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Pet Care System Based On Android Application

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Abstract: In this paper we present Pet Care System which is based on android Application. The objective of this system is to provide non-exhausting way to take care of your pet based on mobile application. We describe the design approaches and functional components of this system. The system was developed based on domestic pets experts. The results were divided into 2 parts: developing the mobile application for advice users and analysing the functionality of the application, by the research purposes. Design of the application and functionality of the system were described.
Keywords: Android Application, Pet caring, Mapping location

I. INTRODUCTION

Pet is a domestic animal. The pet population in India has grown from 7 million in 2006 to 10 million in 2011. On an average 600,000 pets are adopted every year. Now a days petting is just not only from financial point view but also became a new trend. Lots of people finds difficulty of how to take care of their pets and where to keep their pets when they go out of town for couple of days and sometimes people can't pet though they are interested in petting due to some reasons so they can have pet for few time. Having a pet can be a stressful and exhausting experience. So to tackle this situation this application is easier and non exhausting way to take care of your pet. The pet safety and protection Act would be Establish integrity in the provision of dogs and cats. Lots of location based Application are growing up by mobile devices with GPS. No pet-care systems and application are available yet.

With recent advances in information technology becoming an integral part of everyday life, smart mobile device is possible to take advantage to advice and guide what care need to be taken and also provide easy way to get rid of the problem which is faced by owner of the pet when they want go out of the town for couple of days where to keep their pets and how to care them. So to overcome this problem this application is used. In addition care taker are instructed with respect to diet of the pet and training that should be given to that pet. People who want to give their pets to be taken care will request and the interested people who can take care of pets will replay on the request. This application is android application so that it will be easily accessible on mobile phones at anytime and anywhere.

Therefore this project aims to implement Pet Care System based on android application so as to advise user to upkeep, feed and find temporary adopter for pet based on mobile application.

The remainder of this paper is organized as follows. Section II presents the system framework of this project. Section III presents details of each module, Section IV presents feasibility of the system, Section V presents mathematical model for system. Finally, Section VI concludes the paper with future work.

II. THE SYSTEM FRAMEWORK

To implement this project, we studied and collected data from user's requirements. The information was used as a source of information for management web and mobile applications and database management and internet network technology were applied to make the system fast and efficiently work. From analysis and design phase, we applied UML (Unified Modelling Language) as a tool for this step and
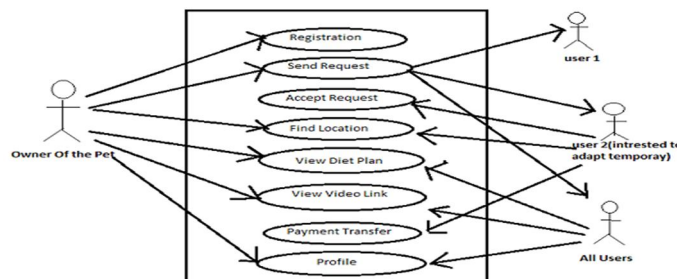Fig. 1 was presented use case of this application.

Fig.1 Use case of the Application

The system can be divided to 5 parts as following; a user registers part, an edit profile part, a search part, a categorization part, and a backend part. Fig. 2 presented the
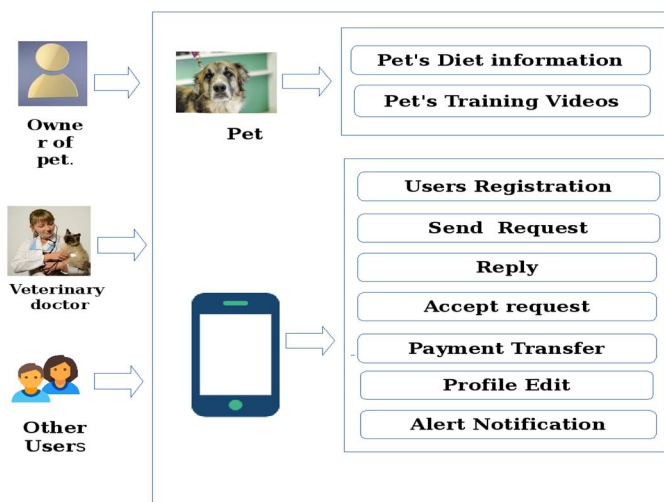framework of the system.

Fig.2 Framework of Application

In the user registers system, pet's owner and other users can subscribe his/her profile such as personnel information, pet's name, email address, username and password, and etc. The people who are facing problems regarding their pets caring can send request to keep their pets for a while and interested people can respond them and even can get paid for providing the service. Pet's all diet related and other information according to their species will be available on this application. Veterinary doctors contacts and address will be present on this application and the doctors who are present nearby their information will be displayed using map and shortest route to reach to the location will also be displayed. Basic pet training related videos will be shared on this application under the guidance of trainers. Also by capturing image of your pet we can find breed of that pet if you are unknown about it to guide from caring point of view. Account for the respective pet can be created on this application using which the notification regarding pet vaccine and meal will be send on time.

