

P2 Concept Exploration and Paper Prototype

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Introduction

Every quarter, DePaul students are required to buy textbooks and school supplies for their classes or their own needs. Our user study sought to look into how students buy, rent, and get rid of their textbooks and other school-related materials. The goal of this project is to design an innovative application that will help positively impact the experience of DePaul students when it comes to finding and getting rid of textbooks and school materials. This is important to prevent the waste of books and materials as some students may throw them out or not use them after only using them once. Wasting school supplies has a negative environmental impact which is why it is important to promote school supply reuse. Students will also be able to save and get money back by purchasing used supplies from other students who would understand the struggle.

With the insights and design principles from our user study, we were able to define what students would need and want with an application focused on the reuse of school materials. With these principles, we brainstormed concepts for the application. Using these concepts, we generated scenarios, narratives storyboards, and interface sketches that influenced our low-fi paper prototype. After crafting our paper prototype, we had users perform two tasks to test it. User feedback is vital for our team to continue to refine our prototype until it meets user satisfaction.

Users and Context

The system that we are developing is designed in the context of college students who will both buy and sell school materials. It needs to be accessible to all the users, sellers, buyers, and renters. It focuses on and is dedicated to DePaul University college students.

One user is a student who has a textbook they don't use anymore that they need to sell. Users will be motivated to sell if the process is straightforward and convenient. The user should be able to get rid of all materials no matter the quality and safely transfer them to those who are willing to buy or rent from them. For both buyers and sellers they should be able to conveniently schedule pickups and returns if necessary.

A second user is a student who needs to buy cheap material for class. A user is motivated by being able to get material for cheap and on time. Students can be concerned about the quality and sellers. So our system aims to be transparent when it comes to being able to see everything about the material and who is selling it. Students want the material on time so they are concerned about how they can receive it. Options are necessary for this. A student who would like to rent instead of buy needs to be able to receive the material timely and easily return it.

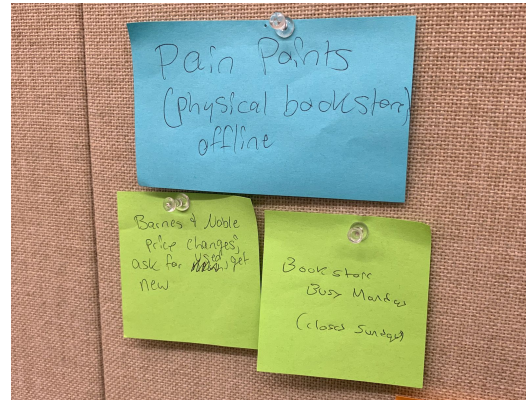
Insights and Design Principles

Through our user study we found insights. We used our insights to generate design principles. For approximately every two insights, we created one design principle. These insights and design principles are the basis of our concept exploration.

10 Insights

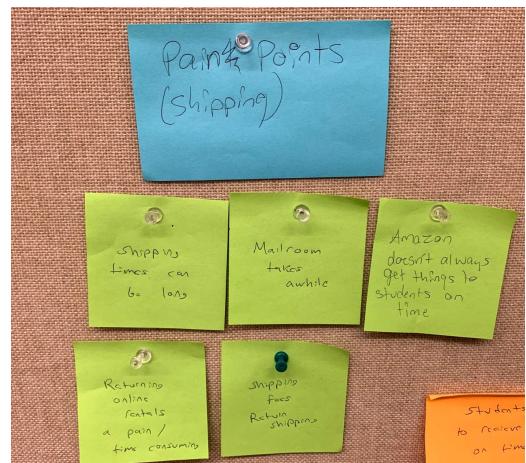
Convenience is a major factor in student purchasing materials

- We heard from interviewees saying that when they purchase things from off-line store, the process is too long or complex. They had to ask the shop assistants for certain things, and when the shop assistants are busy, interviewee had to just wait to get the right answer. And off-line store is not available 24/7. All of these were about convenience. That is how came up with this insight.



Students want to receive materials on time

- Many interviewees shared their negative experiences that relate to the shipping process. In some cases, the promising date of the delivery time was not kept, and in some cases, the product they received was different from their order. In addition, they experienced confusion about the rental product return process. Therefore, we came up with the insight that satisfy all of these elements.



