**CSC 648/848: Software Engineering**

**RecoveryNote**

***Everything you need for school in one place***

**Team 06**

**Joel Giannelli**

**Hongjie Li**

**Tamir Rasheed**

**Ivan Cebreros**

**Kuncheng Wu**

**Nyambayar Purevtseren**

**Milestone 1**

| **Revision ID** | **Revision Date** |
| --- | --- |
|  |  |
|  |  |

Copyright by Dr. Petkovic And Modified by Isabel HJ Song

**CSC 648/848 Milestone 1: User stories & High-Level Requirements**

**Objective:**

Based on the brief high-level project description, the objective of Milestone 1 is to develop: a) key personas and user stories; b) high level functional & non-functional requirements, and c) list high level frameworks and tools to be used (generally the same as in M0). Note that M1 description includes requirements and specs to get early feedback. Future designs can deviate from Milestone 1 in the spirit of iterative SW design and development.

For user stories and requirements, it is encouraged to use your own ideas, the interview with people around you and find your own value proposition. Please consult class material on User stories and Requirements.

The whole student team submits **one** milestone document for each Milestone 1 – 5, submission details are below. Expected size of this document is about 6-10 pages, using font and spacing as in this document.

**Content and structure for Milestone 1 document for review:**

In the document for Milestone 1 you must cover all the following subsections in exact order as below in one doc file.

1. Executive Summary: Short description of the final product/application and its key advantages, novelty, value (up to 1 page). Make it as an executive summary – think of answering the question of why a VC will fund this project. We suggest you assign a name to your project for easier reference and good “marketing” (code name). This summary should be readable to a general manger/executive that is not a CS specialist and is used to explain to advertise/promote your project. Typical outline is: one paragraph on the motivation and importance of the application you are developing, followed by a paragraph on what your application will be doing and how it helps the users (no jargon) and optionally what is unique in your product. At the end say in one paragraph something about your team (e.g. about your student startup team…).

A-1: Executive Summary

Oftentimes students in higher education find it difficult or tedious to find the right supplies or textbooks at the right price. More often than not students end up overspending on certain books or supplies. Our site RecoveryNote , aims to take advantage of the community that is naturally fostered on a college campus. Our ecommerce marketplace would be unique to every college campus where students can list their textbooks, notes or any other materials for sale where other students on campus can purchase said material. The benefit of having this marketplace relative to each university is that students are more likely to find material for their courses as others in the same university have most likely taken the class and have excess material. Making a University Marketplace narrows students' search for their tools while also ensuring the best and most fair price. RecoveryNote would take a small commission, like most marketplace sites, per sale.

Our application would be a dynamic web application that features a variety of products related to classes at the specific university which would be listed for sale by students. The site would be organized by classes and each class would have categories such as notes, textbooks and other materials related to the specific course. These sections would be populated by listings of items for sale that other students have posted.

The goal of our web app is to increase accessibility of school supplies to college students. Many students find themselves in situations where they either can’t afford textbooks or can’t find textbooks for their class. The web app would create a network of used and reasonably priced books/materials.

1. Personas and User stories: Summarize several key *personas* (categories of users) for your application – their general behaviors, interests, skills, pain points. In a user story you say how each persona will use your app (at high level). Please number your user story as their ID, organize user stories into a similar activity, and put your priority for each user story. Simple text format is OK. Focus on WHAT users do, not on HOW is the SW implemented.

A-2: Personas and User stories

Persona ID: 0001 – Brandon

Brandon is a 20-year-old Sophomore attending San Francisco State University. With the pandemic and this semester being his first full semester in person, he wanted to make sure he got all the supplies he needed for his classes. Last year, during his freshman year of college, Brandon has spent a lot more money than expected for textbooks, notebooks, and other class essentials. Unfortunately, he bought too many supplies and because of that is left with supplies in which he overpaid for that he won’t even use. He wants there to be an easy way to buy supplies needed for his courses at a decent price point and if need be, be able to return/resell his extra supplies.

Persona ID: 0002 – Lilly

Lilly is a 22-year-old senior attending San Francisco State University. With her college career coming to an end, Lilly has an abundance of old college material. This material includes old textbooks, notes from her 4 years’ worth of classes, and extra supplies such as notebooks.

Instead of simply throwing all these supplies away. She still wants them to have some use and find a way for her to still take advantage of them. Ideally, she’d want to be able to safely sell her items online for a reasonable price to a student who can get their school supplies for cheaper from her and get the same use out of it like she did.

Persona ID: 0003 – Leo

Leo is a 24-year-old attending Los Medanos College and also has a full time job. It has been a couple years since Leo has been in a school setting. Leo is worried as he is realizing the pricing of books. He also feels as if he can’t keep up with his professors and peers when it comes to note taking. Because of this, Leo feels like he is falling behind with his courses. For Leo, he would like a resource available to him where he could purchase textbooks and notes for his classes so he can catch up with his courses and be able to study for them as need be.

