Final Report
Computer Science Project COMP3900 20T1

Team: 3900capstone
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I. Overview

As a university student, one of the main concerns is purchasing textbooks every new semester. New textbooks are expensive, and only used for a semester. Therefore, many of the students prefer purchasing a second handed textbook. Currently, facebook textbook exchange group is the only place available for UNSW students to buy and sell, which is not reliable.

Our team has worked on creating a centralised platform for UNSW students to easily and securely buy second-handed textbooks. For users, in addition to purchasing textbooks, our website also provides personalised recommendations based on their major that they have provided us. For admins, we provide analytics which will help them when managing stocks.

Goal

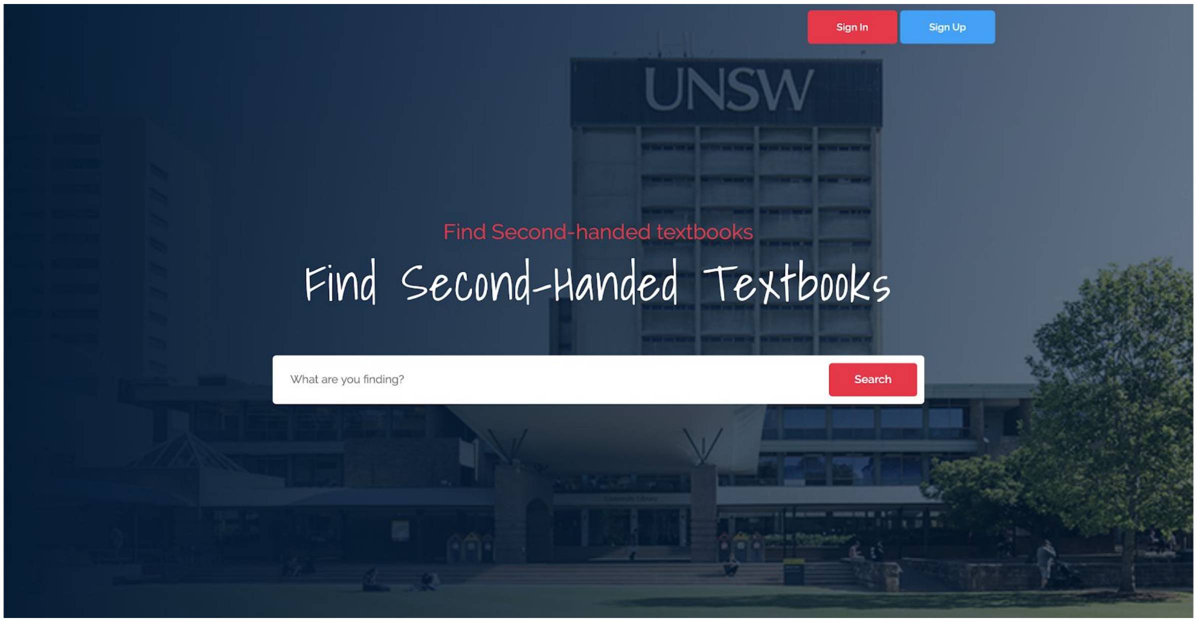
Our team's common goal is to create a second-hand book trading platform belonging to the University of New South Wales.This platform allows students to freely buy and search for second-hand books on the platform according to their own requirements, so as to quickly get useful information. The platform will also achieve maintainability, practicality, security, and aesthetics.

Design

To design the platform, we split the work to front end and back end. Firstly, for the front end, our team decided to use pure html, css and javascript and use bootstrap framework to make our website much better. Secondly, for the backend, our team decided to use Springboot, which is a Java framework. The next step is to choose the sql engine and design the tables of the database and the relationship among sql tables. Our team uses InnoDB of Mysql to be the SQL engine. Then our team needs to combine the back end and front end, which is implemented by Thymeleaf, a model engine that can be used in Springboot. After that, the programming environment needs to be set up. Our team uses Intellij IDEA to be our IDE and set the environment inside, which uses maven to manage the project.

II. Functionalities

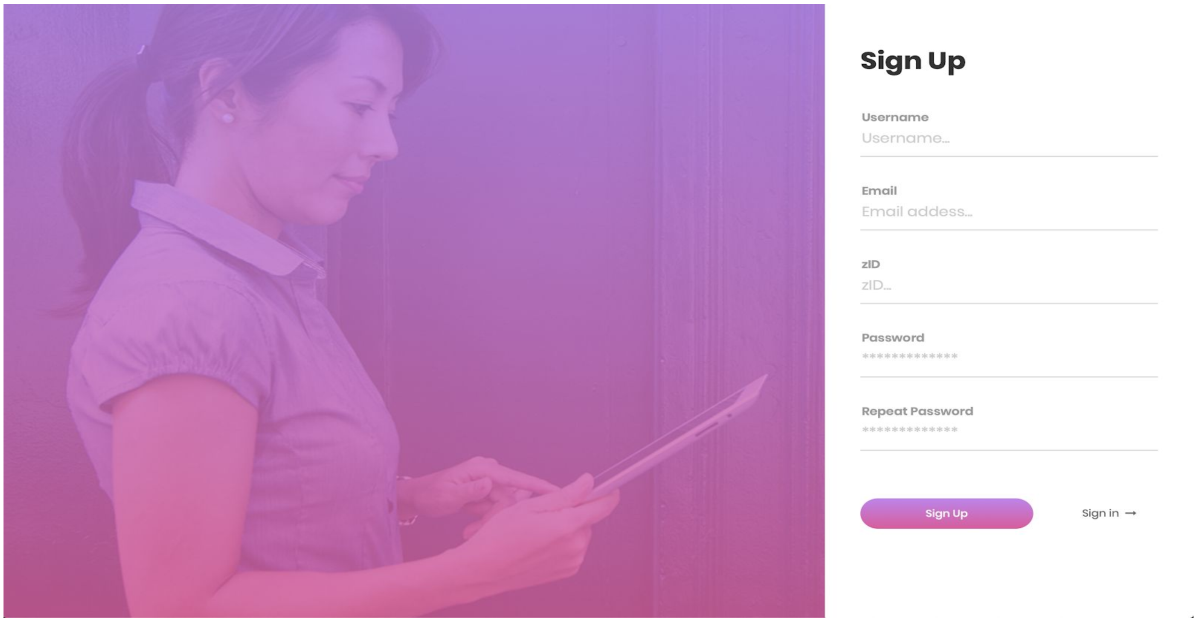
A. Homepage



This is a default page that a user will face first when they visit our website. Before the user logins(as normal user or admin), There will be no navigation bar visible nor the book recommendation. Users can login/register by using the buttons located top left of the index page.

