



INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT, AKURDI, PUNE

**“Trusty Tails: Pets and pet products buying and selling
platform”**

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ABSTRACT

TrustyTails is an integrated online platform designed to revolutionize the way pet owners, pet product sellers, and veterinarians interact. The platform offers a comprehensive solution for buying and selling pets and pet-related products, along with booking veterinary services. Built using Spring Boot for the backend and React JS for the frontend, TrustyTails ensures a robust, scalable, and user-friendly experience. The system incorporates secure user authentication, efficient cart and order management, and seamless payment processing. Additionally, it provides veterinarians with tools to manage their services and appointments effectively. The database, designed using Spring Data JPA and MySQL, ensures data integrity and efficient query handling. TrustyTails aims to bridge the gap between pet owners and service providers, offering a one-stop solution for all pet-related needs. This project demonstrates the effective use of modern web technologies to create a reliable and intuitive platform for the pet care industry.

ACKNOWLEDGEMENT

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1. INTRODUCTION

The pet care industry has witnessed significant growth in recent years, driven by the increasing number of pet owners and their desire to provide the best care for their companions. However, pet owners often face challenges in finding reliable platforms to purchase pets, pet products, and veterinary services. To address these challenges, TrustyTails was conceptualized as an all-in-one online platform that seamlessly connects pet owners, pet product sellers, and veterinarians.

TrustyTails is designed to provide a user-friendly and secure environment where users can buy and sell pets, explore a wide range of pet products, and book veterinary services. The platform leverages modern technologies such as Spring Boot for the backend and React JS for the frontend, ensuring a robust and scalable solution. With features like role-based access control, secure payment processing, and efficient cart and order management, TrustyTails aims to simplify the pet care experience for all stakeholders.

The primary objective of TrustyTails is to create a centralized hub that caters to the diverse needs of pet owners while providing sellers and veterinarians with a platform to showcase their offerings. By integrating advanced technologies and adhering to best practices in software development, TrustyTails not only enhances user convenience but also sets a new standard for pet care platforms. This report outlines the design, development, and implementation of TrustyTails, highlighting its key features, technical architecture, and future potential.

2. SOFTWARE REQUIREMENTS SPECIFICATION

2.1 Purpose

The purpose of this document is to outline the functional and non-functional requirements for the development of **TrustyTails**, an online platform for buying and selling pets and pet products, along with veterinary services. This SRS serves as a blueprint for developers, testers, and stakeholders to ensure the system meets its intended objectives.

2.2 Scope

TrustyTails is a web-based platform that provides the following functionalities:

- **User Management:** Registration, login, and role-based access control (Admin, Customer, Veterinarian).
- **Product and Pet Management:** Listing, searching, and managing pets and pet products.
- **Cart and Order Management:** Adding items to the cart, placing orders, and tracking order history.
- **Payment Integration:** Secure payment processing using third-party payment gateways.
- **Veterinary Services:** Booking and managing veterinary appointments.
- **Feedback System:** Allowing users to leave reviews and ratings for products and services.

The system is designed to be scalable, secure, and user-friendly, catering to the needs of pet owners, sellers, and veterinarians.

2.3 Functional Requirements

2.3.1 User Management

1. User Registration:

- Users can register by providing necessary details (e.g., name, email, password).
- Email verification is required to activate the account.

2. User Login:

- Registered users can log in using their credentials.
- Password recovery option is available.

3. Role-Based Access Control:

- **Admin:** Manages users, products, and orders.
- **Customer:** Browses products, places orders, and books veterinary services.
- **Provider:** Manages pets, products and services.

2.3.2 Product and Pet Management

1. Product Listing:

- Admins can add, update, and delete products.
- Customers can browse products by category, price, or rating.

2. Pet Listing:

- Admins can add, update, and delete pet details.
- Customers can search for pets by breed, age, or price.

2.3.3 Cart and Order Management

1. Cart Management:

- Customers can add/remove products and pets to/from the cart.
- The cart displays the total price and item details.

2. Order Placement:

- Customers can place orders and choose payment methods.
- Order confirmation is sent via email.

2.3.4 Payment Integration

1. Payment Processing:

- Integration with third-party payment gateways.
- Secure transaction handling with encryption.

2.3.5 Veterinary Services

1. Appointment Booking:

- Customers can book appointments with veterinarians.
- Veterinarians can manage their schedules and availability.

2. Service Management:

- Veterinarians can add or update their services.

2.3.6 Feedback System

1. Product Reviews:

- Customers can leave reviews and ratings for purchased products.

2. Service Reviews:

- Customers can rate and review veterinary services.

2.4 Non-Functional Requirements

2.4.1 Security

- Secure user authentication and authorization using **Spring Security**.
- Data encryption for sensitive information (e.g., passwords, payment details).

2.4.2 Performance

- The system should handle up to **1000 concurrent users**.
- Average response time for API calls should be less than **500ms**.

2.4.3 Usability

- The user interface should be intuitive and responsive.
- The platform should be accessible on both desktop and mobile devices.

2.4.4 Scalability

- The system should be scalable to accommodate future growth in users and data.

2.4.5 Reliability

- Regular backups and disaster recovery mechanisms should be in place.

2.5 System Requirements

2.5.1 Hardware Requirements

- **Server:** Minimum 4GB RAM, 2GHz processor, 50GB storage.
- **Client:** Modern web browser (e.g., Chrome, Firefox).

2.5.2 Software Requirements

- **Backend:** Java 17, Spring Boot(3.3.5), Spring Data JPA(4.0.0), Spring Security(3.3.5).
- **Frontend:** React JS 17, HTML 5, CSS 4, JavaScript 14.
- **Database:** MySQL(8.0.3).
- **Tools:** Postman (API testing)(11.29.3), Git (version control)(2.47.1).

2.6 Assumptions and Dependencies

- Users have access to a stable internet connection.
- Payment gateways are available and functional.

- Veterinarians and sellers are willing to register and use the platform.

2.7 Constraints

- The project must be completed within the allocated budget and timeline.
- Third-party APIs (e.g., payment gateways) may have usage limitations.

