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**Faculty of Engineering and Architecture**  
**Department of Computer Engineering**  
**CEN 302 – Software Engineering**

# **PetStoreAndClinic**

## **Requirements Specification**

**April 9, 2023**

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***First Draft***  
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# 1. Executive Summary

## 1.1 *Project Overview*

Pets are a significant part of people's lives. They are generally regarded as family members and give us company, love, and affection. The demand for pet-related services, such as pet stores and veterinary clinics, is rising along with the number of people owning pets.

Combining pet shops and veterinarian offices has been more popular recently, creating a one-stop shop for all things pertaining to pets. These veterinary clinics and pet stores offer a range of services, such as pet adoption, grooming, training, and medical attention. With this mix of services, pet owners can take care of their animals' requirements without having to go to many sites.

We recognize the value of having access to high-quality goods and services that can ensure the happiness and health of our four-legged friends. For this reason, we're dedicated to providing a broad selection of pet supplies, from food and toys to grooming products and accessories, all at reasonable costs. We're thrilled to provide veterinarian services in our on-site clinic in addition to our pet store. Routine examinations, immunizations, and treatments for typical pet health problems will be offered by our skilled and caring staff of veterinarians.

The goal of this project is to create a pet shop and clinic that serves as a convenient and dependable one-stop shop for all of the needs of pet owners. While the clinic will offer veterinarian services like regular check-ups, vaccinations, and treatments, the store will sell a variety of pet products like food, toys, and accessories.

The management system for the pet store and clinic will make it possible for its clients to access timely and dependable services. The technology will enhance the management of veterinary services, patient data, scheduling of appointments, and inventory. In the project, modern web technologies will be used to make sure the system is scalable and reliable.

This project will outline the purpose, scope, and product/service description for the pet store and clinic, providing a clear understanding of what the business will offer and how it will operate.

## 1.2 *Purpose and Scope of this Specification*

The goal of this project is to develop an all-inclusive, user-friendly method for pet owners to take care of their animals' requirements in a single location.

This specification's objectives include defining the project's parameters and outlining the features and functionalities of the pet shop and clinic. The pet shop and clinic's design, development, and implementation, as well as the system's ongoing maintenance and support, are all included in the scope of this specification.

Pet owners can save time and effort by having all of their needs for their animals taken care of in one place by combining a pet store and clinic.

By the end of the project, we want to have reached the following goals:

- To give a complete management system to the pet shop and clinic.
- To make it possible to manage inventory, appointments, and patient data effectively.
- To increase client happiness and service by offering a convenient and trustworthy service
- To boost sales by streamlining the clinic and shop operations
- To offer a user-friendly interface that both staff and clients can utilize

This project will have the following components.

- A store that sells a variety of pet goods, such as food, accessories, and toys.
- A facility that will offer veterinarian care solutions, including as checkups, shots, and medical care.
- Services offered for pet grooming, including bathing and combing.
- Services for finding homes for animals.

## 2. Product/Service Description

The store enables owners of pets to be able to choose from a wide range of goods and services at the pet clinic and store. Many pet products, including food, toys, accessories, and grooming items, will be available in the store. The facility will provide veterinarian services like examinations, shots, and operations. The clinic will also offer boarding services for animals whose owners are away from home.

Introducing our innovative Pets Store and Clinic software, the all-in-one answer for pet owners who experience lack of management in seeking services in different places.

You will have access to a variety of features and functions with the pet's shop and clinic software that will make your life as a pet owner simpler and more convenient. You'll be able to book veterinarian clinic appointments, get pet food and supplies, keep track of your pet's medical history, and get reminders for immunizations and other appointments.

Our product is really well thought out and meticulously planned, making it simple to use and navigate. You can easily access all of the app's features and operations thanks to its user-friendly layout.

Therefore, this is the ideal answer for you whether you're a pet owner trying to better care for your furry companion or a pet care provider searching for a platform to interact with pet owners.

### 2.1 Product Context

The platform for the pet's store and clinic is a complete system created for both pet owners and pet care specialists. The app has an intuitive user interface and a host of features and functionalities that are designed to meet the demands of both pets and their owners.

The system enables pet owners to easily browse and buy a variety of pet products and supplies from

the comfort of their own homes. Additionally, the platform gives pet owners a way to schedule appointments with veterinarians and communicate with them. The system's integrated messaging feature makes it simple for pet owners and veterinary staff to communicate, ensuring that animals get the best care possible.

The software gives veterinary practitioners a set of tools to simplify their work and raise the standard of care they give to their patients. Veterinarians can conveniently track patient health records, manage their schedules, and connect with pet owners thanks to the app. To assist veterinarians in making knowledgeable choices regarding the health of their patients, the app also includes a complete database of pet care resources, including medicines, treatments, and diagnostic equipment.

Overall, the Pets Store and Clinic Software is a strong and user-friendly platform that connects pet owners with veterinary specialists to make sure that animals get the finest treatment possible.

