CoffeeLog

Every coffee has a story.

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Introduction

Every day, adults get up early in the morning to order a cup of their favorite expresso blend or medium roast coffee at their local coffee shop before heading off to work. While they might list their nutrients, **ingredients**, and flavors, consumers are often left on their own to research into the coffee bean sources, **production process**, and other **traceability** features that lead them to enjoy the robust flavors of their morning coffee.

Through **CoffeeLog**, our goal is to provide **efficient search** querying for the source of their coffee beans and ingredients, allow consumers to **discover** new interesting facts about nearby coffee stores of interest, and **evaluate** coffee facts and the bean sources.

Brainstorm

During the studio session, our team brainstormed possible user interface functions based on the accountability theme targeting various different user groups such as coffee drinkers and students. We wanted to build an application that would allow users to be informed as well as discover new insights for a topic that related to accountability such as coffee drinking and credibility.

Some of the initial ideas that we brainstormed were personal financial credit trackers, keeping records of people who were part of the delivery process for a package, supply chain traceability, recording daily activities, and organizing academics. After coming up with these general ideas, we narrowed them down to be more specific. In particular, we found that the topic on supply chain traceability to be really compelling and insightful since everyday consumers might not be very well-informed on the sources of the food production or how the products get supplied. Finally, we decided to settle on tracing the coffee production process, which would be targeted towards users including morning coffee drinkers or those who buy coffee bean packages.
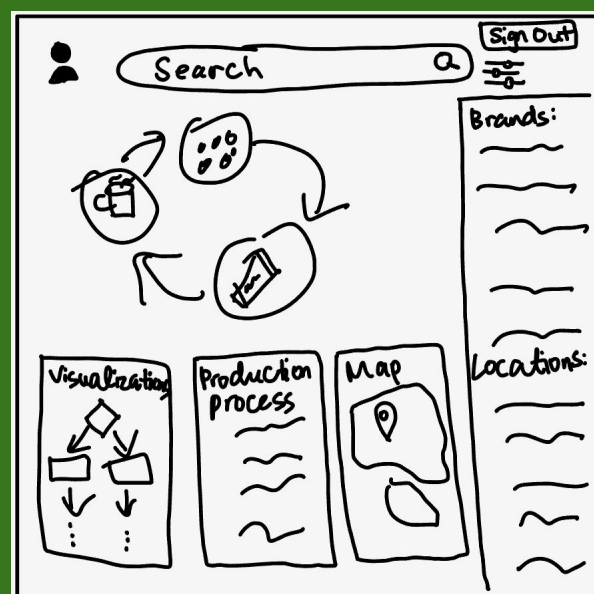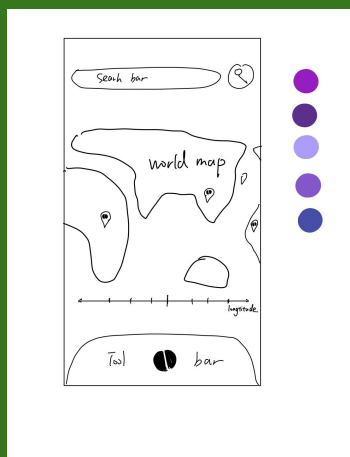
Function Goals

Our initial goals for the features that we wanted to include in our app:

- Enable users to search up coffee production process based on coffee bean brand, location, and name
- Generate visualizations and flowcharts of coffee production process
- Coffee companies/coffee bean source producers/users can input data into the database
- Filters based on the user's location, store brand, and other properties for user queries

Interview & Synthesis

Interview Script:

Time scope: 10-15 min

Opening questions:

- General coffee questions (2 min):
  - Where do you like to get your coffee from?
  - Do you make coffee at home?
    - If so, where do you get your beans?
  - Would you consider your coffee specialty coffee?
  - How often do you drink coffee?
  - Do you know where your coffee comes from (region/specific farms)?
  - What roast of coffee do you prefer (light/medium/dark)?
    - In case participants are not familiar with coffee: do you rather have your coffee to be bitter or sour?
- Sustainability questions (2 min):
  - Do you consider yourself to care about sustainability?
  - To what extent (1-5) do you participate in sustainable practices?
  - Do you look at how sustainable your coffee is?
  - Would you consider differentiating the coffee that you buy based on its sustainability?

Observation:

- By examining this coffee package, can you identify what type of coffee bean is used?
- How reliable do you consider this coffee brand? (Rate 1-5)
- How often do you buy this coffee brand? (Rate 1-5)
- Where do you think the beans are produced?

