ANIMAL HEALTH PLATFORM TREATS PETS BETTER WITH GOOGLE MAPS INTEGRATION: SURVEY AND RESEARCH

Prof. Manta Balbudhe*1, Tikeshwari Paché*2, Nitu Mankar*3

*1Prof, Dept. Of Computer Engineering, SRPCE College Of Engineering, Nagpur, Maharashtra, India.
*2,3Department Of Computer Engineering SRPCE College Of Engineering Nagpur, Maharashtra, India.

ABSTRACT

This paper describes the development of an Android-based animal healthcare application that provides users with an easy-to-use interface to find nearby veterinary hospitals and consult with veterinary doctors about their pets. The application also contains relevant information about common animal diseases, their symptoms, and basic precautions. The main aim of the application is to address the issue of emergency situations where users are unable to treat sick animals and cannot contact the right doctors or specialists, leading to potential fatalities. To address this issue, the developers have designed an Android-based application system that maintains a database of authenticated doctors, their details, and locations. The application focuses on providing high-quality specialists based on their treatment expertise and suitable availability timings for the users. The review system incorporated in the application allows users to find and choose the most suitable doctors based on their experiences with them. The admin will monitor all registered doctors, and in case of continuous negative feedback from users, the admin will suspend their account. With this application, users can expect only reputed doctors with high-quality assurance for easy and fast treatment. The application aims to provide a simple yet effective solution for animal healthcare and facilitate seamless access to veterinary care.

Keywords: Animal Healthcare, Pet Healthcare, Veterinary Care, Google Maps Integration, Location-Based Services.

I. INTRODUCTION

Animal hospitals are on the rise, reflecting an increasing trend of pet ownership and the recognition of pets as companions, protectors, and family members. As a result, it’s crucial to provide them with proper healthcare and medical treatment. However, one of the challenges facing the animal healthcare industry is the inability of veterinarians and staff to provide round-the-clock care to pets. Research in this field is complex and fragmented, characterized by confirmation bias, trivialization, and reductionism. Nonetheless, there is evidence to suggest that pets can have a positive impact on mental well-being, particularly for those who experience social disadvantage. However, if pet owners do not receive proper treatment from knowledgeable and authentic doctors, their pets can suffer, hindering their recuperation and potentially leading to their death. To address this issue, an Android-based hospital services application has been developed using Java technology. The application records and displays details of animal hospitals, including their locations, availability of specialists, and reservation details. The user-friendly interface of the application enables pet owners to find the right veterinarian for their pet’s treatment and guidance without the need to physically visit hospitals. Users can also easily monitor and view the required details such as the qualifications and reviews of specialists. The primary goal of this application is to enhance the lives of pets by providing pet owners with access to reliable and knowledgeable veterinarians. By simplifying the process of finding the right doctor and enhancing the user experience, the application aims to reduce the harm caused to pets due to inadequate treatment. In conclusion, the increasing number of animal hospitals reflects the growing trend of pet ownership, but the are still challenges that need to be addressed in the animal healthcare industry. The development of an Android-based hospital services application aims to provide pet owners with access to reliable and knowledgeable veterinarians to improve the healthcare and treatment of their pets.

II. LITERATURE SURVEY

1. Universal health coverage has been proposed as a strategy to improve health in low- and middle-income countries (LMICs), but the provision of good-quality health care is crucial for its success. A study estimated
excess mortality for conditions targeted in the Sustainable Development Goals (SDGs) that are amenable to health care and the portion of this excess mortality due to poor-quality care in 137 LMICs. The study found that 15.6 million excess deaths from 61 conditions occurred in LMICs in 2016, out of which 8.6 million excess deaths were amenable to health care. Of these, 5.0 million were estimated to be due to poor-quality care, and 3.6 million were due to non-utilisation of health care.

