SW Engineering CSC648/848 Fall 2018

UniTrade

Team 10
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1. **Executive Summary**

Are you a college student at SFSU looking to make some quick cash? Did you wait too long into your semester to decide that you needed that textbook and need to get it the quickest and cheapest way possible? Are you going home for the summer and need to get rid of extra baggage quickly while making money from it? With UniTrade, all of this is possible. UniTrade is an exclusive website that students can use to buy or sell items to their fellow classmates. We all know that Ebay and Amazon are useful services, but you have to pay for things such as shipping costs as well as additional fees for faster shipping. UniTrade aims to make your college life easier by getting you the things you need efficiently and at an affordable price.

UniTrade is a platform for people to trade on campus. Users can search, browse items by categories, post items for sale, and send messages between users and sellers to set times and locations for trade. Our advantage is that users can search by class names (i.e. SFSU students can search for textbooks for their specific class). This makes life easier for the students, faculty, or anyone associated with the university by helping them find what they need within their own community without burdening them with unnecessary fees they would have to pay elsewhere. UniTrade is a secure site and will not tolerate inappropriate postings. Our admin must investigate and approve a post based on its credentials. Categories include textbooks, school supplies, clothing, furniture, things college students need.

The UniTrade team consists of motivated undergrad and graduate computer science students who are passionate in designing great web applications. We aim to deliver efficient, easy to use software that makes the users' browsing experience simple and convenient.

2. Personas and Use Cases

Personas:

Carrie (Persona 1):

- Decent tech skills.
- Only has small windows of breaks (Max 10 minutes)
- Doesn't want to be late and make her friends wait for her
- Frequent user of UniTrade
- Hates waiting in line in the bookstore

John (Persona 2):

- Experienced and skilled with technology
- Wants to get things done fast to work on homework
- Stressed from school and work
- Frequent user of UniTrade
- Full-time admin of UniTrade

Inori (Persona 3):

Jana Grady Photography

- Single mom
- Poor tech skills
- Little to no time in her hands
- Doesn't like giving out too much information
- Avoids the use of difficult apps
- Beginner user of UniTrade
- Poor
- Stressed most of the time

Henry (Persona 4):
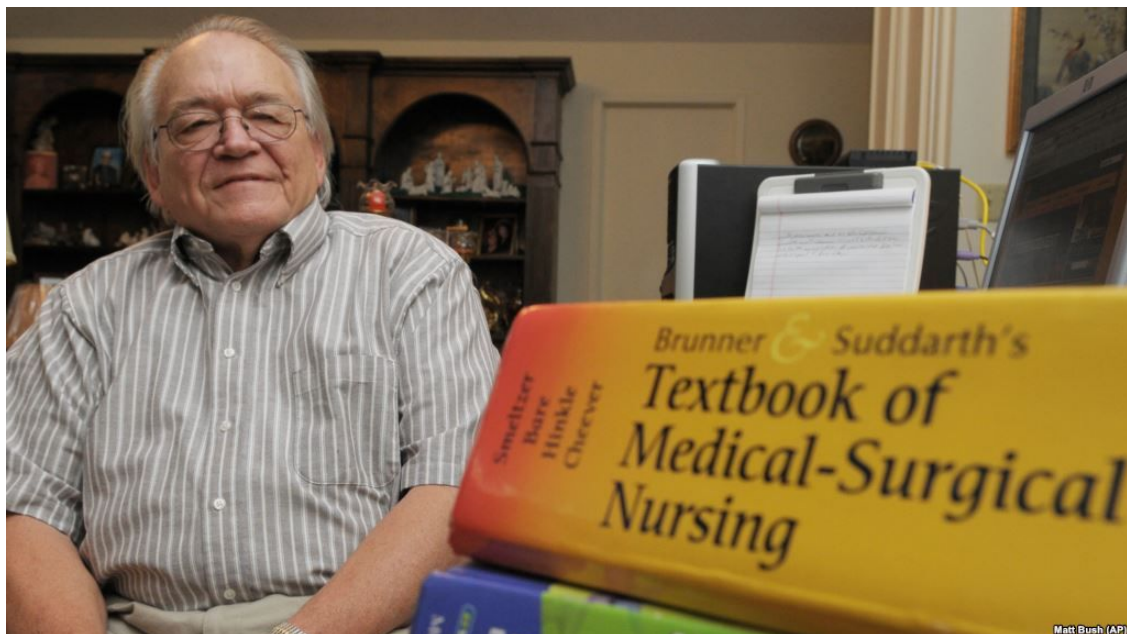
- Hates banks and the use of credit/debit
- Registered user of UniTrade
- Poor tech skills
- Bad Eyesight
- Hates wasting time
- Little to no patience

