ST. XAVIER'S COLLEGE

(Affiliated to Tribhuvan University)

Maitighar, Kathmandu

Final Year Project Report

On

"pawsCARE: ICT for Street Animals of Kathmandu for the Betterment of their Condition"

[CSC- 404]

A Final Year Project Report submitted in the partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Information Technology awarded by Tribhuvan University.

Under the supervision of

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Submitted by

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Submitted to

ST. XAVIER'S COLLEGE

Department of Computer Science

Maitighar, Kathmandu, Nepal

June 30, 2016

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CERTIFICATE OF APPROVAL

The undersigned certify that they have read and recommended to the Department of Computer Science for acceptance, a project report entitled "**pawsCARE: ICT for Street Animals of Kathmandu for the Betterment of their Condition**" submitted by **Aachal Thapa (T.U. Exam Roll No. 2091/069)** and **Nisha Shahi (T.U. Exam Roll No. 2115/069)** in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Information Technology awarded by Tribhuvan University.

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ABSTRACT

The streets of Kathmandu are overflowing with life, both metaphorically and literally. With the air heavy, with the scent of street food, motorcycles scurrying through a dangerous maze, and people dodging the bullet like cars, there is one thing that stands out; the street animals of Kathmandu. They vary from one another in many different ways. Whether it's a cow, monkey, or dog, they all have similar problems.

Street animals face many challenges that most animals, and even humans do not face today. They are not protected from colds, or any other diseases. In the past three years, the number of stray animals has definitely increased and so has the cases of locals being attacked by some of them. All these factors have fed a complex serious stray animal's problem for Kathmandu, which is more than ready for a humane, efficient and long-term solution.

There are many people working for the welfare of these street animals individually or through different organizations. However, due to lack of knowledge and resources, they are unable to work efficiently and make a remarkable impact for the welfare of street animals. The project, pawsCARE: ICT for the welfare of Street Animals constitutes web application which helps in rescuing injured and ill street animals through Information and Communication Technology.

The project deals with the scope and use of ICT in rescuing the injured and ill street animals. The application will provide access to send emergency report by sending SMS notification, view animals for adoption, add and view lost and found animals in the application. The central idea of this project is that ICT can help in management of street animals and create awareness among the people to make the lives of street animals better.

Keywords: Information and Communication Technology, ICT, Street Animals, Street Animals in Kathmandu

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LIST OF ABBREVIATION

ICT	Information and Communication Technology
SQL	Structured Query Language
HTML	PHP: HyperText Markup Language
CSS	Cascading Style Sheets
PHP	PHP: Hypertext Preprocessor
OS	Operating System
KMC	Kathmandu Metropolitan City
WHO	World Health Organization
MVC	Model View Controller
ER	Entity-Relationship
DFD	Data Flow Diagram
UML	Unified Modeling Language
OOP	Object-Oriented Programming
NGO	Non-Governmental Organization
INGO	International non-governmental organization

CHAPTER 1: INTRODUCTION

The condition of animals in Nepal is very impoverished and poor. Many of the pet owners do not care or accept any responsibility towards their pets. They are poorly kept and often kicked out of their homes as they grow old. On the streets the conditions are even worse. A lot of stray dogs and cows can be visibly seen almost in every street and square of Kathmandu. There are thousands of dogs such as this in Nepal, an estimated 22,500 in Kathmandu alone. They are mangy, starving and sometimes dangerous. They are left to fend for themselves and roam freely on the streets [1].

In Kathmandu, many stray animals wander the streets, many of them living in miserable states, suffering from malnourishment, disease, and ill treatment. At worst, people commit unspeakable acts of violence with knives and boiling water or whatever they have to hand. Street animals are just like other animals, except for the fact that they have a very hard time surviving. They face many difficulties that most animals and even humans do not face today. Whether it be stoning from shop owners, or plain starvation, life is difficult [2].

Our project is intended to be conclusive about all the animals out there on street, but since the population of dog dwarfs the presence of other animals, we would like to focus more on dogs. This initiative is taken primarily to develop a web application that provides a direct interaction with the rescue teams on emergency of any incident. This application project will mainly focus in rescuing the street animals and providing information for animal adoption in Kathmandu.

1.1 Problem Statement

Lack of awareness is the prime reason for the condition of street animals. We do not seem to care if there is a wounded animals lying in a street, rather we feel grossed and walk away. This is the main reason that inspired to come up with this project.

We may think that why should it matter if we hit an animal and get away, they are strays anyway. We do not realize the impact of what we have done. We see dozens of street animals with broken legs, and rupture eyes. Yes, this is the result of hit and run.

Street animals mainly rely on the foods from a dumpster, and fetch water from sewage. As a result, they get sick with different diseases. We see them every day, but we just don't care enough to feel their pain. Also, there is countless number of street dogs lying on dirt, some searching for food, and some eating garbage thrown by us. We literally see at least a dog in every corner of Kathmandu. We should feel the responsibility, and help create them a better Living environment. We can adopt them and provide them a better environment.

1.2 Project Objectives

- To research on prospect of ICT and its feature used in the rescue of street animals in Kathmandu.
- To provide pet adoption and lost and found information.
- To develop a web application.
- To create awareness among the people to make the lives of street dogs better within the city.
- To carry out a feasibility study based on the survey.

1.3 Requirement analysis and Feasibility

1.3.1 Requirement analysis

Requirements analysis is the first stage in the systems engineering process and software development process. The main purpose of Requirement Analysis is to describe the functional and nonfunctional requirement of the Project. The security requirement of the system is:

- This system can be opened using both computer and mobile device and there is a direct link to the web service via internet.
- Hence the system security is depended on the user's device security and web security.

1.3.2 Feasibility

Feasibility study of the project is performed to get to know whether the project is possible given circumstances they are as follows:

- Whether the application being created is the need of users.
- To show the strengths and deficits before the project is planned.
- Whether the time, budget and human resources will be sufficient.

1.3.2.1 Technical Feasibility

In examining Technical feasibility of the system, more importance is given to the hardware interaction part of the system. This was based on system requirements of web application. PHP Laravel and MYSQL were chosen for server side logic and HTML/CSS/JavaScript was chosen for client-side presentation.

PHP is selected because of following reasons

- Easy for beginners to pick up
- Can be hosted nearly everywhere.
- Compared to other languages and especially compared to web frameworks, PHP is lower level, less abstract, and more transparent.
- Easy to deploy
- PHP runs in separate isolated processes within Apache so it is very difficult for any one process to bring down the entire web server.

JavaScript can be implemented easily in any web page to display alert or error message.

1.3.2.2 Economic Feasibility

It is commonly known as cost benefit analysis, the procedure to determine the benefits and saving that are expected from a candidate system and compare them with costs. The cost of running this project from start to finish was affordable. The ultimate benefit is for common people which outweigh the cost of implementation. The project can be improved by the volunteers and enthusiast using existing resources and technology available.

1.3.2.3 Operational Feasibility

Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

- Is there sufficient support for application resources?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

The user interface designed for this system is user friendly. The results are displayed in the same user interface and can be easily understood by all the users. So the project is operational feasible.

1.3.2.4 Legal Feasibility

Legal feasibility determines whether the proposed system conflicts with legal requirements, e.g. a data processing system must comply with the local data protection regulations. What are the legal implications of the project, what sort of ethical considerations are there, any project undertaken will meet all legal and ethical requirements before the project is on the table.

1.3.2.5 Schedule Feasibility

It estimates how long the system will take to develop, and if it can be completed in a given time period. Schedule feasibility is a measure of how reasonable the project timetable is. So, feasible schedule had been managed through proper time schedule and Gantt chart

1.4 System Requirements

The minimum system requirements of the project are:

Development

Platform	PHP Laravel 5.2
Operating System	OS later from Microsoft Windows 7, Mac OSX
Processors	Pentium 4 or any greater processor
RAM	512 MB minimum
Display	Graphical over 64mb

Table 1 Minimum System Requirements

Client (Users)

This project is web based; the primary requirement is internet connection. User can browse from computers or mobiles. A simple portable device with connection to the internet is enough for running this system. The web application must be hosted in server for multiple users to access the web page. Since PHP is used to develop the web application it can be hosted in most of web servers.

Developer Side:

Operating System	**Microsoft Windows**, **Mac OS**
Application Server	Apache web server
Programming Language	PHP laravel 5.2

Table 2 Software Development Requirements

Client Side:

Operating system	**Microsoft Windows**, **Mac OS**
Web Browser	Chrome, Mozilla Firefox, Safari

Table 3 Client Software Requirements

Server Side:

Operating System	**Microsoft Windows**, **Mac OS**
Application Server	Apache web server

Table 4 Server Software Requirement

CHAPTER 2: LITERATURE REVIEW

2.1 Present condition of street animals of Kathmandu

Nepal is an extremely delightful nation, and generally, the Nepalese are delicate and kind, but like every nation, it has a savage side. We can see street animals all over the city in a very poor condition. The street animals are mostly surviving on rubbish strewn at the roadsides. The situation is critical there for animals that live on the streets of Kathmandu. And the animals especially dogs are everywhere living in Kathmandu valley alone [3]. There are some 22,500 stray dogs inside the ring road and more than 35,000 animals are left on the street. Every day hundreds of dogs go hungry and are abused in Kathmandu valley. They have to survive on rubbish and are prone to diseases. They are susceptible to vaginal and other tumors. Many are found dragging their bodies due to broken bones and severe malnutrition. The vast majority suffers severe mange and other skin disorders due to lack of water, food, and no veterinary care [4].

A lot of stray dogs and cows can be visibly seen almost in every streets and square of Kathmandu. They are mangy, starving and sometimes dangerous. They are left to fend for themselves and roam freely on the streets. Their large numbers, live in extremely bad conditions. Many suffer from the agony of maggots, infected wounds, skin disorders, worms and parasites. Untreated wounds and accidents often result in the loss of limbs. There are many cows and calves which are a regular sight in the smog-choked capital and are often found eating from piles of garbage on the roadside [5]. The plight of these stray animals is devastating. Most of them have been suffering from common disease such as parasite infection and skin problems. Parvo and distemper, birthing problems, malnutrition and dehydration are some other diseases that these animals are suffering from. Their condition is very impoverished and pathetic [6]. Many of the pet owners do not care or accept any responsibility towards their pets. They are poorly kept and often kicked out of their homes, as they grow old. On the streets the conditions is even worse

Stray animals are simply ignored in Kathmandu valley. Their respective owners leave most dogs and other stray animals to die on streets after these owners conclude that their animals' utility is finished. These unlucky animals are injured or killed in fights and there are dozens of hit and run cases by speeding vehicles leaving stray animals wounded and severely injured [7]. Walking along the roads, the street animals have to doze in the sun, hanging out in ancient temples, scavenging on garbage scattered by the roadside. Some appear to be in decent condition, while others suffer from advanced skin ailments, infected wounds, broken bones, and starvation [8].

Far from being revered, Kathmandu's strays are typically considered a nuisance and often fall prey to abuse at the hands of local residents. There are very few resources to help these poor animals. Although there are a few local and international organizations that work for the welfare of the stray animals in Kathmandu valley, there are no legal protections so animal abusers act with full freedom, throwing stones or boiling water at them, or casually kicking them as they pass by. With thousands of street dogs looking for loving homes, it is peculiar that many Nepali locals purchase foreign hounds. Though there are some people who adopt street dogs as pets [9]. With Kathmandu overflowing, with dogs and people alike, bringing in new breeds from outside may not be a good idea. We have discovered that the majority of street dogs are technically 'owned' in some fashion or another, in that the dog has a person and a home within their roaming distance, so they receive some element of care. Then there are community dogs that live in a neighborhood and are very tolerated, with a few people within that particular neighborhood identifying that the dog is one they care about, or even love to some degree. Then there are true strays that have no real ties to people, that live among people to some degree, but don't rely on direct interaction with them [10].

2.2 Benefits in using ICT for animal welfare

Information and communications technology (ICT) represents an enormous opportunity to introduce significant and lasting positive change across the

developing world. The presence of technology in every aspect of our life gives us with new choices, opportunities and challenges. Technology has been a boon for us. There has been abundant use of information technology in today's world [11].

ICT has incredible potential to improve every sector. Many countries are embracing ICT tools such as mobiles, radios, TVs, Internet etc. for sustainable agriculture and livestock farming. ICT essentially facilitates the creation, management, dissemination of any relevant data, knowledge and information that may have been processed and adopted [12]. In the past television, radios were the basic ICT tools. However, in the past two decades Internet and mobile devices have emerged. ICTs are very important because they enable the accessibility and use of e-resources [13]. Without ICTs like computers and the internet, e-resources cannot be accessed and used even if the livestock researchers possess the basic computer skills.

The rapid penetration of mobile access in particular has resulted in considerable improvements in the lives of the needy people as well as animals globally. All evidence suggests that this trend is going to continue, as the availability expands and the cost of access continues to decline. Today almost every person carries a mobile phone with them. And they are not so costly as well. A small electronic device such as the mobile phone can be of great use even in terms of animal health. Lot of benefitted can be achieved in the field of veterinary as well. Animal welfare is an important ethical social concern [14]. ICT has benefitted in various areas of animal welfare like animal husbandry, wildlife conservation, mobile veterinary and agriculture.

2.3 Challenges in using ICT for animal welfare

2.3.1 Sustainability and scale

Development will not be balanced or sustainable if important aspects such as animal well-being, and human-animal relationships, are not included in development programs [15].The use of ICT in animal welfare is a new

approach. To unleash the full potential of ICT in animal welfare, the organizations working for animal welfare should coordinate with technology company as well as development partners.

2.3.2 Lack of knowledge

Many organizations working for animal welfare are not well equipped internally to support and nurture the effective exploitation of ICT. The use of information technology is often seen as a thorny, problematic issue. Furthermore, ICT often has a questionable reputation as a result of previous unsuccessful or costly initiatives [16].

2.4 Overview of ICT initiatives in the welfare of street animals

Animal welfare involves animals coping up with the conditions in which the animal lives. An animal is in a good state of welfare if it is healthy, comfortable, and well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress [17].

ICT has become an integral and accepted part of everyday life for many people. ICT is increasing in importance in people's lives and it is expected that this trend will continue, to the extent that ICT literacy will become a functional requirement for people's work, social, and personal lives. Information and communications technology applications can be found in practically every area of life; they shape our private lives and our work [18]. ICTs in the developing world have the potential to improve the life of a street animal.

Nepal thought to be a developing country, still has not been able to make maximum use of Information and Communication Technology for Development. According to Central Bureau of Statistics (2012/2013), about only 43 percent of the households in Nepal have access to Internet facility within the reach of 30 minutes [19]. In urban areas access to these facilities is far

better compared with the access in the rural areas. Nepal has its own critical scenario, where different parties (Governmental, Public, or Private) lack use of ICT in different fields. Most renowned economic sectors in Nepal like tourism, agriculture, animal welfare, tax, banking, commerce, health-care, education, environment-management and transportation are using only least of ICT related facilities which has made it a non-effective and slow performance, boring-to-use-sectors [20].

Recently, Kathmandu Metropolitan City (KMC) has started collecting data on stray animals to control animal menace in the Capital. As a part of the three-year stray dog management program, the campaign aims at controlling unnecessary increment of the population of stray dogs in the Kathmandu valley, which has created various problems. The campaign is started at the initiatives of the KMC and Humane International Society and it costs around NRs. 35 million [21].