Students prefer to use the simplest process when getting textbooks

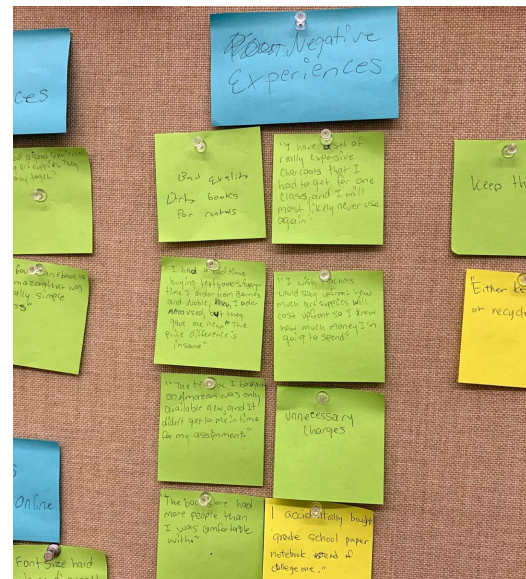
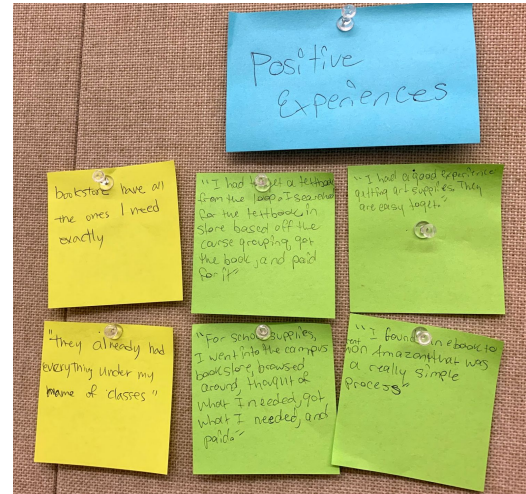
- When talking to people about their experiences when ordering textbooks, some interviewees told us about how easy it was for them to order their textbooks. Others, however, commented when the process was a hassle. We looked at these experiences and concluded that having a system where the user barely has to think about the process would cater to user needs.

Students want different options when buying textbooks

- Interviewees shared a positive experience in finding the exact material they wanted. Users are satisfied when they receive the exact product they want. In addition, when they have the opportunity to choose a product from several different qualities, the users have higher chance to choose the right product for them.

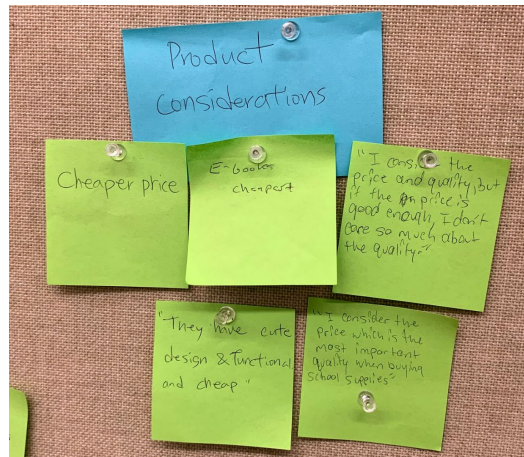
Students prefer to receive higher quality textbooks

- When we asked users to rank what they thought was the most important features when deciding to buy a textbook, quality was almost always after price. We determined that users want to get the best quality for the best price.



Many students consider price the most when getting textbooks

- The first feature that most interviewees considered when buying textbooks was the price. One interviewee even said, "if the price is good, then the quality doesn't matter as much." We also took note when interviewees expressed frustration at outrageous textbook prices. Therefore, we determined that price was an important thing to look at.

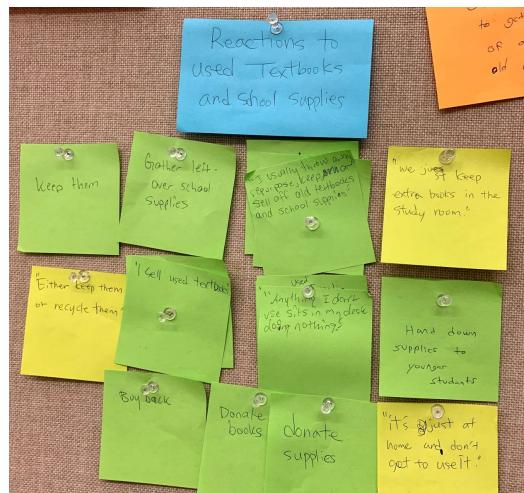


Students don't want to pay more than they have to

- Investigations have shown that interviewees are considering affordability when they purchase products.

A lot of students have textbooks and materials sitting around

- When we asked the interviewees if they had excess supplies, many of them said that they did. Some even communicated annoyance when describing how many materials they no longer use. From this information, we concluded that a lot of students had a similar problem.

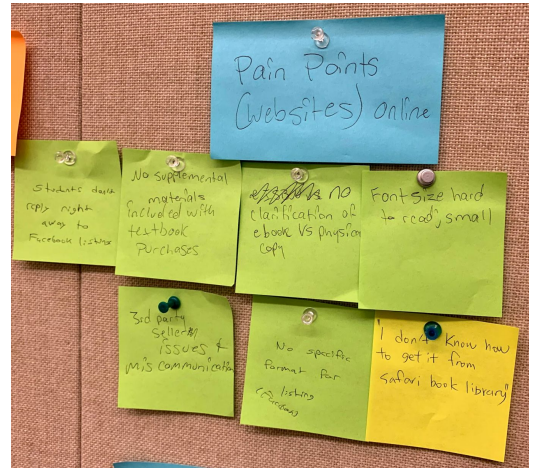


Students want to get rid of their old materials

- We found that interviewees not only have many leftover school supplies but also they want to do something with those, sell, donate, recycle, or just keep them because they simply do not know what to do with them.

