



DEPARTMENT OF COMPUTER ENGINEERING

**Content based GROCERY STORE**

A project submitted in partial fulfilment of the  
requirement award of degree of

Diploma

In

COMPUTER ENGINEERING

Submitted by

R.ravi teja	23471-cm-085
P.abhi ram	23471-cm-077
P.venkat teja	23471-cm-119
T.rohith	23471-cm-104
SK.abdul haseeb	23471-cm-091
G.rohith kumar	23471-cm-123
T.mokshagna	23471-cm-098
P.arya	23471-cm-071
p.krishna	23471-cm-073

Under the esteemed guidance of  
P.JAHNAVI

# **Pace institute of technology & sciences**

(Approved by AICTE, New Delhi, Accredited by NBA and NCCA with A grade)

(Permanently Affiliated to Jawaharlal Nehru technological university. Kakinada)

Vallur NH-16, Ongole, prakasam district, AP-523272



Department of computer and engineering

## **CERTIFICATE**

This is to certify that the project entitled **GROCERY STORE** is a bonafide work of R.ravi teja (23471- cm-085), P.abhiram (23471-cm-077), P.venkat teja (23471-cm-119), T.rohith (23471-cm-104), Sk.abdul haseeb (23471-cm-091), G.rohith kumar (23471-cm-123), T.mokshagna (23471-cm-098), p.arya (23471-cm-071), P.krishna (23471-cm-073) In the partial fulfilment of the requirement award of degree of bachelor of technology in **Department of Computer and Engineering** for the academic year 2023-2026. This work done by supervision and guidance

Signature of Guidance.

Signature of Head of department

B.Satish kumar(M.tech)

Signature of the External Examiner

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# GROCERY STORE

R.ravi teja

P.abhi ram

P.venkat teja

T.rohith

SK.abdul haseeb

G.rohith kumar

T.mokshagna

P.arya

p.krishna

# GROCERY STORE

## Introduction

### WelcometoGROCERY STORE:

TheGroceryStore webapplicationis a comprehensive e-commerce platform built using Python Flask framework with SQLite database. This system provides a complete solution for online grocery shopping with separate interfaces for customers and administrators. The application follows the Model-View-Controller (MVC) architectural pattern and implements modern web development practices.

The application serves two primary user roles: customers who can browse products, add items to cart, and place orders; and administrators who manage products, view orders, and monitor store operations. The system features a responsive design that works across different devices and screen sizes.

### Key Features:

- User registration and authentication
- Product catalog with search functionality
- Shopping cart management
- Order proce ssing and tracking
- Admin dashboard for store management
- Image upload for products
- Real-time cart updates
- Order status tracking

## SYSTEM ARCHITECTURE:

The GroceryStore application follows a three-tier architecture with clear separation between presentation, business logic, and data layers.

## TECHNOLOGY STACK:

### BACKEND:

PYTHON 3.X FLASK WEB FRAMEWORK SQLITE DATABASE

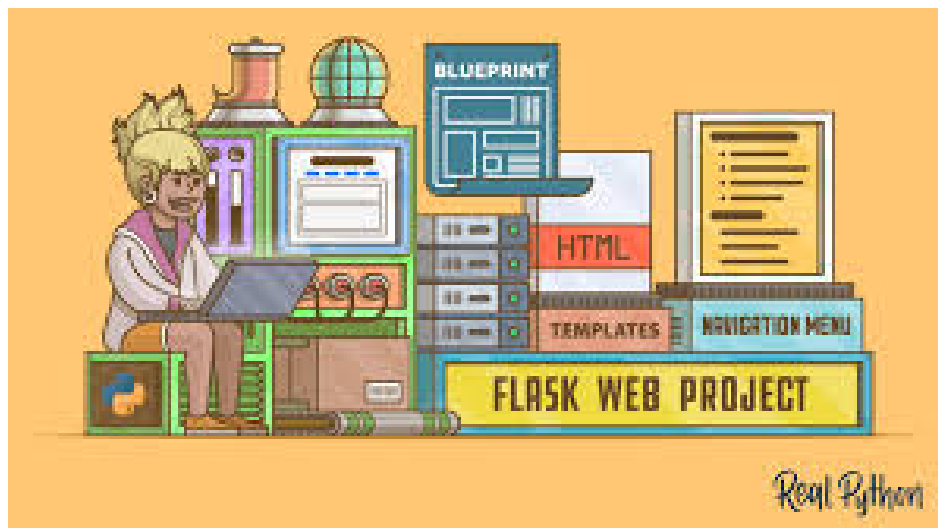
WERKZEUG FOR SECURITY AND FILE HANDLING

### FRONTEND:

HTML5 WITH JINJA2 TEMPLATING CSS3 WITH CUSTOM STYLING

VANILLA JAVASCRIPT FOR DYNAMIC INTERACTIONS BOOTSTRAP

FOR RESPONSIVE LAYOUT



## DATABASE DESIGN AND DATA MANAGEMENT:

The database schema is carefully designed to support all aspects of grocery store operations while maintaining data integrity and performance. The schema consists of five main tables that work together to represent the core entities and relationships within the system. Each table serves a specific purpose and contains fields that capture essential information about the entity it represents.

The users table stores customer information including

authentication details, and contact information. This table forms the foundation of user management and enables personalized shopping experiences.

The admins table maintains separate administrator accounts with enhanced security measures, ensuring that administrative functions remain protected from regular user access.

The products table serves as the product catalog, containing detailed information about each grocery item including name, price, description, category, and inventory levels. This table

supports rich product presentations and management capabilities. The orders table tracks customer purchases comprehensively, capturing not only the products ordered but also delivery information, payment methods, and order status throughout the fulfillment process.

The cart table manages temporary shopping data, allowing users to accumulate items before committing to a purchase.