Persona ID: 0004 - Mohaned

Mohaned is an 18 year old international student. Being that he is not from the U.S.A and is now attending school and being in the country for the first time ever, he is nervous about succeeding within his academics. Mohaned does understand english but it isn’t his first language and because of that, he is unable to take all the notes needed as he cant write them down as fast as his peers. Because of this, Mohaned would like an option of buying notes online with translation if possible. He has searched online for notes, the problem is the notes are different than to what his class has. Ideally, he’d be able to buy notes similar to those of the class he is currently taking.

Persona ID: 0005 - Raelynn

Raelynn is a 20 year old college student. She is currently taking 5 classes. With these 5 classes, there are no required textbooks, however, there are recommended textbooks. Raelynn is currently struggling with some of her classes and considering buying some of the recommended textbooks to help her out in her classes. However, she doesn’t truly know how good the textbooks are and if they’ll help her with what she needs. Ideally, she’d be able to see reviews of the textbooks used by students before and be able to make a final judgement on whether or not it is worth investing in textbooks that aren’t required.

**User Stories**

| **User story ID #** | **(persona)** | **wants to (functionality or feature)** | **so that (benefit)** | **Constraints** |
| --- | --- | --- | --- | --- |
| 1 | Brandon | Buy supplies for school at an affordable price | He will have everything he needs for school without breaking his wallet | - the app must be able to show needed school supplies based on specific needs at the best price available |
| 2 | Lilly | Sell her college supplies online | Someone can continue to benefit from her work and so that she can make some money on her work | - The app must be able to let college students be able to sell old supplies if they’re worth selling. |
| 3 | Leo | Buy textbooks and class notes as a good price | so that he can feel up to speed with his peers | - The app should only have legitimate textbooks and school notes available |
| 4 | Mohaned | Be able to easily buy school supplies online | He won’t feel as if he’s at a disadvantage as an international student | - The app must be easily usable to those whose first language might not be English |
| 5 | Raelynn | Be able to read reviews on textbooks and other supplies to see if they are worth purchasing | She can make a final judgement on purchasing supplies | - The app must be able to show reviews and be able to post reviews of products |

1. .Data Definitions - define main terms, data structures and “items” or “*entities*” *at high or logical (not implementation) level* (e.g. name, meaning, usage, and NOT how the data is stored in memory) so it is easier to refer to them in the document. Focus on key terms (main data elements used in your app, types of users and their privileges etc.) specific for this application and not on general, well-known terms. These terms and their names *must be used consistently* in all documents, user interface, also in naming software components and database elements in your code implementation. In later milestones you will add more implementation details for each item. You will later expand this section with more details.

A-3: Data Definitions

| **Name** | **Definition (& Examples)** | **Usage** |
| --- | --- | --- |
| Account | Account that utilizes application and increases functionality. | Users can access their accounts to save account specific information and utilize application features. |
| School | School that the user would like to see listings from. | Users can select their school they would like to browse listings from and make/create listings. |
| Registered User | A person who signed up with an account on the application, e.g., Mike, @mike100, school info, age, gender | This information is collected so that users can interact with one another, and have the supplied information at hand easily. |
| Address | Location of users and listings. | The address will be used to provide shipping and/or pickup results from other listings. |
| User Preferences | Preferences per account, these can include search settings, filtering, and user specific options. | User preferences will be used to provide users a personalized experience based on the preferences set. |
| Private Chat | Direct messaging | Here, users can contact other users about their listings and communicate with them. |
| Listings | A listing that contains user specified images, description, and product based on the item they’re trying to sell. | The user can view listings that other users have created, or can create their own listing with a product they wish to sell. |

1. Initial list of functional requirements – see class materials. This refers to high level functions you plan to develop to the best of your knowledge at this point. Focus on WHAT and not HOW. Keep personas in mind. Develop these functions to be consistent with user stories. Number each requirement with *unique numeric value* and use these numbers consistently from then on. Each requirement has a requirement ID, title, 1-3 line of description, owner/initiator (optional), priority, user story to be referenced.

A-4: Initial list of functional requirements

1. Customers can create a unique user account
2. Customers with an account can login with a user account
3. Customers with an account can log out of the account
4. Customers with a unique user account can list which school they attend and what classes they are taking so that the store will show supplies (textbooks, notes, etc.) that would relate most to that customer
5. Customers who do not have a user account can browse the store and see what supplies are available. However, to make a final purchase, they would need to make a unique user account.
6. Customers can fill up a shopping cart with supplies they want to purchase
7. Customers with an account can put in information needed to finalize purchase. This information includes the payment method and the address that the items will be sent to.
8. Customers with an account can choose to save information for future purchases.
9. Customers with an account can leave reviews on items that are sold multiple times.
10. Customers with an account can put up items to sell on the website.
11. Customers with an account who put items to sell on the website shall put a title of the item, a description of the item, when the item was previously used (or if never used), and a price of the item
12. List of non-functional requirements (performance, storage space, usability, security, storage, availability, fault tolerance (with the expected number of users)) Number each. Please refer to these non-functional requirements in your design and develop from here. Example are listed as below :
    1. (compatibility) Application shall be compatible and usable on several mobile browsers including chrome and Mozilla Firefox.
    2. (development requirement) Data shall be stored in the team’s chosen database technology on the team’s deployment server (e.g. Google cloud or Amazon AWS)
    3. (usability) Application shall be easy to use and intuitive (*Please be specific per your application*)
    4. (development requirement) The code base should be well maintained in team’s github repo.

