

Report Project SSIP (Library System)

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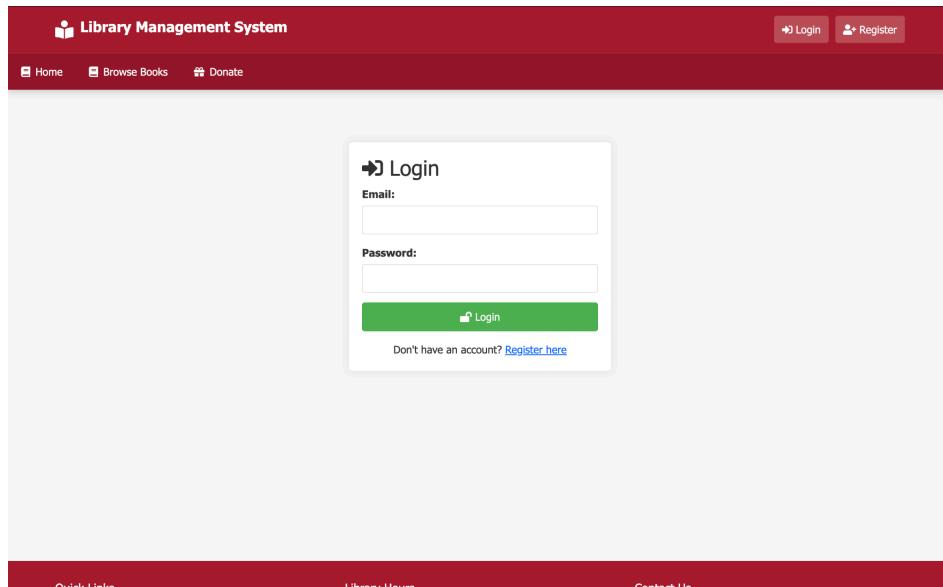
A.1 OVERVIEW

This project aims to create a comprehensive Library Management System that facilitates book borrowing, donation management, and administrative functions. The system is designed to streamline library operations for both users and administrators, providing an intuitive interface for book discovery, borrowing processes, and library resource management.

The screenshot shows the registration page of a Library Management System. At the top, there is a red header bar with the title "Library Management System". Below the header, there are three navigation links: "Home", "Browse Books", and "Donate". On the right side of the header, there are "Login" and "Register" buttons. The main content area has a white background and features a "Register" form. The form includes fields for "Name", "Email", "Phone (optional)", and "Password", each with its own input box. Below these fields is a green "Register" button. At the bottom of the form, there is a link that says "Already have an account? [Login here](#)". At the very bottom of the page, there is a dark red footer bar with three links: "Quick Links", "Library Hours", and "Contact Us".

Page A1.1 (Register Page)

User registration page where new users can create accounts by providing personal information including name, email, phone number, and password. The system validates email uniqueness and ensures all required fields are completed before account creation.



Page A1.2 (Login Page)

Authentication page for registered users to access their accounts using email and password credentials. The system differentiates between admin and regular user accounts, redirecting each to their respective dashboards upon successful login.

A screenshot of the library management system's home page for a user named 'pusri'. The header is identical to the login page. The main content shows a search bar, a welcome message for 'pusri@example.com' (ID: 7), and a 'Logout' button. Below is a section titled 'Library Books' with a blue header. It displays four book cards: '1984' by George Orwell, 'Pride and Prejudice' by Jane Austen, 'The Prince' by Pusri si Petualang, and 'The Hobbit' by J.R.R. Tolkien. Each card includes the book title, author, ISBN, publication year, and a 'Borrow' button. A total of 5 books found is indicated at the top right of this section.

Page A1.3 (Home Page)

The main landing page displaying featured books, recent additions, popular titles, and general library information. Provides navigation to all major system functions and displays current library announcements or promotions.

The screenshot shows the Admin Dashboard of the Library Management System. On the left, a sidebar titled 'Admin Panel' includes a 'Dashboard' button (which is highlighted in blue) and links for Books Management, Member Loans, Members Management, and Reports. The main content area is titled 'Admin Dashboard' and shows 'Library Statistics' with four cards: 'Total Books' (5), 'Total Members' (8), 'Total Loans' (10), and 'Overdue Loans' (0). Below this is a section titled 'Recent Loans' with a table listing four entries:

ID	Member	Book	Loan Date	Due Date	Status
41	nietz	To Kill a Mockingbird	2025-05-23	2025-06-07 00:00:00	Active
39	nietz	Pusri si Petualang	2025-05-23	2025-06-07 00:00:00	Returned
40	nietz	1984	2025-05-23	2025-06-07 00:00:00	Active
38	nietz	Pride and Prejudice	2025-05-23	2025-06-07 00:00:00	Active

Page A2.1 (Admin Dashboard)

Comprehensive admin control panel displaying key library statistics including total books, active loans, registered members, pending donations, and overdue items. Features graphical representations of borrowing trends, popular books, and monthly activity summaries.

