"Project Report"

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CSE 215	Object Oriented Programming Lab

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Library Management System

Introduction: The provided Java code presents a simple implementation of a Library Management System. The system allows users to manage and interact with a collection of library items, such as books and magazines, by providing options to display all items, borrow an item, return an item and exit the program. This short report aims to discuss the key features and functionality of the code.

Code Overview: The code consists of several classes, interfaces and methods, each serving a specific purpose in the Library Management System.

1. LibraryItem Class:→ Represents a generic library item with properties such as title, author and year.
→ Contains a constructor to initialize the item's

attributes and a displayInfo() method to print the item's details.

2. Borrowable Interface:

→ Defines the contract for items that can be borrowed and returned from the library.

→ Includes borrowBook() and returnBook() methods that are implemented by the Book and Magazine classes.

3. Book Class:

→ Inherits from the library item class and implements the borrowable interface.

→ Contains additional functionality specific to Books such as a Borrowed status flag.

4. Magazine Class:

→ Inherits from the LibraryItem class and implements the Borrowable interface.

→ Similar to the Book class but tailored for magazines with their specific borrow and return behaviours.

5. Library Class:

→ Represents the Library itself, managing a collection of LibraryItem objects.

→ Initializes with pre-defined books and magazines.

→ Provides a displayAllItems() method to print the details of all items in the library.

6. Main Class:

→ Contains the main method and serves as the entry point of the program.

→ Creates and instance of the Library class and presents a menu driven interface to interact with the library.

→ Options include displaying all items, borrowing an item, returning an item and exiting the program.

Funcionality and Usage: The Library Management System Provides basic functionality for managing library items. Users can choose to display all items, borrow an available item, return a borrowed item or exit the program. The system ensures that the borrowed status is correctly updated and preverents borrowing already borrowed items. Invalid user inputs are handled with appropriate

erroron messages.

Conclusion: The proovided Java code demonstrates a simplified implementation of a Libraary Management System. It showcases object oriented proogramming concepts such as inheritance, interfaces and polymorphism. The code can serove as a starting point for furthero enhancements and additions to develop a more comprehensive library management system.