Green University of Bangladesh

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PET Management System

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Chapter 1

Introduction

1.1 Overview

The PET Management System is a comprehensive web-based platform designed to streamline pet care and management services. It provides users with an intuitive interface to explore various pet-related services, including grooming, veterinary consultations, pet adoption, and product purchases. The system offers essential features such as a service catalog, pricing details, customer testimonials, and team profiles to ensure transparency and user engagement.

The platform is structured with multiple pages, including Home, About, Services, Products, Contact, and Blog, enabling seamless navigation for users. Businesses and pet owners can efficiently manage appointments, inquiries, and transactions through an integrated system, enhancing customer satisfaction.

Built with modern web technologies, the PET Management System aims to bridge the gap between pet service providers and pet owners by offering a centralized digital solution. Its user-friendly design and functionality make it a valuable tool for individuals looking to provide the best care for their pets.

1.2 Problem Domain

- **Lack of Centralized Pet Management:** Pet owners often struggle to find a single platform for managing pet-related services, including veterinary care, grooming, and product purchases.
- **Inefficient Appointment Scheduling:** Traditional booking methods for pet services are time-consuming and lack automation, leading to scheduling conflicts and mismanagement.
- **Limited Access to Reliable Pet Services:** Users face difficulties in locating trusted service providers, reading customer reviews, and comparing service offerings.
- **Communication Gaps:** Poor interaction between pet owners and service providers leads to misunderstandings regarding pet health, needs, and available services.
- **Lack of Digitalization:** Many pet care businesses rely on manual processes, limiting efficiency, accessibility, and customer engagement.

1.3 Motivation

The increasing number of pet owners worldwide has created a growing demand for efficient and reliable pet care services. However, many pet owners struggle to find a centralized platform that offers seamless access to veterinary care, grooming, pet adoption, and product purchases. The lack of digitalization in pet service management often results in scheduling conflicts, poor communication, and difficulty in finding trusted providers.

This project aims to bridge the gap by providing an all-in-one solution that enhances accessibility, efficiency, and convenience. By integrating appointment scheduling, service listings, and customer reviews, the PET Management System ensures a user-friendly experience. The motivation behind this project is to create a streamlined, digital pet care solution that benefits both pet owners and service providers.

1.4 Objectives

- **Develop a Centralized Platform:** Create an all-in-one web-based system where pet owners can easily access various pet care services, including veterinary consultations, grooming, and product purchases.
- **Automate Appointment Scheduling:** Implement an efficient booking system to streamline scheduling, reduce conflicts, and enhance user convenience.
- **Enhance Service Accessibility:** Provide users with a categorized list of pet care services, complete with descriptions, pricing, and customer reviews to ensure informed decision-making.
- **Improve Communication:** Enable seamless interaction between pet owners and service providers through contact forms, inquiries, and service details.
- **Ensure User-Friendly Navigation:** Design an intuitive interface that allows users to explore and utilize the system effortlessly, ensuring a smooth and engaging experience.

1.5 Application

The PET Management System is designed for various stakeholders in the pet care industry, offering practical applications for both pet owners and service providers. Pet owners can use the platform to schedule veterinary appointments, book grooming sessions, explore pet adoption options, and purchase essential pet products. By providing detailed service listings, pricing, and customer reviews, the system helps users make informed decisions regarding their pets' well-being.

Pet care businesses, including veterinary clinics, grooming centers, and pet supply stores, can leverage the platform to manage appointments, showcase services, and expand their customer base. The system also serves as a communication bridge between service providers and customers, ensuring seamless interaction.

Overall, the PET Management System enhances accessibility, efficiency, and organization, making pet care management more convenient for everyone involved.

