



# Project FairShare

**Name of Project:**

FairShare Bill Splitting App

**Created By:**

Ekombong Uffort

Mae Ison

Natalie Yeung

Miebaka Semenitari

Grace Oluwaniyi

Aaron Ly

Tanzela Fatema Ali

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# Design Challenge

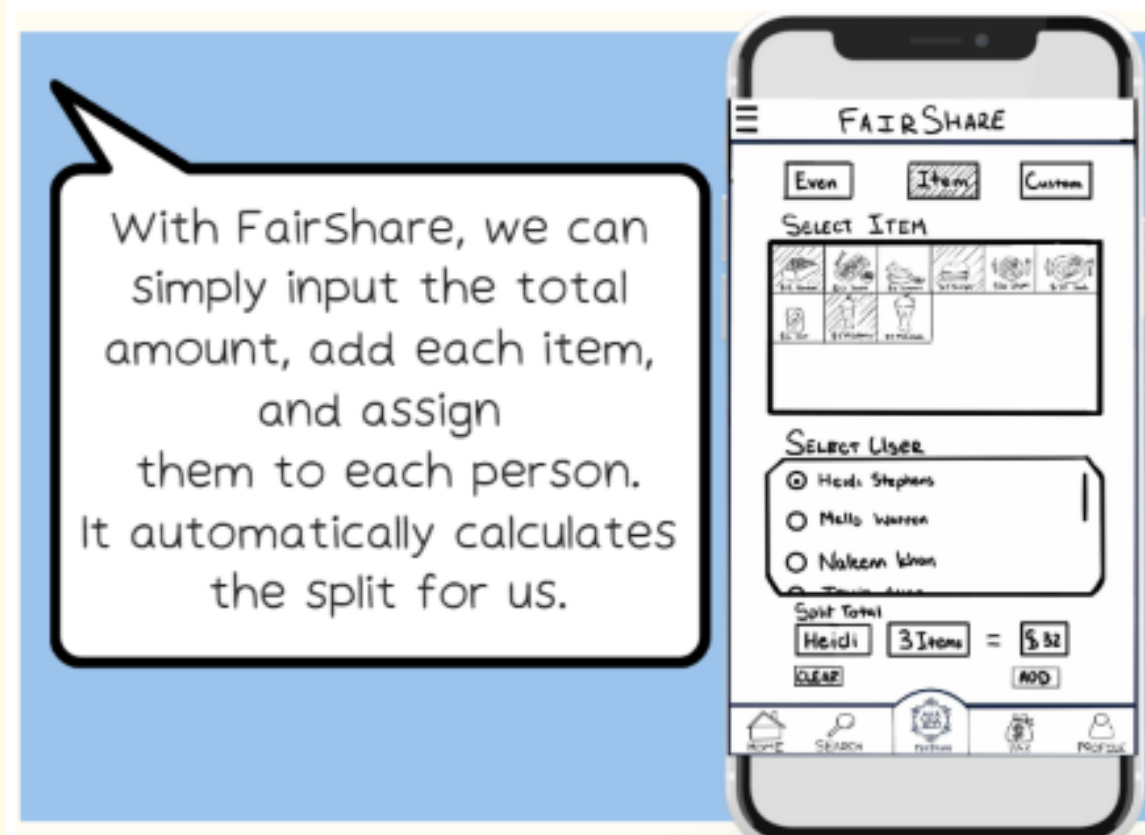
## Bill Splitting Issues



Six friends are sitting at a restaurant table with their bill. They just finished eating but figured their bill will be hard to split among themselves. They all seem conflicted until...



One of the friends, Aaron, recommends an app he recently discovered called FairShare. He pulls out his phone.



Aaron demonstrates the app's features to the group.



The group is amazed at how easy their situation would be if they used FairShare.

# STAKEHOLDERS



- **Developers/Engineers**

They collaborate closely with clients, product managers and designers to understand the requirements of the desired product.

- **Marketing Managers**

They play an essential role in raising awareness among potential users.

- **Designers and Design Team**

They are responsible for ensuring the application reflects user's needs and preferences.

- **Stripe**

Stripe as a software enables FairShare users and participating businesses to complete transactions within the application.



# USERS



- **Customers**

Customers in a group of at least two will use FairShare as a more efficient method of browsing and ordering Items/Services and most importantly splitting the bill among the group.

- **Service Staff**

Service staff interact directly and frequently with the application.

- **Owners**

Owners will integrate FairShare mobile application into their businesses.



# User Activities

## Where can users find FairShare?

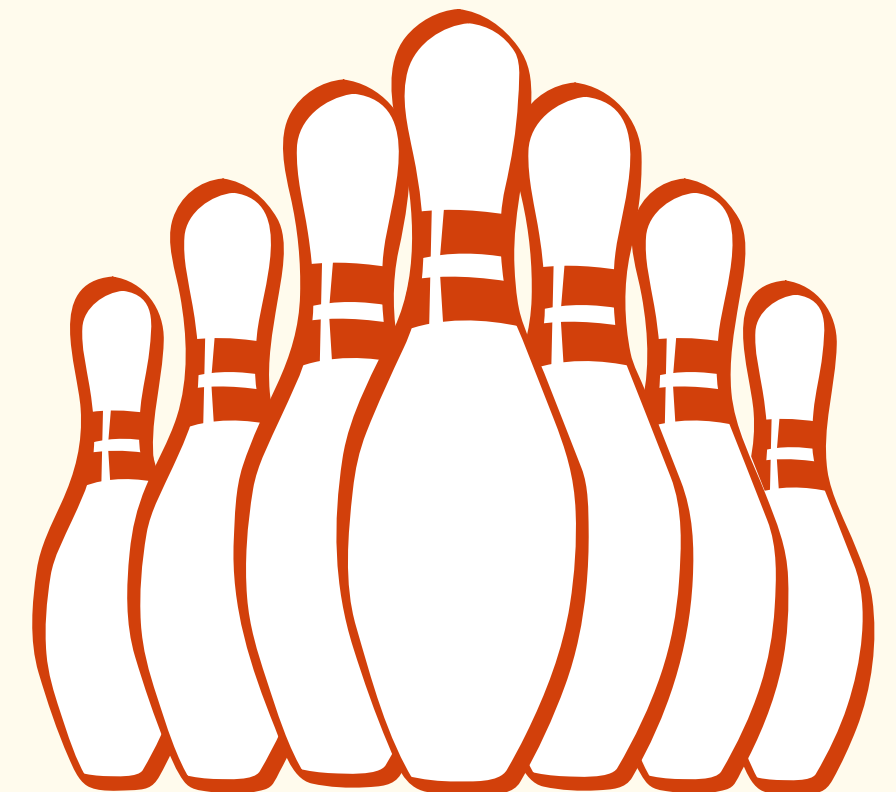
FairShare is only available on the app store for mobile devices.  
We plan to expand onto different devices in the future.

## What kind of environment is FairShare used in?

- Recreational activities (bowling, amusement parks, shopping, etc.)
- Dining (restaurant and ordering food online)

## When can users use FairShare?

FairShare can be used at any time.  
Our live chat even runs for 24/7.



# USER RESEARCH

- Observation Method
- Persona Creation
- Interview Method






# Observation Method

The observation plan was successfully executed by gathering valuable insights into user behavior. Group observations with a minimum of four individuals provided valuable data on group dynamics and collaborative app usage, while the observation checklist ensured a focused approach on key areas like interactions, pain points, and feedback.



# Persona Creation

## PERSONAS:



### DEMOGRAPHICS

Age: 22 years old  
Education: 1st year student at the Alberta University of the Arts (ACAD)  
Hometown: Trondheim, Norway  
Family: Family (Mother, Father, 3 sisters) who all live in Norway.  
Occupation: Software development Intern at Benevity

### TECHNOLOGY TRAINING/EXPERIENCE

5 years of various digital art software such as Adobe, Procreate, and Robelle 6.  
Has used various types of technology since she was 10 years old.

## Naleem Khan

### ARTS STUDENT

#### BACKGROUND:

Naleem is a student completing a Bachelor of Arts and works at a local coffee shop. She has a very busy schedule working and studying. Despite her busy schedule, she prioritizes her well-being and makes sure she spends time with friends since her family lives in Norway. She often spends most of her weekends with a group of 5 friends from school. They enjoy going to group environments such as restaurants, and movie theatres, and playing group sports. They frequently use Splitwise to split expenses.

#### JUSTIFICATION:

Naleem is a primary user because she enjoys hanging out with her group of friends most weekends. They enjoy going to establishments and often split the bill for a more efficient experience.

#### PAIN POINTS:

- Some establishments don't allow groups to split the bill.
- Some services take a while to take our orders and give us our bill.
- It takes a while to get the service worker if we need support or there is a long line up.
- Some menus/services are accessed through QR code, which can be a security issue.

#### GOALS:

- A secure and efficient method to split the bill with her friends when they go out.
- An easy and fast way to order/reorder and pay for food/drinks and other services.

