Unified Business Rules Document (SRS Ready)

Magento Open Source – Platform Independent

1. Product & Catalog Domain

- Product is a sellable entity with unique SKU.
- Product must belong to at least one category.
- Product can be enabled, disabled, or hidden.

2. Customer Domain

- Customer can be registered or guest.
- Registered customer has persistent profile and order history.
- Customer belongs to a group affecting pricing and promotions.

3. Cart / Checkout Domain

- Cart represents purchase intent, not a legal transaction.
- Prices in cart are temporary.
- Cart converts to order on checkout confirmation.

4. Sales / Orders Domain

- Order is a legal immutable sales record.
- Supports partial invoices, shipments, and refunds.

5. Payments Domain

- Order is paid only after confirmed payment.
- Payment must be idempotent.

6. Shipping / Fulfillment Domain

- Shipment created only for confirmed orders.
- Supports partial deliveries.

7. Promotions Domain

- Discounts apply based on conditions.
- Cannot result in negative price.

8. Reviews & Ratings Domain

- Reviews build trust and may require moderation.

9. Notifications Domain

- Notifications are event-driven.

- No duplicate messages allowed.

10. Settings / Wallet / Packages

- Each store has isolated configuration.

- Wallet is ledger-based.

11. Appearance & App Store

- Themes affect presentation only.

- Plugins must be isolated and permission-based.

Conclusion:

This document represents the complete business logic foundation for rebuilding Magento into a clean, scalable Django platform.

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.

Software Requirements Specification (SRS)

Section: Actors & Use Cases

Project: Magento Open Source → Django Platform

Purpose: Define system actors and their interactions with the system.

1. System Actors

1.1 Store Owner

Manages store configuration, products, orders, and subscriptions.

1.2 Admin

System-level administrator responsible for platform configuration and monitoring.

1.3 Customer (Registered)

End user with an account who can browse, purchase, and review products.

1.4 Customer (Guest)

End user without an account who can browse and place orders.

1.5 Payment Gateway

External system responsible for processing payments.

1.6 Shipping Provider

External system responsible for shipping and delivery tracking.

2. Core Use Cases

UC-01: Manage Products

Actor: Store Owner

Description: Create, update, activate, or deactivate products.

Outcome: Products become available or unavailable for sale.

UC-02: Browse Products

Actor: Customer

Description: Browse and search products by category or keyword.

Outcome: Product listings are displayed.

UC-03: Place Order

Actor: Customer (Registered / Guest)

Description: Add items to cart and complete checkout.

Outcome: Order is created.

UC-04: Process Payment

Actor: Payment Gateway

Description: Confirm or reject payment for an order.

Outcome: Order payment status updated.

UC-05: Ship Order

Actor: Store Owner / Shipping Provider

Description: Prepare and ship order items.

Outcome: Shipment created and tracked.

UC-06: Submit Review

Actor: Customer

Description: Submit rating and review for a purchased product.

Outcome: Review pending or published.

UC-07: Send Notification

Actor: System

Description: Notify users about order, payment, or shipment events.

Outcome: Message delivered through configured channel.

UC-08: Install Plugin

Actor: Store Owner

Description: Install or remove platform plugins.

Outcome: Feature enabled or disabled.

3. Conclusion

This section complements the SRS by defining actors and use cases, enabling clear understanding of system behavior and responsibilities.

SRS – Use Case Diagrams (Textual Representation)

Project: Magento Open Source → Django Platform

Purpose: Provide clear use case diagrams in a textual UML-style format suitable for documentation and reviews.

Diagram 1: Customer Purchase Flow

```
Customer | |--> Browse Products |--> View Product Details |--> Add to Cart |-->
Checkout |--> Select Address |--> Select Shipping |--> Select Payment |-->
Confirm Order |--> Receive Notification
```

Diagram 2: Store Owner Management Flow

```
Store Owner | |--> Manage Products |--> Manage Categories |--> Manage Orders |--> Approve Order |--> Create Shipment |--> Issue Refund |--> View Reports |--> Manage Store Settings
```

Diagram 3: Payment Processing Flow

```
Customer --> Checkout | v Payment Gateway | [Success | Failure] | v Update Order
Status | v Send Notification
```