Students want to have the exact materials required

- A lot of students talked about their syllabi in the interview. Some of the interviewees even said that the first thing they do before purchasing supplies is to look at the syllabus even if the textbook is listed on their textbook list on the Barnes and Noble website. From this, we concluded that students do not want to buy extraneous materials which would cause them to spend more money than they had to. From these ideas, we determined this insight.



5 Design Principles

A successful solution will...	From insights of...
Get students the exact quality and variation they need <ul style="list-style-type: none"> - We found that students consider quality and accurate products when buying materials. Therefore, we came up with the following solution 	<ul style="list-style-type: none"> - Students prefer to receive higher quality textbooks - Students want to have the exact materials required - Students want different options when buying textbooks
Allow students to get rid of all materials <ul style="list-style-type: none"> - Because the interviewees shared a lot of school-related materials that are no longer used, we came up with the following solution 	<ul style="list-style-type: none"> - A lot of students have textbooks and materials sitting around - Students want to get rid of their old materials
Encourage affordability <ul style="list-style-type: none"> - Because they are students, they tend to consider price was one of the most important things they consider 	<ul style="list-style-type: none"> - Many students consider price the most when getting textbooks - Students don't want to pay more than they have to
Get students their materials on time for their assignments <ul style="list-style-type: none"> - They want their products to be delivered on time 	<ul style="list-style-type: none"> - Students want to receive materials on time
Provide convenience to student <ul style="list-style-type: none"> - They want simple and convenient process when they purchase products. 	<ul style="list-style-type: none"> - Convenience is a major factor in student purchasing materials - Students prefer to use the simplest process when getting textbooks

Concepts

How might we...


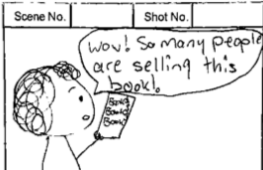
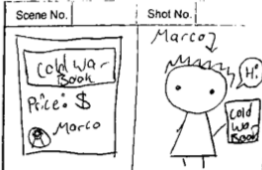




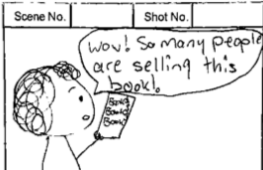
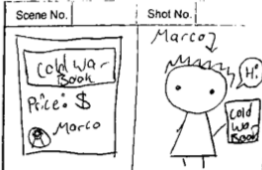




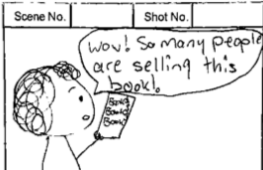
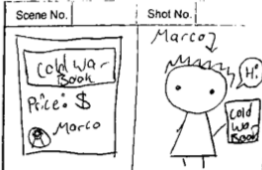



- Get students the exact quality and variation they need
 - Search
 - Pictures
 - Description
 - Title
 - Seller rating
- Allow students to get rid of all materials
 - Sell button
 - Connect people who need materials with the people who no longer need them
 - Donate
 - Repurpose
 - Throw away
 - Recycle
 - Sell to third world countries
- Encourage affordability
 - Set up a pricing system
 - Price comparison
 - Provide a lot of sellers (advertise to people who want to make money and sell their extra supplies)
 - Option to buy or rent
 - Rent option for student to student
 - Encourage students to not sell their supplies at outrageous prices
- Get students their materials on time for their assignments
 - Connecting students' syllabi with the application in a way that is easy for users to access
 - Want (wish/shopping) list
 - Calendar feature
 - Allow user to see a seller's location (perhaps on a map)
 - Messaging
 - Payment options
 - Meet up (no shipping/delivery costs)
 - Seller rating customers/customer rating sellers
- Provide convenience to student
 - Schedule
 - A seller can drop a product off somewhere and a buyer can pick it up from there
 - Short distance
 - App - easy to log into
 - Campus connect login

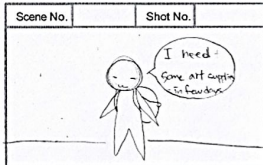
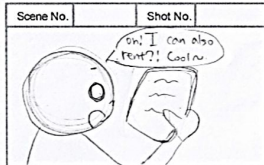
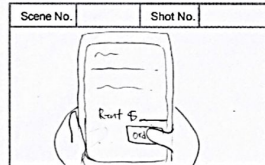
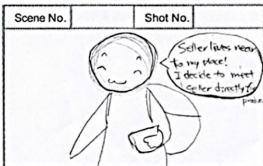
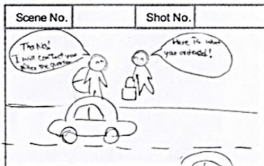
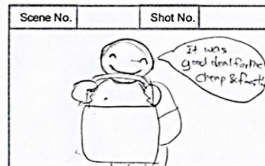
- When a buyer looks up a material, they are shown that material
- Comparison button that allows the buyer to compare the prices between the student sellers and the third party sellers
- Show how much people are saving (ex: you are saving \$15)

