Group 17
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A2 GROUP REPORT

Ideation Process

Our early design proposals were largely shaped by stakeholder interviews conducted in the initial stages of research. Each group member focused on addressing pain points identified from their respective stakeholders, ranging from households and restaurants to sustainability activists and disadvantaged people. A recurring theme across stakeholder groups was that spending habits were mainly motivated by considerations of cost and convenience, rather than by moral or environmental concerns about food waste. This insight became a key factor in shaping our ideation process, prompting us to consider solutions that provide tangible, practical benefits while passively encouraging waste reduction rather than relying solely on ethical motivation.

We began by generating a wide range of early ideas that approached the problem domain from different angles. ForkCast was conceived as a restaurant analytics system designed to forecast food demand and minimise overproduction. FoodChain proposed a redistribution network connecting restaurants and consumers through volunteer couriers. Shop Your Fridge was developed as a household management tool enabling users to track ingredients, manage inventory, and plan meals more efficiently. Fridge to Market introduced a marketplace model for exchanging or donating surplus food. Finally, ShareCart was conceptualised as a grocery pooling platform that enables smaller households to participate in bulk purchases, take only what they need, and share the discounts.

To evaluate which concepts held the most potential, we revisited the interview data to assess the concepts in relation to user appeal. Each respondent ranked the concepts from most to least preferred, and the aggregated scores indicated that Shop Your Fridge and ShareCart were the most favoured. The concepts were then further assessed by logistical feasibility. While FoodChain and ForkCast demonstrated potential for impact, both were limited by their reliance on large-scale coordination. Participants expressed scepticism regarding the practicality of these systems, particularly due to the lack of incentives for couriers and operational challenges like staff retraining efforts for restaurants. Similarly, Fridge to Market received negative feedback due to low user trust and concerns about scams.

In contrast, ShareCart and Shop Your Fridge were more relatable and grounded to an everyday context. Shop Your Fridge was praised for its convenience and potential educational value, though its concept was seen as similar to existing food management apps. ShareCart, on the other hand, stood out for its novelty and practical benefits. Participants appreciated its cost-saving potential despite also recognising logistical challenges.

Given these considerations, we chose to refine ShareCart as our main design concept. Rather than merging ideas, we opted to develop one idea thoroughly to understand how it might work in practice. Our design process centred on addressing the logistical challenge of coordinating group orders while maintaining an intuitive user experience. This included designing a purchase system, order tracking interface, and clear feedback mechanisms to ensure transparency between users.

While ShareCart's strengths lie in its broad appeal, its weaknesses stem from practical complexities, particularly in facilitating shared orders across multiple users and managing payments. These limitations guided our next phase of exploration, which aimed to resolve these logistical challenges to ensure that ShareCart can function effectively in real-world contexts.

Main Design Concept

ShareCart is a shared ordering system that connects households to buy bulk from producers at lower prices, letting each household only take what they need to minimise excess food waste.

ShareCart appeals to households, specifically smaller households who experience excess from bulk purchases or higher unit costs when buying smaller quantities. ShareCart offers lower unit costs for smaller quantities without significantly less control or convenience. Users may wait longer but benefit from direct access to producers. By removing the cost incentive to buy more, the system encourages users to only buy what they need, helping reduce waste.

Producers benefit from predictable bulk sales and better access to consumers. This enables them to bypass distributors like supermarkets, who underpay and waste food. Supermarkets could also benefit from bulk sales, but have less incentive. They remain a strong competitor by offering convenience.

Users can start orders privately with people they know, add items to their wish list to be matched with other users or join existing orders. For each item, they select only the quantity they need. They can check pickup and delivery details for their orders, leave an active order (waiting for people to join) or cancel a completed order.

ShareCart addresses a paradox (Dorst, 2015) in the problem domain, lower unit prices encourage overconsumption and waste, while programs to reduce food waste (ie. composting) adds complexity to waste management which discourages less waste-conscious households. These households need an incentive beyond environmental reasons. ShareCart addresses food waste indirectly by appealing to cost and convenience to reduce waste, rather than directly focusing on food waste. This approach affords broader appeal to users less concerned with food waste, giving it stronger potential to reduce waste.

Following Dorst's format (Dorst, 2015):

Because lower unit prices encourage households to buy more food, they over consume and waste it

Because food is wasted, programs are started to minimise food waste

Because these programs are started, food waste management becomes more complex and less convenient

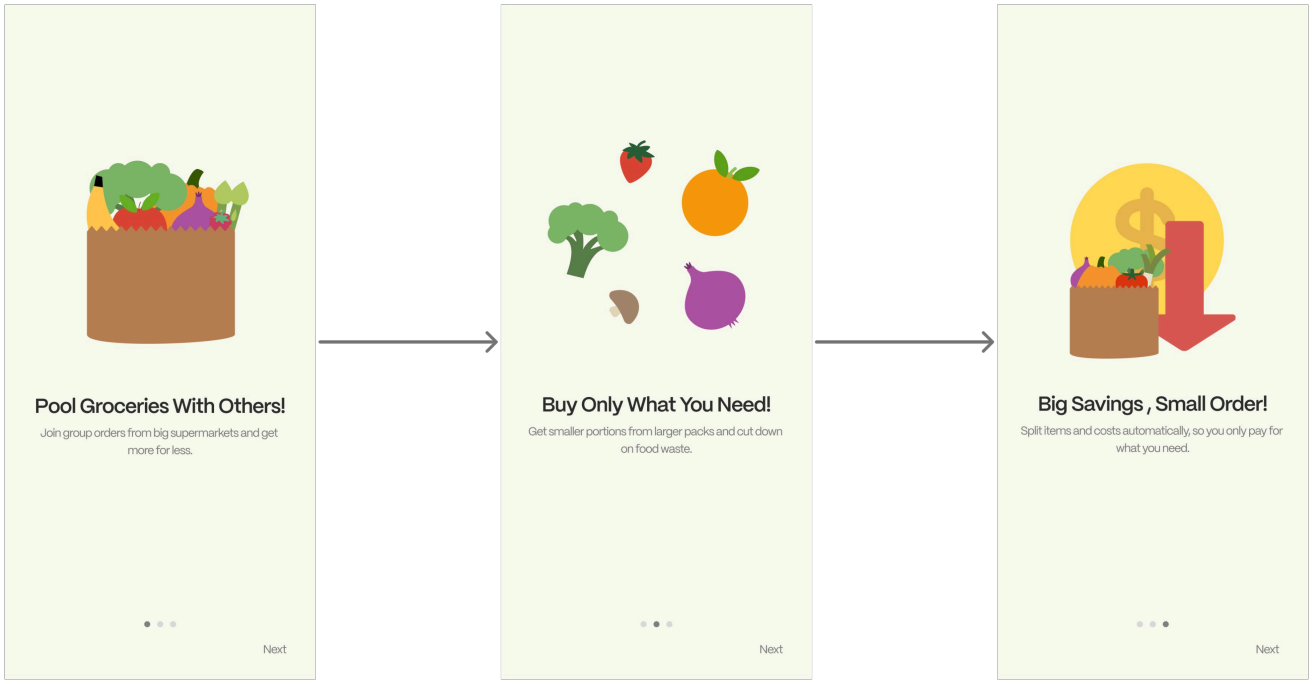
Because food waste management is less convenient, less waste conscious households are not motivated to reduce food waste

Previous interviews revealed cost is a significant motivator. Households and disadvantaged people sought lower costs – households buying bulk despite excess and DP buying less but more per unit. Waste-conscious households and DP attempted to minimise waste, but DP would do this to avoid wasting money and waste conscious still wasted food from forgetting. Less waste conscious households were generally indifferent to waste but could be motivated financially. Prototype interviews confirmed that ShareCart's lower cost could motivate adoption for both groups.

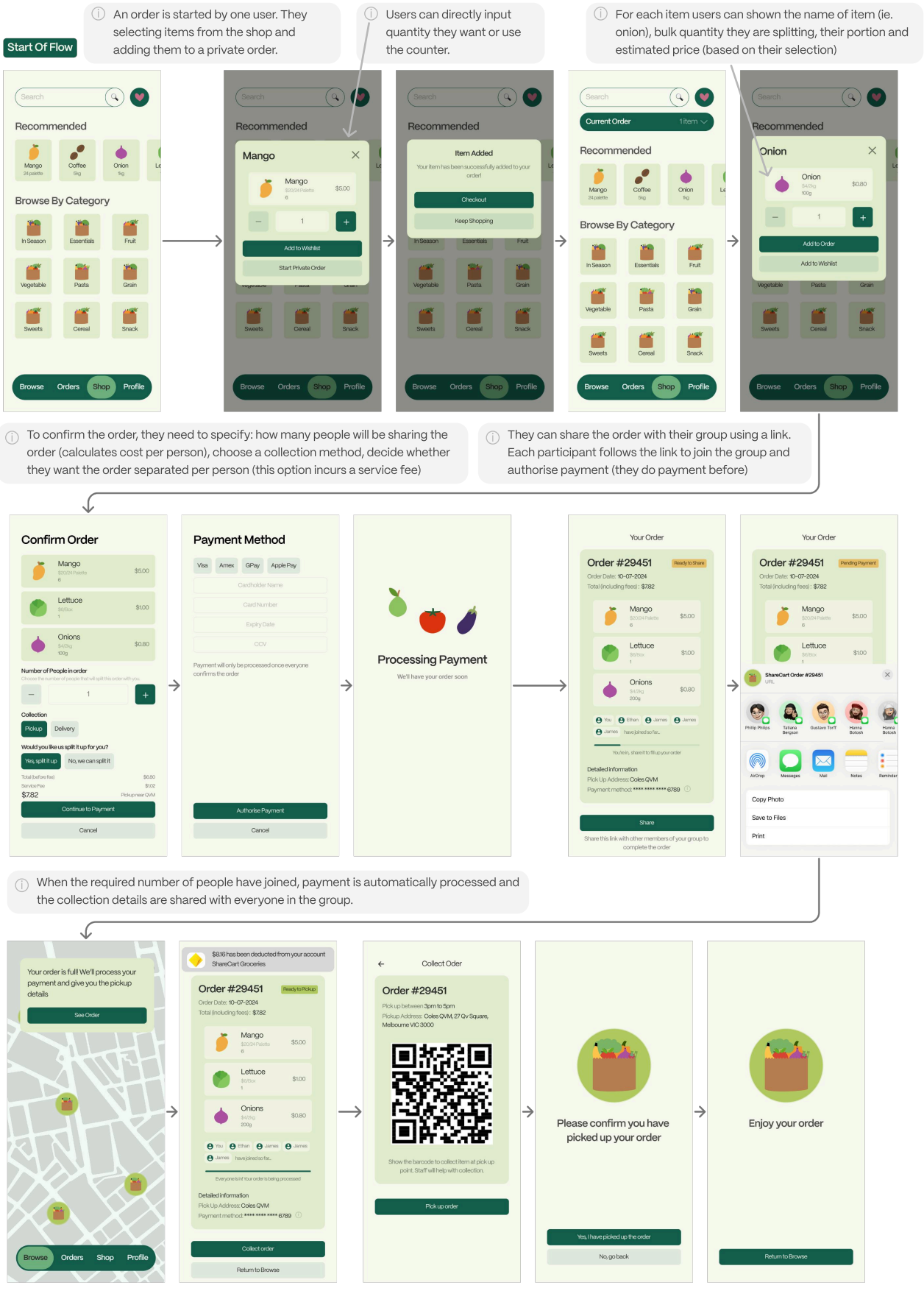
Applications like Too Good to Go use a similar system of appealing to cost to reduce waste. Its success sets a precedent for similar systems like ShareCart. Likewise food co-ops establish a precedent for collective purchasing. Members buy food collectively to get wholesale prices. ShareCart is a more accessible option than food co-ops requiring membership. Sharing systems like group tutoring, splitting gifts and collective savings set a precedent for collective spending within known groups and communities. Community gardens set a precedent for sharing between strangers. Groups are connected by a common interest like shared items in ShareCart. Noticeboards similarly connect strangers through a shared space like the map of orders in ShareCart. ShareCart relies on these existing practices of sharing and lower costs to appeal to users and reduce food waste.

Description: Through the join flow screens, users are introduced to Sharecart's core benefits and key functions, helping them understand the value of the app before getting started.

