Problem 3: Library Management System ----------

```java
// Approach: Implement Book, User, and Transaction entities. Handle lending and return logic with
transaction status updates.

@Entity
public class Book {
    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long bookId;
    private String title;
    private String author;
    private String category;
    private boolean availability;

}

@Entity
public class User {
    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long userId;
    private String name;
    private String membershipType;

}

@Entity
public class Transaction {
    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long transactionId;

    @ManyToOne
    private Book book;

    @ManyToOne
    private User user;

    private LocalDate issueDate;
    private LocalDate returnDate;
    private String status;
}
```