

E-Commerce Online Laptop Shopping System

(Synopsis Document)

Abstract

In today's digital era, online shopping has become an essential part of daily life. The E-Commerce Online Laptop Shopping System is designed to provide a simple, secure, and user-friendly platform for purchasing laptops online.

The system enables users to view laptop specifications, compare prices, add products to a shopping cart, and make purchases. It also provides an admin interface for managing products and viewing orders.

Developed in Java with JDBC and MySQL, the project demonstrates a practical implementation of e-commerce using core and advanced Java concepts.

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1. Introduction

Traditional laptop shopping involves visiting physical stores, comparing models manually, and spending more time and effort. The proposed system overcomes these challenges by offering a digital platform where:

Customers can browse laptops by brand, price, or specifications.
Admins can easily manage inventory and monitor sales.
Secure and reliable transactions are ensured.

This project is scalable and can be extended into a full-fledged e-commerce system with additional features like payment gateways, delivery tracking, and customer reviews.

2. Objectives

The objectives of this project are:

- To provide an online platform for purchasing laptops.
- To simplify the shopping process with search and filtering features.
- To implement a shopping cart and checkout system.
- To enable admin control for adding, updating, and deleting products.
- To maintain a database of users, products, and transactions.
- To provide a secure login system for both users and admins.

3. System Scope

Users: Register, log in, browse laptops, add to cart, and purchase.

Admin: Manage laptops, categories, and view customer orders.

Database: Maintain records of customers, laptops, and transactions.

Future enhancements may include:

Payment gateway integration.

Recommendation system based on user preferences.

Delivery tracking system.

4. System Features Modules

4.1 User Module

Register/Login system
Search laptops by brand, price, and category
View laptop specifications and images
Add to cart and checkout
View purchase history

4.2 Admin Module

Add/Edit/Delete laptop details
Manage categories and stock
View sales and customer details

4.3 Shopping Cart Module

Add/remove items
Show total amount dynamically

4.4 Payment Module (Simulation)

Cash on Delivery
Card payment simulation (basic validation)

5. System Requirements

5.1 Hardware Requirements

Processor: Intel i3 or above

RAM: Minimum 4GB

Hard Disk: 250 GB or more

5.2 Software Requirements

Programming Language: Java (JDK 8 or above)

Database: MySQL / Oracle

Server: Apache Tomcat (for JSP/Servlet version)

IDE: Eclipse / NetBeans / IntelliJ

6. System Design

6.1 ER Diagram (Entities)

User (UserID, Name, Email, Password, Address)

Admin (AdminID, Username, Password)

Laptop (LaptopID, Brand, Model, Price, Specifications, Stock)

6.2 Admin Module

Add/Edit/Delete laptop details

Manage categories and stock

View sales and customer details

6.3 Shopping Cart Module

Add/remove items

Show total amount dynamically

6.4 Payment Module (Simulation)

Cash on Delivery

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7. System Requirements

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8.System Design

8.1 ER Diagram (Entities)

User (UserID, Name, Email, Password, Address)

Admin (AdminID, Username, Password)

Laptop (LaptopID, Brand, Model, Price, Specifications, Stock)

Cart (CartID, UserID, LaptopID, Quantity)

Order (OrderID, UserID, LaptopID, Quantity, TotalPrice, Date)

8.2 Data Flow Diagram (Level 0)

User → Login/Register → System

User → Browse Laptops → Database

User → Add to Cart → System

User → Place Order → Order DB

Admin → Manage Products → Database

9. Technology Stack

Frontend: Java Swing / JSP-Servlet + HTML/CSS

Backend: Java, JDBC

Database: MySQL

Server (for web version): Apache Tomcat

10. Advantages

Time-saving and convenient.

Easy laptop comparison.

Centralized management of products.

Multiple users supported at the same time.

Scalable for future expansion.

11. Limitations

No real payment gateway (only simulation).

Delivery tracking not implemented.

Works only for laptops (not a full e-commerce portal).

12. Conclusion

The E-Commerce Online Laptop Shopping System is a Java-based project designed to demonstrate the application of software engineering concepts in real-world scenarios. The system successfully allows customers to browse, select, and purchase laptops while enabling the admin to manage the product inventory.

With further enhancements such as payment gateway integration, customer reviews, and delivery management, the system can evolve into a complete e-commerce platform.