

E-Commerce Application — Requirements Document

Technology Stack

JSP, Java Servlets, JDBC, MySQL, Apache Tomcat (or other servlet container)

Modules

Admin, User (Customer)

1. Project Overview

Build a full-featured e-commerce web application using JSP/Servlets and JDBC with a MySQL backend. The application must support standard e-commerce workflows: product catalog, search & filtering, shopping cart (add/update/remove), checkout, payments, order tracking, user accounts, and an admin panel.

2. Stakeholders

- Product Owner / Client
- Project Manager
- Frontend Developer
- Backend Developer
- Database Administrator
- QA / Tester

3. Scope & Goals

In scope:

- User registration/login
- Product listing, categories, search, filters
- Shopping cart
- Checkout
- Admin panel

Out of scope:

- Multi-vendor marketplace
- Recommendation engine

4. Functional Requirements - User Module

- Register/Login/Logout
- Browse/Search/Filter products
- View product details
- Add/Update/Remove from cart
- Checkout, order placement, payment (mock)

- Order history & tracking
- Manage addresses
- Wishlist (optional)

5. Functional Requirements - Admin Module

- Admin login
- Dashboard with KPIs
- Product/Category management (CRUD)
- Inventory management
- Order management (status updates)
- User management
- Reports (sales, top products)

6. Non-Functional Requirements

- Performance <2s
- Security (SQL injection prevention, CSRF/XSS protection, password hashing)
- Scalability (connection pooling)
- Reliability (transaction-safe checkout)
- Maintainability (MVC architecture)
- Logging & backup strategy

7. Database Model (Key Tables)

- users (id, name, email, password_hash, phone)
- admins
- categories
- products
- product_images
- carts, cart_items
- orders, order_items
- payments
- addresses
- coupons
- reviews
- audit_logs

8. Servlet URLs

/, /products, /product?id=, /cart, /cart/add, /cart/update, /checkout, /order/place, /user/login, /user/register, /admin

9. Acceptance Criteria

- User can register, add products to cart, and place order
- Orders are stored in DB and visible to users/admins
- Checkout process is transactional
- Security measures implemented

10. Future Enhancements

- Real payment gateway
- Shipping API integration
- Recommendation engine
- Multi-role admin access
- Analytics dashboard