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CEN302 – Software Engineering

Nimbus' PawPals

First Draft

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1. Executive Summary

1.1 Project Overview

Nimbus' PawPals is a dynamic, web-based platform designed to revolutionize the way pet shops and clinics manage their operations. Traditional methods often rely on manual, paper-based processes for booking appointments, managing pet health records, and handling retail transactions, which are not only time-intensive and prone to errors but also lack the efficiency, accessibility, and automation that modern veterinary care and customer expectations require.

Nimbus' PawPals addresses these challenges by providing a centralized, digital platform that streamlines and automates various aspects of clinical and operational management. It encompasses features such as pet reservations, appointment scheduling, staff reporting, grooming services, and detailed sales reports. This system ensures that everything from the front desk to the back office operates smoothly and effectively.

With its user-friendly interface, accessible from any device with internet connectivity, Nimbus' PawPals ensures seamless interaction among all stakeholders, including pet owners, receptionists, veterinarians, groomers, and managers. This enhances collaboration and improves the efficiency, accuracy, and customer satisfaction of pet care services.

By modernizing pet shops with advanced web technologies, Nimbus’ PawPals not only streamlines operations but also meets the modern expectations of veterinary care and retail management, making it an indispensable tool for any pet care business looking to thrive in today's digital age.

1.2 Purpose and Scope of this Specification

Purpose

This specification document aims to define the functional and nonfunctional requirements of Nimbus' PawPals, a comprehensive web-based platform designed to enhance the operational efficiency of pet shops and clinics. It serves as a detailed guide for developers, stakeholders, and end-users to understand the capabilities, design principles, and technological framework of the system. This document also facilitates clear communication and alignment of project goals among the development team, ensuring that all functionalities are implemented according to specified requirements.

The system is designed to be fully accessible on any device with internet connectivity, offering a responsive and intuitive user interface that caters to various users such as pet owners, receptionists, veterinarians, groomers, and managerial staff. The specification also outlines the requirements for these features and the underlying technology stack that supports them, including database management, security measures, and third-party service integrations.

Scope:

In Scope

The Nimbus' PawPals platform encompasses a broad range of functionalities tailored to the needs of modern pet care establishments, which include:

- Clinical Management: Automates and manages appointment scheduling, pet health records, and treatment histories to streamline veterinary operations.
- Retail Management: Integrates tools for inventory management, product reservations, and transaction processing to enhance retail operations.
- Grooming Services: Provides scheduling and management tools for grooming appointments, including staff coordination and customer preferences.
- Reporting and Analytics: Generates detailed reports on sales, customer interactions, and operational efficiency to aid in strategic decision-making.

Out of Scope

The following items are outside the scope of this specification:

- Hardware requirements for end-users and operational environments.
- Training materials for end-users or the development team.

- Post-deployment maintenance and support details, which will be addressed in a separate maintenance and support plan.
- Third-party payment gateway integration (transactions will be logged but processed externally).
- Hardware-related solutions, such as pet tracking devices or biometric scanning.

2. Product / Service Description

2.1 Product Context

The Software is a multi-user platform that connects pet owners with pet care professionals in a single, convenient digital environment. Customers (pet owners) benefit from easy access to pet care services, while professionals can efficiently manage their business operations and provide better service.

Pet owners can browse and purchase a variety of pet products, schedule appointments with veterinarians, and access grooming services. Additionally, integrated communication tools allow pet owners to consult with veterinary professionals, ensuring their pets receive the best possible care.

For pet care specialists, the system offers tools to simplify daily operations and enhance the quality of service provided. Doctors can track patient health records, diagnose pets, and communicate with pet owners in real-time.

The software is versatile and scalable, making it suitable for pet clinics of any size and specialization. It supports a comprehensive set of functionalities that are crucial for efficient management and superior service delivery in modern pet care facilities.

2.2 User Characteristics

Manager

- Oversees the day-to-day operations of the pet shop, ensuring smooth functioning across all departments (retail, clinic, grooming, and hotel services).
- Manages product inventory, including adding, editing, deleting, and viewing product details to ensure accurate stock levels.
- Oversees pet management, including adding, editing, and deleting pet-related information.
- Tracks sales, processes orders, and generates detailed reports to monitor business performance and make data-driven decisions.

- Manages employee scheduling, training, and performance evaluations to maintain a productive workforce.
- Oversees hotel management functions, including viewing, adding, and editing hotel appointments and pet boarding details.
- Monitors and maintains personal information for staff (receptionists, groomers, and doctors) to ensure accurate records.
- Views and analyzes business analytics, such as the number of animals, sales revenue, and inventory trends.
- Strong organizational and leadership skills to manage multiple tasks and teams effectively.
- Proficient in using software systems for inventory management, sales tracking, and reporting.
- Excellent problem-solving and decision-making abilities to handle operational challenges.
- Customer-focused mindset to ensure a positive experience for clients.

Receptionists

- Greets customers, answers phone calls, and provides information about the pet shop's services.
- Schedules and overlooks appointments for grooming, medical care, and hotel stays using the software system.
- Manages customer information, including adding, editing, and deleting client and pet details.
- Tracks appointments, processes payments, and generates invoices for services rendered.
- Maintains and updates pet health records, ensuring accuracy and confidentiality.
- Views purchase history and product information to assist clients with their needs.
- Oversees the cleanliness and organization of the reception area to create a welcoming environment.
- Assists with hotel management by viewing, adding, and editing hotel-related appointments.
- Provides customer support to ensure client satisfaction.
- Strong communication and customer service skills to interact effectively with clients.
- Proficient in using software systems for appointment scheduling, payment processing, and record management.
- Attention to detail to ensure accurate data entry and record-keeping.

Clients

- Visit the pet shop to purchase products, schedule appointments, or seek medical care for their pets.
- Use the software system to browse products, make purchases, and view pet health records.

- Schedule appointments online for services such as grooming, medical care, or hotel stays.
- Provide feedback regarding their experience and satisfaction with the pet shop's services.
- View purchase history to track previous transactions and orders.
- Non-logged-in users have limited access, restricted to browsing products and services only.
- Login credentials are required to access personalized features, such as viewing pet medical records and editing account details or personal information.
- Possess basic computer skills and familiarity with online systems to navigate the software effectively.
- Willing to provide feedback to help improve the pet shop's services.
- Responsible for providing accurate personal and pet information in the system.

Doctor

- Responsible for diagnosing and treating pets, maintaining accurate medical records, and managing their daily schedule.
- Conducts pet consultations, issues medical diagnoses, and prescribes medications.
- Views appointment schedules and checks appointment details, including the pet's name, owner, and reason for the visit.
- Accesses a pet's complete medical history, including past illnesses, treatments, and vaccination records.
- Provides pet owners with detailed post-treatment care instructions to ensure proper recovery.
- Shares pet health reports with groomers before grooming services and receives notifications from groomers regarding potential health concerns.
- Coordinates with receptionists to reschedule appointments and communicate important updates with clients.
- Can view personal information relevant to appointments and treatment records.
- Requires strong diagnostic skills, attention to detail, and empathy when interacting with pets and their owners.

Groomer

- Responsible for maintaining the hygiene and appearance of pets through grooming services such as bathing, fur trimming, nail clipping, and other cosmetic care.
- Access scheduled grooming appointments and client requests.
- View schedule of grooming sessions.
- Check appointment details, including the pet's name, breed, and requested services.
- View pre-grooming health clearance status from the Doctor.
- Notify the Receptionist if a pet is unfit for grooming due to medical concerns.
- Provide aftercare tips and suggest pet care products based on the pet's skin type, fur type, and allergies.

- Can view personal information relevant to the grooming appointments and client interactions.
- Requires attention to detail, patience, and knowledge of pet grooming techniques and products.

2.3 Assumptions

Staff and clients are familiar with using web applications for managing appointments, purchases, and records.

The system operates under the assumption of a stable and reliable internet connection.

Product listings and stock information are regularly updated to ensure accurate availability for clients.

The software supports commonly used payment methods, such as credit and debit cards.

Receptionists, veterinarians, groomers, and managers have received or will receive adequate training to effectively use the application.

The clinic has the necessary infrastructure, including computers and stable internet connectivity, to support the operation of the web application.

The system is expected to function properly across various devices (desktops, tablets, smartphones).

Regular system maintenance will be scheduled to ensure optimal performance and to minimize downtime.

It is assumed that the appointment is approved by the receptionist.

Proper verification and validation of client, pet, and staff information will be performed during data entry to maintain data integrity and accuracy.

Staff members (veterinarians and groomers) will only be able to view their own scheduled appointments. Veterinarians will have access to pet medical records as required for treatment.

Pet health records and grooming histories will be updated by authorized personnel only to ensure data accuracy and confidentiality.

The system will perform regular data backups to prevent data loss in case of system failure or unexpected issues.

Clients are responsible for providing accurate personal and pet information when registering and booking services through the application.

Receptionists are expected to assist in everyday administrative tasks to support the smooth operation of the clinic.

It is assumed that the clinic provides a suitable environment for hosting and caring for pets, including hotel stays and grooming services.

It is assumed that the clinic is equipped with the necessary medical tools and equipment, and that these are maintained appropriately for services.

It is assumed that the pet store has got a working email address.

2.4 Constraints

The application must function efficiently across various devices and browsers, ensuring a seamless user experience.

As a web-based application, a stable and reliable internet connection is required for proper functionality and to avoid performance issues.

Budget limitations may restrict the ability to implement certain advanced features or enhancements during the development phase.

The software must be developed, tested, and deployed within a predefined timeline to ensure timely delivery and meet project goals.

The system may face challenges when handling a large number of concurrent users or transactions, potentially requiring infrastructure upgrades to scale effectively.

The application must comply with applicable data protection laws (e.g., GDPR, CCPA) and industry standards to ensure data privacy and security.

Access levels will be enforced based on user roles (e.g., admin, staff, customer), ensuring appropriate permissions and security for each type of user.

The system's performance may be affected by third-party services, such as payment gateways and delivery providers, which could cause slowdowns or disruptions.

The user interface and overall functionality of the application may be constrained by the limitations of the web technologies and frameworks used in its development.

Staff may have varying levels of familiarity with the software, requiring adequate training and ongoing support to ensure effective use.

The accuracy and completeness of data entered into the system will directly impact the effectiveness of the search function, limiting the quality of search results.

External factors such as supplier delays or shipping constraints may impact order processing and delivery times, affecting customer satisfaction.

Customers are required to log in to make purchases, although browsing products and services is available to all users without authentication.

Refunds and returns are subject to the pet shop's store policies, which may define limitations on how and when items can be returned or exchanged.

Hotel services may be limited by space availability, with bookings subject to restrictions based on capacity.

2.5 Dependencies

The software relies on external services, such as PayPal, for payment processing, which may affect transaction reliability and availability.

A robust database is essential for securely storing user and product information, ensuring data integrity and accessibility.

The performance and availability of the software depend on the chosen hosting environment (e.g., AWS, Azure), which provides the necessary infrastructure and scalability.

The development of the project is reliant on specific technologies, including .NET, ReactJS, and MySQL, for backend, frontend, and database management, respectively.

The creation, editing, and deletion of appointments are managed by receptionists, making their role crucial for appointment scheduling and modifications.

Receptionists are also responsible for creating, editing, and deleting pet records, which are integral to maintaining accurate client data.

Veterinarians depend on the receptionist to provide detailed pet records, ensuring that proper medical care is given based on the pet's health history.

The manager plays a central role in tracking product inventory, staff information, and overall business operations, ensuring smooth daily functions.

The availability of general clinic information, such as client pet details, depends on the application's uptime and accessibility to authorized users.

The efficiency of the online store depends on accurate and timely inventory updates, as well as reliable supplier availability, to ensure that products are in stock and ready for purchase.

System performance and user experience are contingent upon stable and high-speed internet connectivity, which affects both functionality and user satisfaction.

Customer interactions, purchases, and access to personalized features depend on secure authentication mechanisms and role-based access control to protect user data.

The overall software experience is influenced by third-party suppliers for products, services, and equipment, which may affect inventory availability, service quality, and operational performance.

3. REQUIREMENTS

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
FR_01	The software should have a different UI for different user levels.	The UI for clients (pet owners), receptionists, doctors, groomers, and managers must be customized based on their roles and permissions.	1	11/03/2025	Mario Caushi Jona Alushaj
FR_02	The software shall require users to log in with their unique username and password.	Passwords should be hashed before being stored in the database to maintain security and ethical data handling.	1	11/03/2025	Mario Caushi Jona Alushaj
FR_03	The software should allow managers to manage product inventory, including adding, updating, and deleting pet products.	The system must provide real time inventory updates and alert the user when inventory level is low. The system shall allow managers to add, edit, delete, and view pet products such as food, toys, accessories, etc.	2	15/03/2025	Mario Caushi Jona Alushaj

FR_04	The software should allow managers to view comprehensive financial reports.	The system must generate reports detailing daily sales , expenses and profit margins to assist the manager in making informed financial decisions.	2	19/03/2025	Mario Caushi Jona Alushaj
FR_05	The system shall allow managers to manage store and clinic employees.	The manager must be able to add, edit, and remove employee accounts, such as of doctors, receptionists, and groomers.	2	22/03/2025	Mario Caushi Jona Alushaj
FR_06	The software should provide employees with access to view and edit their personal information.	Each employee must have access to their personal information, contact details, job responsibilities and time schedule. This access helps ensure that the data remains accurate and up-to-date.	2	19/03/2025	Jona Alushaj Mario Caushi
FR_07	The software should generate invoices and process payments.	An invoice is generated after each service is provided, and the payment is processed.	1	16/03/2025	Jona Alushaj Mario Caushi
FR_08	The system shall support multiple payment methods.	Clients should have flexible payment options at checkout.	2	29/03/2025	Jona Alushaj Mario Caushi
FR_09	The software should allow clients to search for products based on category, price, name and description.	Customers can easily find products that match their specific preferences and needs. This feature also helps customers quickly narrow down options, improving overall satisfaction and potentially increasing sales.	1	10/03/2025	Jona Alushaj Mario Caushi
FR_10	The software shall provide a shopping cart for clients to add and remove items before proceeding to checkout.	This feature is essential for improving usability, enhancing customer satisfaction, and reducing cart abandonment during the checkout process. It also enables accurate tracking of item quantities and pricing before finalizing the transaction.	2	25/03/2025	Jona Alushaj Mario Caushi
FR_11	A client is able to leave feedback for the service.	The feedback mechanism can be used to monitor customer experiences and enhance future interactions or offerings.	2	23/04/2025	Debora Hoxhaj / Megi Muci

FR_12	Clients shall be able to view their past purchases.	This feature enhances the overall user experience by offering transparency.	2	14/03/2025	Debora Hoxhaj / Megi Muci
FR_13	The software should allow clients to view and edit their personal information.	Clients can view and update their personal information, such as contact details, shipping address, and payment preferences.	2	14/03/2025	Debora Hoxhaj / Megi Muci
FR_14	Clients shall be able to view, book, modify, or cancel veterinary appointments.	The software provides an intuitive interface where clients can book new appointments by selecting available time slots, modify existing appointments by adjusting the date, time, or type of service, and cancel appointments if necessary. The software will update real-time availability and send confirmations to clients.	1	19/03/2025	Debora Hoxhaj / Megi Muci
FR_15	The software shall allow receptionists or authorized staff to maintain detailed pet information and medical history.	The system allows staff members and pet owners to easily access and track a pet's health journey over time.	1	21/03/2025	Debora Hoxhaj / Megi Muci
FR_16	The software should enable the receptionist to register new clients and manage their profiles.	Receptionists must be able to enter client information into the system, including contact details and pet information and update these details as necessary.	2	29/03/2025	Pellumb Cela / Adela Kushta
FR_17	Receptionists shall be able to schedule appointments for pets.	Receptionists can schedule different sessions, based on the client's request, service preference and approval.	2	22/03/2025	Pellumb Cela / Adela Kushta
FR_18	The receptionist shall be able to register new pets.	Excluding the manager, the receptionist is the only user that can register a pet. The system should provide an easy-to-use interface for the receptionist to input and store pet information in detail.	1	23/03/2025	Pellumb Cela / Adela Kushta
FR_19	The receptionist should be able to view all the pets registered at the clinic.	The receptionist can choose to view a list of all pets registered at the clinic and then select the specific pet information they wish to see.	2	25/04/2025	Pellumb Cela / Adela Kushta
FR_20	The receptionist should be able to search for a specific pet.	By enabling search functionality, the receptionist can quickly locate a pet's profile based on criteria like name , ID, or owner.	2	21/04/2025	Pellumb Cela / Adela Kushta

FR_21	The receptionist should be able to view staff personal information and schedule.	Receptionist is able to view limited personal information on the staff and their time schedule for work.	2	21/03/2025	Adela Kushta / Megi Muci
FR_22	The software should allow the receptionist to confirm appointments by considering the existing schedule and available time slots.	This ensures that appointments are confirmed without causing conflicts, and the receptionist can manage the clinic's schedule efficiently.	2	29/03/2025	Adela Kushta / Megi Muci
FR_23	The receptionist shall edit and update the pet's medical chart.	Except for the manager, the receptionist is the only person authorized to edit and update the pet's medical chart, based on the doctor's recommendations.	2	27/03/2025	Adela Kushta / Megi Muci
FR_24	The software should enable doctors to view their appointment schedule.	A well-organized view of scheduled appointments allows doctors to manage their time efficiently and ensures they are fully prepared for each visit.	1	26/03/2025	Adela Kushta / Megi Muci
FR_25	The software should enable doctors to view pets' medical information.	By clicking on a scheduled appointment in the calendar, the doctor can also access the pet's medical information to make informed decisions.	1	18/03/2025	Adela Kushta / Megi Muci
FR_26	The software should provide groomers with access to view their appointment schedules.	Groomers must first check their schedule and provide services according to the appointments listed in the calendar.	1	22/03/2025	Debora Hoxhaj / Pellumb Cela
FR_27	The software should provide groomers with the ability to check the details of their scheduled appointments, including pet information,and special instructions.	Groomers must be able to view pet information such as the pet's name, breed, and the requested service.	2	20/03/2025	Debora Hoxhaj / Pellumb Cela
FR_28	The software should allow groomers to access pets' health status, allergy information, and any special needs or requirements that are relevant for safe and effective grooming.	To ensure the service can proceed smoothly and safely, groomers must verify that the pet is healthy before continuing with the requested service.	2	18/03/2025	Debora Hoxhaj / Pellumb Cela
FR_29	The system should notify pet owners about upcoming or overdue appointments via email.	By keeping owners informed, the system helps ensure that pets stay on schedule with their appointments, promoting better health and preventing preventable diseases.	3	26/03/2025	Debora Hoxhaj / Pellumb Cela

FR_30	The software allows managers to view and respond to client feedback.	The manager is the only one that deals with client feedback, he can respond to specific cases but is not able to delete them as they are very valuable to other clients acquiring the same services, and the overall flow of the clinic / store.	3	28/03/2025	Debora Hoxhaj / Pellumb Cela

3.2.1 Product Requirements

1. **Performance Requirements**
   - The system must provide a fast and responsive user experience across all functionalities, including appointment scheduling, inventory management, and payment processing. Specifically, user interactions should not exceed a response time of 2 seconds.
   - The application should handle up to 500 concurrent users without significant delays, ensuring smooth operation.
2. **Reliability & Availability**
   - The system must be available **24/7**, ensuring uninterrupted access for customers to book appointments and view pet health records.
   - The system should always be open, except during scheduled maintenance where the system will be down to be fixed.
   - **Regular backups** must be implemented to prevent data loss and allow quick recovery in case of failure.
3. **Scalability**
   - The application should efficiently handle an increasing number of users, pets, appointments, and transactions, designed to scale up by 50% each year without performance degradation.
   - The system should allow seamless **expansion of services** (e.g., adding new clinic branches, additional hotel rooms, or grooming services).
4. **Security & Access Control**
   - The system must enforce **role-based access control (RBAC)** to restrict actions based on user roles (Manager, Receptionist, Doctor, Groomer, Client).
   - Clients can only access their own pet records, while veterinarians can access full medical histories.
   - Receptionists are responsible for verifying and approving appointments.
   - The system must comply with **GDPR/CCPA** data protection regulations to safeguard personal and pet data.
   - The system must comply with GDPR/CCPA data protection regulations to safeguard personal and pet data.
5. **Usability & User Experience**
   - The software must be **easy to navigate**, even for users with basic computer skills.

- A responsive design should ensure proper functionality across desktop, tablet, and mobile devices, with UI elements dynamically adjusting to screen size.
- The system must support **multiple languages** to accommodate diverse clients.

6. **Appointment & Scheduling Efficiency**
   - Clients can book appointments, but receptionists must approve and validate them before final confirmation to avoid scheduling conflicts and ensure efficient use of resources.
   - Veterinarians and groomers should be able to view only their assigned appointments, while doctors must have access to detailed pet medical records for accurate diagnosis and treatment.
7. **Inventory & Order Processing**
   - The system must support **real-time inventory updates** to prevent overselling and ensure accurate stock levels.
   - The online store should only allow logged-in users to make purchases, while **browsing is available to all visitors**.
   - Orders and payments must be processed securely using **integrated payment gateways** (e.g., PayPal).
8. **Hotel & Boarding Services**
   - Clients can **book pet boarding services**, and receptionists must verify availability before approval.
   - The system should track **available space and manage reservations** to prevent overbooking.
9. **Data Integrity & Validation**
   - All user inputs (client and pet details, appointments, medical records) must undergo **validation** to ensure accuracy.
   - Only **authorized personnel** (veterinarians, receptionists) can update pet health records.
   - Duplicate or incomplete records should be prevented through **automated checks**.
10. **Business Analytics & Reporting**
    - Managers must have access to **detailed reports** on sales, inventory, and business performance.
    - The system should generate **monthly and annual summaries** of revenue, appointments, and customer trends.
11. **Third-Party Integrations**
    - The system must support **third-party services** for payment processing, email notifications, and appointment reminders.
    - Integration with **shipping services** is required for processing online store orders.
12. **Compliance & Legal Requirements**
    - The system must comply with local **business regulations**, including **pet care, medical recordkeeping, and financial transactions**.
    - Privacy policies and **terms of service must be clearly displayed** for all users.

3.2.1.2 User Interface Requirements

The user interface of the web application should be designed to ensure compatibility across all major web browsers, allowing users to access the system seamlessly from both desktop and mobile devices. The interface should be intuitive, user-friendly, and responsive to provide an optimal experience across different screen sizes.

1. The login interface includes the following elements:
    - **Navigation Bar:** The navbar features the **Nimbus' Pawpals** logo and key buttons for navigation:
        - **About Us** – Scrolls to a section explaining the company's story and offerings.
        - **Contact Us** – Leads to a form where users can enter their **full name, email, and message** to get in touch.
        - **Products button** - allows users to explore the online store. Browsing is open to everyone, but users must log in to access personal credentials or account-specific features.
        - **Authentication & Validation:** The **Login** button opens the login form. After clicking **Log In**, the system validates the user's input:
            - If correct, the appropriate **dashboard** for each role is displayed.
            - If incorrect, an **error message** appears, prompting the user to re-enter their credentials.
        - The **Sign Up** button triggers a **pop-up registration form**, where users enter their **full name, first name, last name, username, password, email, contact number, birthday, preferred communication method, and address**.
    - **Welcome Section:** This section prominently displays the **full Nimbus' Pawpals logo**, a **welcome message**, and a **Browse** button that has the same function as the Products button in navbar.

2. The manager interface includes the following elements:

    - **Navigation Bar:** The navbar displays the **Nimbus' Pawpals** logo and essential management sections:
        - **Pets** – Shows all pets and their detailed information.
        - **Clients** – Displays client profiles and related data.
        - **Staff** – Presents staff information with additional features:
            - **Add Staff** button for creating new staff entries.
            - **Role Dropdown** to filter staff by position (Groomer, Receptionist, Doctor).
        - **Inventory** – Manages product stock and supplies.

