

# Project Report Format

## 1. INTRODUCTION

### 1.1 Project Overview:

**ShopEZ** is a full-stack e-commerce web application built using the MERN stack. It simplifies online shopping for users by offering effortless product discovery, a personalized shopping experience, and a seamless checkout process. On the seller side, it provides efficient product and order management tools through an intuitive dashboard.

### 1.2 Purpose:


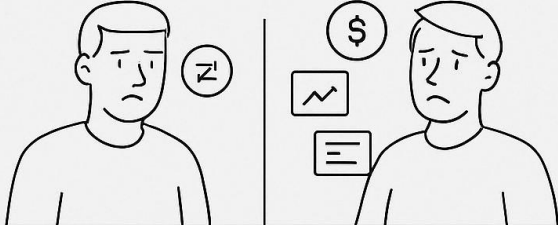
To provide a centralized platform that caters to both buyers and sellers, offering user-friendly interfaces, secure transactions, and real-time insights for business growth.

## 2. IDEATION PHASE

### 2.1 Problem Statement:

Busy consumers often struggle to find relevant products quickly across disorganized platforms. Small sellers also face challenges managing their inventory and understanding sales data. ShopEZ solves both issues with a unified system.

### 2.2 Empathy Map Canvas:

BUYER		SELLER	
			
<b>SAYS</b> <ul style="list-style-type: none"><li>• I just want to find the perfect gift quickly</li><li>• There are too many options online!</li><li>• I don't have time to browse endlessly</li></ul>	<b>THINKS</b> <ul style="list-style-type: none"><li>• What if I don't fit something in time?</li><li>• Will she even like this gift? I wish shopping online was simpler</li><li>• Adds items to cart and compares</li></ul>	<b>THINKS</b> <ul style="list-style-type: none"><li>• I need a better way to track orders</li><li>• I could sell more with the right data</li><li>• A smart dashboard would save me hours</li></ul>	<b>FEELS</b> <ul style="list-style-type: none"><li>• Overwhelmed with growing responsibilities</li><li>• Frustrated by lack of simple tools</li><li>• Hopeful about business growth with the right support</li></ul>
<b>PAIN POINTS</b> <ul style="list-style-type: none"><li>• Overwhelming number of options</li><li>• Inconsistent shopping interfaces</li><li>• Time crunch</li></ul>	<b>GOALS</b> <ul style="list-style-type: none"><li>• Stressed due to time constraints</li><li>• Anxious about making the wrong choice</li><li>• Relieved when checkout is smooth and confirmation is received</li></ul>	<b>PAIN POINTS</b> <ul style="list-style-type: none"><li>• No efficient order management</li><li>• Limited analytics or insights</li><li>• Time wasted on manual processes</li></ul>	<b>GOALS</b> <ul style="list-style-type: none"><li>• Streamlined order and inventory system</li><li>• Real-time insights into sales</li><li>• More time to focus on product quality and customer service</li></ul>

### 2.3 Brainstorming:

Ideas were grouped into themes: Product Discovery, Checkout, Personalization, Seller Management, and Admin Analytics. Prioritized features for MVP based on user needs.