Artoria (Persona 5):

- Working part-time
- Spends most of her money on food
- Poor
- Skilled in tech
- Registered user of UniTrade
- Frequent user of apps
- Tends to procrastinate

Use Cases:

Use Case 1:

One day, Carrie finishes her essay for history. She wants to sell the book she bought as reference. She opens up her phone, opens up UniTrade and posts her book, but before she could post the item she's prompted by a register screen. After filling in the prompts(Images, Description, Price, Item Name, Category) the item appears on the website. A few days later, she checks her dashboard and sees that a buyer messaged her with his contact information. She contacts him offline to set up a meeting time in school. They meet up and she sells her books.

Use Case 2:

Today is another work day for John. After a hard day at school, he opens up UniTrade, signs in as admin and starts approving posts. The days work is dull as usual but then he comes

across an unapproved post with an inappropriate image. After double checking, John denies the post saving the company from potential trouble.

Use Case 3:

Inori's professor just announced that she needed a number of expensive books for her class. Pulling out her phone, Inori opens up UniTrade, taps browse and navigates to the books section sorting by price. Finding the book she needs, she sees that it is much cheaper than other websites online. She finds the item and after attempting to message the user, she is directed to a registration prompt screen. She sees that it only requires her name and email, after filling in the required fields. She messages the seller and sets up a schedule to meet. After meeting up, she buys her books for a cheap price.

Use Case 4:

After finishing his semester, Henry decides to sell all his books in UniTrade. He opens up UniTrade in his phone, logs in, and posts his item. After completing the required fields for the item (Images, Description, Price, Item Name, Category). He submits the item and it appears in the Posted Item List in Unitrade. A few days later, he checks the dashboard and finds that a buyer messaged him. They set a schedule to meet up in SFSU, they meet up and Henry sells his books.

Use Case 5:

Artoria spent most of her money on food again and was broke for a couple weeks. Due to this, she wasn't able to buy the required books for her Britain history class. After working overtime for a few hours, she finally has enough money to buy her books. She goes to the school bookstore to buy her books but is horrified to find them out of stock. Even worse, the cashier told her that the next restock is two weeks from now, but she has a paper due a week from now. Pulling out her phone, she opens up UniTrade, logs in, searches for her class, and finds someone selling the book. She goes to the item, messages the person, meets up with them the next day and buys her book.

3. Data Definitions:

Unregistered User: The user has not registered. Unregistered User can only browse on UniTrade.

Registered User: The user is registered to UniTrade. Registered User has all the Unregistered User's privileges and in addition can post items, upload images, send and receive messages to/from other users in UniTrade.

Administrator : The user can review and manage posts on UniTrade. Administrator can approve or delete the post. Administrator won't be able to post or add any post.

Category: Items are categorized in different groups.

Item: The items that users post for sale. Registered Users need to fill in title, price, description, categories and upload images.

User Dashboard: Registered users can view and manage their items and messages on their dashboards.

Admin Dashboard: Administrators can view and manage (approve or delete) the items and messages on their dashboard.

User Profile: User's Profile. Registered User can enter and see their profile data, and upload profile image.

Login : Registered User can login

Logout: Login Registered User can logout from account

Register: Unregistered Users have to register in order to buy or sell. Unregistered Users need to fill the register form with valid email, username, password. Users will not be prompted to register until they post their items for sale or contact sellers to buy.

Message: Registered User can send messages to seller with their contact information.

Search: All Users can search items by categories and keywords.

Status: Item status. To allow the user to know the status of the items they submitted. The status can be pending or approved.

Status - Pending: Status that an item waiting to be approved by Administrator.

Status - Approved: Status that an item approved by administrator and visible on website.

4. Initial List of Functional Requirements:

Unregistered Users:
1.1 Unregistered users shall be able to browse through available items.
1.2 Unregistered users shall be able to browse by category.
1.3 Unregistered users shall be able to sort by posted date and price.
1.4 Unregistered users shall be able to search by keyword or by class and keyword.
1.5 Unregistered users shall be able to see other items related to their search.
1.6 Unregistered users shall be prompted to register or sign in upon confirming to create or buy an item.
1.7 Unregistered users shall be able to register.
1.8 Unregistered users shall be required to accept terms & conditions upon registering.