    - **Timetable** – Displays scheduling information.
    - **Insights** – Provides business analytics and reports.
- **Personal Section:** The interface includes:
    - **My Profile** button that displays the manager's personal information. When viewing personal information, the manager can see:
        - **Role** and **Manager ID** (e.g., MGR001)
        - **Personal ID** and employment details including **Hire Date**
        - **Name**, **Last Name**, **Birthday**, **Email**
        - **Address** and **Contact Number**
        - **Edit** button that allows modification of personal details
    - **Log Out** button to securely exit the system.
- **Edit Functionality:** The edit page includes:
    - Input fields for modifying name, last name, birthday email, address and contact number.
    - **Discard** button to cancel changes
    - **Save** button to update information
    - **View Info** button to return to the information display
- **Data Management:** Each section (Pets, Clients, Staff, Inventory) includes:
    - **Search Bar** for quickly finding specific entries
    - **Clear** button to reset search results
    - **Edit**, **View**, **Delete**, and **Add** functions for complete data control

3. The receptionist interface includes the following elements:

- **Navigation Bar:** The nav bar displays the **Nimbus' PawPals** logo and key operational sections:
    - **Pets** – Shows all pets and their detailed information.
    - **Clients** – Displays client profiles and contact information.
    - **Staff** – Presents basic staff information (view-only).
    - **Inventory** – Displays product availability (view-only).
    - **Timetable** – Manages appointment scheduling and calendar.
    - **Hotel** – Oversees pet boarding reservations and status.
- **Personal Section:** The interface includes:
    - **My Profile** button that displays the receptionist's personal information.
    - **Log Out** button to securely exit the system.
- **Information Display:** When viewing personal information, the receptionist can see:
    - **Role** and **Receptionist ID** number
    - **Personal ID** and employment details including **Hire Date**
    - **Name**, **Last Name**, **Birthday**, **Email**
    - **Address** and **Contact Number**

    - **Edit** button that allows modification of personal details
- **Client Management:** Includes functionality to:
    - **View**, **Add**, **Edit**, and **Delete** client information
    - Access client **Purchase History**
    - Manage **Pet Records** for each client
- **Operational Tools:** Each section includes:
    - **Search Bar** for quickly finding specific entries
    - **Clear** button to reset search results
    - **Appointment Scheduler** for booking client visits
    - **Products** catalog view to assist with client inquiries

4. The doctor interface includes the following elements:

- **Navigation Bar:** The nav bar displays the **Nimbus' PawPals** logo and key medical sections:
    - **Pets** – Shows all pets with their medical histories and treatment records.
    - **Timetable** – Displays daily schedule and upcoming appointments.
    - **Insights** – Provides access to selected analytics and patient feedback.
- **Personal Section:** The interface includes:
    - **My Profile** button that displays the doctor's personal information.
    - **Log Out** button to securely exit the system.
- **Appointment Management:** The daily schedule view includes:
    - List of appointments with time slots
    - **View** button for each pet that reveals detailed medical information
    - Patient history and previous treatments
- **Information Display:** When viewing personal information, the doctor can view and edit basic profile details.

5. The groomer interface includes the following elements:

- **Navigation Bar:** The nav bar displays the **Nimbus' PawPals** logo and grooming-focused sections:
    - **Timetable** – Shows daily grooming appointments and schedule.
- **Personal Section:** The interface includes:
    - **My Profile** button that displays the groomer's personal information.
    - **Log Out** button to securely exit the system.
- **Appointment Management:** The daily schedule view includes:
    - List of grooming appointments with time slots
    - Interactive pet entries that reveal detailed information on hover

    - **View** button for accessing specific pet grooming preferences and history
- **Information Display:** When viewing personal information, the groomer can view and edit basic profile details.

6. The client interface includes the following elements:
    - **Navigation Bar:** The navbar features the **Nimbus' Pawpals** logo and essential client sections:
        - **Products** – Displays the store's merchandise in a grid layout with search functionality, filtering options (category, price range, animal type), and detailed product views.
        - **My Pets** – Available after login, shows the client's registered pets and their health records.
        - **Appointments** – Enables scheduling services for their pets (visible after login).
    - **Personal Section:** After authentication, clients can access:
        - **My Profile** – Displays and allows editing of personal information.
        - **Purchase History** – Shows previous orders and transactions.
        - **Log Out** button to exit the logged-in state.
    - **Shopping Experience:** The products interface includes:
        - Search bar with filtering capabilities
        - Interactive product cards with images, descriptions, and pricing
        - Detailed pop-up views for each product
    - **Guest Access:** Unregistered users can browse products but must log in to view personal information, pet details, or make purchases.

3.2.1.2 Usability

-Easy-to-Learn Interface

- The system should have a **simple and consistent design** across all pages.
- Use of **familiar UI elements** such as dropdown menus, radio buttons, and checkboxes.
- **Shortcut actions** for frequent operations (e.g., one-click appointment rescheduling).

-Fast Navigation & Search-probably remove

- A **global search bar** should allow users to quickly find pets, clients, products, or appointments.
- Frequently accessed features should be **accessible in one or two clicks**.
- A **dashboard-based design** should summarize key information at a glance.

-Undo & Confirmation Messages

- Users should be able to **undo accidental actions** such as deleting a record.
- A **confirmation message** should appear before any irreversible action (e.g., "Are you sure you want to delete this pet record?").

-Multi-Device Support

- The software should be **responsive** and work on desktop, tablet, and mobile devices.
- UI elements should adjust dynamically based on screen size.

-Error Handling & Feedback

- The system should provide **clear and actionable error messages** (e.g., "Invalid phone number format, please use +1 234 567 8901").
- Auto-suggestions should be available to guide users when filling out forms.
- If a task fails, the system should provide **explanations and potential solutions**.

-Feedback System

- A built-in **feedback form** should allow users to report issues, request new features or leave a general review of their experience.
- A **rating system** for usability improvement (e.g., "How easy was it to book an appointment?").

3.2.1.3 Efficiency

3.2.1.3.1 Performance Requirements

Static Numerical Requirements:

- The system must support a **minimum of 50 simultaneous users** (e.g., managers, receptionists, doctors, groomers, and clients) without performance degradation.
- The system should handle up to **100 active sessions** at any given time.
- The system should store and process **at least 1000 pet records**, including medical histories and grooming logs.
- The system should maintain a **product database** capable of storing **5000 items**, including inventory details and pricing.
- A single receptionist or manager should be able to manage up to **500 daily transactions**, including scheduling, product purchases, and client interactions.

Dynamic Numerical Requirements:

- Almost all transactions (e.g., appointment bookings, inventory updates, and payment processing) must be completed in under 1 second.
- The system should be able to handle 100 appointment bookings per hour without performance lag.

- The system must support up to 1000 transactions per day, including purchases, medical record updates, and pet check-ins.
- Data retrieval from the database (e.g., searching for a pet's medical history) should take no longer than **2 seconds** under normal conditions.
- During peak load (e.g., holiday seasons, special promotions), the system should be able to process at least **200 transactions per minute** without system crashes or slowdowns.
- System response time for user interactions (e.g., clicking buttons, loading menus) should be under **500 milliseconds**.

3.2.1.3.2 Space Requirements

Database Storage: The system should integrate cloud-based database services designed for high scalability and flexibility. These services support automatic scaling to accommodate data needs from gigabytes to petabytes, ensuring long-term expansion without the need for manual intervention. Utilizing cloud databases will provide enhanced data management capabilities, reliability, and accessibility, ideal for dynamic data storage demands.

-Log Files & Backups:

- Daily system logs should not exceed **1GB** in size.
- Backup files should be retained for **up to 1 year**, requiring an estimated **500GB of storage** annually.

-Application Size:

- The client-side (web-based) application should not exceed **200MB** in size.
- The server-side application, including APIs and business logic, should be optimized to stay under **2GB**.

3.2.1.4 Dependability

1. Availability & Uptime

The system should be available 99% all the time, with planned maintenance scheduled outside business hours.

Automatic failover mechanisms should be in place to switch to a backup server in case of hardware failure.

2. Reliability

The system must guarantee minimal transaction failures due to software or hardware issues.

Data loss should be prevented through automatic backups every 24 hours.

Critical failures (e.g., database crashes) must be recoverable within 30 minutes.

3. Security & Data Integrity

All client and pet data must be stored securely with AES-256 encryption.

Role-based access control (RBAC) must restrict unauthorized data access.

Every transaction (e.g., pet check-ins, purchases) must be logged and auditable for security and compliance.

4. Fault Tolerance

The system should **gracefully handle errors**, displaying user-friendly messages instead of system crashes.

In case of system failure, a **backup recovery plan** must restore the latest state within **30 minutes**.

3.2.1.4.1 Monitoring

- The system must provide **real-time monitoring** of critical functions, including appointment scheduling, billing, and medical record updates.
- The system shall detect **failure conditions** such as network issues, database corruption, or server crashes and provide alerts to administrators.
- Logs of all transactions and system activities must be maintained for at least **one year**.
- Automatic error detection and reporting mechanisms should identify issues and attempt recovery within **30 seconds** before escalating to system administrators.

3.2.1.4.2 Maintenance

- The system must be designed with independent components to enable seamless updates and maintenance of specific features, such as the database, user interface, and appointment scheduler.
- Software updates should not require downtime greater than 10 minutes.
- The system should support automated backup and restore mechanisms.
- Developers should be able to modify the system without disrupting ongoing operations.

3.2.1.4.3 Integrity

- The system must ensure **data consistency and integrity** across all modules.
- All modifications to data must be logged, including timestamps and user IDs.
- In case of system failure, all ongoing transactions should either be **fully committed or rolled back** to maintain data consistency.

3.2.1.5 Security

3.2.1.5.1 System Protection

- All sensitive data, including user credentials and pet medical records, must be **encrypted using AES-256**.
- Role-based access control (RBAC) must be enforced to limit access to sensitive data.
- A **firewall and intrusion detection system (IDS)** should monitor unauthorized access attempts.

3.2.1.5.2 Authorization and Authentication

- The system must implement **multi-factor authentication (MFA)** for administrative users.
- Password policies must enforce **a minimum of 8 characters, including uppercase, lowercase, numbers, and special characters**.
- Failed login attempts should trigger **temporary account lockout after 5 unsuccessful attempts**.

3.2.1.5.3 Data Integrity & Logging

- All user activities should be logged, including login attempts, changes to pet medical records, and financial transactions.
- Logs must be stored securely and accessible only to authorized personnel.

3.2.2 Organizational Requirements

3.2.2.1 Environmental Requirements

- The system must be compatible with **Windows, macOS, and Linux**.
- Cloud-hosted components should run on **AWS, Azure, or GCP** with a **99.9% uptime guarantee**.

3.2.2.2 Operational Requirements

- The system should be **accessible 24/7** with **scheduled maintenance windows**.
- Support for **automatic software updates and patches**.
- Integration with third-party services (e.g., payment gateways, pet insurance APIs).

3.2.2.3 Development Requirements

- The system must follow **Agile development methodologies**.
- Use of **CI/CD pipelines** for deployment and testing.
- The system should be developed using **secure coding practices (OWASP Top 10 guidelines)**.

3.2.3 External Requirements

3.2.3.1 Regulatory Requirements

- The system must comply with **GDPR** and **HIPAA** (for pet medical records, if applicable).
- Compliance with **ISO 27001** standards for data security.

3.2.3.2 Ethical Requirements

- The system must ensure **ethical handling of user data**, ensuring no unauthorized third-party sharing.
- Clients must be informed and provide **explicit consent** before their pet data is shared with third parties.

3.2.3.3 Legislative Requirements

- All financial transactions must comply with **PCI DSS** standards.
- Digital signatures should be used to verify critical transactions.

3.2.3.3.1 Accounting Requirements

- The system should support **automated financial reports**.
- **All financial records should be kept for at least 5 years**.

3.2.3.3.2 Security Requirements

- Regular **penetration testing and security audits** should be conducted.
- **Biometric authentication** may be supported for high-security operations.

3.3 Domain Requirements

- The system should support **species-specific medical records** (e.g., cats, dogs, birds, reptiles).
- **Breed-specific health recommendations** should be provided.
- Integration with **RFID-based pet tracking systems** for lost-and-found services.
- The system should support **vaccination reminders** for pet owners.

4.1 Use case Table

Nr	Name	Description
US_01	Client self-registers	If a client does not have an account, they can register themselves.
US_02	User logs in	Users: customers, receptionists, veterinarians, groomers and managers log in using username and password.
US_03	Change login credentials	Users: customers, receptionists, veterinarians, groomers and managers change their credentials: username and password.
US_04	Add a new pet	Managers /Receptionists add a new pet to the system.
US_05	Add a new staff user	Manager creates an account for a new staff member.
US_06	Add a new client.	Manager / Receptionist creates an account for a new client.
US_07	Pets list	Manager / Doctors / Groomer / Receptionist can view a list of all pets.
US_08	Staff list	Manager / Receptionist can view all the staff of the pet store.
US_09	Client list	Manager / Receptionist can view all clients.
US_10	Search a pet	The staff are able to search for a pet
US_11	Search for a staff member.	Manager / Receptionist searches for a specific staff member..
US_12	Search for a client.	Manager / Receptionist searches for a specific client..
US_13	Update customer information	Manager / Receptionists update personal information of a specific customer.
US_14	Update pet information	Manager / Receptionists update personal information of a specific pet.
US_15	Update staff information	Managers can update personal information of a specific staff member.
US_16	Update personal information.	Manager / Receptionist / Groomer / Doctor / Client can update personal information, not username or password.
US_17	View staff information	Managers and receptionists can view personal information of a specific staff member.
US_18	View client information	Managers and receptionists can view personal information of a specific client.
US_19	View pet information	Manager / Receptionist / Groomer / Doctor / Client Can view pet information
US_20	View personal information.	Manager / Receptionist / Groomer / Doctor / Client can view personal information

US_21	Delete client.	Managers / Receptionists can delete the account of an existing client.
US_22	Delete pets.	Managers / Receptionists can delete the account of an existing pet.
US_23	Delete staff	Manager can delete the account of a staff member..
US_24	Create an appointment	Clients / Receptionists create a new appointment record for a specific pet. This pet appears in the staff's appointment list.
US_25	View pet appointment lists	Managers / Receptionists / Client / Groomer / Doctor can view the pets appointments in the clinic
US_26	Browse products	Clients / Receptionist / Managers can browse products.
US_27	Download pet's medical records	Any user can download all the pet medical records they have access to.
US_28	Leave feedback	Customers can leave feedback about the services offered by the pet store.
US_29	User logs out	Customers, receptionists, veterinarians, groomers and managers log out from their accounts.
US_30	View product details	Clients, receptionists, and managers can view detailed information about a selected product, including description, price, and availability.
US_31	Receptionists confirm or reject client appointment requests	Receptionists review and approve customer appointment requests for their pets.
US_32	Add Products to cart	Clients can add products to the shopping cart
US_33	Update shopping cart	Clients can update, or remove products from their shopping cart before purchasing.
US_34	Delete a product	The manager can remove a product from the system if it's no longer available or discontinued.
US_35	Edit product details	The manager can update existing product information, such as the product name, category, price or description.
US_36	Add a new product	The manager can add a new product to the system by providing its name, category, price, description and image.
US_37	Views Feedbacks	Receptionist / Manager can view a list of feedbacks done by the clients
US_38	View purchase history.	Client / Manager / Receptionist can view purchase history for clients (themselves).

US_39	View analytical reports	Managers can view analytical reports about the store and clinic activity,
US_40	Cancel an appointment	Clients / Receptionists cancel a new appointment record for a pet.
US_41	Proceed to checkout	Clients review their selections, finalize details, and securely complete their purchases.

US_01 - Client self-registers

1. The user visits the pet store's website
2. The user clicks on the "Register" or "Sign Up" link on the home page or the user menu.
3. The user is presented with a registration form that requires:
4. Full Name (FirstName and LastName)
    a. Username
    b. Password
    c. Email
    d. Contact Number
    e. Birthday
    f. Preferred Communication (Email, SMS)
    g. Address
5. The user clicks the "Register" button.
    h. If the data is up to the store policies then the user successfully self-registers as a client and can then log in.
    i. If not an error message will be displayed and the user will be prompted to refill the necessary fields correctly.

US_02 - User logs-in

1. User visits the pet store's website.
2. The user then clicks the "Login" button on the user menu.
3. A modal is displayed presenting the user with the necessary form to continue the process.
4. User enters his username and password.
5. User presses the "LogIn" button.
    a. If the data is correct the user will be redirected to his profile page in the corresponding role.
    b. If the data is not correct the user will not be authenticated and an error message will be displayed to prompt the user to enter the data again.

US_03 - Change login credentials

1. User logs in following the steps in **US_02**
2. In the profile page the user is displayed his/her personal information.
3. Under the personal information section the user clicks the "Edit" button.
4. The personal information section changes into a form where the user can edit his/her personal information including the credentials.

5. The user then clicks the "Update Login Credentials" button. This action opens a form where you can enter new login details.
6. The user then enters new credentials (Username, Password).
7. To save the change the user clicks the "Save" button.
    a. If the data entered complied with the store's policies a success message is shown.
    b. If not then an error message is displayed prompting the user to re-enter the credentials in the right way.

US_04 - Add a new pet

1. Staff (Receptionist, Managers) logs in following the steps in **US_02**
2. On the navigation bar the staff member clicks on the "Pet" link.
3. The pet page that displays a list of pets in the store will be displayed.
4. On the top of the page the staff member clicks on the "Add Pet" button.
5. A modal will be displayed where the staff member can enter all the necessary details about the pet.
6. The staff member enters the pet's details and then clicks the "Confirm" button.
    a. If the data and validation was passed, the data is saved in the database and the pet profile is created successfully. An informative message "Pet added successfully!" will be shown and the staff is redirected to the pet page.
    b. If validation is not passed successfully, informative messages will show where the problem is, so the receptionist can fix it and continue again from step f.

US_05 - Add a new staff user

1. The manager logs into the system following the steps in **US_02**.
2. The manager navigates to the "Staff" section in the navigation bar.
3. The manager clicks on the "Add Staff" button.
4. A modal is displayed prompting the manager to enter the following details:
    a. Full Name (FirstName and LastName)
    b. Username
    c. Password
    d. Email
    e. Contact Number
    f. Role (Receptionist / Groomer / Doctor)
    g. Email
    h. Phone Number
    i. Address
5. The manager fills out the form and clicks the "Confirm" button.

If the data is valid and complies with the system's policies, the staff user is created and added to the system. A success message is displayed: "Staff member added successfully!".

If not, an error message is shown, and the manager is prompted to correct the invalid fields.

US_06 - Add a new client

1. The manager or receptionist logs into the system following the steps in **US_02**.
2. The user navigates to the "Clients" section in the navigation bar.
3. The user clicks on the "Add Client" button.
4. A form is displayed requiring the following information
    a. Full Name
    b. Username
    c. Password
    d. Email
    e. Phone Number
    f. Birthday
    g. Preferred Communication Method
    h. Address
5. The user fills in the form and clicks the "Confirm" button.
    a. If the data is valid, the client is successfully added to the system, and a success message is displayed.
    b. If the data is invalid, error messages are shown and the user is prompted to correct the information.

US_07 - Pets list

a. The manager, doctor, groomer, or receptionist logs into the system following the steps in US_02.
b. The user navigates to the "Pets" section in the navigation bar.
c. The system displays a list of all registered pets.

US_08 - Staff list

a. The manager or receptionist logs into the system following the steps in **US_02**.
b. The user navigates to the "Staff" section in the navigation bar.
c. The system displays a list of all registered staff members.
d. The user can scroll through or use filters to find staff members as needed.

US_09 - Client list

a. Staff (Receptionist, Managers) logs in following the steps in **US_02**
b. On the navigation bar click on "Clients" section
c. The page displays a list of all the clients and their information.

US_10 - Search a pet

a. Staff(Receptionist, Manager) logs in following the steps in **US_02**
b. The user follows the steps in US_07 to go to the Pet list.
c. The staff is able to search a specific pet by entering the name of the pet in the search bar.
d. The result will be based if the staff have entered the information correctly.

US_11 - Search for a staff member.

a. caqaStaff(Receptionist, Manager) logs in following the steps in **US_02**
b. The user navigates to staff list following the steps in US_08
c. The staff is able to search a specific staff member by entering the name of the staff employee in the search bar .
d. The result will be based if the staff have entered the information correctly.

US_12 - Search for a Client .

a. Staff(Receptionist , Manager) logs in following the steps in US_02 .
b. The staff user looks up the client list following the steps in US_09
c. The staff is able to search a specific staff member by entering the name of the client in the search bar .

US_13 - Update customer information

a. Staff(Receptionist , Manager) logs in following the steps in US_02 .
b. The staff user searches for the specific client using the steps in US_12
c. The staff user clicks on the "edit" button to be able to edit information about the client.

US_14 -Update pet information

a. Staff(Receptionist , Manager) logs in following the steps in US_02 .
b. The staff user searches for a Pet using steps in US_10 .
c. The staff user clicks on "edit" button to be able to edit the pet information.

US_15 - Update staff information

a. Staff(Receptionist , Manager) logs in following the steps in US_02 .
b. The staff user searches for a staff member using the steps in US_11 .
c. The staff user clicks the "edit" button to be able to edit the staff information.

US_16 - Update personal information.

a. User logs in following the steps in US_02.
b. The user navigates to Personal Info Section following the steps in US_20.
c. The user can then click on edit button to edit the profile information .

US_17 – View staff information

1. The manager or receptionist logs into the system following the steps in US_02.
2. The user navigates to the Staff section in the navigation bar.
3. The system displays a list of all staff members.
4. The user can use the search function to find a specific staff member.
5. The user finds a specific staff member and clicks on the staff member's card.
6. The system then displays detailed information about the selected staff member.

US_18 – View client information

1. The manager or receptionist logs into the system following the steps in US_02.
2. The user navigates to the Clients section in the navigation bar.
3. The system displays a list of all clients.
4. The user can use the search function to find a specific client.
5. The user finds a specific client and clicks on the client's card.
6. The system displays detailed information about the selected client.

US_19 – View pet information

1. The manager, receptionist, groomer, doctor, or client logs into the system following the steps in US_02.
2. The user navigates to the Pets section in the navigation bar.
3. The system displays a list of pets.
4. The user can use the search function to find a specific pet.
5. The user finds a specific pet and clicks on the pet's card.
6. The system displays detailed information about the selected pet.

US_20 – View personal information

1. The manager, receptionist, groomer, doctor, or client logs into the system following the steps in US_02.
2. The user clicks on the "My Profile" button in the navigation bar.
3. The system displays the user's personal information including contact details and role-specific information.

US_21 – Delete client

1. The user logs into the system following the steps in US_02.
2. The user navigates to the Clients section in the navigation bar.
3. The system displays a list of all clients.
4. The user can use the search function to find the client to be deleted.
5. The user selects the specific client and clicks the "Delete" button.
6. The system prompts a confirmation message "Are you sure you want to delete this client?".
7. The user clicks "Confirm".
8. The system removes the client from the database.
9. The system updates all related records.
10. The system displays "Client deleted successfully!".

US_22 – Delete pets

1. The manager or receptionist logs into the system following the steps in US_02.
2. The user navigates to the Pets section in the navigation bar.
3. The system displays a list of all pets.
4. The user can use the search function to find the pet to be deleted.
5. The user selects the specific pet and clicks the "Delete" button.
6. The system prompts a confirmation message "Are you sure you want to delete this pet?".
7. The user clicks "Confirm".
8. The system removes the pet from the database.
9. The system updates all related records.
10. The system displays "Pet deleted successfully!".

US_23 – Delete staff

1. The manager logs into the system following the steps in US_02.
2. The manager navigates to the Staff section in the navigation bar.
3. The system displays a list of all staff members.
4. The manager can use the search function to find the staff member to be deleted.
5. The manager selects the specific staff member and clicks the "Delete" button.
6. The system prompts a confirmation message "Are you sure you want to delete this staff member?".
7. The manager clicks "Confirm".
8. The system removes the staff member from the database.
9. The system updates all related records.
10. The system displays "Staff member deleted successfully!".

US_24 – Create an appointment

1. The client or receptionist logs into the system following the steps in US_02.
2. The user navigates to the Appointments section in the navigation bar.
3. The user clicks on the "Create New Appointment" button.
4. The system displays a modal to enter appointment details.
5. The user selects the pet, service type, preferred date and time.
6. The user clicks the "Submit" button.
7. The system validates the information.
8. The system creates a new appointment and adds it to the relevant staff member's schedule.
9. The system displays "Appointment created successfully!".
10. The appointment now appears in the appropriate staff member's appointment list.

US_25 – View pet appointment lists

1. The user logs into the system following the steps in US_02
2. The user navigates to the Timetable section of the navbar.
3. The user selects the desired date range or pet name.
4. The system retrieves and displays all the appointments matching the criteria.
5. The user views appointment details, including time, and type of service.
6. Based on clearance level the user can see the appointments of only their pets if they are a client, all the appointments assigned to them for doctors and groomers and all appointments for receptionists and managers.
7. The user can filter or sort appointments if needed.

US_26 – Browse products

1. The user logs into the system following the steps in US_02
2. The user navigates to the Products section in the navbar.
3. The system displays a list of available products categorized by type.
4. The user can apply filters such as price range, brand, or category.
5. The user browses through the products and selects one for more details.

US_27 – Download pet's medical records

1. The user logs into the system following the steps in US_02
2. The user navigates to the Pets section through the navigation bar.
3. The user selects a pet from the list of owned pets.
4. After selection the pet's personal information is displayed.
5. Then the user clicks the "View Medical Chart" button.
6. The system displays the pet's medical history, including vaccination and treatment records.
7. The user clicks on the 'Download' button.
8. The system generates and downloads a PDF file of the medical records.

US_28 – Leave feedback

1. The user visits the pet store's website.
2. The user navigates to the end of the page.
3. There is a form where the user can leave their feedback on at the end of the page.
4. The user then fills the form with the required information.
    a. Full Name
    b. Email
    c. Feedback
5. The user submits the feedback.
6. The system saves and confirms submission if the data was passed on successfully.

7. If not an error message will be displayed which will prompt the user to fill and submit the form again.

US_29 – User logs out

1. The user first logs in following the steps in US_02.
2. The user then clicks on the 'Logout' button in the navigation bar.
3. The system prompts for confirmation.
4. The user confirms logout.
5. The system logs the user out and redirects them to the home page.

