### Part 3: Building an Advanced LMS with Enhanced Features

Objective: Apply knowledge of OOP principles, including inheritance, composition, polymorphism, and abstraction, to design and implement an advanced Library Management System with enhanced features.

#### Requirements:

1. **Class Hierarchy:**
   * Create a class hierarchy for the LMS system as follows:
     + **Book class (Abstract Base Class)**
       - **Attributes:**
       - Title
       - Author
       - Book ID
       - **Methods:** Basic book interaction methods, display\_info()
     + **FictionBook class (Derived from Book)**
       - **Attributes:** Inherits attributes from Book
       - **Methods:** Overrides display\_info() to include genre information
     + **NonFictionBook class (Derived from Book)**
       - **Attributes:** Inherits attributes from Book
       - **Methods:** Overrides display\_info() to include subject information
     + **Person class (Base Class)**
       - **Attributes:**
       - Name
       - Age
       - Person ID
     + **Methods:** Basic person interaction methods.
     + **Librarian class (Derived from Person)**
       - **Attributes:** Inherits attributes from Person, Employee ID
       - **Methods:** issue\_book(book, user), return\_book(book, user)
     + **Library class**
       - **Attributes:**
       - Library Name
       - Library ID
       - List for books
       - an instance of Librarian
       - **Methods:**
       - add\_book(book)
       - remove\_book(book\_id)
       - view\_books()
       - search\_book(title)
       - list\_issued\_books()
2. **Polymorphism:**
   * Implement polymorphism by creating different types of books (FictionBook, NonFictionBook) that inherit from the same Book class.
   * Use method overriding to customize specific book operations.
3. **Abstraction:**
   * Create an abstract base class Book that defines abstract methods like display\_info.
   * Implement FictionBook and NonFictionBook classes that inherit from Book and provide unique implementations of the abstract methods.

#### Abstraction Improvement:

* **Book Class (Abstract Base Class)**
  + **Methods:**
    - display\_info(): Abstract method to display book information.

1. **Enhanced Functionality:**
   * Enhance the functionality of the Library:
     + Implement additional methods for book interactions.
     + Add features to manage different sections of books within the library.

#### Instructions:

1. Define the Book class with the specified attributes and methods to manage book data.
2. Define the Person class with the specified attributes and methods.
3. Implement inheritance: Enhance the Librarian class to inherit attributes and methods from the Person class.
4. Enhance the Library class: Implement additional methods and features, as specified in the requirements.
5. Implement polymorphism by creating different types of books (FictionBook, NonFictionBook) that inherit from the same Book class.
6. Implement abstraction by creating an abstract base class Book and modifying the FictionBook and NonFictionBook classes to inherit from it and provide unique implementations of the abstract methods.
7. Implement a mechanism that allows users to have dynamic and engaging interactions with the library, with transaction history being logged and displayed.