Institut Bernat el Ferrer

DESENVOLUPAMENT D'APLICACIONS WEB

Segon Curs

A&M library

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Data d'entrega:

Curs acadèmic 2022 /2023

Summary

We are going to develop a website for an online library where users can access e-books for free or rent physical books for their reading.

Keywords

Web, ebooks, elearning , renting books, elibrary.

Index

1 Introduction

an online library that allows free access to books and also offers the option of renting physical books.

2 Context and motivation of the project.

2.1 Objectives of the project

2.1.1 General production objectives

The objective of this project is to develop a user-friendly and responsive online library platform using Laravel framework, which will allow individuals to easily access and read a wide variety of books. With this platform, users will also have the option to rent books, giving them the flexibility to rent books for a limited time period, without the need to purchase them.

2.1.2 Learning objectives.

Creating a project using the Laravel framework can provide a number of valuable learning opportunities, including:

- PHP Programming: Laravel is a PHP-based framework, so developers can gain valuable experience in programming in PHP. This includes learning how to work with PHP's syntax and data types, as well as understanding how to use various PHP libraries and functions.

- Laravel Framework: By creating a project using Laravel, developers can gain experience in working with this popular PHP framework. They can learn about Laravel's architecture, routing, middleware, controllers, and other key features.

- Role-Based Access Control: Laravel includes built-in support for role-based access control (RBAC), which allows developers to manage user permissions based on their role in the system. By using Laravel's RBAC features, developers can learn how to create different user roles and permissions, and how to restrict access to certain parts of the system based on those roles.

- Database Design: Laravel provides a number of tools for working with databases, including its own Object Relational Mapping (ORM) system called Eloquent. By using Eloquent and other Laravel database features, developers can learn about database design and management, including how to create tables, define relationships, and query data.

- Web Development Best Practices: Laravel is built with modern web development best practices in mind, including test-driven development, dependency injection, and the use of third-party libraries and packages. By using Laravel, developers can learn about these best practices and how to apply them to their own projects.

Overall, creating a project using the Laravel framework can provide developers with valuable experience in PHP programming, Laravel framework features, database design and management, and modern web development best practices. This can help them to become better developers and prepare them for future projects.

3 Description

3.1 Expected results

The expected results of our website:

Homepage: The homepage will serve as the main entry point for the website. It will feature various categories of books, and possibly some featured books and a search bar.

Library: This page will include a list of all the available books on the website, sorted by category or genre. Each book will have a brief description and a thumbnail image.

Book Details: When a user clicks on a specific book, they will be taken to a page with more details about that book, including its synopsis, author, publisher, and publication date. This page may also include user reviews and ratings.

Reading Interface: When a user decides to read a book online, they will be taken to a page with a reading interface. This interface will allow users to flip through pages, adjust the font size, and perform other reading-related functions.

Renting Interface: If a user decides they want to rent a physical copy of a book, they will be taken to a renting interface. This interface will allow users to select the book they want to rent, choose a rental period, and enter their shipping information.

Admin pages: The admin pages would allow library staff to manage the online library, including adding new books, updating book information, and managing user accounts.

Account Management: Users will need to create an account to access the online library. This page will allow users to manage their account information, view their rental history, and manage their rentals.

Contact Us: This page will include contact information for the website's support team, such as email, phone number, or a contact form.

About Us: This page will provide background information about the online library, including its mission, history, and team members.

3.2 Benefits

Creating an online library using Laravel can provide a number of benefits, both for the library itself and for its users. Here are some of the main benefits:

- Increased Access: An online library can provide users with access to a wide range of books and other resources from anywhere in the world, at any time of day or night. This can be particularly beneficial for users who may not have easy access to a physical library or who have busy schedules.

- Cost Savings: Creating an online library can be a cost-effective way to provide library services, as it eliminates the need for expensive physical infrastructure, such as buildings, shelves, and furniture. It also reduces the need for staff to manage the physical library, as many tasks can be automated in the online environment.

- Improved User Experience: An online library can provide users with a more streamlined and intuitive experience, with easy-to-use search tools, personalized recommendations, and instant access to books and other resources. This can lead to higher levels of user satisfaction and engagement.

- Better Data Management: By creating an online library, library staff can better manage and track their collections, users, and rentals. This can lead to better decision-making, improved planning, and more efficient operations.

- Increased Reach: An online library can reach a wider audience than a physical library, as users from all over the world can access its resources. This can help to promote the library and its services, and can lead to increased use and awareness.

Overall, creating an online library using Laravel can provide a range of benefits, including increased access, cost savings, improved user experience, better data management, and increased reach. These benefits can help to promote the library and its services, and can lead to increased use and engagement from users.

4 Analysis

The following section will present the analysis carried out for the development of the project. It includes the system requirements, data requirements, and non-functional requirements.

4.1 Functional requirements

- All the button will have hand cursor when you hover on them.
- when you click on Register Button, popup window will be open up and from there you can register, and same with login.
- logo will take you to home page
- contact button will take you to another page to contact.
- library button will take you to another page where you can see all the book and you can list them by category

4.2 Non-functional requirements

Non-functional requirements are a type of requirement that describe the qualities or characteristics of a system or application, rather than its specific features or functions. In the context of an online library application, some examples of non-functional requirements might include:

- Performance: The application should be able to handle a large number of users and book rentals without experiencing significant slowdowns or outages.

- Reliability: The application should be reliable and available at all times, with minimal downtime or system failures.

- Security: The application should be secure, with appropriate measures in place to protect user data and prevent unauthorized access.

- Scalability: The application should be designed to scale up or down as needed, to accommodate changes in user demand or business growth.

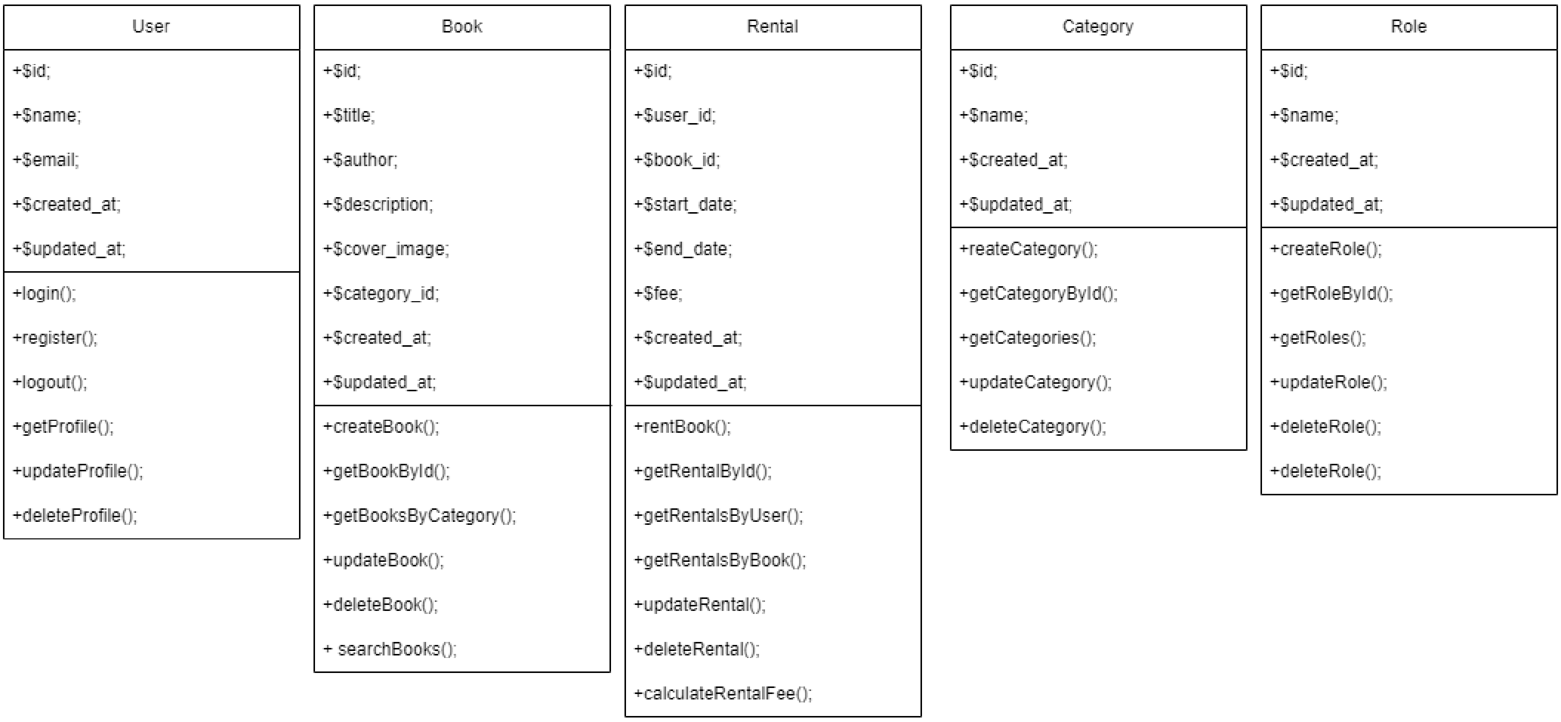
- Usability: The application should be user-friendly and easy to use, with intuitive navigation and clear instructions for users.