#### VALUES:

- Visually appealing platforms
- Simple design
- Easy to navigate
- Easy and quick payment methods
- Accessible applications for all types of users

Source: Adapted from [3]



### DEMOGRAPHICS

Age: 26 years old  
Education: Bachelor's degree in computer science  
Hometown: Brampton, Ontario  
Family: Family (Mother, Father, 2 children) who all live in Brampton.  
Occupation: Software Developer/Engineer

### TECHNOLOGY TRAINING/EXPERIENCE

10 years of programming experience  
Has been working in the industry for over eight years.

## Heidi Stephens

### SOFTWARE DEVELOPER

#### BACKGROUND:

Heidi Stephens interest for software engineering was ignited in her sophomore year of university where she discovered her love for coding and problem solving. She has attended and actively participated in several coding bootcamps and competitions around the country. Heidi is also deeply knowledgeable in UX design principles as well as the software development life cycle and stages. She is proficient in python, java script, C++ and HTML/CSS.

#### JUSTIFICATION:

Heidi serves as a major stakeholder for the team. She currently oversees a team of junior developers who work on the back end of the app to identify and fix bugs or issues within the code.

#### VALUES:

- Heidi values diversity and inclusion. She is also a strong advocate for representation of more women in the technology space.
- Heidi supports and upholds ethical practices in software development. She is a firm believer in the protection of user privacy, data security and accessibility. She understands the importance of catering to diverse user needs and abilities.

#### PAIN POINTS:

- As stated in her goals and values, Heidi is a strong supporter of continuous learning and professional development. However, she is aware of the gender gap and glass ceilings for women that exist in the technical space. This gap tends to limit the opportunities available for her to grow in her field of expertise.

#### GOALS:

- Excellence: Heidi is determined to deliver technical excellence in her work at all times. She strives to write clean and concise codes which produce efficient algorithms when necessary.
- Life-Long Learning: Heidi believes that education does not end in the classroom. She constantly seeks new opportunities to learn and grow by expanding her knowledge and skills on programming languages, machine learning and artificial intelligence.

Source: Adapted from [4]



### DEMOGRAPHICS

Age: 31 years old  
Education: Bachelor of Business Administration, specializing in Marketing, from Mount Royal University  
Hometown: Didsbury, Alberta  
Family: Mello is a husband with two sons and one daughter.  
Occupation: Marketing Manager at FairShare.

### TECHNOLOGY TRAINING/EXPERIENCE

- 11 year as a Digital Marketing intern at Telus
- 3 years of experience as a Marketing Assistant at PetSmart
- 1 year of experience as a Marketing Manager at PetSmart
- Started using technology when he was 10 years old
- Uses it on a daily basis, especially for work

## Mello Warren

### DIGITAL MARKETER

#### BACKGROUND:

Mello has worked in the marketing industry for over 5 years. He has experience in leading a team for campaigns regarding new products. The main skills he possesses are leadership, UX design skills, and strategic thinking. His UX design skills will benefit the business as they would help him make content that appeals to our target audience. As for Mello's strategic thinking, he thinks it will help him make smart long-term plans for our business. During Mello's free time when he is off work, he likes to take his kids to the park and walk his dog. Every Thursday, he takes his wife to a new restaurant for dinner. Once a month, he goes bowling with his friend group from high school.

#### JUSTIFICATION:

Since Mello is part of FairShare marketing team, he is considered a stakeholder because he is a part of the foundation that enables the business' product to succeed. Himself and his team are the ones that mainly focus on acquiring customers and improving brand awareness.

#### PAIN POINTS:

- Budget limitations for the marketing team
- Web Development team not making deadline
- Lack of internal communication

#### GOALS:

- Provide positive and measurable results (such as increasing customer traffic and raising brand awareness)
- Have the brand recognized by different markets (new regions, different demographics, interest from other domains, etc.)

#### VALUES:

- Communication and honesty: the business to understand own goals, mission, business operations, etc.
- Social responsibility which includes sustainable market strategies and environment friendly practices.
- Placing the needs of the customers first.

Figure 1: Naleem Khan, Arts Student

Figure 3: Mello Warren, Digital Marketer



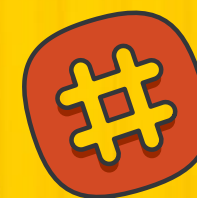
## Persona #1

List their key details.



## Persona #2

List their key details.



## Persona #3

List their key details.





# Persona Creation

Source: Adapted from [5]



### Emily Abara

STUDENT & SOFTWARE DEVELOPER INTERN


**BACKGROUND:**  
Emily is a skilled service staff member with a passion for technology and a background in coding. With a degree in computer science and several years of experience in customer service, Emily brings a unique blend of technical expertise and customer-centric approach to her role. She is dedicated to providing outstanding support to customers, leveraging her coding knowledge to troubleshoot and resolve complex technical issues.

**JUSTIFICATION:**  
Emily is a primary user because she is often operating technology, mainly in her customer service job which involves collecting financial payment for a group of people. In addition often teaches how to use the technology with the elderly.

**DEMOGRAPHICS**  
Age: 20  
Education: 2nd Year Student at Southern Alberta Institute of Technology (SAIT)  
Hometown: Onitsha, Nigeria  
Family: Family (Mother, 1 Sister, 2 Brothers)  
Occupation: Software Developer, Internship at FairShare

**TECHNOLOGY TRAINING/EXPERIENCE**  
-5 years in customer serving roles  
- Thrive in fast paced environments, has developed strong communication, and problem-solving skills that allows her to handle a wide range of customer inquiries and concerns effectively.

Figure 4: Emily Abara, Student & Software Developer Intern



### Stripe

FINANCIAL SERVICES AND SOFTWARE AS A SERVICE (SaaS) COMPANY

**BACKGROUND:**  
Stripe is a financial services and software as a service (SaaS) company. Stripe was founded by two Irish brothers named Patrick and John Collison and they created Stripe in 2009 [1]. Stripe has provided millions of businesses with a payment infrastructure using their software and application programming interface (API) [2].

**GOALS [2]:**  
• Users first  
• Move with urgency and focus  
• Be meticulous in your craft  
• Seek Feedback  
• Deliver outstanding results

**VALUES [2]:**  
• Stripe's operating principles guide how we interact with each other and our users, translating our values and beliefs into concrete actions.

**DEMOGRAPHICS**  
Founded: 2009, San Francisco California, United States.  
Created by: John and Patrick Collison.  
Headquarters: South San Francisco, California U.S., Dublin, and Ireland.  
Service: Payment Processing

**TECHNOLOGY TRAINING/EXPERIENCE**  
Stripe started 14 years ago and became one of the top payment processing services to date. Stripe has a worldwide reach in the financial services industry, with over 47+ countries and 135+ currencies and payment methods supported [2].

**JUSTIFICATION:**  
Stripe is a main stakeholder for Team FairShare's mobile application because of Stripe's SaaS and API. Team FairShare users and participating businesses would not be able to complete transactions within the app. Stripe's software is an integral part of Team FairShare mobile application to allow customers to achieve hassle free and secure payments.

Figure 5: Stripe, Financial Services

Figure 5: Stripe, Financial Services

Source: Adapted from [1]



### Toyin Adisa

FINANCIAL ANALYST

**BACKGROUND:**  
Toyin is a business owner with over 5 years experience as a financial analyst at Stripe. She will be a primary user because she will need the product to operate her business. She also has leadership and strategic planning experience and this enables her to navigate the challenges of running a business successfully.

**JUSTIFICATION:**  
Toyin is a business owner that will require the product to operate her business, this also make her a primary user.

**DEMOGRAPHICS**  
Age: 28  
Education: Babcock University  
Hometown: Ogun State, Nigeria.  
Family: Mother, Father, 3 Sisters.  
Occupation: Financial Analyst

**TECHNOLOGY TRAINING/EXPERIENCE**  
5 years of financial analyst experience

**PAIN POINTS:**  
• Some establishments don't allow groups to split the bill.  
• Some services take a long time to take our orders and give us our bill.  
• It takes a long time to get the waiter/waitress again if we want to order more food or there is a long line up.  
• Some menus/services are accessed through QR code, which can be a security issue

**GOALS:**  
• A secure and efficient method to help my customers who are friends split their bill.  
• An easy and fast way to order/reorder and pay for food/drink and other services.

**VALUES:**  
• Engaging screen display  
• User friendly and efficient

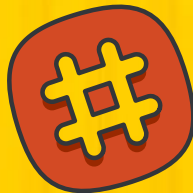
Figure 6: Toyin Adisa, Financial Analyst



Persona #4  
List their key details.



Persona #5  
List their key details.



Persona #6  
List their key details.



