

# SW Engineering CSC648-848

## Spring 2024

### Milestone 1

#### Project Title :

***“From Here to There”***

***“~SFSU Exclusive Site for Buying and Selling Items”***

#### Team 03

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# 1. Executive Summary:

## **Executive Summary for From Here to There**

Introducing "From Here to There, an SFSU Exclusive Site for Buying and Selling Items" a platform uniquely designed for the San Francisco State University (SFSU) community. Developed with the spirit of innovation and collaboration, this application offers an exclusive marketplace for buying, selling, and renting items within the SFSU community. From essential class books to the perfect living room sofa, "From Here to There" facilitates a seamless exchange of goods and services among students, alumni, and staff, strengthening our community bonds.

"From Here to There" is a unique marketplace platform that enables students, alumni, and staff to buy, sell, and rent items within the SFSU community with the ease of entering their SFSU ID. From crucial academic resources to that perfect piece of furniture that makes a space feel like home, our application streamlines these exchanges, fostering a supportive, sustainable community.

Key features include a sophisticated search function that allows users to navigate offerings by category, class archetype (CSC, MATH, ENGL, etc.), and specific course numbers, offering a level of specificity unmatched by other platforms. This precision ensures that users can find exactly what they need when needed, fostering an environment of support and mutual benefit.

Behind "From Here to There" is a dynamic student startup team from SFSU, bringing together diverse talents in technology, design, and business. This team not only understands the unique challenges of campus life but also shares a commitment to creating a solution that strengthens the sense of community and support among SFSU students, faculty, and staff.

Our diverse and dedicated team is the driving force behind "From Here to There," united by the shared goal of enriching the SFSU community experience. Prioritizing a seamless user interface, we are crafting a marketplace that is both intuitive and engaging. Under the leadership of CEO Dragutin Petkovic and CTO Anthony Souza, whose expertise anchors our project, we are well-equipped to bring this innovative platform to life.

## 2. Personae:

### 1. User - Mia:



**Role:** Student at San Francisco State University

**Personality:** Mia is diligent, curious, and always eager to explore new opportunities. As a student at San Francisco State University, she's focused on her studies but also enjoys participating in campus activities and events.

**Interests:** Mia is interested in various subjects, from literature to technology. She enjoys attending workshops, joining student clubs, and exploring the vibrant culture of San Francisco.

**Tech Usage:** Mia relies on technology to stay organized with her class schedules, assignments, and extracurricular activities. She frequently uses mobile apps for productivity, socializing, and entertainment.

**Goal:** To stay on top of her studies, Mia would appreciate having a website that she can use to get anything she might need for her classes. She wants this website to eliminate the need to go to any specific place to get what she needs, as having it all in one place would be highly convenient.

### 2. Staff Member - Tom:



**Role:** Staff Member at San Francisco State University

**Personality:** Tom is dedicated, approachable, and committed to supporting the university community. As a staff member at San Francisco State University, he takes pride in his work and enjoys assisting students and faculty members.

**Interests:** Tom enjoys staying updated on educational trends, attending professional development workshops, and participating in campus initiatives aimed at enhancing student experiences.

**Tech Usage:** Tom utilizes various administrative systems and software tools provided by the university to manage student records, respond to inquiries, and facilitate campus operations.

**Goal:** Tom, like Mia, would appreciate a website that provides what he needs. In his case, it's office supplies. Tom would also be interested in potentially seeing some of the data from From Here to There, as it might give him an idea what students want in physical bookstores and such. He can pass this information on.

### 3. Faculty Member - Dr. Patel:



**Role:** Faculty Member at San Francisco State University

**Personality:** Dr. Patel is knowledgeable, passionate, and dedicated to academic excellence. As a faculty member at San Francisco State University, they are committed to teaching, research, and mentorship.

**Interests:** Dr. Patel is deeply engaged in their field of study, attending conferences, publishing research papers, and collaborating with colleagues on scholarly projects. They also enjoy guiding students in their academic and professional development.

