

ShopEZ: E-commerce Application - Report

1. Introduction

Project Title: ShopEZ: E-commerce Application

Team Members:

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- Deepak Roshan J

2. Project Overview

Purpose:

ShopEZ is designed to cater to the growing need for efficient and user-friendly e-commerce platforms. It bridges the gap between complex online shopping systems and user convenience by providing streamlined navigation, secure transactions, and personalized product recommendations. Additionally, the platform empowers sellers with a dashboard for managing their inventory, processing orders, and accessing analytics to drive growth.

Features:

1. **Seamless Checkout:** Secure and smooth payment process with instant order confirmations and email notifications.
2. **Effortless Product Discovery:** Advanced search capabilities, intuitive category navigation, and powerful filters to help users find exactly what they need.
3. **Personalized Recommendations:** AI-driven algorithms analyze user behavior to provide curated product suggestions.
4. **Seller Dashboard:** Comprehensive tools for inventory tracking, order processing, and analytics to monitor performance metrics.
5. **Real-time Analytics:** Data-driven insights for sellers, highlighting sales trends, customer preferences, and product performance.

3. Architecture

Frontend:

- Developed using **React.js** for its component-based architecture and state management capabilities.
- Features dynamic components like:
 - **Product Listings:** Displays products with sorting and filtering options.
 - **Cart Management:** Allows users to add, update, or remove items in their cart.
 - **User Authentication:** Login and registration pages with secure validation.
 - **Admin Panel:** Provides sellers with tools to manage inventory and view analytics.

Backend:

- Built with **Node.js** and **Express.js**, ensuring scalability and high performance.
- Features include:
 - **API Endpoints:**
 - `/products` for fetching product data.
 - `/orders` for processing customer orders.
 - `/users` for managing user authentication.
 - **Middleware** for error handling and authentication using **JWT**.

Database:

- **MongoDB** serves as the database, storing collections for:
 - **Users:** Authentication credentials, profiles, and purchase history.
 - **Products:** Information on inventory, prices, categories, and descriptions.
 - **Orders:** Details about placed orders, delivery status, and payment.

This architecture ensures modularity, scalability, and efficient data management.

4. Setup Instructions

Prerequisites:

- **Node.js:** v14 or later
- **MongoDB:** Installed locally or set up using a cloud provider like MongoDB Atlas
- **npm:** Package manager for installing dependencies

Installation:

Clone the repository:

```
https://github.com/stinastanley/stina.git
```

Navigate to the project directory:

```
cd shopEZ
```

Install dependencies for the backend and frontend:

Backend:

```
cd server  
npm install
```

Frontend:

```
cd client  
npm install
```

Run the servers:

Backend:

```
node index.js
```

Frontend:

```
npm start
```

5. Folder Structure

Client:

- **src/components**: Contains reusable components like **Navbar**, **ProductCard**, **CartItem**, etc.
- **src/pages**: Holds page components such as **Home**, **Cart**, **Checkout**, and **AdminPanel**.
- **src/services**: Manages API interactions for fetching and posting data.
- **src/redux**: Implements state management for cart items, user authentication, and order status.

Server:

- **routes**: Defines all RESTful API routes for users, products, and orders.
- **controllers**: Contains the logic for handling API requests and responses.
- **models**: Defines database schemas for **Users**, **Products**, and **Orders**.
- **middleware**: Handles authentication (JWT) and error management.

6. Running the Application

Frontend:

Navigate to the client directory:

```
cd client
```

Start the React application:

```
npm start
```

Backend:

Navigate to the server directory:

```
cd server
```

Start the Node.js server:

```
node index.js
```

7. API Documentation

Endpoints:

1. GET /products

- Fetches the list of all products.
- Parameters: Optional category and price filters.

Response:

```
json
[
  {
    "id": "123",
    "name": "Gold Bracelet",
    "price": 50,
    "category": "Accessories"
  }
]
```

2. POST /orders

- Places a new order.
- Parameters: User ID, product details, and quantity.

Response:

```
json
{
  "message": "Order placed successfully",
  "orderId": "456"
}
```

8. Authentication

JWT-based Authentication:

- **Login:** Issues a JWT token upon successful authentication.
- **Token Validation:** Protects private routes like `/orders` and `/admin`.
- **Logout:** Invalidates the token on the client side.

