

BookTrade

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ABSTRACT

Books have remained as one of the most important learning tools for individuals and academic institutions. We require textbooks for referencing, studying, and completing assignments. Yet, an astounding 7 out of 10 students say that they have skipped on obtaining a required textbook due to their high cost. The goal of this project was to build a web application that allows students to easily acquire the study material they require without incurring the high costs that are typically associated with textbooks.

TEAM

YAZEED ALOTAIBI

Responsible for the front-end design and aesthetics for the project. In addition, Yazeed is working alongside Jason to enhance the user experience. Yazeed is also in charge of project documentation.

JASON GOSE

Jason is handling the back-end side of the project as well as front-end functionality. He is also in charge of making sure that the team stays on the right path to meet all deadlines and requirements.

DECLARATION OF ORIGINALITY

BookTrade is an original project created by Jason Gose and Yazeed Alotaibi. Materials and information derived from any other published works has been clearly acknowledged in the list of references. We confirm that this capstone project has never previously been submitted to this or any other institution for the fulfillment of a degree, diploma, or certificate.

PROJECT OVERVIEW

PROJECT MOTIVATION

Forgoing the purchase of the required course textbooks can greatly reduce a student's chance of success and general understanding of the subjects they study. This issue is so severe that almost half of all student say that the cost of these books is having a serious impact on what classes they take or even how many they can take. This is a problem that has become worse year after year without any real solutions. We believe we can change that with our web application, BookTrade.

PROJECT GOAL

The goal of the project is to build a web application that allows students to easily acquire textbooks they require at a much lower cost. Rather than just buying or selling books, BookTrade will make direct trading a viable option. By making it easier for students to directly trade textbooks with one another, we can eliminate the net loss that students experience every semester with the current buy/sell or renting options that have long been the standard.

DEVELOPMENT TOOLS

BookTrade is powered by multiple web technologies that ensure the system is dynamic, intuitive, and reliable. These technologies are divided into two categories; the front-end and the backend technologies. Frontend technologies bring the aspects of our site that will interact directly with the users whereas the backend technologies will support the activities of the front-end technologies as well as the application's core functions.

FRONT-END

HTML5

HTML5 is the latest version of HTML and gives access to more elements and attributes compared to earlier versions. It also allows for clean simplified code that will improve our project build time.

CSS3

It is one of the most common technologies used in web design. BookTrade will utilize CSS3 to create a visually appealing website and an intuitive interface for the user.

JavaScript

The language has the benefits of being flexible and compatible with various devices. Therefore, in our case, JavaScript will help us make our website operate efficiently.

BACK-END TECHNOLOGIES

PHP with Laravel

PHP is a scripting language that is commonly used and is mainly applied in the process of web development in embedded HTML. This will be used with Laravel, which is a PHP framework that will speed up development and increase organization.

MySQL Database

MySQL will be used in developing a database for BookTrade that will contain information about the users, books, and other data.

USER STORIES AND ACCEPTANCE CRITERIA

As a visitor, I want to be able to quickly search for a book without creating an account, because I'm only curious to see what's available.

- a) Search results populate in less than 3 seconds
- b) Results are accurate

As a seller, I want to be notified of book matches by email, so I don't have to log in to check every time.

- a) Timely (less than an hour)
- b) Email sent securely
- c) sent to correct email address

As a college Freshman, I want to be able to edit my list of books needed or for trade, so I can keep it up to date as my classes change each semester.

- a) Added books display immediately
- b) Deleted books no longer display

As frequent user, I want to be able to quickly login or out of my account.

- b) login process is quick (less than 20 seconds)
- a) Login is secure

As a busy student, I want to list all my books for trades once, so I don't have to post each book individually.

- a) Books listed are saved to account
- b) List accurately displays the books entered

As an infrequent user, I'd like to be able to reset my password, so I'm not locked out if I forget my password.

- a) Reset link sent securely to email on file
- b) Reset link sent quickly (less than 30 minutes)
- c) Password reset page is secure

As a student, I want to be able to message other users, so that we can discuss our trades.

- a) Messages are private
- b) Messages are securely stored
- c) Messages are sent/received quickly (less than 30 seconds)

As a student, I want to see a user's campus or location, so I can decide if they're close enough to meet up with.

- a) Location is accurate
- b) Location is saved to user account

As a user, I want to be able to modify my account setting.

- a) Changes are saved
- b) Changes update immediately

TARGET AUDIENCE

Initially, BookTrade will only be open to students that are attending ASU at any of the existing campuses. We hope that our site will help students save money on purchasing their books as well as introduce them to fellow ASU students. Below are a few personas that should help illustrate the kind of users that we plan to target.

