile platform solution, utilizing GPS technology, LBS, and FCM, while the goals achieved in this research are:

1. Make it easy for pet owners looking for the location of the nearest pet shop presence that provides what it wants pet owners.
2. Make it easy for pet owners to consult a veterinarian.
3. Make it easy for pet owners looking for other pet owners who want to hewannya on the upside.

1.5 Reasearch Methodology

Research phase consisted of two stages, namely the stage of data collection and application development [8]. The following research methodology such as picture 1.

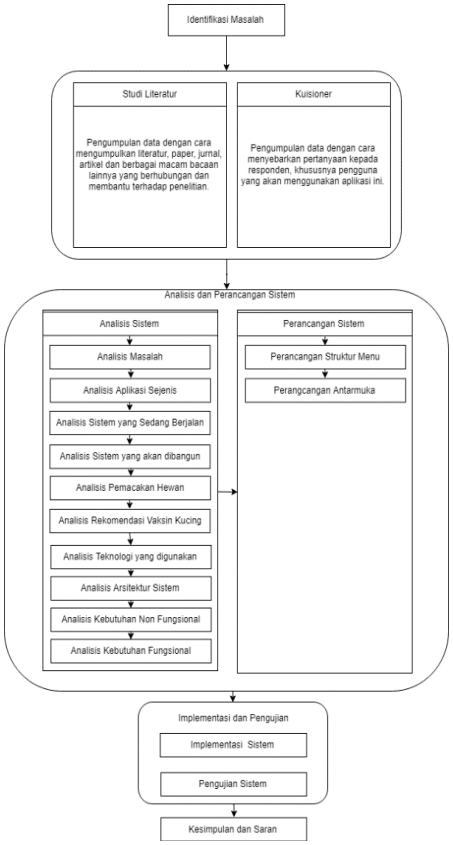


Figure 1. Stages of Research

1.6 A Method of Software Development

Software engineering methods used researchers is the method waterfall [9].

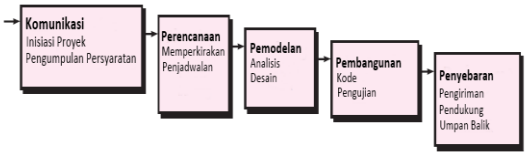


Figure 2. *Waterfall Model*

2. Results and Discussion

2.1 Analysis of System Architecture

The system will be built, namely the application of e-pet solution-based android. System architecture to be built can be seen in Figure 3.

Figure 3. System Architecture

2.2 Analysis of The Problem

Based on review of system analysis that has been done by doing an evaluation of the application to be built. Some of the problems that are the result of the analysis conducted as background in the development of a system that was built. The following problems from the results of the analysis are performed:

1. How to build an application to search for veterinarian or pet shop closest to you based on the needs of pet owners.
2. How to build an application to ease pet owners to consult a veterinarian.
3. how to build applications that can search for fellow pet owners who wish to hewannya on the upside (mated).

2.3 Analysis of The Procedures That Will Be Built

Procedures that will be built is the order of the proper activities of stages that describe the process of what will be done, who will be working on the process, and how these processes can be carried out. Analysis of the system to be built is can be seen in Figure 4.

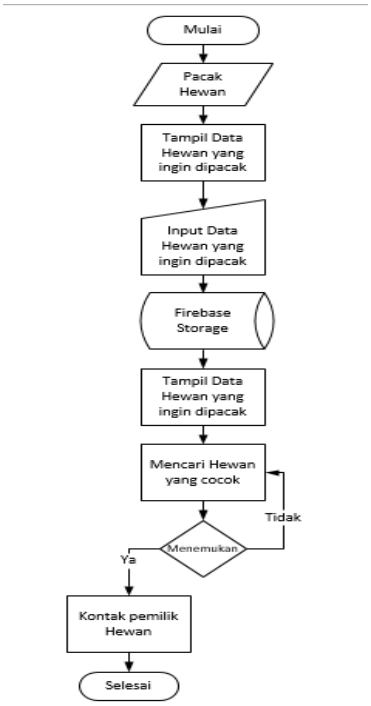


Figure 4. The analysis procedure that is built

2.4 Analysis of The Technology Used

Analysis of technology aims to find out what technology will be used in a system that was built. As for the technology used on the system are built include:

1. GPS

GPS technology on Android Smartphone will be used to find out the location of the user. The way it works on the application are as follows:

a. the user enable existing GPS in Android Smartphone.
b. Then application will be otomatismenangkap the location of the user.

