NM1042 – MERN STACK POWERED BY MONGODB

GROCERY WEB APPLICATION

Submitted by

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in partial fulfillment for the award of the degree

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In

COMPUTER SCIENCE AND ENGINEERING

St. PETER'S

COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution)

Affiliated to Anna University | Approved By AICTE

Avadi,Chennai,Tamil Nadu-600054

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2024

BONAFIDE CERTIFICATE

Certified that this project report under **NM1042 – MERN STACK POWERED BY MONGODB** with the topic **"GROCERY WEB APPLICATION"** is the Bonafide work of Pavithran. R – 112721104025, Shyam. M - 112721104035, Manikandan. D – 112721104020, Kishore. P – 112721104015 who carried out the project work under my supervision.

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Submitted for the practical Examination held on ..... at St. PETER'S COLLEGE OF ENGINEERING AND TECHNOLOGY.

Internal Examiner **External Examiner**

NAAN MUDHALVAN

GROCERY WEB APPLICATION

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College Code: 1127

College Name: St. Peter's College of Engineering and Technology

TEXT TO CODE GENERATOR

ABSTRACT :

This project is a comprehensive grocery web application built using the MERN (MongoDB, Express, React, Node.js) stack. It is designed to provide users with a seamless online shopping experience for grocery products. The application includes user authentication, product browsing, search and filtering capabilities, cart management, and an efficient checkout process. Customers can review products and manage their orders, while administrators are equipped with tools to manage the product inventory and user data. The application aims to enhance convenience for users while ensuring a scalable, secure, and feature-rich platform for grocery retailers.

INTRODUCTION :

In today's fast-paced world, online grocery shopping has become an essential part of modern living, offering unparalleled convenience and time-saving benefits. This project is a comprehensive grocery web application developed using the MERN (MongoDB, Express, React, Node.js) stack, aiming to bridge the gap between traditional grocery shopping and digital solutions. The application serves as a robust platform that caters to the needs of customers and administrators alike.

For customers, the platform provides a seamless experience with features such as user authentication, intuitive product browsing, powerful search and filtering options, and a streamlined checkout process. Users can also manage their shopping carts, leave reviews for products, and keep track of their past orders through detailed order histories.

On the other hand, administrators are equipped with tools to manage the product inventory and user data efficiently, ensuring smooth operation and scalability. Security is a core aspect of the application, with strong authentication mechanisms and data protection measures in place to safeguard user information and transactions.

This project not only addresses the growing demand for online grocery shopping but also focuses on building a scalable, secure, and user-centric platform that enhances the shopping experience while digitizing grocery retail operations.

FEATURES :

- **Login/Sign Up**: Users can create accounts or log in to existing ones.
- **Forgot Password**: Forgot your password? No problem! Users can reset their passwords via email.
- **Update Password**: Users can change their passwords for added security.
- **Customer Reviews**: Customers can leave reviews for products.
- **Update Reviews**: Customers can edit or delete their reviews.
- **Product Lists**: Browse and view product listings.
- **Filter Products**: Filter products by category, price, or other attributes.
- **Search Products**: Search for specific products by name or keywords.
- **Cart Items**: Add products to the cart for purchase.
- **Order Summary**: Review and confirm orders before checkout.
- **Order Details**: View order history and details.
- **Admin Functionality**: Special features for administrators to manage products and users.

TECHNOLOGIES USED :

- **MongoDB**: A NoSQL database for storing data.
- **Express.js**: A web application framework for Node.js.
- **React**: A JavaScript library for building user interfaces.
- **Node.js**: A JavaScript runtime for server-side development.
- **JWT**: JSON Web Tokens for user authentication.
- **bcrypt**: A library for hashing user passwords.
- **Nodemailer**: A library for sending email.
- **Cloudinary**: A cloud-based image and video management service.

PROJECT FLOW :

1. User Registration and Authentication

- **Flow:** Users register with email and password or log in if they already have an account. Password reset is handled through an email-based recovery system.

- **Tools:** MongoDB for storing user details, Node.js for handling backend logic, and JSON Web Tokens (JWT) for authentication.

2. Product Browsing

- **Flow:** Users can view available products organized into categories. Products are fetched from the MongoDB database using Express routes and displayed on the frontend using React.