US_30 – View product details

1. The user logs into the system following the steps in US_02
2. The user navigates to the Products section in the navigation bar.
3. After navigating to the right section a list of Products is displayed.
4. The user finds a specific product and clicks on the Product card.
5. The system then displays a pop up modal that shows product details, including name, description and price.

US_31 – Receptionists confirm or reject client appointment requests

1. The receptionist logs into the system following the step in US_02.
2. The receptionist navigates to the TimeTable section.
3. The receptionist then clicks the "Pending Appointments" button on the top of the page.
4. The system displays a list of pending appointment requests.
5. The receptionist selects a request to review details.
6. The receptionist chooses to confirm or reject the appointment.
7. If confirmed, the system schedules the appointment and notifies the client.
8. If rejected, the system notifies the client with a reason for rejection.

US_32 – Buy Products

1. The client logs into the system following the steps in US_02
2. The client navigates to the Products section of the navbar.
3. The client selects a product to purchase.
4. The system displays the product details and the Add to Cart option.
5. The client adds the product to the cart.

6. The client then clicks on the shopping card in the navigation bar.
7. The shopping cart is displayed with a list of products.
8. The client then clicks on the "Proceed to Checkout" button.
9. The user proceeds to checkout.
10. The user enters shipping and payment details.
11. The user confirms the purchase.
12. The system processes the order and provides an order confirmation.
13. If a system or processing error occurs the system notifies the client.

US_33 –Update shopping cart

1. The user logs into the system following the steps in US_02.
2. The user clicks on the shopping cart icon.
3. The shopping cart page with all added products will be shown.
4. The user increases or decreases the quantity of a product in the cart.
5. The user clicks "Remove" to remove a product from the cart .
6. The system updates the total price dynamically as changes are made.
7. If the cart is empty, the system displays "Your cart is empty!"
8. The user clicks "Proceed to checkout" to complete the purchase process.

US_34 –Delete a product

1. The manager logs into the system following the steps in US_02.
2. The manager navigates to the Product management page.
3. The system displays a list of all available products.
4. The manager selects a product to delete.
5. The manager clicks the **"**Delete**"** button.
6. System prompts a confirmation message "Are you sure you want to delete this product?".
7. Manager clicks "Confirm".
8. The system removes the product from the database.
9. The system updates all related records and removes the product from inventory and product page.
10. The system displays "Product deleted successfully!".
11. If the manager clicks "Cancel" the system stays at the same page and the product is not deleted.

US_35 - Edit product details

1. The manager logs into the system following the steps in US_02.

2. The manager navigates to the Product management page.
3. The system displays a list of all available products.
4. The manager selects a product to edit.
5. Manager clicks the "Edit" button and updates one or more fields, such as:
    - Product name
    - Category
    - Price
    - Description
    - ImageUrl
6. The manager clicks the **"**Save**"** button.
7. The system validates the input and updates the product information in the database.
8. The system displays "Product details updated successfully.".
9. If the manager clicks"'Cancel," the system remains on the same page, and no changes are made to the product details.

US_36 - Add a new product

1. The manager logs into the system following the steps in US_02.
2. The manager navigates to the Product management page.
3. The manager clicks the "Add New Product" button.
4. The system displays a form with input fields for:
    - Product name
    - Category
    - Price
    - Description
    - ImageUrl
5. The manager fills in the required details.
6. The manager clicks the **"**Save**"** button.
7. The system validates the input and if validation is successful it updates the product information in the database.
8. The system displays "Product added successfully.".
9. The new product is now visible in the product list and available for purchase.
10. If the manager clicks "Cancel" the system remains on the same page.
11. The manager logs out following the steps in US_29.

US_37 -Views Feedbacks

1. The Manager or Receptionist logs into the system following the steps in US_02.
2. The Manager or Receptionist navigates to the Insights section on top of the page.
3. The Manager or Receptionist clicks "Feedbacks".
4. The system displays a list of feedback submitted by clients.

5. Manager or Receptionist selects a feedback comment and clicks "Reply".
6. Manager or Receptionist enters the reply message in the provided text box.
7. Manager or Receptionist clicks "Send".
8. The system saves and displays the reply under the corresponding feedback.
9. The receptionist or manager logs out following the steps in US_29 or navigates away when finished.

US_39 - View analytical reports

1. The Manager logs into the system following the steps in US_02.
2. Manager navigates to the "Insights" section on top of the page.
3. Manager clicks "Analytics & Reports".
4. The system displays a list of available analytical reports.
5. The manager can choose a specific time range to view the analytics reports.

US_40 - Cancel an appointment

1. The Receptionist or Client logs into the system following the steps in US_02.
2. The Client or Receptionist navigates to the Appointments section.
3. The system displays a list of upcoming appointments.
4. The Client or Receptionist selects the appointment.
5. They click the "Cancel Appointment" button.
6. The system displays "Are you sure you want to cancel this appointment?".
7. If the Client or Receptionist clicks "Confirm" , the appointment is removed from the schedule.
8. The system displays : "Appointment canceled successfully.
9. If the Client or Receptionist clicks "Cancel", no changes are made to the appointments schedule.

US_41 – Proceed to checkout

1. The user logs into the system following the steps in US_02.
2. The user navigates to their cart following the steps in US_32.
3. The user reviews the items in their cart and confirms quantities.
4. The user clicks the "Proceed to Checkout" button.
5. The system prompts the user to enter or confirm their shipping address.
6. The user selects a shipping method from the available options.
7. The user enters payment information or selects a saved payment method.
8. The user reviews the order summary, including items, shipping, and total cost.

9. The user clicks "Place Order" to complete the purchase.
10. The system processes the payment and displays an order confirmation with an order number.

UC_01 - Client self-registers

Name	**Client self-registers**
Summary	The client wants to self-register and create an account for the pet store and clinic
Actor	Client
Description of the Main Sequence	1. The user visits the pet store's website 2. The user clicks on the "Register" or "Sign Up" link on the home page or the user menu. 3. The user is presented with a registration form that requires: - Full Name (FirstName and LastName) - Username - Password - Email - Contact Number - Birthday - Preferred Communication (Email, SMS) - Address 4. The user clicks the "Register" button. a. If the data is up to the store policies then the user successfully self-registers as a client and can then log in. b. If not an error message will be displayed and the user will be prompted to refill the necessary fields correctly.
Precondition	The website is up and running efficiently. The user must not have an account prior to this action.
Alternative sequence	**Invalid input**: If any input in the registration form is invalid (e.g., email format is incorrect, password is too weak), the system displays a specific error message for each field and asks the user to correct the input. **Username or email already exists**: If the username or email provided by the user is already registered in the system, the user is informed and asked to use different credentials or log in.

	Service disruption: If there is a temporary issue with the server or database during registration, the user sees a message indicating that registration is temporarily unavailable and to try again later.
Post Condition	**Account Created**: The user's account is successfully created in the system. **User Logged In**: Optionally, after successful registration, the user may be automatically logged into their new account. **Confirmation Email/SMS**: A confirmation email or SMS is sent to the user's provided email address or contact number, respectively.

UC_02 - User Logs-In

Name	**User Logs-In**
Summary	This use case describes the process by which a registered user logs into their account on the pet store's website.
Actor	Client / Manager / Receptionist / Groomer / Doctor
Description of the Main Sequence	1. User visits the pet store's website. 2. The user then clicks the "Login" button on the user menu. 3. A modal is displayed presenting the user with the necessary form to continue the process. 4. User enters his username and password. 5. User presses the "LogIn" button. a. If the data is correct the user will be redirected to his profile page in the corresponding role. b. If the data is not correct the user will not be authenticated and an error message will be displayed to prompt the user to enter the data again.
Precondition	**User is Registered**: The user must have already created an account. **System is Operational**: The website is up and running without any service disruptions.
Alternative sequence	**Incorrect Credentials:** If the username and/or password do not match any account in the system, display an error message that prompts the user to try entering their credentials again.
Post Condition	**Access Granted**: The user gains access to their profile page according to their role in the system.

UC_03 - Change credentials

Name	**Change Login Credentials**
Summary	This use case describes how a registered and logged-in user can edit their personal information, specifically credentials, on their profile page. It ensures users can update their information to maintain accuracy and security.
Actor	Client / Manager / Receptionist / Groomer / Doctor
Dependency	US_02: User is logged in
Description of the Main Sequence	1. User logs in following the steps in **US_02** 2. In the profile page the user is displayed his/her personal information. 3. Under the personal information section the user clicks the "Edit" button. 4. The personal information section changes into a form where the user can edit his/her personal information including the credentials. 5. The user then clicks the "Update Login Credentials" button. This action opens a form where you can enter new login details. 6. The user then enters new credentials (Username, Password). 7. To save the change the user clicks the "Save" button. a. If the data entered complied with the store's policies a success message is shown. b. If not then an error message is displayed prompting the user to re-enter the credentials in the right way.
Precondition	**User Logged In:** The user must be logged in to their account, following successful authentication as described in US_02.
Alternative sequence	**Incorrect Credentials:** If the username and/or password do not match any account in the system, display an error message that prompts the user to try entering their credentials again. **Invalid Data:** If the entered data does not comply with the store's policies (e.g., password strength requirements), an error message is displayed. The user is prompted to enter the correct information in the form.
Post Condition	**Information Updated:** The user's personal information is updated in the system's database. **Confirmation Displayed:** The user receives visual confirmation that their information has been successfully updated.

UC_04 - Add a new pet

Name	**Add a new pet**
Summary	This use case outlines the process by which staff members (such as Receptionists and Managers) add a new pet's profile to the system. It ensures accurate record-keeping and facilitates efficient pet management within the store.
Actor	Manager / Receptionist
Dependency	US_02: User is logged in
Description of the Main Sequence	1. Staff (Receptionist, Managers) logs in following the steps in **US_02** 2. On the navigation bar the staff member clicks on the "Pet" link. 3. The pet page that displays a list of pets in the store will be displayed. 4. On the top of the page the staff member clicks on the "Add Pet" button. 5. A modal will be displayed where the staff member can enter all the necessary details about the pet. 6. The staff member enters the pet's details and then clicks the "Confirm" button. a. If the data and validation was passed, the data is saved in the database and the pet profile is created successfully. An informative message "Pet added successfully!" will be shown and the staff is redirected to the pet page. b. If validation is not passed successfully, informative messages will show where the problem is, so the receptionist can fix it and continue again from step f.
Precondition	**Staff Logged In:** The staff member must be logged in following the steps in US_02. **Authorized Access:** The staff member must have the necessary permissions to add pet information (typically Receptionists and Managers).
Alternative sequence	**Incorrect or Incomplete Data:** If any data fails to meet validation criteria (e.g., missing required fields, incorrect format), the system displays specific error messages. The staff member must correct these issues before proceeding.

	Database Error: If there is a failure in saving the data to the database (due to technical issues), an error message alerts the staff member, who can then retry or report the issue
Post Condition	**Pet Profile Created:** Upon successful validation and data entry, a new pet profile is successfully added to the database. **Visual Confirmation:** The staff member receives visual confirmation through a success message, ensuring that the process was completed effectively.

UC_05 - Add a New Staff User

Name	**Add a New Staff User**
Summary	This use case allows the manager to create an account for a new staff member by entering their details.
Actor	Manager
Description of the Main Sequence	1. Manager logs in following the steps in US_02. 2. Navigates to the "Staff" section in the navigation bar. 3. Click the "Add Staff" button. 4. A modal is displayed prompting for: Full Name Username Password Role (Receptionist / Groomer / Doctor) Email Phone Number Address 5. Fills in the form and submits. a. If valid, a confirmation message is displayed. b. If invalid, the form highlights errors for correction.
Precondition	User must be logged in as a Manager
Alternative sequence	Username/Email already exists: A prompt asks for new credentials.
Post Condition	**Account Created**: The staff's account is successfully created in the system. The client is successfully registered.

UC_06 - Add a New Client

Name	**Add a New Client**
Summary	This use case allows managers or receptionists to register a new client into the system.
Actor	Manager / Receptionist
Description of the Main Sequence	1. Manager logs in following the steps in US_02. 2. Navigates to the "Client" section in the navigation bar. 3. Click the "Add Client" button. 4. A modal is displayed prompting for: Full Name Username Password Email Phone Number Address 6. Fills in the form and submits. a. If valid, a confirmation message is displayed. b. If invalid, the form highlights errors for correction.
Precondition	User must be logged in as a Manager or Receptionist.
Alternative sequence	Username/Email already exists: A prompt asks for new credentials.
Post Condition	**Account Created**: The Client's account is successfully created in the system. The client is successfully registered.

UC_07 - View Pets List

Name	**View Pets List**
Summary	Allows authorized users to view all registered pets in the clinic/store system.
Actor	Manager / Doctor / Groomer / Receptionist
Description of the Main Sequence	1. The user logs in. 2. Navigates to the "Pets" section. 3. The system loads and displays a list of all pets.

	4. For each pet, information such as name, breed, owner, and age is displayed.
Precondition	The user must be logged in with appropriate roles.
Alternative sequence	No pets found: Display "No pets currently registered." Load failure: Retry or notify the user of an issue.
Post Condition	**The user sees the list of pets.**

UC_08 - View Staff List

Name	**View Staff List**
Summary	This use case allows authorized users to view all current staff members.
Actor	Manager / Receptionist
Description of the Main Sequence	1. Manager/Receptionist logs in. 2. Navigates to the "Staff" section. 3. The system displays a list of all staff members with relevant details: name, role, contact. 4. Users can scroll or filter by role.
Precondition	User is logged in with sufficient privileges.
Alternative sequence	No staff available: "No staff members currently in the system." Search failure: "No match found."
Post Condition	**The list of staff is available for viewing.**

UC_09 - Client List

Name	Client List
Summary	To display the list of clients in the page
Actor	Manager , Receptionist or any staff role
Description	The staff user navigates to the list of client
Precondition	The user must be logged in the system as staff
Alternatives	The user can filter the client list based on specific client features

Post Condition	The user successfuly reviews the client list .

UC_10 - Search a pet

Name	Search a Pet
Summary	To display the specific pet based on the information inserted on the search bar
Actor	Manager ,Receptionist or any staff role
Description	The staff user searches for a specific pet based on inserted name in the search
Precondition	The user must be logged in the system as staff
Alternatives	The user can search through different information for the pet as in breed , assigned groomer etc
Post Condition	The user successfuly find the specified pet.

US_11 - Search for a staff member.

Name	Search for a Staff member
Summary	To display the specific staff member based on the information inserted on the search bar
Actor	Manager ,Receptionist or any staff role
Description	1. Staff(Receptionist, Manager) logs in following the steps in **US_02** 2. On the navigation bar the staff member clicks on the "Staff" page. 3. The page displays a list of all current registered staff members. 4. The staff is able to search a specific staff member by entering the name of the staff employee in the search bar . 5. The result will be based if the staff have entered the information correctly.
Precondition	The user must be logged in the system as staff

Alternatives	The user can search through different information for the staff as in position and other filter options .
Post Condition	The user successfuly find the specified staff.

US_12 - Search for a Client .

Name	Search for a Client
Summary	To display the specific Client based on the information inserted on the search bar
Actor	Manager ,Receptionist or any staff role
Description	1. Staff(Receptionist , Manager) logs in following the steps in US_02 2. The staff user looks up the client list following the steps in US_09 3. The staff is able to search a specific staff member by entering the name of the client in the search bar .
Precondition	The user must be logged in the system as staff
Alternatives	The user can search through different information for the client using other filter options .
Post Condition	The user successfuly find the specified client.

US_13 - Update customer information

Name	Update customer information
Summary	To be able to edit customer information
Actor	Manager ,Receptionist or any staff role
Description	1. Staff(Receptionist , Manager) logs in following the steps in US_02 .

	2. The staff user searches for the specific client using the steps in US_12 3. The staff user clicks on the "edit" button to be able to edit information about the client.
Precondition	The user must be logged in the system as staff
Alternatives	The user can request an edit from the software provider if the system doesn't work.
Post Condition	The user successfuly edits the client info .

US_14 -Update pet information

Name	Update pet information
Summary	To edit and update pet information .
Actor	Manager ,Receptionist or any staff role
Description	1. Staff(Receptionist , Manager) logs in following the steps in US_02 2. The staff user searches for a Pet using steps in US_10 . 3. The staff user clicks on the "edit" button to be able to edit the pet information.
Precondition	The user must be logged in the system as staff
Alternatives	The user can request an edit from the software provider if the system doesn't work.
Post Condition	The user successfuly edits the pet info .

US_15 - Update staff information

Name	Update staff information
Summary	To edit and update staff information .
Actor	Manager ,Receptionist or any staff role
Description	1. Staff(Receptionist , Manager) logs in following the steps in US_02 2. The staff user searches for a staff member using the steps in US_11 3. The staff user clicks the "edit" button to be able to edit the staff information.
Precondition	The user must be logged in the system as staff
Alternatives	The user can request an edit from the software provider if the system doesn't work.
Post Condition	The user successfuly edits the staff info .

US_16 - Update personal information.

Name	Update personal information
Summary	To edit and update personal information .
Actor	Anyone eligible to make a profile in the program.
Description	1. User logs in following the steps in US_02. 2. The user navigates to Personal Info Section . 3. The user can then click on the edit button to edit the profile information.
Precondition	The user must be logged in the system .
Alternatives	The user can request an edit from the software provider if the system doesn't work.
Post Condition	The user successfuly edits the personal info .

US_17 – View staff information

Name	**View Staff Information**
Summary	The manager or receptionist wants to view detailed information about a specific staff member.
Dependency	The system must securely store and provide access to staff member information.
Actor	Manager or receptionist
Description of the Main Sequence	1. The manager or receptionist logs into the system following the steps in US_02. 2. The user navigates to the Staff section in the navigation bar. 3. The system displays a list of all staff members. 4. The user can use the search function to find a specific staff member. 5. The user finds a specific staff member and clicks on the staff member's card. 6. The system then displays detailed information about the selected staff member.
Precondition	The user has valid credentials and appropriate permissions to view staff information.
Alternative sequence	**1-** If the search yields no results, the system displays a "No staff members found" message. **2-** If the user navigates away before viewing details, the operation is canceled.
Post Condition	The user successfully views detailed information about the selected staff member.

US_18 – View client information

Name	**View Client Information**
Summary	The manager or receptionist wants to view detailed information about a specific client.
Dependency	The system must securely store and provide access to client information.
Actor	Manager or receptionist

Description of the Main Sequence	1. The manager or receptionist logs into the system following the steps in US_02. 2. The user navigates to the Clients section in the navigation bar. 3. The system displays a list of all clients. 4. The user can use the search function to find a specific client. 5. The user finds a specific client and clicks on the client's card. 6. The system displays detailed information about the selected client.
Precondition	The user has valid credentials and appropriate permissions to view client information.
Alternative sequence	**1-** If the search yields no results, the system displays a "No clients found" message. **2-** If the user navigates away before viewing details, the operation is canceled.
Post Condition	The user successfully views detailed information about the selected client.

US_19 – View pet information

Name	**View Pet Information**
Summary	The manager or receptionist wants to view detailed information about a specific client.
Dependency	The system must securely store and provide access to pet information.
Actor	Manager, Receptionist, Groomer, Doctor, or Client
Description of the Main Sequence	1. The user logs into the system following the steps in US_02. 2. The user navigates to the Pets section in the navigation bar. 3. The system displays a list of pets. 4. The user can use the search function to find a specific pet. 5. The user finds a specific pet and clicks on the pet's card. 6. The system displays detailed information about the selected pet.
Precondition	The user has valid credentials and appropriate permissions to view pet information.
Alternative sequence	**1-** If the search yields no results, the system displays a "No pets found" message. **2-** If the user navigates away before viewing details, the operation is canceled.
Post Condition	The user successfully views detailed information about the selected pet.

US_20 – View personal information

Name	**View Personal Information**
Summary	The user wants to view their own personal information.
Dependency	The system must securely store and provide access to user personal information.
Actor	Manager, Receptionist, Groomer, Doctor, or Client
Description of the Main Sequence	1. The user logs into the system following the steps in US_02. 2. The user clicks on the "My Profile" button in the navigation bar. 3. The system displays the user's personal information including contact details and role-specific information.
Precondition	The user has valid credentials and is successfully logged into the system.
Alternative sequence	**1-** If the user session has expired, the system redirects to the login page. **2-** If there is an error retrieving the information, an error message is displayed.
Post Condition	The user successfully views their personal information.

US_21 – Delete client

Name	**Delete Client**
Summary	The manager or receptionist wants to delete a client from the system.
Dependency	The system must update the database and all related records.
Actor	Manager or Receptionist
Description of the Main Sequence	1. The user logs into the system following the steps in US_02. 2. The user navigates to the Clients section in the navigation bar. 3. The system displays a list of all clients. 4. The user can use the search function to find the client to be deleted. 5. The user selects the specific client and clicks the "Delete" button. 6. The system prompts a confirmation message "Are you sure you want to delete this client?". 7. The user clicks "Confirm". 8. The system removes the client from the database. 9. The system updates all related records. 10. The system displays "Client deleted successfully!".

Precondition	The user has valid credentials and appropriate permissions to delete clients.
Alternative sequence	**1-** If the user clicks "Cancel" at the confirmation prompt, the delete operation is aborted. **2-** If there is an error during deletion, the system displays an error message.
Post Condition	The client is successfully removed from the system and all related records are updated.

US_22 – Delete pets

Name	**Delete Pets**
Summary	The manager or receptionist wants to delete a pet from the system.
Dependency	The system must update the database and all related records.
Actor	Manager or Receptionist
Description of the Main Sequence	1. The user logs into the system following the steps in US_02. 2. The user navigates to the Pets section in the navigation bar. 3. The system displays a list of all pets. 4. The user can use the search function to find the pet to be deleted. 5. The user selects the specific pet and clicks the "Delete" button. 6. The system prompts a confirmation message "Are you sure you want to delete this pet?". 7. The user clicks "Confirm". 8. The system removes the pet from the database. 9. The system updates all related records. 10. The system displays "Pet deleted successfully!".
Precondition	The user has valid credentials and appropriate permissions to delete pets.
Alternative sequence	**1-** If the user clicks "Cancel" at the confirmation prompt, the delete operation is aborted. **2-** If there is an error during deletion, the system displays an error message.
Post Condition	The pet is successfully removed from the system and all related records are updated.

US_23 – Delete staff

Name	**Delete Staff**
Summary	The manager wants to delete a staff member from the system.
Dependency	The system must update the database and all related records.
Actor	Manager
Description of the Main Sequence	1. The manager logs into the system following the steps in US_02. 2. The manager navigates to the Staff section in the navigation bar. 3. The system displays a list of all staff members. 4. The manager can use the search function to find the staff member to be deleted. 5. The manager selects the specific staff member and clicks the "Delete" button. 6. The system prompts a confirmation message "Are you sure you want to delete this staff member?". 7. The manager clicks "Confirm". 8. The system removes the staff member from the database. 9. The system updates all related records. 10. The system displays "Staff member deleted successfully!".
Precondition	The manager has valid credentials and appropriate permissions to delete staff members.
Alternative sequence	**1-** If the manager clicks "Cancel" at the confirmation prompt, the delete operation is aborted. **2-** If there is an error during deletion, the system displays an error message.
Post Condition	The staff member is successfully removed from the system and all related records are updated.

US_24 – Create an appointment

Name	**Create an Appointment**
Summary	The client or receptionist wants to create a new appointment for a pet service.
Dependency	The system must update the appointment database and staff schedules.
Actor	Client or Receptionist

Description of the Main Sequence	1. The user logs into the system following the steps in US_02. 2. The user navigates to the Appointments section in the navigation bar. 3. The user clicks on the "Create New Appointment" button. 4. The system displays a modal to enter appointment details. 5. The user selects the pet, service type, preferred date and time. 6. The user clicks the "Submit" button. 7. The system validates the information. 8. The system creates a new appointment and adds it to the relevant staff member's schedule. 9. The system displays "Appointment created successfully!". 10. The appointment now appears in the appropriate staff member's appointment list.
Precondition	The user has valid credentials and appropriate permissions to create appointments.
Alternative sequence	**1-** If the selected time slot is unavailable, the system displays a notification and suggests alternative times. **2-** If the user clicks "Cancel" before submitting, the appointment creation is aborted. **3-** If required information is missing, the system displays validation errors.
Post Condition	The appointment is successfully created and added to the appropriate staff member's schedule.

UC_25 - View pet appointment lists

Name	View pet appointment lists
Summary	Users can view pet appointments.
Actor	Managers / Receptionists / Client / Groomer / Doctor
Description	The user views pet appointments scheduled at the clinic.
Precondition	The user must be logged into the system.
Alternatives	The user can filter or sort appointments by date, pet name, or veterinarian.
Post Condition	The user successfully views the list of pet appointments.

UC_26 - Browse products

Name	**Browse products**
Summary	Users can browse available products.
Actor	Clients / Receptionists / Managers
Description	The user explores the product catalog available in the system.