2.5 International Practices in using ICT for animal welfare

Millions of stray dogs roam the streets worldwide. In many countries they are considered "man's best friend", and pet numbers are increasing along with veterinary treatment possibilities. Yet in some parts of the world they are considered pests – a public health problem associated with bites and the risk of disease or parasite transmission [22]. Too often, governments deal with this overpopulation through cruel means such as poisoning, electrocution and shooting.

In the context of India, the issue is particularly acute. Millions of street dogs coexist with people in the country's booming cities. The law is that no one is supposed to kill street dogs. But now there are too many street dogs in India, and no one knows how to control the population of these dogs. These dogs aren't fed and live in the street with no one to take care of them. They eat garbage, dirty foods and scraps in the streets. These street dogs are very thin.

These dogs often are sick because of living in the streets. They also get the disease of rabies. These dogs often have accidents with cars and get wounded [23]. Indians experience among the highest rates of dog bites in the world. Thirty six percent of the world's rabies deaths occur in India, according to the World Health Organization. For Almost a year, rates of viral canine distemper among stray dogs in India have been on the rise. This disease is highly-contagious and very often fatal due to its incurable nature [24].

In India, there are also many volunteering organizations working for the welfare of street dogs that aims at:

- Promoting Animal Birth Control program and discouraging brutal extermination of stray animals
- Rescue of abused animals.
- Promoting vegetarianism.
- Lobbying for amendments to existing animal protection laws in India, to make them effective.
- Creating awareness amongst people for animal related issues; for example, commercial breeding and exploitation of animals, animals in zoos, conditions of enslaved elephants etc. [25].

Different organizations are working in different parts of India to rescue street animals and provide animal shelter and free veterinary service for the sake of wellbeing of animals. Most of the organizations have ambulance service for rescuing the street animals [26]. With the development of ICT technology, Animal Cadet Corps in India developed automated technology for rescuing street animals. Through an automated technology process get instant help wherever we are. If we punch in the pin code of the area we need help in, automated service will send you the number of an animal welfare worker, ambulance, vet or hospital mapped to that pin code [27].

The scope of the stray dog problem in many parts of the world is unimaginable. Street and village dogs have always been part of the developing world's landscape, but exploding populations, increasing attacks on citizens, and spiraling rabies epidemics have transformed this issue from a third world problem to a global public health priority [28]. The World Health Organization (WHO) estimates that there are more than 200 million stray dogs worldwide and that every year, 55,000 people die from rabies, while another 15 million receive post exposure treatment to avert the deadly disease. 95% of these cases occur in Asia and Africa, and dog's cause 99% of the fatalities [29].

According to WHO most countries deal with the problems by culling the dogs. In Bangladesh dogs were beaten to death with sticks in the street; in the Philippines piping car exhaust into a metal box caused "a slow painful 20-30 minutes of carbon monoxide euthanasia"; in Bhutan they were shot; in Mauritius they were killed using "extremely painful" non-approved chemicals and in India they used to electrocute them by standing them in a room knee-deep in water [30]. However, culling has proved ineffective.

The most dogs in Southeast Asia carry a number of diseases with them. Parasites like fleas and lice and worms are relatively harmless, but scabies makes the dogs already suffering a great deal, particularly when it gets worse and they lose all their fur and show their naked, partially bleeding skin. Also no protection against mosquitoes they have them anymore. It's lethal sometimes. Worms are not nice; the beasts lose weight and look like skeletons after a time. Most serious for people are rabies, and in fact parts of Southeast Asia (e.g. Thailand's northeastern region Isan) are notorious for rabies and on the WHO list among the worst rabies regions in the world. There is great number of more dogs' diseases [31].

2.6 Tools used for the Development

The selection of the best tools for the solution is of greater importance. The solution is not only the proof of concept but also an integral part of the project objective. And clearly, right tools must be used to make the solution efficient. We basically started with the free and open source tools. Tools are required for the front end and the back end development of the project. Front-end development focuses on the general layout and structure design whereas the back end focuses with the data processing functionality.

2.6.1 PHP Laravel

PHP (Hypertext Preprocessor) is a popular general-purpose scripting language that is especially suited to web development. Fast, flexible and pragmatic, PHP powers everything from blog to the most popular websites in the world. PHP is known as a server-sided language. That's because the PHP doesn't get executed on our computer, but on the computer you requested the page from.

Laravel is a powerful MVC PHP framework, designed for developers who need a simple and elegant toolkit to create full-featured web applications. Laravel was created by Taylor Otwell. Laravel is an Open Source framework. It has a very rich set of features which will boost the speed of Web Development. If one is familiar with Core PHP and Advanced PHP, Laravel will make our task easier. It will save a lot time if we are planning to develop a website from scratch. Not only that, the website built in Laravel is also secure. It prevents the various attacks that can take place on websites [32].

2.6.2 MySQL

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB,

which is a Swedish company. MySQL is becoming so popular because of many good reasons:

- MySQL is released under an open-source license. So you have nothing to pay to use it.
- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB) [33].

2.6.3 Apache

Apache is a freely available Web server that is distributed under an "open source" license. Version 2.0 runs on most UNIX-based operating systems (such as Linux, Solaris, Digital UNIX, and AIX), on other UNIX/POSIX-derived systems (such as Rhapsody, BeOS, and BS2000/OSD), on AmigaOS, and on Windows 2000. According to a Netcraft (www.netcraft.com) Web server survey 60% of all Web sites on the Internet are using Apache (62% including Apache derivatives), making Apache more widely used than all other Webservers combined [34].

2.6.4 GitHub

GitHub is a Web-based version-control and collaboration platform for software developers. GitHub, which is delivered through software as a service (SaaS) business model, was started in 2008 and was founded on Git, an open-source code management system created by Linus Torvalds to make software builds faster [35].

CHAPTER 3: SYSTEM DEVELOPMENT

3.1 Project Management

Project management is a methodical approach to planning and guiding project processes from start to finish. According to the Project Management Institute, the processes are guided through five stages: initiation, planning, executing, controlling, and closing. Project management can be applied to almost any type of project and is widely used to control the complex processes of software development projects [36].

The overall development of the system was carefully analyzed under the proper guidance from the supervisor and team member to make this project a grand success.

3.1.1 Project Workflow and Schedule

Team Size: 2

Total Effective Project Duration : 12 Weeks

Effort Required Per Person: 21 Hours Per Week

3.1.2 Project Team

Resource	Role
Vishnu Kumar Rana	Supervisor
Aachal Thapa	Developer/Designer
Nisha Shahi	Developer/Designer

Fig: Table 5 Team Resource and Roles

3.2 System Analysis

Software analysis includes all activities, which help the transformation of requirement specification into implementation. It is a phase between requirement elicitation and system design. Purposes of the system are formalized and put in a consistent and coherent framework [37].

That is a structural process related to four significant phases. They are study phase, design phase, development phase and implementation phase. We can use various tools and programming language for web application development. The proposed web application is supposed to work across various platforms and must be error free.

3.3 System Design

Systems design implies a systematic approach to the design of a system. It may take a bottom-up or top-down approach, but either way the process is systematic wherein it takes into account all related variables of the system that needs to be created—from the architecture, to the required hardware and software, right down to the data and how it travels and transforms throughout its travel through the system. Systems design then overlaps with systems analysis, systems engineering and systems architecture [38].

The project at its first phase designs web-based system. The web base system is based in PHP. The system will be user friendly with various features. The system also allows the admin to view the details regarding the information in the database. The design process includes modular decomposition of the whole system algorithm, flowchart, ER diagram, DFDs etc. The design document acts as a guideline for the system implementation.

3.3.1 Basic Architecture of the system

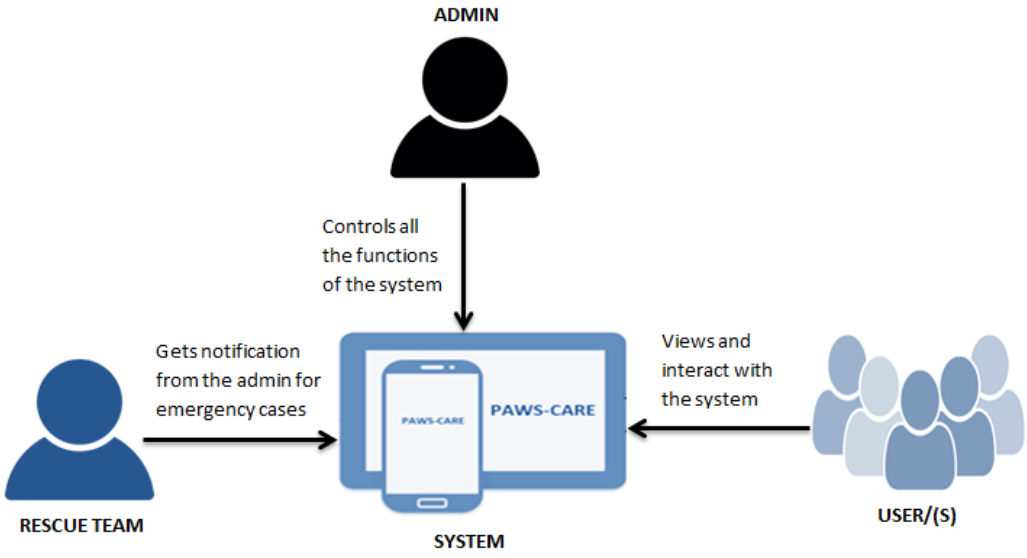

Figure 1 Basic Architecture for pawsCARE

Figure 1 shows System Architecture. There are three components in our system. The first is Admin which controls the whole system. The second is the rescue team which gets notified by the admin for different emergency cases. The third is the users who can view the application.

3.3.2 Flow chart

A flowchart is a formalized graphic representation of a logic sequence, work or manufacturing process, organization chart, or similar formalized structure. The purpose of a flow chart is to provide people with a common language or reference point when dealing with a project or process [39].

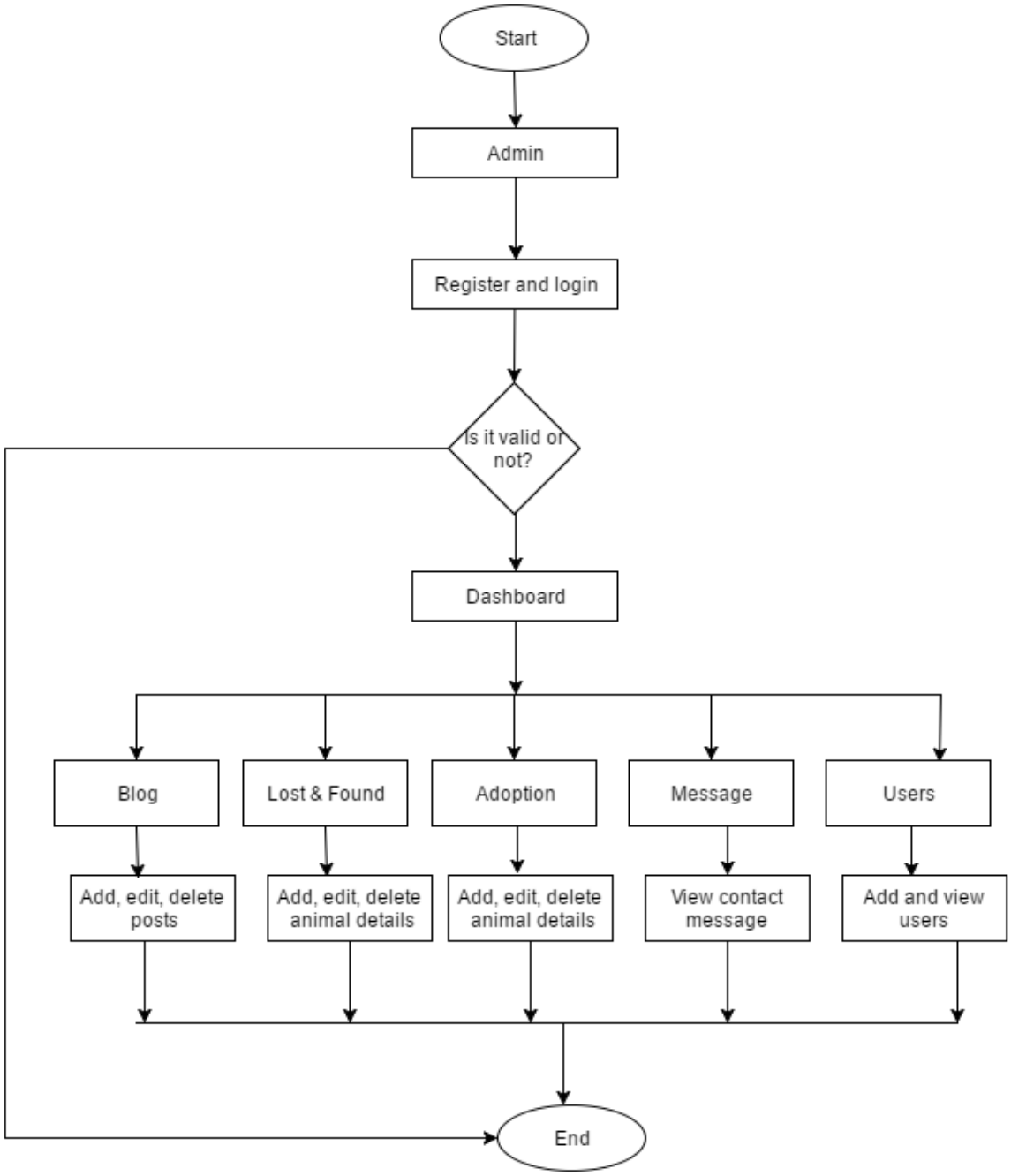

Figure 2 Flowchart for pawsCare (Admin Side)

Figure 2 shows flowchart diagram for admin, here the admin register and login to the page by entering username and password. Then it goes to the dashboard. If it is valid then further process is done if not then login process is started from beginning. After validating the login admin can view, modify and update.

