

## MeowHut: Cat Adoption and Rent Mobile Application

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**Abstract.** The cat is a furry animal which attracts human with its cuteness. Most cats are born with hunting instincts and they can survive on their own. However, without proper care of the cats will be sick and sometimes starve because not enough food is provided. Thus, the whole idea of this project is to give the cat a home. Cats deserve to be taken care of. With the adoption service, people can easily adopt a cat online through their smartphones. Whereas for rent services, people can rent a cat so they can experience how to take care of cats even just for a short while. Thus, this project is developed in the mobile application as nowadays almost everyone owns a smartphone. Native mobile development is chosen among other mobile development because of the high performance provided. This mobile development is applied on Android OS and using Java language. As for the methodology, Scrum methodology is the most suitable because it provides flexible duration that is suitable to make changes from time to time when developing this application. This application will provide the needs of users when using this system.

**Keywords:** Cat adoption and rent system, Native Mobile Application, Android

### 1 Introduction

Starting with Friendster, followed by Myspace and then Facebook, social network phenomena has conquered the world. Millions of people sign in everyday which make social network the number one communication in society. Besides easy to communicate, we can also update status on current activity that we went through. Social network provides attractive functionality where we can tag friends either in status or photos. Within the society, there are animal lovers and animal rescuers. Thus, the second most popular pet in the world is cat which are adopted about 88.3 million (Wall, 2017). Cats have very cute expressions which make people want to adore them more. There are groups created specially for cat lovers in social network. The groups are created based on certain reasons such as interest, news and adoption. There is a cat adoption group where it has attract more than 6000 users to join in and most of them are interested in adopting a cat, while the rest merely just want to entertain themselves. With these kind of existing group, almost 80% of the cats are safely adopted by new owners.

This paper is organized as follows: In Section 1 present on the introduction of this paper. Then, Section 2 explains background problem of the system. In Section 3 provide the system development methodology that used in this project. Next, the software tools and implementation of system is discuss in Section 4. In section 5 present the discussion of challenges in developing system and finally, Section 6 provides the conclusion of this project.

### 2 Problem background

In this recent years, we often come across many cases involving the increasing of stray and free-roaming cats causing a lot of damage as well as dirtying the surrounding areas and neighbourhood. The root of the problem comes from the owner who do not want to take care of their cat anymore due to aging and uncontrolled behaviour. Some of them cannot afford to spend money on food and health care of their cats, so they decide to dispose the cats far away from home so that the cats cannot return. Due to the owner's selfishness, many stray cats were left alone without proper care and some of the cats even die due to hunger. Some NGO and government agencies even volunteer to spay

the female cats to avoid the increase in the cat's population. However, this does not solve all of the problems completely. In addition, some cat owners like to maintain their

cat's ancestry. Thus, they will rent an opposite cat's gendre from same or different breed to produce same or mix breed kitten. Some of these kitten can be sell to another owner for adoption, this can generate income for cat owners.

Therefore, the purpose of this system development is to give a cat a home. The importance of the project is to help people search cats for adoption with their own liking. People can know the details of each type of cats to determine whether the cat is suited with their life style. Moreover, people can locate the exact places of the stray cats by using online mapping with collaboration from Google Maps. The maps will point out where the founder post the location thus show the cat's detail. For those who want to buy the cats from the seller, they can message or call directly from the application. They can also search with their relevant liking. In addition, people who are interested in renting a cat, they can booked the cats online and set an appointment in date and hours as they wanted to. People can view the status if the cats is available or not. The objectives for the mobile application is to collect and analyse data on the abandon cats' problems, design a mobile application for adoption and renting cats, develop the mobile application system which can fulfil the project requirement and test the application on Android mobile operating system. The scope for this project is developed for adoption and rent cats in Malaysia. The application uses mobile-based system development technology. The application will be applied on Android mobile operating system. The application uses internet connection for the functions to work properly. The target user is from 12 years old and above.

### 3 Methodology

Agile method has been chosen for system development methodology. Scrum methodology is chosen for this project as it is part of the Agile movement. Scrum development process provide the iterative and incremental system development for complex and diverse system. The concept of this development is to divide the requirements of the system into small sections and delivers initial system to the end user to get feedback and satisfaction after testing the executable components. Scrum relies on self-organizing, cross-functional team. This methodology allow flexible system development and cost effective requirements modification and changes because during the development process, scrum assumes the requirement and specification is incomplete and need to improve over time. The overall overview of scrum methodology is as shown in Figure 1.

