PROJECT REPORT: LIBRARY MANAGEMENT SYSTEM

1. Introduction

The Library Management System (LMS) is a console-based Java application designed to manage the basic operations of a library. The system allows users to add and remove books, check book availability, and manage borrower records. This project aims to provide a simple and intuitive interface for librarians to perform essential library functions efficiently.

2. Features

2.1 Add Book

The system allows librarians to add new books to the library by providing the title and author information. Each new book is marked as available by default.

2.2 Remove Book

Librarians can remove books from the library by entering the title of the book. If the book is found in the library, it is removed from the collection.

2.3 Check Book Availability

Librarians can check the availability of a specific book by entering its title. The system provides information on whether the book is currently available for borrowing.

2.4 Manage Borrowers

Librarians can manage borrowers by adding new borrowers to the system. The system allows librarians to view the list of current borrowers.

2.5 Exit

The system provides an option to exit the application.

3. Implementation

The project is implemented in Java and follows an object-oriented approach. It consists of three main classes:

- Book: Represents a book with attributes such as title, author, and availability.

- Borrower: Represents a borrower with a name.

- LibraryManagementSystem: The main class that contains the application logic, user interface, and the main method for execution.

The user interface is implemented using the Scanner class to receive input from the user through the console. The program runs in a loop, allowing users to perform multiple operations until choosing to exit.

4. Usage

Users can run the application and interact with the system through the console. The main menu provides options for adding and removing books, checking book availability, managing borrowers, and exiting the application.

5. Future Improvements

While the current implementation provides basic functionality, there are several opportunities for future improvements:

• Book Borrowing: Implement a borrowing system that tracks borrowed books, due dates, and late fees.

• Database Integration: Integrate a database to persistently store book and borrower information between program executions.

• User Authentication: Add a user authentication system to differentiate between librarians and borrowers, allowing librarians to perform administrative functions.

6. Conclusion

The Library Management System project provides a foundation for a console-based application to manage library operations. It can be extended and improved to meet the specific requirements of different libraries.

This project serves as a starting point for a more comprehensive library management system with advanced features and a user-friendly interface.

7. Acknowledgments

Special thanks to the developers and contributors who provided inspiration and resources for the project.

8. References

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