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# Web Engineering Processes

## *Assignment: Online Library*

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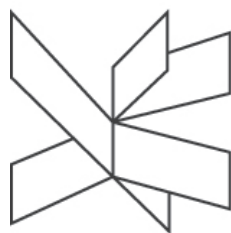
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10th May 2022

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# 1 Introduction

Web Engineering deals with the process of developing, deploying and maintaining Web applications. The main themes of Web Engineering encompass how to successfully manage the diversity and complexity of Web applications development, and, hence, to avoid potential failures that may have serious implications.

So as a course project I have decided to create an online bookstore since I think it is a web application that allows us to distinguish between two types of users very easily: the administrator who manages and authorizes the loans of the books and the user who wants to use them.

In addition, in order to manage the books, it is essential to access and modify the database at all times, as well as update the data in the tables that are shown to users.

## 2 Design

The application consists of two different users:

- User: person who will use the application to create an account, log in, look at books and see the free ones assigned to them.
- Admin: person who will be in charge of assigning the books to the users, managing the authors and publishers of the books, consulting the books available in the inventory, the books that the users temporarily own and the details of the users registered in the web application.

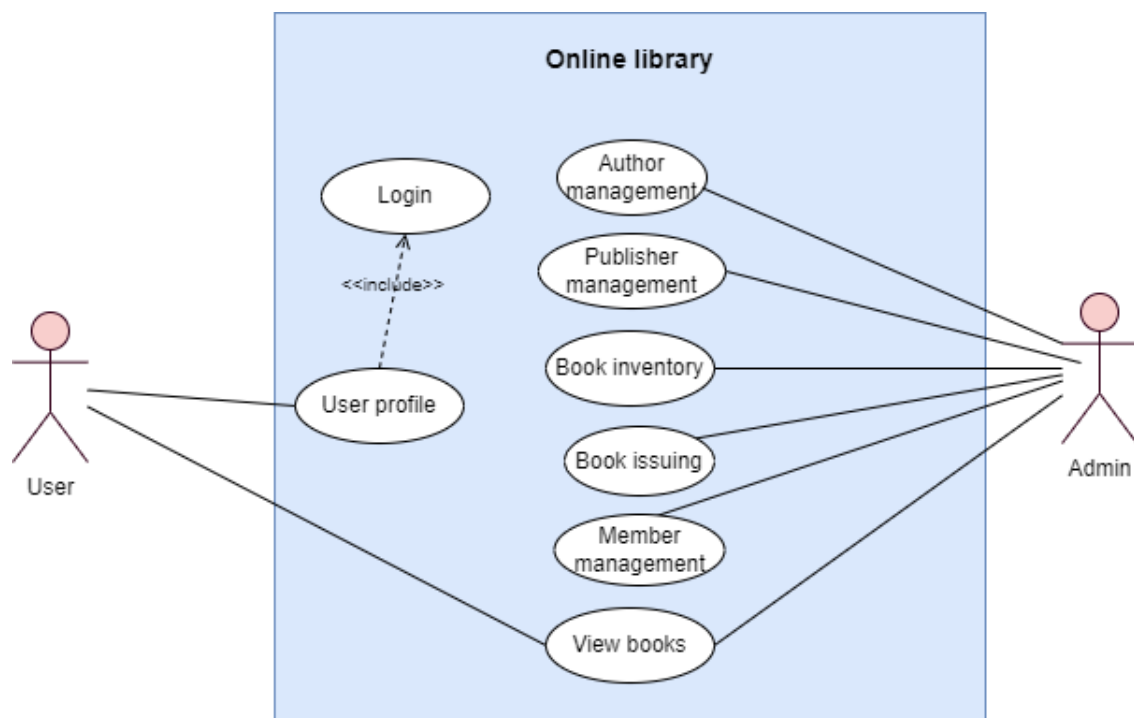


Figure 1: *Use Case Diagram.*