2.8 Future scope:

The TrustyTails platform has been successfully developed as a pet and pet product buying & selling marketplace with veterinary services. To enhance its usability, scalability, and customer engagement, the following future improvements and expansions can be considered:

1. AI & Machine Learning Integration

Personalized Pet & Product Recommendations – Implement AI-based recommendation engines to suggest pets, products, and veterinary services based on user behavior.

Chatbot for Instant Customer Support – Develop an AI chatbot to assist users with queries regarding pet adoption, product purchases, and appointment bookings.

2. Enhanced Veterinary Services

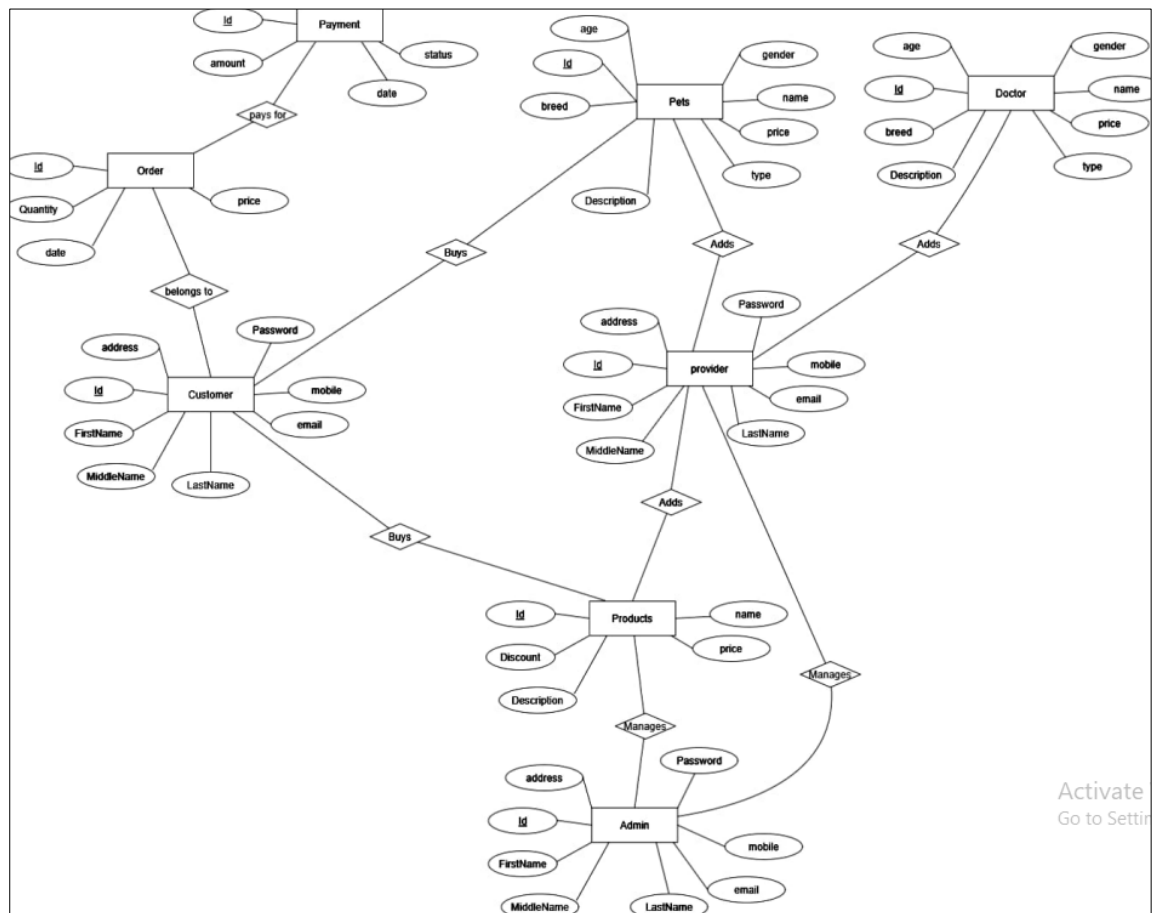
Real-Time Video Consultations – Allow users to book virtual vet consultations via integrated video calling features.

Automated Pet Health Monitoring – Develop a pet health tracking system where users can log pet medical history and get AI-driven health suggestions.

Pet Insurance Integration – Partner with insurance providers to offer pet insurance policies for medical emergencies.