2. The Firebase Realtime database

Firebase Realtime Database NoSQL databases are hosted in the cloud and can be used to store and synchronize data between users in real-time. The way it works on the application are as follows:

a. pet owners send chat to a doctor through the application.
b. Firebase realtime database will provide a response and the application will apply chat data mensinkron doctor, neither the opposite.

2.5 Analysis of functional requirement

The system to be built consists of two types of development architecture namely OOP (Object Oriented Programming) stages of design analysis using UML include use case diagrams, activity diagrams, and class diagrams. Analysis of functional requirements will be explained as follows :

2.5.1 Functional Requirements Specifications

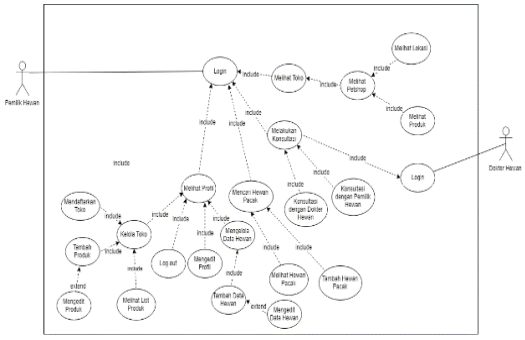
The specification of functional requirements is a system specification provided to users. The specifications of the user's functional requirements can be seen in Table 1.

Table 1. Functional Specification User

Functional Requirements Specifications	
SKPL-F	**Specifications**
001	The system provides facilities for animal owners to log in.
002	The system provides facilities for animal owners to view profiles.
003	The system provides facilities for animal owners to manage the store.
004	The system provides facilities for animal owners to register stores.
005	The system provides facilities for animal owners to add products.
006	The system provides facilities for animal owners to edit products.
007	The system provides facilities for animal owners to see a list of products.
008	The system provides facilities for animal owners to manage animal data.
009	The system provides facilities for animal owners to add animal data.
010	The system provides facilities for animal owners to edit animal data.
011	The system provides facilities for animal owners to edit profiles.
012	The system provides facilities for animal owners to look for pacak animals.
013	The system provides facilities for animal owners to add pacak.
014	The system provides facilities for animal owners to see pacak animals.
015	The system provides facilities for animal owners to see stores.
016	The system provides facilities for animal owners to see pet shops.
017	The system provides facilities for animal owners to see the location.
018	The system provides facilities for animal owners to see products.
019	The system provides facilities for animal owners to conduct consultations.
020	The system provides facilities for animal owners to consult with veterinarians.

2.6 Use Case Diagram

Use case diagrams are used to describe the relationship that occurs between actors and activities on the system. The use case diagram in this application is as shown in Figure 5 below.



Figue 5. Use Case Diagram

1.7 Use Case Scenario

Use case scenario aims to explain how the steps of each process exist in each use case. The use case scenario made can be seen in Table 2.

Table 2. Scenario Functional User

Use Case Name	Search Animal Breed
ID	SKPL-F-012
Actor	Animal Owner
Short Description	Use Case to search animal breed.
Prerequisiet	The animal owner has successfully logged in
Kondisi Akhir	Sistem menampilkan halaman hewan pacak.
Normal Flow	
Initial Conditions	System Response
Animal Owner Search Animal Breed	The system displays a breed animal page.
Alternative Flow	
-	

1.8 Class Diagram

Class Diagrams are used to describe the classes involved in the analysis of a system to be built. Class diagrams are made as in Figure 6.

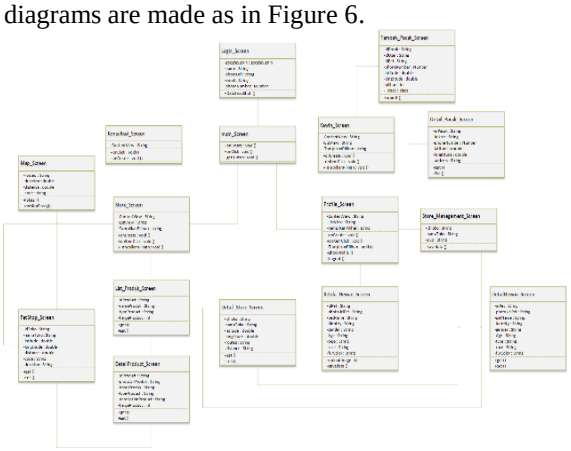


Figure 6. Class Diagram

2.9 Sequence Diagram

Sequence Diagram is describing the interaction between objects that function to indicate communication between these objects. There are several sequence diagrams in the system that are built, such as Figure 7.