### 3. REQUIREMENT ANALYSIS

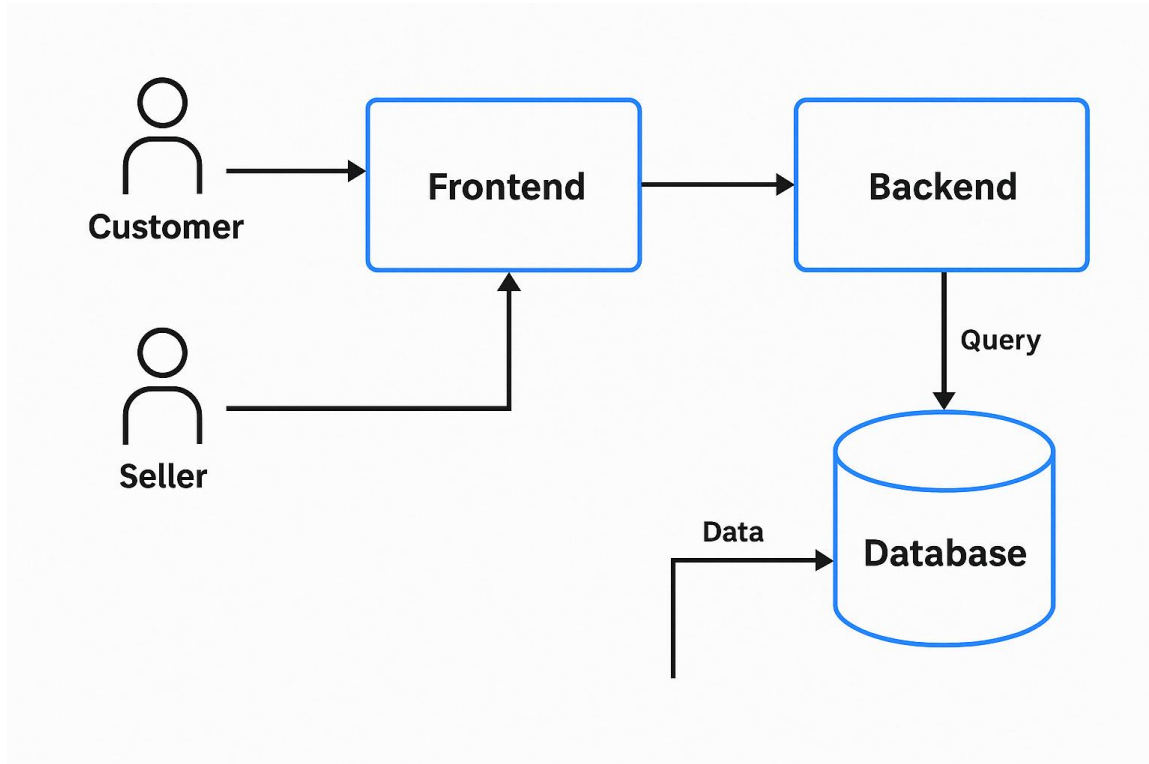
#### 3.1 Customer Journey map:

- Browse Products
- View Details / Add to Cart
- Checkout
- Receive Order Confirmation
- Seller Processes the Order
- Delivery & Feedback

#### 3.2 Solution Requirement:

- Registration & Login (JWT-based)
- Product Catalog with Filters
- Shopping Cart & Payment
- Order Management
- Seller Dashboard
- Admin Controls

#### 3.3 Data Flow Diagram:



#### 3.4 Technology Stack:

- **Frontend:** React.js

- **Backend:** Node.js with Express
- **Database:** MongoDB
- **Authentication:** JWT
- **ODM:** Mongoose

## 4. PROJECT DESIGN

### 4.1 Problem Solution Fit:

The modern online shopper demands speed, personalization, and simplicity. Sellers, on the other hand, seek effective tools to manage products and orders efficiently without relying on expensive, third-party platforms.

#### Problems Faced:

- Time-consuming product searches.
- Generic shopping experiences without personalization.
- Complicated checkout processes that lead to cart abandonment.
- Sellers overwhelmed with order tracking and lack of insights.

#### Solution Provided by ShopEZ:

- Smart filters and categories for effortless product discovery.
- AI-powered personalized recommendations based on user behavior.
- Seamless and secure checkout process using integrated payment gateways.
- Feature-rich seller dashboard with real-time analytics and simplified order management.

### 4.2 Proposed Solution:

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#### 4.3 Solution Architecture:

##### **Frontend (React.js):**

- Routes for Home, Products, Cart, Profile, Login/Register.
- Components like Navbar, Product Card, Filter Panel, and Checkout Form.

##### **Backend (Node.js + Express):**

- RESTful APIs for Users, Products, Orders, Admin.
- Middleware for JWT authentication and role-based access.

##### **Database (MongoDB):**

- Collections: Users, Products, Orders, Carts.
- Indexed queries for fast lookup.
- Mongoose schemas with validations.

##### **Authentication:**

- JSON Web Token (JWT) system.
- Secure access to protected resources for both buyers and sellers.

##### **Hosting & DevOps:**

- Frontend hosted on **Vercel/Netlify**.
- Backend & Database hosted on **Render/Heroku/MongoDB Atlas**.

