

Requirements: Graduation Project

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1.1 Purpose

The purpose of this project is to ensure that the **JPetStore** e-commerce website functions correctly, securely processes orders, and provides a seamless user experience for customers purchasing pet-related products.

1.2 Document Conventions

- **FR:** Functional Requirement
- **NFR:** Non-Functional Requirement
- **TR:** Test Requirement

1.3 Intended Audience and Reading Suggestions

This document is intended for:

- **Software Testers:** To design and execute test cases.
- **Developers:** To implement features based on requirements.
- **Project Managers:** To oversee the development and testing process.

1.4 Product Scope

The **JPetStore** platform allows users to:

- Browse pet-related products.
- Add products to a shopping cart.
- Securely complete purchases.
- Track and review past orders.

1.5 References

- **JPetStore Website:** <https://jpetstore.aspectran.com/>
 - **ISO 25010 Software Quality Model:** <https://www.iso.org/standard/35733.html>
 - **OWASP Security Guidelines:** <https://owasp.org/>
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2. Overall Description

2.1 Product Perspective

JPetStore is a web-based application that provides an online store for pet-related products. The system integrates with:

- A **payment gateway** for secure transactions.
- A **database** for managing users, products, and orders.

2.2 Product Functions

- **User Authentication:** Sign-up and Sign-in.
- **Product Browsing and Search:** Browse and search the product catalog.
- **Shopping Cart Management:** Add/remove items and update quantities.
- **Order Processing:** Secure checkout and payment.
- **Order Tracking:** Review past orders.

2.3 User Characteristics

- **Customers:** Regular users purchasing pet-related products.
- **Admins:** Manage products, orders, and user accounts.

2.4 Constraints

- The website should support **Chrome, Firefox, and Edge**.
- Payments will be processed through an **integrated payment gateway**.

2.5 Assumptions and Dependencies

- Users have a stable internet connection while making purchases.
 - The system is expected to handle **moderate traffic loads** efficiently.
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3. Specific Requirements

3.1 Functional Requirements (FR)

ID	Requirement	Description
FR1	User Registration	The system shall allow users to sign up with a unique username and password.
FR2	User Authentication	Users shall be able to sign in using their registered credentials.
FR3	Product Browsing	Users shall be able to browse products by category.
FR4	Product Search	Users shall be able to search for products using a search bar.
FR5	Shopping Cart Management	Users shall be able to add/remove items from the cart and update item quantities.
FR6	Order Placement	Users shall be able to proceed to checkout and complete an order.
FR7	Order Review	Users shall be able to review their past orders.

3.2 Non-Functional Requirements (NFR)

ID	Requirement	Description
NFR1	Performance	The website should load within 3 seconds for 95% of users.
NFR2	Security	User credentials shall be stored securely using encryption.
NFR3	Availability	The system should have 99.9% uptime.
NFR4	Compatibility	The website should be responsive on both desktop and mobile devices.

3.3 Test Requirements (TR)

ID	Requirement	Description
TR1	Functional Testing	Test user registration, login, product search, and cart operations.
TR2	Performance Testing	Test website response time under heavy load.
TR3	Security Testing	Perform SQL injection and penetration testing.
TR4	Usability Testing	Ensure the website is user-friendly on different devices.

4. Additional Notes

- **Security:** Ensure compliance with **OWASP Top 10** guidelines to prevent common vulnerabilities.
- **Scalability:** The system should be designed to handle future growth in traffic and product offerings.
- **Maintainability:** Code should be well-documented and modular for ease of updates and debugging.