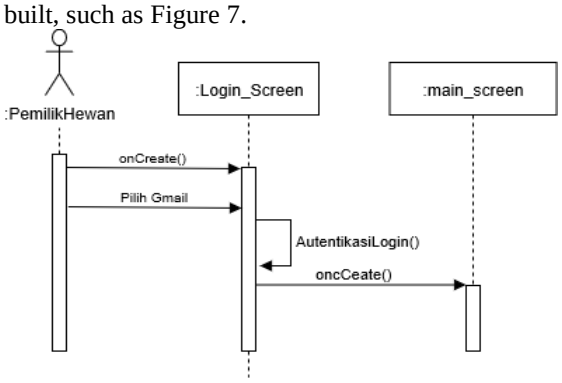


Figure 7. Sequence Diagram Login Activity

2.10 System Design

2.10.1 Structure Design Menu

The menu structure design is an illustration of the application usage path so that the application that is built is easy to understand and easy to use. The following is the menu structure of animal owners can be seen in Figure 8.

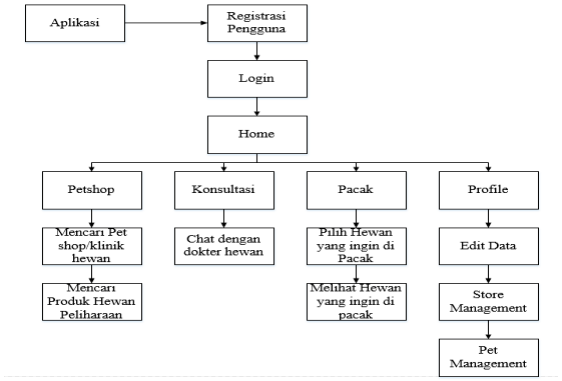


Figure 8. Pet Owner Structure Menu

The design of the structure of the vet menu that is built is as shown in Figure 9.

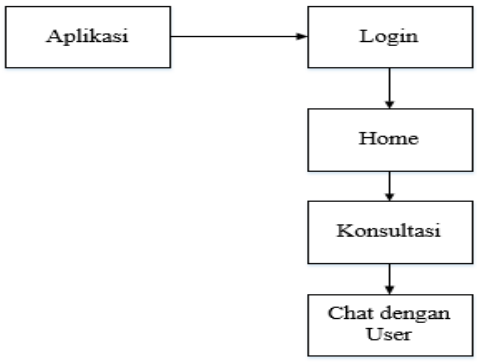


Figure 9. Veterinarians Structure Menu

2.10.2 Interface Design

The design of the interface describes the display plan in the application, thus simplifying the implementation and development of the application. The following is an overview of the application interface that is built, namely :

Figure 10. Interfaces Login

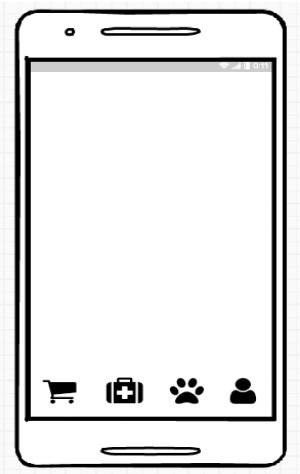


Figure 11. Interfaces Main Page

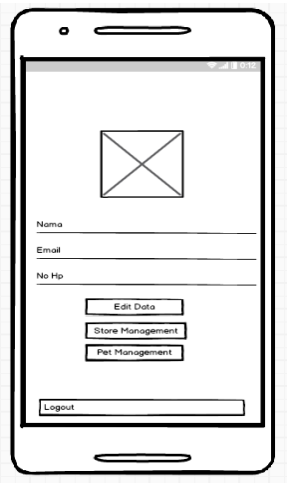


Figure 12. Interfaces Profile Menu

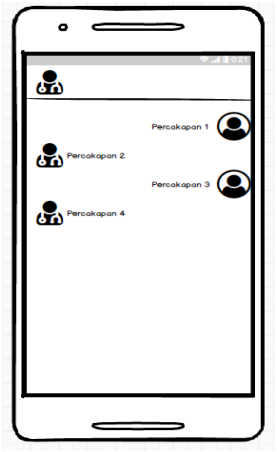


Figure 13. Interfaces Chats Menu

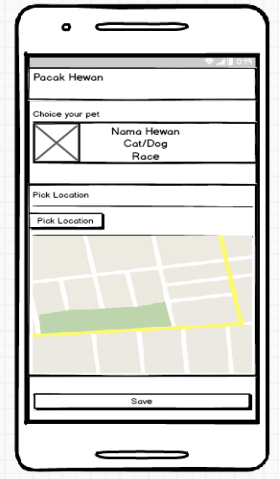


Figure 14. Interfaces Breed Menu

3 CLOSE

3.1 Conclusion

Based on the results of the design made, the design of the Petso application is in accordance with what is expected for further testing.

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