

Curative: a doctor's guide for animal companions (Dogs Diseases Diagnosing System)

Prof.Amita Meshram¹, Monali Gadkari², Pragati Harde³, Prajakta Themdeo⁴, Shraddha Shivankar⁵, Sneha Ghutke⁶

¹Professor Amita Meshram, Dept. of Computer Technology, Rajiv Gandhi College of Engineering and Research, Maharashtra, India

^{2,3,4,5,6} Student, Dept. of Computer Technology, Rajiv Gandhi College of Engineering and Research, Maharashtra, India

Abstract – The objective of the application is to help users understand their animal friend's health better. The app collects symptoms from the user, analyses and displays result (most probable disease/condition). The user (owner) has to create an account and can add multiple records of various pets and manage accordingly. The application basically acts as a health record for easy managing of conditions of pets.

Key Words: Disease diagnosis, veterinary, treatment

1. INTRODUCTION

Dogs are our best friends and our family. Our dog friends can get caught up with diseases and can be sick many a times. They are unable to express their pain or sickness through words. Behavioral changes and physical symptoms are the only means of expressing their pain. But there are certain diseases that can't be detected by owner as they show very minor symptoms. In order to help owners detect their companion's diseases we developed this app. The objective of the application is to help users understand their animal friend's health better. The application collects symptoms from the user, analyzes it and displays result (most probable disease/condition) and its treatment. The user (owner) has to create an account(owner account) and has to add the companions' information as a record(dog record).User can even create multiple records of dogs(i.e. user can create as many records as the number of pets they have) and manage accordingly. The application basically acts as a health record. This application is certainly made to diagnose dog diseases but in the near future it can be further scaled to diagnose diseases of any kind of species such as cats, birds, cows, etc. This paper helps owners to detect almost all kinds of dog diseases including fatal diseases like cancer according to their symptoms or height or hair formation or by their breed names and display their possible treatments. The application also displays the treatment that can be done by owners at home, so that they avoid the pet's disease from worsening by giving them inappropriate home remedies. The paper will further explain how this system works.

1.1 Proposed System

The idea proposed in this paper is very simple, database of diseases and symptoms is stored in table and according to the symptoms entered by user corresponding table columns are selected and more symptoms are asked finally resulting

in calculating of most probable disease. This paper basically shows two diseases but the database can be increased in the near future.

1.2 Methodology

For creating the database diseases data were collected from various sites and vets were consulted. The application is android based and can easily be downloaded on mobile android devices. User will enter the symptoms visible on the dog. After comparison of symptoms stored in the database, results will be fetched from the database and the most probable disease will be displayed. The user (owner) has to create an account (owner account) and has to login after the creation of the account. Then the owner has to add the companions' information as a record(dog record) as give the basic information of dog such as its name, height, weight, breed, etc. Once the companions record is created owner can input the symptoms visible on the dog in case the dog ever falls sick. The android based application will then diagnose the symptoms and display the probable disease the dog must have caught. The required treatment of the disease will also be shown Fig [1].



Fig 1: Usage flow

1.3 System design and development

System has been designed on android studio and supports versions Kit Kat and above. The system design is very simple and app very easy to use as shown in Fig [2]. The database is made in simple table format in SQLite. The app is very user friendly to use.

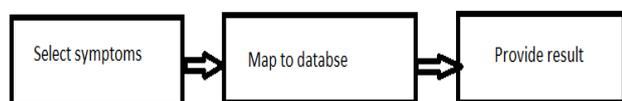


Fig 2: System design

1.4 Knowledge Base

The database is made in simple table format in SQLite as shown in Fig [3]:

Sr. No.	Disease	Symptoms	Treatment
1	Dog Hepatitis	Abdominal Pain Sore Throat Coughing Vomiting / Diarrhea Seizures Liver / Kidney Failure Bluish tinge to the eyes, referred to as Hepatitis Blue ability to pass Eye	No first aid.
2	Mange	Hair Loss Frantic Itching Inflammation Thickening of the skin	Dips of an insecticide called Mitaban preceded by hair clipping and benzoyl peroxide shampoo

Fig 3: Rough sample of Database

2. LITERATURE SURVEY

In artificial intelligence, an expert system is a computer system that consists of a knowledge base. The knowledge base is used by the system to take decisions as per the input of user. In other words expert system takes decisions like humans and can be treated as an expert in a particular field. The best example of expert systems used nowadays is the medical diagnosis systems used. Since its origin, various expert systems have been developed. The research is still on developing in the field of expert system and various systems are yet to be developed. The medical diagnosis expert systems for human disease diagnosis have been developed and it appropriately detects diseases. The expert system for animal disease detection is still in the development process. [1] A web based intelligent diagnosis for fish diseases have been developed which can diagnose 126 types of diseases