The screenshot shows the 'Books Management' section of the Admin Dashboard. It features a form to '+ Add/Edit Book' with fields for 'Title' (with placeholder 'Enter book title') and 'Author' (with placeholder 'Enter author name'). There are also fields for 'ISBN' (placeholder 'Enter ISBN') and 'Published Year' (placeholder 'Enter year'). Below this is a table titled 'Book Inventory' with a search bar 'Search books...'. The table has columns: ID, Title, Author, ISBN, Year, and Actions (with edit and delete icons). The data in the table is:

ID	Title	Author	ISBN	Year	Actions
2	1984	George Orwell	9780452284234	1925	
4	Pride and Prejudice	Jane Austen	9780141439518	1813	
5	Pusri si Petualang	Pusri	1234567890	2000	
3	The Hobbit	J.R.R. Tolkien	9780618002213	1937	
1	To Kill a Mockingbird	Harper Lee	9780061120084	1961	

Page A2.2 (Books Management)

Administrative interface for managing the library's book collection. Displays books in a tabular format with columns for title, author, ISBN, publication year, genre, and availability status. Admins can add new books, edit existing entries, or remove books from the collection.

Manage Member Loans

ID	Member	Book	Loan Date	Due Date	Status	Actions
41	nietz	To Kill a Mockingbird	2025-05-23	2025-06-07 00:00:00	Active	
39	nietz	Pusri si Petualang	2025-05-23	2025-06-07 00:00:00	Returned	
40	nietz	1984	2025-05-23	2025-06-07 00:00:00	Active	
38	nietz	Pride and Prejudice	2025-05-23	2025-06-07 00:00:00	Active	
34	bie	Pusri si Petualang	2025-05-18	2025-06-02 00:00:00	Active	
33	bie	1984	2025-05-18	2025-06-02 00:00:00	Active	
32	bie	Pride and Prejudice	2025-05-18	2025-06-02 00:00:00	Active	

Page A2.3 (Member Loans)

Loan management interface showing all current and historical book loans. Displays borrower information, borrowed books, loan dates, due dates, return status, and any applicable fines. Admins can process returns, extend loan periods, and manage overdue items.

Members Management

ID	Name	Email	Join Date	Actions
5	bie	bie@gmail.com	2025-05-02	
8	daniel	daniel@gmail.com	2025-05-06	
3	Gabriel	gabriel@gmail.com	2025-04-28	
9	gery	gery@gmail.com	2025-05-06	

Page A2.4 (Members Management)

User account management system allowing admins to view, edit, and manage user accounts. Displays member information, registration dates, borrowing history, and account status. Provides capabilities to suspend or activate user accounts as needed.

Manage Book Donations

Donation Statistics

- 3 Total Donations
- 1 Pending Review
- 1 Approved
- 1 Rejected

Filter Donations

Status: All Donations

Search: Search by title, author or donor name

Book Donations

ID	Book Details	Donor	Date	Status	Actions
10	The Pragmatic Programmer by Andrew Hunt and David Thomas Addison-Wesley, 1999	Nabil	May 24, 2025	Approved	
11	Clean Code by Robert C. Martin Prentice Hall, 2008	Gabriel	May 24, 2025	Pending	
12	Introduction to Algorithms by Thomas H. Cormen MIT Press, 2009	wilson	May 24, 2025	Rejected	

Page A2.5 (Donate Management)

Interface for managing book donations from library users. Shows donation requests with details including book information, donor details, donation status (Pending, Approved, Rejected), and admin actions. Admins can review, approve, or reject donation requests with optional feedback.