## 5. PROJECT PLANNING & SCHEDULING

### 5.1 Project Planning:

Week	Tasks
Week 1	Requirement Analysis, Brainstorming, User Personas
Week 2	Database Schema Design, API Design, Environment Setup
Week 3	Frontend Development (UI/UX, Components)
Week 4	Integration of Frontend and Backend, Testing API Routes
Week 5	Finalizing Admin Panel, Seller Dashboard
Week 6	End-to-End Testing, UAT, Report Finalization, Deployment

## 6. FUNCTIONAL AND PERFORMANCE TESTING

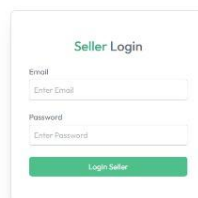
### 6.1 Performance Testing:

Tested each feature against its use case:

- User Registration & Login
- Product Browsing & Filtering
- Cart Operations (Add/Remove)
- Checkout & Order Placement
- Seller Product Management
- Admin Dashboard Access

## 7. RESULTS

### 7.1 Output Screenshots

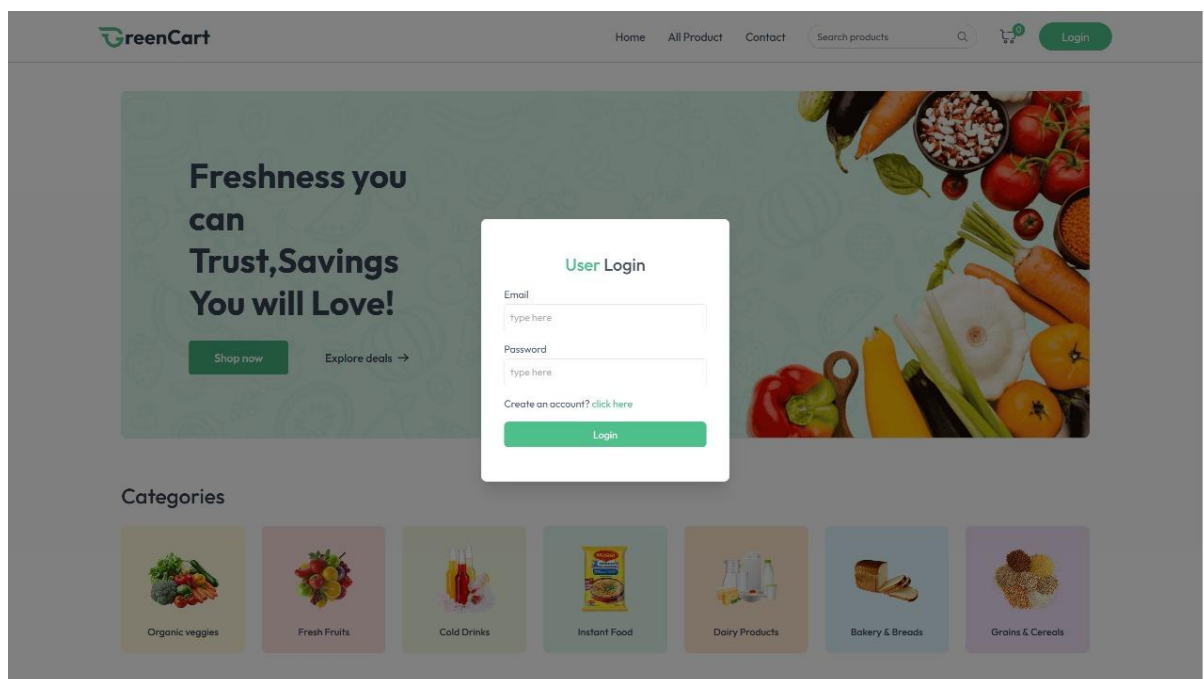


**Seller Login**

Email

Password

[Login Seller](#)



**GreenCart** Home All Product Contact Search products  [Login](#)

**Freshness you can Trust, Savings You will Love!**

[Shop now](#) [Explore deals →](#)

**User Login**

Email

Password

[Create an account? click here](#)

[Login](#)

**Categories**

- Organic veggies
- Fresh Fruits
- Cold Drinks
- Instant Food
- Dairy Products
- Bakery & Breads
- Grains & Cereals

