Software Requirements Specification (SRS)

Project: E-Commerce Web Application

Backend: .NET 8, Entity Framework Core, SQL Server

Frontend: Tailwind CSS

User Roles: Super Admin, Vendor, Seller

1. Introduction

This document describes the functional and non-functional requirements for the E-Commerce Web Application. The goal is to provide a scalable, secure, and role-based e-commerce platform.

2. Overall Description

The system will allow multiple vendors and sellers to manage products and orders, while Super Admin oversees platform-wide operations. Chat functionality is excluded in this phase.

3. User Roles

• Super Admin: Full system control, reports, user & vendor management.

• Vendor: Manage products, inventory, orders, and view reports.

• Seller: Purchase products, manage cart, wishlist, orders, reviews.

4. Functional Requirements

4.1 Registration

Users can register using email and password. Role assignment is controlled by Super Admin.

4.2 Login

Secure authentication using JWT-based login with role-based authorization.

4.3 User Management (Super Admin)

Super Admin can create, update, activate, deactivate users and vendors.

4.4 Category Management

Super Admin and Vendors can create, update, and delete product categories.

4.5 Product Management

Vendors can add, update, delete products with pricing, images, stock, and category mapping.

4.6 Coupon & Discount Management

Super Admin and Vendors can create discount coupons with validity, usage limits, and discount type.

4.7 Test Payment Gateway

System will support a sandbox/test payment gateway for order payment simulation.

4.8 Cart Management & Checkout

Users can add/remove products from cart, update quantities, and checkout using saved addresses.

4.9 Address Management

Users can add, update, delete multiple shipping and billing addresses.

4.10 Review & Feedback

Users can submit ratings and reviews for purchased products.

4.11 Vendor Reports

Vendors and Super Admin can view sales, orders, revenue, and performance reports.

4.12 Wishlist

Users can add and remove products from wishlist for future purchase.

4.13 Order Management

Users can view order history. Vendors can manage order status (Pending, Shipped, Delivered).

4.14 Inventory Management

System will track stock levels and notify vendors when stock reaches low threshold.

5. Non-Functional Requirements

• Performance: Support concurrent users with optimized queries.

• Security: JWT authentication, role-based access, encrypted passwords.

• Scalability: Modular architecture with EF Core and SQL Server.

• Availability: 99% uptime target.

• Maintainability: Clean architecture and layered design.

6. Technology Stack

Backend: .NET 8, Entity Framework Core

Database: SQL Server

Frontend: Tailwind CSS

Authentication: JWT

7. Assumptions & Constraints

• No chat functionality in current phase.

• Payment gateway is test-only.

• UI will be responsive using Tailwind CSS.