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Technology-Driven Animal Shelter Management: The PawsitivelyRescued DBMS

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Abstract

The "PawsitivelyRescued" project presents a pioneering Database Management System designed to revolutionize the operations of animal shelters in India, with a primary focus on rescuing and rehabilitating stray animals. This initiative seeks to facilitate the establishment of animal shelters, making them accessible even to the common man, and serves as a comprehensive platform for organizing and analyzing animal data to derive insights for improved shelter management. The system aims to ease collaboration with Non-Governmental Organisations, simplify funding processes, coordinate hospital vaccinations, oversee pet adoptions, maintain records of animal details, and more. Addressing the urgent challenges of stray animal management is the overarching goal of the project, with a key emphasis on animal welfare, public health, and social relevance. Aligned with Sustainable Development Goals 3 (Good Health and Well-Being), 15 (Life on Land), and 17 (Partnership for the Goals), these objectives encompass stray animal welfare, NGO collaboration, funding transparency, public health initiatives, ethical care standards, employment generation, education and awareness, and government collaboration. By integrating these goals, the "PawsitivelyRescued" project aspires to create a transformative impact on the landscape of animal shelter management in India.

Keywords: Animal Shelter Management System (ASMS), CSS, DBMS, HTML, JavaScript, MySQL, PHP, phpMyAdmin.

INTRODUCTION

Animals hold a significant role in human society as loving companions and essential contributors to the ecological balance. Naturally, we humans possess a shared responsibility for the coexistence and harmony of all living beings, as the well-being of animals is linked to our well-being as well. However, in India's dynamic urbanization and societal changes, a pressing issue has emerged — the escalating problem of stray animals [1]. The unregulated growth in the population of stray animals poses many challenges, with animals often left without proper care and shelter [2]. These animals face a lot of difficulties, from scarcity of food and shelter to the risk of diseases and accidents. Communities struggle to address the issue effectively due to the lack of a comprehensive and organized system for managing stray animals, thereby exacerbating their plight and

making matters worse [2]. In this context, the initiative to establish animal shelters becomes a noble and integral necessity for the well-being of the animals and the communities they inhabit. But despite its urgent need, individuals and organizations face significant barriers in setting up animal shelters. A key obstacle is the perceived complexity and lack of ease in setting up and managing shelters [2]. The absence of user-friendly systems and well-integrated processes hamper the enthusiasm of those willing to work toward the cause. Moreover, financial constraints pose substantial challenges, deterring potential shelter providers from realizing their vision. The issue is further compounded by a prevailing lack of awareness about how to initiate and sustain such efforts, contributing to the inertia in addressing the growing crisis of stray animals in India [3]. In this context, the "PawsitivelyRescued" project emerges, seeking to address these difficulties in the domain of animal shelter management in India.

The project recognizes that to encourage civilian initiative, a powerful Database Management System (DBMS) coupled with a user-friendly interface is indispensable. By providing a robust technological infrastructure, "PawsitivelyRescued" aims to empower individuals and organizations to easily handle the intricacies of shelter management, fostering a culture of compassion and responsibility towards stray animals.

LITERATURE REVIEW

Kremer T (2021) A New Web-Based Tool for RTO-Focused Animal Shelter Data Analysis is a paper that introduces a web-based tool, demonstrated using 2019 Dallas Animal Services data, designed to enhance Return-to-Owner (RTO) rates for stray dogs. The tool utilizes spatial aggregation and visualization for identifying patterns in stray intake and RTO rates. The study explores correlations between stray intake and RTO rates, distances covered by RTOed strays, city-wide microchip utilization, and RTO duration compared to other outcomes. The tool aims to conserve shelter resources and time by efficiently reuniting animals with their owners [4].

