Automated testing - Hands-On Exercises

Hands-On: Building a Business Service using TDD

1. The com.fidelity.business.Book class defines a compareTo() method that permits a list of books to be sorted by title without regard to case.
    a. What are the possible return values of compareTo()?
    b. Create a JUnit test class for Book. Write POJO unit tests to verify all the possible return values of compareTo(). Define the test class in an appropriate package.

2. Use TDD to create a LibraryBusinessService class. Define the new class in an appropriate package.
    - The business service should define three methods:
        1. Return all books
        2. Return the book with a given ISBN number
        3. Add a book
    - The business service should define a field of type LibraryDao and a constructor that has a parameter of type LibraryDao.
    - Define the business service integration test class in an appropriate package.
    - In the set up method for the test class:
        1. Create an instance of the LibraryDao implementation.
        2. Call the LibraryBusinessService constructor, passing the LibraryDao instance as the argument.

BONUS

3. Refactor the LibraryController by replacing the LIbraryDao with your new LibraryBusinessService. See the TODO comments in LibraryController.java.

    - Test the RESTful controller with Insomnia and verify it still handles HTTP requests correctly.

4. Move the business logic that validates input arguments from the controller class to the business service class. See the BONUS TODO comments in LibraryController.java

5. Use TDD to add a business rule that an attempt to add a book with an ISBN that's already present in the book collection will generate an error.

Hands-On: Writing E2E Tests for a RESTful Service

1. Write E2E tests for the LibraryService. Refer to the E2E tests from a previous exercise; for example, the WarehouseService or the RESTful hackathon.
   - Note: the LibraryService uses a stub DAO, so omit the @Sql annotation on the test class, and omit calls to JdbcTestUtils methods such as countRowsInTable().