1. System Overview

Fruit mStore is a compact web-based e-commerce application designed to streamline the sales process for a local fresh produce retailer. Built using the MERN stack (MongoDB, Express.js, React.js, Node.js), the system transitions the shop from a manual, paper-based workflow to an efficient digital platform. It allows the shop owner (Admin) to manage the product catalogue securely while providing customers with a user-friendly interface to browse fruits, manage their shopping carts, and place orders. The application focuses on essential e-commerce functionalities, ensuring a structured, modular, and easy-to-navigate experience that fulfills the core requirements of digital order placement and checking out.

2. Application Workflow Summary

The application works through two distinct roles: Admin and Customer.

- For the Admin: The process begins with a secure login. Once authenticated, the admin can access a protected "Add Product" interface to list new fruits with details like name, price (in PKR), stock, and images, ensuring the catalogue is always up-to-date.
- For the Customer: Users can browse the main product listing page to view all available fruits. They can “Add to Cart” any items they wish to purchase. The "Cart" page allows them to adjust quantities or remove items. When ready, they proceed to "Checkout," where they enter their personal contact details. The system dynamically adjusts requirements based on the Delivery method: if "Home Delivery" is chosen, an address is required; if "Pickup" is chosen, a confirmation note is shown instead. Finally, the user selects a payment method and confirms the order, which is then saved to the database.

3. ERD

The database is designed around five core entities to ensure data integrity and structured relationships:

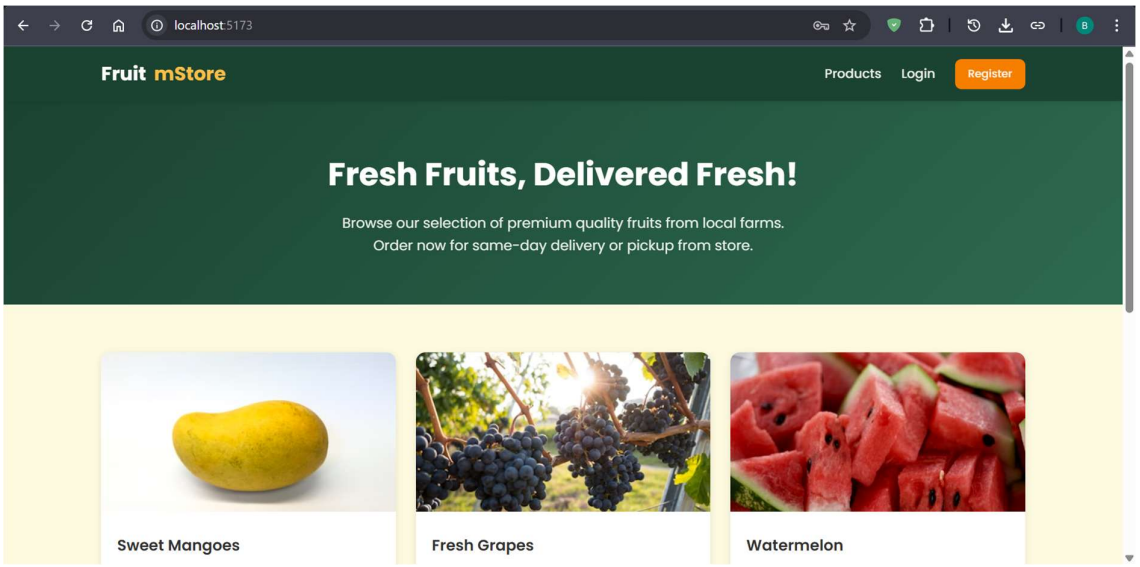
- Users: This table stores all user credentials, differentiating between 'admin' and 'customer' roles to control access levels.

- Products: This entity holds all product-related data (name, price, stock, image). It is linked to the Users table (specifically the Admin) to track who added the inventory.
- Carts: This represents the temporary state of a customer's shopping session. It is linked to the Users table to persist the shopping items for a specific customer.
- Orders: This is the central entity for finalized transactions. It records the total amount, payment method, and delivery details. It is linked to Users so customers can view their history.
- Order_Items: Depending on the specific normalization level, this logically connects Orders and Products, detailing exactly which products were bought in a specific order, including quantity and price at the time of purchase.

4. Payment Flow

The payment process is designed to be a mock simulation of a real-world checkout. Once a customer reaches the final step of the checkout form, they are presented with two options. If "Cash on Delivery" is selected, the order is immediately confirmed with a "Pending" payment status. If "Card Payment" is selected, the system displays a simulated card input form where the user enters their card details (Number, Holder Name, Expiry, CVV). These details undergo a dummy validation check to ensure the format is correct. No actual funds are deducted; instead, the system records the payment method as "Card" and saves the order as "Completed," providing the user with an instant order success confirmation.

5. Output Screenshots



localhost:5173

Fruit mStore Products Login Register

Sweet Mangoes
Chaunsa mangoes from Multan
Rs. 350 / kg
Add to Cart

Fresh Grapes
Seedless green grapes, farm fresh
Rs. 280 / kg
Add to Cart

Watermelon
Large juicy watermelon, perfect for summer
Rs. 150 / piece
Add to Cart

Fresh Apples
Crispy red apples from northern orchards

Ripe Bananas
Sweet yellow bananas, perfect for smoothies

Juicy Oranges
Fresh citrus oranges full of vitamin C

localhost:5173

Fruit mStore Products Login Register

Rs. 350 / kg
Add to Cart

Rs. 280 / kg
Add to Cart

Rs. 150 / piece
Add to Cart

Fresh Apples
Crispy red apples from northern orchards
Rs. 250 / kg
Add to Cart

Ripe Bananas
Sweet yellow bananas, perfect for smoothies
Rs. 120 / dozen
Add to Cart