Precondition	The user must be logged into the system.
Alternatives	The user can browse products without logging in by the pet's store website, although no additional action can be taken.
Post Condition	The user browses and views available products.

UC_27 - Download pet's medical records

Name	**Download pet's medical records**
Summary	Any authorized user can download medical records of a pet.
Actor	Client / Receptionist / Manager / Groomer / Doctor
Description	The user downloads medical records for a pet they have access to.
Precondition	The user must be logged into the system and have access to the records.
Alternatives	The user can choose a specific date range of records before downloading.
Post Condition	The system provides a downloadable file of medical records.

UC_28 - Leave feedback

Name	**Leave feedback**
Summary	Customers can leave feedback about services.
Actor	Customers
Description	The user leaves a review or feedback on the services provided.
Precondition	The user must be logged into the system.
Alternatives	If not logged in the user should navigate to the feedback section of the website and leave a review there.
Post Condition	The feedback is stored and available for review.

UC_29 - User logs out

Name	**User logs out**
Summary	The user logs out of their account.
Actor	Customers, Receptionists, Veterinarians, Groomers, Managers
Description	The user logs out of their account from the system.
Precondition	The user must be logged into the system.
Alternatives	None.
Post Condition	The user is logged out and redirected to the home page.

UC_30 - View product details

Name	**View product details**
Summary	Clients, receptionists, and managers can view details about a product.
Actor	Clients / Receptionists / Managers
Description	The user views detailed information about a selected product.
Precondition	The user must be logged into the system.
Alternatives	The user can see additional product specifications, reviews, and availability.
Post Condition	The product details are displayed to the user.

UC_31 - Receptionists confirm or reject client appointment requests

Name	**Receptionists confirm or reject client appointment requests**
Summary	Receptionists review and approve customer appointment requests.
Actor	Receptionists
Description	Receptionists can confirm or reject appointment requests for clients' pets.
Precondition	The receptionist must be logged into the system.
Alternatives	The receptionist can provide a reason for rejecting an appointment.
Post Condition	The appointment is either confirmed and scheduled or rejected.

UC_32 - Buy Products

Name	**Buy Products**
Summary	Clients can purchase products for their pets.
Actor	Clients
Description	The user selects and buys products from the system.
Precondition	The user must be logged in and have valid payment details.
Alternatives	The user can apply discount codes before purchasing.
Post Condition	The product is purchased, and an order confirmation is generated.

UC_33 –Update shopping cart

Name	**Update shopping cart**
Summary	Clients want to review or modify their shopping cart before checkout.
Dependency	Products must already be added to the shopping cart before the user can manage them.

Actor	Clients
Description of the Main Sequence	1. The user clicks on the shopping cart icon. 2. The system displays the shopping cart page with all added products. 3. The user increases or decreases the quantity of a product. 4. The system updates the total price dynamically. 5. The user clicks "Remove" to remove a product. 6. The system removes the product and updates the total price. 7. The user clicks "Proceed to checkout" to complete the purchase process.
Precondition	Client is logged into the system. The user has added at least one product to the shopping cart.
Alternative sequence	1. If an item is out of stock, the system alerts the user and prevents further quantity increase. 2. If the user has no items in the cart when accessing it, the system displays "Your cart is empty!"
Post Condition	The cart reflects all updates. If the user proceeds to checkout, they are redirected to the checkout process.

UC_34 –Delete a product

Name	**Delete a product**
Summary	The manager decides to remove a product that is no longer available or has been discontinued.
Dependency	US_36: The product must be already added into the system. The system must update the product database.
Actor	Manager
Description of the Main Sequence	1. The manager navigates to the Product management page. 2. The system displays a list of all available products. 3. The manager selects a product to delete. 4. The manager clicks the **"**Delete**"** button. 5. System prompts a confirmation message "Are you sure you want to delete this product?". 6. Manager clicks "Confirm". 7. The system removes the product from the database.

	8. The system updates all related records and removes the product from inventory and product page. 9. The system displays "Product deleted successfully!".
Precondition	The manager is logged into the system. The product exists in the system.
Alternative sequence	1. If the manager cancels the confirmation prompt, the system does not delete the product.
Post Condition	If confirmed, the product is permanently removed, and all related records are updated. If canceled, the product remains unchanged.

UC_35 - Edit product details

Name	**Edit product details**
Summary	The Manager updates product details (e.g., name, category, price, description) to ensure accurate and up-to-date product information.
Dependency	The system must update the product database and reflect changes in inventory.
Actor	Manager
Description of the Main Sequence	1. The manager navigates to the Product management page. 2. The system displays a list of all available products. 3. The manager selects a product to edit. 4. Manager clicks the "Edit" button and updates one or more fields, such as: Product name,Category,Price,Description. 5. The manager clicks the "Save" button. 6. The system validates the input and updates the product information in the database. 7. The system displays "Product details updated successfully.".
Precondition	The manager is logged into the system. The product exists in the system.
Alternative sequence	1. If the manager enters invalid data (e.g., negative price, empty name), the system displays an error message and prompts for correction. 2. If the manager cancels the operation, no changes are saved.
Post Condition	The product details are updated in the system. The updated information reflects in inventory and order processing.

UC_36 - Add a new product

Name	**Add a new product**
Summary	The manager wants to add a new product to the system.
Dependency	The system must securely store the product details and update the product database.
Actor	Manager
Description of the Main Sequence	1. The manager navigates to the Product management page. 2. The manager clicks the "Add New Product" button. 3. The system displays a form with input fields for:Product name,Category,PriceDescription. 4. The manager fills in the required details. 5. The manager clicks the "Save" button. 6. The system validates the input and if validation is successful it updates the product information in the database. 7. The system displays "Product added successfully.". 8. The new product is now visible in the product list and available for purchase.
Precondition	The manager is logged into the system. The product does not already exist in the system.
Alternative sequence	1. If the manager enters invalid data (e.g., negative price, empty name), the system displays an error message and prompts for correction. 2. If the manager cancels the operation,the product is not added in the database.
Post Condition	The new product is successfully stored in the system. The product is now available in the inventory and shopping interface.

UC_37 -Views Feedbacks

Name	**Views Feedbacks**
Summary	The receptionist or manager wants to review client feedback.
Dependency	US_28:The system must store and retrieve feedback entries efficiently.
Actor	Receptionist, Manager
Description of the Main Sequence	1. The Manager or Receptionist navigates to the Insights section on top of the page. 2. The Manager or Receptionist clicks “Feedbacks”.

	3. The system displays a list of feedback submitted by clients. 4. Manager or Receptionist selects a feedback comment and clicks "Reply". 5. Manager or Receptionist enters the reply message in the provided text box. 6. Manager or Receptionist clicks "Send". 7. The system saves and displays the reply under the corresponding feedback.
Precondition	The receptionist or manager is logged into the system. There are existing feedback entries from clients.
Alternative sequence	1. If there is no feedback available, the system displays a message: "No feedback available at the moment.". 2. If the system fails to retrieve feedback due to a technical issue, an error message is displayed: "Error retrieving feedback. Please try again later."
Post Condition	The receptionist or manager successfully views client feedback. The system ensures feedback data remains unchanged.

UC_38 - View purchase history.

Name	**View purchase history.**
Summary	The client, manager, or receptionist wants to review past purchases.
Dependency	US_32: Process order - Purchase history is generated from completed orders.
Actor	Client , Manager , Receptionist
Description of the Main Sequence	1. The Manager,Receptionist or Client navigates to the "View Purchase History" section. 2. The system determines the user role: 3. If a Client is logged in : a. The system automatically displays a list of all purchases made by the client. 4. If a Manager or Receptionist is logged in: a. The system displays an input field to enter a Client ID. b. The Manager or Receptionist enters the Client ID and submits the request.

	c. The system retrieves and displays all purchase history records for the specified client. 5. The Manager, Receptionist or Client ,clicks on "View details" to see detailed information about a specific purchase.
Precondition	The client, manager, or receptionist is logged into the system. There must be at least one completed purchase associated with the client.
Alternative sequence	1. If no purchase history is available, the system displays a message: "No purchase history found." 2. If the system encounters an error while retrieving data, an error message is displayed: "Unable to load purchase history. Please try again later." 3. If a Manager or Receptionist enters an invalid Client ID, the system displays an error message: "Client ID not found. Please enter a valid ID."
Post Condition	The Manager, Receptionist, or Client successfully views the purchase history. The system ensures that purchase records remain unchanged.

UC_39 - View analytical reports

Name	**View analytical reports**
Summary	The manager wants to review analytical reports about store and clinic activity.
Dependency	US_32 : Depends on purchase trends.
Actor	Manager
Description of the Main Sequence	1. The Manager logs into the system following the steps in US_02. 2. Manager navigates to the "Insights" section on top of the page. 3. Manager clicks "Analytics & Reports". 4. The system displays a list of available analytical reports. 5. The manager can choose a specific time range to view the analytics reports.
Precondition	The manager is logged into the system. The system has sufficient data to generate reports.
Alternative sequence	1. If there is insufficient data to generate a report, the system displays a message: "No data available for the selected period."

	2. If the system encounters an error retrieving data, an error message is displayed: "Unable to generate report. Please try again later."
Post Condition	The Manager successfully views the requested analytical report. The system ensures that report data remains unchanged and up to date.

UC_40 - Cancel an appointment

Name	**Cancel an appointment**
Summary	A Client or Receptionist cancels an existing appointment for a pet.
Dependency	The appointment record must already exist in the system.
Actor	Client , Receptionist
Description of the Main Sequence	1. The Client or Receptionist navigates to the Appointments section. 2. The system displays a list of upcoming appointments. 3. The Client or Receptionist selects the appointment. 4. The user clicks the "Cancel Appointment" button. 5. The system displays "Are you sure you want to cancel this 6-appointment?". 6. Client or Receptionist clicks "Confirm" , the appointment is removed from the schedule. 7. The system displays : "Appointment canceled successfully.
Precondition	The Client or Receptionist is logged into the system. The appointment exists in the system.
Alternative sequence	1. If the Client or Receptionist cancels the confirmation, the appointment remains unchanged. 2. If the appointment is already past, the system displays: "You cannot cancel a past appointment." 3. If there is a system error, the system displays:"Unable to cancel the appointment. Please try again later."
Post Condition	If successful, the appointment is marked as canceled. If canceled or failed, the appointment remains unchanged.

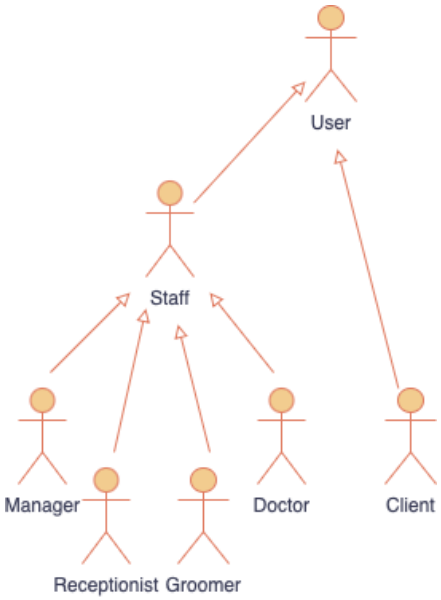
US_41 – Proceed to checkout

Name	**Proceed to checkout**

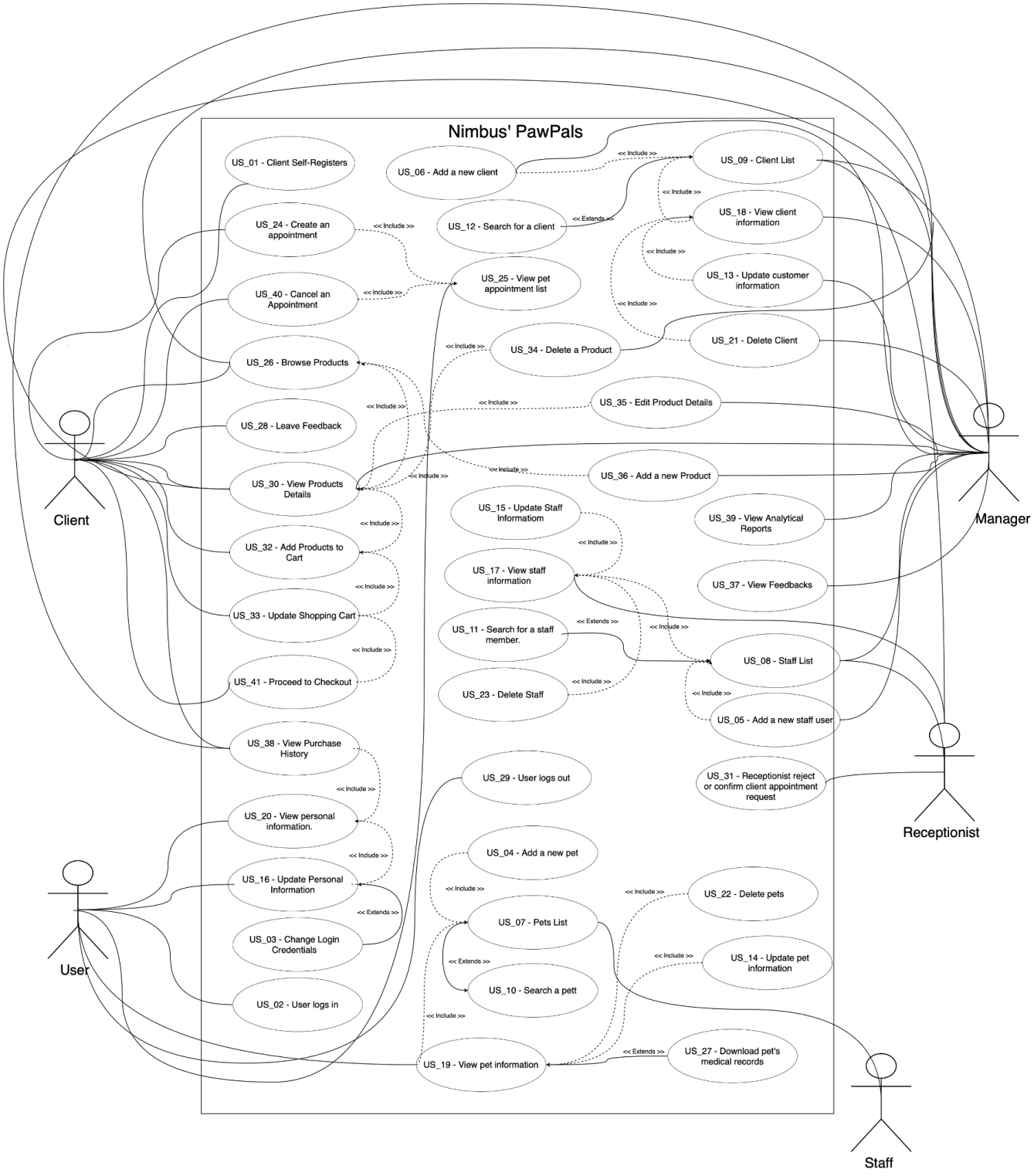
Summary	Clients review their selections, finalize details, and securely complete their purchases.
Dependency	The system must have a functioning cart system (US_32) and secure payment processing capabilities.
Actor	Client
Description of the Main Sequence	1. The user logs into the system following the steps in US_02. 2. The user navigates to their cart following the steps in US_32. 3. The user reviews the items in their cart and confirms quantities. 4. The user clicks the "Proceed to Checkout" button. 5. The system prompts the user to enter or confirm their shipping address. 6. The user selects a shipping method from the available options. 7. The user enters payment information or selects a saved payment method. 8. The user reviews the order summary, including items, shipping, and total cost. 9. The user clicks "Place Order" to complete the purchase. 10. The system processes the payment and displays an order confirmation with an order number.
Precondition	The user has added at least one product to their cart and is logged in.
Alternative sequence	**1.** If the user's cart is empty, the system displays a message and directs them to continue shopping. **2.** If payment processing fails, the system notifies the user and provides options to try again or select a different payment method. **3.** If shipping information is invalid, the system prompts the user to correct it before proceeding.
Post Condition	The user successfully completes their purchase, receives an order confirmation, and the system records the transaction.

4.2 Behavioral Diagrams

4.2.1 Use Case Diagrams

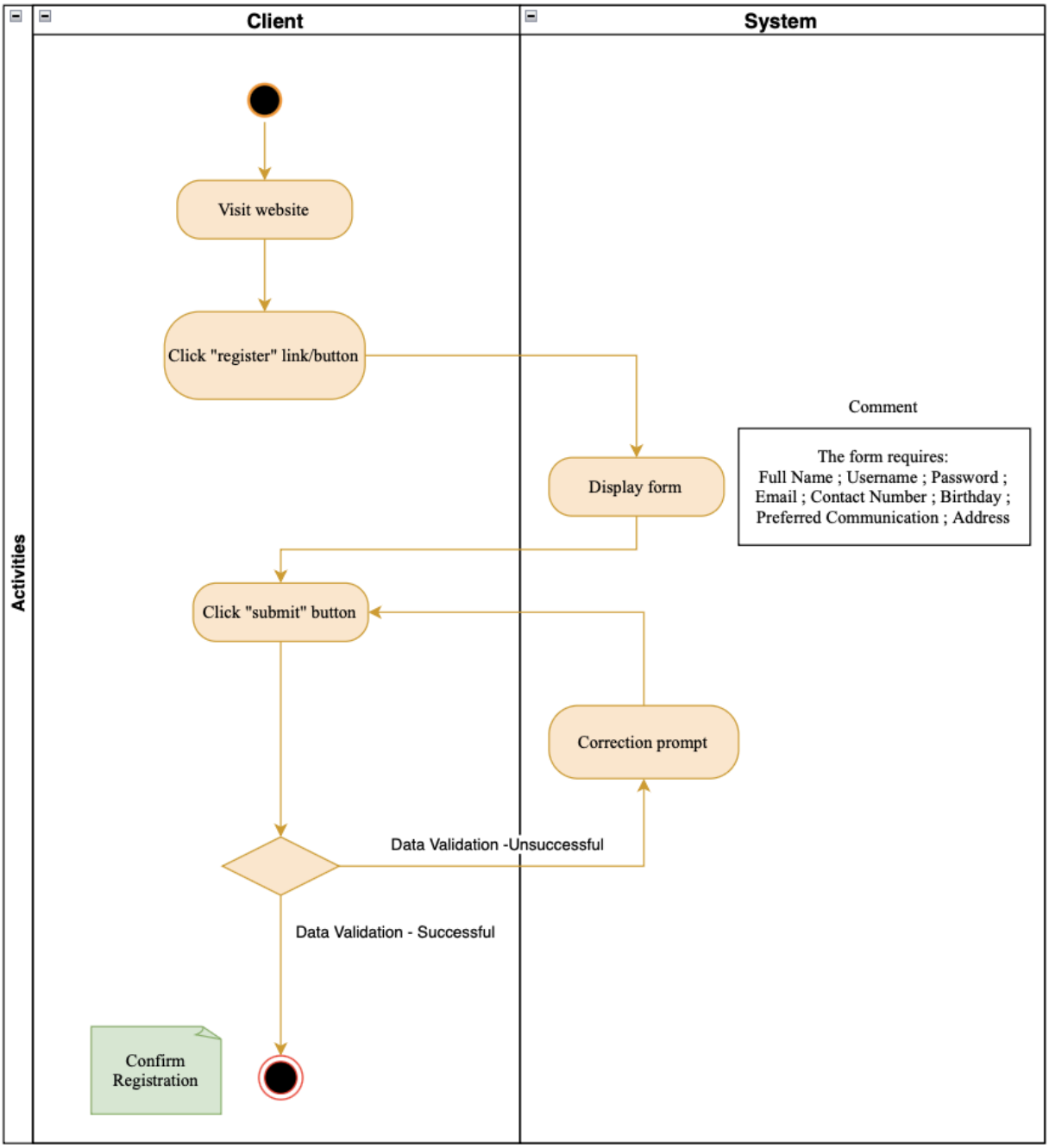


This diagram displays the inheritance hierarchy of user roles within the software, depicting "User" as the root class from which "Staff Member" and "Client" derive. Subclasses like Manager, Receptionist, Doctor, and Groomer inherit from "Staff Member," emphasizing both shared and unique attributes across all roles. This structure is crucial for defining access controls and functionality in use case diagrams.

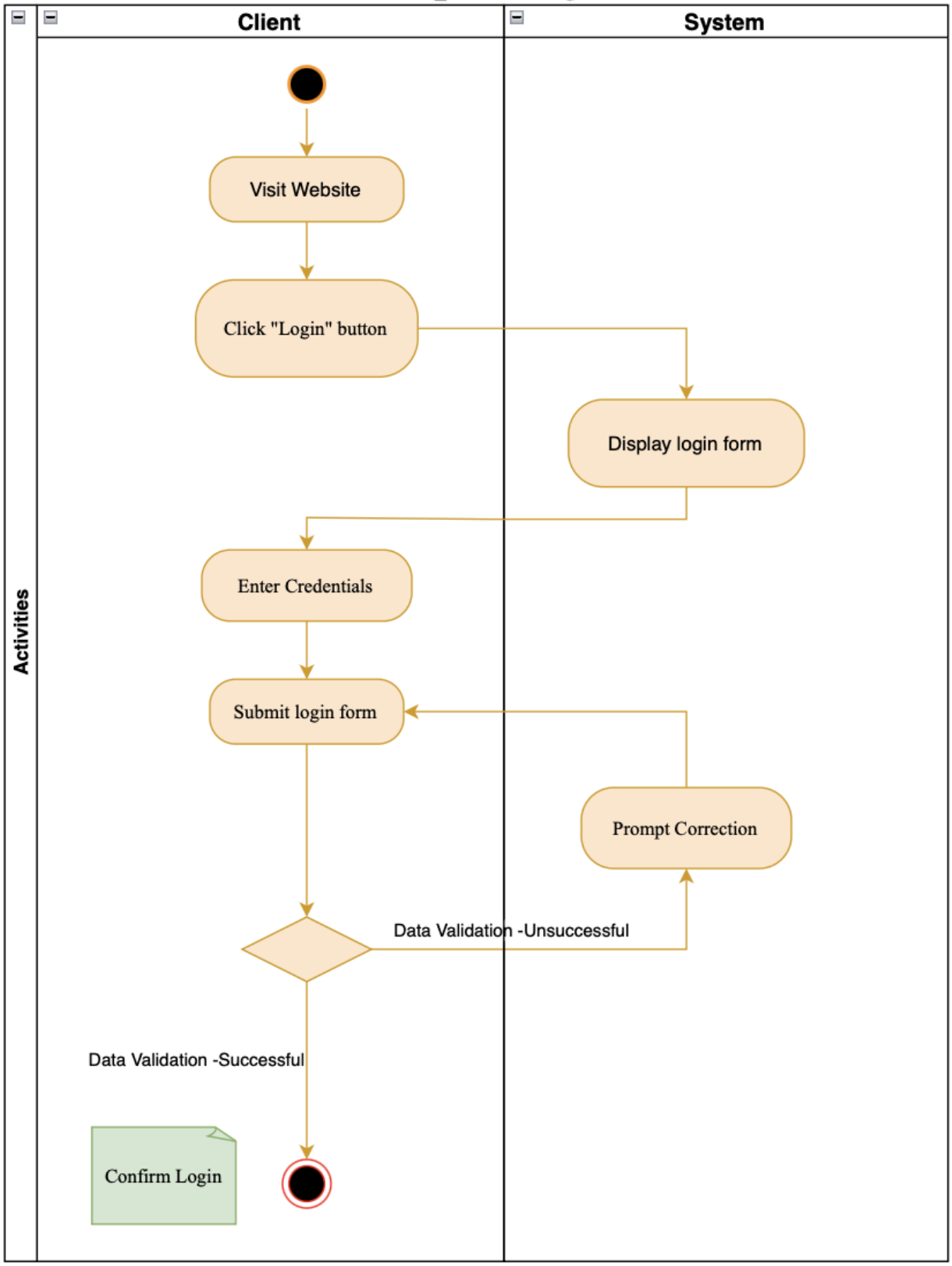

Nimbus' PawPals
US_01 - Client Self-Registers
US_06 - Add a new client
US_09 - Client List
US_24 - Create an appointment
US_12 - Search for a client
US_18 - View client information
US_25 - View pet appointment list
US_40 - Cancel an Appointment
US_13 - Update customer information
US_34 - Delete a Product
US_21 - Delete Client
US_26 - Browse Products
US_35 - Edit Product Details
US_28 - Leave Feedback
US_36 - Add a new Product
US_30 - View Products Details
US_15 - Update Staff Informatiom
US_39 - View Analytical Reports
US_32 - Add Products to Cart
US_17 - View staff information
US_37 - View Feedbacks
US_33 - Update Shopping Cart
US_11 - Search for a staff member.
US_08 - Staff List
US_41 - Proceed to Checkout
US_23 - Delete Staff
US_05 - Add a new staff user
US_38 - View Purchase History
US_29 - User logs out
US_31 - Receptionist reject or confirm client appointment request
US_20 - View personal information.
US_04 - Add a new pet
US_16 - Update Personal Information
US_22 - Delete pets
US_03 - Change Login Credentials
US_07 - Pets List
US_14 - Update pet information
US_10 - Search a pett
US_02 - User logs in
US_19 - View pet information
US_27 - Download pet's medical records
Client
Manager
Receptionist
User
Staff
<< Include >>
<< Extends >>

