SW Engineering CSC648/848 Spring 2022

Gator Express

Team 3

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Milestone 1

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Version #	Date Submitted	Changes
1	03/03/2022	First version submitted
2	03/15/2022	Revision done as per instructor feedback
3	03/20/2022	Minor changes to Functional Req.

1. Executive Summary

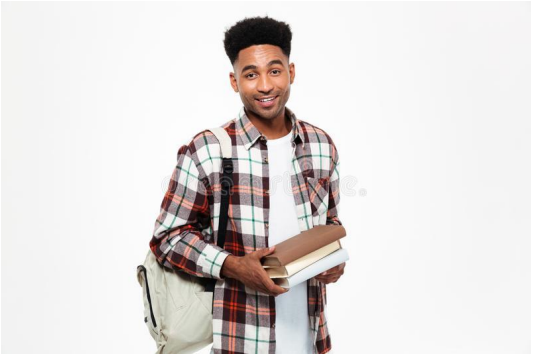
Life can be stressful for college students. This is especially true due to the challenges associated with being an independent adult who, oftentimes, must obtain necessary items such as books, supplies, and clothing. We aim to alleviate this burden by designing “Gator Express”, a web-based service on which college students, staff, and faculty can easily exchange items. Students will no longer have to pay high prices for many of their required items as most will already be sold by their predecessors on Gator Express at a fraction of the cost.

Gator Express will be tailored specifically to fit the needs of those in the university system. While our current aim is to accommodate SFSU affiliates only, it is possible to expand our application to other CSU campuses given the demand and the necessary funds. By restricting access to this clientele, we can better cater to the needs of our target audience by implementing features specific to SFSU. Registered users can post items they want to sell on Gator Express, including information such as the item’s description, asking price, and an optional image. This information can be removed by the seller at any time. Users can also browse available items via search bar and can even apply filters to only return relevant items. Search results can also be sorted based on characteristics such as price, location, date posted, etc., so users can find what they want quickly and effortlessly. Once a user finds an item they are interested in, they can notify the seller in-site with their contact information, so the two parties can negotiate an exchange. Unlike competing platforms who must cater to a global audience, Gator Express users can rest assured that their exchanges will take place swiftly due to the locality of the application. For this reason, we will ensure that all users can make informed decisions when selecting a meeting location by also displaying a labeled map within our UI. Furthermore, the map will provide users with the locations of SFSU’s police department and “Emergency Blue Light Phones”, so that the users can make exchanges with maximum personal security incomparable to exchanges made on competing platforms.

The team that will be designing this revolutionary platform consists of 6 brilliant students, part of SFSU’s Computer Science program. As members of the SFSU community, we understand the needs of the target audience and can therefore, deliver the most relevant product while applying the knowledge we have learnt through our time at SFSU to ensure that the product is seamless and error-free.

2. Personae and Main Use Cases

- Frank

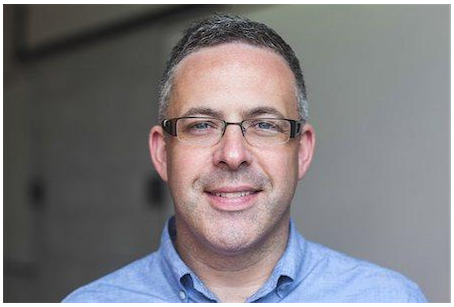


  - Basic Information:
    - Occupation: Student
    - Year: Freshman
    - Residence: Living on Campus with three other housemates
  - About Frank:
    - Frank is a computer science major, taking two CS courses and three GE courses
    - From Orange County and is not familiar with the area or the people
    - Frank has also wanted to come to San Francisco since he was a child
  - Goals and Scenario:
    - Frank has no school supplies and is looking for an easy way to get them while meeting other students at the same time
    - Frank is thinking about buying new clothes because he only has two weeks worth of clothing
  - Limitations:
    - No job; very little money to spend
    - Does not know how to use the Muni for public transportation
    - Needs materials urgently

- George

  - Basic Information:
    - Occupation: Student
    - Year: Senior
    - Residence: Living off campus in San Mateo (20-30 minute drive)
  - About George:
    - George is a business major in his last semester of SFSU
    - Doing a part-time internship in Downtown San Francisco on Tuesdays and Thursdays
    - George is on Campus Monday, Wednesday, and Fridays, going to class in the morning and then studying in the library until closing
  - Goals and Scenario:
    - George has a lot of old material from past semesters and wants to get rid of them
    - George plans to sell his old laptop for money to upgrade into a newer model for work
  - Limitations:
    - Has to commute if he wants to meet other students on campus
    - Constantly busy with both school and internship; little time to interact with other students

- Prof. Smith



  - Basic Information:
    - Occupation: Faculty
    - Residence: Commuting from Union City
  - About Prof. Smith:
    - Professor Smith is a full-time faculty from SFSU's math department who teaches four different in person classes from Monday through Friday
    - Has a traditional style of teaching (white board only, no powerpoint, does not use iLearn)
    - Took a break from teaching due to the pandemic and has now returned for the semester
    - His classroom includes a projector and a screen which he does not know how to set up
  - Goals and Scenario:
    - Prof. Smith is thinking about switching to a different style of teaching next semester and needs equipment
    - Prof. Smith has also written multiple books on computing which he wants to sell to his students
    - All of his classes have required textbooks and he may want students to have an easy way to access it
  - Limitations:
    - Not familiar with UI and online shopping at all
    - Usually, not willing to learn new technology

