in collaboration with

Softwarica College of IT & E-commerce | Coventry University

STW 6003CEM

WEB API DEVELOPMENT

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Project Introduction

The following project is a Pet Care Website developed using MERN stack (MongoDB, Express, React and Node) is a platform designed for Pet lovers and Care takers. It will serve as a solution for pet owners to manage their pet's health, look for best pet shops, and services such as booking babysitting services and schedule veterinary appointments. This website will provide a responsive, modern interface and secure backend to ensure a seamless user experience. The application helps to manage the hassle of pet care and manage them properly according to their time. This website will help as a centralized hub for pet owners to manage their pets. Paw Care will prioritize accessibility, trust, and playful charm to reflect it audience for the pet lovers who want convenient, reliable, and secure digital tools to care for their companions. Paw Care helps pet owners commonly juggle vaccination, medication, appointments and service reputation checks across multiple apps and spreadsheets, which is fragmented, error-prone and stressful. This website consolidates those tasks into a single, intuitive and secure interface. Paw Care is the application where they can trust.

Justification

In over a decade, Pet ownership has risen significantly. It has risen with particularly strong growth in urban areas where digital solutions for healthcare, logistics and commerce are widespread. Par Care helps new owners need vaccination schedules and local vets experienced owners seek specialized services, training and long-term health tracking where all owners desire peace of mind, convenience, and transparency.

The project comes from observing the existing problems and the inspirations to fill the existing problems. Problems such as health tracking, appointments, reminders, service discovery and siter booking which is live across multiple platforms.

In today's environment trust is the major thing to tackle. Owner's need confidence such as verified professionals, peer reviews, and clear service policies. Paper records get lost, apps without cloud backups fail to carry history forward and reminders are inconsistent.

This project takes a modern and trustworthy approach using MERN stack which deliver a cohesive, scalable and user-centric experience that is playful in tone but professional in execution. The UI will help a friendly color system to convey health, trust and hope aligning with pet owners' emotional needs.

Objective of the Project

Paw Care aims to build a secure, scalable and user-friendly MERN based website. Helping pet owners to manage health records, book services, and maintain appointment which are constant reminders and trust mechanism.

- Functionality: Profiles, health, appointment, and babysitting reservations.
- Delightful UX: layouts that are responsive and accessible components with playful and trustworthy visuals to show the trust and joyful.
- Security: JWT auth, password hashing, role-based access control(user/provider/admin), validation and sanitization, rate limiting, secure cookies for session management when applicable.
- Data Integrity: Robust and strong data models, clean CRUD flows and trails on sensitive changes.
- Notifications: Email reminders for vaccinations, medications and appointments.
- Support Extensible: Clear roadmap for future additions (insurance, telemedicine, community forums, analytics).