Library Management System

Reports

Loan Statistics

- Total Loans: 10
- Active Loans: 6
- Overdue Loans: 0
- Most Borrowed Book: Pride and Prejudice

Loan Reports

All Loans

ID	Member	Book	Loan Date	Due Date	Status
41	nietz	To Kill a Mockingbird	2025-05-23	2025-06-07 00:00:00	Active
39	nietz	Pusri si Petualang	2025-05-23	2025-06-07 00:00:00	Returned
40	nietz	1984	2025-05-23	2025-06-07 00:00:00	Active
38	nietz	Pride and Prejudice	2025-05-23	2025-06-07 00:00:00	Active
34	bie	Pusri si Petualang	2025-05-18	2025-06-02 00:00:00	Active
33	bie	1984	2025-05-18	2025-06-02 00:00:00	Active

Page A2.6 (Reports)

Comprehensive reporting dashboard providing various library statistics and analytics. Includes borrowing reports by time period, popular books analysis, member activity reports, overdue items tracking, and financial summaries for fines and payments.

Donation Details

Book Title: Clean Code
Author: Robert C. Martin
Publisher: Prentice Hall
Publication Year: 2008
Donor: Gabriel
Donation Date: May 24, 2025
Status: Pending

ID	Book Details	Donor	Date	Status	Actions
	The Pragmatic Programmer by Andrew Hunt and David Thomas				

Page A2.7 (Donation Details)

Detailed view of individual book donation requests showing complete book information, donor details, submission date, current status, and admin notes. Provides interface for admins to review donation quality and make approval decisions.

ID	Member	Book	Loan Date	Due Date	Status
41	nietz	To Kill a Mockingbird	2025-05-23	2025-06-07 00:00:00	Active
39	nietz	Pusri si Petualang	2025-05-23	2025-06-07 00:00:00	Returned
40	nietz	1984	2025-05-23	2025-06-07 00:00:00	Active
38	nietz	Pride and Prejudice	2025-05-23	2025-06-07 00:00:00	Active
34	bie	Pusri si Petualang	2025-05-18	2025-06-02 00:00:00	Active
33	bie	1984	2025-05-18	2025-06-02 00:00:00	Active
32	bie	Pride and Prejudice	2025-05-18	2025-06-02 00:00:00	Active
19	nietz	The Hobbit	2025-05-17	2025-05-31 00:00:00	Returned
15	daniel	Pride and Prejudice	2025-05-10	2025-05-25 00:00:00	Returned
16	daniel	The Hobbit	2025-05-10	2025-05-25 00:00:00	Returned

Page A2.8 (Report Export)

Data export functionality allowing admins to generate and download reports in formats (CSV).

Page A3.1 (Browse Books)

Book discovery interface where users can search and browse the library's collection. Features filtering options by genre, author, publication year, and availability status. Displays book covers, basic information, and availability status with search functionality.

Page A3.2 (Borrowing Carts)

Shopping cart like interface where users can add multiple books they wish to borrow. Shows selected books with details, allows quantity adjustment, and provides overview of borrowing limits and due dates before final confirmation.

The screenshot shows the 'Borrow Books' section of the library management system. At the top, there are links for Home, Browse Books, and Donate. Below that, a header bar indicates 'Currently Borrowed: 3 book(s)' and 'Available Slots: 2 of 5'. The main area is divided into two sections: 'Books to Borrow' (containing a single book entry for '1984' by George Orwell) and 'Borrower Information' (with fields for Full Name, Email Address, and Return Due Date). A large blue button at the bottom right says 'Confirm Borrowing'.

Page A3.3 (Confirm Borrow)

Final confirmation page for book borrowing requests showing selected books, borrowing terms, due dates, and user agreement to library policies. Users review and confirm their borrowing request before submission to library staff.

The screenshot shows the 'Donate Books' section of the library management system. At the top, there are links for Home, Browse Books, and Donate. The main area is split into two panels: 'Donate a Book' (with fields for Book Title, ISBN, Author, Publisher, Publication Year, Book Cover URL, and Description) and 'Your Donation History' (which currently shows 'You haven't donated any books yet'). A blue button at the bottom right says 'Submit Donation'.

Page A3.4 (Donate Books)

Book donation form where users can submit requests to donate books to the library. Includes fields for book details (title, author, publisher, year, condition), book cover upload, and description. Submissions are sent to admins for review and approval.

My Profile

Profile Information	Edit Profile
 Joined: Jan 01, 1970	Email Full Name Phone Number <small>Optional: Enter your phone number for contact purposes</small> <input type="button" value="Update Profile"/>
Change Password	
Current Password New Password <small>Password must be at least 8 characters long.</small> Confirm New Password <input type="button" value="Change Password"/>	

Page A3.5 (Profile)

User profile management page displaying personal information, borrowing history, current loans, overdue items, fine payments, and account settings. Users can update contact information, view transaction history, and manage account preferences.

