

Team Name: BoilerTradeCo

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Problem Statement:

Students at Purdue University currently face challenges in efficiently buying and selling commonly needed items within the large campus network. The lack of a dedicated platform that focuses on these issues has resulted in an unorganized system where students find themselves having to navigate through a myriad of different channels. Introducing a specialized website for students in West Lafayette can tailor these transactions, creating a consolidated space where students can easily find what they are looking for.

Background Information:

Acquiring and disposing of furniture and other common items has always been a struggle expressed by college students, as most of the items they buy throughout the year are only intended for temporary purposes. When they no longer need the item, most students resort to throwing it out as they may not know anyone who could find a function for it. When in reality, it may be of use to one of the thousands of other students on campus. Our goal is to create a web application that addresses all of these issues by creating a common domain for said students to not only sell the items they no longer need but also give them a space to purchase niche items only college students may be looking for. Targeted users are students or faculty at Purdue who are interested in making money off items they no longer have use for and/or purchasing items in “good condition” rather than new ones to save money. These individuals at Purdue can be those who are usually moving out at the end of the year, switching between dorms or apartments, or graduating and wanting to sell their items away. Additionally, students can use BoilerTradeCo to sell any textbooks, iClickers, lab equipment, or other school supplies when students are done using these materials and would like to sell them for a cheaper price.

“Craigslist” is a platform that is designed for individuals to connect for a multitude of purposes that include: buying and selling used items, finding housing, or promoting local events. Similarly, “Facebook Marketplace” is a platform designed to allow users to buy or sell items within their local communities with their main form of communication being “Facebook Messenger” which is operated in-system. While our team acknowledges the fact that there are other platforms with a similar purpose to our application, like “Craigslist” and “Facebook Marketplace”, our application, BoilerTradeCo, distinguishes itself by being a channel solely dedicated to students at Purdue. This exclusive focus, by attaching the Purdue name, adds a layer of reliability and trust to each product as the platform is designed to connect students. Whereas, in a platform like “Craigslist”, students may be unsure about the origin of the product and would be less likely to trust the product exchange. When using BoilerTradeCo, users will be verified of their status as students at Purdue University, so when going through the process of purchasing an item, the seller has already been verified as a trustworthy source. This would address any concern a user may have on competing platforms providing a secure environment for all users.

Requirements:

Functional:

1. Login/Logout
 - a. As a user, I would like to be able to create a username/password for my account. The username should be a valid Purdue email.
 - b. As a user, I would like to be able to sign into my account with my username/password and use the same account to be either a buyer or seller.
 - c. As a user, I would like to be able to log out of my account and have all my account information saved.
2. System Settings
 - a. As a user, I would like to be able to add and change my profile picture.
 - b. As a user, I would like to be able to edit the username/password for my account.
 - c. As a user, I would like to be able to delete my account.
 - d. As a user, I would like to choose if I want to view the webpage in light mode or dark mode.
3. User authentication
 - a. As a user, I would like to be able to authenticate my registration with my Purdue email so that only Purdue students have access to the platform. There will be an email sent to my Purdue email where I can confirm my Purdue student identity.
4. Product directory
 - a. As a user, I would like to be able to add my posting for a product and view it, including the price, quality, seller, date posted, category for product search, and pictures of each product.
 - b. As a user, I would like to be able to edit my posting for a product.
 - c. As a user, I would like to be able to remove my posting for a product.
 - d. As a user, I would like to be able to upload pictures to my product posting.
 - e. As a user, my product posting should be automatically deleted if I mark the product as sold.
5. Search bar
 - a. As a user, I would like to be able to search for a product using a search bar.
6. Bookmark products
 - a. As a user, I would like to be able to bookmark products that I am interested in purchasing and remove a bookmark from a product I previously bookmarked.
 - b. As a user, I would like to be able to view all the products that I have previously bookmarked and saved in a separate bookmarks page.
 - c. As a user, I would like to be able to filter products the same way I can filter my product search in the bookmarks page for easier viewing.
7. Filter product search by common categories