Registered Users:
2.1 Registered users shall have all of the functions of unregistered users.
2.2 Registered users shall be able to login.
2.3 Registered users shall be able to access their own dashboard when logged in.
2.4 User dashboards shall show all of the items the user has created.
2.5 User dashboards shall display the title, status (posted or non-posted), and link of each item.
2.6 User dashboards shall contain all messages sent or received.
2.7 Registered users shall be able to create an item.
2.8 Registered users shall be prompted to confirm to post their item.
2.9 Registered users shall be able to edit their item category, describe, add images, and add pricing and/or best offer for their items.
2.10   Registered users shall be able to edit their own items.
2.11   Registered users shall be able to delete their own items.
2.12   Registered users shall be able to message sellers.

Administrator:
3.1 Admins shall have all the functions of registered and unregistered users.
3.2 Admins shall be able to access the Admin dashboard when logged in.
3.3 Admin dashboards shall contain all messages sent to the site email.
3.4 Admin dashboards shall contain items waiting for approval.
3.5 Admins shall be able to approve and disapprove items.
3.6 Admins shall be able to remove a registered user from the site.

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, which include PostgreSQL 9.4.17, Apache 2.4.33 and Python 3.6.4.
2. Application shall be optimized for standard desktop/laptop browsers and shall render correctly on the two latest versions of all major browsers: Mozilla, Safari, Chrome.
3. Selected application functions must render well on mobile devices.
4. Data shall be stored in Amazon Web Services.
5. File size in no time shall exceed 3 MB.
6. No more than 50 concurrent users shall be accessing the application at any time.
7. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
8. The language used shall be English.
9. Application shall be very easy to use and intuitive.
10. The Systems visual response time shall be within 5 seconds.
11. Google analytics shall be added to analyze visitor data. These include visitor clicks, name and email of registered users which shall ONLY be used for google analytics.
12. No email clients shall be allowed.
13. Pay functionality shall not be implemented nor simulated.
14. Site security: basic best practices shall be applied (as covered in the class).
15. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.
16. The website shall prominently display the following exact text on all pages "SFSU-Fulda Software Engineering Project CSC 648-848, Fall 2018. For Demonstration Only" at the top corner and the website logo in the navbar. (Important so as to not confuse this with a real application).

6. Competitive Analysis:

Features	Amazon	Ebay	Craigslist	Letgo	Etsy	UniTrade
Search	++	+	+	+	+	+
Category	++	++	++	+	+	+
Sort	++	++	+	+	+	+
Browse	++	++	+	+	+	+
Message	+	+	+	+	+	+
Search by SFSU Class	-	-	-	-	-	+

+ feature exist; ++ superior; - does not exist

      Niche market is the go-to strategy. While global companies like Amazon and Ebay target all industries and customers, our product is similar to Craigslist, Letgo, or Etsy in that we target specific customers, in this case, SFSU students. We want to provide a platform where students can trade with one another conveniently and quickly.

7. **High-level System Architecture:**

Server/Platform - AWS, 1 vCPU, 1 GiB RAM
OS - Linux 2.7.3
Database - PostgreSQL 9.4.17
Web Server - Apache 2.4.33
Server-Side Language: Python 3.6.4
Additional Technologies:
       Web Framework: Django 1.11.10
       Front End Framework: Bootstrap 4.1.3
       IDE: Pycharm 2018.1.3
       Web Analytics: Google Analytics
Supported Browsers: The latest two versions of Mozilla, Safari and Chrome

8. **Team:**

Name	Position	Front End/Back End Affinity
Xinhuan Qiu	Team Lead	FE/BE
Mario Marcos		BE
Pohung Wang	Git Master	FE
Jianhong Kuang		BE
Zachary Martin	Back End Lead	BE
Toluwanimi Oyewumi	Front End Lead	FE
Rong Tian Huang		FE

9. **Checklist:**

- Team found a time slot to meet outside of the class **DONE**
- Github master chosen **DONE**
- Team decided and agreed together on using the listed SW tools and deployment server **DONE**
- Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on it **DONE**
- Team lead ensured that all team members read the final M1 and agree/understand it before submission **DONE**