# Persona Creation



**DEMOGRAPHICS**

Age: 26  
Education: University of Zurich  
Hometown: Zurich, Switzerland  
Family: Mother, Father, Brother  
Occupation: Art Director - Graphic and UI/UX Designer at FairShare

**TECHNOLOGY TRAINING/EXPERIENCE**

- More than 7 years of experience in the design industry
- Knowledge of user research, usability testing, and information architecture
- Proficient in industry-standard design software such as Adobe Creative Suite (Photoshop, Illustrator, InDesign), Sketch, and Figma.

## Eloise Schneider

GRAPHIC AND UI/UX DESIGNER

**BACKGROUND:**

Eloise is a Graphic and UI/UX Designer. She has been in this field for over 7 years and has experience working on various design projects, including branding, print materials, and web design. She is passionate about creating visually appealing and user-friendly designs. Eloise's design expertise extends beyond just aesthetics. She understands the importance of designing for the end user and ensuring that the final product effectively communicates the intended message.

**JUSTIFICATION:**

Based on Eloise's profile, she's part of the design team at FairShare. It's important to design an intuitive and efficient user interface for their payment-splitting app. By minimizing unnecessary steps, providing shortcuts, minimal design, and offering clear navigation in the app, we can ensure that Eloise and her team can quickly accomplish their goals and improve the user's overall experience.

**PAIN POINTS:**

- Tight deadlines and unrealistic client expectations.
- Designing for clients with varying design knowledge and preferences.
- Conflicting stakeholder priorities

**GOALS:**

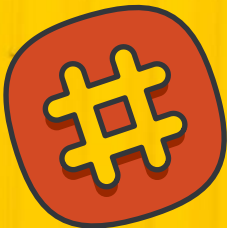
- Producing high-quality designs that communicate effectively.
- Staying updated with the latest design trends and technologies.

**VALUES:**

- Quality and attention to detail.
- Having a growth mindset and a strong desire to constantly learn and improve.
- A supportive and creative work environment that encourages collaboration and inspiration.

Figure 7: Eloise Schneider, Graphic and UI/UX Designer

Source: Adapted from [7]



**Persona #7**  
List their key details.

# Interview Method

The interview method was executed by first communicating with the interviewee to schedule the interview based on their preferred availability and location for maximum comfort. The interview duration ranged from 30 to 60 minutes, depending on the depth of discussion and the interviewee's availability. To achieve diverse insights, participants representing the various stakeholders and users of the app were selected for the interviews.





# Interview Questions

## INTERVIEW QUESTION FORM

"Customer"

### Personal information

Name

Gender

Address

Email

Phone

### 1. Question 1. Can you describe a typical day in your life/routine?

My day starts ay 8:30 am with a team meeting. Our inspectors give us the operational site/drilling updates, and my team members provide their tasks of the day and areas of concerns which they need assistance on. After the meeting I respond to emails, call sub-contractors, and chair meetings to ensure my construction sites are being prepared for drilling operations, and/or my ongoing drilling operations are proceeding without any issues

### Question 2. How has technology influenced your daily life or work routine? And how comfortable are you with using it?

Technology has allowed me to connect with operations all over the country without me having to be present on-site and give instructions directly. It has also allowed me to expedite data analytics and produce reports in a timely manner as I am not required to do tedious hand calculations.

### Question 3. How do you come across new products? And what motivates you to try and continue using it?

I typically come across new products through social media as that is most common platform, I use to gain insight about world events and developments. I am motivated to try new products if the product provides me with more space time and makes my life easier. For example, a product that resolve trivial tasks that consume a lot of time are made more efficient and take a shorter amount of time to complete. Since I value my time immensely, any technology that can streamline a process and reward me with more time for the important things is worth trying and introducing into my lif





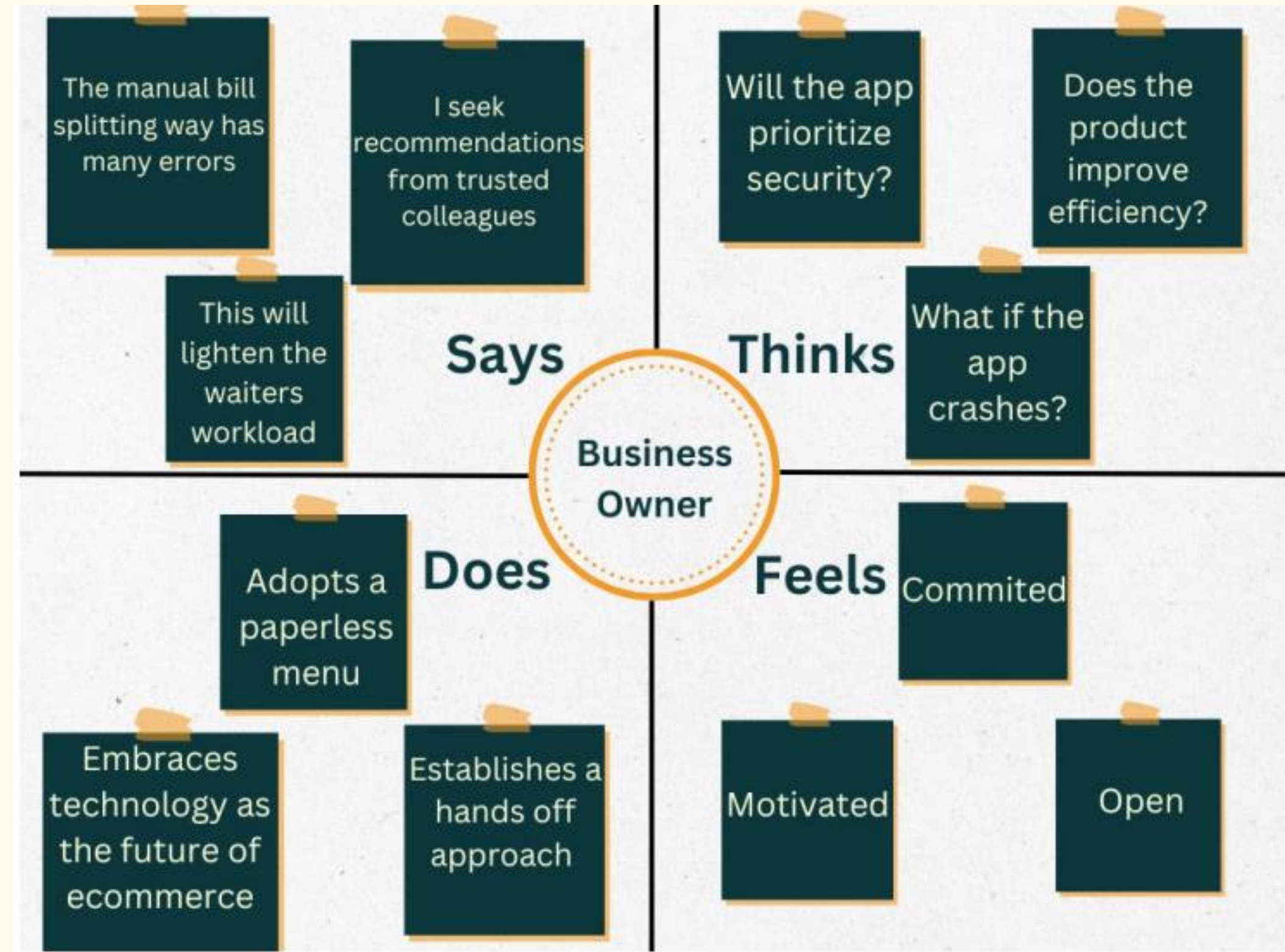
# MAJOR FINDINGS

The major findings from the interviews are as follows:

1. Users have a growing need for a group bill splitting app that removes the stress of bill splitting and accommodates everyone's needs and a user-friendly interface that allows individuals to personalized bill splitting options is very key.
2. The app can address potential server mix-ups by allowing users to directly input their orders and preferences, eliminating the reliance on manual calculations and handwritten notes, leading to more accurate bill totals and improved efficiency.
3. Transparency is crucial to avoid conflicts within a group, and the app can foster transparency by offering itemized breakdowns, individual contributions, and the ability to review and dispute charges if necessary.



# EMPATHY MAP



# FEATURES

## MUST FEATURES:

1. Bill Splitting Options
2. Order Board (Menu)
3. A Group Profile with each member

## SHOULD FEATURES:

1. Security and Privacy
2. Accessibility Technology (AT)

## COULD FEATURES:

1. Feedback and Rating
2. Support Button



# MUST HAVE JUSTIFICATION

**1. Bill Splitting Options:** The bill splitting options are crucial because they fulfill the core need of the customers to accurately divide expenses among their group.

**2. Order Board (Menu):** The Order Board feature is essential as it allows customers to browse, place orders, and include special requests directly through the app.

**3. A Group Profile with each member:** The Group Profile feature enhances transparency and convenience for groups of customers by displaying each member's order details.