A.3 BUSINESS FUNCTIONS

User Functions

- "Register Account" (Create new user account with email verification)
- "Login/Logout" (Authenticate and manage user sessions)
- "Browse Books" (Search and filter library book collection)
- "View Book Details" (Access complete book information and availability)
- "Request Book Borrowing" (Add books to cart and submit borrowing requests)
- "View Borrowing History" (Access personal loan records and status)
- "Donate Books" (Submit book donation requests with details)
- "Manage Profile" (Update personal information and preferences)
- "Pay Fines" (Process payments for overdue book penalties)
- "View Account Status" (Check current loans, dues, and account standing)

Admin Functions

- "Manage Books" (Add, edit, delete, and categorize library books)
- "Process Loans" (Approve, extend, and manage book borrowing requests)
- "Manage Returns" (Process book returns and calculate fines)
- "Manage Users" (Create, edit, suspend, and delete user accounts)
- "Review Donations" (Approve or reject book donation requests)
- "Generate Reports" (Create various library statistics and analytics)
- "Manage Fines" (Calculate, track, and process fine payments)
- "System Administration" (Configure library policies and system settings)
- "Export Data" (Generate and download various data reports)
- "Monitor Activity" (Track user activity and system usage)

A.4 DATA REQUIREMENTS

- User Account Information (user_id, name, email, phone, join_date, password, role)
- Book Data (book_id, title, author, isbn, published_year, genre_id, cover_image)
- Loan Data (loan_id, user_id, book_id, loan_date, return_date, due_date, fine_amount, borrower_name, borrower_email, notes)
- Book Donation Data (donation_id, user_id, book_title, author, publisher, publication_year, description, book_cover, status, created_at, updated_at, rejection_reason)
- Payment Data (payment_id, loan_id, user_id, amount, payment_date, payment_method, transaction_id, notes, created_at)

A.5 BUSINESS RULES

1. Users must register with a unique email address and valid contact information. Email addresses must be verified before account activation.
2. Users must authenticate with email and password to access the system. User roles determine access levels (admin vs. regular user permissions).
3. Users can update their profile information except for email and registration date.
4. Each book must have a unique ISBN in the library system. Book information must include title, author, ISBN, and publication year.
5. Book availability status must be accurately maintained in real-time. Admins can add, edit, or remove books from the library collection.
6. Users can borrow multiple books up to the library's lending limit. All borrowed books must have defined due dates (typically 14 days).
7. Users cannot borrow books that are already on loan to other users. The system must track loan dates, due dates, and return dates accurately.
8. Overdue books automatically generate fines based on library policy. Users with outstanding fines may have borrowing privileges suspended.
9. Fine payments must be recorded with transaction details. Payment methods and amounts must be properly documented.
10. Users can view their fine history and payment records.
11. Users can submit book donation requests with complete book details. All donations require admin approval before being added to the collection.
12. Admins can approve, reject, or request additional information for donations. Rejection reasons must be provided to donors for transparency.
13. Approved donations are automatically added to the library catalog.
14. Admins have full access to manage books, users, loans, and donations. System generates comprehensive reports for library management.
15. All user activities and transactions are logged for audit purposes. Admins can export data in various formats for external analysis.
16. The system maintains data integrity through proper foreign key relationships.
17. User passwords must be securely encrypted in the database. Personal user information is protected and accessible only to authorized personnel.
18. Session management ensures secure user authentication and authorization. Data backup and recovery procedures must be maintained.
19. The system logs all critical operations for security monitoring.
20. Book covers should be uploaded and stored in the designated directory with proper file management.
21. Users can search for books by title, author, ISBN, or genre to find available books in the library collection.
22. The system must display real-time book availability status to prevent conflicts in borrowing requests.
23. Users must return books on or before the due date to avoid automatic fine generation.
24. The system should send automated reminders to users about upcoming due dates and overdue books.

25. Admins can generate various reports including loan statistics, popular books, user activity, and financial reports for library management purposes.

A.6 CRUD Operations Implementation

The system provides complete **Create, Read, Update, Delete** functionality across all modules:

Create Operations:

- New user registration
- Adding new books to inventory
- Creating borrowing transactions
- Recording book donations
- Generating reports

Read>Select Operations:

- User authentication and profile viewing
- Book browsing and searching
- Loan history and current loans display
- Donation records viewing
- Report generation and analytics

Update Operations:

- User profile modifications
- Book information updates
- Loan status changes (extensions, returns)
- Member status updates
- System settings modifications

Delete Operations:

- Book removal from inventory
- User account deactivation
- Loan record archiving
- Donation record management
- Administrative data cleanup