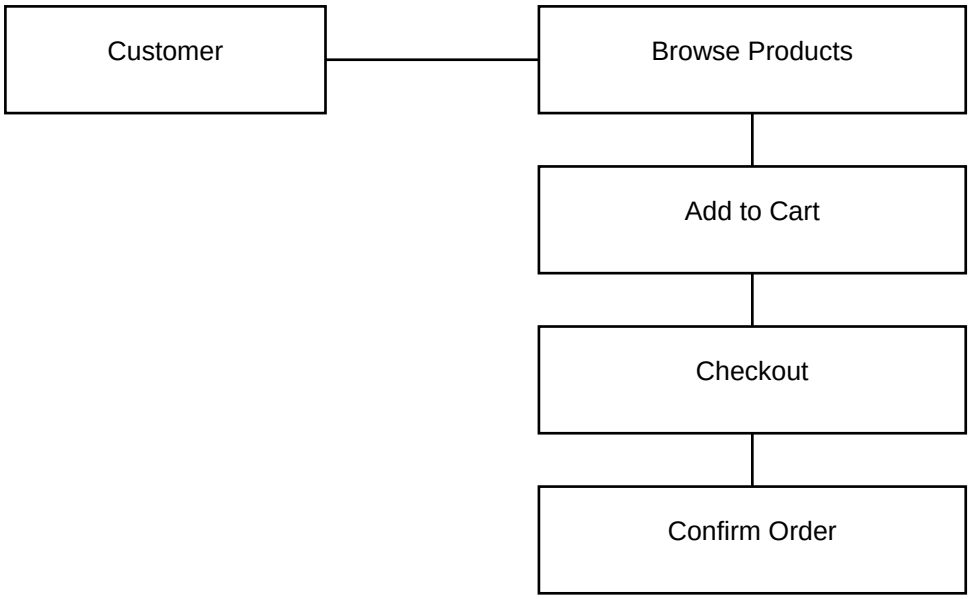
Diagram 4: Plugin Installation Flow

```
Store Owner | |--> Browse App Store |--> Select Plugin |--> Review Permissions
|--> Install Plugin |--> Enable / Disable Plugin
```

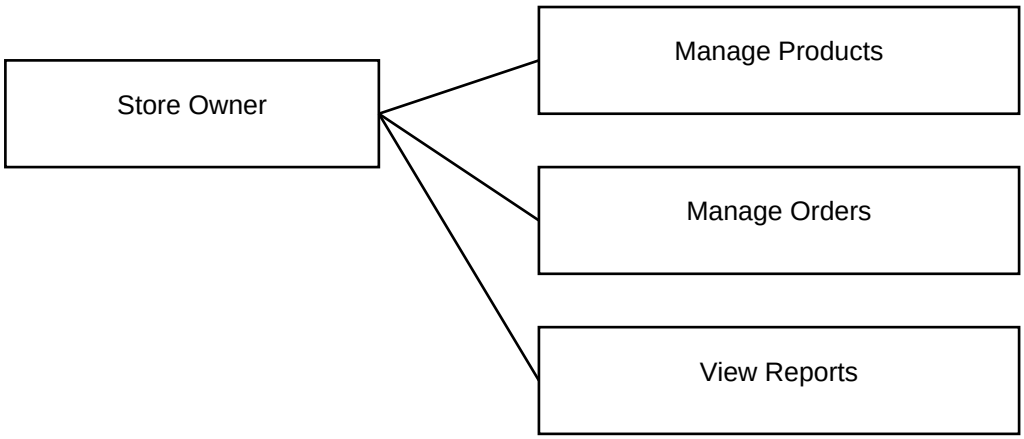
Conclusion

These textual use case diagrams complement the SRS by visually explaining system interactions in a simple, implementation-independent format.

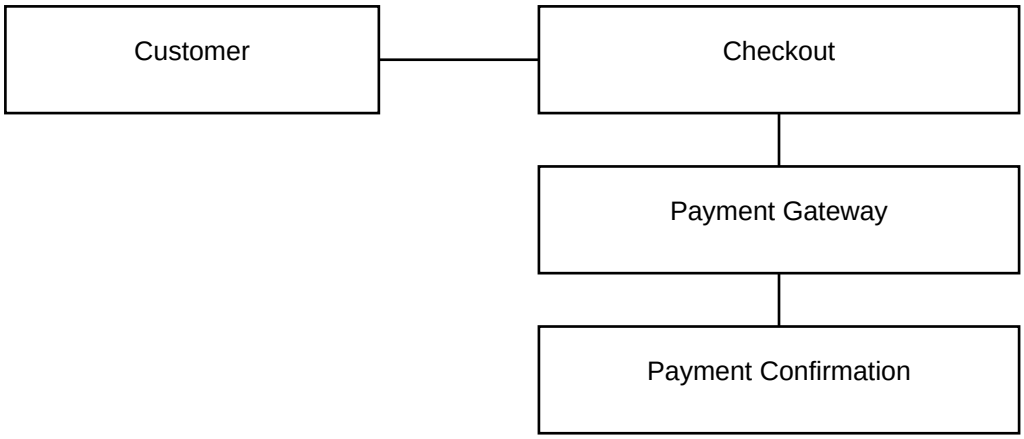
Use Case Diagram – Customer Purchase Flow



Use Case Diagram – Store Owner Management



Use Case Diagram – Payment Processing



SRS – Sequence Diagrams

1. Order Placement Sequence

```
Customer -> Cart : Add items
Customer -> Checkout : Start checkout
Checkout -> Pricing : Calculate totals
Checkout -> Payment : Initiate payment
Payment -> Gateway : Process payment
Gateway -> Payment : Payment confirmation
Payment -> Order : Mark order as paid
Order -> Notification : Send confirmation
```

2. Payment Failure Sequence

```
Customer -> Checkout : Confirm order
Checkout -> Payment : Initiate payment
Payment -> Gateway : Process payment
Gateway -> Payment : Failure response
Payment -> Order : Keep order pending
Order -> Notification : Send failure message
```

3. Shipping Sequence

```
Store Owner -> Order : Prepare shipment
Order -> Shipping : Create shipment
Shipping -> Carrier : Send shipment data
Carrier -> Shipping : Tracking number
Shipping -> Notification : Send tracking info
```