Aim: To develop a software requirement specification (SRS) document in IEEE format for online E-Commerce Application/System

Software Requirements Specification (SRS)

For: *Smart Shopping – B2C eCommerce Platform*
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1. Introduction

1.1 Purpose

This document defines the requirements for **Smart Shopping**, a B2C eCommerce platform that allows users to browse, compare, and purchase products directly from businesses through a seamless online experience.

1.2 Scope

Smart Shopping enables vendors to create and manage digital storefronts, while customers can register, search for products, compare prices, make purchases, and track deliveries. The system supports secure payment processing, order tracking, real-time support, and personalized shopping experiences.

1.3 Definitions, Acronyms, and Abbreviations

- **B2C**: Business to Consumer

- **UI/UX**: User Interface/User Experience

- **SSL**: Secure Sockets Layer

- **SKU**: Stock Keeping Unit

- **API**: Application Programming Interface

1.4 References

- IEEE Std 830-1998 Software Requirements Specification

- PCI DSS Compliance Documentation

- Indian Information Technology Act & E-Commerce Guidelines

1.5 Overview

Smart Shopping is designed to be a mobile-friendly eCommerce platform that connects businesses with consumers. It provides core features like product search, shopping carts, user reviews, and secure transactions. Built for scalability and usability, it will feature separate dashboards for admins, vendors, and customers

2. Overall Description

2.1 Product Perspective

Smart Shopping is a standalone SaaS-based B2C eCommerce web application designed using a modular microservices architecture. It integrates with third-party APIs for logistics, payments, and analytics to provide a scalable, flexible, and secure shopping experience.

2.2 Product Functions

- User registration, login, and profile management
- Product catalog browsing with filtering options
- Product comparison by features and pricing
- Shopping cart and wishlist functionalities
- Secure checkout and multiple payment methods
- Real-time order tracking and history
- Dashboards for vendors and administrators
- Product review and rating system
- Live chat for customer support

2.3 User Classes and Characteristics

User Role Description

Admin   Manages users, vendors, categories, and system reports

Vendor   Handles product listings, inventory, and order fulfillment

Customer Browses, compares, purchases products, and tracks deliveries

2.4 Operating Environment

- **Browsers:** Chrome, Firefox, Safari, Edge
- **Operating Systems:** Windows, macOS, Linux, Android, iOS

- **Backend:** Node.js / Django / Spring Boot

- **Frontend:** React / Angular

- **Database:** MySQL / MongoDB

- **Hosting:** AWS / Google Cloud / Azure

2.5 Design and Implementation Constraints

- Fully responsive across devices

- Enforced HTTPS for secure communication

- Compliant with GDPR and other data protection regulations

- Payment systems must adhere to PCI DSS standards

2.6 User Documentation

- Online manuals and quick-start guides for vendors and admins

- FAQ section and integrated chatbot for customer support

2.7 Assumptions and Dependencies

- Users have access to stable internet and compatible devices

- Third-party APIs for payments and shipping are operational

- Vendors provide and maintain accurate product information

3. Specific Requirements

3.1 Functional Requirements

- **FR-1: User Account Management**
  Users can register, login, reset passwords, and manage profiles.

- **FR-2: Product Management**
  Vendors can manage product listings with categories, images, and stock. Customers can search and filter products.

- **FR-3: Product Comparison & Wishlist**
  Customers can compare items and save products for later.

- **FR-4: Cart & Checkout**
  Add/edit/delete cart items; secure payments via credit/debit cards, wallets, or UPI.

- **FR-5: Order & Delivery Tracking**
  Real-time order tracking and access to order history.

- **FR-6: Review System**
  Users can leave ratings and reviews for purchased products.

- **FR-7: Dashboards (Admin/Vendor)**
  Manage users, orders, products; access reports and resolve issues.

- **FR-8: Support System**
  Integrated support chat and contact form for assistance.

3.2 External Interface Requirements

- **3.2.1 User Interfaces**
  Responsive and accessible UI (HTML5, CSS3, JavaScript).

- **3.2.2 Hardware Interfaces**
  Standard internet-enabled device is sufficient.

- **3.2.3 Software Interfaces**

  - Payments: Stripe, Razorpay, PayPal

- o Notifications: Twilio, SendGrid

- o Shipping: Delhivery, BlueDart APIs

3.3 Non-Functional Requirements

- **NFR-1: Performance**
<2s page load time, scalable for 20,000+ users.

- **NFR-2: Security**
HTTPS, encrypted data, and role-based access control.

- **NFR-3: Availability**
99.95% uptime with cloud failover.

- **NFR-4: Usability**
Intuitive, mobile-optimized UI with guided assistance.

3.4 System Features

- Personalized product suggestions

- Coupon and discount management

- Email/push order alerts

- AI-powered chatbot for FAQs

- Loyalty and referral rewards system

4. Appendices

- Appendix A: UI Wireframes (optional)

- Appendix B: Glossary of Terms

- Appendix C: Database Schema (ER Diagram)

- Appendix D: System Architecture Overview

Conclusion

This SRS defines the foundational requirements for Smart Shopping, a scalable, secure, and user-centric B2C eCommerce solution. It ensures clarity for all stakeholders involved in its development and deployment.