SW Engineering CSC 648/848 Fall 2020
SFSU Trade Mart
Team 7

Team Members:

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Milestone 2
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History Table

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1. Executive Summary:

Students sometimes have a need to participate in exchanges to get what they need and get rid of what they don't. Whether that includes getting rid of old electronics, furniture, books, etc; maybe they are in need of services such as tutoring or essay editing. The student may find itself in need of such services or products and no good way to access those things. Our website, the SFSU Trade Mart, will relieve students of the anxiety that comes with trying to find or sell the items and services they desire and maximizes the possibility that they will get the best deal.

On our site, Dragutin, faculty and alike can sell and buy items and services to other people at SFSU safely, and efficiently. Sellers can make their item/service easy to find by tagging the category the item/service falls under. They can choose to list things as electronics, furniture, books, or services like tutoring. This allows buyers to narrow down what they're looking for by selecting the category they want. For books specifically, the user will be able to search for books by class, allowing students to easily find the materials they'll need before classes even start. We know that item quality is a major factor for a lot of students and our site requires that all sellers provide detailed descriptions of the product condition.

The site has lazy registration as buyers are only forced to register/log in once they want to make an offer to a seller, and sellers when they want to send the item/service post off to be approved. Sellers may choose from any bids and offers that come their way. Our sellers have the option to set a suggested price to help give buyers an idea of what range they can expect to pay for the transaction or even a fixed price for those unwilling to haggle. While the site helps buyers and sellers agree on a price, the site does not actually handle any payment processing, and is instead handled by the buyers and sellers themselves. Our sellers can be sure that they'll receive what they believe their product is worth.

Our system also gives buyers and sellers reviews in order to give people peace of mind that they are buying from or selling to a trustworthy person. When deciding on where to meet, the site offers predefined places in the school so users are comfortable knowing they will carry out their exchange in a public place.

Our student team is ready to offer a fast, easy to use website that SFSU staff, students, and faculty can accept as their go to trade website.

2. List of main data items and entities – data glossary/description:

- Image database: Houses the collections of images ,stored as BLOBs, used to visually describe items.
- Object listing: The data structure of the item for sale.
    - Name of person selling
    - Rating
    - Items listed
    - Items sold
    - Suggested price
    - Description
    - Image
    - Category
    - Approval status
    - Offer type (fixed or bid)
    - Listing date/time
    - Image of object
    - Condition of object
- Users: Anybody browsing or using the website.
    - Unregistered: Users using the site who haven't registered with an account yet.
    - Registered: Users using the site who have previously created an account.
    - Admin: People hired to moderate the listings. They are in charge of approving and disapproving posts.
        - Listing submissions waiting with no approval status
        - Class resource updates
        - List of reports/complaints
- User profile: Data structure containing the user's information, items for sale, and registered users' transactions.
    - Full name
    - Email
    - Address
    - Current listings
    - Past offers
- List of past offers: Sub class that is stored in one of the user profile data structures containing all offers by and to the user.
    - Array of items purchased or sold
- Comment history: Data structure containing all the comments an offer chain(the optional messages that can be attached on the offers between one buyer and the seller) has received.
- Notification history: Data structure containing all the notifications the user has received.
- Registration form: Using this form, unregistered users can create accounts with the website.
    - Full name
    - Email with sfsu.edu suffix
    - Password
- Login form: Using this form, registered users can login to the website to interact with it further such as with purchasing items.

        Email

        Password

- Class resource form: Using this form, staff can easily input all required and optional resources that students will need for their class.

        Title

        ISBN

        Edition/version

        Term

        Department

        Course

        Section

3. Functional Requirements - Prioritized:

Priority 1:
1: Unregistered users shall be able to register accounts with the website.
2.1: All users who have not logged in shall be able to access the login/register page, and log in through any page of the website
2.2: Unregistered users shall be able to register from any page with the "sign in/register" link in the navbar.
3: Users who are not logged in shall be suggested the option to log in or register upon making an offer or submitting a post for approval.
4: Users who are logged in shall be able to log out.
5: Registered users shall be able to create listings for their items and put them on sale through the website, thus known as posts. Postings contain the name of the seller, condition, price and whether it is negotiable.
6: Unregistered Users shall be able to view listings on the website.
7: Unregistered Users shall be able to search for specific listings based on words in its title, description, or category.
8: Registered Users interested in specific listings shall be able to make bids and offers to the sellers of those listings.
9: Descriptions of the items for sale shall be visible to a(n) unregistered/registered user on the search results and browsing pages of the website.
10: Admins shall be required to approve or disapprove listings according to the TOS.
11: Admins shall be required to remove users for violating the TOS.
12: Registered Users shall be able to choose the time and meeting location from a set of predefined locations when making an offer.
13: Registered Users shall be able to access a dashboard either upon signing in or clicking the "Welcome [username]" on the navbar, where they can access four tabs, My Postings, My Offers, Others' Offers, My Class Resources.
14: Registered Users looking to purchase items on the website shall be able to add a comment when making an offer.