Interview Findings:

- People usually don't care a lot about sustainability. However, most people care about the quality of their coffee beans.
- People love to know more about their coffee (e.g. brand/producer) as long as those information won't bother them
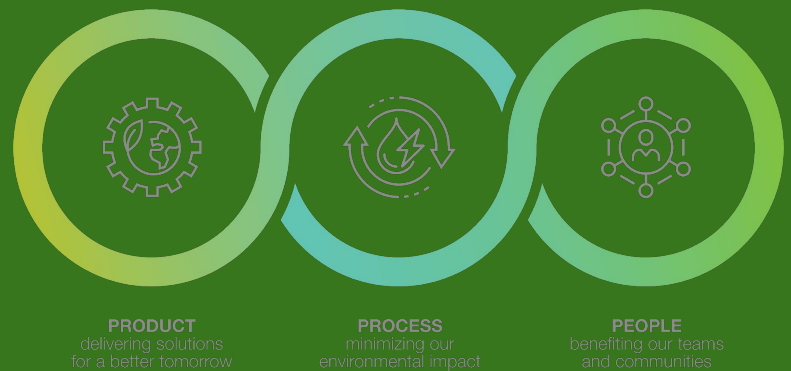
Persona & Textual Scenario

Persona 1:

Pete is a coffee enthusiast. As a student at UC Berkeley, he is a verifiable hippie and cares about things like ethics, the environment, and sustainable practices. He enjoys a light roast like a proper coffee nerd should and insists that specialty coffee is much better than Starbucks. He buys beans at times to brew in his espresso machine at home, but also enjoys visiting shops around town for a peaceful cup of hot espresso.

Persona 2:

Caw Fee is a casual coffee drinker. As a GSI at UC Berkeley, they only drink coffee for caffeine intake. While they are not particular about the craft or taste of coffee, Caw Fee tries to have a lower carbon impact and be an ethical consumer. They frequently buy drinks from stores like Starbucks, Peet's, or other similar chain coffee shops. However, Caw Fee recently read an article about the wastefulness and environmental impact of chain coffee shops, and is looking for new sources of caffeine.

PRODUCT
delivering solutions
for a better tomorrow

PROCESS
minimizing our
environmental impact

PEOPLE
benefiting our teams
and communities

Scenario 1:

Pete is concerned about whether or not he is being an ethical consumer. Before buying some new beans from his local coffee roastery, he looks up the information on the origin of the beans. Pete opens his coffee tracking application and enters the name of the coffee bean into the search bar. The application shows Pete a visualization of the process the coffee beans have taken, from farm to roastery. Wanting to know more about where the beans were grown, Pete clicks on the Origin part of the visualization. It turns out that the beans were grown by a farm associated with Nestle, so Pete decides to not buy the beans.

Scenario 2:

Caw Fee went to Starbucks to get their usual iced quadruple espresso, and was wondering if their coffee was ethically sourced. Caw Fee opens their coffee tracking application and enters the name of the item they ordered at Starbucks, which then shows Caw a visualization of the source of the coffee beans. Caw Fee looks through the visualization, and finds out that in the Origin part, that the beans were grown using slave labor. Disgusted, Caw Fee throws away their coffee and refuses to ever get Starbucks again.

Low-Fidelity Sketches

Key Elements:
- User and company data manipulation
- Coffee production traceability visualization
- Coffee search querying

In our initial sketches, the main page after user login would be a dashboard with navigation icons to production process details, flowchart visualization, maps of bean origins, and a search bar at the top. There would also be user and company login authentication. There would also be a page for inputting user and company data so that our app would be able to enter and store new data. Afterwards, there would be a notification that the user successfully inputted the new data.

We felt overall that this was a broad initial idea and that we could instead focus more on tasks that would allow the user to explore more while using the app. We were quite satisfied that we came up with the ideas of having a map visualization for the coffee bean origins since from our observational study we found that users care a lot about the quality of their coffee bean, and having the barcode scanner for querying about coffee bean details.