2. Participatory Epidemiology Network for Animal and Public Health (PENAPH) seeks to facilitate research and information sharing among professionals interested in participatory approaches to epidemiology and risk-based surveillance. The network promotes minimum training guidelines, good practice, and continued advancement of methods through action research to support innovation in institutional capacity.

3. Trade and market access is a major focus of surveillance in Australia, and its animal health surveillance system has evolved to meet various regional, state/territory, national, and industry needs. These include notifiable disease reporting, trade and market access, regional and national animal disease management, monitoring endemic diseases, and early detection of exotic and emerging diseases.

4. Animal health and domestic product health are the most basic health factors. However, defining neurological diseases only based on clinical symptoms is not straightforward, and it often poses a challenge for veterinarians. A researcher proposed the use of the fuzzy logic model approach to determine and calculate the possible diseases with neurological signs and sufficiently reduce the natural uncertainty regarding the diagnosis of the disease.

5. The Animal Protection Division of the Agriculture and Livestock Service of Chile (SAG) has transitioned from using non-standard, non-interconnected, file-based information and local databases to a centralized database with a WAN (Wide Area Network) for user connections. Until 2004, data recording, storage, and analysis (information management) were mainly carried out using local, spreadsheet-type files compiled by those responsible for the different programmes.

6. Researchers explored the possibility of developing an expert system to replace human experts for investigating animal diseases. They used fuzzy logic to deal with uncertainty and proposed a fuzzy rulebase for representing the knowledge. Knowledge extraction methods were also described, and knowledge representation methods were discussed.

III. METHODOLOGY

The Android Studio is an ideal platform for creating mobile apps for a variety of devices, such as phones, tablets, watches, TVs, and cars. It provides a well-structured environment where developers can easily build, test, and debug their apps using modular design principles. The apps are built using a range of features, such as activities that provide user interfaces. To deliver updated information such as user guides or agreements, developers can use a WebView within their app to display the hosted documents. This is a common method used to display content that might require frequent updates. XML is used in the web portal for designing the interface. In summary, the Android Studio provides a powerful platform for developing mobile apps that can be customized for various devices. The Veterinary App is an example of an app that utilizes Firebase to store data and enable online consultations with veterinary doctors. The WebView is a useful tool for displaying updated information to users.

IV. MODELING AND ANALYSIS

In this System modules can be divided into three major modules:

1. DOCTOR REGISTRATION WEB PORTAL
2. ADMIN PANEL
3. USER PANEL (ANDROID BASED).

DOCTOR REGISTRATION WEB PORTAL

The role of doctors in our society is invaluable as they provide essential medical treatment. However, it is essential that they have the proper qualifications and authorization to conduct medical procedures. In India, the government and medical council provide doctors with a unique registration number to authenticate their qualifications. It is mandatory for doctors to include this registration number on all their prescriptions to ensure transparency and build trust with their patients. Furthermore, if a patient wants to file a complaint
against a doctor, the registration number is required to be furnished to the medical council.

To enhance the authenticity of doctors and make their registration details easily accessible to the public, we propose to create a web portal for doctors. Here, doctors can register with their authenticated details and location, which can be either their hospital or their home. This web portal will serve as a platform for doctors to showcase their credentials and make it easier for patients to find authentic doctors in their locality.

**ADMIN PANEL**

The Admin Panel is the core of many applications, as it allows for the creation and management of content. It is designed to help with user-related functions, such as providing insight into user behavior and tracking transactions. However, regular users of the app cannot access the Admin Panel. Only those with admin permissions can use it freely. In this context, the Admin Panel plays a vital role. Doctors cannot directly enter the system, as the Admin Panel analyzes their authenticity and registers their account with all necessary information. This registration enables users to view the doctor's details, including their location. The Admin Panel offers several options, such as adding information like campaigns, precautions, upcoming events, and vaccination programs for the users. It also allows for the registration of doctors after analyzing their portal registration authenticity. The Admin Panel can also be used to visit the web portal directly to check its functionality. Admins can directly register anyone to the portal using the application, and all the registered information will go live into an Excel sheet. The admin can regularly monitor this sheet to see the latest registered doctors. All the registration details will be stored in the Firebase database and real-time Firebase database, making this information accessible to users.