- Accessibility: The application should be accessible to users with disabilities, including support for assistive technologies and compliance with accessibility standards.

- Maintenance: The application should be easy to maintain and update, with a clear and well-documented codebase, and efficient debugging tools.

Overall, non-functional requirements are important for ensuring that an online library application is reliable, secure, and easy to use, and can support the needs of its users and stakeholders over the long term.

4.3 Data requirements



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+login();
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+getProfile();
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+deleteProfile();

Book

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+$author;
+$description;
+$cover_image;
+$category_id;
+$created_at;
+$updated_at;

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+getBookById();
+getBooksByCategory();
+updateBook();
+deleteBook();
+ searchBooks();

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+$book_id;
+$start_date;
+$end_date;
+$fee;
+$created_at;
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+getRentalById();
+getRentalsByUser();
+getRentalsByBook();
+updateRental();
+deleteRental();
+calculateRentalFee();

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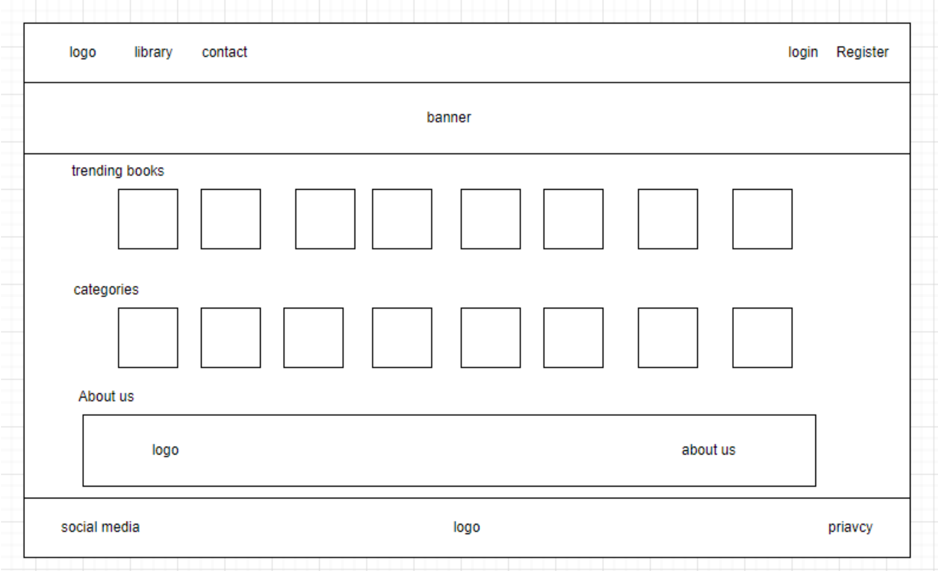
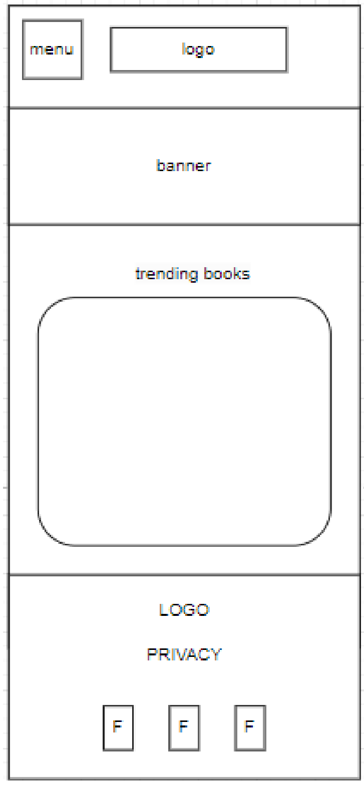
5 Design

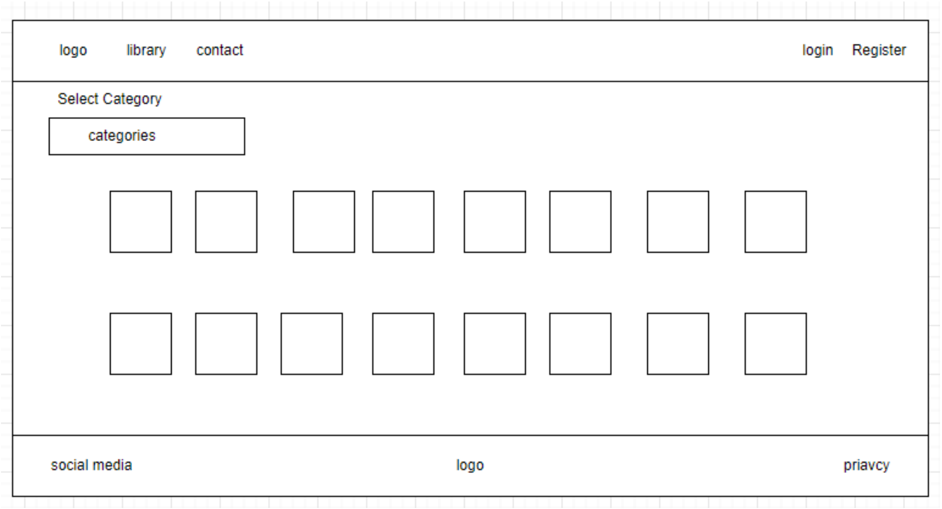
5.1 Interface design

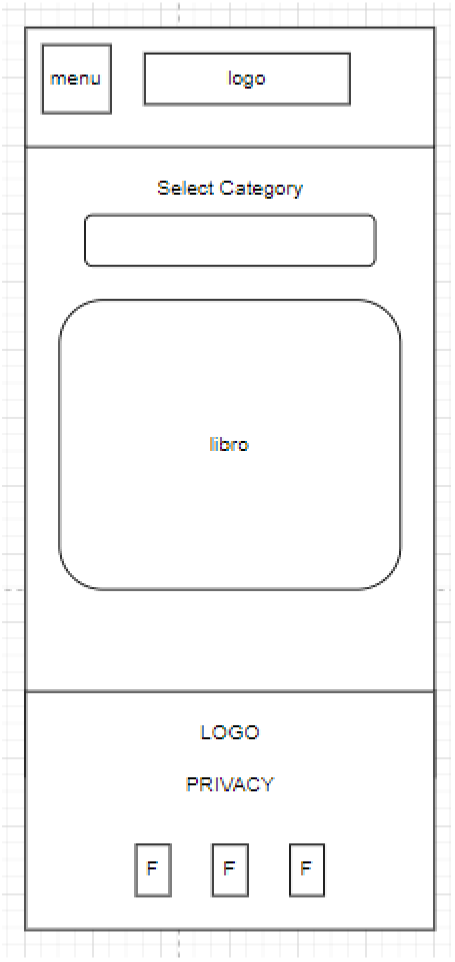
Home Page:



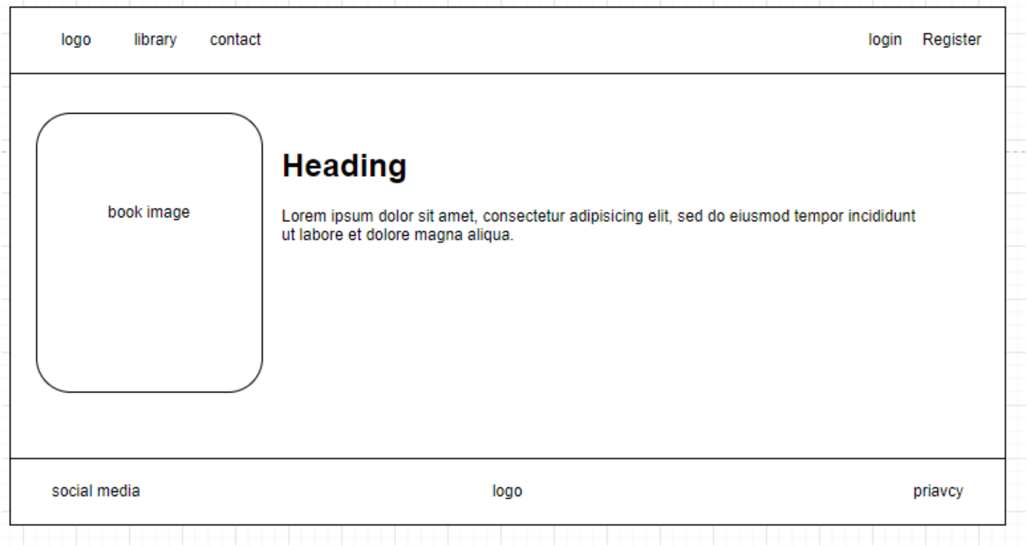


library page:





Book Detail Page: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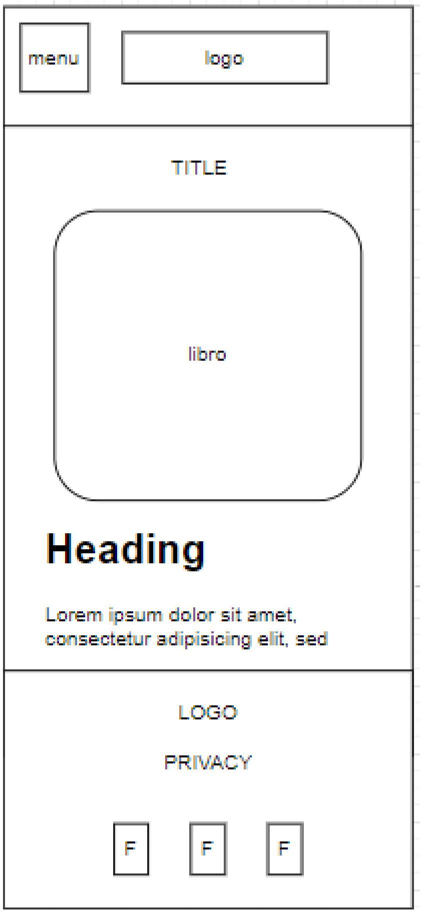
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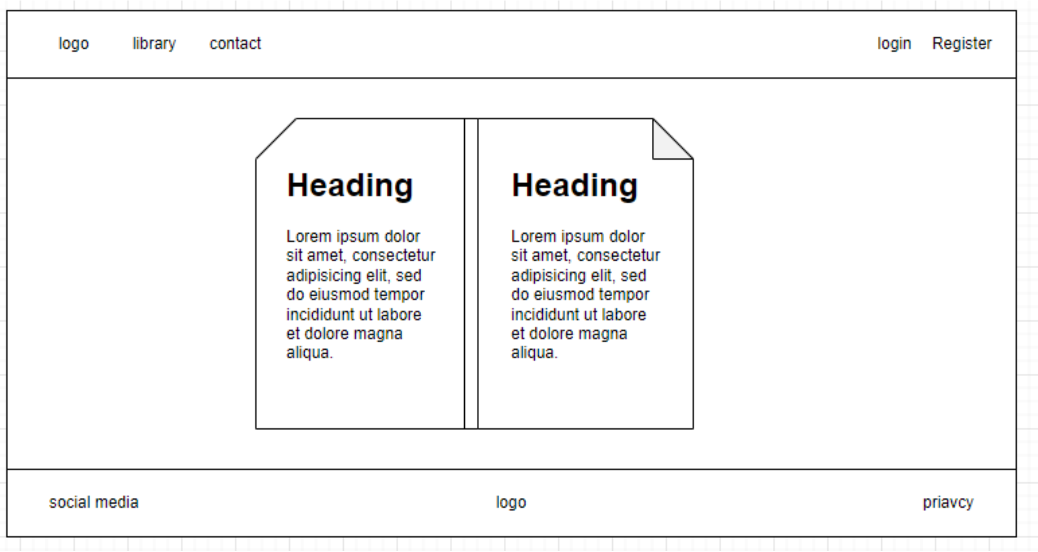