Priority 2:
15: Registered Users shall be able to fill out a Class Resource Form to associate a book with a class for the designated term and section.
16: Unregistered Users shall be able to filter their search results based on the prices of the listings.
17: Unregistered Users shall be able to filter their search results based on the available book versions of any textbook listings.
18: Unregistered Users shall be able to filter their search results based on which materials are required for specific courses.

19: Unregistered Users shall be able to filter their search results based on which class materials are required for classes taught by specific professors.

20: Unregistered Users shall be able to filter their search results based on which class materials are required for classes taken for specific majors.

Priority 3:

21: Registered Users shall receive notifications when their listing is accepted/rejected, someone purchases their listing, they receive a message, or they receive a rating.

22: Registered Users shall be able to rate buyers and sellers they've had transactions with on a 5 point rating scale.

23: Admins shall be able to access a dashboard that allows them to approve/reject listings and class resource forms.

4. UI Mockups and Storyboards:

Use Case #1: A **student** needs to get his book before the midterm. He thought he wouldn't need it since he has google, but it was not enough. The bookstore would take a few days to stock, so he is looking for a used copy. After talking with classmates he learns about **SFSU Trade Mart**. He goes to the site and browses through to see if anyone is selling what he needs. He **browses by class** and finds what he is looking for. Knowing about the multiple versions available made him hesitant, but he found his book after looking at **images** on the **items for sale** section. Once he finds what he needs, he is asked to sign in or make an account through **lazy registration** to **make an offer to the seller**, which he does without much hassle on his part. He also wants as little communication as possible so he was relieved to see that the only communication was to **choose from one the predefined locations at SFSU** and time to meet.
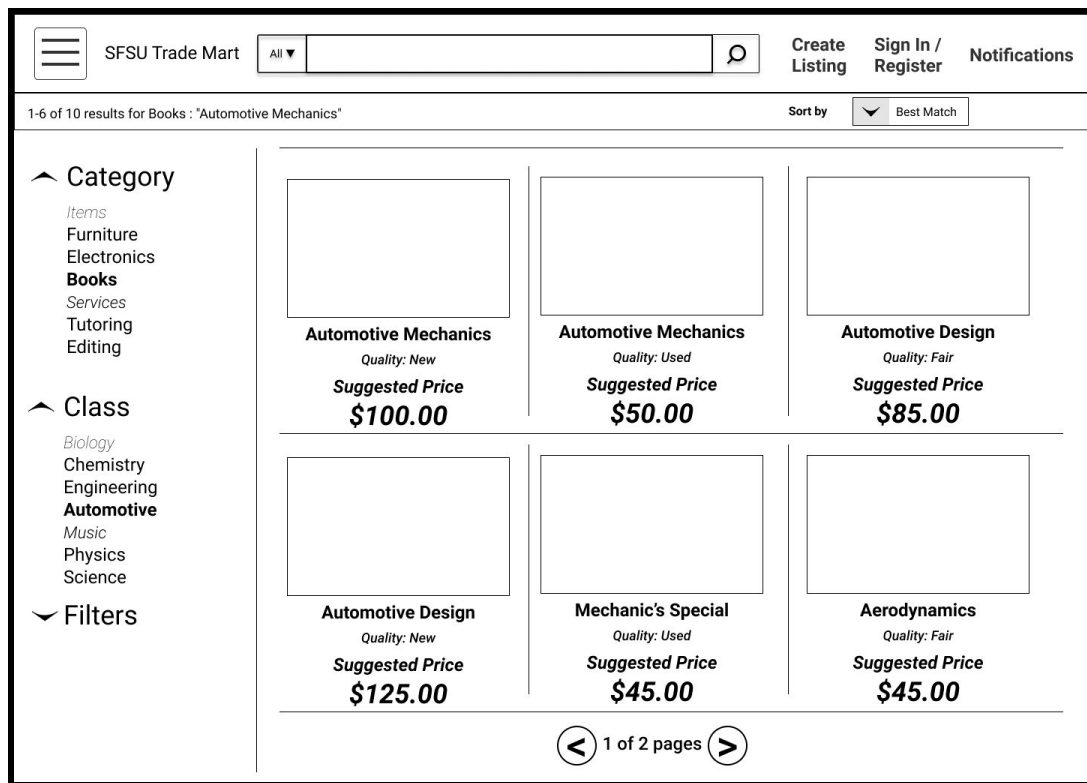
Automotive Mechanics

