Ecommerce Application - ShopEZ

REPORT

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Project Overview:

Purpose

ShopEZ is an innovative e-commerce platform that redefines the online shopping experience. Designed for both buyers and sellers, ShopEZ ensures effortless navigation, personalized recommendations, and seamless order management. With its intuitive interface, users can explore a wide range of products, access detailed descriptions, read customer reviews, and enjoy exclusive discounts.

For sellers, the platform offers a comprehensive dashboard equipped with tools for efficient order tracking and insightful analytics, enabling data-driven decisions to boost sales. ShopEZ aims to simplify online shopping while empowering businesses to grow.

Features

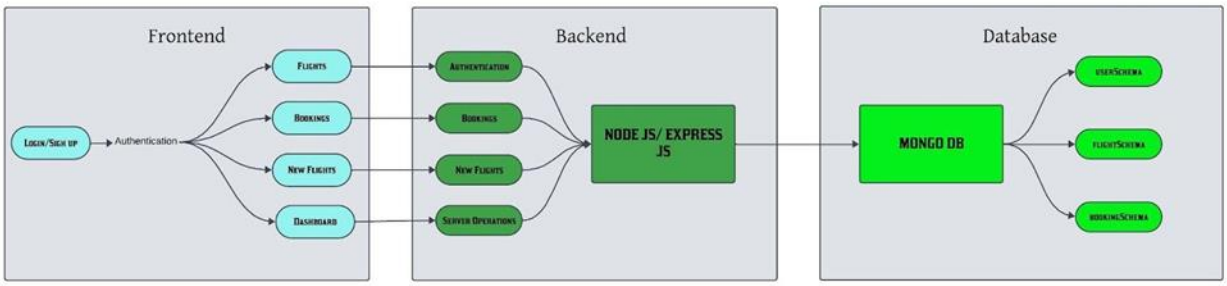
For Buyers

1. **Effortless Product Discovery**
    - Navigate an extensive catalog with advanced search and filtering options.
2. **Personalized Shopping Experience**
    - Tailored product recommendations based on browsing history and preferences.
3. **Seamless Checkout Process**
    - Secure payment gateways with instant order confirmation and tracking.
4. **Detailed Product Information**
    - Access product descriptions, customer reviews, ratings, and real-time stock updates.

For Sellers

1. **Efficient Order Management**
    - Track orders, manage inventory, and process returns seamlessly.
2. **Insightful Analytics**
    - Monitor sales trends, product performance, and customer behavior to optimize strategies.
3. **Robust Dashboard**
    - Centralized tools for managing listings, promotional campaigns, and revenue reports.

Architecture:



Technology Stack

- **Frontend**:
  - Built using React.js for dynamic and responsive user interfaces.
  - Styled with Material UI and custom CSS for an intuitive shopping experience.
- **Backend**:
  - Developed with Node.js and Express.js for robust API handling.
  - Integrated with MongoDB for secure and scalable data storage.
- **Database**:
  - MongoDB (NoSQL) with Mongoose for schema management.
- **Authentication and Security**:
  - Secure user authentication with bcrypt and JWT (JSON Web Tokens).
  - CORS implemented for safe cross-origin resource sharing.

Setup Instructions:

1. **Prerequisites:**

- Node.js (v14.17.0 or higher)
- MongoDB (local or cloud-based using MongoDB Atlas)
- npm (Node Package Manager)
- React (Frontend framework)
- Two web browsers (recommended: Chrome and Firefox)

Installation:

- Clone the repository:
  git clone <repository-url>
  cd ShopEZ/

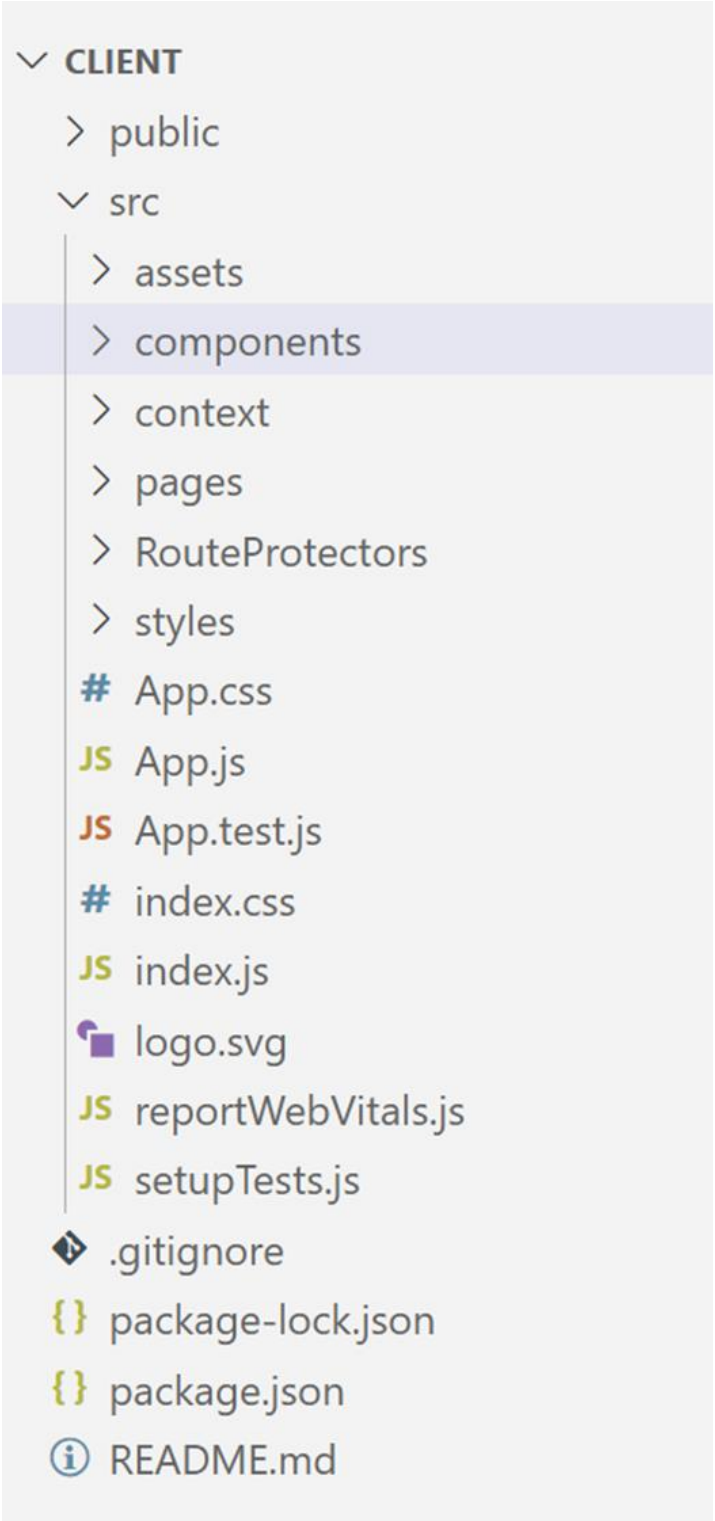
- Install dependencies for the server:
  cd server
  npm install

- Install dependencies for the client:
  cd ../client
  npm install

Folder Structure:

1. **Server (Node.js Backend, MongoDB Database)**

2. Client (React js):



Running the Application:

1. **Frontend:**

   - Navigate to the client directory and run:
     npm start

2. **Backend:**

   - Navigate to the server directory and run:
     node index.js

API Documentation:

1. User Registration Endpoint

- **URL**: /api/register
- **Method**: POST
- **Description**: Registers a new user.
- **Authentication**: None.
- **Request Parameters**:
  - Body Parameters:
    - username (required): The user's name.
    - email (required): The user's email address.
    - password (required): The user's password.
    - userType (optional): Either "buyer" or "seller". Defaults to "buyer".
- **Response Example**:
  Success Response (201 Created):
  - Message: "User registered successfully"
  - User ID: A unique identifier for the user.

