Full Stack Development with MERN

Project Documentation: GreenCart – Online Grocery Web Application

1. Introduction
• Project Title: GreenCart – Online Grocery Web Application

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2. Project Overview
• Purpose: To provide users with a seamless online platform to browse, add, and purchase groceries.

• Features: Product listing, search/filter, cart, user authentication, admin product management.

3. Architecture
• Frontend: Built using Angular with Bootstrap for responsive design.

• Backend: Developed using Node.js and Express.js to handle business logic and APIs.

• Database: MongoDB is used for storing product, user, and cart information.

4. Setup Instructions
• Prerequisites: Node.js, MongoDB, Angular CLI.

• Installation:
1. Clone the repository.
2. Run `npm install` in both frontend and backend folders.
3. Setup environment variables.
4. Run the servers.

5. Folder Structure
• Client: Angular frontend organized into components, services, and routes.

• Server: Node.js backend with separate routes, controllers, and models.

6. Running the Application
• Frontend: `npm run dev` in the client directory.

• Backend: `npm run server` in the server directory.

7. API Documentation

• Document all endpoints exposed by the backend.
• Include request methods, parameters, and example responses.
Frontend: http://localhost:5173
Backend: http://localhost:4000

8. Authentication

• Authentication is handled using JWT (JSON Web Tokens).
• After login, a token is issued and stored in the browser (typically in localStorage).
• Protected backend routes require the token in the Authorization header.
• The server validates the token before processing the request.

9. User Interface

• Built with Angular and styled using Bootstrap for responsiveness.
• Clean design with sections for homepage, products, cart, and authentication.
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• Clean design with sections for homepage, products, cart, and authentication.
• Includes:

- Product grid with categories and prices
- Login/Signup pages
- Cart preview and checkout button

10. Testing

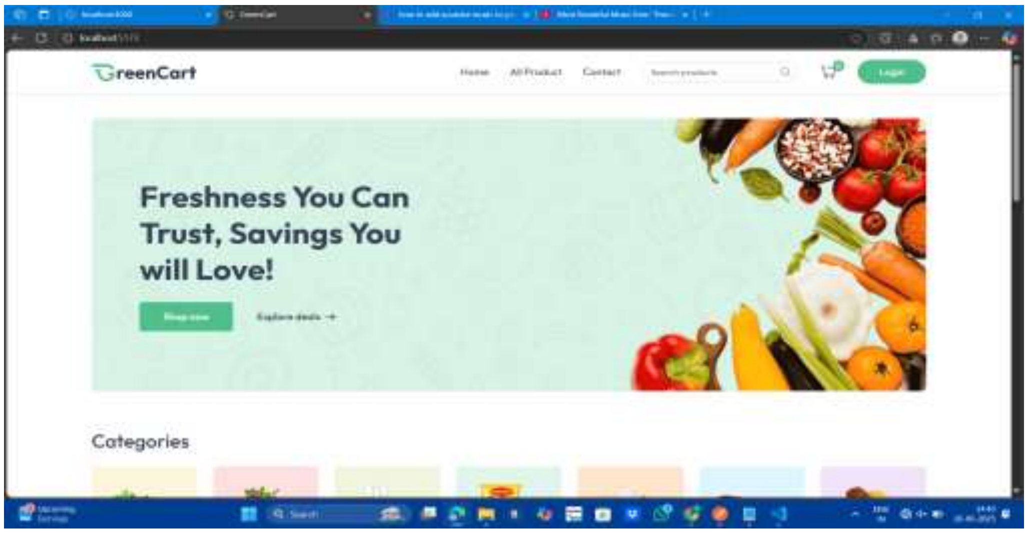
• Manual testing was performed for all workflows:

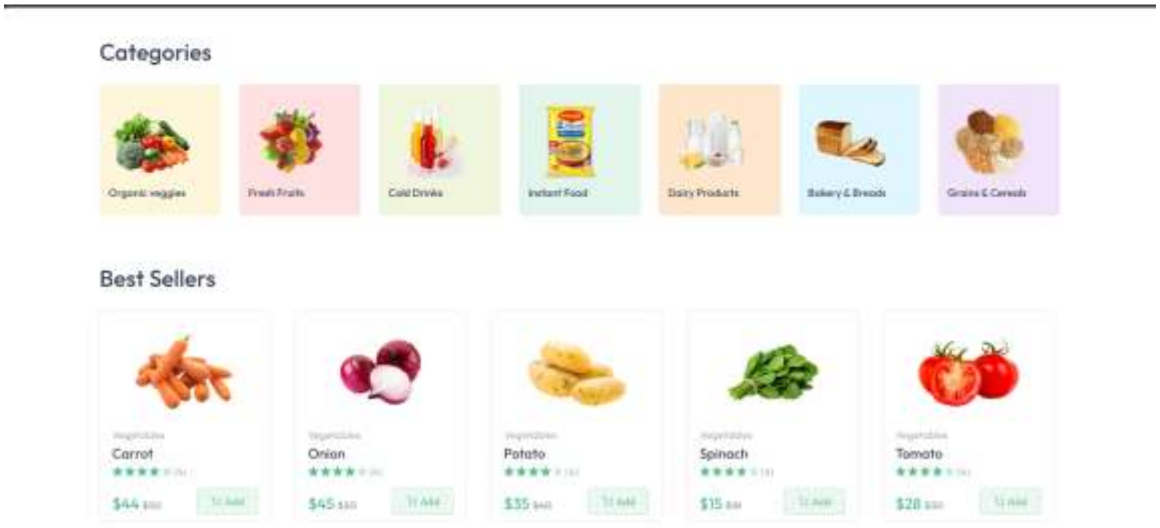
- User registration
- Login
- Adding/removing from cart
- Product navigation

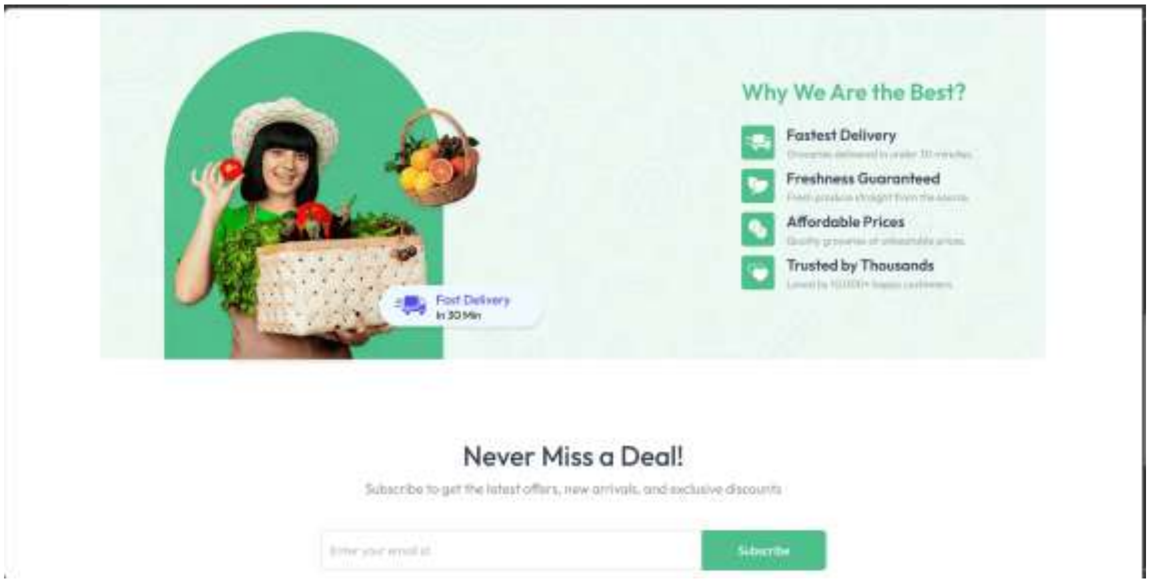
  • Postman was used to validate backend API endpoints.
  • Unit testing can be enhanced using Jasmine and Karma (Angular default).