Mid-Fidelity Wireframe
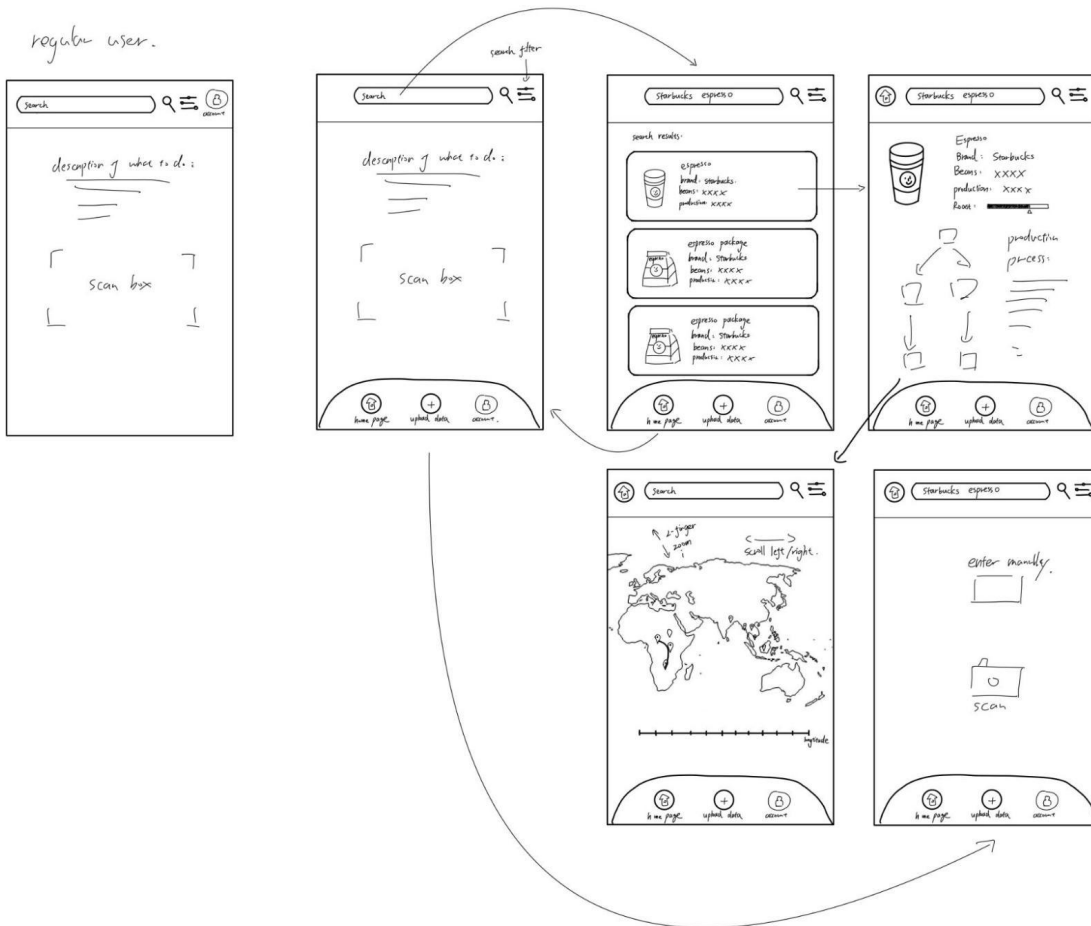
Key Elements:
- Scan box
- Express production flowchart
- Map
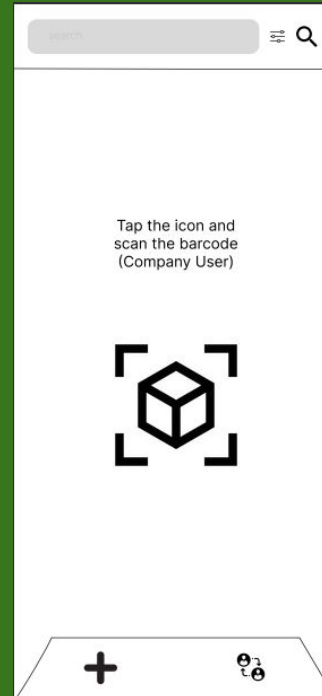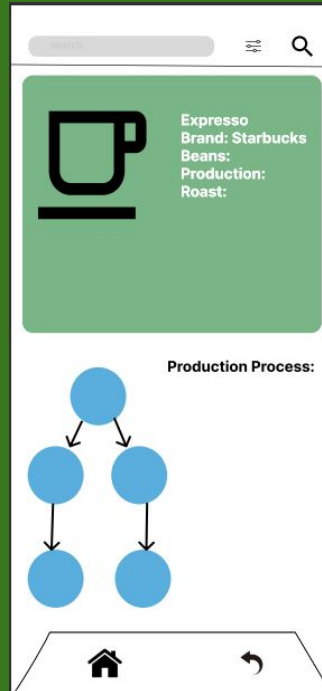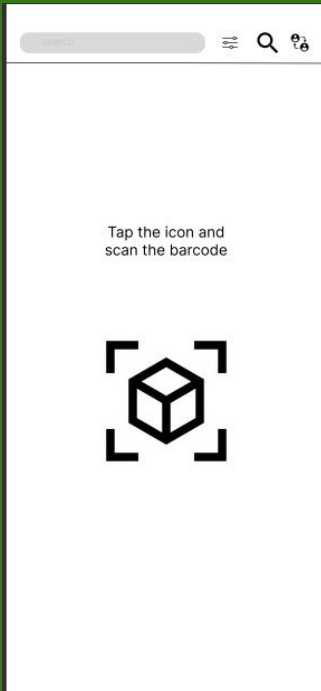- Manual entry

User-Free Evaluation

Next, we ran a heuristic evaluation on our mid-fidelity wireframe using the 10 Heuristics of Usability Design.