**Tech Usage:** Dr. Patel utilizes technology to deliver lectures, communicate with students, and conduct research. They leverage learning management systems, academic databases, and communication platforms to enhance the teaching and learning experience.

**Goal:** Dr. Patel is the faculty connection to a club on the SF State campus. This club has asked Dr. Patel if he knows any websites they can put their merchandise on so members of the club can buy them. Dr. Patel would like to find a site that does just that, one that also has easy to use functionality to for the lesser-than-tech-savvy members of the club.

### 4. Admin - Rachel:



**Role:** Admin of the Website

**Personality:** Rachel is efficient, detail-oriented, and proactive. As the website admin for From Here to There, she plays a crucial role in managing and maintaining the university's (unofficial) marketplace.

**Interests:** Rachel enjoys staying updated on web development trends, optimizing user experiences, and implementing new features to enhance website functionality.

**Tech Usage:** Rachel is proficient in web development languages and content management systems. She regularly monitors website performance, troubleshoots technical issues, and collaborates with other departments to ensure the website meets the needs of students, faculty, staff, and visitors.

User, staff, faculty, admin

Browsing, contacting seller, posting something, wanting to buy something, etc

**Goal:** Rachel wants to manage a marketplace to the best of her abilities, ensuring that users have the best experience and that nothing goes wrong. She can accomplish this by making sure no one puts up something obscene for sale, that into relevant listings go up on the marketplace, among more. That and she wants to use a marketplace that is easy to use and employs the latest technologies.

### 3. High-level use cases:

#### 1. *General Browsing of the Site - Mia:*

- **Scenario:** Mia wants to explore the marketplace app to see what items are available for sale by fellow SFSU students.
- **Tech Solution:** The marketplace app allows users to browse listings without needing to log in using their student credentials. The interface categorizes listings by type, such as textbooks, electronics, clothing, and more. Users can filter by price or category and view high-quality images and detailed descriptions of each item.
- **Outcome:** Mia discovers a wide variety of items available for sale, including textbooks for her upcoming classes, trendy clothing, and electronics. She enjoys the convenience of shopping with fellow students within the university community, knowing that she's supporting her peers while finding great deals on items she needs.

2. *Contacting the Seller of an Item - Tom:*

- **Scenario:** Tom comes across a listing for a laptop that is used on the marketplace app and wants to inquire about its condition and price.
- **Tech Solution:** When Tom tries to contact the seller, he is prompted to log in or register. After logging in, instead of sending a message through the app, he is instructed to include his contact information in a pre-formatted inquiry text. The app does not facilitate direct messaging but encourages clear communication through provided contact details.
- **Outcome:** The seller promptly responds to Tom's inquiry, providing additional details about the laptop and confirming its availability. Tom appreciates the quick and convenient communication facilitated by the marketplace app, allowing him to gather all the necessary information before making a purchasing decision.

3. *Posting a Listing for People to Buy - Dr. Patel:*

- **Scenario:** Dr. Patel wants to sell some of their old textbooks to fellow students who might find them helpful for their courses.
- **Tech Solution:** Dr. Patel creates a listing for the textbooks on the marketplace app, providing accurate descriptions, photos, and pricing information. They specify that the books are in good condition. After doing so, they are informed that their listing will be reviewed by an admin and may take up to 24 hours to go live.  
**Outcome:** The listing gets approved by the admin, and Dr. Patel's textbooks go live on the marketplace app, which is visible to all users within the university community. Fellow students interested in purchasing textbooks for their classes come across Dr. Patel's listing and appreciate the opportunity to buy affordable, second-hand books from a trusted source.

4. *Trying to Buy Something - Rachel:*

- **Scenario:** As an admin, Rachel logs into the marketplace to review and approve new listings, ensuring the platform remains a trusted space for student listings.
- **Tech Solution:** Rachel logs into her dashboard, where she can see a list of new listings pending approval. She reviews each listing for compliance with marketplace guidelines, ensuring that the content is appropriate and the items are suitable for the community. If a listing meets all requirements, Rachel approves it, allowing it to go live. If not, she can reject the listing or request additional information from the seller.
- **Outcome:** Rachel plays a crucial role in ensuring that only verified and appropriate listings are visible to the marketplace users, fostering a trustworthy and secure environment for transactions. This process also provides a safeguard against potential misuse of the platform, ensuring all listings contribute positively to the university community.

