Web Design

Final Project Documentation

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Project subject: Online Book Library

Motivation:

Books are very important to our lives, whether we realize it or not. This is why I believe books should be accessible to everyone and everywhere, and an online book library is a great way to provide that access. Additionally, in today's society it might not seem a great idea to still carry around physical books, since everything is only a few clicks away. Ease of access is hugely important to our motivation, so an online Book Library seems to be helpful in that sense.

Implementation:

For this project, I created several web pages using HTML, CSS and JavaScript. Additionally, in order to store book-related data, I used PHP and MySQL technology. These technologies will be detailed and exemplified later.

Main Pages:

In this section, the main web pages will be presented, along with a short description of their structure. All pages contain a header and a footer section, which will be detailed later when the JavaScript functionalities will be presented.

Home (index.html)

This page provides general information about the Book Store. It also contains a carousel of newly-added books and a contact form for customers.

About (about.html)

This page summarizes some of the information found in the Home Page, but in a more dynamic and more structured manner.

Books (books.html)

This page displays all of the books available in the store, in the form of a table. It lists their ISBN, author, title while also providing a cover image, a short description of the subject and a button to a pdf version of the book. All of this information is stored in a database, which will be presented later.
This page also contains the option to add more books to the inventory, and that makes the connection to the user database.

Log In (login.php)

In order to add more books to the inventory, a user has to log in. If the user does not have an account, two options are provided:

- Sign Up: the user will be asked for a username and a password;
- Continue as a Reader: the user will return back to the homepage of the website;

If the user already has an account, they will be asked to provide the username and the password via a html form.

Sign Up (signup.php)

A user can reach this page if they do not already have an account and they wish to add books to the inventory. They will be asked to fill in a html form with two fields, one for a username and the other for password. Once the form is filled in, they will be taken back to the Log In page, where they will have to log into their newly created account in order to move to the next step.

Add Books (add_books.html)

After logging in into their account, the user can add a book by filling in a html form, with the following fields: ISBN, title, author, description, link to cover image and link to pdf file. Once this is done, a message will be displayed if the operation was successful, and then the user can keep adding books. If they do not wish to continue, they are required to log out of the account.

Technologies Used

CSS

All of the pages share the same stylesheet, which can be found in the css folder. The web pages were created using containers implemented in elements, which were then styled using the CSS stylesheet. The advantage of sharing an external .css file between documents is consistency. Any changes made will automatically reflect across all documents. It additionally promotes reusability of elements.

JavaScript

This technology has several important uses, which were highlighted in this project.

First of all, it allows us to modify the style of an element or a group of elements. For example, this was done via override.js. I accessed elements by their id and modified some of their style attributes, also making use of the Document Object Model. Another example would be the insertion of the header and footer in each webpage, done using header.js and footer.js respectively. Instead of writing the same lines in all documents, we provided these sections via two files. This approach ensures consistency between pages, since any change in the JavaScript documents will immediately reflect in the other documents.

Second of all, it allows us to make use of mouse of keyboard events. One such example is the book carousel in the Home page. The carousel contains three slides, and we can switch between those slides by clicking the provided buttons. This is done by changing the attributes of the slides: the current slide is considered “active”, while the others which do not have this property will be hidden, thus allowing us to visualize one slide at a time.

MySQL

This technology is an open-source relational database management system. SQL is an acronym for Structured Query Language. This technology is useful for organizing and storing data in tables which may or may not be related to one another.

In the database used for this project, three tables were created:

- contact_form: this table collected the data from the contact html form in the Home Page. It stored the user’s First and Last Name, Email and Message.
- books: this table is used for storing the books in the inventory. Its fields are the ones mentioned previously: ISBN, title, author, description, link to cover image and link to pdf

file. The links were stored as VARCHAR (strings) with maximum length of 200 characters.
- users: this table is needed for keeping track of user accounts, but is also helpful for the Log In and Log Out operations. It stores the usernames and passwords — which are typed in by the users themselves, but also a user_id, an id and a timestamp.

PHP

PHP is an acronym for Hypertext Preprocessor, and it is a widely-used scripting language on the server-side.

In my project, this technology was used for communicating with the database, more specifically inserting and retrieving data to and from tables. This is needed for contact forms, displaying and adding books, but most importantly for keeping track of the user accounts. Each time a user tries to log in, we search the database for matching a username and password, while also modifying the id field in order to keep the session open.