Start Of Flow

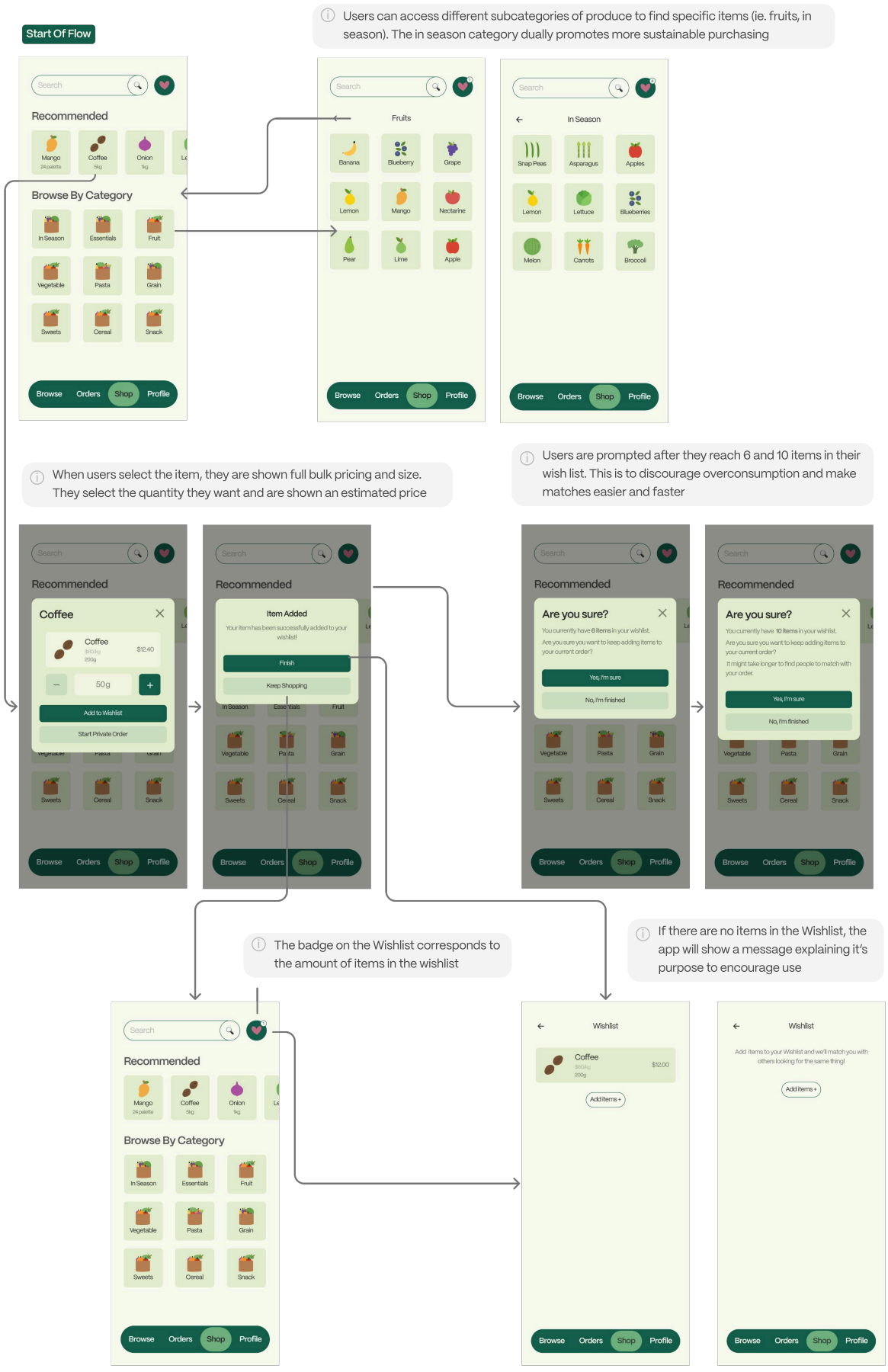


Description: Users can place orders with people they know by creating a private order. This feature is intended for existing communities or groups (ie. friend groups, housemates, for events).

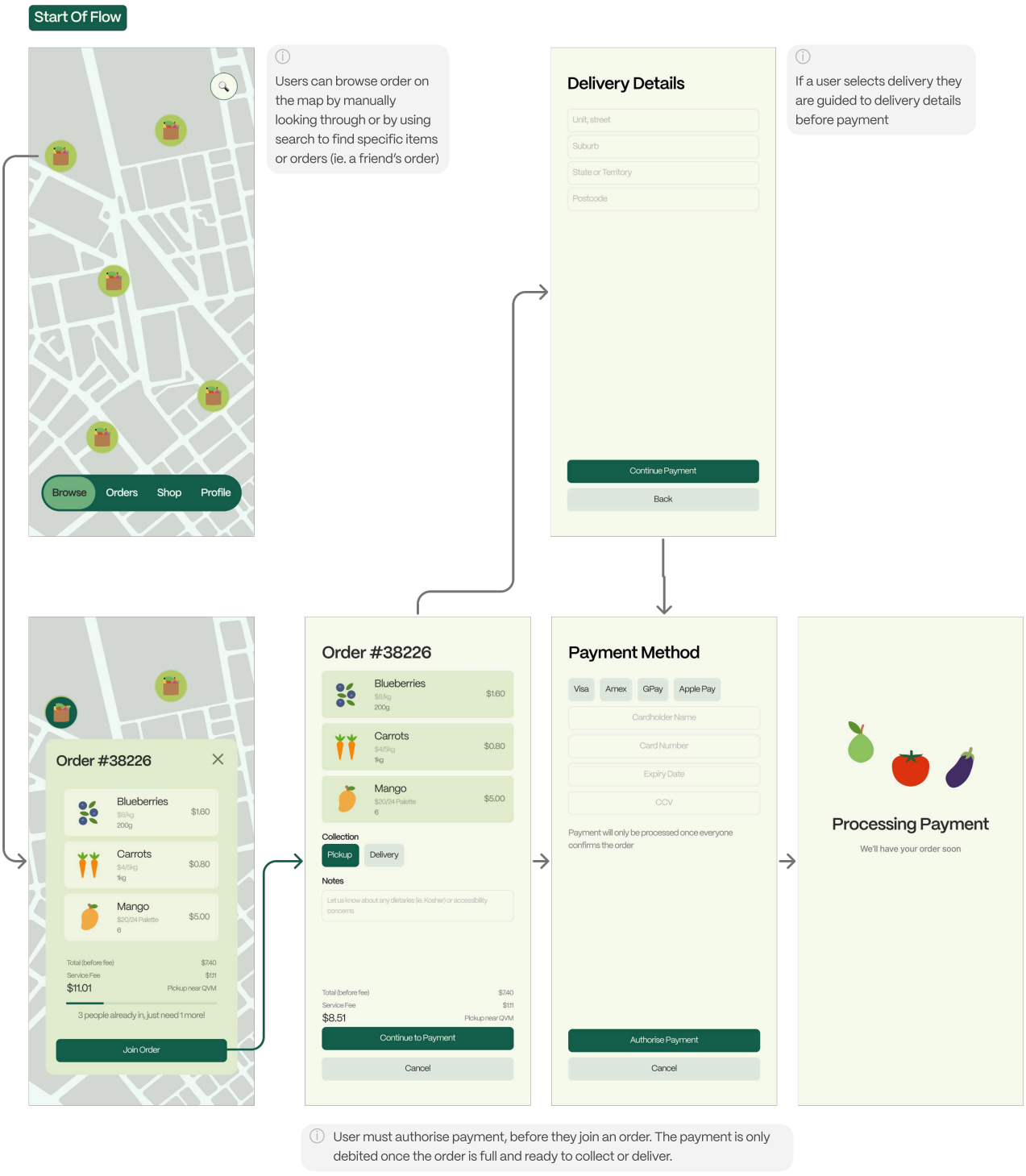


Description: Users are matched based on the contents of their Wishlist to start public group orders. This allows users to bulk buy without a predetermined group

Description: Users are matched based on the contents of their Wishlist to form group orders. They can view and add to their Wishlist in the "Shop" page.



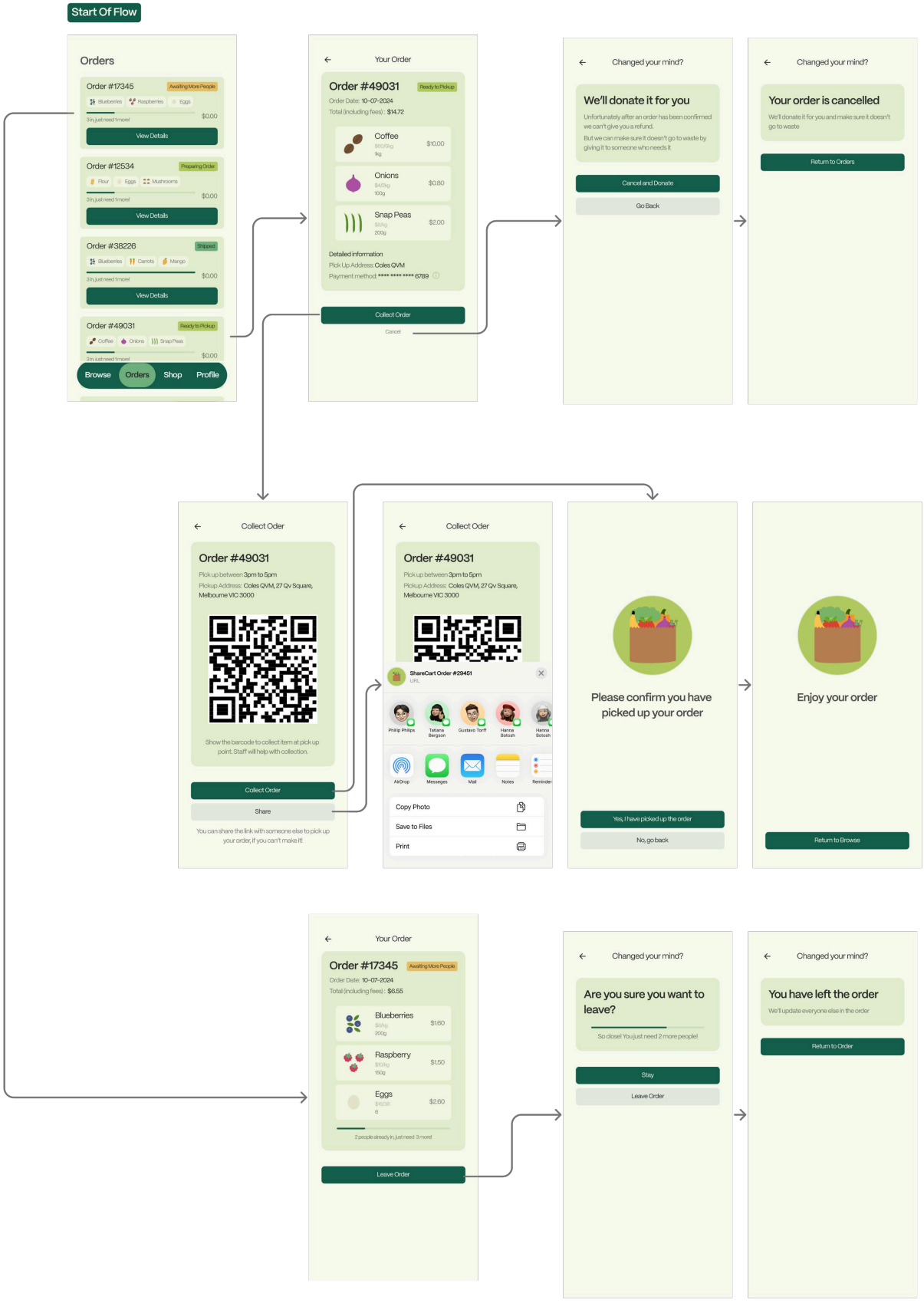
Description: Users can join orders started by others by browsing on the map or through using a search feature.



Description: After joining a group order, users are notified and updated as the progress of their order

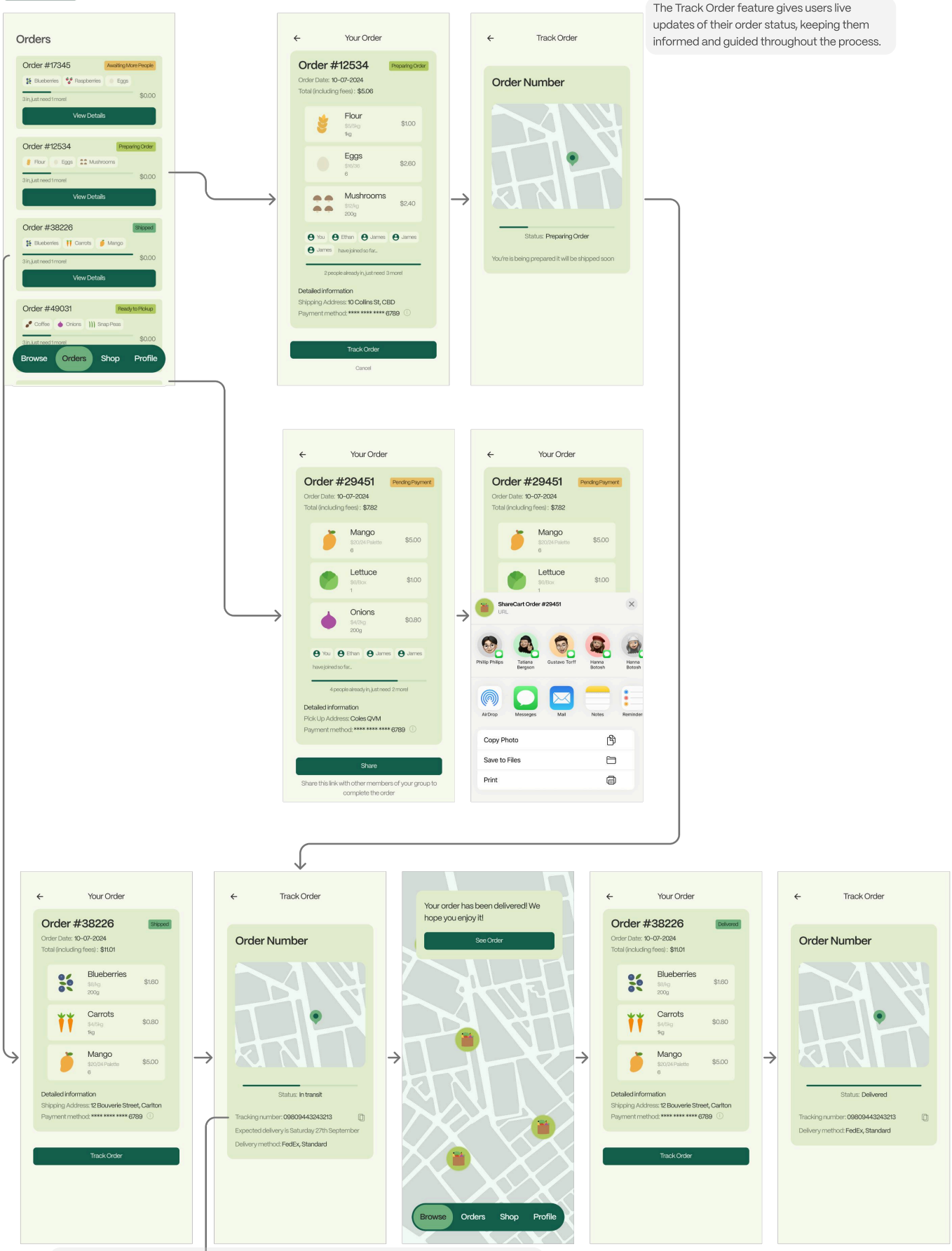
Continuation Of Flow

Description: Users can browse their ongoing orders and track their status before completion, with access to detailed information for each order.



