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