

# **Modern Shop - A Modern E-commerce Inventory Management Web Application**

## **Introduction**

The Inventory Model Website is a modern, full-stack Ecommerce inventory management application designed to simulate a real-world shopping and stock monitoring experience. Built using React.js for the frontend and Tailwind CSS for rapid, responsive UI development, it leverages Supabase as a powerful backend-as-a-service to handle authentication, database operations, and real-time data updates.

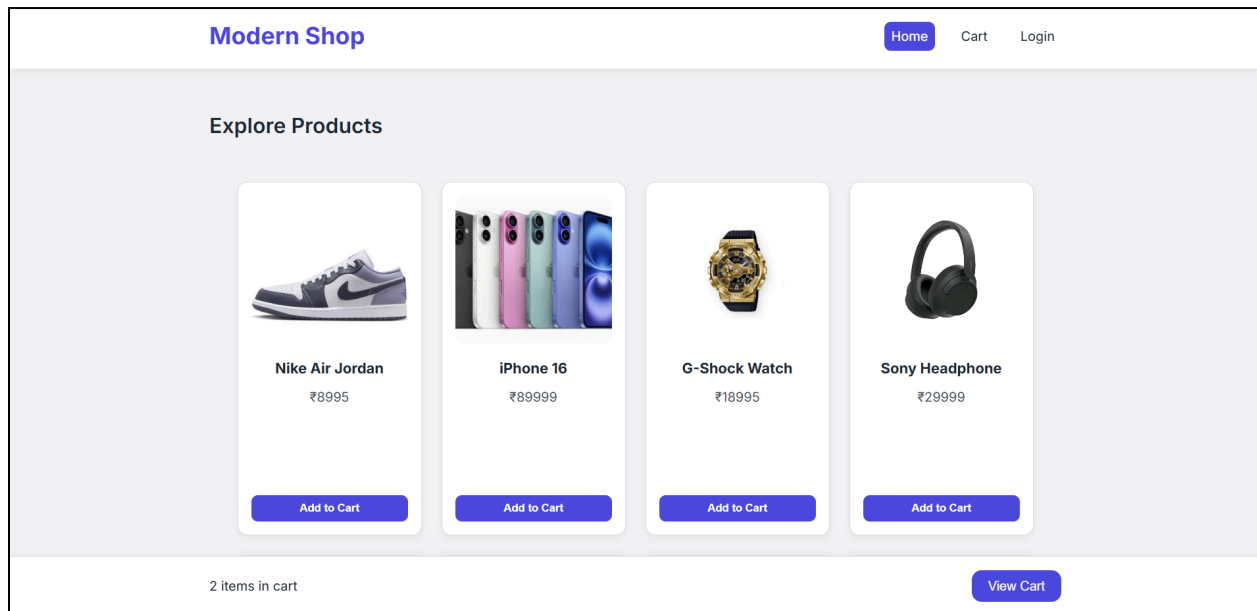
This application provides an intuitive and seamless shopping interface for users to explore products, add items to their cart, proceed through a secure checkout flow, and receive confirmation upon successful purchase. Simultaneously, it equips administrators with a dedicated dashboard to view product stock levels, identify low-stock items, and manage restocking operations effectively.

The project demonstrates the implementation of essential modern web development concepts, including:

- Client-side routing and conditional rendering using React
- User authentication and role-based access control powered by Supabase
- Real-time inventory tracking and order management
- Shopping cart logic with item updates, removal, and state persistence
- Checkout process with form validation and order confirmation
- Admin-only dashboard for inventory insights and low-stock alerts
- Fully mobile-responsive design to ensure usability across all devices

This project is ideal for showcasing how to build a complete and scalable e-commerce system using modern development tools and best practices.

## Home Page



The Home Page acts as the main interface for browsing products available in the store. All products are dynamically fetched from the Supabase database and displayed in a responsive grid layout, making it easy for users to explore items at a glance.

