Library Management System Documentation

Introduction

This document provides an overview and detailed description of the Library Management System. The system aims to manage the operations of a library, including book management and borrower management.

Background

Libraries play a crucial role in providing access to knowledge and resources. Managing a library manually can be challenging, and an automated system can streamline various processes such as lending, returning, and tracking books.

Problem Statement

The primary challenge addressed by this system is the inefficiency in manually managing library operations, which can lead to errors, misplacement of books, and difficulties in tracking borrowed books and their due dates.

Methodology

The system is designed using a hash table to store books and borrowers, and linked lists to manage books and borrowed books. Key functionalities include:

- Adding and removing books
- Registering borrowers
- Lending and returning books
- Tracking overdue books

Outputs / Results

The system effectively manages the following operations:

- Insertion, retrieval, and deletion of book records
- Insertion, retrieval, and deletion of borrower records
- Lending books and updating due dates
- Returning books and updating status
- Tracking overdue books and generating reports

Discussion

The Library Management System enhances the efficiency of library operations by automating the management of books and borrowers. It minimizes human errors and provides a reliable way to track borrowed books and their due dates.

Limitations

While the system is robust, it has some limitations:

- Scalability issues with a large number of books and borrowers
- Limited user interface for interaction
- Requires manual input of book and borrower data

Conclusion

The Library Management System provides a structured approach to managing library operations, improving efficiency and accuracy. Future enhancements could include a more user-friendly interface and better scalability to handle larger libraries.

Authors

The logic and pseudocode were written by **Sewak Raj Joshi**.

The code was written and implemented by **Saurav Gautam**.

The documentation and final touch were given by **Sumit Madhikarmi**.

For more details, visit the project repository:
https://github.com/Jeniet/Library_Management_System.git