Six best concepts

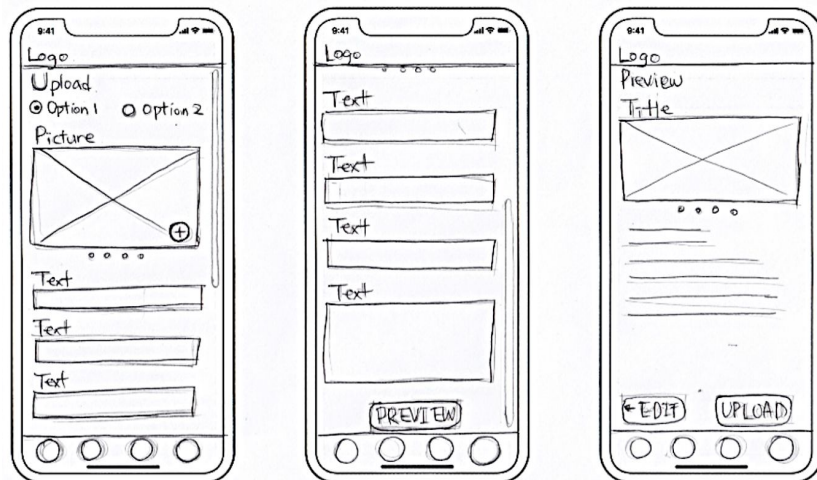
- Search - filters, price, and comparison
- Sellers - pictures, title, author, ISBN, description (for materials)
- Seller + buyer ratings / profiles
- Buying process - buy / rent / shipping through delivery or in-person meet-up
- Syllabus feature
- Calendar - when the book will get to you / tracking / when you need the book soon

Representation

<p>Scenario 1 - Search - filters, price comparison</p>	<p>Dan is going to University, he sees there is a textbook on the syllabus that his accounting teacher told him to get. He looks online, but buying the book seems too expensive. He wants an alternative to paying full price. He hears about a place where he can get textbooks and materials cheaper from other students. So he downloads the app. He wants to compare prices in hope of finding the cheapest purchasing option, with the ability to receive the book in a timely manner. He searches for his course and clicks on the class. He then clicks on the textbook he needs and filters the options. He sorts from cheapest to highest price, and is able to find the book at a cheaper price.</p>												
<p>Scenario 2 - Syllabus feature</p>	<p>Arreli has enrolled in her classes for the fall quarter at DePaul. She wants to buy cheaper supplies and hears about an application that can help her do this. She wants to use this app to buy things that are only on her syllabi. After she downloads the app, she uploads her syllabi to it to remind herself what she needs to buy. The app takes the information from it and displays it on the homepage for her to easily find. Everything is organized alphabetically by course code. Arreli now has an easy way to check that she is buying everything from her syllabi.</p>												
<p>Storyboard 1 - ratings/profile - sellers and buyers</p>	<table><tr><td></td><td></td><td></td></tr><tr><td><p>Esperanza is a history major, and she saw on her syllabus that she needs to purchase "Cold War and Soviet Insecurity" for one of her major classes.</p></td><td><p>She found the book on an application where students sell their used textbooks and supplies to other students. Many people were selling the book.</p></td><td><p>She then found the book for cheaper than listed online from a seller, Marco. He had a good rating.</p></td></tr><tr><td></td><td></td><td></td></tr><tr><td><p>She purchased the</p></td><td><p>They decided to meet</p></td><td><p>Because of her</p></td></tr></table>				<p>Esperanza is a history major, and she saw on her syllabus that she needs to purchase "Cold War and Soviet Insecurity" for one of her major classes.</p>	<p>She found the book on an application where students sell their used textbooks and supplies to other students. Many people were selling the book.</p>	<p>She then found the book for cheaper than listed online from a seller, Marco. He had a good rating.</p>				<p>She purchased the</p>	<p>They decided to meet</p>	<p>Because of her</p>
													
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	<p>book, and sent him a message about where to meet up. He responded almost immediately, and they set up a time and date.</p>	<p>up at the JTR library. He gave her the book which she thought was a good quality, especially considering the price.</p>	<p>positive experience with Marco, Esperanza decided to give him a 5 star rating.</p>
<p>Storyboardc2 - Buying process - buying/renting school materials/textbooks, shipping through delivery or in-person meet up</p>	<div> <div>Scene No. Shot No.</div>  <p>A student needs to buy some art supplies for his class. But because the class is not his major course, He doesn't want to buy the supplies.</p> </div> <div> <div>Scene No. Shot No.</div>  <p>He found an application that he can rent the materials with cheap prices. The app allows him to compare prices from other sellers.</p> </div> <div> <div>Scene No. Shot No.</div>  <p>He placed an order through app.</p> </div> <div> <div>Scene No. Shot No.</div>  <p>He needs supplies by tomorrow, so he decides to get the product directly from the seller today.</p> </div> <div> <div>Scene No. Shot No.</div>  <p>Buyer and seller meet at promised place and pay the price</p> </div> <div> <div>Scene No. Shot No.</div>  <p>The student got the product he needed at a good price and at the right moment.</p> </div>		

**Interface -
School material
information - pictures,
title, author, ISBN,
description**



Seller can upload a product with simple steps. First, seller chooses type of product (book or supplies). Seller can upload photos of products, title, author, ISBN(case of book), relevant course, and description. When seller is done with filling out all the items, seller taps 'preview' to check the final version. Seller taps upload.