### Key Features:

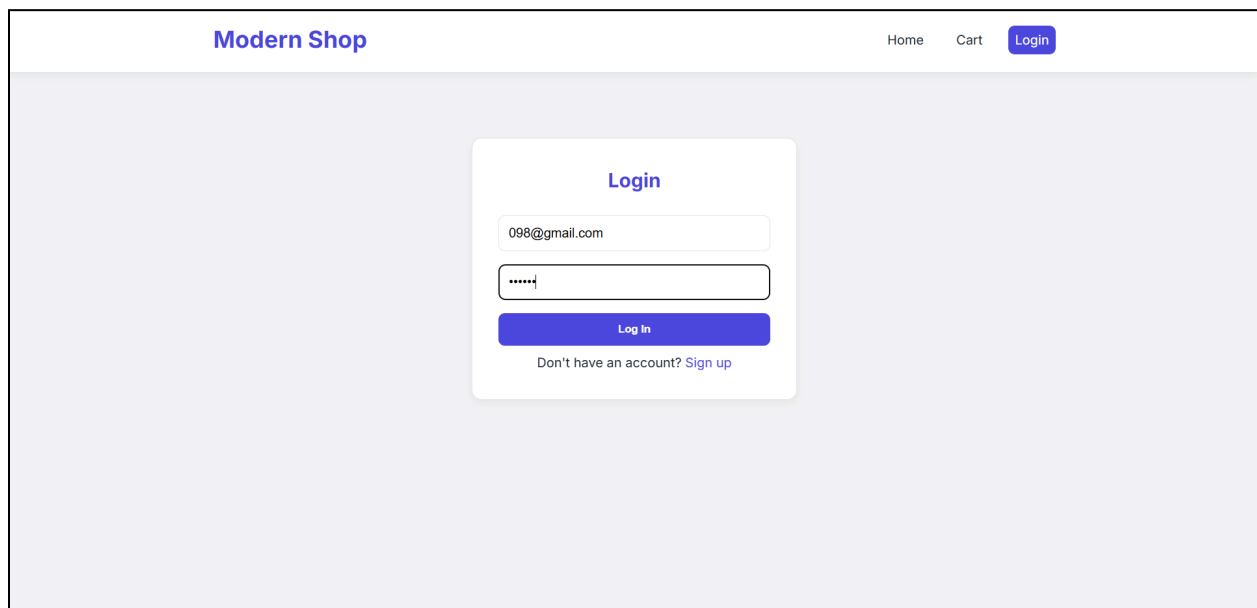
- **Dynamic Product Rendering:**  
Products are loaded in real-time from Supabase and shown with images, names, and prices in a card-based layout.
- **Authentication-Guarded Cart Access:**  
Users must be logged in to add items to their cart. This helps maintain individual cart data securely.
- **User Prompt:**  
If a user tries to add to cart without logging in, an alert message prompts them to log in first.

The page is fully mobile-responsive, ensuring a smooth and accessible shopping experience across all devices.

## Authentication System

The authentication system in the Inventory Model Website is built using Supabase Auth, which provides secure and efficient user management. It enables users to register, log in, and maintain active sessions across the application. Authentication is required for all cart and order-related interactions, ensuring that user-specific data remains isolated and protected. Admin privileges are handled separately through role-based redirection.