## **2.2 User Characteristics**

There are five types of users that will interact with the system:

### **Administrator:**

Has access to all functions and settings in the software program

Responsible for managing user accounts, permissions, and data backups

Needs strong technical skills and familiarity with software systems

May also be responsible for financial reporting and analysis

### **Manager:**

Oversees the day-to-day operations of the pet shop

Uses the software program to monitor inventory levels, track sales, and generate reports

Needs strong organizational and leadership skills

May also be responsible for employee scheduling and training

### **Doctor:**

Provides medical care to animals in the pet shop's care

Uses the software program to manage patient records, track treatments and medications, and communicate with other staff members

Needs strong veterinary skills and familiarity with medical terminology

May also be responsible for ordering and tracking medical supplies and equipment

### **Receptionist:**

Greets customers, answers phones, and schedules appointments

Uses the software program to manage customer information, track appointments and payments, and generate invoices

Needs strong communication and customer service skills

May also be responsible for maintaining the cleanliness and organization of the reception area

***Client:***

Visits the pet shop to purchase supplies or seek medical care for their pets

Uses the software program to schedule appointments, make purchases, and view their pet's medical records

Needs basic computer skills and familiarity with online systems

May also provide feedback to the pet shop regarding their experience and satisfaction with the services provided.

## **2.3 Assumptions**

***Administrator:***

Assumes that the administrator has access to sensitive data, and therefore requires high levels of trust and security measures to prevent unauthorized access or data breaches.

Assumes that the administrator has sufficient technical knowledge to troubleshoot and resolve technical issues in the software program.

Assumes that the administrator is responsible for creating and managing user roles, and therefore requires strong organizational and communication skills.

***Manager:***

Assumes that the manager has a high level of authority and decision-making power in the pet shop, and therefore requires strong leadership and strategic planning skills.

Assumes that the manager has a good understanding of the pet industry and customer needs, and therefore requires good customer service and marketing skills to attract and retain clients.

Assumes that the manager may be responsible for managing budgets and finances, and therefore requires some financial literacy.

***Doctor:***

Assumes that the doctor has a good understanding of animal behavior, anatomy, and diseases, and therefore requires strong veterinary skills and knowledge.

Assumes that the doctor may need to work long hours and be available for emergency situations, and therefore requires flexibility and adaptability.

Assumes that the doctor may need to communicate with other veterinary professionals or

specialists, and therefore requires good communication and collaboration skills.

**Receptionist:**

Assumes that the receptionist is the first point of contact for clients, and therefore requires good communication and customer service skills.

Assumes that the receptionist may need to handle difficult or upset clients, and therefore requires some conflict resolution and problem-solving skills.

Assumes that the receptionist may need to multitask and handle multiple requests or tasks at once, and therefore requires good time management and organizational skills.

**Client:**

Assumes that the client is interested in finding quality pet products or services, and therefore requires a user-friendly and informative interface in the software program.

Assumes that the client may not be familiar with the software program or technology, and therefore requires clear instructions and guidance.

Assumes that the client may have specific preferences or needs for their pets, and therefore requires some customization or personalization options in the software program.

## **2.4 Constraints**

**Hardware Constraints:**

The software program may need to run on specific hardware platforms, such as desktop computers or mobile devices, which could limit the features or functionality of the program.

The pet shop may have limited or outdated hardware resources, which could affect the performance or speed of the software program.

**Time Constraints:**

The development of the software program may need to be completed within a specific timeframe, such as before the opening of a new pet shop location, which could limit the scope or complexity of the program.

The software program may need to be updated or modified frequently to keep up with changing pet industry trends, which could require ongoing time and resources.

**Budget Constraints:**

The pet shop may have limited financial resources to allocate towards the development of the software program, which could affect the features or quality of the program.

The cost of acquiring or integrating with other software programs or systems may be prohibitively expensive, which could limit the functionality or compatibility of the software program.



**Regulatory Constraints:**

The pet shop may be subject to regulations or guidelines governing the use of personal or medical data, which could affect the privacy or security of the software program.

The pet shop may need to comply with specific standards or certifications, such as those required for medical or veterinary software, which could affect the development or deployment of the software program.

**User Constraints:**

The users of the software program, such as the receptionists or clients, may have different levels of technical knowledge or experience, which could affect the usability or accessibility of the program.

The users of the software program may have specific needs or preferences, such as language or cultural differences, which could require customization or localization of the program.

**2.5. Dependencies****Database Dependencies:**

- The software program may need to rely on a database or data management system to store and retrieve information, which could affect the performance or scalability of the program.
- The structure and format of the database may need to be designed to meet the specific needs of the pet shop, which could require careful planning and coordination between developers and stakeholders.

**API Dependencies:**

- The software program may need to integrate with other third-party software programs or services, such as payment processing or shipping providers, which could affect the functionality or compatibility of the program.
- The API specifications and requirements of these third-party providers may need to be considered during the design and development of the software program.

**User Interface Dependencies:**

- The software program may need to provide a user interface that is consistent and intuitive across different devices and platforms, which could require careful design and testing.
- The user interface may need to be designed to meet the needs and preferences of different types of users, such as receptionists or clients, which could require customization or personalization options.

**Hardware Dependencies:**

- The software program may need to run on specific hardware platforms or devices, such as desktop computers or mobile devices, which could affect the performance or functionality of the program.
- The hardware specifications and requirements of these devices may need to be taken into account during the design and development of the software program.

**Code Dependencies:**

- The software program may be composed of different modules or components that rely on each other to function properly, which could require careful management and coordination between developers.
- The code dependencies between these modules or components may need to be well-documented and tested to ensure that any changes or updates to the program do not break existing functionality.