Start Of Flow

The Track Order feature gives users live updates of their order status, keeping them informed and guided throughout the process.

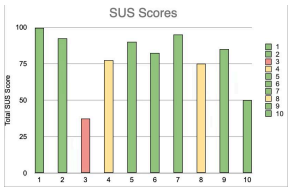


ⓘ The tracking number appears once the order is being shipped. Users can copy and paste the tracking number to view detailed updates with their chosen courier

User-Based Evaluation Plan

Overview

The evaluation assesses the prototype by testing its effectiveness, efficiency and user satisfaction with pre and post questionnaires, as well as the feedback and data collected while participants navigating the sequences.



To structure the evaluation , 5 interactive sequences were identified in the prototype, each representing a fundamental aspect of the main design concept. Guided use was performed to simulate interactive sequences for the test users. And the System Usability Scale (SUS) was used in the post questionnaire, to address the usability and learnability of the system. The team ensured ethical compliance by ensuring all the data was protected and stored safely.

Findings and Observations

The usability evaluation of ShareCart revealed several key insights into how users perceived and interacted with the app. Overall, participants found the concept clear, engaging, and easy to learn, though several areas were identified for refinement.

Concept and Learnability

- The overall concept was well received and easily understood, even for users unfamiliar with the context.
- High Net Promoter Scores (NPS) indicated willingness to use ShareCart in real contexts.
- Most users agreed that it would actually help them reduce food waste.

Interaction Flow and Navigation

- The interaction flow was intuitive, generally clear, and aligned with users' mental models.
- Participants were able to complete tasks quickly and with minimal instruction.
- Particular icons and swipe actions sometimes led to errors or frustration, indicating a need for clearer visual feedback.

Design and Aesthetics

- The minimalist design and illustrations were appreciated for creating an engaging and pleasant experience.
- Some participants found some visuals distracting, causing occasional confusion.

Language and Terminology

- The terminology did not always match user's expectations.
- Terms like Wishlist were seen as misleading, and some item details were misunderstood.
- A clearer, more consistent use of language would support better comprehension.

Information and Trust

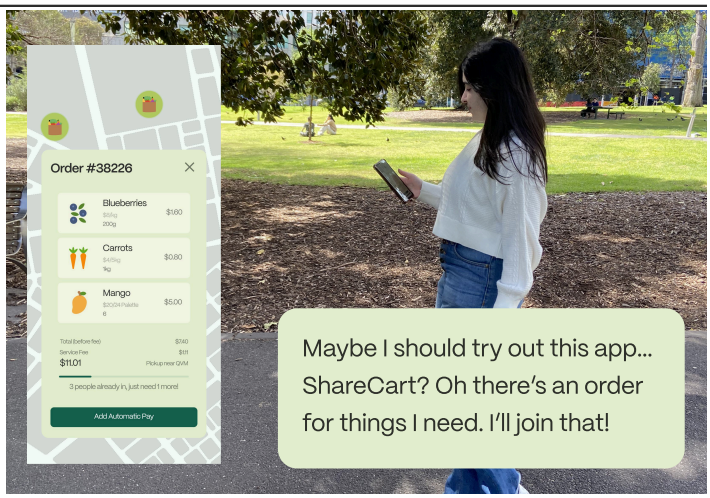
- Participants wanted more order transparency before committing to join.
- Key missing details included vendor information, pickup or delivery logistics, and cost breakdowns.
- Addressing these gaps would help build trust and make users more confident in joining and completing shared orders.

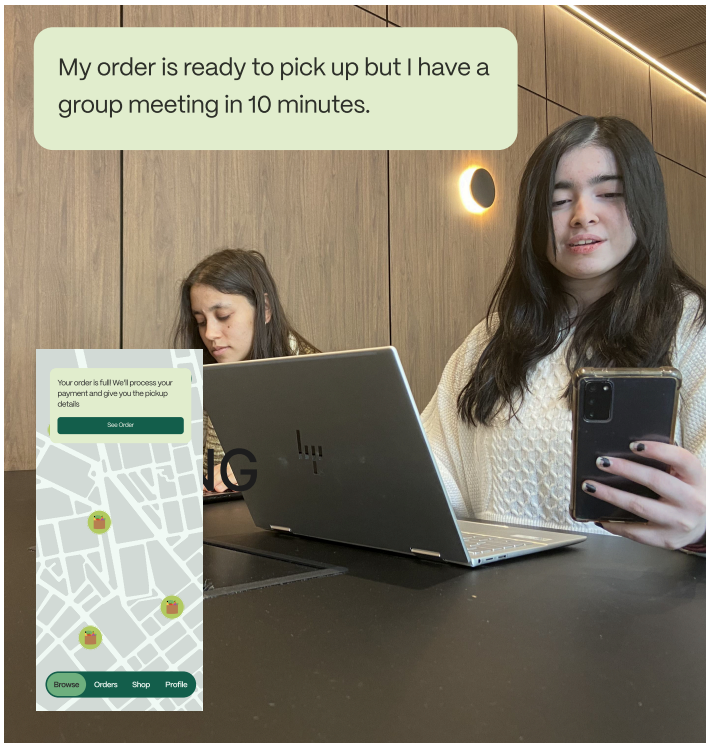
Additional Observations

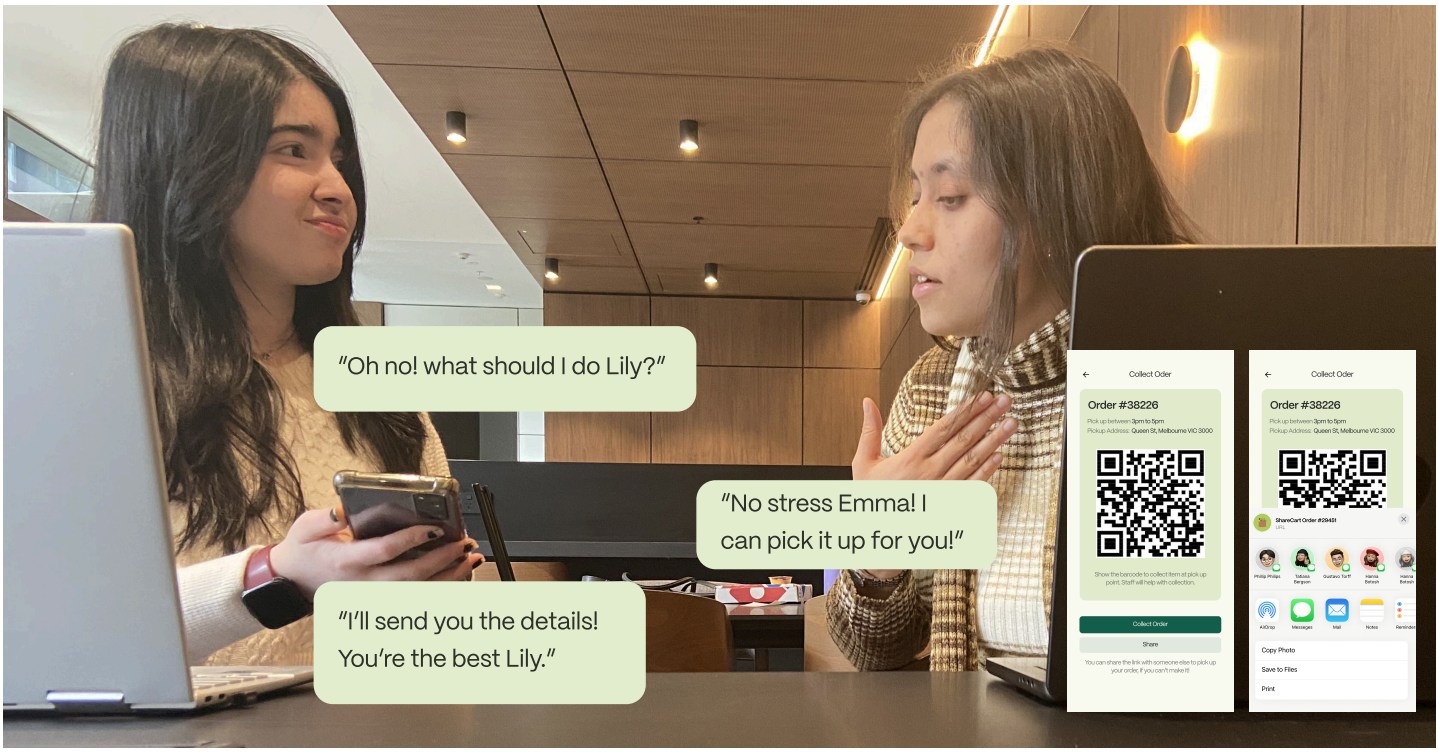
- Users felt some pop-ups interrupted the flow, and buttons with timers were seen as pressurising.
- Improvements included larger text, longer button timers, and clearer cost breakdowns.

Overall, the evaluation found that ShareCart's concept and direction are strong. Refining language, visual affordance, and information clarity will further improve usability, user confidence, and overall engagement.

Emma, a budget-conscious student. She buys bulk for the discount but ends up wasting a lot, before she can finish.







They all live happily ever after with ShareCart.

THE END.

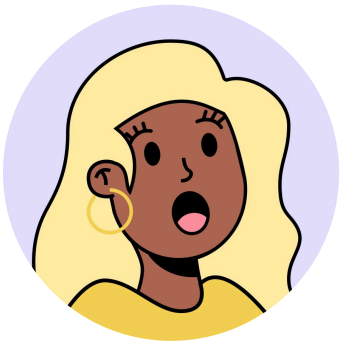
References

Dorst, K. (2015) Frame innovation: create new thinking by design. Cambridge, Massachusettes: The MIT Press.

Statement of AI use

We used Chat GPT to assist with expression and as a thesaurus for writing.

LOREN WILSON



Lily Obrien

Bio

- 31 years old
- Lives with partner in unit in North Melbourne
- Recently bought unit, now renovating
- Sous chef in fine dining
- No children or pets

Device Proficiency

IPhone

IPad

Interests and Values

Money

Following her recent mortgage and renovation, Lily is on a tighter budget. Subsequently, she tries to buy goods based on the lowest unit price. Usually she would buy bulk but she has limited space with the renovations. She prefers the best unit price over the cheapest item as this will be better for her budget long term.

Time

As a chef, Lily's roster regularly changes and often includes long hours and weekends. She doesn't have a lot of time to shop, but still prefers local markets. So she tends to make meal plans and does a weekly shop. She would benefit from more flexible pickups from markets to fit her schedule.

Sustainabilty

Due to her chef training, Lily is really conscious of sustainable cooking practices, especially surrounding food waste. However due to her mortgage she is on a budget, so she tries to find affordable ways to be sustainable. This includes minimising food waste and trying to shop local (ie. farmers markets), when she can. She also wishes more people were as conscious about food waste as her and there were more systems to support this behaviour.

Cooking

Lily really enjoys cooking but doesn't have a lot of time outside of work and feels fatigued making the same thing. Subsequently when she cooks at home she always tries to make something new that she wouldn't make at work. She also sees this as a way to broaden her skills and keep herself creative.

Goals

Maintain her budget without compromising on sustainable consumption and cooking practices like minimising food waste

See more people care about food waste and more systems that encourage conscious purchasing habits to reduce overconsumption

Task Scenario

Lily and her partner, Ava, are planning their meals for the week. They plan a variety of low budget meals and create a shopping list.

The following morning Lily and her partner visit Queen Victoria Market and find everything they need excluding kipfler potatoes and thyme. Lily finds fresh thyme, but it is only available in a larger quantity. They rarely use fresh herbs and have no freezer space for it with the renovations, Lily is worried most of it will be wasted.