Heuristic Evaluation:

- **User control and freedom** – Our app has a back icon on the bottom of the pages in case the user navigated to the wrong page and wants to exit.
- **Consistency and standards** – We keep the general home, add, and back buttons on a bottom tab of all the pages for consistency.
- **Match between system and real world** – We use familiar icons and data visualizations so that the experience is more intuitive for the user. For instance, we include simple flowchart graphs for the coffee production process, and the general icons for the search bar and home button.
- **Aesthetics and minimalist design** – We try to keep the interface as simple and easy to use as possible for the user, such as keep the coffee statistics page as simple as possible.
- **Help and documentation** – One thing we can do to improve our low-fidelity mockup is include a help page where users can ask questions.
- **Help users recognize, diagnose, and recover from errors** – We can improve our low-fidelity mockup and add a "no results found" page when the user searches for a coffee name that doesn't exist.
- **Flexibility and efficiency of use** – We mostly have a simple user interface for general users.
- **Error prevention** – We prevent users from looking up part of string for coffee brand name that doesn't exist in the search bar.
- **Recognition rather than recall** – We can have images of the different coffee products rather than require users to remember the specific name.
- **Visibility of system status** – We can add a loading page when search results not displayed yet and in progress.

High-Fidelity Figma Mockup

Screen 1:

search

Tap the icon and
scan the barcode

Screen 2:

search

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

Production Process:

Screen 3:

search

Tap the icon and
scan the barcode
(Company User)

Screen 4:

qwerty coffee

Search Result

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

No results found

Barcode scanner to search product

Coffee production process, ingredients, and properties

Company barcode scanner

"No results found" for search errors

High-Fidelity Figma Mockup

Search Result

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

Expresso
Brand: Starbucks
Beans:
Production:
Roast:

Enter item manually:

Tap the icon and scan the barcode

Search results for valid input

Coffee bean origin map

Manually enter item details option

Solutions

1952 Guatemala Medium Roast

👁 Great

Tasting notes
Citrus fruit, Apple

Certifications
Smithsonian Bird-friendly
Fair Trade

Roasters
1952 Roasters Inc.