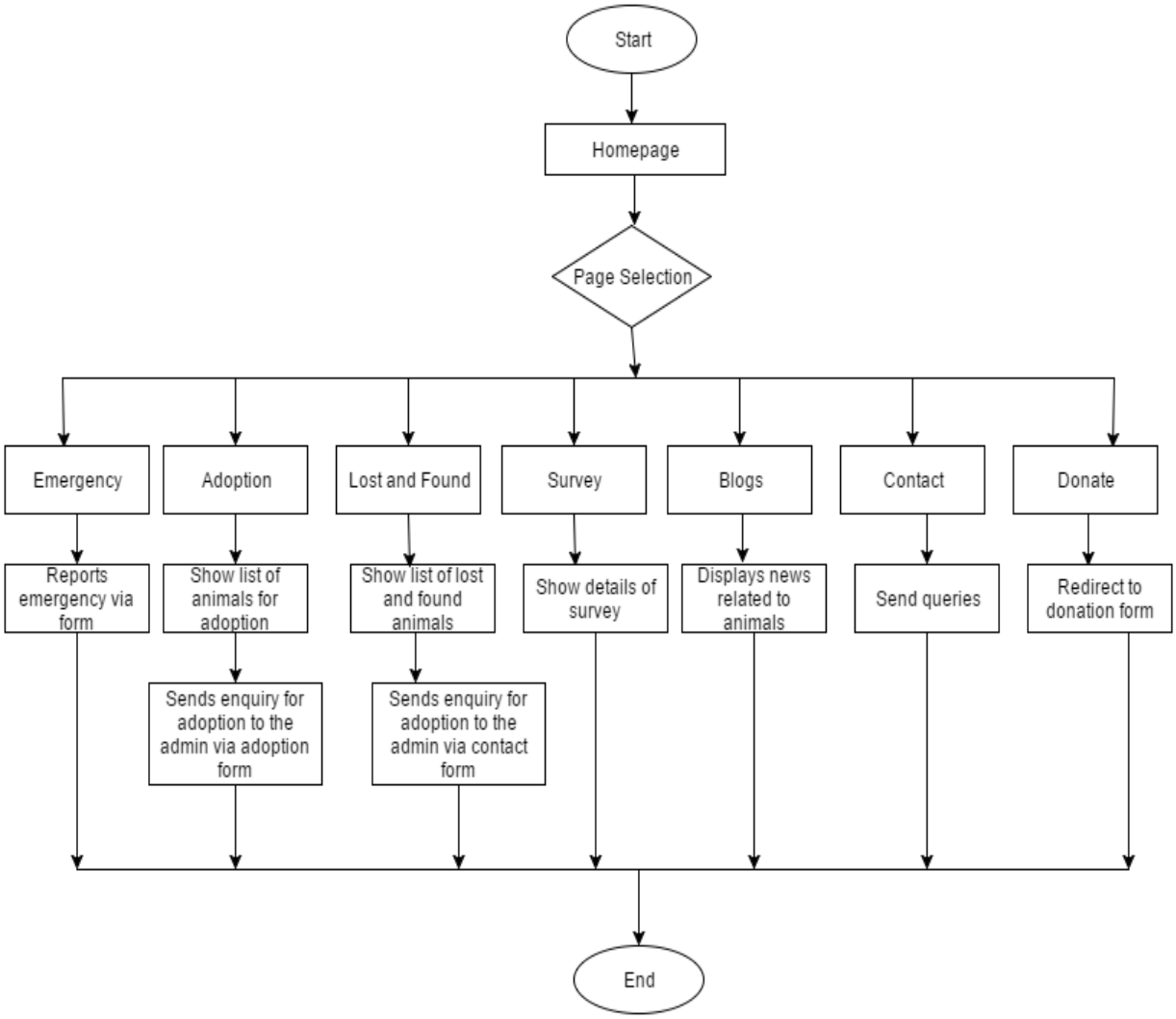

Figure 3 Flow chart for pawsCare (User Side)

Similarly Figure 3 shows flowchart diagram for user, here the user can access the homepage without logging in where the user can send emergency report, adopt animals by filling up a form, add lost and found animals, view survey report and blogs, contact the admin and donate.

3.3.3 Context diagram

The Context Diagram shows the system under consideration as a single high-level process. It then shows the relationship that the system has with other external

entities (systems, organizational groups, external data stores, etc.). It represents a graphic design that clarifies the interfaces and boundaries of the project [40].

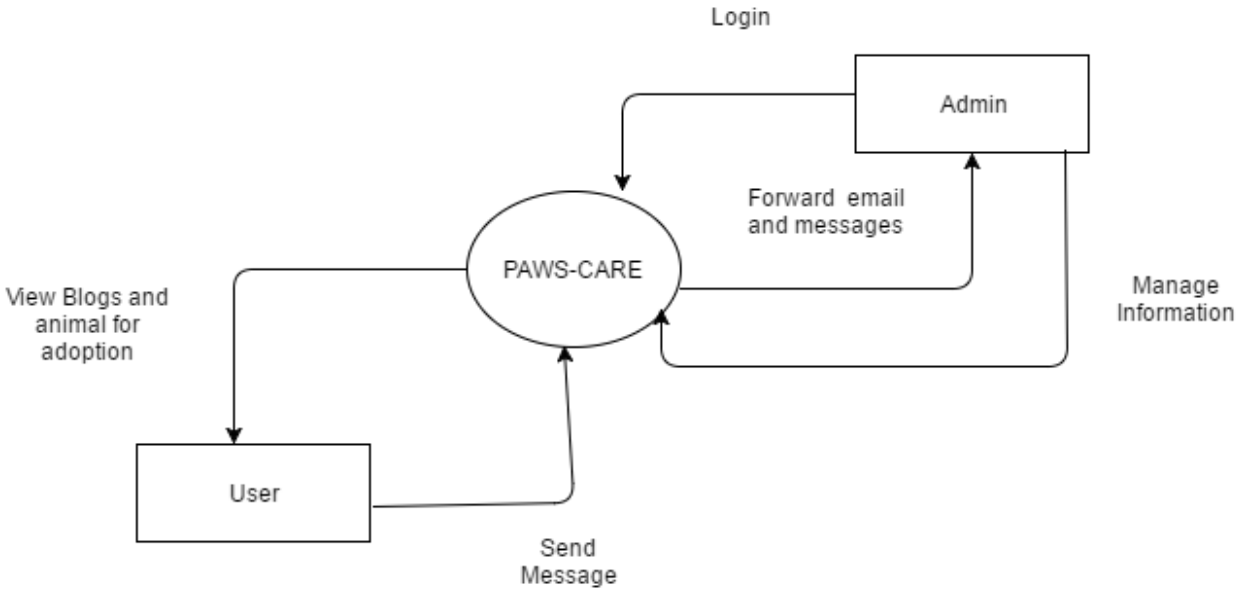

Figure 4 Context Diagram of pawsCare

Figure 4 shows user who can send emergency message or message related with adoption through the application and admin can view the emails and messages after logging into the application. Admin also manages the information regarding animal adoption.

3.3.4 DFD – level 0 and 1

A data flow diagram (DFD) illustrates how data is processed by a system in terms of inputs and outputs. As its name indicates its focus is on the flow of information, where data comes from, where it goes and how it gets stored [41].

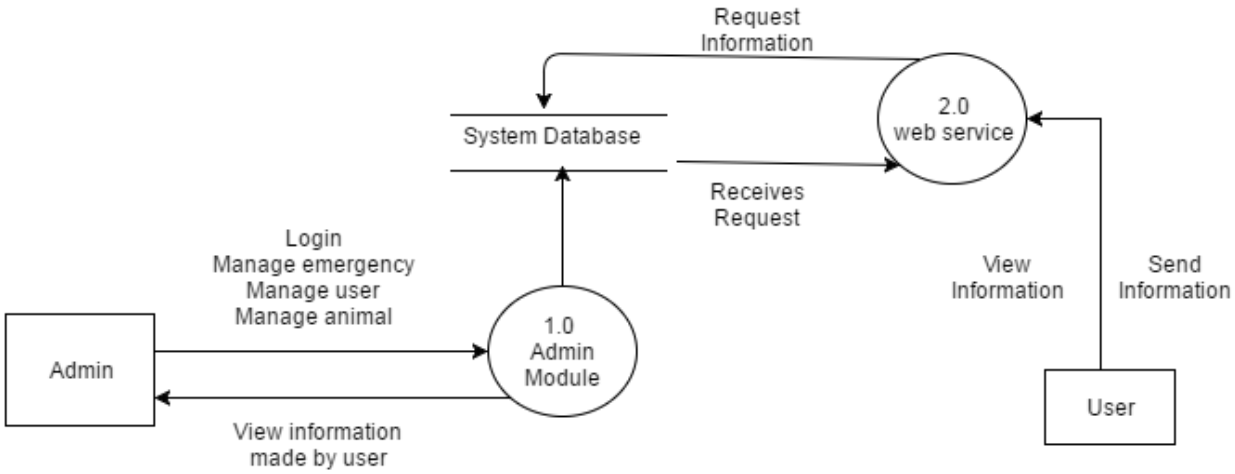

Figure 5 DFD level 0

Figure 5 shows the Data flow Diagram which is of level 0. Here the 2 types of module are categorized: 1.0 Admin module and 2.0 Mobile Web services. Admin login, manage emergency, manage user, manage animal and view information made by the user in the Admin module. User can request information and receives request in the mobile web service. The information saved in Admin module is saved to the system database and when the Mobile web service request the stored information to the system database the database send the request and finally the rescue team can view the information.

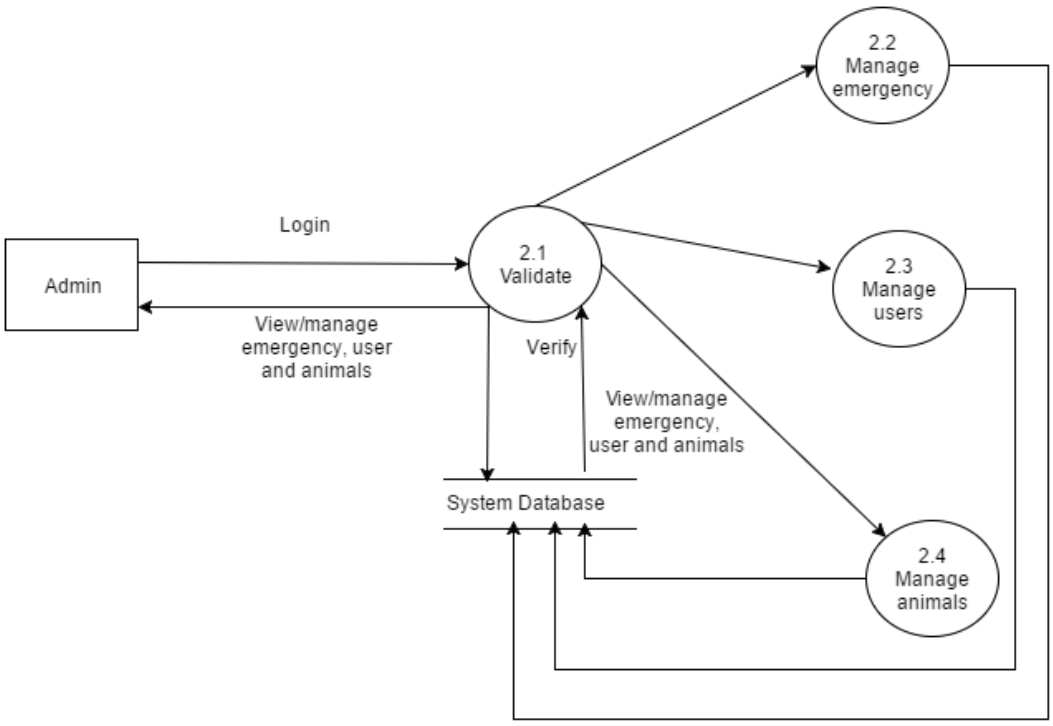

Figure 6 DFD level 1

Figure 6 shows the Data Flow Diagram of level 1, here the Admin module is elaborated when the admin login is validated, admin can view and manage information like emergency and animal adoption. After the validation the system database checks credential and verify. The admin when manage users and manage animals, the database are updated and stored in the System database.

3.3.5 Entity-Relationship diagram

An entity-relationship diagram (ERD) is a graphical representation of an information system that shows the relationship between people, objects, places, concepts or events within that system. An ERD is a data modeling technique that can help define business processes and can be used as the foundation for a relational database [42].

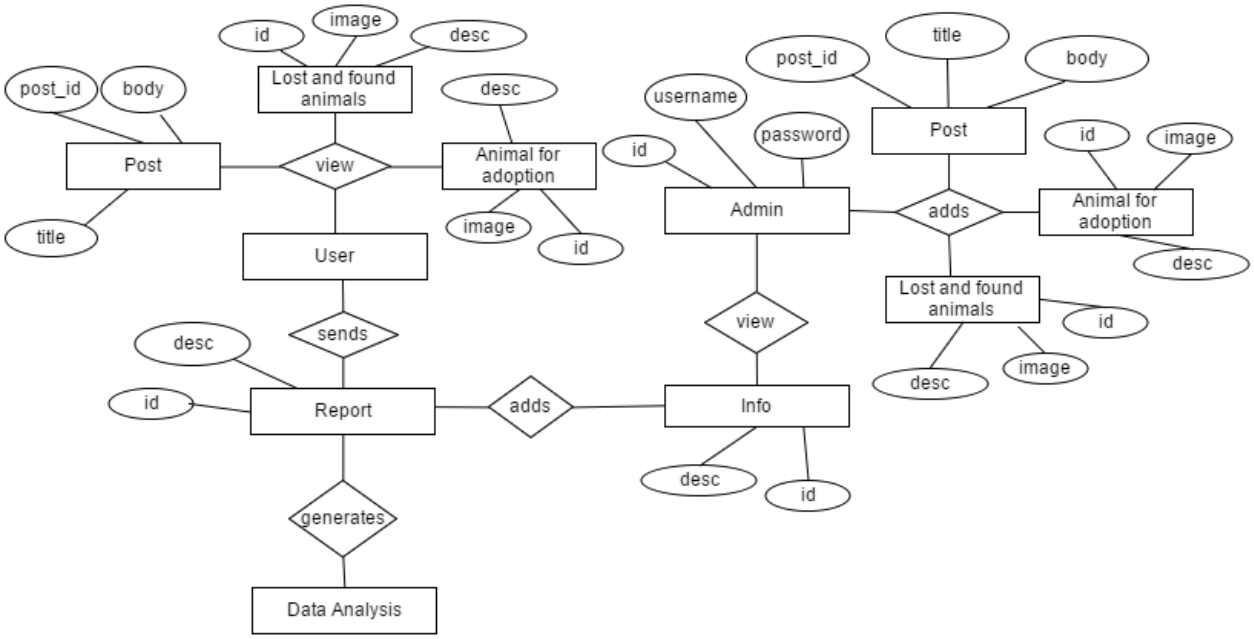

Figure 7 Entity Relationship Diagram

Figure 7 describes the entities and its relation with other entities of the system. The user creates report and adds in the system, then the admin views the information provided by user.

3.3.6 Use-case

A use case diagram is a graphic depiction of the interactions among the elements of a system. It is a methodology used in system analysis to identify, clarify, and organize system requirements.

The key points are:

i. To show the interaction between the use cases and the actor.
ii. To represent the system requirement from user's perspective.
iii. The use cases are the functions that are to be performed in the module.
iv. An actor could be the end-user of the system or an external system [43].

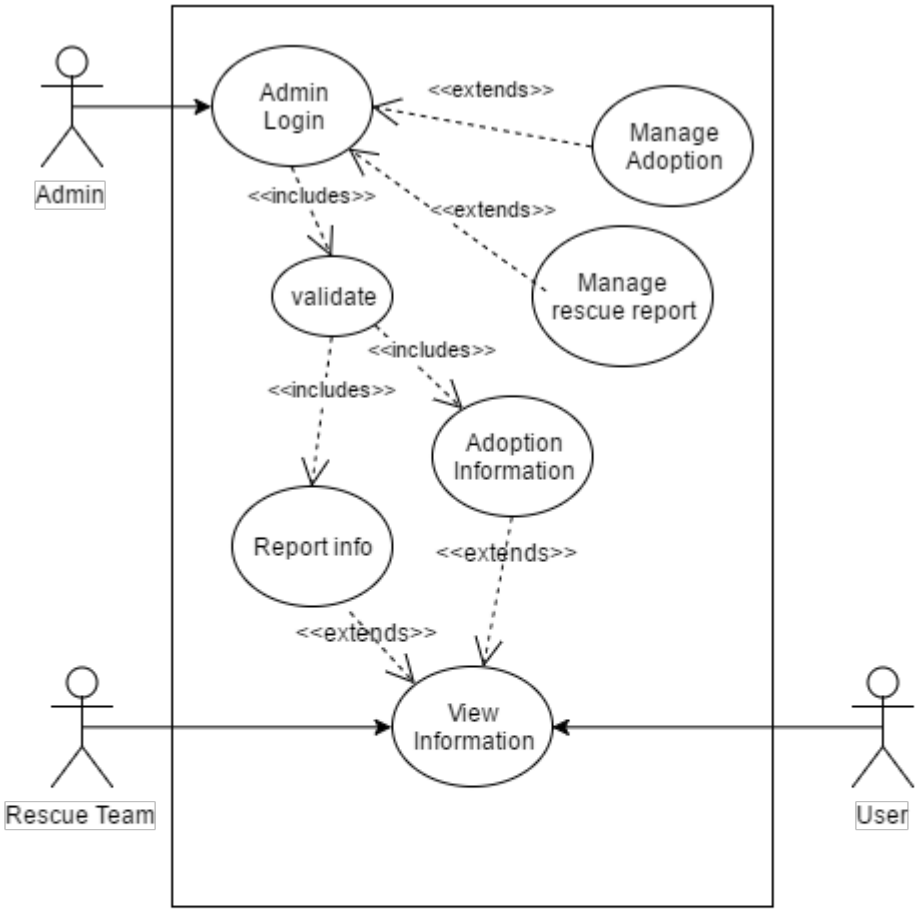

Figure 8 Use Case Diagram

Figure 8 shows the use case diagram of the project. There are three actors: User, Admin and Rescue team. The admin login the application. After the validation, the user can check the notification that may include emergency report information or animal adoption information. The emergency report is then sends to the rescue team.