Lily uses her phone to compare the prices at Woolworths, Coles and Aldi. The price is the same but for a much smaller quantity. Lily is conflicted, she wants to avoid waste but can't justify the higher unit price within her budget. She wants to buy less but at the same unit price. While scrolling she sees an ad for ShareCart, showing thyme for a lower price.

Curious, she selects the ad and is prompted to download ShareCart. The market is busy and loud so she heads home to explore. On the way, she opens the app and browses the introduction screens. She learns the app lets users pool groceries to split bulk orders from producers and pay less. She likes this concept, particularly buying directly from producers.

On the home screen, Lily notices icons on the map showing group orders nearby. She searches for thyme and finds several options, including one that also lists kipfler potatoes. The quantity and price match her needs, so she joins the order.

She's prompted to confirm the order and select a collection method. Seeing that the pickup point is near her house, Queen Victoria Markets, she chooses pickup. She completes the payment using Apple Pay, and receives a confirmation message explaining that the order isn't ready yet because two more people need to join. She is frustrated but resolves it should be full soon and she can wait.

Later that day, Lily receives a notification that her order is available to pick up the next day between 2pm and 3pm. She is impressed by how fast it was, but also realises she can't pick it up because she has work. Lily checks collection details and sees the option to "Share" the order and sends the link to her partner.

The next day Ava (Lily's partner) goes to pick up the order. The link directs her to a webpage with QR code, which she assumes is used to pick up the order. She picks up the order and texts Lily. At work, Lily gets a notification from ShareCart saying her order has been collected and a message from Lily.

Later that week, Lily uses the thyme and potatoes to make a roast. Lily and her partner start to use ShareCart to supplement their groceries, particularly when they don't have a lot of time. Preordering with ShareCart saves them time finding food and they're comfortable with not every item being the best unit price as long as they're not wasting food and saving money overall.

Noticeboards

Origins

The concept of noticeboards can be traced back to Ancient Greece and Rome. In Greece, the Monument of the Eponymous Heroes served as the official bulletin board of Athens (Gottesman, 2014). While in Rome wooden boards (tabula dealbata) were used to display public announcements (Burcham, 1992). This practice persisted through the Middle Ages, when church doors assumed the role of noticeboards (Burcham, 1992), and continued into the modern era with the advent of online bulletin boards in 1978 (Snyder, 2002). In each case, notice boards served as a centralised space to communicate information, announcements and reminders within communities or groups.

Variants

Noticeboards have adapted into various physical and digital formats over time. Physical variants use different materials including traditional cork, felt, fabric, glass, magnetic surfaces and whiteboards. Each are interchangeable and widely used in community spaces (ie. local shops). Digital noticeboards showed greater variation in their development. They evolved into web forums (ie. reddit), discussion boards, community boards, educational boards and corporate intranet boards (Sparsa Digital, 2023). Social media can also be considered a noticeboard, as it serves a similar purpose: sharing information between communities.

Evidence of Success

The success of this practice is evident in its persistence and ubiquity. Noticeboards have persisted in some form for at least nearly two millennia (Gottesman, 2014). They have become a ubiquitous feature of schools, universities, workplaces, community and public spaces. This can be attributed to their versatility and practicality. The practice can be easily implemented in most spaces and is highly effective in communicating information.

Key Design to be applied to our design

Noticeboards or bulletin boards rely on an easily accessible space or platform to communicate information within a community. This notion of a shared space for communication can be applied to our current design, specifically the map on the browse page. The map is a centralised space where users can view and join existing orders. Similar to a noticeboard, the map communicates information to a specific community (users of ShareCart). It is very similar to when community events or services (i.e. tutoring) are posted on noticeboards to seek engagement. Orders are placed on the map to encourage other users to join and complete orders.

Usability Rationale

Chosen Principle Visibility of System Status (Nielsen, 1994)

Visibility of system status describes the need to keep users informed of what is happening through appropriate feedback within a reasonable amount of time (Nielsen, 1994). Within ShareCart, this translates to keeping users informed of their orders and order status which particularly applies when forming group orders.

Unacquainted users are matched based on the content of their Wishlist to form group orders. Users can choose to reject or accept an order, but even after joining, delays or opt outs (i.e. taking too long or not completing payment) can still interrupt the process. These disruptions can increase the wait time, as an order cannot be completed until enough users join to split the price. Users need to be made aware of when these disruptions occur, and how and when they might be resolved. Without this feedback, they may decide the order is taking too long and unlikely to progress soon, leading them to abandon it.

Users are kept informed of their order status through unique loading screens that reflect its progress, replacing generic screens. Each screen corresponds to a different use case and communicates the system's response. For example, if not enough users accept an order, the screen indicates that more people are being found. Once enough users join, the screen updates to show the order is ready. If not enough are confirmed, it will update to show a different resolution, the order is being added to the map for others to join.

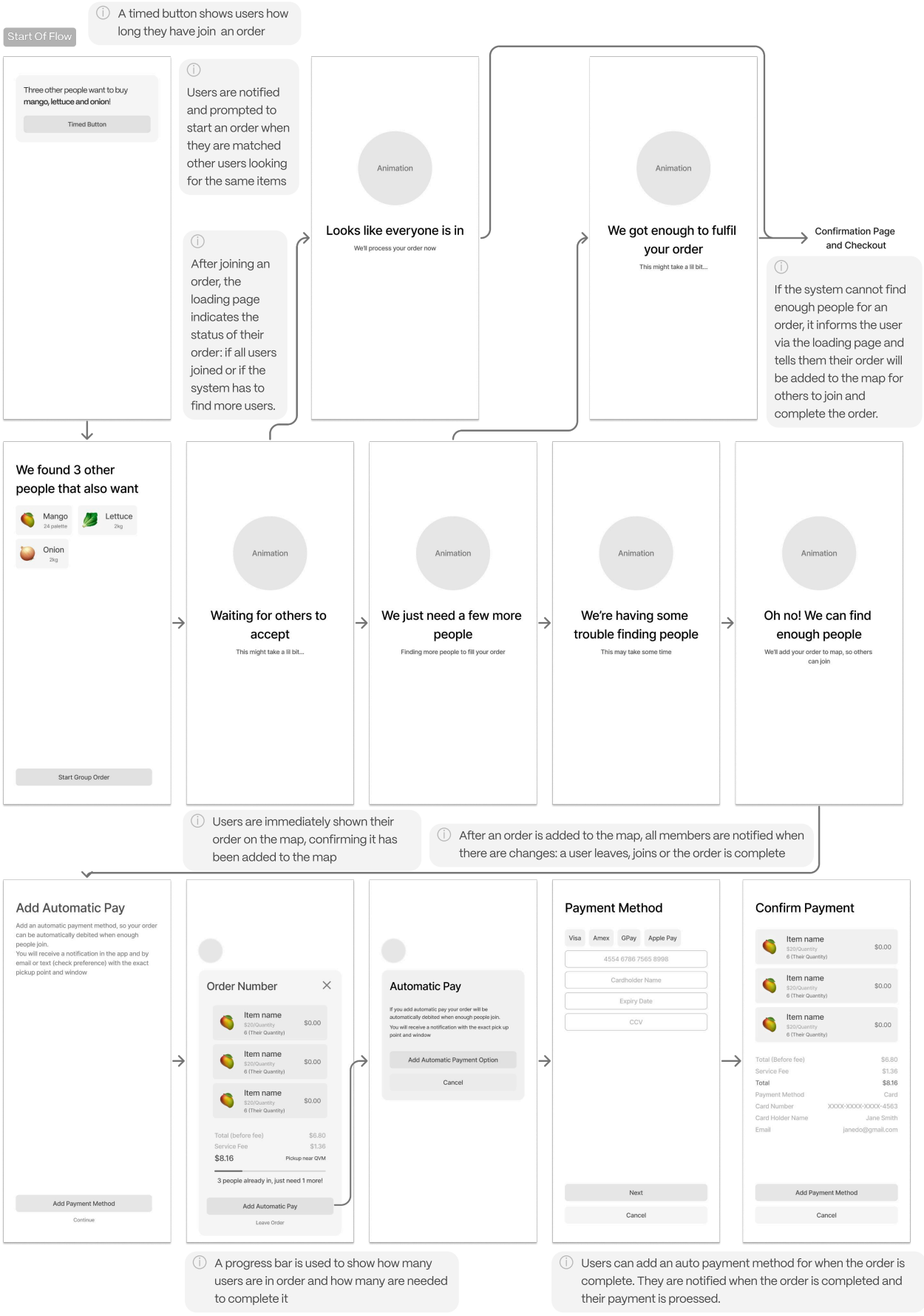
Similarly, users are shown different confirmation screens after they join an existing order based on the order status. In both cases, the screen confirms the user has joined the order, but also indicates whether the order is ready or needs more participants. Consistent with similar applications users are immediately notified when their order is ready, making the interaction predictable and building trust (Nielsen, 1994).

If an order remains on the map for extended time, users are reminded and asked to reconfirm their interest. This feature combines the waste conscious approach of the MDC and the heuristic. Without reminders users may forget order and waste items, but timely notifications keep them aware and prepared to use the items, reducing potential waste.

Additionally, the join button is timed to prevent delay. It uses explicit visual feedback – an animated bar – so users understand and complete the action. Both this feature and dynamic loading pages were specifically evaluated as they were more unique.

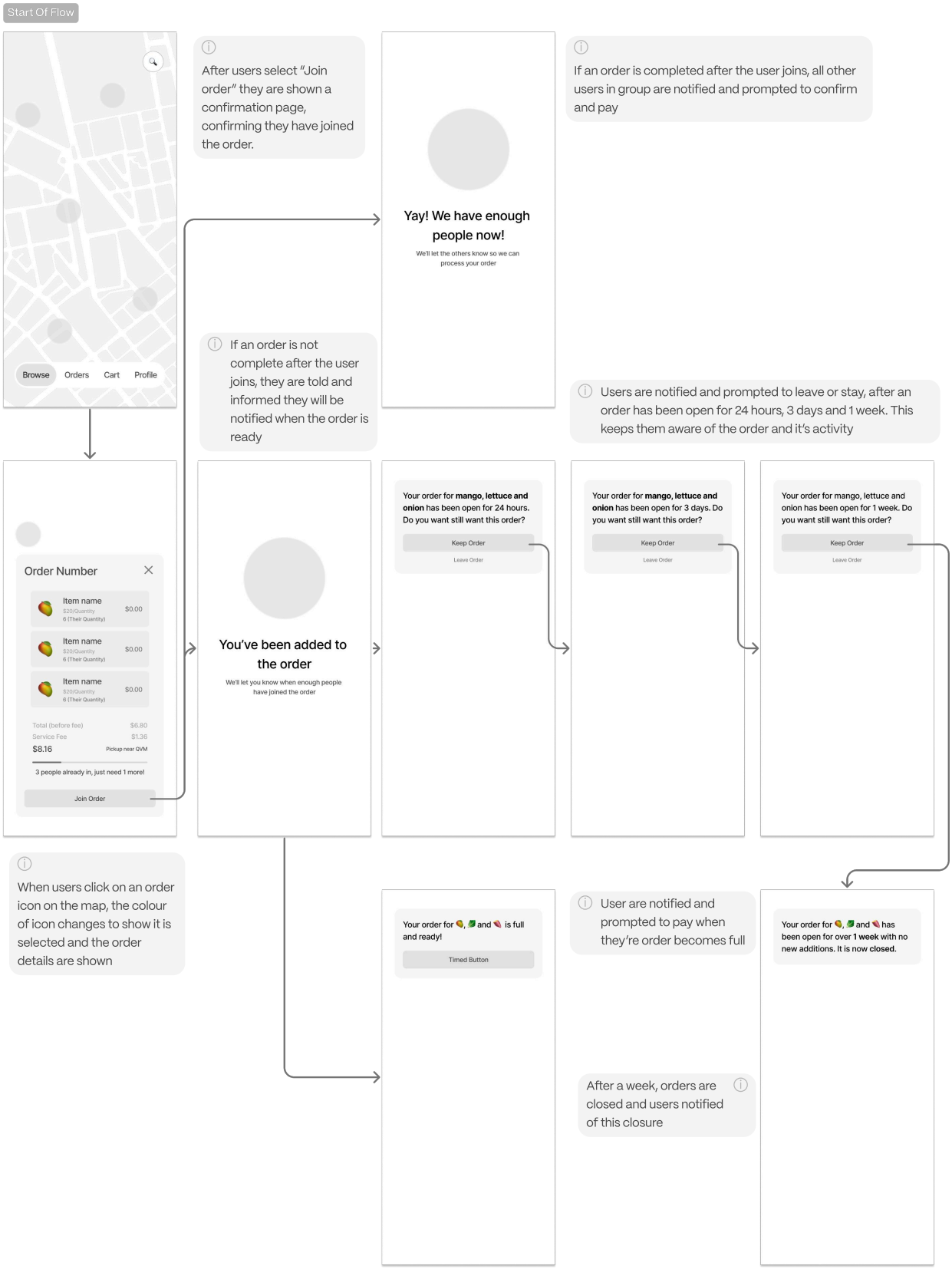
Interactive Sequence: Starting a Group Order based on Wishlist