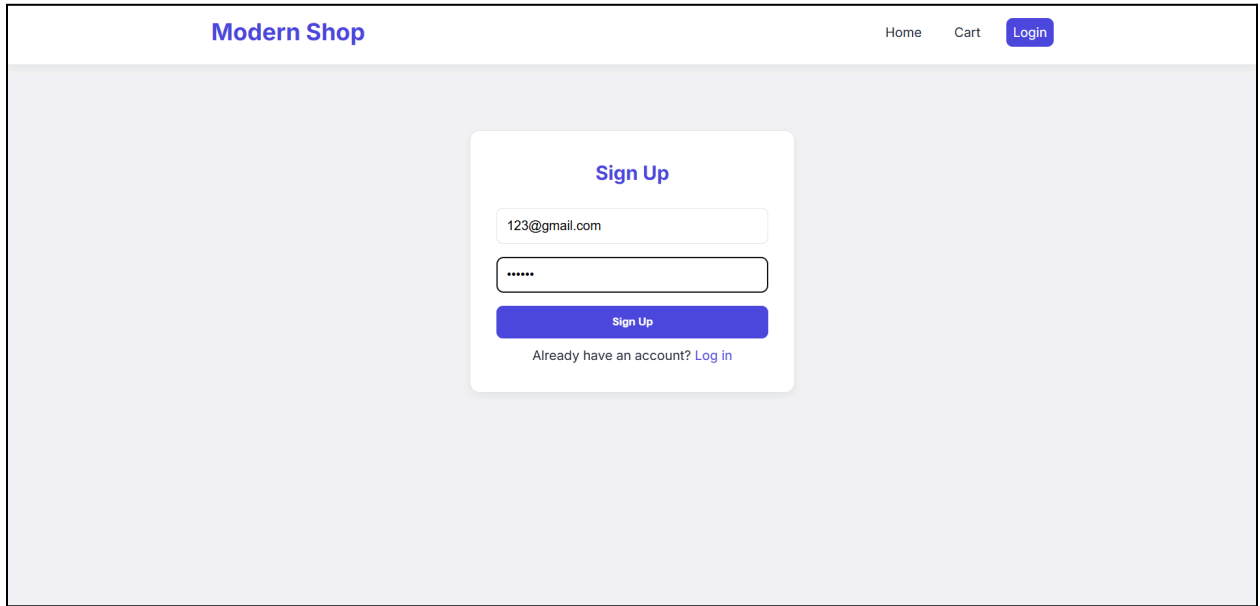
### Login Page:

The image shows a web browser window displaying the 'Modern Shop' login page. The header features the 'Modern Shop' logo on the left and navigation links for 'Home', 'Cart', and 'Login' on the right. The 'Login' link is highlighted with a blue background. The main content area has a light purple background. In the center, there is a white login card with a blue 'Login' title. Below the title are two input fields: the first contains the email '098@gmail.com' and the second contains masked characters '\*\*\*\*\*'. A blue 'Log in' button is positioned below the password field. At the bottom of the card, there is a link that says 'Don't have an account? Sign up'.

The Login Page allows returning users to access their accounts using their registered email and password. Upon successful authentication:

- The user is granted access to features such as adding items to the cart, viewing the cart, and proceeding to checkout.
- If the credentials belong to an admin, the user is redirected to the Admin Dashboard, where they can manage product inventory.
- If incorrect credentials are entered, appropriate error messages are displayed, guiding users to correct their input or reset their credentials.

## Signup Page:



The image shows a web page for 'Modern Shop' with a navigation bar at the top containing 'Home', 'Cart', and a 'Login' button. The main content area has a light purple background and features a central white 'Sign Up' form. The form includes an email input field with '123@gmail.com', a password input field with six dots, a blue 'Sign Up' button, and a link for users who already have an account.