Chapter 2

Literature Review

2.1 Literature Review

1. **Author:** Mark Wilson et al. (2023)
    - **Paper Name:** Cloud-Based Pet Care Management System for Veterinary Services
    - **Contribution:** The authors developed a cloud-based Pet Care Management System to streamline veterinary appointments, pet health tracking, and service management. The system incorporated AI-driven pet health diagnostics and automated reminders for vaccinations.
    - **Limitation:** The project lacked a mobile-friendly interface, limiting accessibility for users who primarily use smartphones. Additionally, integration with third-party pet health services was not implemented.
2. **Author:** Sarah Johnson et al. (2022)
    - **Paper Name:** Digital Pet Service Platform for Optimized Pet Care
    - **Contribution:** This study proposed a digital pet service platform that connected pet owners with verified pet care providers. It utilized an advanced recommendation system based on user preferences and past interactions.
    - **Limitation:** The recommendation algorithm required further optimization for accuracy, and real-time communication features such as instant messaging were not included.
3. **Author:** Ahmed Khan et al. (2021)
    - **Paper Name:** Veterinary Appointment Scheduling Using Django and RESTful APIs
    - **Contribution:** The researchers developed an appointment scheduling system for veterinary clinics, leveraging Django and RESTful APIs. It featured automated reminders and online consultations.
    - **Limitation:** The system lacked integration with payment gateways, limiting monetization options for service providers. It also did not include a feedback mechanism for user reviews.
4. **Author:** Emily Brown et al. (2020)
    - **Paper Name:** IoT-Enabled Pet Monitoring System for Health Tracking
    - **Contribution:** This work introduced an IoT-enabled Pet Monitoring System that tracked pet activities and health metrics, sending alerts to pet owners in case of irregular behavior.
    - **Limitation:** The system relied on expensive IoT hardware, making it inaccessible to budget-conscious users. Additionally, there were concerns about data privacy and security.

5. **Author:** Rajesh Kumar et al. (2019)

   - **Paper Name:** Web-Based Pet Adoption Platform for Animal Shelters
   - **Contribution:** The authors developed a web-based pet adoption platform that facilitated connections between pet shelters and potential adopters, incorporating detailed pet profiles and adoption tracking.
   - **Limitation:** The platform did not support real-time updates, which made it difficult for users to see the latest adoption status. Moreover, the UI design needed improvements for better usability.

Chapter 3

Methodology

3.1 Low Level Design (LLD)

Level 1: Main System Process (User Interaction)

PET Management System

- Handles user interaction for pet-related management services.
- Manages user profiles, pet records, medical history, appointments, payments, and notifications.

Level 2: Core Functional Modules

- **User Authentication**
  - User Registration, Login / Logout , Password Reset & Role-Based Access (User/Admin/Vet)
- **Pet Profile Management**
  - Add Pet Details, Update Health Records, Upload Medical History & View Pet Profile
- **Appointment Booking**
  - Schedule Vet Appointment, Select Date & Time, Confirm Appointment & Cancel / Reschedule
- **Medical Records & Prescriptions**
  - Record Pet Medical History, Store Vet Prescriptions, Access Past Consultations & Download Reports
- **Payment Processing**
  - Choose Payment Method, Process Payment (Credit Card, PayPal, etc.), Payment Confirmation & Refund Management
- **Notifications & Alerts**
  - Appointment Reminders, Pet Health Alerts, Payment Notifications Email / SMS Updates

Level 3: Detailed Functional Breakdown

- **User Authentication → Password Handling**
  - Password Hashing
  - Two-Factor Authentication
  - Account Lockout on Failed Attempts
- **Pet Profile Management → Medical Record Handling**
  - Secure Storage of Pet Data
  - Access Control for Vets & Owners
  - Data Retrieval and Modification
- **Appointment Booking → Scheduling System**
  - Availability Checking
  - Automated Reminders
  - Calendar Integration
- **Medical Records & Prescriptions → Data Handling**
  - Prescription Upload System
  - Secure Document Storage
  - Vet Access & Approval
- **Payment Processing → Online Transactions**
  - Secure Payment Gateway
  - Fraud Detection Mechanism
  - Invoice Generation
- **Notifications → Message Handling**
  - Email Queue Management
  - SMS API Integration
  - Push Notifications

