



#### NM1042 – MERN STACK POWERED BY MONGODB

#### **GROCERY WEB APPLICATION**

#### Submitted by

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in partial fulfillment for the award of the degree

of BACHELOR OF ENGINEERING

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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#### **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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#### **GROCERY WEB APPLICATION**

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# **TEXT TO CODE GENERATOR**

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#### **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 rolebased 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	Ì∰ CART LE SIGN IN
	SIGN IN	
	Email Address	
	admin@example.com	
	Password	
	SIGN IN  New Customer? Register	



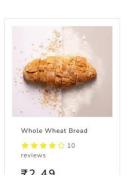
#### LATEST PRODUCTS



)da08f0ea4c61201









#### GO BACK



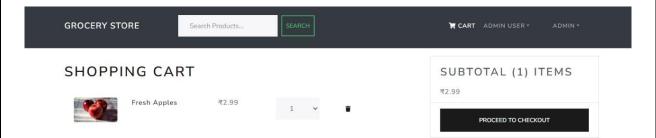
# FRESH APPLES 1 reviews Price: ₹2.99 Description: Crisp and juicy apples, perfect for snacking

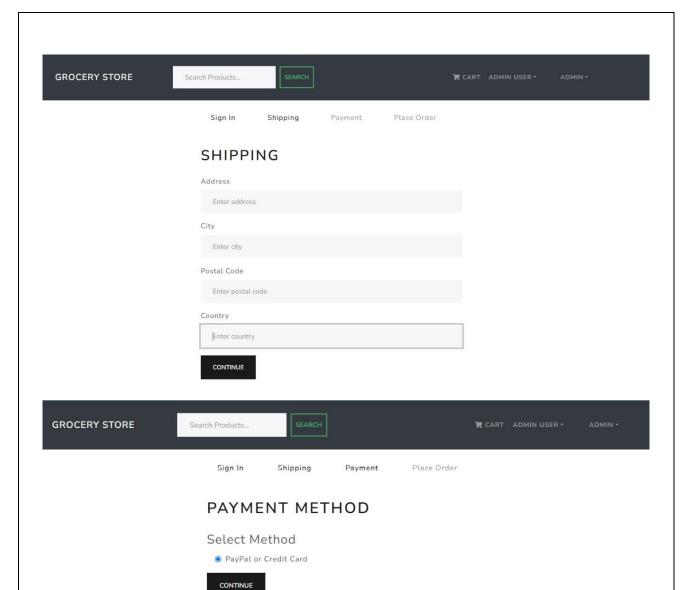
or baking.

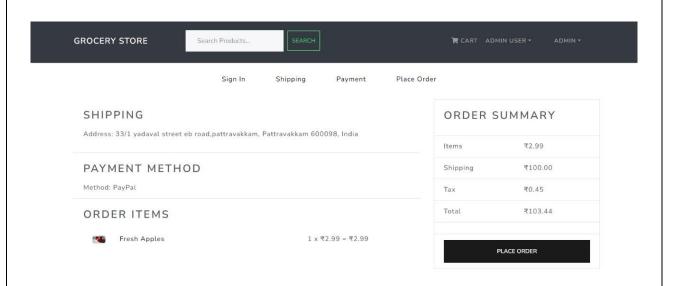


#### REVIEWS



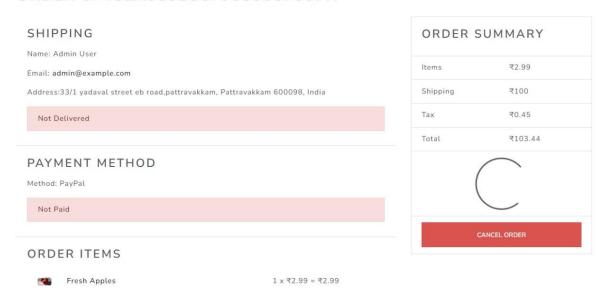




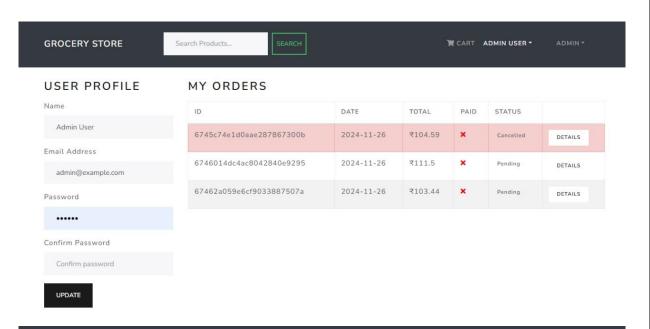




#### ORDER 67462A059E6CF9033887507A



Copyright © Grocery Store



# GROCERY STORE

**USERS** 

ID	NAME	EMAIL	ADMIN	
6744d4970da08f0ea4c611fb	Admin User	admin@example.com	~	Z .
6745fe031d0aae287867305e	Ranjan V	rjryan@gmail.com	×	<b>3</b>

ADMIN -



#### **PRODUCTS**

+ CREATE PRODUCT

ID	NAME	PRICE	CATEGORY	BRAND	
6744d4970da08f0ea4c611ff	Fresh Apples	₹2.99	Fruits	Organic Farms	<b>B</b>
6744d4970da08f0ea4c61200	Organic Bananas	₹1.99	Fruits	Fresh Choice	<b>3</b>
6744d4970da08f0ea4c61201	Whole Milk	₹3.49	Dairy	Dairy Fresh	8
6744d4970da08f0ea4c61202	Whole Wheat Bread	₹2.49	Bakery	Bakery Delight	8
6744d4970da08f0ea4c61203	Fresh Eggs	₹4.99	Dairy	Farm Fresh	8
6744d4970da08f0ea4c61204	Fresh Carrots	₹1.49	Vegetables	Garden Fresh	8,
6744d4970da08f0ea4c61205	Greek Yogurt	₹3.99	Dairy	Dairy Fresh	8
6744d4970da08f0ea4c61206	Fresh Tomatoes	₹2.29	Vegetables	Garden Fresh	ß, 🚺
6744d4970da08f0ea4c61207	Cheddar Cheese	₹5.99	Dairy	Dairy Fresh	8
6744d4970da08f0ea4c61209	Organic Avocados	₹2.49	Fruits	Fresh Choice	or 🔳

1 2

GROCERY STORE

Search Products...

SEARCH

T CART AD

ADMIN -

#### **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:
<ul> <li>☐ Food Delivery Application - Published on GitHub</li> <li>Explore on GitHub</li> <li>GitHub</li> </ul>
□ <b>Developing an E-commerce Web App using MERN Stack</b> - 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