

An Online Retail Website for Store Management

Abstract

This project presents a full-stack web application designed to deliver a complete online shopping experience integrated with a robust store management system. The platform focuses on providing both customer-facing features and administrative tools to manage a retail store digitally, without relying on external vendors. It is particularly suited for single-store businesses seeking to expand their operations into the digital marketplace.

Developed using the MERN stack—comprising MongoDB, Express.js, React.js, and Node.js—the application ensures high performance, scalability, and efficient data handling. The frontend is built using React, styled with Tailwind CSS and Material UI, offering a clean, responsive, and user-friendly interface across devices.

The customer interface allows users to browse categorized products, view product details, manage a shopping cart, and place orders. Although currently using a simplified checkout process, the design supports easy future integration of payment gateways and order tracking systems.

On the admin side, the system features a secure dashboard where store administrators can manage product listings, update inventory, categorize items, and monitor orders. The backend, powered by Node.js and Express, handles RESTful API requests, while JWT (JSON Web Tokens) is used for user authentication and authorization, ensuring that only authorized users have access to admin functionalities.

All data i.e. products, categories, users, and orders—are stored in a MongoDB database, allowing for flexible data modelling and fast retrieval. Additional backend features include route protection, input validation, and structured error handling to ensure the application's reliability and security.

In summary, this project demonstrates a practical implementation of a real-world e-commerce solution, showcasing technical proficiency in full-stack development, user interface design, API creation, and secure data management. It serves as a strong foundation for future enhancements such as payment integration, customer profiles, and delivery management.

Modules:

- **Customer Module:**
 - Product browsing and searching
 - Cart management
 - Checkout and order placement

- **Admin Module:**

- Product management (adding, updating, deleting)
- Category management
- Order tracking and management
- User authentication and authorization via JWT