

Software Requirements Specification (SRS)

Project: Magento Open Source → Django Platform (AI-Assisted Rebuild)

Document Type: Functional & Non-Functional Requirements

Purpose: Define a complete, platform-independent specification for rebuilding the system.

1. Introduction

This document defines the functional and non-functional requirements for rebuilding an e-commerce platform originally based on Magento Open Source into a clean, scalable Django-based system.

The document is business-driven and independent of any specific implementation technology.

2. Scope

The system covers product management, customers, orders, payments, shipping, marketing, notifications, configuration, appearance, and extensibility via plugins.

The initial delivery focuses on an MVP, with phased expansion.

3. Definitions & Acronyms

MVP: Minimum Viable Product

SKU: Stock Keeping Unit

SRS: Software Requirements Specification

4. Functional Requirements

4.1 Product & Catalog Management

The system shall allow creation, update, activation, and deactivation of products.

The system shall enforce unique SKU for each product.

The system shall support product categorization and visibility control.

4.2 Customer Management

The system shall support registered and guest customers.

The system shall maintain customer profiles, addresses, and order history.

The system shall support customer grouping affecting pricing and promotions.

4.3 Cart & Checkout

The system shall allow users to add, update, and remove items from a cart.

The system shall calculate totals dynamically and convert a cart into an order upon confirmation.

4.4 Orders & Sales

The system shall create immutable order records.

The system shall support partial invoicing, shipping, and refunds.

4.5 Payments

The system shall support multiple payment methods.

The system shall confirm payments asynchronously and prevent duplicate charges.

4.6 Shipping & Fulfillment

The system shall calculate shipping costs based on address and method.

The system shall manage shipment lifecycle and tracking.

4.7 Promotions & Marketing

The system shall apply discounts based on configurable rules and conditions.

The system shall prevent invalid or conflicting promotions.

4.8 Reviews & Ratings

The system shall allow customers to submit reviews and ratings.

The system shall support moderation workflows.

4.9 Notifications & Messaging

The system shall send notifications triggered by business events.

The system shall support multiple communication channels.

4.10 Settings, Packages & Wallet

The system shall support store-specific configuration.

The system shall manage subscription packages and wallet balances.

4.11 Appearance & App Store

The system shall allow theme selection without affecting business logic.

The system shall support plugin installation with permission control.

5. Non-Functional Requirements

5.1 Performance

The system shall respond to API requests within acceptable latency under normal load.

5.2 Scalability

The system shall support horizontal scaling for increased traffic.

5.3 Security

The system shall enforce authentication, authorization, and data protection.

Sensitive financial data shall not be stored insecurely.

5.4 Reliability

The system shall ensure consistency of financial and order data.

Critical operations shall be idempotent.

5.5 Maintainability

The system shall follow clean architecture principles.

Business logic shall be isolated from infrastructure concerns.

5.6 Audit & Compliance

The system shall maintain audit logs for financial and critical operations.

6. Assumptions & Constraints

Initial release targets MVP scope.

Advanced enterprise features are planned for later phases.

7. Conclusion

This SRS document serves as the authoritative reference for designing, implementing, and validating the Django-based platform replacing Magento Open Source.