Juicy Oranges
Fresh citrus oranges full of vitamin C
Rs. 180 / kg
Add to Cart

localhost:5173/register

Fruit mStore Products Login Register

Create Account

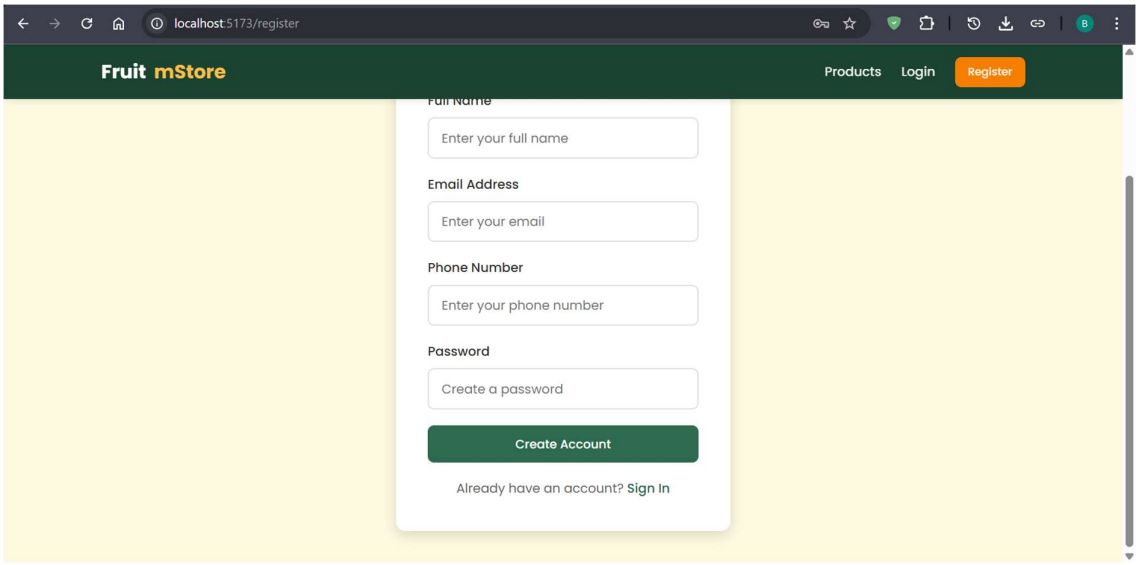
Join Fruit mStore today

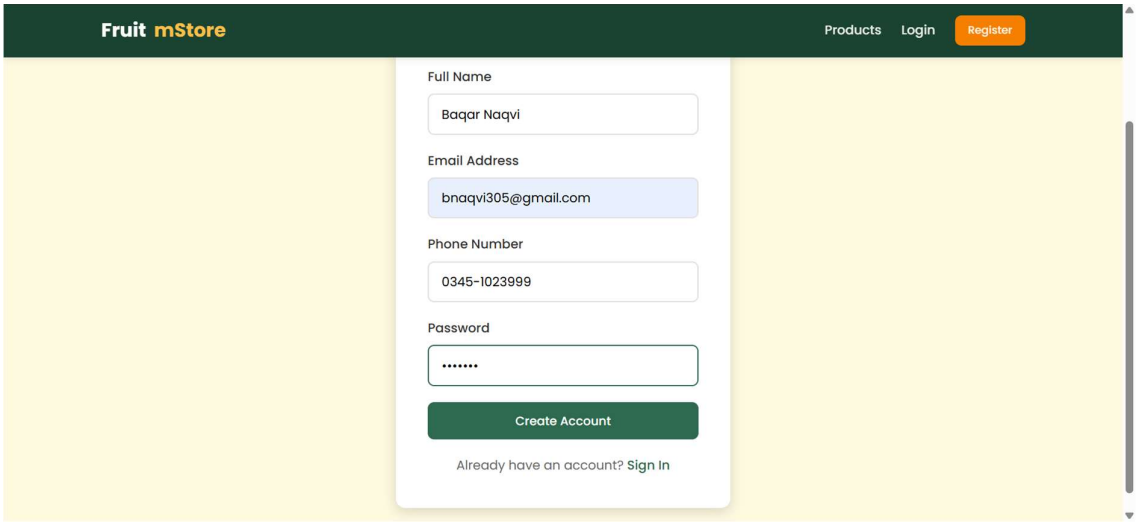
Full Name
Enter your full name

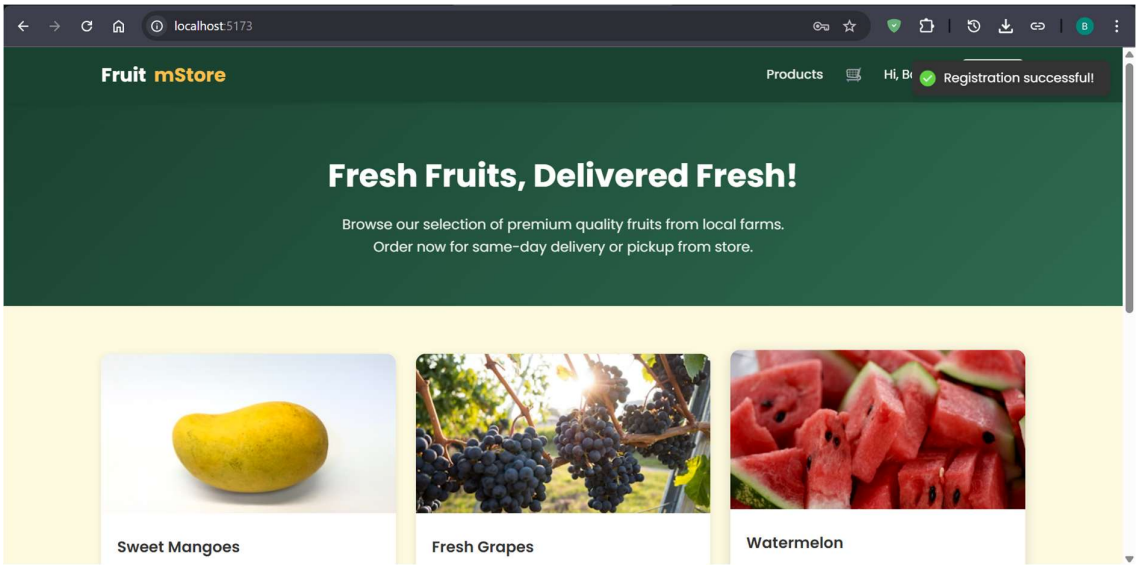
Email Address
Enter your email

Phone Number
Enter your phone number

Password
Create a password


localhost:5173/register
Fruit mStore
Products
Login
Register
Full Name
Enter your full name
Email Address
Enter your email
Phone Number
Enter your phone number
Password
Create a password
Create Account
Already have an account? Sign In


Fruit mStore
Products
Login
Register
Full Name
Baqar Naqvi
Email Address
bnaqvi305@gmail.com
Phone Number
0345-1023999
Password
Create Account
Already have an account? Sign In


localhost:5173
Fruit mStore
Products
Registration successful!
Fresh Fruits, Delivered Fresh!
Browse our selection of premium quality fruits from local farms.
Order now for same-day delivery or pickup from store.
Sweet Mangoes
Fresh Grapes
Watermelon

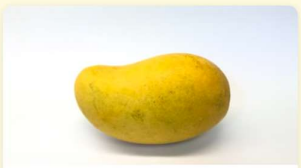
localhost:5173

Fruit mStore

Products Hi, Baqar Logout

Fresh Fruits, Delivered Fresh!

Browse our selection of premium quality fruits from local farms.
Order now for same-day delivery or pickup from store.



Sweet Mangoes

Fresh Grapes

Watermelon

localhost:5173/cart

Fruit mStore

Products Hi, Baqar Logout

Shopping Cart

Your cart is empty

Start shopping to add items to your cart

Browse Products

localhost:5173

Fruit mStore

Products 1 Hi, Baqar Added to cart!

