**OOP PRINCIPLES AND BEST PRACTICES**

1. **Proper Use of abstraction through abstract class and interface (5 marks)**

* **Abstraction through Abstract Class and Interface:**
* **Abstract Class**: LibraryItem serves as an abstract class, defining common attributes (id, title) and abstract methods (getDetails (), isAvailable ()) that subclasses must implement.
* **Interface**: Borrowable defines methods related to borrowing functionality. Any class that implements this interface must provide specific implementations for borrow () and returnItem (), allowing different items to have their own borrowing logic.

1. **Implement Encapsulation (5 marks)**

* **Encapsulation**:
* All attributes in the classes (id, title, author, isbn, available, etc.) are private. This ensures that the internal state of the objects cannot be directly accessed from outside the class.
* Accessor methods (getters) can be added to retrieve necessary information while keeping the data hidden.

1. **Demonstrate Polymorphism (5 marks)**

* **Polymorphism**:
* The code demonstrates polymorphism through method overriding and interface implementation.
* For example, the borrow() method is implemented differently in the Book class but can be called through the Borrowable interface reference.

1. **Code Organization, Readability, and Comments (5 marks)**

* **Code Organization and Readability**:
* The code is structured into separate classes, each with a clear responsibility (e.g., Book, Magazine, Library).
* Each method is clearly defined, and comments explain the purpose of classes and methods.

**BONUS FEATURES**

1. **Implement File I/O to save and Load the Library Data.**

* Add methods to save the library data to a file and load the data from a file using Java’s Serializable interface.

1. **Add Search Functionality by Author or Issue Date.**

* Extend the Library class to include search methods.

1. **Implement a Simple Borrowing System Using the** Borrowable **Interface.**

* Ensure Book class implements borrowing and returning of items:
* **Borrow and Return Items.**