  Error Response (400 Bad Request):

  - Error: "Email already exists."

2. User Login Endpoint

- **URL**: /api/login
- **Method**: POST
- **Description**: Authenticates a user.
- **Authentication**: None.
- **Request Parameters**:

    - Body Parameters:
        - email (required): The user's email address.
        - password (required): The user's password.
- **Response Example**:
  Success Response (200 OK):
    - Message: "Login successful."
    - Token: A JSON Web Token (JWT) for session management.

  Error Response (401 Unauthorized):

    - Error: "Invalid email or password."

3. Fetch Products Endpoint

- **URL**: /api/products
- **Method**: GET
- **Description**: Retrieves a list of available products.
- **Authentication**: None.
- **Request Parameters**:
    - Query Parameters (optional):
        - category: Filters products by category.
        - search: Searches for products by name.
- **Response Example**:
  Success Response (200 OK):
    - A list of products with details such as product ID, name, price, stock, and category.

4. Add Product Endpoint (For Sellers)

- **URL**: /api/products/add
- **Method**: POST
- **Description**: Adds a new product to the catalog.
- **Authentication**: Required (Seller role only).
- **Request Parameters**:
    - Body Parameters:
        - name (required): The name of the product.
        - price (required): The price of the product.
        - stock (required): Quantity available in stock.
        - category (required): Product category.

- **Response Example**:
  Success Response (201 Created):
  - Message: "Product added successfully."
  - Product ID: A unique identifier for the product.

  Error Response (403 Forbidden):

  - Error: "Unauthorized access."

5. Place Order Endpoint

- **URL**: /api/orders
- **Method**: POST
- **Description**: Places an order for a product.
- **Authentication**: Required (Buyer role only).
- **Request Parameters**:
  - Body Parameters:
    - buyerId (required): The unique ID of the buyer.
    - productId (required): The unique ID of the product.
    - quantity (required): The quantity to order.
- **Response Example**:
  Success Response (201 Created):
  - Message: "Order placed successfully."
  - Order ID: A unique identifier for the order.

  Error Response (400 Bad Request):

  - Error: "Insufficient stock."

6. Fetch Orders Endpoint (For Buyers)

- **URL**: /api/orders
- **Method**: GET
- **Description**: Fetches all orders placed by a buyer.
- **Authentication**: Required (Buyer role only).
- **Request Parameters**:
  - Query Parameters:
    - buyerId (required): The unique ID of the buyer.
- **Response Example**:
  Success Response (200 OK):
  - A list of orders with details such as order ID, product ID, quantity, status, and order date.

7. Fetch Seller Analytics Endpoint

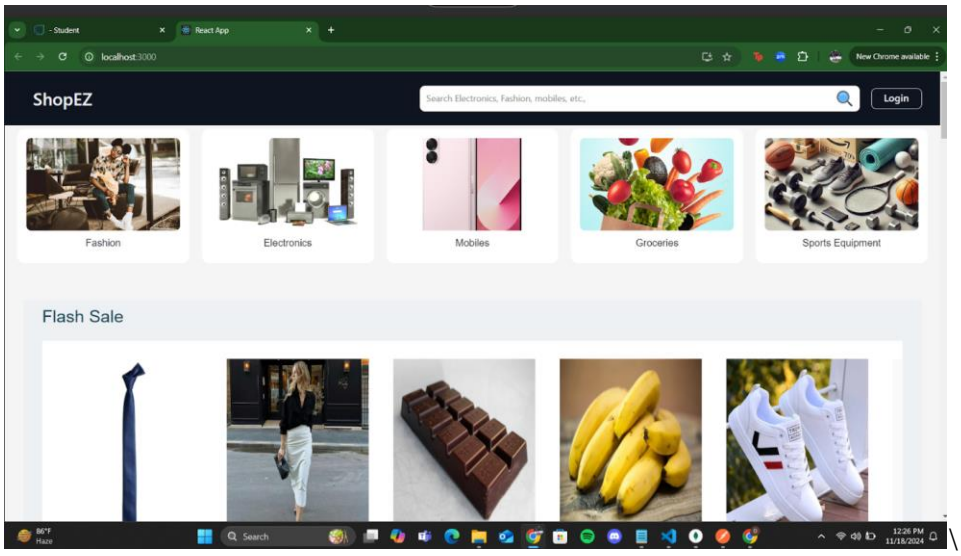
- **URL**: /api/seller/analytics
- **Method**: GET
- **Description**: Retrieves sales performance data for a seller.
- **Authentication**: Required (Seller role only).
- **Request Parameters**:
  - Query Parameters:
    - sellerId (required): The unique ID of the seller.
- **Response Example**:
  Success Response (200 OK):
  - Total sales amount.
  - Details of the top-performing product, including product ID, name, and total sales.

