CS 673 Team 4 Project Proposal

Team 4 Members and initial roles/areas of focus:

- Jennifer Meggs - Initial Team Lead, UI/UX Design, QA Engineer
- Asma Furniturewala - Full Stack Developer
- Tianpei Cai - Back End Developer, Reliability Engineer
- Jinyi Xie - Full Stack Developer
- Tingtao Zhang - UI/UX Design, Product Designer

Documentation responsibilities will be divided equally among the team with the following roles per rotation schedule. Currently, we are working on specifying these tasks in Jira where the primary stakeholder will be the assignee for each task with contributors and reviewers as watchers. See final section for additional details on roles in the context of this project.

Title

BU Student Shopping Website Project

Purpose

Create a website for students to buy and sell to each other while providing features such as average pricing recommendations and proximity to the university campus in mind and storage limitations.

Shopping Website Design Philosophy

Centralize resources to save students' time and money.

1. Addressing 80% of the housing needs for newcomers in BU:
    1. Create convenience specifically for the most crucial 80% of second-hand transactions for newcomers, such as furniture. Allow free-form requests for other categories using message boards.
2. Minimize distrust between buyers and sellers as much as possible:
    1. Solution: Collaborate with Boston University (BU) for student verification and establish seller credibility on our platform through sales volume and customer reviews.

3. Imposing limited price ranges for second-hand items - tackling the issue of information asymmetry (lemon market problem):
    1. Buyers will have a better understanding of market prices for new items.
    2. Sellers will possess a more detailed knowledge of the condition of their second-hand items.
    3. Sellers should post the original purchase price and records. Websites can automatically retrieve prices from websites like Amazon for similar items.
    4. Determine price ranges based on the primary attributes of items, such as battery life for electronic products.
    5. We aim to provide a reasonable pricing range for sellers to choose from, rather than leaving pricing entirely to their discretion. This may be determined by an algorithm designed for this purpose.

Target users

New and returning university students looking to buy commonly pre-used items from other students

MVP - Features

- Login page - basic verification of BU email
    - Authentication for v2
- User basic profile
    - Capability to add item(s) to shopping cart (buy)
    - Capability to list item (sell)
- Item category
    - Just one initially i.e. furniture
        - More than one category will be in v2
- Checkout
    - Dummy checkout process - without any real credit card information
    - Notification purchase is complete or item is sold
    - Purchased item should be removed from site listing
- Error handling
- Host the site with AWS
- Documentation + Requirement clarifications
    - Jira tickets assigned to each person at various stages of development with watchers to denote contributions from each
    - User stories
- Testing
    - Functional tests for the user stories
    - Unit tests for dev
    - Integration testing

○ E2E tests

Further features if MVP requirements are met

- Authentication
  - Exact specifications to be discussed in requirements planning
    - Example: BU ID and email verification
- Buyer profile with more advanced settings
  - Saved payment information i.e. paypal
  - Ratings from seller - ease of transaction
  - Option to filter on more than one category
- Seller profile with more advanced settings
  - Ratings and reviews for past items sold
  - Number of items sold
  - Duration of membership on the sites
  - Privacy settings
- Listing can include attributes such as:
  - Picture with listing
  - Location of the item
  - Distance to the seller or pick up point
  - Storage options (e.g. storage facility on or near bu campus)
  - Recommended price range for the product type for sellers depending on original worth, age, condition
  - Description: If it comes from a big box store include the URL etc
  - Receipts, warranties if applicable
  - Additional keywords by which item can be categorized
- More detailed UI specifications and theme
  - Streamline UX once basic workflows are established
- Integration with external applications to be discussed
- Performance testing
- More error handling

Constraints
- Project timeline
- Need to perform a more thorough risk analysis and cut off points to ensure project deadlines can be met
- Knowledge - we want to allow contributors time to learn while also making full use of existing strengths and skill sets

- <mark>Unknown</mark>s - change requests and blockers to progress will arise, time taken to resolve, testing throughout will also take time in order to develop a quality product, team members with conflicting schedules.

Technologies

- UI/UX design: Figma, Adobe
- Project planning and management: Jira, Google Docs
- Documentation: Google Docs, Jira, GitHub
- Back-end: Python - Django
- Front-end: HTML, CSS, Javascript, React (if needed)
- sqLite included with Django - mySql if needed
- GitHub: For all project artifacts
- AWS: For Hosting the website

Team communication

- Minimum once weekly in person sync up with additional meet ups as needed on zoom
- Whatsapp and google shared docs for informal team communication, Jira will be used to track tickets with collaboration via comments and reviews of pull requests
- Agreed commitment of 5 hours per week per team member with more if needed depending on project progress

Goals

Team:
To create a prototype for this website with a view to expanding the scope/features offered once the user requirements for a minimum working shopping website are met.

Developer:
- Algorithm development
- Write code according to SDD and SRD documents created by the team
  - Tracked in Jira - will work with others to review this each cycle
- Unit tests

Reliability Engineer:
- Support the other developers on the development
- Keep the code, CI/CD pipeline and the deployment healthy
- Problem solve blockers to development process and in particular MVP
- Configuration management, audits, reviews

QA Engineer:
- Create test plans and documentation
- Manual and automate tests outside of developer scope as well as ensure quality process reporting and communication
- Work with team on prioritizing blockers to achieving working baseline

UI/UX Designer:
- Create wireframes and necessary assets for the website
- Collaborate with stakeholders on design deliverables
- Ensure user workflow

Product Designer:
- User stories
- Update Requirements to
- Document stakeholder and contributor

Team Lead:
- Facilitate team meetings and ensuring deliverables are submitted by project deadlines including change requests based on team feedback
- Follow up with stakeholders for required development life cycle activities and continued development process
- Contribute to reviews of process and development of documentation such as SCMP, jira, versioning of documentation