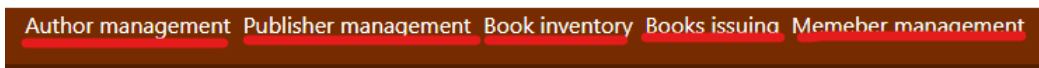


Figure 2: *Administrator use cases.*

- Author management: in this page the administrator can see in a list all the authors that are in the database according to their name and id. Admin can also add more authors, modify the existing ones (changing the name) and delete authors.
- Publisher management: this page has the same functionalities as the "author management" page with the difference that it does it with the list of book publishers.
- Book inventory: this is the most complex page of all. In this the administrator can add, modify, delete books from the database. In addition, it also allows you to see the characteristics of said book if you search for its ID.
- Books issuing: this page allows you to lend and return books from users as well as see users with borrowed books.
- Member management: this page allows the administrator to search, by means of their ID, the information of the users registered on the web page as well as the modification of the status of each one. It also allows you to delete users from the database and shows the list of these.
- View books: this page is shared by all both registered and unregistered users and the administrator. It shows all the books stored in the database (whether they are available or not).
- Signup: page for new users to register.
- Login: login page for registered users.

The following diagram shows the flow diagram of how the start of the web application works.

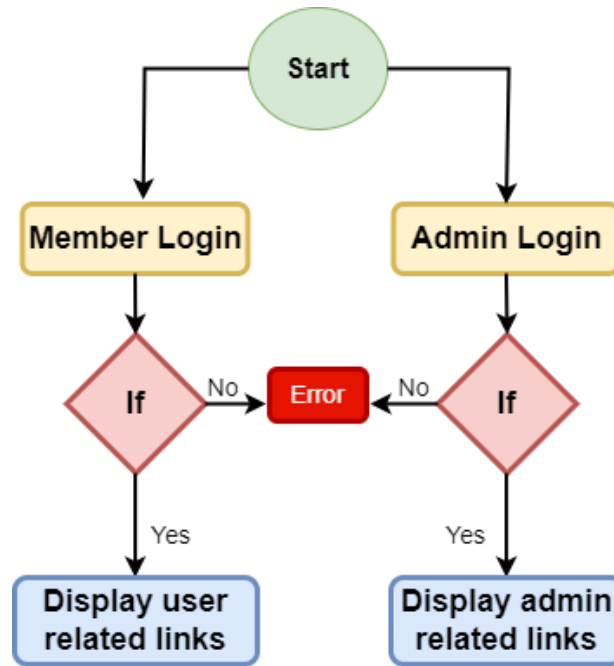


Figure 3: *Flow diagram.*

### 3 Implementation

For the implementation, a total of 11 aspx pages have been used with their respective classes along with 1 master page.