9. User Interface

Screens:

- **Home:** Displays trending products and categories.
- **Product Details:** Shows detailed information about a selected item.
- **Cart:** Summarizes selected products and their quantities.
- **Admin Dashboard:** Offers order status updates and analytics for sellers.

10. Testing

- **Unit Testing:** Conducted using **Jest** for components and backend logic.
- **API Testing:** Performed using **Postman** to validate endpoints.

11. Screenshots or Demo

Screenshots of key UI components and admin panel.

File Eds Selection View Go Run Terminal Help ← → shopEZ-nm

EXPLORER ... JS Schema.js

SHOPEZ... client node_modules server node_modules index.js package-lock.json package.json README.md JS Schema.js

14
15 const productSchema = new mongoose.Schema({
16 title: {type: String},
17 description: {type: String},
18 mainImg: {type: String},
19 carousels: {type: Array},
20 sizes: {type: Array},
21 category: {type: String},
22 gender: {type: String},
23 price: {type: Number},
24 discount: {type: Number}
25 })
26
27 const orderSchema = new mongoose.Schema({
28 userid: {type: String},
29 name: {type: String},
30 email: {type: String},
31 mobile: {type: String},
32 address: {type: String},
33 pincode: {type: String},
34 title: {type: String},
35 description: {type: String},
36 mainImg: {type: String},
37 })
38
39 module.exports = { productSchema, orderSchema }
40

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\HP\OneDrive\Desktop\shopEZ-nm\server> npm install
up to date, audited 160 packages in 7s
17 packages are looking for funding
 run 'npm fund' for details

found 4 vulnerabilities
PS C:\Users\HP\OneDrive\Desktop\shopEZ-nm\server> node index.js
running @ 6001

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The screenshot shows a development environment for a Node.js application named 'shopEZ-nm'. The code editor displays the file 'index.js' with several functions for managing a shopping cart. The 'TERMINAL' tab at the bottom shows the command line interface with npm install, audit results, and a running node command.

```
server > JS index.js> ...
  20  }).then((r)>{
  37    app.put('/decrease-cart-quantity', async(req, res)>{
  38      res.json({message: 'decremented'});
  39      }catch(err){
  40        res.status(500).json({message: "Error occurred"});
  41      }
  42
  43      // remove from cart
  44
  45      app.put('/remove-item', async(req, res)>{
  46        const {id} = req.body;
  47        try{
  48          const item = await Cart.deleteOne({_id: id});
  49          res.json({message: 'item removed'});
  50        }catch(err){
  51          res.status(500).json({message: "Error occurred"});
  52        }
  53      );
  54
  55      // Order from cart
  56
  57      PS C:\Users\HP\OneDrive\Desktop\shopEZ-nm\server> npm install
  58      up to date, audited 160 packages in 7s
  59
  60      17 packages are looking for funding
  61      run 'npm fund' for details
  62
  63      found 0 vulnerabilities
  64      PS C:\Users\HP\OneDrive\Desktop\shopEZ-nm\server> node index.js
  65      running @ 6001
```