III. MODULES AND DETAILS

A. Registration
Registration is done by owner of the pet and the other users of the application..

B. Send Request
Send request is sent by the owner of the pet who wants to find temporary care taker for pet.

C. Reply
Reply is given by the people who are interested in temporary adopting the pet.

D. Accept Request
Accept request module allows owner to accepts requests come from temporary adapter.

E. Find Location
Find Location module provides addresses of the owner, temporary adapter and also veterinary doctors with shortest route to reach that location.

F. View Diet Plan
View diet plan module shows the diet plan for specified pet by retrieving data through database.

G.   View Video Link

View video link module provides the training related videos to all users for specified pet.

H.   Payment Transfer

Payment transfer module provides payment options and the payment should be done successfully without inconsistency in transaction.

I.   Profile

Profile is generated according to the data taken while registration. User can also edit the profiles.

J.   Alert Notification

Alert notification regarding pet vaccine and meal will be send on time.

IV. FEASIBILITY OF THE SYSTEM

The problem under consideration is to develop a pet care android application in which the people whom want their pets to be taken care can request and they will find out the interested people. Some interested people will reply to the request and owner of the pet will have the detail information about his/her pet like pet's diet, hybrids etc. User location will be shown prior to the request and reply. The interested people will be paid by the owner. There are some people who likes pet but they don't have pets, they also enjoys for some time by having pets and even get paid for it.

For analyzing the feasibility of pet care system we used idea matrix.

Table I Idea Matrix

Increase: User awareness. Effectiveness in taking care of pets	Improve Efficiency: Pet can be delivered without much human efforts thereby improves efficiency	Ignore: depends on the integrity of request or deciding whether to accept a request or not.
Drive: System driven safety awareness	Deliver : software which is reliable for owner and users	Decrease : Human efforts
Educate : Android programming	Evaluate : relevant cost and other parameter are needed to be evaluated	Elimination : Manual human interaction
Accelerate : Data analysis and process	Associate : Pet owner and interested people.	Accept: User registration.

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In this way, feasibility of the problem is analyzed using idea matrix.

V. MATHEMATICAL MODEL

System Description

Let S be the Pet Care system where,

$S=\{s, e, I, O, Ds, NDS, F, Su, Fa \}$

s=Start State,

e=End State,

I set of Inputs,

$I=\{IO, IC, ID\}$

$IO=\{IO_1, IO_2, \ldots., IO_n \}$ 'IO' is Input of Owner

$IC=\{IC_1, IC_2, \ldots\ldots, IC_n \}$ 'IC' is Input of Caretaker

$ID=\{ID_1, ID_2, \ldots., ID_n\}$ 'ID' is Input of Doctor

O set of Outputs,

$O=\{O_1, O_2, \ldots., O_5\}$

O_1=Got Response of Care taker for the request send by Owner

O_2=found nearest Care Taker

O_3=View Location of Caretaker and Owner

O_4= Payment Transfer

O_5=Got Diet chart

O_6=Got videos uploaded by others

f set of functions,

$f=\{f_1, f_2, \ldots., f_9\}$

$f_1(O) :: Registration\_Owner()$

$f_2(C,D) :: Registration\_Others()$

$f_3(O) :: Send\_Request()$

$f_4(C) :: Accept\_Request()$

$f_5(O,C,D) :: Find\_Location()$

$f_6(O,C) :: View\ Diet\ Plan()$

$f_7(D) :: View\ Video\ Link()$

$f_8(O) :: Payment\ transfer()$

$f_9(O,C,D) :: Profile()$

Ds= deterministic state

= { Successful Registration, Successful Login, Got nearest Caretaker, Caretaker got

Acknowledgement, successful Payment transfer, successful video upload

}

NDs= non-deterministic state

= { Unsuccessful Registration, Unsuccessful Login, Not found nearest Caretaker, No

Successful Payment transfer

}

Su= Successful Condition : Desired output is generated.

Fa= Failure Condition : Desired output is not generated due to failures.

VI. CONCLUSION WITH FUTURE WORK

In this paper we show the design of mobile application based on android system to give people user friendly way for petting and earning. However, in term of future experiments, we are looking forward to add new feature like breed identification from image of pet and to improve the application by using other advance techniques to enhance this project and also apply the tool to handle this application.

V. ACKNOWLEWDGMENT

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