**Design Document – StudentReads**

Features:

‘StudentReads’ is an online book management service. The main purpose behind this website is to create an environment where the user can create their own personalised reading list, keep track of books they have finished reading, and view other people’s opinions on books they have read. It would especially be useful for students who have lots of reading they need to do. Our website would provide a simple but clear method to keep track of this reading.

Here is a list of features that my website will implement:

* The user must be able to register a new account.
* If the user tries to register with an already taken username, an error message should be shown to the user.
* The user must be able to login to their account.
* If the user enters incorrect login details, an error message should be shown to the user.
* The user once signed in, must be able to change their password.
* To change their password, they must enter the new password twice, if the 2 passwords are different, an error message should be shown to the user.
* The Dashboard should display the user’s personal information.
* The user must be able to view all the books pending on their reading list.
* The user must be able to add new books to the reading list.
* The user must be able to mark books on the reading list as read.
* The books that have been read will be displayed on the read books page.
* The user must be able to view all reviews written by users.
* The user must be able to add their own reviews to the website.
* The user must be able to take notes.
* The user must be able to logout.
* The website should keep the user signed in until they sign out.

Deployment:

[FebinS1.pythonanywhere.com](http://febins1.pythonanywhere.com/)

Analysis of Specification:

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| Specification Point | Achieved? | Evidence |
| The user must be able to register a new account. | I have successfully managed to implement a register feature. Users will be able to fill in the form on the right. All of the user’s information will be stored in a database. |  |
| If the user tries to register with an already taken username, an error message should be shown to the user. | I have achieved this feature. When the username already exists, the website will alert the user that the registration was unsuccessful. |  |
| The user must be able to login to their account. | I have successfully managed to implement a login feature. Users will be able to fill in the form on the right. The information the user enters will be compared to the information in the database. |  |
| If the user enters incorrect login details, an error message should be shown to the user. | I have achieved this feature, when the user enters incorrect details, the website will display an error message. |  |
| The user once signed in, must be able to change their password. | I have successfully managed to implement a change password feature. Users will be able to fill in the form on the right. If the user enters an acceptable password, it will alter the database and change the password stored in it. |  |
| To change their password, they must enter the new password twice, if the 2 passwords are different, an error message should be shown to the user. | This has been implemented correctly. If the user enters passwords that are not the same, then the website will display an error message to the user. |  |
| The Dashboard should display the user’s personal information. | I have successfully managed to implement this feature. Users will be able to see all of their details. It will all be listed out clearly for them to see. |  |
| The user must be able to view all the books pending on their reading list. | This has been implemented correctly, when the user adds books to the reading list, they will be displayed in the format on the right. |  |
| The user must be able to add new books to the reading list. | As you can see from the screenshots on the right, the user is able to add new books to their reading list. The details for book will be stored in a database. |  |
| The user must be able to mark books on the reading list as read. | In the screenshot, we can see a button below the details of the book. When this button is clicked it successfully moves the books details to the read books page. |  |
| The books that have been read will be displayed on the read books page. | This has been implemented correctly. When the user marks books in the reading list as read, they will be displayed in the format on the right on the read books page. |  |
| The user must be able to view all reviews written by users. | This feature has been implemented successfully. When the user accesses the reviews page, it will display all the reviews from all users. It will display details of the review along with the person who posted it. |  |
| The user must be able to add their own reviews to the website. | I have successfully managed to implement the add review feature. Users will be able to fill in the form on the right. It will then store the details of the review in a database. |  |
| The user must be able to take notes. | As you can see from the screenshot on the right, there is a text area where the user can write any notes. This will be stored in local storage. |  |
| The user must be able to logout. | I have successfully implemented the feature where the user can logout of their account at any time. |  |
| The website should keep the user signed in until they sign out. | This has been implemented correctly. Whenever the user is using the website, they will be kept logged in, until they logout. |  |

Analysis of Specification:

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| --- | --- |
| Specification | Achieved? |
| Web Forms | My web application makes use of web forms to receive input from the user. These webforms are also accompanied by client side and server-side validation, making sure the input is appropriate. |
| Databases | My web application makes use of more than 2 databases. I have databases responsible for storing the users’ details and these have relationships with other databases, such as the books and reviews databases. |
| Sessions | My website makes use of session to make sure that the user stays logged in, thus preventing them from needing to login every time. |
| Authentication | My website will only allow users who have registered to access the features. It checks the users’ details before it allows the user to access their account. |
| Logging | My application makes use of 2 levels of logging, INFO and DEBUG. INFO is used to receive updates on what page the users are accessing, and DEBUG is used to monitor actions such as login or adding books. These are stored in a log file for the user to see. |
| Unit Tests | Not Implemented |
| Additional | My website also makes use of JavaScript. JavaScript is used to implement a slideshow on the home page. It also makes use of local storage, allowing the user to take any notes. |

Security:

One of the main potential security concerns I had with the creation of my website was storing the passwords. I felt that, if I had stored the passwords as they were in text form into the database, and someone managed to get hold of that information, they could then login to the user’s account and perform malicious activities. In order to mitigate the impact this would have, I implemented hashing to my code. Whenever the password needed to be stored to the database, the website would first encrypt the data and then submit this encrypted data to the database.

Evaluation:

Overall, I think that my website successfully meets all of the specification points. It allows the user to register/sign in, provides them with a personalised dashboard, a reading list, access to other people opinions on books, and allows them to take notes. I have managed to create a web application that not only considers features, but also places importance on the design and layout. My web application maintains its simplicity, whilst simultaneously delivering on all the needed functionalities. I paid particular care to the forms used to receive input data from the user, making them seem as professional as I could, thus enhancing the user’s experience.

Although I am satisfied with the final product, I recognise that there are some aspects that could be improved. If I had more time to work on this, I would have liked to improve the pages displaying books and reviews. Although they look fine as it is, with more time I could have improved the design/layout enhancing the user experience. Another aspect I would improve in the future is making sure of more graphical forms of media, such as pictures and videos, thus improving the user friendliness.

References:

Slideshow image1 = “https://i2.wp.com/www.tor.com/wp-content/uploads/2019/02/pennington-dune-covers.jpg?fit=913%2C500&type=vertical&quality=100&ssl=1”

Slideshow image2 = “https://www.tolkienguide.com/uploads/newbb/1\_5acea0faca678.jpg”

Slideshow image3 = “https://images-wixmp-ed30a86b8c4ca887773594c2.wixmp.com/f/d6a561fd-b4b2-4bbe-bfed-de24d8f5d47b/d5zfv4u-37b55bc1-26d9-432e-a3b3-9d85f756f75d.jpg/v1/fill/w\_1024,h\_510,q\_75,strp/hunger\_games\_books\_cover\_by\_sanjota\_d5zfv4u-fullview.jpg?token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJ1cm46YXBwOjdlMGQxODg5ODIyNjQzNzNhNWYwZDQxNWVhMGQyNmUwIiwiaXNzIjoidXJuOmFwcDo3ZTBkMTg4OTgyMjY0MzczYTVmMGQ0MTVlYTBkMjZlMCIsIm9iaiI6W1t7ImhlaWdodCI6Ijw9NTEwIiwicGF0aCI6IlwvZlwvZDZhNTYxZmQtYjRiMi00YmJlLWJmZWQtZGUyNGQ4ZjVkNDdiXC9kNXpmdjR1LTM3YjU1YmMxLTI2ZDktNDMyZS1hM2IzLTlkODVmNzU2Zjc1ZC5qcGciLCJ3aWR0aCI6Ijw9MTAyNCJ9XV0sImF1ZCI6WyJ1cm46c2VydmljZTppbWFnZS5vcGVyYXRpb25zIl19.hem-UJ0jOcs8x-0EJUxqMYpeuZtktteYtZSsH4SPo7Y"