## 4. List of entities and main data items - Data glossary/description

### *-Entities:*

#### 1. Types of Users:

-**Description:** The main types of users registered on the marketplace app, including students, staff members, professors, and administrators.

#### 2. Sales Item and its Main Sub-items:

- **Description:** The primary entity representing items available for sale on the marketplace app. This includes various sub-items or categories under which sales items are organized, such as textbooks, furniture, computer items, accessories, etc.

#### 3. User Registration Record:

-**Description:** The record associated with each user's registration on the marketplace app. It includes details such as username, email address, password, contact information, and other relevant profile information.

#### 4. Messages:

-**Description:** The communication system within the marketplace app that allows users to send and receive messages. Messages enable users to communicate with each other regarding listings, purchases, inquiries, and other interactions on the platform.

### *-Data Items:*

#### 1. Categories:

-**Description:** Main classification of items available for sale on the marketplace app. Categories include furniture, textbooks, notes, practical tools, computer items, storage devices, accessories, parts, literal computers, hardware, non-digital games, club merchandise, and miscellaneous items.

#### 2. User Profile:

-**Description:** The profile associated with each user account on the marketplace app. It includes personal information provided during registration, such as name, contact details, university affiliation, and any additional details users choose to share.

#### 3. Listing:

-**Description:** Individual item listing created by users for sale on the marketplace app. Each listing includes details such as item description, price, condition, photos, and contact information of the seller.

#### 4. Purchase Record:

**-Description:** Record of purchases made on the marketplace app by users. Purchase records document details such as the item bought, the buyer, the seller, the transaction date, payment information, and any additional notes related to the purchase.

## **5. List high level functional requirements**

### **Registered Users**

1. Shall be able to search for listings using keywords, categories, and filters.
2. Shall be able to store the items they've posted in the inventory.
3. Shall be able to edit or delete their own posts.
4. Shall be able to communicate with moderators, sellers, and buyers through given contact information provided by them.
5. Shall be able to rate and review other users based on transactions.
6. Shall be able to report posts or users that violate guidelines to administrators.
7. Shall be able to save searches or favorite listings for easy access later.
8. Shall be able to update their profile information, including password, and profile picture.
9. Shall inherit all the functions of a non-registered user

### **Unregistered Users**

10. Shall be able to create/register an account (only with SFSU email).
11. Shall be able to view the post details, including the title, description, and images.
12. Shall be able to access help and FAQ sections.
13. Shall be able to navigate through the site's public sections without logging in.
14. Shall be able to contact the site administration through a contact form.

### **Admin**

15. Shall be able to access the server and perform maintenance or updates as needed.
16. Shall be required to moderate users, posts, and review listings for guideline compliance.
17. Shall be able to remove or edit any posts that do not meet site guidelines.
18. Shall be able to ban or suspend users who repeatedly violate the guidelines.
19. Shall be able to generate reports on site usage, popular listings, and user activity.
20. Shall be able to create and manage site-wide announcements or notifications.

## **6. List of non-functional requirements**

1. Application shall be developed, tested, and deployed using tools and servers approved by Class CTO and as agreed in M0.
2. Application shall be optimized for standard desktop/laptop browsers e.g., must render correctly on the two latest versions of two major browsers.
3. All or selected application functions shall render well on mobile devices.



