

Universidade do Minho

UNIVERSITY OF MINHO

Read2Be - Frontend Report

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Feb 2021 - Jun 2021

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Chapter 1

Introduction

1.1 Context

With knowledge of websites like **myanimelist** and **Goodreads**, as well as the **TV Time** application, a desire to implement an app or web app that would allow users to mark which books they want to read, which ones they have already read, among other categories, emerged in 2020.

The goal was to create a platform that would combine the functionalities of **myanimelist**, the existing books on **Goodreads**, and the simplicity of the **TV Time** interface.

The LEI project presented an excellent opportunity to accomplish this under the supervision of a professor, providing us with the chance to learn new technologies to achieve the desired objective and apply the knowledge we have acquired in our master's profiles.

With less than a semester to complete the project and limited knowledge of some of the technologies involved, we had to analyze the development progress and set realistic goals.

1.2 Used Technology

To develop this project, the decision was to create a webapp with a Frontend + Backend architecture.

- The backend was implemented using Node.js along with the Express.js framework to build the REST API;
- The frontend was implemented using Vue.js, using Vuetify components;
- As part of this architecture, a dedicated server was set up to calculate book recommendation models;
- The server was developed using Python with the Flask-RESTful library;
- The chosen database was MongoDB, which directly communicated with the backend and the recommender system.

Chapter 2

Objectives

The following objectives were deemed necessary for an initial phase, allowing users to utilize all the main services of the basic idea (creating a platform to manage books, similar to myanimelist and TV Time):

- Allowing users to navigate a collection of books, find desired books, and discover new recommendations suggested by the system;
- Building a personal profile of books marked by the user;
- Providing an extensive library of books;
- Allowing users to add books they have read, want to read, are currently reading, or have abandoned to their profile;
- Enabling users to make connections with other users;
- Displaying books with their information and providing recommendations for similar books;
- Offering recommendations for books that the user may like;
- Listing books by their authors and genres.

Chapter 3

Frontend

3.1 Mockups

Initially, basic mockups were created in Adobe XD to test how we wanted the components to be interconnected. As we will see in the following sections, these mockups evolved visually in different ways, but with very similar interactions.

