

Backend Engineering Fundamentals - 6 Week Intensive Course

Week 6: Final Project Completion

E-Commerce Backend API - Complete Feature List

Core Features:

1. User Management
 - Registration, login, logout
 - Profile management
 - Password reset
 - Role-based access (Admin, Customer)
2. Product Management
 - CRUD operations (Admin only)
 - Product images upload
 - Categories and subcategories
 - Search and filtering
 - Pagination
 - Product reviews and ratings
3. Shopping Experience
 - Shopping cart (add, update, remove items)
 - Wishlist functionality
 - Order creation and management
 - Order history
 - Order status tracking
4. Admin Features
 - Dashboard statistics
 - User management
 - Order management
 - Inventory tracking

5. Advanced Features

- Product stock management
- Email notifications (order confirmation)
- Payment intent simulation (no actual payment processing)
- Search with filters (price range, category, rating)

Technical Requirements:

- PostgreSQL database with proper relationships
- JWT authentication
- Input validation on all endpoints
- Comprehensive error handling
- Unit and integration tests (minimum 70% coverage)
- API documentation (Swagger/OpenAPI)
- Docker containerization
- Deployed to production
- Environment-based configuration
- Logging implemented

Project Structure:

- ecommerce-api/
 - |— app/
 - | |— __init__.py
 - | |— models/
 - | |— routes/
 - | |— schemas/
 - | |— utils/
 - | |— config.py
 - |— tests/
 - |— migrations/
 - |— Dockerfile
 - |— requirements.txt

- |—.env.example

|— README.md

Day 6: FINAL DEMO DAY

Demo Presentation Structure:

1. Project overview
2. Architecture explanation
3. Live API demonstration
 - User registration and authentication
 - Product browsing and search
 - Shopping cart operations
 - Order placement
 - Admin features
4. Code walkthrough of interesting features