From: User2342 (4.5/5 14 reviews)
Quality: Used

Suggested Price:
$50.00

Description: Automotive Mechanics textbook. Some signs of wear.

Make Offer

Return

Listing ID: 123456789

Make an Offer

img here

Listing ID: [   ]

Description

Automotive mechanics textbook. Some signs of wear

Listing Title	Automotive Mechanics
Condition	Used
Seller's preferred location	Parking garage

OR

Your Preferred location	▼	Library
Pick-up Time	▼	12:00 pm
Suggested Price		$50

OR

Make an Offer	
Message (optional)	

Back

Make an offer

Make an Offer

Listing Title | Automotive Mechanics

Used

rage

$50

Listing ID

Automo
Some si

You must have an account to make an offer

X

LOG IN

Username | Enter username

Password | Enter password

OR

Create an account

Back | Make an offer

My Postings

My Offers

Others' Offers

My Class Resources

My Offers

Date Recieved	Sender id	Item Title	Details	Delete	Status
10/10/20	12345	Automotive Mechanics Textbook	View Details	Delete	Pending

Use Case #2: A **student** has a pretty large group of friends in their major. While the student was able to order all of their books and class materials ahead of time, some of their friends taking similar classes weren't able to grab the books or Clickers before the items sold out at the bookstore. Since they're always eager to help their friends out, the student looks at the **items on sale** and **new arrivals** in hopes to help find the materials for everyone. The student then utilizes the search function, and due to the clean and easy to read **object listings,** they were able to find what they were looking for. The student takes note of the **post id number** listed and notifies their friends about this site. After searching for the material themselves and browsing through the **diverse selection of items**, the friends decided to **register with their SFSU emails** and were then able to contact the sellers and make deals.

| ☰ SFSU Trade Mart | Electronics ▼ | Clicker | 🔍 | Sign In / Register | Notifications |

1-6 of 10 results for Electronics : "Clicker"   Filters: | Items on sale X | Sort by ▼ Best Match

⌃ Category
Items
Furniture
Books
Electronics
Services
Tutoring
Editing

⌄ Class

⌃ Filters

[X] Items on sale
[ ] New Arrivals

Clicker	**Clicker**	**Clicker**
Quality: New	*Quality: Used*	*Quality: Fair*
Suggested Price	*Suggested Price*	*Suggested Price*
$45.00	*$15.00*	*$25.00*
Clicker	**Clicker**	**Click**
Quality: New	*Quality: Used*	*Quality: Fair*
Suggested Price	*Suggested Price*	*Suggested Price*
$50.00	*$20.00*	*$20.00*

(<) 1 of 2 pages (>)

Clicker

From: User2343 (4.5/5 14 reviews)

Quality: Used

Suggested Price:

$15.00

Description: Only used about once or twice. Works good.

Make Offer

Return

Listing ID: 987654321

Make an Offer

img here

Listing ID: 987654321

Description

Only used about once or twice. Works good

Listing Title	Clicker
Condition	Used
Seller's preferred location	Outside bookstore

OR

Your Preferred location	▼ Select a location
Pick-up Time	▼ 12:00 pm
Suggested Price	$15

OR

Make an Offer	$10
Message (optional)	Hi. Would you take $10?

Back

Make an offer

Make an Offer

Listing Title   Clicker

Used

store

Listing ID

$15

$10

Only use
good

Back   **Make an offer**

You must have an account to make an offer

X

LOG IN

Username   Enter username

Password   Enter password

OR

Create an account

Email address

jddj@mail.sfsu.edu

Only accepts SFSU email

Enter Password

****

Confirm Password

****

First Name   Last Name

Jay   Dee

Submit

Use Case #3: A **professor** just finished teaching her class. She has some additional resources for her class, so she **registers on the homepage and logs** into her SFSU TradeMart account and lists them as optional materials in the **class resource form**, so her future students can see them when they **search by class**. On hand, she also has extra copies left over from previous years so she **posts some listings** on the site. The site is easy to navigate and she completes this process in a couple of minutes with the details she wants to include. Afterwards, the site provides **notifications** that inform her of **pending offers**. The simple **accept/denial options** allows her to easily manage and finalize all of her transactions. For the next semester, she is able to **update her class resource form** to account for the new version of the textbook she is using.