Modern Shop

Home Cart Login

Sign Up

123@gmail.com

\*\*\*\*\*

Sign Up

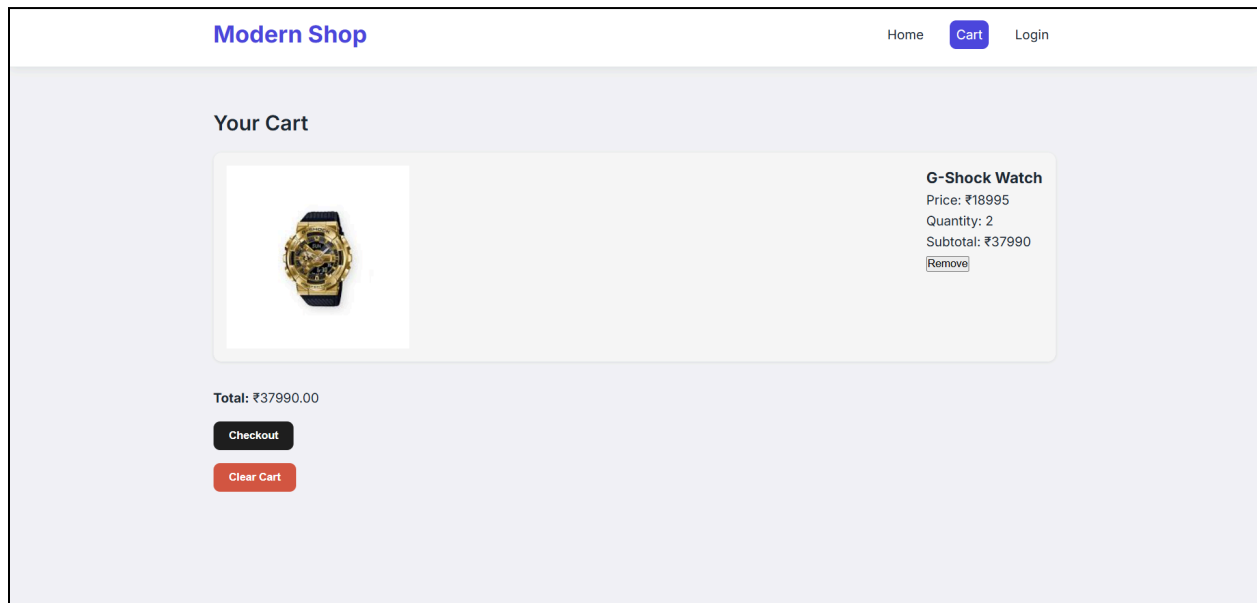
Already have an account? [Log in](#)

The Signup Page enables new users to create an account by providing an email and password. On form submission:

- Supabase securely stores the user's credentials and generates a unique user ID.
- The newly registered user is automatically logged in and redirected to the home page to start shopping.
- Input validation is enforced to prevent submission of empty or invalid fields, enhancing user experience and data integrity.

This registration flow ensures a smooth onboarding process, requiring minimal steps to begin using the application.

## Cart Page



The Cart Page is accessible only to authenticated users and serves as a dedicated space for reviewing items added to the shopping cart. It provides a clear overview of selected products, including their quantities, prices, and overall total, allowing users to confirm their order before proceeding to checkout.

### Key Features:

- **Product Summary:**  
Displays each product the user has added to their cart, along with the quantity and individual price. This gives users a transparent view of what they are about to purchase.
- **Clear Cart:**  
Provides an option to remove all items from the cart with a single click. This is useful if the user wants to restart their shopping session or modify their selections entirely.
- **Proceed to Checkout:**  
Navigates the user to the Checkout Page, where they can enter their personal details and complete the order process.
- **The cart dynamically updates in real-time as items are added or removed, offering a responsive and smooth user experience.**

