605. 782.71: Web Application Development with JSP and Servlets

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Preliminary Proposal

Page and Purpose

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MODIFICATION HISTORY

Version Number	Description	Modified Date	Modified By
Draft 1	Created Document	10/8	all

1. INTRODUCTION

1.1 Need for System:

This project aims to create a comprehensive online platform for selling and reviewing books. The increasing demand for online book purchases and the importance of user-generated reviews make this platform relevant. The platform will serve as a one-stop solution for book enthusiasts, allowing them to browse, purchase, and review books while managing their user profiles.

1.2 Project Definition:

1.2.1. Design, code, test, and implement a differentiated book e-commerce website that enables users to:

- Purchase books and manage their profiles.
- Post, read, and rate book reviews.
- Participate in interactive book clubs and reading challenges.
- Receive personalized book recommendations.
- Access exclusive book-related content.
- Each user will have an account with a unique ID, enabling them to maintain personal information, purchase history, and review submissions.
- The project will adhere to software engineering best practices, ensuring scalability, security, and user-friendly design.

1.3 Project Team:

1.3.1. Team Members: Andrew Jorquera, Derek Zhu, Kevin Tzeng

1.3.2. Team Name: Page and Purpose

1.4 Functions of the System:

1.4.1. Login & Profile

1.4.1.1 - The website will be open for anyone to browse books, but users must register to purchase and write reviews.

1.4.1.2 - Multiple users can log in simultaneously, each with a unique user ID and password-protected account.

1.4.1.3 - Users will be able to log in, manage their accounts, view their purchase history, and see their review contributions.

1.4.1.4 - The user profile will include: Name, Email address, Shipping and billing addresses, Reading preferences, Purchase and review history

1.4.2. Home

1.4.2.1 - The platform will display books in various categories, each with detailed descriptions, author information, prices, and user-generated ratings.

1.4.2.2 - The website will allow users to join or create book clubs, participate in reading challenges, and share reading progress on social media.

1.4.2.3 - Users will be able to find a summary of the various aspects of the site on the home page. This includes user information, book catalogue, and shopping cart.

1.4.2.4. Users will be able to navigate to different parts of the site via links on the home page.

1.4.3. Submitting Review

1.4.3.1 - Users can submit a book rating (1-5 stars) and a review description. The rating system allows for an average rating to be displayed on the book's product page.

1.4.3.2 - Users will receive personalized book recommendations based on their previous purchases and reading preferences.

1.4.4. Catalogue

1.4.4.1 - The customer will be able to view a page containing the full catalogue of books available for purchase. Selecting a book from the catalogue page will bring up the book summary page.

1.4.4.2 - An administrator will manage book inventory, prices, and exclusive content offerings like author interviews and signed editions.

1.4.5. Summary

1.4.5.1 - The platform will display books with information such as title, author, book cover image, genre, description, price, availability, and user review/ratings.

1.4.6. Cart

1.4.6.1 - Users can add books to their cart and review or modify the cart before checking out. SSL will be used for secure transactions. After a purchase, users will receive confirmation emails with the details of their orders.

1.4.6.2 - Users will be able to edit the quantity of books to buy of each title from the cart summary. Users can also remove book titles from their cart before completing the purchase.

2. GLOSSARY

Term	Definition
HTML	Hypertext markup language is the predominant markup language for web pages.
Java	An object-oriented programming language.
JavaScript	JavaScript is a scripting language most often used for client-side web development.
JSP	Java Server Pages -- simply put, it adds Java inside HTML pages
Servlets	The Java Servlet API allows a software developer to add dynamic content to a Web server using the Java platform.
MVC	An acronym for Model-View-Controller. The Model represents the business or database code, the View represents the page design code, and the Controller represents the navigational code.
MySQL	Open-source database system.
SSL	Secure Sockets Layer: cryptographic protocols which provide secure communications on the Internet.

3. SYSTEM ARCHITECTURE

3.1. Description:

3.1.1. Client-side subsystem:

- **Home Page:** Displays featured books, categories, search functionality, and personalized recommendations.
- **Book Details Page:** Shows detailed information about books, including reviews, author details, and purchase options.
- **Review System:** Allows users to post reviews, rate books, and reply to other reviews.
- **Shopping Cart:** Manages the selected books for purchase and handles the checkout process.
- **User Profile Page:** Stores user data, purchase history, and review contributions.
- **Book Club and Reading Challenge Pages:** Enable users to interact with the community and track progress.

3.1.2. Server-side subsystem:

- Handles data validation, processes user requests, and manages security protocols.
- Provides personalized recommendations and ensures smooth transaction processing.
- Integrates with the MySQL database to manage book inventory, user information, and order history.

3.2 Technology to be used:

3.2.1. Front-end:

- HTML5, CSS3, JavaScript, and JSP for dynamic content rendering.
- Bootstrap for responsive design and user experience improvements.