ERD

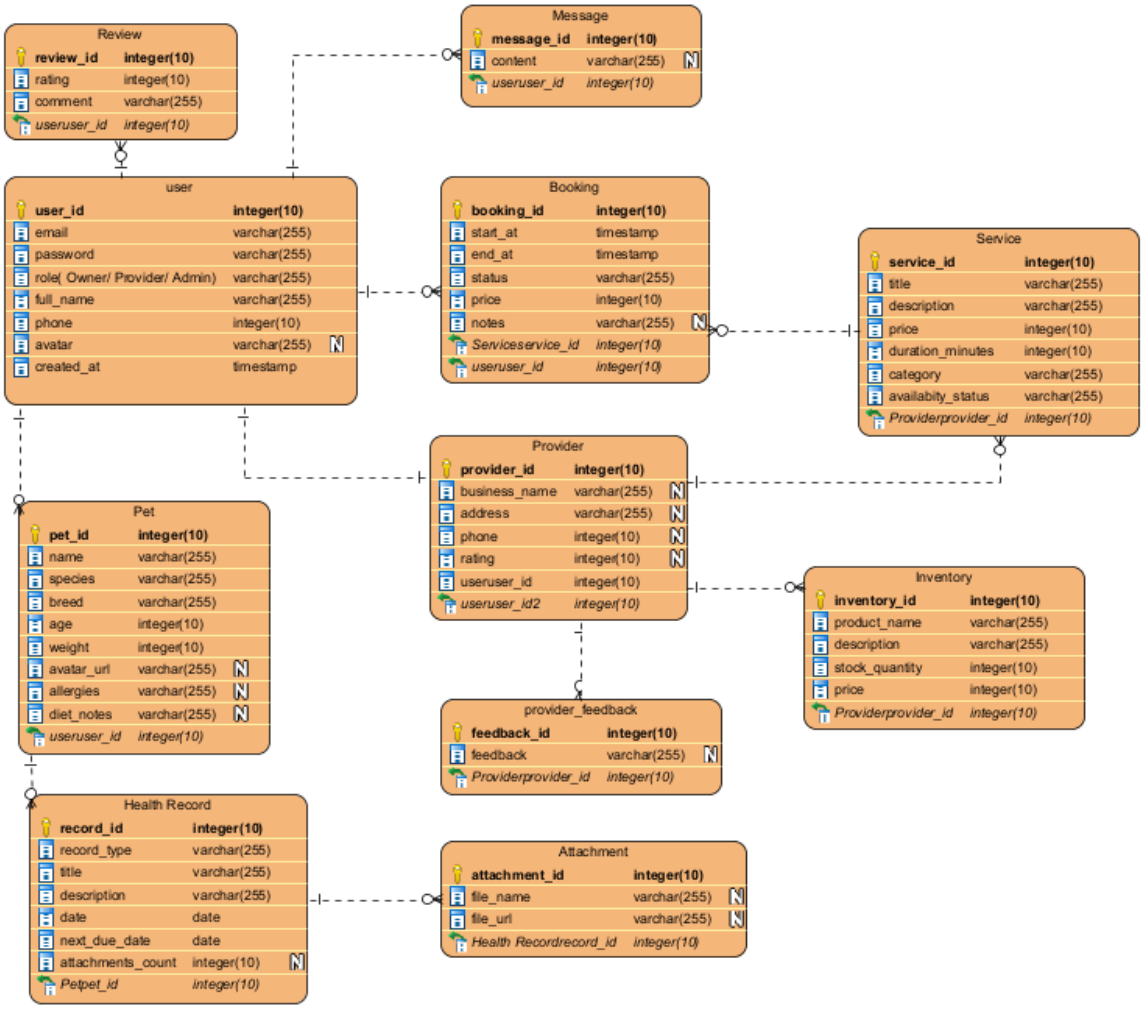

Figure 1 ER Diagram

This is the ER Diagram for Paw Care. This Diagram shows the entity relationship of the application. The following diagram also depicts the relationship between the user, provider, the one responsible for providing the services and how the inventory is holding up. This diagram makes it easy to understand the working flow of paw care and how the applications holds up.

Project Mission

The completion of the Paw Care will be a trusted digital companion for pet owners, balancing playful charm with professional reliability. Paw Care mission is to:

- Empower pet owners with holistic, longitudinal care tracking.
- Helping the bridge between the owners and the providers through verified sources and reviews.
- To promote the health with care through babysitting and vaccinations.
- Reminders for appointments, vaccinations and different notifications with related options.

Upon the completions, Paw Care will become a platform which builds trust alongside the care among the users and the providers, and a knowledge sharing community.

Scope of Work

Frontend: For the frontend of the project React.js will be used alongside typescript.

Backend: Node.js alongside Express.js (RESTful APIs), middleware's (validation, auth, logging)

Database: MongoDB (Atlas for cloud), Mongoose ODM (schemas, indexing, validation)

Version Control: Git + GitHub.

Testing: For APIs testing using Postman.