## 3. Requirements

### 3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date	Reviewed/ Approved
FR_01	The administrator must have a good understanding of the needs of different types of pets, including their dietary requirements, exercise needs, and health concerns. This will enable them to provide accurate advice to customers, as well as ensure that the animals in the store are well-cared for.	It is essential that the administrator has a deep understanding of pet care to provide customers with accurate and reliable advice on how to properly care for their pets. This can include knowledge of dietary requirements, grooming techniques, and health issues.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_02	The administrator should be able to manage the day-to-day operations of the store, including scheduling staff, ordering supplies, and managing inventory. They should also have good communication skills to effectively communicate with staff and customers.	Good sales and customer service skills are critical in any retail environment, but they are especially important in a pet store where customers may have questions or concerns about their pets. The administrator must be able to build rapport with customers and	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi

		provide a positive shopping experience.			
FR_03	The administrator should have a good understanding of sales and marketing principles to promote the store's products and services. This could include developing promotional campaigns, creating sales targets, and monitoring sales performance	Effective inventory management ensures that the store has the right products in stock at the right time, which can help increase sales and reduce waste. The administrator must be able to accurately track inventory levels, forecast demand, and place orders in a timely manner.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_04	The administrator should have excellent customer service skills to ensure that customers have a positive experience when they visit the store. This includes being friendly and approachable, listening to customer concerns, and providing helpful advice.	A pet store may face stiff competition from other retailers, so effective marketing and promotional strategies can help attract new customers and retain existing ones. The administrator should be able to develop and execute marketing plans that are tailored to the store's target audience.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_05	The administrator should have a keen eye for detail to ensure that the store is clean, well-maintained, and stocked with high-quality products. They should also be able to spot potential problems before they become major issues, such as	Managing employees can be a challenging task, but it is critical for ensuring that the store runs smoothly. The administrator should be able to hire the right people, provide training and feedback, and delegate tasks effectively.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	detecting signs of illness in animals.				
FR_06	The administrator should have a good understanding of financial management principles to manage the store's finances effectively. This could include creating budgets, monitoring expenses, and managing cash flow.	Good financial management is essential for any business, and a pet store is no exception. The administrator must be able to manage the store's finances effectively, including budgeting, accounting, and financial reporting.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_07	The administrator should be familiar with relevant laws and regulations related to pet care, such as animal welfare laws and regulations related to the sale of pets. This will help ensure that the store is operating legally and ethically.	A pet store must comply with various safety and regulatory requirements, such as ensuring that pet food is stored correctly and that animals are housed in appropriate conditions. The administrator should be familiar with relevant regulations and ensure that the store complies.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_08	The administrator should be a strong leader who can motivate and inspire staff to perform at their best. This could involve setting clear goals, providing regular feedback and support, and creating a positive work environment.	There are numerous administrative tasks that must be performed in a pet store, such as maintaining records, managing invoices and receipts, and coordinating with vendors. The administrator should be able to handle these tasks efficiently to keep the store running smoothly.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

FR_09	The administrator should have basic computer skills to manage inventory, create reports, and use email and other communication tools.	Technology is increasingly important in the retail industry, and a pet store is no exception. The administrator should be familiar with common retail technologies, such as point-of-sale software and inventory management systems, to ensure that the store operates efficiently.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_10	The administrator should be physically fit and able to lift heavy items, such as bags of pet food or large cages. They should also be able to stand for long periods of time and move around the store comfortably.	It is important that the administrator has a genuine love and passion for animals. This will not only help to create a positive and caring environment for pets and customers, but it will also help the administrator stay motivated and engaged in their work.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_11	A manager at a pet store must be an effective leader who can motivate and inspire employees to provide excellent customer service and care for animals. They should be able to delegate tasks, give feedback, and provide support and guidance to staff.	As a manager, you'll need to be able to inspire and motivate your team to achieve their goals, providing clear direction and guidance as needed. You should be approachable and able to listen to your employees' concerns, while also being firm when necessary.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_12	A manager must have a good understanding of the needs of different	Excellent sales and customer service skills are critical for any	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	types of pets, including their dietary requirements, exercise needs, and health concerns. They should be able to provide accurate advice to customers, as well as ensure that the animals in the store are well-cared for.	manager in a retail environment. You should be able to build strong relationships with customers, while also setting and achieving sales goals.			
FR_13	A manager must have a good understanding of sales and marketing principles to promote the store's products and services. This could include developing promotional campaigns, creating sales targets, and monitoring sales performance.	Effective inventory management is crucial for a pet store, as you'll need to balance having enough inventory to meet customer demand while minimizing waste. You should be able to track inventory levels, forecast demand, and place orders in a timely manner	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_14	A manager must have excellent customer service skills to ensure that customers have a positive experience when they visit the store. This includes being friendly and approachable, listening to customer concerns, and providing helpful advice.	The ability to develop and execute effective marketing and promotional strategies is key to attracting new customers and increasing sales. You should be able to identify your store's target audience and develop strategies to reach them.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_15	A manager must have strong inventory management skills to ensure that the store is	Managing a pet store's finances effectively requires strong budgeting and	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	well-stocked with high-quality products. They should be able to track inventory levels, place orders, and manage pricing and promotions.	accounting skills. You should be able to monitor the store's financial performance and identify areas for improvement.			
FR_16	A manager must have a good understanding of financial management principles to manage the store's finances effectively. This could include creating budgets, monitoring expenses, and managing cash flow.	Compliance with safety and regulatory requirements is crucial for any pet store manager, as you'll need to ensure that the store is safe for both pets and customers. You should be familiar with relevant regulations and ensure that the store complies.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_17	A manager must be familiar with relevant laws and regulations related to pet care, such as animal welfare laws and regulations related to the sale of pets. This will help ensure that the store is operating legally and ethically.	As a pet store manager, you should have in-depth knowledge of pet care to provide customers with accurate and reliable advice. This can include knowledge of dietary requirements, grooming techniques, and health issues.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_18	A manager must be able to manage the day-to-day operations of the store, including scheduling staff, delegating tasks, and managing employee performance. They should be able to provide regular feedback and support to employees and create a	You'll need to be able to provide your employees with the training and development they need to succeed in their roles. This can include providing feedback, setting goals, and delegating tasks effectively.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	positive work environment.				
FR_19	A manager must have excellent communication skills to effectively communicate with staff and customers. They should be able to listen to customer concerns and provide helpful advice, as well as effectively communicate with staff to ensure that tasks are completed on time and to a high standard.	You should be familiar with the technology used in retail environments, such as point-of-sale systems and inventory management software. This will help you manage the store's operations more efficiently.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_20	A manager must have good computer skills to manage inventory, create reports, and use email and other communication tools.	A genuine passion for animals and their welfare is essential for any pet store manager. This will help you create a positive and caring environment for both pets and customers, while also keeping you motivated and engaged in your work.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_21	A manager must be physically fit and able to lift heavy items, such as bags of pet food or large cages. They should also be able to stand for long periods of time and move around the store comfortably.	Analytical skills are important for making data-driven decisions that improve the store's operations. You should be able to analyze sales data, inventory levels, and other metrics to identify areas for improvement.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_22	A doctor at a pet store must have a degree in	A degree or certificate from an accredited	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi



	veterinary medicine from an accredited institution. They must also be licensed to practice in the state where the pet store is located.	veterinary technology program or a veterinary assistant program provides a solid foundation of knowledge and skills that are essential to assist the veterinarian in providing quality care for pets.			
FR_23	A doctor at a pet store must have a comprehensive knowledge of animal anatomy and physiology, as well as their behaviour and common health conditions.	Some states require veterinary technicians to be certified or licensed to ensure that they have met certain educational and training requirements and have passed a standardized exam.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_24	A doctor at a pet store must be able to accurately diagnose and treat a wide variety of animal diseases and injuries. They should also perform surgical procedures, prescribe medications, and provide recommendations for aftercare.	A good understanding of animal anatomy and physiology is crucial to assist the veterinarian in performing diagnostic tests, administering medications and treatments, and providing post-operative care.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_25	A doctor at a pet store should have a good understanding of animal nutrition and be able to provide advice on appropriate diets for pets.	Understanding animal behaviour is essential in helping the veterinarian in assessing pets' behaviour and providing training recommendations to pet owners.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_26	A doctor at a pet store	Strong diagnostic and	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	should have excellent communication skills and be able to explain complex medical issues to pet owners in a clear and understandable way.	treatment skills are necessary to assist the veterinarian in diagnosing and treating medical conditions and to provide post-operative care to pets.			
FR_27	A doctor at a pet store must be familiar with relevant laws and regulations related to pet care, including animal welfare laws, and regulations related to the sale of pets.	Attention to detail is critical in ensuring accurate record-keeping and medication dosing, as well as assisting the veterinarian in performing procedures and treatments accurately.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_28	A doctor at a pet store must have a keen eye for detail to ensure that they are providing the best possible care to pets. They should be able to spot potential problems before they become major issues and be thorough in their examinations and treatments.	Good communication and customer service skills are important when interacting with pet owners, as well as working well with the veterinarian and other members of the pet store team.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_29	A doctor at a pet store must have a deep compassion for animals and be committed to providing the highest level of care to them.	A veterinary technician or assistant may need to lift or restrain animals, and standing for long periods of time is common when assisting the veterinarian.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_30	A doctor at a pet store must be able to work collaboratively with other staff members,	Being able to adapt to changes in the pet store's needs and handling unexpected	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	including other doctors, technicians, and administrative staff.	situations as they arise is crucial in providing quality care to pets and supporting the veterinarian.			
FR_31	A doctor at a pet store must be physically fit and able to lift and move animals of varying sizes and weights. They must also be able to stand for long periods of time and be able to move around the store comfortably.	Continuing education is important for veterinary technicians and assistants to stay up to date on the latest advancements in veterinary medicine and provide the best care possible to pets.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_32	A receptionist at a pet store must have excellent communication skills to interact with customers, employees, and suppliers. They should be able to communicate clearly, professionally, and in a friendly manner.	Communication skills are essential for a receptionist to effectively communicate with customers and co-workers, whether in person, over the phone, or through email.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_33	A receptionist at a pet store must have good telephone etiquette and be able to answer calls promptly and courteously. They should be able to route calls effectively, take accurate messages, and handle customer inquiries.	Good customer service skills are critical for a receptionist to create a positive customer experience and build trust with customers.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_34	A receptionist at a pet store must have strong	Strong organizational skills are necessary for a	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	organizational skills to manage the flow of people and pets in and out of the store. They should be able to manage appointments, schedule services, and maintain accurate records.	receptionist to manage multiple tasks and maintain accurate records and schedules.			
