A PROJECT ON Grocery Store Management System

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE COURSE OF DIPLOMA IN ADVANCED COMPUTING FROM CDAC



SUNBEAM INSTITUTE OF INFORMATION TECHNOLOGY

Hinjewadi

SUBMITTED BY:

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UNDER THE GUIDENCE OF:

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ACKNOWLEDGEMENT

A project usually falls short of its expectation unless aided and guided by the right persons at the right time. We avail this opportunity to express our deep sense of gratitude towards Mr. Nitin Kudale (Center Coordinator, SIIT, Pune) and Mr. Yogesh Kolhe (Course Coordinator, SIIT, Pune).

We are deeply indebted and grateful to them for their guidance, encouragement and deep concern for our project. Without their critical evaluation and suggestions at every stage of the project, this project could never have reached its present form.

Last but not the least we thank the entire faculty and the staff members of Sunbeam Institute of Information Technology, Pune for their support.

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CERTIFICATE

This is to certify that the project work under the title 'Grocery Store Management System' is done by Sanket Shesherao Kadam in partial fulfillment of the requirement for award of Diploma in Advanced Computing Course.

Mrs. Pooja Jaiswal Project Guide Mr. Yogesh Kolhe Course Co-Coordinator

Date: 11/08/2025

1. INTRODUCTION TO PROJECT

The Grocery Store Management System is a web-based application designed to streamline the process of buying grocery products online. It provides a convenient shopping experience for customers and a robust management platform for the store administrator. By integrating product management, order tracking, checkout, and customer interaction into a single platform, the system enables customers to browse and purchase products from the comfort of their homes.

The application supports two main roles: **Admin** and **Customer**. The Admin can add and update products, monitor stock levels, manage order statuses, and access insights like total customers, sales, profit, and traffic. The admin dashboard also allows tracking of all orders—pending, shipped, or delivered—ensuring smooth fulfillment.

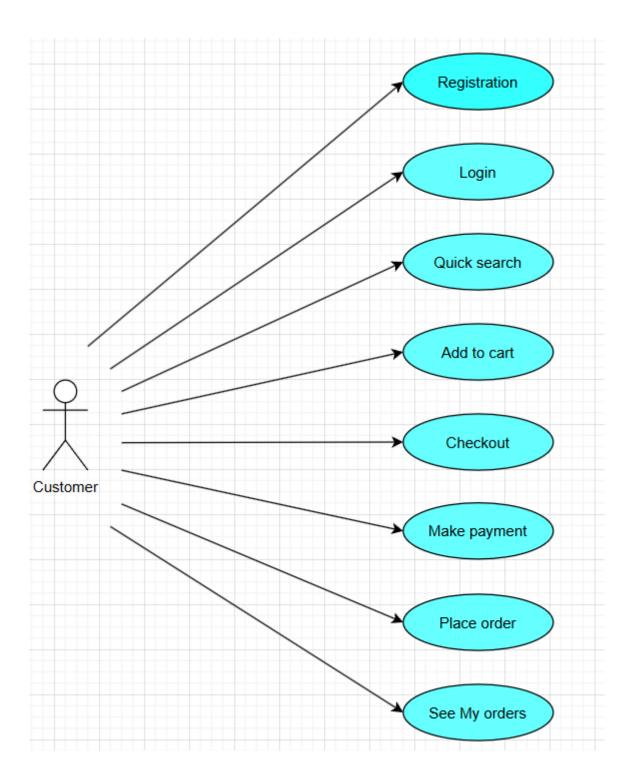
For customers, the platform offers a user-friendly interface to browse products, search, filter by category, and add items to a shopping cart. While basic browsing is available without login, purchasing requires account registration for secure transactions. The **Checkout page** collects user details for order delivery. Payment options include online payment and cash on delivery. Customers can view order history, track status in real time, and manage their account through the profile section.

Additional features include an **About Us** page to provide store information and a **Contact Us** page for customer inquiries, enhancing transparency and trust. The system ensures real-time updates between the front end and database, with security measures to protect sensitive data and scalability to handle a growing customer base.

Overall, the system bridges the gap between traditional grocery shopping and modern ecommerce, benefiting both administrators and customers through efficiency, security, and convenience.

