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Web Applications A.Y. 2024-2025
Homework 1 – Server-side Design and Development

Master Degree in Computer Engineering
Master Degree in Cybersecurity
Master Degree in ICT for Internet and Multimedia

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Deadline: 17 April, 2025

Group Acronym	Bookly	
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Doe	John	123456
Doe	Jane	123456
Doe	John	123456

1 Objectives

The bookstore web application is designed to provide an intuitive and user-friendly platform for customers to browse and purchase books online. The main objective of this project is to simplify book shopping by allowing users to explore a wide range of books categorized by genre, author, and publisher while offering a convenient and efficient checkout process. This application is particularly useful for book lovers who prefer online shopping over visiting physical stores. Users can create an account, add books to their cart, and proceed with secure payments. Additionally, the system incorporates discounts, enabling customers to benefit from promotional offers. The structured design ensures that books are well-organized, making it easy for users to find what they need based on different criteria such as title, author, or category. By integrating features such as a shopping cart, order processing, and payment management, this project aims to enhance the online book-buying experience. The goal is to provide a streamlined, accessible, and efficient platform that makes book discovery and purchasing more convenient while ensuring a smooth user experience.

2 Main Functionalities

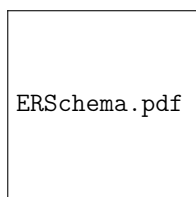
Bookly is an interactive online bookstore designed to provide a seamless experience for both customers and administrators. The platform allows users to explore and purchase books while ensuring efficient management of payments. At the core of the system, customers can search for books by various criteria, including title, author, and use a filter of category, and publisher, to find a book easier. The book details page is contain of book information, such as ISBN, price, stock availability, and publication year. Additionally, customers can engage with the platform by bookmarking books for future reference, leaving reviews, and receiving personalized recommendations based on their browsing and purchasing history.

To enhance the purchasing experience, customers can add books to their shopping cart and proceed to checkout using a simple and secure payment method. The system ensures that stock availability is updated in real-time, preventing purchasing unavailable books. Customers can also track their orders. Alongside managing their account information.

Bookly is built on a structured system that integrates RESTful APIs to handle book data, user interactions, and order processing. The system includes error-handling mechanisms that provide meaningful feedback for issues such as failed transactions or invalid inputs. By maintaining a clear and organized approach to managing book sales and customer interactions, Bookly ensures a streamlined and user-friendly experience for both customers and administrators, making book discovery, purchase, and management effortless.

3 Data Logic Layer

3.1 Entity-Relationship Schema



(Amirreza and Parisa)

3.2 Other Information

(Amirreza - parisa)

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4 Presentation Logic Layer

When a user accesses the website, they will be directed to the home page without needing to sign in. From there, they can navigate to various other sections, including:

- Sign In/Sign Up Page : For user authentication.
- User Profile Page : Displays user details.
- Book Page : Provides details about a specific book.

- Basket Page : Shows the user's selected books for purchase.
- Search Results Page : Displays books based on the user's search query.

4.1 Home Page

The Home Page serves as the central hub where all users (whether signed in or not) can browse through the book catalog. It will feature several sections, such as:

- **Most Popular** : Showcasing books with the highest reviews from our users.
- **New Arrivals** : Displaying the latest books added to our stock.
- **Best Sellers** : Highlighting books with the highest sales.

The homepage will also include:

- A **search bar** to allow users to find books by title, author, or genre.
- If the user is signed in, an **account icon** linking to their profile and a **basket icon** leading to their cart.
- If the user is not signed in, a **Sign In/Sign Up button** for account access.