Rs. 350 / kg

Add to Cart

Rs. 280 / kg

Add to Cart

Rs. 150 / piece

Add to Cart

Fresh Apples

Crispy red apples from northern orchards

Rs. 250 / kg

Add to Cart

Ripe Bananas

Sweet yellow bananas, perfect for smoothies

Rs. 120 / dozen

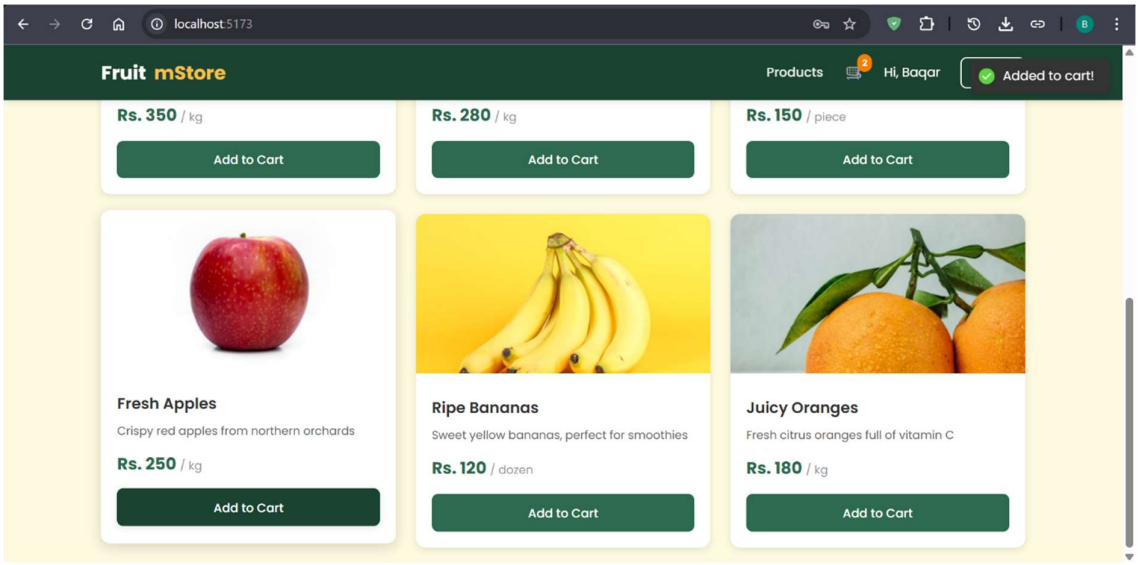
Add to Cart

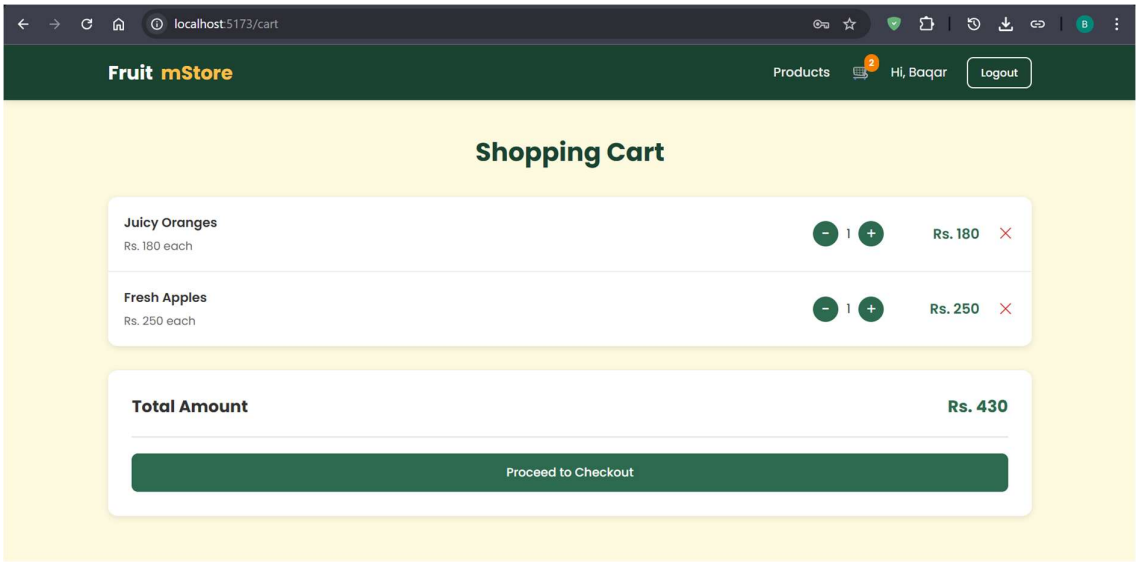
Juicy Oranges

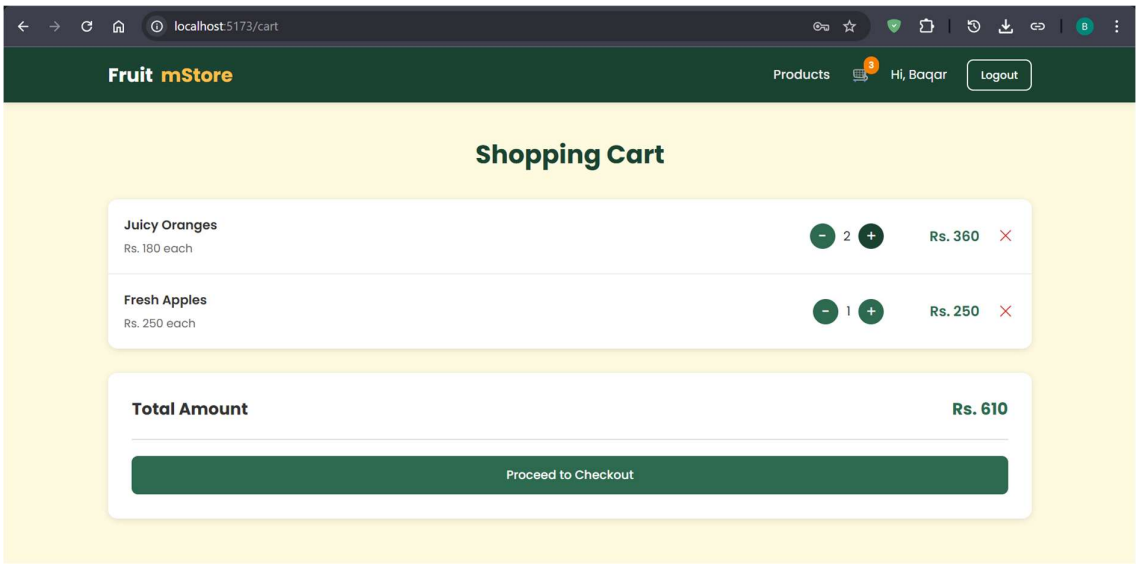
Fresh citrus oranges full of vitamin C

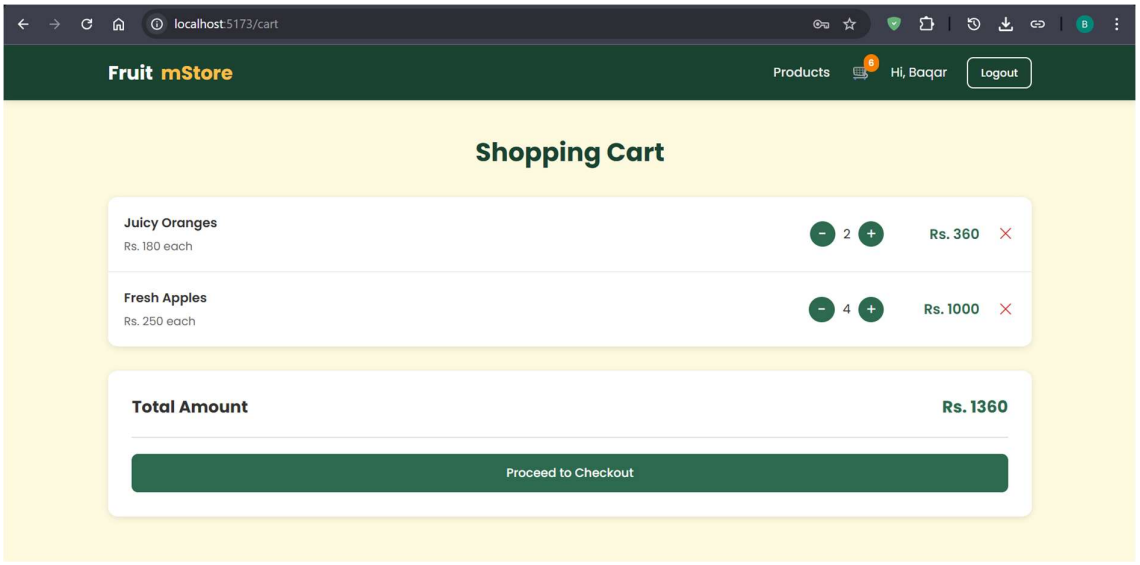
Rs. 180 / kg