PERSONAS



Laura, a native Arizonan, is 20 years old. She is currently a sophomore at the ASU Tempe campus, majoring in supply chain management. She recently moved into a nearby house off-campus with a couple of her close friends. Laura goes to school full-time but also has a part-time job as a server in a local restaurant. Because of her large workload, she is unable to work more than 15 hours a week which results in a tight budget.



Ali is international student from Saudi Arabia. Currently, Ali is studying Mechanical Engineering at Arizona State University Tempe campus. He is a full-time student and lives in a dorm on campus. In his free time, he enjoys reading science fiction novels and playing video games. As an international student, Ali is only permitted to work on campus. Due to these circumstances, he rarely leaves campus.

USER GUIDE

USER GUIDE

Type <http://booktrade.biz/> in your browser.



1

Three options are available on the landing page:

- ▶ Search Listings
- ▶ Trade a Book
- ▶ Choose Books

Search list will give you a listing of all the books that are available.

To request a book, simply click on [Message](#) button and email the trader.

BookTrade

Search ISBN or keyword...

Book Listings

ISBN	Title	Contact Trader
4568715348745	Congratulations, You're Not Blind!	Message
4568432546987	The Pamphlet of Books	Message
9780134093413	Campbell Biology	Message
9780123735683	Information Modeling and Relational Databases	Message
9780077661069	Biology (Biology Volume 1 Eleventh Edition)	Message
9781306251653	Stock Image Introductory Biology	Message
9780553176162	Anatomy of a Scientific Discovery	Message
9780805301229	Stock Image Human Anatomy and Physiology (The Benjamin/Cummings series in human anatomy and physiology)	Message
9780673152497	Essential Human Anatomy and Physiology	Message
9780697051752	Laboratory Guide to Human Anatomy and Physiology	Message
9780619285585	IE it Project Management	Message
9780619217501	Readings in Information Technology Project Management	Message
9780131176553	Introduction to Computing and Programming in Python, A Multimedia Approach	Message
9780470138090	Professional Python Frameworks: Web 2.0 Programming with Django and Turbogears (Programmer to Programmer)	Message
9780132923514	Introduction to Computing and Programming in Python (3rd Edition)	Message

2

BookTrade

Books Wanted

Enter up to 5 books at a time. Just click 'Add Books' and we'll let you know when we've found one for you.

enter isbn...

enter isbn...

enter isbn...

enter isbn...

enter isbn...

Add books

If you wish to request a book that is not yet listed, simply select Choose Book and fill up to 5 ISBN numbers and click Add Books

To trade a book, fill in up to five ISBNs and Titles. Click List Books to post the request.

BookTrade

Books for Trade

Enter up to 5 books to list for trade. Both the ISBN and the Title are required.

enter isbn...	enter title...
enter isbn...	enter title...
enter isbn...	enter title...
enter isbn...	enter title...
enter isbn...	enter title...

List Books

SOURCE CODES

BookTrade is built using the Laravel framework. As such, each component consists of several parts working together. For example, a URL is routed to a view that may contain a single HTML form. The form's action is calls to a controller class that consists of the PHP that provides the logic. On top of this, an Eloquent model must be used to interact with the appropriate database tables. In this section we will avoid including examples of simple HTML or code for formatting and will instead only include the core PHP component of a feature's functionality.

**Books for trade*

BookTrade allows users to post several books at the same time. To accomplish this, we had to use a form that would allow multiple records to be created in the database with a single submission; each with multiple fields. We also had to account for the ability to accept null values so that a user could post one book, five books, or any number in between.

This is the code from the controller class:

```
public function store(Request $request)
{
    $uid = Auth::user()->id;
    $titles = $request->title;

    foreach($request->isbn as $key => $isbn) {
        if(is_null($isbn)) continue;
        DB::table('listings')->insert([
            'isbn' => $isbn,
            'title' => $titles[$key],
            'user_id' => $uid
        ]);
    }
    return view("booksfortradesubmitted");
}
```

*Books wanted

BookTrade also allows users to input a list of books that they want but are not currently listed. This way they can be notified when somebody posts a book that they have in their wanted list.

Controller class:

```
public function wanted(Request $request)
{
    $uid = Auth::user()->id;
    $booklist = Input::get('isbn');
    foreach($booklist as $onebook) {
        if(is_null($onebook)) continue;
        DB::table('wantedbooks')->insert([
            'isbn' => $onebook,
            'user_id' => $uid
        ]);
    }
    return view("bookswantedsubmitted");
}
```

*Search Listing

BookTrade's search functionality allows users to search by a textbook's title or its ISBN.

