SW Engineering CSC648-848
Spring 2024

Milestone 1

Project Title :
“From Here to There”

Team 03

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1. Executive Summary:

Executive Summary for From Here to There

Introduction and Motivation

In the bustling campus life of San Francisco State University (SFSU), students often find themselves at a crossroads of transitioning between semesters, graduating, or simply decluttering their living spaces. The need for a streamlined, secure, and student-focused platform for selling and purchasing personal items is more pressing than ever. Enter From Here to There, a groundbreaking app designed to revolutionize how SFSU students and alumni manage their belongings. With its modern interface and user-friendly features, From Here to There is not just an app; it's a movement towards simplifying the lives of its community members.

Functionality and User Benefits

From Here to There offers a wide array of services tailored to the needs of the SFSU community. Whether you're looking to sell your gently used furniture, offload recreational gear, or find a new home for your miscellaneous items, this app facilitates a seamless transaction process. Unlike other platforms, From Here to There is built with the safety and interests of students and alumni in mind, ensuring a trustworthy environment free from the common pitfalls of online marketplaces. Features such as direct messaging with sellers, personalized wishlists, and a simple, efficient checkout process underscore our commitment to user satisfaction and convenience.

Uniqueness and Customization for SFSU

What sets From Here to There apart is its deep integration with the SFSU identity. From the use of the university's colors—purple and gold—to the incorporation of the SFSU mascot, the app resonates with the spirit and pride of being part of the SFSU community. This intentional design choice not only fosters a sense of belonging but also elevates the app's status to what feels like an official university tool, even without formal endorsement. By restricting access to individuals with a valid SFSU student ID, we ensure that our platform remains exclusive and beneficial to our immediate community.

About the Team

Behind From Here to There is a dynamic team of current SFSU students, each bringing their unique skills and passion for making a difference in the university community. Our diverse backgrounds in technology, design, and business have allowed us to create an app that is not only technologically robust but also deeply empathetic to the needs of our peers. Our commitment to excellence and our shared experience as part of the SFSU family drive us to continuously improve and adapt our app to serve our community better.

In conclusion, From Here to There is more than just an app; it's a testament to the innovation and community spirit of SFSU. By addressing a real need within our community in a way that is safe, efficient, and deeply connected to our university identity, we believe From Here to There represents a valuable investment in the well-being and

convenience of SFSU students and alumni. We invite you to join us in making the SFSU experience even richer and more connected by supporting From Here to There.

2. Personae:

1. *User - Mia*:
   Role: Student
   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.

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.

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.

4. *Admin - Rachel*:
   Role: Admin of the Website
   Personality: Rachel is efficient, detail-oriented, and proactive. As the website admin for San Francisco State University, she plays a crucial role in managing and maintaining the university's online presence.
   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

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 San Francisco State University students.
   - ***Tech Solution***: Mia logs into the marketplace app using her student credentials. The app's intuitive interface categorizes listings by type, such as textbooks, electronics, clothing, and more. Mia can browse through the listings, 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 from 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 used laptop on the marketplace app and wants to inquire about its condition and price.
   - ***Tech Solution***: Tom clicks on the listing for the laptop and finds contact information for the seller, who happens to be a student at San Francisco State University. He sends a message to the seller directly through the app, asking about the laptop's specifications and whether it's still available for sale.
   - ***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 useful 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 and suitable for courses commonly taken by San Francisco State University students.
- ***Outcome***: The listing for Dr. Patel's textbooks goes live on the marketplace app, 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***: Rachel needs to purchase a scientific calculator for her upcoming mathematics course and decides to use the marketplace app to find one.
    - ***Tech Solution***: Rachel searches for "scientific calculator" on the marketplace app and filters the results to show listings from San Francisco State University students. She finds a listing for a gently used calculator at a reasonable price and clicks on it to view more details.
    - ***Outcome***: Rachel is impressed by the thorough description and clear photos provided by the seller. She decides to purchase the calculator directly through the app, using secure payment methods integrated into the platform. Rachel appreciates the convenience of being able to buy the item she needs quickly and securely, without having to leave the marketplace app.

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

a. Furniture - Self-Explanatory
b. Textbooks - Self-Explanatory
c. Notes (Coarse and Fine) - Absolutely Free AT ALL TIMES
d. Practical Tools - For their related Labs and note taking.
e. Computer Items - For those without much and in need of second hand
    i. Storage Devices
    ii. Accessories
    iii. Parts (Fans, RAMs)
    iv. Literal Computers themselves
f. Food - May be redundant, but use cases do mention digital storefronts. Can just be simple snacks and such.
g. Hardware - Home Decor is Important to the Soul and Mind!
    i. Screwdrivers (Electrical and Manual)
    ii. Gardening Tools
    iii. Wires/Cables

h. Non-digital games - For leisure, because why else do we live?
    i. Chess
    ii. Cards
    iii. Board Games
i. Club merchandise - Stickers, banners, clothes, etc.
j. Miscellaneous - Anything that fits into one or more categories (or none of them), and also any unmentionables as well (I am not clarifying what counts as unmentionable)

5. List high level functional requirements

Registered Users

1. Shall be able to create an account (only with SFSU email). (Priority 1)
2. Shall be able to use site functionality only if guidelines are followed.
3. Shall be able to search for listings using keywords, categories, and filters. (Priority 1)
4. Shall be able to store the items they've posted in the inventory. (Priority 1)
5. Shall be able to edit or delete their own posts. (Priority 1)
6. Shall be able to communicate with other users in the form of a chat system. (Priority 3)
7. Shall be able to rate and review other users based on transactions.
8. Shall be able to report posts or users that violate guidelines to administrators.
9. Shall be able to save searches or favorite listings for easy access later. (Priority 2)
10. Shall be able to update their profile information, including password, and profile picture. (Priority 1)