Origins
Las Lomas Coffee Farm, Guatemala

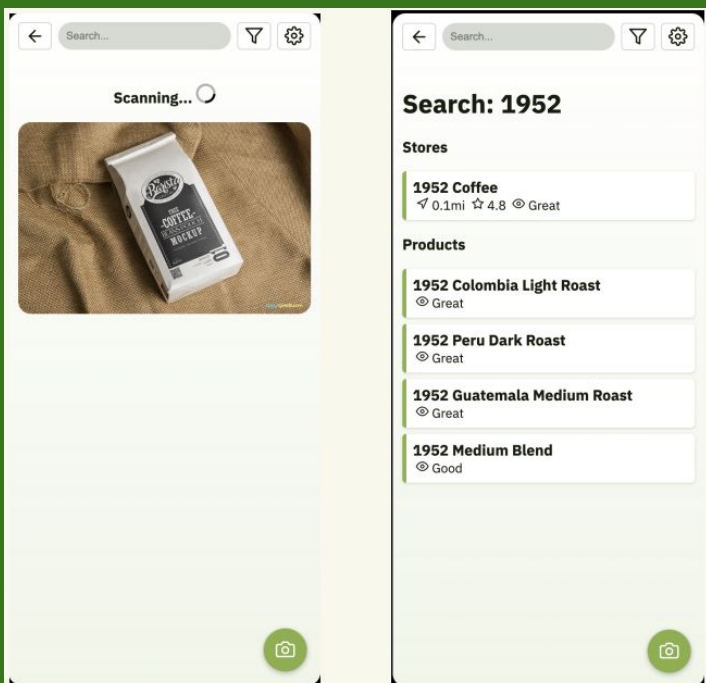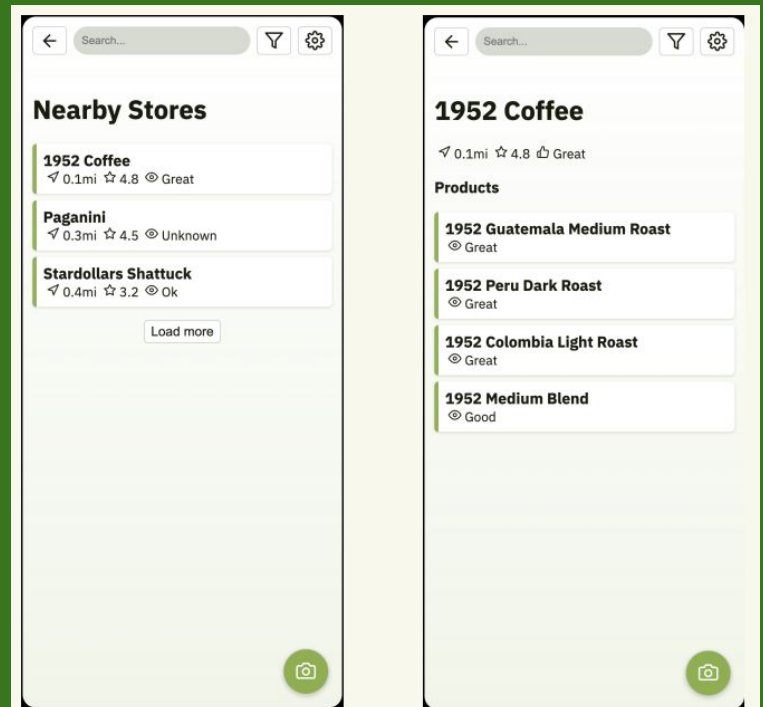**Evaluate:** Display information about a specific coffee (taste profile, cost, certifications, roaster, origin, etc.) so that the user can make relevant evaluations of the various coffees that they might like. Support supply traceability down to which farms certain coffees use.

Nearby Stores

1952 Coffee
⌁ 0.1mi ☆ 4.8 👁 Great

Paganini
⌁ 0.3mi ☆ 4.5 👁 Unknown

Stardollars Shattuck
⌁ 0.4mi ☆ 3.2 👁 Ok

Load more

1952 Coffee
⌁ 0.1mi ☆ 4.8 👍 Great

Products

1952 Guatemala Medium Roast
👁 Great

1952 Peru Dark Roast
👁 Great

1952 Colombia Light Roast
👁 Great

1952 Medium Blend
👁 Good

Discover: Enable users to find new coffee shops with coffee that they might like through "Nearby Stores" and "Search". Use a simple star system for coffee shops.

Scanning... ◯

Search: 1952

Stores

1952 Coffee
⌁ 0.1mi ☆ 4.8 👁 Great

Products

1952 Colombia Light Roast
👁 Great

1952 Peru Dark Roast
👁 Great

1952 Guatemala Medium Roast
👁 Great

1952 Medium Blend
👁 Good
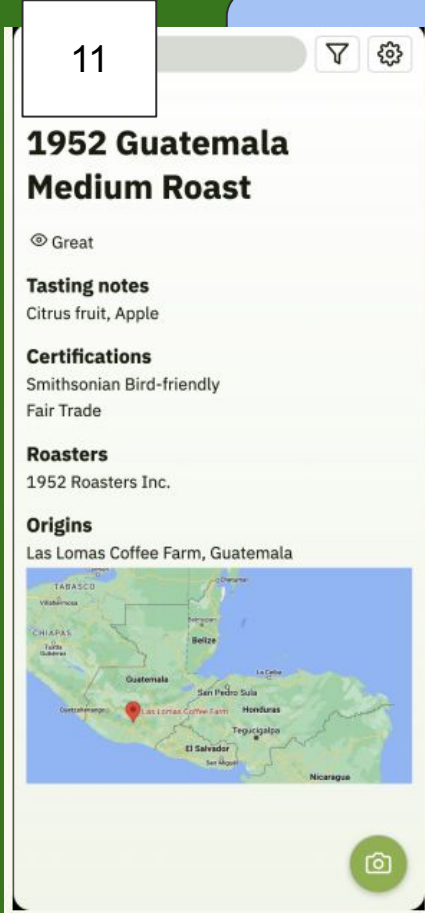
Query: Find relevant coffee easily though a camera-based barcode scanner and the search system, so they can browse in-person and access information in real time.

User Evaluation

In the evaluation study, our main goal is to test the effectiveness of the three major functions (evaluate, discover, query) of our application.