## Checkout Page

Modern Shop

Home Cart Login

### Checkout

#### Order Summary

Product	Qty	Price	Subtotal
G-Shock Watch	2	₹18995	₹37990
Total			₹37990

Total: ₹37990

#### Delivery Details

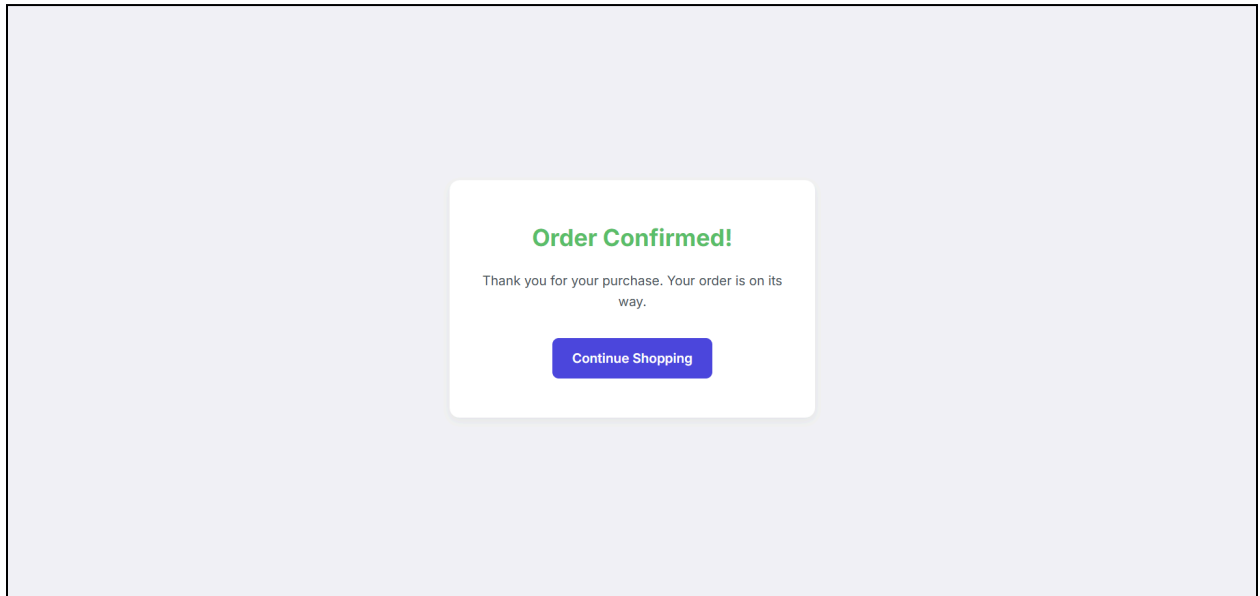
Place Order

The Checkout Page is the final step in the shopping process, where users provide their personal and delivery details to place an order.

### Key Features:

- Displays the total cost of the items in the cart, giving users a clear breakdown of the amount due before finalizing the order.
- Customer Information Form:  
Users are required to fill in essential details needed for order fulfillment, including:
  - Full Name
  - Shipping Address
  - Contact Number
- Order Submission:  
Once the form is correctly filled out, the data is submitted and securely stored in the Supabase **orders** table. This includes both customer details and the list of ordered products.
- Form Validation:  
Built-in validation ensures all fields are filled before submission. If any input is missing or invalid, the user is prompted to correct it before proceeding.

## Order Success Page

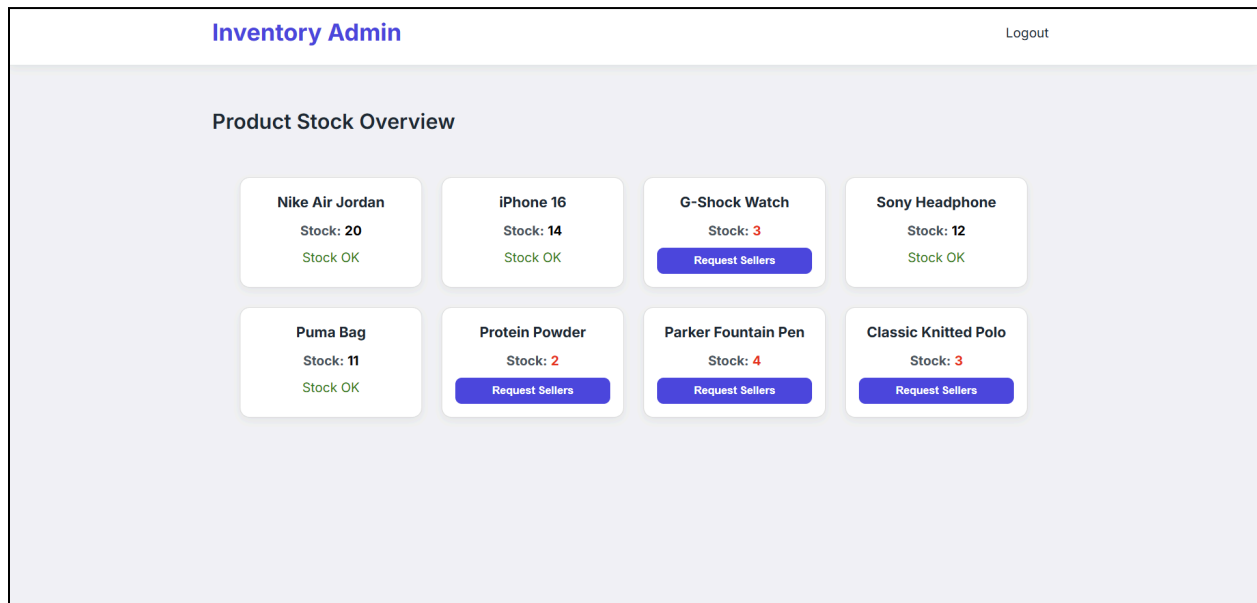


After a user successfully places an order, they are redirected to the Order Success Page—a dedicated confirmation screen that provides immediate feedback on the transaction. This page serves as the final touchpoint in the shopping flow and reassures users that their order has been processed.

