

# SW ENGINEERING

## CSC648/848 Fall 2019

### Section: 01 | Team #07

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## “Milestone 1”

10/1/2019

## **1.Executive Summary - Project: State Exchange**

It's not uncommon for students of higher education to be unaware of the resources available to them. This website aims to provide a general resources through direct communication between students. A potential user can use the site to buy and sell personal items on campus, organize meetups, or request general information about anything from classes to the best places to eat. This application creates a bridge between the community of students, in order to create a place where students can sell their own services and items. This easy to use application has a plug-n-play concept, where the interface and the design can be used by anyone and picked up within less than a minute. The intuitive UI will have a person using the application and the user will come back because of how easy it is for someone to post a listing and make their own ends on the website.

San Francisco State University is a school like no other, because of this, we are tailoring this application to meet the style of the university. The metropolitan city definitely has an effect on the students and we feel like we can use this to our advantage to make the experience of those who are looking to buy a specific item around their area.

The team that built State Exchange from the ground up, are versatile engineers that each specialized in different areas from front-end to back-end. The application was made in mind for students, by the input of students with direct feedback. Our team came together with the thought of making a high functioning application that can help communities of students at any University. All of our team has gone through college so we are deriving our experiences, curating an ideal platform in which wish we had when we were going through college.

## 2a. Personae and Main Use Cases (#1)

### Asana

#### About Asana

- 18 years old
- Just started at SFSU as a freshman
- History Major
- Knows how to use a computer but only for browsing and light tasks
- Lives in SFSU dormitory

#### Goals & Scenarios

- Asana just started her first day of classes and is feeling a little overwhelmed with everything that she is expected to do.
- She heard from a classmate about a site that can help her find general information about her classes.
- She loads the site and is delighted to find that she can select her major from the list of categories.
- Upon loading the category, she finds that there are already posts from people selling their old textbooks for much cheaper than what the bookstore offers.
- And what do you know, that same girl who told her about the site has made a post seeing if anyone wants to start a study group.



## 2a. Personae and Main Use Cases (#2)

### Bob

#### About Bob

- Student starting his junior year at SFSU
- Has accumulated textbooks and resources from previous classes
- Business Major
- Has a part-time job but extra income would help him save and have a more flexible budget

#### Goals & Scenarios

- Bob has a heavy course load this semester and has had to reduce the amount of hours he works at his part time job
- Wants to sell his previous course materials for a fair price and in a trusted environment
- Knows of a site where students can buy/sell school resources from reputable sellers and has used the site to buy some resources previously
- He is busy with his classes so he doesn't have time to go out of the way to sell his previous textbooks or other resources
- Has questions and concerns about some of his courses regarding difficulty of the course and would like advice on how to do well in the course from previous students



## 2b. Use Cases (#2)

- As a freshman, Asana's is also looking to furnish her place of residence, State Exchange will pull up all of the household items she wants that are posted online, and because everything is very close in proximity; Asana enjoys the convenience.
- Because trades are done within SF State, Asana also is safer in trading due to the proximity of SF State police.
- As most items being posted on State Exchange are used, items will most likely be sold at a reasonable price; perfect for students with limited capacity for gainful employment due to studies. Bob goes online to the website to see how much textbooks for a particular class he took are selling for. He goes online to see the same book he is selling sold for a fair price and decides he wants to proceed with making a post. He logs in and creates a post to sell his book where he enters some information about the product and then submits it.
- Bob is in his junior year and has more difficult classes. He is nervous about balancing his academic and work schedules and doesn't want one to suffer. He goes online to the site and selects his class and finds a post on best ways to pass the course and tips on how to do well. He posts his questions in the comments and receives positive feedback promptly. He feels more confident in his ability to handle work and school.

### 3.List of Main Data Items and Entities

#### Main Entities

##### Guest

- Internet visitor to our site, who is browsing the site anonymously. Does not have an account or privileges to create a post. Guests privileges ends there.

##### User

- Someone who has registered with the website and has an account within . A user has privileges to post content on the site, which will be moderated and approved by administrators. Users shall also have the ability to purchase items, created meet up points and communicate with other users.

##### Administrators

- A staff member(s) of the site that monitors the website both for backend errors, as well as content moderation. The admin's job is to allow user posting(s), and by allowing posting(s), State Exchange shall allow the item to be listed onto the website's selling page.

