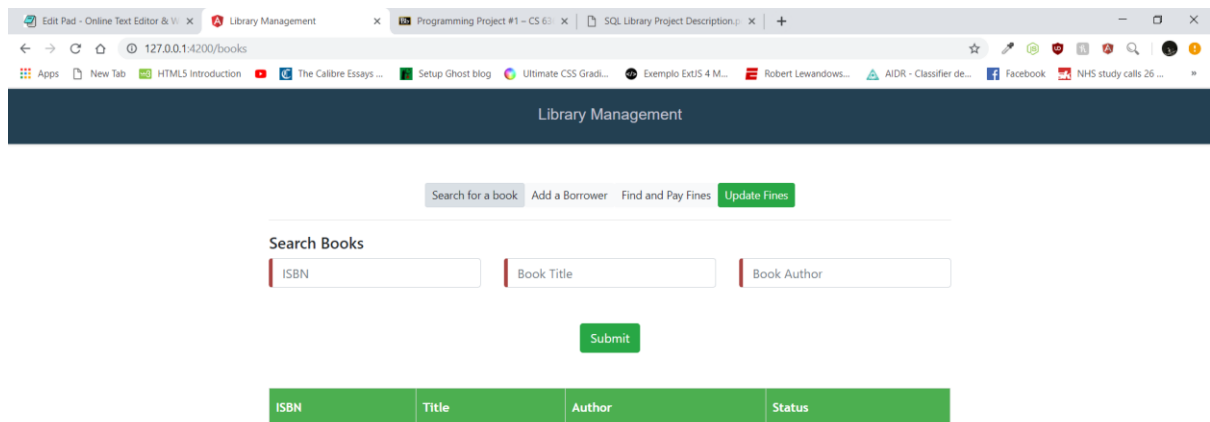


Library Management System

The features that are implemented are search for a book, borrow books if a person has a valid library card, borrowers are fined if the book is not returned within 14 days of checkout. The interface also has a provision to add new borrowers given a valid SSN and phone number. The library management system has been implemented as a web-interface. Front-end was implemented using Angular6, HTML and CSS, and the back-end was implemented using NodeJS wired to MySQL db through Sequelize ORM.

SEARCHING FOR A BOOK:



The screenshot shows a web browser window with the URL `127.0.0.1:4200/books`. The page has a dark blue header with the text "Library Management". Below the header, there are four buttons: "Search for a book", "Add a Borrower", "Find and Pay Fines", and "Update Fines". The "Search for a book" button is highlighted. Below these buttons, there is a "Search Books" section with three input fields: "ISBN", "Book Title", and "Book Author". A green "Submit" button is located below the input fields. At the bottom, there is a table with four columns: "ISBN", "Title", "Author", and "Status".



In the space provided the Librarian search based on either ISBN or Book Title or the Book Author. This liberty was taken to help narrow down the search results easily without inundating the user with too many search results to choose from. Substrings are matched for all the three fields.

For example on searching the ISBN substring 0001. We get the following results -

Search for a book | Add a Borrower | Find and Pay Fines | Update Fines

Search Books

0001 | Book Title | Book Author

Submit

ISBN	Title	Author	Status
0001047973	Brave New World	Aldous Huxley	Check Out
0001047973	Brave New World	Tony Britton	Check Out
0001360469	Dressing (Collins Baby & Toddler: Babe Board Books)	Mandy Stanley	Check Out
0001374869	Baby Plays (Collins Baby & Toddler)	Fiona Pragoff	Check Out
0001714600	I Want To Be Somebody New! (Beginner Series)	Robert Lopshire	Check Out
006000133X	The Creek	Jennifer L. Holm	Check Out

Narrowing it down by the Author Substring Hux results in the following –

Library Management

Search for a book | Add a Borrower | Find and Pay Fines | Update Fines

Search Books

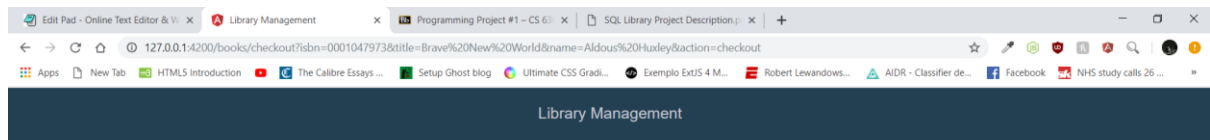
0001 | Book Title | hux

Submit

ISBN	Title	Author	Status
0001047973	Brave New World	Aldous Huxley	Check Out

BORROWIN A BOOK:

To borrow a book from the library, the borrower should have a valid library card ID. Each borrower can borrow up to three books without returning. A book can be borrowed only by one borrower at a point of time since there happens to be only one copy of each book.