Controller class:

```
public function index(Request $request)
{
    $s = $request->input('s');
    $listings = Listing::latest()
        ->search($s)
        ->paginate(20);
    return view('listings', compact('listings', 's'));
}
```

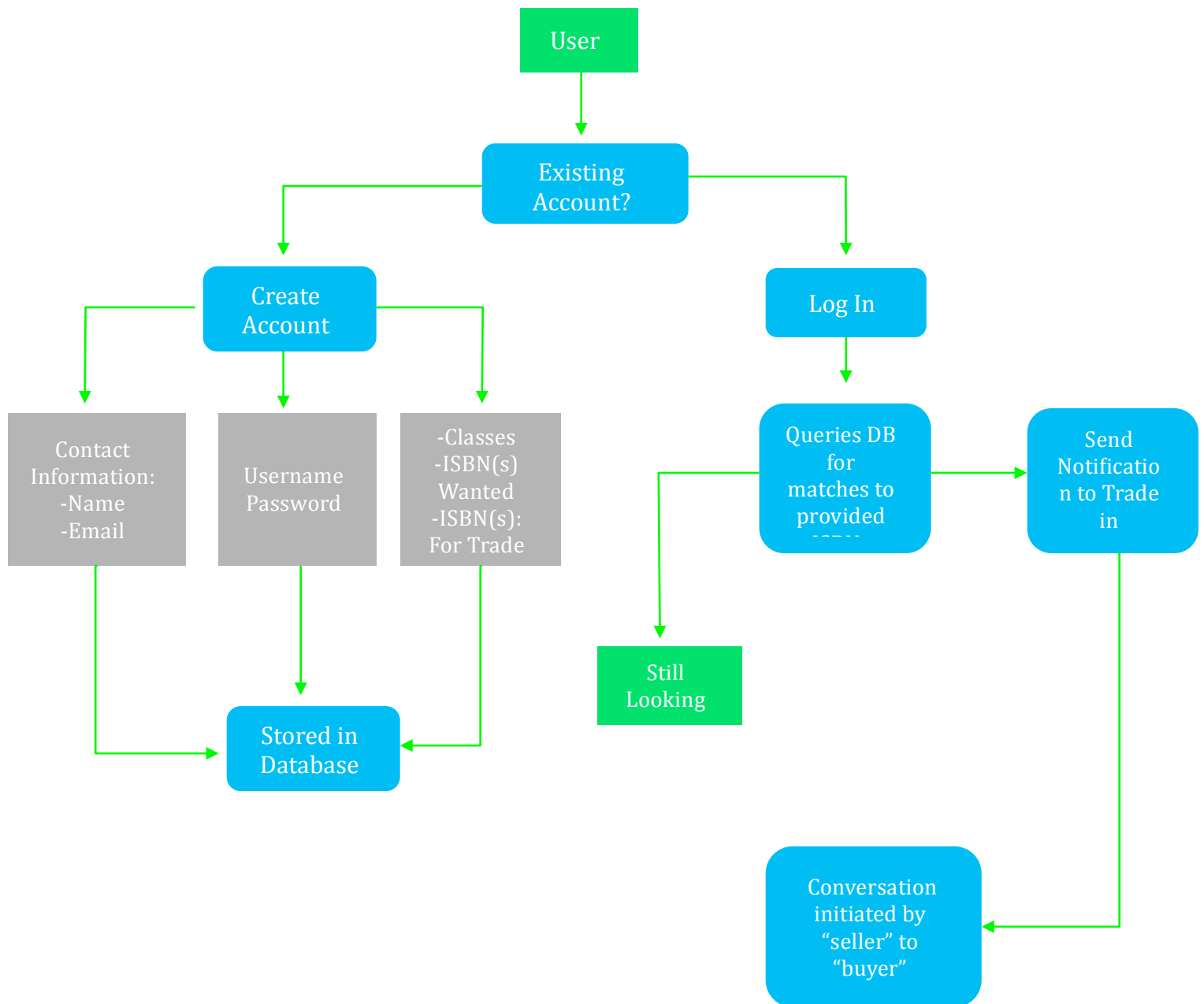
*Cron job for notifications

To ensure that users will be notified when a book they want is listed for trade, we implemented a cron job.

```
public function handle()
{
    $wantedBookData = Wantedbook::with('listing')->get();
    foreach ($wantedBookData as $book) {
        if(isset($book->user_id)){
            $userData = User::where('id', '=', $book->user_id)->first();
            $toEmail = $userData->email;
            // Send notification email
            $data = ['isbn' => $book->isbn];
            Mail::send('emails.notify', ['title' => 'Book Available', 'data' => $data], function ($message) use ($toEmail)
            {
                $message->subject('Book Available For Trade');
                $message->from('notifications@booktrade.biz', 'BookTrade');
                $message->to($toEmail);
            });
        }
    }
}
```