After giving the participants a brief introduction about the study's background and its goal, we'll give them a bag of coffee beans with its product name "1952 Guatemala medium roast" marked on its package. Then we'll ask the user to provide more detailed information about this coffee bean with the following questions:

1 Can you tell me something more detailed about this coffee bean (e.g., its roaster, farm of origin, certifications, tasting notes, etc.)?

2 Are there any stores nearby that uses this kind of beans for their coffee?

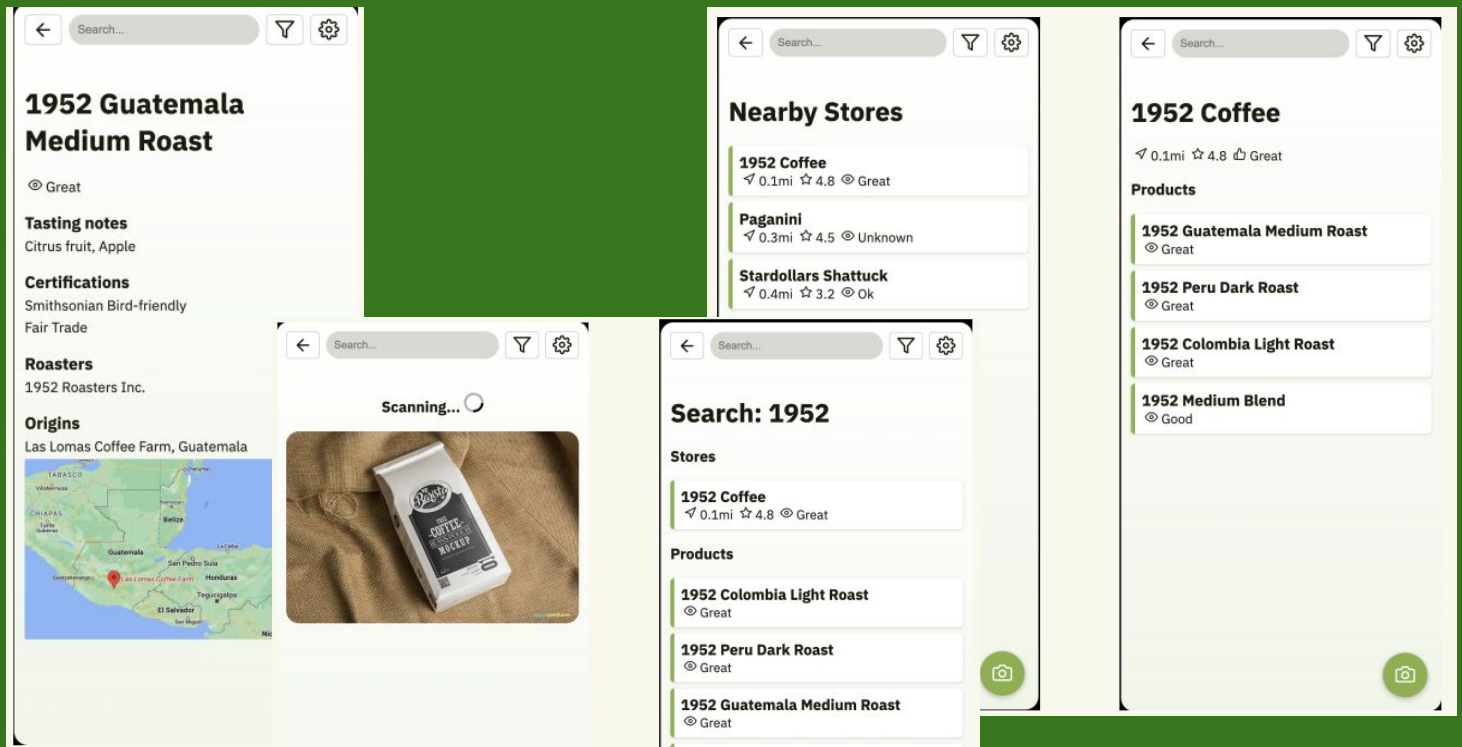**3** (Following q2) Can you name one other product this store has?

4 Based on the information you just saw, were you able to tell if the coffee bean is eco-friendly?

Synthesis:
Both participants of the study were able to find the information we asked for during the study using the search bar & scan function. The iteration of pages was also making sense to them as they had no trouble moving between pages.

The only issue that was identified is that both participants seemed confused when they were asked about whether the coffee bean is eco-friendly or not. According to their feedback, instead of showing them the production process, it would be easier for users to tell whether the beans are eco-friendly or not if we can add a "eco-friendly certified" mark on the beans' product detail page.