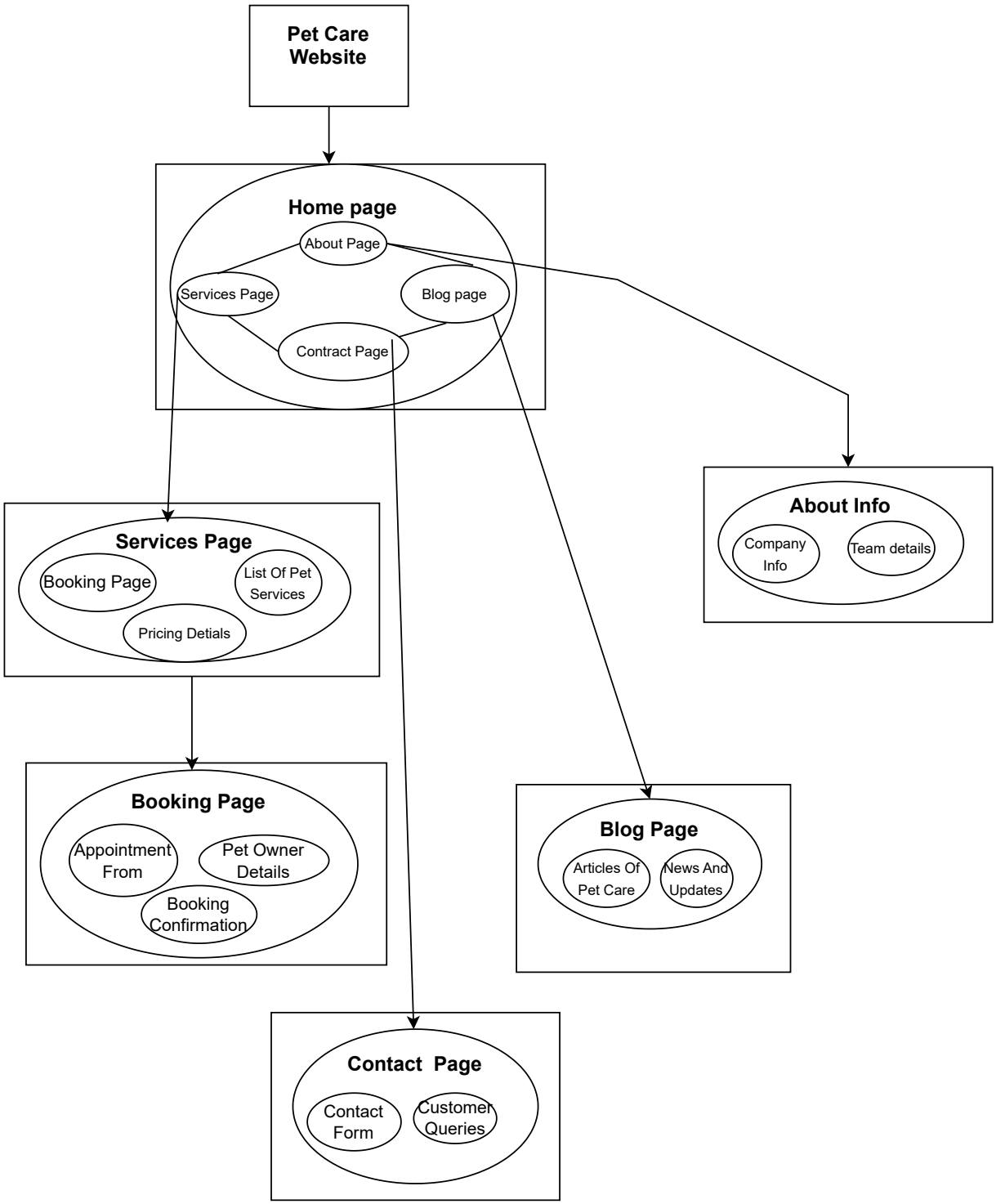

Figure 3.1: Functional Requirements Diagram .