Library Management System

The project is a Library Management System which can be used by librarians to store, access and manipulate data for the effective management of the system. We can search for books, check-out and check-in books, manage the borrowers and their account and calculate the penalties in case of exceeding the due date. It is a complete working web application which just needs a browser to execute.

This system is for librarians to manage the daily operations in their library system.

The benefits of this project are that it offers the librarian a simple and easy-to-use GUI, by which the librarian can effectively manage the library system. The requirements are as low as needing a browser. No additional technical knowledge is needed to use the system.

The outcomes that need to be achieved using this system are:

- Effective search for books using any criteria such as Book, Title, Author Name or a combination of criteria.
- Checking in and out of the data accordingly declaring whether a particular book is available or not. Other constraint checking such as disallowing users to enter with multiple IDs, disallowing users to have more than 3 books at once, checking whether a particular user has any fines pending are implemented in this system.
- Calculation of fines as per the number of days by which the user has exceeded the deadline is also a functionality.

The assumptions are that the librarian must have had some basic experience with typing and web forms and that is all that is required as far as any pre-requisites are concerned.

The project scope includes operations such as search, check-out, check-in, fine calculation and borrower management. This system is not for users like students and faculty, but only for the use of the librarian.

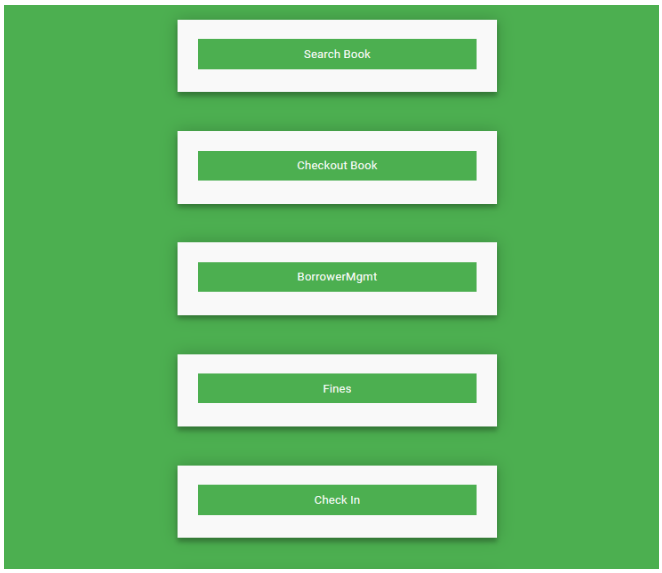
Third party packages or softwares used: Open Refine, NetBeans, XAMPP Server.

Steps followed

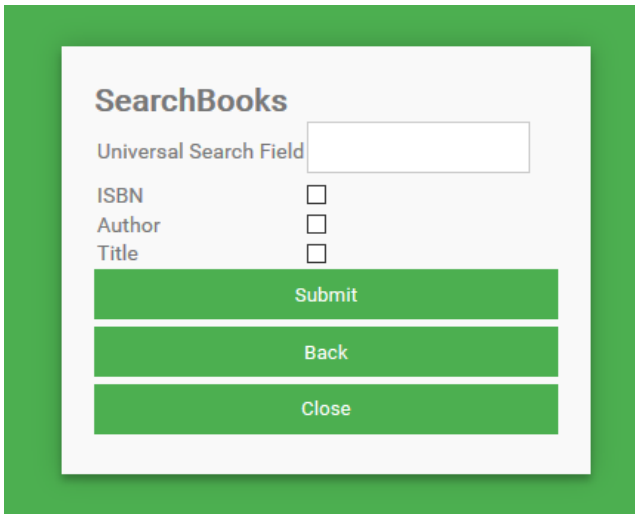
- XAMPP control panel was used to establish Apache web server. Database was built using PhpMyAdmin which uses MYSQL.
- Data initially was structured in a proper CSV format using the tool OpenRefine. The tool helped to remove blank, error valued and merge duplicate author names of the same author. The files book, authors and book_authors were saved in TSV format.
- Schema was created using the SQL Console in PhpMyAdmin and tables BOOK, AUTHORS, BOOK_AUTHORS, BORROWER, BOOK_LOANS and FINES were created as per instructions in the problem statement. Additional table USER was created for user authentication.
- Front end was done using PHP. Pages were created for Searching Books, Checking out Books, Checking in Books, Borrower Management and Fine Calculation. NETBEANS IDE was used for coding.
- Application can be run in any web browser.

Screenshots

Home Page



Search Page



Borrower Management Page


SSN
Address
First Name
Last Name
Phone
Confirm
Back