Software Requirements Specification

for

Pet Breeding and Management System

Version 1.0 approved

Prepared by

Drishti Chauhan
Ayush Kulshreshtha
Shivanshi Singh
Akshat Lahariya

MIT-WPU

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The Pet Breeding and Health Management System is a web-based application designed to help pet breeders and pet owners manage the health and breeding records of their pets. This document outlines the software requirements for the system.

1.2 Document Conventions

Content Font : Arial and Font Size : 11
Headings Font: Times New Roman and Font Size : 14

1.3 Intended Audience and Reading Suggestions

The intended audience for the Pet Breeding and Health Management System includes pet breeders, veterinarians, and pet owners who want to manage their pets' health and breeding records. The system is designed to provide an easy-to-use platform that allows users to manage their pets' medical history, vaccinations, medications, surgeries, and breeding records. The system is also suitable for those who want to keep track of their pets' genetic testing results and pedigrees. The system's reporting functionality allows users to generate health and breeding reports for their pets, which can be useful for breeders and veterinarians. Additionally, the system's search functionality makes it easy for users to find pets based on specific criteria such as breed, gender, and medical history. The system's admin management functionality is designed for administrators who need to manage user accounts and data.

1.4 Product Scope

The product scope for the Pet Breeding and Health Management System is a web-based application that allows users to manage their pets' health and breeding records. It includes user management, pet management, health management, and breeding management features. Users can register new accounts, login, edit their profiles, add and manage their pets' records, view health and breeding information, and upload related documents. The system also includes search and reporting functionalities and admin management features. The system prioritizes performance, security, and usability to provide an excellent user experience for pet breeders, veterinarians, and pet owners

2. Overall Description

2.1 Product Perspective

The Pet Breeding and Health Management System is a standalone web-based application that interacts with users through a user interface, stores user data in a database, and uses algorithms to organize and retrieve data. The system is designed to be scalable, flexible, and secure, and provides an excellent user experience through clear navigation, intuitive user interfaces, and contextual help and documentation. The system does not interact with other systems but may integrate with third-party services to provide additional functionality.

2.2 Product Functions

- User Management:
  - Register a new account
  - Login to an existing account
  - Edit user profile information
  - Change password

- Pet Management:
  - Add a new pet record
  - Edit an existing pet record
  - Delete a pet record
  - View pet information

- Health Management:
  - Add a new health record
  - Edit an existing health record
  - Delete a health record
  - View health information
  - Upload and manage health-related documents

- Breeding Management:
  - Add a new breeding record
  - Edit an existing breeding record
  - Delete a breeding record
  - View breeding information

- Search and Reporting:
  - Search pets based on various criteria
  - Generate health and breeding reports for pets

- Admin Management:
  - Manage user accounts and data

2.3 User Classes and Characteristics

- Pet Owners: These are individuals who own pets and want to keep track of their pets' health and breeding records. They may have different levels of technical expertise and may use the system frequently or occasionally.

- Pet Breeders: These are individuals who breed pets as a profession or hobby and want to manage their breeding records. They may use the system frequently and require advanced functionalities such as pedigree tracking and mating prediction.

- Veterinarians: These are medical professionals who provide healthcare services to pets and may use the system to manage their patients' health records. They may require a high level of technical expertise and access to sensitive information such as medical records.

- System Administrators: These are individuals responsible for managing the system's technical infrastructure and ensuring its smooth operation. They require advanced technical skills and access to privileged system functions such as user management and data backups.

2.4 User Documentation

- User Manual: A comprehensive user manual will be provided that describes the system's features, functionality, and workflows in detail. The user manual will be delivered in PDF format.

- Online Help: An online help system will be included within the application, accessible via a Help button. The online help will provide context-sensitive assistance to users, explaining the purpose and use of various features and functions.

- Tutorials: A series of interactive tutorials will be provided to guide users through common tasks and workflows. The tutorials will be accessible within the application and will include step-by-step instructions, screenshots, and videos.

- Release Notes: Release notes will be provided with each software release, detailing any new features, bug fixes, and known issues. The release notes will be delivered in PDF format.

3. System Features

The functional requirements for the Pet Breeding and Health Management System can be organized into the following system features: User Management, Pet Management, Breeding Management, Health Management, Sales Management, Communication, and Data Management. These features allow for user authentication and authorization, management of pet information and health records, breeding and sales management, communication between users, and secure storage and backup of system data.