## MY ORDERS

OrderId : 67e2589a8f87e63366786400

Payment : Online

Total Amount : \$89

**Spinach 500g**  
Category: VegetablesQuantity: 2  
Status: Order Placed  
Date: 25/3/2025

Amount: \$30

OrderId : 67e258798f87e633667863f2

Payment : COD

Total Amount : \$43

**Potato 500g**  
Category: VegetablesQuantity: 1  
Status: Order Placed  
Date: 25/3/2025

Amount: \$20

**Tomato 1 kg**  
Category: VegetablesQuantity: 1  
Status: Order Placed  
Date: 25/3/2025

Amount: \$35

**Fast Delivery**  
In 30 Min

**Freshness Guaranteed** Fresh produce straight from the source.

**Affordable Prices** Quality groceries at unbeatable prices.

**Trusted by Thousands** Loved by 10,000+ happy customers.

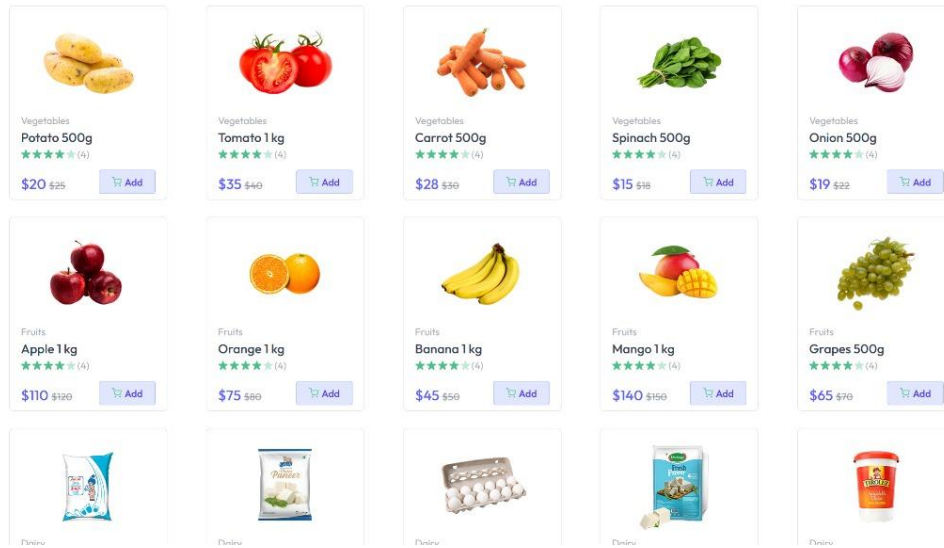
## Never Miss a Deal!

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

Enter your email id

Subscribe

## ALL PRODUCTS




Freshness you  
can  
Trust, Savings  
You will Love!

[Shop now](#)[Explore deals →](#)


## Categories




## Best Sellers




Vegetables  
**Potato 500g**  
★★★★☆ (4)  
\$20 \$25 [Add](#)




Vegetables  
**Tomato 1kg**  
★★★★☆ (4)  
\$35 \$40 [Add](#)



Vegetables  
**Carrot 500g**  
★★★★☆ (4)  
\$28 \$30 [Add](#)



Vegetables  
**Spinach 500g**  
★★★★☆ (4)  
\$15 \$18 [Add](#)




Vegetables  
**Onion 500g**  
★★★★☆ (4)  
\$19 \$22 [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.




Grains  
**Basmati Rice 5kg**  
★★★★☆ (4)  
\$520 \$550 [Add](#)




Grains  
**Wheat Flour 5kg**  
★★★★☆ (4)  
\$230 \$250 [Add](#)




Grains  
**Organic Quinoa 500g**  
★★★★☆ (4)  
\$420 \$450 [Add](#)




Grains  
**Brown Rice 1kg**  
★★★★☆ (4)  
\$110 \$120 [Add](#)




Grains  
**Barley 1kg**  
★★★★☆ (4)  
\$140 \$150 [Add](#)




Bakery  
**Brown Bread 400g**  
★★★★☆ (4)  
\$35 \$40 [Add](#)




Bakery  
**Butter Croissant 100g**  
★★★★☆ (4)  
\$45 \$50 [Add](#)




Bakery  
**Chocolate Cake 500g**  
★★★★☆ (4)  
\$325 \$350 [Add](#)




Bakery  
**Whole Bread 400g**  
★★★★☆ (4)  
\$40 \$45 [Add](#)




Bakery  
**Vanilla Muffins 6 pcs**  
★★★★☆ (4)  
\$90 \$100 [Add](#)




Instant  
**Maggi Noodles 280g**  
★★★★☆ (4)  
\$50 \$55 [Add](#)




Instant  
**Top Ramen 270g**  
★★★★☆ (4)  
\$40 \$45 [Add](#)



Instant  
**Knorr Cup Soup 70g**  
★★★★☆ (4)  
\$30 \$35 [Add](#)



Instant  
**Yippee Noodles 260g**  
★★★★☆ (4)  
\$45 \$50 [Add](#)



Instant  
**Oats Noodles 72g**  
★★★★☆ (4)  
\$35 \$40 [Add](#)



We deliver fresh groceries and snacks straight to your door. Trusted by thousands, we aim to provide fresh and quality products at the best prices. Our mission is to make grocery shopping easy and convenient for everyone.