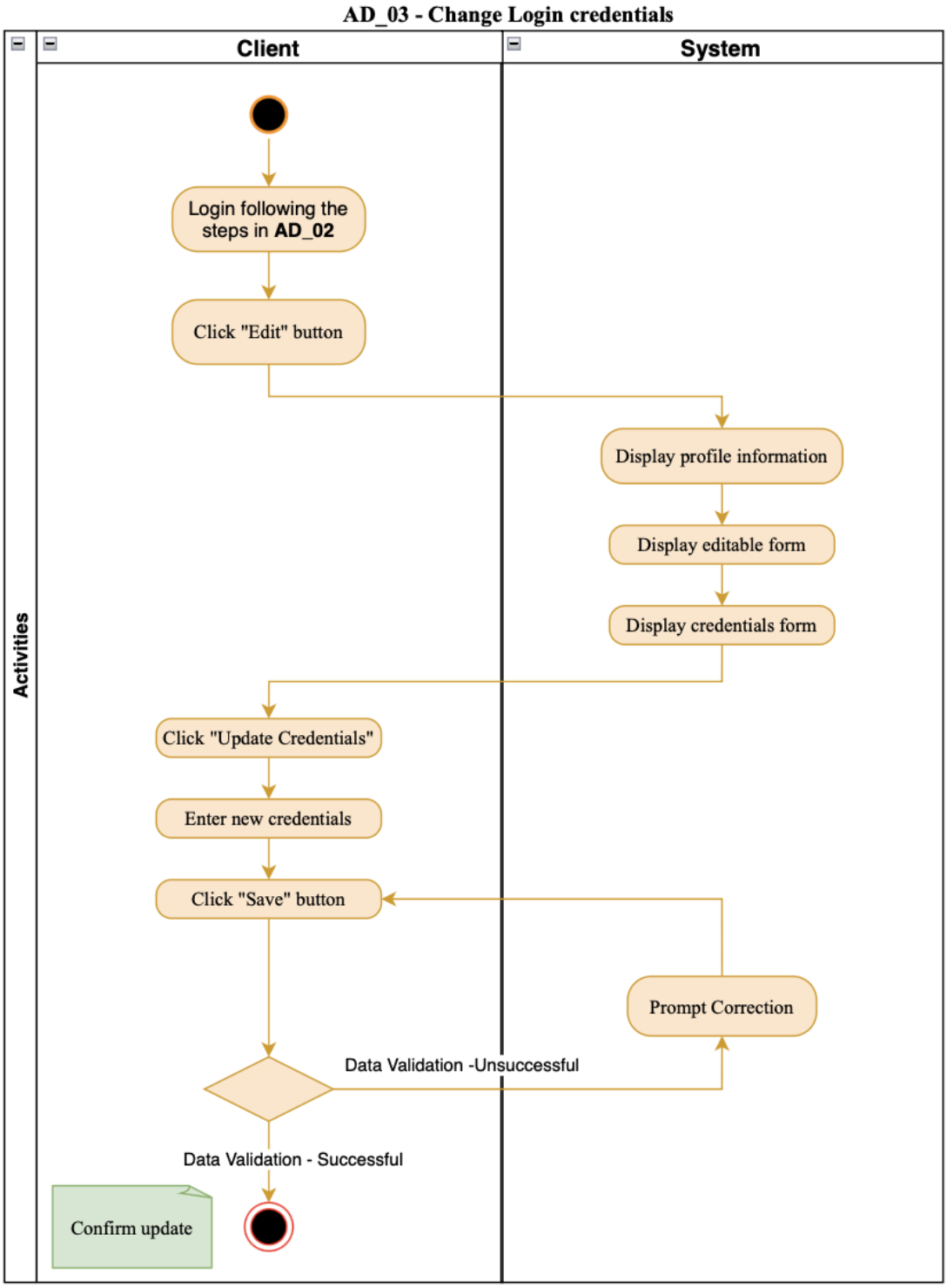
4.2.2 Activity Diagrams

AD_01 - Client self-registers

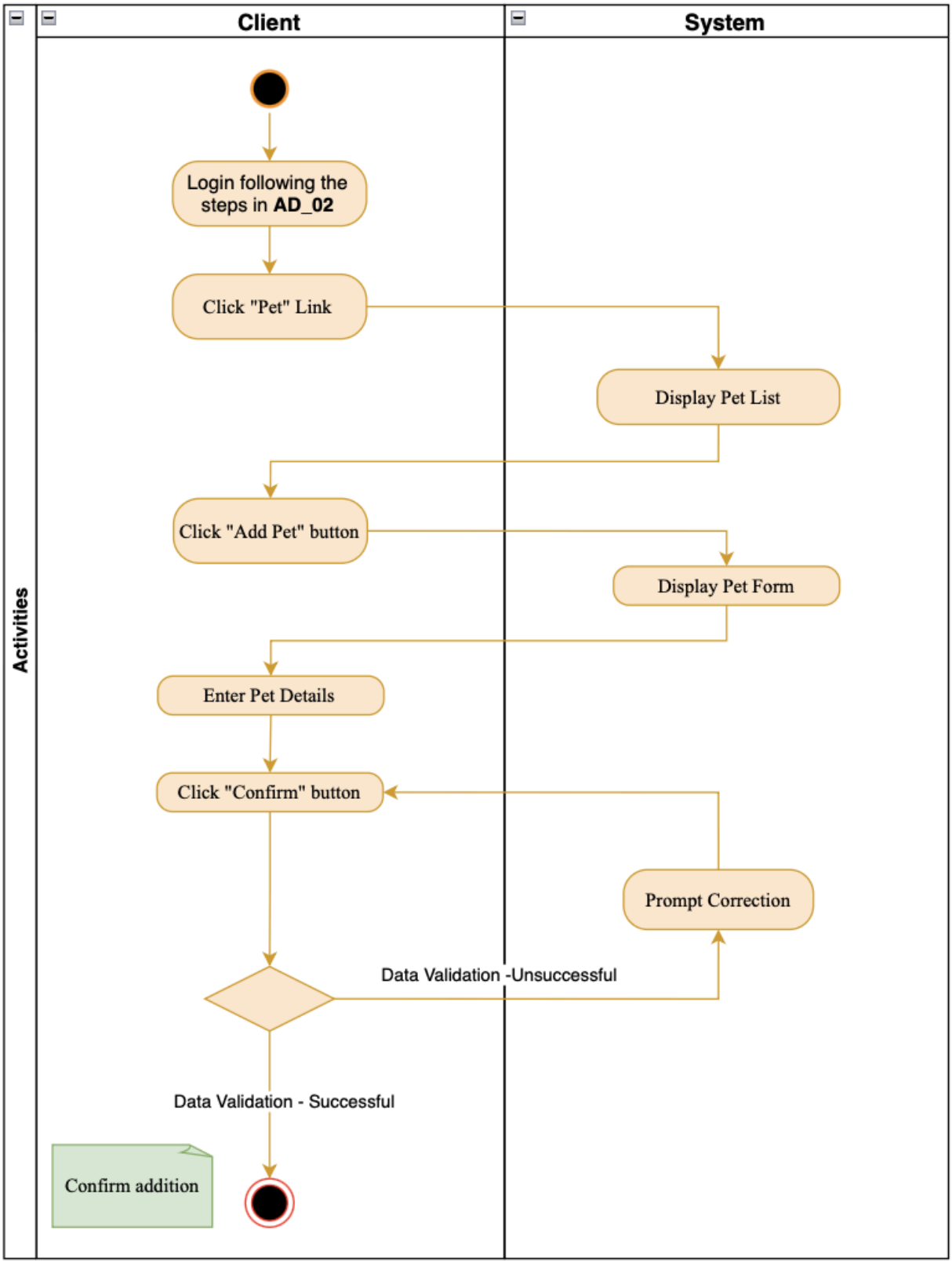


AD_02 - User Logs-In

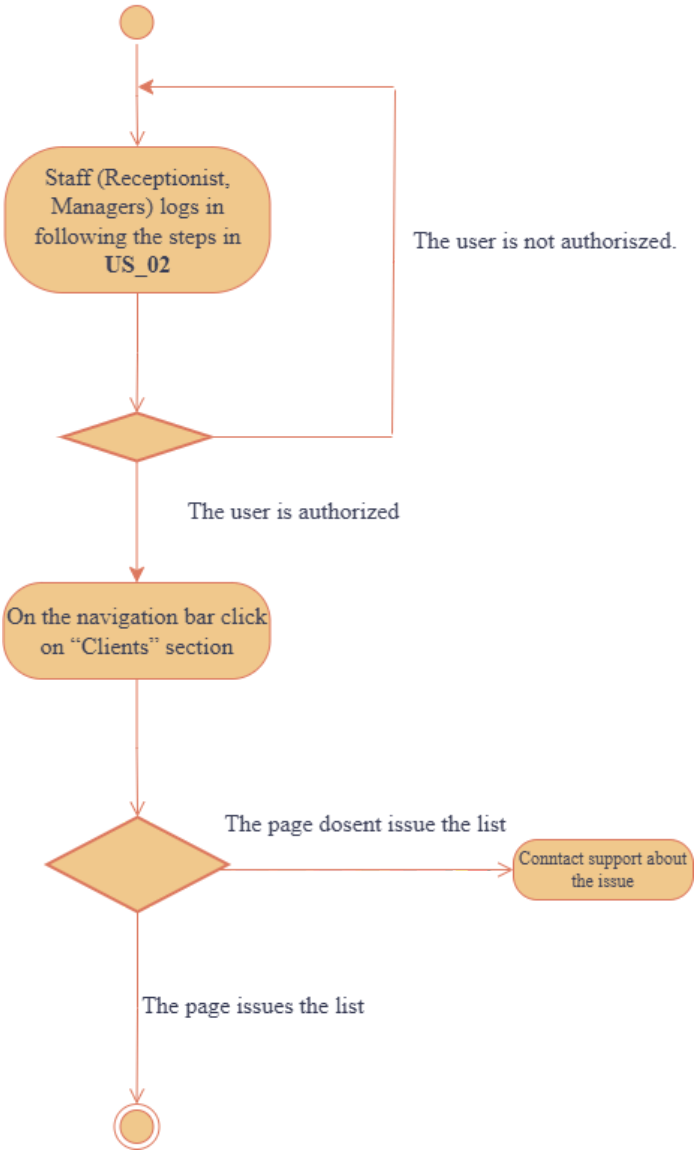



AD_03 - Change Login credentials
Client
System
Activities
Login following the steps in AD_02
Click "Edit" button
Display profile information
Display editable form
Display credentials form
Click "Update Credentials"
Enter new credentials
Click "Save" button
Prompt Correction
Data Validation -Unsuccessful
Data Validation - Successful
Confirm update

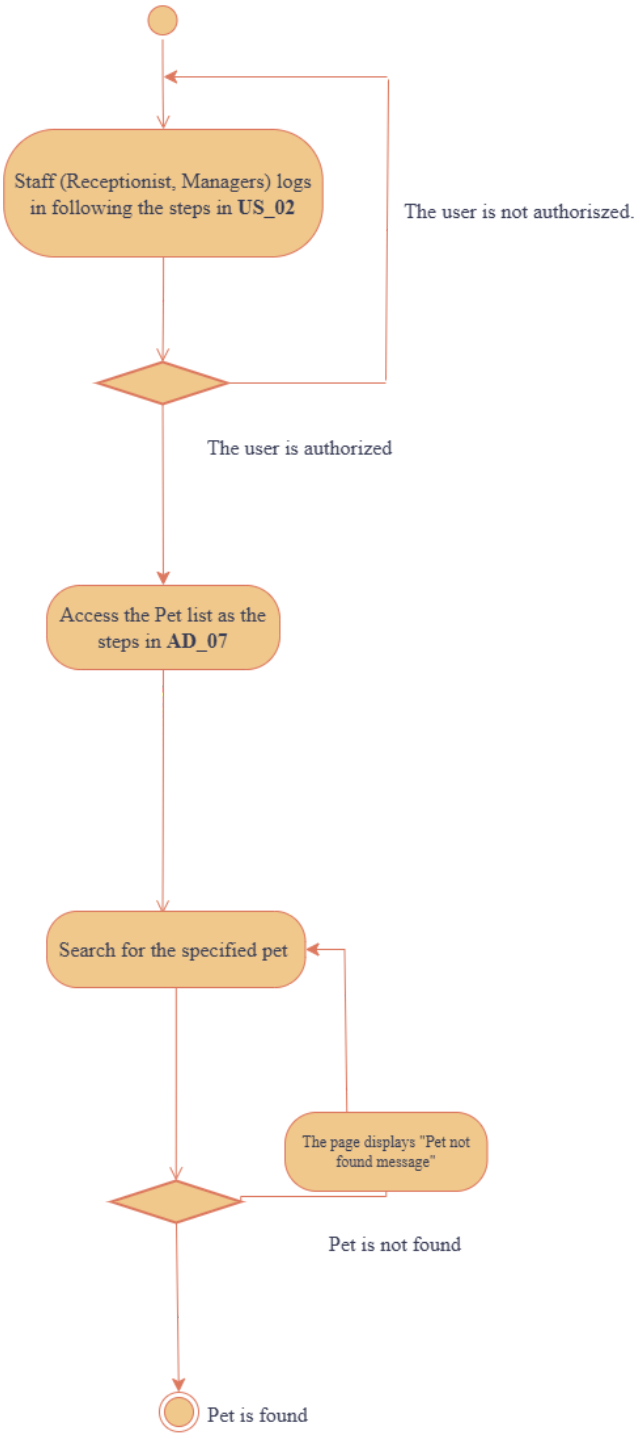
AD_04 - Add a new pet



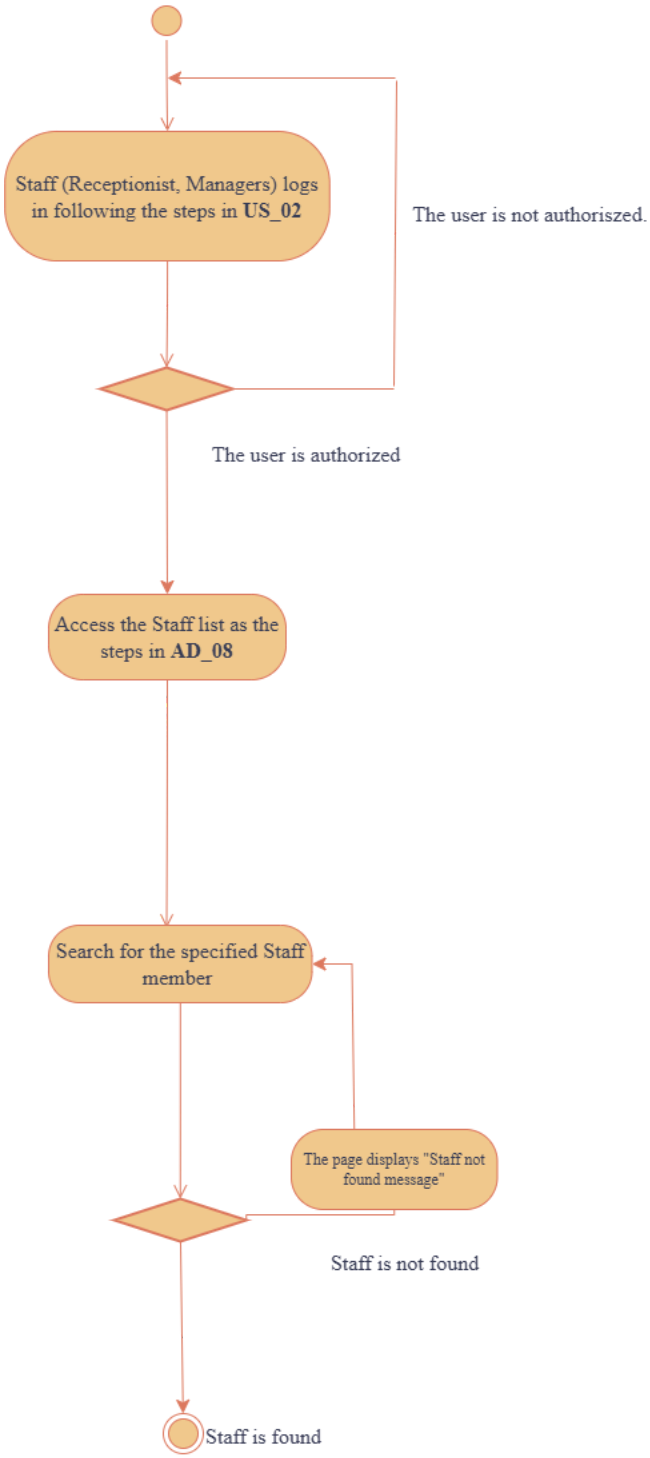
AD_09- Client list



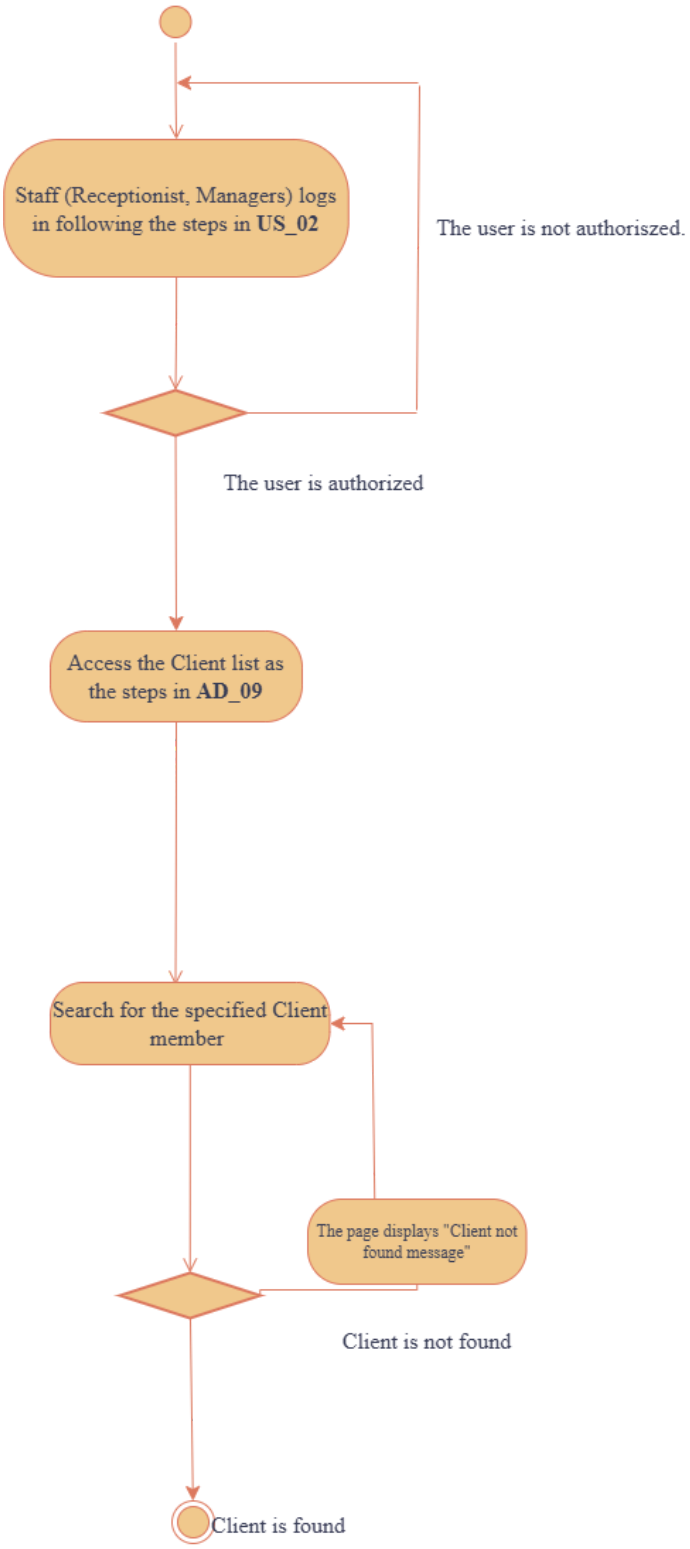
AD_10 - Search for a Pet



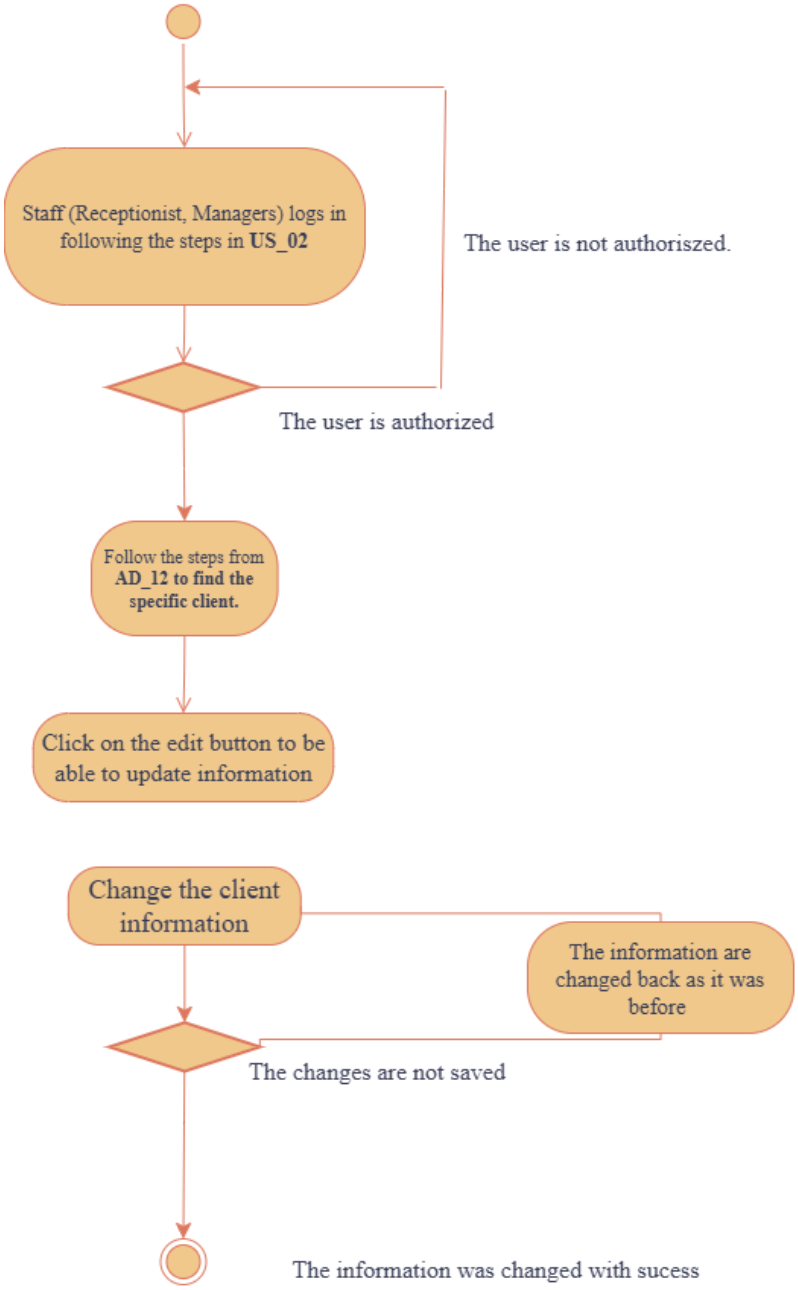
AD_11 - Search for a staff member.