1st Iteration



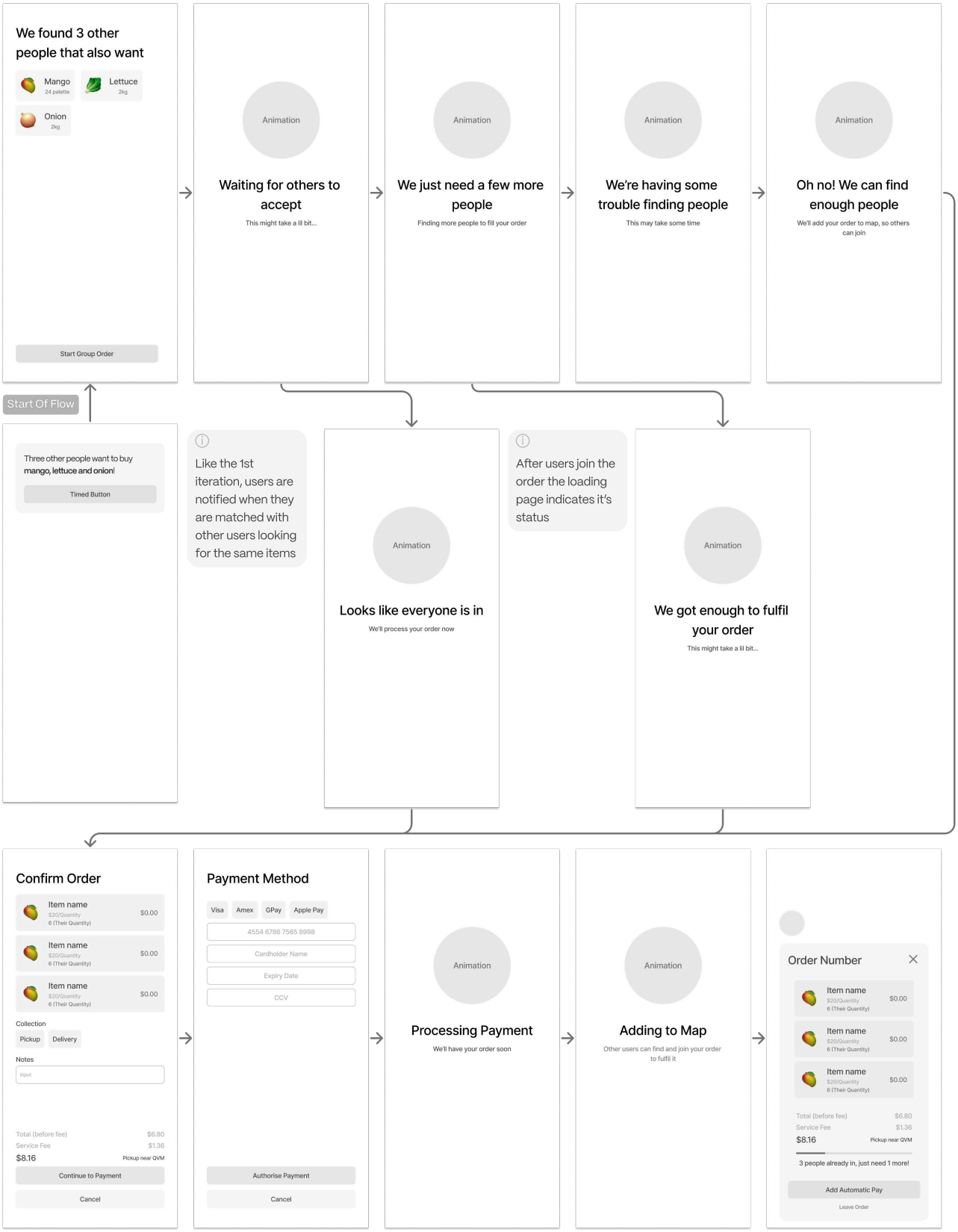
Interactive Sequence: Joining a Group Order

1st Iteration



Interactive Sequence: Starting a Group Order based on Wishlist

2nd Iteration

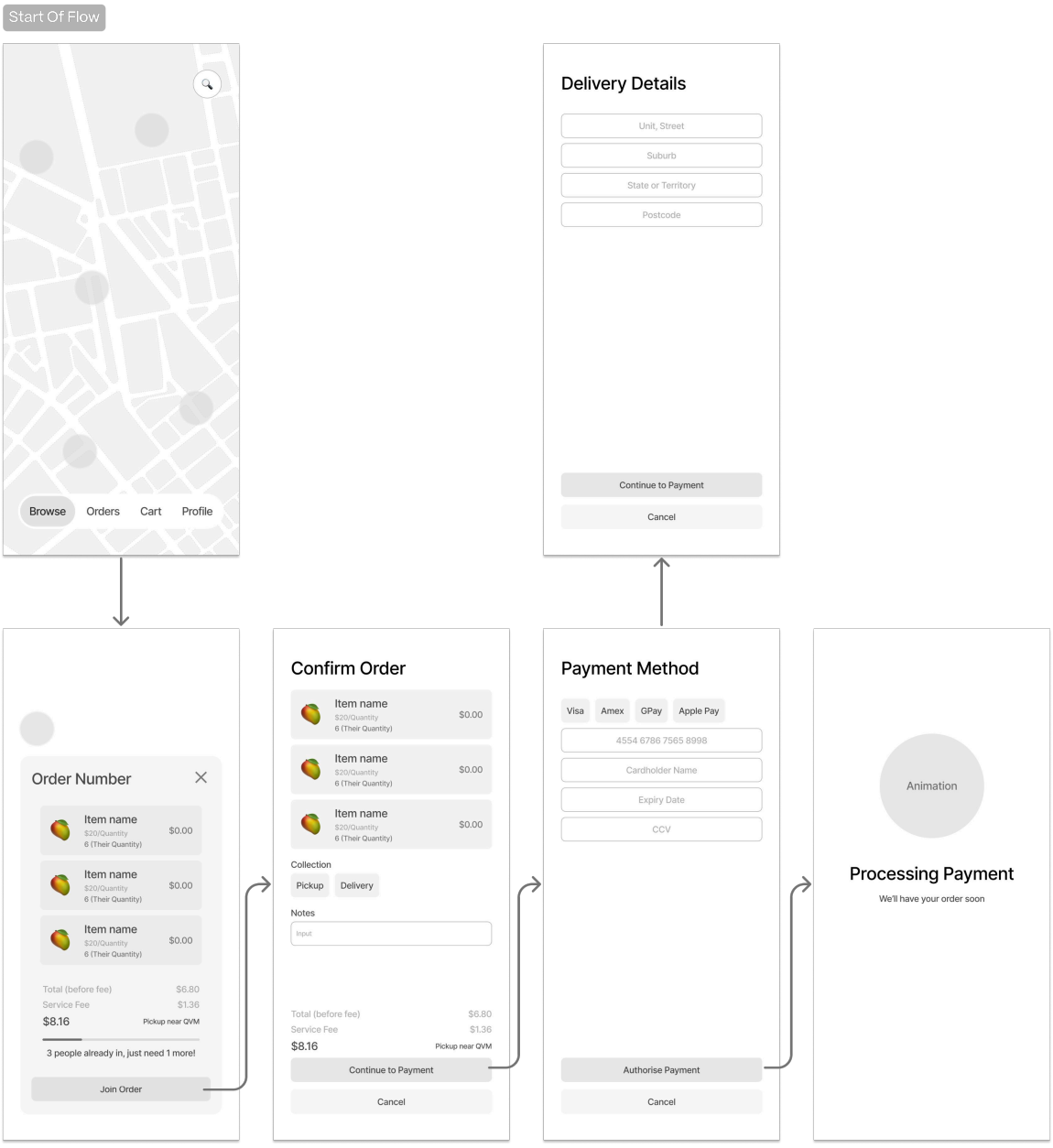


Unlike the 1st iteration, users are required to confirm and authorise auto payment before an order is added to the map. This is to prevent wait times after an order is full. In the first iteration, users could paid after and had to wait for all users to pay before the order could be processed

An additional loading page is added to show when payment has been processed and give time for system to add the order to map

Interactive Sequence: Joining a Group Order

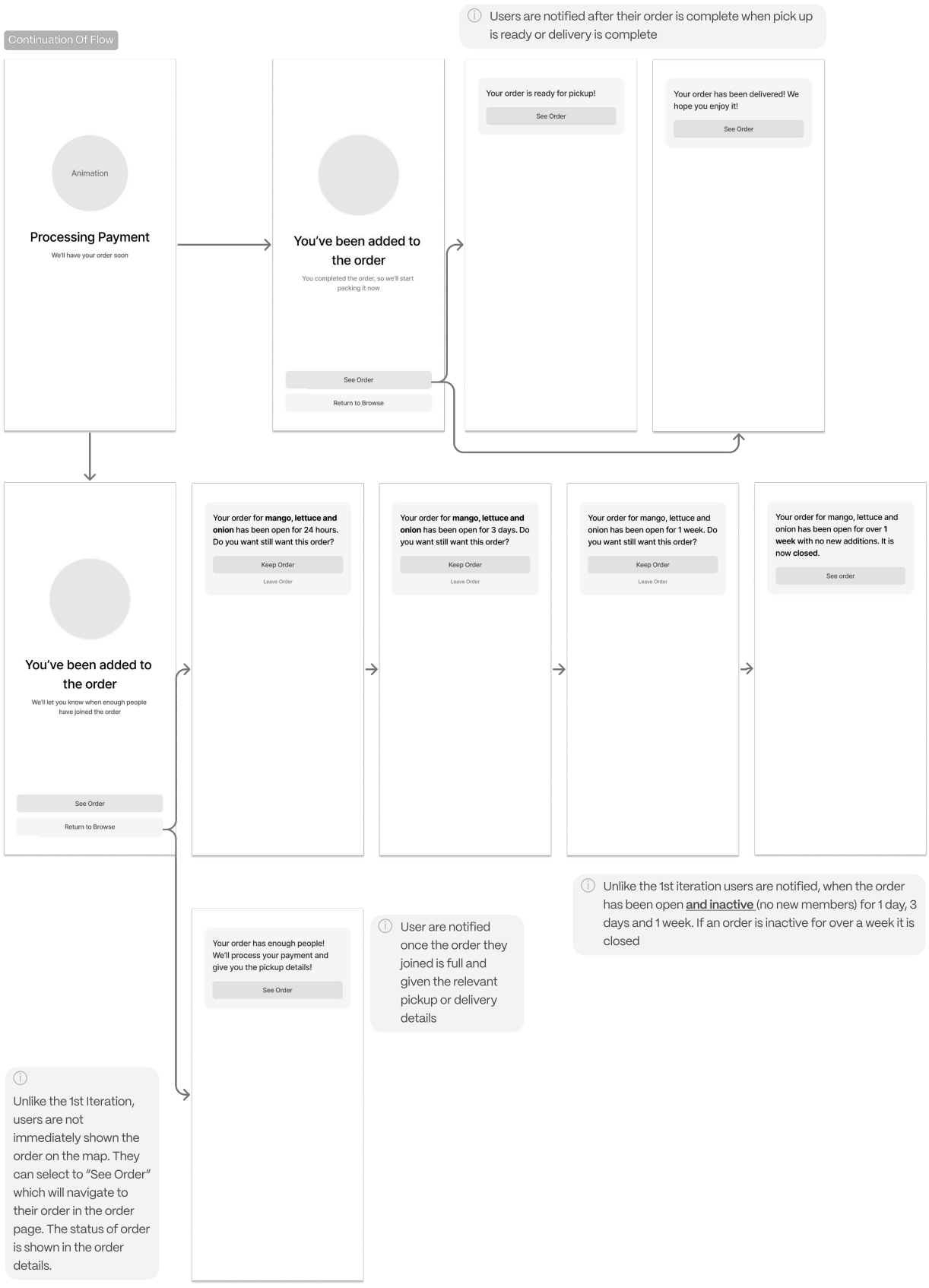
2nd Iteration



ⓘ Unlike the first iteration users are required to confirm and authorise payment before they join an order, to reduce wait times after the order is full. Payment is only taken after the order is full.

Interactive Sequence: Joining a Group Order

2nd Iteration



Participants

Participant 1 (P1) is a lawyer over 55. They live with family and buy groceries weekly from supermarkets, local markets and speciality stores. They never usually buy bulk but could be motivated by cost savings. They had not participated in previous interviews and were new to the concept.

Participant 4 (P4) is a student between 18 to 24 years olds. They live wth roommates and shop several times a week from supermarkets, local markets and speciality stores. They rarely buy bulk and would be motivated by cost savings, convenience and stocking up. They had participated in both initial and prototype interview, so they were familiar with the concept.