Reading Interface: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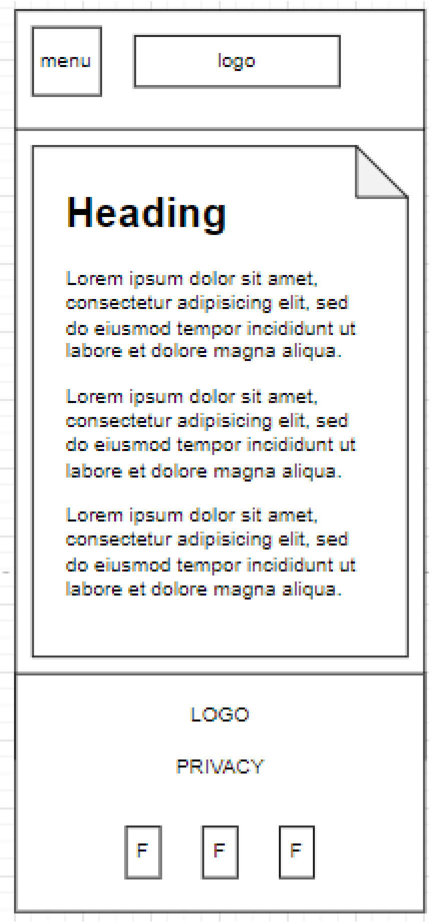
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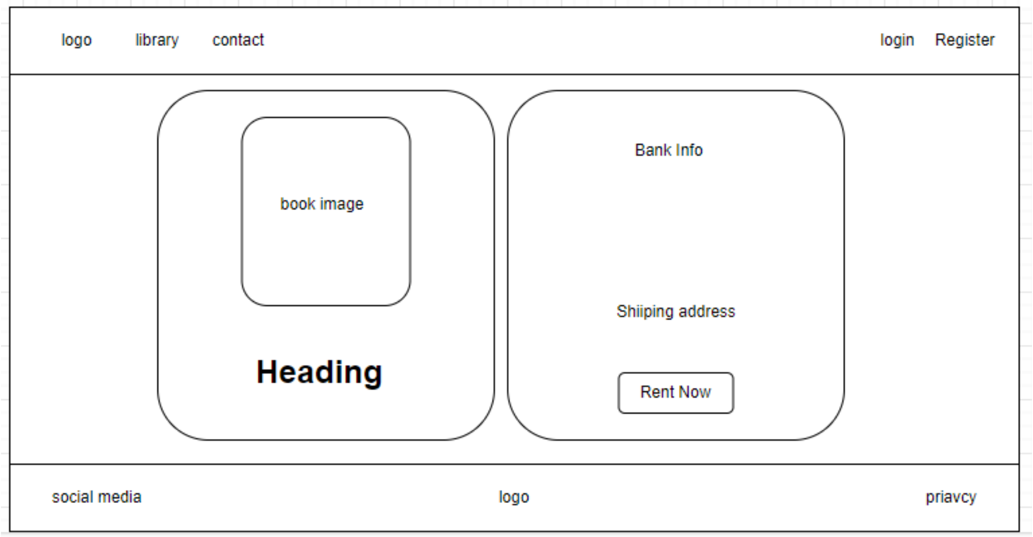
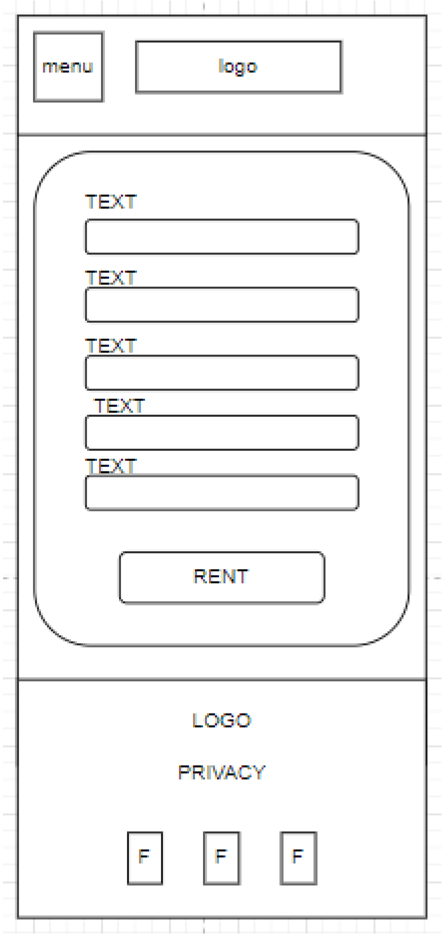
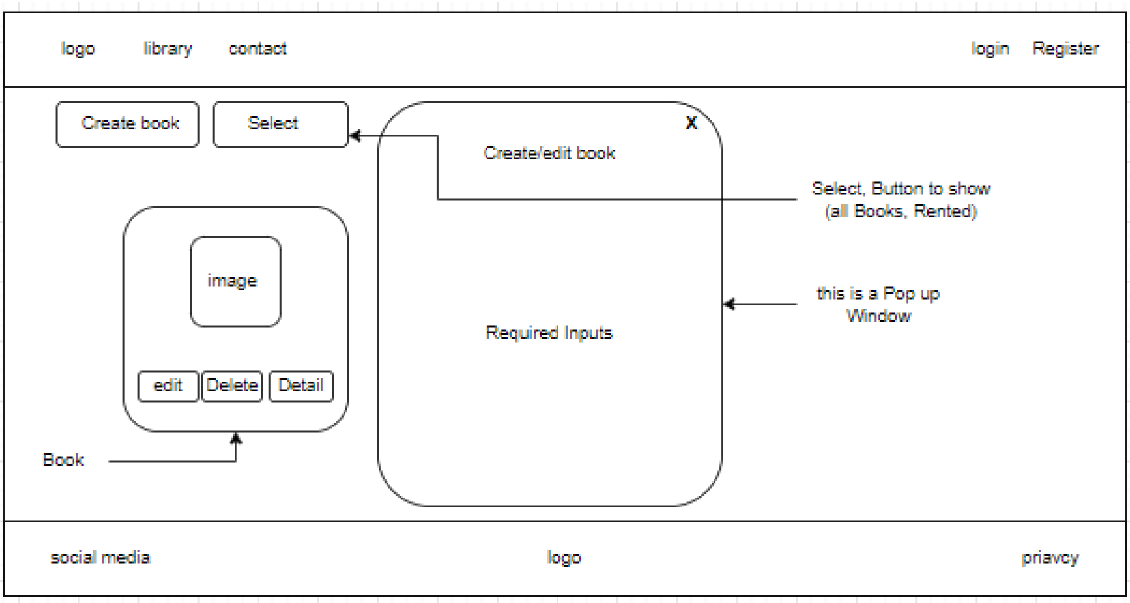
Renting Interface





