**Scenario (Class Diagram)**

A **Library Management System** is being designed.  
The system manages **Libraries**, each of which contains **Books**, **Magazines**, and **DVDs** as items available for borrowing. Every **Book** has **Chapters**, and each **DVD** contains multiple **Scenes**. **Chapters** and **Scenes** cannot exist without their respective **Book** or **DVD**.

Each **Library** employs multiple **Librarians**, who manage the lending process. **Members** can borrow items (Books, Magazines, DVDs). A **Member** can have multiple **BorrowRecords**, each recording details of an item borrowed and the date of borrowing.

There are two types of **Members**: **StudentMember** and **FacultyMember**. Both inherit common member details but have slightly different borrowing limits.

Each **Member** has a **LibraryCard** issued by the **Library**. The **LibraryCard** is invalid if the member account is deleted.

Additionally, the **Library** is associated with **Publishers**, from whom it acquires new **Books** and **Magazines**. A **Publisher** can supply multiple libraries.

**Scenario (Object Diagram)**

The **City Library** has a book titled *“Clean Code”* (ISBN: 9780132350884) published by **Pearson**.  
A student member named **M Aun** (studentId: ST002) has a **Library Card** with cardId **502**, valid until **2025-12-31**.

On **May 1, 2025**, M Aun borrowed the book *“Clean Code”*. A **BorrowRecord** was created with:

* borrowDate: **2025-05-01**
* returnDate: **2025-05-15**

The librarian handling this transaction was **Mr. Usman** (employeeId: 201).

**Scenario (Component Diagram)**

The library management system allows users to search for books, DVDs, and other materials in the collection. Users can log in using their unique credentials to access their personal accounts, where they can view their borrowing history, check due dates, and reserve materials. The system maintains a catalog of all library resources and handles requests to borrow or return items. When a user borrows an item, the system checks their membership validity and borrowing limits before approving the transaction. The borrowing and returning operations are recorded and updated in the system's records. Librarians are responsible for managing member accounts, adding new resources to the collection, and generating reports on library usage. All library data, including user information, borrowing records, and resource details, is stored securely and can be queried for administrative purposes.