Findings

Interactive Sequences Tested: Joining the App, Starting a Group Order based on your Wishlist

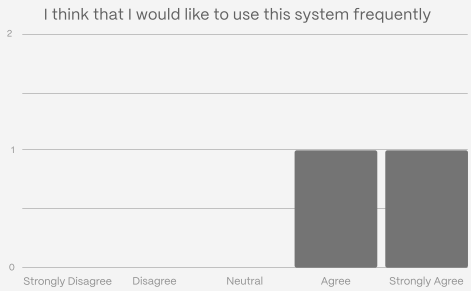
✓ Postive Findings | Works well. This approach is recommendable
! Minor Problem | Minor Dissatisfaction; noticeable delays; or superficial difficulties
!! Major Problem | Substantial Delays; or moderate dissatisfaction
!!! Critical Problem | Users gave up; substantial dissatisfaction; or minor financial damage

✓ The concept was well received and regarded as useful

Both users liked the general concept of ShareCart and indicated they would be interested in using application in the during the evaluation and in the post-questionnaire

P4– "I think I'd really like to see the others features, the other ways you can order stuff. But what I did just now, it looks professional"

P4 – "I think it's got a lot of potential"



Neither would usually purchase bulk but thought the cost savings and smaller portions offered by ShareCart could motivate them. However, both would likely only use it to supplement their groceries, as they prefer the reliability of their current methods for essentials.

P4 (Post Questionnaire) – "It could help connect buyers with cheap fresh produce that might be about to expire, also increases the average person's purchasing power"

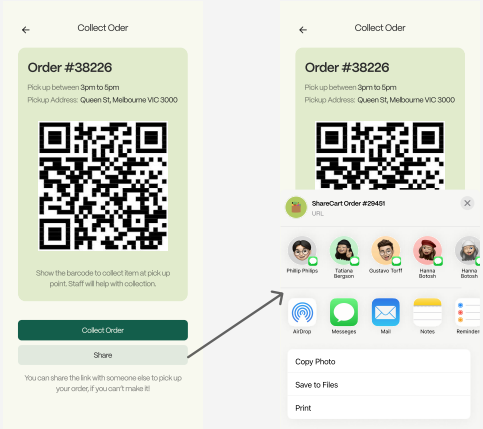
They also both thought it could reduce their overconsumption and food waste.

✓ Users liked the flexibility of the "Share" option

Both users indicated they would benefit from being able "share" pickup details with someone else to collect and could give uses cases for when they would use it.

P1 – "Yes, if I can't make it in the time that's been given to me"

P4 – "Ooh that's cute. Yeah I like that, share link... if I'm busy or I want my roommate to pick it up instead of me"



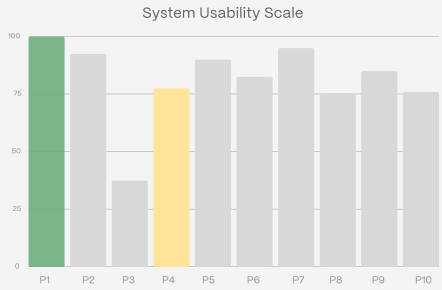
Findings

✓ The interaction flow and interface were intuitive and easy to understand.

Both were able to to quickly interpret and navigate content correctly with minimal assistance to finish tasks (ie. join flow, picking up details and order information).

P4 – "It was still simple in a way that it was really streamlined, I think, like it made sense."

In the post questionnaire, they rated the usability of the app highly. P1 scored 100 and P4 scored 77.5 on the System Usability Scale (SUS)



Users quickly discerned the concept of app through the join flow, understanding it well enough to use the app.

P4 – "I think it's pretty clear, what the intention of the app is"

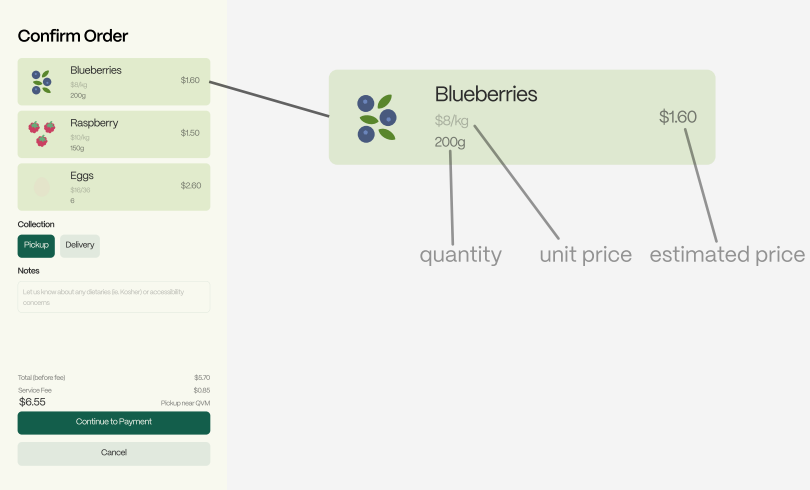
P1 – "I think it's very good, it's clear and it's got good graphics and explains everything well"

They were both also able to quickly distinguish between the unit price, quantity and item cost within specific labels or instructions.

P1 – "Well I've got the cost but what I don't know is – Okay, so the quantity is there"

They were both also able to quickly distinguish between the unit price, quantity and item cost within specific labels or instructions.

P4– "Coffee, it shows me...the unit price, well I mean per X amount of kilos and beneath that it shows me how much I've requested and on the right...that's the subtotal for each item"



✓ Users liked the simple and minimalistic visual style, particularly the illustrations

Users thought the visual style design was minimalistic and simple, which they regarded as a positive feature.

P1 – "It's got good graphics"

P4 – "Yeah the design is really nice, yeah. I really like the icons, the map. It's very simple but pleasing to the eye

They enjoyed the illustrations and felt they improved their experience.

Findings

!!! Users wanted more information before confirming or joining an order.

Users wanted to know more information about the vendor and the exact pickup and delivery details for orders including time and location, before they confirmed an order. If they were unable to access these details, they would be uncomfortable proceeding with an order and may not join.

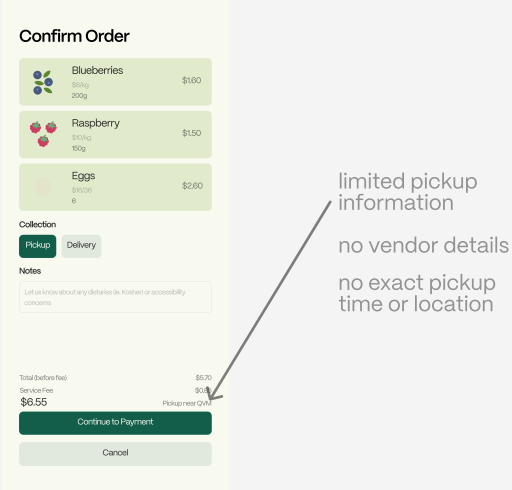
P1 – "Alright well before I join the order, I would want to know the details...I'd want to know how much it's likely to cost and when I'm likely to get it"

P1 – "I would want to know, not just the price but the time for pickup or delivery...Because if not gonna be like for a fortnight, I might go to out to the shops and buy it myself"

P4 – "I would have liked to know the time beforehand."

P4 – "Queen Victoria Markets where? Where in Queen Victoria Markets."

P1 – "I would like to know who the manufacturer or producers are and where they are"



P4 also indicated they would be interested in more explicit information about their cost savings and waste impact – comparison to supermarket prices, summary of waste saved – to show the app's benefit.

P4 – "It's be nice for me personally to do some comparison with supermarkets prices. I mean even better if the app had them."

Resolution: Vendor details would be available on the order confirmation page

Resolution: A general estimated time of pickup should be given before confirming and/or more information should be given about when they will receive exact details (ie. "You will receive exact pickup and delivery details once everyone joins and order is confirmed). Alternatively we could allow for users to select from a set of pick up times when the order is confirmed.

!! Some touch points and text were misleading or too small

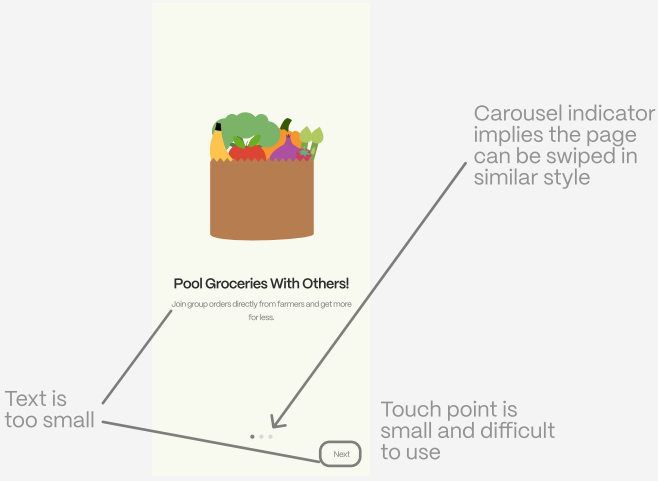
Both users could not see the "Next" button initially in the join flow and expected to swipe between pages based on their previous experience with similar features.

P4 – "I was just silly, it looked like it would swipe between the slide when I swiped it left or right."

P4 – "I saw a Next button in the bottom right corner but it's disappeared"

The small size of button likely reduced visibility and also made it difficult to use; P4 especially had longer nails and struggled to press the touchpoint. This reveals issues with accessibility.

Continued on Next Page



Findings

!! Some touch points and text were misleading or too small

P4 also indicated some of the text was too small to read. However this does did not seem to bother P1.

P4 – "I mean, sorry this is like a me thing but the font's a bit small, so I'm squinting a bit (referring to text in join flow)"

P1 – "It was very easy, 7" (referring to difficulty of task)

Resolution: The base text should be increased to 16pt size to increase visibility

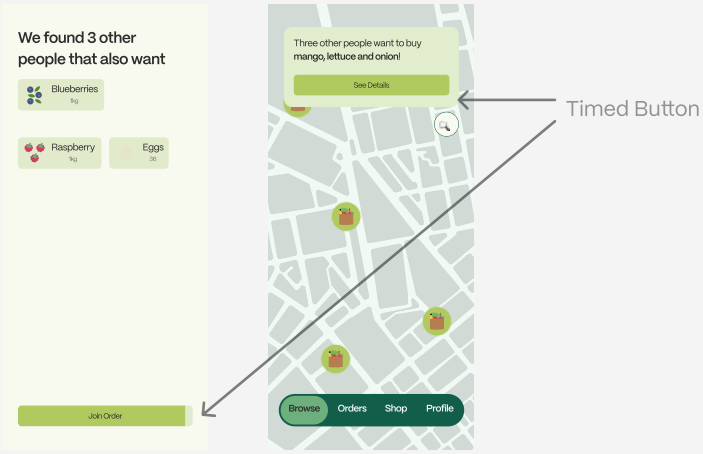
Resolution: The size of touch points should be increased and tested for better accessibility

!! The pacing of the interaction flow was sometimes too fast

The pacing of the timed button and the loading screen were too fast leading users to feel rushed or overlook information. Neither of the participants distinguished between the different loading pages before order page.

P4– "I think the progress bar, like the timer was going a little bit too fast...It kinda looked like I had to click it before it expired to proceed with the order. So it was a little bit rushed."

P4– "I mean I barely even remember it" (referring to loading screens)



P4 revisited the homepage by exploring the cancel option and noted the experience was much better without a timed button.

P4– "this time there's no timer. So I feel a lot more calm"

However, users still valued to be able to quickly move through the sequence. Both completed tasks quickly, P1 especially was uninterested in details that did not effect them.

	Joining the App	Starting a Group Order
P1	2.30 min	7.50 min
P4	3.50 min	10.01 min

P1 – "But I'm only paying my price, so I don't care what they're paying" (after explaining splitting of price)

The loading page issues also does not translate to real use as pacing would be paced on external factors – internet, matching logistics – and not fixed. P4 noted this.

P4 – "I was thinking that I imagine in actual practical use, it might take a while, it might not be as instant"

Resolution: Allow for more time in the timed button or introduce a prompt after a fixed to ask them whether they are still interested in joining an order

Findings

! User wanted more payment options

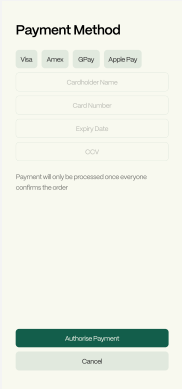
P4 – "I would have liked to know the time beforehand."

P1 pointed out the lack of PayPal and Mastercard options. They indicated the lack of these option reduced the realism and credibility of the prototype

P1 – "Why hasn't it got Mastercard?"

P1 – "Why don't you use PayPal?"

Resolution: For further testings these option should be added for better realism and more accurate results.



References

Burcham, K.R. (1992) The Wings of Worship. CSS Publishing.

Gottesman, A. (2014) Politics and the Street in Democratic Athens. Cambridge University Press.

Nielsen, J. (1994) 10 Usability Heuristics for User Interface Design, Nielsen Norman Group. Available at: https://www.nngroup.com/articles/ten-usability-heuristics/ (Accessed: October 24, 2025).

Snyder, J. (2002) "All about Bulletin Boards," Interface: The Journal of Education, Community and Values, 2.

Sparsa Digital (2023) "The Evolution And Impact Of Digital Bulletin Boards And Notice Boards," Medium, 7 August. Available at: https://sparsa-digital.medium.com/the-evolution-and-impact-of-digital-bulletin-boards-and-notice-boards-a80fa992fe07 (Accessed: October 18, 2025).

Statement of AI use

I used Chat GPT to assist with expression and as a thesaurus for writing Usability Rationale and Design Precedent.