Admin Pages: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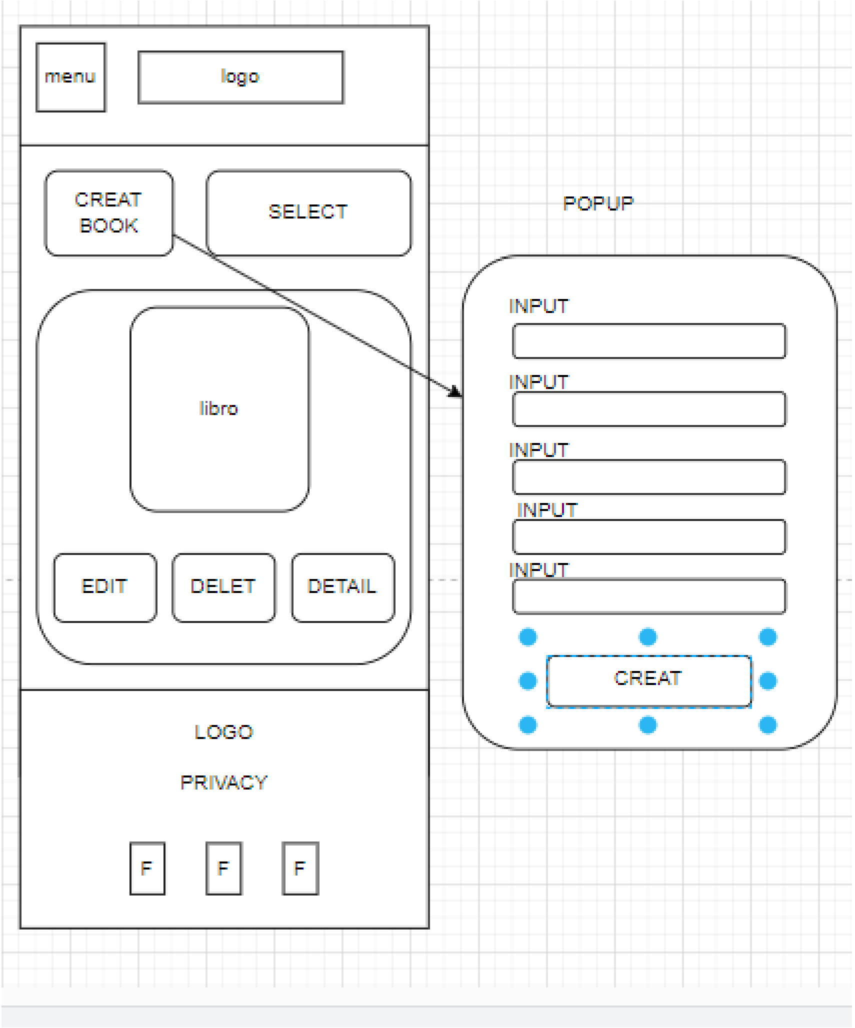
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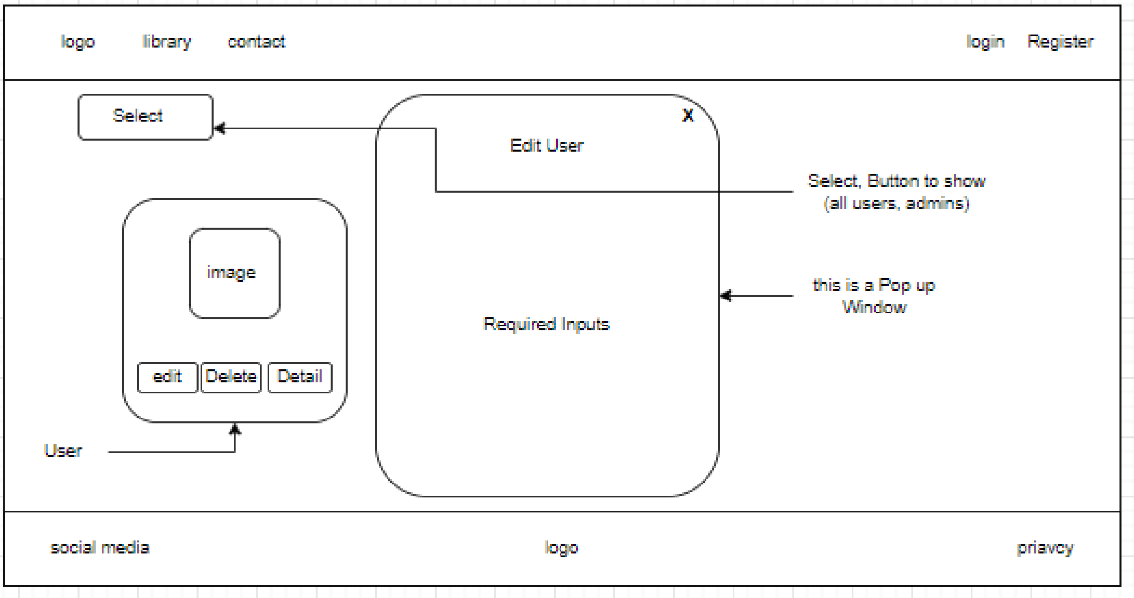
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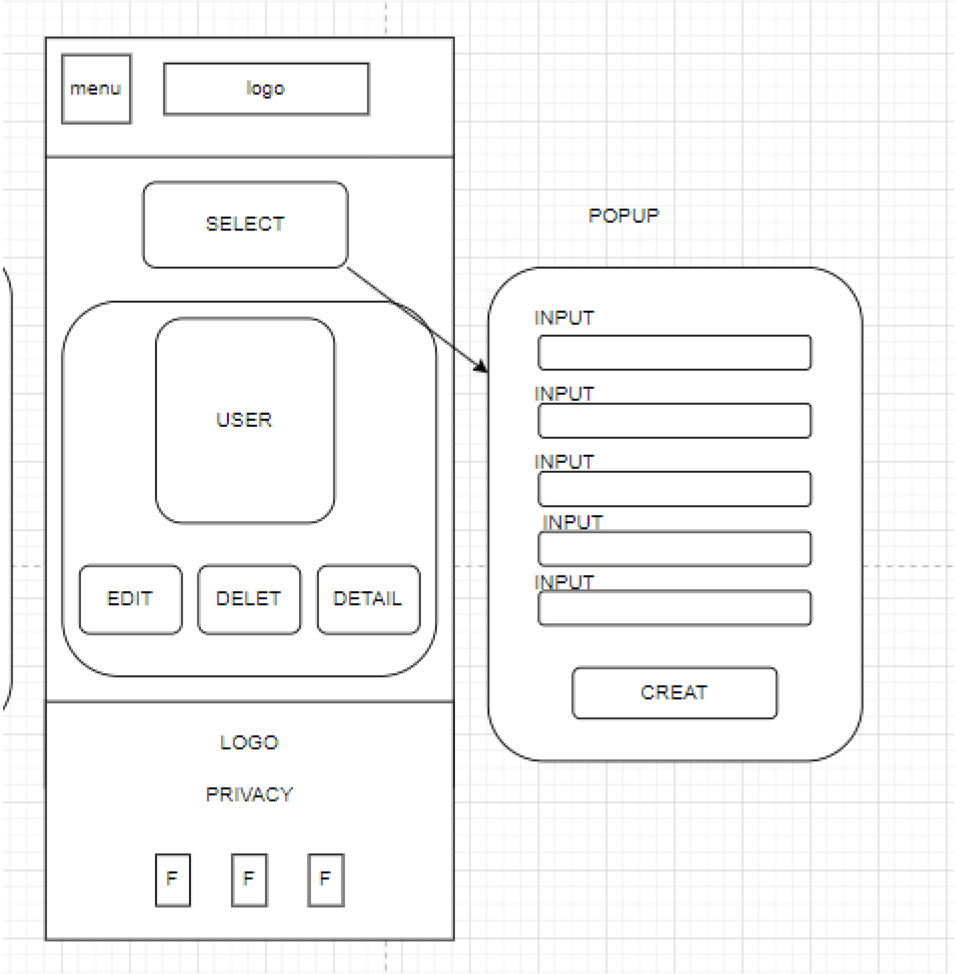
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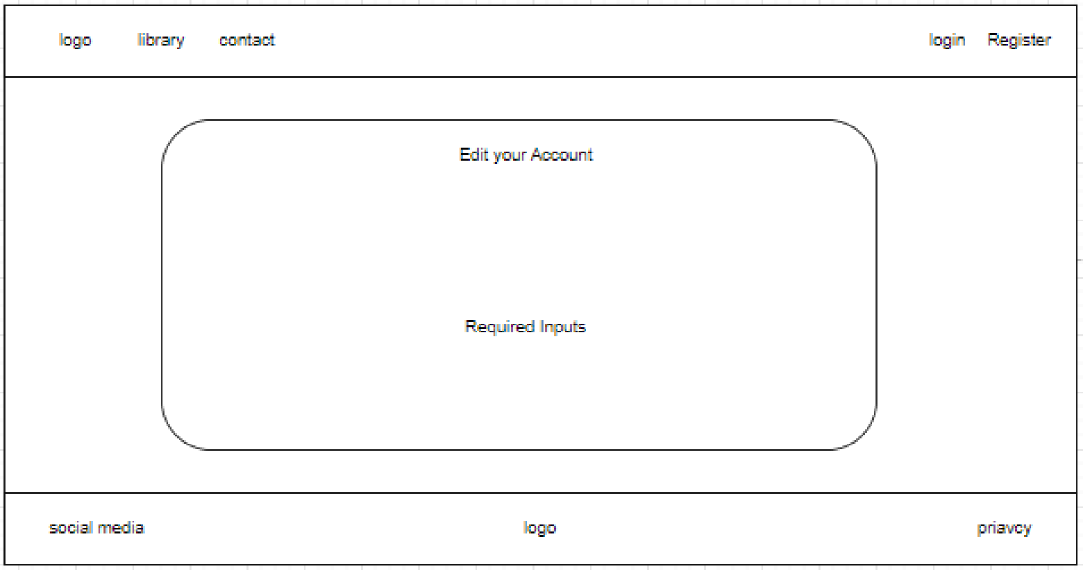
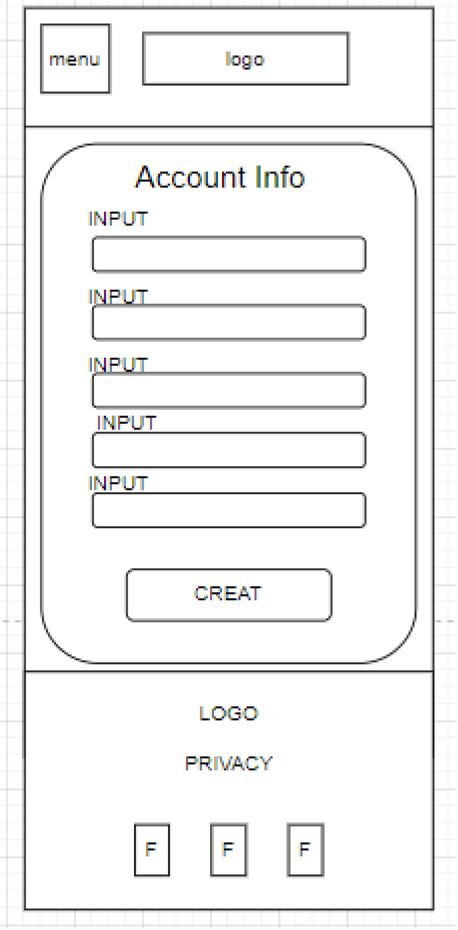
Account Management:





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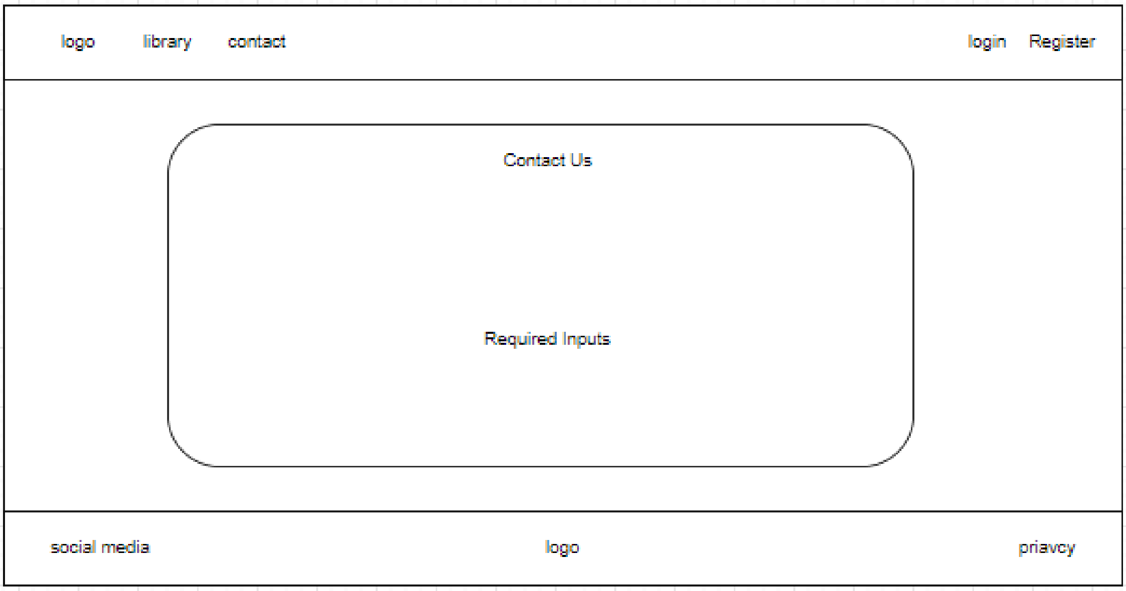
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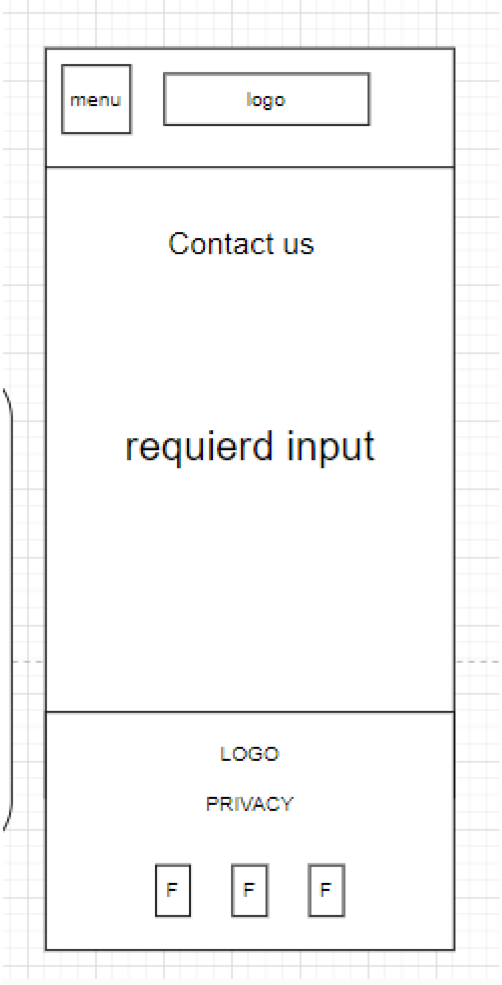
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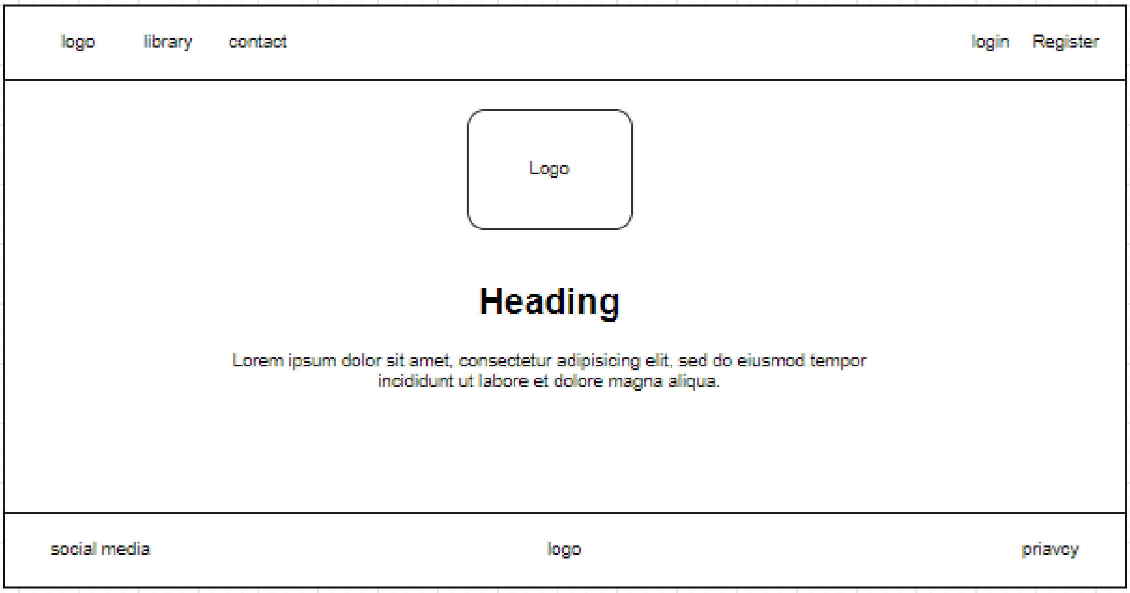
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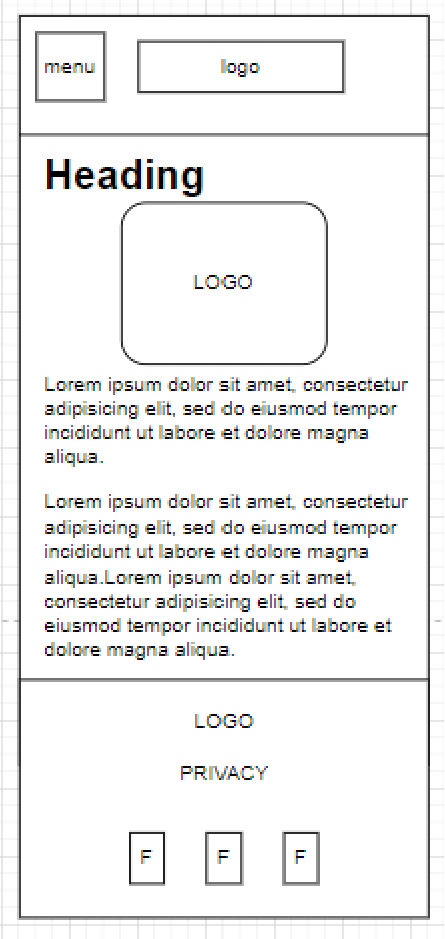
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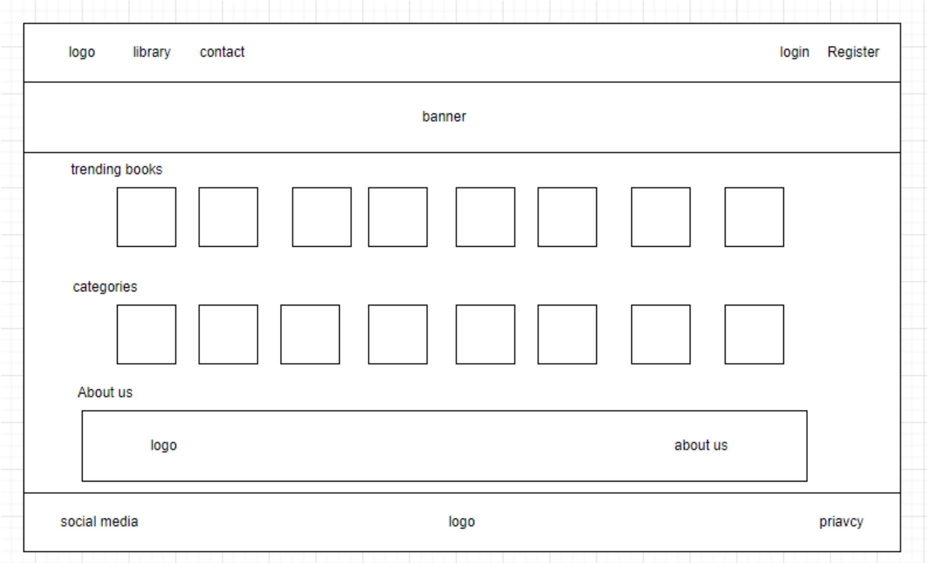
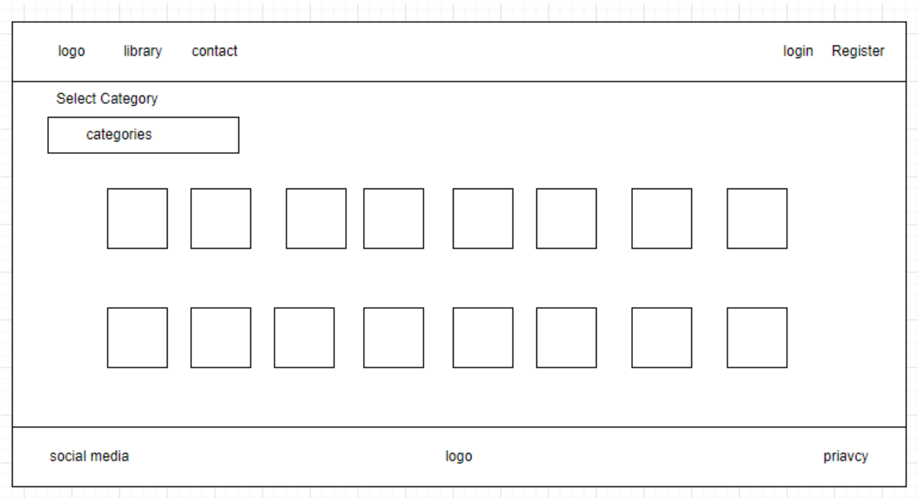
5.2 Application Flow