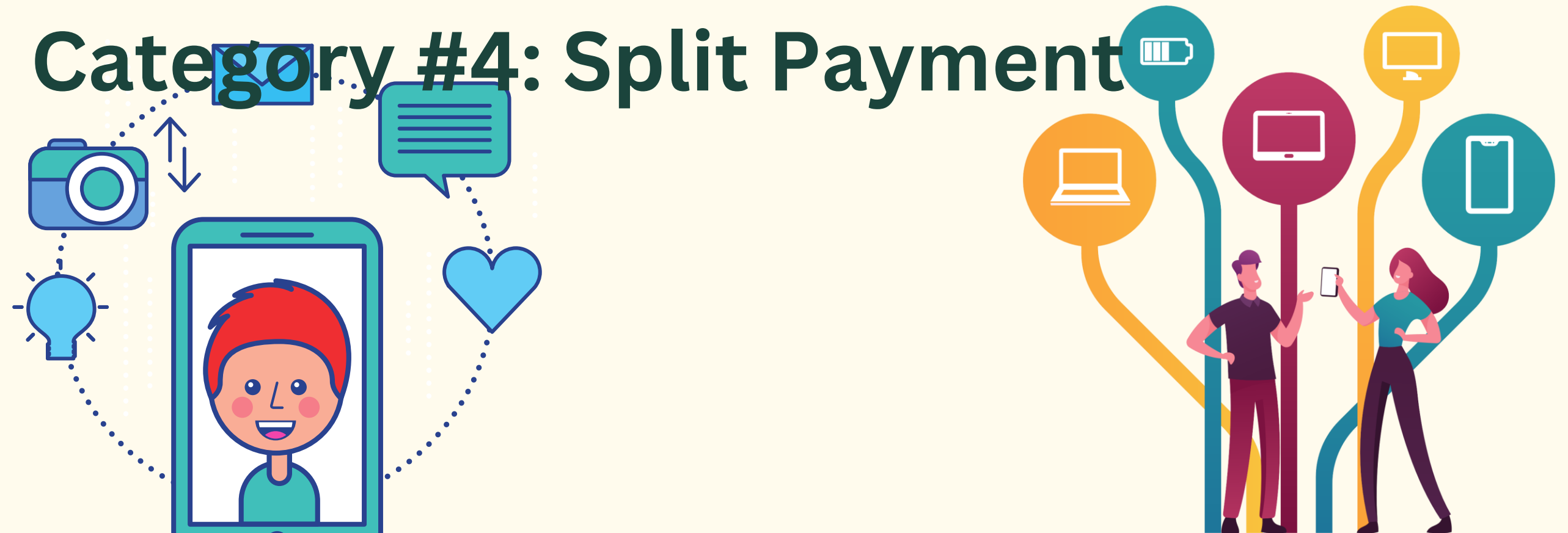
# AFFINITY GROUPINGS

**Category #1: Home Page**

**Category #2: Group Profile**

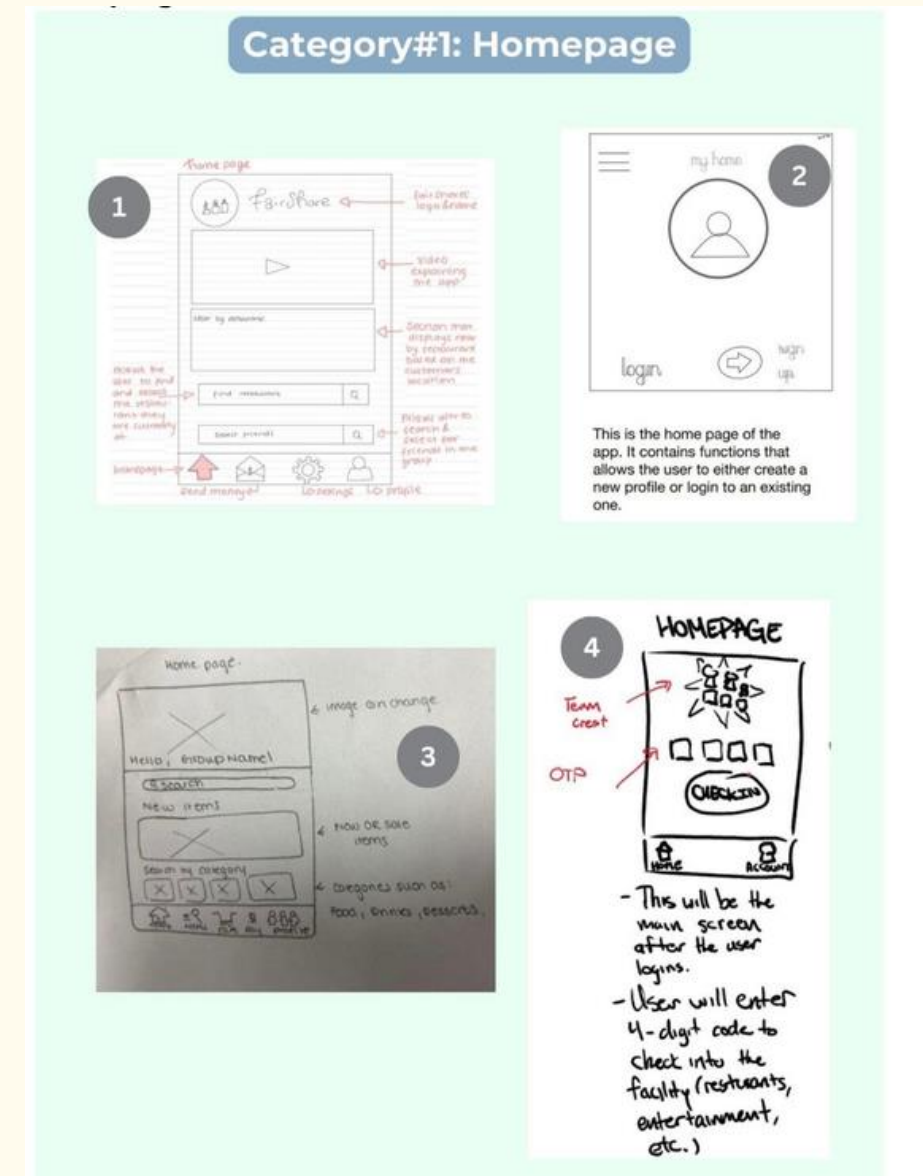
**Category #3: Ordering and Shopping  
cart**