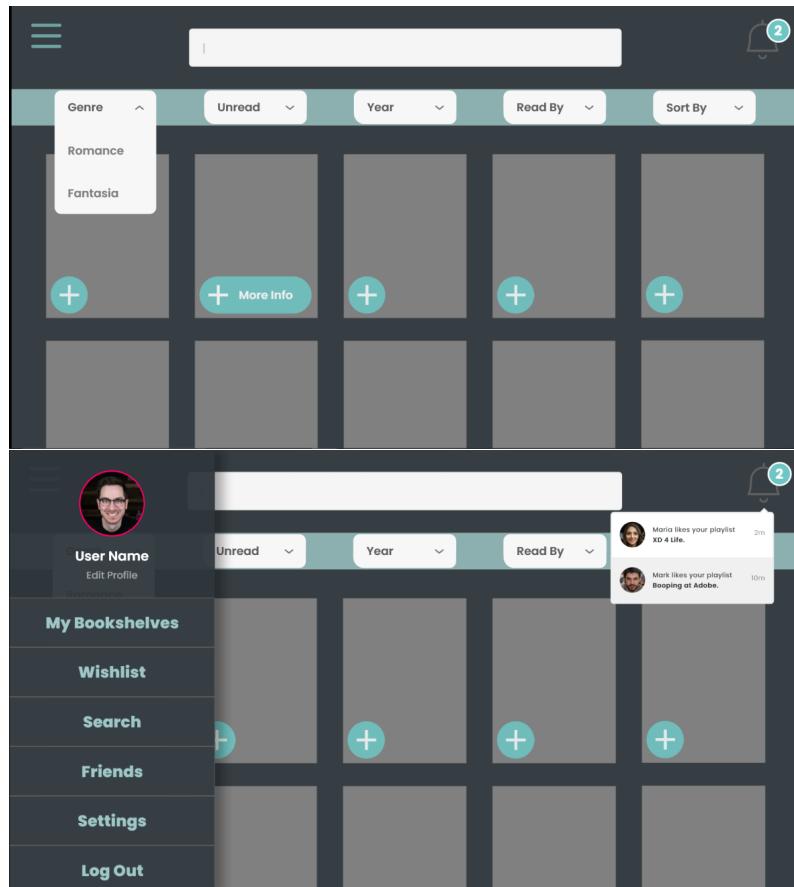


Figure 3.1: Mockups

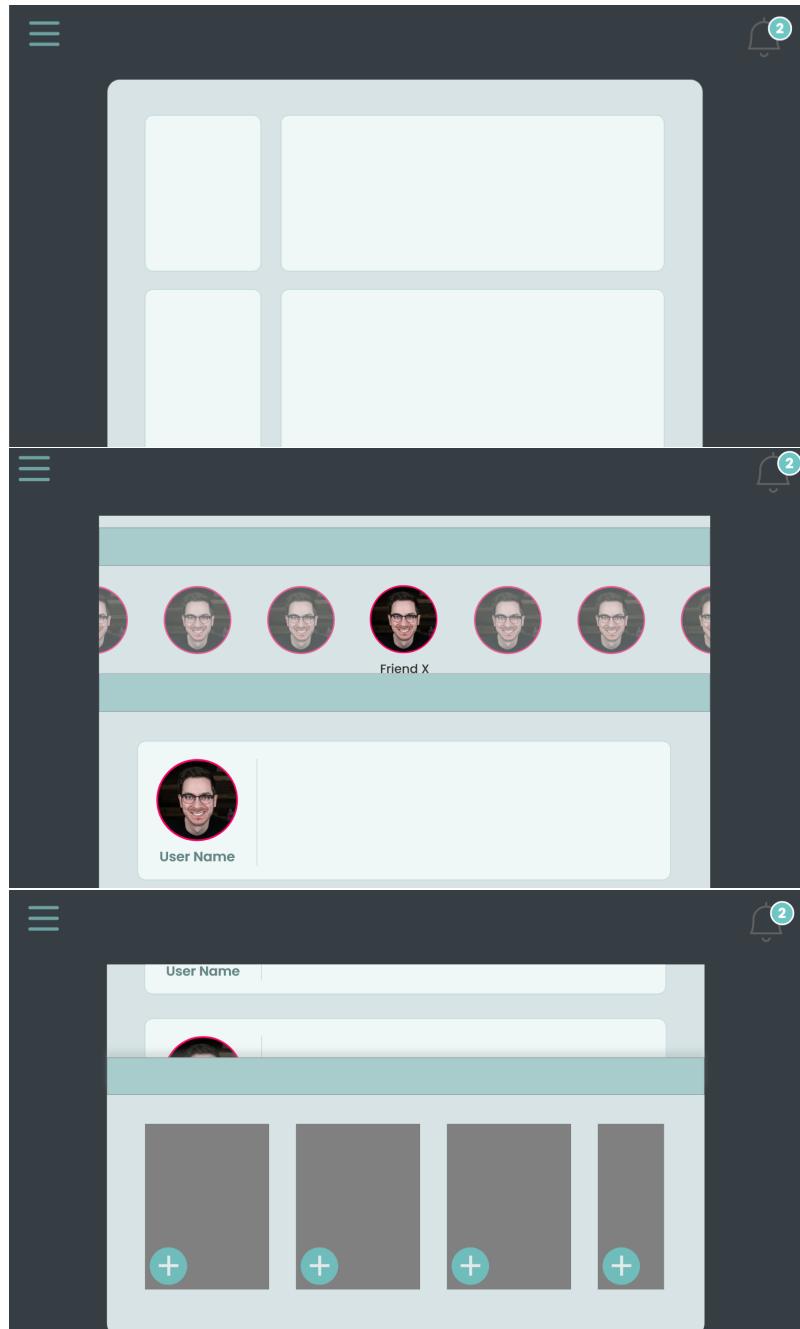


Figure 3.2: Mockups

3.1.1 Finished Webapp

Here are screenshots and details of the finished webapp. To demonstrate the pages, two test accounts will be used: one with friends, books and recommendations (**a83840**), and one that has none of those (**helloworld**).

Login & Register

This is the first page everyone sees when entering the webapp. In this page, anyone can create a new account, and registered users can login into their accounts.