3.3.7 Class diagram

A class diagram is an illustration of the relationships and source code dependencies among classes in the Unified Modeling Language (UML). In this context, a class defines the methods and variables in an object, which is a specific entity in a

program or the unit of code representing that entity. Class diagrams are useful in all forms of object-oriented programming (OOP) [44].

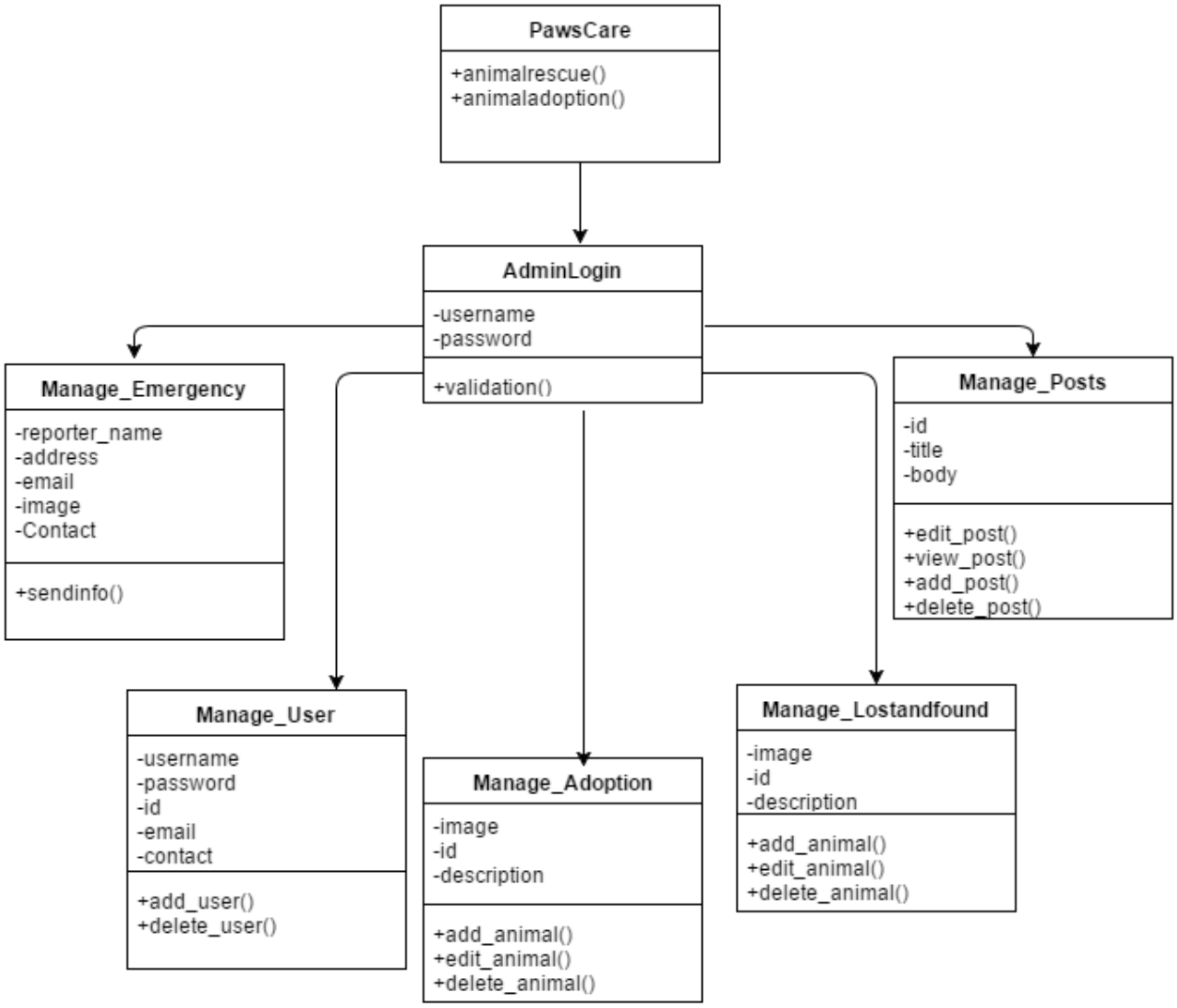

Figure 9 Class Diagram

In Figure 9, pawsCare is the main class with method animalrescue() and animaladoption(). Admin login into the page by entering user name and password and validate using method validation(). Manage_emergency, Manage_animal and Manage_userare the classes. Admin manages emergency using method sendinfo() and manages the animal using method add_animal() delete_animal() and

edit_animal (). Similarly admin manages the user using method add_user() delete_user() and edit_user().

3.3.8 Sequence diagram

The Sequence Diagram models the collaboration of objects based on a time sequence. It shows how the objects interact with others in a particular scenario of a use case [45].

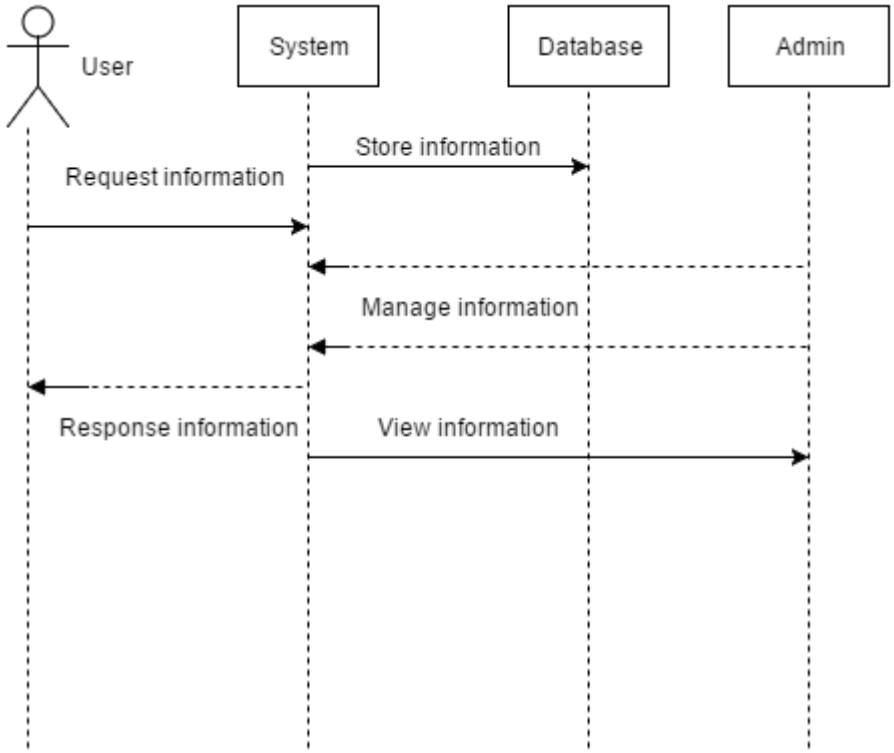

Figure 10 Sequence Diagram

Figure 10 shows an interaction, which represents the sequence of messages between instances of classes, components, subsystems, or actors. Time flows down the diagram, and it shows the flow of control from one participant to another. Sequence diagrams are typically used to model usage scenarios, logic of methods and logic of services.

3.4 Project Schedule

3.4.1 Time Schedule

Task ID	Task Description	Start Date	Duration	Finished Date	No. of Hours	Planned Deliverables
1	**Preliminary Work**					
1.1	Planning for the project	9-Apr	1	9-Apr	12	Project Plans
1.2	Analysis on the topics	12-Apr	1	12-Apr	10	Analyzed topics
1.3	Project requirement and analysis	12-Apr	1	12-Apr	10	Analyzed Data
1.5	Meeting the Supervisor	14-Apr	1	14-Apr	1	Supervisor Advice
1.6	Preliminary research on the project	14-Apr	1	14-Apr	12	Project Initial Plans
1.7	Proposal Preparation	15-Apr	4	18-Apr	3	Proposal Prepared
1.8	Preparing the Gantt Chart and Project Schedule	19-Apr	52	9-Jun	55	Dissertation Complete
1.9	Proposal Submission	21-Apr	1	22-Apr	2	Proposal Submitted
1.10	Proposal Defence	22-Apr	2	24-Apr	4	Project Acceptance
2	**Research Work**					
2.1	Research on present condition of Street Animals	24-Apr	4	28-Apr	10	Research Draft
2.2	Field visit at different organization	28-Apr	4	2-May	12	Research Draft
2.3	Research on Database	2-May	4	6-May	12	Research Draft
2.4	Research on PHP Laravel	6-May	5	11-May	10	Research Draft
2.5	Second Review	11-May	2	13-May	7	Progress Status
3	**Design Phase**					
3.1	System Design	13-May	3	16-May	10	System Architecture
3.2	Database Design	16-May	4	20-May	20	Database structure
3.3	Implementation	20-May	9	29-May	14	Hybrid Mobile application
3.4	Testing and Validation	29-May	2	31-May	8	Effective Mobile Application
4	**Result Validation**					
4.1	Critical evaluation	31-May	2	2-Jun	7	System Faults and Complexity
4.2	System Testing	2-Jun	1	3-Jun	6	Effective Mobile Application
5	**Dissertation**					
5.1	Draft Report Writing	1-May	35	5-Jun	12	Initial Draft Finished

5.2	Final Report Writing	25-May	13	7-Jun	14	Final Report Finished
5.3	Report Evaluation and conclusion	29-May	3	1-Jun	6	Conclusion Drawn
5.4	Submission of draft copy report	20-Jun	1	21-Jun	5	Draft Submitted
5.5	Correction for final draft copy	22-Jun	1	22-Jun	5	Final Correction Done
6	**Final Phase**					
6.1	Final Documentaion Printing and Binding	26-Jun	5	27-Jun	10	Printed Project Document
6.2	Final Report Submission	30-Jun	1	30-Jun	6	Project Submitted
		Total Days	82		Total Hours Per day	3.98(1.99 hours per student)
		Total Hours	246			

Table 6 Time schedule of the project

3.4.2 Gantt Chart

Figure 11 Gantt chart

3.5 Testing

Software testing is a process of executing a program or application with the intent of finding the software bugs. It can also be stated as the process of validating and verifying that a software program or application or product [46].

3.5.1 Unit Testing

Unit testing is a software development process in which the smallest testable parts of an application, called units, are individually and independently scrutinized for proper operation. Unit testing is often automated but it can also be done manually. This testing mode is a component of Extreme Programming (XP), a pragmatic method of software development that takes a meticulous approach to building a product by means of continual testing and revision. Unit testing involves only those characteristics that are vital to the performance of the unit under test [47]. This encourages developers to modify the source code without immediate concerns about how such changes might affect the functioning of other units or the program as a whole.

3.5.2 Integration Testing

Integration testing is a logical extension of unit testing. In its simplest form, two units that have already been tested are combined into a component and the interface between them is tested. A component, in this sense, refers to an integrated aggregate of more than one unit. In a realistic scenario, many units are combined into components, which are in turn aggregated into even larger parts of the program. The idea is to test combinations of pieces and eventually expand the process to test your modules with those of other groups. Eventually all the modules making up a

process are tested together. Beyond that, if the program is composed of more than one process, they should be tested in pairs rather than all at once [48].

3.5.3 System Testing

System Testing is a level of the software testing where complete and integrated software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements. Once all the required modules were developed and integrated, the system as a whole was tested to ensure that the system is functioning correctly and efficiently. This test is very helpful to determine the problems and bugs that have been escaped during the integration testing. In this testing the system was compiled and run to check if errors exist. The errors that appeared were either resolved or handled properly [49].

3.5.4 User Acceptance Testing

User acceptance testing (UAT) is the last phase of the software testing process. During UAT, actual software users test the software to make sure it can handle required tasks in real-world scenarios, according to specifications [50].

3.6 Test Cases

3.6.1 Test Case 1

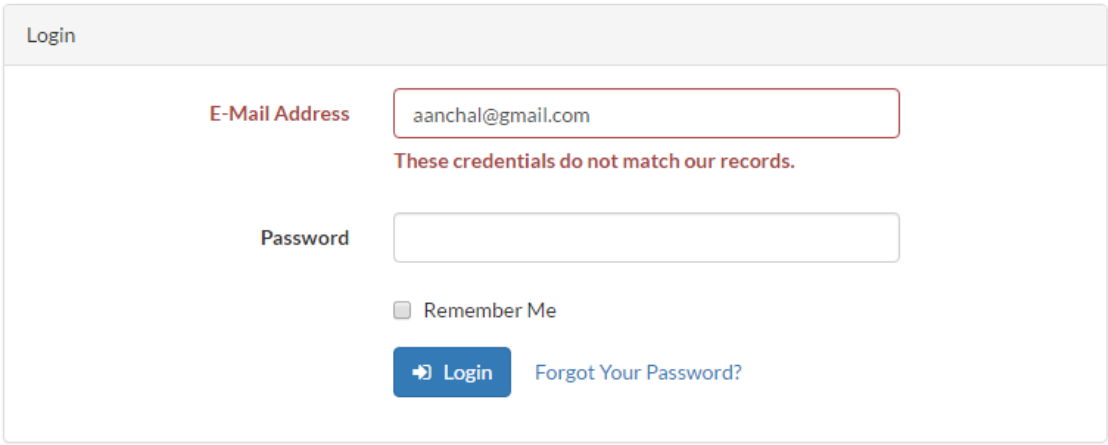

Figure 12 System Testing - Admin Login Page Failure

Figure 12 shows the login form where email address and password should match to view the admin dashboard. Invalid admin login, represents the condition where the admin login is no accepted due to invalid password or email entry.