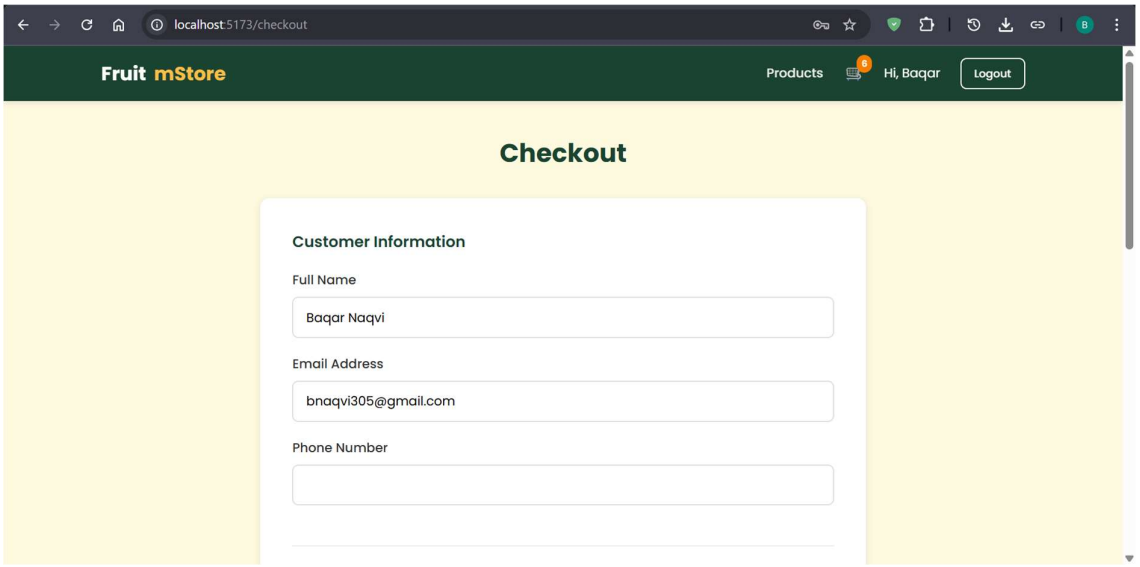
Add to Cart

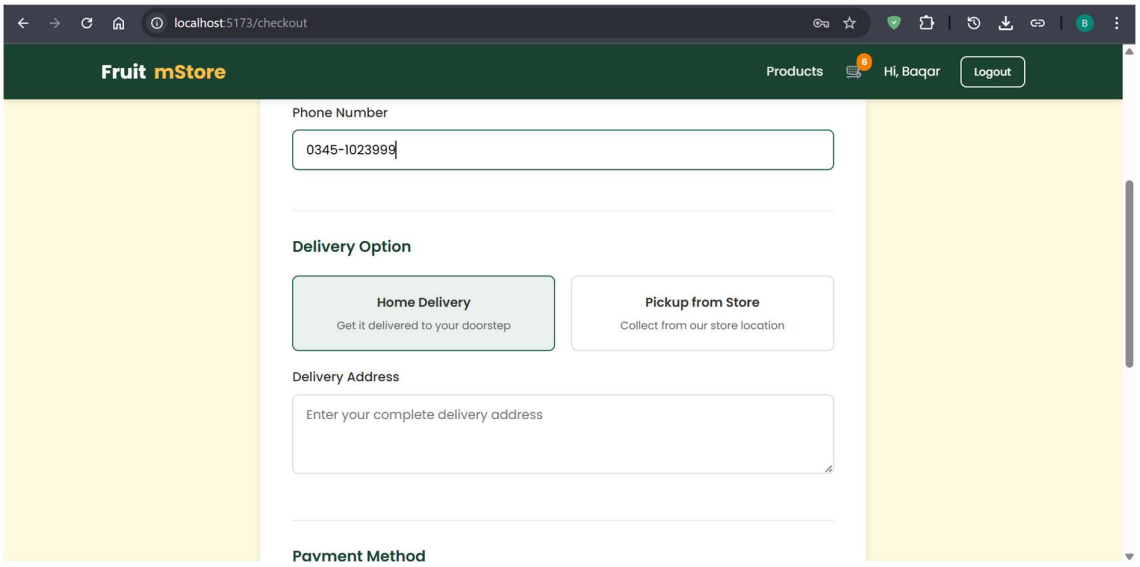

localhost:5173
Fruit mStore
Products
2
Hi, Baqar
Added to cart!
Rs. 350 / kg
Add to Cart
Rs. 280 / kg
Add to Cart
Rs. 150 / piece
Add to Cart
Fresh Apples
Crispy red apples from northern orchards
Rs. 250 / kg
Add to Cart
Ripe Bananas
Sweet yellow bananas, perfect for smoothies
Rs. 120 / dozen
Add to Cart
Juicy Oranges
Fresh citrus oranges full of vitamin C
Rs. 180 / kg
Add to Cart