2.REQUIREMENTS

2.1 FUNCTIONAL REQUIREMENTS



2.1 User Account

The customer, who will henceforth be called the 'user', will be presented with options by the grocery store system at the first stage of interaction. A user's choice will depend on whether they are a guest or a registered customer and whether they want to simply browse products or proceed to purchase them. The terms 'registered user' and 'guest' are defined below.

A user who has shopped from the store earlier and created an account would have been given a **user ID** and a **password**. This *personal information* will henceforth be referred to as the *profile*. Such a user with a profile in the database will be called a *registered* user. A registered user will be able to browse products, add them to the cart, and place an order by logging into the system.

A new user, on the other hand, would either:

- a) Register with the system by providing personal information, or
- b) Continue as a guest without registration.

In case of (a), the new user becomes a registered user.

In case of (b), the new user remains a guest.

A guest can browse products and view their details but cannot add items to the cart for checkout or place an order. A registered user, however, can also act as a guest if they only wish to browse without logging in.

The term 'viewing products' refers to browsing the available grocery items, their prices, descriptions, categories, and any active discount offers.

2.2 Registration and creation of user profile

The system shall require a user to register in order to carry out any purchase transactions, such as adding products to the cart and placing orders. Registration will require the user to provide the following information at a minimum – user ID, password, full name, address, phone number, and email address.

The system will store this information securely in the database as the user's *profile*. This profile will enable personalized services, such as saving the delivery address, maintaining order history, and tracking order statuses. The system will also store any loyalty or reward points (if applicable) in the user's profile, initializing them to zero at the time of registration.

2.3 Quick Search

The Quick Search feature allows any user, whether logged in or not, to instantly search for products in the grocery store catalog without going through the account creation or login process. This ensures that customers can quickly browse products, check prices, and view availability without any barriers. The primary objective of Quick Search is to enhance user convenience, encourage exploration of the product range, and help customers make faster decisions by reducing unnecessary steps in the browsing process.

Search Input and Criteria

When using Quick Search, the user simply needs to type a product name or keyword (such as "milk", "bread", or "rice") into the search bar provided on the homepage or in the navigation bar. The system will then search the product database for matching results. The search will be flexible, supporting partial matches and case-insensitive comparisons so that users can still find relevant items even if they do not enter the exact product name. Additionally, the search can be refined to show only products that are in stock, ensuring customers see items they can purchase immediately.

Result Display

The results from a Quick Search are displayed in an easy-to-read product grid or tabular format. Each product listing will include essential details such as product image, name, price, category, average star rating (based on customer feedback), and an "Add to Cart" button. For users searching without logging in, the system will still allow adding products to a temporary cart stored in the browser session. However, these items will not persist after the browser is closed unless the user logs in or registers.

Optional Filters and Sorting

While Quick Search primarily focuses on speed and simplicity, optional filtering options can be provided for better user experience. These may include filtering by category, brand, price range, and ratings, along with sorting options like price (low-to-high or high-to-low), newest arrivals, or highest-rated products. This allows customers to narrow down large search results into more relevant and manageable lists.

Purpose and Benefits

The Quick Search feature significantly improves the usability of the grocery store application by reducing the time taken to locate products. It also caters to casual visitors who may want to explore the catalog before committing to an account. By providing immediate access to product details and prices, Quick Search can drive higher engagement and potentially lead to more conversions, as users can easily transition from browsing to purchasing in just a few clicks

2.4 Placing Orders / Holding Cart Items / Confirming Purchase

After the user has completed **Step 2.3 – Checking Product Availability**, the system will now ask if they wish to proceed with adding the selected items to their cart and confirm the purchase. If yes:

- a) If the user is browsing as a **guest**, they will need to first **register** and become a registered user before they can proceed with the order.
- b) If the user is already **logged in** as a registered user, they can directly proceed to place the order. However, if the logged-in session has expired, they will be prompted to log in again.

Once the system ensures that the user is logged in validly (according to the authentication process), it checks product stock levels to ensure all requested items are still available. If any product is out of stock, the system will notify the user and suggest alternatives.