FR_35	A receptionist at a pet store must have basic computer skills to use scheduling software, maintain customer databases, and process payments.	Computer skills are important for a receptionist to manage electronic records, scheduling software, and communication tools.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_36	A receptionist at a pet store must be able to work in a fast-paced environment and handle multiple tasks simultaneously. They should be able to prioritize tasks and work effectively under pressure.	Attention to detail is crucial for a receptionist to ensure accurate scheduling, record-keeping, and financial transactions.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_37	A receptionist at a pet store should have a basic understanding of pet care and be able to provide information about the products and services offered by the store.	While not necessary to be a pet care expert, a basic knowledge of pet care is helpful for a receptionist to assist customers with their questions and inquiries.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_38	A receptionist at a pet store should have excellent customer service skills to create a positive and welcoming	A fast-paced environment is common in pet stores, especially during peak times, and a receptionist should be	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	atmosphere. They should be friendly, helpful, and patient with customers and their pets.	able to work effectively under pressure while maintaining a positive attitude.			
FR_39	A receptionist at a pet store must maintain a professional demeanour at all times, including dressing appropriately and using appropriate language.	Collaboration with coworkers is important for a receptionist to provide quality customer service and support the pet store's operations.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_40	A receptionist at a pet store must have a keen eye for detail to ensure that appointments are properly scheduled, customers receive accurate information, and records are maintained accurately.	A receptionist should be able to adapt to changes in the pet store's needs and handle unexpected situations as they arise.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_41	A receptionist at a pet store must be flexible and willing to work outside regular business hours, including weekends and holidays. They should also be willing to perform other duties as needed, such as cleaning, organizing, or assisting with pet care services.	A high school diploma or equivalent is typically the minimum requirement for a receptionist, and previous experience in customer service or administrative roles is often preferred.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_42	As a client at a pet store, you should have a basic understanding of pet care, including nutrition, exercise, grooming, and healthcare. You should	This requirement is crucial to ensure the health and well-being of the pet. It's important for clients to understand the commitment involved in	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	be aware of your pet's specific needs, such as breed-specific health concerns or dietary restrictions.	owning a pet and the responsibility that comes with it.			
FR_43	As a client at a pet store, you should be financially responsible for your pet's care. This includes providing necessary medical treatment, purchasing appropriate food and supplies, and providing a safe and comfortable living environment.	Clients should have a basic understanding of their pet's needs, behavior, and health concerns to ensure they can provide appropriate care and recognize any potential issues. This knowledge can be gained through research, consultation with veterinarians or pet store staff, and experience.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_44	As a client at a pet store, you should be able to commit the necessary time to care for your pet, including regular exercise, training, and socialization.	Owning a pet can be expensive, and clients should be prepared to handle the costs associated with proper pet care. This requirement ensures that clients can provide their pet with the necessary resources without placing undue financial strain on themselves.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_45	As a client at a pet store, you should comply with all relevant laws and regulations related to pet ownership, including licensing requirements, leash laws, and vaccination	Pet care practices and products are constantly evolving, and clients should be willing to learn about new information and technologies to provide the best care for their pet.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	requirements.				
FR_46	As a client at a pet store, you should be responsive to your pet's needs, including providing them with adequate food, water, shelter, and medical care. You should also be aware of signs of illness or distress and seek veterinary care as needed.	Following store policies is necessary to ensure the safety and health of all pets and customers. This requirement ensures that clients are aware of and willing to follow the pet store's guidelines.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_47	As a client at a pet store, you should ensure that your pet receives proper training and socialization to prevent behavioural problems and ensure their safety around people and other animals.	This requirement ensures a positive and safe environment for all pets and customers. Clients should treat pet store staff and other customers with respect and courtesy, and refrain from any disruptive or harmful behaviour.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_48	As a client at a pet store, you should respect the rights and safety of other customers and employees. This includes keeping your pet on a leash or in a carrier when necessary, cleaning up after your pet, and following store policies and guidelines.	Pet store staff may be busy or dealing with multiple customers at once, and clients should understand that they may need to wait or be patient in some situations. Additionally, clients should understand that discussing their pet's health and behaviour can be sensitive and should approach these conversations with patience and	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