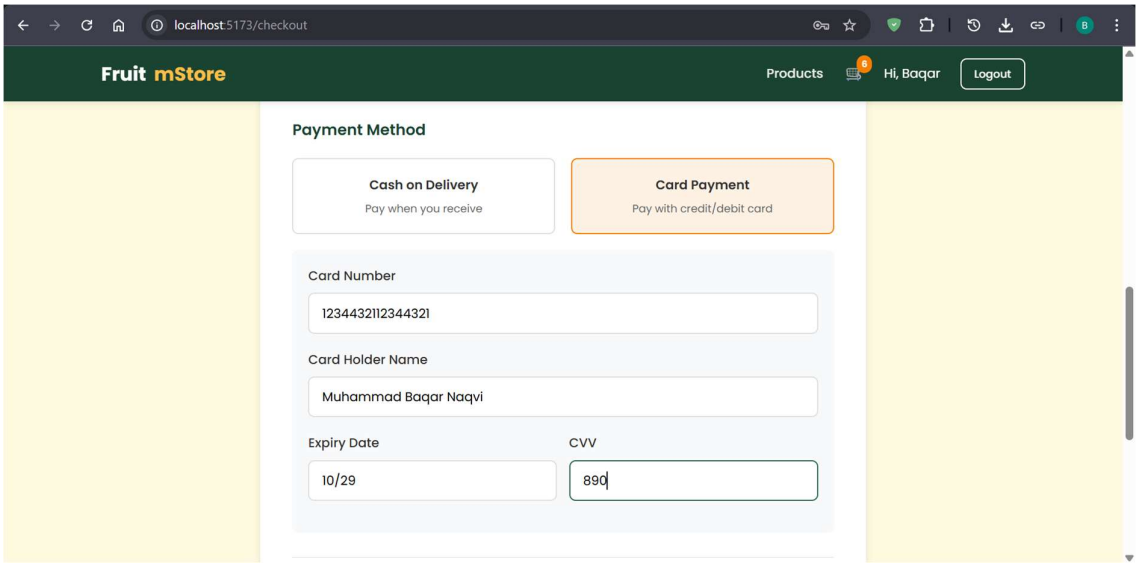

localhost:5173/cart
Fruit mStore
Products
2
Hi, Baqar
Logout
Shopping Cart
Juicy Oranges
Rs. 180 each
1
Rs. 180
Fresh Apples
Rs. 250 each
1
Rs. 250
Total Amount
Rs. 430
Proceed to Checkout

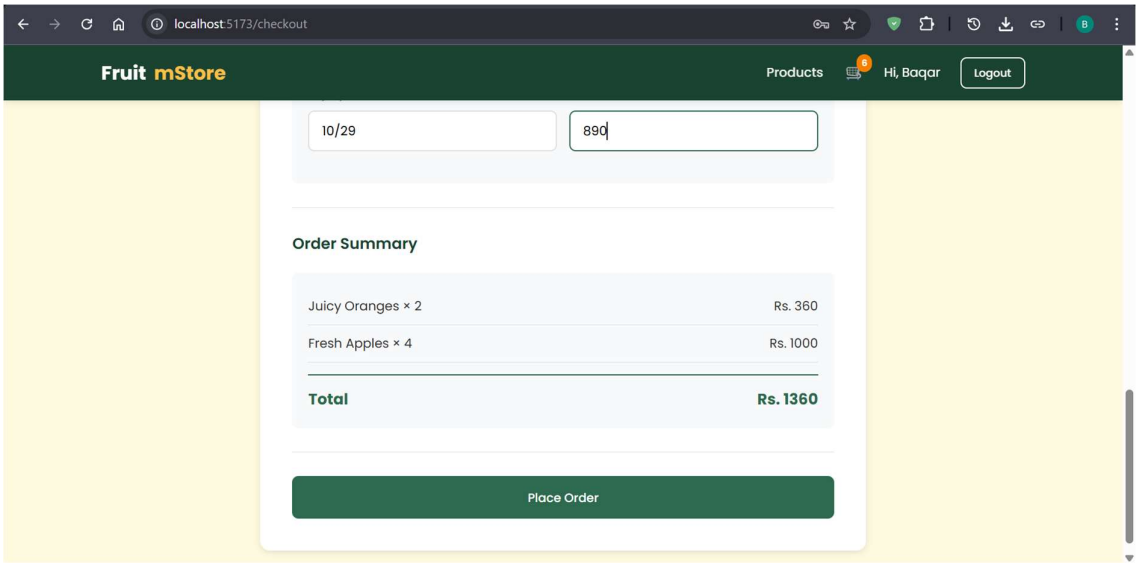

localhost:5173/cart
Fruit mStore
Products
3
Hi, Baqar
Logout
Shopping Cart
Juicy Oranges
Rs. 180 each
2
Rs. 360
Fresh Apples
Rs. 250 each
1
Rs. 250
Total Amount
Rs. 610
Proceed to Checkout

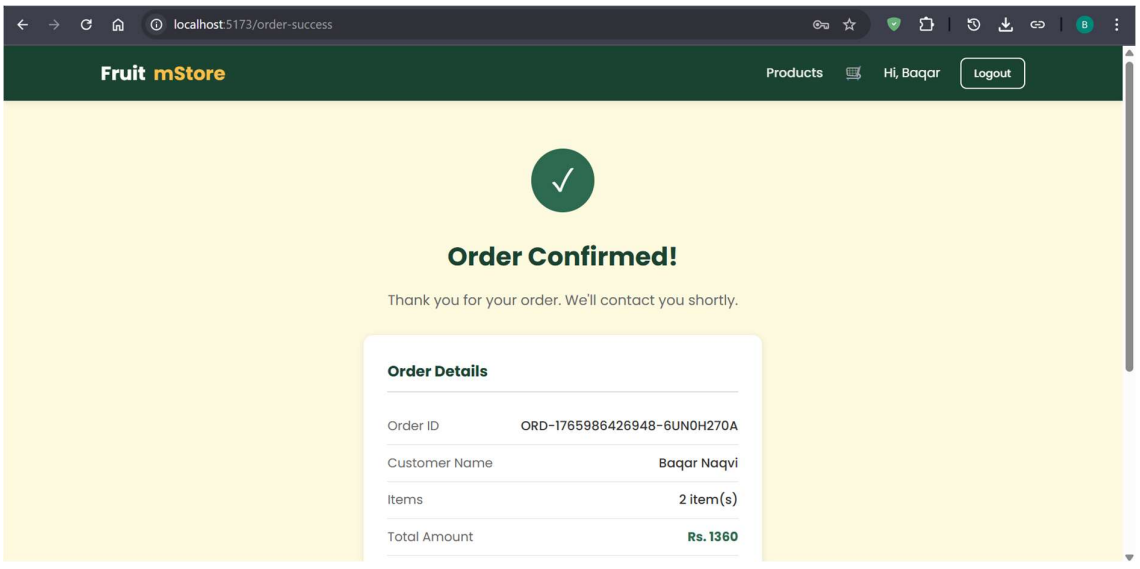

localhost:5173/cart
Fruit mStore
Products
Hi, Baqar
Logout
Shopping Cart
Juicy Oranges
Rs. 180 each
2
Rs. 360
Fresh Apples
Rs. 250 each
4
Rs. 1000
Total Amount
Rs. 1360
Proceed to Checkout