- **Features:** Pagination and infinite scrolling can enhance usability.

3. Search and Filtering

- **Flow:** Users can search for specific products or apply filters based on price, category, or brand. Queries are passed to the backend, which filters the MongoDB data before sending results to the frontend.

4. Shopping Cart Management

- **Flow:** Users add products to the cart, which stores product details and quantity. Cart information is saved in the database or local storage for session management.

5. **Order Summary and Checkout**

   - **Flow:** Users review their cart, check totals, and proceed to checkout. Payment integration (e.g., PayPal, Stripe) can be included here. Orders are stored in the database upon successful payment.

6. **Order History and Details**

   - **Flow:** Users view past orders, including product details, quantities, and payment status, fetched from MongoDB and rendered on the frontend.

7. **Customer Reviews and Ratings**

   - **Flow:** Users can leave reviews for purchased products. Reviews are submitted via React forms, processed by the backend, and saved in the MongoDB database.

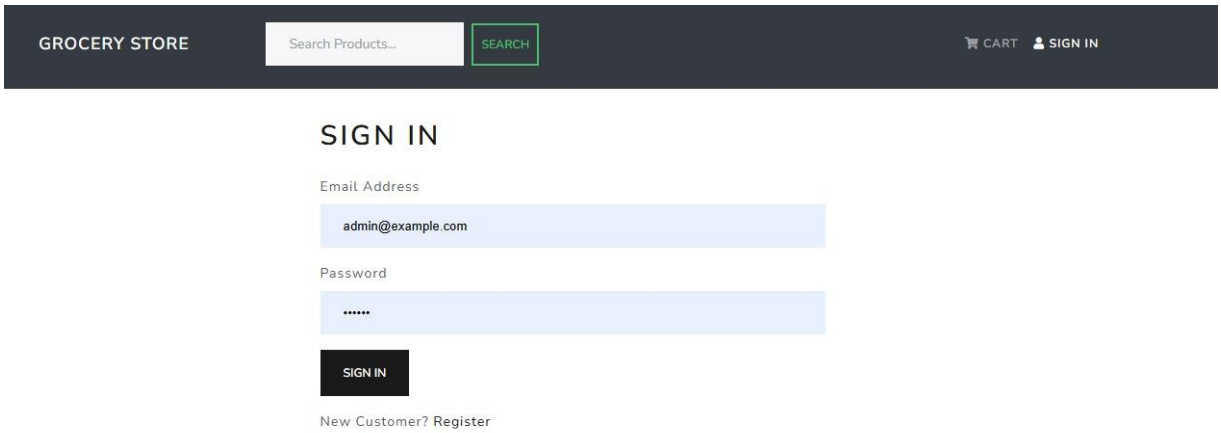
8. **Admin Panel**

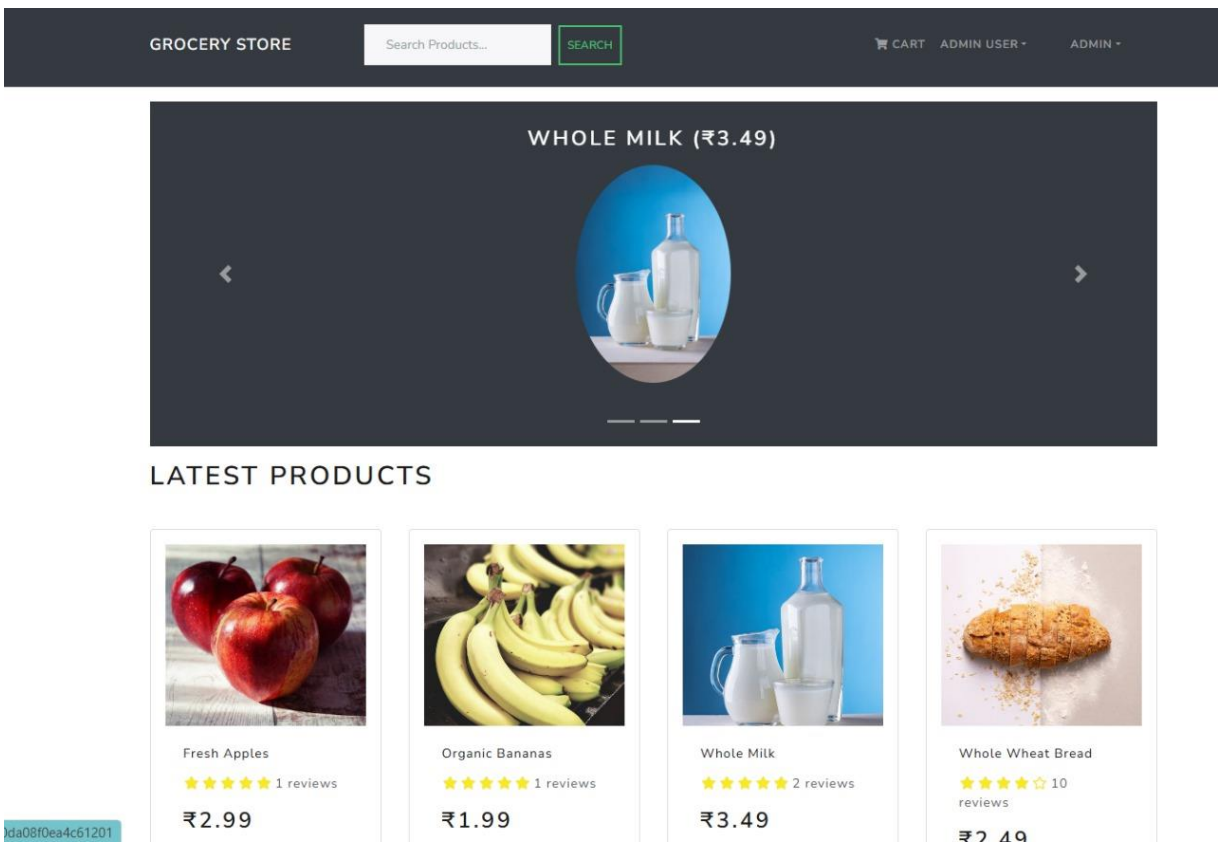
   - **Flow:** Administrators log in to access management tools for adding or updating products, managing categories, and overseeing user activity. Admin actions are secured with role-based authentication.

9. **Security and Performance**

   - **Features:** Secure APIs, HTTPS, and data validation ensure safety. React optimizations (like code splitting) and MongoDB indexing enhance performance.

SAMPLE OUTPUT :





GROCERY STORE Search Products... SEARCH CART ADMIN USER ADMIN

GO BACK

FRESH APPLES

1 reviews

Price: ₹2.99

Description: Crisp and juicy apples, perfect for snacking or baking.

Price:	₹2.99
Status:	In Stock
Qty	1

ADD TO CART

REVIEWS

PAVITHRAN R

2024-11-26

good product

WRITE A CUSTOMER REVIEW

Rating

Select...