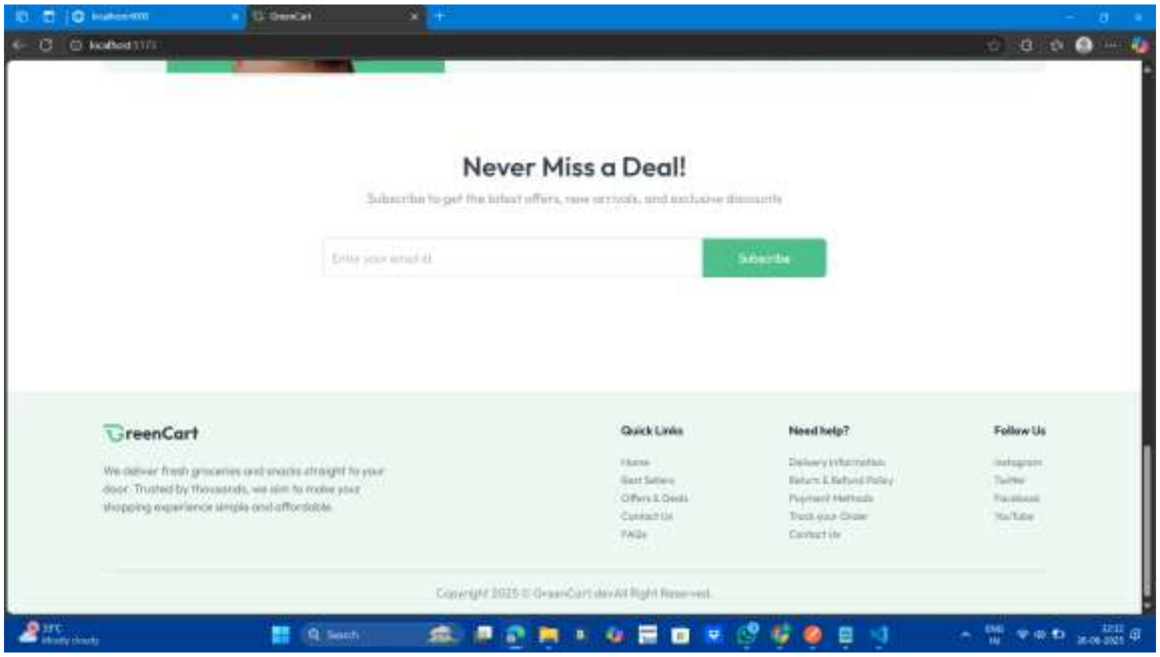
11. Screenshots or Demo

Main page:


GreenCart
Home
All Product
Contact
Search products
Login
Freshness You Can Trust, Savings You will Love!
Shop now
Explore deals →
Categories


Categories
Organic veggies
Fresh Fruits
Cold Drinks
Instant Food
Dairy Products
Bakery & Breads
Grains & Cereals
Best Sellers
Vegetables
Carrot
$44 $50
Add
Vegetables
Onion
$45 $50
Add
Vegetables
Potato
$35 $40
Add
Vegetables
Spinach
$15 $18
Add
Vegetables
Tomato
$28 $30
Add


Fast Delivery
In 30 Min
Why We Are the Best?
Fastest Delivery
Groceries delivered in under 30 minutes.
Freshness Guaranteed
Fresh produce straight from the source.
Affordable Prices
Quality groceries at unbeatable prices.
Trusted by Thousands
Loved by 10,000+ happy customers.
Never Miss a Deal!
Subscribe to get the latest offers, new arrivals, and exclusive discounts
Enter your email id
Subscribe



Never Miss a Deal!