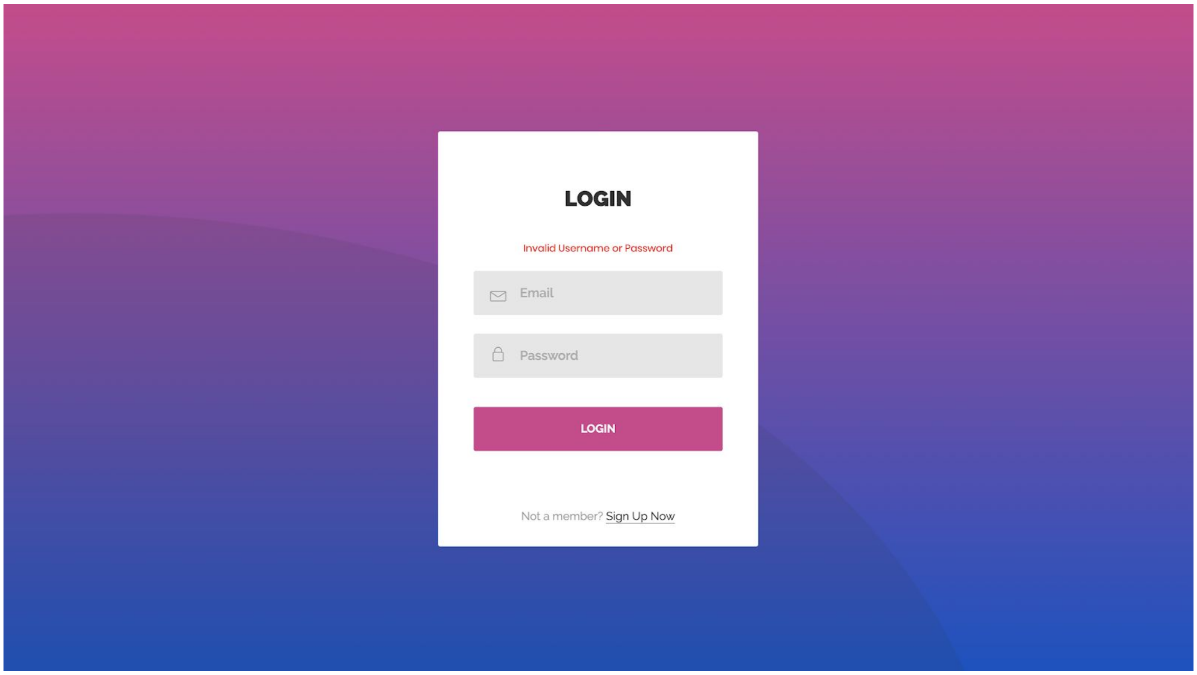
B. User Authentication

1. Registration



This is a registration page where users can register when it is their first time to use our platform. Already existing username and email cannot be used. Upon successful registration, users will be redirected to the login page.

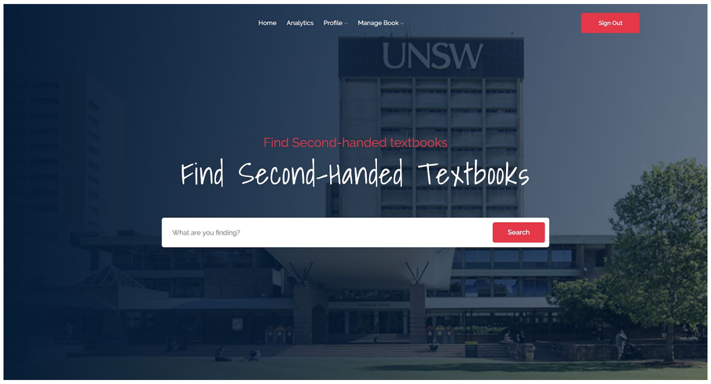
2. Login



LOGIN

Invalid Username or Password

This is a login page where users can login with their email and password. An error message will be shown for login attempts with invalid credentials. Upon successful login, users will be redirected to different main pages based on users' roles(admin/normal user).

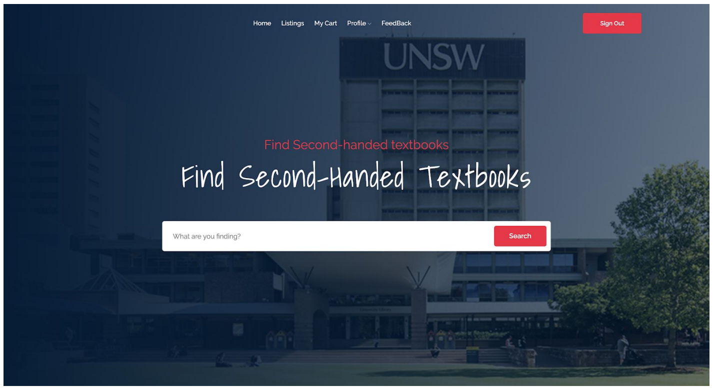


Find Second-handed textbooks

Find Second-Handed Textbooks

What are you finding?

Admin main page



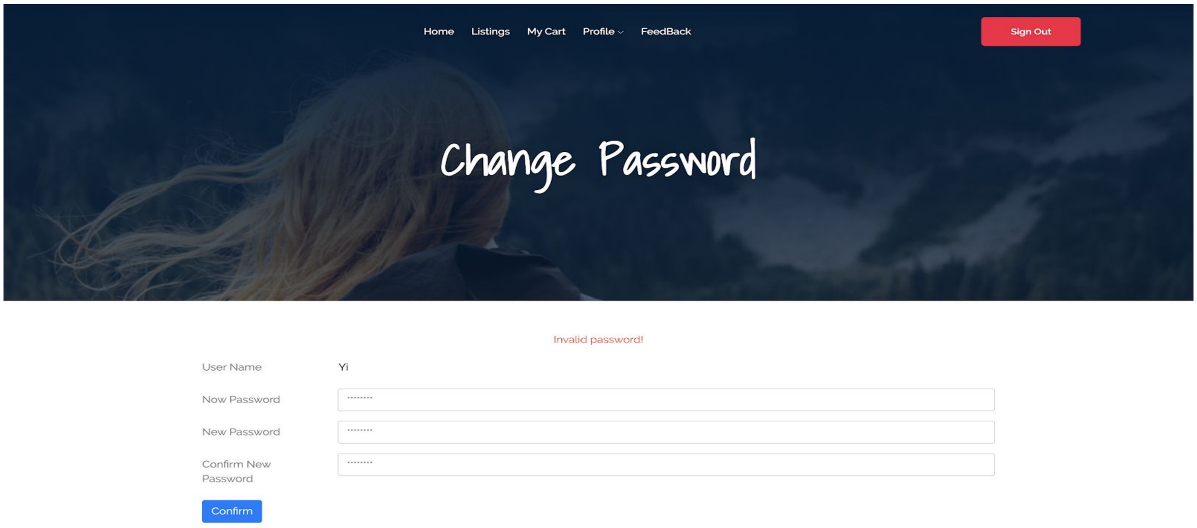
Find Second-handed textbooks

Find Second-Handed Textbooks

What are you finding?

Normal user main page

3. **Change Password/Profile**



Invalid password!