A-5: List of non-functional requirements

1. Application shall be compatible with any web browsers and any operating systems, including mobile devices.
2. The users’ passwords shall be encrypted with salting and hashing. Additionally, users can use OAuth to login.
3. All product and user data shall be stored in Amazon AWS server.
4. The code base shall be well maintained in a git repository and every code patch should get a review approval by at least one team member.
5. The application launching time is less than 1.001 sec.
6. The latency between pages should be 0.5 sec.
7. Competitive analysis: Find 3-4 competitive features against existing solutions which are available in the market. Present competitors’ features vs. your planned ones. First, create a table with key features of competitors vs. yours planed, at only very high level, 5-6 entries max. After the table, you must summarize in one paragraph what are the advantages of your planned product to what is already available.

There are currently many marketplace type websites that offer similar services that we plan to offer.

A-6: Competitive analysis

One of the first, and most popular marketplace, is Amazon. Many students utilize Amazon to get used or new textbooks for classes. Some features that Amazon has is fast shipping and a wide net of resources. Some of the benefits that our product has over Amazon is that our products are tailored to specific schools. Therefore, all of our products will be tailored to the needs of a specific population. Students attending a school can post notes and textbooks for sale that are relevant to the classes offered by that school. In essence, our product allows for a more refined search of school materials as it is a marketplace where the sellers and buyers attend the same school.

Another potential competitor is the school bookstore, for example the SFSU Bookstore. While they offer supplies relevant to the classes offered at the University, even the used options tend to be over priced. Even so, the Bookstore doesn’t offer any supplemental materials such as notes. Our prices would be determined by the sellers and who is willing to buy at that price, making it both a much more economical and fair solution. Moreover, our platform would make it possible for products such as notes or class specific materials to be sold there as well. It’s this expanded product list that distinguishes us from competitors such as school bookstores.

In conclusion, what makes our product unique is how it makes expensive products affordable to students via the marketplace format and how the products are tailored to the student population and courses offered at a specific place. Our team feels that these features combined gives us an edge over broad and overpriced competitors.

1. High-level system requirements Briefly provide itemized list of all main SW components such as frameworks, tools and systems to be used, supported browsers and deployment platform (SW and server) to be used. This list is to be the list of approved tools and systems from M0. Any other external (open source) code/API/tool must be listed.

A-7: High-level system requirements

| Server Host: | AWS 1vCPU 2 GB RAM |
| --- | --- |
| Operating System: | Ubuntu 16.04 Server |
| Database: | MongoDB |
| Web Server: | Amazon EC2 w/ NGINX |
| Server-Side Language: | JS |
| Web App Framework: | Express |
| Front-end Additions: | Material UI for React |
| IDE: | VS Code |

1. Team: list student names, name of the roles for each member. *If you form the study group, please list them too with their key milestones. (If you present detailed study plan, will earn extra points)*.

A-8: Team member and role

| Joel Giannelli | Team Lead |
| --- | --- |
| Hongjie Li | Frontend Lead |
| Tamir Rasheed | Scrum Master |
| Kuncheng Wu | Github Master |
| Ivan Cebreros | Backend Lead |
| Nyambayar Purevtseren | Frontend |

1. Checklist: for each item below you must answer with only one of the following: **DONE**; or **ON TRACK** (meaning it will be done on time, and no issues perceived); or **ISSUE** (you have some problems, and then define what is the problem with 1-3 lines)

* Team found a time slot to meet outside of the class
* Scrum Master shares a meeting minutes with everyone after each meeting.
* Github master chosen
* Everyone sets up their local development environment from the team’s git repo.
* Team decided and agreed together on using the listed SW tools and deployment server
* Team ready and able to use the chosen back and front end frameworks.
  + For each technology (front-end/back-end/DB/cloud) , team decides who will lead the study of each technology, and what will be output of the (feasibility) study by end of Oct.
    - Ex : implement sample about page using the front-end technology
    - Ex : Populate DB with simple data table
    - Ex : …
  + If you list a detailed explanation (other than Yes/No/Issues), earn extra point!
* Team lead ensured that all team members read the final M1 and agree/understand it before submission

A-9:

[On Track] Team found a time slot to meet outside of the class

[On Track] Scrum Master shares a meeting minutes with everyone after each meeting.

[Done] Github master chosen

[Done] Everyone sets up their local development environment from the team’s git repo.

[Done] Team decided and agreed together on using the listed SW tools and deployment server

[On Track] Team ready and able to use the chosen back and front end frameworks.

[On Track] Team lead ensured that all team members read the final M1 and agree/understand it before submission

**Background reading:**

* Class material on requirements and specs
* Relevant existing applications and products.
* Info about allowed frameworks
* M0 document and documentation on SW tools and frameworks you plan to use
* Git, Github tutorials along with a team tutorial session on Git/Github