This table maintains the state of each user's shopping session and enables features like cart persistence across browser sessions. The relationships between these tables are carefully designed to maintain referential integrity while supporting efficient querying for various application functions.

## FRONTEND IMPLEMENTATION AND USER EXPERIENCE:

The frontend of the Grocery Store application is built with a focus on creating an intuitive and engaging experience. The interface uses HTML5 with Jinja2 templating for server-side rendering, CSS3 for styling and layout, and vanilla JavaScript for interactive elements. The design employs a consistent color scheme and visual hierarchy that guides users through the shopping process naturally.

The application uses a base template system that provides consistent layout elements across all pages, including navigation, footer, and common structural elements. This approach ensures visual consistency while reducing code duplication. The navigation system adapts based on user authentication state, showing relevant options for logged-in users, guests, and administrators.

Product presentation follows established e-commerce patterns with clear product images, prominent pricing information, and intuitive action buttons. The product grid layout responds to different screen sizes, ensuring optimal viewing experience across all devices. Product cards include information at a glance while providing pathways to detailed product views and quick add-to-cart functionality.

The shopping cart interface provides a clear summary of selected items with options to modify quantities or remove items entirely. The cart calculates totals automatically, including subtotals, delivery charges, and grand totals, giving customers complete transparency about their purchase costs. The checkout process is streamlined to collect necessary information without creating unnecessary friction in the purchasing workflow.



## HOW THE GROCERY STORE APPLICATION WORKS:



### 1. USER REGISTRATION AND AUTHENTICATION PROCESS:

The application begins with user registration and authentication. When a new customer visits the website, they can create an account by providing basic information such as username, password, address, and phone number. The system securely hashes the password using SHA-256 algorithm before storing it in the database, ensuring that plain text passwords are never saved. Once registered, users can log in using their credentials, and the system validates them against the stored hashed passwords. The authentication process checks both the regular users table and the administrators table to determine the appropriate level of access. Successful login creates a session that maintains the user's authenticated state throughout their browsing experience, allowing them to access personalized features like shopping cart and order history.

## 2. PRODUCT BROWSING AND SEARCH FUNCTIONALITY:



After logging in, customers enter the main product browsing interface where they can view all available grocery items. The products are displayed in an organized grid layout with each product showing an image, name, price, and an "Add to Cart" button. The system fetches product information from the database, including current stock levels, and only displays items that are available for purchase. Customers can use the search functionality to find specific products by entering keywords that match product names, descriptions, or categories. The search feature works by querying the database for partial matches across multiple fields, returning relevant results in the same intuitive grid layout. This approach helps customers quickly locate items they need without navigating through multiple categories.

### 3. SHOPPING CART MANAGEMENT SYSTEM:



When customers find products they want to purchase, they can add them to their shopping cart. The cart system works by storing product selections in the database linked to the user's session, allowing items to persist across browser sessions. Each time a customer adds a product to the cart, the system checks current inventory levels to ensure the item is available. If the product is already in the cart, the system increments the quantity rather than creating duplicate entries. The cart interface displays all selected items with thumbnails, prices, quantities, and calculated line totals. Customers can adjust quantities using increase/decrease buttons or remove items entirely. The system automatically recalculates the subtotal, applies delivery charges, and displays the grand total in real-time as changes are made to the cart contents.

#### 4. CHECKOUT AND ORDER PROCESSING WORKFLOW:



WHEN CUSTOMERS ARE READY TO COMPLETE THEIR PURCHASE, THEY PROCEED TO THE CHECKOUT PROCESS. THE SYSTEM FIRST VALIDATES THAT ALL ITEMS IN THE CART ARE STILL AVAILABLE AND IN SUFFICIENT QUANTITY. THE CHECKOUT FORM PRE- FILLS WITH THE CUSTOMER'S STORED ADDRESS AND PHONE INFORMATION, WHICH THEY CAN MODIFY FOR THIS SPECIFIC ORDER IF NEEDED. CUSTOMERS SELECT THEIR PREFERRED PAYMENT METHOD FROM OPTIONS LIKE CASH ON DELIVERY, CREDIT CARD, OR DIGITAL PAYMENTS. UPON SUBMITTING THE ORDER, THE SYSTEM PERFORMS SEVERAL CRITICAL OPERATIONS: IT RESERVES THE INVENTORY BY REDUCING STOCK LEVELS, CREATES ORDER RECORDS IN THE DATABASE, CALCULATES DELIVERY TIME ESTIMATES, AND CLEARS THE SHOPPING CART. THE ENTIRE PROCESS OCCURS WITHIN A DATABASE TRANSACTION TO ENSURE DATA CONSISTENCY—IF ANY STEP FAILS, ALL CHANGES ARE ROLLED BACK TO PREVENT PARTIAL ORDER CREATION OR INCORRECT INVENTORY COUNTS.

## 5. Order Fulfillment and Status Tracking:



After order placement, the system generates an order confirmation with details including order number, items purchased, delivery address, and estimated delivery time. Customers can view their order history through a dedicated interface that shows all past and current orders with their status. The order status progresses through various stages like processing, preparing for delivery, out for delivery, and delivered. Administrators can update these statuses through the admin dashboard as the order moves through the fulfillment pipeline. The system tracks each product within an order separately, allowing for partial fulfillment if some items become unavailable after order placement. Customers receive notifications at key status changes, keeping them informed about their order progress throughout the delivery timeline.

## 6. Administrative Operations and Store Management



Administrators access a separate dashboard that provides comprehensive store management capabilities. The admin interface displays key business metrics including total products, active orders, customer counts, and revenue indicators. Administrators can add new products to the catalog by filling out a form that includes product name, price, description, category, initial stock quantity, and product images. The image upload system validates file types and sizes before storing them in the designated upload directory. Product management features allow administrators to edit existing product information, update prices, modify descriptions, and adjust inventory levels. The system maintains a complete audit trail of product changes, though this history is not directly visible in the current interface.