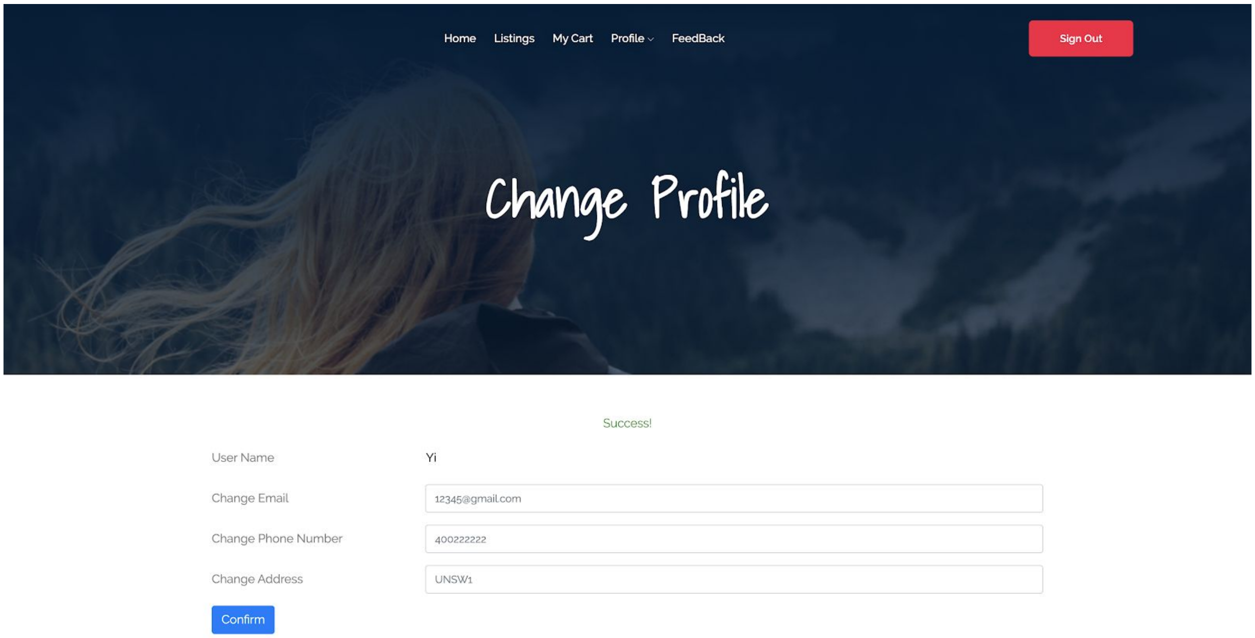
User Name Yi

Now Password ········

New Password ········

Confirm New Password ········

Users can change passwords from the “Change Password” tab. Users will be required to provide both the original password and a new one with double confirmation. If the original password is incorrect or the new passwords are not consistent, an error message will be shown. After the password is changed, users will be logged out from the website. They can login using the new password.



Success!

User Name Yi

Change Email 12345@gmail.com

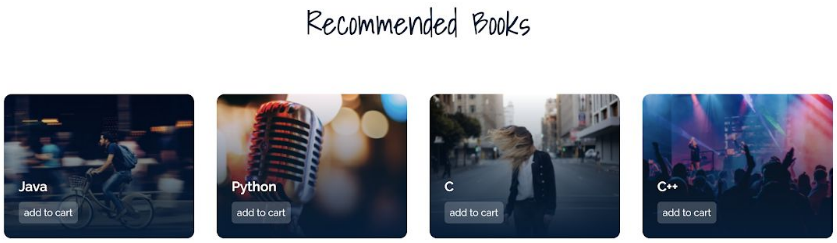
Change Phone Number 400222222

Change Address UNSW1

Users can also change their personal details from the “Update Profile” tab.

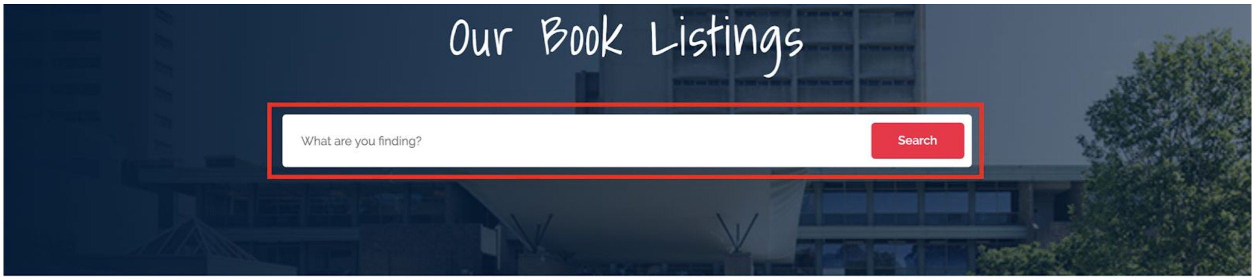
C. User

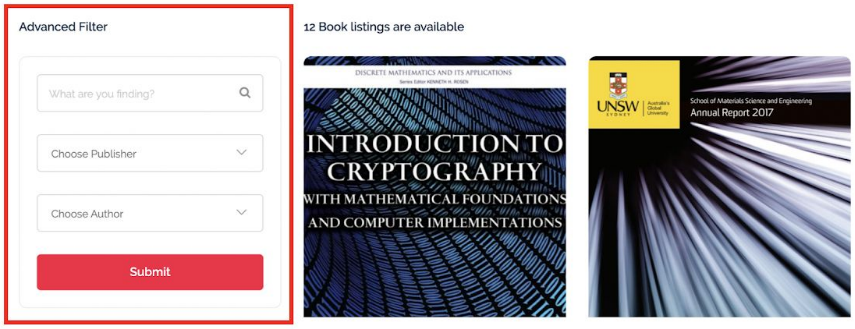
1. Recommendation



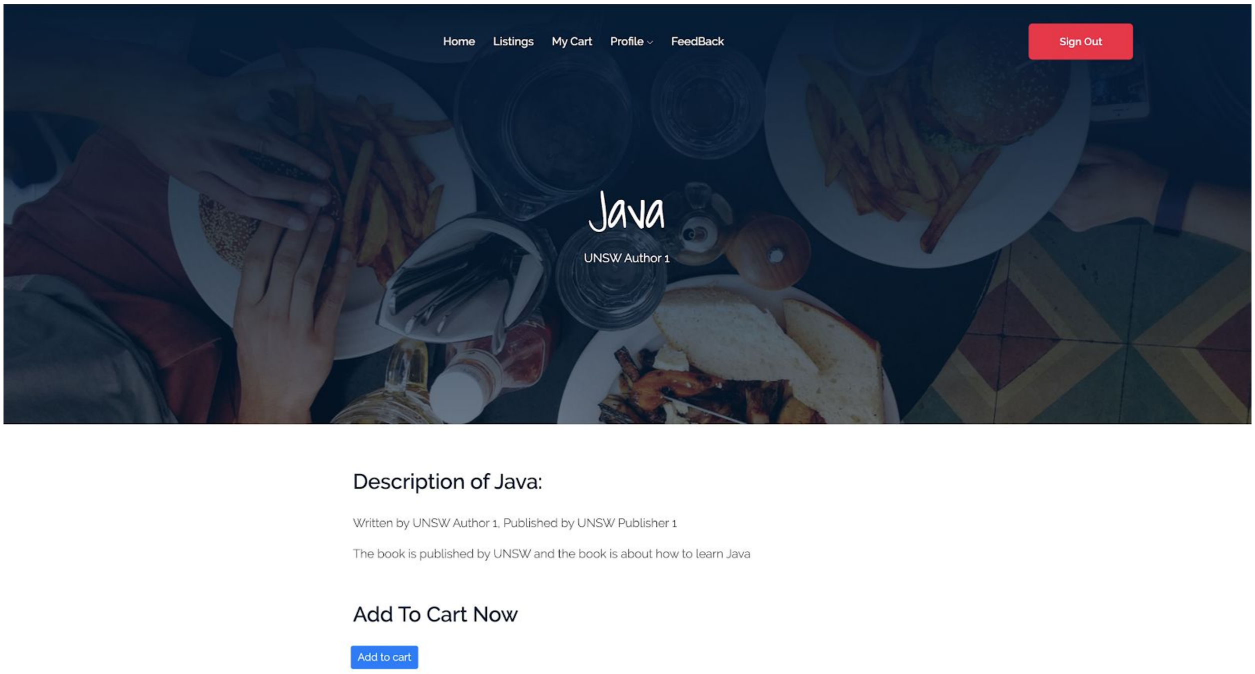
Users can view recommended books at the bottom of the main page. Users can click on the "add to cart" button. It brings the user to the book's detailed page, and adds the book to the user's cart.