Subscribe to get the latest offers, new arrivals, and exclusive discounts

Enter your email id | Subscribe

GreenCart

We deliver fresh groceries and snacks straight to your door. Trusted by thousands, we aim to make your shopping experience simple and affordable.

Quick Links	Need help?	Follow Us
Home	Delivery Information	Instagram
Best Sellers	Return & Refund Policy	Twitter
Offers & Deals	Payment Methods	Facebook
Contact Us	Track your Order	YouTube
FAQs	Contact Us	

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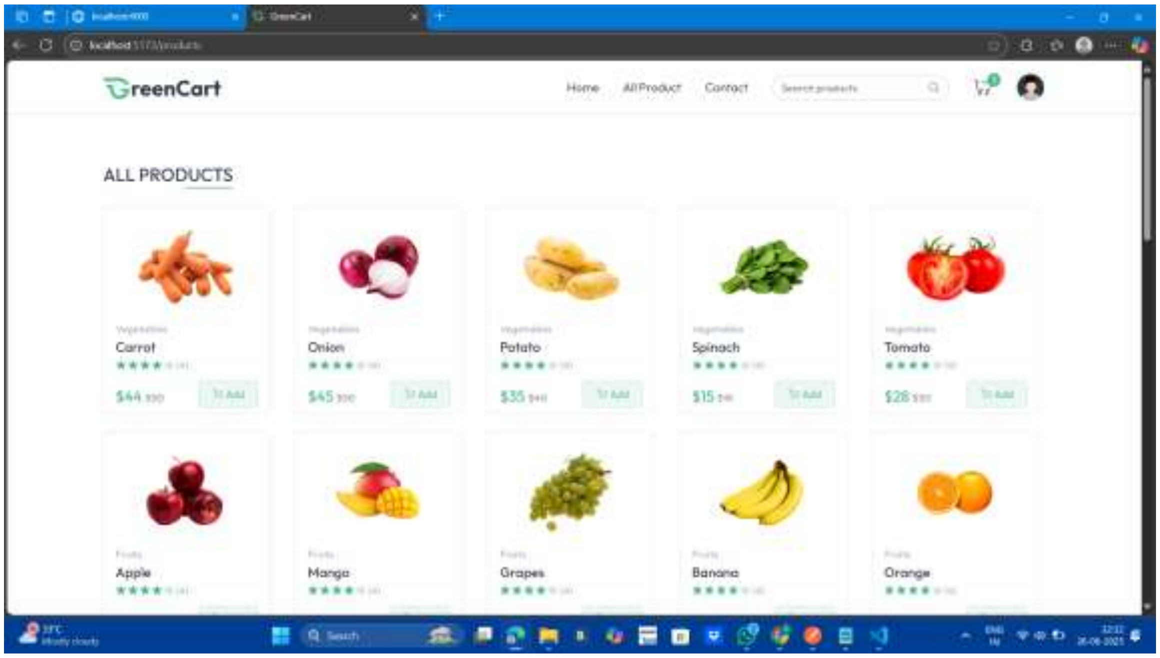
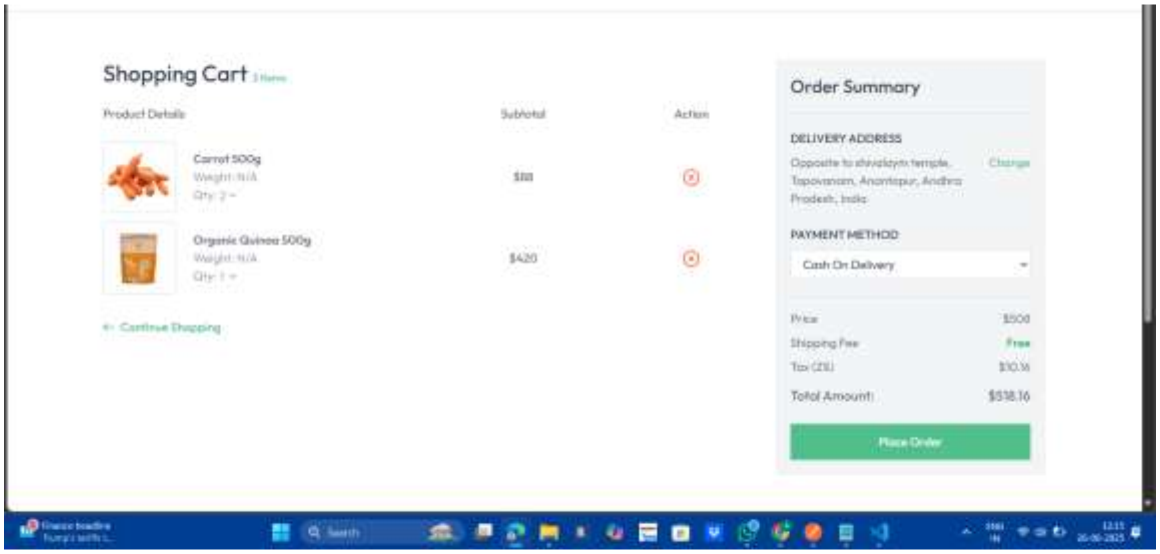
All Products