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shopEZ-nm

EXPLORER JS App.js

```

client > src > JS App.js > ...
19 function App() {
29   |   <Route exact path="/" element={<Home />}/>
30   |   <Route path="/cart" element={<Cart />} />
31   |   <Route path="/product/:id" element={<IndividualProduct />} />
32   |   <Route path="/category/:category" element={<CategoryProducts />} />
33   |   <Route path="/profile" element={<Profile />} />
34   |   <Route path="/auth" element={<Authentication />} />
35   |   <Route path="/admin" element={<Admin />} />
36   |   <Route path="/all-products" element={<AllProducts />} />
37   |   <Route path="/all-users" element={<AllUsers />} />
38   |   <Route path="/all-orders" element={<AllOrders />} />
39   |   <Route path="/new-product" element={<NewProduct />} />
40   |   <Route path="/update-product/:id" element={<UpdateProduct />} />
41   |   </Routes>
42   |   </div>
43   |
44   |   );
45   |
46   |   export default App;
47   |
48   |
49   |
50

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Line 38:9: 'decreaseCartQuantity' is assigned a value but never used no-unused-vars
Line 80:5: React Hook useEffect has a missing dependency: 'calculateTotalPrice'. Either include it or remove the dependency array react-hooks/exhaustive-deps

src\pages\customer\IndividualProduct.jsx
Line 15:8: 'fetchCartCount' is assigned a value but never used no-unused-vars
Line 30:3: React Hook useEffect has a missing dependency: 'fetchProduct'. Either include it or remove the dependency array react-hooks/exhaustive-deps

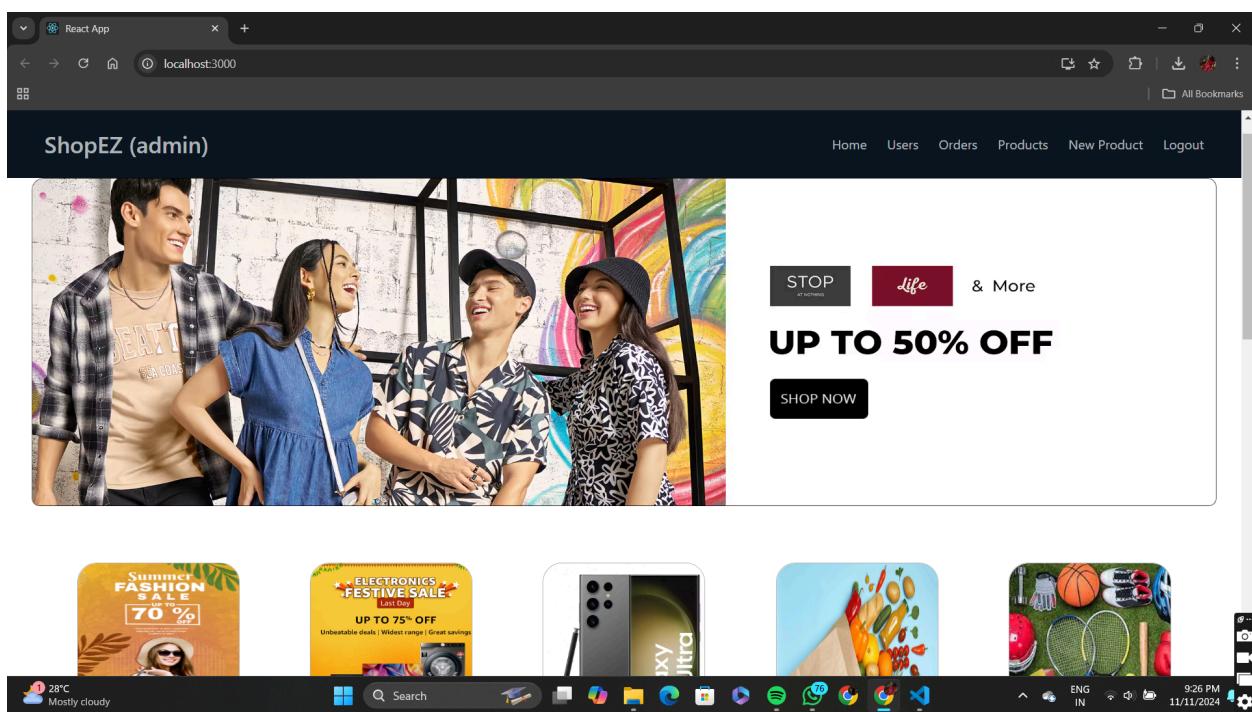
src\pages\customer\Profile.jsx
Line 19:5: React Hook useEffect has a missing dependency: 'fetchOrders'. Either include it or remove the dependency array react-hooks/exhaustive-deps

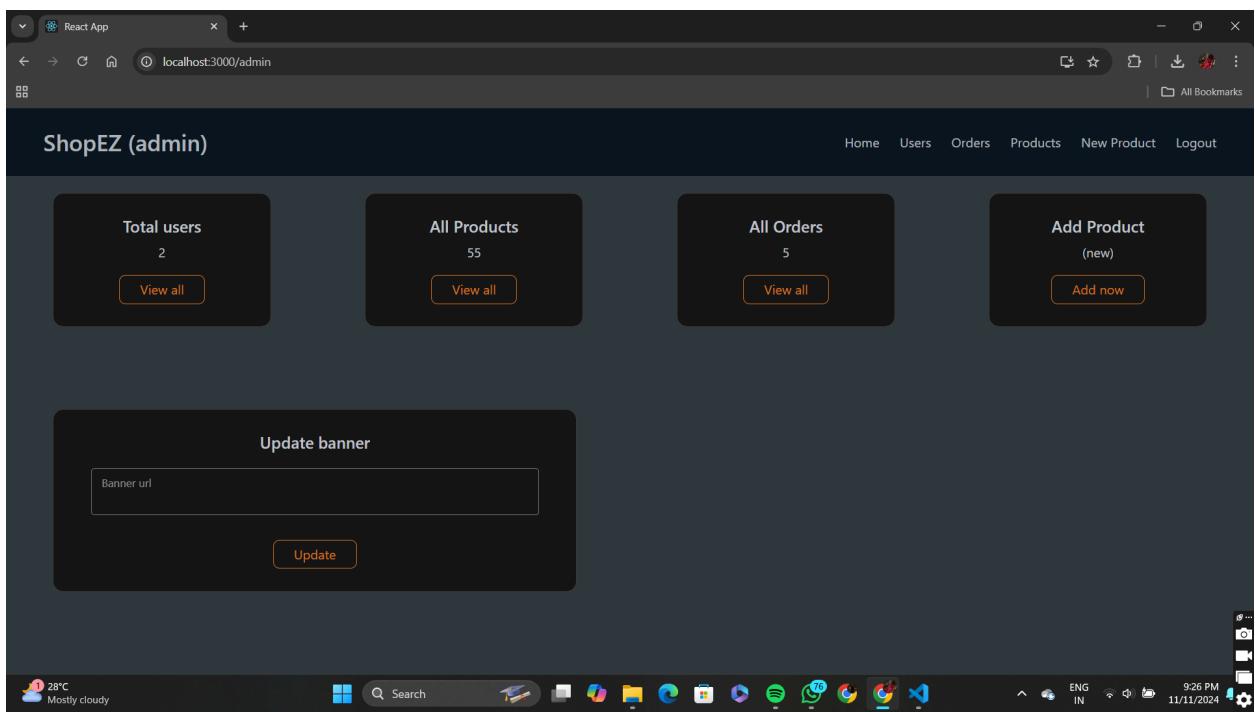