Developing an Android-based Mobile Application for Temporary Animal Shelter Activities discusses "ShelterInfo," an Android-based mobile application designed by TÜRK, T., & ŞENER, R. (2019) to enhance the efficiency of temporary animal shelter activities. The application facilitates information sharing among local governments, animal protection volunteers, and community members. It focuses on location-based features for selecting provinces, districts, and specific shelters, streamlining activities related to temporary shelters. The study emphasizes the collaborative efforts needed for successful implementation and the technical aspects of the application, including the Web Server, JSON Parse, and Android Mobile Application structures [5].

Wee, M., Hafit, H., & Bernard Leong. (2022) Development of Web-based System for Animal Shelter and Rescue in Johor State is a project that aims to design, develop, and test a web-based system for animal shelter and rescue organizations in Johor. The system includes functionalities for administrators, registered organizations, and the public. It addresses tasks such as organization registration, donation management, volunteer forms, and animal abuse reports. The development methodology includes planning, analysis, design, implementation, and testing phases. The study suggests enhancements such as additional donation methods, proof of donation invoices, and visual references for animal organizations [6].

Business Model in Animal Shelter Management is an article by Graziadei-Darmas, J., & Irczyk, K. (2019) that explores legal considerations and presents a business model for animal shelter management in Poland. It identifies irregularities in current practices, emphasizing the need for effective organizational models. The paper outlines four management models, asserting that a business model should capture subjective and objective values, involving collaboration between communal units and non-governmental organizations. The primary goal is to efficiently find homes for sheltered animals while addressing the broader challenges of animal shelter management [7].

Leanne Nedeau (2017) RinTin Animal Shelter Scheduling showcases "RinTin" a specialized tool for animal shelter administrators and volunteers, streamlining the process of generating volunteer schedules. The system employs a "self-serve" approach, allowing volunteers to create accounts, access schedules, and

register for shifts. Administrators can visually monitor and approve shifts, endorse new users, and manage all aspects of the scheduling system. RinTin addresses the challenge of time wasted on manual scheduling, providing a user-friendly solution for efficient volunteer management and communication within animal shelter organizations [8].

METHODOLOGY

The methodology in developing the proposed animal shelter management web application system encompasses a comprehensive approach to ensure seamless functionality and user satisfaction. Beginning with the design phase, a relational database schema has been crafted using MySQL to store essential information, emphasizing data integrity and normalization. The backend development involves the implementation of Create, Read, Update, Delete (CRUD) operations using phpMyAdmin for each functional module, utilizing a suitable programming language or framework to ensure robust functionality. Concurrently, front-end development focuses on creating a user-friendly interface using HTML, CSS, and JavaScript, promoting responsiveness for both mobile and desktop views.

The website's home page serves as an informative hub, offering visitors details about the shelter, the services it provides, and a gallery showcasing its strays. Users can utilize the "Book an Appointment" button to book appointments or make use of the "Contact Us" section, which in turn offers an inquiry form and the shelter's contact number. This also enables them to specify their desired transactions. Direct contributions through QR Code scanning can be facilitated through the "Donate" button. User logins for people, companies, and organizations (PCOs), authenticated and created by the shelter administrator, give them the autonomy to manage their accounts, gaining insight into only their transaction history while ensuring the privacy of others involved. "PawsitivelyRescued" incorporates a robust administration module, empowering administrators to log in and maintain a comprehensive dashboard containing vital details related to animal intake, adoption, and engagement with PCOs participating in volunteering, memberships, donations, and more.

The dashboard offers essential functionalities to manage shelter operations. First, the animal module captures detailed animal information including specifics about stray intakes and outcomes, microchip details, vaccinations, and a repository for attachments such as photos. Reports offering insights into the health and biographical aspects of each animal can be generated. The adoption and surrender modules contain all details regarding the adoption and surrender of strays, including the PCOs involved in the transaction. The PCO module manages detailed records for a diverse range of entities, encompassing donors, adopters, fosters, veterinary clinics, and collaborating shelters involved in animal transfers. Additionally, the reminders functionality leverages automated reminders for crucial shelter tasks like vaccinations due, medical procedures, expiring spay or neuter certificates, and appreciation notes due to contributors, with administrators and volunteers given the flexibility to create custom reminders directly from the home page. Features for managing appointments, events, memberships, volunteers, donations, and PCO transaction history are further encompassed by the dashboard, ensuring a user-friendly and efficient shelter management process. The administrator can effortlessly navigate through the dashboard once logging in. They can view and manipulate data through tables with options to add, update, delete, or filter records. The home page displays appointments, reminders, and analytics graphically. The logout button returns to the login and home page.