## 7. Inventory Management and Stock Control:



The application implements real-time inventory management that automatically updates stock levels when orders are placed. The system prevents customers from adding out-of-stock items to their cart and displays appropriate warnings when inventory is insufficient. When administrators add new products, they set initial stock quantities, and the system deducts from these quantities as orders are processed. The inventory checking occurs at multiple points: when adding to cart, during cart quantity adjustments, and at the final checkout stage. This multi-layered approach ensures that customers never order products that are unavailable. Administrators can view current stock levels through the product management interface and receive visual indicators when items are running low, though automated restocking alerts are not implemented in the current version.



## 8. USER SESSION MANAGEMENT AND SECURITY:



The application maintains user sessions to provide a continuous shopping experience without requiring repeated authentication. When users log in, the system creates a session identifier that is stored securely in an encrypted cookie on the user's browser. This session contains essential information like user ID, username, and role (customer or administrator). The system checks session validity on each page request to ensure users are properly authenticated for protected resources. Sessions automatically expire after a period of inactivity, requiring users to log in again for security. All sensitive operations, particularly those in the admin dashboard, include additional authorization checks to verify the user has appropriate privileges. The system also includes protection against common web vulnerabilities like SQL injection and cross-site request forgery.



## 9. PAYMENT PROCESSING AND ORDER COMPLETION:



### **Log In to CookinBot:**

Welcome back! Please enter your credentials to access your account.

**Email Address or Username:**

Enter your registered email or username.

**Password:**

Enter your password.

(Forgot your password? [\[Click here\]](#)(#) to reset.)

**Remember Me:**

☐ Keep me logged in on this device.

**Log In Button:**

Click "Log In" to access your account.

**New to CookinBot:**

Don't have an account? [\[Sign up here\]](#)(#) to join our community.

**Need Help:**

Having trouble logging in? Contact our [\[Support Team\]](#)(#) for

## 9. PAYMENT PROCESSING AND ORDER COMPLETION:



While the current implementation focuses on cash-on-delivery payments, the system is structured to support multiple payment methods. When customers select a payment option during checkout, the system records this preference with the order. For cash transactions, the payment status is implicitly pending until delivery completion. The architecture includes placeholder structures for integrating electronic payment gateways, though these are not fully implemented in the current version. Upon successful order creation, the system generates a unique order identifier that serves as a reference for both customers and administrators. This identifier helps track the order through the entire fulfillment process and resolves any customer service inquiries related to specific purchases.

## 10. Database Operations and Data Integrity:

All application data is stored in a SQLite database with carefully designed tables and relationships. The system performs database operations using parameterized queries to prevent SQL injection attacks and ensure data security. Critical operations, particularly order creation and inventory updates, are wrapped in database transactions to maintain data consistency. This means that either all related database changes succeed together or fail together, preventing scenarios where inventory is deducted but no order is created. The database maintains relationships between users, products, carts, and orders through foreign key constraints, ensuring that references between tables remain valid. Regular database maintenance operations, though not explicitly implemented in the interface, would typically include backup procedures and integrity checks in a production environment.

## Responsive Design and Cross-Device Compatibility:

The user interface is designed to work seamlessly across different devices and screen sizes. The responsive design uses CSS media queries to adapt layouts, font sizes, and interactive elements based on the viewing device. On mobile phones, the product grid rearranges to a single column layout, navigation elements transform into mobile-friendly patterns, and touch targets are appropriately sized for finger interaction. The system maintains full functionality across devices, ensuring that customers can complete their grocery shopping regardless of whether they're using a desktop computer, tablet, or smartphone. This device flexibility is particularly important for grocery applications, as customers often shop using mobile devices while physically in stores or planning their shopping lists throughout the day. The Grocery Store application works by integrating these various systems into a cohesive workflow that guides customers from product

## Detailed System Modules & Workflow:

### User Authentication and Authorization

- Description: A secure, role-based system controlling access to the application's features.
- Components:
  - a. Customer Registration: Collects Username, Password, Address, and Phone Number to create a new customer account.
  - b. Customer Login: Authenticates returning customers using their credentials.
  - c. Admin Login: A separate, secured gateway for administrators, ensuring role-based access control.
- Workflow: Unauthenticated users are directed to the authentication module. Upon successful login, they are redirected to their respective dashboards (Product Catalog for customers, Admin Panel for admins).

### Product Management & Catalog

- Description: The core of the e-commerce platform, handling product information and presentation.
- Components:
  - a. Customer-Facing Catalog (Available Products):
    - Displays products with Name, Price, and an Add to Cart button.
    - Includes a Search Bar for product discovery.
  - b. Admin-Facing Product Manager (Add New Product):

- A form for admins to input Product Name, Price, and upload a Product Image (with constraints: max 2MB, PNG/JPG/JPEG/GIF formats).
- Includes a link to a "Manage Products" page (implied) for editing or deleting existing items.
- Data Flow: Products added by admins are instantly reflected in the customer's product catalog.

### Shopping Cart & Order Processing:

- Description: Manages the customer's selection of products and facilitates the purchase process.
- Components:
  - a. Shopping Cart (Your Cart):
    - Lists items with details: Product Name, Unit Price, Quantity, and Total Price for the item.
    - Provides a Remove button for each item.
    - Dynamically calculates Subtotal, Delivery Charge, and Total amount.
    - Offers actions: Proceed to Checkout and Continue Shopping.
  - b. Checkout System (# Checkout):
    - Presents a final Order Summary.
    - Collects/Confirms critical information: Delivery Address and Phone Number.
    - Allows selection of Payment Method (e.g., UPI, Cash on Delivery).
    - Finalizes the transaction with a Place Order button.