**Interface -
Calendar - when the
book will get to the
student/tracking
information/when the
student needs the book
by**



This interface sketch of the calendar feature highlights the selected day in a dark shade, shows light shades for days they can be selected which align with the seller. As well as a circle X, to show when they need the book for class. Which can be shown through the syllabus about the first day of class or manually input by the user, followed by extra options about information, or if shipping is chosen shipping information.

Paper Prototype

Task One

You are a Mathematical Sciences major. You have registered for a required math class this upcoming quarter, MAT 125. You want to buy a cheap graphing calculator required for the class. You need it as soon as possible, so you want to meet in person with the seller who is selling it for the cheapest price. Show me how you would do this.

Logo Search Course or Material Q

Art # required Materials

B course #

Course #

Course #

Task 1-1

Logo MAT 125 Q

Syllabus Materials for MAT125

Text book

Graphing Calculator (TI-89)

Task 1-2

Logo

Graphing Calculator

Sort ✓

\$ Condition John Doe Location

\$

\$

\$

Task 1-3

Logo

Graphing Calculator

Sort ✓

Price (low to high)

Price (high to low)

Seller Rating

Distance

Condition (New - old)

Task 1-4

Logo

Graphing Calculator

Description

Condition

BUY RENT

\$

Buy Now Add to Cart

Logo Seller info Location Rate

Task 1-5

Logo

Ship to

Expected Delivery Date

Oct

In Person

Seller's prefer Location

Continue

Task 1-6

Logo

Ship to

Expected Delivery Date

Oct

Address 1

Address 2

City

State Zipcode

Continue

Task 1-6-1

Logo

Ship to

Expected Delivery Date

Oct

In Person

Seller's prefer Location

Your prefer meet up time

Date:

Time: 00:00 ~ 00:00

Location option

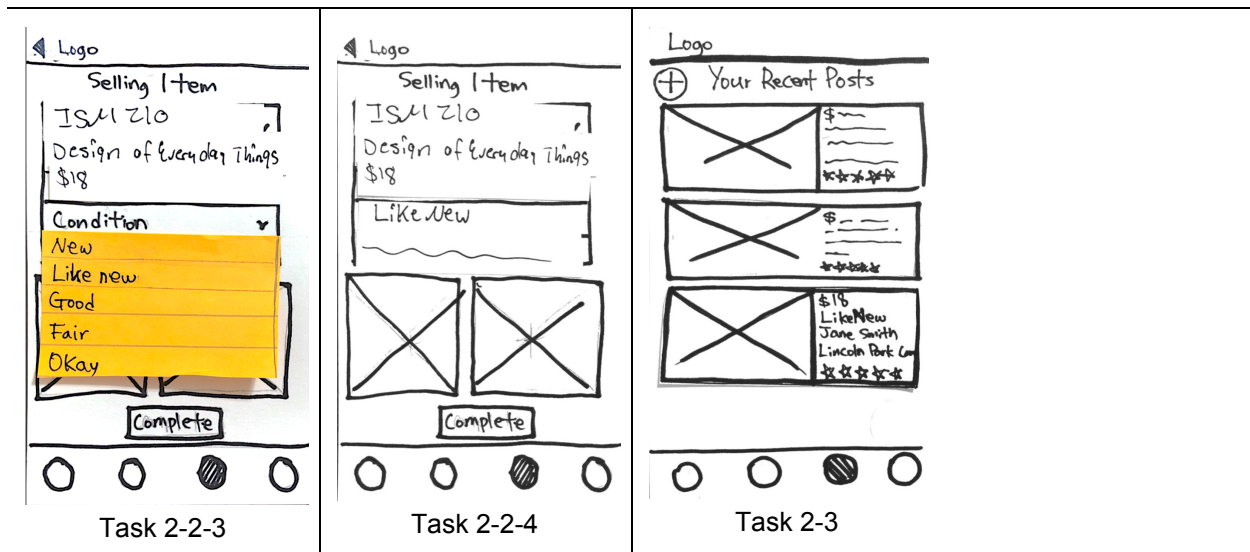
Task 1-6-2

	<p>Logo</p> <p>Graphing Calculator</p> <p>Total \$ _____</p> <p>Card No. _____</p> <p>MM <input type="text"/> YY <input type="text"/></p> <p>CVC code <input type="text"/></p> <p>Name on Card _____</p> <p><input type="button" value="Place Order"/></p> <p>○ ● ○ ○</p> <p>Task 1-7</p>	<p>Logo</p> <p>Thank You for placing Order!</p> <p>You purchased Graphing Calculator</p> <p>Price: \$ _____</p> <p>Condition: _____</p> <p>Description: _____</p> <p>○ ● ○ ○</p> <p>Task 1-8</p>	
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Task Two

You are a Graphic Design major, and you have an ISM 210 textbook you don't use anymore. It is in like new condition so you think you can get a decent amount of money back for it. You bought the book "The Design of Everyday Things" by Don Norman, and you want to make money by selling it to another student who needs it. You need to make a marketplace listing on the app selling the textbook for \$18. Show me how you would begin this process.