Final Design

1952 Guatemala Medium Roast

👁 Great

Tasting notes
Citrus fruit, Apple

Certifications
Smithsonian Bird-friendly
Fair Trade

Roasters
1952 Roasters Inc.

Origins
Las Lomas Coffee Farm, Guatemala

Nearby Stores

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Products

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1952 Peru Dark Roast
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1952 Colombia Light Roast
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Scanning... ◯

Search: 1952

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1952 Coffee
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Products

1952 Colombia Light Roast
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1952 Peru Dark Roast
👁 Great

1952 Guatemala Medium Roast
👁 Great

1952 Medium Blend
👁 Good

HTML   CSS

SVELTE

- Main features: Display coffee details and ingredients, Show nearby coffee stores, Barcode scanners and search bar for querying information
- Implemented using Svelte, HTML/CSS, JavaScript
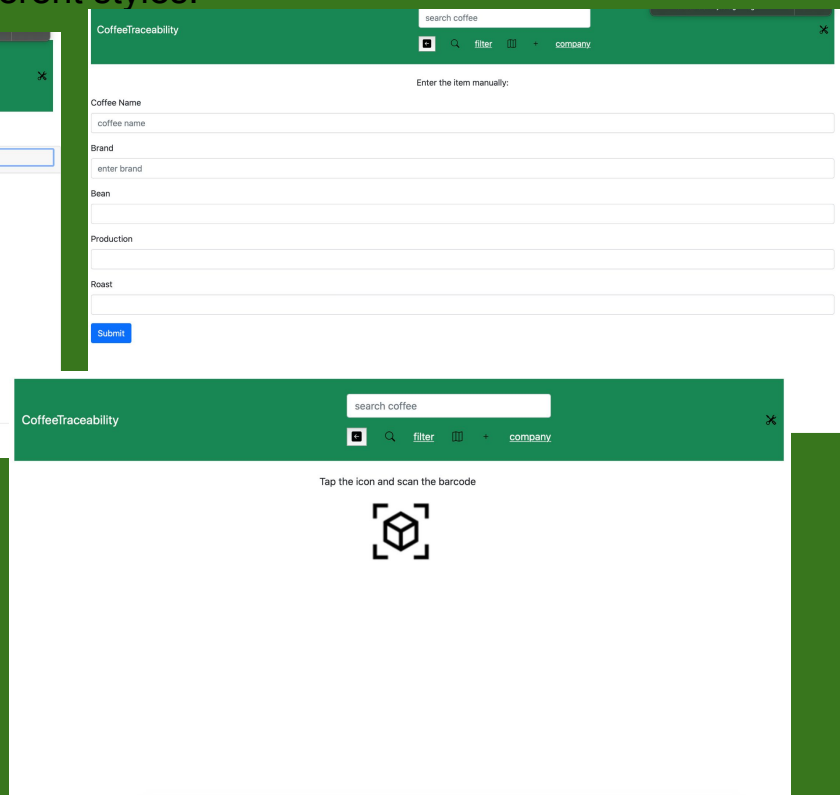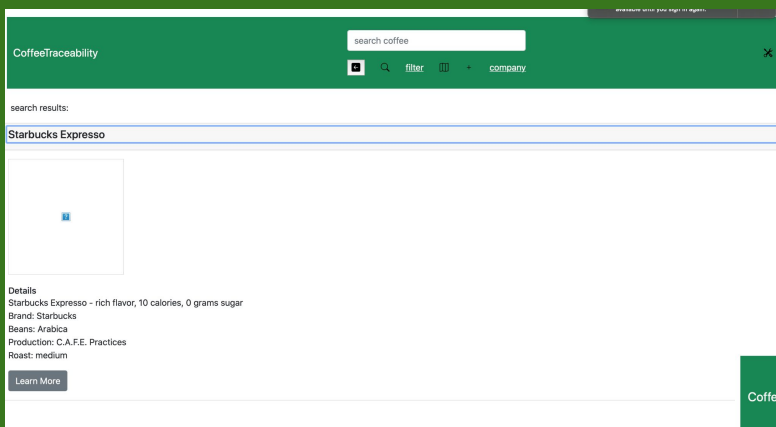
Conclusion - Design Process Reflection

