

TechSprint



Leveraging the power of AI



Team Details

- a. Team name: PHOENIX
- b. Team leader name: JAYACHAITHANYA
- c. Problem Statement: Open Innovation

Brief about your solution and problem statement addressing:

Problem Statement

- Traditional libraries rely on manual registers and offline processes
- Students waste time searching for books and checking availability
- Book issue and return tracking is slow and error-prone
- No real-time record of issued books, due dates, or fines
- Librarians face difficulty in managing large collections efficiently

Proposed Solution

- Smart Library is a digital library management system using web/mobile technology
- Users can search books, check availability, reserve, and renew online
- Dashboard shows issued books, due dates, and fines in real time
- Admin panel enables easy book, user, and transaction management
- Optional QR code system enables fast and contactless issue/return

Opportunities

- a. How different is it from any of the other existing ideas?
- b. How will it be able to solve the problem?

Opportunities

- Can be implemented in schools, colleges, and public libraries
- Scalable system – works for small libraries and large institutions
- Supports digital learning and smart campus initiatives
- Reduces operational cost by minimizing paperwork
- Can be extended with AI recommendations, e-library access, and analytics

How Is It Different from Existing Ideas?

- Not just a digital catalog; it is a **complete smart management system**
- Real-time book availability instead of static records
- User dashboard with due dates, fines, and renewals in one place
- Admin gets centralized control instead of multiple manual registers
- Optional QR-based issue/return makes it faster than traditional systems

List of features offered by the solution

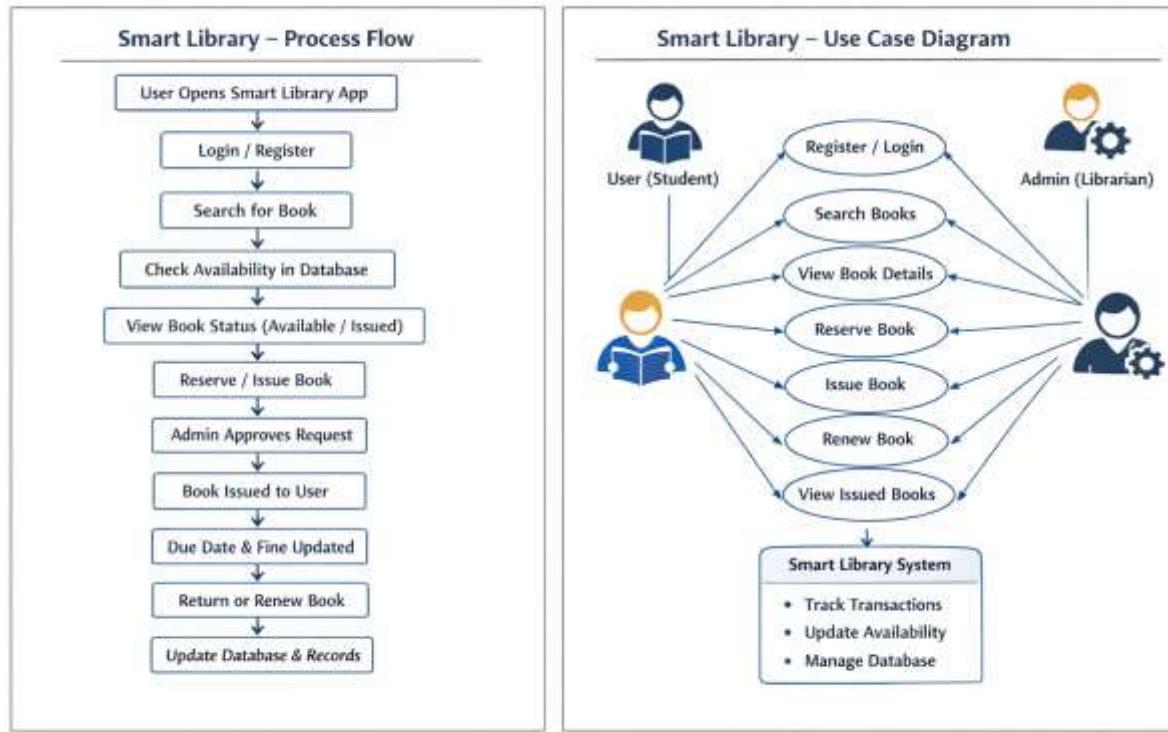
Features of the Smart Library Solution

- Advanced book search (by title, author, ISBN, category)
- Real-time book availability status
- Online book reservation system
- Digital issue and return tracking
- User dashboard with issued books, due dates, and fine details
- Book renewal option
- Admin panel for managing books and users
- Add, edit, and delete book records
- Issue and return control for librarian
- Automated fine calculation
- QR code-based user verification (optional)
- Dark mode and light mode interface
- Secure login and role-based access
- Centralized database for records and history

Google Technologies used in the solution:

Gemini AI

Process flow diagram or Use-case diagram



Wireframes/Mock diagrams of the proposed solution:

Wireframe / Mock Diagram – Smart Library System

Proposed Screens

- **Home Screen:** Book search bar, categories, login/register, dark–light mode
- **Book Details:** Full book info, rack location, issue option
- **User Dashboard:** Issued books, due date, fine details, renew option
- **Admin Panel:** Add/edit/delete books, manage users, issue/return control
- **QR Code System (Optional):** Fast user verification and contactless access

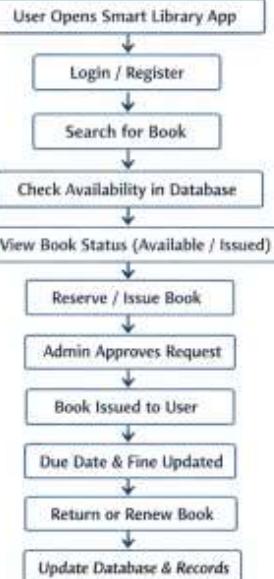
System Flow

- User → Web/Mobile App → Smart Library Server → Database
- Database stores books, users, and transaction records



Architecture diagram of the proposed solution

Smart Library – Process Flow



Smart Library – Use Case Diagram



Snapshots of the MVP



Shot on OnePlus
27 July 2025 at 22:20



Shot on OnePlus
27 July 2025 at 22:26

Additional Details/Future Development (if any)

- AI-based book recommendations
- E-library (e-books and digital resources)
- RFID / barcode-based issue and return
- Mobile notifications for due dates and fines
- Advanced analytics for library usage
- Cloud-based system for scalability

Provide links to your:

- 1. GitHub Public Repository**
- 2. Demo Video Link (3 Minutes)**
- 3. MVP Link**



Google Developer Group
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Thank you!