The project emphasizes gratitude and appreciation, as PCOs can be sent regular 'Thank You' notes and emails for their valuable contributions. Crucially, the incorporation of data analytics features with report generation within the DBMS emerges as a transformative element. This functionality facilitates the in-depth analysis and visualization of individual shelter data, extracting valuable insights that contribute to the enhancement of shelter management practices. By harnessing the power of data, shelter operators can make informed decisions, optimize resource allocation, and implement targeted interventions for the well-being of the animals under their care [4].

Fig. 1 depicts the flow diagram of the “PawsitivelyRescued” animal shelter management system.

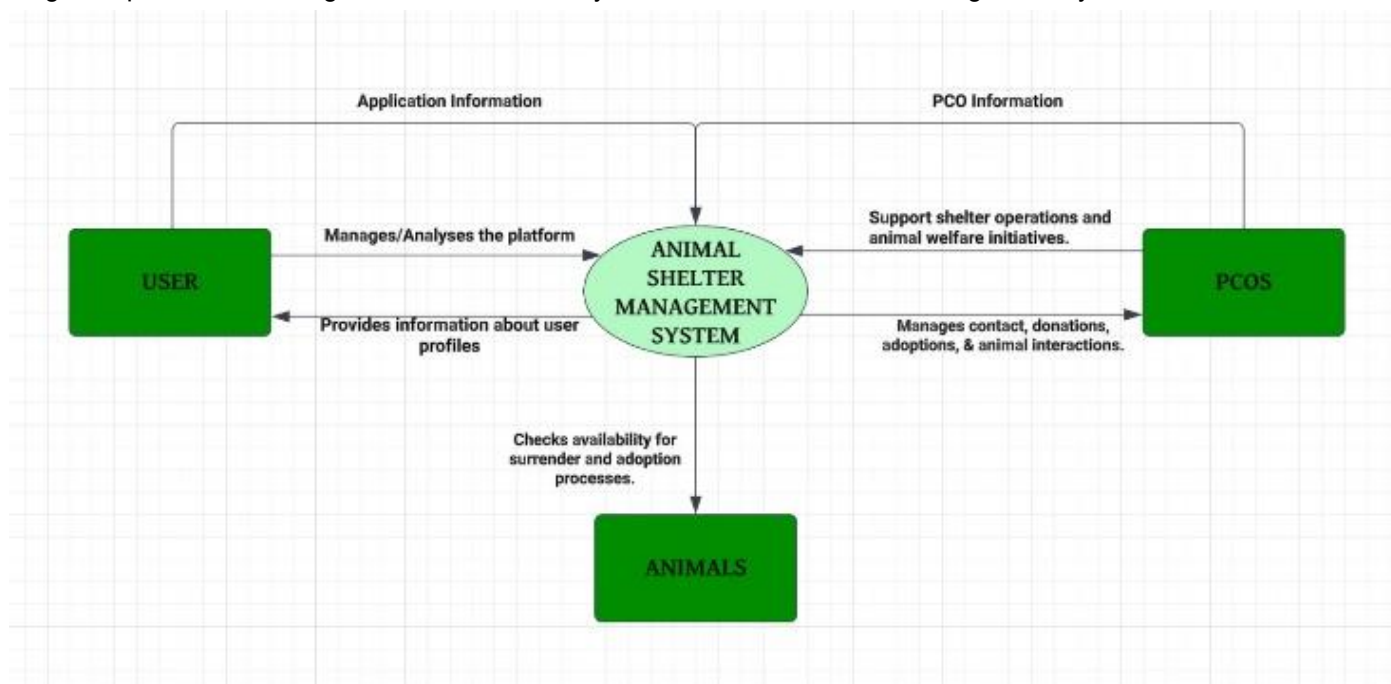


FIGURE 1: Flow Diagram of PawsitivelyRescued Animal Shelter Management System.