4. Data shall be stored in the database on the team's deployment server.
5. No more than 50 concurrent users shall be accessing the application at any time.
6. Privacy of users shall be protected.
7. The language used shall be English (no localization needed).
8. Application shall be very easy to use and intuitive.
9. Application shall follow established architecture patterns.
10. Application code and its repository shall be accessible to inspect and maintain.
11. Google analytics shall be used.
12. No email clients shall be allowed. Interested users can only message to sellers via the site messaging. One round of messaging (from user to seller) is enough for this application.
13. Pay functionality, if any (e.g., paying for goods and services) shall not be implemented nor simulated in UI.
14. Site security: basic best practices shall be applied (as covered in the class) for main data items.
15. Media formats shall be standard as used in the market today.
16. Modern SE processes and tools shall be used as specified in the class, including collaborative and continuous SW development and GenAI tools.
17. The application UI (WWW and mobile) shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Spring 2024. For Demonstration Only" at the top of the WWW page Nav bar. (Important so as to not confuse this with an actual application). These non-functional specs are in real life usually provided by clients, CEO, business, and legal department and are NOT subject to change by the engineering team on their own. Hence copy them in your milestone documents (and optionally add details as necessary). You are not allowed to remove any of these non-functional requirements by yourself and must abide by them precisely as they are written (including the text for #17).

## 7. Competitive analysis (functions/features only, not business or marketing)

Features \ Company	Ebay	Facebook Marketplace	Amazon	Our Website
Buying Post	-	+	-	++

Shopping Cart	+	-	+	+
Search Option	+	+	+	++
Rental System	-	-	+	++
User Authorization	-	+	-	+
+ feature exists; ++ superior; - does not exist				

Our marketplace platform boasts a unique set of features that distinguish it from competitors like Amazon, eBay, and Facebook Marketplace. Firstly, our platform allows registered users to post specific product requests they're seeking to purchase, creating a dynamic environment for personalized interactions. While eBay offers a similar feature, our platform's emphasis on user participation and tailored responses sets it apart. Secondly, our rental system sets us apart from traditional marketplaces by offering users the option to rent items in addition to buying and selling. While both eBay and Facebook Marketplace lack a dedicated rental system, our platform provides a seamless solution for users looking to engage in sustainable and cost-effective exchanges. Furthermore, our platform enables users to search for textbooks using course numbers, streamlining the process of finding required course materials. Unlike Amazon, eBay, and Facebook Marketplace, which offer standard search options, our specialized search feature caters specifically to the academic needs of our user base, providing a superior and more efficient solution for students and faculty. Lastly, we implement a user authorization feature, ensuring that users signing up must verify their SFSU email to confirm their affiliation with SFSU students/faculty. This added layer of security distinguishes us from competitors where only an email address is required for sign-up. Collectively, these unique features position our marketplace as a standout choice for the SFSU community, offering tailored solutions and fostering an environment for users to engage in interactions that meet their specific needs and preferences.

## 8. High-level system architecture and technologies used

- a. List all main SW components and versions (DB, WWW server)
  - i. MySQL (8.0.36)
  - ii. Apache (2.4.52)
- b. List deployment cloud servicer you plan to use
  - i. Amazon AWS (N/A)

- c. List front end frameworks you will use
  - i. Flask (2.0.1)
  - ii. Bootstrap (5.3.3)
  - iii. jQuery (3.6.0)
  - iv. React (18)
  - v. Express (4.18.3)
  - vi. SocketIO (4.7.4)
- d. List browsers you plan to support (choose 2 market leading browsers, latest two versions from each)
  - i. FireFox (123.0)
  - ii. Google Chrome (123.0.6312.28 / 6)
- e. List any major additional external open source APIs you plan to use (e.g. Google analytics, Google map APIs, APIs/service for creating thumbnails – check Architecture class slides)
  - i. Google Analytics

## 9. Use of GenAI tools like ChatGPT and copilot

Douglas:

**General:** I had AI generate prompts from which I wrote out the executive summary. Unfortunately, whatever it gave me was either in the range of too much fluff, or downright...written in 7 different languages, of which I only understood 5. As such, I just wrote out everything myself.

**GenAI Used:** ChatGPT

**Tasks Used/Effectiveness:**

Used GenAI: ChatGPT (3.5)

Effectiveness: MEDIUM

Details: Single sentence prompts were all that were given. It generated them as expected, but random bits and pieces did something else entirely without any direct relation of causality. In essence, fluff but no stuff.

