

Scoop Labs Project Lab

Full Stack Development Project Brief

Project Title: E-commerce Marketplace

Difficulty Level: Advanced

Estimated Duration: 6–8 Weeks

Suggested Stack: MERN (MongoDB, Express.js, React, Node.js)

Project Overview

In this project, you will build a **full-stack E-commerce Marketplace application** that allows users to browse products, add items to a shopping cart, and complete a checkout process. The application will include both **customer-facing features and an administrative dashboard** for managing products and orders.

The goal of this project is to help students understand how real-world online shopping platforms work, including **product catalog management, secure user authentication, order processing, and payment workflows**.

Students will implement a simplified but functional version of an e-commerce platform while learning how to design scalable web applications.

All required tools and services for this project are available through **free development tiers**, making it possible to complete the project without paid services.

Why This Project Matters

E-commerce platforms are among the most common types of modern web applications. Many companies require developers who understand how to build systems that handle **product catalogs, customer accounts, shopping carts, and secure checkout flows**.

This project demonstrates the ability to build a **complex full-stack application with multiple components working together**, including authentication, database management, and payment integration.

Completing this project will help students understand how to design **secure, scalable applications** that handle real-world business logic.

A well-implemented e-commerce project also becomes a **strong portfolio project**, as it demonstrates multiple development skills in a single application.

Learning Outcomes

By completing this project, students will learn and practice:

- Designing full-stack applications using the **MERN stack**
- Managing application state in complex interfaces
- Implementing **secure user authentication and authorization**
- Designing advanced database relationships and product models
- Building product catalog systems with search and filtering
- Integrating payment gateways for checkout simulation
- Implementing order processing and inventory tracking
- Building role-based admin dashboards for managing products and orders

Project Requirements

Your e-commerce application should include the following core features:

Product Catalog

- Display a list of available products
- Each product should include images, description, price, and category
- Implement search and filtering functionality

Shopping Cart

- Allow users to add or remove products from their cart
- Update item quantities
- Display total price calculation

User Accounts

- User registration and login functionality
- Store user information securely
- Allow users to view their order history

Checkout and Payment

- Implement a checkout workflow
- Integrate payment processing using **Stripe test mode or similar sandbox payment services**

Students should use **test APIs** that simulate payments without using real money.

Order Management

- Store order details in the database
- Display order confirmation after checkout
- Track order history for each user

Admin Dashboard

- Admin interface to add, edit, or delete products
- Manage product inventory
- View customer orders

Responsive Design

- The application should work properly on **desktop, tablet, and mobile devices**

Technical Guidelines

Students are encouraged to follow the guidelines below while implementing the project.

Frontend

- Use **React** to build the user interface
- Implement state management using **React Context or Redux**
- Create reusable UI components

Backend

- Use **Node.js** and **Express.js** to build REST APIs
- Implement **JWT-based authentication** for secure user sessions

Database

- Use **MongoDB** to store product data, user accounts, and order information
- Design database schemas for products, users, and orders

Payment Integration

- Use **Stripe test mode** or similar sandbox environments to simulate payments
- Ensure that payment logic is handled securely through backend APIs

Free Development Tools

Students can complete this project using the following free tools:

- **VS Code** for development
- **GitHub** for version control and repository hosting
- **MongoDB Atlas (Free Tier)** for database hosting
- **Vercel / Netlify** for frontend deployment
- **Render** for backend hosting

These platforms offer free tiers suitable for this project.

Bonus Challenges (Optional)

Students who want to enhance their project can add additional features such as:

- Product reviews and ratings
- Email notifications for order confirmation
- Wishlist functionality
- Seller dashboard for managing products
- Inventory alerts when stock levels are low

These enhancements demonstrate more advanced full-stack development skills.

Submission Guidelines

To receive the **Project Completion E-Certificate**, students must submit the following:

Required

- GitHub repository link containing the complete project source code
- Live deployed project link

Students can deploy their project using free platforms such as **Vercel, Netlify, or Render**.

Optional (Recommended)

- 2-3 screenshots demonstrating the application interface and features

All submissions must be made through the **official Scoop Labs Project Lab submission form**.

Submission Form:

<https://scooplabs.in/project-lab>

Ensure that your GitHub repository includes a **README file explaining the project setup and features**.

Certification

Students who successfully complete and submit their project will receive a **Project Completion E-Certificate from Scoop Labs, an Authorized Training Partner of the National Skill Development Corporation (NSDC) under the Skill India Mission**.

This certification recognizes the successful completion of an industry-oriented development project.

Project Showcase Opportunity

Selected high-quality submissions may be **featured in the Scoop Labs Project Gallery**.

Projects showcased in the gallery serve as a **public portfolio reference**, providing additional credibility when students share their work with recruiters and potential employers.

Need Help?

If you have questions or face issues while building the project, you can contact the Scoop Labs team for guidance.

Support Email:

info@scooplabs.in

Scoop Labs Project Lab

Building **industry-ready projects for aspiring developers.**

Scoop Labs is an **Authorized Training Partner of the National Skill Development Corporation (NSDC)** under the **Skill India Mission**, committed to helping learners develop practical technical skills through real-world projects.