If all items are available, the system will allow the user to either:

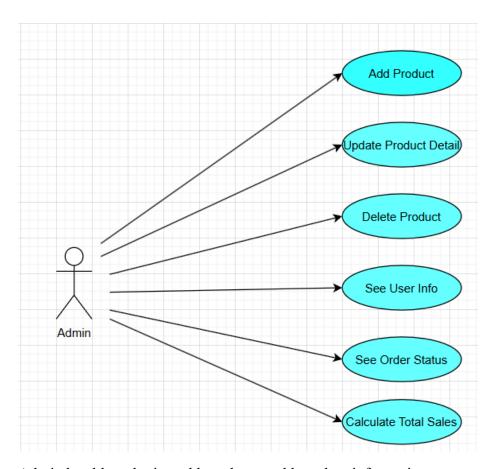
- Hold the items in their cart (saved for a limited period for example, 24 hours
 without payment)
- **Proceed to purchase** immediately.

When holding items in the cart, the system will inform the user that the products are not reserved indefinitely and stock availability may change. For confirmed purchases, the system will ask for **payment details** (debit card, credit card, UPI, or other available payment methods). Once the payment is successful, the system will deduct the purchased quantities from the stock in the **Products Database** and create a new entry in the **Orders Table** along with related details in the **Order Details Table**.

2.5 View Order History

The system shall allow a registered user to view all information about their **previous orders**. After logging in, the user can access the "My Orders" section from the navigation menu. The system will retrieve all past order details from the **Orders Table** for that specific user, including:

- Order ID
- Order Date
- Status (PENDING, SHIPPED, DELIVERED)
- Total Price
- List of Products with quantities and prices



Admin be able to login, add products, add product information, Delete product and see user Information according to user Id.

3. DESIGN

3.1 Database Design

The following table structures depict the database design.

Table1: Users

| Key | Column | Data Type | Length | Allow Null |
|------------|-------------|-----------|--------|------------|
| Constraint | Name | | | |
| PK | Id | BIGINT | | 0 |
| | FullName | VARCHAR | 255 | 1 |
| | Address | VARCHAR | 255 | 1 |
| UQ | Email | VARCHAR | 255 | 0 |
| | Password | VARCHAR | 255 | 0 |
| | PhoneNumber | VARVHAR | 20 | 1 |

Table2: Products

| Key | Column | Data Type | Length | Allow Null |
|------------|-------------|-----------|--------|------------|
| Constraint | Name | | _ | |
| PK | Id | BIGINT | | 0 |
| | Name | VARCHAR | 255 | 0 |
| | Description | VARCHAR | 500 | 1 |
| | Price | DOUBLE | | 0 |
| | Stock | INT | | 0 |
| | Category | VARCHAR | 255 | 1 |
| | Image | VARCHAR | 255 | 1 |
| | CreatedAt | DATETIME | | 0 |

Table3: Orders

| Key | Column | Data Type | Length | Allow Null |
|------------|------------|-----------|--------|------------|
| Constraint | Name | | | |
| PK | OrderId | BIGINT | | 0 |
| | OrderDate | DATE | | 0 |
| | Status | VARCHAR | 50 | 0 |
| | TotalPrice | DOUBLE | | 0 |
| FK | User_Id | BIGINT | | 0 |
| | | | | |

Table 4 :Order_Detail

| Key | Column | Data Type | Length | Allow Null |
|------------|------------|-----------|--------|------------|
| Constraint | Name | | | |
| PK | ID | BIGINT | | 0 |
| FK | Order_Id | BIGINT | | 0 |
| FK | Product_ID | BIGINT | | 0 |
| | Quantity | INT | 4 | 0 |
| | Price | DOUBLE | | 0 |

Table 5 : Cart

| Key | Column | Data Type | Length | Allow Null |
|------------|-------------|-----------|--------|------------|
| Constraint | Name | | | |
| PK | CartId | BIGINT | | 0 |
| FK | User_Id | BIGINT | | 0 |
| FK | Product_Id | BIGINT | | 0 |
| | ProductName | VARCHAR | 255 | 0 |
| | Price | DOUBLE | | 0 |
| | Quanity | INT | | 0 |

Table 6 : Feedback

| Key | Column | Data Type | Length | Allow Null |
|------------|------------|-----------|--------|------------|
| Constraint | Name | | | |
| PK | ID | BIGINT | | 0 |
| | Feedback | VARCHAR | 500 | 1 |
| | UserName | VARCHAR | 255 | 1 |
| | Rating | INT | | 0 |
| | CreatedAt | DATETIME | | 0 |
| FK | Product_ID | BIGINT | | 0 |