**Category #4: Split Payment**

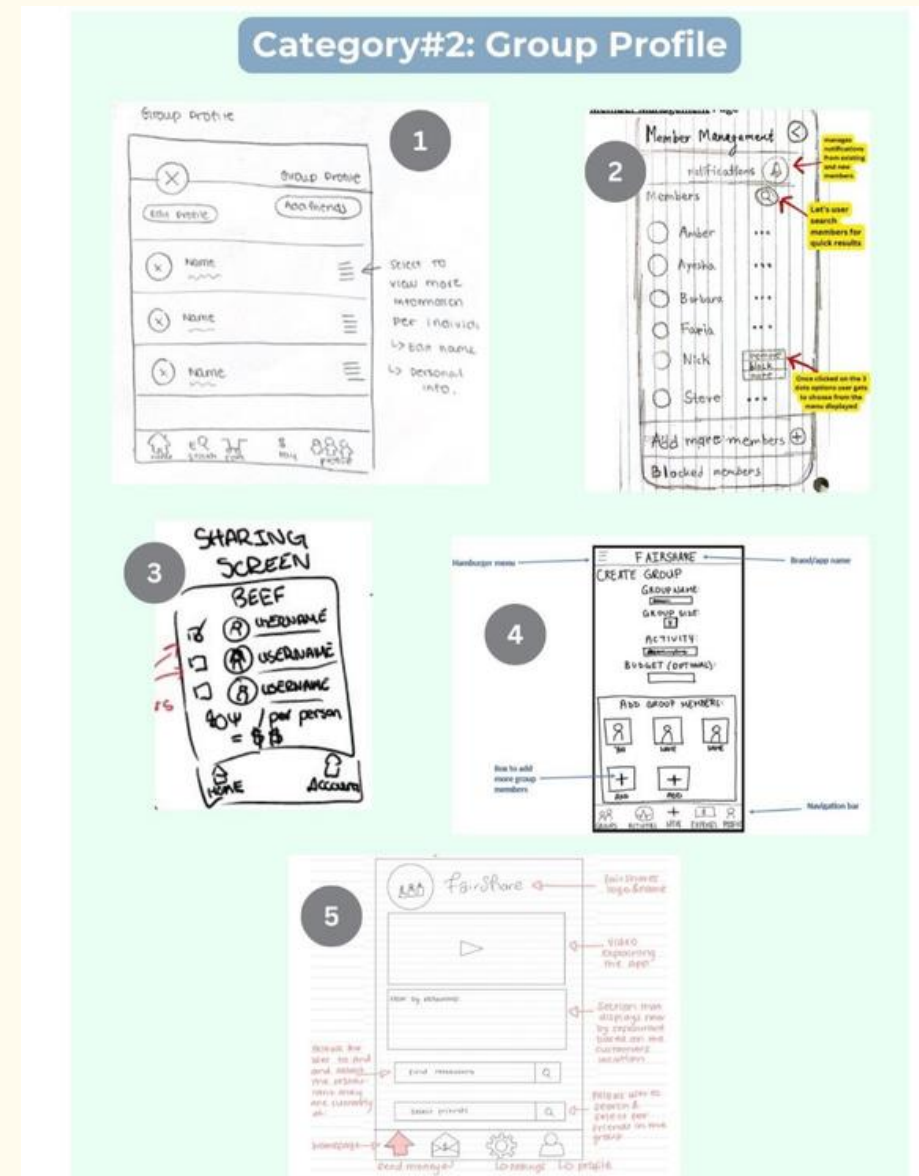
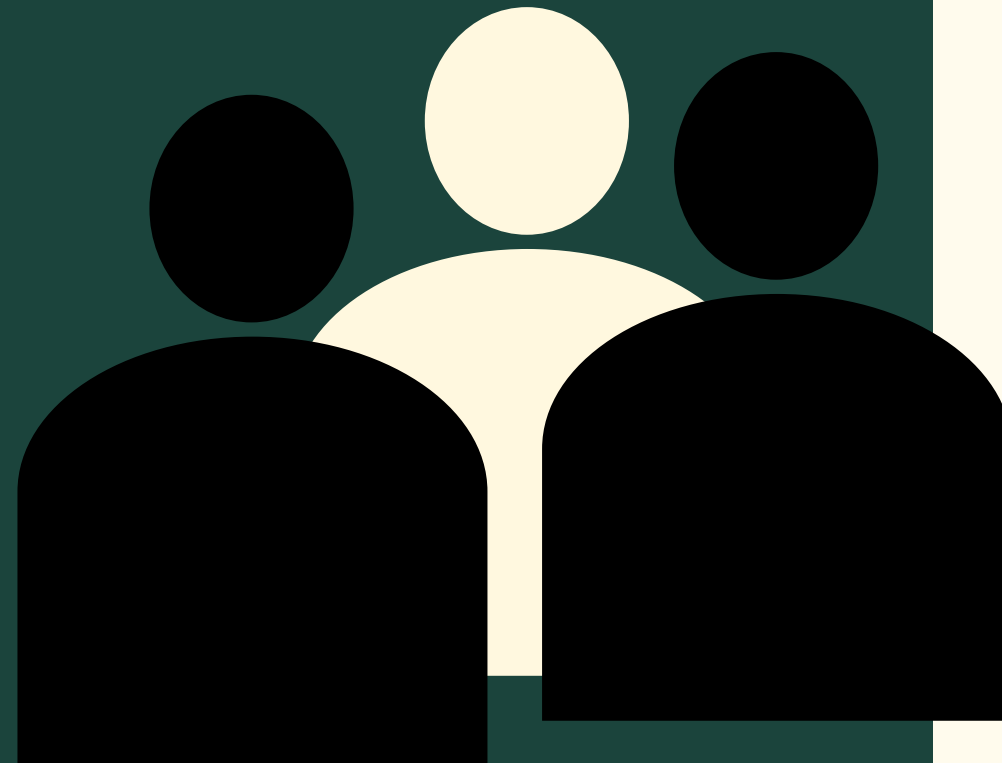


# HOME PAGE

It shows an overall overview of the central point of access for users. It has a user-friendly interface and tab-based navigation

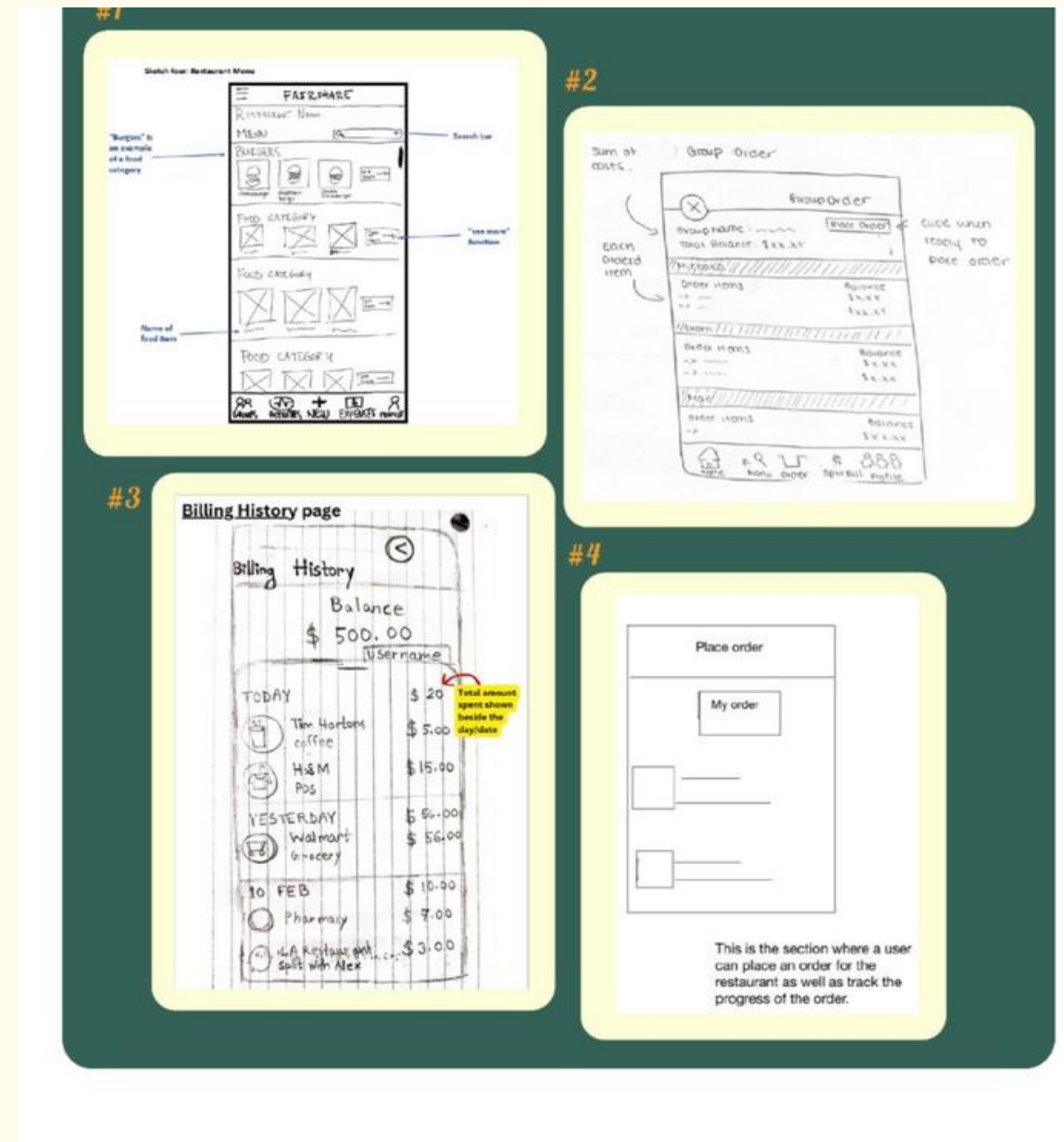


# GROUP PROFILE



It shows a range of benefits for the users due to its editing capabilities, ensuring accurate and up-to-date information.