Features of the Project

1. Login and Signups
    - Signup/Login with email and password
    - Profile management
    - Multi-Role (owner vs provider)
    - Forgot password
2. Pet Profiles
    - Add/edit pets such as avatar, species, age, health notes.
    - Weight tracking timeline, allergies, diet info
    - Attachments for medical recipets.
3. Health Records
    - Vaccination, medication, checkups, diet logs, free-form notes.
    - Calendar view, upcoming schedule historical timeline.
    - Smart reminders for vaccination and medication windows.
4. Service Discovery
    - Discover nearby vets, shops sitters, groomers.
    - Filter by rating, price range, distance, availability.
    - View verified providers (badge), ratings/reviews, services offered.
5. Appointment Booking
    - Booking requests and confirmations
    - Cancellation policies
    - Reminder through emails
6. Babysitting & Boarding
    - Book sitters with reviews
    - Messaging for coordination
7. Rating & Reviews.
    - Give reviews to pet shops and babysitters
8. Notification & Reminders
    - Notification through E-mails

9. Responsive & Accessible UI
    - Smooth with any screen (mobile, tablet, desktop)
10. Provider Features
    - Publishing services and schedule management
    - Inventory Management for shops
    - Booking Managements
11. Admin Features
    - User and provider management.
    - Reviews management
    - Analytics dashboard
    - System Configuration