## Order Fulfillment & Tracking:

- Description: Provides post-purchase transparency and management capabilities.
- Components:
  - a. Customer Order History (# Your Orders):
    - Displays a table of past orders with columns: Order ID, Product, Price, Quantity, Total, Status, and Date.
    - Allows customers to track the status of their orders (e.g., "Processing").
  - b. Admin Order Dashboard (# Customer Orders):
    - A comprehensive table showing all orders from all customers.
    - Includes full details: Order ID, Customer, Product, Amount, Delivery Address, Phone, Payment Method, Scheduled Delivery Time, Order Date, and Status.
    - Serves as the central hub for admins to manage and update order fulfillment.

## Entity-Relationship (ER) Diagram Concept

The system manages several core entities:

- User: (Attributes: UserID, Username, Password, Address, Phone, Role)
- Product: (Attributes: ProductID, Name, Price, ImageURL)
- Order: (Attributes: OrderID, UserID, OrderDate, TotalAmount, Status, DeliveryAddress, Phone, PaymentMethod)

- OrderItem: (Attributes: ItemID, OrderID, ProductID, Quantity, Price)
  - Relationships: A User can place many Orders. An Order can contain many Products (via OrderItems). A Product can be part of many Orders.
- Non-Functional Requirements:
- Usability: The interface is intuitive and requires minimal training for both customers and admins.
- Reliability: The system ensures data integrity for orders and inventory.
- Security: Implements password-based authentication and separates customer and admin access.
- Performance: The product catalog and search functionality should be responsive.
- Future Enhancements
- Integration of real-time payment gateways (Razorpay, Stripe).
- Implementation of a delivery executive module with live tracking.
- Features for customer reviews and ratings.
- Inventory management with stock level alerts for admins.
- A recommendation engine ("Customers who bought this also bought...").
- Mobile application development for iOS and Android.

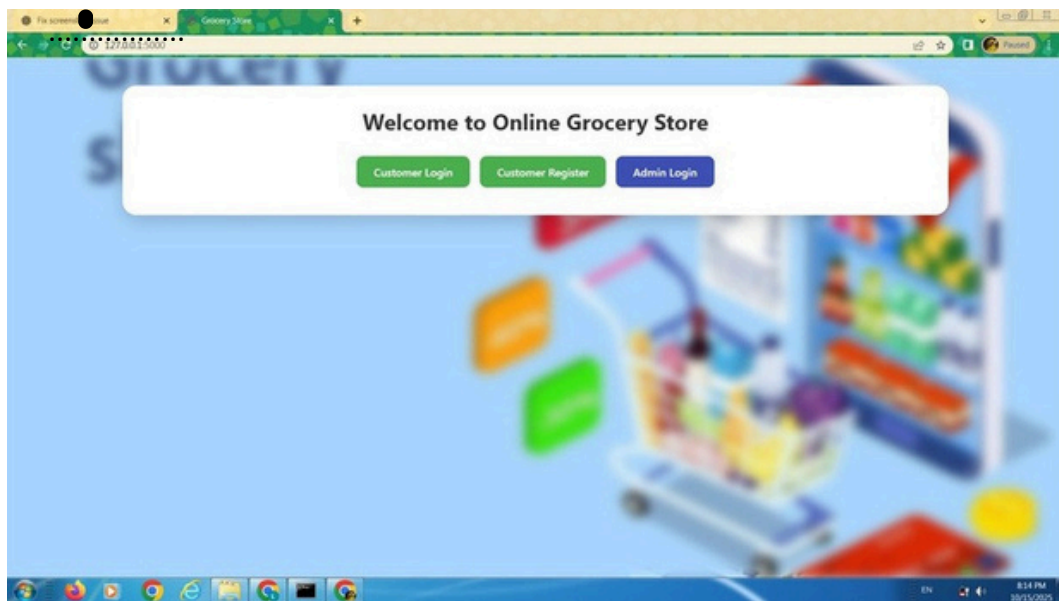


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- Inventory management with stock level alerts for admins.
- A recommendation engine ("Customers who bought this also bought...").
- Mobile application development for iOS and Android.

- Key User Workflows (In Simple Terms)

- A. The Customer's Journey:
  - Sign Up / Log In: Create a simple account with their address.
  - Browse & Search: Look through the digital aisles ("Available Products") or search for a specific item.
  - Build Cart: Click "Add to Cart" for each item they need.
  - Review Cart: Check "Your Cart" to see the list, make changes, and see the total cost.
  - Checkout: Confirm their address, phone number, and choose a payment method to "Place Order."
  - Track Order: See their order status ("Processing") in the "Your Orders" section.
- B. The Store Manager's (Admin's) Day:
  - Log In: Access the secure admin panel.

