

Library Management System

Documentation

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Project Overview:

The Library Management System is a console-based Java application designed to assist libraries in managing books, periodicals, authors, and patrons. It enables librarians to add, edit, and delete items and patrons, as well as allow patrons to borrow and return items. The system is very simple and user-friendly.

Class Descriptions:

1. **Library:**

- Manages collections of `LibraryItem`, `Author`, and `Patron` objects.
- Provides methods to add, delete, borrow, and return items.

2. **LibraryItem:**

- Base class representing a library item with attributes like ID, Title, Author, ISBN, Publisher, and Copies.
- Contains subclasses **Book** and **Periodical** to represent specific types of items.

3. **Book:**

- Extends `LibraryItem`
- Represents a book in the library with additional methods as needed.

4. **Periodical:**

- Extends LibraryItem
- Represents periodicals, such as magazines or journals with specific attributes.

5. **Author:**

- Represents an author with details such as name, dateOfBirth, and itemsWritten
- Linked to LibraryItem objects representing the books or periodicals written by the author.

6. **Patron:**

- Represents a library user who can borrow and return items.
- Attributes include name, address, phoneNumber, and a list of borrowed items.

Instructions for Use:

When you open LibraryDemo.java file and run it, a terminal window will launch, displaying a menu with options numbered 1 through 17. For instance, choosing “1” allows you to add a new library item. To add an item, you’ll need to provide details such as the ID, title, author, ISBN, publisher, and total copies. Once these details are entered, the item is successfully added, and you’ll be prompted to add another item. To exit the menu, select option 17.

Class Diagram:

Our contribution to this assignment was strong. We held several team meetings to discuss our approach and how we would divide the work, providing support to one another by answering questions. We split the files among the three of us, each taking responsibility for one. However, we collaborated on shared files like this document, the menu, and the diagram.