4. CODING STANDARDS IMPLEMENTED

Naming and Capitalization

Below summarizes the naming recommendations for identifiers in Pascal casing is used mainly (i.e. capitalize first letter of each word) with camel casing (capitalize each word except for the first one) being used in certain circumstances.

| Identifier | Case | Examples | Additional Notes |
|------------------------------------|--------------------------------|----------------------------|---|
| Class | Pascal | | Class names should be based on "objects" or "real things" and should generally be nouns . No '_' signs allowed. Do not use type prefixes like 'C' for class. |
| Method | Camel | getDetails, updateStore | Methods should use verbs or verb phrases. |
| Parameter | Camel | personName, bankCode | Use descriptive parameter names. Parameter names should be descriptive enough that the name of the parameter and its type can be used to determine its meaning in most scenarios. |
| Interface | Pascal with "I" prefix | Disposable | Do not use the '_' sign |
| Property | Pascal | ForeColor, BackColor | Use a noun or noun phrase to name properties. |
| Associated private member variable | _camelCase | _foreColor, _backColor | Use underscore camel casing for the private member variables |
| Exception Class | Pascal with "Exception" suffix | WebException, | |

5. TEST REPORT

GENERAL TESTING:

| NIO | TEST-CASE | EXPECTED | ACTUAL DESILET | ERROR |
|-----|----------------|---------------------|-------------------|---------|
| NO | D : (| RESULT | RESULT | MESSAGE |
| 1 | Register page | Redirected to | OK | Nothing |
| _ | τ . | Login page | 01 | NT .1.1 |
| 2 | Login page | Redirected to | Ok | Nothing |
| | 0 1 1 1 | Home page | 01 | NT 41 |
| 3 | Quick search | Search available | Ok | Nothing |
| | | products | | |
| 4 | Product Detail | Gives Product | Ok | Nothing |
| | Page | Detail and Add to | | |
| | | Cart button | | |
| 5 | Cart page | Gives products | Ok | Nothing |
| | | added into the cart | | |
| | | and place order | | |
| | | button | | |
| 6 | Checkout page | Customer enters | Ok | Nothing |
| | | details which is | | |
| | | require to deliver | | |
| | | the order | | |
| 7 | Payment page | Gives Qr code to | Ok | Nothing |
| | | scan or On | | |
| | | Delivery button | | |
| 8 | Thank You | Gives confirmation | Ok | Nothing |
| | page | about order is | | |
| | | placed | | |
| 9 | MyOrder page | Gives detail about | Ok | Nothing |
| | | ordered products | | |
| 10 | User Detail | Gives user | Ok | Nothing |
| | | information | | |
| 11 | Feedback | Allow to give | Ok | Nothing |
| | | feedback about | | |
| | | ordered product | | |
| 12 | About us | Gives the info | Ok | Nothing |
| | | about company | | |
| | | policies | | |
| 13 | Contact us | Send any queries | Ok | Nothing |
| | | about delivered | | |
| | | product | | |
| 14 | Logout | Logout the | Ok | Nothing |
| | | customer | | |

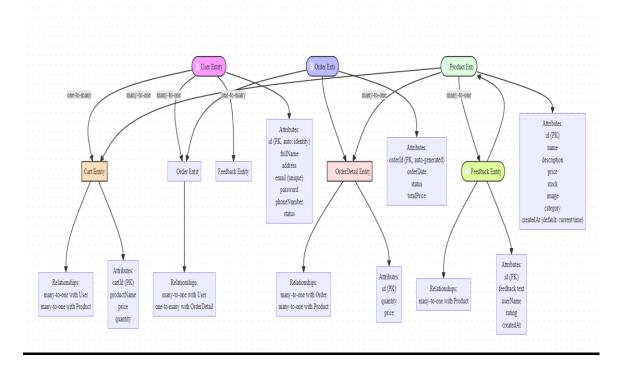
6. PROJECT MANAGEMENT RELATED STATISTICS