SHEREN WIRANATA

Heather Lee

Bio

- 26 years old
- Lives alone in rental unit in Ballarat
- Recently relocated for work
- Registered Nurse
- No children or pets

Device Proficiency

IPhone

IPad

Interests and Values

Money

Heather avoids buying large amount of food or household items as she frequently relocates for work and lives alone. Her unpredictable shifts make it hard to finish perishable goods, and moving often means extra belongings become a hassle to carry.

Time

Heather's rotating nursing shifts are long and unpredictable, often including nights and weekends. She doesn't always have time to plan her meals or do big grocery runs. She prefers shopping online or using quick delivery options so she can rest on her days off.

Sustainabilty

Heather is not waste conscious, as she prioritises convenience and affordability over sustainability. Because she relocates frequently and has limited space, she often ends up wasting food when she can't finish what she buys before relocating. Her choices are mainly driven by practicality and cost rather than environmental concerns.

Cooking

Heather enjoys cooking simple, healthy meals that help her unwind after work. Because she often eats alone, she tends to cook small portions and keeps ingredients minimal. Cooking gives her a sense of routine and control, especially when everything else in her life feels temporary.

Goals

Find affordable grocery options that caters the amount for one person household lifestyle and small storage spaces.

Reduce effort and stress from shopping by using convenient, low-interaction delivery services.

Reduce effort and stress from shopping by relying on convenient, low-interaction delivery solutions.

Task Scenario

Heather has recently relocated to Ballarat for her new nursing role. She now lives alone in a small rental apartment near the local farmers market. With supermarkets being far from her area and delivery options requiring a high minimum spend, the market feels like the most convenient choice. On her first weekend off, she decides to shop there, hoping it will also be a cheaper and healthier alternative.

At the market, Heather realises most vendors only sell in bulk, such as large bundles of spinach, bags of potatoes, and trays of fruit meant for families. She hesitates but ends up buying more than she needs, thinking it will last the week. A few days later, she opens her fridge to find spoiled vegetables and feels frustrated. Throwing them out makes her feel wasteful, especially on a tight budget.

During one of her shifts, an elderly patient tells her about an app called ShareCart, which helps locals split grocery orders and buy smaller portions together. The patient explains how it has helped them save money and avoid waste, which catches Heather's attention. After her shift, she decides to download the app and explore it.

Heather browses her area and finds a nearby group order from the same farmers market she visited earlier. She joins the order, selects smaller portions of produce, chooses the delivery option, and proceeds to payment using her Visa card. She feels satisfied knowing her grocery costs have decreased significantly. By splitting items with others, she can now enjoy more variety instead of being stuck finishing large quantities alone.

Since the group order is not yet full, Heather receives a confirmation message that it needs one more person to be completed. As she is at work, she doesn't mind waiting. Later that day, when she gets home and realises she still has plenty of food left, she decides to cancel her order. Because the order has not yet been processed, she is able to leave the group easily.

A few days later, when she finally needs to restock, Heather opens the app again and joins another group order. This time, she happens to be the last person needed to complete the order, and it is instantly processed. The delivery is confirmed for the next day. When she gets home from work, her groceries are waiting at her doorstep, neatly packed in smaller portions.

For the first time since moving, Heather feels like she has found a cost-effective and low-effort way to shop that fits her unpredictable schedule. The experience also gives her a quiet sense of connection to her new community through ShareCart.

Group Tutoring

Origins

As demand for accessible and affordable academic support grew in the late 20th century, group tutoring emerged as a response to this need, providing a more collaborative and cost-effective alternative to traditional one-on-one tutoring (Topping, 2001). Early models of group tutoring drew from the principles of peer-assisted learning, which emphasised interaction, shared responsibility, and collective problem-solving among students (Vygotsky, 1978).

Variants

Overtime, this practice is integrated into structured programs in schools, universities, and community learning centres, combining the benefits of social learning with guided instruction. The approach has since been adapted to various contexts, including digital platforms where collaboration continues to play a key role in improving learning outcomes.

Evidence of Success

Studies show that peer-assisted learning enhances academic performance, confidence, and retention (Cohen, Kulik & Kulik, 1982). In a group setting, students benefit from shared discussions and peer questions, which deepen understanding for everyone involved. The practice also offers practical advantages, as learners share the cost of tutoring sessions while tutors earn more by teaching multiple students at once. This creates a mutually beneficial system that promotes collaboration, affordability, and greater learning efficiency for both tutors and students (Topping, 2001).

Key Design to be applied to our design

Group tutoring demonstrates how shared participation creates mutual benefits for everyone involved. Students save on tutoring fees by learning in groups, while tutors can reach more learners and increase their income. The shared environment also builds a sense of community and allows students to learn from one another through discussion and peer support. Similarly, ShareCart applies this idea of cost-sharing through collective purchasing by allowing users to group their grocery orders and split bulk items from wholesalers. This approach reduces individual costs and helps suppliers reach more customers, creating a mutually beneficial system built on collaboration and shared value.

Usability Rationale

Chosen Principle Aesthetic and Minimalist Design (Nielsen, 1994)

Aesthetic and minimalist design focuses on displaying only the most relevant information and keeping the interface simple and visually balanced (Nielsen, 1994). The goal is to reduce cognitive load so users can focus on what is essential without distraction. In the context of ShareCart, this principle is particularly important because the concept of group grocery ordering is both new and complex. The challenge lies in presenting multiple layers of information, such as item details, group order details, and order status, without overwhelming the user.

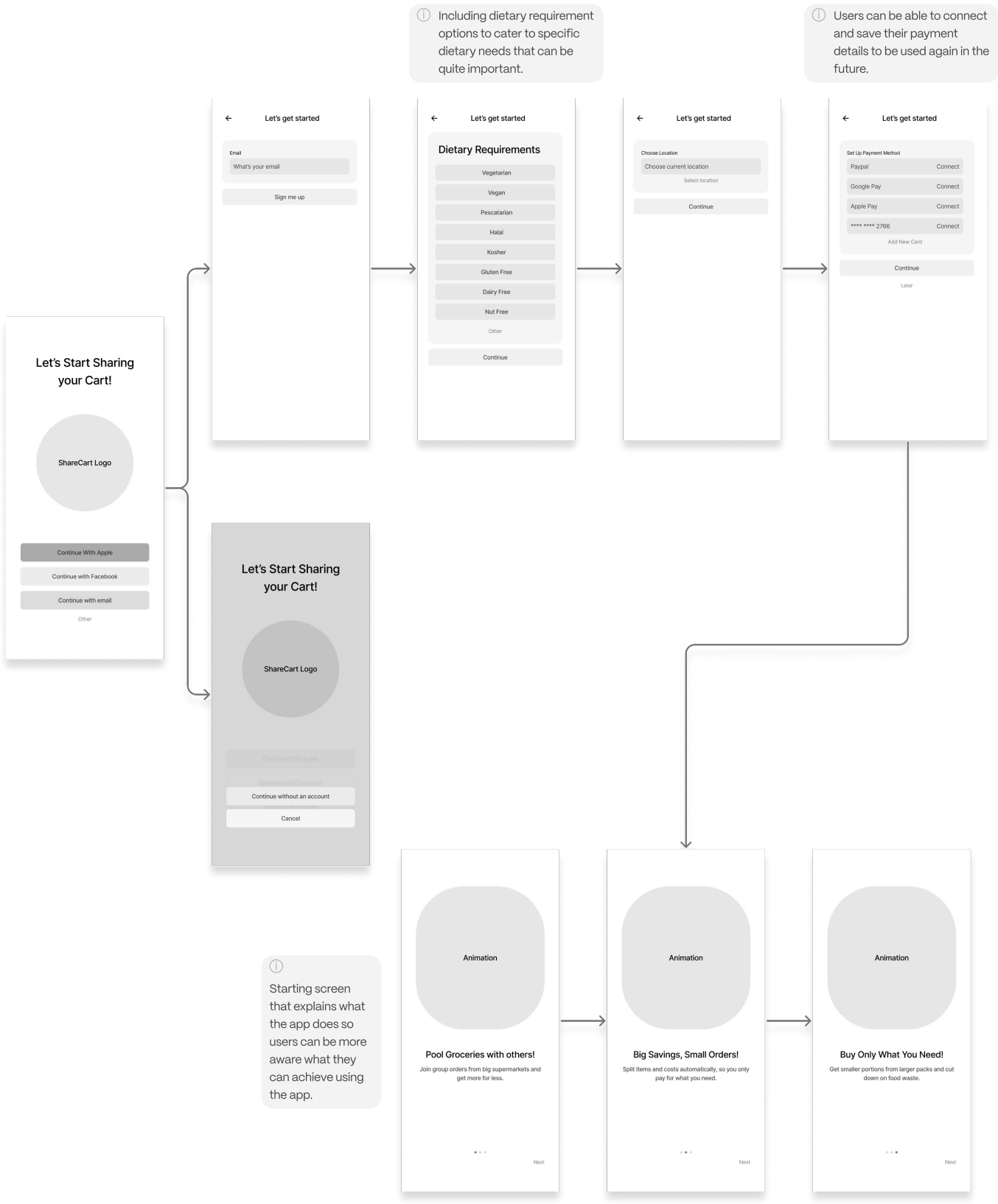
To achieve this, the interface design prioritises simplicity and structure. Only necessary functions are displayed at each step, helping users navigate the group ordering process with clarity. Layout and spacing are carefully considered to organise dense information in a readable and approachable way. Visual hierarchy ensures that primary actions, such as joining or creating an order, stand out clearly from supporting details.

Colour and visual language also contribute to usability. The consistent use of green is intended to create a sense of calm and trust while reinforcing associations with health, nature, and freshness. Rounded icons and soft tones make the interface feel friendly and less transactional, helping users feel comfortable engaging with a new system.

As Nielsen (1994) suggests, "dialogues should not contain information which is irrelevant or rarely needed." The design takes this into account by balancing simplicity with clarity, keeping the interface visually light while ensuring that all essential information is accessible. The minimalist approach aims to make a complex system feel easy to understand, approachable, and trustworthy for users engaging with collaborative shopping for the first time.

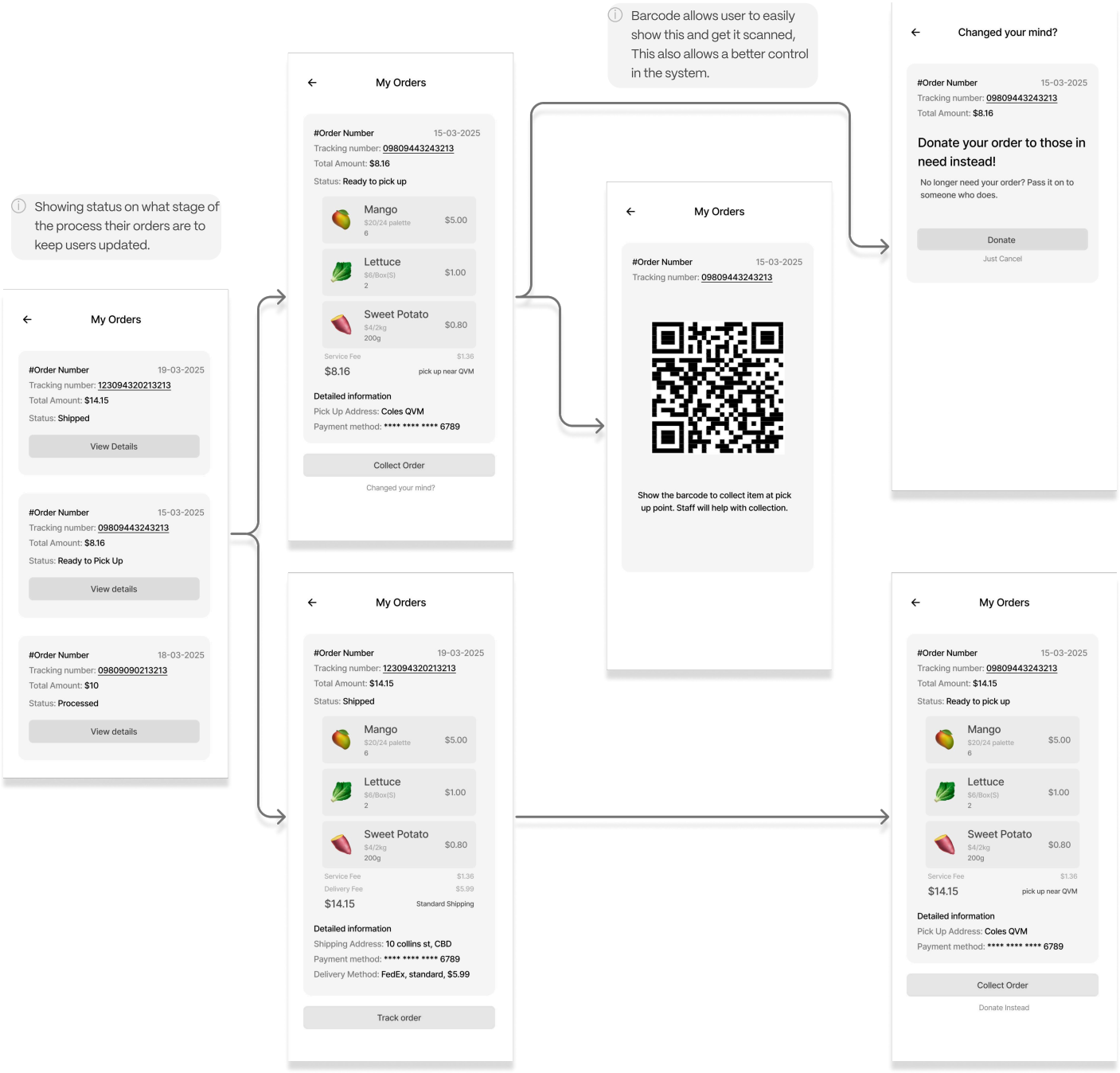
Interactive Sequence: Join Flow

1st Iteration



Interactive Sequence: Current Orders

1st Iteration



Participants

Participant 8 (P8) is a canteen owner between 44 – 54 years olds. They live with family and buy groceries several times a week from supermarkets, local markets and speciality stores. They sometimes buy bulk but could be motivated by cost savings and convenience of fewer grocery trips. They had not participated in previous interviews and were new to the concept.