- a. As a user, I would like to be able to filter my product search by school supplies, dorm/apartment items, textbooks, clothing, game tickets, etc.
 - b. As a user, I would like to be able to filter my product search by quality, ranging from levels such as "Like New, " "Good, " and "Acceptable. "
- 8. Sort product search by price
 - a. As a user, I would like to be able to use a slider to filter my product search by price and find products within a specific price range.
- 9. Product sales
 - a. As a user, I would like to be able to view when a product's price has changed from the original price.
 - b. As a user, I would like to be directed to a specific page with products that have dropped in price.
- 10. Facilitating communication between buyer and seller
 - a. As a user, I would like to be able to select the "I'm interested" button for a product to trigger notifying the seller via email of another preferred method of contact, as well as my contact information, to initialize communication.
- 11. Ratings
 - a. As a user, I would like to be able to rate my experience with a seller so that others can use my experience to judge whether or not they want to proceed with the seller and view my ratings with a seller.
 - b. As a user, I would like to be able to edit ratings with a seller.
 - c. As a user, I would like to be able to remove ratings with a seller.
- 12. Recover password
 - a. As a user, I would like to be able to receive a password reset link via email for account recovery so that I can recover my account in case I forget my password.
- 13. Notifications
 - a. As a user, I would like to be notified if a buyer or seller shows interest in a product and tries to contact me.
 - b. As a user, I would like to be able to turn on and off the notifications feature.
 - c. As a user, I would like to be notified if there is a new product posting in a specific category.
 - d. As a user, I would like to be notified if a product listing I previously bookmarked has been sold or deleted.
 - e. As a user, I would like to be notified if a product's price has changed from its original price.
 - f. As a user, I would like to be notified if I should consider dropping the price on my product listing if it has been posted for two weeks with no buyer interest (if time allows).
- 14. Sharing products on social media

- a. As a user, I would like to be able to share my product listing on my Instagram, Facebook, and/or Snapchat accounts.
 - b. As a user, I would like to be able to share my product listing through text messages.
 - c. As a user, I would like to be able to share my product listing by copying the link.
15. Reports
- a. As a user, I would like to be able to report other users for scamming/fake posting.
16. Exporting Page and Printing Product Listing
- a. As a user, I would like to be able to convert the page to a PDF and export it to be printed in case I want to create a physical poster.

Non-Functional:

1. As a user, I expect the web application to load within 3 seconds, ensuring a smooth and responsive experience and quick access to the platform's features.
 2. As a user, I should be able to access the website through different browsers, as there should be cross-browser capability.
 3. As a user, I should be able to access the website on different devices as the website should have a responsive design and maintain the website's design across different screen sizes.
 4. As a user, I expect the web application to be available 24/7, with a maximum downtime of 1 hour per month for scheduled maintenance.
 5. As an administrator, I want the platform to accommodate an increasing user base, supporting a minimum of 40,000 registered users.
 6. As a user, I expect the search functionality to return relevant results within 1 second, enabling quick and efficient browsing of available items.
 7. As a user, I expect the registration process to take no longer than 2 minutes, ensuring a quick onboarding experience.
 8. As a user, I want my account to be deactivated within 24 hours of submitting a request, ensuring a swift response to account closure requests.
 9. As a user, I want assurance that any financial transactions conducted on the platform, including buying and selling, will be processed securely using encryption and standard payment methods.
 10. As a user, I expect the web application to implement secure privacy measures, ensuring that my personal information, including contact details, remains confidential and is not shared with third parties without explicit consent.
 11. As a user, I want the web application to be user-friendly and easy to use.
12. Platforms/Frameworks
- a. Frontend: Javascript/HTML/CSS
 - i. Languages used for the client front-end web application will be HTML for structure, CSS for website styling, and Javascript for interactivity.

- b. Backend: Python
 - i. Languages used for the server back-end will be Python using a **Django** web framework to help implement client-server interaction.
- c. Database: Heroku
 - i. The database will store login credentials for each user with an account. Additionally, the database will meet any data requests from APIs, such as the push notification API, which sends notifications to users about their product listing.
- d. REST API
 - i. The web application will use a REST API to facilitate client-server communication. There will be API integration for the REST API implementation.
- e. Notifications API
 - i. The web application will integrate a Notifications API to send push notifications to the user about product listings they are interested in or other relevant notifications particularly obtaining to buyers/sellers. There will also be API integration to implement this feature.