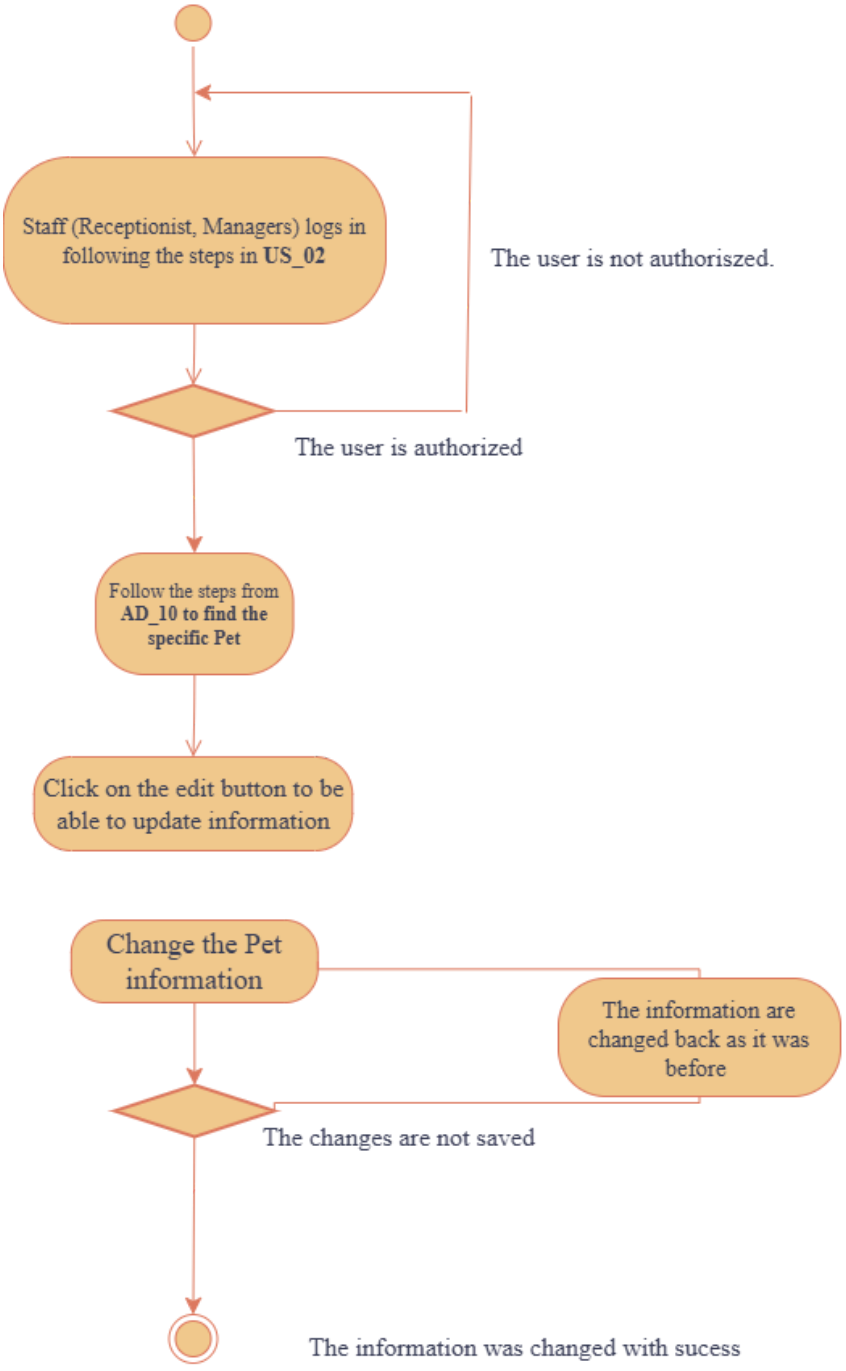
AD_12 - Search for a Client .