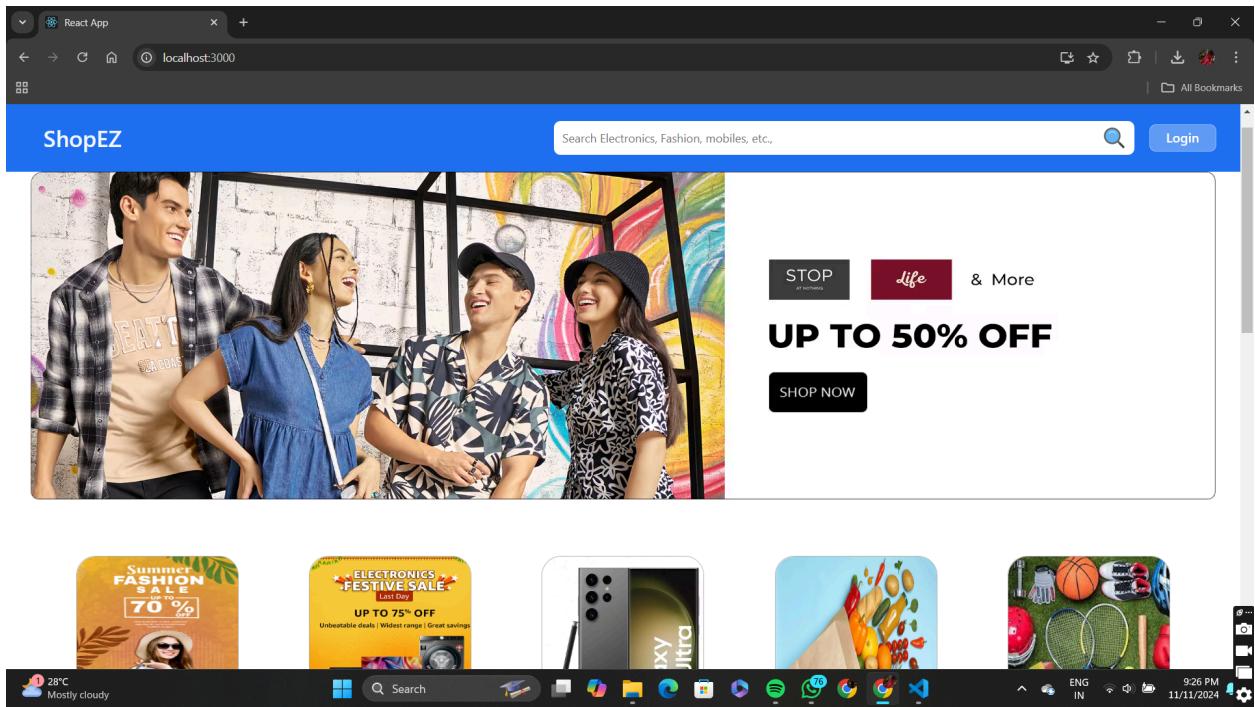
webpack compiled with 4 warnings

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node node

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React App

localhost:3000/all-users

ShopEZ (admin)

Home Users Orders Products New Product Logout

All Users

User Id	User Name	Email Address	Orders
6730cd1aa7006f22da14446c	prabhu	prabhusamtina@gmail.com	3
6731095aa7e2268d54c21501	sarah	sarah@gmail.com	1

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Search

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React App

localhost:3000/all-orders

ShopEZ (admin)

Orders

localhost:3000 says
Order status updated!!

OK

Home Users Orders Products New Product Logout

User Id: 673106970f8ef2b315a45d4e Name: Sarah Email: sarah@gmail.com Mobile: 09345706914
Ordered on: 2024-11-10 Address: Johitha's Bhavi Villas, Villa no : 3 , Pincode: 600125
Order status: Order Placed

Apple iPad Pro 13" (M4): Ultra Retina XDR Display, 512GB, 12MP Front Camera / 12MP Back Camera, LiDAR Scanner, Wi-Fi 6E + 5G Cellular with eSIM. All-Day Battery Life, Standard Glass — Space Black
The Apple iPad Pro 13" (2024) with the M4 chip combines top-tier performance and cutting-edge AI features. It offers a 13-inch Ultra Retina XDR display for stunning visuals, 512GB storage, and Wi-Fi 6E + 5G support for fast connectivity. Equipped with a 12MP front and back camera, and LiDAR for enhanced AR experiences, this device is perfect for professionals and creatives. The M4 chip's powerful Neural Engine accelerates AI tasks, ensuring seamless multitasking. Ideal for work and play, it also boasts all-day battery life.
Size: Quantity: 1 Price: ₹ 152100 Payment method: cod
User Id: 6730cd1aa7006f22da14446c Name: Tina S Email: stinastanley46@gmail.com Mobile: 09345706914
