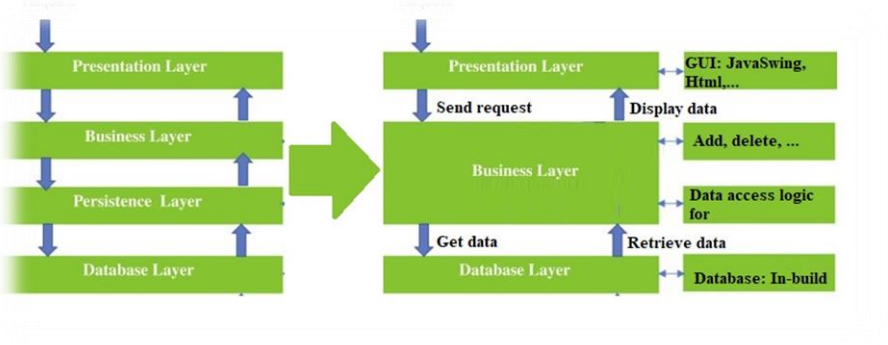
PRACTICE ASSIGNMENT 5

3 and 4-Layered Architecture

In this project, we will learn how to build a Library Management with 3-layered architecture.



I. Database Layer (20%): While not a separate layer in this example, it utilizes an ArrayList to store information in memory. This simulates data persistence without a dedicated database**.**

a) **Borrower**: Includes name, address, email, and phone number and list of borrowed books.

b) **Book:** Includes Title, author, genre, and available quality. (For simplicity's sake, each book includes only one author and one genre)

c) **Record:** keep the record logs including borrower's name and name of the book they have borrowed. (Each time they borrow a book will result a new log)

II. Presentation Layered (30%): it handles user interaction with the Swing UI components and interacts with the business logic tier. You can provide a pre-built UI using Java Swing or a simple HTML form.

a) **Book register**: Provide the interface to enter information like Title, author, genre, quantity for a book.

b) **Book borrow**: Provide the interface to allow user to borrow one book at a time.

c) **Book delete**: Provide the interface to delete one book from library.

d) **Book return:** Provide the interface allow a user to return one of the borrowed books, provides that the name and Title is correct.

e) **Book display**: Displaying list of existing books.

f) **Record display**: Displaying Record.

**It should also have buttons for adding, removing, displaying potentially deleting functions.*

III. Business Logic Tier (50%): it encapsulates the core functionalities of adding/ deleting books, retrieving the list of books, and record. It also interacts with the data layer (in this case, simulated in-memory storage).

a) **Book register:** add/remove book and increase the book quatity if it fits a registered one.
b) **Book borrow:** Check available, register to Record when its success**.**
c) **Display:** request data from Database Layer then return to Presentation Layered.

~The end~

Your project/ solution should be submitted to Moodle before the deadline.