Regular testing and quality assurance measures will be implemented to deliver a robust and reliable stray animal management platform. This comprehensive system streamlines shelter operations, providing functionalities for user interaction, transaction tracking, record management, and volunteer engagement.

IMPLEMENTATION

Fig. 2 and Fig. 3 represent the landing page of the web application and the home page of the dashboard, respectively.

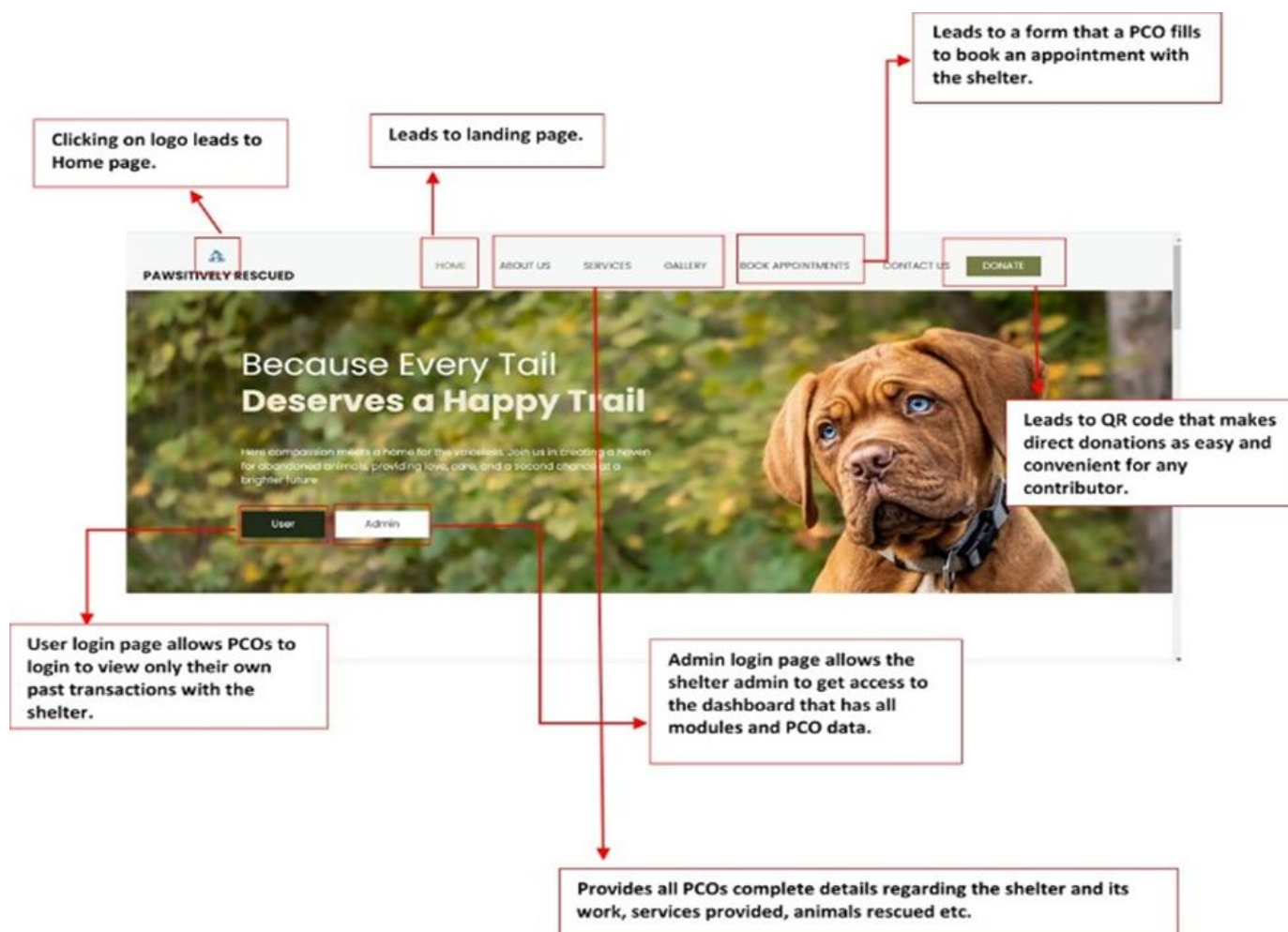


FIGURE 2: Features of the landing page.