Library Page:





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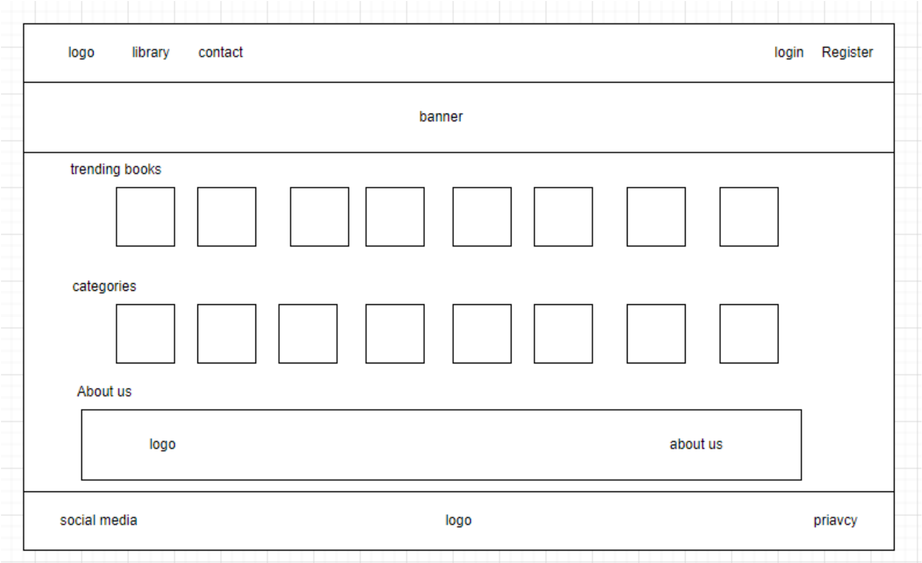
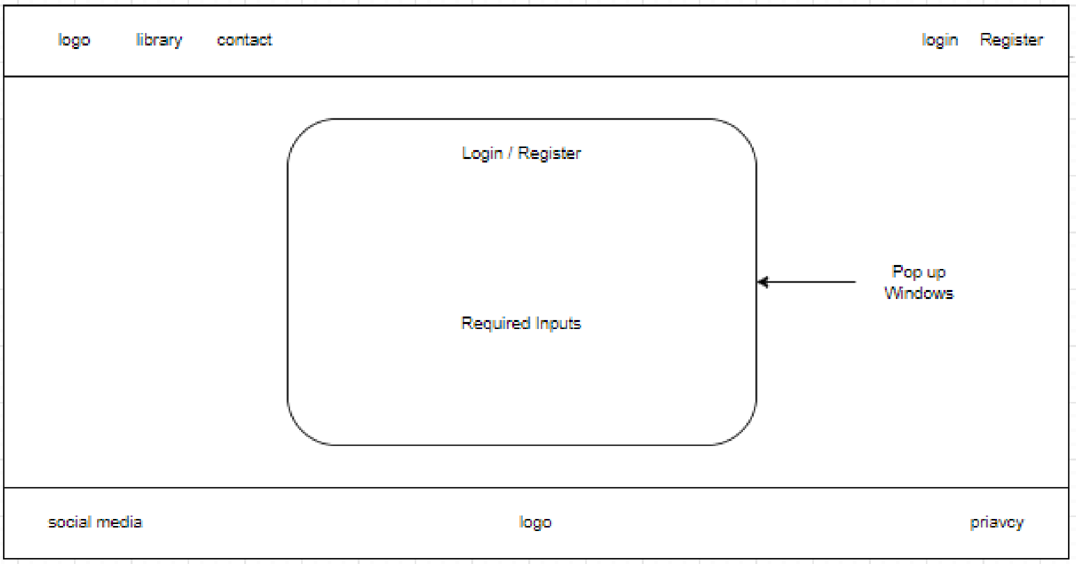
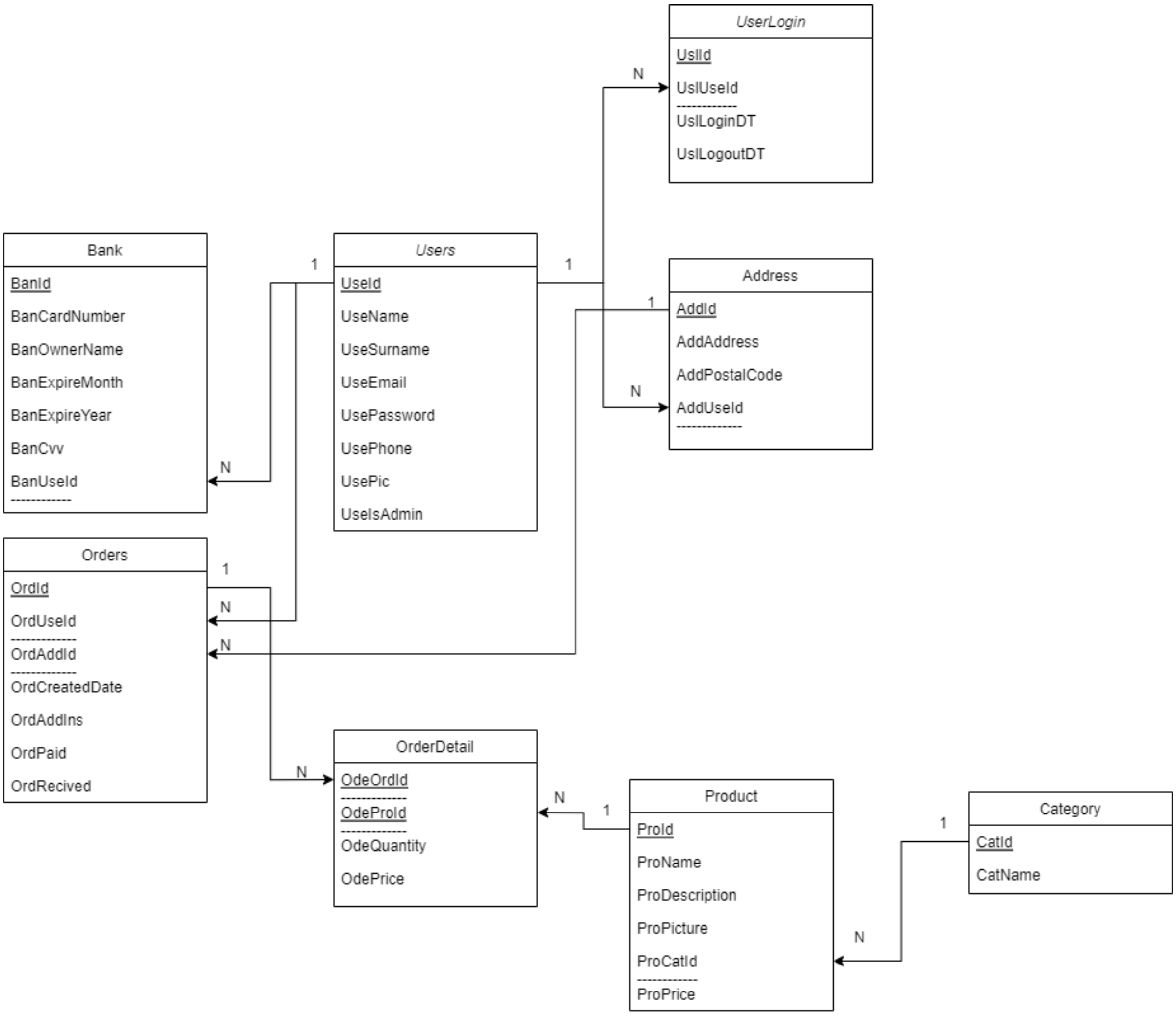


