Convoy Hill Library Management System

Project Overview

The **Convoy Hill Library Management System (CHLMS)** is a user-friendly application designed to efficiently manage a small-town library's operations through an intuitive **Graphical User Interface (GUI)**. The system facilitates streamlined book management for librarians and an easy borrowing experience for clients, ensuring a smooth library experience for all users.

The system is built with the following user roles:

1. **Librarian**: Responsible for managing the library's catalog.
2. **Client**: Library patrons who can borrow and return books.

Both roles are accommodated within the application through a sign-in system, with librarians having additional privileges for managing books in the collection.

Key Features

1. User Authentication

- **Librarians**: Can log in as pre-existing users. The process of hiring and creating librarian accounts occurs externally from the application.
- **Clients**: Can sign up to create a new account or log in with existing credentials.

2. Librarian Functionality

Librarians have access to the following book management features:

- **Search for Books**: Librarians can search the library's catalog by title, author, or other metadata.
- **Add New Books**: Librarians can add new books to the catalog, including specifying the number of copies available.
- **Update Book Information**: Librarians can modify existing book details, such as updating the quantity of available copies when new shipments arrive.
- **Remove Books**: Books can be removed from the catalog if they are no longer available in the library's collection.

- **Automatic Record Updates**: The system automatically tracks borrowing activity, updating the available book quantities as they are borrowed and returned.

3. Client Functionality

Clients can interact with the system in the following ways:

- **Search for Books**: Clients can search for books by title, author, or year of publication to check their availability in the library's collection.
- **Borrow Books**: Clients can request to borrow a book. The system reduces the number of available copies by one when a book is borrowed.
- **Return Books**: Clients can return previously borrowed books. Once returned, the system increases the available quantity of that book.

4. Automatic Inventory Management

- The system ensures that the inventory remains accurate:
  - When a book is borrowed, its status is automatically set to "borrowed," and the available quantity is reduced.
  - When a book is returned, its status is updated to "returned," and the available quantity is increased.
  - Books are marked as "returned" by default until they are actively borrowed by a client.

Expected Output

At the end of the project, the **Convoy Hill Library Management System** will provide a fully functional library management solution with the following features:

- A robust **Swing-based GUI** that is easy to navigate for both librarians and clients.
- The ability to manage a library's catalog, including adding, updating, and removing books.
- A seamless borrowing and return process for clients.
- Real-time updates to the book inventory as users interact with the system.

This application will support internationalization, with both English and French language options available to cater to a diverse user base.