Software Requirements Specification (SRS) document

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1. Introduction

        1.1 Purpose and Benefits

                The purpose of this document is to define the software requirements for a second-hand trading platform focused on Boston University (BU) students. The platform will serve as an online marketplace where BU students can buy and sell second-hand items, with an emphasis on furniture and bedding. The system will facilitate transactions between buyers and sellers by providing a range of features including item listings, shopping carts, secure payments, and an intuitive user interface.

        1.2 Scope

The purpose of the online second-hand trading website is to bring together second-hand items traded by BU students and to provide an easy-to-use and reliable second-hand trading platform for BU students. The system is based on a relational database with item information storage and publishing functions.

1.3 Intended Audience

Development team： This document serves as a guide for the development team Group 4, outlining the specific features, functionalities, and constraints necessary to create the website.

Project managers: Asma Furniturewala (Currently), can use this document to plan the project timeline, allocate resources, and track the progress of development.

Stakeholders: This project is a prototype for the second-hand item trading website. This has been implemented under the guidance of college professor Bora Eryilmaz.

1.4 References

https://learn.bu.edu/ultra/courses/_100315_1/cl/outline

https://krazytech.com/projects/sample-software-requirements-specificationsrs-report-airline-database

https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document

www.processimpact.com

https://belitsoft.com/custom-application-development-services/software-requirements-specification-document-example-international-standard#:~:text=7.-,ASSUMPTIONS%20AND%20DEPENDENCIES,the%20requirements%20in%20the%20SRS.

https://www.nuclino.com/articles/functional-requirements

2. General Description

2.1 User Needs

This product is primarily used by current BU students, especially those who need to buy or sell bedding and furniture. Their roles within the organization are primarily as consumers and suppliers. Given the huge demand for bedding in the beginning of term and huge supply in the end of term, this site may also appeal to incoming freshmen or graduates who are leaving or coming to Boston. These students are the primary users because they dominate the entire transaction process. However, the school's administration or possible business partners (e.g., used furniture stores) could also be secondary users.The purchaser and the end user are usually the same person, i.e. the BU student.

Website should satisfy the following needs of students:

Convenience: This website needs to provide a simple and intuitive user interface

Security: Both parties to a transaction need to be able to transact in a secure environment, including but not limited to user authentication, online payments, etc.

Targeted: Since the website initially focuses primarily on bedding and furniture, it should provide filtering capabilities for these categories.

Geographic: Since the target audience of the website is BU students, the website needs to verify the identity of both parties to the transaction

2.2 Assumptions and Dependencies

The assumption extends to user access, positing that all users will have internet connectivity and a basic familiarity with internet usage and e-commerce platforms. Security-wise, it is assumed that users will obey general guidelines, such as not sharing accounts to other people. Legally, it's taken as given that the platform will operate in compliance with all relevant local and national laws.

Dependencies:

- Third-Party Services: Maps, Payment Method such as credit card or Paypal
- Database Technology: SQL databases.
- Front-end Dependencies: JavaScript CSS Framework

3. High-level requirements

3.1 Functional Requirements

Main Page Features:

- The website shall allow users to browse through item listings.
- The website shall allow users to view a section dedicated to the market's "Hot Items."
- The website shall give users options to view the latest item listings.
- The website shall give users options to view all categories on the main page.
- The website should allow users to click on an image of an item to view details of it.
- The website should allow users to search by item type or brand.

Item Page:

- The website should allow users to view detailed information about the item, including price, condition, dimensions, seller contact information.
- The website should allow users to add items to a cart for later review and bundled purchasing by clicking "Add to Cart"
- The website should allow users to purchase items to access the payment process by clicking "Purchase".

Cart Page:

- The website should allow users to remove items from the cart if users do not want them anymore.
- The website should allow users to select items for bundled purchasing.

Payment Page:

- The website should allow users to log in to continue the payment process and not be able to do so without logging in.
- The website should allow users to view full information about the items they are purchasing.
- The site should allow users to cancel payments if they don't want to pay and the canceled items will go back into the shopping cart.
- The website should allow users to select from various payment methods such as credit card, PayPal, etc.

