

Functional Requirements Specification (FRS)

Product Name: E-Book Shop (Frontend)

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Overview

E-Book Shop is an online platform designed for buying and selling digital books. It provides users with a smooth, user-friendly interface for browsing a wide range of e-books across different genres and purchasing them instantly for download. The platform offers features that cater both to seasoned readers and first-time users looking for an easy and accessible digital reading experience.

The platform supports multiple payment methods and offers extensive filtering and search capabilities to help customers find their desired books quickly. A key feature is secure user authentication, including registration, login, and password recovery via OTP (One-Time Password) to enhance security.

Technical Requirements

To function correctly, E-Book Shop requires:

- ✓ Web server with Flutter
- ✓ JavaScript-enabled browsers
- ✓ Database (MySQL or any compatible SQL database)
- ✓ Frameworks: jQuery 3.x for front-end interactivity
- ✓ SSL certificate for secure transactions
- ✓ Email and/or SMS gateway service for OTP delivery

E-Book Shop Frontend Functionalities

Header

The header is displayed at the top of every page and includes:

- ✓ **Shop Logo:** Returns the user to the homepage when clicked.
- ✓ **Currency Selector:** Switch between supported currencies.
- ✓ **Search Bar:** Search by book title, author, or ISBN.
- ✓ **User Account:** Links to Login, Register, Dashboard, and Logout, based on session state.
- ✓ **Shopping Cart:** Shows items selected and total price.

Navigation Menu

- ✓ Lists main book categories such as Fiction, Non-Fiction, Academic, Self-Help, Children's Books, etc.
- ✓ Subcategories appear on hover for easier browsing.
- ✓ Click a category to view all e-books within it.

Homepage

- ✓ **Featured Books:** Carousel of popular or new e-books, linking to product pages.
- ✓ **Top Genres:** Visual blocks for bestselling genres.
- ✓ **Special Offers:** Banner for bundles or discounts.
- ✓ **User Recommendations:** Personalized suggestions based on user history (if logged in).

Product Page

Each e-book product page includes:

- ✓ **Book Cover Image:** Large, with zoom option.
- ✓ **Book Details:** Title, author, publisher, date, ISBN, language, ratings, reviews count.
- ✓ **Price & Purchase Options:** Price displayed, add to cart or wishlist options.
- ✓ **Preview:** Sample pages or first chapter preview.
- ✓ **Download Formats:** e.g., PDF, ePub, MOBI.
- ✓ **Description & Reviews Tabs:** Synopsis and customer reviews.

Category Page

- ✓ Displays all e-books in the selected category.
- ✓ Shows grid/list views; filter by price, popularity, rating, publication date.
- ✓ Refine search by subgenre, author, price range, language.

Shopping Cart Page

- ✓ Lists selected books with thumbnails, titles, quantity (usually 1), unit price, total.
- ✓ Modify quantity, remove items, apply discount codes or gift certificates.
- ✓ Shows subtotal, taxes, and final total.
- ✓ Buttons to continue shopping or proceed to checkout.

User Authentication Features

1. User Registration

- ✓ **Purpose:** Enable users to create accounts for personalized features like order history and downloads.
- ✓ **Process:**
 - User enters Full Name, Email, Password, Confirm Password.
 - Form validates inputs: email format, password strength (e.g., minimum 8 characters with letters and numbers), and required fields.
 - On submission, system sends a **6-digit OTP** via email and/or SMS for verification.
 - User must enter OTP within 10 minutes. Maximum 3 attempts allowed.
 - Successful OTP verification activates the account.
 - Confirmation email sent upon activation.
- ✓ **Error Handling:**
 - Invalid/expired OTP prompts error message with option to resend.
 - Duplicate email registration blocked.

2. User Login

- ✓ **Purpose:** Secure access to user accounts.
- ✓ **Process:**
 - User inputs registered email and password.
 - Authenticate credentials securely (passwords stored hashed with bcrypt).
 - Optional “Remember Me” checkbox for persistent sessions.
 - Successful login redirects to the user dashboard.
 - Failed login attempts give clear error messages. After 5 failed attempts, account is locked temporarily (e.g., 15 minutes).
- ✓ **Security Measures:**
 - Use CAPTCHA after multiple failed attempts to prevent brute force.
 - Session timeout after inactivity (configurable, e.g., 30 minutes).

3. Forgot Password with OTP Verification

- ✓ **Purpose:** Secure password reset.
- ✓ **Process:**
 - User enters registered email to request password reset.
 - System generates and sends a **6-digit OTP** via email and/or SMS.
 - User inputs OTP within 10 minutes. Maximum 3 attempts allowed.
 - Upon valid OTP entry, user enters new password and confirms it.
 - Password strength validated; changes saved with encrypted storage.

- Reset confirmation email sent.
- ✓ **Error Handling:**
 - Invalid or expired OTP prompts errors with resend option.

Additional OTP Features

- ✓ OTP generated randomly for every request, unique per user session.
- ✓ OTP expiry time configurable; default: 10 minutes.
- ✓ Attempts to enter OTP limited to prevent abuse (default: 3 attempts).
- ✓ OTP sent via email primarily; SMS optional depending on service availability.
- ✓ Logs maintained for OTP requests and verifications for auditing purposes.

User Account

- ✓ Users can view order history, download purchased books, manage wishlist, and edit profile information.
- ✓ Password reset via email with OTP, as described above.
- ✓ Logout option securely terminates the session.

Checkout Process

1. **Checkout Options:** Login, Register, or Guest checkout.
2. **Billing Details:** Enter or confirm details, including email and payment info.
3. **Delivery Details:** Skipped for digital products.
4. **Payment Method:** Credit cards, PayPal, other gateways.
5. **Review Order:** Display final purchase summary.
6. **Order Confirmation:** Success message and email with download links.

Additional Features

- ✓ **Wishlist:** Save books for later purchase.
- ✓ **Product Comparison:** Compare books by price, rating, format.
- ✓ **Book Reviews & Ratings:** Registered users can submit ratings and written reviews.
- ✓ **Newsletter Subscription:** Email sign-up for updates and promotions.

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