

Booksterdam – An online Bookstore

“Buy Books from your Fellowmates on Campus”

Application designed and developed by Vivek Pandey

Faculty Sponsor: Dr. Scott E. Frees

Faculty Readers: Dr. Kenneth W. McMurdy, Dr. Benjamin Fine

Temporary Web Link to the store: <http://booksterdam.azurewebsites.net>

Code and related project files can be viewed at:

<https://github.com/Viveckh/Booksterdam>

Project Overview

Booksterdam is an online bookstore which aims to connect students within a college campus so that they can purchase and sell used books among each other in cheaper prices. The primary purpose of the bookstore is to lessen the textbooks expenses in college by linking students taking similar courses. It allows students to view and search through books their fellow students are trying to sell within their campus, and also to list their own used books for sale through a very easy and straightforward interface. At first glance, it might just seem like any other web store associated with books, but upon closer look, you will realize that the store is particularly tailored keeping the need of students in mind. The store is intentionally designed to discourage businesses selling books for profit by making it cumbersome to post items in bulk.

Purpose

Meet Ashley.

Every semester, Ashley buys her course books from the campus Bookstore, Amazon, or similar websites spending a few hundred dollars. A lot of these books just lay unused in a corner of her dorm after the semester is over. She sometimes tries selling them back online but barely receives a quarter of the original price she paid after the online posting service charges and shipping costs. The campus bookstore, on the other hand, pays less than 20% of the original book price. She has tried bombarding student groups on Facebook with “Anyone wants to buy...?” posts, but in vain. By the time she graduates, she could be losing a few thousand dollars just on books!

While Ashley’s old textbooks are laying unused, Jessica next door is taking a similar course and is looking to purchase one of the books Ashley has. Wouldn’t it be nice if we could connect Jessica and Ashley?

Well, that’s where Booksterdam comes into play. By connecting the sellers and buyers within the same college, both the parties will benefit. The goal is to circulate the books within the campus among students decreasing the need for students to spend more on new expensive books.

Without shipping and third-party commissions to account for, Ashley would be willing to sell the book for a comparatively cheaper price. And Jessica would have the book on her hands within minutes in an unbeatable price.

Features

- LISTING
 - List your used books for sale.
 - Surf through book listings made by students in your school.
- SEARCH
 - Search for a book using full or partial ISBN, title, author, publisher or school.
 - Drop down suggestions as you start typing book info in search bar
- USER ACCOUNTS
 - Simple signup process with minimal form filling
 - Manage your listings through a secure portal
 - User accounts were primarily implemented with the vision of adding the functionality to make online purchase in future.
- AUTOMATIC FORM-FILLING
 - Adding a book to the store has never been so easy with Booksterdam's auto form filling system. All you have to do is enter the ISBN number of the book, and the rest of the form will be auto-populated with book information and its pictures. And you have a listing in a matter of seconds.
- SECURITY
 - Sensitive information encrypted using the adaptive bcrypt function which is resistant to brute-force search attacks even with increasing computational power.

- PAYMENT PROCESSING VIA TEXTING (FUTURE ADDITION)
 - Since Booksterdam is not your traditional online bookstore with shipping options, the students will be meeting physically to make the transaction. Hence, the payment system needs to be developed keeping this in mind. The plan is to implement a pay-via-text feature where the user's payment information will be stored on the Booksterdam servers, but the payment will only be processed once the two parties meet, exchange the books, and send a confirmation text of transaction to Booksterdam.

Methodology

Booksterdam is developed using the agile software development methodology under which each functionality is implemented and thoroughly tested before moving to the next one. The technologies used were carefully chosen based on the needs of the application while also ensuring that the application is scalable to accommodate new functionalities and support a growing user base if it comes to that. The client-server model is designed at present by handling most of the external API calls on the client-side. This made more sense since handling such API calls on the server-side meant making two requests to fetch data every time. One from the client to Booksterdam server and the other from Booksterdam server to external server. Currently, the server side is kept simple by having it handle only the internal routing requests and fetching data from the database.

Technology Stack

Client-side:

Languages: *HTML5, CSS, JavaScript*

Template Engine: *Jade*

Framework/Libraries: *Bootstrap, jQuery*

Plugins: *Mobirise, Jarallax, Socicon*

Server-side:

Frameworks: *Node.js, Express*

Key Modules:

mssql: Processing requests to the remote MSSQL database

bcryptjs: For password encryption.

client-sessions: Handling user sessions / storing browser cookies

Database: *MSSQL*

External Application Programming Interfaces (APIs)

ISBNdb: To gather information about books.

Google Books: To gather information about books.

Openlibrary.org: To retrieve cover images of books.

Hosted on:

Microsoft Azure: For both the Server and Database.

Future of Booksterdam

The application is ready for use within Ramapo College and will be officially rolled out in summer of 2017. And within a month or two following that, it will also be available for use within all other schools and campuses around the east coast. There is no plan to commercialize Booksterdam yet, but if that happens, then sellers will be charged a nominal commission for every item they sell in the store. At the moment, the store can only be accessed through the browser, but it can also be migrated to a mobile application if there is a demand for it.