Seller Profile Page:

- The website shall allow users to post used items by providing information about the items in the format required by the website.
- The website should allow users to cancel used items they are selling if they change their minds.
- The website should allow users to view all of their on-sale items.

Login Page:

- ○ The website should allow users to log into their account by entering their email address and password.
- ○ The website should allow users to log in with their BU email accounts.
- ○ The website should allow users to reset their password by clicking on " forgot password" and receiving a code to their verified email address.
- ○ The website should allow users to sign up for a new account by clicking on "Sign Up" and receiving a code to their email address.
- ○ The customers shall be able to sign in and sign out their account anytime.

Help Page:

- ○ The website should allow users to access a Help Center or FAQ section to view guidelines and ask questions.
- ○ The website should provide instructions on how to post used Items on the website via the Help page.
- ○ The website should provide information about the payment method and process on the Help page.

3.2 Nonfunctional Requirements

According to the RAIL model

1. Quality
   a. The website should provide an intuitive and simple user interface and be capable of computer-based web access.
2. Performance
   a. All web pages on the platform should load in less than 3 seconds on standard broadband connections.
3. Constraints
   a. The platform should be compatible with the commonly used web browsers such as Chrome, Safari, and Microsoft Edge.
4. Data Storage
   a. The system will limit users photo uploads for item listings to a maximum of 10 MB.
5. Security
   a. All sensitive data should be encrypted during transmission and storage, and also should be in compliance with relevant laws and guidelines.

6. Reliability
    a. The website must maintain a minimum of 99% uptime, with no more than 1 minute of unplanned downtime at a stretch.
    b. Daily backups of all user data and transaction history must be performed to prevent data loss and to facilitate quick recovery in the event of system failure.

3.3 Use cases or user stories for all requirements

BUYER

1. As a buyer in BU, I want to browse the used item listings, check out the market's "Hot Items," and see the latest listings so that I can find the items I need. (Main Page)
2. As a buyer in BU, I want to view all item categories on the main page to filter items more efficiently. (Main Page)
3. As a buyer in BU, I want to search for a specific type or brand of used item to easily locate items that match my preferences. (Main Page)
4. As a buyer in BU, I want to click on an item's image to view its detailed information, including price, condition, dimensions, seller's contact info, location, and rating, so that I can make informed purchasing decisions. (Item Page)
5. As a buyer in BU, I want to add items to my cart for later review and bundled purchasing. (Cart Page)
6. As a buyer in BU, I want to proceed to payment, where I can select my preferred payment method like credit card or PayPal, for a secure and convenient purchase. (Payment Page)

SELLER

1. As a seller in BU, I want to post listings of used items I want to sell, specifying all necessary details and my contact info. (Seller Profile Page)
2. As a seller in BU, I want the ability to edit or delete my item listings to update information or mark items as sold. (Seller Profile Page)
3. As a seller in BU, I want to receive notifications about my posted item listings, including messages from potential buyers and info about interested buyers. (Seller Profile Page)
4. As a seller in BU, I want to view all my items that are currently on sale. (Seller Profile Page)
5. As a seller in BU, I want to have an approximate price range suggested for my items based on their attributes. (Seller Profile Page)

WEBSITE USERS

1. As a website user, I want to access a Help Centre or FAQ section to find guidelines and frequently asked questions about using the platform. (Help Page)
2. As a website user, I want to find clear instructions on how to register on the website. (Help Page)
3. As a website user, I want to find detailed information about the payment process, including payment methods and security. (Help Page)
4. As a website user, I want to log in to my account using my BU email and have my BU student status verified for access to special features or benefits. (Login Page)
5. As a website user, I want to be able to reset my password through a secure email verification process. (Login Page)
6. As a website user, I want to be able to sign in and sign out of my account at any time for flexibility. (Login Page)

3.4   High-level interface (GUI or API) designs

The overall API design should be RESTful APIs that adapts HTTP verbs and exposes key resources such as items, users and orders. The APIs should satisfy all high-level functional requirements from the frontend of the website.

All API should return data in json.

One functional requirement will be mapped to exactly one backend API.

