

Case Study

Library Management System



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1 Description

Previously, our library maintained records manually, where all transactions, including book borrowing and user information, were recorded in registers. Whenever a user borrowed a book, a handwritten receipt was issued, detailing the book borrowed and the time of borrowing. However, this manual system had its limitations, including the risk of errors, time-consuming processes, and difficulty in accessing information. These are the challenges by using previous system.

- **Manual record-keeping:**

- All library transactions were recorded by hand.
- This manual process made the system prone to errors and inefficiencies.

- **Limited accessibility:**

- Retrieving information from registers was time-consuming.
- It was inconvenient for both library staff and users.

- **Manual receipt generation:**

- Handwritten receipts for book borrowings lacked uniformity.
- They were susceptible to loss or damage.

- **Incomplete user records:**

- While basic user information was recorded.
- There was no comprehensive system to track user borrowing history or preferences.

To overcome the limitations of the previous system, we are implementing an automated library management. By automating our library management, we aim to improve accuracy. By implementing an automated system, Digitizing book records and user information enables efficient data management and retrieval. Automated receipt generation ensures consistency and reliability in transaction records. Comprehensive user profiles allow for streamlined communication. Overall, the automated system not only improves operational efficiency but also enhances user experience.

2 Features

2.1 User Management

Users can register themselves into the system by providing necessary details such as name, email, and desired username along with a password. Once registered, their profiles will be created, and they will be able to log in to the system. Through this feature, management of registered users in the library will be facilitated.

2.2 Staff Management

In this library system, there is also staff management functionality available. The admin will have the authority to add, delete, and edit staff members within the library. This feature enables the admin to efficiently manage the workforce within the library accurately maintained.

2.3 Admin Management

Administrators have the privilege to add other administrators to the system, enhancing administrative capabilities. Admins can perform CRUD (Create, Read, Update, Delete) operations on user data, Books Data and administrative records. It involves creating, deleting, and updating admin accounts.

2.4 Book Management

This feature will be for managing the library's collections. New books can be added, existing book details updated along with its details. When adding a book, information about the book's publisher and author is also recorded, enriching the database.

2.5 Request Book

This feature will provide users with the ability to request books. Users can request books, have them issued and returned, and their borrowing history will be maintained. It will also manage overdue notifications and fines.

2.6 Book Issue

When a user requests to borrow a book, the system will first check the availability of the book. If the book is available, the request will be forwarded to the librarian, who will then issue the book to the user. This process ensures a seamless and efficient workflow in the library management system

2.7 Fine Management

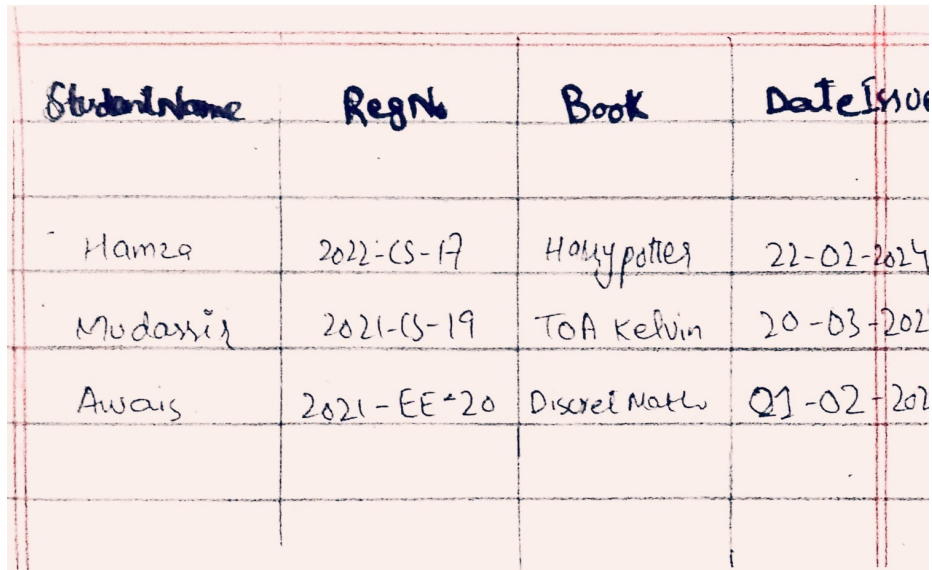
If a user forgets to return the book before the due date, the system will automatically apply fines. Similarly, if a user forgets to return the book till the due date, the system will mark the book as overdue and apply fines accordingly. The system notify the users about the amount to be paid.

2.8 User Reviews

Users can access and fill the review form available in the system if they wish to provide feedback on specific books available in the library. The review form will allow users to share their opinions, comments, or concerns about individual books they have read. Reviews provided by users will be recorded and displayed alongside the respective books for other users to reference and consider.



3.3 Book Borrow Record



Student Name	Reg No	Book	Date Issued
Hamza	2022-CS-17	Harry Potter	22-02-2024
Mudassir	2021-CS-19	TOA Kelvin	20-03-202
Awaiz	2021-EE-20	Discrete Math	01-02-202

Figure 3: Sample Of Borrow Record

3.4 Fine To Student

707 Meadowsweet Dr
No. 415.924.6219 **Library Fine Receipt** No. 00000001

Patron: Tony Goodman ID No. _____

Book Title(s): Look Out For Pirates!

Out Date: 08/01/1972 Date Due: 08/07/1972 Date Returned: 12/07/

Book Was: ☐ Damaged: _____ Cost: \$ _____

Book Was: ☒ Late by 48 years. Cost per year: \$ 1.00 Cost: \$ 48

Book Was: ☒ Lost/Abandoned/Stolen Cost: \$ 10

Amt. \$ 58.00 ☐ Cash

Paid: \$ 58.00 ☐ Check No. 00000001

Balance: \$ 0.00 ☒ Card No. _____

Paid by: Kenny Goodman Date: 12/07/2020

Figure 4: Sample Of Fine To The Student