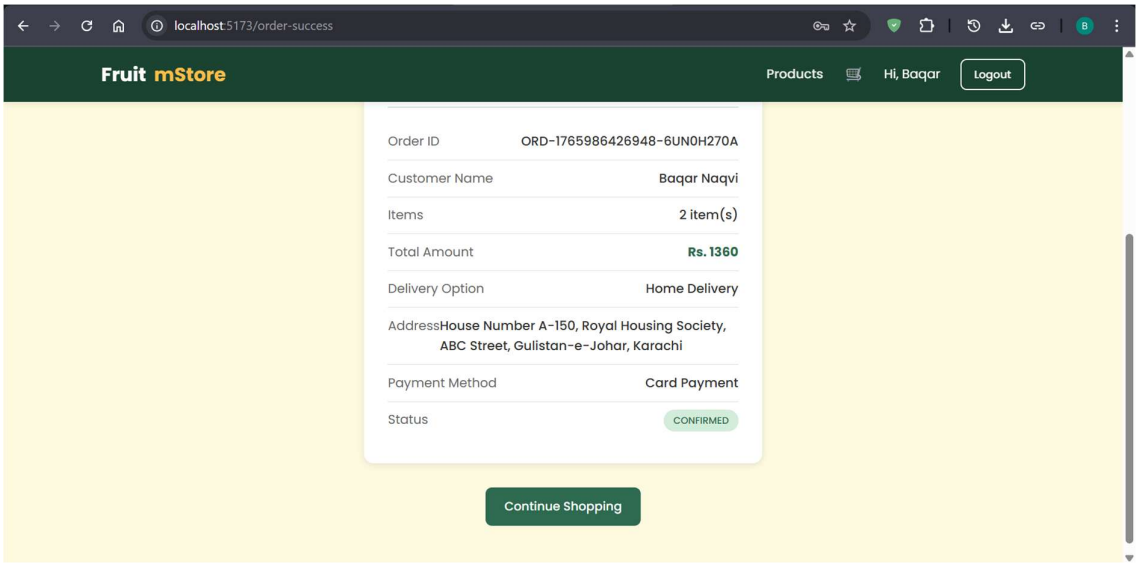

localhost:5173/checkout
Fruit mStore
Products
Hi, Baqar
Logout
Checkout
Customer Information
Full Name
Baqar Naqvi
Email Address
bnaqvi305@gmail.com
Phone Number

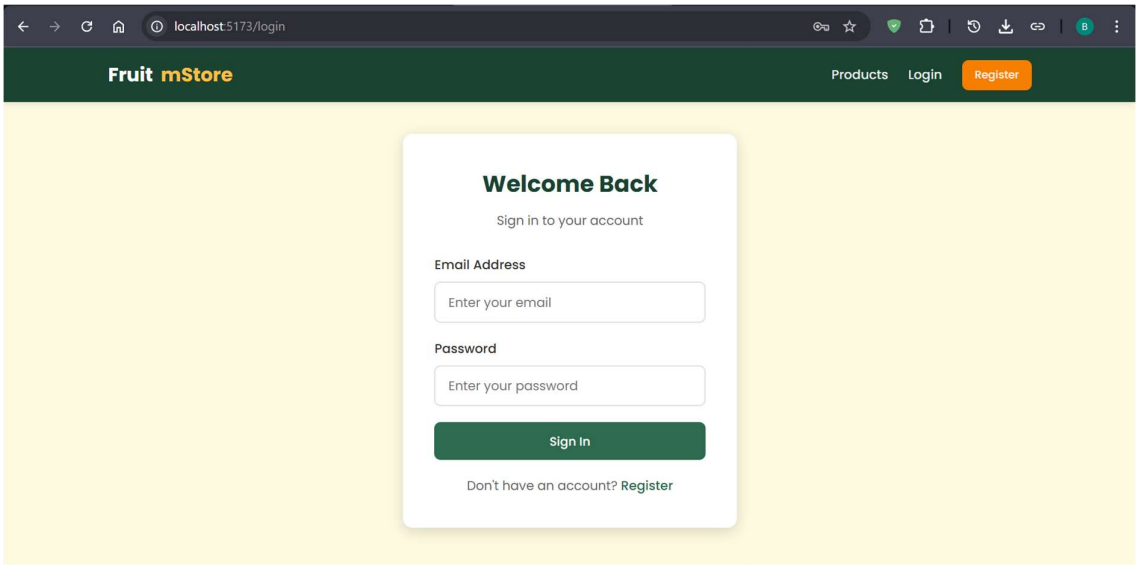

localhost:5173/checkout
Fruit mStore
Products
Hi, Baqar
Logout
Phone Number
0345-1023999
Delivery Option
Home Delivery
Get it delivered to your doorstep
Pickup from Store
Collect from our store location
Delivery Address
Enter your complete delivery address
Pavment Method

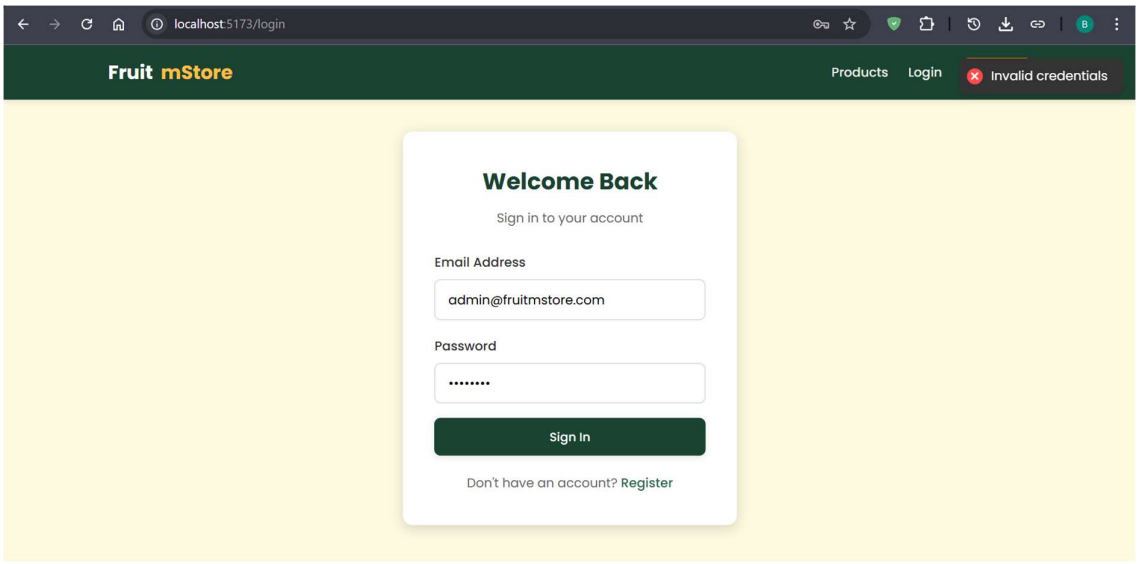

localhost:5173/checkout
Fruit mStore
Products
Hi, Baqar
Logout
Payment Method
Cash on Delivery
Pay when you receive
Card Payment
Pay with credit/debit card
Card Number
1234432112344321
Card Holder Name
Muhammad Baqar Naqvi
Expiry Date
10/29
CVV
890