| DATE | WORK PERFORMED | SLC Phase | Additional Notes |
|---------------|---|---|--|
| JULY 11, 2025 | Project Allotment and User Requirements Gathering | Feasibility Study | Our team met the client Mr. Nitinkudale (CEO, SIIT Pune) to know his requirements. |
| JULY 21, 2025 | Initial SRS Document Validation And Team Structure Decided | Requirement Analysis (Elicitation) | The initial SRS was presented to the client to understand his requirements better |
| JULY 22, 2025 | Designing the use-cases, Class Diagram, Collaboration Diagram, E-R Diagram and User Interfaces | Requirement Analysis & Design Phase | Database Design completed |
| JULY 23, 2025 | Business Logic Component design Started | Design Phase | |
| JULY 24, 2025 | Coding Phase Started | Coding Phase | 70% of Class Library implemented. |
| JULY 25, 2025 | Implementation of Web Application and Window Application Started | Coding Phase | Class Library Development going on. |
| JULY 27, 2025 | Off | Off | Off |
| JULY 28, 2025 | Implementation of Web Application and Window Application Continued | Coding Phase and Unit Testing | Class Library Modified as per the need. |
| JULY 29, 2025 | Implementation of Web Application and Window Application Continued | Coding Phase and Unit Testing | |

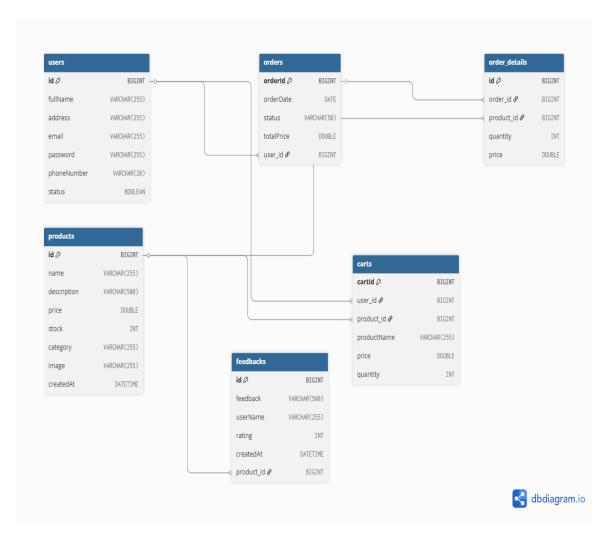
Grocery Store Management System

| JULY 29 – AUG 03, 2025 | After Ensuring Proper Functioning the Required Validations were Implemented | | Module Integration was done by the Project Manager |
|---------------------------|--|--------------------------------------|--|
| AUG 04 - 05, 2025 | The Project was Tested by the respective Team Leaders and the Project Manager | Testing Phase (Module Testing) | |
| AUG 06 - 08, 2025 | The Project was Submitted to Other Project Leader of Other Project Group For Testing | (Acceptance | The Project of Other Team was Taken up by the Team for Testing |
| AUG 09 - 10, 2025 | The Errors Found were Removed | Debugging | The Project was complete for submission |
| AUG 11, 2025 | Final Submission of Project | | |

Entity Relationship Diagram



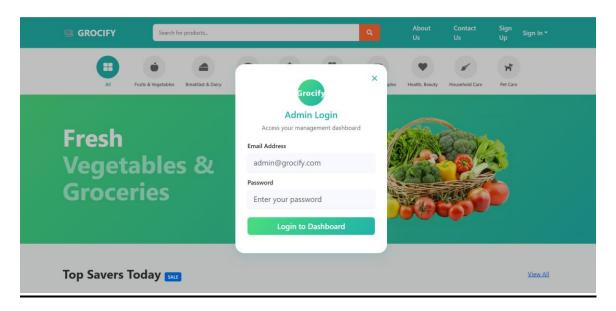
Class Diagram



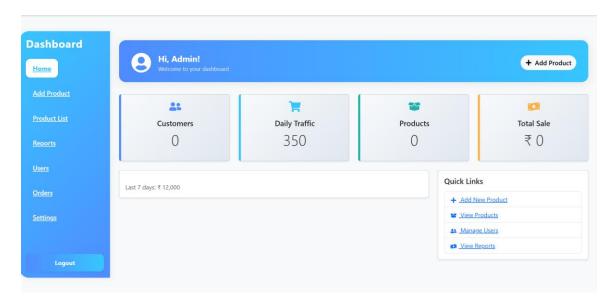
Welcome:



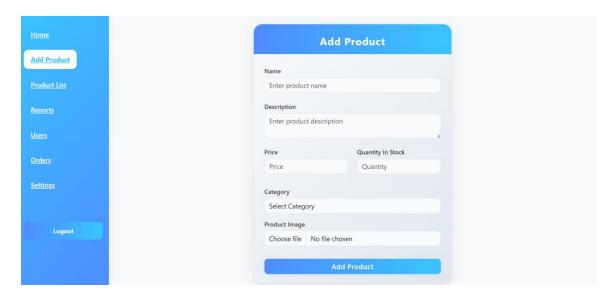
Admin Login:



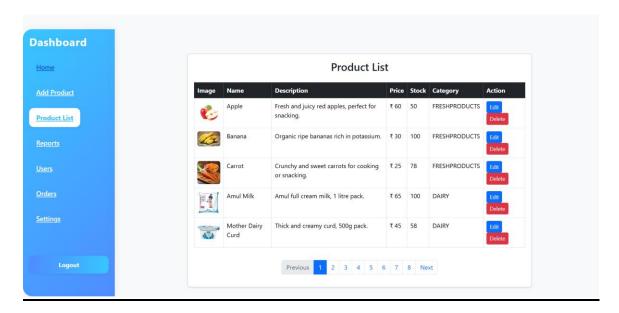
Admin Homepage:



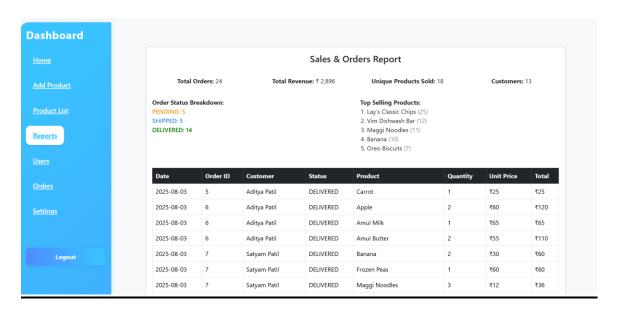
Add Product:



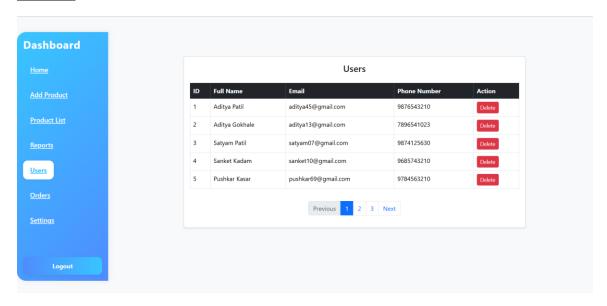
Product List:



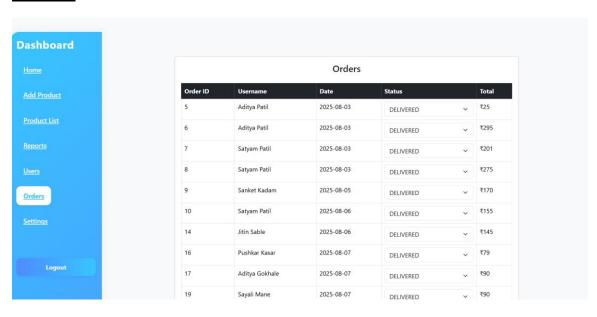
Reports:



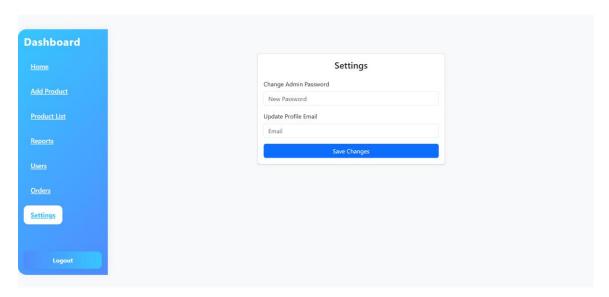
Users:



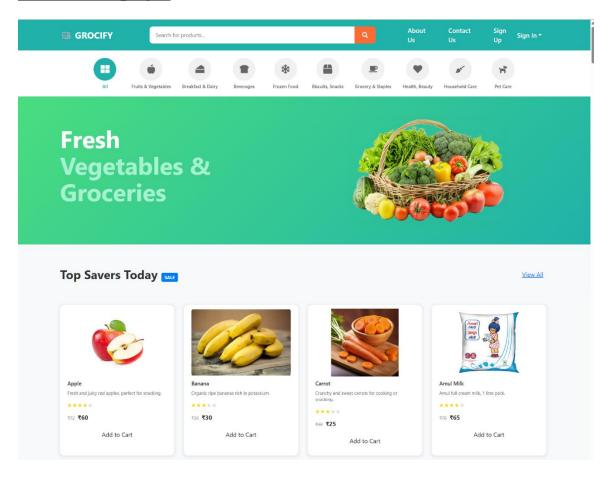
Orders:



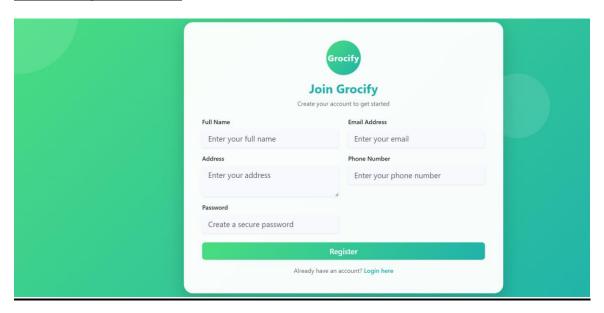
Setting:



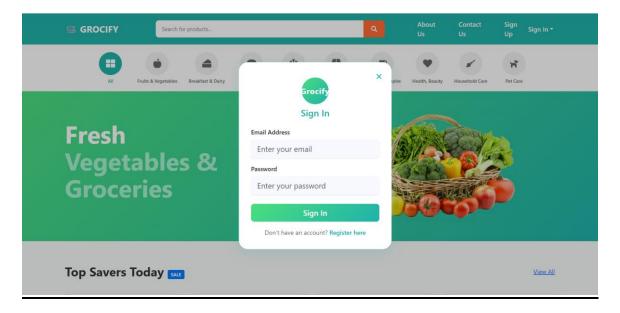
User Homepage:



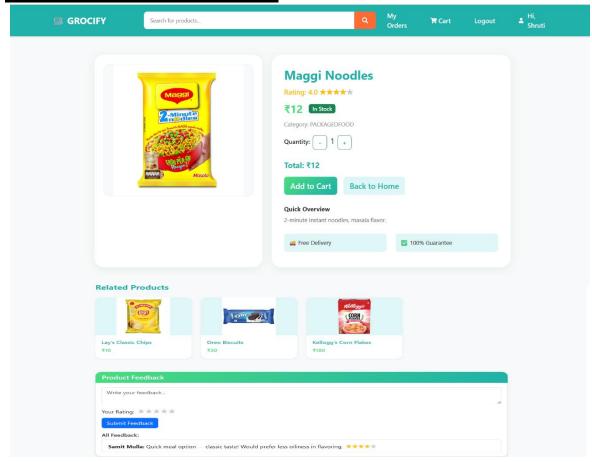
User Registration:



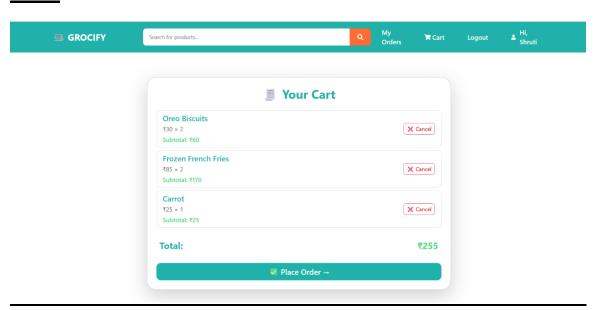
User Login:



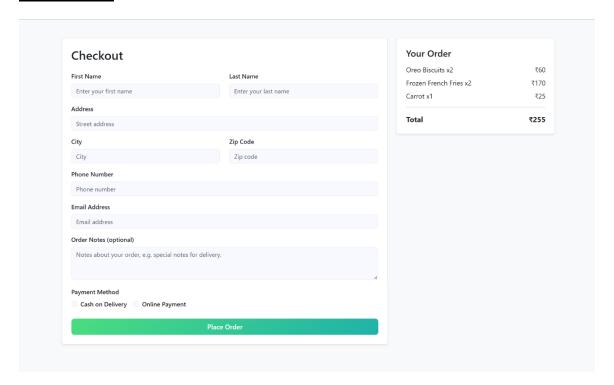
Product Detail and Feedback:



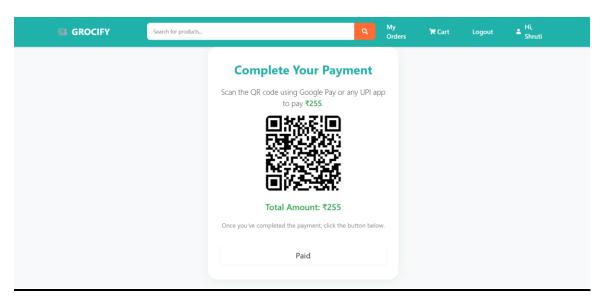
Cart:



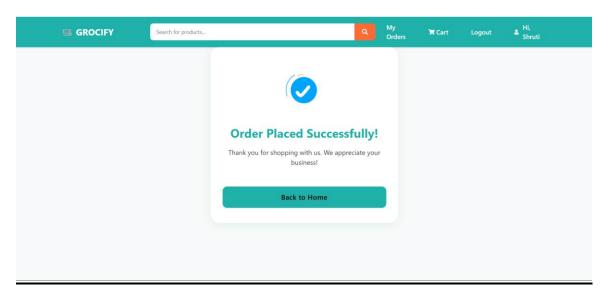
Checkout:



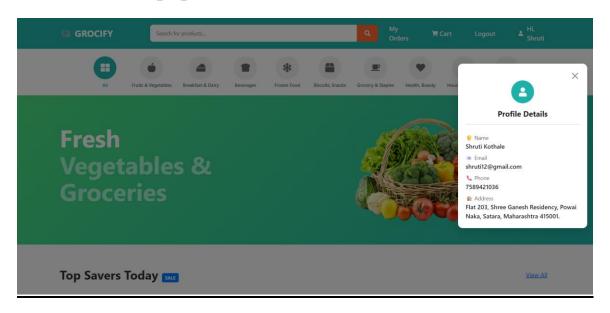
Payment:



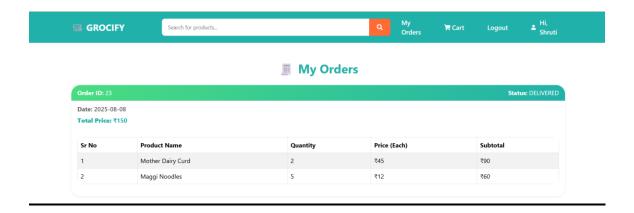
Thank You:



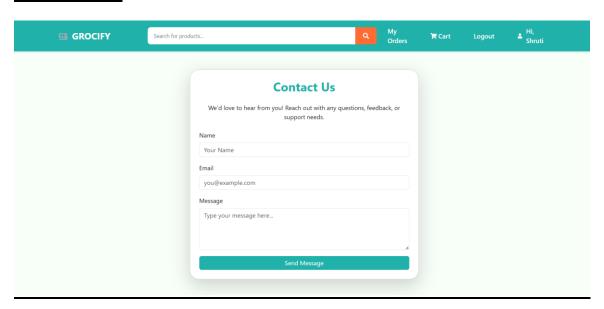
User Details Popup:



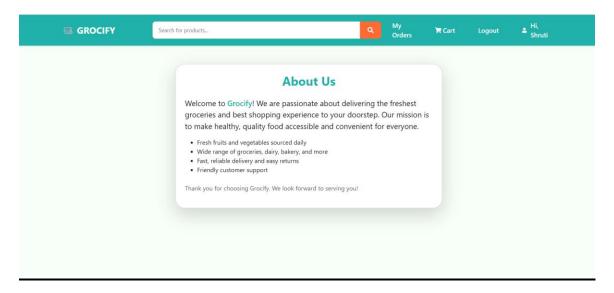
My Orders:



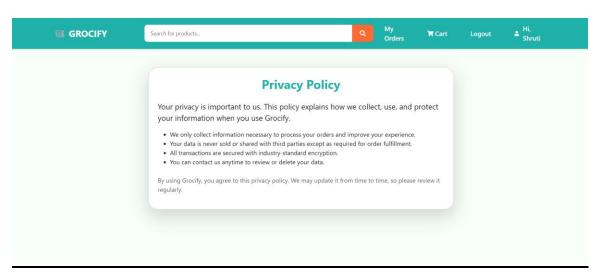
Contact Us:



About Us:



Privacy Policy:



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