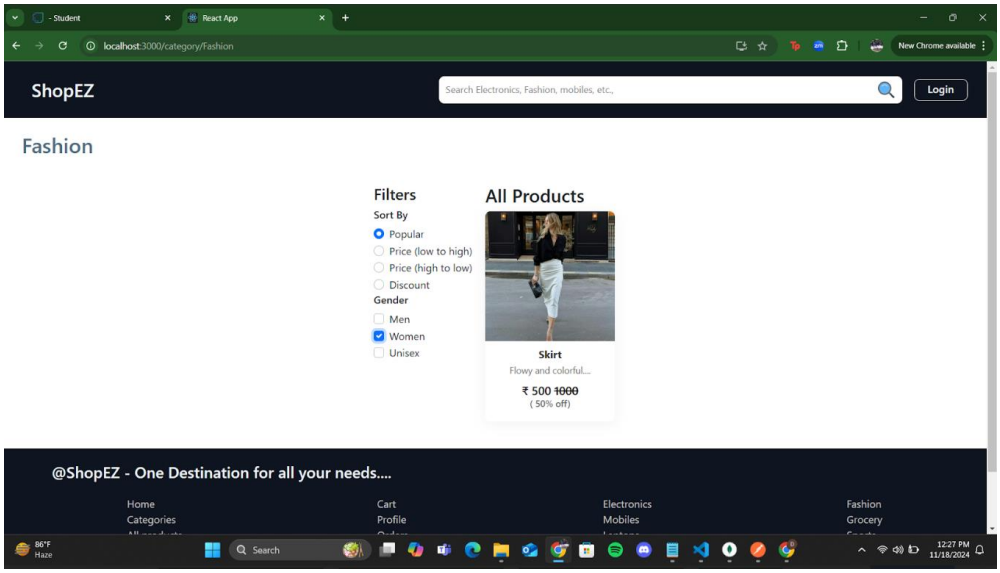
Authentication:

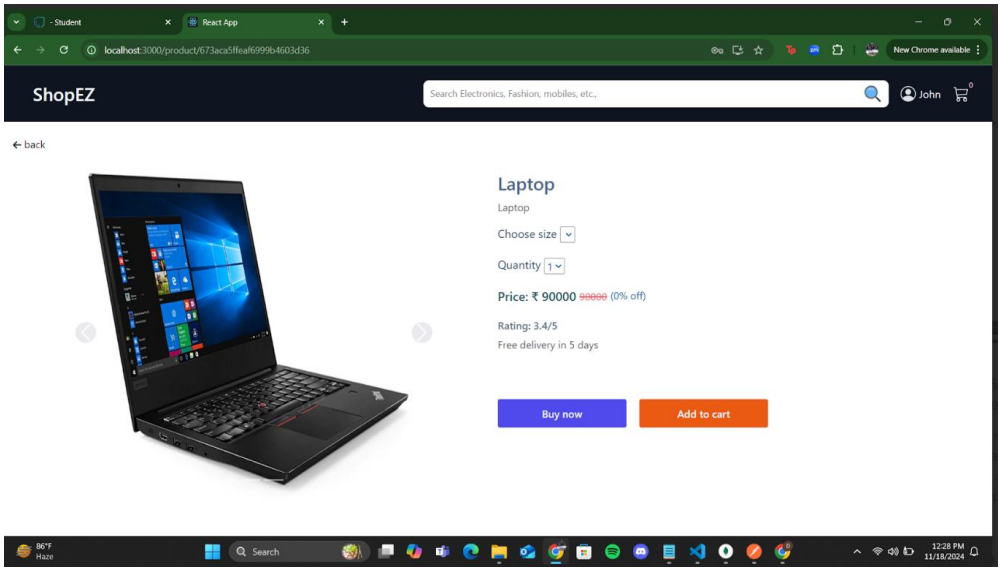
Authentication in this project is managed through a simple user login system.

