E-Commerce Shopping Application Project Documentation
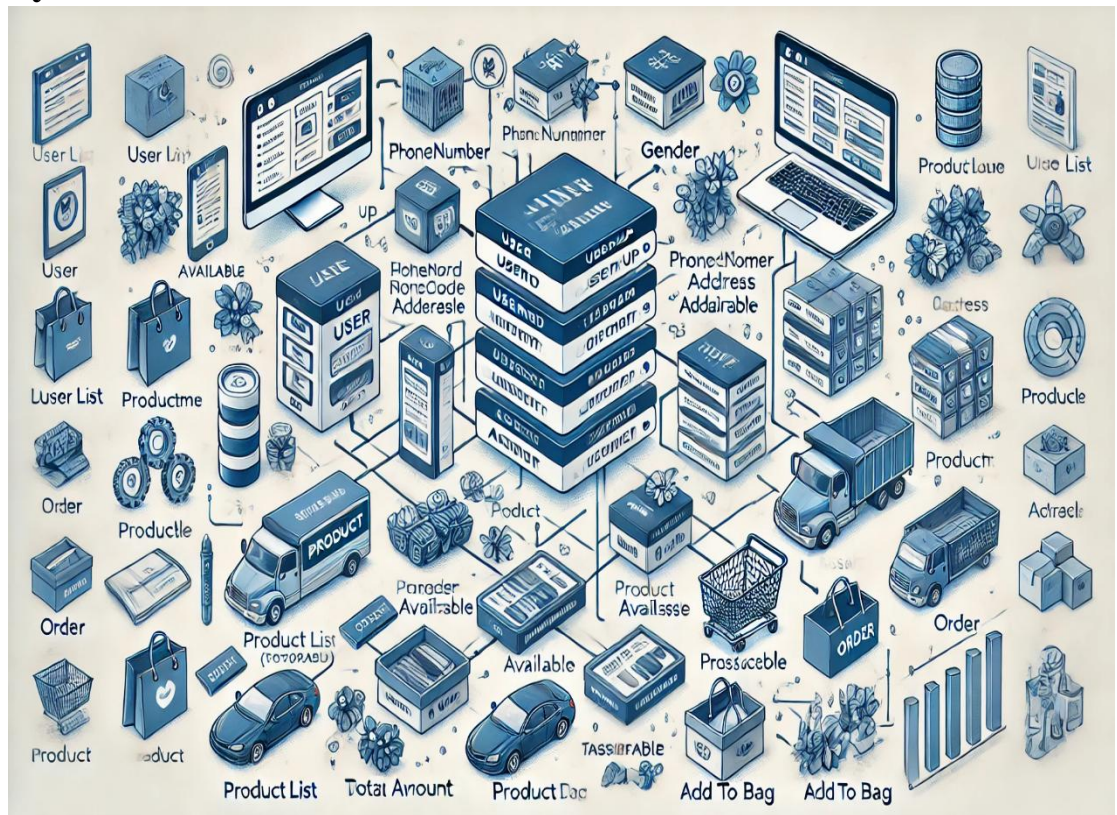
1. Project Overview

The E-Commerce Shopping Application is a web-based platform developed using modern web technologies. It enables users to browse products, add items to their Wishlist or cart, and proceed to checkout. An Admin Panel is provided for managing products.

1.1   Technologies Used

Component	Technologies Used
Frontend	Angular, HTML, CSS, Bootstrap, java Script
Backend	Spring Boot, MySQL, Spring Security, JWT Token
Tools	VS Code, Eclipse, MySQL Workbench
Version Control	Git & GitHub

1.2   System Architecture

2. Features Implemented

2.1 User Authentication & Authorization

- Secure login and signup using JWT token-based authentication.

- Spring Security ensures user role management (Admin & Customer).

2.2 Product Filtering & Searching

- Users can filter products by Gender, Brand, Colour, Price, and Product Type.

- A search bar allows quick access to desired products.

2.3 Wishlist & Add to Bag

- Users can save products for later.

- Easily add products to the shopping cart.

2.4 Checkout Process

- Users can proceed to checkout and place orders (Payment integration not included).

2.5 Admin Panel

- Admin can add, update, and delete products.

2.6 Email Notifications

- Users receive an email confirmation upon successful order placement.

3. Technology Stack

Layer	Technology
Frontend	Angular, TypeScript, HTML, CSS, Bootstrap
Backend	Spring Boot, Spring Security, JWT Authentication
Database	MySQL (via MySQL Workbench)
Email Service	Java Mail Sender for notifications

4. Implementation Steps

4.1 Frontend Development (Angular)

1. Set up an Angular project using Angular CLI.
2. Design UI using HTML, CSS, and Bootstrap.
3. Implement routing for seamless navigation.
4. Use Angular Services to communicate with the backend.
5. Implement JWT authentication for secure user sessions.

4.2 Backend Development (Spring Boot)

1. Create a Spring Boot project with dependencies like Spring Security, JWT, MySQL, and JavaMailSender.
2. Develop REST APIs for authentication, product management, cart, and checkout.
3. Implement user roles (Admin & Customer) using Spring Security.
4. Integrate MySQL for data storage.
5. Configure JavaMailSender for email notifications.
   (Insert an ER Diagram here showing the database schema.)

5. Pages Developed

Page Name	Description
Logo Page	Displays the application logo on launch.
Signup Page	Allows new users to register.
Login Page	Authenticates users before accessing the application.
Home Page	Displays product listings with filtering options.
Wishlist	Stores saved products for later purchase.

Add to Bag	Shows items added to the shopping cart.
Checkout Page	Displays order summary before placing an order.
Product Details Page	Displays detailed information about a product.
Place Order Page	Confirms order placement.
Admin Page	Allows admins to manage products.
Add Product Page	Admin interface for adding new products.

6. Project Limitations

1. **No Payment Gateway** - Currently, payments are not integrated.
2. **Not Hosted Yet** - The application runs locally and is not yet deployed.

7. Future Enhancements

- **Payment Gateway Integration** (e.g., PayPal, Stripe).
- **User Review & Ratings System** for products.
- **Product Recommendation Engine** using AI.
- **Order Tracking System** with shipment updates.

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