

Full Stack Development With MERN ShopEZ

Project Title: ShopEZ – Online Shopping Platform

Team Members:

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Project Overview

Purpose:

ShopEZ is a comprehensive online shopping solution enabling seamless e-commerce for both customers and sellers. The platform includes modern UI/UX, multi-role authentication, product management, order lifecycle control, and integrated payment features.

Key Goals:

- Facilitate easy product search and purchase for customers
- Enable sellers to manage inventory and orders
- Ensure secure transactions and efficient backend data handling

Key Features:

Customer Features

- Product Browsing with filtering and search
- Shopping Cart with quantity management and promo code support
- Cashfree Payment Gateway Integration
- Product Reviews & 5-Star Ratings
- Wishlist and Order History
- INR (₹) native currency support

Seller Features

- Dedicated Seller Dashboard
- Product CRUD with image support
- Real-time Revenue Tracking (based on shipped orders)
- Inventory Management with low-stock alerts
- Order Lifecycle: Pending → Processing → Shipping → Delivered

Architecture

Frontend (React + TypeScript):

- Build Tool: Vite
- Styling: TailwindCSS + ShadCN UI
- Routing: React Router
- State Management: Local state and context hooks
- Key Pages: Home, Login, Register, Cart, Products, Dashboard, Analytics
- Key Components: Navbar, ReviewSection, Buttons, Cards, Toasts
- Services: Axios-based API handler

Backend (Node.js + Express.js):

- Main Server File: index.js
- Route Modules: auth, user, product, order, review, analytics
- Controllers: Separated by domain (authController.js, productController.js etc)
- Middleware: JWT-based auth
- DB Connection: MongoDB via mongoose

Database Schema:

MongoDB Collections via Mongoose Models:

- **User**
 - Roles: customer, seller, admin
 - Fields: email, password (hashed), name, profile info
- **Product**
 - Fields: name, description, price, image, stock, seller ID
- **Order**
 - Fields: user, orderItems, payment info, status updates, timestamps

Setup Instructions

Prerequisites:

- Node.js v16+
- MongoDB v4.4+
- npm or yarn
- Cashfree & Clouinary accounts for API credentials

Installation:

- `git clone <repository-url>`
- `cd ShopEZ`

Backend:

- `cd server`
- `npm install`

Frontend:

- `cd ../Client`
- `npm install`

Folder Structure

ShopEZ/

- └─ Client/ # Frontend
 - | └─ src/
 - | | └─ components/
 - | | └─ pages/
 - | | └─ services/
 - | | └─ App.tsx
- └─ server/ # Node.js (Backend)
 - | └─ controllers/
 - | └─ models/
 - | └─ routes/
 - | └─ middleware/
 - | └─ index.js
- └─ .git # Git repository
- └─ README.md

API Documentation

Authentication

- POST /api/auth/register – Register user
- POST /api/auth/login – Login
- GET /api/auth/me – Current user

Products

- GET /api/products – List all
- GET /api/products/:id – View single
- POST /api/products – Add (seller)
- PUT /api/products/:id – Edit (seller)
- DELETE /api/products/:id – Delete (seller)

Orders

- GET /api/orders – Seller/customer filtered
- POST /api/orders/create-after-payment
- POST /api/orders/cashfree – Payment session
- PUT /api/orders/:id/status – Update status

Reviews

- POST/PUT/DELETE /api/reviews – Full CRUD
- GET /api/reviews/product/:id – Reviews by product