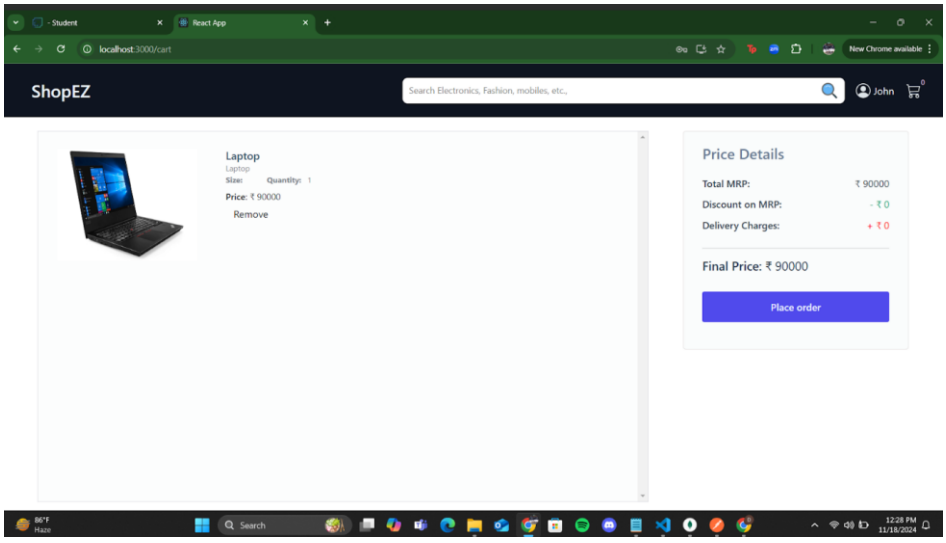
- **User Login and Registration:** Users can create an account with a username, password, and email. The credentials are securely stored in the database.
- **Middleware:** Basic authentication middleware is used to check if a user is logged in before accessing certain protected routes.
- **Role-Based Access:** The system differentiates between regular users and admin users using a usertype field in the user schema, allowing the admin to manage flights and bookings.

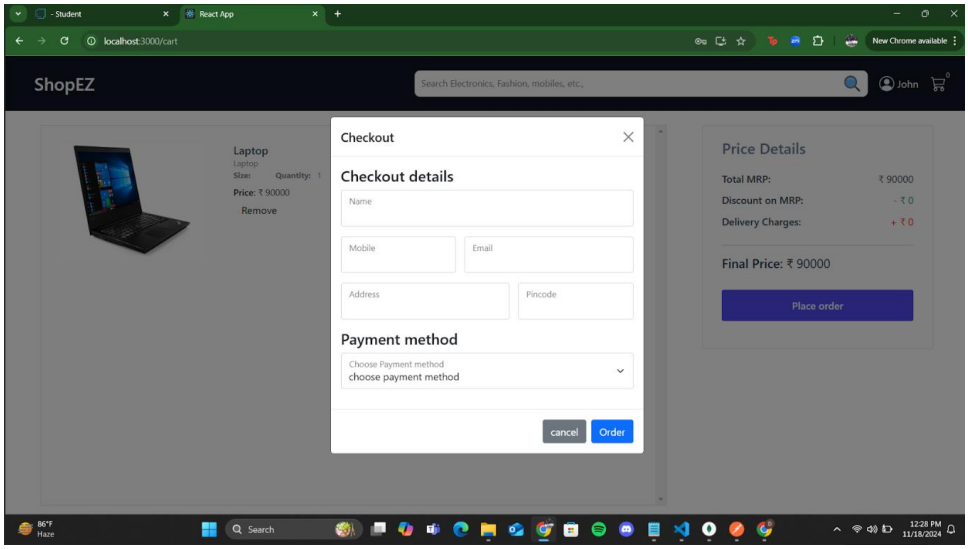
User Interface:

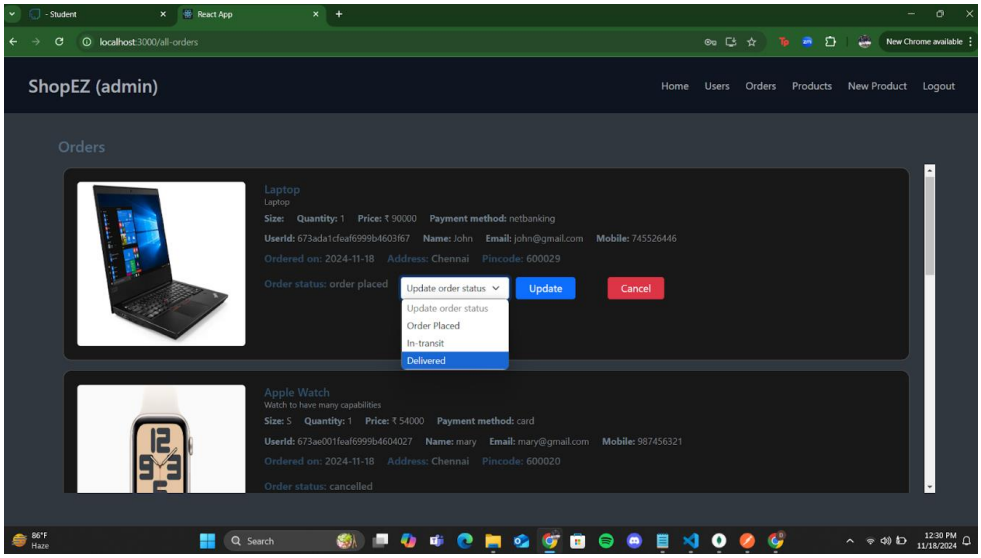


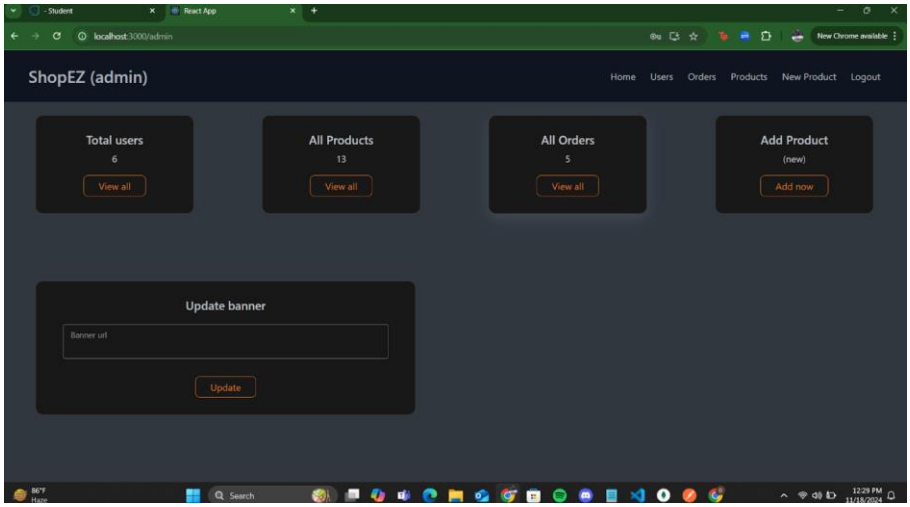

ShopEZ
Search Electronics, Fashion, mobiles, etc.,
Login
Fashion
Filters
Sort By
Popular
Price (low to high)
Price (high to low)
Discount
Gender
Men
Women
Unisex
All Products
Skirt
Flowy and colorful...
₹ 500 1000
(50% off)
@ShopEZ - One Destination for all your needs....
Home
Categories
Cart
Profile
Electronics
Mobiles
Fashion
Grocery