Ordered on: 2024-11-10 Address: Johitha's Bhavi Villas, Villa no : 3 , Pincode: 600125
Order status: order placed

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Search

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ShopEZ (admin)

Filters

Sort By
 Popularity
 Price (low to high)
 Price (high to low)
 Discount

Categories
 Fashion
 Electronics
 Mobiles
 Groceries
 Sports Equipments

Gender
 Men
 Women
 Unisex

All Products

Men's Stud
Bold and stylish men's stud e...
₹ 2849 ~~2999~~ (5% off)

Men's Bracelet
Trendy set of 2 men's bracelet...
₹ 4499 ~~4999~~ (10% off)

Men's Chain
Sleek and stylish men's chain ...
₹ 1899 ~~1999~~ (5% off)

Men's Watch
Elegant men's watch featuring ...
₹ 1000 ~~1200~~ (16.7% off)

Maxi
Elegant women's maxi dress cr...
₹ 2600 ~~3000~~ (13.3% off)

Women's Top
Chic women's V-neck top made f...
₹ 550 ~~600~~ (8.3% off)

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ShopEZ (admin)

localhost:3000 says
product added

New Product

Microwave
A microwave is a kitchen appliance that uses micro

Thumbnail Img url
https://m.media-amazon.com/images/I/41aWelAmsuL__SY445_SX342_QL70_FMwebp.jpg

Add on img1 url
https://m.media-amazon.com/images/I/41aWelAmsuL__SY445_SX342_QL70_FMwebp.jpg

Add on img2 url
https://m.media-amazon.com/images/I/41aWelAmsuL__SY445_SX342_QL70_FMwebp.jpg

Add on img3 url
https://m.media-amazon.com/images/I/41aWelAmsuL__SY445_SX342_QL70_FMwebp.jpg

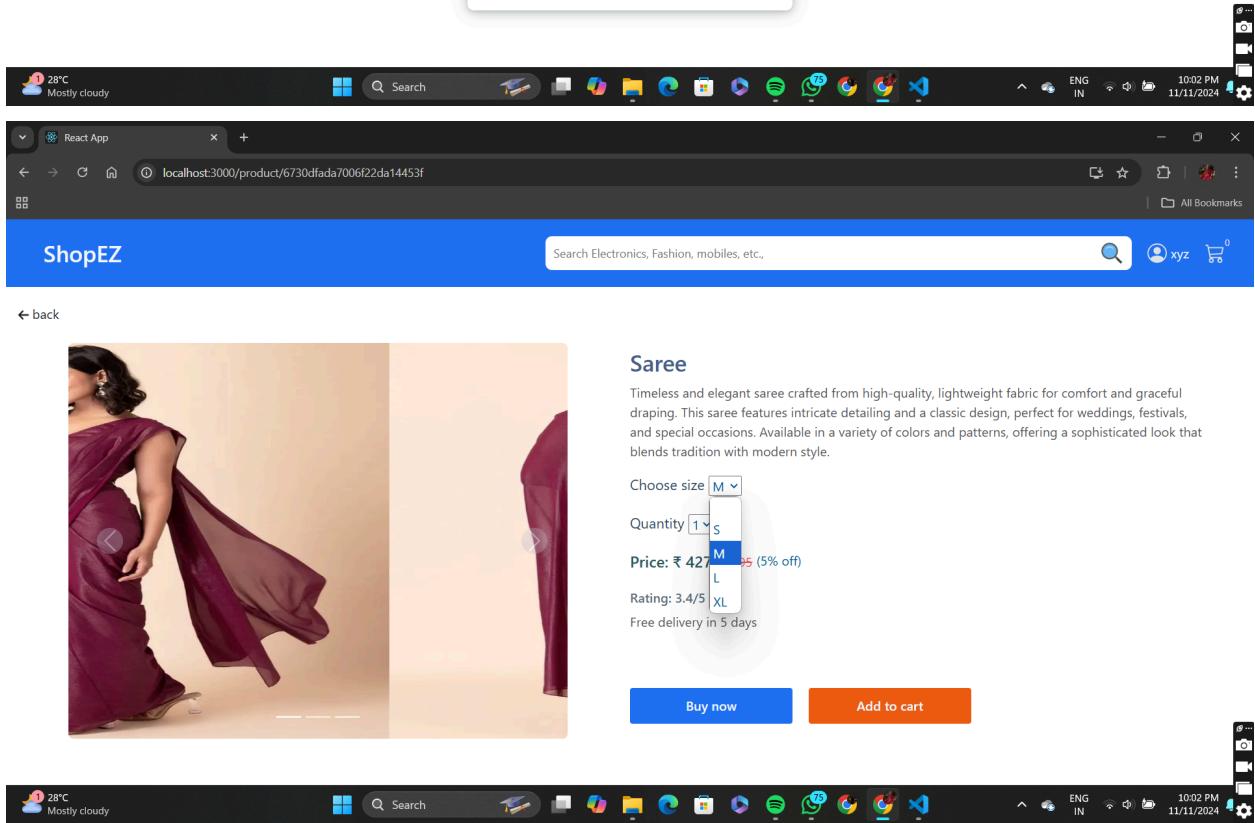
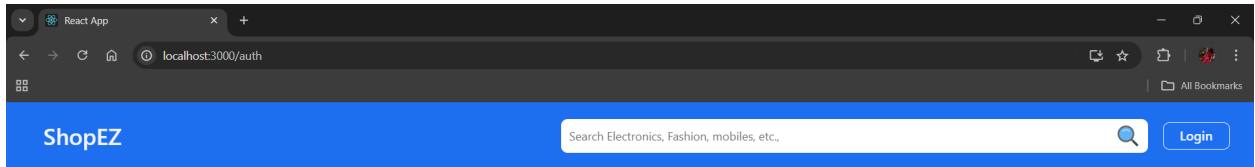
Available Size
 S M L XL

Gender
 Men Women Unisex

Category:
Price:
Discount (in %):

Add product

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localhost:3000/product/6730dfada7006f22da14453f

ShopEZ

localhost:3000 says
product added to cart!!



Saree