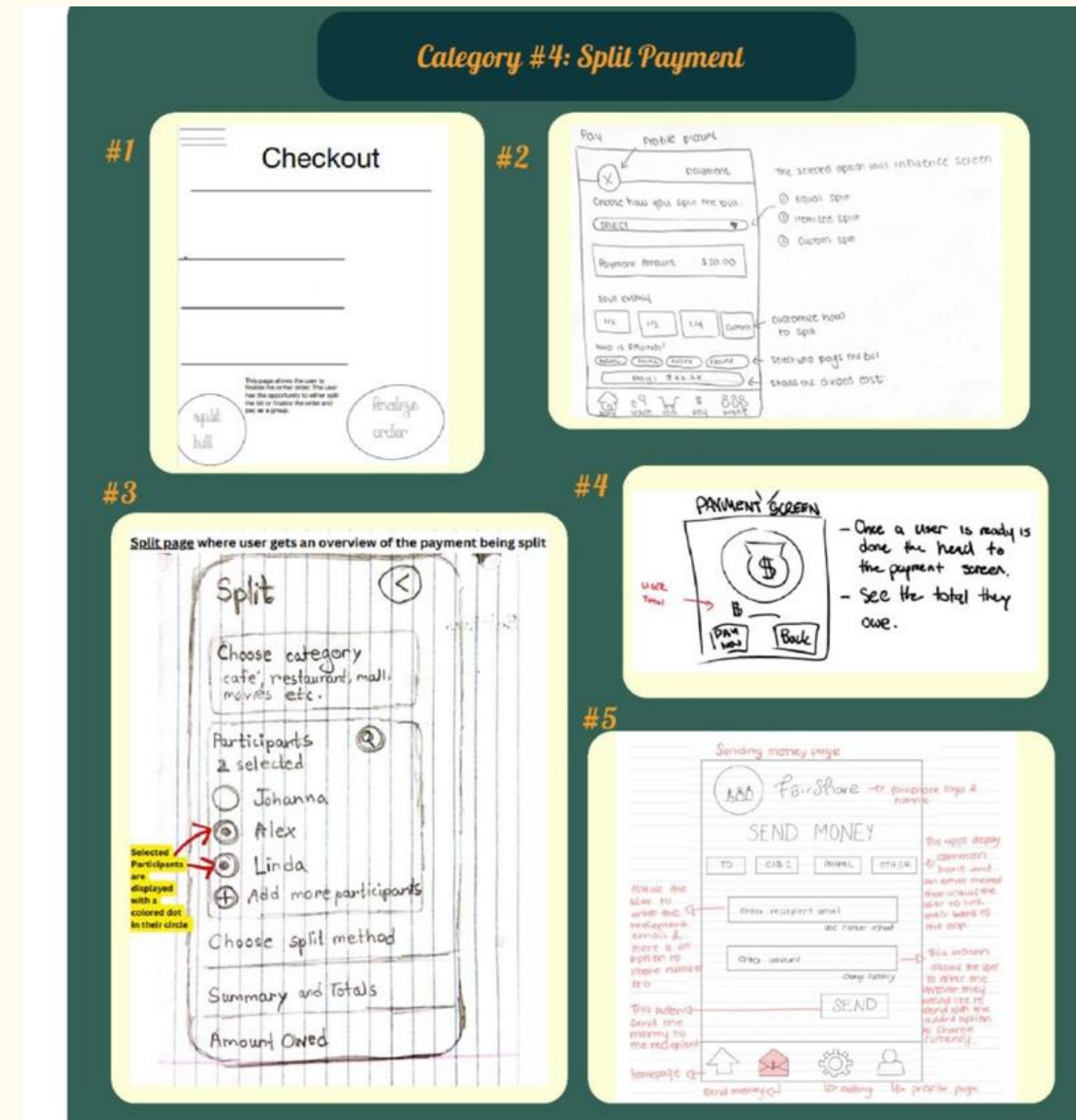
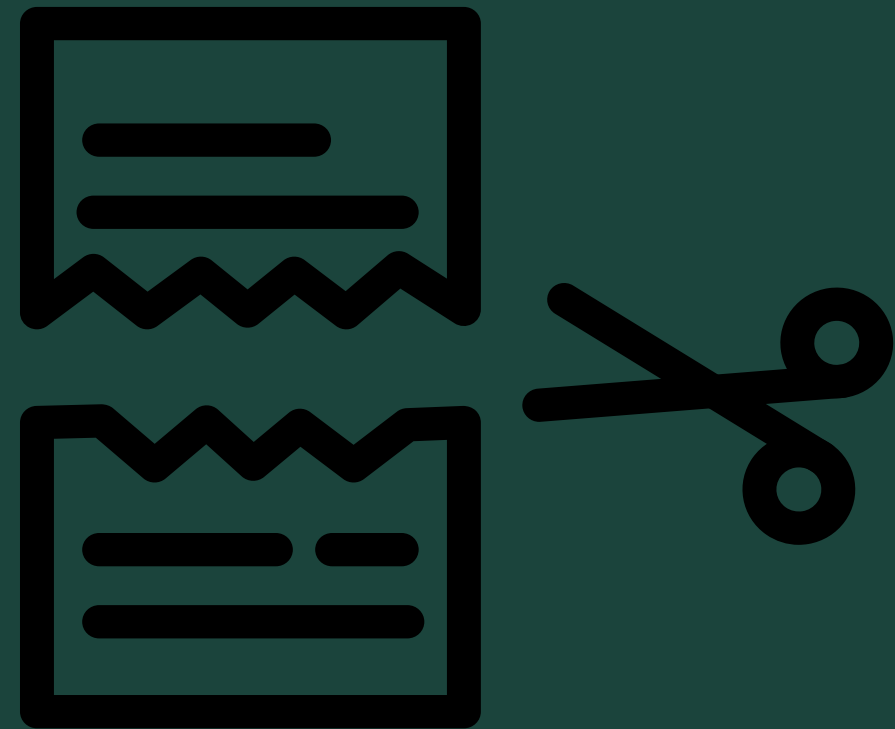
# SHOPPING CART



It shows a summary of items to be ordered along with the price and sum total.



# SPLIT PAYMENT



It allows users to further analyze their order and splitting options including 'Equal split', 'Itemized split', and 'Custom split'

# REFINED SKETCHES: Split Payment Options



Sketch #1: Split Payment Options

Sketch #1: Split Payment Options

FAIR SHARE

Even **Item** Custom

SELECT ITEM

\$12	\$10	\$10	\$10	\$10	\$10

SELECT USER

- ☒ Heidi Stephens
- ☐ Mello Warren
- ☐ Naleem Khan

Split Total

Heidi 3 Items = \$32

CLEAR ADD

HOME SEARCH FAIR SHARE PAY PROFILE

FAIR SHARE

Even **Item** Custom

Group's Order Total: \$47

\$12	\$10	\$10	\$10	\$10	\$10

100% 75% **50%** 25% Enter Amount

SELECT USER

- ☒ Heidi Stephens
- ☐ Mello Warren
- ☐ Naleem Khan

Split Total

Heidi 50% = \$48.50

CLEAR ADD

HOME SEARCH FAIR SHARE PAY PROFILE

FAIR SHARE

Even **Item** Custom

SELECT ITEM

Loaded Nachos \$12

SELECT User(s)

- ☐ Eloise Scheider
- ☒ Emily Abara
- ☒ Heidi Stephens
- ☐ Mello Warren
- ☒ Naleem Khan