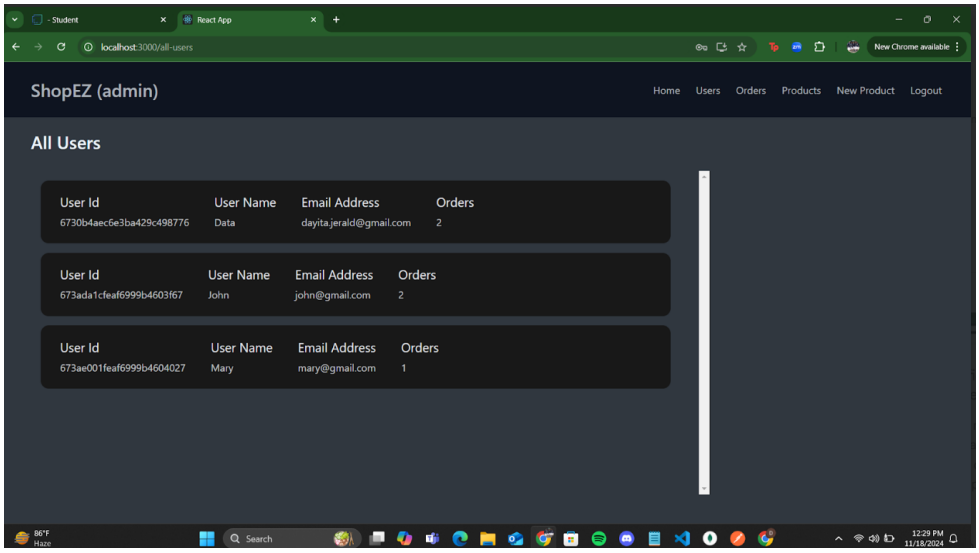

ShopEZ
Search Electronics, Fashion, mobiles, etc.,
John
back
Laptop
Laptop
Choose size
Quantity
Price: ₹ 90000 90000 (0% off)
Rating: 3.4/5
Free delivery in 5 days
Buy now
Add to cart