2. Listing/Search/Filter




Advanced Filter
What are you finding?
Choose Publisher
Choose Author
Submit
12 Book listings are available
DISCRETE MATHEMATICS AND ITS APPLICATIONS
INTRODUCTION TO CRYPTOGRAPHY WITH MATHEMATICAL FOUNDATIONS AND COMPUTER IMPLEMENTATIONS
UNSW SYDNEY
School of Materials Science and Engineering
Annual Report 2017

Users can view all books by clicking the "Listings" tab. Users can use the keyword search or dropdown list filter to search for specific books.



Java

UNSW Author 1

Description of Java:

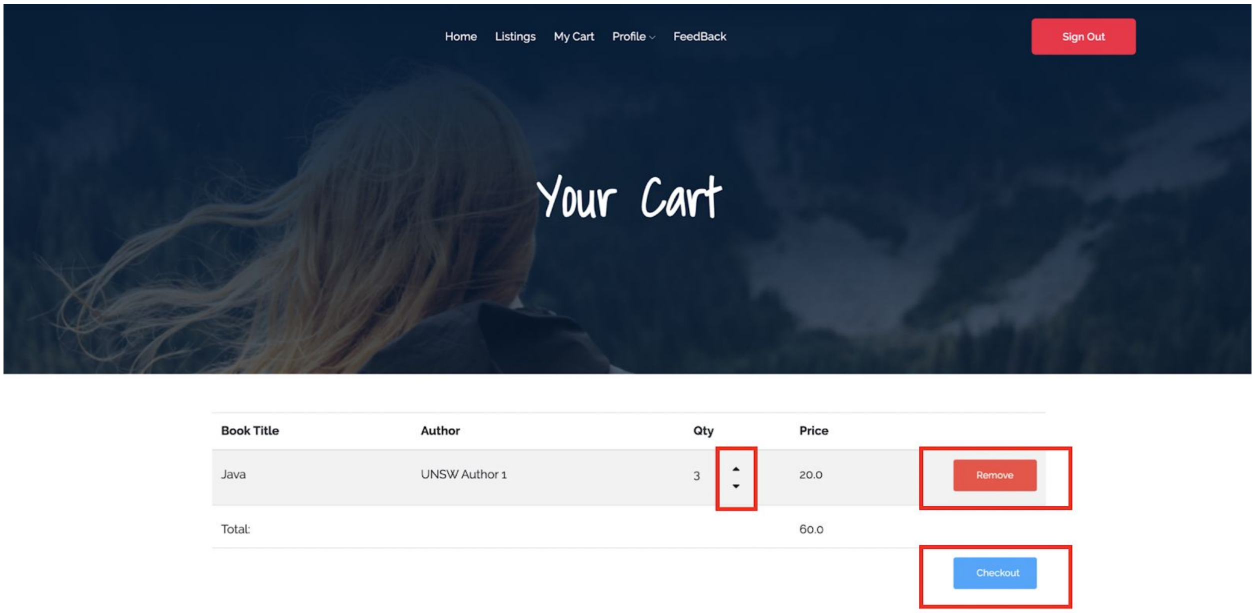
Written by UNSW Author 1, Published by UNSW Publisher 1

The book is published by UNSW and the book is about how to learn Java

Add To Cart Now

Users can click on a book title to go to the book detail page. Users can click on the “add to cart” button to add the book into cart.

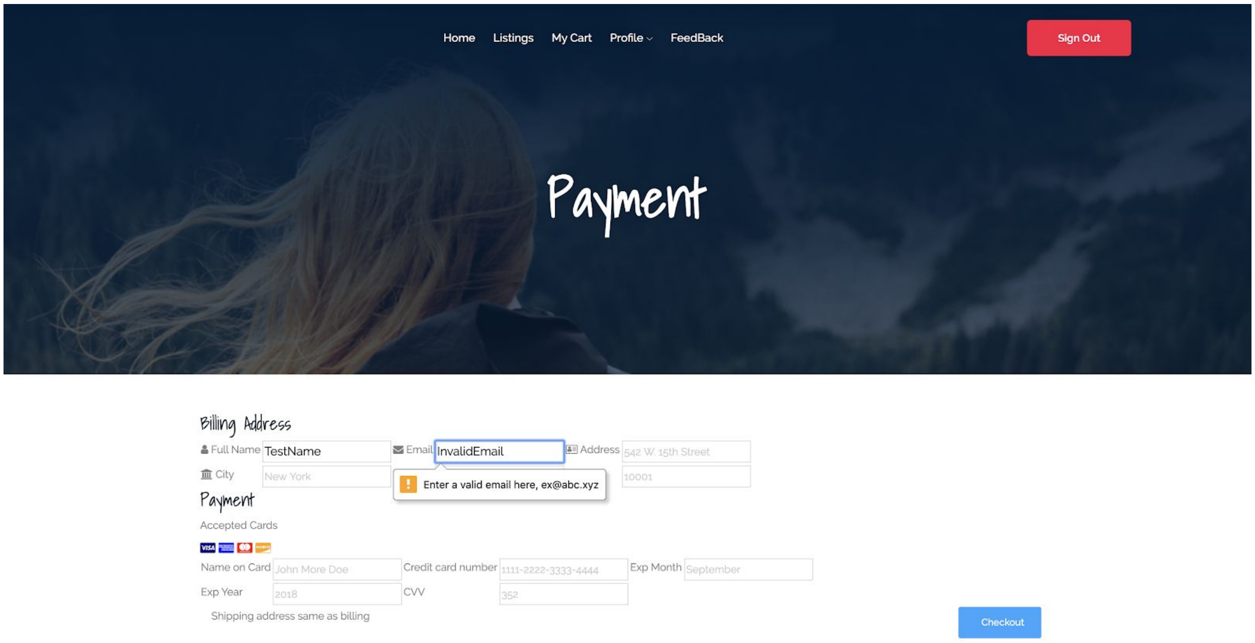
3. **Cart & Payment**



Your Cart

Book Title	Author	Qty	Price	
Java	UNSW Author 1	3	20.0	Remove
Total:			60.0	
				Checkout

Users can view his/hers shopping cart by clicking on the “my cart” tab. Users can adjust the item’s quantity using the up/down arrow besides the quantity number. Users can delete the item using the “Remove” button. Users can proceed to payment by clicking the “Checkout” button.