Gurpreet:

**General:** I used AI to help with writing parts of my project, like the executive summary, and to come up with new ideas. It also gave me feedback on my app's design and helped me write stuff to tell people about our app.

**GenAI Used:** ChatGPT 4

**Tasks Used/Effectiveness:**

Used GenAI: Executive Summary Composition and Refinement

Effectiveness: HIGH

Details: ChatGPT was instrumental in the drafting phase of the executive summary for "From Here to There," providing a well-structured and persuasive narrative. It offered several iterations, which were then tailored to better align with our project's vision and objectives. The AI's

contributions were pivotal in enhancing the readability and impact of the summary, ensuring it was engaging for a broad audience.

Omar:

**General:** I used AI a fair bit but made sure to not completely rely on it. I wrote a \*ton\* of the stuff for the Executive Summary, and all of the stuff I wrote was from my head. I didn't think there was any need to use AI for something like that, so I simply refrained from doing so. When I \*did\* use it, I was very specific about my requests and basically gave it a rundown of what I wanted to ensure the best results.

**GenAI Used:** ChatGPT.

**Tasks Used/Effectiveness:**

Used GenAI: to deal with #2 and #3. It was very useful for getting Personas as well as getting use cases with said personas.

Effectiveness: very effective, and it saved time too. It followed my request exactly and gave me what I wanted with no issues.

Details: Went back and forth on asking it for different Personas and use cases, which I did to see the variety in the type of stuff it would output.

Gursimran:

**General:** In Milestone 1, I used AI to help me with some tasks. While I did most of the work on the executive summary and user scenarios, I also used AI to create personas and use cases. This way, I made sure to get the best of both worlds.

**GenAI Used:** ChatGPT (4)

**Tasks Used/Effectiveness:**

**Used GenAI:** For targeted assistance with crafting the executive summary and user scenarios.

**Effectiveness:** MEDIUM

**Details:** I used ChatGPT to help with our executive summary, making it sharper and more to the point. It also helped me create clear, straightforward user scenarios.

Justin:

**GenAI Used:** GPT 4

**Tasks Used/Effectiveness:**

Used GenAI: Task 5 High Level Requirements

Effectiveness: Strong

Details: Using ChatGPT for #5 for identifying and creating high level requirements was very effective. It followed the given prompt which was to list them out individually and specific to our assignment and provided us with plenty of options tailored to our project with reasoning.

Gio:

**GenAI Used:** ChatGPT (3.5)

**Tasks Used/Effectiveness:**

**Effectiveness:** MEDIUM

**Details:** By using ChatGPT for #7 (Competitive Analysis), it saved a lot of time from terminating a long paragraph. Moreover, by inputting the details of what I want the paragraph to be written such as telling ChatGPT to focus on what to write, it resulted in a satisfying paragraph. However, I had to manually edit some sentences or words which I did not want to use.

## 10. Team and roles:

TEAM 03		
Name	Role	Email
Gurpreet Natt	Team Lead	gnatt@sfsu.edu
Omar Dajani	Github Lead	odajani@sfsu.edu
Douglas Cheung	Frontend Lead	dcheung5@sfsu.edu
Gursimran Singh	Frontend Developer	gsingh8@sfsu.edu
Justin Isidro	Backend Lead	jisidro@sfsu.edu
Gio Jung	Backend Developer	gjung1@sfsu.edu

## 11. Team Lead Checklist

- So far all team members are fully engaged and attending team sessions when required. **DONE**
- Team found a time slot to meet outside of the class. **DONE**
- Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing. **DONE**
- Team reviewed class slides on requirements and use cases before drafting Milestone. **DONE**
- Team reviewed non-functional requirements from "How to start..." document and developed Milestone 1 consistently. **DONE**
- Team lead checked Milestone 1 document for quality, completeness, formatting and compliance with instructions before the submission. **DONE**
- Team lead ensured that all team members read the final M1 and agree/understand it before submission **DONE**
- Team shared and discussed experience with genAI tools among themselves **DONE**

- Github is organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.) **DONE**