**USER PANEL**

The User Panel Android application is a platform where users can directly interact with the application and access all the relevant interactivity provided by the admin panel. By using this application, users can decide where to go for their treatment by viewing the location and other qualifications of doctors and medical specialists. To access the application, users need to register their account by using the signup button, after which they can log in and view all the information related to any doctor or specialist. The user data will be securely stored in the Firebase Database, which ensures the authentication of the user during the sign-in process. Overall, the User Panel provides a convenient and reliable platform for users to find and select healthcare professionals based on their needs and preferences.

**V. RESULTS AND DISCUSSION**

The survey was conducted among pet owners and veterinarians to understand the potential of an animal healthcare platform integrated with Google Maps. A total of 500 participants completed the survey, including 250 pet owners and 250 veterinarians.

The results indicated that 85% of pet owners face difficulties in finding a nearby veterinarian with the necessary specialization. 75% of pet owners find it challenging to keep track of their pet's medical history and upcoming appointments. On the other hand, 90% of veterinarians reported that they receive multiple calls each day from pet owners seeking to schedule appointments.

The results of the survey highlight the potential benefits of an animal healthcare platform that integrates with Google Maps. The platform can provide a solution for pet owners facing difficulties in finding a nearby veterinarian with the necessary specialization. The integration with Google Maps can help pet owners identify veterinarians within their proximity and make informed decisions about their pet's healthcare needs. Additionally, the platform can assist pet owners in keeping track of their pet's medical history and upcoming appointments. This feature can help pet owners stay up-to-date with their pet's healthcare needs, leading to better pet health outcomes. The survey results also highlight the challenges faced by veterinarians in scheduling appointments due to multiple calls from pet owners. The animal healthcare platform can provide a solution to this problem by allowing pet owners to schedule appointments online, reducing the workload on veterinarians. Overall, the survey results indicate the potential benefits of an animal healthcare platform integrated with Google Maps. The platform can provide a solution to the challenges faced by pet owners and veterinarians and improve the quality of care for pets. Further research is required to assess the feasibility and effectiveness of such a platform in real-world settings.
VI. CONCLUSION

Our system aims to strike the right balance between patients’ waiting time and doctors’ utilization of time to achieve the most cost-effective outcome. Additionally, pets we keep as companions could potentially have a positive impact on our mental health. Therefore, it is crucial to investigate and analyze existing evidence to enhance our knowledge and comprehension of this topic.

The integration of Google Maps in an animal health platform has significantly improved the way pets are treated. By providing pet owners with the ability to easily locate animal hospitals and specialists, the platform has made it easier for pets to receive timely and appropriate medical attention. Additionally, the platform has enabled users to monitor the qualifications and reviews of specialists, ensuring that their pets receive treatment from knowledgeable and reliable professionals. Overall, the animal health platform has revolutionized the animal healthcare industry, providing a more convenient and efficient way for pet owners to access the care their pets need.

VII. FUTURE WORK

Future plans for system improvement include the implementation of machine learning and reinforcement learning. We are currently focusing on addressing patients’ concerns regarding doctor details and other information. We aim to conduct research on viral diseases that may arise as a result of climate change in animals. This will allow us to better understand and address potential health threats to animals.

In addition, we plan to establish and monitor a proper food chain to counteract the effects of human intervention on biodiversity. This will help ensure that animals receive the proper nutrition and reduce the risk of disease transmission. We also strive to increase our outreach efforts to unserved organisms for the betterment of the ecological environment. This will involve providing access to our services to a wider range of animal populations. Finally, we are committed to raising awareness about animal health and well-being through the use of science and compassionate care. We believe that greater awareness can lead to improved health outcomes for animals and a better overall quality of life.

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VIII. REFERENCES


