**<Book Shop>**

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**1. Requirements Analysis**

* **Assignment Specification**

The application is designed for users to be able to find books that they like. Using an existing database of books, users will be able to see what books it has accessing a given link using any browser.

* **Functional Requirements**

The application has 2 types of users:

The regular user can perform the following operations:

* Search books by genre, title, author.
* Sell books.

The administrator can perform the following operations:

* CRUD on books (book information: title, author, genre, quantity, and price).
* CRUD on regular users’ information.
* Generate two types of reports files, one in pdf format and one in csv format, with the books out of stock.
* **Non-functional Requirements**

The data will be stored in an XML based database with 2 main files: one for books and one for users. The application will be structured using the MVC pattern. Since the application is web based, the view will be modeled using HTML, CSS and JavaScript(AngularJS). The controller will be implemented using the Spring framework. The model will be the XML files and the data access objects will use JAXB to access it.

**2. Use-Case Model**

Use case : Register an account

Level : user-goal oriented

Primary actor : user/admin

Main success scenario: the guest will have created an account

Extensions : if the user enters wrong credentials an alert message will pop up

Use case : Login with an account

Level : user-goal oriented

Primary actor: user/admin

Main success scenario : depending on the user type, the guest will enter either the admin or user dashboard

Extension : if wrong credentials are entered then a pop-up message will appear

Use case : Search books

Level : user-goal oriented

Primary actor : user/admin

Main success scenario : Depending on the keywords written, a series of books will appear

Use case : Modify book

Level : admin-goal oriented

Primary actor : admin

Main success scenario : The book is modified in the database

Extensions : The book is deleted from the DB.

Use case : Modify user account

Level : admin-goal oriented

Primary actor : admin

Main success scenario : The user account is modified in the database

Extensions: The user account is deleted from the DB

**3. System Architectural Design**

**3.1 Architectural Pattern Description**

The architectural pattern used in this assignment is called MVC (Model-View-Controller).  It divides a given software application into three interconnected parts, so as to separate internal representations of information from the ways that information is presented to or accepted from the user.

**3.2 Diagrams**

*[Create the system’s conceptual architecture; use architectural patterns and describe how they are applied. Create package, component and deployment diagrams]*

Architectural pattern :



Deployment diagram :



**4. UML Sequence Diagrams**

Login user :



Search book :



**5. Class Design**

**5.1 Design Patterns Description**

*[Describe briefly the used design patterns.]*

**5.2 UML Class Diagram**



**6. Data Model**



**7. System Testing**

The application has JUnit tests for creating creating users and books.

**8. Bibliography**