

# **Building an E-Commerce Application Using Claude-Assisted Coding**

**Duration: 2 days**

## **Prerequisites**

- Basic understanding of HTML, CSS, and JavaScript
- Familiarity with any backend language
- Basic understanding of APIs and databases
- Access to Claude (Anthropic) or Claude API

## **Day 1 — Foundations & Core Store Development**

### **Module 1 — Introduction to AI-Assisted Development with Claude**

- Overview of Claude for coding
- Prompt engineering for software development
- Using Claude to generate architecture, code, tests, and documentation
- Comparing traditional vs AI-assisted development workflows
- Best practices for secure and reliable AI coding

#### **Lab 1**

- Setting up development environment
- Writing first coding prompts to Claude
- Generating boilerplate project structure
- Reviewing and refining AI-generated code

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### **Module 2 — E-Commerce System Architecture**

- Key components of an E-Commerce platform
  - Frontend
  - Backend APIs
  - Database
  - Payment systems
- Monolithic vs Microservices approach
- Designing scalable architecture using Claude
- Database schema design for products, users, orders

#### **Lab 2**

- Use Claude to generate:
  - System architecture diagram (text-based)
  - Database schema
  - API endpoints specification

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### **Module 3 — Product Catalog & UI Development**

- Designing product listing pages
- Product details view
- Categories and filtering
- Responsive UI considerations
- Using Claude to generate frontend components (React/Angular/Vue or plain JS)

### Lab 3

- Build Product Listing Page
  - Create Product Detail Page
  - Implement category filter
  - Populate with mock data generated via Claude
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## Module 4 — Backend Setup & Product APIs

- Creating REST APIs for products
- CRUD operations
- Database integration
- Validation and error handling
- Generating backend code using Claude

### Lab 4

- Implement Product API endpoints:
    - Get products
    - Add product
    - Update product
    - Delete product
  - Connect frontend to backend
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## Day 2 — Cart, Checkout & Deployment

### Module 5 — Shopping Cart Implementation

- Cart design patterns
- Session vs persistent cart
- Add/remove/update items
- Price calculation and totals
- State management

### Lab 5

- Build Shopping Cart functionality
  - Add items from catalog
  - Update quantities
  - Calculate totals dynamically
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## **Module 6 — User Authentication & Security**

- User registration and login
- Session management / JWT tokens
- Role-based access (Admin vs Customer)
- Security considerations with AI-generated code

### **Lab 6**

- Implement authentication APIs
  - Create login and signup UI
  - Protect checkout endpoint
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## **Module 7 — Checkout & Order Management**

- Checkout workflow design
- Address management
- Order creation
- Inventory update logic
- Integrating payment gateway (simulation)

### **Lab 7**

- Implement Checkout flow
  - Create Order API
  - Simulate payment processing
  - Store order history
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## **Module 8 — Testing, Optimization & Deployment**

- Using Claude for test case generation
- Unit and integration testing
- Code review with AI
- Performance considerations
- Deployment strategies (cloud / local server)
- Documentation generation using Claude

### **Lab 8 (Capstone Mini Project)**

Participants will integrate all modules to deliver:

Functional E-Commerce Application including:

- Product catalog
- Shopping cart
- User authentication
- Checkout system
- Order management