Users

- Wishlist CRUD: /api/users/:id/wishlist

Authentication

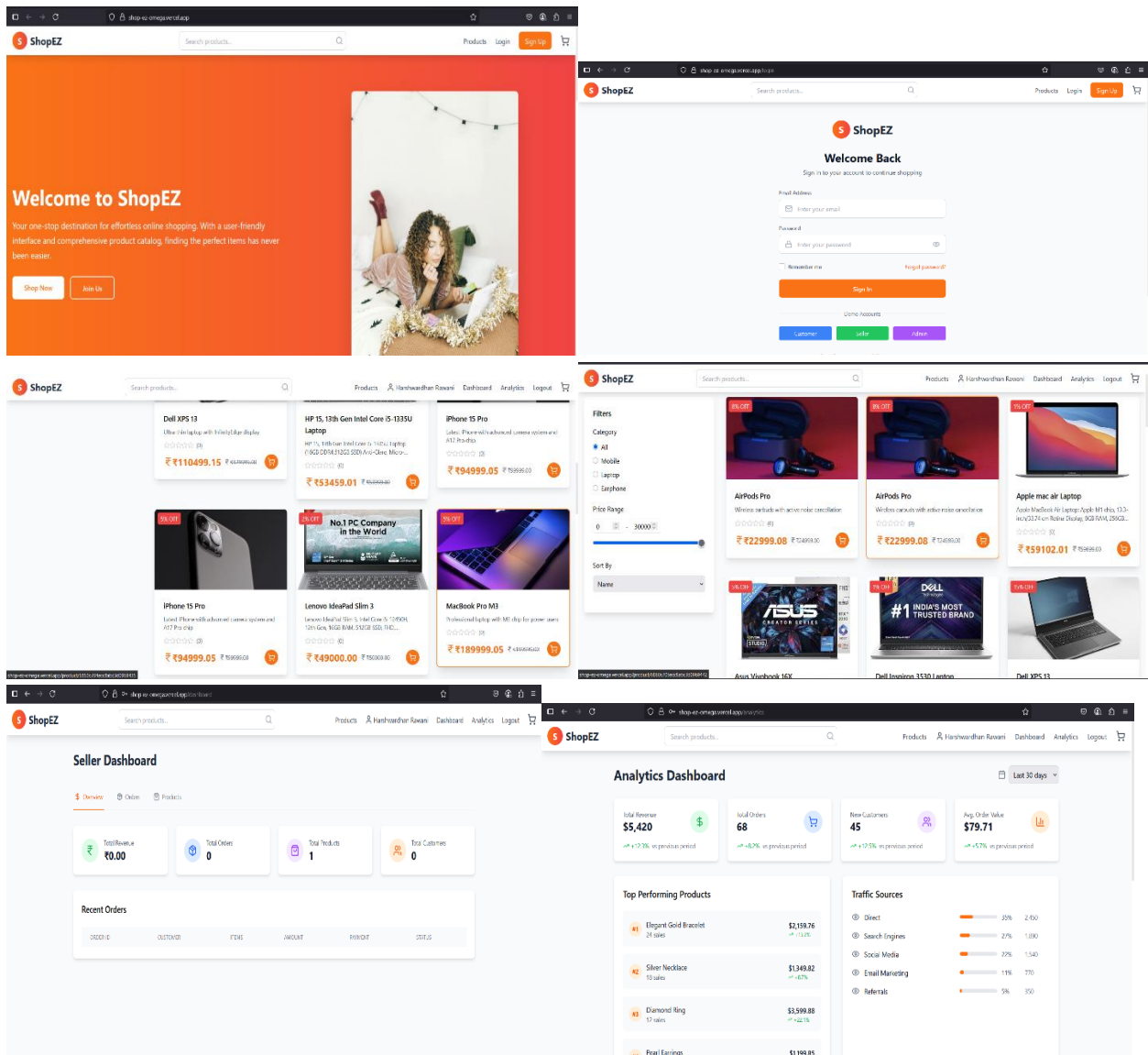
JWT-based Authentication

- Tokens generated at login
- Secure routes for admin/seller/customer roles

Role-Based Access

- Roles: customer, seller, admin
- Custom middleware for route protection

Screenshots or Demo



 <https://shop-ez-omega.vercel.app/>

Known Issues

- Image uploads may fail on slow networks.
- No retry mechanism for failed payments.

Future Enhancements

- Add payment gateway integration (e.g., Razorpay)
- Mobile app using React Native
- Real-time order tracking
- Push notifications for sellers and users