### Key Features:

- **Success Message:**  
A clear, visually distinct message is displayed to inform the user that their order has been placed successfully. This reinforces a sense of completion and reliability.
- **User-Friendly UX:**  
Offers navigation options to continue shopping or return to the home page.
- **Clean, Minimal Layout:**  
The design of the page is intentionally simple and focused, removing distractions and emphasizing the successful completion of the purchase.

## Admin Dashboard



The Admin Page is accessible exclusively to users who log in using admin credentials. It provides a streamlined dashboard interface that offers real-time visibility into the product inventory, allowing administrators to monitor stock levels and take timely action when stock is low.

### Key Features:

- **Product Overview:**  
Displays a comprehensive list of all products currently available in the database, along with their current stock quantities. This gives administrators a clear snapshot of inventory at any given time.
- **Low Stock Indicator:**  
Products with a stock count of 5 or less are automatically flagged and visually highlighted in red, drawing immediate attention to items that require restocking.
- **Request Seller Button:**  
For low-stock items, a “Request Seller” button appears, providing a call-to-action for initiating restocking. This helps ensure that product availability is maintained without delays.



## Mobile Responsiveness

The entire application is designed with responsive layout principles using Tailwind CSS.

Responsive Design Highlights:

- Optimized for both mobile and desktop devices.
- Grid and flexbox layouts adjust automatically to screen size.
- Button sizes, input fields, and cards scale appropriately for touch interaction.

This ensures that users have a seamless experience across smartphones, tablets, and desktops.

## Authentication Features

- **Session Handling:** Supabase automatically manages authentication tokens, enabling persistent login states.
- **Access Control:** Routes and actions such as adding to cart, viewing cart items, and placing orders are restricted to authenticated users.
- **Role-Based Redirection:** A simple credential check is implemented to differentiate admin users from regular users, ensuring that only authorized personnel can access the admin panel.
- **Security:** All authentication requests are handled via secure Supabase APIs, minimizing the risk of unauthorized access.

Together, the login and signup flows create a secure foundation for user interaction, while maintaining ease of use and mobile responsiveness throughout the application.

## Supabase Integration

Supabase serves as the backend for this application, providing secure and scalable cloud-based services.

Supabase Features Used:

- Authentication: Manages user sign-in and session control.
- Database:
  - `users` table stores registered users.
  - `products` table contains all inventory data.
  - `orders` table logs placed orders with customer details.

Real-time integration ensures that all data remains current and consistent.

## Component Architecture

The application adopts a modular design with reusable React components, enhancing maintainability and scalability.

Major Components:

- `Navbar`: Top-level navigation across routes
- `ProductCard`: Displays individual product details
- `CartItem`: Renders items within the cart
- `CheckoutForm`: Collects and validates customer data
- `AdminDashboard`: Admin-only interface for monitoring inventory

## Technologies Used

- **React.js** – Component-based frontend framework
- **React Router** – Client-side routing and navigation
- **Tailwind CSS** – Utility-first CSS framework for responsive UI
- **Supabase** – Backend-as-a-service for database and authentication
- **JavaScript (ES6+)** – Core application logic

## Conclusion

The Inventory Model Website is a complete, production-ready e-commerce application that combines modern frontend technologies with a cloud-based backend. It delivers a robust and intuitive experience for both users and administrators.

Highlights:

- Full shopping flow from product browsing to checkout
- User authentication and secure backend integration
- Real-time data rendering and state management
- Responsive design optimized for all screen sizes
- Admin dashboard with inventory alerts and controls

This project exemplifies scalable, modern web development and serves as a strong foundation for future enhancements such as real-time stock updates, payment gateway integration, and user dashboards.