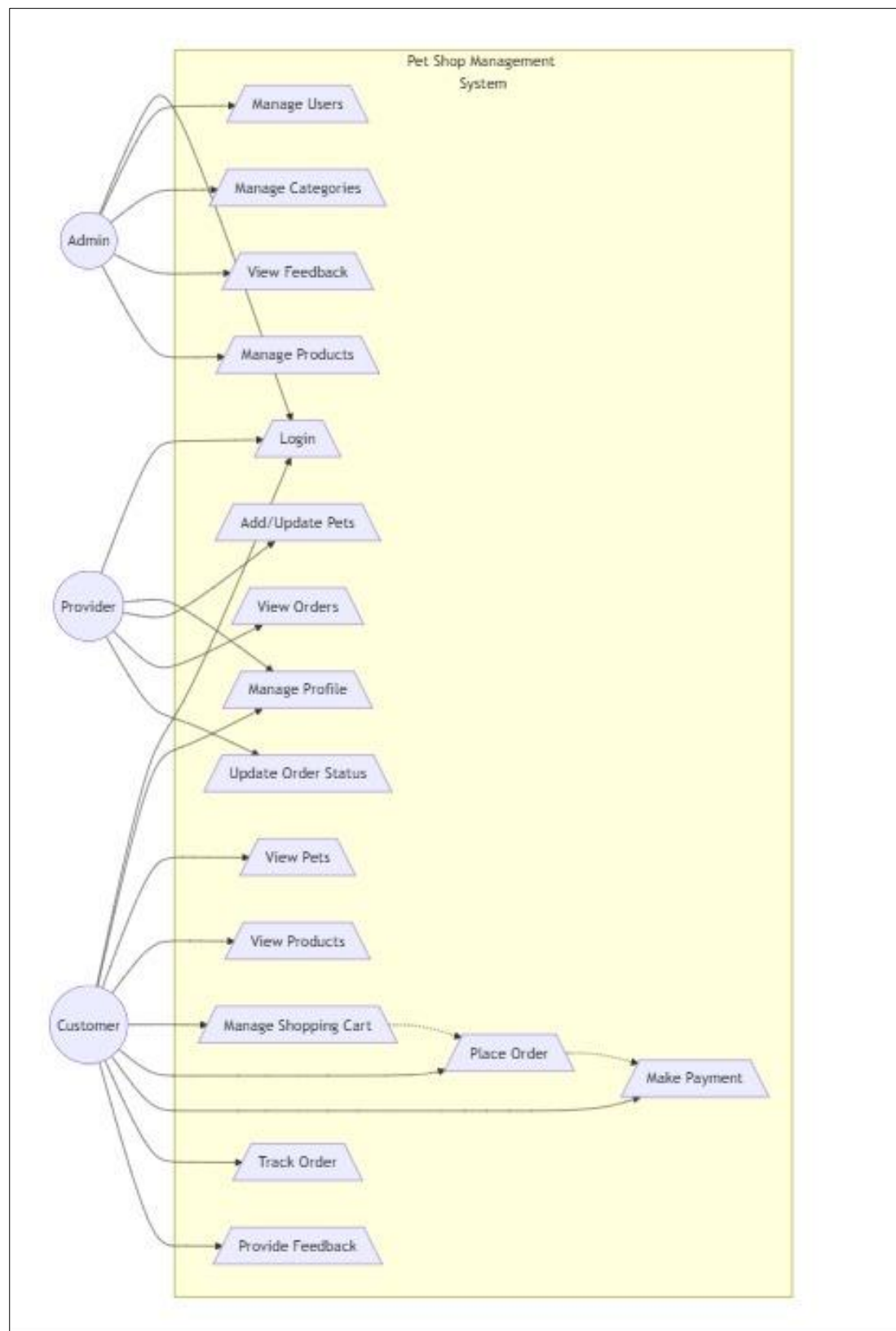
3. DIAGRAMS

3.1 Entity relationship diagram



Entity relationship diagram

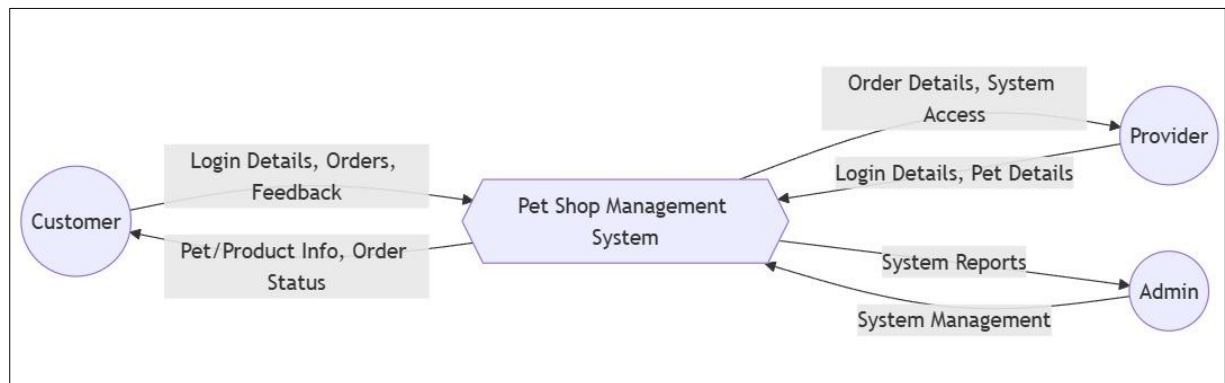
3.2 Use case diagram



Use case diagram

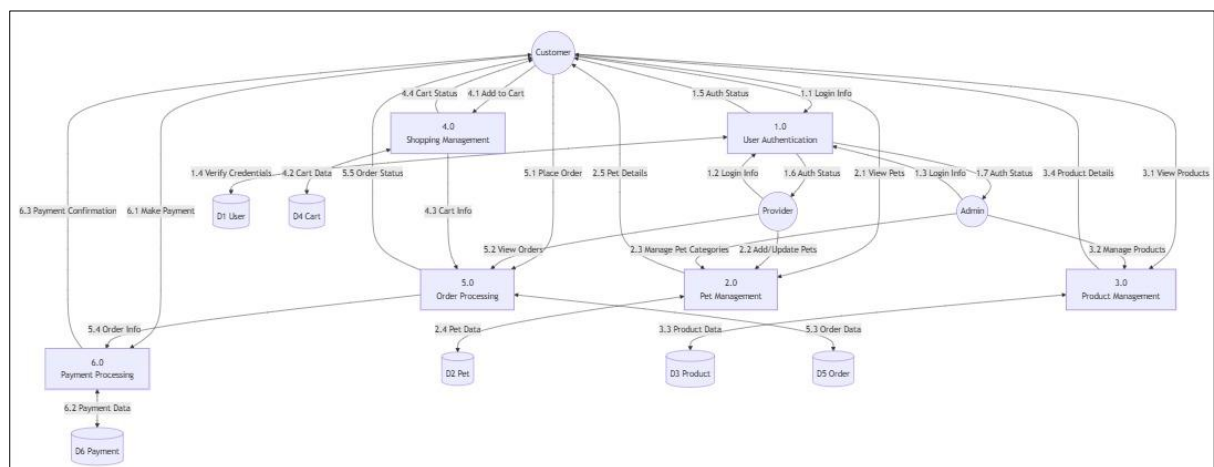
3.3 Data flow diagram

3.3.1 Data flow diagram 0



Data flow diagram 0

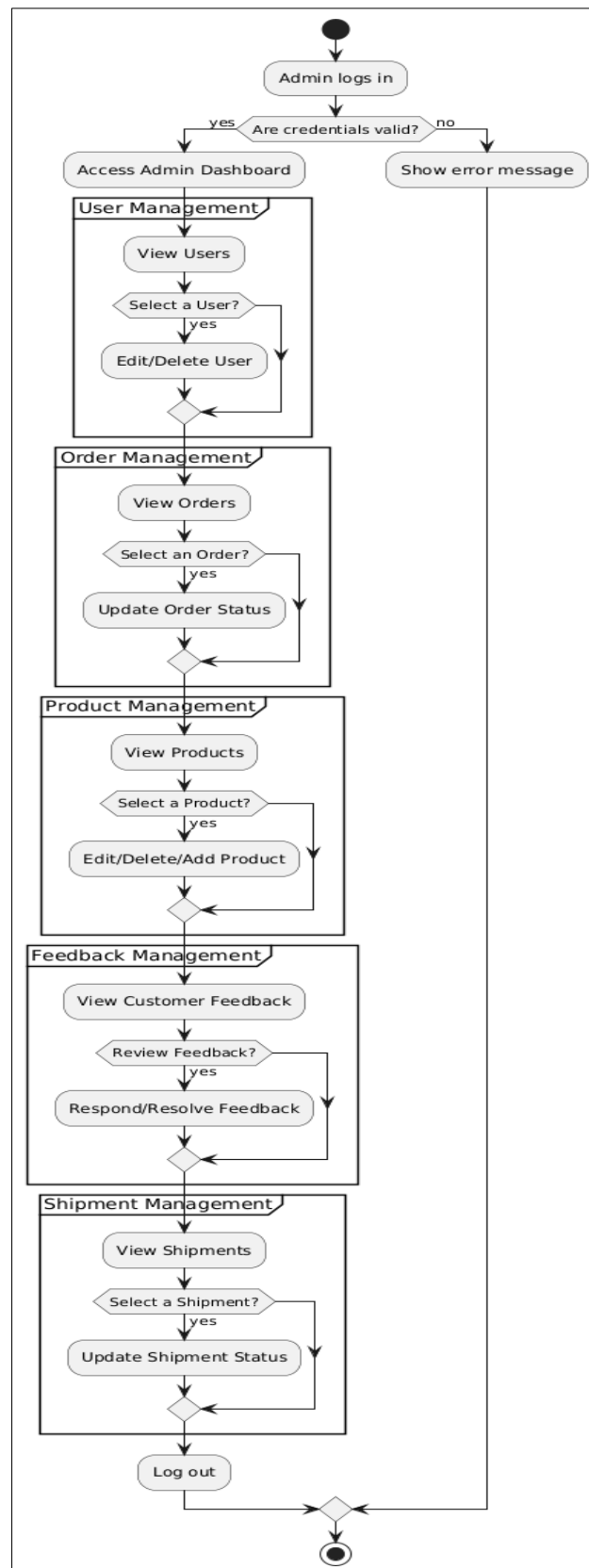
3.3.2 Data flow diagram 1



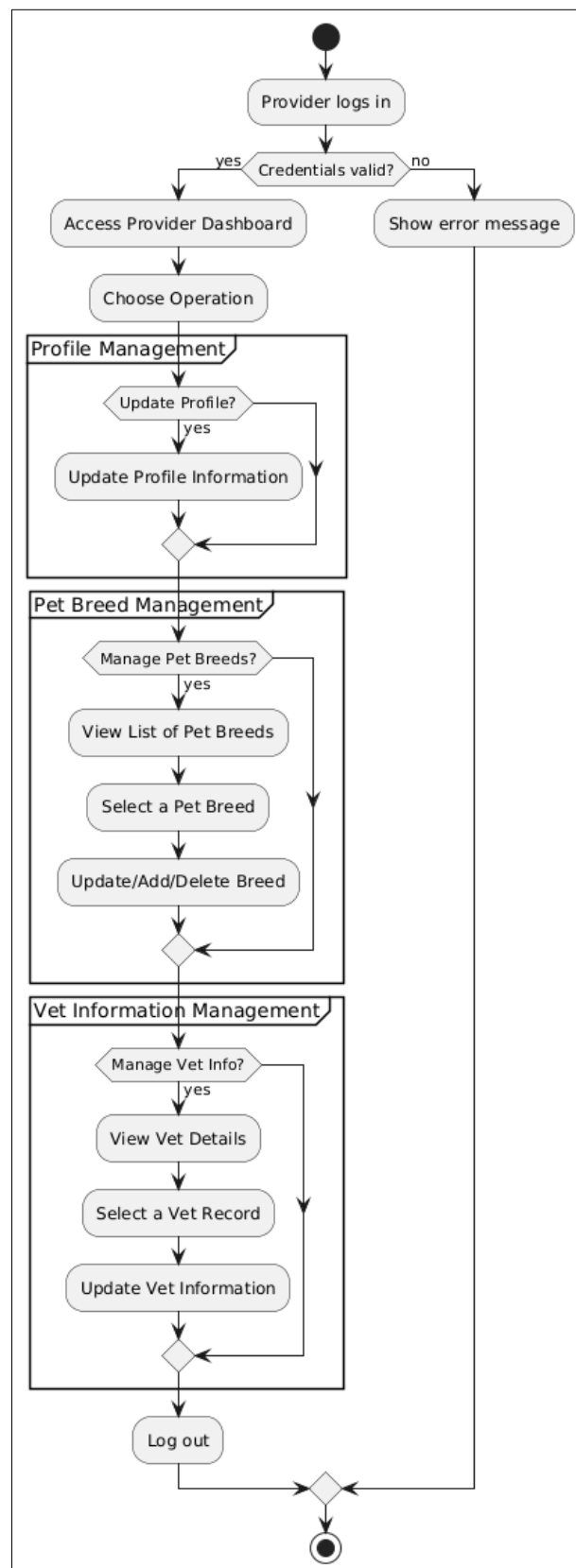
Data flow diagram 1

3.4 Activity diagram

3.4.1 Admin activity diagram

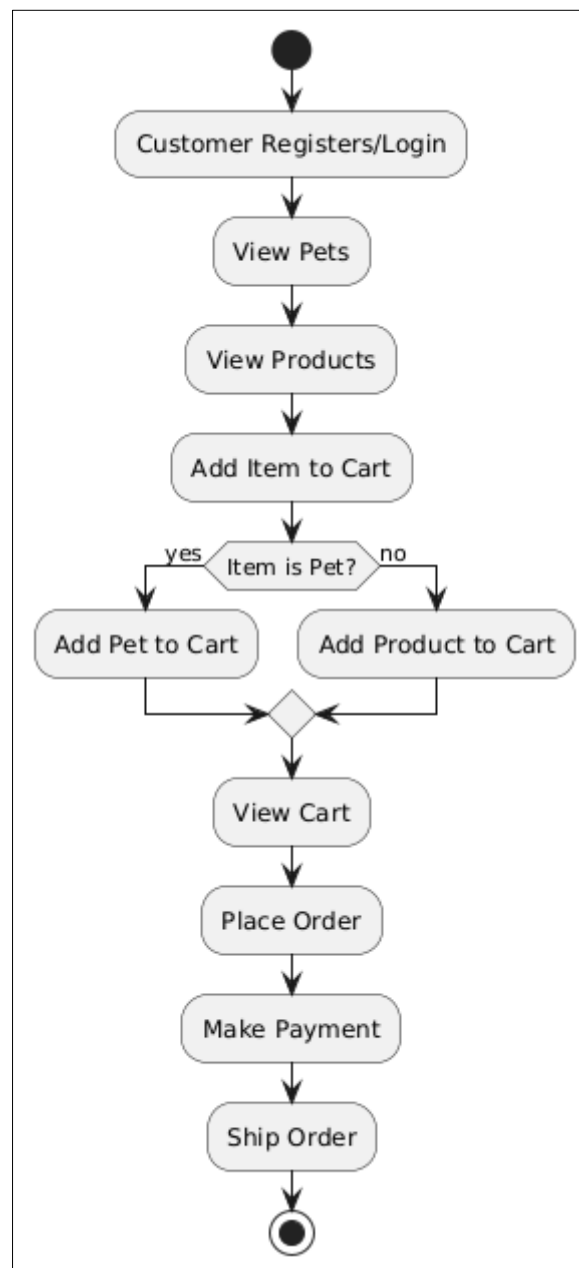


3.4.2 Provider activity diagram



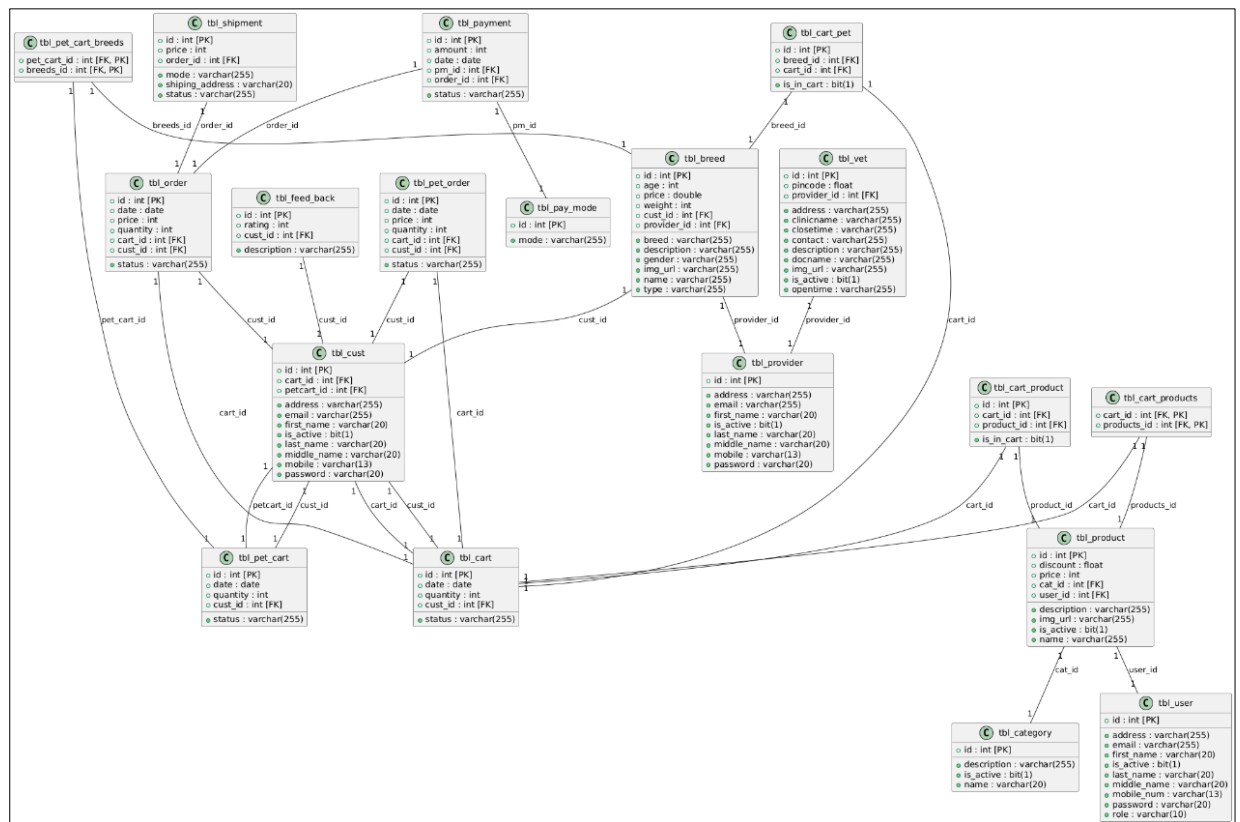
Provider activity diagram

3.4.3 Customer activity diagram



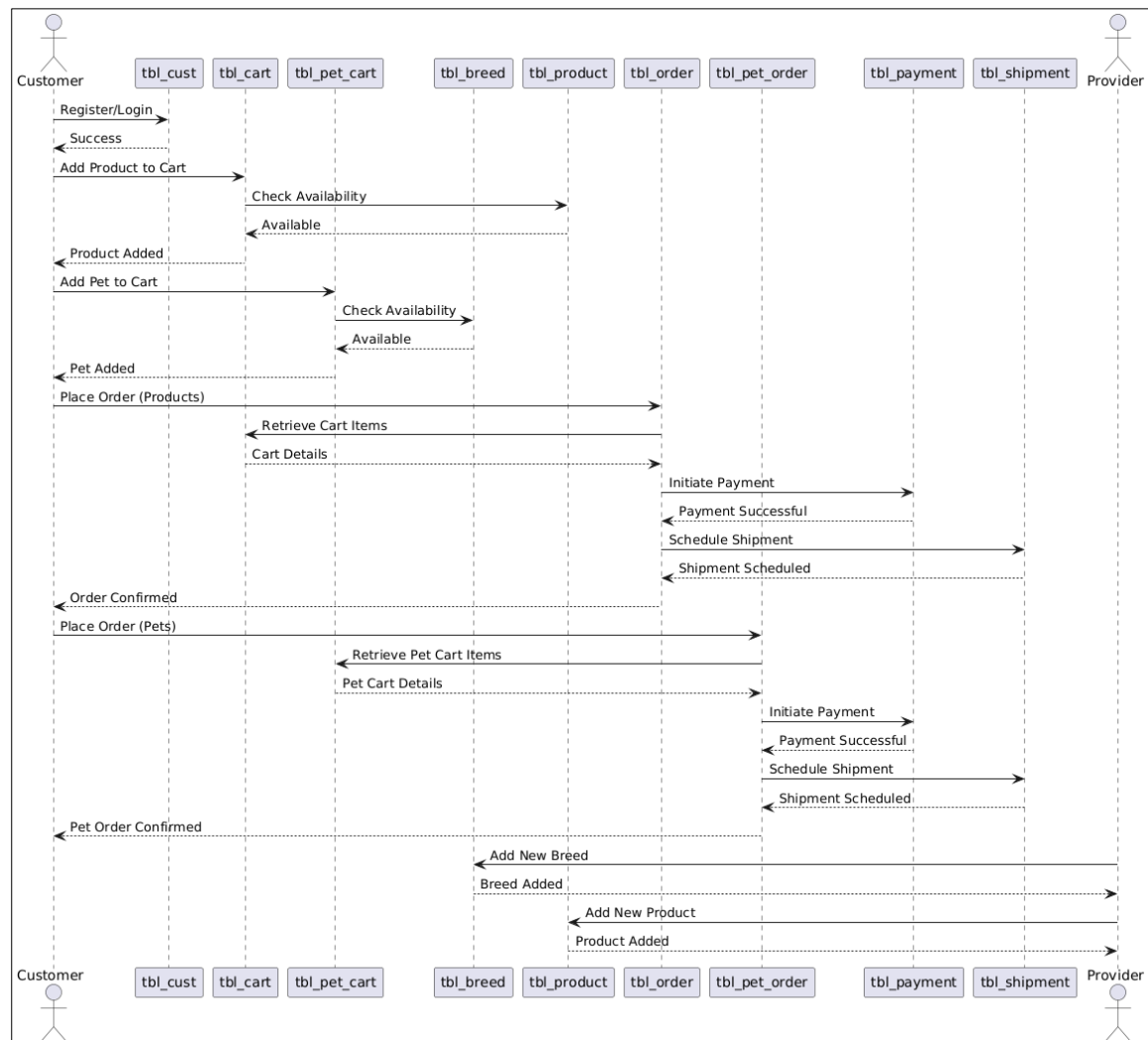
Customer activity diagram

3.5 Class diagram



Class diagram

3.6 Sequence diagram



Sequence diagram

4.2 Tables

The following table structures depict the database design.

```
mysql> use trustytails;
Database changed
mysql> show tables;
