

# CentraMart: A Single-Vendor E-Commerce Management System Module Documentation

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## 1. Authentication & Authorization Module

- User signup and login using secure credentials
- OTP verification for account validation and sensitive actions
- JWT-based authentication and session management
- Role-based access control for customers and administrative users

## 2. User Management Module

- Manage customer profiles (basic details and contact information)
- Address management for delivery locations
- Wallet overview and transaction visibility for users
- Password change functionality for authenticated users
- View customer order history and account status
- Enable or disable user accounts for administrative control

## 3. Category & Brand Management Module

- Create and manage product categories and subcategories
- Assign products to categories and brands
- Enable or disable categories and brands for storefront visibility

## 4. Product Catalog Management Module

- Create, update, activate, and deactivate products.

- Manage product details including name, description, images, categories, and tags
- Control product pricing and discount configuration
- Maintain product availability status (In Stock / Out of Stock)

## **5.Inventory & Stock Management Module**

- Track product stock quantities.
- Reduce stock on order placement.
- Prevent checkout for insufficient stock.

## **6. Cart Management Module**

- Add and remove products from the shopping cart
- Update product quantities before checkout
- Validate product availability and pricing in the cart
- Persist cart data for logged-in users

## **7. Checkout & Order Creation Module**

- Collect delivery address and order details.
- Support optional wallet usage during checkout.
- Lock final pricing and payment details at order creation.
- Support multiple payment methods (online payment and COD).
- Create orders with locked financial values

## **8. Order Lifecycle Management Module**

- Manage order state transitions (Created, Processing, Completed, Cancelled)
- Enforce valid order state changes to prevent illegal modifications

- Restrict cancellations based on order processing stage
- Maintain consistency between order, payment, and status data

## **9. Payment & Wallet Management Module**

- Integrate secure online payment gateway.
- Support cash-on-delivery (COD).
- Support wallet-based payments.
- Track payment status and transaction references.
- Maintain payment and wallet transaction records.

## **10. Administrative Order Management Module**

- View and monitor all customer orders.
- Filter orders by status, date, or customer.
- Review order details and payment status.
- Handle exceptional cases such as failed payments or cancellations.

## **11. Review & Ratings Module**

- Allow customers to submit product reviews and ratings
- Display aggregated ratings on product pages
- Enable moderation of user-generated reviews by administrators

## **12. Coupon & Discount Management Module**

- Create and manage discount coupons
- Define usage limits, expiry dates, and eligibility rules
- Apply coupons during checkout validation

## **13. Notification Module**

- Send order confirmation and status update notifications.

- Notify users about payment and delivery updates.
- Support email-based notifications for system events.

#### **14. File & Media Management Module**

- Upload and manage product images.
- Store and retrieve media assets securely.
- Associate uploaded files with relevant products.
- Manage user profile images.
- Associate media with users and products.

#### **15. Admin Roles & Permissions Module**

- Define administrative roles and permission sets
- Control access to system features based on roles
- Restrict sensitive actions to authorized users only

#### **16. System Settings & Audit Module**

- Manage platform-level configuration settings.
- Record audit logs for critical system and administrative actions.
- Ensure traceability of changes for security and accountability.
- Audit wallet credits and refunds.
- Record report generation activities.

#### **17. Sales & Reports Module**

- Generate sales reports by date range.
- Generate brand-wise and category-wise reports.
- Generate payment-method-based reports.
- Support CSV/PDF export.

