Analysis and Design Document

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Revision History

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# Project Specification

# The Online Library is a platform for reading, creating and reviewing literature, from user-written stories to popular books. Users can modify other books by adding/removing from them or write their own. They can rate books and write comments on books or send messages to other users. These are the main features of the application:

# digital storage for books, shared between users.

# books can be modified by users if the owner gives permission (add / add and remove).

# books can be reviewed.

* users can chat.
* users are allocated a small part of the storage(25MB, for example), with an option to pay for increasing the storage size.

# administrators must approve books before they are published to prevent spamming or stealing.

# Elaboration – Iteration 1.1

# Domain Model

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# Architectural Design

## Conceptual Architecture

## 

The Online Library application is designed using the Spring MVC framework. Because this application is a document-sharing online app which doesn’t require very fast response times (not many online users expected), this architecture was considered the best to use.

## Package Design

## 

A screenshot of text

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## Component and Deployment Diagrams

* Component diagram:

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* Deployment diagram:

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# Elaboration – Iteration 1.2

# Design Model

## Dynamic Behavior

*[Create the interaction diagrams (1 sequence, 1 communication diagrams) for 2 relevant scenarios]*

## Class Design

*[Create the UML class diagram; apply GoF patterns and motivate your choice]*

# *A screenshot of a cell phone Description automatically generated*Data Model

# Unit Testing

*[Present the used testing methods and the associated test case scenarios.]*

# Elaboration – Iteration 2

# Architectural Design Refinement

*[Refine the architectural design: conceptual architecture, package design (consider package design principles), component and deployment diagrams. Motivate the changes that have been made.]*

# Design Model Refinement

## *[Refine the UML class diagram by applying class design principles and GRASP; motivate your choices. Deliver the updated class diagrams.]*

# Construction and Transition

# System Testing

For testing the application, the client-server system was simulated on a computer which also contains the databases. Every functionality of the Online Library is tested using the user interface, after making sure that every component works correctly. These are the main test cases:

* **Logging-in**: enter your username and password and press the login button. Your application launches and the user database is updated with your’s status set to ‘online’.
* **Writing a book and publishing it**: enter the ‘my books’ section and presses the ‘write new book’ button. Choose between uploading a text file or using the embedded text editor. For uploading a file, select the file from your computer and press OK. The book appears in your unpublished books collection. To publish a book, select in and press publish. Wait until the administrator approves the book, and then the book database is updated.
* **Finding a book and downloading it**: type the book’s name in the search bar and press the search button or select a book from the home page. After the book’s main page appears, press the read button to open it.
* **Posting a review**: find a book, then write a review in the comment box and press post. The comment appears on the book’s main page and the database is updated.
* **Approving a book(administrator)**: select a book from the ‘awaitingapproval’ section of the interface, then press the publish button.

# Future improvements

A good improvement which can be done in the future is designing an anti-spam system which prevents books without meaningful content from being published and stops flooding attempts(same user using multiple accounts to upload in mass).

# Bibliography