<p>Logo</p> <p>⊕ Your Recent Posts</p> <p><input type="text"/> \$ _____</p> <p><input type="text"/> \$ _____</p> <p>○ ○ ● ○</p> <p>Task 2-1</p>	<p>Logo</p> <p>Selling Item</p> <p>Course <input type="text"/></p> <p>Name of Item <input type="text"/></p> <p>Price <input type="text"/></p> <p>Condition <input type="text"/></p> <p>Description <input type="text"/></p> <p><input type="button" value="Complete"/></p> <p>○ ○ ● ○</p> <p>Task 2-2</p>	<p>Logo</p> <p>Selling Item</p> <p>Course <input type="text"/></p> <p>ISM 101 ✓</p> <p>210 ✓</p> <p>270 ✓</p> <p>360 ✓</p> <p>390 ✓</p> <p>394 ✓</p> <p><input type="button" value="Complete"/></p> <p>○ ○ ● ○</p> <p>Task 2-2-1</p>	<p>Logo</p> <p>Selling Item</p> <p>ISM 210</p> <p>Name of Item <input type="text"/></p> <p>Price <input type="text"/></p> <p>Condition <input type="text"/></p> <p>Description <input type="text"/></p> <p><input type="button" value="Complete"/></p> <p>Q W E R T Y U I O P</p> <p>A S D F G H J K L</p> <p>1 2 3 Space return</p> <p>Task 2-2-2</p>
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User Testing Script

Hi, thank you again for taking the time to participate in this study. I'll be giving you a task to complete and then ask questions as we go along.

It's really important to know that we are only testing the app, not you. You can't do or say anything wrong here.

Please feel free to let me know at any time if there's something you like, dislike, if you're confused. I promise you won't hurt my feelings.

Also, I'd like you to "think aloud" as much as possible. By that, I mean that I'd like you to speak your thoughts as often as you can. For example, you may be looking at a page, suddenly see something you didn't see before and want to click on it. In that case, saying something like "this caught my eye so I'm going to see what it is" would be very useful.

If at any point you have questions, please don't hesitate to ask. Do you have any questions so far?

Ok, Let's get started.

Task 1 Video

https://drive.google.com/file/d/1nDlo_LFKTECbAUqDpo8rZL5HrjPXAXpR/view?usp=sharing

Task 2 Video

<https://drive.google.com/file/d/1Ms0UPang9Uoj-Az-vLmrgfbYP4Ca3fEZ/view?usp=sharing>

Evaluation

User 1	<p>Task 1</p> <p>From the first screen of the app, the user typed “graphing calculator” into the search bar instead of MAT 125. After going through a few screens, user questioned the “Buy Now” option. She wasn’t sure what that meant. The user went easily though the task. User asked what the circles on the bottom of the app were. She thought it was a step by step thing until a few steps into the task. She assumed the filled in ones were the pages she was on. User went easily through the entire task. She did not have much trouble with the task overall. She said that she found everything to be very self explanatory. She suggested making it more obvious that there is a location in the seller’s profile. She said for the location system, users should not be able to put any location in the location. She suggested making default specific locations available only (ie the stu, library, etc). Understood what the rating system was.</p> <p>Task 2</p> <p>User completed the task with ease. She assumed there were pictures to add. Asked why there were more than two pictures on the add post, but only one is displayed on the listing. She wouldn’t really know how to add more than two pictures.</p>
User 2	<p>Task 1</p> <p>User completed most of the task with ease. When looking at options for the graphing calculator and the seller, she chose the seller with the highest rating and more information. She did not sort for price. User had an issue with meeting up in person with the seller. She would want a phone number and email available on the seller’s information. She would want to be able to look at the seller’s information and contact them about meeting in person. She would prefer to rent the calculator if desperate enough, and if it was not in as good of a condition so she would not have spent as much money. User did not know what to do from the current screen. She was confused about the “Buy Now” button because she would not think that was how a person would meet up with a person. She suggested that the app specify that the user can contact the seller after clicking on “Buy Now”. She also suggested adding a messaging option to be able to contact the seller. That option seems too final. She prefers to talk to people in person before meeting them. Expecting someone to hit buy now to meet in person seems weird. She would want more information about the person, but would honestly not want to meet the person in general. When choosing the location for where to meet the seller, she would not want to be able to input any location. She wants to be able to choose a set location or a mid location option. She would want an option to pay with paypal. User was confused about the circles on the bottom of the app. She did not know what they meant. People like having affirmation that their task is completed, like a check mark or confirmation. The user said a smiley face may not be the best option to do this because it is kind of creepy, but it is on the right track.</p> <p>Task 2</p> <p>Completed the entire task with ease. The user said that people shouldn’t be able to put any amount for the textbook. She suggested that, after the user inputs the book</p>