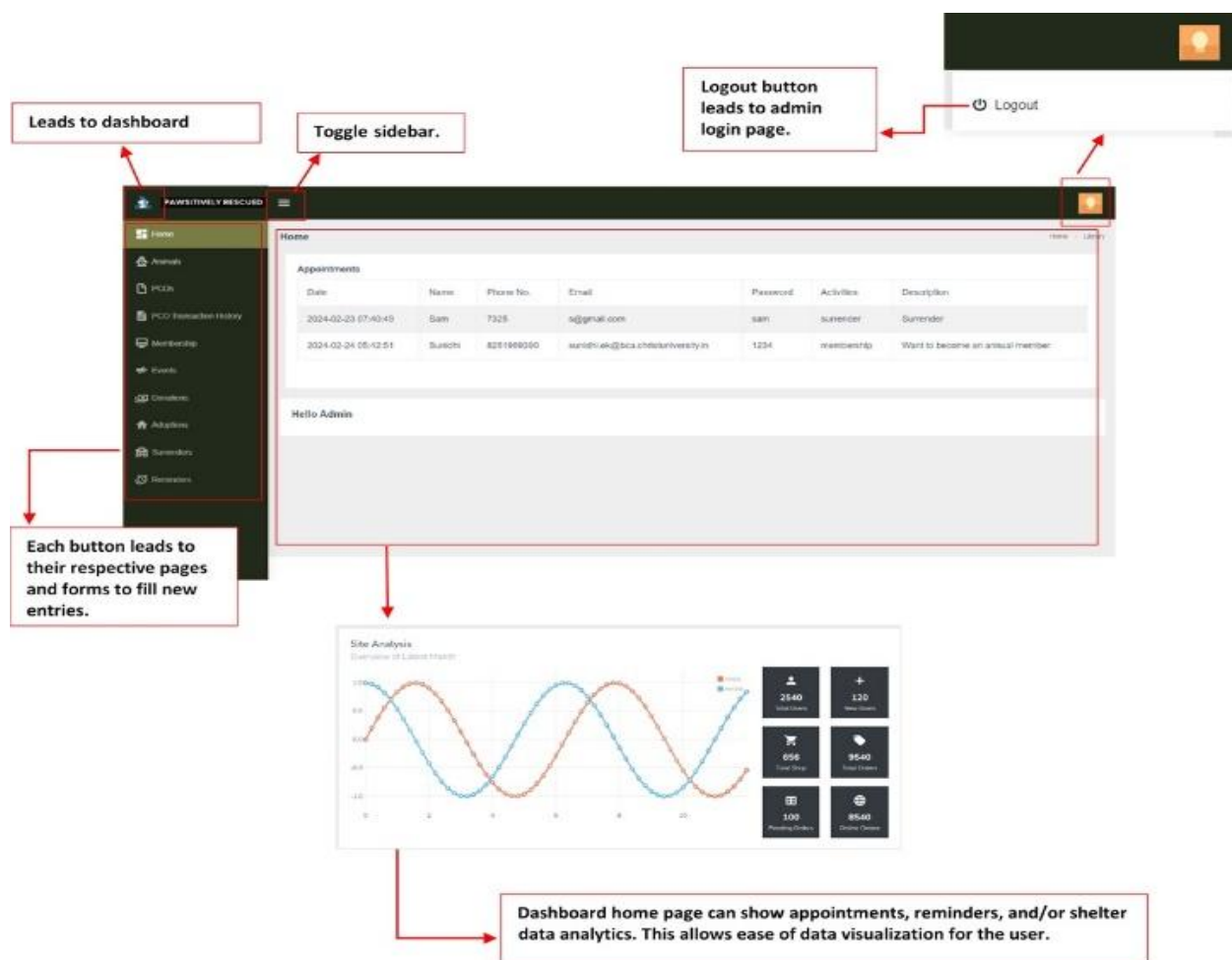


FIGURE 3: Dashboard home page.

CONCLUSION

The "PawsitivelyRescued" project is a revolutionary software system that streamlines animal shelter management activities in an efficient and user-friendly manner. Using HTML, CSS, JavaScript, MySQL, and phpMyAdmin, this software is accessible to the general public making the welfare and management of stray animals accessible to all. By aiming to collaborate with NGOs, donors, adopters, and shelter workers, the project ventures toward achieving the overarching goal of rescuing and rehabilitating stray animals. Furthermore, keeping in mind Sustainable Development Goals 3, 15, and 17, the project aims to emphasize how crucial animal welfare and public health are. In the future, the project aspires to create a mobile application to increase scalability and potentially go beyond the local bounds of India, to increase accessibility and international engagement. Additionally, utilizing artificial intelligence to leverage shelter data for building predictive models could also be impactful. In essence, the "PawsitivelyRescued" project is not merely a technological innovation but a holistic approach towards mitigating the challenges posed by stray animal overpopulation through actionable insights and user-friendly solutions.

REFERENCES

- [1] Goel, K., Sen, A., Satapathy, P., Kumar, P., Aggarwal, A., Sah, R. and Padhia, B. (2022). Emergence of rabies among vaccinated humans in India: a public health concern <https://doi.org/10.1016/j.lansea.2022.100109>