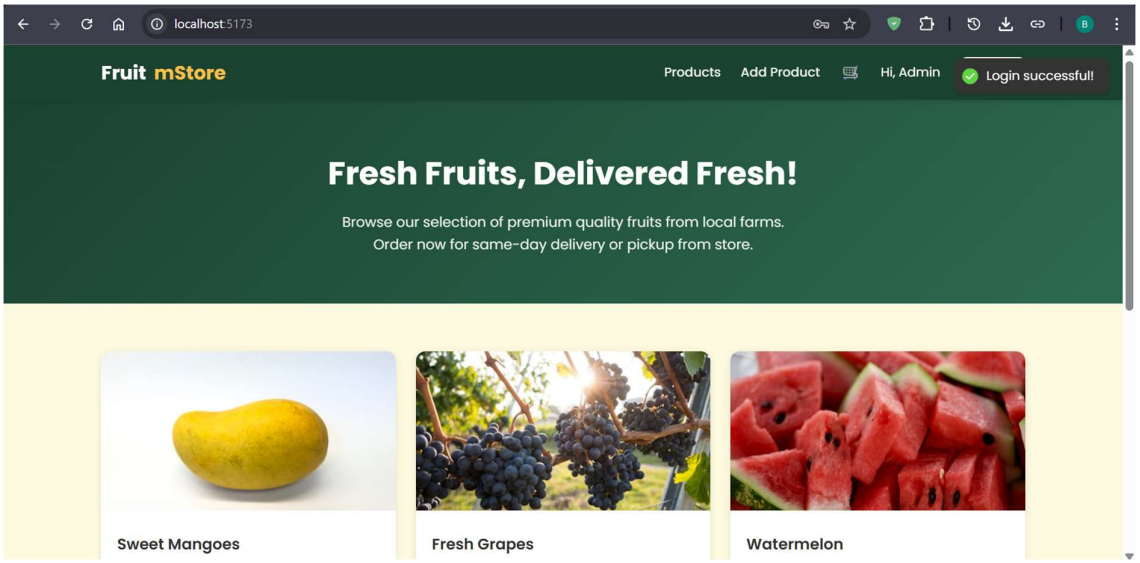

localhost:5173/checkout
Fruit mStore
Products
Hi, Baqar
Logout
10/29
890
Order Summary
Juicy Oranges × 2
Rs. 360
Fresh Apples × 4
Rs. 1000
Total
Rs. 1360
Place Order

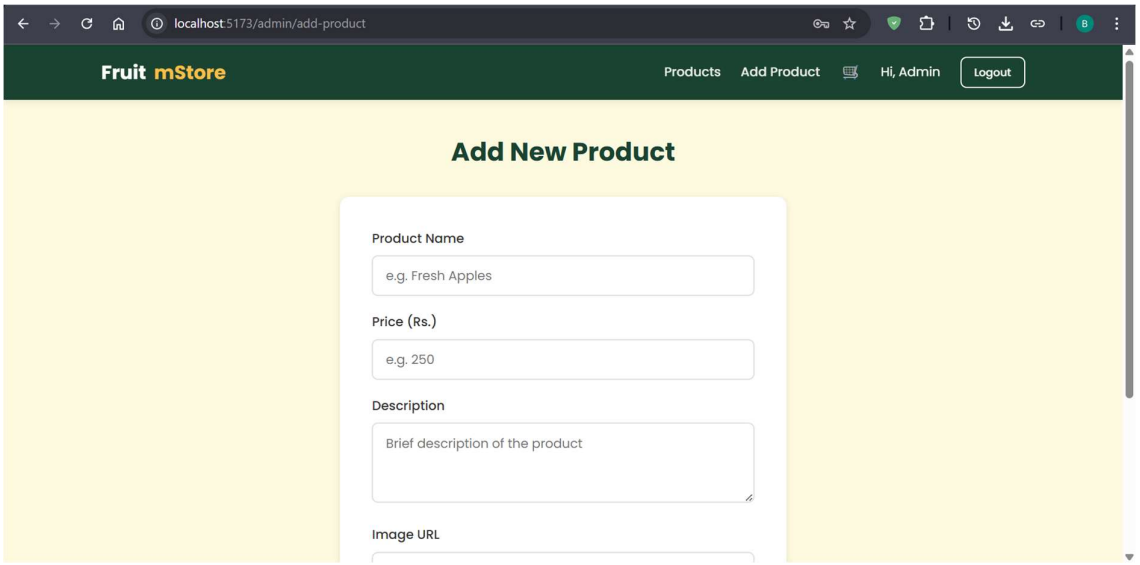

localhost:5173/order-success
Fruit mStore
Products
Hi, Baqar
Logout
Order Confirmed!
Thank you for your order. We'll contact you shortly.
Order Details
Order ID
ORD-1765986426948-6UN0H270A
Customer Name
Baqar Naqvi
Items
2 item(s)
Total Amount
Rs. 1360

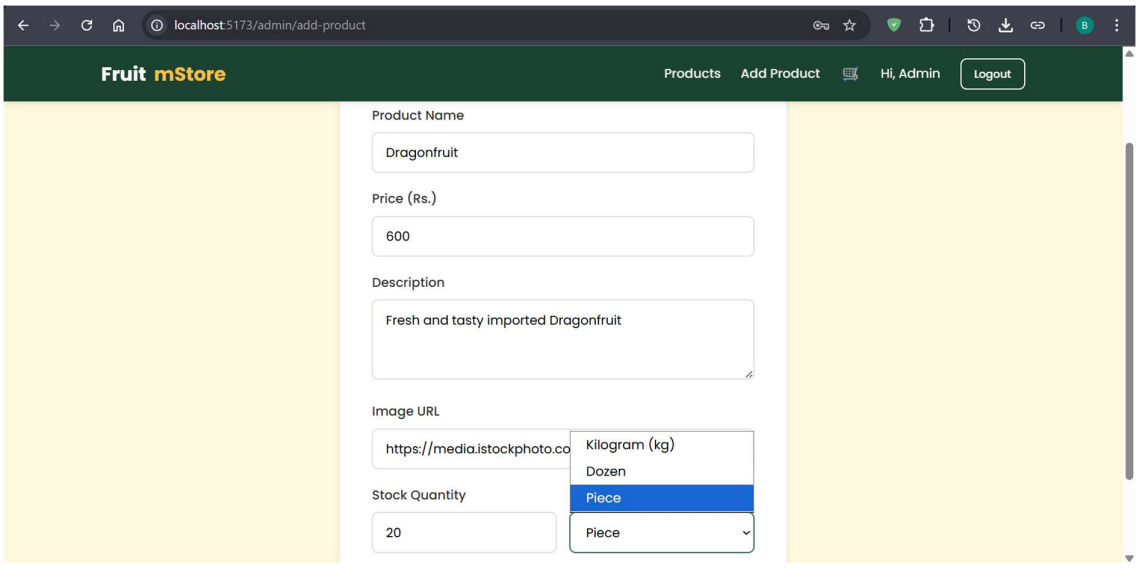

localhost:5173/order-success
Fruit mStore
Products
Hi, Baqar
Logout
Order ID
ORD-1765986426948-6UN0H270A
Customer Name
Baqar Naqvi
Items
2 item(s)
Total Amount
Rs. 1360
Delivery Option
Home Delivery
Address
House Number A-150, Royal Housing Society, ABC Street, Gulistan-e-Johar, Karachi
Payment Method
Card Payment
Status
CONFIRMED
Continue Shopping


localhost:5173/login
Fruit mStore
Products
Login
Register
Welcome Back
Sign in to your account
Email Address
Enter your email
Password
Enter your password
Sign In
Don't have an account? Register


localhost:5173/login
Fruit mStore
Products
Login
Invalid credentials
Welcome Back
Sign in to your account
Email Address
admin@fruitmstore.com
Password
Sign In
Don't have an account? Register


localhost:5173
Fruit mStore
Products
Add Product
Hi, Admin
Login successful!
Fresh Fruits, Delivered Fresh!
Browse our selection of premium quality fruits from local farms.
Order now for same-day delivery or pickup from store.
Sweet Mangoes
Fresh Grapes
Watermelon


localhost:5173/admin/add-product
Fruit mStore
Products
Add Product
Hi, Admin
Logout
Add New Product
Product Name
e.g. Fresh Apples
Price (Rs.)
e.g. 250
Description
Brief description of the product
Image URL


localhost:5173/admin/add-product
Fruit mStore
Products
Add Product
Hi, Admin
Logout
Product Name
Dragonfruit
Price (Rs.)
600
Description
Fresh and tasty imported Dragonfruit
Image URL
https://media.istockphoto.co
Kilogram (kg)
Dozen
Piece
Stock Quantity
20
Piece

localhost:5173

Fruit mStore

Products Add Product

Product added successfully!