		understanding.			
FR_49	As a client at a pet store, you should be responsive to store policies, such as returning defective items or following the store's return policy.	Good communication skills are important to effectively convey information about a pet's needs and health concerns to store staff. Clients should be able to communicate clearly and respectfully with store staff.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_50	As a client at a pet store, you should ensure that your pet is properly identified with a collar and tag or microchip in case they become lost.	Regular visits to the pet store can help ensure the pet's health and well-being and can also help clients stay informed about new products and services.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_51	As a client at a pet store, you should ensure that your pet receives regular veterinary check-ups to maintain their health and prevent illness or disease.	Clients should be willing to accept feedback and advice from store staff to improve their pet's care and behavior. This requirement demonstrates a commitment to the pet's well-being and a willingness to learn and improve. Regenerate response	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_52	The website should have a user-friendly interface that is easy to navigate and understand. Customers should be able to find the information they need quickly and easily.	A user-friendly interface is important for ensuring that customers can easily find what they are looking for and navigate the website with ease.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_53	The website should be optimized for mobile	With the increasing use of smartphones and	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi



	devices, as more and more customers are using smartphones and tablets to access websites.	tablets, it's important for the website to be optimized for mobile devices to ensure that customers can access the website from anywhere.			
FR_54	The website should have clear and concise information about the products offered at the pet store, including descriptions, prices, and availability.	Detailed product information is crucial for helping customers make informed purchasing decisions.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_55	The website should have high-quality images of the products offered at the pet store, which should be zoomable so that customers can see the products in detail.	An online store allows customers to conveniently purchase products from the pet store and should be easy to use and secure.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_56	The website should have secure online shopping capabilities, with encrypted payment processing and the ability to track orders.	Providing helpful information about pet care can help build trust with customers and establish the pet store as a reliable source of information.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_57	The website should have customer reviews and ratings for the products offered at the pet store, as this can help customers make informed purchasing decisions.	Providing information about veterinary care can be helpful for customers and demonstrate the pet store's commitment to the health and well-being of pets.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_58	The website should have a blog or resource section that provides helpful information	Providing information about pet adoption can help encourage responsible pet	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi

	about pet care, including tips on grooming, training, and healthcare.	ownership and potentially lead to increased adoptions.			
FR_59	The website should have a store locator that makes it easy for customers to find the nearest pet store location.	Providing customer support can help address any issues or concerns customers may have and enhance their overall experience.	2	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_60	The website should have clear and easily accessible contact information, including a phone number, email address, and physical address.	Integrating social media can help increase engagement with customers and provide them with updates and news about the pet store.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi
FR_61	The website should be integrated with social media platforms, allowing customers to share product information and reviews with their friends and followers.	Customer reviews and testimonials can help build trust with potential customers and encourage them to make purchases.	1	07/04/2023	Mauricio Spaho/Kleo Kocaqi

Table 1. Functional Requirements

## 3.2 Non-Functional Requirements

### 3.2.1 Product Requirements

#### 3.2.1.1 User Interface Requirements

The user interface for the web applications should be compatible with any browser for the user to access it from a Desktop or Mobile. In addition to the functions required, we are going to describe the characteristics of each interface which are supported by the sketches attached in Appendix D.

The User interface could be grouped into 6 main interfaces:

1. Log-In Interface

Which will contain:

- The header bar containing the PETSTOREANDCLINIC logo, “PetStoreAndClinic” and a telephone number.
- In the body, three icons will be shown, one for each user: receptionist, doctor, and manager. These icons will serve as buttons to log in to the system. When the button is pressed the log-in form is displayed.
- The login form contains fields <Username> and <Password>, a reCAPTCHA to make sure the user is not a robot, and a button <Log In>. When that button is pressed the information is validated and the respective interface is shown to the user (client/doctor/receptionist/manager/administrator) or an error notification indicating a wrong username or password will be shown.

## 2. Receptionist Interface

Which will contain:

- The header bar containing the PETSTOREANDCLINIC logo and “Receptionist <Name> <Surname>”, a “Home” button, and a “Log out” button.
- The main view (“Home”) contains six buttons: “My profile”, “Pet’s list”, “Add a new pet”, and “Change password”.
- “My Profile” will allow the receptionist to see all his personal information.
- “Pet’s List” will show a full list of the pets of that clinic. For each pet, the receptionist can view his full profile, can update his information, can delete his profile, can export his medical file, or can allow the doctor to create a visit for that pet. When he clicks “View profile”, he can see the full details and the examinations of that pet. He can also download that information in a PDF file. When he clicks “Update profile”, he can change the personal information of that pet. When he clicks “Delete” a pop-up window will appear to ensure that the receptionist wants to delete that pet. When he clicks “Export”, an XML file will be created and it can be sent to other clinics or hospitals. When he/she clicks “Create visit”, it allows the doctor to add a new examination record for that pet.
- “Add a New Pet” allows the receptionist to create a new user, and type pet. He will be responsible for filling all the obligatory fields with valid information provided by the patient. If there already exists an XML file of that patient, he can import that file.
- “Change Password” will display a simple form that contains fields <Current Password>, <New Password>, <Confirm New Password>, and a button <Save Changes>. When that button is pressed the system checks if the current password matches, then check if the new password is the same in both fields and validates the password format (for example only alphanumeric characters at least one number, and one uppercase). If all the validations are correct it displays a message that says “Password was changed successfully!” otherwise displays a message with the respective error.

- The “Log out” will terminate the current session and will resent the user to the main page.