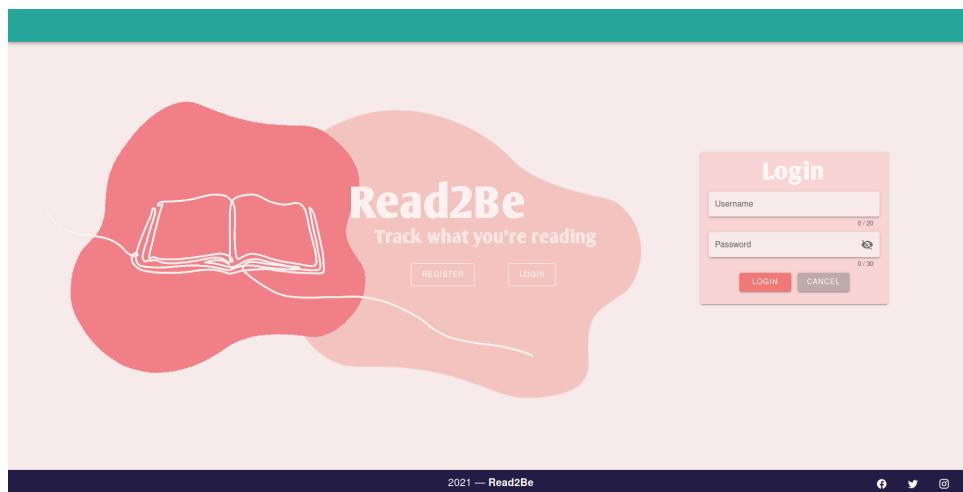


Figure 3.3: Login Page

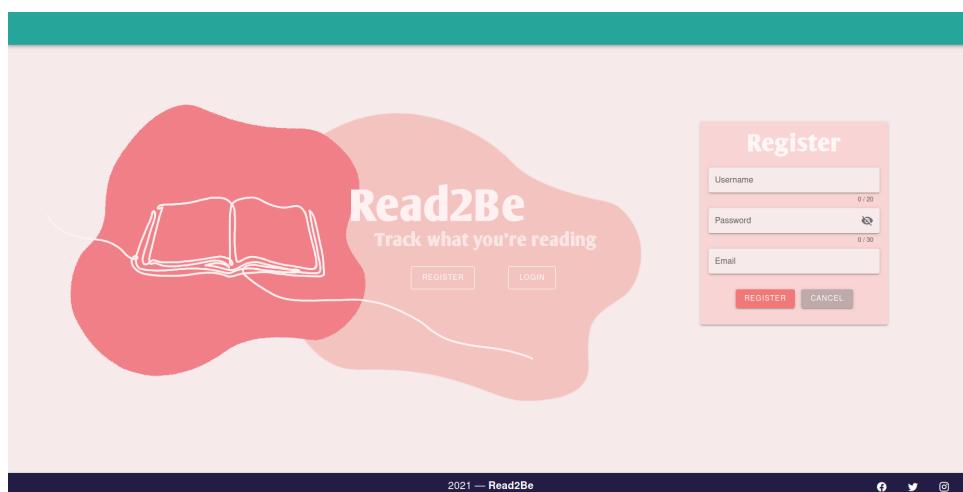


Figure 3.4: Register Page

Home Page

When logged in, the user is redirected to the home page, where they'll find recommendations after using the webapp for some time. At first, a new user will have little to do in this page, since books need to be added and rated to create recommendations. In that case, the following will be visible:

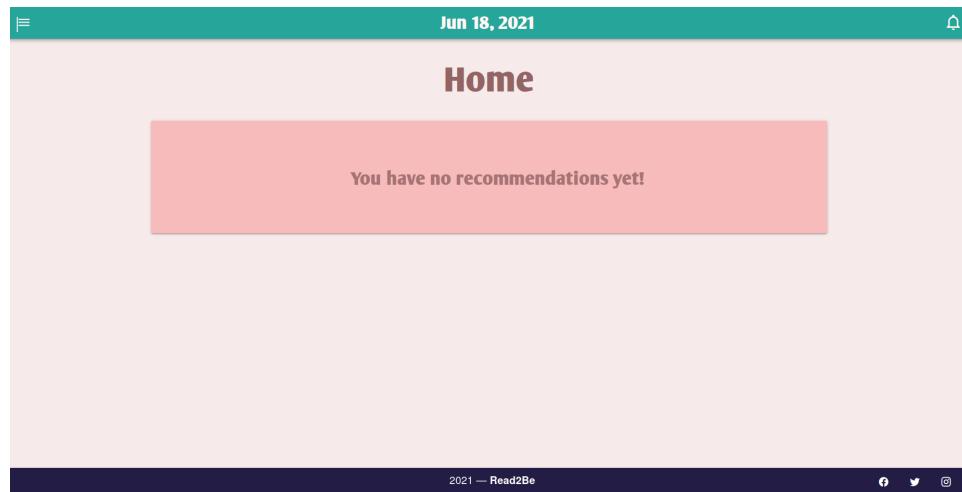


Figure 3.5: Home page with no recommendations

When the user had added and rated books to their collection, the recommendations will appear:

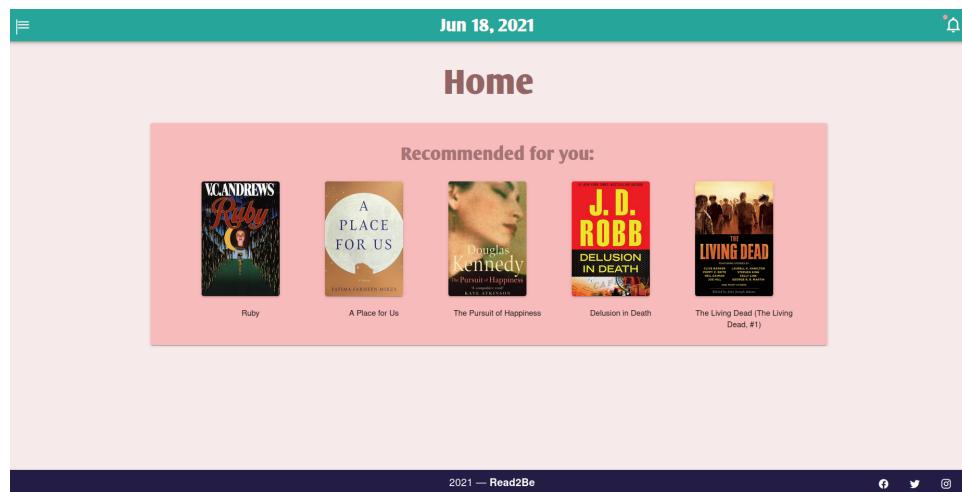


Figure 3.6: Home page with recommendations

Notifications

In the top bar, users can find the button to open the menu and the notifications button. The notifications button is used for users to view friend requests and it appears with a different symbol if there are notifications:

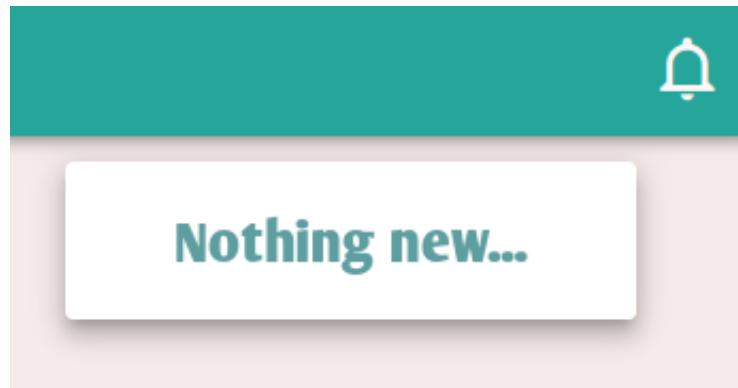


Figure 3.7: Empty Notifications

When there are notifications, the user can choose to accept or decline the request or view the profile of the user in question before making a decision:

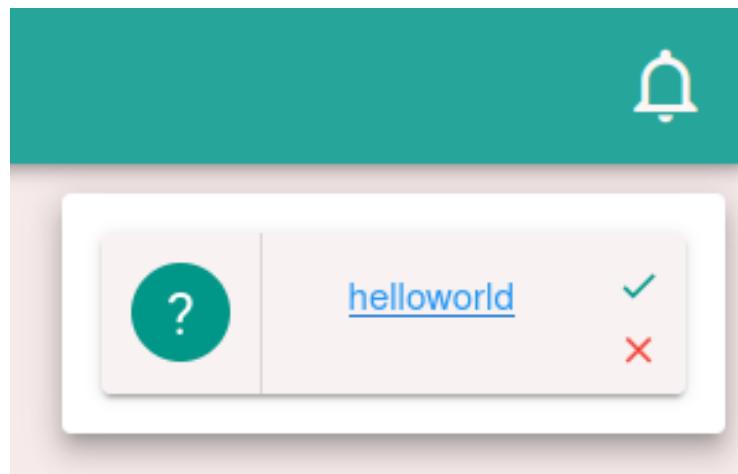


Figure 3.8: Notifications with request

Side Menu

The side menu consists of three main sections, which are:

- **User:** Users can see their username and email here, and they can click on their avatar to access their own page.
- **Pages:** This section provides users with access to all pages that are visible to them.
- **Account:** In this section, users can access their account information or log out.

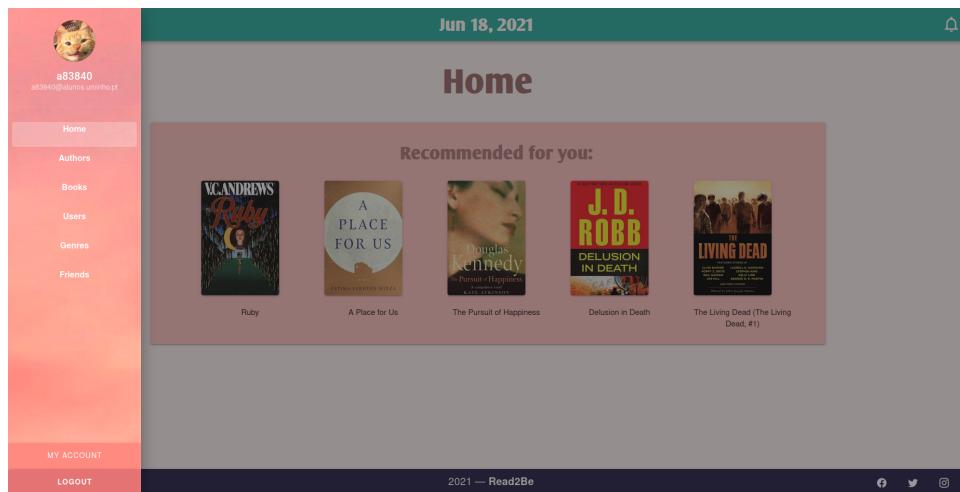


Figure 3.9: Side Menu - Admin Permissions

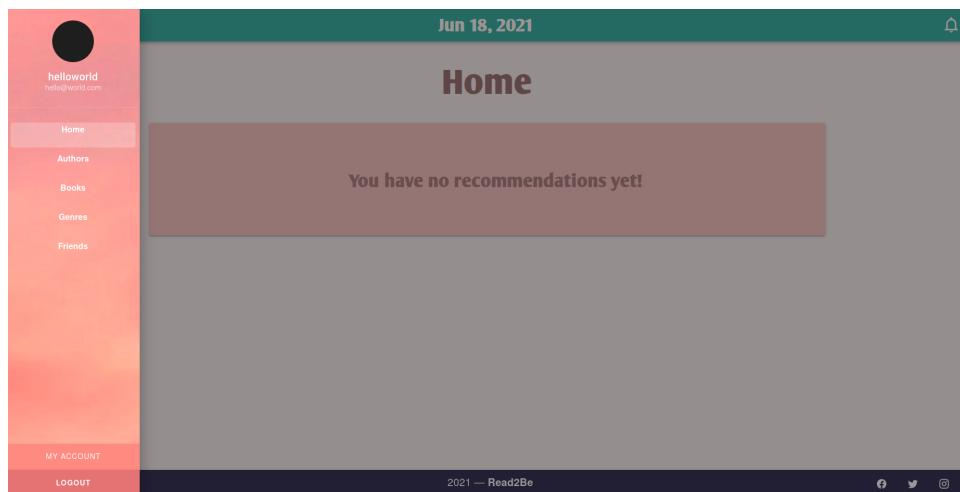


Figure 3.10: Side Menu - User Permissions

Alerts

An alert shows up in the bottom right corner of the page when some information needs to be shown to the user (either success or failure of an event):