Split Total

\$12 / 3 users = \$4

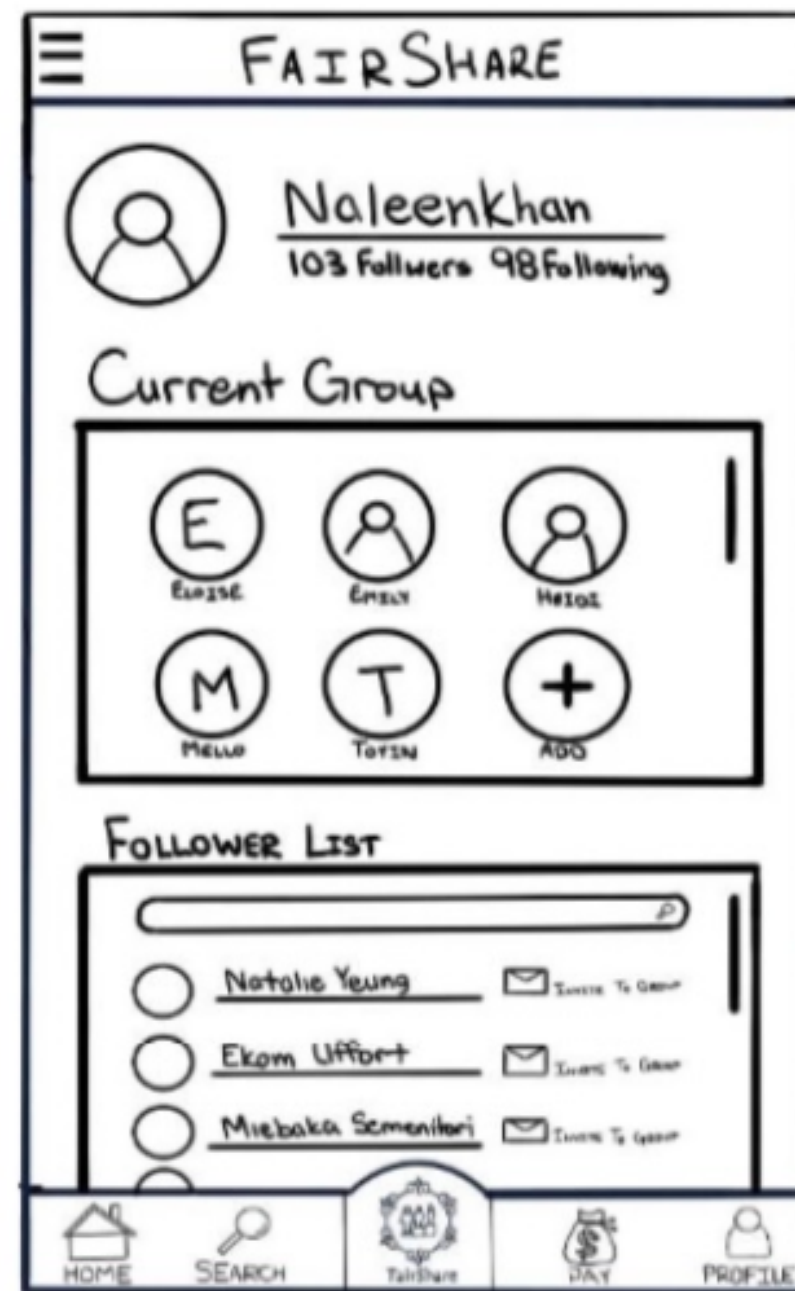
CLEAR ADD

HOME SEARCH FAIR SHARE PAY PROFILE

# REFINED SKETCHES: Group Profile

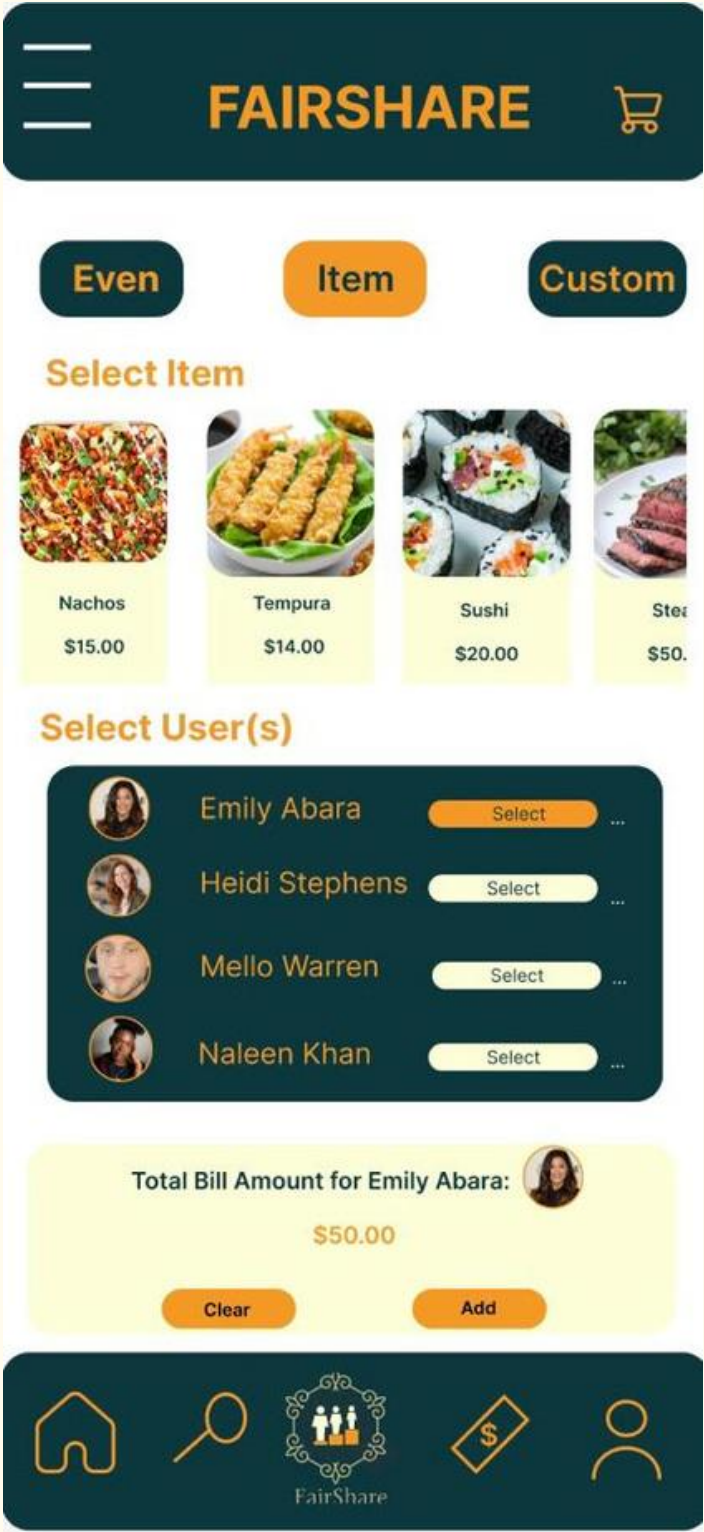
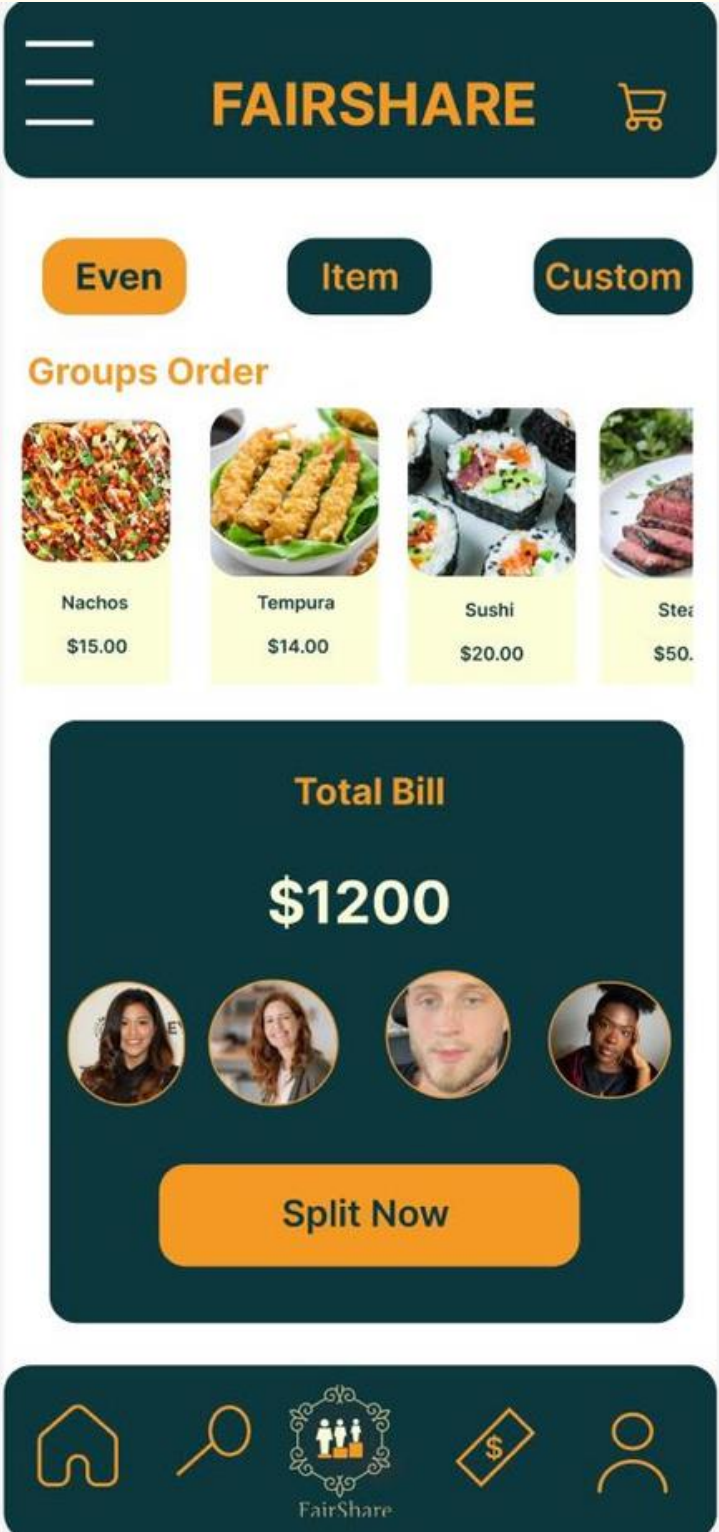
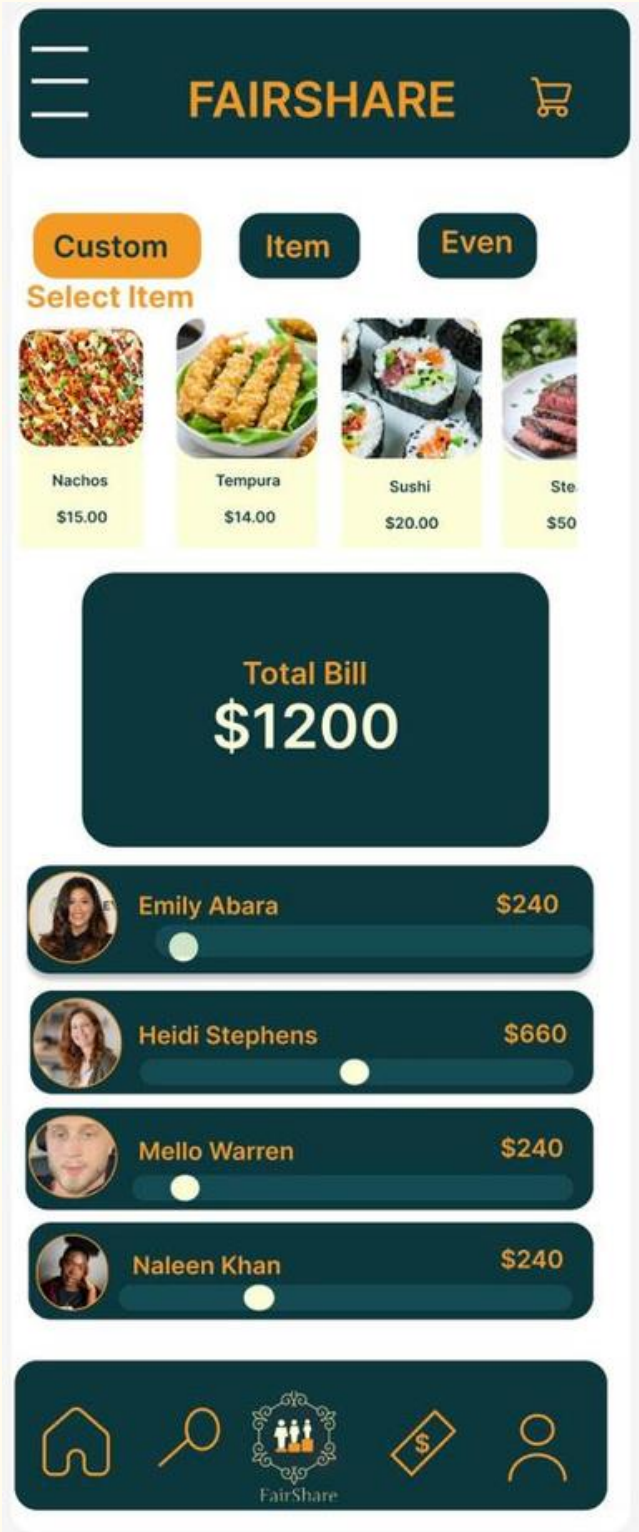