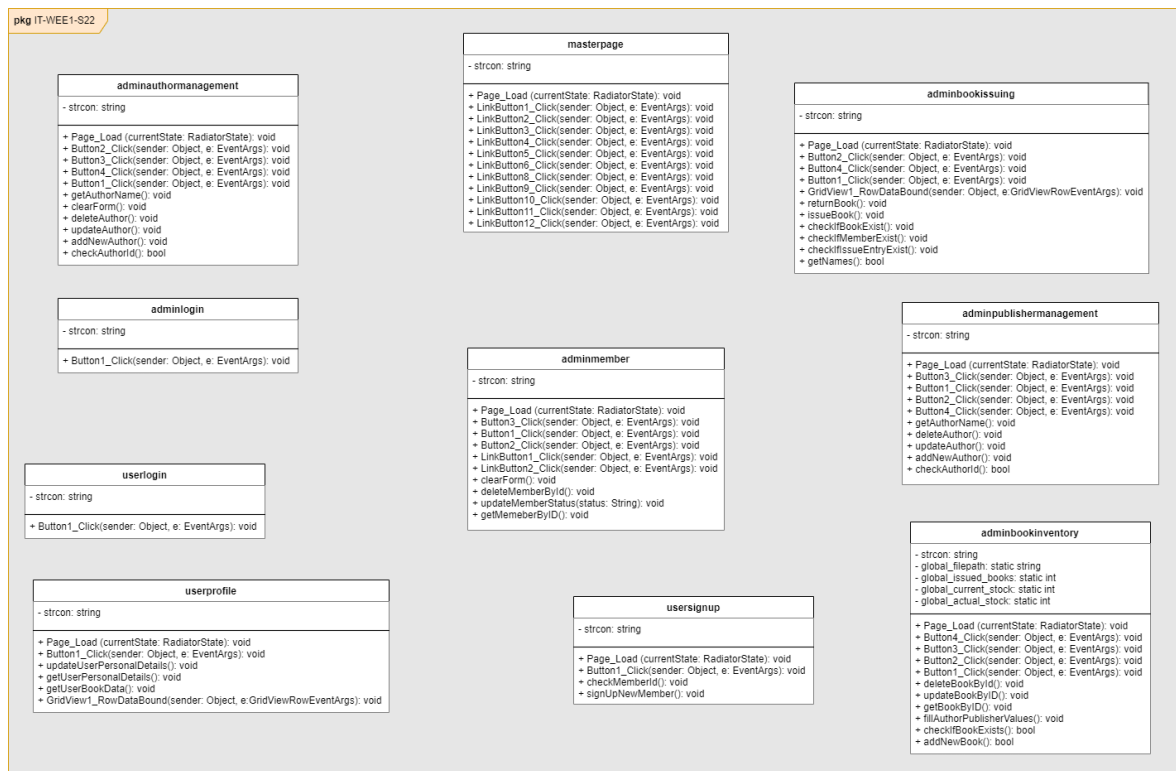


Figure 4: *Class diagram.*

For the design of the database, the following scheme has been used, which is simple but good.

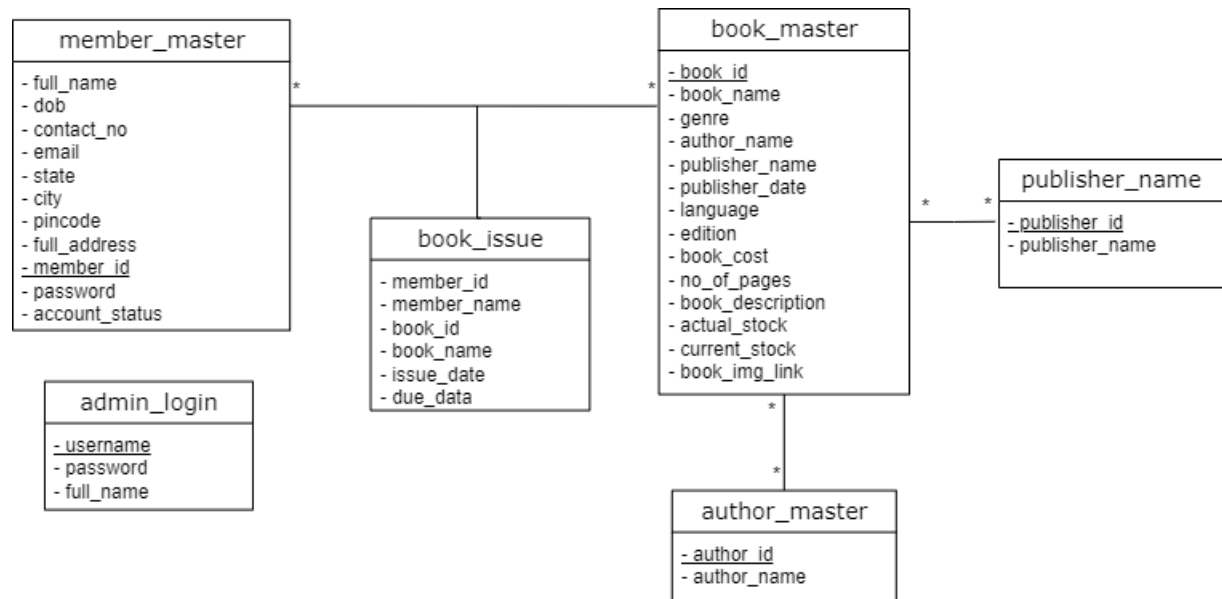


Figure 5: *Domain model of the database.*