#### Main Data Items

Search Bar - The input field where all queries will be handled

Nav Bar - Links to important pages can be found here

Banner - Location for popular posts to be featured

History - history of searched queries , visited items/services. History of purchases.

Posts - A service or item in which an individual is looking for or selling.

Item - Items to be sold/bought

Seller Account- People can see what a seller has sold before and how the experience went for the person.

## 4.Initial List of Functional Requirements

For this project, we are making a platform where SFSU students can sell and/or purchase items within SF State University. We are to make a website that works on Google Chrome browser, as it covers most application operating systems: Windows, Mac, Chrome OS, Android, iOS, etc. Listed below are Functional Requirements we are to implement.

1. Users shall be able to access recent and featured posts from the homepage
2. Nav bar shall contain the most useful and relevant links to avoid confusion and increase speed of use
3. Nav bar shall contain popular searches.
4. Every page shall contain the Nav bar
5. Search bar shall be prominently displayed on every page
6. Search bar shall maintain search query until cleared by user
7. Users shall be able to search by category
8. Homepage shall feature popular posts in a banner format
9. Homepage shall list the most recent and popular posts
10. Posts shall be displayed in a summarized format until clicked on by user
11. Posts shall go into greater detail once they are clicked on.
12. Posts shall have options on whether item can be delivered or picked up.
13. Posts shall have the option if buyer is willing to negotiate prices.
14. Every page shall have a footer containing links to more information about the site
15. Users shall not be prompted to log in upon loading the site
16. Users shall not be redirected away from their current page in order to log in
17. Users shall not be prompted to make an account until they perform an action that requires one
18. Users shall be able to edit their posts after its initial submission
19. Users shall be able to tag their posts to help increase search hits
20. Users shall be able to comment on and like posts
21. Likes and Comments shall increase post popularity rating
22. Admins shall be required to approve posts before going live
23. Admins shall have access to delete live posts
24. Admins shall not have access to edit posts.
25. Admins shall have the ability to give feedback for post to meet qualifications.

## 5.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 (some may be provided in the class, some may be chosen by the student team but all tools and servers have to be approved by class CTO).
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. Selected application functions must render well on mobile devices
4. Data shall be stored in the team's chosen database technology 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 and all privacy policies will be appropriately communicated to the users.
7. The language used shall be English.
8. Application shall be very easy to use and intuitive.
9. Google analytics shall be added
10. No email clients shall be allowed
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.
12. Site security: basic best practices shall be applied (as covered in the class)
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
14. The website shall prominently display the following exact text on all pages *"SFSU Software Engineering Project CSC 648-848, Fall 2019. For Demonstration Only"* at the top of the WWW page. (Important so as to not confuse this with a real application).



## 6.Competitive Analysis

Feature	Amazon	SFSU Bookstore	Our Product
Recently Viewed Posts	+	--	+
Major Specific Search	--	--	+
Browse by category	+	+	+
UI Animation	+	--	++
Comments / Likes	+	--	++

+ feature exists                      ++ superior feature                      -- does not exist

The overall advantage of this application isn't necessarily a novel system for buying and selling products, neither is it a diverse array of possible post types. What truly makes this application relevant to its users is it's context. Because this service is offered on a small local scale posts can be tailored to a much higher level of specificity that otherwise would not be possible on a large scale application. By taking advantage of these circumstances we are capable of designing a system that is truly useful and meaningful to the people who use it.

## 7.High-Level System Architecture and Technologies

### Software Stack

1. Amazon Web Services EC2 Instances
2. Express Framework
3. Node.js
4. React.js
5. Html/CSS

### Supported Browsers

1. Google Chrome
2. Mozilla Firefox
3. Safari
4. Mobile Readiness

## 8.Teams and Roles

Roderic Kong - Team Lead, Back-end engineer

Chris Jol - Front-end Lead engineer,

Kevin Venegas - Document Master, Back-end Lead engineer

Deepinder Bhueller - Github master, Front-end engineer

## 9. Checklist

Item	Status
Outside Meeting Time Slot	Done
Github Master Chosen	Done
Software Tools/Server Agreement	Done
FrontEnd/BackEnd Frameworks	Done
All members read M1 final submission	Done
Github Organized	Done