Fresh Fruits, Delivered Fresh!

Browse our selection of premium quality fruits from local farms.
Order now for same-day delivery or pickup from store.

Dragonfruit

Sweet Mangoes

Fresh Grapes

localhost:5173

Fruit mStore

Products Add Product Hi, Admin Logout

Dragonfruit

Fresh and tasty imported Dragonfruit

Rs. 600 / piece

Add to Cart

Sweet Mangoes

Chaunsa mangoes from Multan

Rs. 350 / kg

Add to Cart

Fresh Grapes

Seedless green grapes, farm fresh

Rs. 280 / kg

Add to Cart

localhost:5173

Fruit mStore

Products Hi, Ayesha Logout

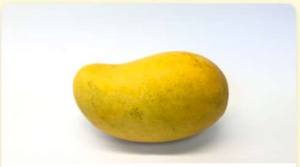
Fresh Fruits, Delivered Fresh!

Browse our selection of premium quality fruits from local farms.
Order now for same-day delivery or pickup from store.

Dragonfruit

Fresh and tasty imported Dragonfruit

Rs. 600 / piece



Sweet Mangoes

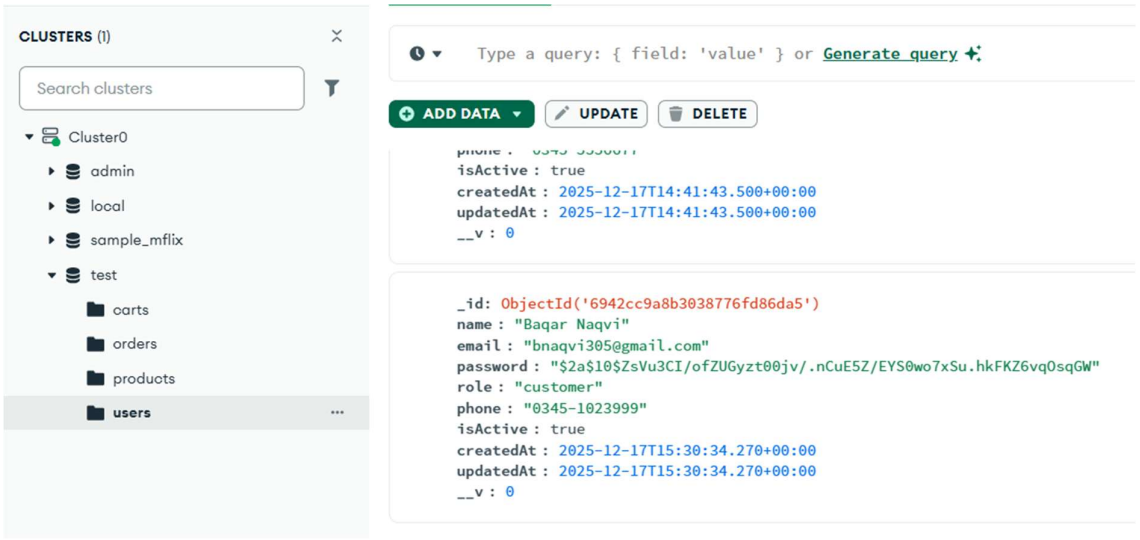
Chaunsa mangoes from Multan

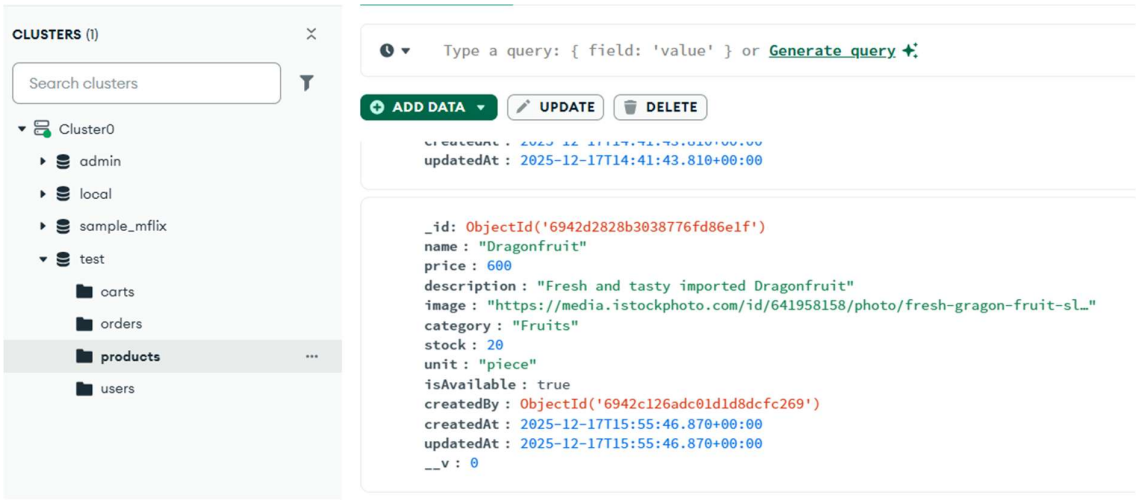
Rs. 350 / kg

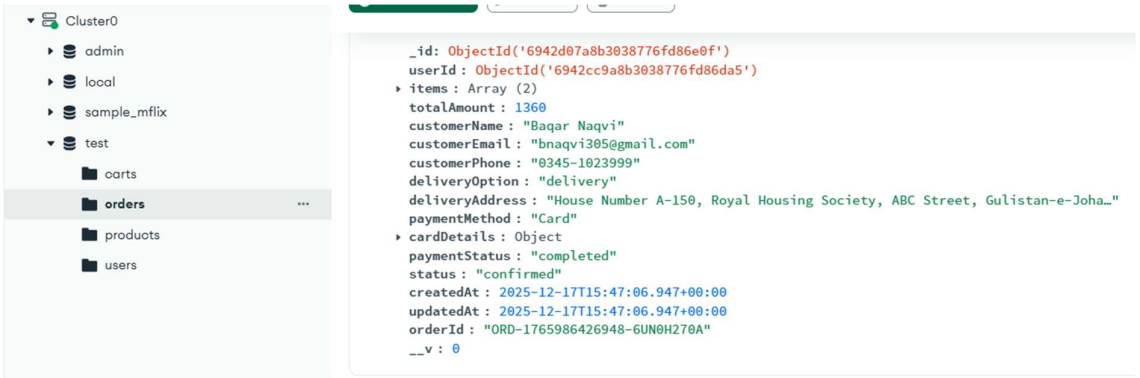
Fresh Grapes

Seedless green grapes, farm fresh

Rs. 280 / kg







Github Repository:

https://github.com/mbnaqvi/fruit-mstore/tree/master/backend