Payment

Billing Address

Full Name TestName
Email InvalidEmail
Address 542 W. 15th Street
City New York
10001

Enter a valid email here, ex@abc.xyz

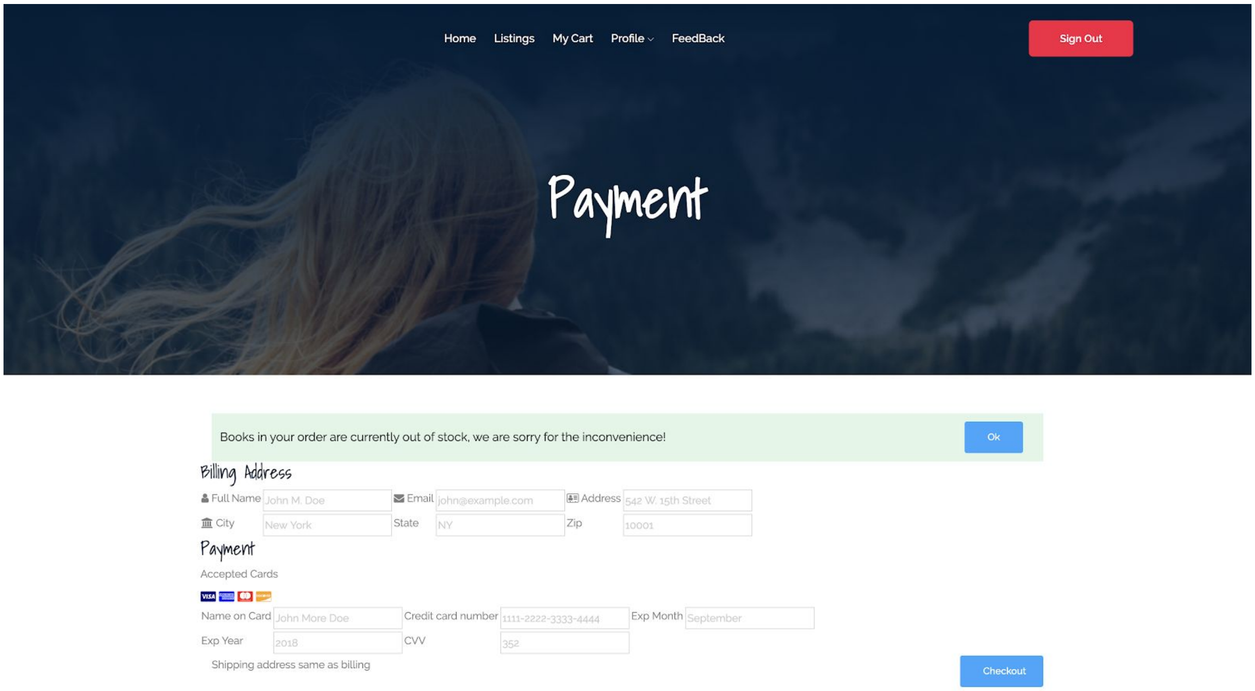
Payment

Accepted Cards

Name on Card John More Doe
Credit card number 1111-2222-3333-4444
Exp Month September
Exp Year 2018
CVV 352

Shipping address same as billing

Users are required to provide address and credit card information to finish payment. An error message will be shown for blank fields or invalid inputs.



Payment

Books in your order are currently out of stock, we are sorry for the inconvenience!

Billing Address

Full Name John M. Doe
Email john@example.com
Address 542 W. 15th Street
City New York
State NY
Zip 10001

Payment

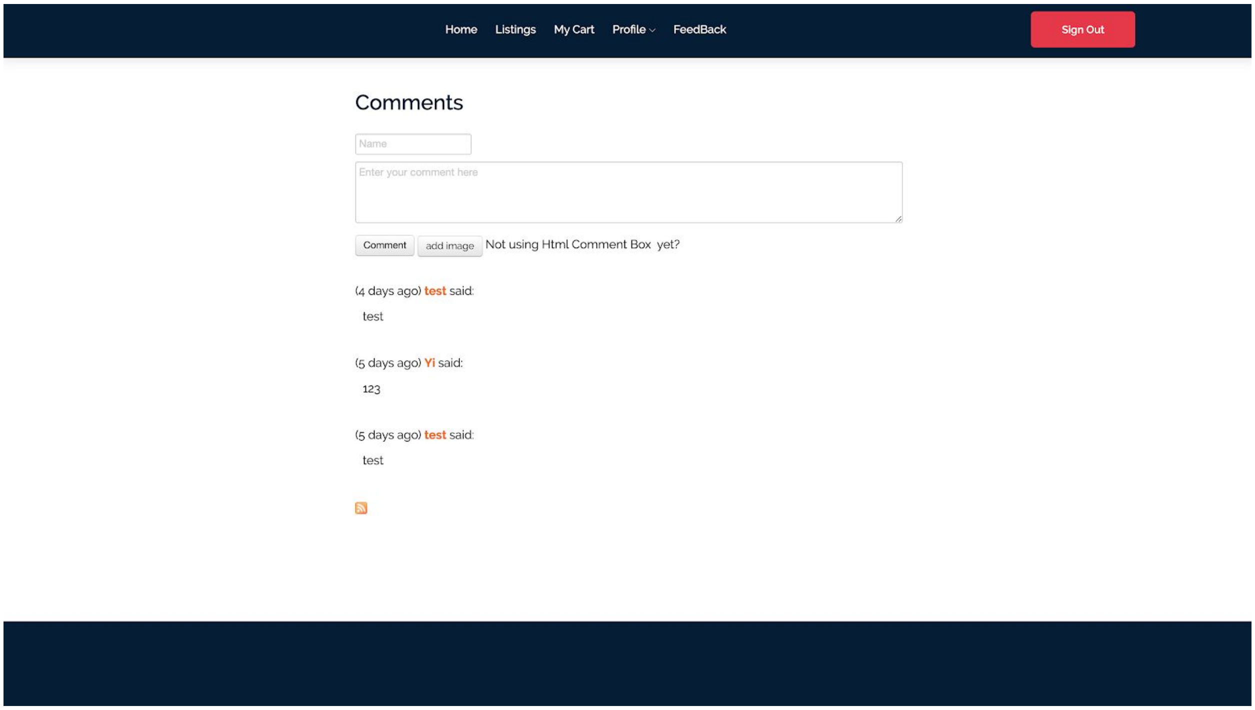
Accepted Cards

Name on Card John More Doe
Credit card number 1111-2222-3333-4444
Exp Month September
Exp Year 2018
CVV 352

Shipping address same as billing

A warning message will be shown if any ordered book is out of stock.Upon successful payment, users will be redirected to the confirmation page, indicating successful purchase.