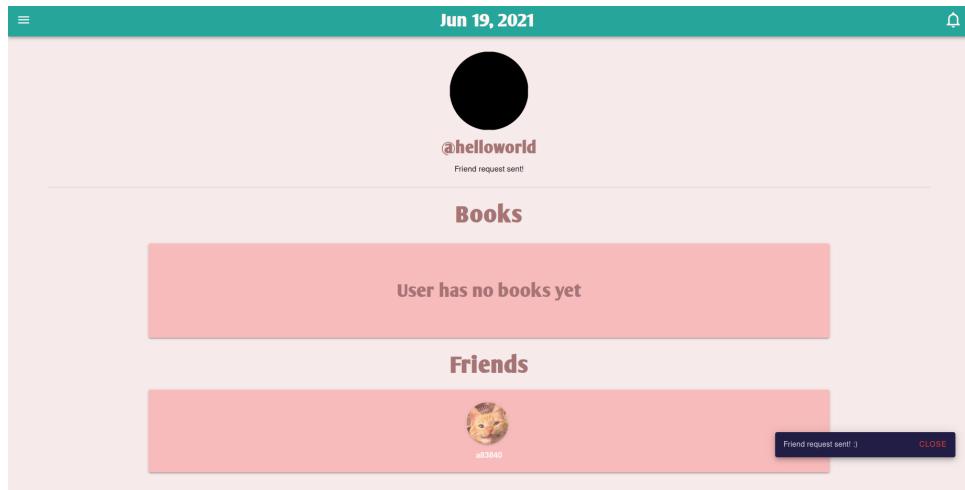


Figure 3.11: Success alert after sending a friend request

Footer

The name and year of creation of the project are shown in the footer, as well as links to the project's social media:



Figure 3.12: Footer

Author's Page

In the author's page, the user can search for the name of an author, or check all the authors in the database:

The screenshot shows a web application interface for managing authors. At the top, a green header bar displays the date "Jun 18, 2021". Below it, a pink header area contains the title "Authors" and a search bar with the placeholder "Search" and a magnifying glass icon. The main content area is a table with a light gray background, listing authors in rows. The columns are labeled "Author" and contain names such as Kate Brian, Julian Peploe, Lincoln Child, Douglas Preston, Albert Uderzo, Anthea Bell, Derek Hockridge, A.A. Milne, Ernest H. Shepard, Jim Butcher, Karen Kingsbury, and Greg Iles. At the bottom of the table, there is a navigation bar with icons for back, forward, and search, followed by page numbers 1 through 2222.

Figure 3.13: Authors Page

When clicking one of the authors, the user will be redirected to that author's specific page:

The screenshot shows a web application interface for Stephen King's books. At the top, a green header bar displays the date "Jun 19, 2021". Below it, a pink header area contains the title "Stephen King's Books" and the text "103 books". The main content area displays a grid of book covers. The first row includes "Cycle of the Werewolf", "The Improbable Adventures of...", "The Dark Tower, Books 1-3: The...", "End of Watch", "Apt. Pupil", and "The Bazaar of Bad Dreams". The second row includes "Tales of the Cthulhu Mythos", "Blaze", "The Regulators", "The Stand", "Just After Sunset", and "The Living Dead (The Living Dead, #1)". Below the grid, there are two small sections: "stephen KING" and "STEPHEN KING".

Figure 3.14: Author's Page

Book's Page

In this page, the user can see all the books in the database, and apply search filters, or search by titles and keywords:

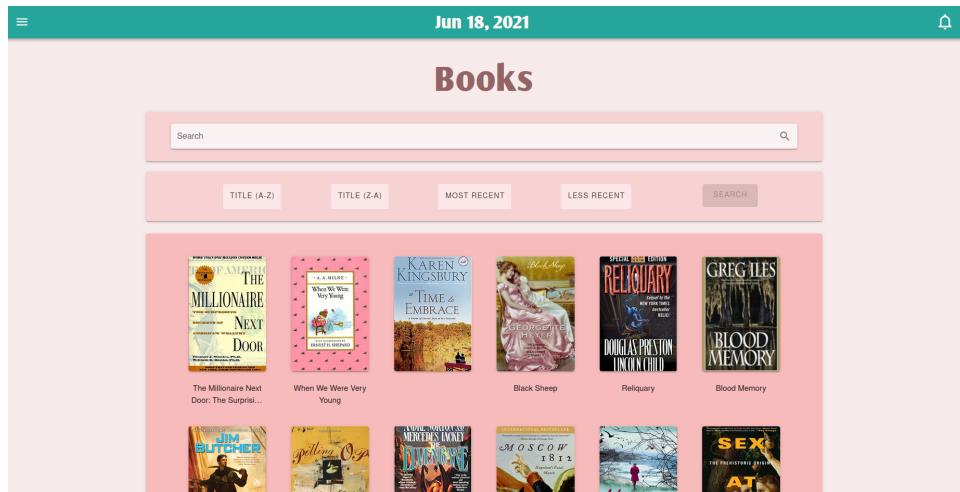


Figure 3.15: Books Page

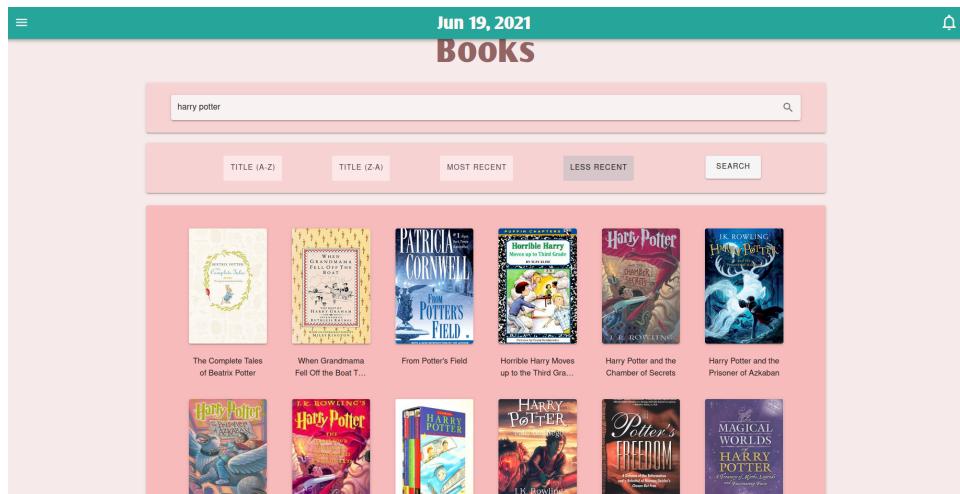


Figure 3.16: Books Page after search

Whenever the user wants to see more details of a book, update its reading status or rating, or even see recommendations based on said book, they can click in that book to be redirected to the book's page:

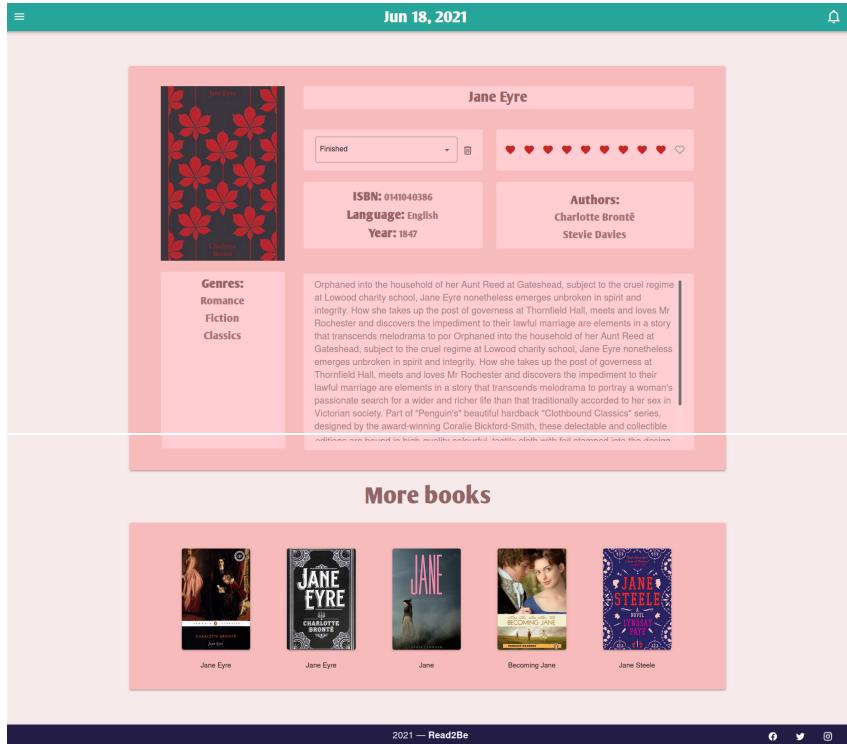


Figure 3.17: Book's Page

Users Page

This page was only visible to users with admin permissions. It was used for testing purposes, so we could click on each existing user and see their details.

ID	User	Name	Email
60b2011c1e4877bda3ba281	organicger545	Selve Asnerud	selve.asnerud@example.com
60b2011c1e4877bda3ba282	lazyzebra321	Eline Lederer	eline.lederer@example.com
60b2011c1e4877bda3ba283	purplepig440	Rosa Mora	rosa.mora@example.com
60b2011c1e4877bda3ba285	angrypig950	Avelino da Luz	avelino.daluz@example.com
60b2011c1e4877bda3ba286	orangeelephant760	Kelly Welch	kelly.welch@example.com
60b2011c1e4877bda3ba284	purplemeerkat55	Elena Hernandez	elena.hernandez@example.com
60b2011c1e4877bda3ba288	brownladybug778	Rosemarie Brill	rosemarie.brill@example.com
60b2011c1e4877bda3ba28d	lazypeacock669	Inaya Breland	inaya.breland@example.com
60b2011c1e4877bda3ba28b	smalladaby680	Rocio Hidalgo	rocio.hidalgo@example.com
60b2011c1e4877bda3ba28a	silvergoose406	Leandre Michel	leandre.michel@example.com
60b2011c1e4877bda3ba289	purplelizard991	Hugo Herrera	hugo.herrera@example.com
60b2011c1e4877bda3ba287	silverduck741	Margarita Torres	margarita.torres@example.com