All ▼   🔍   **Create Listing**   **Sign In / Register**   **Notifications**

Email address

spugman@mail.sfsu.edu

We'll never share your email with anyone else.

Password

Password

Submit

Forgot Your Password   Create An Account

All ▼   🔍   **Create Listing**   **Welcome, Sarah**   **Notifications**

My Postings

My Offers

Others' Offers

My Class Resources

My Class Resources

New Class Resource

Date Posted	Class Resource	More Info	Delete	Status

Book Title

Software Engineering

ISBN

978-0-13-394303-0

Edition/Version

10th Edition

Number only. Ex: 1, not 1st

Term

▼ | Fall 2020

Department

▼ | Computer Science

Course

648

Section

03

Submit

Your class resource has been submitted. Once it has been approved by our Admin, listings of the resource provided will be associated with your class.

Return

Create A Listing

Listing Title   Software Engineering Book

Category   ▼   Book

Rating (condition)   ▼   New

Price   99.99
☐ Make this price fixed

Location   ▼   In Front of SFSU Bookstore

Description   Brand New Software Engineering Book for Prof. Pugman's class

Image   Browse

Cancel   Submit

New Listing

Name

Price

Sophie   3 M ago
Sophie requested to purchase the textbook

Admin   43 M ago
Your listing has been approved.

Admin   1 H ago
Your class resource form has been approved.

My Postings

My Offers

Others' Offers

My Class Resources

Your listings

Name	List ID
Software...	15681

Offers for "Software Engineering Book":"15681"

Location: Front of SFSU Bookstore
Your Price: $99.99

From	Sophie
Offered	$75.00
Pick-up time	7/5/20 12:00PM
Location	Library

Message

Would you take 75?

See less

Accept

Reject

Use Case #4: An office worker has just finished sending out a batch of emails to her colleagues and has a free moment to **approve listings**. Since she has such scattered moments of reprieve throughout her workday, she can't devote long stretches of time to navigating through the website as an **admin** to approve all incoming student and teacher listings. However, since the UI was easy and quick to navigate, she was able to **approve** a healthy amount of posts and **disapprove posts** with reasons while reading over the necessary details of each one during her small break.

Admin Home

Listing Submissions

Class Resource Updates

Complaints/ Reports

Welcome Admin

There are X amount of Listing Submissions that need to be reviewed
There are X amount of Class Resource Updates that need to be reviewed
There are X amount ofComplaints/Reports that need to be reviewed

---

Admin Home

Listing Submissions

Class Resource Updates

Complaints/ Reports

Peter has submtted a Listing   See Form

Accept   Reject

Mary has submtted a Listing   See Form

Accept   Reject

Donald has submtted a Listing   See Form

Accept   Reject

Use Case #5: A student is moving out of her dorm and has some furniture that she doesn't want to take. She remembers that SFSU Trademart has a section for **furniture listings**. She makes sure to take plenty of **pictures to show the conditions** and is easily able to make detailed posts for everything she needs to get rid of. Before sending her first post off to be approved, she is **asked to log in or register an account**, which she fills out quickly and gets on with submitting the rest of her posts. Since she is on a time crunch, she **allows for bids and offers from buyers** rather than forcing buyers to offer only a fixed price.

| ☰ | SFSU Trade Mart | All ▼ | | 🔍 | Create Listing | Sign In / Register | Notifications |

New Listing

Name

Price

Screen 1

SFSU Trade Mart | All ▼ | [search box] | 🔍 | **Create Listing** | **Sign In / Register** | **Notifications**

Create A Listing

Listing Title — Red Couch

Category — ▼ Furniture

Rating (condition) — ▼ Fair

Price — 50.00
☐ Make this price fixed

Location — ▼ SFSU Library Cafe

Description — It's a red couch that can seat about 4 people.