Overall, iterating through each of these design stages assisted us in gaining new insights, making improvements, and advancing our progress in building this coffee production traceability application. We started off in the design phase where our team came up with lots of broad and general ideas focused on accountability such as financial credit tracking systems, tracking academic progress, and supply chain traceability. Afterwards, we decided to focus on supply chain traceability since this can be a large accountability issue especially for consumers who want to check the actual ingredients or materials for their products. Specifically, our main focus was on coffee production traceability, in which we wanted to track down the origin of coffee beans and create a flowchart from the coffee bean farms to the production facility. Afterwards, we created more low-fidelity sketches, conducted observational studies, and created textual scenarios and personas. During this stage, we gained insights such as coffee drinkers having concerns over the quality of their coffee beans and came up with new ideas for what features to include in the coffee application. Some ideas that we had were having a map for the bean origin and a search engine for querying different brands and types of coffee. To solidify these initial ideas, in the prototyping phase we built the mid-fidelity wireframe and high-fidelity Figma prototype. After building the mid-fidelity wireframe we performed a heuristic evaluation using the 10 heuristics of usability design. This was really helpful in figuring out which parts of our wireframe needed improvements, like making the loading system status visible to the user and showing an error if the user queried for a coffee which didn't exist. Then, using our high-fidelity prototype, we used frameworks and code including HTML/CSS, JavaScript, Svelte, and Node JS to implement our application with the three main features – evaluate, discover, and search. Afterwards, we conducted a user evaluation to assess our application.

Conclusion - Challenges & Next Steps

While we were able to successfully build the front-end features using Svelte, HTML/CSS, and JavaScript, due to two team members both accidentally building two separate frontend application and time constraints, we didn't end up getting through with the backend application portion as we had initially planned to do. In the future, we could work on using Node.js, Express, and MongoDB to build a functional backend that could be used for fetching, updating, and storing data about coffee such as the certifications and origin type. In addition, we could include the saving functionality on user information and building authentication for company and user login.

Challenges – Made frontend twice with different styles:

Appendix

Github: https://github.com/yjp20/160-group-18

Presentation:
https://docs.google.com/presentation/d/1ZQTyjLraMBchJb7kpINyw5JGwQNRSJz7KBJzZpnQO0A/edit?usp=sharing

Video:
https://www.youtube.com/watch?v=anwu0qm8JNo&list=PLQQgP4RfdlXrv3aFcysy8tf5_21KIb1nJ&index=11

Image Sources:
https://docs.google.com/presentation/d/1tEgTZ8KONYzdLf-5NetzdAo-l2J1v2L8SBfsPcTlNfI/edit?usp=sharing

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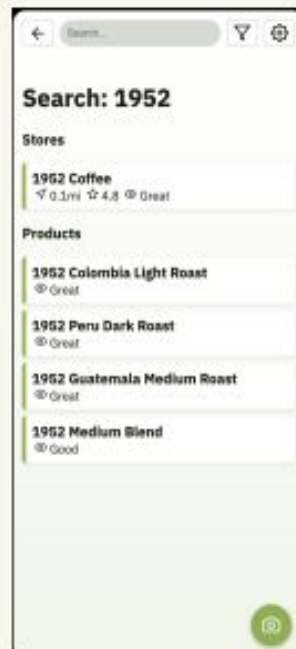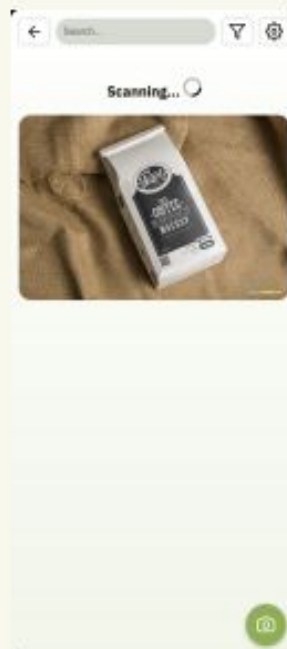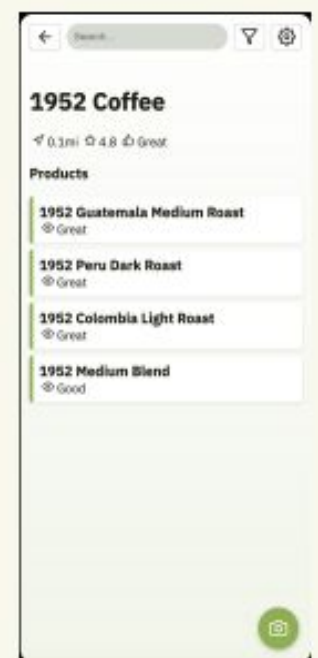Yunlong Li

CoffeeLog

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Display information about a specific coffee (taste profile, cost, certifications, roaster, origin, etc.) so that the user can make relevant evaluations of the various coffees that they might like. Support supply traceability down to which farms certain coffees use.

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