3.6.2 Test Case 2

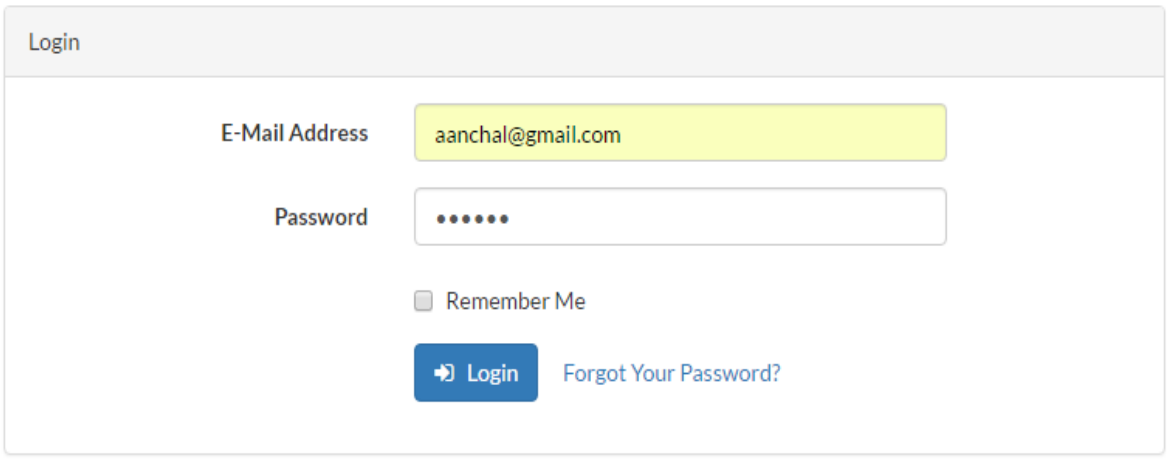

Figure 13 System Testing - Admin Login

Figure 13 shows the admin login page, where the email and password is required to login to the admin page.

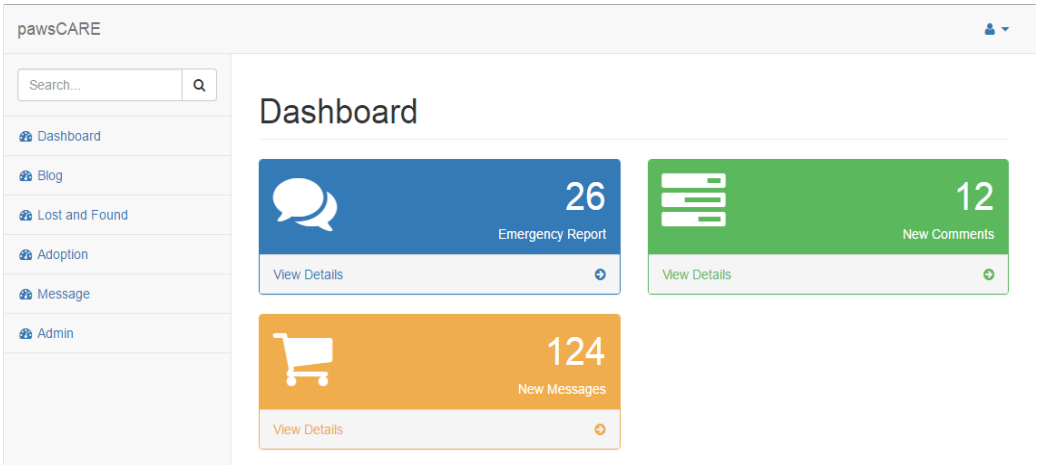

Figure 14 System Testing - Admin login successful

Figure 14 shows the successful admin login where the login page is redirected to the admin dashboard. Admin dashboard can view emergency notification, add and delete blog posts, add animal for adoption and lost and found animals. Messages sent from the contact form are listed in admin dashboard.

3.6.3 Test Case 3

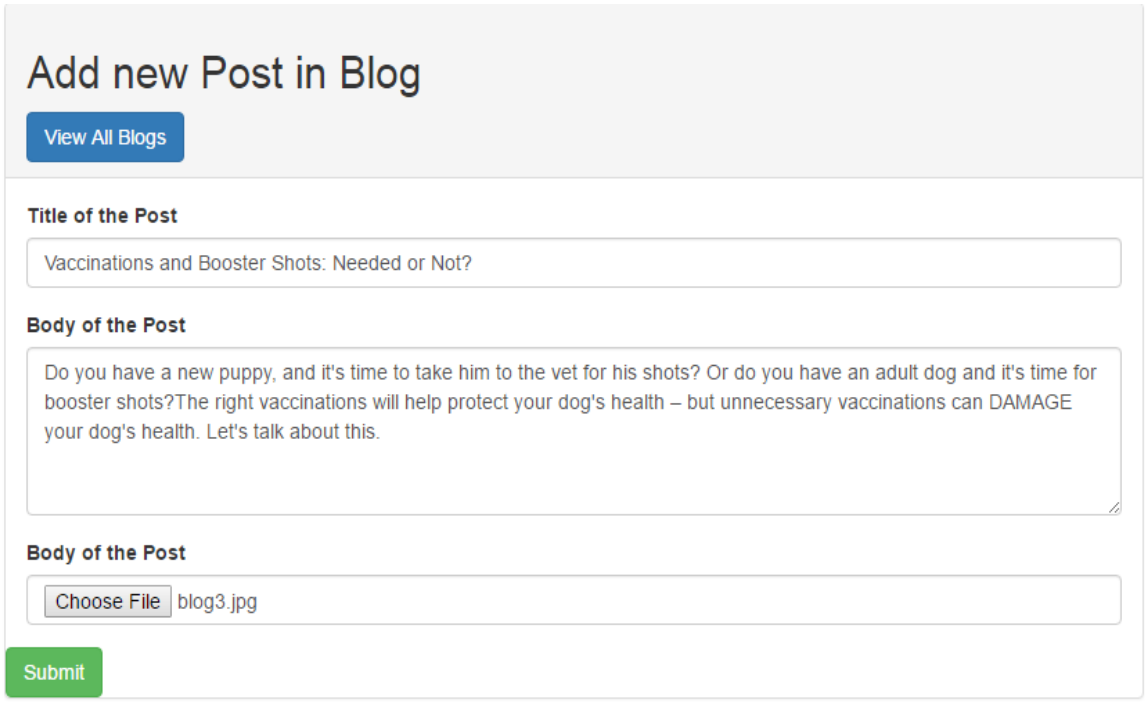

Figure 15 System Testing - Adding new post in blog page

Figure 15 shows the blog page in admin side, where different blogs can be posted.

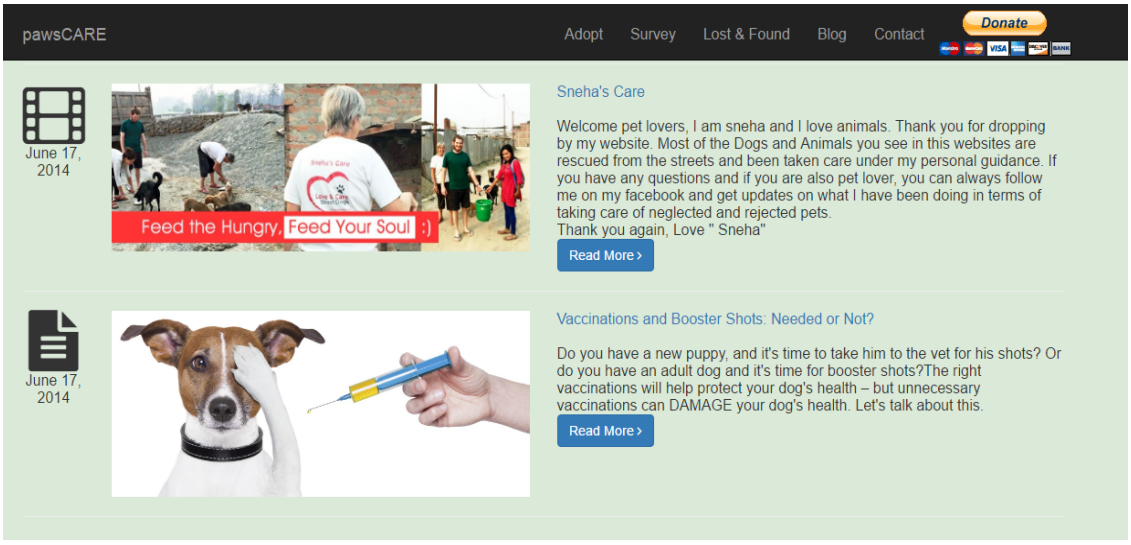

Figure 16 System Testing - Post successfully added in Blog page

Figure 16 shows that the new post is successfully added in a blog. The post is added using add new post in blog form. The new post is then listed in the admin dashboard and also displayed to the users in a blog tab of homepage.

3.6.4 Test Case 4

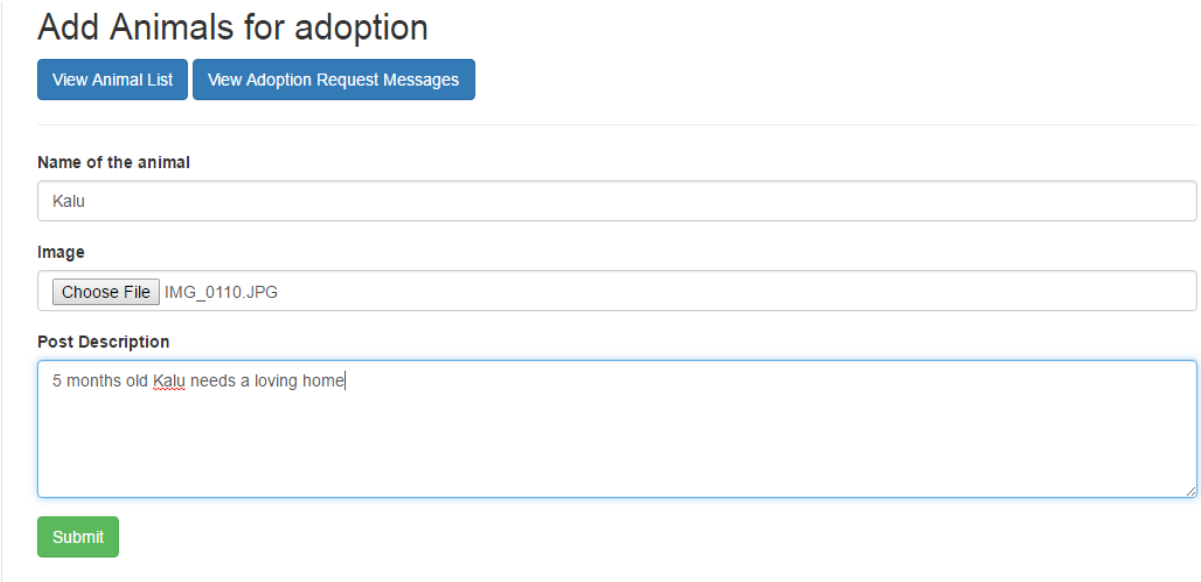

Figure 17 System Testing - Adding new animal for Adoption

Figure 17 shows the adoption page where details of different animals can be posted for adoption.

ID	Image	Description	Action
6		2 Months old Kalu needs a loving home	Delete
7		4 months saney needs a loving home	Delete

Figure 18 System Testing - Animal for adoption successfully added

Figure 18 shows that animal is added for adoption using add animals for adoption form. The list of animals for adoption can be viewed as a list in dashboard whereas users can view the animals for adoption in an adoption tab of navigation menu bar.

3.6.5 Test Case 5

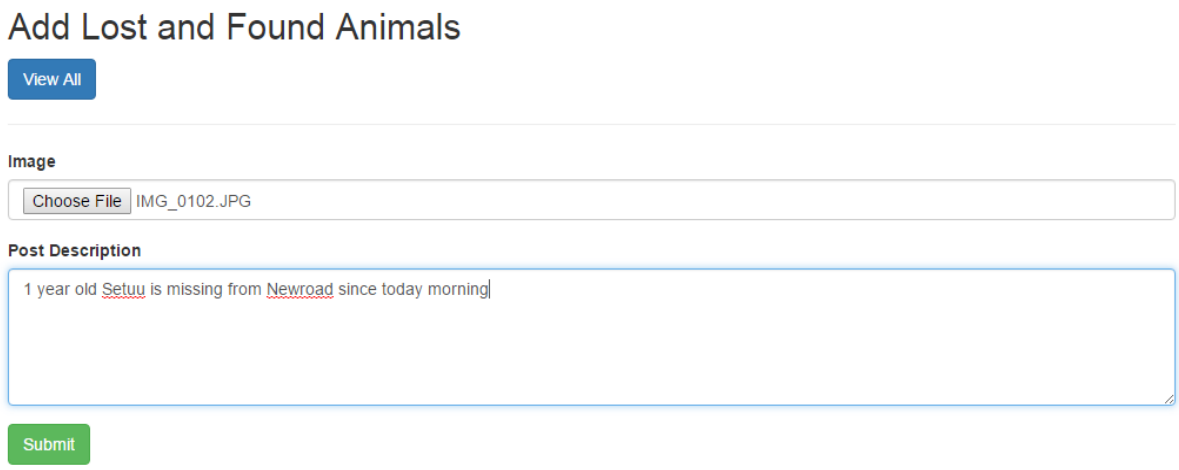

Figure 19 System Testing - Adding new lost and found animal's report

Figure 19 shows the lost and found page where details of different animals can be posted.

ID	Image	Description	Action
3		2 years old Browny missing from Maitighar area since yesterday morning	Delete
4		1 year old Setuu is missing from Newroad since today morning	Delete

Figure 20 System Testing - New lost and found animal's report successfully added

Figure 20 shows that animal is added in lost and found section using add lost and found animal's form. The list of lost and found animals is listed in admin dashboard. The list of lost and found animals is displayed in user side Lost and found animal's page.

3.6.6 Test Case 6

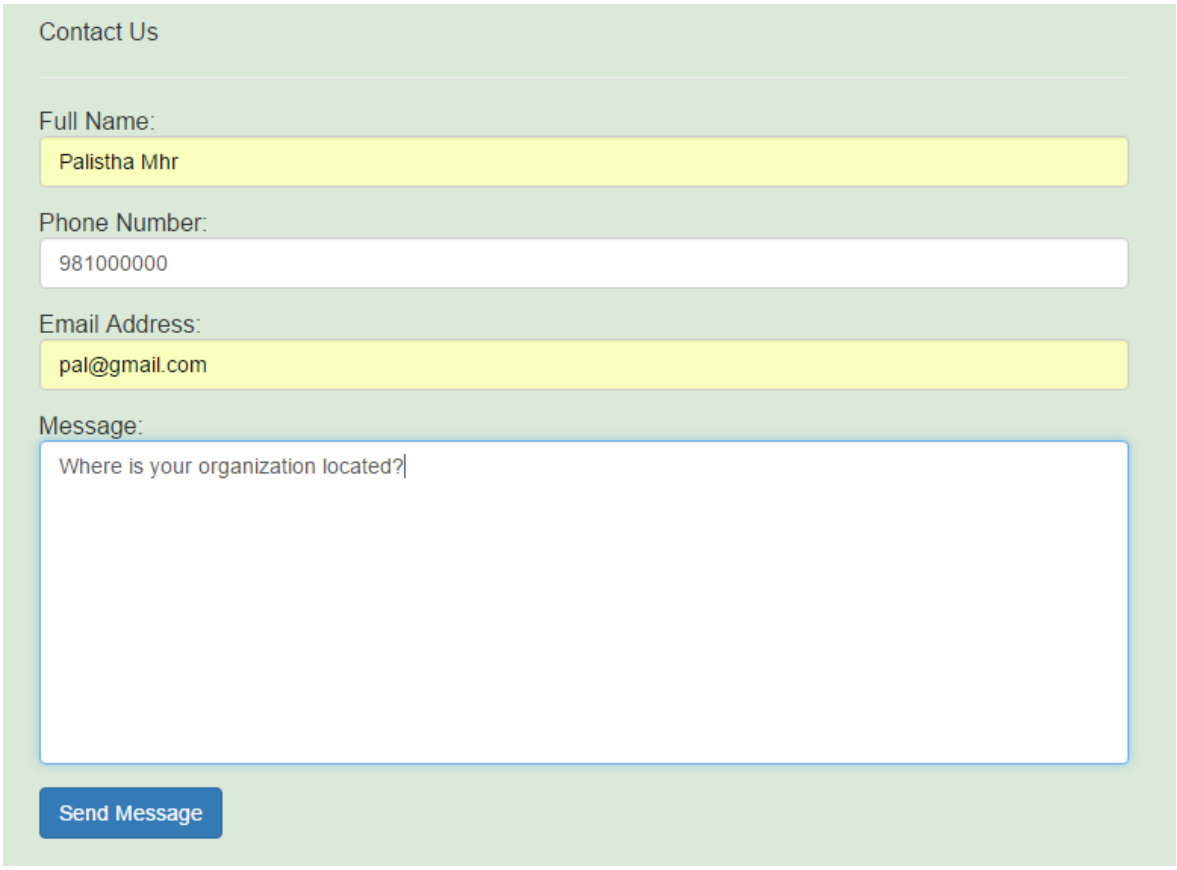

Figure 21 System Testing - Message sending from contact page

Figure 21 shows the contact form where users can send their queries by filling the form. Then the form is submitted in admin dashboard. The message sent by the user is listed in the admin dashboard as shown in the figure.