#### Quick Links

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[Best Sellers](#)  
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#### Need help?

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

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[Add Product](#)[Product List](#)[Orders](#)

## All Products

Product	Category	Selling Price	In Stock
 Potato 500g	Vegetables	20	<input checked="" type="checkbox"/>
 Tomato 1kg	Vegetables	35	<input checked="" type="checkbox"/>
 Carrot 500g	Vegetables	28	<input checked="" type="checkbox"/>
 Spinach 500g	Vegetables	15	<input checked="" type="checkbox"/>
 Onion 500g	Vegetables	19	<input checked="" type="checkbox"/>
 Apple 1kg	Fruits	110	<input checked="" type="checkbox"/>
 Orange 1kg	Fruits	75	<input checked="" type="checkbox"/>
 Banana 1kg	Fruits	45	<input checked="" type="checkbox"/>
 Mango 1kg	Fruits	140	<input checked="" type="checkbox"/>
 Grapes 300g	Fruits	65	<input checked="" type="checkbox"/>
 Amul Milk 1L	Dairy	55	<input checked="" type="checkbox"/>
 Parag Milk 200g	Dairy	85	<input checked="" type="checkbox"/>

[Add Product](#)[Product List](#)[Orders](#)

## Orders List

 Spinach 500g x 2	Great Stack Street 123, Main City New State, 123456, IN 1234567890	89	Method: Online Date: 25/3/2025 Payment: Paid
 Potato 500g x 1  Tomato 1kg x 1	Great Stack Street 123, Main City New State, 123456, IN 1234567890	43	Method: COD Date: 25/3/2025 Payment: Pending

[Add Product](#)[Product List](#)[Orders](#)