Comment

GROCERY STORE Search Products... SEARCH CART ADMIN USER ADMIN

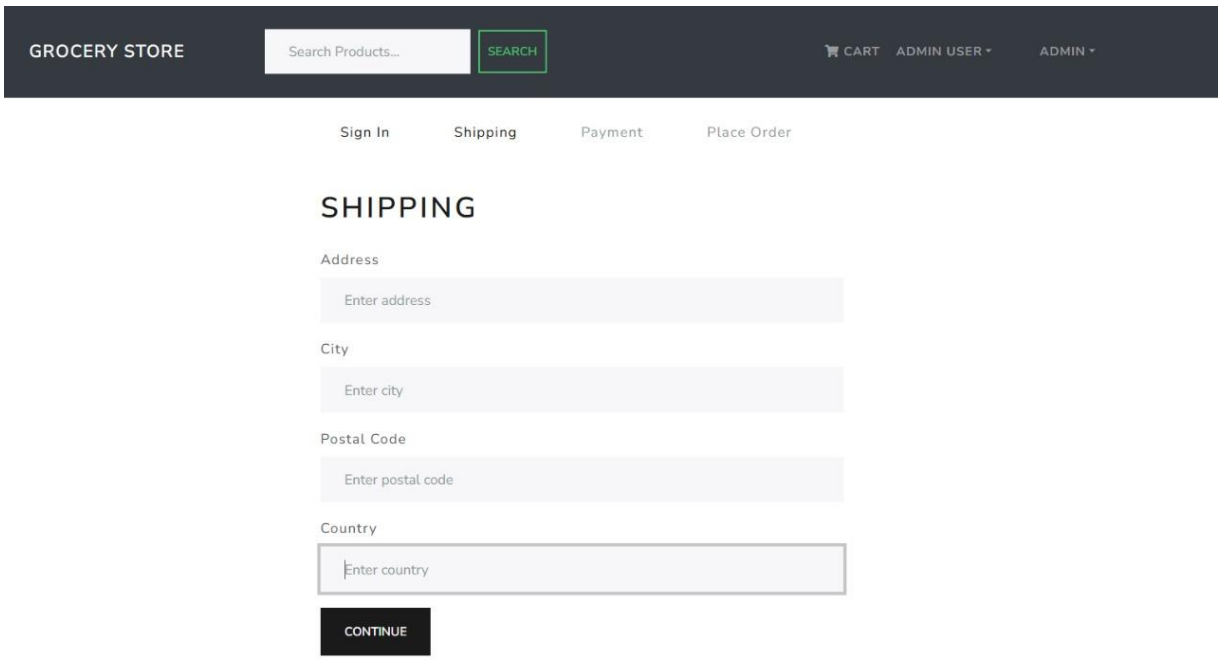
SHOPPING CART

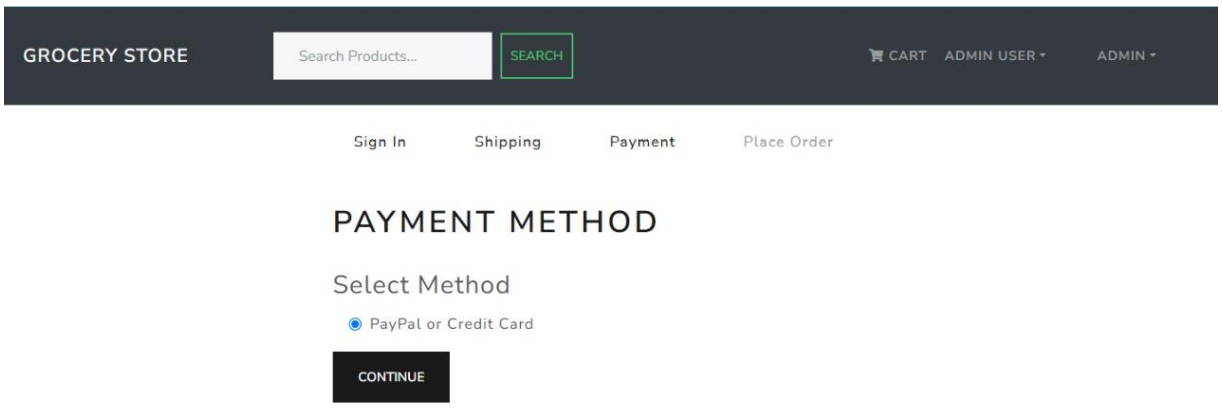
Fresh Apples ₹2.99 1

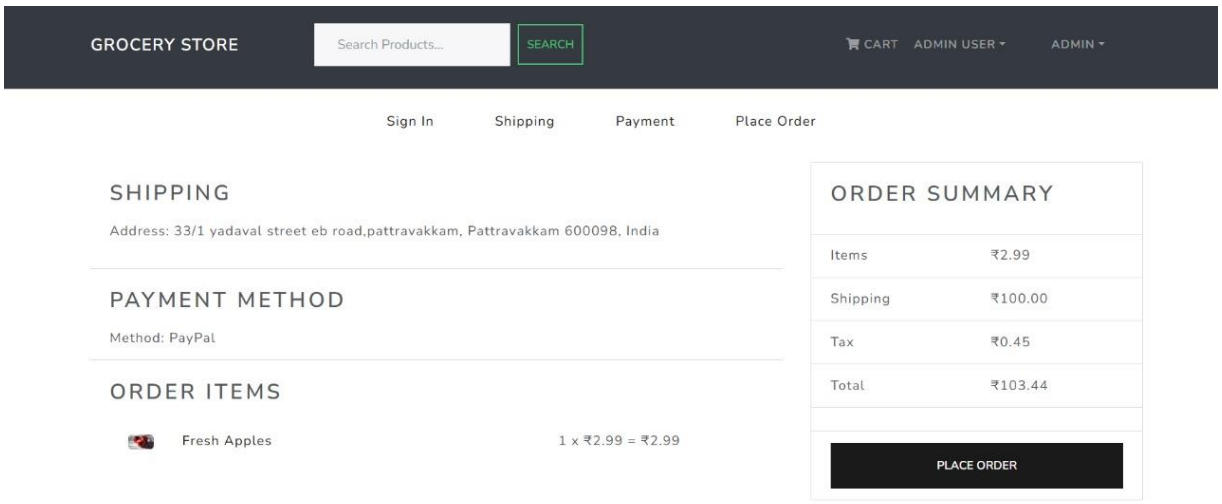
SUBTOTAL (1) ITEMS

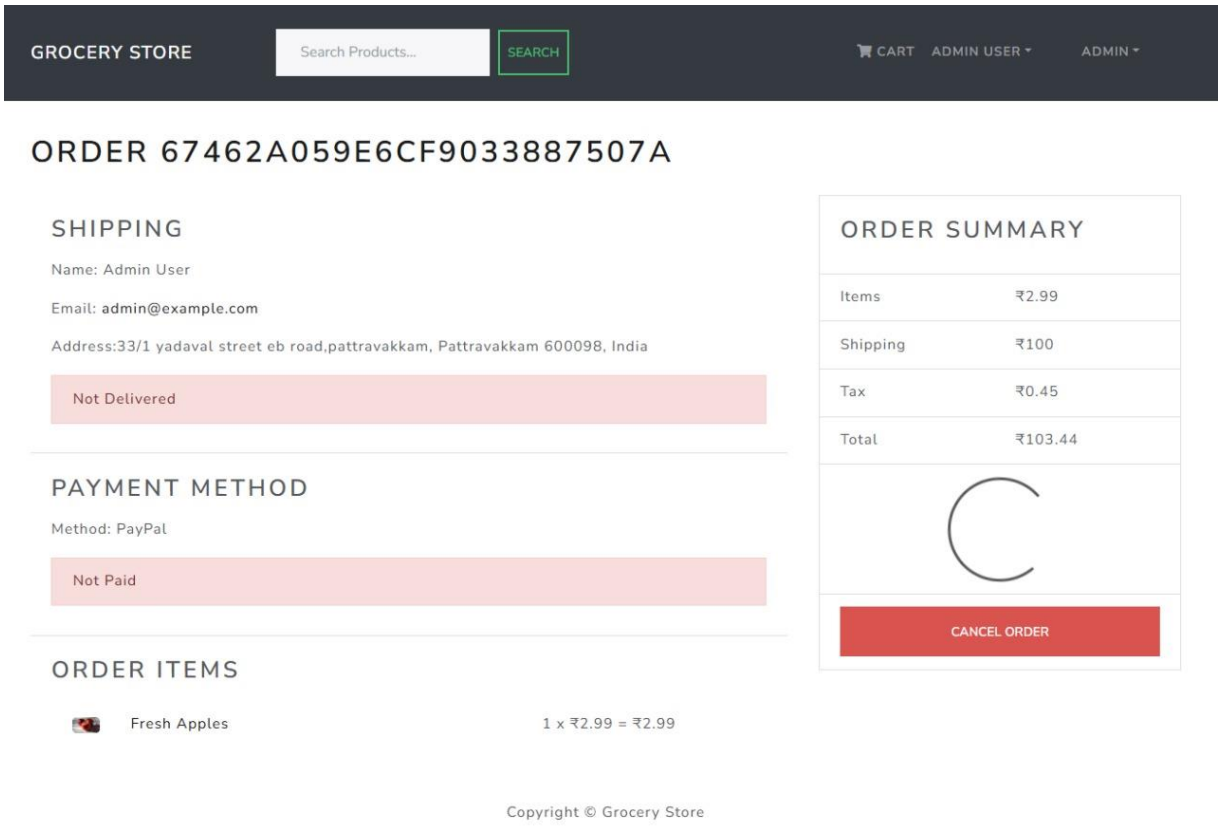
₹2.99

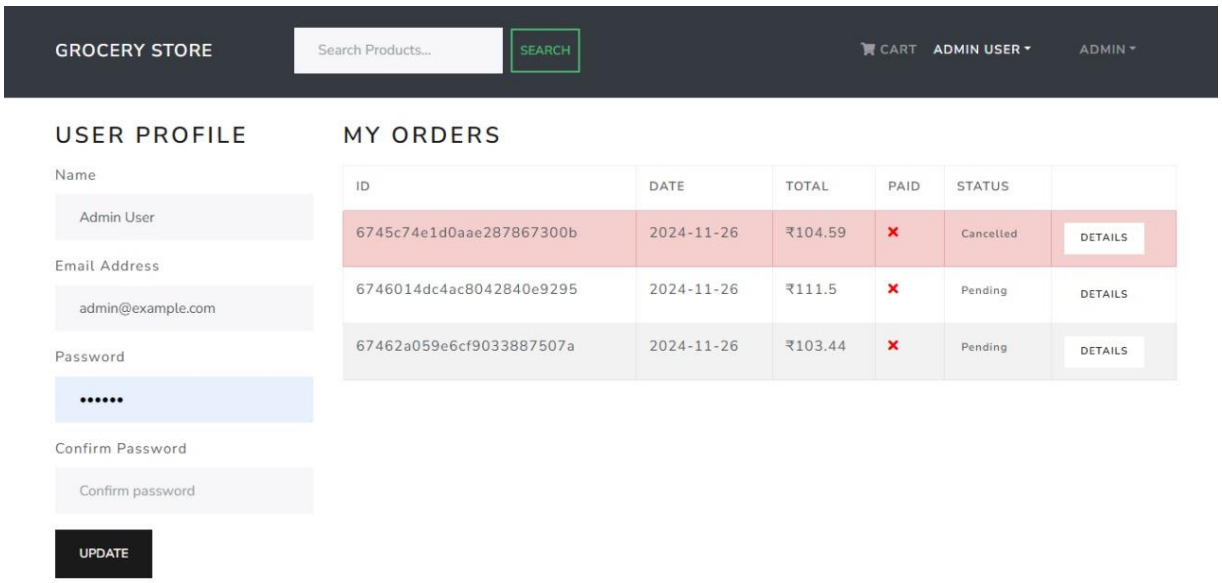
PROCEED TO CHECKOUT


GROCERY STORE
Search Products...