3.1 User Management

- The system shall allow users to create new accounts. The registration process should require the user to provide a valid email address and password.
- The system shall require users to provide a valid email address during account creation. The system should validate the email address and check that it is unique in the system.
- The system shall verify the email address provided by the user by sending a verification link to the email address. The user should not be able to log in until the email address has been verified.
- The system shall allow users to reset their password. The system should provide a secure password reset process, such as sending a password reset link to the user's email address.
- The system shall enforce password strength requirements. The system should require users to choose a password that meets a certain level of complexity, such as including uppercase and lowercase letters, numbers, and special characters.
- The system shall allow administrators to manage user accounts. Administrators should be able to create, edit, and delete user accounts.
- The system shall allow administrators to assign different permission levels to users. The system should provide different permission levels, such as read-only access, write access, and administrative access.

3.2 Pet Management

- The system shall allow users to add new pets to the system. Users should be able to add pets by providing basic information such as pet name, breed, gender, age, and weight.
- The system shall require users to provide basic information such as pet name, breed, gender, age, and weight. The system should validate the information provided by the user.
- The system shall allow users to upload images of pets. Users should be able to upload one or more images of the pet.
- The system shall allow users to edit and view pet information. Users should be able to view and edit pet information at any time.
- The system shall allow users to search for pets using various search criteria. Users should be able to search for pets based on criteria such as breed, age, gender, and weight.

- The system shall allow administrators to manage pet information. Administrators should be able to edit and delete pet information.

3.3 Breeding Management

- The system shall allow users to create and manage breeding pairs. Users should be able to create breeding pairs by selecting two pets and recording the pair information in the system.
- The system shall record breeding history and lineage for each pet. The system should record the breeding history and lineage of each pet in the system.
- The system shall provide recommendations for breeding pairs based on genetic compatibility and health status. The system should use genetic and health information to provide recommendations for breeding pairs.
- The system shall allow users to track breeding outcomes and litter information. Users should be able to record and view breeding outcomes and litter information.
- The system shall allow administrators to manage breeding information. Administrators should be able to edit and delete breeding information.

3.4 Health Management

- The system shall allow users to record health history, vaccinations, and medical treatment for each pet. Users should be able to record and view health information for each pet in the system.
- The system shall provide reminders for vaccinations and appointments. The system should provide notifications and reminders for upcoming vaccinations and appointments.
- The system shall track pet health trends and status over time. The system should track and analyze pet health trends and status over time.
- The system shall allow users to generate health reports for individual pets and breed groups. Users should be able to generate reports on individual pets and groups of pets based on health information.
- The system shall allow administrators to manage health information. Administrators should be able to edit and delete health information.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

- The system should be able to display a pet's medical records within 5 seconds of the user selecting the pet.

- The system should be able to generate a report on pet breeding history within 10 seconds of the user submitting a request.
- The system should be able to handle at least 100 concurrent users without experiencing significant performance degradation.
- The system should be able to manage at least 10,000 pet records without experiencing significant performance degradation.
- The system should be able to handle a peak load of 2000 requests per hour without crashing or slowing down.
- For real-time systems, the system should be able to process incoming data within a specified time frame, for example, the system should be able to detect a pet's vital signs within 10 seconds of the data being collected.

4.2 Safety Requirements

- The system should have measures in place to prevent unauthorized access to pet medical records or sensitive data.
- The system should have a backup and recovery plan in place to ensure that pet records are not lost in the event of a system failure.
- The system should comply with applicable laws and regulations related to pet breeding and management, such as those related to animal welfare.
- The system should have safeguards in place to prevent accidental breeding between closely related pets, such as siblings or parent-child pairs.
- The system should have mechanisms to flag potentially dangerous health conditions, such as contagious diseases, and prevent the transfer of infected pets between facilities.
- The system should require users to provide confirmation before performing irreversible actions, such as deleting pet records or marking a pet as deceased.
- The system should undergo regular security and safety audits to ensure compliance with industry standards and regulations.

4.3 Security Requirements

- User authentication: The system must authenticate users before allowing them to access any sensitive information. This can be achieved through a login page requiring a username and password, or through biometric authentication.
- Access control: The system must have different levels of access for different users, and the administrator must have the ability to assign or revoke access to specific areas of the system.
- Data encryption: All sensitive information stored in the system, including animal health records and breeding data, must be encrypted to protect against unauthorized access.

- Audit trails: The system must maintain an audit trail of all user activities within the system, including login attempts, data modification, and record access.

- Data backup and recovery: The system must have a backup and recovery plan in place to ensure that all data is recoverable in the event of system failure or other disasters.

4.4 Software Quality Attributes

- Usability: The system should be easy to learn and use, with clear and intuitive user interfaces. User interactions should be efficient and minimal, with appropriate feedback and help provided.

