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**Library System Project Report**

**1. Topic and Objective**

**Topic: Library System**

**Objective:** Objective: The objective of this project is to develop a comprehensive library management system that streamlines various library operations including book cataloging, user account management, book checkout and book return tracking. The purpose of the system is to improve the efficiency, organization and convenience of users in the library environment.

**Tasks:**

1. Design and implement a database schema to store information about books, users, loan records and other relevant objects.

2. Develop a user-friendly interface for librarians to perform CRUD (create, read, update, delete) operations on books, users and borrowed records.

3. Implement authentication and authorization mechanisms to ensure secure access to the system.

4. Implement user account management features, including registration and login.

5. Develop functions for tracking the issuance and return of books.

**2. Database Connection and Usage**

The project will use the PostgreSQL relational database management system to store and manage data related to books, users, borrowed records, etc. The database connection will be established using appropriate libraries or frameworks in the selected JDBC programming language for Java.

Example object:

Book entity: {ID, title, author, publication year, status}

**3. Project Structure**

The project will follow a structured organization to ensure maintainability, scalability, and readability of the code base. A typical project structure might include directories containing source code, configuration files, documentation, and tests. Additionally, version control with Git and hosting the project on GitHub will make collaboration and code management easier.

**4. Functionality**

**The library system will offer the following functionalities:**

- Book management:

- Add new books to the system.

- Update existing book information.

- Remove books from the library catalog.

- User management:

- Authentication of users to log into the system.

- Manage user profiles and account information.

- Borrowing and returning:

- Take books from the library.

- Return the books you rented.

- Authentication and authorization:

- Secure user authentication.

- Role-based access control for different types of users (librarians, members).

- User interface:

- Develop a user-friendly interface for easy navigation and interaction with the system.

By performing these functions, a library system aims to provide an efficient and organized platform for managing library resources and effectively serving library patrons.