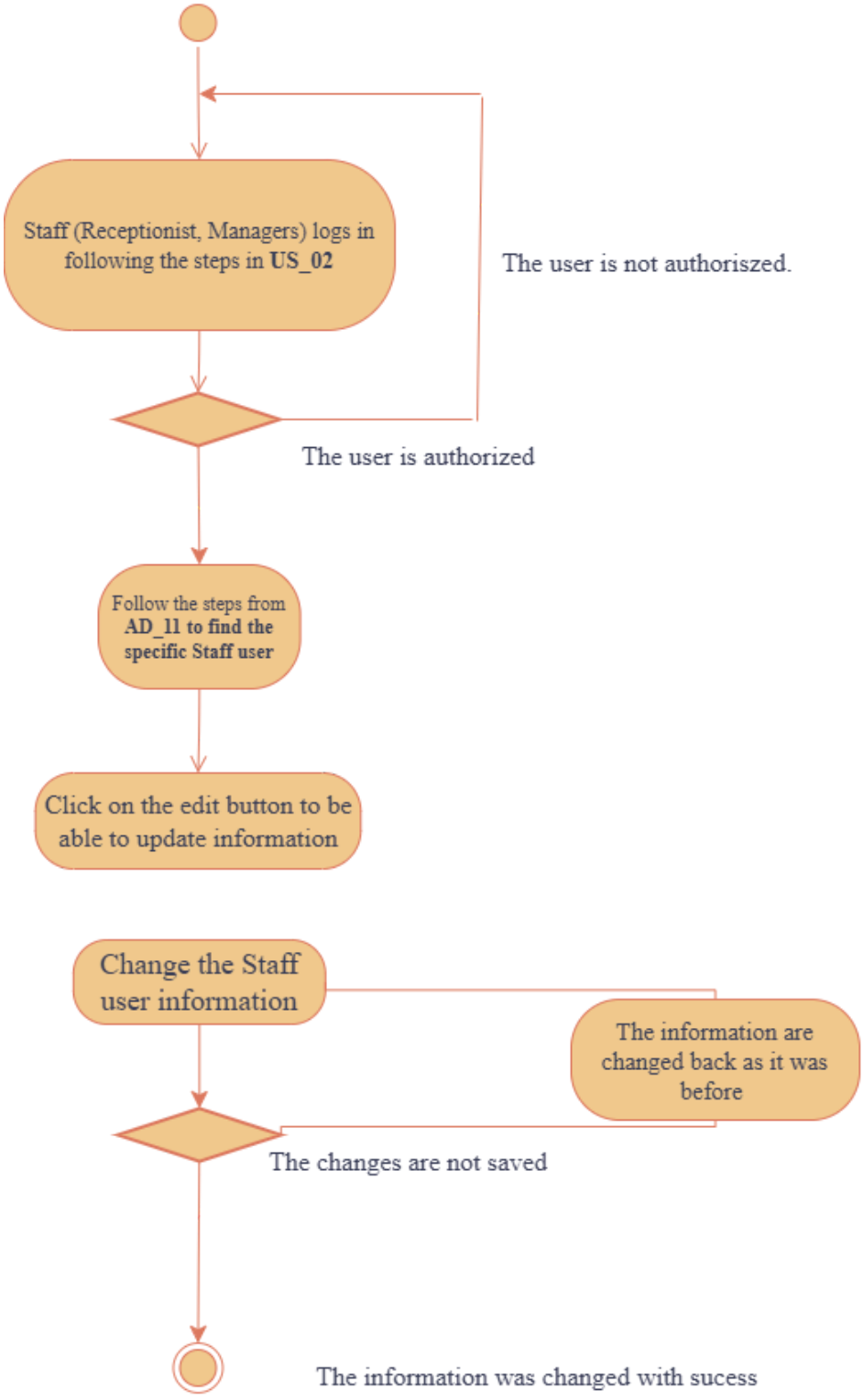
AD_13 - Update customer information



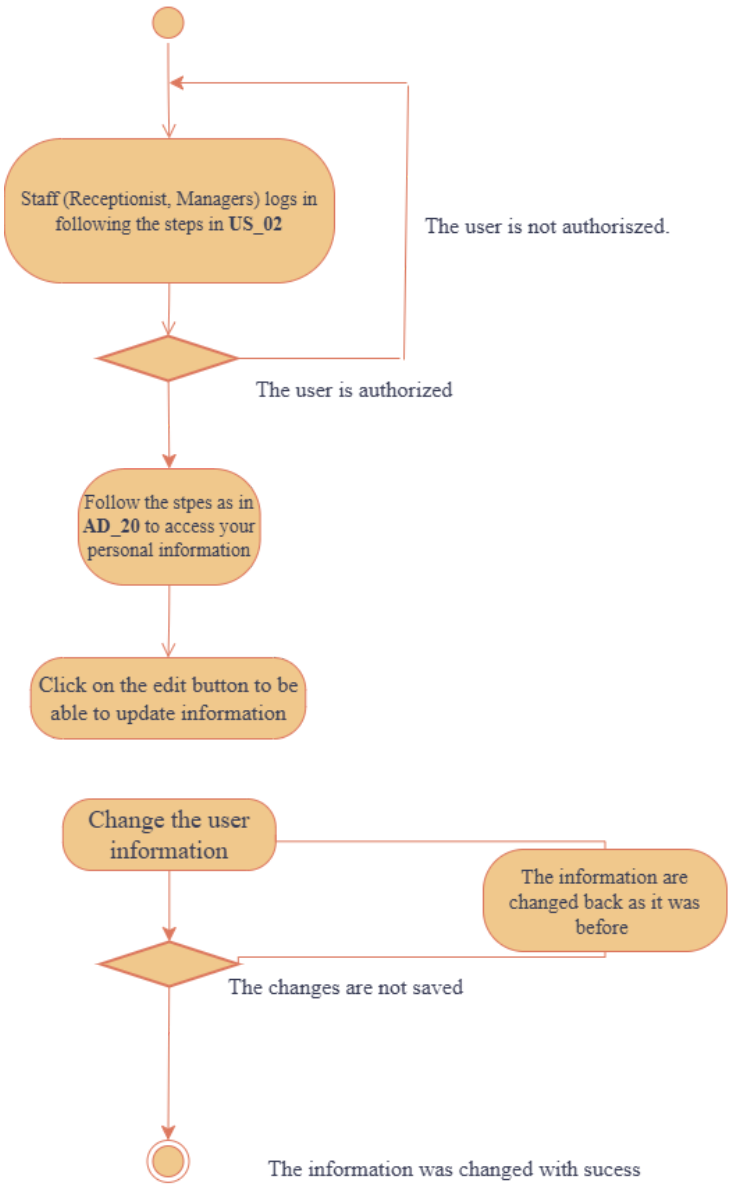
AD_14 -Update pet information



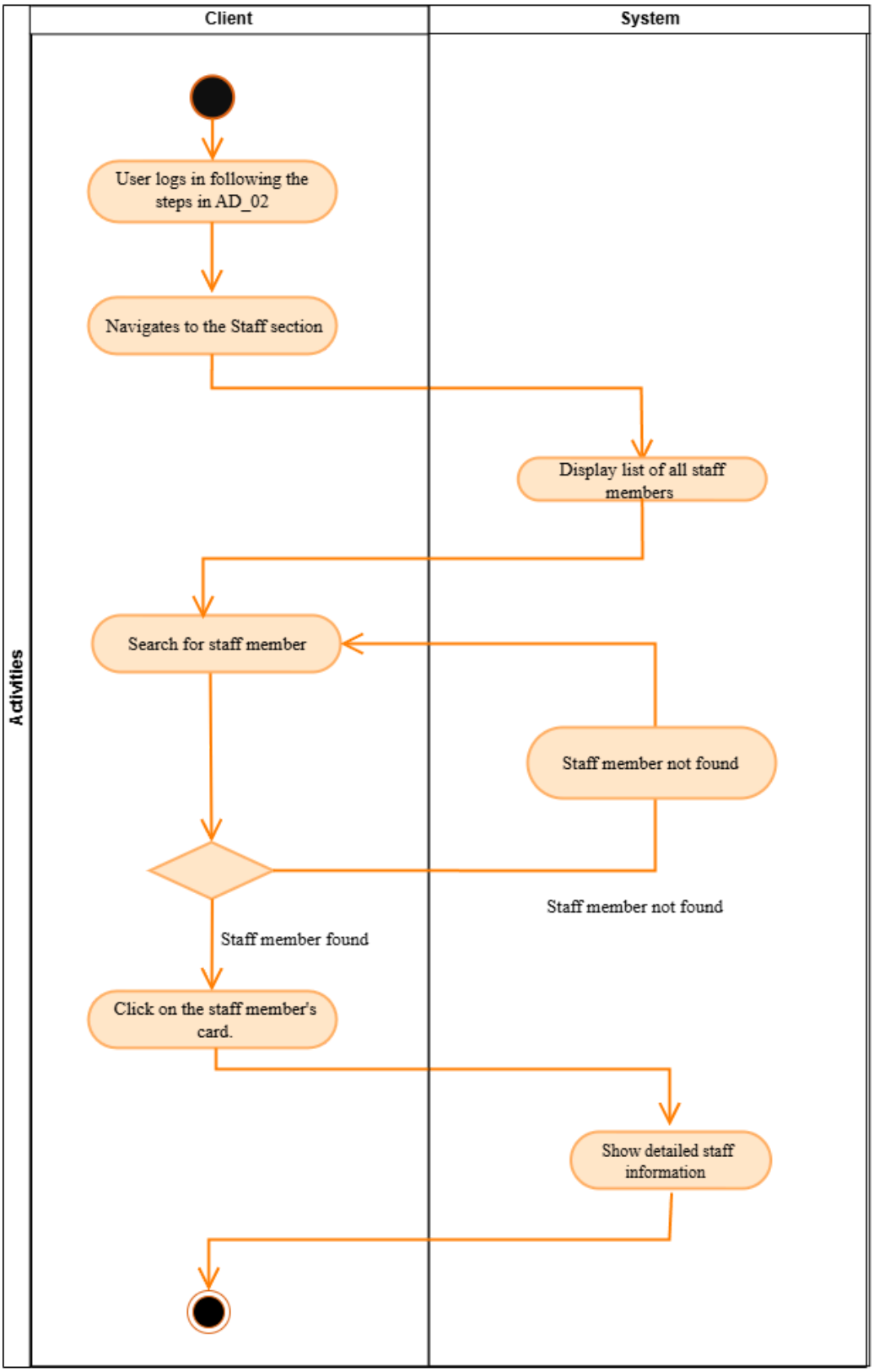
AD_15- Update staff information



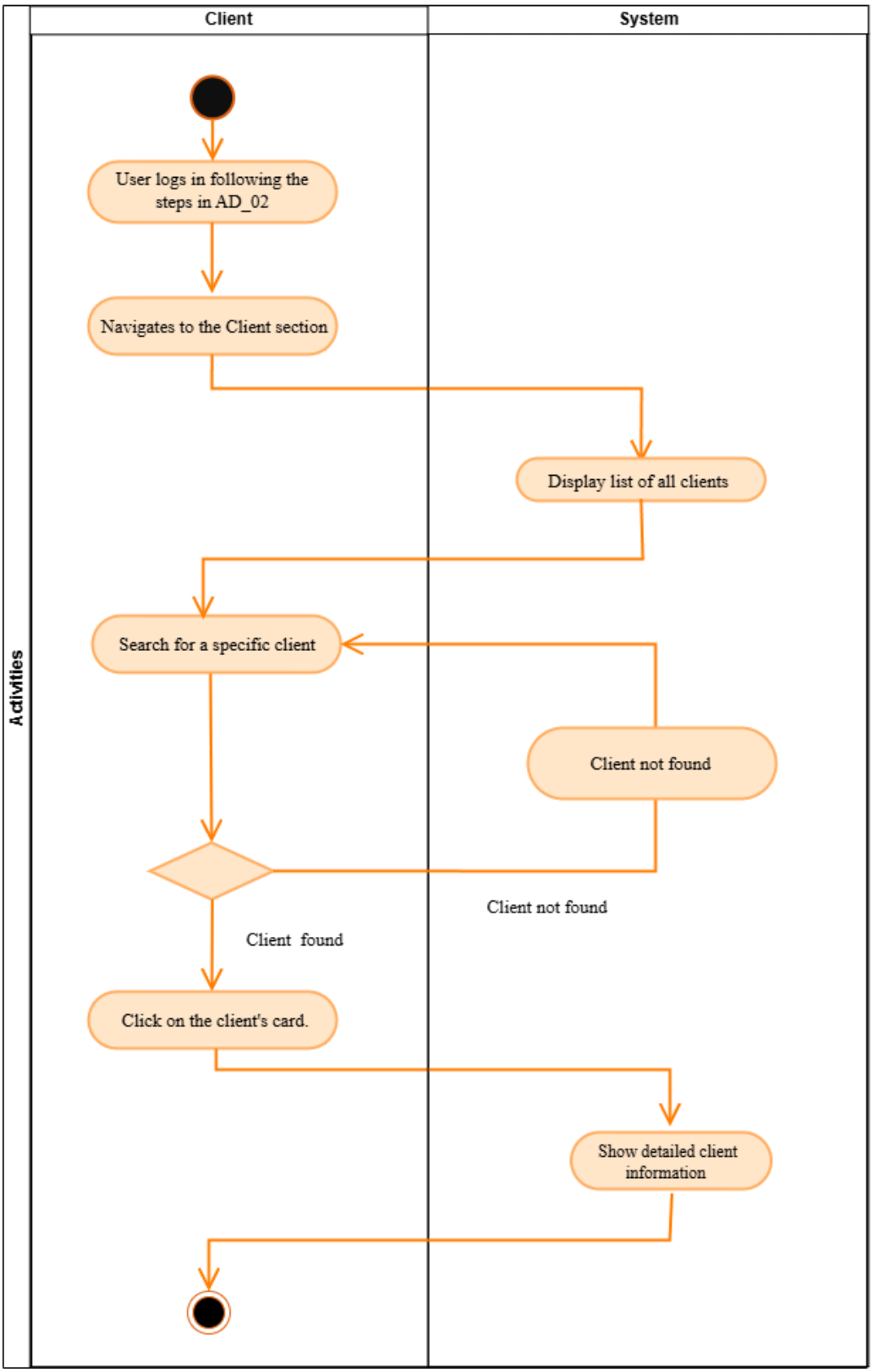
AD_16- Update personal information



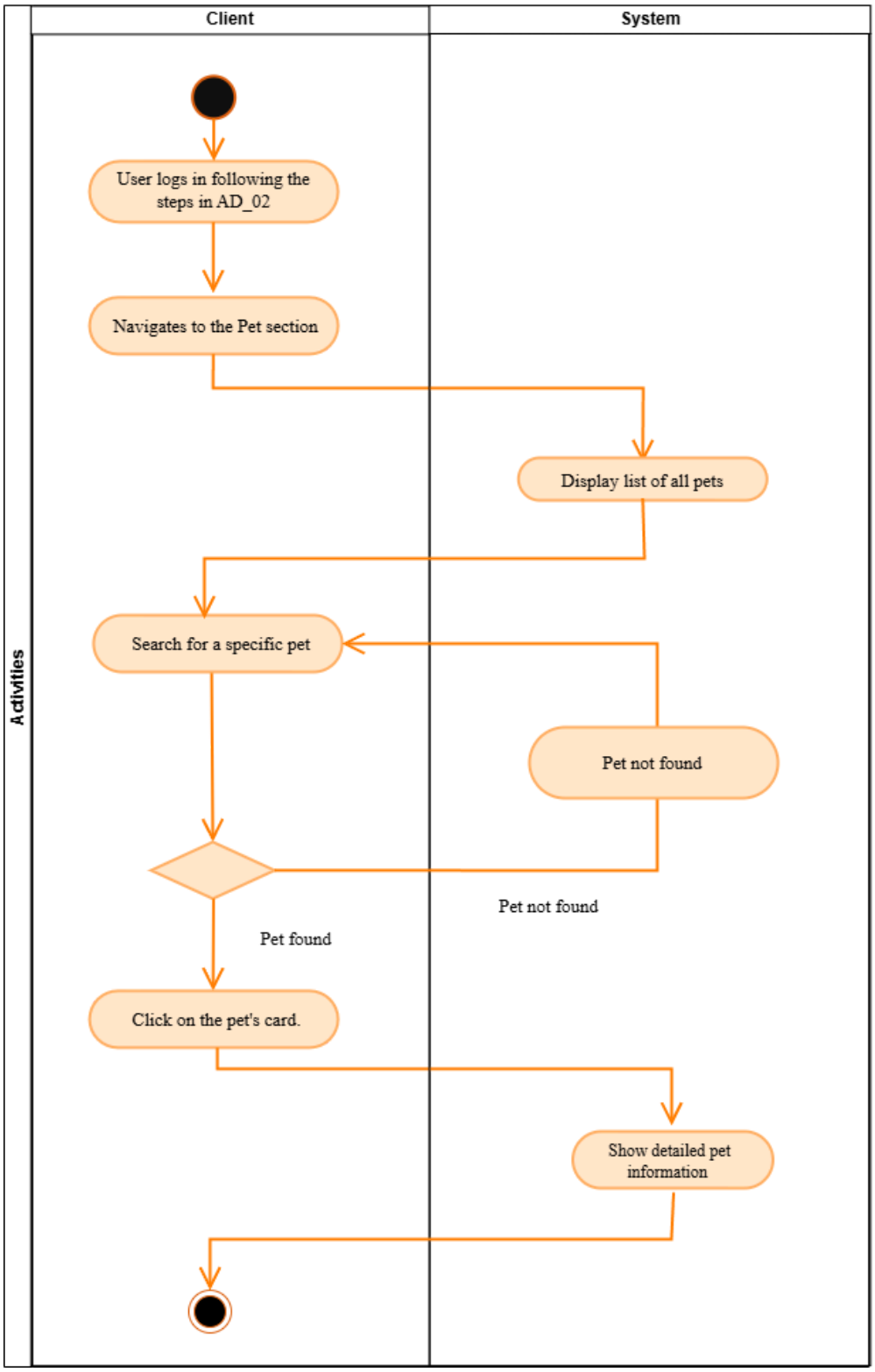
AD_17 - View Staff Information



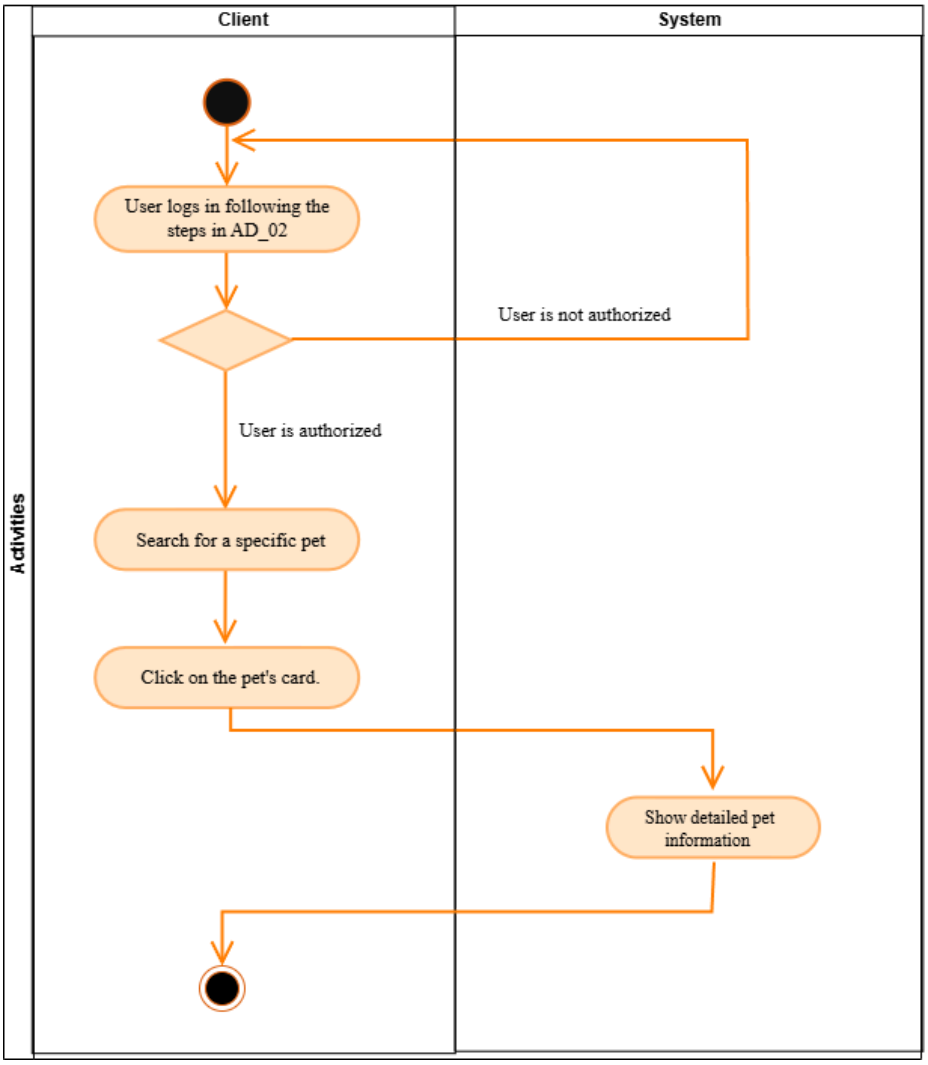
AD_18 - View Client Information



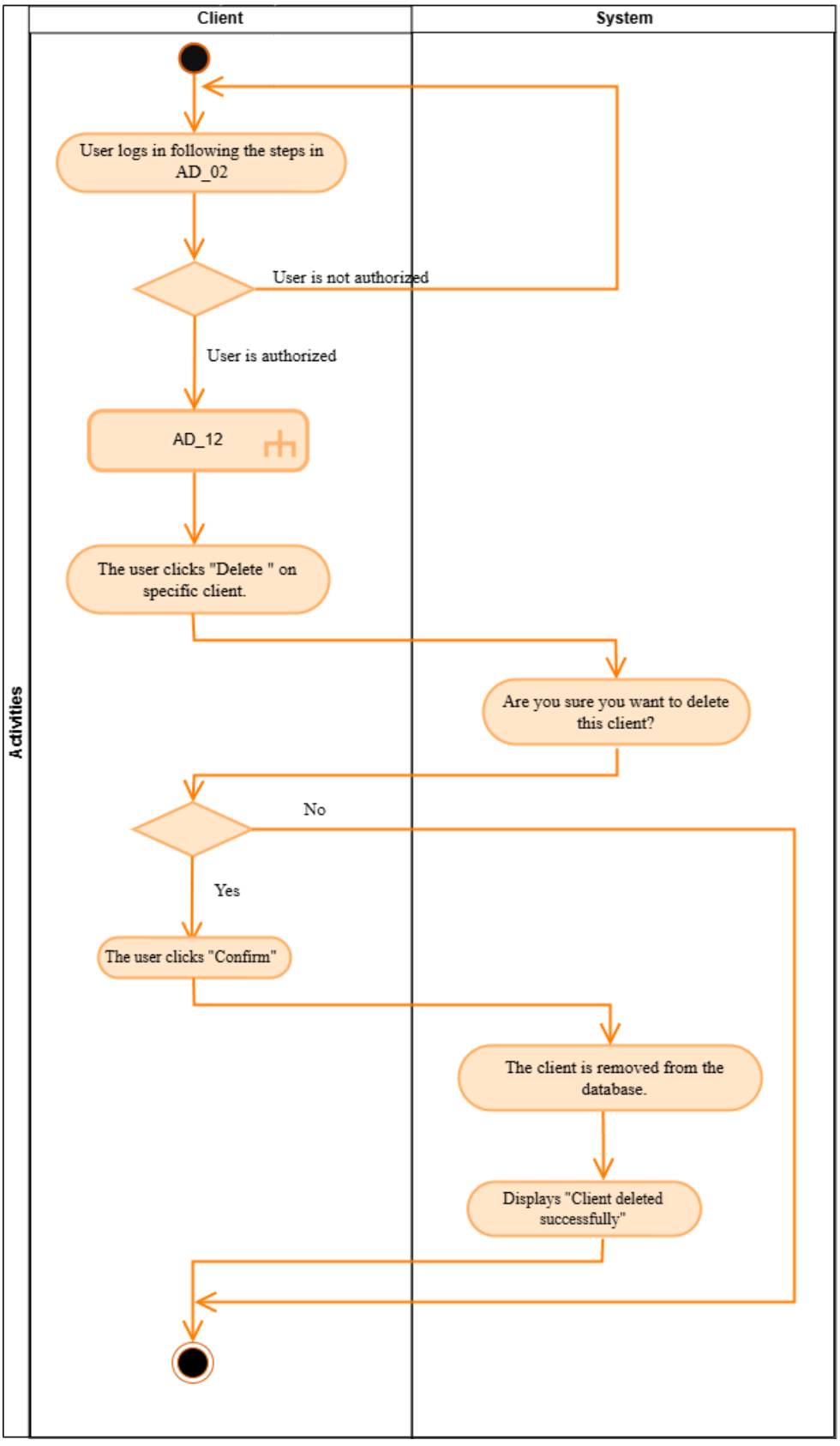
AD_19 - View Pet Information



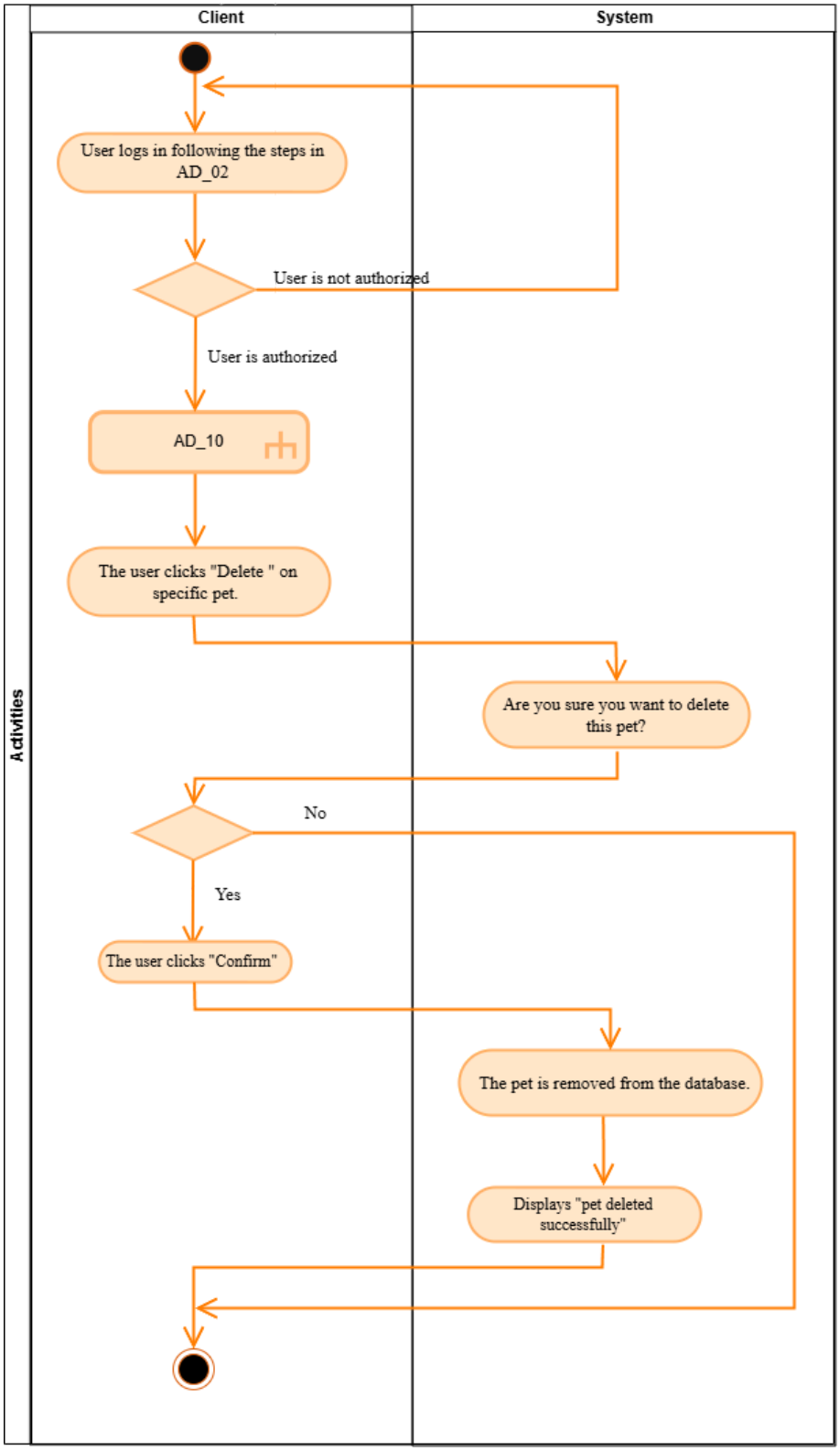
AD_20 - View Personal Information



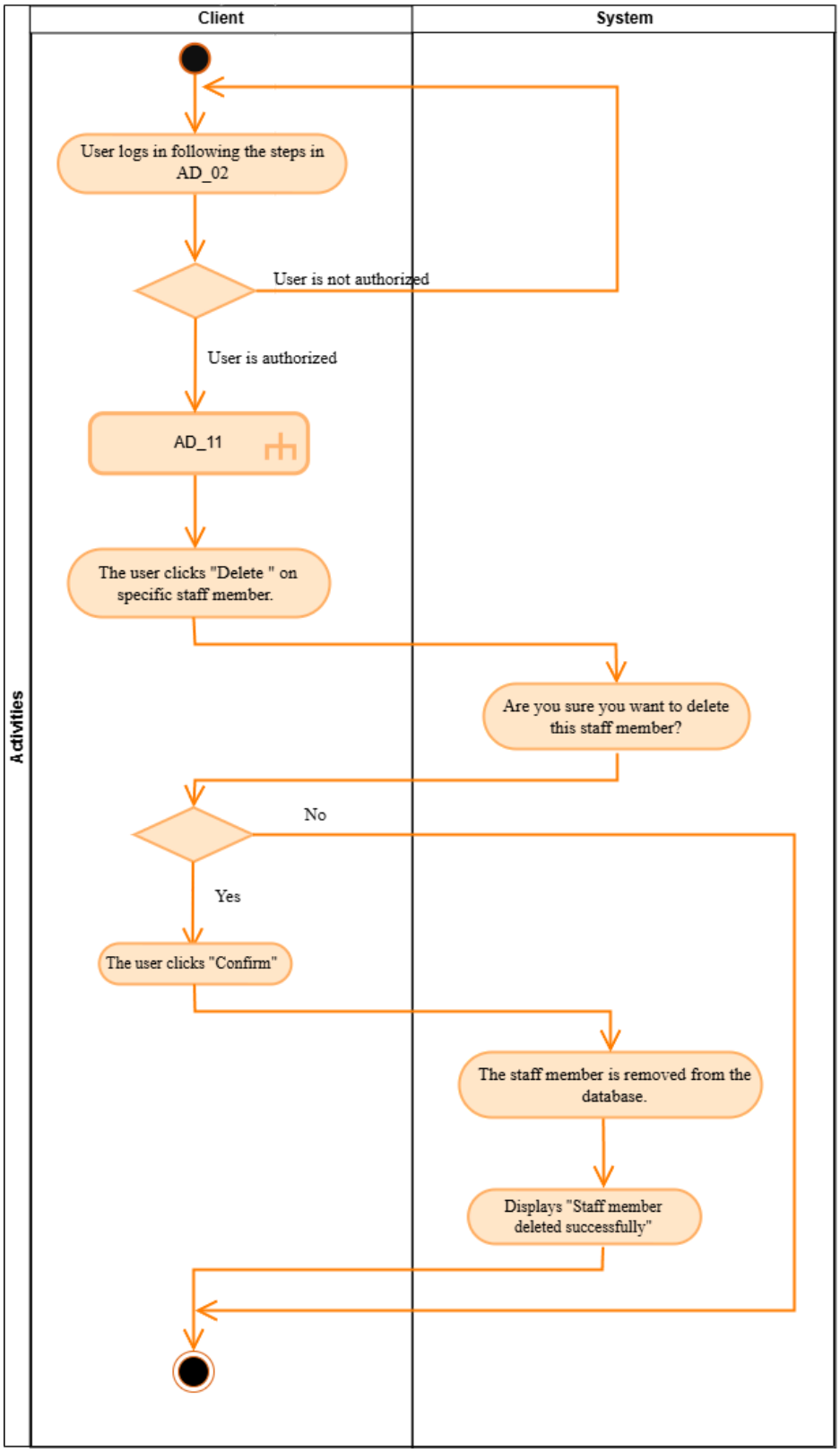
AD_21 - Delete Client



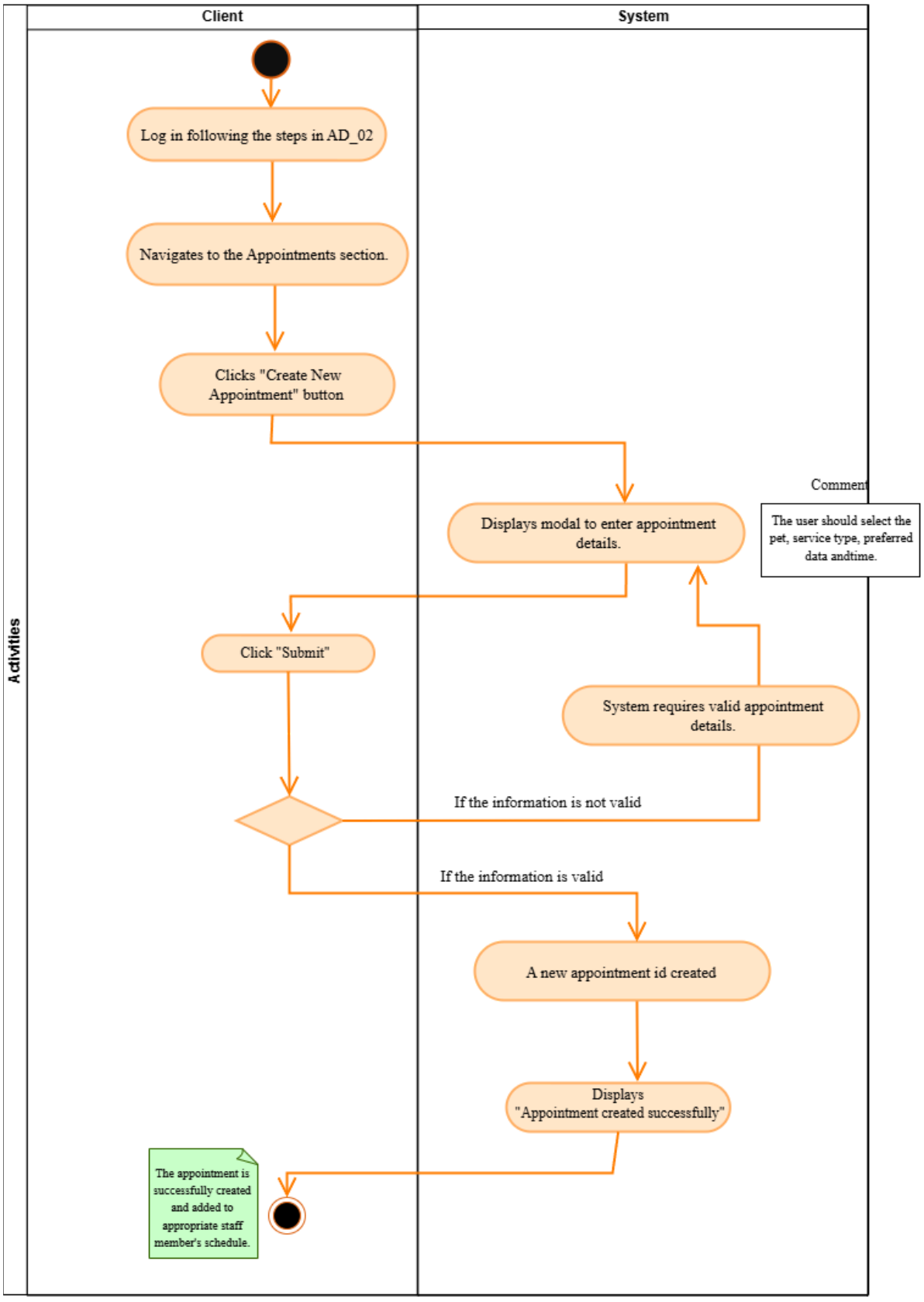
AD_22 - Delete Pet



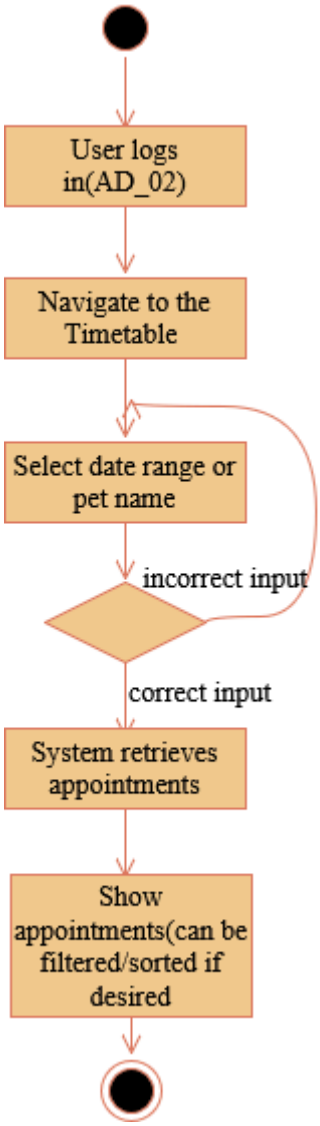
AD_23 - Delete Staff



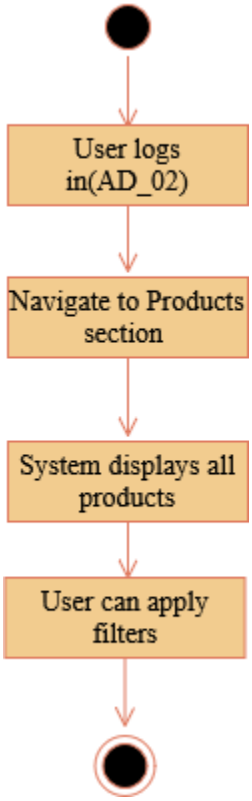
AD_24 - Create an Appointment



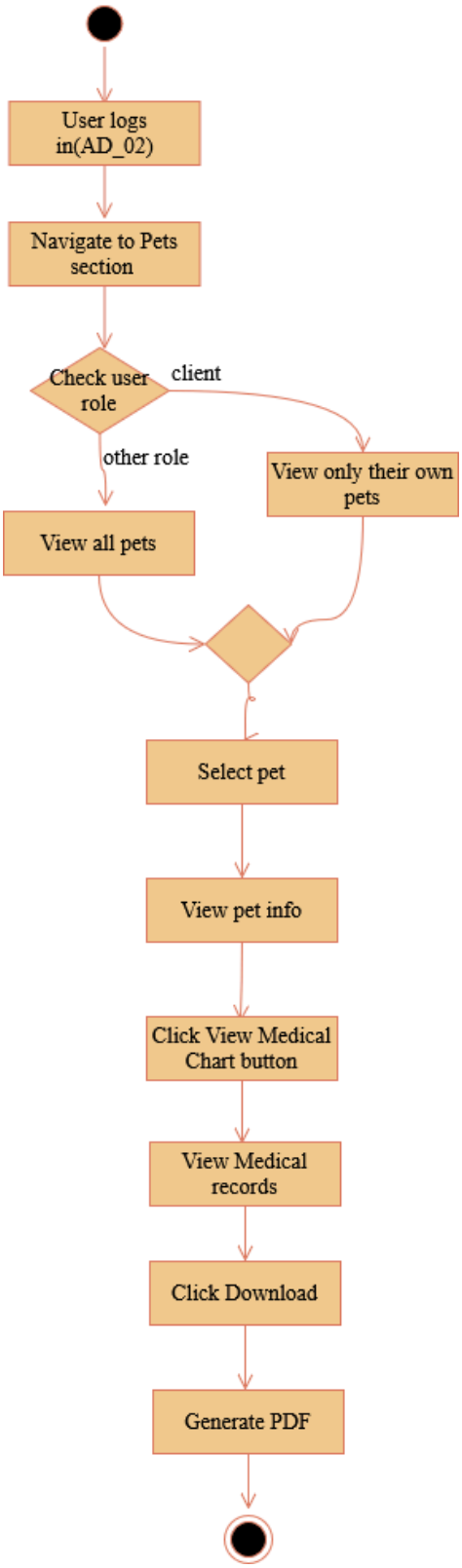
AD-25


User logs in(AD_02)
Navigate to the Timetable
Select date range or pet name
incorrect input
correct input
System retrieves appointments
Show appointments(can be filtered/sorted if desired

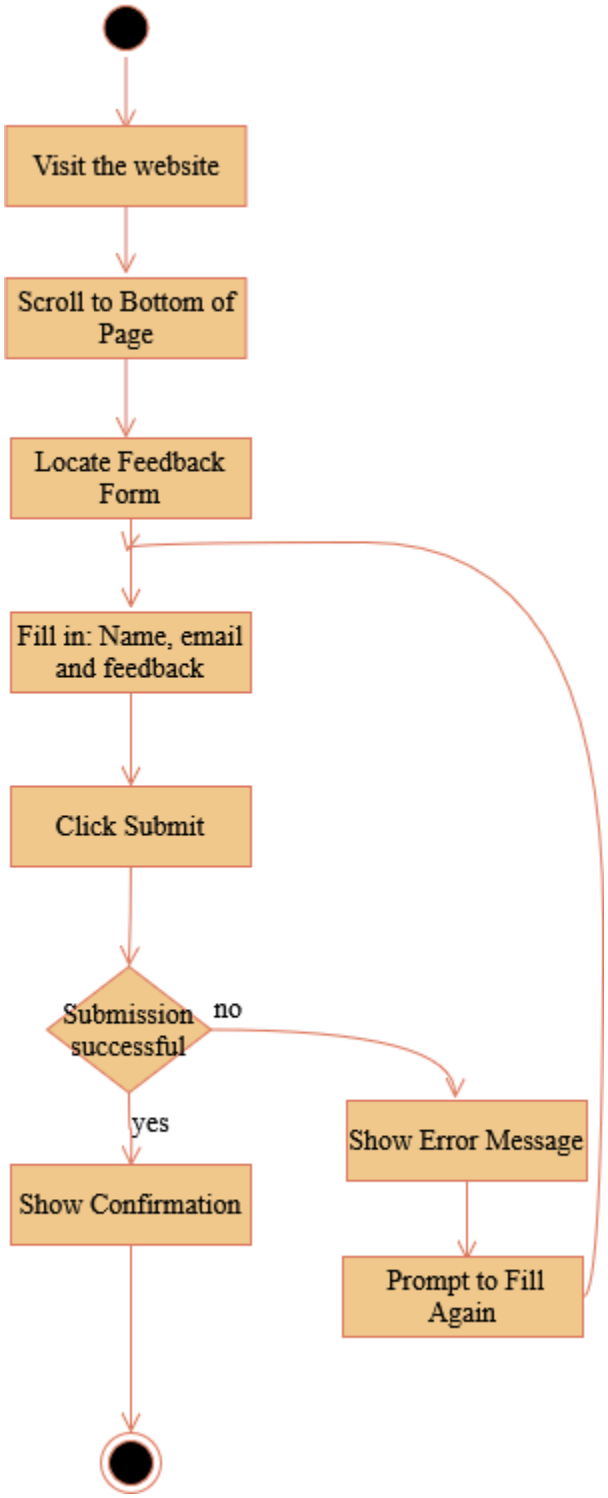
AD-26


User logs in(AD_02)
Navigate to Products section
System displays all products
User can apply filters

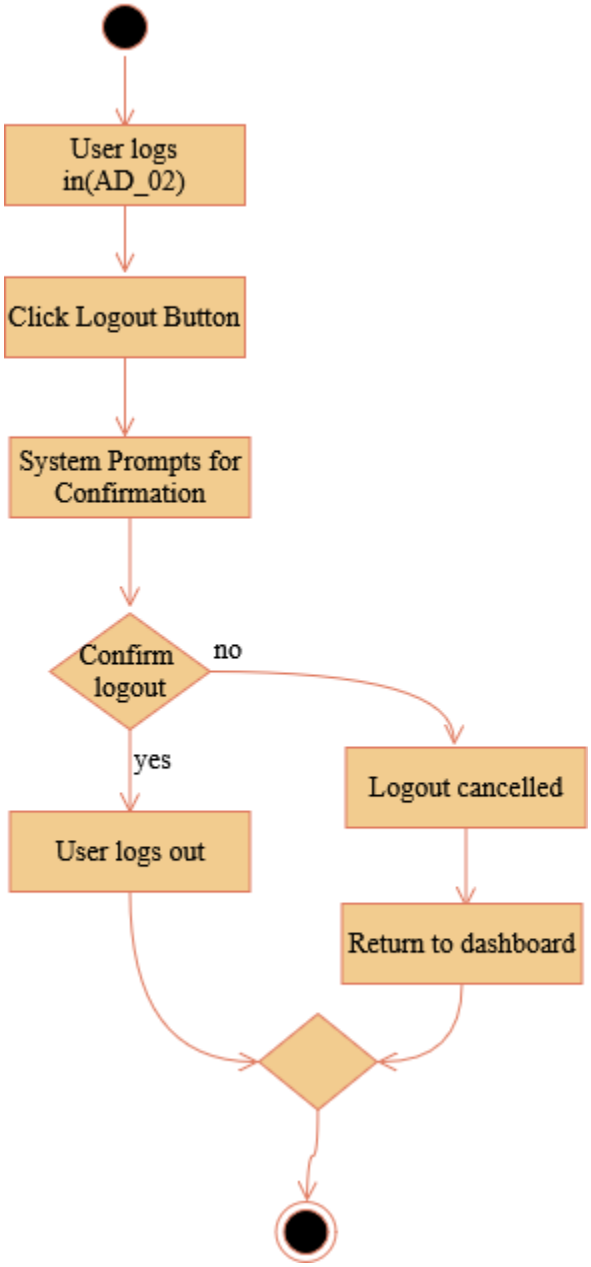
AD-27


User logs in(AD_02)
Navigate to Pets section
Check user role
client
other role
View only their own pets
View all pets
Select pet
View pet info
Click View Medical Chart button
View Medical records
Click Download
Generate PDF

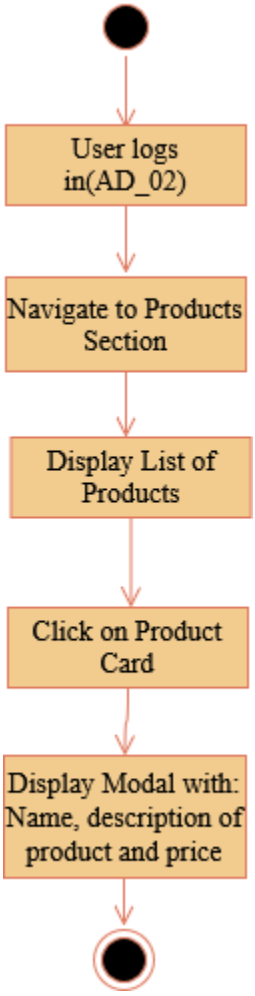
AD_28


Visit the website
Scroll to Bottom of Page
Locate Feedback Form
Fill in: Name, email and feedback
Click Submit
Submission successful
no
yes
Show Error Message
Show Confirmation
Prompt to Fill Again