4. **Comment**



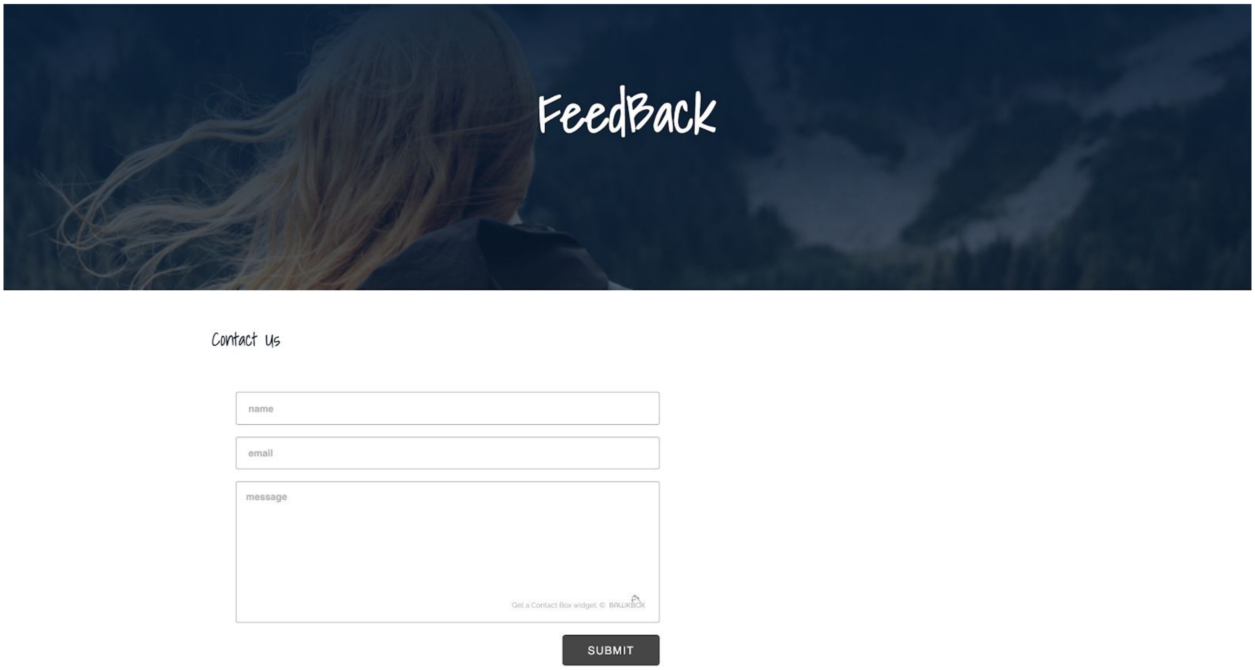
(4 days ago) test said:
test

(5 days ago) Yi said:
123

(5 days ago) test said:
test

Users can post comments at the bottom of the book detail page. This can be used to ask questions regarding the book. Since the comment will be posted publicly, not only admins but other users can answer questions as well. Therefore this section can also be used as an opened discussion forum just like webCMS forum page.

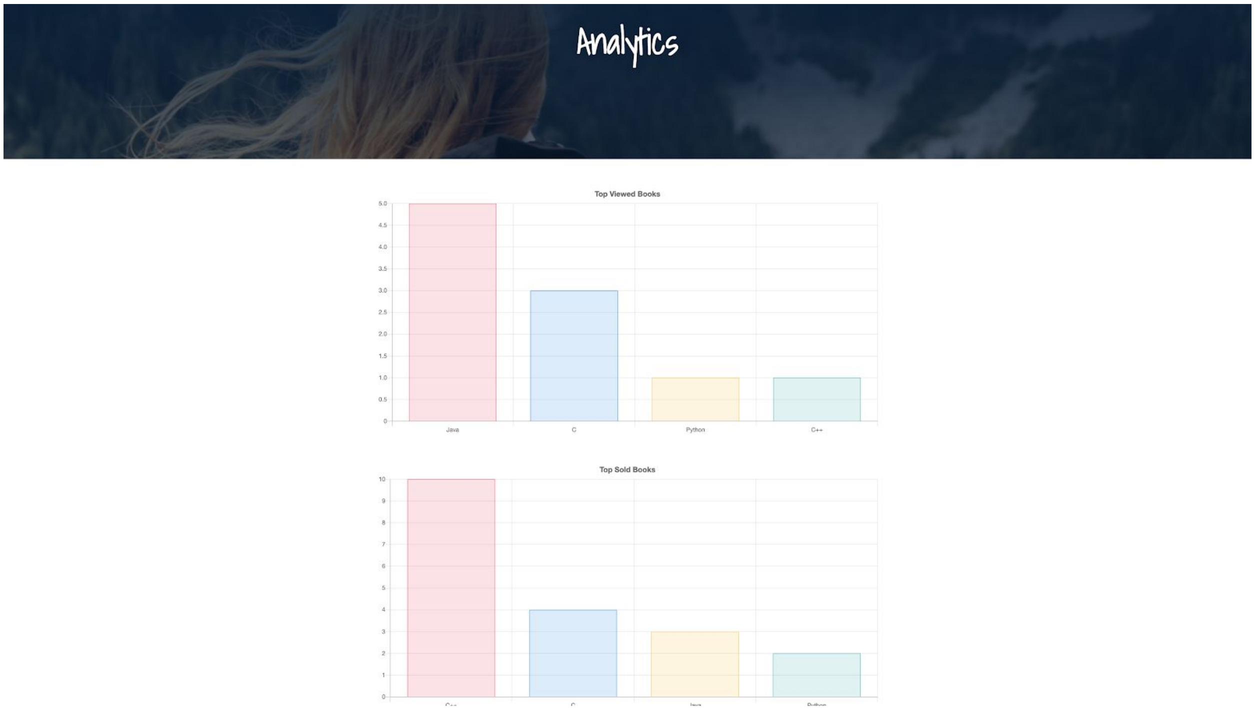
5. **Feedback**



There is also a feedback section where users can provide opinions or ask questions directly to the admin. Unlike commenting, your response won't be posted publicly so only the admin will be able to see your response. All the feedback provided in this page will be directly sent to the admin's email.