SEARCH
CART
ADMIN USER
ADMIN
Sign In
Shipping
Payment
Place Order
SHIPPING
Address
Enter address
City
Enter city
Postal Code
Enter postal code
Country
Enter country
CONTINUE


GROCERY STORE
Search Products...
SEARCH
CART
ADMIN USER
ADMIN
Sign In
Shipping
Payment
Place Order
PAYMENT METHOD
Select Method
PayPal or Credit Card
CONTINUE






GROCERY STORE
Search Products...
SEARCH
CART
ADMIN USER
ADMIN
USER PROFILE
Name
Admin User
Email Address
admin@example.com
Password
Confirm Password
Confirm password
UPDATE
MY ORDERS
ID
DATE
TOTAL
PAID
STATUS
6745c74e1d0aae287867300b
2024-11-26
₹104.59
Cancelled
DETAILS
6746014dc4ac8042840e9295
2024-11-26
₹111.5
Pending
DETAILS
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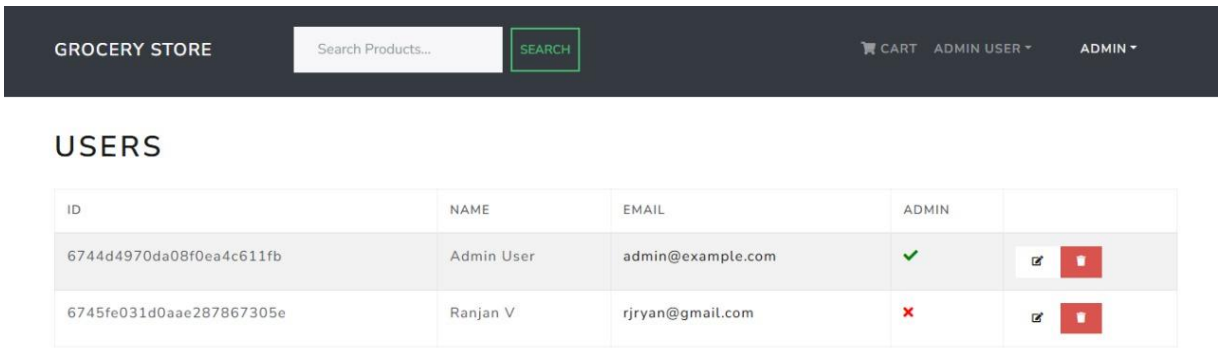
2024-11-26
₹103.44
Pending
DETAILS