amongst nine species of primary freshwater fishes. The knowledge base consists of all the rules for the fish diseases with two sections including a symptom pattern and the diseases. [2] An expert system name Pig-Vet to diagnose Pig diseases have been developed which can diagnose 54 different types of pig diseases and symptoms. This system is used to help pig farmers to diagnose, treat and prevent pig diseases because of the insufficient of pig vets. [4] Horse-Expert combines the confidence factors with weight factors assigned to clinical signs by experts during the knowledge acquisition process to make diagnostic conclusions. The system can diagnose 91 common horse diseases, and provides suggestions for appropriate treatment options by continuously updating knowledge base. [5] This web-based intelligent system can mimic human cow disease expertise and diagnose 67 types of common dairy cow diseases with a user-friendly interface. [3] Online Dog Diseases Diagnosing System will provide diagnosis module and treatment module as main modules. This system diagnoses seven common dogs diseases which are Distemper, leptospirosis, Glaucoma, Colitis, Kennel Cough, Parvo Virus and Jaundice. This shows that the expert systems for dog diseases developed so far show a limited amount of diseases and is a web based platform to deliver system information to their respective online user.

This paper contains four modules user module, dog records (module), diagnosis module, treatment module. In addition, this application will be an easy to use android app which will reduce the complications of the web based platform applications.

3. IMPLEMENTATION

Disease is being diagnosed with the help of the application as shown in Fig [4] and Fig [5]:

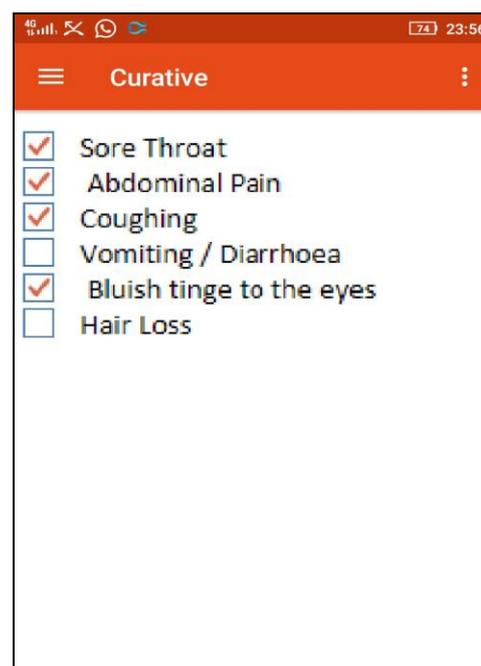


Fig [4]: Selection of symptoms by the user

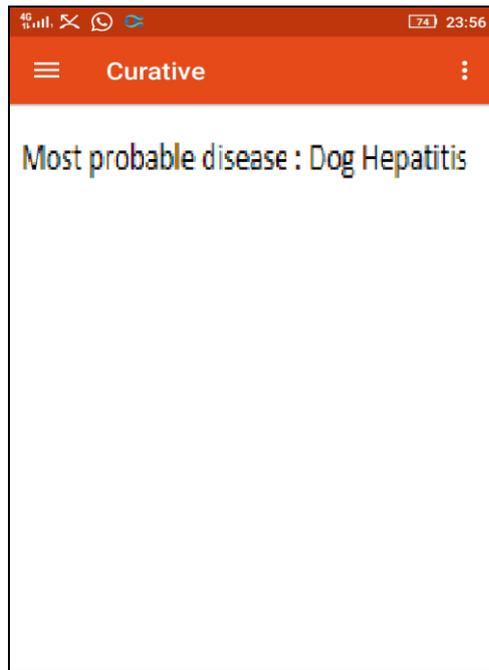


Fig [5]: Result displaying most probable disease

[6] www.pets4homes.co.uk

[7] www.petwave.com

[8] <https://www.kennelclub.org.uk>

[9] www.peteducation.com

[10] www.petpug.com

4. CONCLUSIONS

Currently, two diseases can be diagnosed with the help of the application and more diseases are being added. We can manage the records of our dog .It acts as a medical record. This application is very user friendly and owners can easily maintain the record of their companion's health.

REFERENCES

[1] D. Li, Z. Fu, and Y. Duan, –"Fish-expert: A web-based expert system for fish disease diagnosis", Expert Systems with Applications, vol. 23, pp., 311-320, 2002.

[2] Z. Fu, F. Xu, Z. Yun, and X. Zhang, –"Pig-vet: A web-based expert system for pig disease diagnosis", Expert Systems with Applications, vol. 29, pp. 93–103, 2005.

[3]Munirah M. Y., Suriawati S., and Teresa P. P. "Design and Development of Online Dog Diseases Diagnosing System", International Journal of Information and Education Technology, Vol. 6, No. 11, November 2016

[4] H. Qin, J. Xiao, X. Gao, H. Wang Department of Veterinary Surgery, Northeast Agricultural University, Harbin, Heilongjiang 150030, PR China, "Horse-Expert: An aided expert system For diagnosing horse diseases",Polish Journal of Veterinary Sciences Vol. 19, No. 4 (2016), 907–915

[5] Libin.Rong, 12 Daoliang.Li," A WEB BASED EXPERT SYSTEM FOR MILCH COW DISEASE DIAGNOSIS SYSTEM IN CHINA",

1. China Agricultural University, College of Information and Electrical Engineering, Beijing 100083, China;
2. Key Laboratory of Modern Agriculture System Integration, China Agricultural University, Beijing 100083