+-----+
| Tables_in_trustytails |
+-----+
| tbl_breed              |
| tbl_cart               |
| tbl_cart_pet           |
| tbl_cart_product       |
| tbl_cart_products      |
| tbl_category           |
| tbl_cust               |
| tbl_feed_back          |
| tbl_order              |
| tbl_pay_mode           |
| tbl_payment            |
| tbl_pet_cart           |
| tbl_pet_cart_breeds    |
| tbl_pet_order          |
| tbl_product            |
| tbl_provider           |
| tbl_shipment           |
| tbl_user               |
| tbl_vet                |
+-----+
```

Database structure

```
mysql> desc tbl_user;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	NO		NULL	
email	varchar(255)	NO	UNI	NULL	
first_name	varchar(20)	NO		NULL	
is_active	bit(1)	NO		NULL	
last_name	varchar(20)	NO		NULL	
middle_name	varchar(20)	YES		NULL	
mobile_num	varchar(13)	YES		NULL	
password	varchar(20)	NO		NULL	
role	varchar(10)	YES		NULL	

```
10 rows in set (0.58 sec)
```

User table

```
mysql> desc tbl_cust;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	NO		NULL	
email	varchar(255)	NO	UNI	NULL	
first_name	varchar(20)	NO		NULL	
is_active	bit(1)	NO		NULL	
last_name	varchar(20)	NO		NULL	
middle_name	varchar(20)	YES		NULL	
mobile	varchar(13)	YES		NULL	
password	varchar(20)	NO		NULL	
cart_id	int	YES	MUL	NULL	
petcart_id	int	YES	MUL	NULL	

```
11 rows in set (0.17 sec)
```

Customer table

```
mysql> desc tbl_provider;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	NO		NULL	
email	varchar(255)	NO	UNI	NULL	
first_name	varchar(20)	NO		NULL	
is_active	bit(1)	NO		NULL	
last_name	varchar(20)	NO		NULL	
middle_name	varchar(20)	YES		NULL	
mobile	varchar(13)	YES		NULL	
password	varchar(20)	NO		NULL	

```
9 rows in set (0.10 sec)
```

Provider table

```
mysql> desc tbl_product;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
description	varchar(255)	NO		NULL	
discount	float	YES		NULL	
img_url	varchar(255)	YES		NULL	
is_active	bit(1)	NO		NULL	
name	varchar(255)	NO		NULL	
price	int	NO		NULL	
cat_id	int	YES	MUL	NULL	
user_id	int	YES	MUL	NULL	

Product table

```
mysql> desc tbl_breed;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
age	int	NO		NULL	
breed	varchar(255)	NO		NULL	
description	varchar(255)	NO		NULL	
gender	varchar(255)	NO		NULL	
img_url	varchar(255)	YES		NULL	
name	varchar(255)	NO		NULL	
price	double	YES		NULL	
type	varchar(255)	NO		NULL	
weight	int	NO		NULL	
cust_id	int	YES	MUL	NULL	
provider_id	int	YES	MUL	NULL	

Breed table for pets

```
mysql> desc tbl_vet;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	NO		NULL	
clinicname	varchar(255)	NO		NULL	
closetime	varchar(255)	NO		NULL	
contact	varchar(255)	NO		NULL	
description	varchar(255)	NO		NULL	
docname	varchar(255)	NO		NULL	
img_url	varchar(255)	YES		NULL	
is_active	bit(1)	NO		NULL	
opentime	varchar(255)	NO		NULL	
pincode	float	YES		NULL	
provider_id	int	YES	MUL	NULL	