## index page:



1.Register Button

2.Login Button

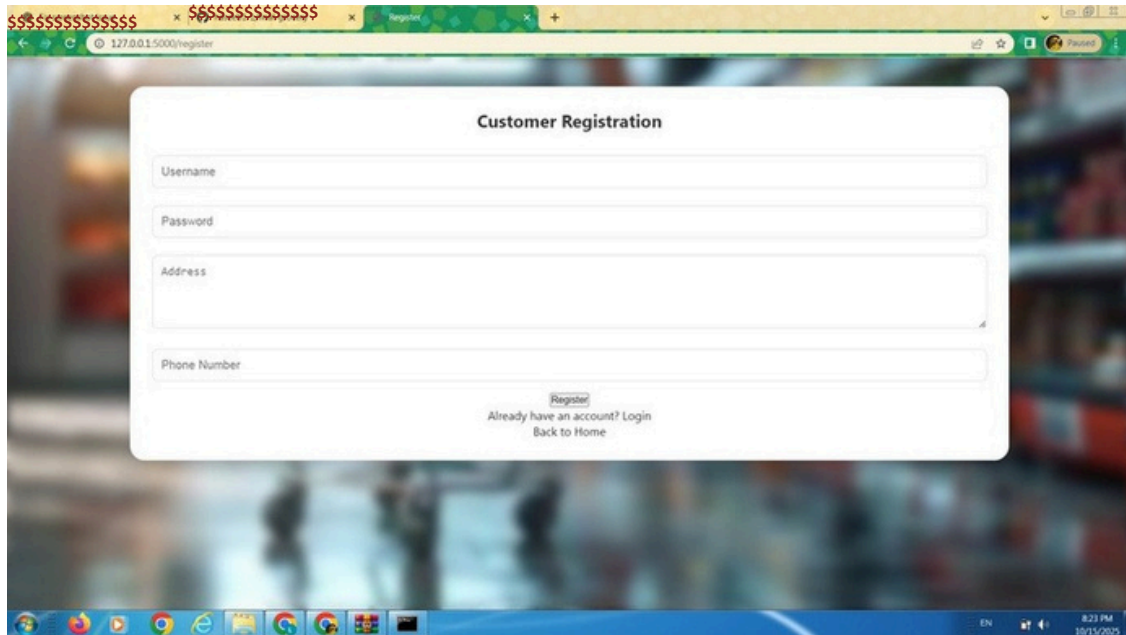
3.Admin Button

The interface appears to be an entry point or authentication gateway for the application, providing users with three different access options:

Register for new account creation Login for existing users

Admin for administrative access

# Register page:



The screenshot shows a web browser window with a single tab titled 'Register'. The address bar displays '127.0.0.1:5000/register'. The main content area features a white registration form titled 'Customer Registration'. The form contains four input fields: 'Username', 'Password', 'Address', and 'Phone Number'. Below these fields is a 'Register' button. At the bottom of the form, there are two links: 'Already have an account? Login' and 'Back to Home'. The browser's taskbar at the bottom shows various application icons and the system clock indicating 8:23 PM on 10/2/2023.

1. SCREEN LAYOUT AND COMPONENTS: The interface contains a registration form with the following elements:  
Form Title: "Customer Registration" - clearly indicating the purpose of this screen.

Input Fields (arranged vertically):

Username - for the user's chosen unique identifier

Password - for the user's security credential (likely masked)

Address - for delivery location details

Phone Number - for contact and delivery purposes

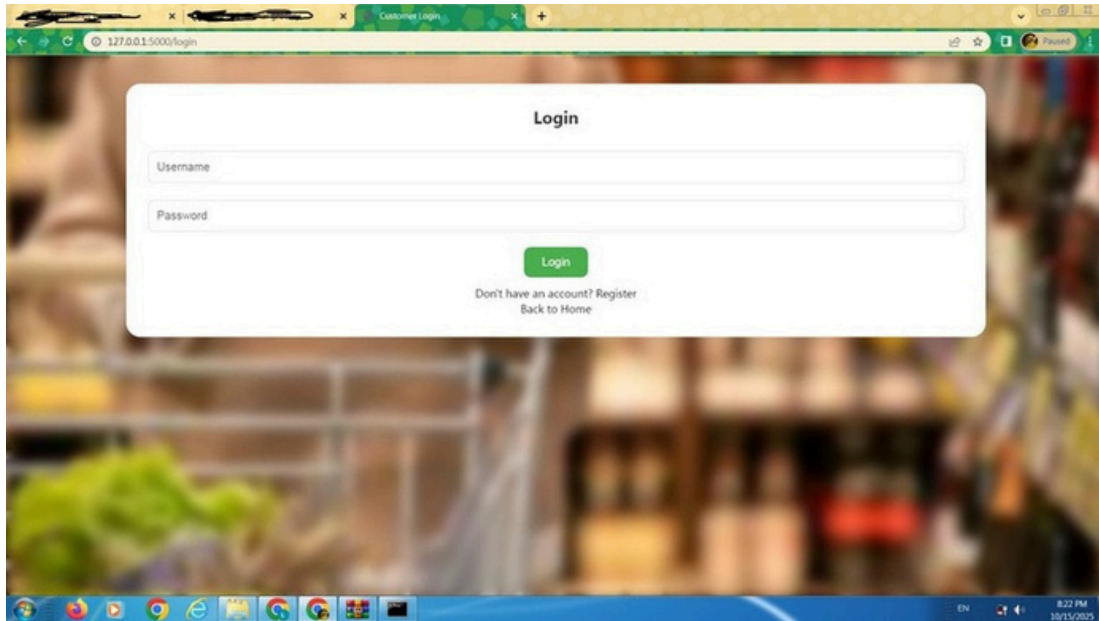
Action Buttons:

[Register] - Primary button to submit the registration form and create a new account.

Navigation Links:

"Already have an account? Login" - redirects existing users to the login page. "Back to Home" - returns users to the main landing page.

# Login page:



**SCREEN LAYOUT AND COMPONENTS:** The interface contains a clean login form with the following elements:  
Header: "# Login" - a prominent heading identifying the page's function.

Input Fields (arranged vertically):

Username - field for entering registered username

Password - field for entering secure password (typically masked with asterisks)