	<p>title, the app should set the max price as the original price of the book. Users should then have an arrow for adjusting the price. For inputting pictures, she would take a picture of the front and the back of the book. The rest of the task was completed well.</p>
User 3	<p>Task1</p> <p>Overall, users could easily navigate the application. However, the user had a hard time identifying the first screen. He took about 30 seconds to fully understand it. Other than the first menu, the user interacted with the app very easily. The user pointed out that there are no special characters and numbers on the keyboard.</p> <p>Task2</p> <p>Because the menu buttons have all same icons, the user was confused about what the menu is for sale. The user pointed out that the text boxes for sales and purchase prices are not distinct. He also pointed out that, in a recent post screen, no ratings are needed because the screen is for the seller himself. Also, seller's name does not need to be repeatedly show for each post. Instead, the user suggested to put upload date, price change, and number of clicks. In addition, user pointed out that it is unclear how to add photo. There is no plus sign or camera icon for adding photos.</p>
User 4	<p>Task1</p> <p>User was struggling to figure the first screen out. User suggested not to put photos on the first screen because it seems hard to get it, or little too busy. Instead, user wanted to see more information about course materials at the first screen. For third screen, the user suggest to place half position for image and the other half for information. (the information portion is too small)</p> <p>Task2</p> <p>When the user saw the 'Recent Posts' screen, he expected the plus icon to appear in the bottom center (or right) of the screen which currently we have that in the top left of the screen because the bottom portion of the screen is thumb friendly area. User said, it is hard to find plus icon when it is placed right below the logo. That area is already busy with other stuff. He also suggested to appear the recent post on the top of the screen or to have sort menu button for 'Your recent posts' screen. User expected to be able to upload photos more than two for selling item screen. Photos can be able to slide horizontally. He pointed out that one product can be for more than two courses. So he proposed the ability to add more than one course. He also pointed out that there is no separate text boxes for rental price and buy price. The app should provide two different text boxes for each. He mentioned that there is no plus sign to add photo for post selling item screen.</p>
User 5	<p>Task1</p> <p>User was not sure if class was displayed, asked if they should search or scroll. One the Task 1-2 screen user found the Graphing Calculator with no problem, and clicked on the button. User was not positive if cheapest option was displayed with one \$ sign or if sorting it would be included under sorting, they used sorting and eventually found that it could be sorted by price. User spoke aloud saying, "I assume since I sorted it the top one is the cheapest so I'll click on that." User was not sure if buy now or add to cart, they said it seemed like the same. User was hesitant once</p>

	<p>drop box screen went away and was back on the same page, “so I’m done right? continue, I guess?” User received feedback the task was complete, no way they saw to get back to the home screen.</p> <p>Task2</p> <p>User had no idea how to sell an item from the main screen. User said “This looks like an add button, although it’s on the top left.” Prototype keyboard has no numbers. User asked if adding images was needing since there does not seem to be a button, or they look like they’re already there. User thought the task was straightforward and easy when new post was added.</p>
User 6	<p>Task1</p> <p>User wondered why there was already stuff on the first screen, eventually assumed the search for MAT would be the best option. No visible change of sort screen on prototype, had to confirm it was sorted. User said they want to know more about the seller before they click the buy button. Seller wanted to visibly be able to see which option is faster in person or shipping and be able to compare. After confirming still wanted more information about how the in person option worked, left them confused.</p> <p>Task2</p> <p>User did not know how to get to sell screen, although they assumed it was one of the buttons. Questioned how to get numbers during the pricing. User thought the task would be added to the top instead of under listing already there, but understood that the posting was added, they thought it was simple.</p>

To begin testing our prototype, we assigned and rotated two roles: the facilitator and the observer. The facilitator read the user the testing script and told them the tasks they would have to perform with the paper prototype. They encouraged the users to speak their thoughts out loud. The facilitator then simulated the app responding to the user’s interaction with it. The observer took notes on what the users said and did. Each team member took turns being one of the two roles until everyone had tested the appropriate amount of users.

Overall, the users we tested provided very useful feedback on how to change and update our prototype. We observed several problems that the user had while trying to go through the two tasks. One of the biggest issues we found was that people were confused about the “Buy Now” button. Most users were not sure what that was supposed to mean. Many users also had problems with the lack of icons on the navigation bar. They were either not sure what the circles on the bottom meant, or they were unable to figure out where they needed to go based on the circles. Users also wanted more information about the seller. They were confused how the in person delivery would work. Users commented on the first screen. They thought it was cluttered and difficult to understand what to do at first. As for the second task, the main issue was that users were not sure how to add photos to the item post. They didn’t know if they could add more than two or if there were already photos there. They also had an issue with the mock keyboard as it didn’t have an option for numbers. Part of the second task is to input the price of the textbook, and that is difficult to do when there is no options to do that.