Veterinary table

```
mysql> desc tbl_cart;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
date	date	YES		NULL	
quantity	int	NO		NULL	
status	varchar(255)	YES		NULL	
cust_id	int	YES	MUL	NULL	

Cart table

```
mysql> desc tbl_order;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
date	date	YES		NULL	
price	int	NO		NULL	
quantity	int	NO		NULL	
status	varchar(255)	YES		NULL	
cart_id	int	YES	MUL	NULL	
cust_id	int	YES	MUL	NULL	

Order table

```
mysql> desc tbl_feed_back;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
description	varchar(255)	YES		NULL	
rating	int	NO		NULL	
cust_id	int	YES	MUL	NULL	

Feedback table


```
mysql> desc tbl_category;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
description	varchar(255)	NO		NULL	
is_active	bit(1)	NO		NULL	
name	varchar(20)	NO	UNI	NULL	

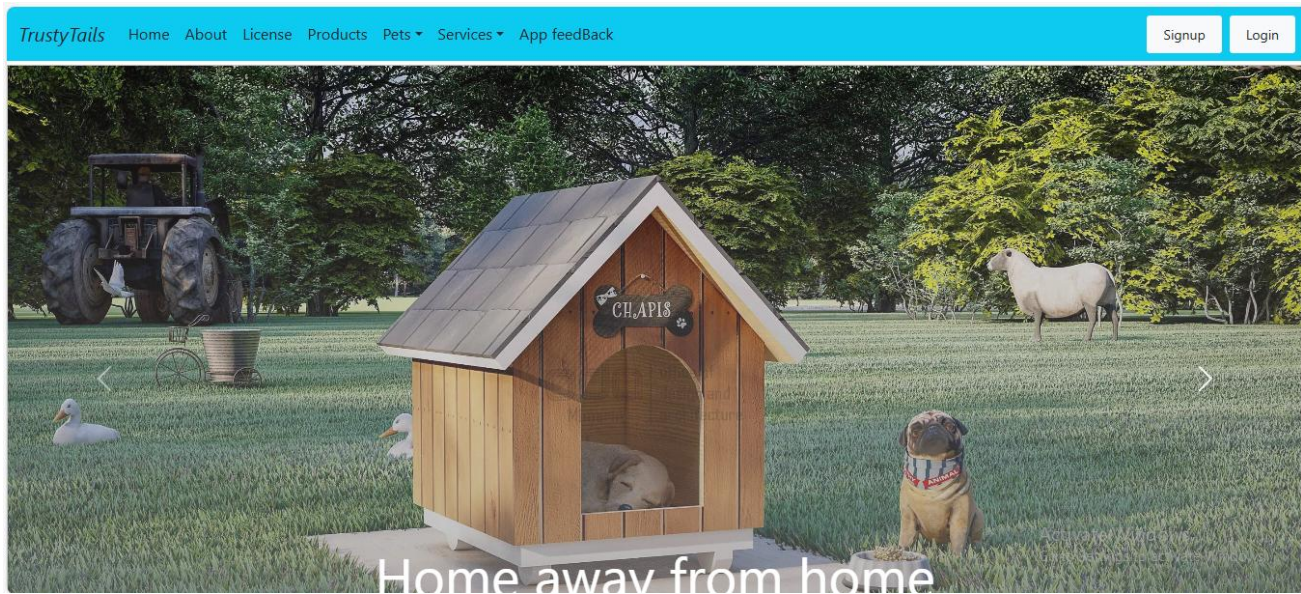
Product category table

```
mysql> desc tbl_payment;
```

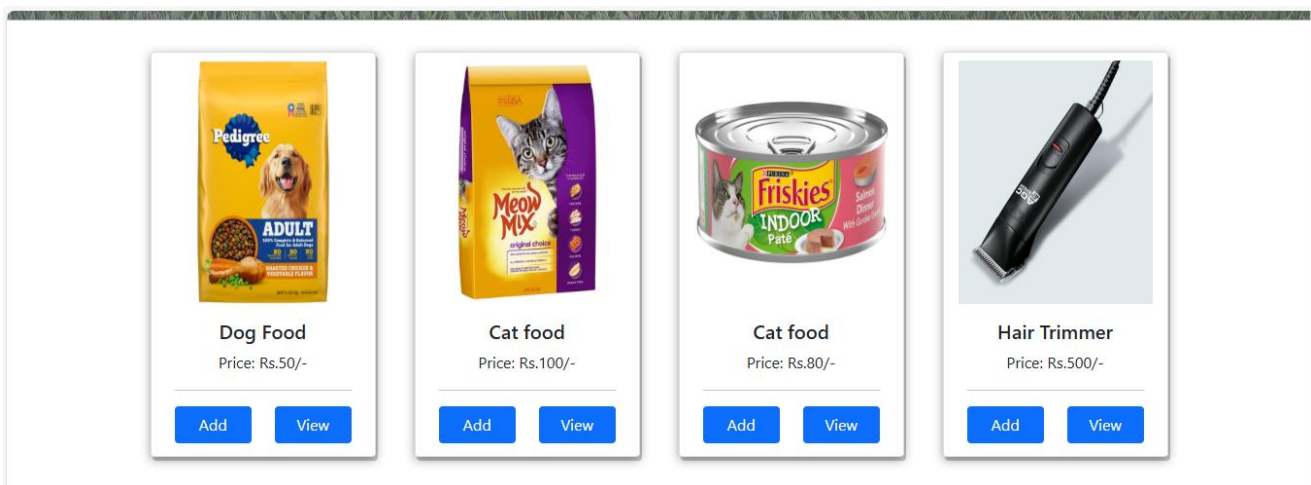
Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
amount	int	NO		NULL	
date	date	YES		NULL	
status	varchar(255)	NO		NULL	
pm_id	int	YES	MUL	NULL	
order_id	int	YES	MUL	NULL	

Payment table

5. SNAPSHOTS



Home page



Products listed

**Veterinary**

*Professional medical
care for your pet*

Book an
appointment

Shopping

Register
Login
View Cart


Quick Links

About Us



Activate Windows
Go to Settings to activate Windows.