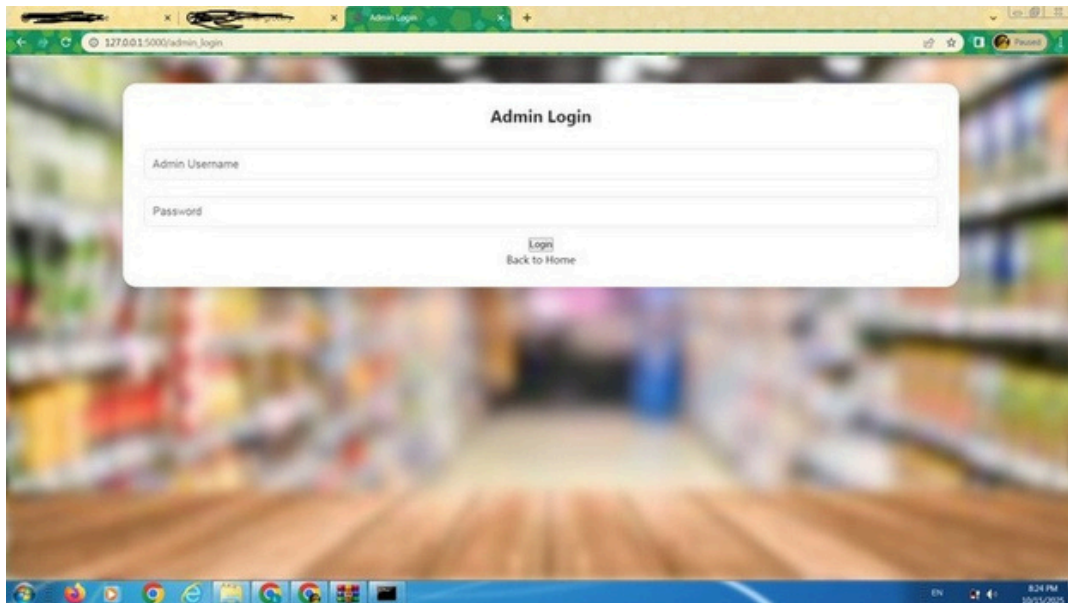
Action Button:

Login - prominently styled button to submit credentials and authenticate the user.

Navigation Links:

"Don't have an account? Register" - redirects new users to the registration page. "Back to Home" - returns users to the main landing page without logging in.

# admin login:



**SCREEN LAYOUT AND COMPONENTS:** The interface contains a specialized admin login form with the following elements:

**Form Title:** "Admin Login" - clearly distinguishing this as an administrative access point. **Input Fields** (arranged vertically):

**Admin Username** - field for entering administrator-specific username **Password** - secure field for administrator password (typically masked)

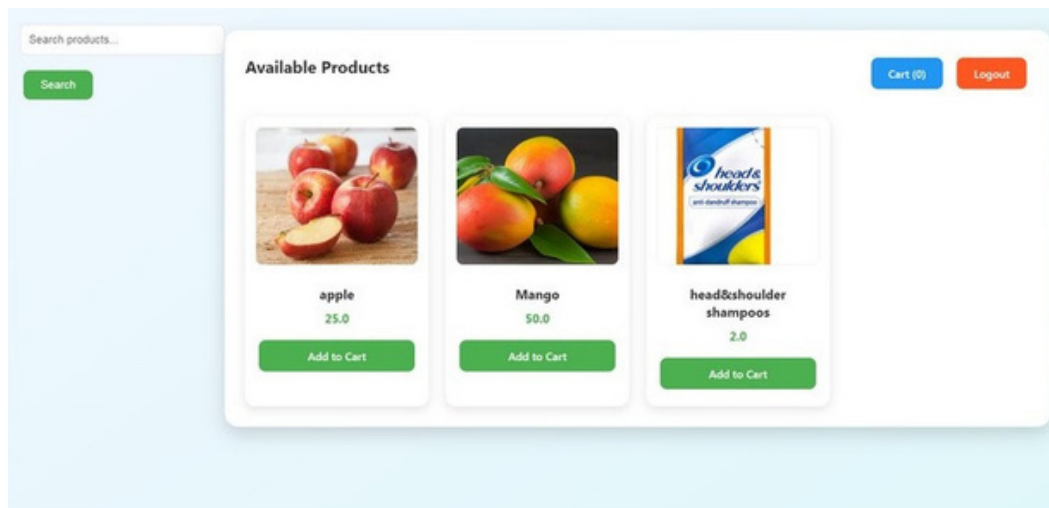
**Action Button:**

**Login** - authentication button to verify admin credentials and grant access to the admin dashboard.

**Navigation Link:**

**Back to Home** - returns users to the main landing page without logging in.

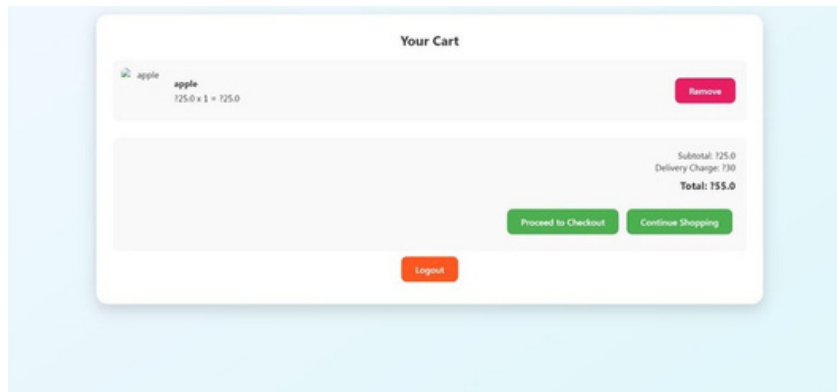
# product page:



The interface contains the following key elements:

- Search Functionality:
  - Search Bar: "Search products..." (placeholder text in search input field)
  - Search Button: A dedicated "Search" button to execute product searches
- Section Header: "Available Products" - clearly labeling the product display area
- Product List: Displayed in a vertical layout with each product showing:
  - Product Name (e.g., "apple", "Mango", "head&shoulder shampoos")
  - Product Price displayed below the name (e.g., "25.0", "50.0", "2.0")
  - "Add to Cart" Button - individual action button for each product
- Shopping Cart Indicator:
  - "Cart (0)" - showing the current number of items in the shopping cart (appears empty in this view)
- User Account Control:
  - "Logout" button - for secure session termination