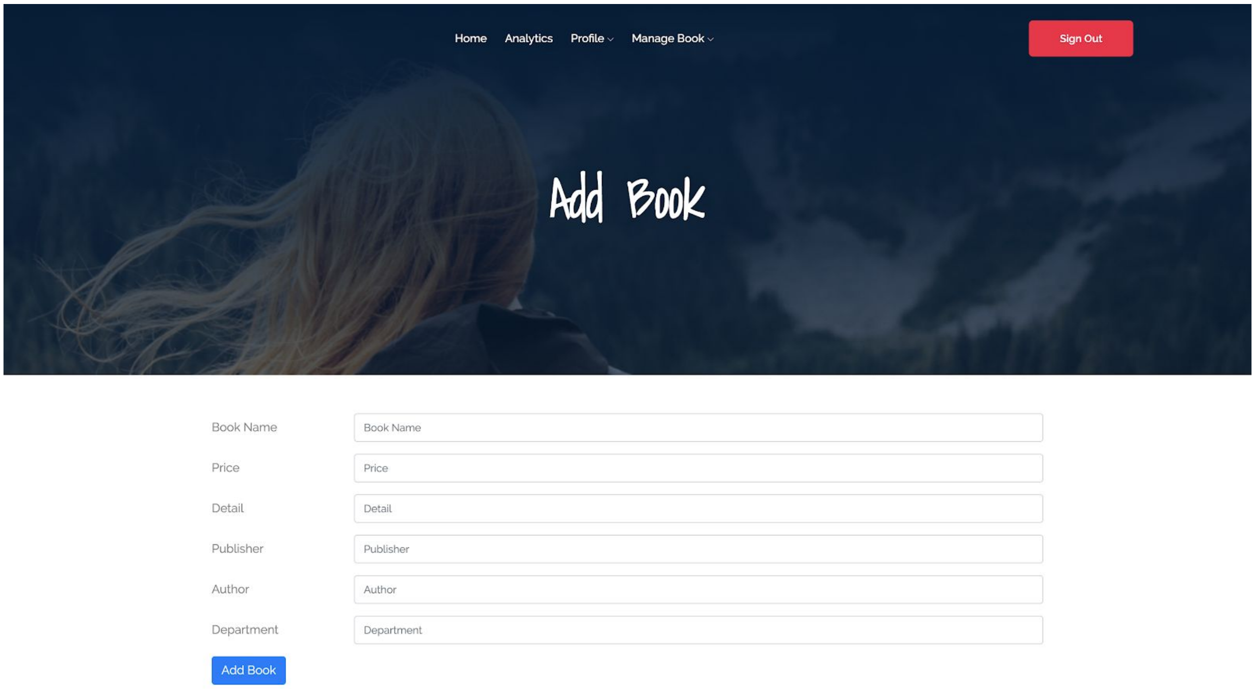
D. **Admin**

1. **Analytics**



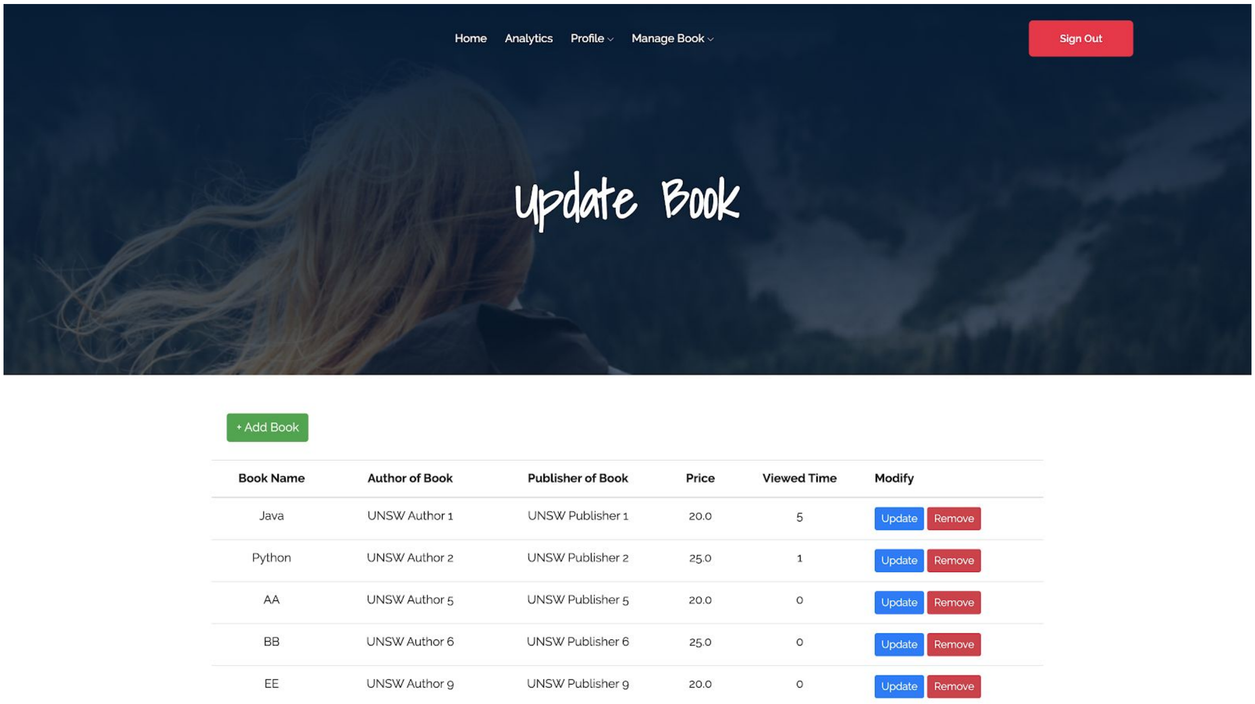
Admin can view charts from the “Analytics” tab. Admin will be able to view up to 5 most viewed and most sold books.

2. **Manage inventory (add/update books)**



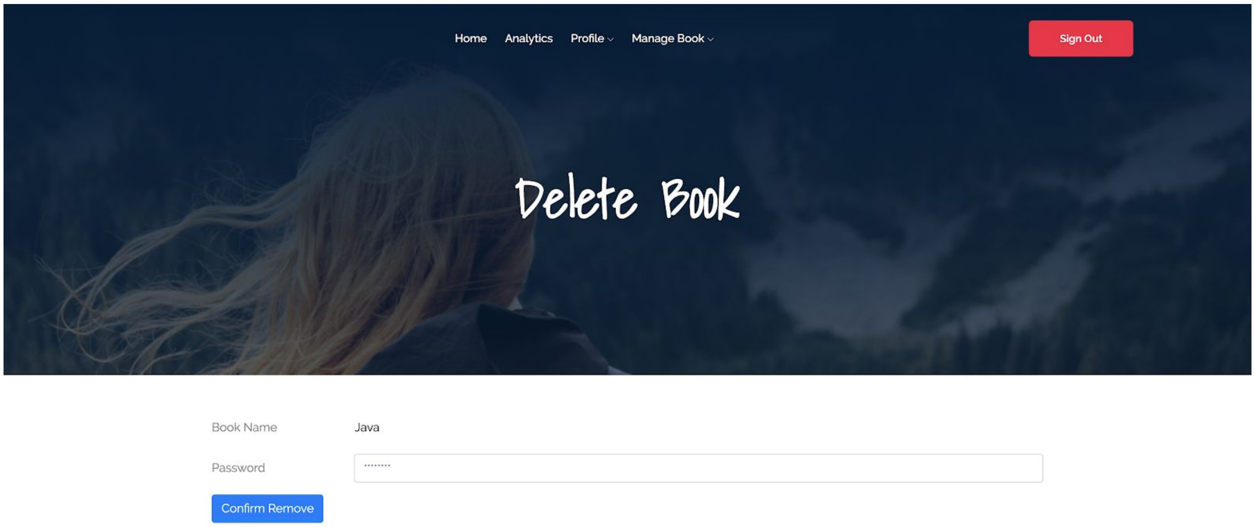
Book Name	Book Name
Price	Price
Detail	Detail
Publisher	Publisher
Author	Author
Department	Department

Admin can add a new book from the “Add Book” tab or access via the “Add Book” button in the update book page.



Book Name	Author of Book	Publisher of Book	Price	Viewed Time	Modify
Java	UNSW Author 1	UNSW Publisher 1	20.0	5	Update Remove
Python	UNSW Author 2	UNSW Publisher 2	25.0	1	Update Remove
AA	UNSW Author 5	UNSW Publisher 5	20.0	0	Update Remove
BB	UNSW Author 6	UNSW Publisher 6	25.0	0	Update Remove
EE	UNSW Author 9	UNSW Publisher 9	20.0	0	Update Remove

Admin can update details or remove a certain book from the “Update Book” tab.



Delete Book

Book Name Java

Password ········

Removing a book will require the admin to provide his/hers password.

III. Implementation challenges

A. Develop software

In our group we discuss using JE to develop software, but some members is the first time to use this one , when downloading this software, do not know how to set the environment, so some members share the environment file in the google drive, another people can download and set up.

B.Database

Some team members did not learn database lessons, so firstly did not know how to use query or list and some funications. Especially when dealing with connections between different tables. But our team shared ideas and searched from google to deal with this problem, at last every member knew how to use the basic funication and create tables.

C.Login interception

In the web, firstly we want use Spring Mvc in the login fuvication, it mean The view sends the request to the controller, and the controller selects the corresponding model to process; the model hands the processing result to the controller, and the controller selects the appropriate view to display the processing result. But in our project use this way always occur problem, we talk about and do not understand why will happen this one, so we change another way to do, that way is shiro, shiro t is a powerful and flexible open source security framework that can cleanly handle authentication, authorization, enterprise session management and encryption. We use this one to solve problems easily.

D.Page integration backend

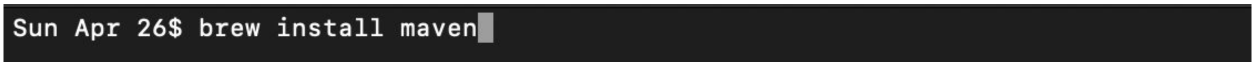
In the website user can use search function to find book, user can use keyword or Initials to search , so we should connect the search function and the database, we do not know how to connect the two parts we use youtube to learn, at least we find use thymeleaf can achieve our goal, Thymeleaf is a Java library. It is an XML / XHTML / HTML5 template engine that can be applied to convert template files to display the data and text generated by your application.