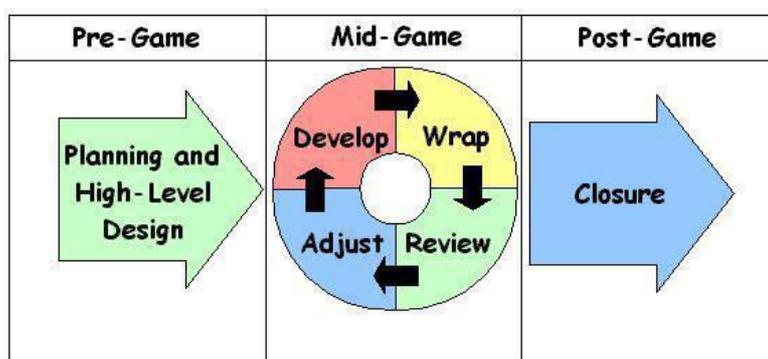
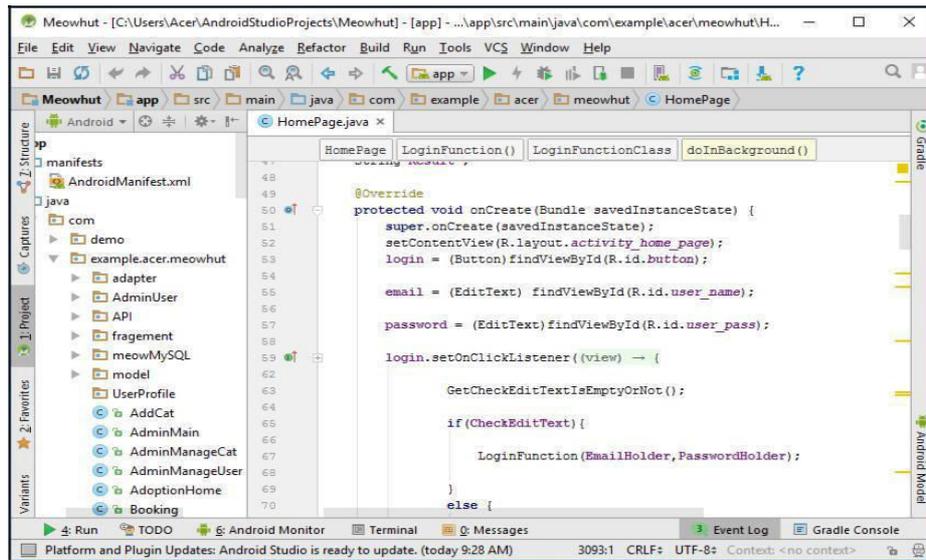


Figure 1: Overview of system development methodology (Clifton & Dunlap, 2003)

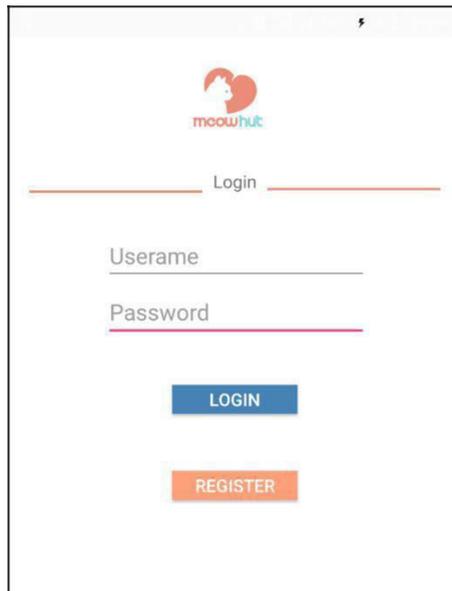
### 4 System development

Before starting a system development, certain software and API(s) need to be installed first before proceeding with the development function. The softwares which are required to build this system is Android Studio, XAMPP and Notepad++. API(s) that is needed to be implemented in Android Studio is Retrofit 2 API and Google Map API. Android Studio is the main programming software tools designed especially for native Android application environment. This programming tool is compatible to be built with all Android platform version. As for this system, Android KitKat 4.0+ version is used. Android studio provides rich layout editor that allow users to drag and drop UI components thus it is easy to design. Android Studio is an open sources and can be downloaded from its provider website. Android Studio support Java language. Figure 2 shows Android Studio tools to develop mobile application.



**Figure 2:** Android Studio tools

The developed application is executed and tested in mobile phone with Android based KitKat 4.0+. This is to ensure the each functionality of the system works properly. The interface of the system is as shown in Figure 3.



**Figure 3:** System development testing in mobile application

## 5 Result and Discussion

Mobile application is demand in nowadays as many user prefer using application rather than website. To build up mobile application, many hardware and software need to be considered as one code error can cause break down to the whole system. As a new developer in mobile application, self learning will take a longer time as the implementation is not the same as building a website. Using API is more easier but need to understand each layer as API implement MVC method. When testing the system into smartphone, the interface design will be misplaced as the interface size when design using Android Studio is bigger than smartphone interface. Thus, this will take some time to re-adjust the position of each widgets placed.

There are a few functionalities that can be done by the system. Firstly, the system can be divided into two categories, which are adoption and rent cat. In adoption cat page, user are able to manage their cat and adopt other users cat which is available for adoption. User is able to view details of each cat to know which cat suit their liking. User can view contact information of the seller or founder for the cat. Besides, user can also share cat's location via social networking, for example Whatsapp, Facebook and Twitter. In renting cat page, user are able to view, add, update and delete the cat register for renting. Moreover, user can book other user's cat which are available. Price for booking is calculated automatically when the user enter pickup and return date. User can also cancel on the cat that have been reserved. When other user book a cat, user can display contact information of the other user.

## 6 Conclusion

The development system is overall to help user to find cat for adoption or renting purposes. For users who cannot adopt cat in their house, they can give contribution by giving wet food to stray cat or bought them to vet to cure disease or give vaccine. Therefore, for future system, I have interest to enhance this system which focus on welfare and donation to stray cats and NGO activities involvement towards care on strays care at the alleys.

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