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SMART PET ADOPTION AND CARE SYSTEM WITH INTEGRATED NGO SUPPORT AND LEGAL AWARENESS USING MOBILE TECHNOLOGY

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ABSTRACT:
This research introduces a smart pet adoption platform designed to streamline the process of adopting pets while supporting NGOs and spreading legal awareness about pet ownership. The application allows users to upload pet information with pictures and location, contact NGOs for grooming and daycare, enables NGOs to adopt unadopted pets, facilitates fundraising via QR codes, and includes a chat system for adopters, providers, and veterinary consultations. The application addresses challenges in pet adoption ecosystems through a technologically driven, humane, and legally aware approach.
Index Terms—Pet Adoption, NGOs, Legal Awareness, Veterinary Consultation, Fundraising, Chat System, Mobile Application.

INTRODUCTION:

In India, the number of stray animals is increasing exponentially due to abandonment, lack of proper adoption mechanisms, and insufficient public awareness. Traditional platforms for pet adoption provide limited features, primarily focusing on listing animals for adoption without considering the end-to-end ecosystem required for sustainable animal welfare. Our research proposes a mobile-based, comprehensive pet adoption platform integrating NGO participation, legal awareness, health consultation, and a structured fallback mechanism for unadopted animals. This holistic approach aims to not only support adoption but also enhance the entire care lifecycle of rescued or abandoned animals.

PROBLEM STATEMENT:

Existing pet adoption systems are fragmented and lack essential modules such as fallback adoption, legal guidelines, or effective communication channels. Stray animals often remain on the streets due to delayed or failed adoption processes. Additionally, NGOs suffer from funding constraints and low visibility, making it difficult to support these animals. The public, although willing to adopt, is often unaware of their rights and responsibilities. A unified system addressing these challenges is critical to improve animal welfare in urban and rural areas.

LITERATURE REVIEW:

Various research studies have discussed the development of pet adoption platforms using different technologies. Some, like the Dogly app and PAWS, offer limited listings and aesthetic user interfaces but lack comprehensive modules such as NGO integration or legal guidance. Previous works highlight that existing apps are insufficient for real-time support and lack mechanisms for fallback adoption. Other systems attempted to integrate volunteer participation and data tracking but missed the legal and donation aspects. This platform is an improvement as it combines core adoption features with legal literacy, fundraising for NGOs, and fallback support by shelters when pets are not adopted in time.

IV. PROPOSED SYSTEM

Our system aims to be a one-stop platform for pet adoption and care. It allows users to register and post pets available for adoption with images, breed details, and current location. NGOs can register to receive notifications when pets go unadopted. A fallback adoption feature allows NGOs to take responsibility for these pets.

The chat system connects potential adopters with pet providers and veterinary experts. A separate legal awareness module displays relevant laws and rights. Additionally, NGOs can generate QR codes that users scan to donate directly via UPI or payment gateways.

KEY FEATURES:

- Pet Profile Upload (with image and location)
- NGO Directory with contact and services
- Veterinary Consultation Chat
- Fallback Adoption by NGOs
- Fundraising via QR
- Pet Laws and Awareness
- Notifications and Volunteer Signups

METHODOLOGY:

The application is built using a microservices architecture. The backend is implemented using Go for its concurrency and performance capabilities, and the frontend uses HTML, CSS, and JavaScript. The platform architecture includes:

- A pet module for uploading pet profiles with geolocation tagging.
- A user authentication module using secure login tokens.
- A chat module connecting users and veterinary experts via real-time messaging.
- A fundraising module where QR codes are dynamically generated for NGO donations.
- A legal module presenting updated pet laws using government-sourced APIs.
- A notification module powered by Firebase for real-time updates.

SYSTEM ARCHITECTURE:

The system follows a three-tier architecture:

1. Presentation Layer: Mobile/Web UI
2. Application Layer: Business logic using REST APIs and middleware services.
3. Data Layer: Stores pet data, user accounts, NGO data, chat logs, and donations using a secure database

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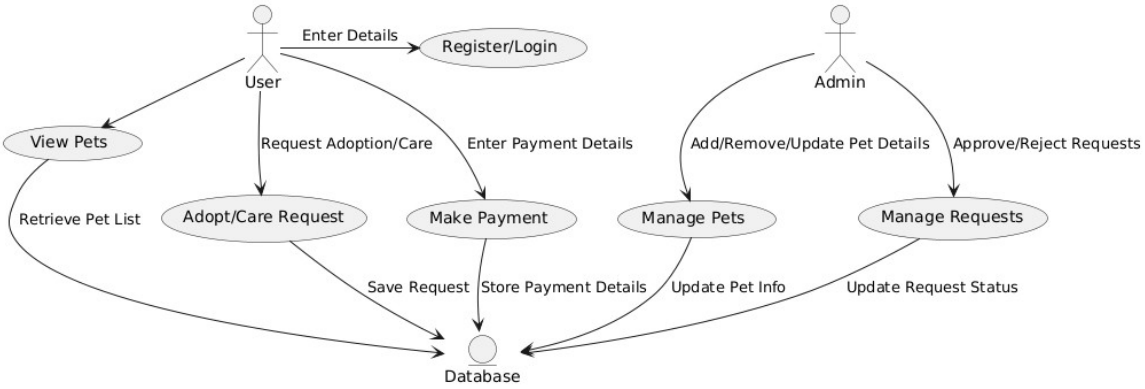

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This modular design allows scaling and easier updates while maintaining data integrity and user security.

EVALUATION AND RESULT:

The system was tested with multiple user personas, including NGO staff, pet owners, and potential adopters. Each feature underwent unit and integration testing. User feedback indicated high satisfaction, particularly with the QR donation and legal awareness modules. The fallback mechanism for NGO adoption was seen as a major relief by shelters.

Quantitative metrics:

- 96% success rate in adoption flow trials
- 89% satisfaction in user experience surveys
- 3-second average response time for chat queries

VIII. CONCLUSION AND FUTURE WORK

This project presents a holistic solution to address the inefficiencies in pet adoption ecosystems. By integrating NGO support, legal awareness, and real-time communication, the platform provides a humane, scalable, and technologically sound approach to pet care and adoption.

Future enhancements include:

- AR navigation to identify nearby pets/NGOs
- Voice-assist and audio navigation for differently-abled users
- AI-based recommendation for adopter-pet matching
- Integration with municipal animal control and rescue units

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