## cart page:

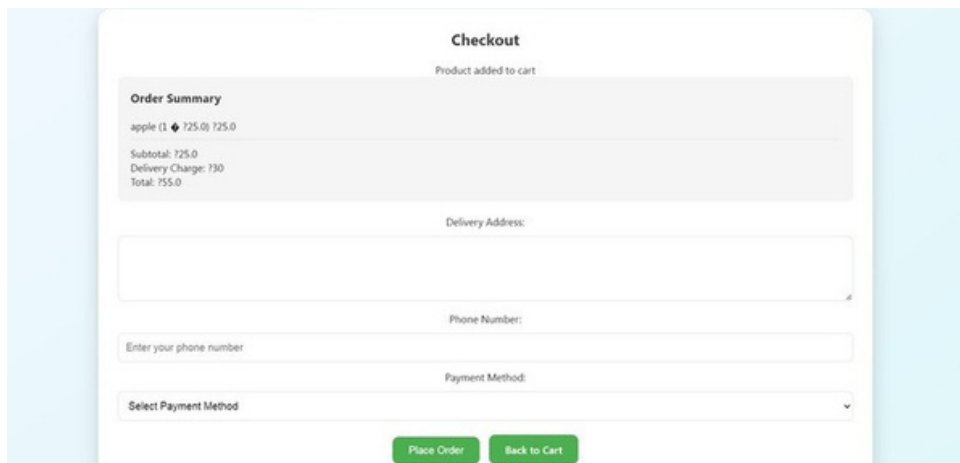


The interface contains the following key elements:

- Page Header: "Your Cart" - clearly identifying the cart review page
- Cart Items List:
  - Product Name: "apple"
  - Item Details: "725.0 x 1 = 725.0" showing:
    - Unit price (725.0)
    - Quantity (1)
    - Total price for that item (725.0)
  - "Remove" Button - action button to delete the item from the cart
- Order Summary Section:
  - Subtotal: 725.0 (total cost of all items before additional charges)
  - Delivery Charge: 730 (fixed delivery fee)
  - Total: 755.0 (final amount payable including all charges)
- Action Buttons:
  - "Proceed to Checkout" - primary button to move to the payment and address confirmation stage
  - "Continue Shopping" - secondary button to return to the product catalog



# check out page :

A screenshot of a checkout page. At the top, the heading "Checkout" is centered, with a sub-message "Product added to cart" below it. On the left, an "Order Summary" box lists "apple (1 x 125.0) 125.0", "Subtotal: 125.0", "Delivery Charge: 730", and "Total: 155.0". To the right of this box is a "Delivery Address:" label above a text input field. Below that is a "Phone Number:" label above another text input field with the placeholder "Enter your phone number". Further down is a "Payment Method:" label above a dropdown menu with the placeholder "Select Payment Method". At the bottom, there are two green buttons: "Place Order" and "Back to Cart".

The interface contains the following key elements:

- Page Header: "# Checkout" - main heading identifying the checkout process
- Confirmation Message: "Product added to cart" - system notification
- Order Summary Section:
  - Header: "## Order Summary"
  - Product Details: "apple (125.0) 125.0" showing product name, unit price, and total
  - Delivery Information Section:
    - Delivery Address: Display field for customer's saved address
    - Phone Number: Input field with placeholder "Enter your phone number"
- Payment Section:
  - Payment Method: Dropdown/selection field with placeholder "Select Payment Method"
- Action Buttons:
  - "Place Order" - primary button to confirm and finalize the order
  - "Back to Cart" - secondary button to return to cart for modifications



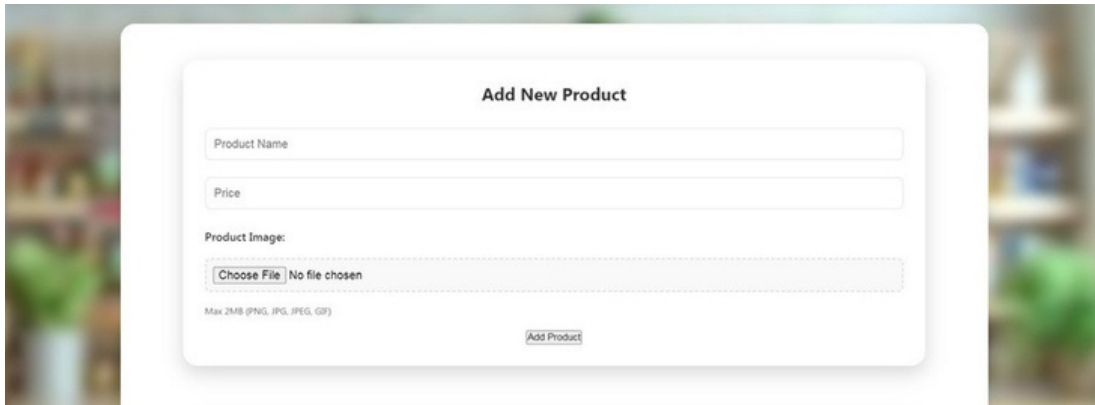
## order placed page :



The interface contains the following key elements:

- Page Header: "# Your Orders" - main heading identifying the order history section
- Order Table Header:
  - Column Labels: "Order ID Product Price", "Quantity Total Status Date"
- Order Details Entry:
  - Order ID: 6
  - Product Name: apple
  - Product Price: 125.00
  - Quantity: 1 (represented as ":1" in the display)
  - Total Amount: 755.00
  - Order Status: Processing
  - Order Date & Time: 2025-10-17 05:09:39
- Navigation Button:
  - "Continue Shopping" - button to return to the product catalog
- Footer Section:
  - Copyright Notice: "© 2023 Grocery Store. All rights reserved."

