**Software Requirements Specification (SRS) - Juice Shop: Secure E-Commerce Platform**

This document outlines the functional and non-functional requirements for the Juice Shop, a secure online retail platform.

**1. Introduction**

* **1.1 Purpose:** To define the requirements for a robust and secure e-commerce platform that allows customers to purchase products online safely and efficiently.
* **1.2 Scope:** The system will be a web-based application providing a full range of e-commerce functionalities, from user registration and product browsing to secure payment processing and order management.
* **1.3 Intended Audience:** This document is intended for project managers, developers, quality assurance engineers, and stakeholders involved in the development and maintenance of the Juice Shop platform.

**2. Overall Description**

* **2.1 Product Perspective:** A customer-facing, scalable, and secure e-commerce website with a comprehensive administrative backend.
* **2.2 Product Features:**
  + Secure user registration and authentication with multi-factor authentication (MFA).
  + A product catalog with detailed descriptions, images, pricing, and stock levels.
  + Advanced search and filtering capabilities for products.
  + A secure shopping cart and checkout process integrating with a trusted payment gateway.
  + User profile management, including order history, shipping addresses, and payment information.
  + An administrative dashboard for managing products, inventory, orders, and customer data.
* **2.3 User Classes and Characteristics:**
  + **Customer:** A registered or guest user who can browse products, make purchases, and manage their account.
  + **Administrator:** An authorized employee who can manage the platform's content and operations.
  + **Customer Service Representative:** An authorized employee who can assist customers with orders and account issues.

**3. System Features**

* **3.1 Functional Requirements:**
  + **User Management:**
    - Users shall be able to register for a new account with a unique email address and a strong password.
    - The system shall enforce strong password policies (e.g., length, complexity, and expiration).
    - Users shall be able to log in securely and enable/disable MFA.
    - Users shall be able to reset their password through a secure, token-based process.
  + **Product Management:**
    - The system shall display products with accurate information, including price, description, and availability.
    - Administrators shall be able to add, update, and remove products from the catalog.
  + **Order Processing:**
    - The system shall process orders through a secure, PCI-compliant payment gateway.
    - The system shall encrypt all sensitive customer and payment data.
    - Customers shall receive email confirmations for orders and shipping updates.
* **3.2 Non-Functional Requirements:**
  + **Security:**
    - All data transmission shall be encrypted using TLS 1.2 or higher.
    - The system shall be protected against common web vulnerabilities, including the OWASP Top 10 (e.g., SQL Injection, XSS, CSRF).
    - Regular security audits and penetration testing shall be conducted.
  + **Performance:**
    - The website shall load in under 3 seconds on a standard broadband connection.
    - The system shall handle at least 1,000 concurrent users without significant performance degradation.
  + **Reliability:** The system shall have an uptime of 99.9% or higher.
  + **Usability:** The user interface shall be intuitive and easy to navigate for all user types.

**Architectural Design**

Here is a high-level architectural diagram for the secure Juice Shop platform:

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