## Product Image



## Product Name

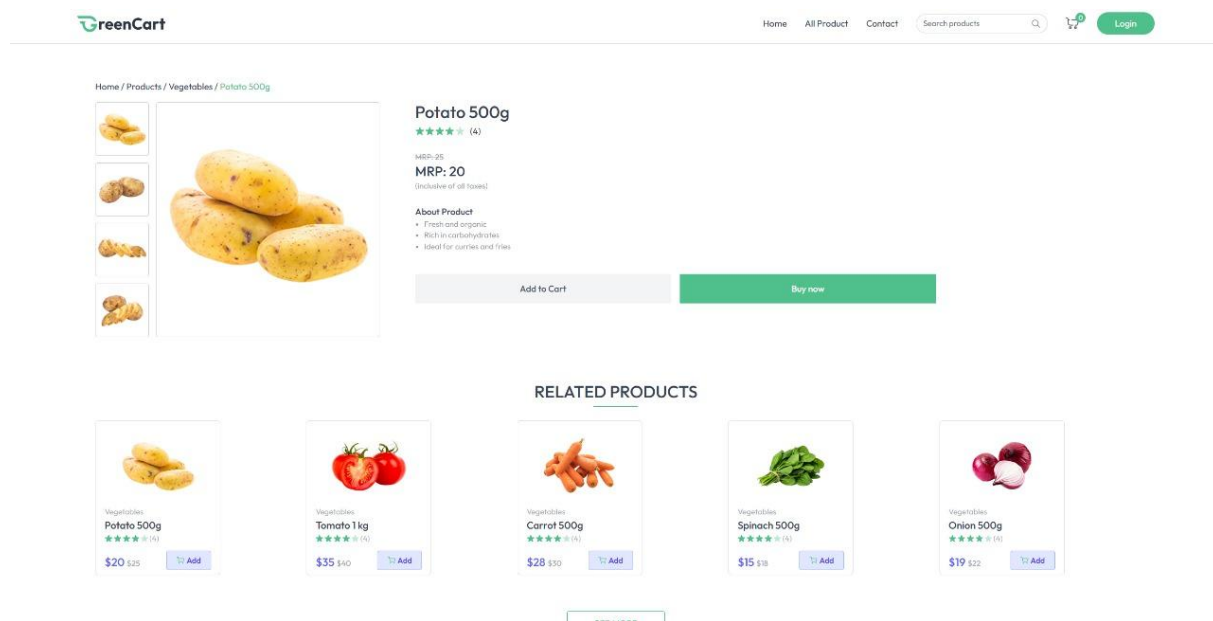
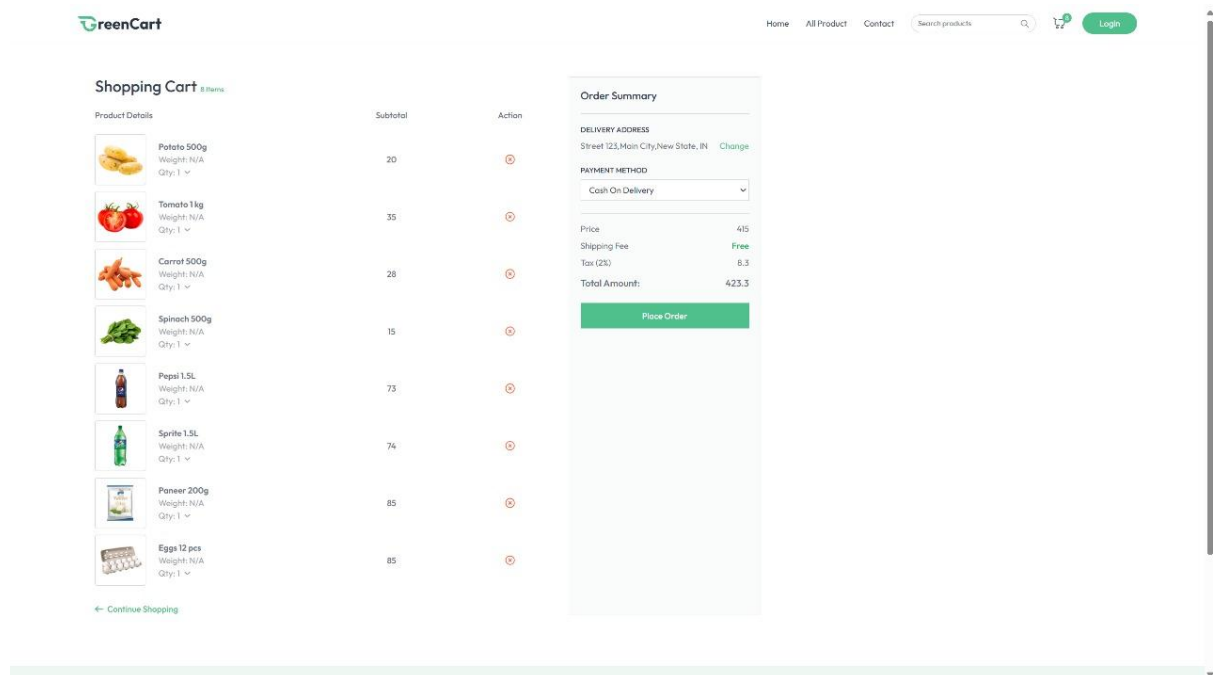
## Product Description

## Category

## Product Price

## Offer Price

[ADD](#)



## 8. ADVANTAGES & DISADVANTAGES

### Advantages

- Fast and scalable with React and Node.js.
- Secure authentication system with JWT.
- Insightful analytics for seller growth.
- Personalized shopping experience.
- Modular architecture for easy feature updates.

## **Disadvantages**

- Requires stable internet connection for optimal experience.
- Currently supports limited payment methods.
- No real-time customer support feature implemented yet.

## **9. CONCLUSION**

ShopEZ successfully bridges the gap between convenience for buyers and control for sellers. It offers a modern, robust shopping platform that simplifies discovery, enhances shopping experiences, and supports sellers with performance insights. The MERN stack enabled fast development and seamless integration across the entire tech stack.

## **10. FUTURE SCOPE**

### **Planned Enhancements:**

- AI-based Product Tagging & Discovery: Enhance personalization with ML models.
- Chatbot Support: Real-time customer support via AI assistants.
- Voice Search Integration: Hands-free shopping for accessibility.
- Order Tracking Integration: Real-time tracking updates via logistics APIs.
- Wishlist & Review System: Boost user engagement and trust.

## **11. APPENDIX**

GitHub Link: <https://github.com/anirudhsrii/GREATSTACK.git>