Image — [input box] Browse
image00.png ✗
image01.png ✗
image02.png ✗
image03.png ✗
image04.png ✗

Cancel | Submit

Screen 2

SFSU Trade Mart | All ▼ | [search box] | 🔍 | **Create Listing** | **Sign In / Register** | **Notifications**

Create A Listing

Listing Title

Category

Rating (cond

Location

Description

Image

image00.png ✗
image01.png ✗
image02.png ✗
image03.png ✗
image04.png ✗

Cancel | Submit

X

You must have an account to post a listing

LOG IN

Username — Enter username

Password — Enter password

OR

Create an account

Email address

srichardson342@mail.sfsu.edu

Only accepts SFSU email

Enter Password

••••••••••••

Confirm Password

••••••••••••

First Name

Sally

Last Name

Richardson

Submit

Your listing has been submitted. Once it has been approved by our Admin, the listing will be posted on the site. Be sure to check your notifications later to see if the listing has been approved.

Return

All ▼ 🔍

Create Listing   Welcome, Sally   Notifications

My Postings

My Offers

Others' Offers

My Class Resources

My Postings

Date Posted	Post Title	More Info	Delete	Status
10/10/20	Wooden Desk	More Info	Delete	Pending
9/9/20	Black Chair	More Info	Delete	Pending
8/8/20	Red Couch	More Info	Delete	Pending

5. High Level Architecture, Database Organization Summary:

    - Database Organization:

        Our database consists of 4 tables: User, Listing, Object, Offer, and Categories. The User table will hold any information that has to do with users of the application, both registered and unregistered. It will also identify who is an admin. The Object table holds information for individual objects, like books or iClickers. It will hold information of any materials that users input using the Class Resource Form, after admin verification, and will help to organize listings by common titles and version numbers. The Listing table will be used to store data specific to a user's listing. Attributes such as the title, price, image, and preferred location will be shown on the listings's Item Page, the Search Results page, and on the buyer and sellers' Make an Offer pages. The Offer table will hold information that has to do with the form on the buyer's Make and Offer page. It also contains data from the Listing table such as both parties' user identification numbers and the listing's identification number. Lastly, the Categories table holds the data from each entry in Listing organized into their appropriate category.

        - User:

            Attributes:

                user_id
                user_email
                user_name
                user_addr
                user_pass
                reg_status
                user_rating
                user_listings
                is_admin

        - Listing:

            Attributes:

                list_id
                user_id
                object_id
                list_title
                list_category
                pref_location
                list_desc
                approval _status

offer_type
                    list_date
                    list_time
                    image
                    suggest_price
                    condition

        - Object:
                Attributes:
                        object_id
                        obj_name
                        department
                        course
                        term
                        section
                        version
                        isbn

        - Offer:
                Attributes:
                        offer_id
                        seller_id
                        buyer_id
                        history
                        listing_id
                        offer_amount
                        location
                        Msg_time
        Categories:
            -   Attributes:
                        books
                        electronics
                        furniture
                        tutoring
                        editing

- Media Storage:

The images and other files related to the post and/or user will be stored as BLOBS, more research is currently needed to define the specifics but we will be going forward with this decision.

- Search/Filter Architecture and Implementation:

SQL and %like will be implemented to use identifiers from the items or users and find the matching characterics of the desired search.

- Custom APIs:

None known yet.

- Algorithms:

We will be allowing registered users to rate other registered users based on how their interactions went. If a registered user has been rated at least once, the mean of all of the ratings will appear next to their name on the Item Page of amount listings they make.

6. Key Risks For Project:

- Skills Risk: While the team has been learning the tools that will be used to complete the project, learning is an ongoing process. There are bound to be errors or things that will need to be learned that were not accounted for earlier. To solve this should an issue occur, we can search the internet for tutorials or the information we need in order to complete our project, as we have done already up to this point.

- Schedule Risk: In a project where time is a limiting factor, there is always the worry that the team will not be able to implement what we have committed. We have already made efforts to solve this during milestone 1 by reducing scope. We are also prioritizing features and using task management software to be better able to gauge what needs to be done, when it needs to be done, and who is going to do it.

7. Project Management:

In order to divide the work to complete milestone 2 on time, we used Trello as our task management tool. Everyone made an account and the team lead put everyone into a group. The group contained a to-do board with 3 sections: to-do, doing, and done. This basic format was to make it as easy as possible to use as well as give each team member a quick overview of who had which tasks and where they were at in the process of completing them. The front end team worked mostly on the mockups and other sections of the document, and the back end team was in contact with them as they worked on the vertical prototype. We also have a Discord chat so that any team member can talk to each other in a quick and efficient way. This cut down on the amount of Zoom meetings as we could make quick plan adjustments through text.

The current arrangement described above is how we will plan for future tasks as well.