- Reliability: The system should be able to perform consistently and reliably, with minimal downtime and errors. It should be able to recover from errors and failures gracefully, with appropriate notifications and logging.

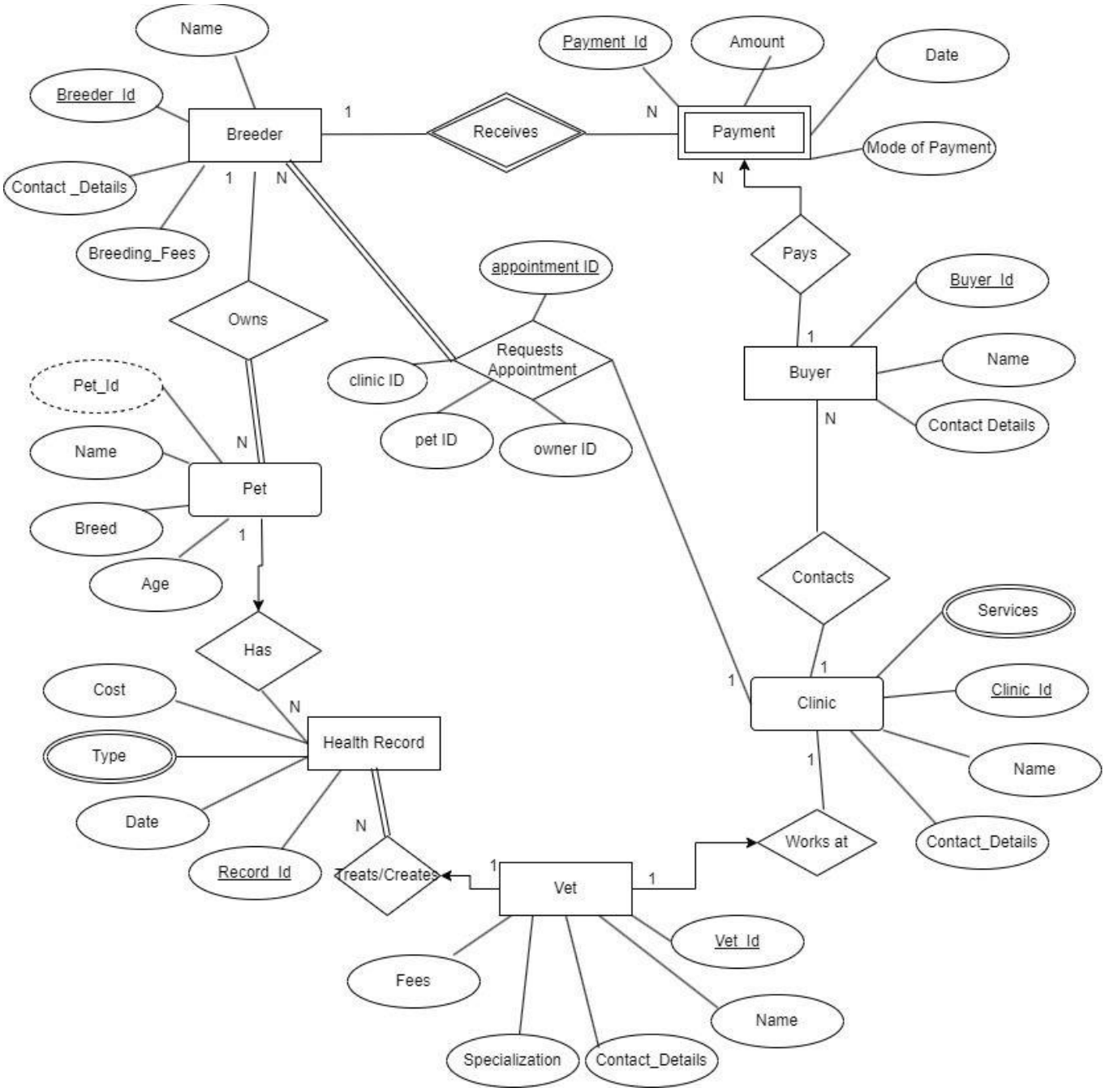
- Maintainability: The system should be designed with ease of maintenance in mind, with clear and modular code structure, appropriate documentation, and well-defined interfaces. It should be easy to modify or extend the system as needed.

- Interoperability: The system should be able to communicate and interoperate with other systems or services, using standard protocols and interfaces. It should be designed to support integration with third-party applications and services.

- Adaptability: The system should be designed to adapt to changing requirements or environments, with appropriate configuration and customization options. It should be able to handle different types of pets and breeding practices, as well as different types of users and workflows.

Appendix A: Analysis Models

ERD DIAGRAM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