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

- Users
  - Anonymous_Users:
    - Does not need to login/register
    - Can view posts from other users
    - Can make posts but will be asked to register/login after making a post (Lazy registration)
    - Unable to interact with others posts
  - Registered_Users:
    - Registration Record - Username, password, email
    - Needs to login/register
    - Able to make posts
    - Able to view and interact with others' posts
  - Admin
    - Username
    - Password
    - Needs to login/register
    - Can access all data and content and modify the database
    - Approves posts made by users
- Posts - Items users will post onto the marketplace. Any user can create a post but must be registered and logged in at the end of creating a post
  - Textbooks
    - Post Title
    - Post Description
    - Post owner (user who posted)
    - Book Title
    - Book Author
    - Edition/Volume number
    - Photos
    - Price
    - Classes it was used used for
  - Class Equipment (Like lab coats, clickers, anything that is specifically required for a class)
    - Post Title
    - Post Description
    - Post Owner
    - Photos
    - Price

        - Classes it was used for

- Technology
    - Post Title
    - Post Description
    - Post Owner
    - Condition (New, refurbished, used, etc)
    - Photos
    - Price

- School Supplies (Like pencils, calculators, notebooks, etc)
    - Post Title
    - Post Description
    - Post Owner
    - Photos
    - Price

- Clothes
    - Post Title
    - Post Description
    - Post Owner
    - Size
    - Type of clothing (shirt, pants, dress, etc)
    - Condition (new, used, etc)
    - Photos
    - Price

4. Initial list of functional requirements

1. System shall provide full functionality using mouse and keyboard.
2. System shall provide login to registered users. Contains user id and password.
3. All users shall be able to search for items to buy.
4. All users shall be able to view all the categories of posts on the website and navigate to their preferred section.
5. All users shall click on any post and see its details, pricing, etc.
6. All users shall be able to view Gator Express's about page.
7. All users shall be able to view the map of SFSU for reference.
8. Registered Users shall be able to login to use the website, create posts.
9. Registered Users shall be prompted to enter a password to get access to their account.
10. Forgot Password: Registered Users shall use this option to regain access to their account. This shall always be visible on login page.
11. Username shall be displayed on the header after the registered user logs in.
12. Registered Users shall be able to logout of the website when not in use and keep surfing for posts but not use the functions.
13. Post Creation: Registered users shall create posts from their account and make it public for buyers to see.
14. Registered users interested in purchasing the item from any post shall send the seller their contact information.
15. Sellers shall rely on the buyer to send them their contact information via one-way chat on the website.
16. Registered users shall create posts to sell or add details about the course material used in their respective classes.
17. Registered users shall be able to view messages sent from other registered users.
18. Registration form: required for anonymous users to register. Contains name, email id, optionally phone number and terms and conditions.
19. Anonymous users shall only register using their university's email id (.edu email).
20. Anonymous users shall not have permission to post items.
21. Anonymous users shall not have permission to contact sellers.
22. Admin shall have special login access to the backend of the website.
23. Admin shall manage the posts, view requests to add posts, delete an inappropriate post, block a user, approve a post.

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
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 must 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 should follow established architecture patterns
10. Application code and its repository shall be easy to inspect and maintain
11. Google analytics shall be used
12. No e-mail clients shall be allowed. Interested users can only message to sellers via in-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 practices shall be used as specified in the class, including collaborative and continuous SW development
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 2022. For Demonstration Only" at the top of the WWW page nav bar. (Important so as to not confuse this with a real application)

6. Competitive analysis

	Amazon	eBay	Craigslist	Facebook Marketplace	Gator Express
Search Bar	✓✓	✓✓	✓✓	✓✓	✓
Post Items	✓	✓	✓✓	✓✓	✓✓
Local Pickup	X	X	✓	✓	✓✓
SFSU Member	X	X	X	X	✓✓
Categorize by Class	X	X	X	X	✓✓

Gator Express exclusively works with SFSU members to make transactions safer and easier. This provides extra security by requiring ".edu" email accounts to sign up with. Competitors include Amazon, Craigslist, Ebay, Facebook marketplace. Compared to competitors, we're more involved in our students' day to day lives, what materials, tools, and accessories are required or best needed to strive in their classes. Additionally, we advertise and market directly to our audience who we solely provide our service for, so our audience has certain things in common across the board. Whereas with companies like Amazon, they have to cater to a much more general audience. We know a majority of our audience is composed of students, professors, or administration, who live somewhat close to SFSU, and are well into their late teens or adulthood. Our product is a straightforward online vendor meant to act as a gateway between customers and sellers, with items for sale in between while providing secure in-person transactions.

7. High-level system architecture and technologies used

- Server Host: AWS EC2 1vCPU 1 GB RAM
- Operating System: Ubuntu 20.04.3 LTS
- Database: MySQL v.8.0
- Web Server: Node.js v.16.14.0
- Server-Side Language: JavaScript ES6
- Additional Technologies:
    - Front-End Web Framework: Bootstrap v.5.1.3
    - Back-End Web Framework: Express v.4.17.2
    - IDE: Visual Studio Code v.1.64

8. Team and roles

- Amir Modan - Team Lead / Document Master / Team Member Front-End
- Brian Cheng - Team Member Back-End
- Dev Soni - Front-End Lead
- Kayvaun Khoshkhou - Team Member Front-End
- Vicente Pericone - Back-End Lead
- Majid Samir - Github Master / Team Member Back-End

9. Checklist

- So far all team members are engaged and attending ZOOM sessions when required - **OK**
- Team found a time slot to meet outside of the class - **DONE**
- Back end, Front end leads and Github master chosen - **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 - **ON TRACK**
- Team lead ensured that all team members read the final M1 and agree/understand it before submission - **DONE**
- Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.) - **ON TRACK**