Sketch #2: Group Profile





# High Fidelity of refined sketches





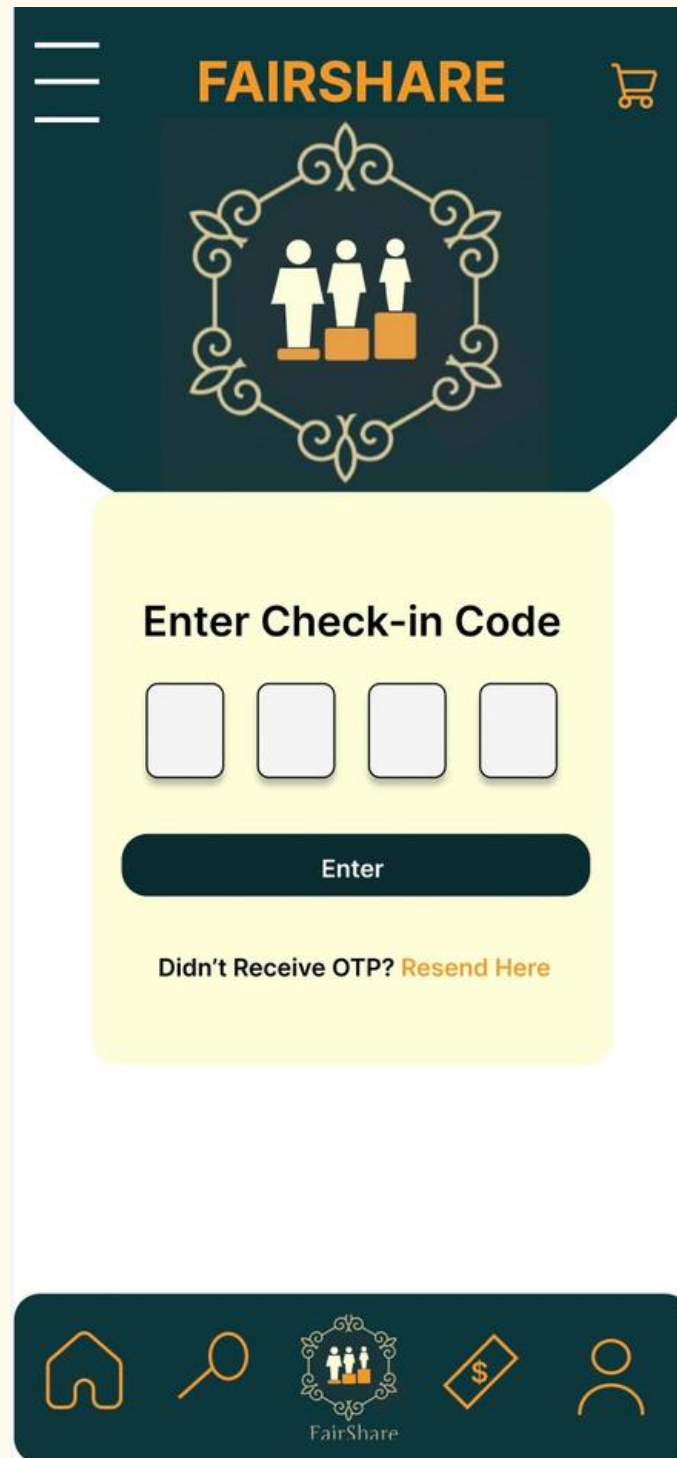
# Three Issues

## Top Three Issues Identified

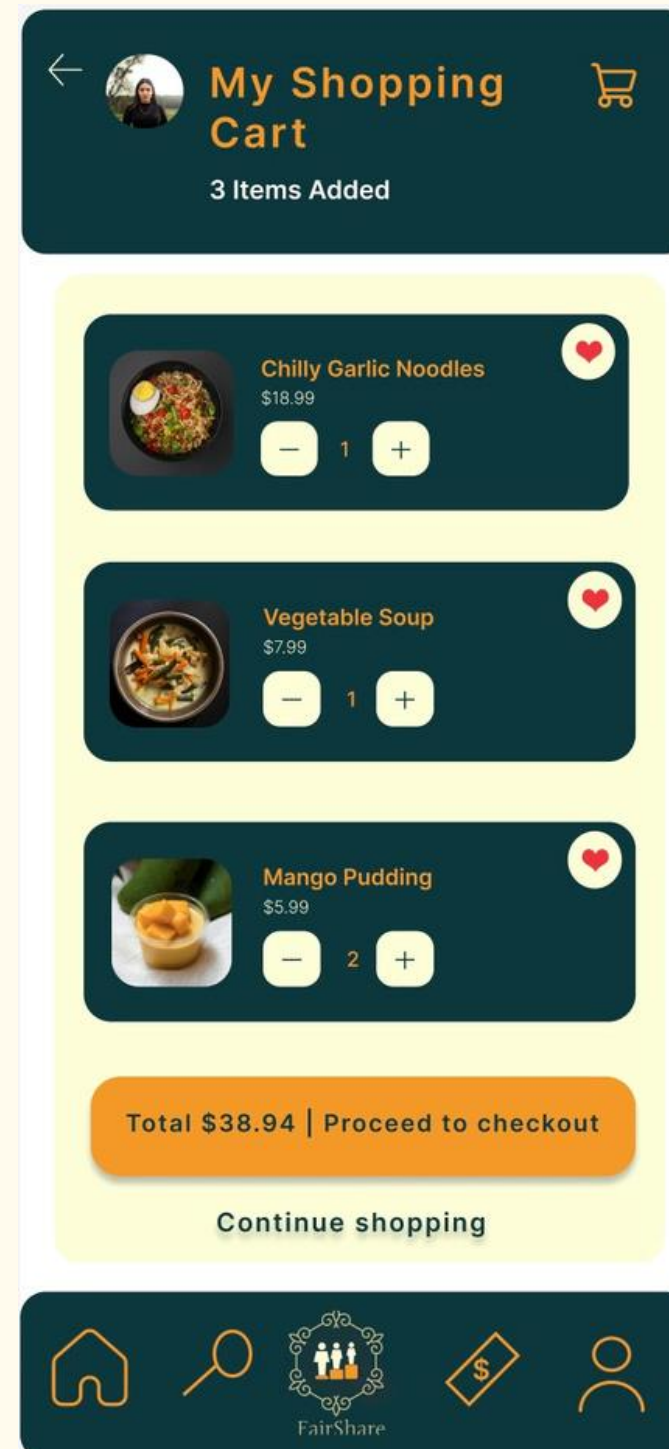
1. QR Codes are not secure.
2. A group shopping cart does not give each user flexibility. It lacks user freedom.
3. Help Center was not an idea we originally had.



# Improvements Made



1. For a more secure experience, from QR Codes, we switched to Authentication Codes.



2. FairShare now has both a group and single shopping cart.



3. A Help Center has been added to FairShare

# Next Iteration

Implementing more accessibility software like :

1. voice recognition software, magnifier and cursor enlarging tools
2. Dark and light mode
3. Language translation