Unregistered Users

11. Shall be able to view the post details, including title, description, and images. (Priority 1)
12. Shall be able to access help and FAQ sections. (Priority 1)
13. Shall be able to navigate through the site's public sections without logging in. (Priority 1)
14. Shall be able to contact the site administration through a contact form. (Priority 1)

Admin

15. Shall be able to access the server and perform maintenance or updates as needed. (Priority 1)
16. Shall be required to moderate users, posts, and review listings for guideline compliance. (Priority 1)
17. Shall be able to remove or edit any posts that do not meet site guidelines. (Priority 1)
18. Shall be able to ban or suspend users who repeatedly violate the guidelines. (Priority 1)

19. Shall be able to generate reports on site usage, popular listings, and user activity. (Priority 1)
20. Shall be able to create and manage site-wide announcements or notifications. (Priority 1)

6. List of non-functional requirements

a. Application shall be developed, tested and deployed using tools and servers approved by
b. Class CTO and as agreed in M0
c. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers
d. All or selected application functions shall render well on mobile devices
e. Data shall be stored in the database on the team's deployment server.
f. No more than 50 concurrent users shall be accessing the application at any time
g. Privacy of users shall be protected
h. The language used shall be English (no localization needed)
i. Application shall be very easy to use and intuitive
j. Application shall follow established architecture patterns
k. Application code and its repository shall be easy to inspect and maintain
l. Google analytics shall be used
m. No email clients shall be allowed. Interested users can only message to sellers via the site
n. messaging. One round of messaging (from user to seller) is enough for this application
o. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor
p. simulated in UI.
q. Site security: basic best practices shall be applied (as covered in the class) for main data
r. items
s. Media formats shall be standard as used in the market today
t. Modern SE processes and tools shall be used as specified in the class, including collaborative
u. and continuous SW development and GenAI tools
v. 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 a real 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 exactly as they are written (including the text for # 17).

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

Features \ Company	Ebay	Facebook Marketplace	Our Website
Social	+	+	++
Shopping Cart	+	-	+
Category	+	+	+
Browse	+	+	+
+ feature exists; ++ superior; - does not exist			

In addition to facilitating traditional buy-and-sell transactions, our website empowers registered users within the San Francisco State University (SFSU) community to actively engage in a dynamic marketplace by posting specific product requests they are looking to purchase (categorized in Social Feature). This unique feature goes beyond conventional e-commerce platforms by allowing users to articulate their exact needs and preferences, creating opportunities for personalized interactions and tailored solutions. By harnessing the collective expertise and resources of the SFSU community, our platform fosters a collaborative environment where users can seamlessly connect with others who may possess the desired items or can offer relevant recommendations. This not only enhances the overall shopping experience but also cultivates a sense of community and camaraderie among users, making our website a valuable resource for fulfilling diverse needs and fostering meaningful connections within the university ecosystem.

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: ChatGPT helps with the mundane parts of coding, but it almost always seems to mess up on stuff. Understandable, considering that it is quite literally generating this out of a prompt, while not having access to the entire situation, since only so much could be conveyed via words.

GenAI Used: ChatGPT, Miscellaneous AIArt generators (Can't recall exact names)

Tasks Used/Effectiveness: Produce the Skeleton html of the site

Used GenAI: ChatGPT (3.5)

Effectiveness: HIGH

Details: I had it generate a page based on several existing ones, such as Amazon, as well as giving it several colors to make it on. It generated what I was looking for, albeit with room for improvement given the lack of specificity

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: I use AI tools primarily to enhance certain aspects of my work and study. I approach these tools as supplementary resources, offering quick insights or a fresh perspective rather than as fundamental components of my workflow.

GenAI Used: ChatGPT (4)

Tasks Used/Effectiveness:

Used GenAI: For targeted assistance with coding challenges and generating creative ideas.
Effectiveness: MEDIUM
Details: I used ChatGPT to perfect the CSS for our webpage's header and navigation bar, ensuring it scales elegantly on mobile screens and providing SFSU students with a cohesive browsing experience regardless of device.

Justin:

General: Honestly, I use AI mainly to supplement my skills and productivity. Most of the time I find it hard to start learning, or if I'm going in the right direction. The usage of AI in my case acts like that peer who is always there to steer you in the right path when I am lost. It teaches me concepts and ideas real-time which is super beneficial when learning new things without any background knowledge.

GenAI Used: GPT 4

Tasks Used/Effectiveness:

Used GenAI: Troubleshooting Server
Effectiveness: Not too sure

Details: When we were having trouble with deploying our website, we came into a lot of troubles which ChatGPT was not able to fix.

Gio:

GenAI Used: ChatGPT (3.5)
Tasks Used/Effectiveness: setting the server for this project, implementing functions or specific code, writing emails, searching information
Effectiveness: MEDIUM
Details: The usage of GenAI brought a huge impact on my life. Despite the fact that the only GenAI I used and have been using is ChatGPT 3.5, it is very convenient and efficient in particular situations such as writing an email, searching information, or implementing projects. However, I still have some conflict about getting solutions from ChatGPT such that it cannot help with the specific situations of mine which I think exist as a limitation of GenAI. To sum up, it saves a lot of time on working though it could lead me in the wrong direction once I just follow what GenAI is telling me which takes more time to deal with. This might be one of the aspects of how to use GenAI well which I have to improve.

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