

SHOPPIYO: A Secure & Scalable MERN-Based Dropshipping Platform with Automated Fraud Detection

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THE CONTEXT

1. ABSTRACT

Shoppiyo is a full-stack MERN-based dropshipping platform delivering scalable, secure e-commerce. Features include product browsing, cart management, Razorpay payments, and an automated fraud detection module that locks suspicious accounts based on failed login attempts, enhancing security without ML. An admin dashboard manages products, orders, messages, and blocked users, demonstrating strong architectural scalability.

2. PROBLEM STATEMENT

Traditional platforms suffer from:

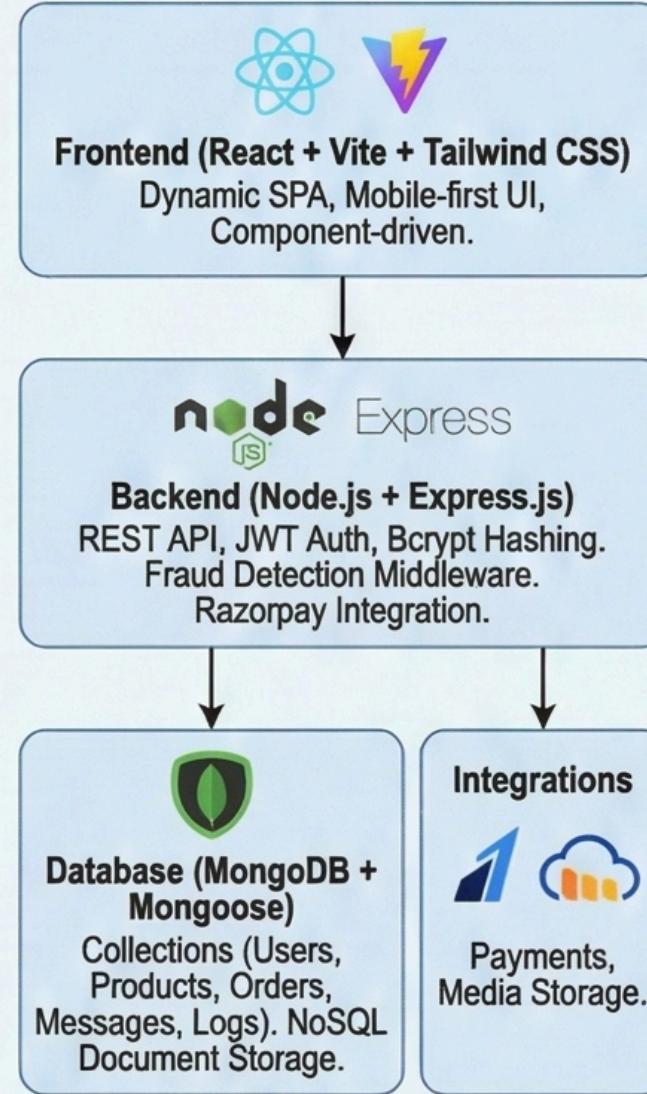
- Security vulnerabilities (brute-force).
- Poor scalability under high loads.
- Limited backend management tools.
- Slow, unoptimized UIs impacting UX.
- Need for a secure, scalable MERN system with integrated fraud prevention.

3. OBJECTIVES

- Develop full-stack dropshipping platform (MERN).
- Provide responsive, consistent UI/UX.
- Implement secure JWT auth & Razorpay payments.
- Deploy automated fraud detection & temporary account lock.
- Enable real-time admin management (products, orders).
- Ensure scalability and modular design.

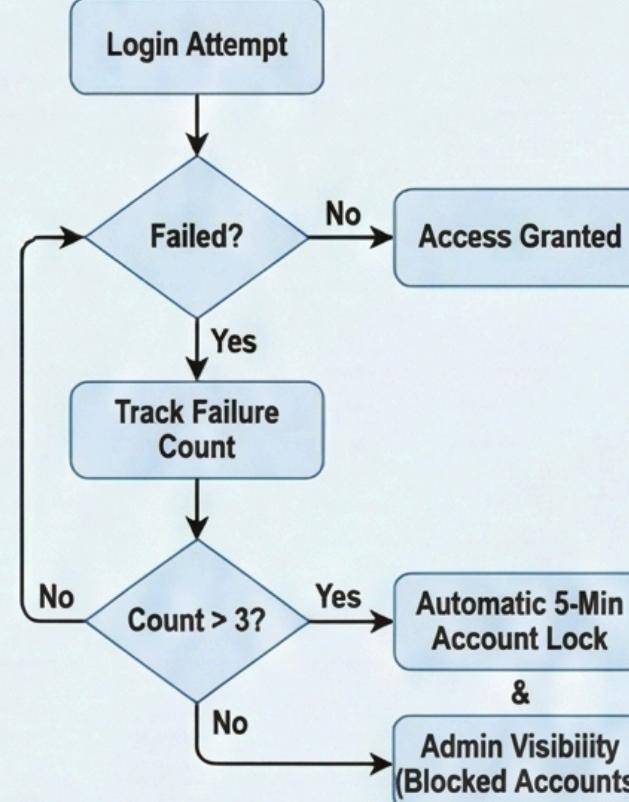
ARCHITECTURE & METHODOLOGY

4. SYSTEM ARCHITECTURE



5. METHODOLOGY

Fraud Detection Layer (Flowchart)



Frontend/Backend Dev

- React+Vite for fast bundling.
- TailwindCSS for UI.
- Express.js routing.
- JWT-protected APIs.
- Bcrypt security.

Order Workflow

Cart validation -> Secure payment (Razorpay) -> Order confirmation -> Admin tracking.

RESULTS & OUTLOOK

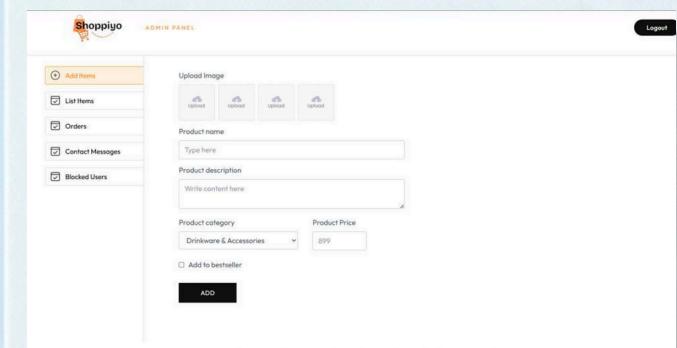
6. RESULTS

Screens Implemented:

- Customer (Login, Home, Checkout, etc.)
- Admin (Dashboard, Products, Blocked Users)

Platform demonstrates:

- Fast UI (Vite)
- Secure transactions
- Automatic fraud-prevention
- Smooth workflow



Admin Dashboard & Blocked Users

7. CONCLUSION

Shoppiyo validates the MERN stack for modern, secure dropshipping. It integrates key e-commerce functionalities with an effective, lightweight brute-force fraud detection mechanism, ready for commercial evolution.

8. FUTURE SCOPE

- Machine Learning-based fraud detection.
- Supplier-side automation APIs.
- Shipment tracking system.
- Advanced analytics dashboard.
- Recommendation system for users.