GROCERY STORE
Search Products...
SEARCH
CART
ADMIN USER
ADMIN
USERS
ID
NAME
EMAIL
ADMIN
6744d4970da08f0ea4c611fb
Admin User
admin@example.com
6745fe031d0aae287867305e
Ranjan V
rjryan@gmail.com

PRODUCTS

+ CREATE PRODUCT

ID	NAME	PRICE	CATEGORY	BRAND	
6744d4970da08f0ea4c611ff	Fresh Apples	₹2.99	Fruits	Organic Farms	
6744d4970da08f0ea4c61200	Organic Bananas	₹1.99	Fruits	Fresh Choice	
6744d4970da08f0ea4c61201	Whole Milk	₹3.49	Dairy	Dairy Fresh	
6744d4970da08f0ea4c61202	Whole Wheat Bread	₹2.49	Bakery	Bakery Delight	
6744d4970da08f0ea4c61203	Fresh Eggs	₹4.99	Dairy	Farm Fresh	
6744d4970da08f0ea4c61204	Fresh Carrots	₹1.49	Vegetables	Garden Fresh	
6744d4970da08f0ea4c61205	Greek Yogurt	₹3.99	Dairy	Dairy Fresh	
6744d4970da08f0ea4c61206	Fresh Tomatoes	₹2.29	Vegetables	Garden Fresh	
6744d4970da08f0ea4c61207	Cheddar Cheese	₹5.99	Dairy	Dairy Fresh	
6744d4970da08f0ea4c61209	Organic Avocados	₹2.49	Fruits	Fresh Choice	

1 2

ORDERS

ID	USER	DATE	TOTAL	PAID	STATUS	
6745fe3e1d0aae287867306b	Ranjan V	2024-11-26	₹104.01	✗	Pending	DETAILS
6745fe7f1d0aae2878673083	Ranjan V	2024-11-26	₹107.45	✗	Pending	DETAILS
67460081c4ac8042840e9246	Ranjan V	2024-11-26	₹104.59	✗	Pending	DETAILS
6746014dc4ac8042840e9295	Admin User	2024-11-26	₹111.5	✗	Pending	DETAILS
67462a059e6cf9033887507a	Admin User	2024-11-26	₹103.44	✗	Pending	DETAILS

RESULT :

The developed grocery web application successfully meets its objectives by providing a comprehensive, feature-rich platform for online grocery shopping. The system offers a seamless and user-friendly experience for customers, allowing them to register, log in, browse products, search and filter items, manage their shopping carts, and complete orders with ease. The review and feedback features enhance user engagement, fostering trust and transparency between customers and the platform.

Administrators benefit from robust management tools that enable efficient handling of product inventories, user accounts, and platform operations. The inclusion of strong security measures ensures safe user authentication, secure transactions, and the protection of sensitive data.

The application’s scalability and flexibility make it adaptable to future enhancements, such as adding new features or accommodating a growing user base. Overall, the project achieves its goal of delivering a modern, efficient, and reliable online grocery shopping solution that bridges the gap between traditional retail and digital innovation.

REFERENCE :

- **Food Delivery Application** - Published on GitHub
Explore on GitHub

GitHub

- **Developing an E-commerce Web App using MERN Stack** - Published on DEV Community
Read on DEV Community

DEV Community

- **Node.js and MERN Stack Applications Case Study** - Published on Theseus.fi
View on Theseus

Theseus