### 3. Doctor Interface

Which will contain:

- The header bar contains the PETSTOREANDCLINIC logo, “Doctor <Name> <Surname>” and a menu icon, which when pressed shows all available menus.
- The “Home” menu directs the doctor to a page, where he can see the personal information on the left side of the screen and a table with all the pets waiting to be examined by him at the center. For these pets, the doctor can choose to view their profiles or to write the examination. If he chooses “Create Visit” a form with all the necessary fields of an examination will be shown. If he chooses “View Profile” for a specific pet, he will be directed to a page where the personal information and the medical records are shown. From there, he can view and download his medical visits.
- The “My Pets” menu will display a table with all the pets of that specific doctor. For each pet, he can view the full profile: personal information, and all the medical examinations. He can also download a PDF file of this information. Above the table of the pets, there is a search box that can be used to find a specific pet.
- The “Change Password” menu will display a simple form that contains fields <Current Password>, <New Password>, <Confirm New Password>, and a button <Save Changes>. When submit button is pressed the system checks if the current password matches, then check if the new password is the same in both fields and validates the password format (for example only alphanumeric characters at least one number, and one uppercase). If all the validations are correct it displays a message that says “Password was changed successfully!” otherwise displays a message with the respective error.
- The “Log out” will terminate the current session and will resent the user to the main page.

### 4. Manager Interface

Will contain:

- The manager interface of the pet shop and clinic should also include a login page for the manager to access their account. The login page should be secure and require a unique username and password to prevent unauthorized access.
- Once the manager has logged in, they should be taken to the dashboard where they can view all important information. Dashboard: A central location where the manager can view all important information, such as appointments, inventory, and financials. The dashboard should be customizable so that the manager can choose what information they want to see at a glance.
- Inventory Management: A way to manage the inventory of the pet shop, including adding and removing products, tracking stock levels, and generating reports on inventory usage

and sales.

- Financial Management: A way to manage the finances of the pet shop, including generating invoices, recording payments, tracking expenses, and generating reports on financial performance.
- Staff Management: A way to manage staff members, including adding and removing staff, managing schedules, and tracking employee performance.

## 5. Administrator pages Interface

Will contain:

- Navigation Menu: The navigation menu should be located on the left-hand side of the screen and should provide easy access to different sections of the PETSTOREANDCLINIC, such as user management, database management, appointment management, inventory management, financial management, reporting, security, and system settings.
- Dashboard: The dashboard should provide a quick overview of the pet shop and clinic's performance, such as financial performance, inventory levels, appointment schedules, and staff performance. The data should be presented clearly and concisely, allowing the administrator to quickly view and analyze the information.
- Data Tables: The data tables should allow the administrator to view and manage different aspects of the PETSTOREANDCLINIC, such as pets, clients, staff members, appointments, inventory items, and financial transactions. The data tables should be easily sortable and filterable, allowing the administrator to quickly find the information they need.
- Forms: The forms should allow the administrator to add, edit, and delete different types of data within the PETSTOREANDCLINIC, such as pets, clients, staff members, appointments, inventory items, and financial transactions. The forms should be user-friendly and intuitive, guiding the administrator through the necessary steps to complete the operation.
- Reports: The reports should provide the administrator with insights into different aspects, such as financial performance, inventory usage, appointment management, and staff performance. The reports should be easy to generate and export, allowing the administrator to share the information with other stakeholders.
- Settings: The settings section should allow the administrator to customize different aspects, such as business hours, appointment types, payment methods, and other critical configurations. The settings should be easy to understand and change, allowing the administrator to adapt the page to the pet shop and clinic's specific needs.
- Help and Support: The help and support section should provide the administrator with access to training and documentation resources, such as user manuals, video tutorials, and FAQs. The section should also allow the administrator to contact technical support for

assistance with any issues they may encounter.

## 6. Client Interface

Will Contain:

- Navigation Menu in order to access their profile and their pets.
- In their profile interface they can view all their information and have the availability to change some information such as username and password.
- In their pets interface they can view a list of all their pets and have the availability to select one of them.
- For each pet they can view their pet's general and medical information, and all the transactions that they have placed for the pets.

### 3.2.1.2 Learnability

- Clinic staff and veterinarians should be able to master using the system within a few hours.
- Pet owners will not need a specific training since the system will be intuitive.
- This documentation can serve as a user guide to the clinic staff, pet owners, and veterinarians.
- In case of an error, a specific and detailed message will be shown to the user in order for them to understand what went wrong.
- The user is responsible for their own actions.

### 3.2.1.3 Accessibility

- Each user is provided with their username and password at the time they register with the system.
- Clinic staff, pet owners, and veterinarians can access the system.
- The registered users can access the system at any time and from any place.

### 3.2.1.4 Efficiency

- Each operation will be fast and in real time.
- Once the users have learned the system they will be able to perform each operation within minutes.

### 3.2.1.5 Memorability

- The system is intuitive hence, it is not a problem if you 'vaguely remember' how to use it.
- If the users return to the design after a period of not using it they will be able to re-establish

proficiency within the first hour.

- The user interfaces are designed to be easy understandable by the user (pictures, icons, buttons, descriptions etc.)

#### **3.2.1.6 Errors**

- The error rate is lower than the current error rate.
- Each time sensitive data is entered in the system double check procedure is applied where the user confirms the entered data.
- If an error occurs it can be edited and corrected immediately.

#### **3.2.1.7 Satisfaction**

- The system is user-friendly and it is very easy to use.

#### **3.2.1.8 Capacity**

This application will be developed to cover all the necessities of one pet store clinic. The application will work at the same time for the pet owners, veterinarians, and clinic staff. It will work in real-time, so every change made will be reflected immediately to the other users (based on their clearance).