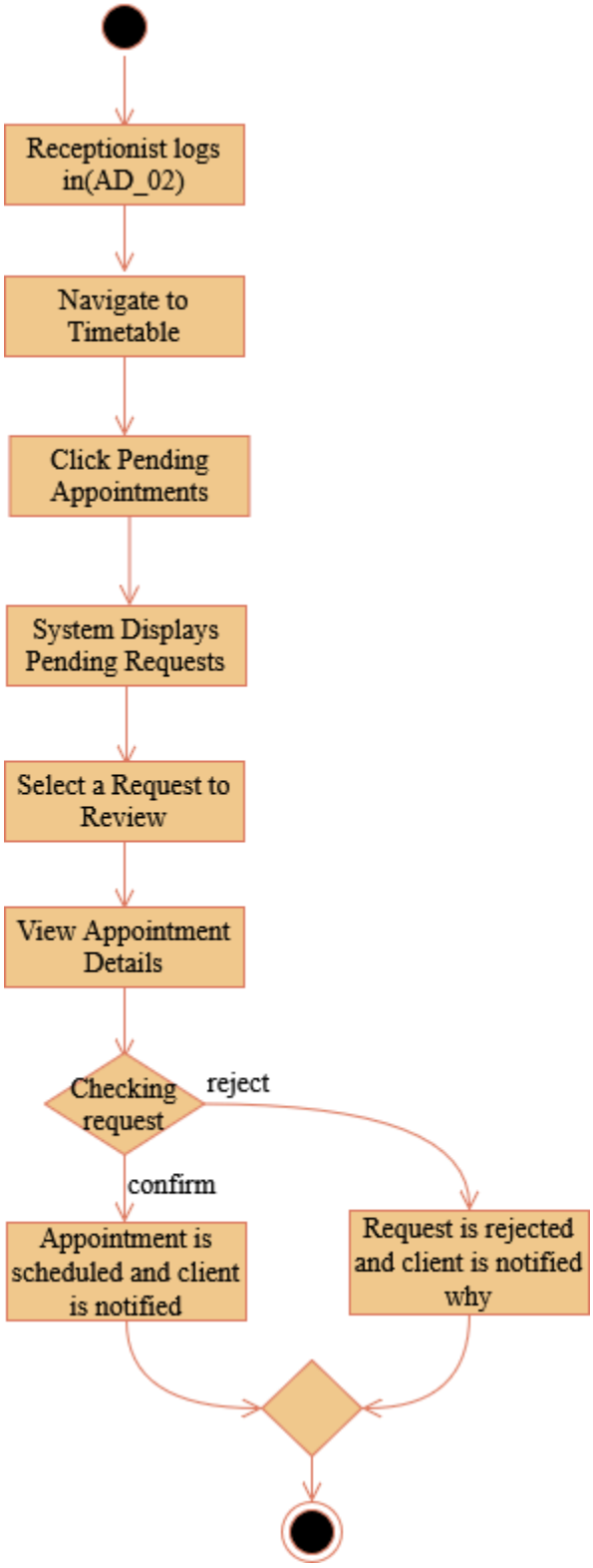
AD 29


User logs in(AD_02)
Click Logout Button
System Prompts for Confirmation
Confirm logout
no
yes
Logout cancelled
User logs out
Return to dashboard

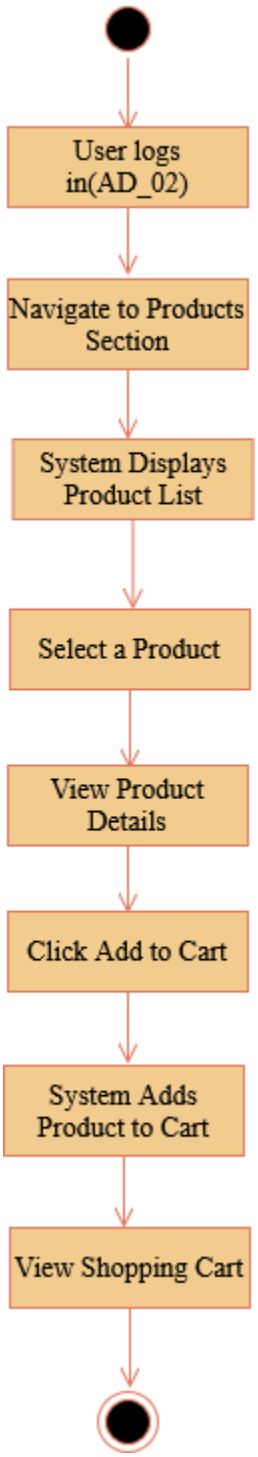
AD 30

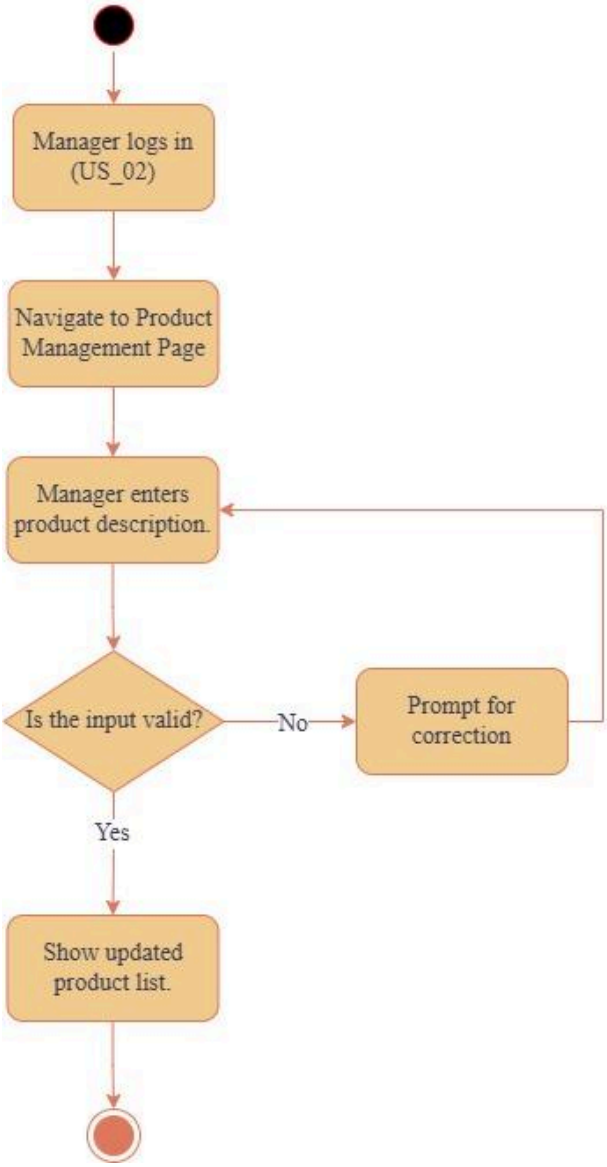

User logs in(AD_02)
Navigate to Products Section
Display List of Products
Click on Product Card
Display Modal with: Name, description of product and price

AD 31

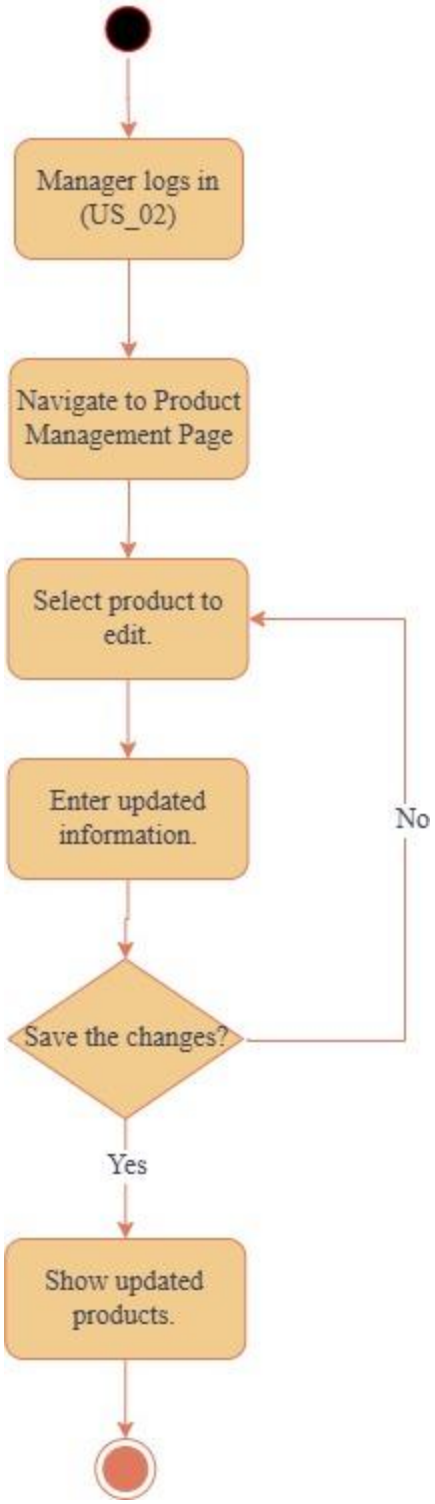

Receptionist logs in(AD_02)
Navigate to Timetable
Click Pending Appointments
System Displays Pending Requests
Select a Request to Review
View Appointment Details
Checking request
reject
confirm
Appointment is scheduled and client is notified
Request is rejected and client is notified why

AD 32


User logs in(AD_02)
Navigate to Products Section
System Displays Product List
Select a Product
View Product Details
Click Add to Cart
System Adds Product to Cart
View Shopping Cart

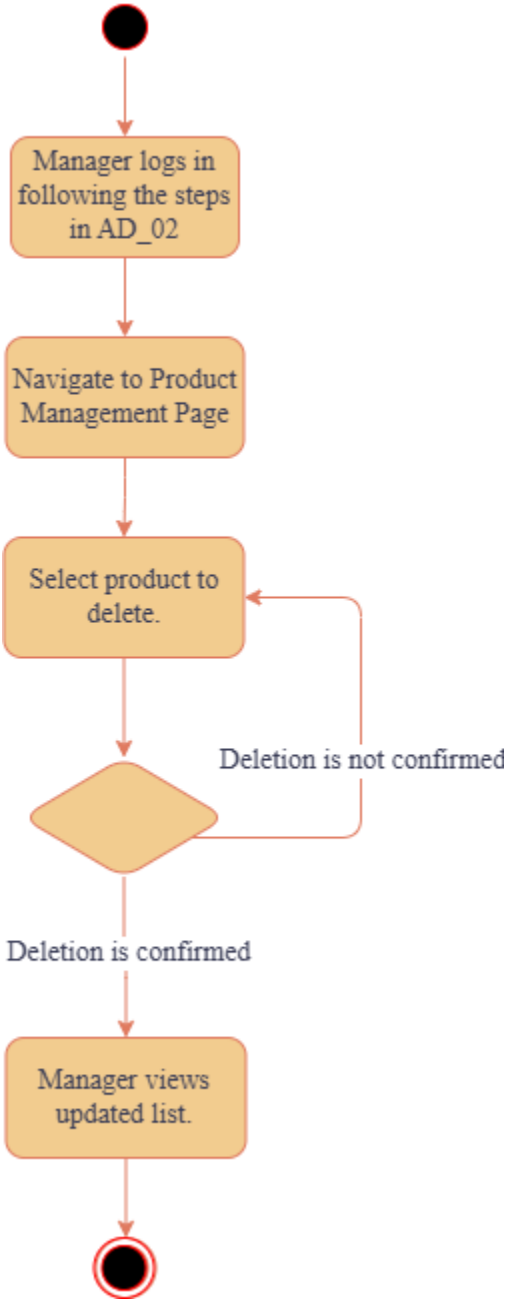


AD_36 Add a new product

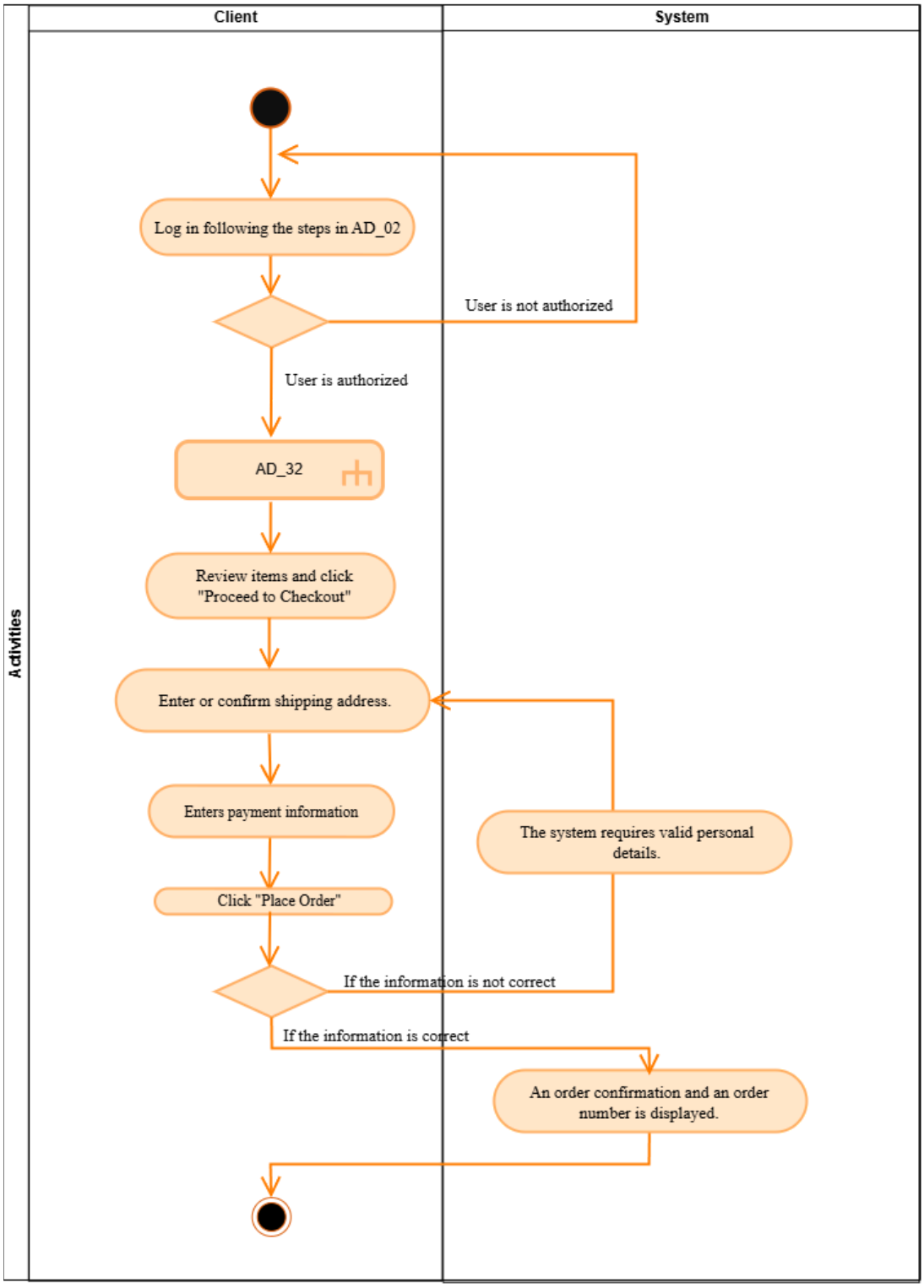


AD_35 Edit product

AD_34 Delete product

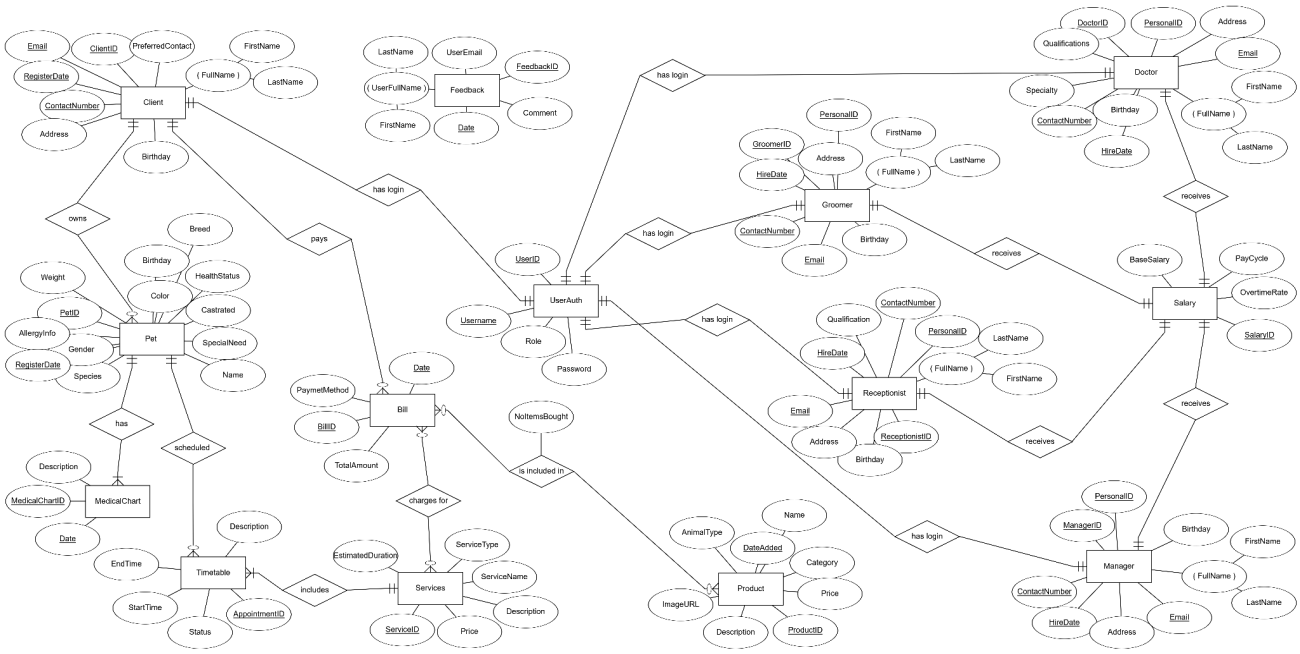


AD_41 - Proceed to Checkout

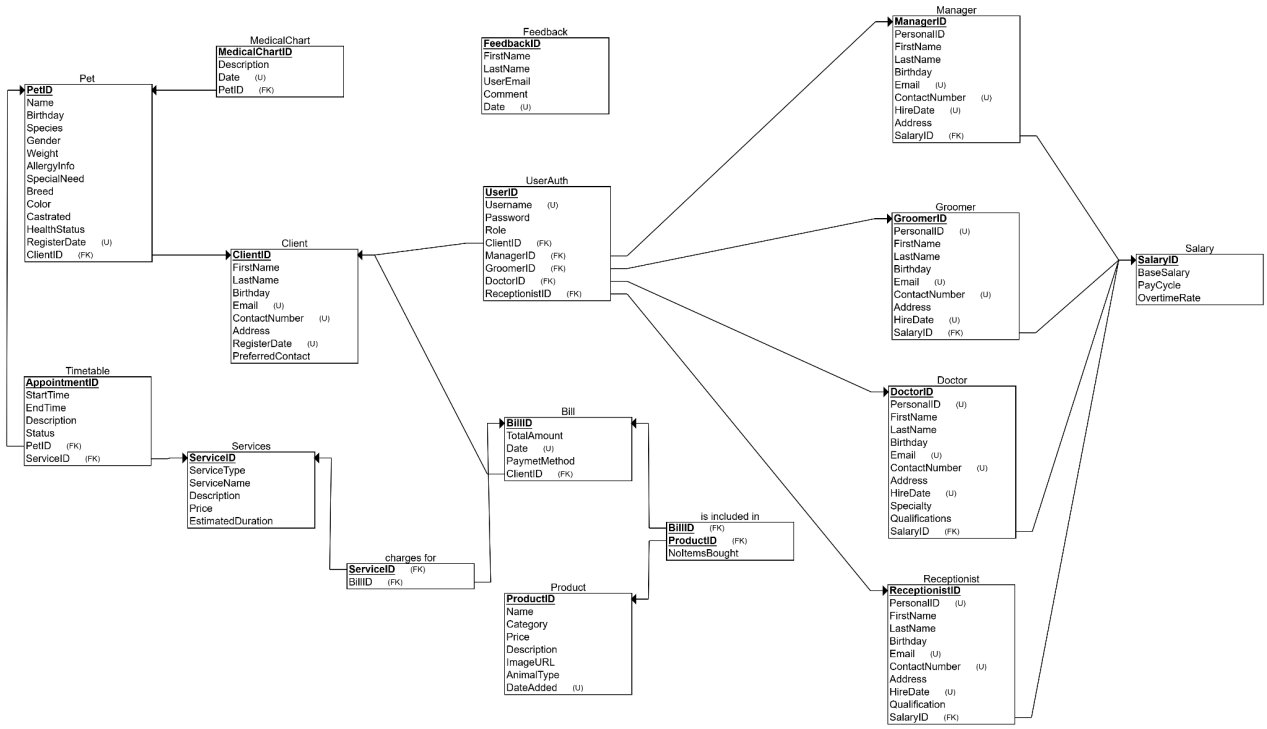
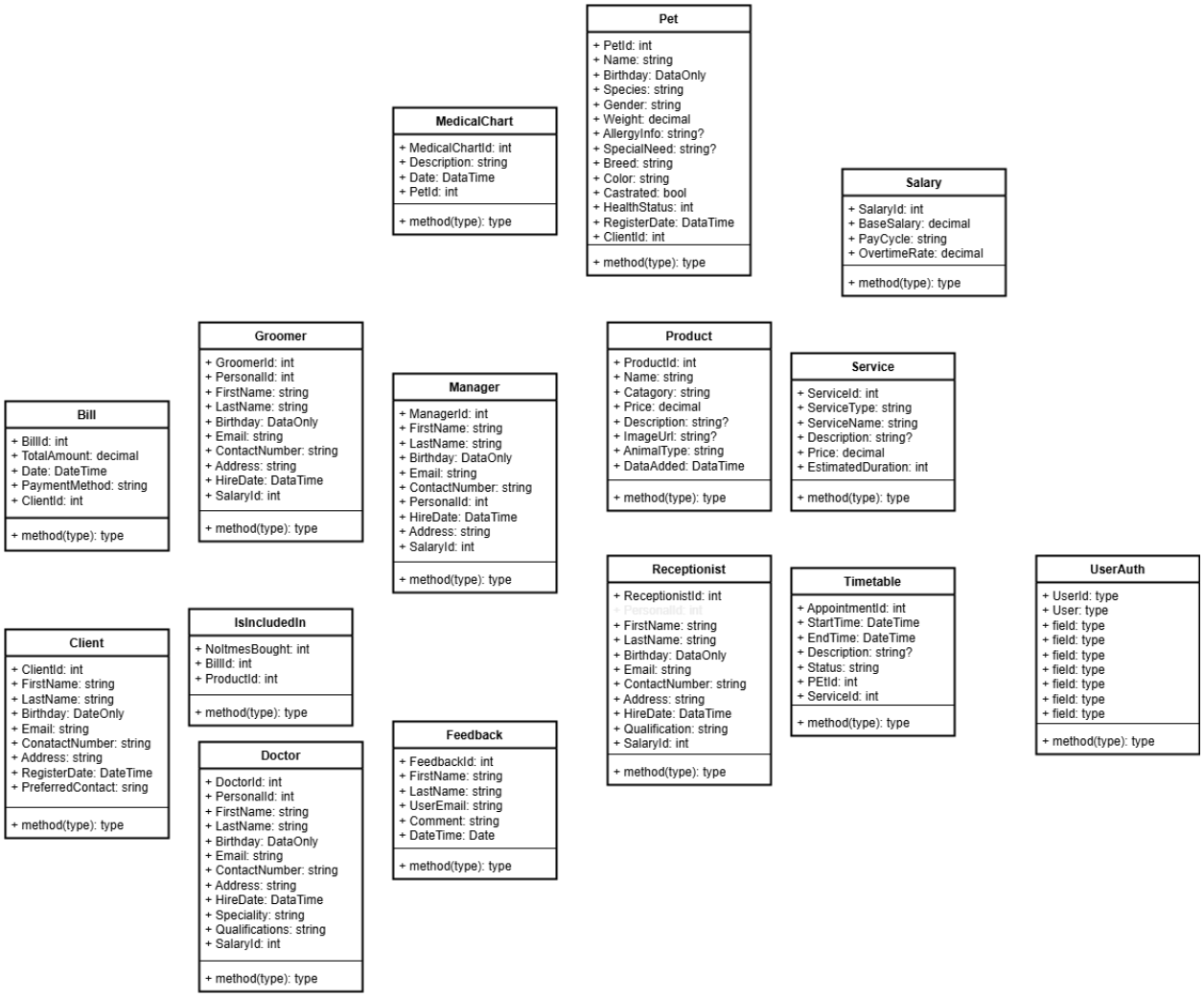


4.3 Database

4.3.1 Entity Relationship Diagram - ERD



4.3.2 Relational Schema



4.4 Class Diagram