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 & Cloudinary 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

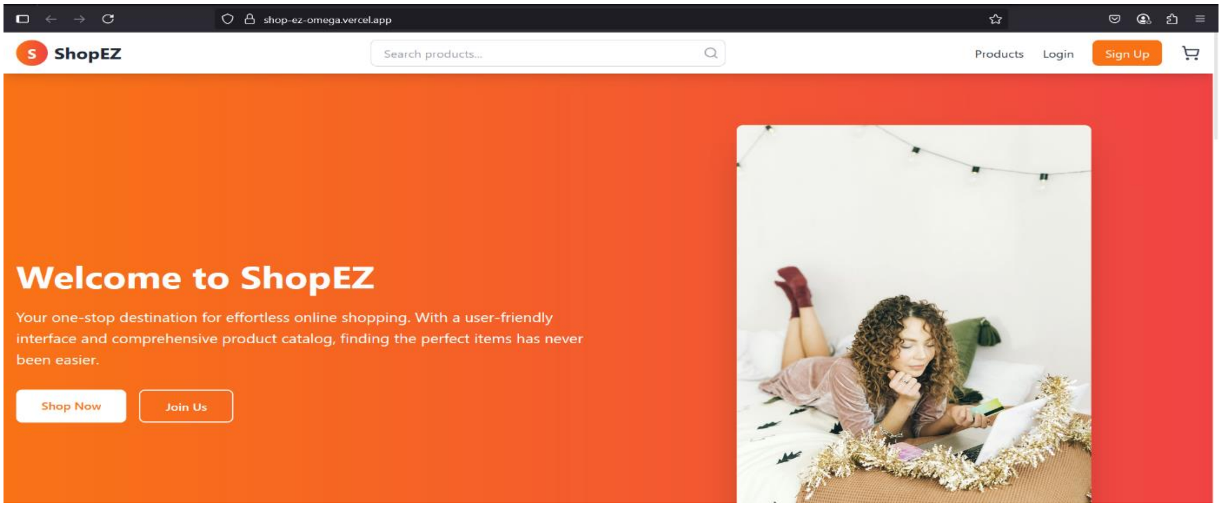
JWT-based Authentication

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

Role-Based Access

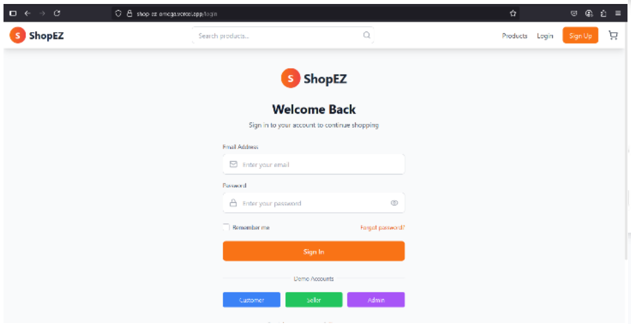
- Roles: customer, seller, admin
- Custom middleware for route protection

Screenshots or Demo



Welcome to ShopEZ

Your one-stop destination for effortless online shopping. With a user-friendly interface and comprehensive product catalog, finding the perfect items has never been easier.



Welcome Back

Sign in to your account to continue shopping

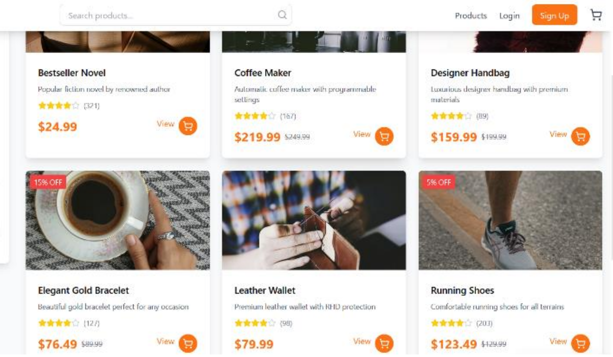
Email Address

Enter your email

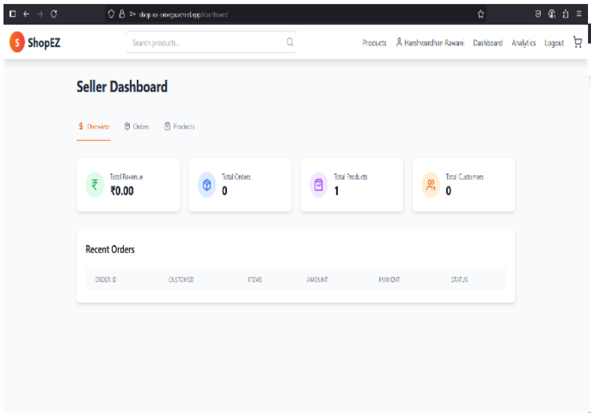
Password

Enter your password

□ Remember me



Product	Description	Reviews	Price	Original price
Bestseller Novel	Popular fiction novel by renowned author	(321)	$24.99	
Coffee Maker	Automatic coffee maker with programmable settings	(167)	$219.99	$249.99
Designer Handbag	Luxurious designer handbag with premium materials	(89)	$159.99	$199.99
Elegant Gold Bracelet (15% OFF)	Beautiful gold bracelet perfect for any occasion	(127)	$76.49	$89.99
Leather Wallet	Premium leather wallet with RFID protection	(98)	$79.99	
Running Shoes (5% OFF)	Comfortable running shoes for all terrains	(203)	$123.49	$129.99



Seller Dashboard

Total Revenue ₹0.00

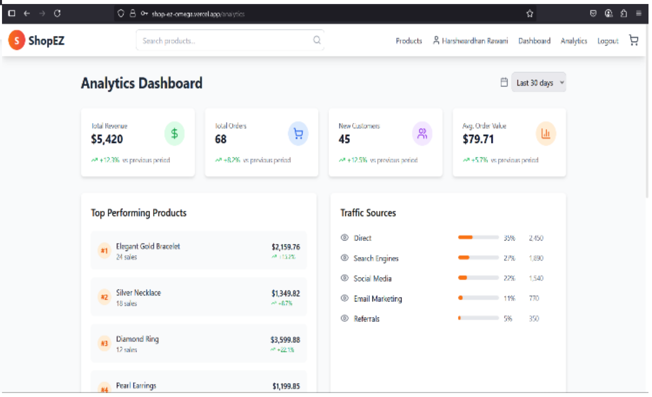
Total Orders 0

Total Products 1

Total Customers 0

Recent Orders

ORDER ID	CUSTOMER	ITEMS	AMOUNT	PAYMENT	STATUS



Analytics Dashboard

Last 30 days

Total Revenue $5,420 +12.3% vs previous period

Total Orders 68 +8.2% vs previous period

New Customers 45 +12.5% vs previous period

Avg. Order Value $79.71 +5.7% vs previous period

Top Performing Products

	Product	Sales	Revenue	Change
#1	Elegant Gold Bracelet	24 sales	$2,159.76	+15.2%
#2	Silver Necklace	18 sales	$1,349.82	+8.7%
#3	Diamond Ring	12 sales	$3,599.88	+22.1%
#4	Pearl Earrings		$1,199.85	

Traffic Sources

Source	Share	Visits
Direct	35%	2,450
Search Engines	27%	1,890
Social Media	22%	1,540
Email Marketing	11%	770
Referrals	5%	350

🔗 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