Timeless and elegant saree crafted from high-quality, lightweight fabric for comfort and graceful draping. This saree features intricate detailing and a classic design, perfect for weddings, festivals, and special occasions. Available in a variety of colors and patterns, offering a sophisticated look that blends tradition with modern style.

Choose size

Quantity

Price: ₹ 4270 ~~4495~~ (5% off)

Rating: 3.4/5

Free delivery in 5 days

[Buy now](#) [Add to cart](#)

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Search

localhost:3000/cart

ShopEZ

Search Electronics, Fashion, mobiles, etc.



Necklace
Elegant necklace crafted with high-quality materials, designed to add a touch of sophistication to any outfit. Featuring a beautiful arrangement of intricate details, this necklace is perfect for special occasions or adding elegance to your everyday look. Available in various styles to suit your personal taste.
Size: Quantity:

Price: ₹ 3200 [Remove](#)



Saree
Timeless and elegant saree crafted from high-quality, lightweight fabric for comfort and graceful draping. This saree features intricate detailing and a classic design, perfect for weddings, festivals, and special occasions. Available in a variety of colors and patterns, offering a sophisticated look that blends tradition with modern style.
Size: Quantity:

Price: ₹ 4270 [Remove](#)

Price Details

Total MRP:	₹ 8495
Discount on MRP:	- ₹ 1024
Delivery Charges:	+ ₹ 0

Final Price: ₹ 7471

[Place order](#)

React App

localhost:3000/cart

ShopEZ

09345706914

xyz 0

Checkout

Checkout details

Name: xyz

Mobile: 1234567890

Email: xyz@gmail.com

Address: Johitha's Bhavi Villas, Villa no : 3 , Pincode: 600125

Payment method

Choose Payment method
cash on delivery

cancel Order

Price Details

Total MRP: ₹ 8495

Discount on MRP: - ₹ 1024

Delivery Charges: + ₹ 0

Final Price: ₹ 7471

Place order