Prototypes

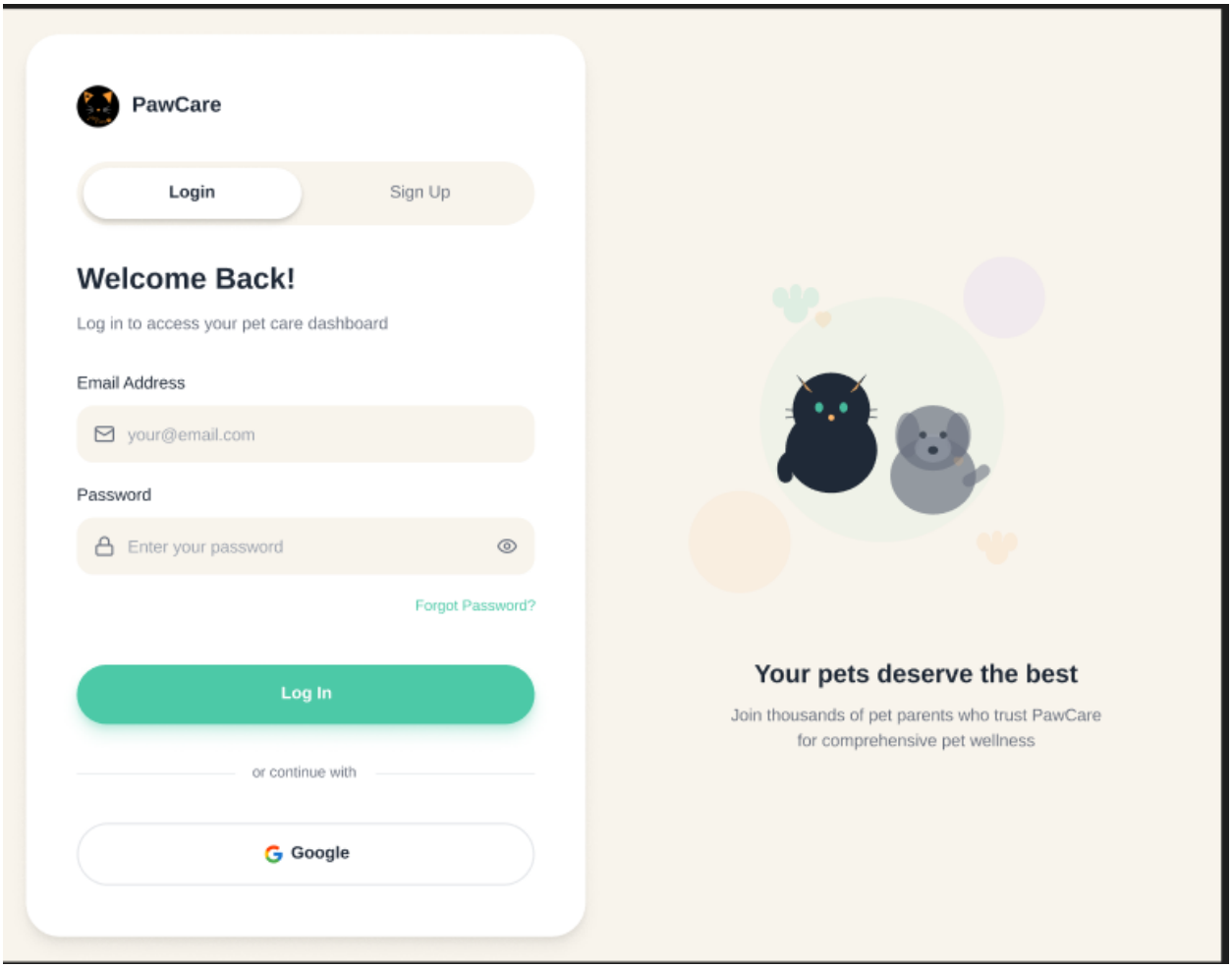

Figure 2 Login Page

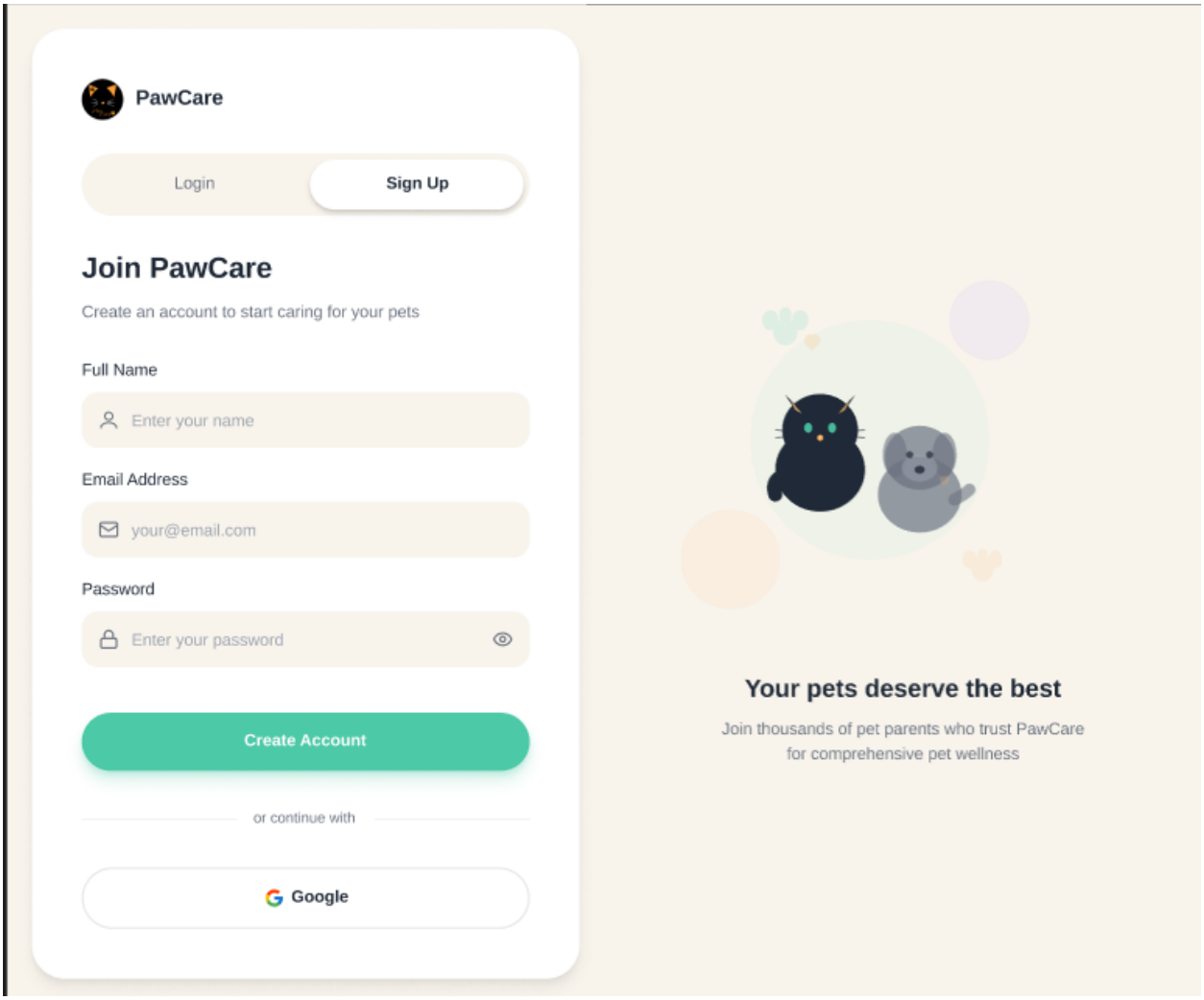

Figure 3 Sign Up Page

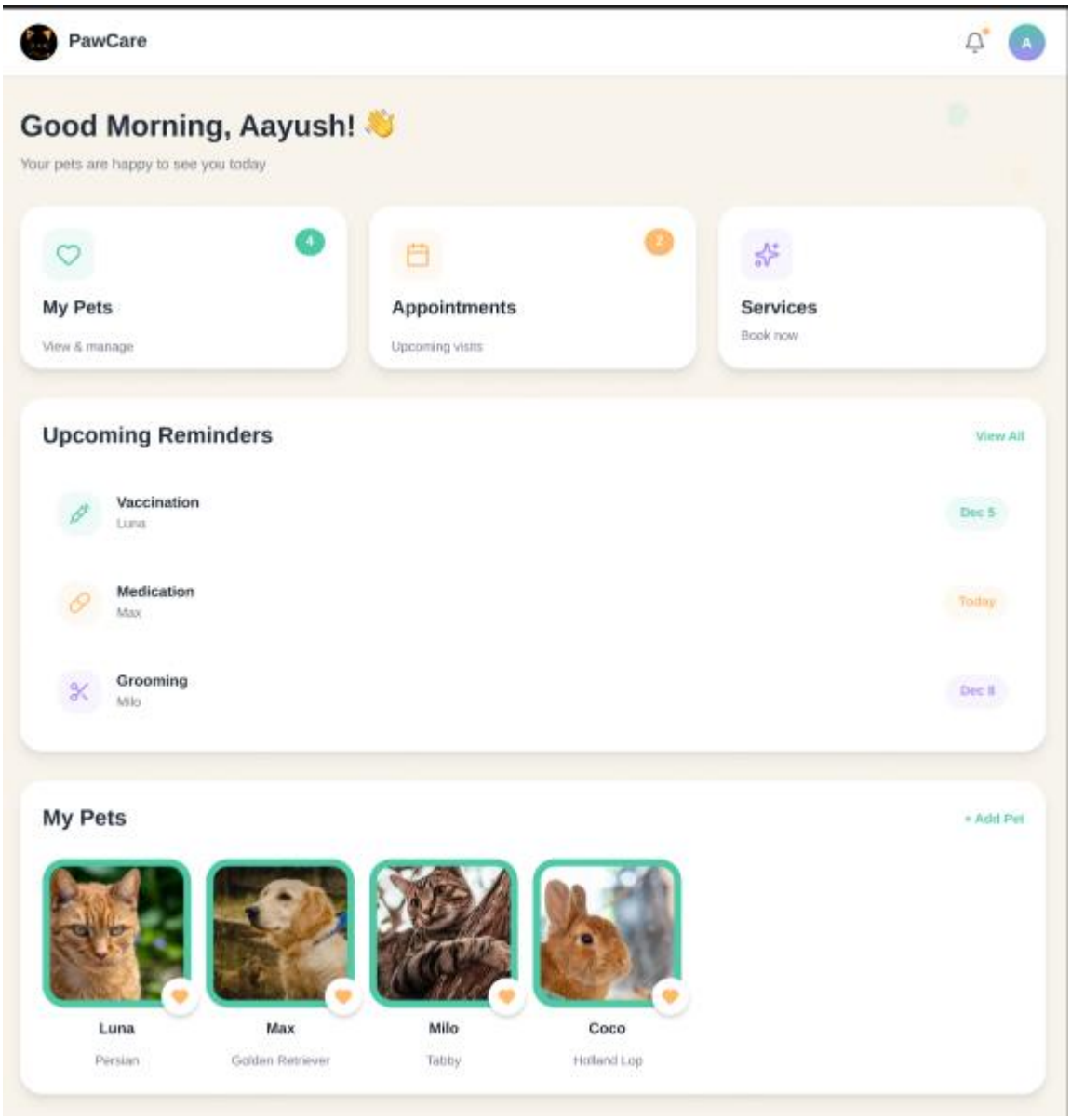

Figure 4 Main Dashboard

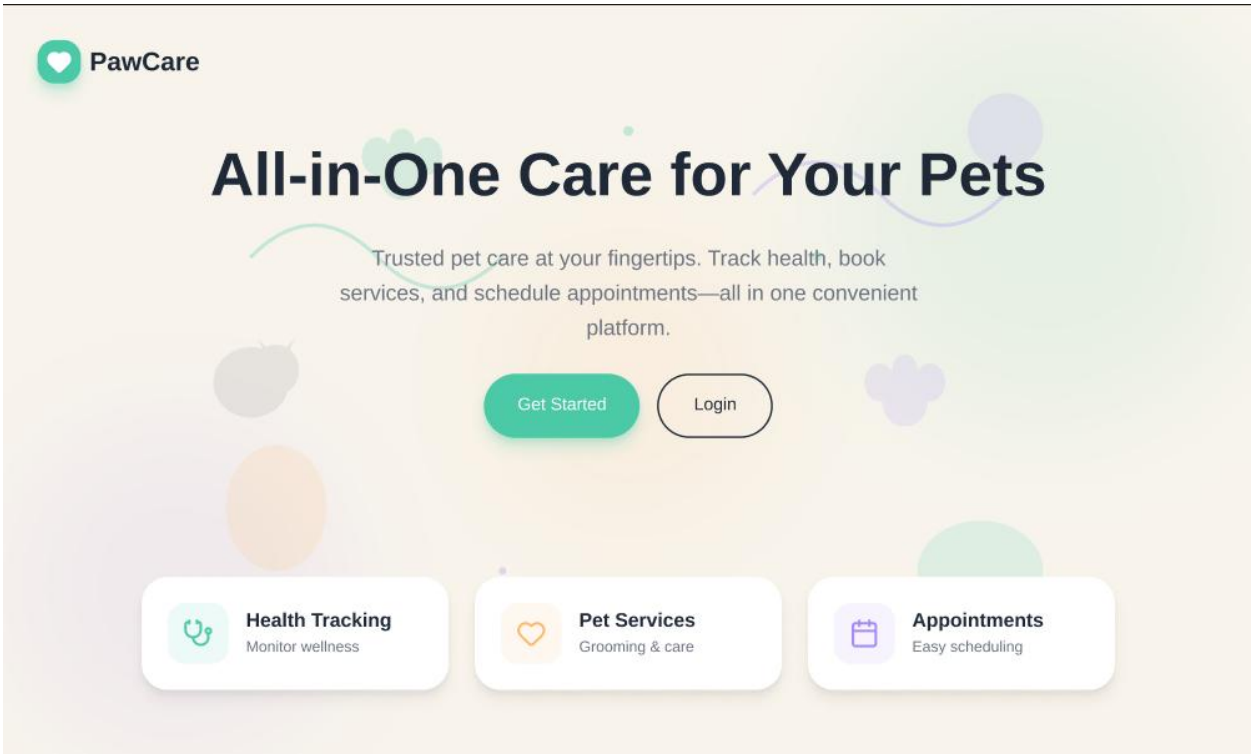

Figure 5 Splash Screen

Conclusion

The Paw Care platform represents a meaningful step toward modernizing how pet owners manage their pets' health, services, and daily needs. By integrating essential features such as pet profiles, health records, service discovery, appointment booking, and babysitting services, the system successfully consolidates tasks that are typically scattered across multiple applications. Built using the MERN stack, the project ensures scalability, security, and performance, while maintaining a user-friendly and responsive interface suitable for all device types. Through features like reminders, provider verification, reviews, and secure authentication, Paw Care enhances trust, reliability, and transparency all of which are critical factors for pet owners seeking dependable digital tools. The project also reflects strong attention to data integrity and user experience, combining playful design with professional reliability. Overall, Paw Care stands as a holistic platform that bridges gaps between owners and service providers, encourages responsible pet care, and lays the foundation for future enhancements such as analytics, telemedicine, or community forums. It demonstrates how thoughtful digital innovation can simplify daily routines while strengthening long-term pet well-being. Paw Care, where you can trust.

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