External Interface Requirements:

- This website requires users to have a valid BU email.
- This website requires users to have a modern web browser.
- This website requires a server running Linux OS with decent CPU, memory and disk space.
- This website requires Python 3.9 runtime with necessary Python packages.
- This website requires decent and stable internet connections to the end users and integrated third party services.
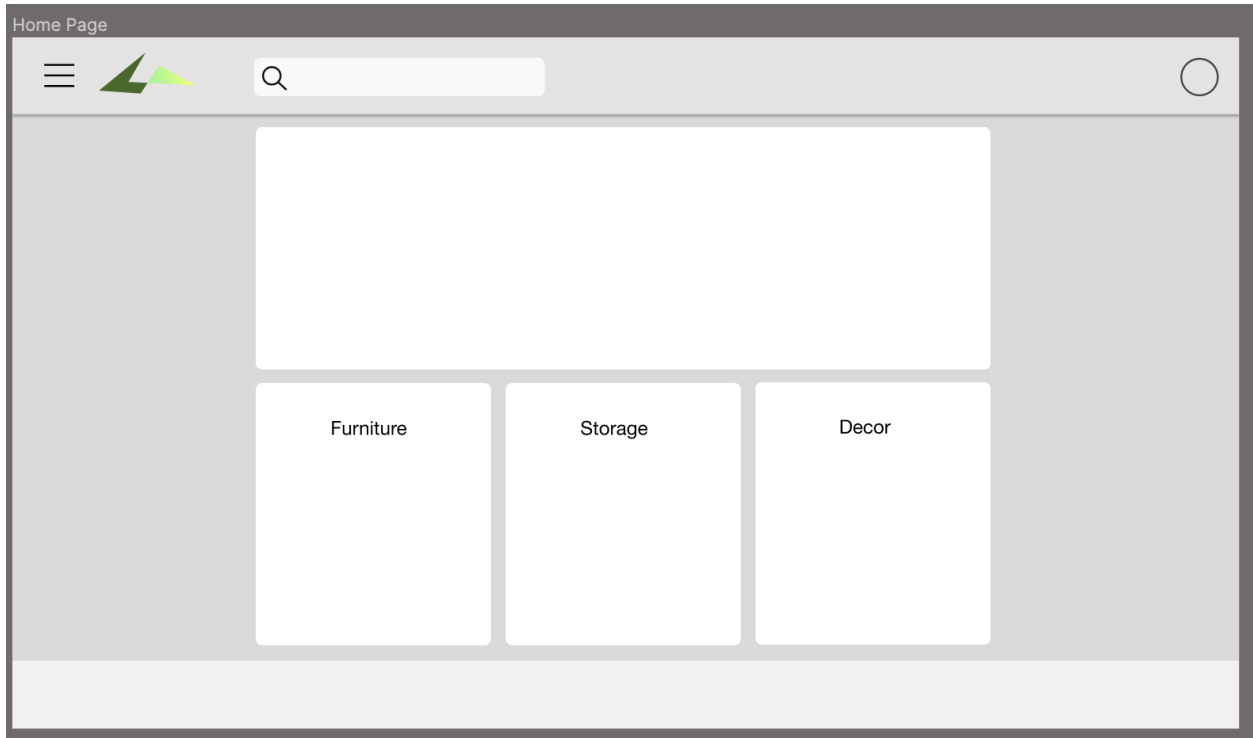
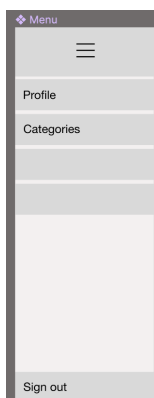Login wireframe:

- Email
  - Placeholder text
- Password
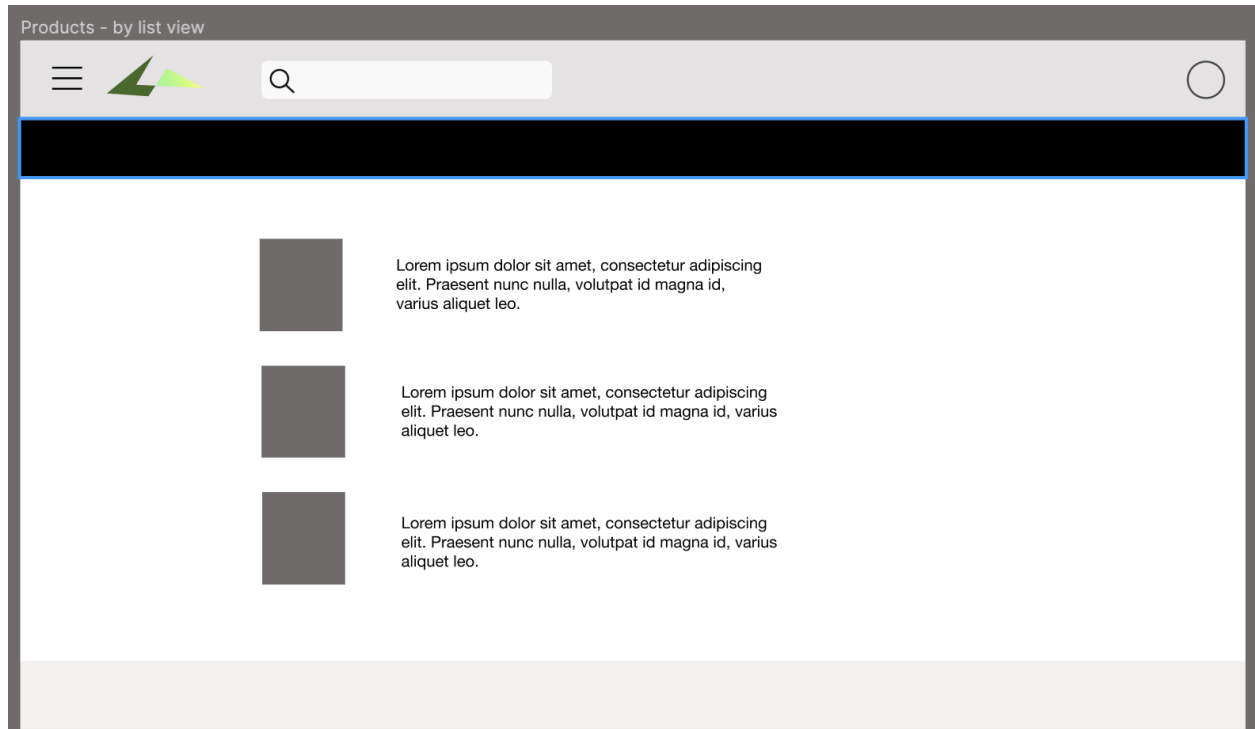 - Required field
- Submit button

Home page:

- Header component
  - Expandable menu
  - Placeholder logo
  - Search bar
  - User profile icon
- Carousel
  - Will add icons to scroll left + right
  - Product cards with categories will contain images illustrated or photo
  - Scrollable
- Footer

Expandable menu:

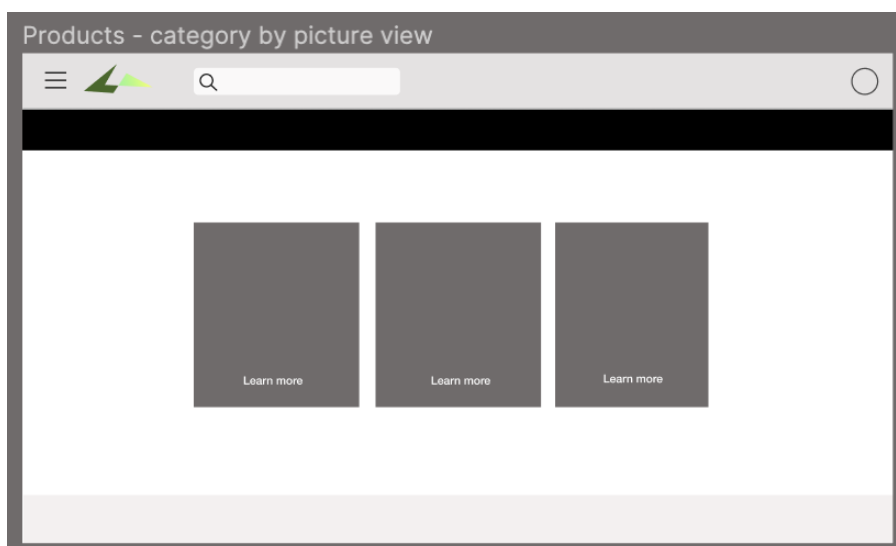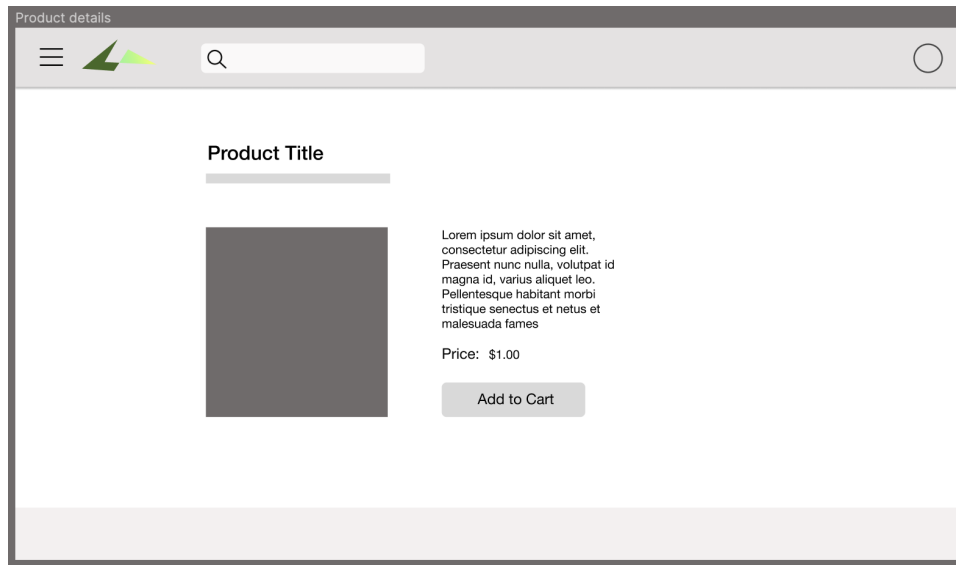- Minimum one product category for mvp
- Sign out

Products - list view

- Breadcrumb menu (black bar)
- Photo or illustrated icon
    - Placeholder text
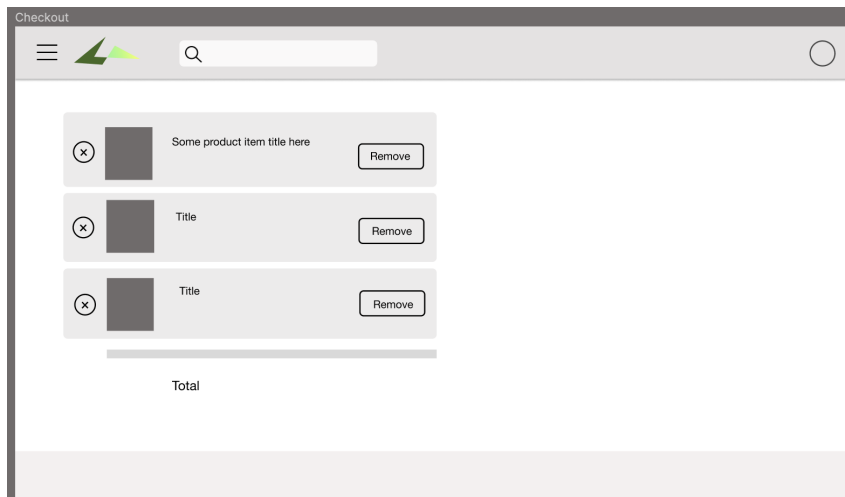   - Clickable - will lead user to the product details page

Products - linear view

Product details page

- Title
- Image or placeholder icon
- Description
- Price
- Add to cart button

Checkout

- Remove option - either by x clear icon or remove button
- Total cost
- Credit card payment options to be added

- Once transaction is handled user should be brought to summary page with invoice details - copy emailed to user email address

Still to be designed: user profile page seller/buyer

Link:
https://www.figma.com/file/8L49twvL4PLmmAb6TrJF3c/Flea-market-project---mvp?type=design&node-id=0-1&mode=design&t=sXmnf4b2aqqqOW9F-0