Veterinary service



Add Breed

*Name:

*Pet Type:

*Breed:


*Gender:

*age:

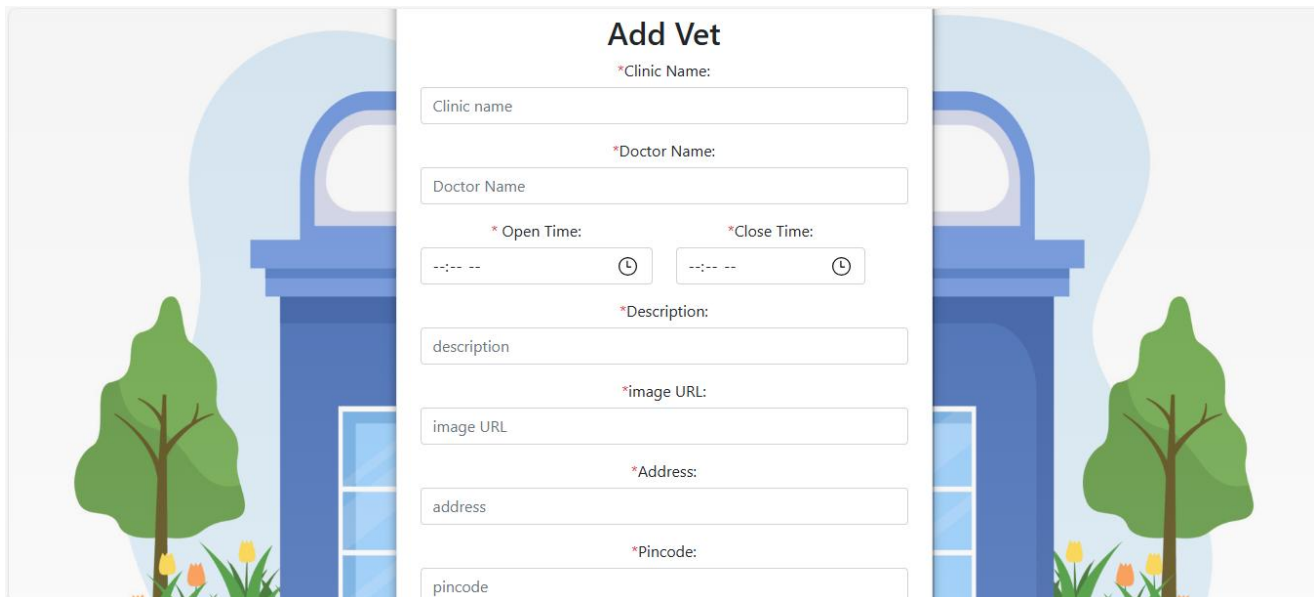
*Weight:

*Description:

*image URL:





Form for adding pet



Add Vet

*Clinic Name:

*Doctor Name:

* Open Time:  *Close Time: 




*Description:

*image URL:

*Address:

*Pincode:

Form for adding veterinary doctor

 <p>Cat Type:Cat Breed:Abyssinian Gender:female Age:1 Weight: 5 Description: Very cute cat Price: 0</p> <p>Buy</p>	 <p>Dog Type:Dog Breed:german shepherd Gender:male Age:2 Weight: 2 Description: Strong and healthy puppy Price: 0</p> <p>Buy</p>	 <p>Cat Type:Cat Breed:AmericanCurl Gender:female Age:2 Weight: 2 Description: Very cute cat Price: 0</p> <p>Buy</p>
--	--	--

Pets listed

Application Feedback

Rating:

★ ★ ★ ★ ★

Description:

User ID:

1

Submit Feedback

Feedback form

TrustyTails

Home

About

License

Products

Pets

Services

Products Cart

FeedBack


App feedBack

MyOrders

Profile

Logout

Shopping Cart



Dog Food

x 1

Price:50

Delete

Summary

TOTAL PRICE

50

CHECKOUT





Shopping


Register

Login

Quick Links


About Us





Shopping cart


TrustyTails
Home
About
License
Products
Pets
Services
Products Cart
FeedBack
App feedBack
MyOrders
Profile
Logout




TrustyTails is a one-stop shop for all pet owners, offering a comprehensive range of pet supplies for dogs, cats, rabbits, rodents, fishes, etc. Starting from nutritious foods to delicious treats and going far up to healthcare, grooming and training products, we at TrustyTails have everything to ensure the excellent well-being of your pets.

About us details

TrustyTails
Home
About
License
Products
Pets
Services
Products Cart
FeedBack
App feedBack
MyOrders
Profile
Logout



Your Orders



Dog Food

Very Tasty Dog Food

50

Your Order Booked on
2025-02-11

Will deliver in 2 days at
Morya residency

items in order are
1

Total amount paid is
50

Order details

6. CONCLUSION

The development of TrustyTails marks a significant step forward in addressing the needs of pet owners, sellers, and veterinarians through a unified and user-friendly platform. By leveraging modern technologies such as Spring Boot for the backend and React JS for the frontend, TrustyTails delivers a robust, scalable, and secure solution for buying and selling pets and pet products, as well as booking veterinary services. The platform's intuitive design, coupled with its comprehensive features, ensures a seamless experience for all users.

Throughout the project, several challenges were encountered, including the integration of secure payment gateways and the management of complex database relationships. However, these challenges were successfully overcome through careful planning, iterative development, and rigorous testing. The use of Spring Security ensured robust user authentication and data protection, while Spring Data JPA streamlined database operations, ensuring data integrity and efficiency.

TrustyTails not only meets its initial objectives but also lays the foundation for future enhancements. Potential improvements include the development of a mobile application, integration of AI-based pet health recommendations, and expansion of the product and service catalog. These enhancements will further solidify TrustyTails as a leading platform in the pet care industry.

In conclusion, TrustyTails demonstrates the successful application of modern web technologies to solve real-world problems. It bridges the gap between pet owners and service providers, offering a reliable and efficient platform for all pet-related needs. The project underscores the importance of innovation and user-centric design in creating impactful digital solutions.

7. REFERENCES

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- [5] <https://www.amazon.com/Agile-Software-Development-Principles-Patterns/dp/0135974445>
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