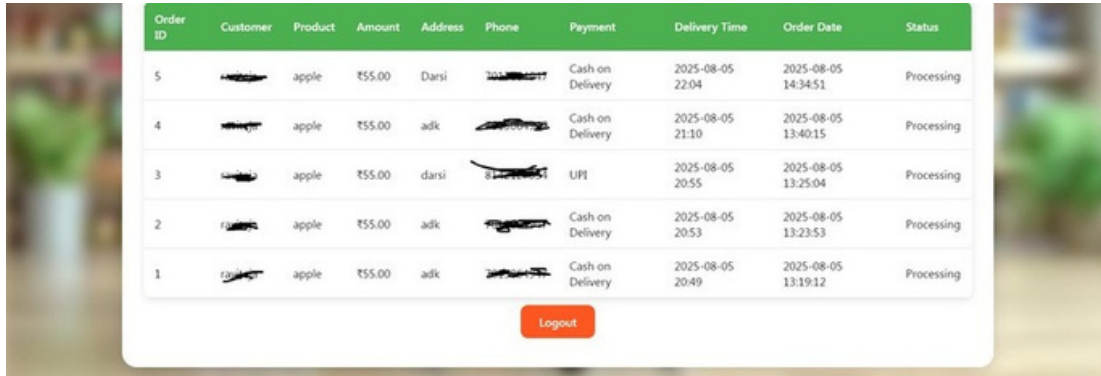
## admin page(add new items):

A screenshot of a web form titled "Add New Product". The form is white with a subtle shadow and is centered on a blurred background of a store interior. It contains three input fields: "Product Name", "Price", and "Product Image:". The "Product Image:" field includes a "Choose File" button and a status indicator "No file chosen". Below the image field, there is a small text label "Max 2MB (PNG, JPG, JPEG, GIF)". At the bottom right of the form is an "Add Product" button.

The interface contains a product management form with the following elements:

- Form Title: "Add New Product" - clearly indicating the purpose of this administrative function
- Product Information Fields:
  - Product Name - input field for entering the product name
  - Price - input field for setting the product price
- Image Upload Section:
  - Label: "Product Image:"
  - File Selection: "Choose File" button with status indicator "No file chosen"
  - File Requirements: "Max 2MB (PNG, JPG, JPEG, GIF)" - specifying acceptable file formats and size limitations
- Action Button:
  - [Add Product] - primary button to submit the form and add the new product to inventory
- Navigation Link:
  - "Manage Products" - link to navigate to the product management dashboard

## admin page (orders list):



Order ID	Customer	Product	Amount	Address	Phone	Payment	Delivery Time	Order Date	Status
5	raji	apple	₹55.00	Darsi	9876543210	Cash on Delivery	2025-08-05 22:04	2025-08-05 14:34:51	Processing
4	raji	apple	₹55.00	adk	9876543210	Cash on Delivery	2025-08-05 21:10	2025-08-05 13:40:15	Processing
3	raji	apple	₹55.00	darsi	9876543210	UPI	2025-08-05 20:55	2025-08-05 13:25:04	Processing
2	raji	apple	₹55.00	adk	9876543210	Cash on Delivery	2025-08-05 20:53	2025-08-05 13:23:53	Processing
1	raji	apple	₹55.00	adk	9876543210	Cash on Delivery	2025-08-05 20:49	2025-08-05 13:19:12	Processing

Logout

- The interface contains a detailed orders table with the following structure:
  - Page Header: "# Customer Orders" - identifying the administrative orders dashboard
  - Orders Table with Columns:
    - Order ID - Unique identifier for each order
    - Customer - Username of the customer who placed the order
    - Product - Product name ordered
    - Amount - Order total amount
    - Address - Delivery address
    - Phone - Customer contact number
    - Payment - Payment method used (Cash on Delivery, UPI)
    - Delivery Time - Scheduled delivery date and time
    - Order Date - When the order was placed
    - Status - Current order status (all showing "Processing")

## SIMPLE STEPS TO RUN THE GROCERY STORE APPLICATION:

Step 2: Install Flask Open Command Prompt or Terminal and type: `pip install flask`

Step 1: Install Python

Download and install Python from [python.org](https://python.org). Make sure to check "Add Python to PATH" during installation  
`cd path/to/your/grocery_store`

Step 5: Run the Application Open Command Prompt or Terminal Navigate to your `grocery_store` folder:  
`python app.py`

step 4:Run the application: `python app.py`

Step 5: Access the Application

Open your web browser Go to: `http://localhost:5000` You should see the Grocery Store homepage

Step 6: Test the Application

As a Customer:

Click "Customer Register" to create an account Login with your new account Browse products and add items to cart Checkout and place orders

As an Admin:

Click "Admin Login" Username: `admin` Password: `admin123` Manage products and view orders

## Step 7: Stop the Application

Press Ctrl+C in the Command Prompt to stop the server  
That's it! Your grocery store application is now running locally on your computer.

## Conclusion:

### Project Summary:

The Grocery Store web application represents a complete, functional e-commerce solution built using modern web development technologies. This project successfully demonstrates the implementation of a full-stack web application using Python Flask framework with SQLite database, providing a robust platform for online grocery shopping.

### Key Achievements:

The application delivers a comprehensive shopping experience with separate interfaces for customers and administrators. Customers can seamlessly register accounts, browse products, manage shopping carts, and complete purchases, while administrators have full control over product management, inventory, and order processing. The system incorporates essential e-commerce features including user authentication, product catalog management, shopping cart functionality, order processing, and inventory tracking.

## Technical Implementation :

From a technical perspective, the project showcases proper implementation of web application architecture following the Model- View-Controller pattern. The use of Flask framework provides a clean and maintainable codebase, while SQLite offers a lightweight yet powerful database solution. The frontend combines HTML templates with CSS styling and JavaScript functionality to create an intuitive user interface that works across different devices.

## Security and Reliability:

The application incorporates important security measures including password hashing, SQL injection prevention, session management, and input validation. The transactional approach to database operations ensures data integrity, particularly during critical processes like order creation and inventory updates. Error handling and user feedback mechanisms provide a smooth user experience even when unexpected situations occur.