ID	Name	Number	Email	Message
3	Sarita Giri	980000000	sarita@gmail.com	How many dogs do you have for adoption?
4	Palistha Mhr	981000000	pal@gmail.com	Where is your organization located?

Figure 22 System Testing - List of messages in dashboard

Figure 22 shows the list of messages from the contact page.

3.7 Implementation

Implementation is the carrying out, execution, or practice of a plan, a method, or any design, idea, model, specification, standard or policy for doing something. As such, implementation is the action that must follow any preliminary thinking in order for something to actually happen. Thus, Implementation refers to the final process of moving the solution from development status to production status [51].

After performing all the necessary testing and correcting the error, the system can now be implemented. The web application was developed using PHP which makes it compatible in many severs and operating systems. The web application is responsive i.e. it responds differently when viewed on devices of different sizes. The web pages can be hosted form web server and it can be accessed from end computers. Also it runs smoothly without creating much server overhead. After rendering the PHP code, the server renders it into simple HTML file which can be viewed by almost all browsers.

CHAPTER 4: RESULT ANALYSIS

4.1 Result

pawsCare is a web-based application which can run in computer system as well as in mobile device. The application will provide access to send emergency report, view animals for adoption, add and view lost and found animals in the application. This application also contains blog section where users can view various news related to animals. Users can also view the data analysis of different cases related to the rescue of the street animals. The application is able to provide information via website to the users who access the website. The website was developed in PHP Laravel and MySQL. Since this is an ICT based application, internet connection is required to run the application. The major goal of this project is to develop a web application which helps to report emergency case of street animals for instant rescue and treatment.

First the project was initiated with the objective to do research on ICT and its impact on animals. Also, it is believed that the use of ICT enabled application will contribute to improve the current status of street animals which helps for the welfare of street animals.

4.2 Screenshots of Application's Output

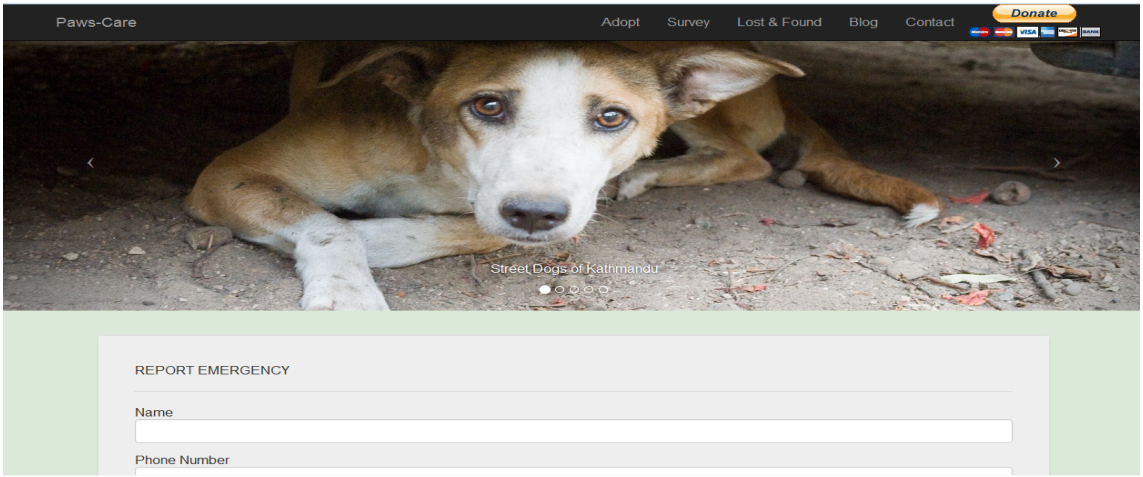

Figure 23 Home Page of the application

Figure 24 is the screenshot of the homepage of web application. Since this application is dynamic as well as responsive, it can be viewed both in computer system and mobile devices. This homepage displays the information like form for emergency report and different navigation menus for further browsing.

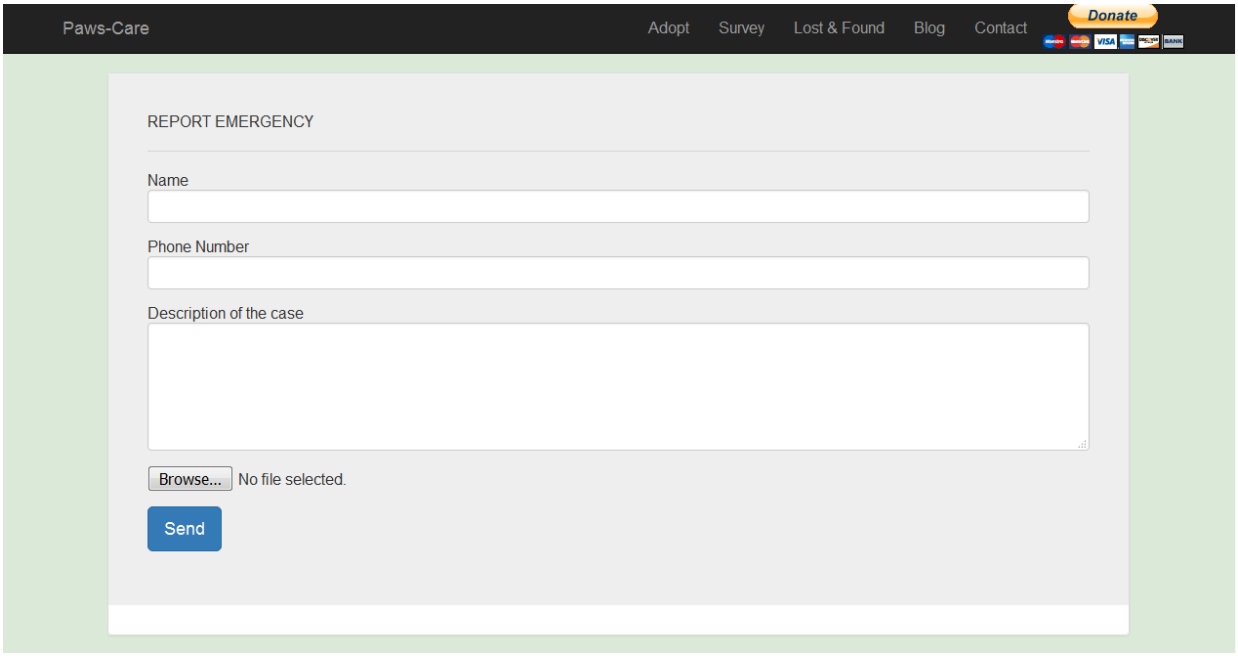

Figure 24 Emergency Report form

Figure is a part of homepage of this application. This part contains report emergency form where the emergency report is sent to the admin through this form. After the submission of the form, the message is then sent to the admin to notify the admin about the case.

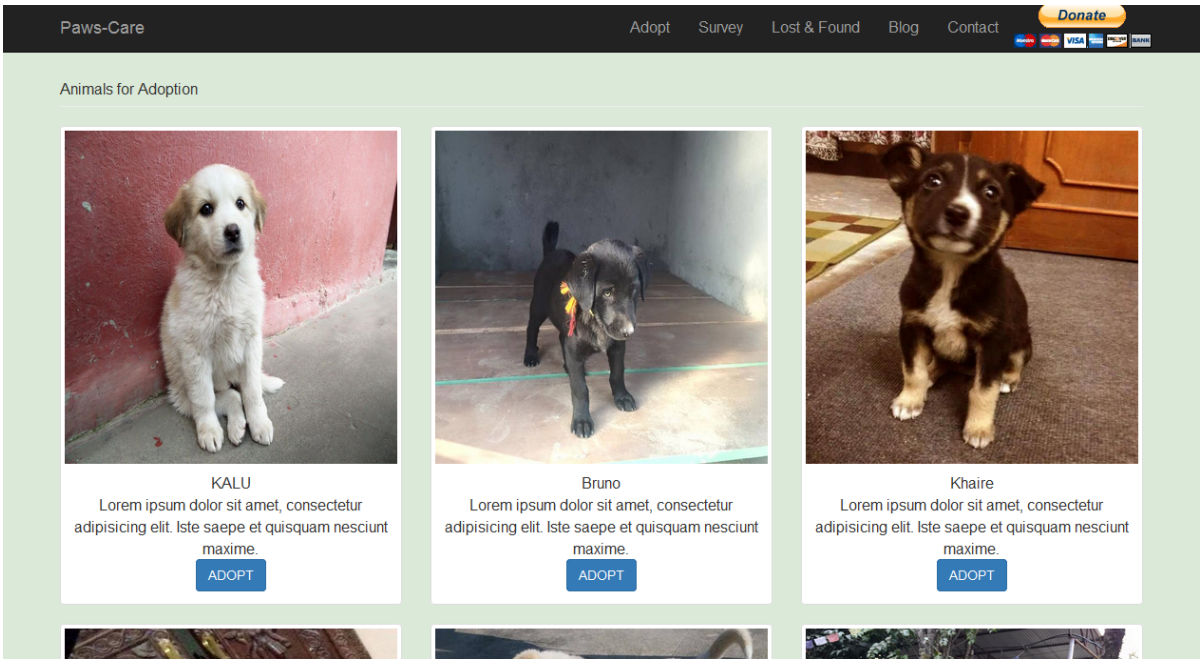

Figure 25 Animal adoption page

Animal adoption page displays the list of animals available for adoption and their description. The adopt button below the picture of animals opens the form to enquiry about the animal for adoption.

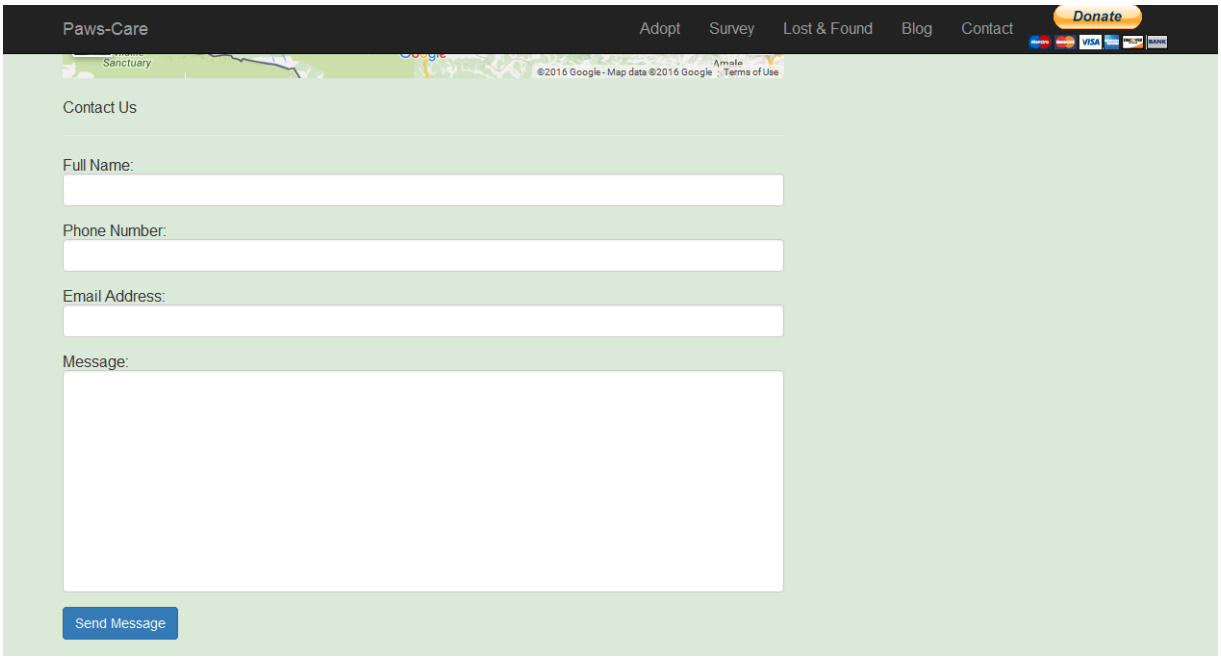

Figure 26 Contact Page

Figure is Contact Us page which displays the page on how users and other members can contact the admin in any case. Also, through user queries and messages, the admin can get to know about the user demands and suggestions. This page also gives exclusive access to the location through satellite maps.

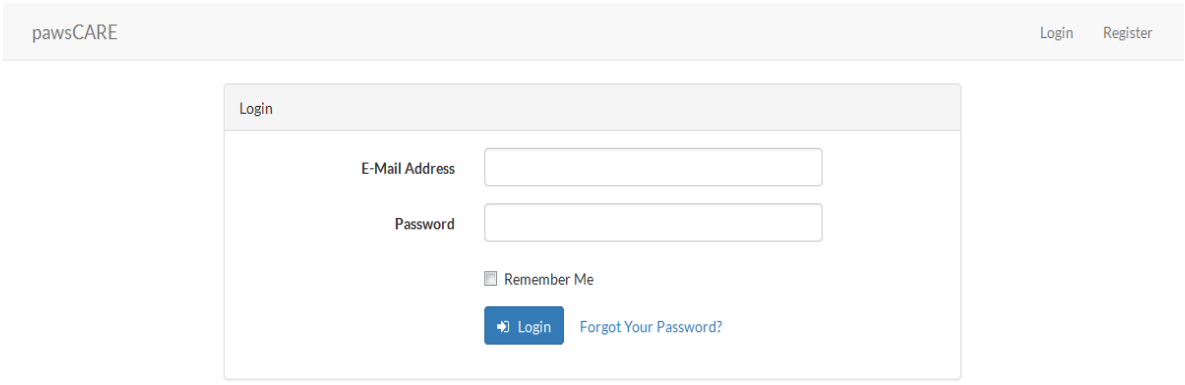

Figure 27 Admin Login

Figure represents admin login page. This page consists of login forms which redirect the admin to the admin dashboard.