- [2] Turner, P., Berry, J., & Macdonald, S. (2012). Animal shelters and animal welfare: raising the bar. The Canadian veterinary journal = La revue veterinaire canadienne, 53(8), 893–896.
- [3] Herbert, M., Basha, S. R., & Thangaraj, S. (2012). Community perception regarding rabies prevention and stray dog control in urban slums in India. Journal of Infection and Public Health, 5(6), 374-380.

- [4] Kremer T (2021) A New Web-Based Tool for RTO-Focused Animal Shelter Data Analysis. *Front. Vet. Sci.* 8:669428. doi: 10.3389/fvets.2021.669428
- [5] TÜRK, T., & ŞENER, R. (2019). Developing An Android-based Mobile Application for Temporary Animal Shelter Activities. *Eurasian Journal of Agricultural Research*, 3(1), 1-8.
- [6] Wee, M., Hafit, H., & Bernard Leong. (2022). Development of Web-based system for Animal Shelter and Rescue in Johor State. *Applied Information Technology And Computer Science*, 3(2), 479–495. Retrieved from <https://publisher.uthm.edu.my/periodicals/index.php/aitcs/article/view/7645>
- [7] Graziadei-Darmas, J., & Irczyk, K. (2019). Model biznesu w zarządzaniu schroniskiem dla bezdomnych zwierząt. *Zeszyty Naukowe WSB W Poznaniu*, 87(4), 41–56. <https://doi.org/10.26349/zn.wsb.w.poznaniu.0087.03>
- [8] Leanne Nedeau RinTin Animal Shelter Scheduling (2017) Directed Study Journal Link <https://1drv.ms/u/s!AkzE-bUJDaxWeH4DDMTd7swx8Z4>



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