Figure 3.18: Users Page

Genre's Page

In the genres page, the user can search their preferred genre, as well as checking all the genres in the database:

The screenshot shows a web application interface for managing genres. At the top, a green header bar displays the date "Jun 18, 2021". Below the header, the word "Genres" is centered in a large, bold, dark red font. Underneath "Genres", there is a search bar with a placeholder "Search" and a magnifying glass icon. To the left of the search bar is a sidebar titled "Genre" containing a list of genre names: Unknown, Horror, Economics, Romance, Nonfiction, Thriller, Finance, Business, Currency, Audiobook, Self Help, Psychology, Historical, and Mystery. The background of the main content area is light pink.

Figure 3.19: Genres Page

When clicking in one of them, the user will be redirected to a page with all the books included in that genre:

The screenshot shows a web application interface for displaying books in the Horror genre. At the top, a green header bar displays the date "Jun 19, 2021". Below the header, the title "Horror Books" is centered in a dark red font. The main content area displays a grid of book covers for various horror titles. The books shown are: Reliquary by Douglas Preston and Lincoln Child; Cycle of the Werewolf by Keri Maniscalco; The Descent by Jeff Long; Hell's Heroes by Darren Shan; Communion by Whitley Strieber; Suffer the Children by John Saul; The Last Vampire by Christopher Pike; The Bad Place by Dean Koontz; Sharp Teeth by Michael J. Sullivan; Dark Matter by Michelle Paver; Game by Barry Lyga; and Twice-Told Tales by Nathaniel Hawthorne. At the bottom of the page, there is a navigation bar with page numbers from 1 to 153, with the current page highlighted in blue.

Figure 3.20: Genre's Page

User's Friends Page

Here, the user can see their friends (if there are any), and they can also search for a user by their username. When doing that search, the user will be redirected to that user's page. Otherwise, an alert will show that the user does not exist.

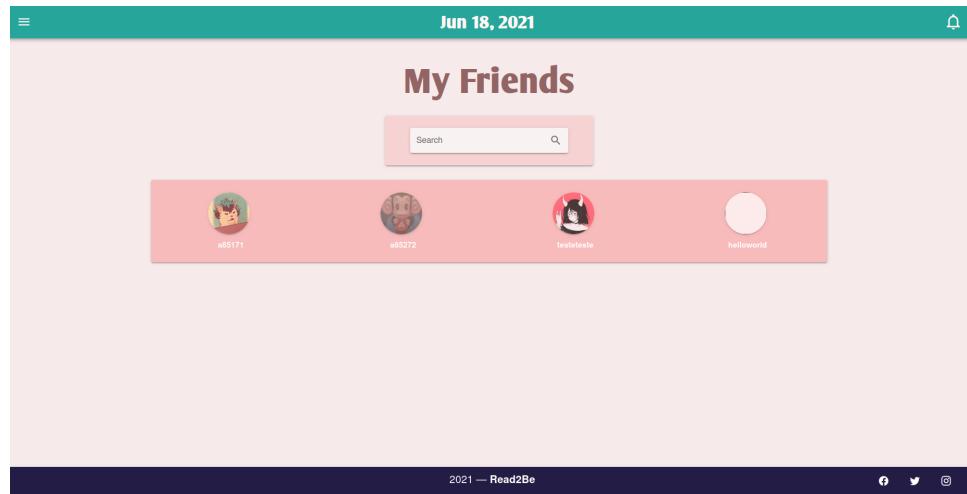


Figure 3.21: User's Friends Page when friends exist

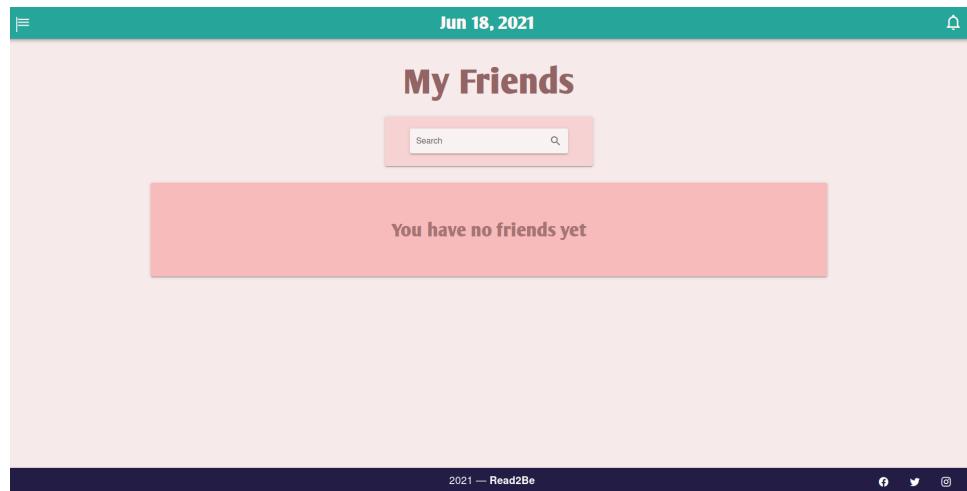


Figure 3.22: User's Friends Page when friends do not exist yet

Another User's Page

Esta página serve para mostrar as informações públicas (username e avatar), livros, e amigos de um utilizador: When visiting another user's page, their information (username and avatar), books, and friends will be shown:

The screenshot shows a user profile page for the username '@aa83840'. At the top, there is a teal header bar with the date 'Jun 18, 2021' and a bell icon. Below the header is a circular orange cat avatar and the username '@aa83840'. A section titled 'Books' displays six book covers: 'Jane Eyre', 'Pride and Prejudice', 'They Both Die at the End', 'Persuasion', 'Emma', and 'Heartless'. Below this is another copy of 'They Both Die at the End' by Adam Silvera. A section titled 'Friends' shows four user profiles: 'a65171', 'a65272', 'testeteste', and 'helloworld'. At the bottom, a dark footer bar includes the text '2021 — Read2Be' and social media icons for Facebook, Twitter, and Instagram.

Figure 3.23: Another User's Page

The screenshot shows a user profile page for the username '@helloworld'. The layout is identical to Figure 3.23, featuring a teal header bar with the date 'Jun 18, 2021' and a bell icon. It includes a black placeholder circle for the user's profile picture and the username '@helloworld'. A 'Books' section contains a pink box with the text 'User has no books yet'. A 'Friends' section contains a pink box with the text 'User has no friends yet'. The footer bar at the bottom is dark and includes the text '2021 — Read2Be' and social media icons.

Figure 3.24: Another User's Page with no books and no friends

When viewing another user's page, there is also the possibility to send a friend request, or remove a friendship when it already exists:

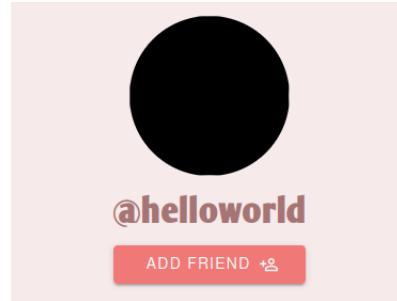


Figure 3.25: Add friend button

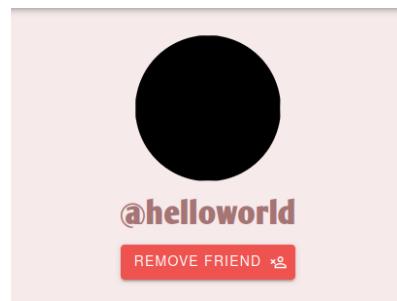


Figure 3.26: Remove friend button

User's Account Page

The user can change their avatar, nickname, or email in their account page:

A screenshot of the 'My Account' page. At the top, the date 'Jun 18, 2021' is shown. The main title 'My Account' is centered above a circular profile picture of a cat. Below the title is a light pink form containing three input fields: 'Username:' with the value 'a83840', 'Name:' with the value 'Maria Silva' and a note '11 / 20', and 'Email:' with the value 'a83840@alunos.uminho.pt'. At the bottom of the form are 'SUBMIT' and 'CANCEL' buttons. The footer contains the text '2021 — Read2Be' and social media icons for Facebook, Twitter, and Instagram.

Figure 3.27: User's Account Page

Chapter 4

Conclusion

This project turned out to be more interesting and enriching than we could have imagined. Not only was it a project that we had previous personal interest and motivation to work on, but it also required us to learn several new technologies, something that we might have tried to avoid in a different environment.

In terms of the achieved project, our expectations were exceeded, and we were pleased with the result. Due to our limited experience in developing dynamic webapps, we initially faced difficulties completing our goals. However, despite this and encountering some challenges throughout the semester, we successfully overcame them as a group.

In conclusion, the group believed that we made the most out of the course.

4.1 Proposal for Future Work

The original idea was unrealistic, given the time constraints of the project. However, we adapted the development of this project to include the basic functionalities, with support for future modifications. Some ideas that were not implemented were:

- Bookshelf format to view books, with the option to create new shelves (each equivalent to a book collection). These collections group books and are distinguished by name and thumbnail image.
- Reading challenge page (e.g., "52 books a year" or "1 book a month") where users can choose to participate (and receive reminders and/or rewards).
- Ability to suggest a book to a friend. This could include a personal review of the book or the reason for recommending it.

4.2 Personal Conclusion

Now, in 2023, after finishing my degree and gaining some work experience, I can say there are some things I would change about the design of this project. But I can say I am really proud of the results that we reached at the time. It was my first time learning HTML, CSS, Javascript, Vue.js and Vuetify, and we had to do this in less than a semester. All of that in a short amount of time, considering we had more projects to make for different courses, was a really big achievement for me. And now, looking back at it, it really was a big part of how I found out I wanted to be a frontend developer and creative web designer, because it was really challenging to learn so much in so little time, but I enjoyed doing it so much.