Every user will use the same database, therefore if multiple requests are made to the server, the requests will form a query slightly delaying the process. To increase the capacity and to lower the number of times this happens, the user will make the changes storing them in their computer, then they will be sent to the database. This way, even if there is a delay, it will allow them to continue their job.

The application will be stored on a web server. The application itself is not large, and the database that we are going to use does not occupy a large space either.

### **3.2.2 Organizational Requirements**

#### **3.2.2.1 Availability**

- The application will be available 24 hours per day, every day.
- The application will be available to everyone who owns a PC or mobile device connected to the Internet, therefore any user can access their data anywhere.
- The application will be developed such that it will not be forced to encounter downtime since the data used

#### **3.2.2.2 Latency**

The latency of the web application will depend on:

- Internet connection strength.
- The size of the database.
- The efficiency of the algorithms used to fetch data from the database.

- The number of concurrent users accessing the system.

To ensure acceptable latency, the following requirements must be met:

- The system must be able to handle at least 50 concurrent users without significant latency issues.
- The system must be able to load customer and pet information within 3 seconds of a request.
- The system must be able to complete transactions within 5 seconds of a request.

### 3.2.2.3 Monitoring

To ensure the system is running smoothly and efficiently, the following monitoring requirements must be met:

- The system must log all user actions, errors, and transactions for auditing purposes.
- The system administrator must be able to monitor system performance in real-time and receive alerts when performance thresholds are exceeded.
- The system must have automated monitoring of the system's database, server, and network to detect any issues.
- The system must have automated backups of all data in the event of a system failure.
- The system must be able to recover from a system failure within 1 hour of the failure.
- Periodic reports shall be generated by the system maintenance group. These reports shall be used not only to detect problems but also to find possible ways to improve the system.

### 3.2.2.4 Maintenance

- The system will be developed using MySQL for the database and APACHE server. Therefore, these two platforms will be used to maintain the application.
- In case of system malfunction, a system restart should help. If that does not help, then maybe the server is down, so the maintenance department should be contacted.
- In case of any software update or bug correction, the users will be informed.
- The software will have a mechanism to automatically backup data at regular intervals to prevent data loss in case of hardware failure or other issues.
- The software should be designed with modular architecture to facilitate easy maintenance and updates.
- The software will be designed to provide useful error messages to help administrators and developers quickly troubleshoot and fix issues.

### 3.2.2.5 Operations



Some of the operations that will be provided to the users are:

- The clients can log in and access their and their pet's personal information anytime.
- The information entered into the system is accessed only by the people who really need access.
- Create, Read, Update, and Delete Managers (Done by Administrator).
- Create, Read, Update, and Delete Receptionists (Done by managers).
- Create, Read, Update, and Delete Doctors (Done by managers or the administrator).
- Doctors can view the personal information and medical records of the client's pet.
- Download a PDF with the medical examinations of a specific patient(pet).
- Export the medical file of a specific patient and use it to send it to another hospital.
- Allow the doctors to edit only the medical records of patients.
- Leave feedback for the service.
- Allow the receptionist to edit only non-medical records of patients.

The application will be available 24/7, although the busiest time frames shall be 8 AM to 11 AM and from 4 PM to 7 PM. These time frames are based on the flux of the people requesting visits, thus it is not fixed and it varies from day to day.

The information entered to the system is considered to be sensitive, that is why it is secured with hashed passwords.

#### **3.2.2.6 Standards Compliance**

Our application is a new system developed to digitalize the filing system in polyclinics. Although the system is a new concept, it is bounded by some existing standards. Despite the view, the personal information of the user must have all the fields that are present in the current file format of the pet store and clinic. The same obligation is valid for the examination page. Also, the user ID and other information will continue to follow the standards created by the Ministry of Health of Albania. Everything will be in accordance with the law and the Ministry of Health.

#### **3.2.2.7 Portability**

- The system will be web-based; therefore, it will operate the same regardless of the operating system.
- All you need is a computer or mobile phone and an Internet connection.
- The software should be designed to be easily portable to different platforms or environments.

### 3.2.3 External Requirements

#### 3.2.3.1 Security

The software should be designed with strong encryption mechanisms to protect sensitive data such as medical records and payment information. The software should have features to prevent unauthorized access to the system, such as multi-factor authentication and role-based access control.

#### 3.2.3.2 Protection

- To protect the system from malicious or accidental access, modification, disclosure, destruction, or misuse we will take the following precautions:
- Encrypt the most sensitive information such as passwords using the hashing method to protect privacy.
- We will keep track of the activity of each user, such that in case of a problem the user will be held responsible.
- The receptionist is responsible for the personal data authenticity of the user he/she enters; hence the system is not responsible.
- The system will validate each data for special characters and other specific conditions before inserting or updating in the database.
- To make sure that some action is intentional and not accidental, most of the actions of the users are protected by a pop-up window to confirm that action.
- Each client will see only the information related to his/her pet.
- Each doctor will only see the data of his/her patients.
- The software should have features to prevent data loss due to hardware failures, such as regular backups and redundancy measures.

#### 3.2.3.3 Authorization and Authentication

The Authorization and Authentication factors:

- The user authentication will be using username, password and reCAPTCHA.
- Authorization will be based on the user type. Each user will access only the respective information.
- Using sessions for the currently logged user.
- If the user tries to log in with the wrong credentials a message will be shown to him/her.