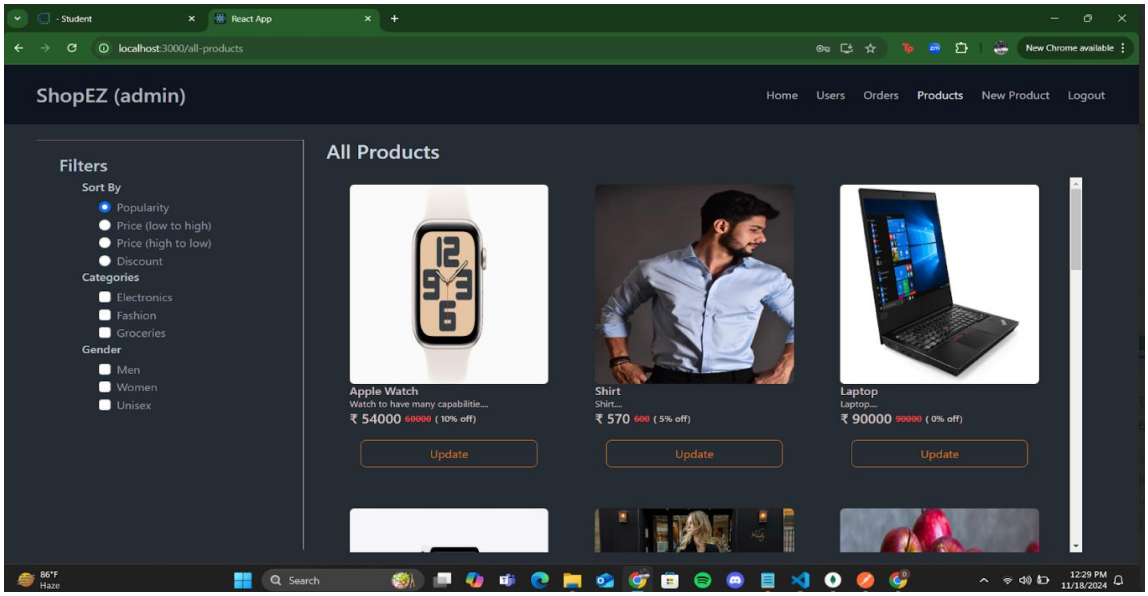

ShopEZ
Search Electronics, Fashion, mobiles, etc.,
John
Laptop
Laptop
Price: ₹ 90000
Remove
Price Details
Total MRP: ₹ 90000
Discount on MRP: - ₹ 0
Delivery Charges: + ₹ 0
Final Price: ₹ 90000
Place order


- Student
React App
localhost:3000/cart
New Chrome available
ShopEZ
Search Electronics, Fashion, mobiles, etc.,
John
Laptop
Laptop
Size:
Quantity: 1
Price: ₹ 90000
Remove
Checkout
Checkout details
Name
Mobile
Email
Address
Pincode
Payment method
Choose Payment method
choose payment method
cancel
Order
Price Details
Total MRP:
₹ 90000
Discount on MRP:
- ₹ 0
Delivery Charges:
+ ₹ 0
Final Price: ₹ 90000
Place order
86°F
Haze
Search
12:28 PM
11/18/2024


- Student
React App
localhost:3000/all-orders
New Chrome available
ShopEZ (admin)
Home
Users
Orders
Products
New Product
Logout
Orders
Laptop
Laptop
Size:
Quantity: 1
Price: ₹ 90000
Payment method: netbanking
UserId: 673ada1cfeaf6999b4603f67
Name: John
Email: john@gmail.com
Mobile: 745526446
Ordered on: 2024-11-18
Address: Chennai
Pincode: 600029
Order status: order placed
Update order status
Update
Cancel
Update order status
Order Placed
In-transit
Delivered
Apple Watch
Watch to have many capabilities
Size: S
Quantity: 1
Price: ₹ 54000
Payment method: card
UserId: 673ae001feaf6999b4604027
Name: mary
Email: mary@gmail.com
Mobile: 987456321
Ordered on: 2024-11-18
Address: Chennai
Pincode: 600020
Order status: cancelled
86°F
Haze
Search
12:30 PM
11/18/2024


ShopEZ (admin)
Home
Users
Orders
Products
New Product
Logout
Total users
6
View all
All Products
13
View all
All Orders
5
View all
Add Product
(new)
Add now
Update banner
Banner url
Update


ShopEZ (admin)
Home
Users
Orders
Products
New Product
Logout
All Users
User Id
User Name
Email Address
Orders
6730b4aec6e3ba429c498776
Data
dayita.jerald@gmail.com
2
User Id
User Name
Email Address
Orders
673ada1cfeaf6999b4603f67
John
john@gmail.com
2
User Id
User Name
Email Address
Orders
673ae001feaf6999b4604027
Mary
mary@gmail.com
1


ShopEZ (admin)
Home
Users
Orders
Products
New Product
Logout
Filters
Sort By
Popularity
Price (low to high)
Price (high to low)
Discount
Categories
Electronics
Fashion
Groceries
Gender
Men
Women
Unisex
All Products
Apple Watch
Watch to have many capabilitie...
₹ 54000 60000 (10% off)
Update
Shirt
Shirt...
₹ 570 600 (5% off)
Update
Laptop
Laptop...
₹ 90000 90000 (0% off)
Update