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React App

localhost:3000/profile

ShopEZ

09345706914

xyz 0

Orders

Username: xyz

Email: xyz@gmail.com

Orders: 2

Logout

Order Details 1

Necklace

Elegant necklace crafted with high-quality materials, designed to add a touch of sophistication to any outfit. Featuring a beautiful arrangement of intricate details, this necklace is perfect for special occasions or adding elegance to your everyday look. Available in various styles to suit your personal taste.

Size: Quantity: 1 Price: ₹ 3200 Payment method: cod

Address: Johitha's Bhavi Villas, Villa no : 3 , Pincode: 600125 Ordered on: 2024-11-11

Order status: order placed

Cancel

Order Details 2

Saree

Timeless and elegant saree crafted from high-quality, lightweight fabric for comfort and graceful draping. This saree features intricate detailing and a classic design, perfect for weddings, festivals, and special occasions. Available in a variety of colors and patterns, offering a sophisticated look that blends tradition with modern style.

Size: M Quantity: 1 Price: ₹ 4270 Payment method: cod

Address: Johitha's Bhavi Villas, Villa no : 3 , Pincode: 600125 Ordered on: 2024-11-11

Order status: order placed

Cancel

28°C Mostly cloudy

Search ENG IN 10:04 PM 11/11/2024

Link to a live demo.

 **Demo Video.mp4 /**

<https://drive.google.com/file/d/1B025A59a0S6EKPuVxcbPbKBkCITjvwuN/view?usp=sharing>

12. Known Issues

- **Slow Search Performance:** Optimization is required for large product datasets.
- **UI Bugs:** Minor alignment issues on smaller screens.

13. Future Enhancements

- **Voice Search:** Enable users to search using voice commands.
- **Mobile App:** Create a cross-platform app using React Native.
- **Multi-language Support:** Expand accessibility for global audiences.