Our team brainstormed on how to combat the various user struggles. For the “Buy Now” option, we suggested that we can specify that users will be able to contact the seller after clicking on the button. For the navigation bar, we will add relevant icons so users are not confused by the blank icons such as a home, search, cart, and profile. The keyboard problem is not an issue on actual phone keyboards. It was a fault with the paper prototype keyboard we made. Therefore, the solution would be to have an actual phone keyboard with numbers and symbols. When the user is on the screen describing the item they wish to purchase, we can add more seller information such as an email and phone number to contact. Another possibility is to add a messaging feature in case users do not want to give out their phone or email to a stranger. To combat issues with the home screen, we can display the materials in a simplified list form without the pictures to make it look cleaner and less cluttered. For the second task, we can add an outline of a picture button that, when a user clicks on it, adds a photo. There can also be a plus button that a user can click on if they want to add more photos of the product they are selling.

Reflection

Initially, we started off our prototype from our six best concepts. By creating expressions, we got a rough idea of how to shape and form our application. Starting with those rough ideas, we formed the details of screen contents and functions of the application. We decided our application should be something that can connect buyers and sellers. Sellers can upload their used textbook and leftover school supplies and sell or rent them through the application. By doing that, sellers can get rid of their used ones when buyers can buy or rent the products they need at an affordable price. We came up with an in-person meet-up option for buyers, so that they can have the products at the right moment. In order to do so, we should have seller's further information, including name, contact info, and their rough location.

We tried to build a prototype that runs our initial ideas. We received positive feedback on the general application concept. However, through evaluations, we found a lot of flaws that are problematic to the users and received several different comments and suggestions on the details of the screen contents.

What we would do differently next time

- Task 1 & 2
 - Provide confirmation (feedback) as the process progresses
- Task 1-1
 - No photos, info of syllabus materials instead?
 - Allow buyers to search the title of supplies directly from the home menu.
- Task 1-3
 - Provide seller's further information for buyer
- Task 1-7
 - Provide various payment options
- Task 1-8
 - Have positive emoji or image at the end of process (instead of smiley face we have)
- Task 2-1
 - Do not have sellers name and rating (because the rate appear repeatedly) instead, allow sellers to check uploaded date, view numbers (how many times buyer search and open the post), and price change
 - Place add (plus icon) on the bottom of the screen
- Task 2-2
 - Allow sellers to upload more than two photos and give signifiers (plus or camera icon)
 - Allow sellers to slide uploaded photo horizontally
 - Let or encourage sellers to upload various angles of photos of supplies (in case of book, front and back covers at least)
 - Provide two text boxes to input both buy and rent
 - Allow sellers to add more than one related course per product
- Task 2-3

- Allow sellers to edit their post
- Others
 - Provide numbers and special characters on keyboard
 - Provide message option
 - For meet-up location, give them options of depaul landmark locations
 - Create details of tap menu icons

Design patterns used

- Activity stream
 - Used on the recent posts page for task 2 (Task 2-1 and Task 2-3)
- Carousel
 - Used on the page displaying the full description, condition, seller information, etc. on the graphing calculator page (Task 1-5)
- Dropdown chooser
 - Used on the selling item page for the course and the condition (Task 2-2-2 and Task 2-2-3)
- Explicit search
 - Used when the user searches by either course or material (Task 1-1)
- Forgiving format
 - Used when user inputs card information because no parameters are set (Task 1-7)
- List inlay
 - Used for displaying syllabus materials, sellers selling the product, search results for MAT 125 (Task 1-1 through Task 1-4)
- Module tabs
 - Used for Buy and Rent tabs (Task 1-5)
- Onscreen sort
 - Used on the selling page for task one, sort options are available (Task 1-4)
- Prominent done button
 - “Place Order” and “Complete” (Task 1-6 and Task 1-7)
- Responsive enabling
 - When the information is not all presented at once, used for “In Person” when a box pops up prompting the user to input date, time, location then clicks continue for the next step (Task 1-6, Task 1-6-1, and Task 1-6-2)
- Tab menu
 - Used consistently on the bottom of the application across all screens (navigation bar) (Tasks 1-1 through Task 2-3)
- Thumbnail grid
 - Used when displaying the syllabus materials and the different sellers selling the materials (Task 1-1 through Task 1-4)

Group Contributions

All

- Came up with insights
- Came up with design principles
- Came up with the two user tasks
- Concepts
- User tested 2 individuals
- Documenting P2

Ross

- Drew one interface sketch
- Wrote one scenario
- User in paper prototype video
- Wrote user testing script
- Wrote introduction and Users & Context section
- Contributed to writing tasks

Jiyoun

- Drew some of the paper prototype screens
- Operation paper prototype for video
- Video editing
- Drew one interface sketch
- Drew & write one storyboard
- Form and organize paper prototype screens with labels
- Formed and wrote details of 'how we get into insights' and 'insight to design principles'
- Wrote Reflection
- List 'how we would do differently next time'
- Design P2 document

Bridgit

- Filmed prototype video
- Did voice over for prototype video
- Drew some of the paper prototype screens
- Wrote one scenario
- Drew one storyboard
- Edited and added to the introduction section
- Wrote the evaluation section (minus the user tasks table)
- Added the design patterns to the reflection section
- Edited and wrote parts of the insights and design principles section

Behind the Scenes