Booklystore

← → ↺

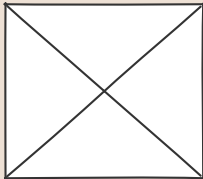
https://booklystore.com/home

Bookly

Q search

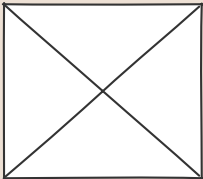


Most popular



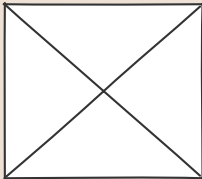
Harry Potter

J.K. Rowling



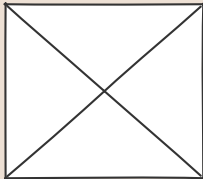
It Ends With Us

Colleen Hoover



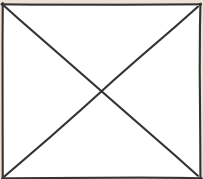
Crime and Punishment

Dostoyevsky



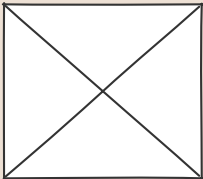
1984

Georges Orwell



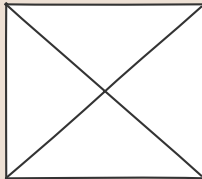
Dune

Frank Herbert



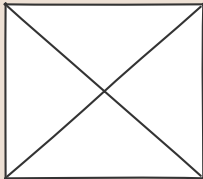
It

Stephen King



The Hunger Games

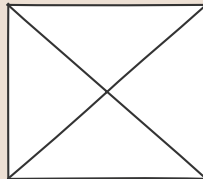
Suzanne Collins



The Lord of The Rings

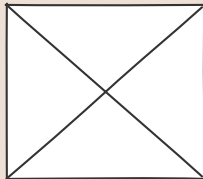
J.R.R Tolkien

Novelty



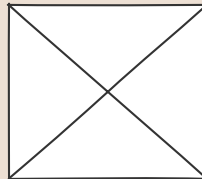
Harry Potter

J.K. Rowling



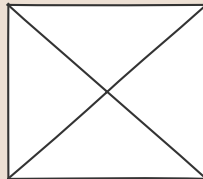
Harry Potter

J.K. Rowling



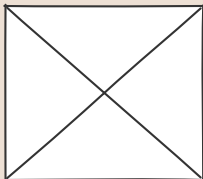
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J.K. Rowling



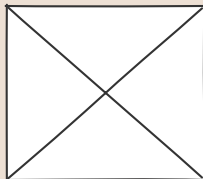
Harry Potter

J.K. Rowling



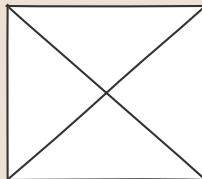
Harry Potter

J.K. Rowling



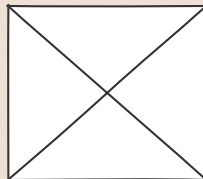
Harry Potter

J.K. Rowling



Harry Potter

J.K. Rowling



Harry Potter

J.K. Rowling

5

4.2 Sign In/Sign Up Page

This page allows users to register or log in to their accounts. It includes fields for username, password, an option for password recovery, and a button leading to the Sign-up Page.

Login

←

→

↻

https://booklystore.com/login

Bookly

Sign Up

Enter your username...

Enter your password...

Login

[forgot password ?](#)

Create a new account

4.3 User Profile Page

Users can also access their profile page, which displays their personal details and order history.

4.4 Book Page

Each book will have its own dedicated page containing details such as title, author, price, edition, genre, and description. It will also include a review section and a button to add the book to the basket.

4.5 Basket Page

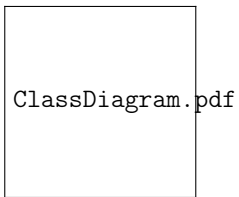
This page will show the books added by the user, along with options to update quantities or proceed to checkout.

4.6 Search Results Page

When a user enters a query in the search bar, they will be redirected to this page, where relevant books will be displayed based on title, author, or genre.

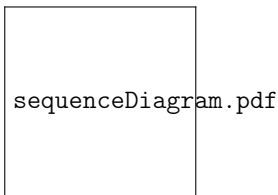
5 Business Logic Layer

5.1 Class Diagram



(Amirreza and parisa)

5.2 Sequence Diagram



(Adam)

5.3 REST API Summary

URI	Method	Description	Filter
(Gul) What is the URI?	What HTTP method uses?	Describe briefly the result of calling the URI	is it behind a filter?

Table 2: Describe in this table your REST API

5.4 REST Error Codes

Error Code	HTTP Status Code	Description
(Amirreza and gul) Error Code Identifier	Corresponding HTTP Status Code	Description of the error

Table 3: Describe in this table your REST API

5.5 REST API Details

A resource

(Gul)

- URL: the URL to retrieve it
- Method: Method to retrieve it

- URL Parameters:
- Data Parameters:
- Success Response:
- Error Response:

6 Group Members Contribution

Parisa Saeedidana Wrote the objective of the project, Drew the ER diagram for the bookstore.

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