Library Management System User Guide  
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# Introduction

This document provides an overview of the Library Management System, including how to access and use it. It also explains the classes and their interactions within the system.

# Application Overview

The Library Management System is design to help libraries efficiently manage their books, authors, patrons, and book borrowing/returning processes. The system provides features for adding, editing, and deleting books, authors, and patrons, as well as tracking the status of books.

# How to Access and Start the Application

1. Download the program onto your computer.

2. Open the program in **Visual Studio Code**.

3. **Open** the **LibraryDemo.java** file  
Underneath ‘public class LibraryDemo’ in the written code you will see small grey words saying:  
**“Run | Debug”**  
4. Press **‘Run’**. This will start the program in your terminal.

The Library Management System will display, and you can choose an option from 1 to 7.  
**You need to directly type in your terminal**.  
  
5. Type the number associated with the option you want to access.

6. Press **Enter.**

**You have successfully accessed, started, and accessed an option from the application.**

# Classes and Their Working

## Author Class

The Author class represents an author and contains attributes like name, date of birth, and a list of books written by the author. Authors can be added, edited, and removed from the system.

## Book Class

The Book class represents a book, including details like title, author, ISBN, publisher, number of copies, status, and due date. Books can be added, edited, and removed from the library, and patrons can borrow and return them.

## Borrowable Interface

The Borrowable interface defines methods for borrowing and returning books. Both the Patron and Library classes implement this interface.

## Copy Class

The Copy class represents individual copies of a book and includes a copy ID and status. Copies are associated with a book and can be tracked within the library.

## Library Class

The Library class acts as the central controller, managing books, authors, patrons and book borrowing/returning processes. It includes methods for managing these entities and maintaining their relationships.

## Patron Class

The Patron class represents library patrons, including attributes like name, address, phone number and a list of borrowed books. Patrons can be added, edited and removed from the system. They can also borrow and return books.

## Status Enum

The Status Enum defines the status of a book, which can be AVAILABLE, CHECKED\_OUT, or OVERDUE.

# Class Diagram

This is the diagram Group 6 came up with. I honestly had issues trying to follow this, so I opted to follow the Sprint deliverables instead. I restarted making this project twice because of issues.  
  
A screenshot of a computer

Description automatically generated

Usage Guide

When the program is running, there are different menu options you can choose from, and different options within. The menu options are as follows:  
  
**Library Management System**  
1. Book Management  
2. Author Management  
3. Patron Management  
4. Borrow a Book  
5. Return a Book

6. Check Book Status  
7. Exit  
  
The program will prompt you to enter which option you wish to access, followed by more prompts depending on what you wish to do.

## Book Management

-Adding, editing, and deleting books

-Listing books

-Searching books by title, author, or ISBN

## Author Management

-Adding, editing, and deleting authors

-Listing authors and their books

## Patron Management

-Adding, editing, and deleting patrons

-Listing patrons and their borrowed books

## Borrowing and Returning Books

-Borrowing a book

-Returning a book

## Checking Book Status

-Checking the status of a book

# Conclusion

In this user documentation, we have introduced you to the Library Management System, a comprehensive tool designed to facilitate the efficient management of books, authors, patrons, and book-related processes. This application simplifies library operations, making it easier to organize, track and serve the needs of the library users.

You have been provided with an overview of the systems, which includes and explanation of the various classes that form the core of this application. We have covered classes like Author, Book, Patron, and more, each contributing to the smooth functioning of the Library Management System.

The class diagram visualizes the associations between these classes, offering a clear depiction of how they interact to accomplish specific tasks. This diagram serves as a valuable reference for understanding the underlying structure of the application.

Our usage guide walks you through functionalities of the system, including book and author management, patron management, borrowing and returning books, and checking book statuses. Whether you are a library administrator or a patron, this guide will help you effectively navigate and utilize the system.

We hope this tool proves to be an asset in your library management endeavors.