LIBRARY BOOK BORROWING LOG

An Introduction to Computing Project
Presented to the
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CHAPTER 1

THE PROBLEM

1.1 Introduction

- In today's generation, Libraries are still essential for advancing lifelong learning, education, and research in the current generation. The need for effective library management systems has increased along with the population's ongoing growth and the number of students, researchers, and community members who depend on libraries for information and knowledge. Access to a wide range of books, journals, magazines, and other educational resources that promote both academic and personal development is made possible by libraries, which act as information gateways.

Many libraries continue to record book borrowing and return transactions manually, despite their importance. Librarians manually enter information such as the book title, author, borrower's name, date borrowed, and date returned in logbooks or spreadsheets, which are often used in these standard systems. Although this approach has been used for many years, as the quantity of books and users rises, it becomes ineffective and prone to mistakes.

As libraries expand their collections and serve larger communities, it becomes increasingly difficult to effectively monitor the movement of books.just a few of the problems brought on by the increasing number of users and materials. This situation causes confusion and disruption for both librarians and those who use libraries. Libraries run the risk of losing control over their inventory and lowering the caliber of their services if they don't have an organized method to measure book circulation.

1.2 Statement of the problem

In libraries, it can be challenging and time-consuming to keep track of book loans and returns. Confusion and delays result from customers' frequent difficulties checking out and returning books promptly. It gets harder to keep track of book circulation as the library's collection grows in size. Librarians may find it challenging to maintain track of which books are currently checked out and which are available for other users if they don't take a systematic approach. This could result in mishandled resources, inefficient use of the library's collection, and lost or misplaced books.

Objectives of the Study

- Libraries have difficulties protecting books, encouraging users to handle them responsibly, and stopping book loss. Books may be lost, damaged, or misplaced if there is no proper system in place to track borrowing and return, which has an impact on the library's collection and its capacity to provide effective services to its users.

Scope and Limitation

This study focuses on the development and implementation of a Library Book Borrowing Log to improve the tracking and management of books within a library. The system includes features such as:

- keeping track of borrowed books' title, author, borrower's name, and dates of borrowing and return.

- keeping track of book circulation to identify which books are available and which are currently being borrowed.

- promoting responsibility among library patrons to guarantee appropriate book handling.

- creating simple reports to assist librarians in monitoring borrowing patterns.

Limitation

This study excludes complex tasks like inventory management and categorization and is restricted to tracking and recording book borrowing transactions. Also, the accuracy of records may be impacted by how accurately users enter data. The strategy is effective for small to medium-sized libraries; larger operations might need additional enhancements.

System Requirements

A. Hardware Requirements

The hardware requirements specify the physical components needed to run the system efficiently. These requirements ensure that the system can process transactions, store data, and operate without lag or interruption.

Minimum Hardware Specifications:

- **Processor:** Intel Core i3 or higher

- **Memory (RAM):** At least 4 GB

- **Storage:** 250 GB HDD or higher

- **Monitor:** 15-inch LED/LCD Display

- **Input Devices:** Standard keyboard and mouse

- **Printer:** Optional, for printing reports or borrower receipts

- **Backup Storage:** External hard drive or USB for data backup

Recommended Hardware Specifications:

- **Processor:** Intel Core i5 or higher

- **Memory (RAM):** 8 GB or more

- **Storage:** 500 GB SSD or higher

- **Monitor:** 19-inch widescreen display

- **Printer:** High-speed laser printer for report generation

- **Network Connection:** Stable local area network (LAN) or Wi-Fi for system updates and data access

B. Software Requirements

The software requirements define the programs and platforms necessary for the development and operation of the system.

Minimum Software Specifications:

- **Operating System:** Windows 10 or higher

- **Database Management System:** MySQL or Microsoft Access

- **Programming Language:** Python, Java, or PHP

- **Front-End Framework:** HTML, CSS, JavaScript (if web-based)

- **Code Editor/IDE:** Visual Studio Code, NetBeans, or PyCharm

- **Web Browser:** Google Chrome or Mozilla Firefox (for web-based interface)

- **Office Suite:** Microsoft Office or LibreOffice (for report viewing and export)

Flow Chart

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         │
              ┌──────────▼──────────┐
   ┌─────────►│  Display option menu │◄──────────────────────────┐
   │          └──────────┬──────────┘                            │
   │                     │                                       │
   │              ┌──────▼──────┐                                │
   │              │ Input choice │                               │
   │              └──────┬──────┘                                │
   │                     │                                       │
   │   Display    Choice    Choice    Choice    Choice   Display message Incorrect
   │   available   == 1      == 2      == 3      == 4    choice, please enter a
   │   books                                              number and try again. Thank you
```

(Flowchart)

Start → Display option menu → Input choice

Choice == 1 → Display available books → Enter number of books to borrow → Enter name of the borrower → Add details of borrowed book number and borrower name. → Display message book number and borrower name

Choice == 2 → Display borrowed books → Enter a book number 2 return → Remove the details of the book borrowed and the book borrowed to the list. → Display message eg. Returned the book

Choice ==3 → Display list of borrowed list

Choice ==4 → Display Thank you for using Library system → End

Display message Incorrect choice, please enter a number and try again. Thank you