Library Management System

12.27.2023

Name	ID
Yared Kiros	URC119/14
Natinael Tesfaye	URC102/14
Mickyas Tesfaye	URC109/14

Submission Date: 11/27/2023

Submitted To: Mr. Bekima

Overview

The Library Management System (LMS) is a database-driven application that manages the day-to-day operations of a library. It encompasses various functionalities, including managing books, readers, staff, and reports. This report delves into the intricacies of the LMS, elucidating its purpose, capabilities, and the queries used to implement its functionalities.

Goals

The primary goals of the LMS are to:

- Efficiently manage the library's book collection
- Maintain accurate records of library patrons
- Streamline the book borrowing and circulation process
- Generate comprehensive reports on library usage

Specifications

The LMS database consists of four primary tables:

- Books: This table stores information about the library's collection, including book number, title, edition, category, and price.
- Readers: This table maintains records of library patrons, including reader ID, first name, last name, email address, and phone number.
- Report: This table chronicles book circulation details, encompassing report number, reader ID, book number, issued date, due date, and return date.
- Staff: This table manages staff information, including staff ID, first name, and last name.

The following queries were used to implement the LMS functionalities:

1. Add a new book:

SQL

```
INSERT INTO Books (booknum, title, Edition, Category, price)
VALUES (12345, 'The Lord of the Rings', 'First Edition', 'Fantasy', 29.99);
```

2. Register a new reader:

SQL

```
INSERT INTO Readers (reader_id, fname, sname, email, phone_number)
VALUES (67890, 'John', 'Doe', 'johndoe@example.com', '555-555-5555');
```

3. Issue a book:

SQL

```
INSERT INTO Report (report_no, reader_id, Book_no, Issued_date, due_date)
VALUES (10001, 67890, 12345, '2023-10-04', '2023-10-21');
```

4. Generate a report on book circulation:

SQL

```
SELECT title, COUNT(*) AS circulation_count
FROM Books
JOIN Report ON Books.booknum = Report.Book_no
GROUP BY title
ORDER BY circulation_count DESC;
```

Milestones

The LMS development process has achieved the following milestones:

- Database design and implementation
- Development of core functionalities
- Integration of user interface and reporting tools
- Deployment and testing

Conclusion

The Library Management System plays a pivotal role in the smooth functioning of libraries. Its comprehensive functionalities and data-driven insights empower libraries to provide exceptional services to their patrons. As libraries evolve, the LMS will continue to adapt, ensuring efficient and effective management of library resources.

Additional Notes

- The LMS can be used to implement a variety of features, such as online book borrowing and renewals.
- The LMS database can be integrated with other library systems, such as the catalog system and the circulation system.
- The LMS database can be used to collect data for research purposes.