It is especially suitable for web service applications based on XHTML / HTML5, and at the same time it can process any XML file as a web or standalone application. The main purpose of Thymeleaf is to provide an elegant and well-formed way to create templates. In order to achieve this goal, it puts the pre-defined logic on XML tags and attributes, rather than explicitly on the content of XML tags.

IV. User document/manual

A. Install maven

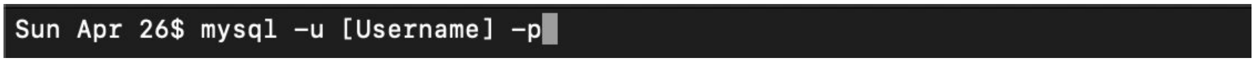
1. Install maven from https://maven.apache.org/download.cgi;
2. Or install via homebrew.



```
Sun Apr 26$ brew install maven
```

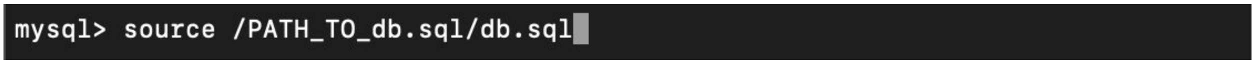
B. Load db.sql into mysql

1. Connect to mysql client.



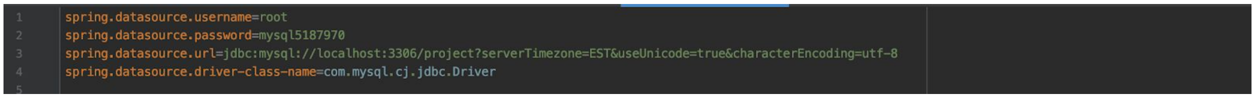
```
Sun Apr 26$ mysql -u [Username] -p
```

2. Load db.sql



```
mysql> source /PATH_TO_db.sql/db.sql
```

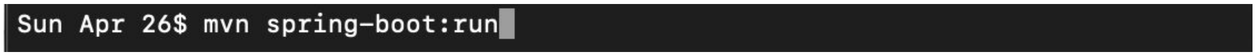
3. Default mysql setting is
   Username: root
   Password: mysql5187970
   Edit it in ***/src/main/resources/application.properties*** if needed.



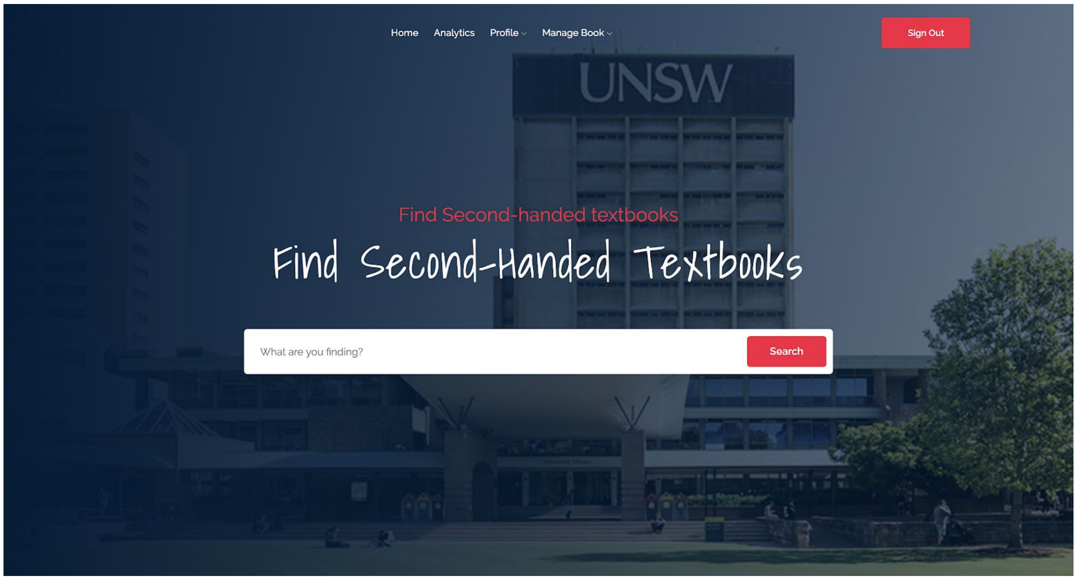
```
spring.datasource.username=root
spring.datasource.password=mysql5187970
spring.datasource.url=jdbc:mysql://localhost:3306/project?serverTimezone=EST&useUnicode=true&characterEncoding=utf-8
spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
```

C. Run spring boot application

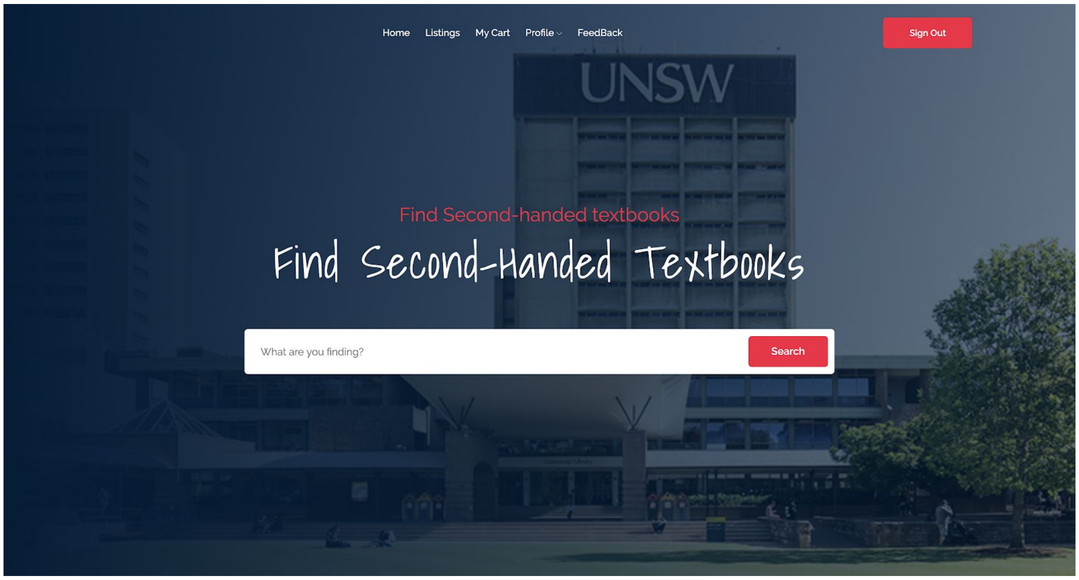
1. Run application
2. Upon successful configuration, the website is accessible at localhost:8080



```
Sun Apr 26$ mvn spring-boot:run
```



Admin main page



Normal user main page

Both admin & user accounts are available in db.sql for demonstration purposes.

- Admin email: abcd@gmail.com
- Admin password: 123456
- Normal user email: 1234@gmail.com
- Normal user password: abcdef

V. References

https://www.htmlcommentbox.com - used for commenting on a book's detail page.
https://bawkbox.com/install/feedback - used for sending feedback from a user to admin’s email account.
https://howtodoinjava.com/spring-boot2/crud-application-thymeleaf/ - CRUD for spring boot application.
https://www.chartjs.org/docs/latest/charts/bar.html - Javascript bar chart for analytics.