Cart



Shopping Cart 2 Items

Product Details	Subtotal	Action
Carrot 500g Weight: N/A Qty: 2	$80	
Organic Quinoa 500g Weight: N/A Qty: 1	$420	

← Continue Shopping

Order Summary

DELIVERY ADDRESS

Opposite to shivalayam temple, Tapovanam, Anantapur, Andhra Pradesh, India — Change

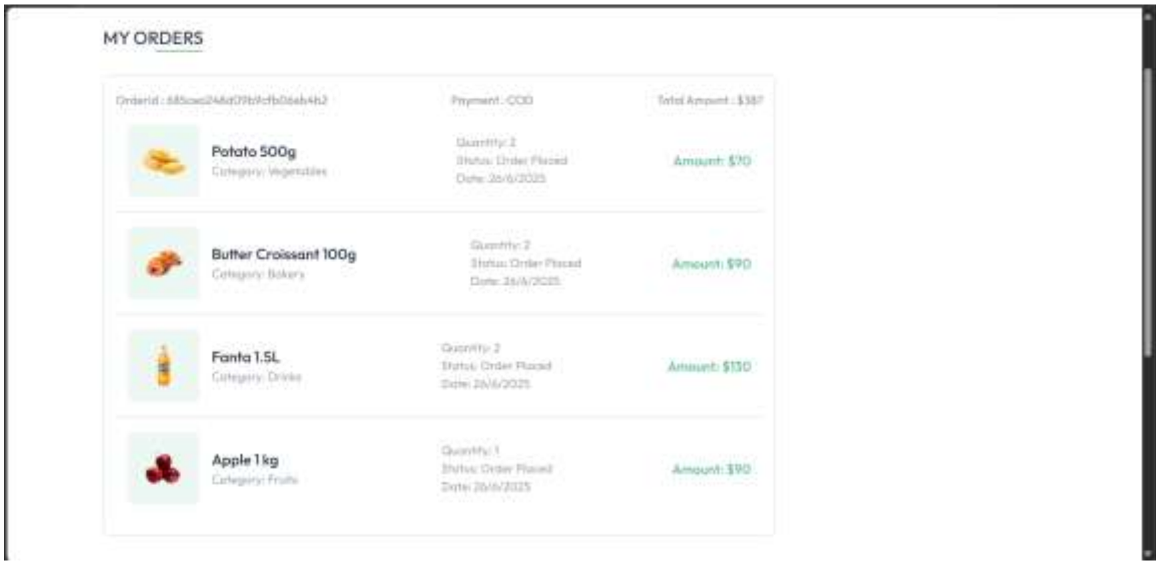
PAYMENT METHOD

Cash On Delivery

Price	$500
Shipping Fee	Free
Tax (2%)	$10.16
Total Amount:	$518.16

Place Order

MyOrders

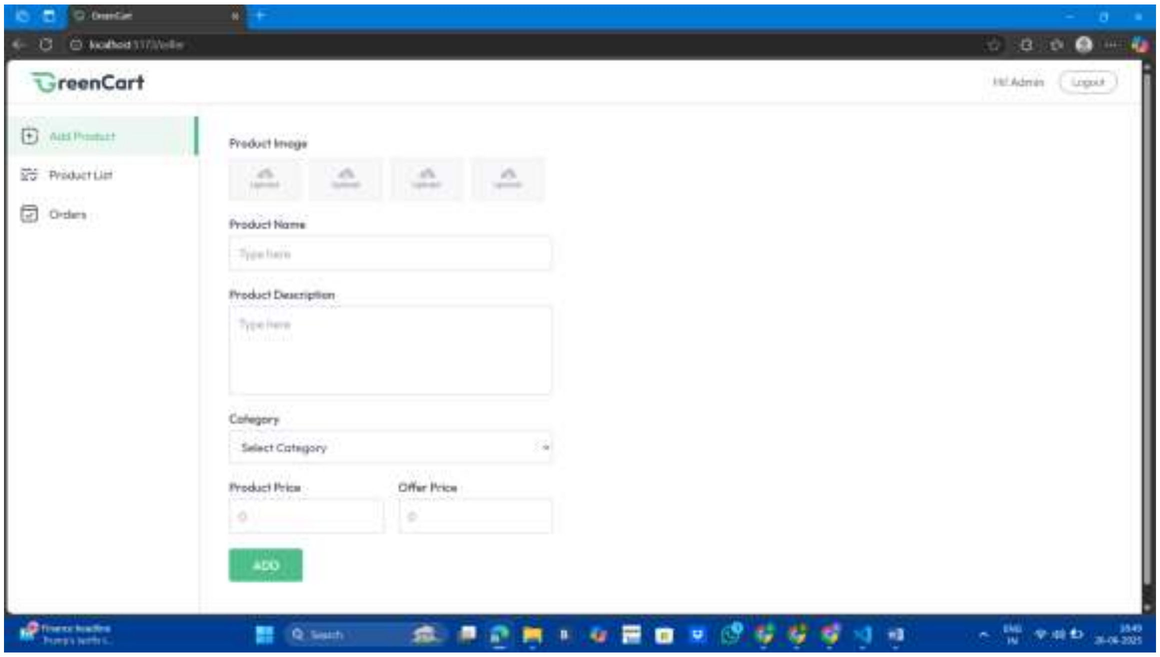


MY ORDERS

Orderid : 685cae246d07b9cfb0deb4b2 Payment : COD Total Amount : $387

Potato 500g Category: Vegetables	Quantity: 2 Status: Order Placed Date: 26/6/2025	Amount: $70
Butter Croissant 100g Category: Bakery	Quantity: 2 Status: Order Placed Date: 26/6/2025	Amount: $90
Fanta 1.5L Category: Drinks	Quantity: 2 Status: Order Placed Date: 26/6/2025	Amount: $130
Apple 1 kg Category: Fruits	Quantity: 1 Status: Order Placed Date: 26/6/2025	Amount: $90

Admin:



12. Known Issues

• Payment gateway is not live – only simulated.
• No image upload or file storage functionality.
• No user role separation for admin tasks (if admin panel exists).
• No validation for duplicate products.

13. Future Enhancements

• Integrate real payment gateways like Razorpay or Stripe.
• Implement role-based access (admin/user).
• Enable product image uploads using Cloudinary or AWS S3.
• Add product reviews, ratings, and feedback.
• Improve search functionality with filters and suggestions.
• Enable order tracking and invoice generation.