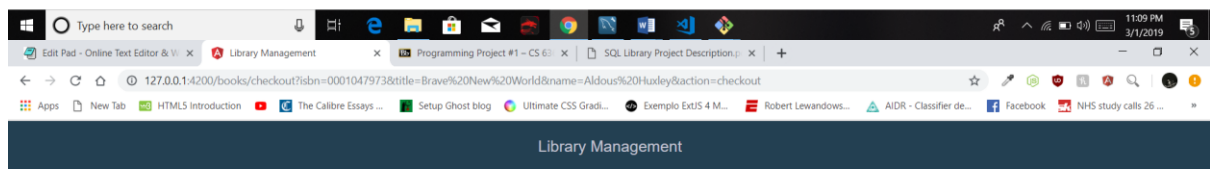


Search for a book Add a Borrower Find and Pay Fines Update Fines

0001047973
Brave New World
Aldous Huxley

Checkout this Book

Submit



Search for a book Add a Borrower Find and Pay Fines Update Fines

0001047973
Brave New World
Aldous Huxley

Checkout Successful, Redirecting to the home page.



RETURNING A BOOK:

To return books, the same search UI is used. Upon searching for the book's isbn, a button with check-in functionality is shown instead of the checkout button.

Library Management

Search for a book Add a Borrower Find and Pay Fines Update Fines

Search Books

0001360469 Book Title Book Author

Submit

ISBN	Title	Author	Status
0001360469	Dressing (Collins Baby & Toddler: Babe Board Books)	Mandy Stanley	Check In

Library Management

Search for a book Add a Borrower Find and Pay Fines Update Fines

0001360469

Dressing (Collins Baby & Toddler: Babe Board Books)

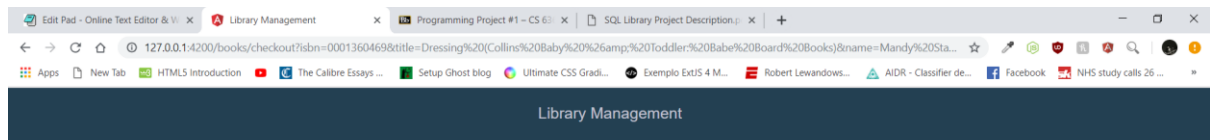
Mandy Stanley

Checkin this Book

4

Submit

Type here to search



[Search for a book](#) [Add a Borrower](#) [Find and Pay Fines](#) [Update Fines](#)

0001360469

Dressing (Collins Baby & Toddler: Babe Board Books)

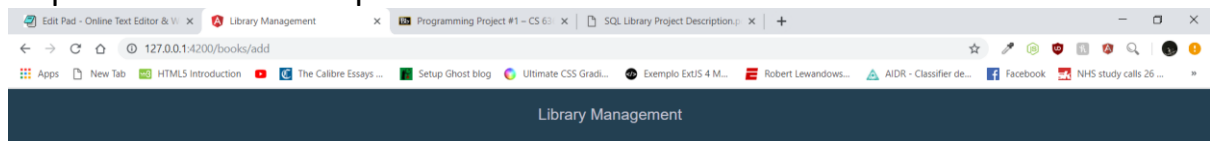
Mandy Stanley

Checkin Successful, Redirecting to the home page.



BORROWER MANAGEMENT:

Users can add new borrowers to the system by entering the details such as SSN, name of the borrower, address and phone number. Each borrower is required to have a unique SSN.



[Search for a book](#) [Add a Borrower](#) [Find and Pay Fines](#) [Update Fines](#)

Add Customer

SSN

555-55-5555

Name

Enter Customer's Name

Address

Enter Customer's Address

Phone Number

(555) 555-1212

[Back](#) [Add](#)



FINES:

Fines are calculated when a borrower returns a book and when the fines table is updated manually using the Update Fines button. Fines are calculated as number of days multiplied by the difference of due_date and current date or difference of due_date and the date_in of that particular book.