PROJECT SKETCHES

FLOW CHART



WIRE FRAMES

Book Trade

Sign in

Search Books

Login

Email: Enter Email

Password: Enter Password

☒ Remember me

Signin

Or

Create an Account

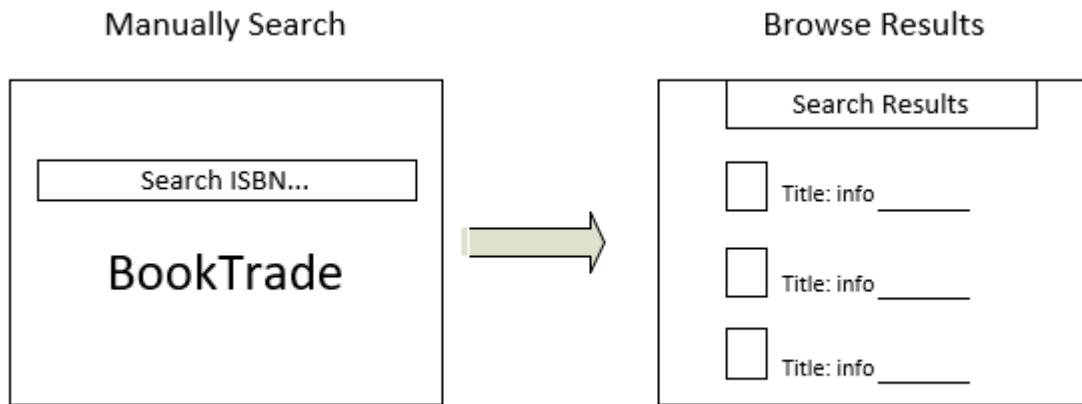
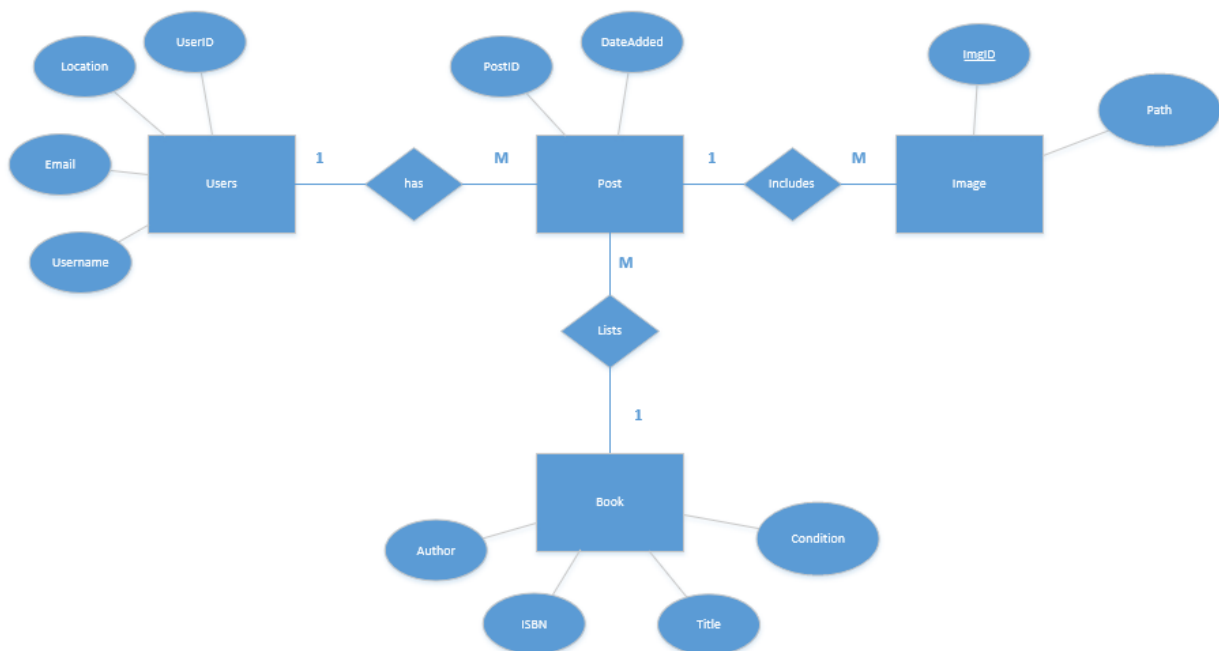


Figure 1

ERD



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