# Assessment 01 - Library Management System

You need to create a **Library Management System** that can manage books, members, and lending operations. This system should demonstrate your understanding of Object-Oriented Programming concepts, collections, exception handling, and file operations. This does not need to be a springboot application but a standalone java program will be fine. Create a maven project for managing the dependencies.

**Time Limit: 2 hours**

**Requirements**

1. **Add a new book**
2. **Add a new member**
3. **Borrow a book**
4. **Return a book**
5. **Search books by author**
6. **Display all members with borrowed books**
7. **Save data to file**
8. **Load data from file**
9. **Exit**

**Evaluation Criteria**

**Your solution will be evaluated on:**

1. **Object-Oriented Design (25%): Proper use of classes, encapsulation, constructors**
2. **Collections Usage (20%): Correct implementation of List and Map**
3. **Exception Handling (20%): Custom exceptions and proper try-catch blocks**
4. **File Operations (15%): Basic file I/O implementation**
5. **Code Structure (10%): Clean, readable code with proper naming**
6. **Functionality (10%): Working menu system and correct business logic**

**Classes**

1. **Book (bookId, title, author, isbn, isAvailable)**
2. **Member (memberId, name, email, borrowedBooks)**
3. **Library (books, members)**

**Exception Classes**

1. **BookNotFoundException**
2. **BookNotAvailableException**
3. **MemberNotFoundException**