Login Register:



5.3 System design



```
Users(UseId, UseName, UseSurname, UseEmail, UsePassword, UsePhone, UsePic, UseIsAdmin)

 Bank(BanId, BanCardNumber, BanOwnerName, BanExpireMonth, BanExpireYear, BanCvv, BanUseId)
                                                                                 --------

Address(AddId, AddAddress, AddPostalCode, AddUseId)
                                          ---------
Category(CatId, CatName)

Product(ProId, ProName, ProPicture, ProDescription, ProCatId, ProPrice)
                                                    --------

Orders(OrdId, OrdUseId, OrdAddId, OrdCreatedDate, OrdPaid, OrdRecived)
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OrderDetail(OdeOrdId, OdeProId, OdeQuantity, OdePrice,)
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UserLogin(UslId, UslUseId, UslLoginDT, UslLogoutDT,)
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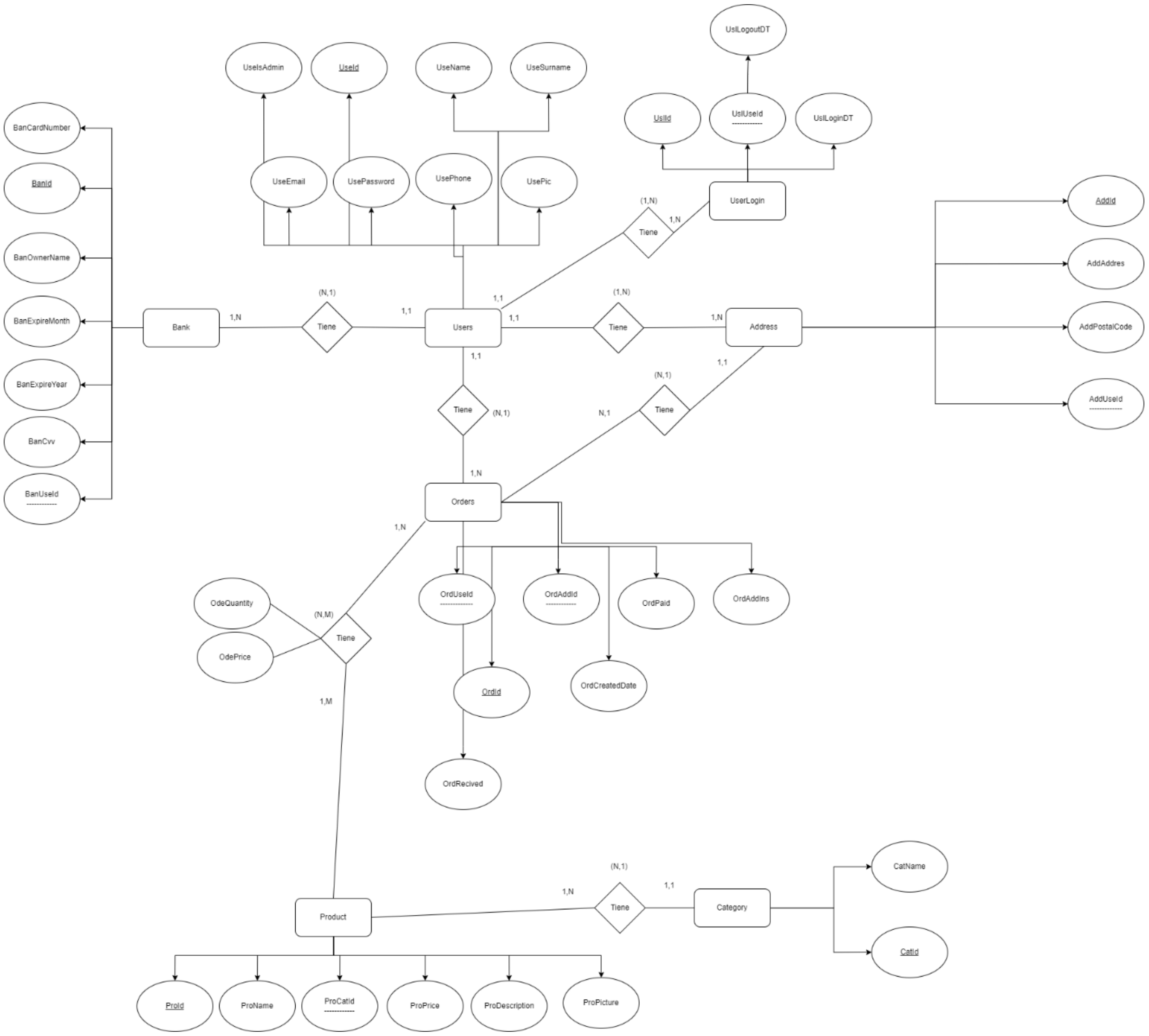

6 Final Result

Creating an online library using Laravel framework can be a challenging but rewarding project that provides many benefits for users and developers alike. By carefully considering the design and implementation of your application, you can create a high-quality, scalable, and user-friendly library that meets the needs of your target audience.

7 Conclusions

In summary, creating an online library using Laravel framework is a great project for developers. It can help create a user-friendly, scalable, and accessible application. To make a successful library

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[3] Displaying Bitmaps Efficiently. http://developer.android.com/training/displaying-bitmaps/index.html. [Consulta: 5 de Maig de 2015].