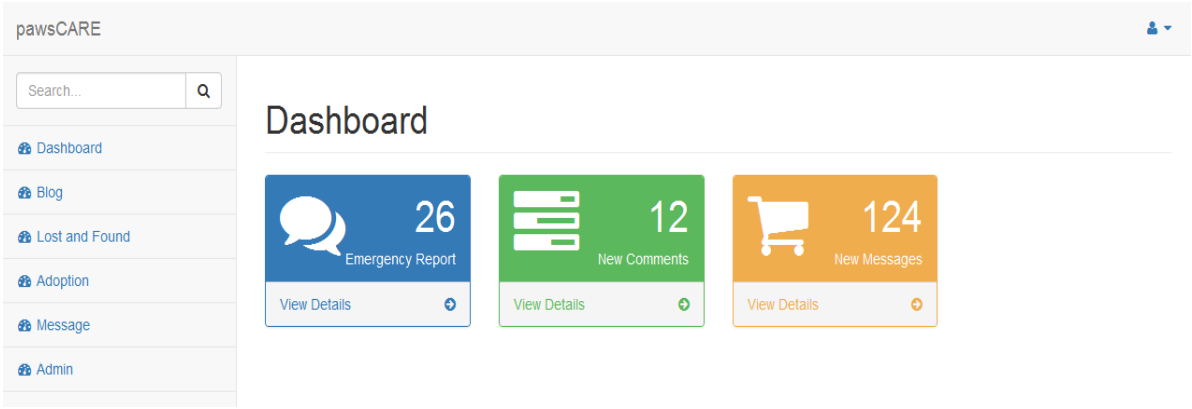

Figure 28 Admin Dashboard

Figure displays the Admin panel when a user is logged in as an admin. The admin panel gives the access to users to add, update, edit and delete post, animals as well as users.

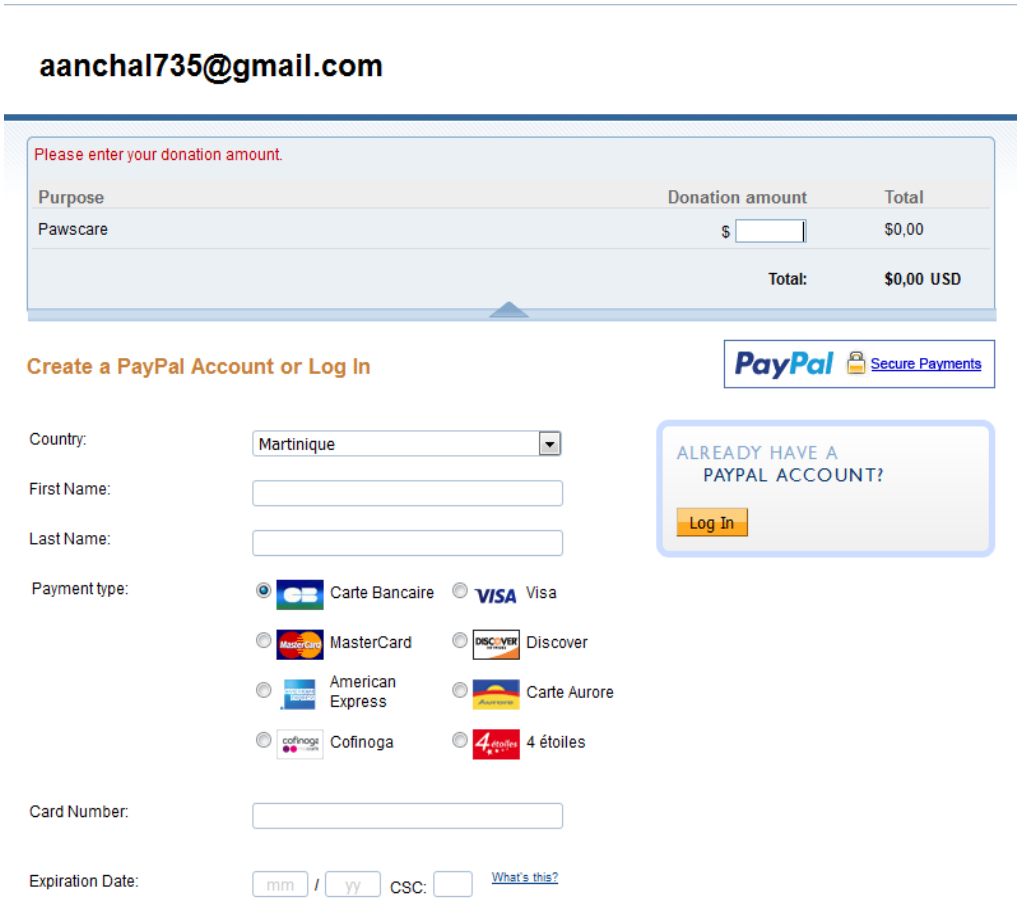

Figure 29 Paypal donate button

Figure displays the form to donate using PayPal account. Interested users can donate clicking the Donate button in navigation menu.

4.3 Critical Analysis

"pawsCare: ICT for Street Animals of Kathmandu for the betterment of their condition" is a web based application which fulfills the objectives defined in the initial stage of the development. This application is a research based web application which is focused on the present condition of street animals of Kathmandu. The primary concern of this project is to report emergency case of street animals for instant rescue and treatment. The application provides access to send emergency report, view animals for adoption, add and view lost and found animals in the application. This application also contains blog section where users

can view various news related to animals. Users can also view the data analysis of different cases related to the rescue of the street animals. The application is able to provide information via website to the users who access the website. The end system has friendly design to make the users clear about the features available in the application. Despite of the immense effort applied in the development of the project, bug-free state of the application can't be guaranteed. A proper analysis of the work and the application's various aspects is needed to further improve the quality aspect of the application.

Basically, this web application consists of two types of user. One is the administrator and the other is the users/viewers. This application consists of one or more than one administrators who can access the contents of the page and update them. The administrator can only alter the information independently. The information submitted by the administrator in the application is the information gathered from different organizations and people working for the welfare of street animals. The information posted by the administrator can be viewed by the users. The users can only view the information in the web application. They cannot alter the information.

In present world, computer based system are somehow indirectly or directly implemented in each and every field. There has been abundant use of information technology in various fields. However its use in the field of welfare of street animals has still been lacking behind. The use of ICT in animal welfare in our country is stagnant as compared to other countries. There are few successful ICT initiatives for the welfare of street animals in other countries. Many countries are adapting ICTs tools for the welfare of street animals.

As an internet user, it is known that the users can be able to use a web application which has easy user interface. Hence, the developers have tried to develop a platform with easy user interface. For designing the front end, the developers have used HTML5, CSS3, JavaScript, and Twitter Bootstrap. The front end is very simple so that the users have the idea of 'what to do next' after the access the web

application. The developers have tried to do strong backend coding to minimize the security risks and errors or bugs. For the backend coding, the developers have used MySQL which is known for its secured environment. MySQL as backend has the entire feature required for supporting crud operations in the application. The database is managed in such a way that the required data will be generated. Since the application is web based, the users need no particular OS; they can access the application in any OS as long as internet connection and browser availability is active. Initially the authors had many problems integrating front end system with back end systems but eventually they configured successfully and hence were able to integrate and use these systems to fulfill the objective and develop the application. Now they feel confident on both systems and after doing this project, it has helped us both professionally and academically on practical working of the system.

Talking about the stakeholders in our system; the main stakeholders are the rescue team and administrator. ICT for the betterment of street animals could be an emerging issue in Kathmandu nowadays. It is an issue on which the government of Nepal is investing for research and implementation. Being an issue concerned with social welfare, which itself is an important part of the nation's development, even government can become a stakeholder in projects like this. NGOs and INGOs and the government can be the direct stakeholders of projects similar to this. From the overall study, the authors found that the government of Nepal is trying to improve the condition of street animals. As a solution to improve public health, to address animal health and environmental concerns and to humanely manage urban dog population, Kathmandu Metropolitan City (KMC) launched the 'One Health' Dog Management Program in Kathmandu. The project will be using humane dog catching methods, following high-quality pre and post-operative norms and managing a detailed database of the dogs that go through sterilization and/or vaccination over a period of three years. The launch of this program marks the beginning of a new era for the revered street dogs of Kathmandu- an era of health and well-being for the entire community.

During the case study we visited one of the organization working for the welfare of the street animals especially dogs. At first this organization came up with a Facebook page to motivate people to love strays & not to suffer them. Sneha's care shelter is located in Chobar, Lalitpur where they are currently providing shelter, food, medication and all kinds of important things to 15+ homeless street dogs. Many dogs in and around Kathmandu are rescued. Till now they have rescued more than 800 injured street dogs including "On-The-Spot" treatment, rabies vaccination for more than 2000 street dogs, spaying or neutering of 659 street dogs, shelter care for more than 100 dogs, adopted more than 30 puppies, protest against animal cruelty and everything they could do for the animals welfare. These types of organizations are facing problems regarding the emergency reports given by the people. Sneha's Care receives many messages on Facebook for the rescue of street animals from different locations. These types of organizations working for the welfare of street animals will be benefitted by this kind of application

The project was initiated with the objective to do research on ICT and its impact on animals. This application is able to provide information via website to the users who access the website. There are few successful ICT initiatives for the welfare of street animals in other countries, It is believed that the use of ICT enabled application helps in the betterment of the current status of street animals. Also, Animal welfare contributes to the integral part of a responsible development in the livestock sector.

4.4 Limitation and Future Enhancements

4.4.1 Limitations

This project was implemented through lots of ups and downs. Although this application seems to lack of all the features as decided to be added, it still stands out to be an effective application for the anticipated users. With all the efforts the authors built this project to assist people who are willing to work for the welfare of

the street animals. After implementation of the overall system and analyzing the documentations, there are few limitations to this application.

- Being a web based application; this project is solely dependent on the internet connection.
- As the overall performance of the app depends on internet connection; it requires Wi-Fi or mobile data which might take charges.
- The amount of information presented in the application is still not enough to be as competent as of other applications.
- The application can still be given more dynamic and interactive outlooks.
- Even if the project provides all the basic functions, various other features can be added to make the system effective.

4.4.2 Future Enhancement

The application can be improved and extended in several ways. We explore some of these exciting possibilities and discuss our future plans for adding new features that build upon and complement the current functionality.

- The feature of including maps for veterinary and clinics can also add a good addition to this application.
- Upgrading the web based application into a fully mobile based application for the ease of users.
- Adding success stories of lost and found animals.
- Sending emergency report to more than one rescue team from nearby location.

4.5 Conclusion

We started this project with few researches on street animals of Kathmandu. Having started as a hybrid application project, and later, due to technical difficulties and incompetence, this project was shifted to a web based application. The web

application for the welfare of street animals has been developed. This system makes use of technologies like PHP Laravel and algorithms that are efficient and simple. Among many advantages and disadvantages seen in this application, the main pros was that this application didn't need a specific platform to run on, and due to that, users wouldn't have much difficulty in viewing the information in web. Since this application is responsive, users can view the application in any platform. And among many cons, the main problems were the incapability to develop a mobile based application, which was initially proposed at the beginning of the session.

This project will provide information flow in terms of condition of street animals and provide awareness to the people regarding street animals. The main objective of this web application is to report emergency cases of street animals. The report is then submitted and notified to the admin via SMS. After receiving the notification, the rescue team will act accordingly going through the cases. After the completion of research, we have found out that there are lots of organizations working for the street dogs in Kathmandu. Such organizations will be mainly benefitted by this application. Various countries have taken ICT initiatives for the betterment of the condition of animals. The ICT has already proven its worth for animal care systems. ICTs have the potential to enable greater sharing of information. Nepal needs to develop the Technology Infrastructure to implement any ICT initiatives for street animals.

Finally this project has been lucrative for the team and is satisfied with the accomplishment of the project. Working as a teamwork is the major factor without which this project would not have been possible. Working with several stakeholders, the authors came to face the real world challenges. Therefore, this application motivates for the welfare of the street animals.

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APPENDIX

1. Controllers

a. Emergency Controller

```
<?php
namespace App\Http\Controllers;
use Illuminate\Http\Request;
use Session;
use App\Http\Requests;
use App\Emergency;

class EmergencyController extends Controller
{
    public function submitemergencyform(Request $request)
    {
        $destinationPath = 'assets/uploads';
         $extension = $request->file('image1')-
>getClientOriginalExtension(); // getting image extension
        $fileName = rand(11111,99999).'.'.$extension; //
renameing image
        $request->file('image1')->move($destinationPath,
$fileName);

         $Emergency= new Emergency;
        $Emergency->name = $request->get('name');
        $Emergency->contact = $request->get('contact');
        $Emergency->description = $request->get('description');
        $Emergency->image = $fileName;
        $Emergency->email = $request->get('email');
        $Emergency->save();

        /*sending sms*/
        $args = http_build_query(array(
            'token' => 'DVIPK32Pk5rIrj6SBPk9',
            'from'  => 'Demo', //$request->get('contact'),
            'to'    => urldecode('9849418457'),
            'text'  => $request->get('description')
            ));

        $url = "http://api.sparrowsms.com/v2/sms/";

    # Make the call using API.
        $ch = curl_init();
        curl_setopt($ch, CURLOPT_URL, $url);
        curl_setopt($ch, CURLOPT_POST, 1);
        curl_setopt($ch, CURLOPT_POSTFIELDS,$args);
        curl_setopt($ch, CURLOPT_RETURNTRANSFER, 1);

    // Response
        $response = curl_exec($ch);
        $status_code = curl_getinfo($ch, CURLINFO_HTTP_CODE);
        curl_close($ch);

        if($status_code == 200){
            $msg = "SMS is send.";
        }else{
            $msg = "SMS not sent.";
```

```
        }
        /* sending sms via api*/

        \Session::flash('flash_message','Form Submitted! '.
$msg);

        return redirect()->back();
    }
}
```

b. Adopt Controller

```
<?php
namespace App\Http\Controllers;
use Illuminate\Http\Request;
use App\Http\Requests;
use App\Adoption;
use App\Requestadopt;
classAdoptController extends Controller
{
public function show(){
   return view('frontend/adopt');
    }
public function showform()
    {
   return view('frontend/adoptform');
    }
public function submitadoptform(Request $request)
    {
   $Adoption= new Requestadopt;
        $Adoption->name = $request->get('name');
        $Adoption->phone = $request->get('phone');
        $Adoption->email = $request->get('email');
        $Adoption->address = $request->get('address');
        $Adoption->whyadopt = $request->get('whyadopt');
        $Adoption->save();
        \Session::flash('flash_message','Form Submitted!');

return redirect()->back();
    }
}
```

c. Contact Message Controller

```
<?php
namespace App\Http\Controllers;
use Illuminate\Http\Request;
use App\Http\Requests;
use App\Contact;
classContactMessageController extends Controller
{
public function show(){
   return view('frontend/contact');
    }
public function submitcontactform(Request $request)
    {
        $Contact= new Contact;
        $Contact->name = $request->get('name');
        $Contact->number = $request->get('number');
        $Contact->email = $request->get('email');
        $Contact->messagebody= $request->get('messagebody');
        $Contact->save();
```

```
        \Session::flash('flash_message','Form Submitted!');
return redirect()->back();
    }
    }
```