3.2.2. Back-end:

- Java Servlets for handling server-side requests and managing user sessions.
- MySQL database for storing and retrieving data on books, users, and orders.

3.2.3. Security:

- SSL encryption for secure transactions.
- Authentication and authorization systems for account protection.

3.2.4 Database Structure:

- Users: UserId, FirstName, LastName, Password, Email, Address
- Book: BookId, Title, Author, Summary
- Catalog: Book, Number of specific books

3.3 Page Flow:
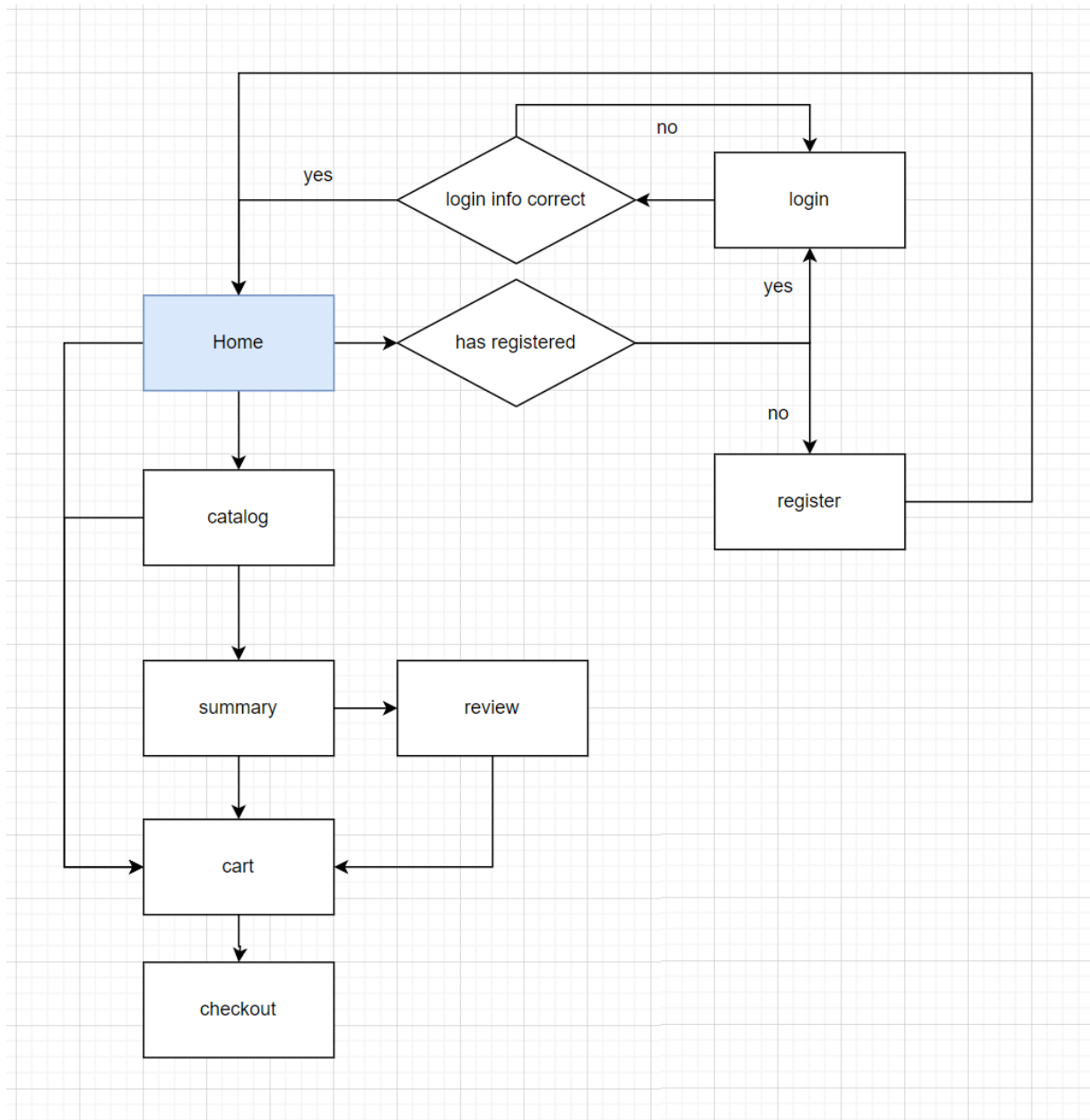
4. WORK DISTRIBUTION

4.1 The work will be divided by use case. Each team member will be required to handle all functionality and view for the assigned use case.

> **4.1.1** Andrew Jorquera
>
> - Implement Book Catalogue use case
> - Implement Book Summary use case
>
> **4.1.2** Derek Zhu
>
> - Implement Cart use case
> - Implement Home use case
>
> **4.1.3** Kevin Tzeng
>
> - Implement Login/Register use case
> - Implement Review use case
> - Create and fill database