2. Database

a. Emergency table

```
<?php
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Database\Migrations\Migration;
classCreateEmergenciesTable extends Migration
{
    /**
     * Run the migrations.
     *
     * @return void
     */
public function up()
    {
         Schema::create('emergencies', function (Blueprint
$table) {
            $table->increments('id');
            $table->string('name');
            $table->string('contact');
            $table->string('description');
            $table->string('image');
            $table->string('email');
            $table->timestamps();
        });
    }
    /**
     * Reverse the migrations.
     *
     * @return void
     */
public function down()
    {
        Schema::drop('emergencies');
    }
}
```

b. Lost and Found Table

```
<?php
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Database\Migrations\Migration;
classCreateLostandfoundsTable extends Migration
{
    /**
     * Run the migrations.
     *
     * @return void
     */
public function up()
    {
         Schema::create('lostandfounds', function (Blueprint
$table) {
            $table->increments('id');
            $table->string('image');
            $table->string('description');
            $table->timestamps();
```

```
        });
    }
    /**
     * Reverse the migrations.
     *
     * @return void
     */
public function down()
    {
        Schema::drop('lostandfounds');
    }
}
```

c. Blogs Table

```
<?php

use Illuminate\Database\Schema\Blueprint;
use Illuminate\Database\Migrations\Migration;
classCreateBlogsTable extends Migration
{
    /**
     * Run the migrations.
     *
     * @return void
     */
public function up()
    {
         Schema::create('blogs', function (Blueprint $table) {
            $table->increments('id');
            $table->string('title');
            $table->string('body');
            $table->string('image');
            $table->timestamps();
        });
    }
    /**
     * Reverse the migrations.
     *
     * @return void
     */
public function down()
    {
        Schema::drop('blogs');
    }
}
```

d. Adoptions Table

```
<?php
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Database\Migrations\Migration;
classCreateAdoptionsTable extends Migration
{
    /**
     * Run the migrations.
     *
     * @return void
     */
public function up()
    {
```

```
        Schema::create('adoptions', function (Blueprint $table)
{
            $table->increments('id');
            $table->string('image');
            $table->string('description');
            $table->string('name');
            $table->string('author_id');
            $table->timestamps();
        });
    }
    /**
     * Reverse the migrations.
     *
     * @return void
     */
public function down()
    {
        Schema::drop('adoptions');
    }
}
```

e. Requestadopts Table

```
<?php
use Illuminate\Database\Schema\Blueprint;
use Illuminate\Database\Migrations\Migration;
classCreateRequestadoptsTable extends Migration
{
    /**
     * Run the migrations.
     *
     * @return void
     */
public function up()
    {
        Schema::create('requestadopts', function (Blueprint
$table) {
            $table->increments('id');
            $table->string('name');
            $table->string('phone');
            $table->string('email');
            $table->string('address');
            $table->string('whyadopt');
            $table->timestamps();
        });
    }
    /**
     * Reverse the migrations.
     *
     * @return void
     */
public function down()
    {
        Schema::drop('requestadopts');
    }
}
```

3. Model

a. Emergency Model

```
<?php
namespace App;
```

```
use Illuminate\Database\Eloquent\Model;
class Emergency extends Model
{
protected $table = 'emergencies';
    protected $fillable = ['id', 'name', 'contact',
'description', 'image', 'email', 'created_at', 'updated_at'];
}
```

b. Contacts Model

```
<?php
namespace App;
use Illuminate\Database\Eloquent\Model;
class Contact extends Model
{
protected $table = 'contacts';
    protected $fillable = ['id', 'name', 'email', 'number',
'messagebody', 'created_at', 'updated_at'];
}
```

4. Front page index

```
@extends('includes.header')
@section('content')
<!-- Header Carousel -->
<header id="myCarousel" class="carousel slide">
<!-- Indicators -->
<ol class="carousel-indicators">
<li data-target="#myCarousel" data-slide-to="0"
class="active"></li>
<li data-target="#myCarousel" data-slide-to="1"></li>
<li data-target="#myCarousel" data-slide-to="2"></li>
<li data-target="#myCarousel" data-slide-to="3"></li>
<li data-target="#myCarousel" data-slide-to="4"></li>
</ol>
<!-- Wrapper for slides -->
<div class="carousel-inner">
<div class="item active">
<div class="fill">
<imgsrc="{{asset('/assets/images/first.jpg')}}">
</div>
<div class="carousel-caption">
<h2>Street Dogs of Kathmandu</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="{{asset('/assets/images/02.jpg')}}">
</div>
<div class="carousel-caption">
<h2>Wandering cattles Kathmandu's streets</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="{{asset('/assets/images/03.jpg')}}">
</div>
<div class="carousel-caption">
<h2>Caption 3</h2>
</div>
</div>
<div class="item">
```

```
<div class="fill">
<imgsrc="{{asset('/assets/images/04.jpg')}}">
</div>
<div class="carousel-caption">
<h2>Caption 4</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="{{asset('/assets/images/05.jpg')}}">
</div>
<div class="carousel-caption">
<h2>Caption 5</h2>
</div>
</div>
</div>
<!-- Controls -->
<a class="left carousel-control" href="#myCarousel" data-
slide="prev">
<span class="icon-prev"></span>
</a>
<a class="right carousel-control" href="#myCarousel" data-
slide="next">
<span class="icon-next"></span>
</a>
</header>
<!-- Emergency Form -->
<div class="row reportform">
<div class="col-md-10 col-md-offset-1">
<div class="panel panel-default">
<div class="panel-body">
<div class="jumbotron">
<h2>REPORT EMERGENCY</h2><hr>
<form role="form" method="POST"
action="{{url('/reportemergency')}}">
<input type="hidden" name="_token" value="{{ csrf_token() }}">
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Name</label>
<input type="text" class="form-control" id="postTitle" aria-
describedby="helpBlock2" name="name">
</div>
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Phone
Number</label>
<input type="text" class="form-control" id="postTitle" aria-
describedby="helpBlock2" name="contact">
</div>
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Description of
the case</label>
<textarea class="form-control" rows="5" id="postBody"
name="description"></textarea>
</div>
<div class="form-group ">
<input type="file" name="pic" accept="image/*">
</div>
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Email</label>
```

```
<input type="text" class="form-control" id="postTitle" aria-
describedby="helpBlock2" name="email">
</div>
<p><button type="submit" class="btnbtn-primary">Send</button>
</p>
</form>
</div>
</div>
</div>
</div>
</div>
<!-- Portfolio Section -->
<div class="container">
<div class="row">
<div class="col-lg-12">
<h2 class="page-header">Animals For Adoption</h2>
</div>
<div class="col-md-4 text-center">
<div class="thumbnail">
<img class="img-responsive"
src="{{asset('/assets/images/adopt1.jpg')}}" alt="">
<div class="caption">
<p>Anyone willing to adopt this puppy?</p>
<a class="btnbtn-primary" href="{{url('/adoptform')}}">ADOPT</a>
</div>
</div>
</div>
<div class="col-md-4 text-center">
<div class="thumbnail">
<img class="img-responsive"
src="{{asset('/assets/images/adopt2.jpg')}}" alt="">
<div class="caption">
<p>2 month old kale is looking for a loving home.</p>
<a class="btnbtn-primary" href="{{url('/adoptform')}}">ADOPT</a>
</div>
</div>
</div>
<div class="col-md-4 text-center">
<div class="thumbnail">
<img class="img-responsive"
src="{{asset('/assets/images/adopt3.jpg')}}" alt="">
<div class="caption">
<p>Looking for a home for this little one.</p>
<a class="btnbtn-primary" href="{{url('/adoptform')}}">ADOPT</a>
</div>
</div>
</div>
<div class="adoptbutton">
<a class="btnbtn-primary" href="{{url('/adopt')}}">View more</a>
</div>
</div>
</div>
<!-- /.row -->
@endsection
<!-- Footer -->
@extends('includes.footer)
```

5. Main admin Page

```
<!DOCTYPE html>
```

```
<html lang="en">
<head>
<meta charset="utf-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-
scale=1">
<meta name="description" content="">
<meta name="author" content="">
<title><link rel="shortcut icon" type="image/x-icon"
href="favicon.ico"/>Paws-Care</title>
<!-- Bootstrap Core CSS -->
<link href="css/bootstrap.min.css" rel="stylesheet">
<!-- Custom CSS -->
<link href="css/modern-business.css" rel="stylesheet">
<link href="css/mystyle.css" rel="stylesheet">
<!-- Custom Fonts -->
<link href="font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
<!-- HTML5 Shim and Respond.js IE8 support of HTML5 elements and
media queries -->
<!-- WARNING: Respond.js doesn't work if you view the page via
file:// -->
<!--[if lt IE 9]>
<script
src="https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"><
/script>
<script
src="https://oss.maxcdn.com/libs/respond.js/1.4.2/respond.min.js
"></script>
<![endif]-->
</head>
<body>
<!-- Navigation -->
<nav class="navbarnavbar-inverse navbar-fixed-top"
role="navigation">
<div class="container">
<!-- Brand and toggle get grouped for better mobile display -->
<div class="navbar-header">
<button type="button" class="navbar-toggle" data-
toggle="collapse" data-target="#bs-example-navbar-collapse-1">
<span class="sr-only">Toggle navigation</span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
</button>
<a class="navbar-brand" href="index.html">Paws-Care</a>
</div>
<!-- Collect the nav links, forms, and other content for
toggling -->
<div class="collapse navbar-collapse" id="bs-example-navbar-
collapse-1">
<ul class="navnavbar-navnavbar-right">
<li>
<a href="adopt.html">Adopt</a>
</li>
<li>
<a href="survey.html">Survey</a>
</li>
```

```
<li>
<a href="lostandfound.html">Lost & Found</a>
</li>
<li>
<a href="blog.html">Blog</a>
</li>
<li>
<a href="contact.html">Contact</a>
</li>
<button><a class="navbar-brand" href="index.html">Donate
Us</a></button>
</ul>
</div>
<!-- /.navbar-collapse -->
</div>
<!-- /.container -->
</nav>
<!-- Header Carousel -->
<header id="myCarousel" class="carousel slide">
<!-- Indicators -->
<ol class="carousel-indicators">
<li data-target="#myCarousel" data-slide-to="0"
class="active"></li>
<li data-target="#myCarousel" data-slide-to="1"></li>
<li data-target="#myCarousel" data-slide-to="2"></li>
<li data-target="#myCarousel" data-slide-to="3"></li>
<li data-target="#myCarousel" data-slide-to="4"></li>
</ol>
<!-- Wrapper for slides -->
<div class="carousel-inner">
<div class="item active">
<div class="fill">
<imgsrc="images/01.jpg">
</div>
<div class="carousel-caption">
<h2>Street Dogs of Kathmandu</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="images/02.jpg">
</div>
<div class="carousel-caption">
<h2>Wandering cattles Kathmandu's streets</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="images/03.jpg">
</div>
<div class="carousel-caption">
<h2>Caption 3</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="images/04.jpg">
</div>
```

```
<div class="carousel-caption">
<h2>Caption 4</h2>
</div>
</div>
<div class="item">
<div class="fill">
<imgsrc="images/05.jpg">
</div>
<div class="carousel-caption">
<h2>Caption 5</h2>
</div>
</div>
</div>
<!-- Controls -->
<a class="left carousel-control" href="#myCarousel" data-
slide="prev">
<span class="icon-prev"></span>
</a>
<a class="right carousel-control" href="#myCarousel" data-
slide="next">
<span class="icon-next"></span>
</a>
</header>
<!-- Emergency Form -->
<div class="row reportform">
<div class="col-md-10 col-md-offset-1">
<div class="panel panel-default">
<div class="panel-heading">
</div>
<div class="panel-body">
<div class="jumbotron">
<h2>REPORT EMERGENCY</h2>
<form role="form" method="POST" action="demo_form.asp">
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Name</label>
<input type="text" class="form-control" id="postTitle" aria-
describedby="helpBlock2" name="title">
</div>
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Phone
Number</label>
<input type="text" class="form-control" id="postTitle" aria-
describedby="helpBlock2" name="title">
</div>
<div class="form-group ">
<label class="control-label" for="inputSuccess1">Description of
the case</label>
<textarea class="form-control" rows="5" id="postBody"
name="postbody"></textarea>
</div>
<div class="form-group ">
<input type="file" name="pic" accept="image/*">
</div>
</form>
<p><a class="btnbtn-primary btn-lg" href="#"
role="button">Send</a></p>
</div>
</div>
```

```
</div>
</div>
</div>
<!-- Portfolio Section -->
<div class="container">
<div class="row">
<div class="col-lg-12">
<h2 class="page-header">Animals For Adoption</h2>
</div>
<div class="col-md-4 text-center">
<div class="thumbnail">
<img class="img-responsive" src="images/adopt1.jpg" alt="">
<div class="caption">
<p>Anyone willing to adopt this puppy?</p>
<a class="btnbtn-primary" href="adoptform.html">ADOPT</a>
</div>
</div>
</div>
<div class="col-md-4 text-center">
<div class="thumbnail">
<img class="img-responsive" src="images/adopt2.jpg" alt="">
<div class="caption">
<p>2 month old kale is looking for a loving home.</p>
<a class="btnbtn-primary" href="adoptform.html">ADOPT</a>
</div>
</div>
</div>
<div class="col-md-4 text-center">
<div class="thumbnail">
<img class="img-responsive" src="images/adopt3.jpg" alt="">
<div class="caption">
<p>Looking for a home for this little one.</p>
<a class="btnbtn-primary" href="adoptform.html">ADOPT</a>
</div>
</div>
</div>
<div class="adoptbutton">
<a class="btnbtn-primary" href="adopt.html">View more</a>
</div>
</div>
</div>
<!-- /.row -->

<link href="css/style.css" rel="stylesheet" type="text/css"
media="all" />
<!-- Footer -->
<footer>
<!--<div class="row">
<div class="col-lg-12">
<p>Copyright &copy; Your Website 2014</p>
</div>
</div> -->
<link href="css/style.css" rel="stylesheet" type="text/css"
media="all" />
<div class="main">
<div class="footer-grids">
<div class="footer one">
<h3>More About Company</h3>
```

```
<p>Nemoenimipsamvoluptatemquia
voluptas sit aspernaturautoditaut fugit,
sedquiaconsequunturmagnidoloreseos qui
rationevoluptatemsequinesciunt.</p>
<p class="adam">- Patrick Victoria, CEO</p>
<div class="clear"></div>
</div>
<div class="footer two">
<h3>Keep Connected</h3>
<ul>
<li><a class="fb" href="#"><i></i>Like us on Facebook</a></li>
<li><a class="fb1" href="#"><i></i>Follow us on Twitter</a></li>
<li><a class="fb2" href="#"><i></i>Add us on Google
Plus</a></li>
</ul>
</div>
<div class="footer three">
<h3>Contact Information</h3>
<ul>
<li>The company name <span>Loremipsum dolor,</span>GlasglowDr 40
Fe 72.  </li>
<li>1234567890  </li>
<li><a
href="mailto:info@example.com">contact@example.com</a></li>
</ul>
</div>
<div class="clear"></div>
</div>
<div class="copy-right-grids">
<div class="copy-left">
<p class="footer-gd">© 2016 Paws-Care. All Rights Reserved </p>
</div>
<div class="clear"></div>
</div>
</div>
</body>
</footer>
</div>
<!-- /.container -->
<!--jQuery -->
<scriptsrc="js/jquery.js"></script>
<!-- Bootstrap Core JavaScript -->
<scriptsrc="js/bootstrap.min.js"></script>
<!-- Script to Activate the Carousel -->
<script>
    $('.carousel').carousel({
interval: 5000 //changes the speed
    })
</script>
</body>
</html>
```