Participant 9 (P9) is a student between 18 to 24 years olds. They live with family and shop several times a week from supermarkets. They never buy bulk and would be motivated by cost savings, convenience and stocking up. They had participated in both initial and prototype interview, so they were familiar with the concept.

Findings

Interactive Sequences Tested: Joining the App, Creating private group order

✓ Postive Findings | Works well. This approach is recommendable
! Minor Problem | Minor Dissatisfaction; noticeable delays; or superficial difficulties
!! Major Problem | Substantial Delays; or moderate dissatisfaction
!!! Critical Problem | Users gave up; substantial dissatisfaction; or minor financial damage

✓ The concept was well received and regarded as useful

Both users liked the overall concept of ShareCart and saw its potential to address their pain points around cost saving and splitting grocery expenses.

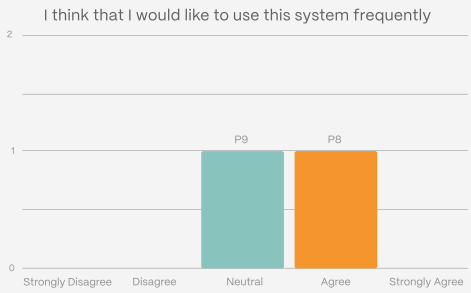
P8– "It's pretty user-friendly... saves me the awkward situation of splitting grocery bills will family members."

P9 – "ShareCart makes the benefit of bulk pricing accesible to everyone... no matter what household size."

Though both found the concept promising, P9 felt the app would be more relevant for cost-conscious users, smaller households, and people organising group events.

P9 – "I won't really use the app as much since I don't cook or buy grocery in my household... my mom would love it."

P9 – "people who are on a budget will really like this app... smaller households and people who are organising events with friends too."



✓ Users liked the illustration and visual aesthetic of ShareCart

Users appreciated the clean and minimal visual design.

P8 – "I like the colours and the looks you know the vibe... kind of reminds me of uber eats too"

P9 – "how you incorporated illustrations and the aesthetic is not what I imagined how this ShareCart idea would look like... it really works! I thought you guys were going to make it look like a generic woolies app"

Users liked the micro-animation in the join flow and existing throughout the app.

P8 – "That's cool the illustrations popping in and out"

P9 – "The singular mushroom, broccoli and stuff must be a representation on how... you buy what you need"

They enjoyed the illustrations and felt they improved their experience.

Findings

✓ The interaction flow and interface were generally clear and straightforward to navigate.

Both participants were able to interpret and navigate through the prototype correctly with some assistance to complete the given tasks.

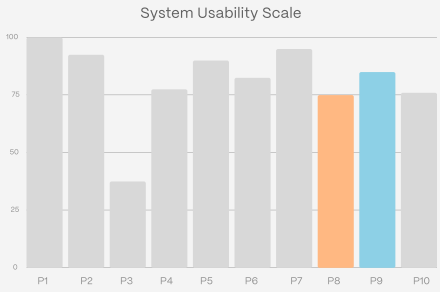
P9 – "This is how I expect to order... with any app actually."

P9 – "Yea simple! it has this very big button here that's highlighted"

P8, being older and less experienced with technology, took slightly longer to complete the tasks but was still able to finish them successfully with some guidance.

In the post questionnaire, they rated the usability of the app highly. P8 scored 75 and P9 scored 87.5 on the System Usability Scale (SUS)

P8 – "It's quite clear to create a private order... I just don't usually use these kind of apps alot."



!! Some touch points and text were misleading or too small

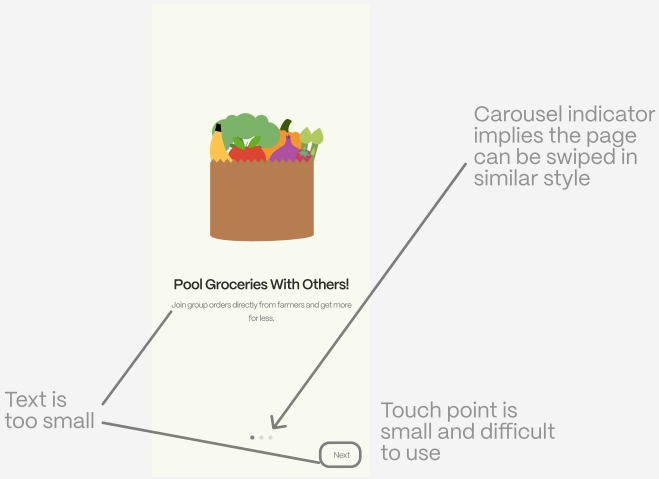
Both users experienced some difficulty navigating the join flow screen. P8 noticed the "Next" button but struggled to press it due to its small size, while P9 did not notice the button at all and became confused about how to proceed.

P8 – "So I press the icon right... ooo, umm maybe I press here?... maybe i swipe?"

P8 – "I did not see the button... that is tiny"

P8 also find some of the text hard to read due to it's size.

P8 – "I didn't read that part because it's really small I kind of just looked over it and don't care"



Resolution: Increase smallest text size to 16pt for better readability.

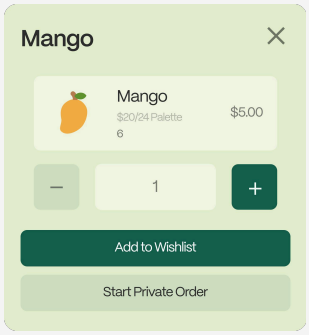
Resolution: Allow multiple ways of moving through the join flow screen such as: swiping and tapping the icon.

!! Some language used in labels and functions was not familiar to users, leading to confusion

P8 got confused as to what "Add to Wishlist" meant as she felt like that was not a very familiar concept to her.

P8 – "what about add to wishlist? what does that do?"

P8 – "That's not what I would expect it to do... that would be pretty hard for to me find out on my own I think."



Continued on Next Page

Findings

‼ Some language used in labels and functions was not familiar to users, leading to confusion

Resolution: Use clearer and more familiar language when labelling features or functions to prevent confusion, such as using "Cart" for shopping-related actions.

Resolution: include short explanations or tooltips to help users understand their purpose.

!!! Lack of clarity with quantity display

Users were confused with what unit the quantity display is showing.

P8 – "wait what does this six mean? So I'm adding six mangoes each time? must be a unit size yea?"

P9 – "Is this six like the amount I'm adding each time?"

Users felt that displaying quantity on both the item card and the quantity selector was unnecessary and caused confusion.

P9 – "that's so redundant, I don't get why you'd have to display the quantity you're putting inside the cart twice?"

Users felt that the space on the item card could be used more effectively to display the unit size or the amount of stock left.

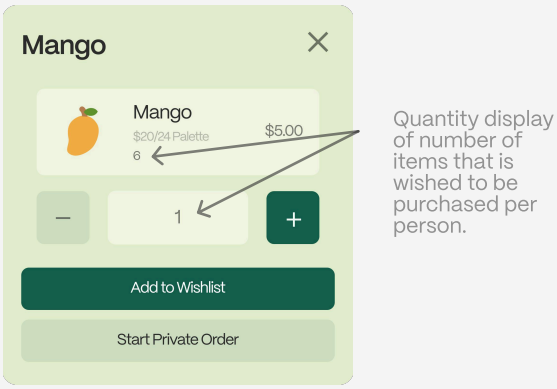
P8 – "Well I think it would be more understandable to have that as the unit size"

P9 – "will be better if you could show the unit size of how much you're adding just here in this box and then this six can instead show how much stock left"

Users expressed confusion whether the quantity being added applies per person or to the entire group.

P9 – "I kind of assumed it's per person... but after you mentioned I think it'll be better if you put some description."

P8 – "I blindly just put it in... this section is really confusing"



Resolution: Simplify the quantity display by removing duplication between the item card and selector.

Resolution: Clarify whether the quantity refers to per-person or group total through clearer labels, this information can replace the current duplication of quantity display on the item card.

Resolution: Additionally, add a low-stock indicator to alert users when item quantities are running low.

Findings

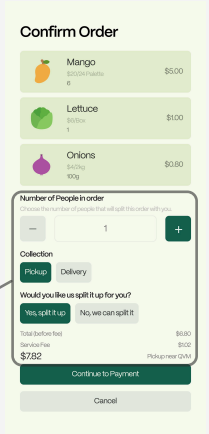
‼ Users found some layout to be slightly overwhelming

P8 overlooked the field for the number of people when placing the order due to over cluttered layout.

P8 – "I did not see that at all"

P8 – "No, it's not that I forgot I need to input the number I just didn't see this section... i didn't realise it was there sorry"

P8 – "Maybe you could add... some warning or confirmation text for me so I know if I have done something wrong."



Text is small and this section is information dense

Resolution: Break the payment section into smaller, clearer parts to reduce visual clutter, especially as the item list grows.

Resolution: Add a warning or confirmation prompt, such as a pop-up message asking, "Do you wish to continue with only one person?", to prevent user errors and improve clarity.

References

Cohen, P. A., Kulik, J. A. and Kulik, C. L. (1982) Educational outcomes of tutoring: A meta-analysis of findings. American Educational Research Journal, 19(2), pp. 237–248.

Topping, K. J. (2001) Peer Assisted Learning: A Practical Guide for Teachers. Cambridge, MA: Brookline Books.

Vygotsky, L. S. (1978) Mind in Society: The Development of Higher Psychological Processes. Cambridge, MA: Harvard University Press.

Nielsen, J. (1994) 10 Usability Heuristics for User Interface Design, Nielsen Norman Group. Available at: https://www.nngroup.com/articles/ten-usability-heuristics/ (Accessed: October 24, 2025).

Statement of AI use

I used Chat GPT to assist with expression clarity and grammar. As a thesaurus for writing Usability Rationale, Design Precedent and writing references in format.

LYRA PAN

Alex Ma

Bio

- 21 years old
- Lives in a student accommodation near campus
- Manages a very tight student budget
- Part-time student accommodation staff
- No children or pets

Device Proficiency

IPhone

IPad

Interests and Values

Stress

Grocery shopping can be stressful for Alex, as he can be overstimulated when spending too much time in a crowded market and having to talk to different vendors. Instead, he prefers using Click and Collect to shop at supermarkets.

Money

Alex works part time in his student accommodation, so he only has limited amount of money to spend on groceries.

Time

As someone on the autism spectrum. Alex tries his best to avoid shopping during rush hours. However, being a full-time student means that he is usually available for grocery shopping during the rush hour.

Sustainability

Alex is enthusiastic about minimising the food waste. He always plans his meals beforehand and make shopping lists. But he finds it hard to find smaller portion of ingredients that are suitable for 1 person size meals, so sometimes he has to throw away the extra ingredients.

Goals

Finding a more affordable grocery option that is cheaper than simply buying from supermarkets.

Minimising food waste by having access to cheaper smaller portion ingredients without over buying.

Reduce the mental stress from the interactions when shopping by introducing a lower-interaction shopping process.

A flexible option of pick-up and delivery time.

Task Scenario

Alex is a 22-year old university student who lives in a student accommodation near campus. He prefers quiet environments and often avoids crowded places, so even though he would love to buy from local markets, he usually shops at supermarkets to avoid the crowd.

Alex recently heard from a friend about ShareCart. He was immediately drawn to the idea of bulk buying product from local vendors to get cheaper, more local and smaller portion of ingredients. He learnt that the app offered both pick-up and delivery options, meaning he could support local markets without having to wander around comparing prices and quality in person. So he downloaded the app, and started exploring.

The introductory screens gave him a general idea of the app. He learnt that he will be able to add items into WishList, and the system will match him with other users who has similar Wishlist, and send him an invitation to join the order.

Alex has already planned out his meal plan for next week. So he went into the shopping page and selected the ingredients he needed for the upcoming week and added them into WishList then continued his day.

Soon, he received notification that he was matched with 3 other users for potatoes, peas, and tomatoes. Without hesitation, he tapped the join order button before it expires. The confirm order page appeared after everyone else in the group accepted the order. To save the delivery fee, Alex chose pick-up as delivery method. He filled out payment details and authorised the payment.

Later that day, he received a message that his order is ready for pick-up on the next day between 2-5pm. He arrived at the pick-up booth the next day. It was right by the entrance of the market. The staff greeted him with warmth. Alex showed his order details, and the staff scanned the QR code on his screen to confirm collection. The process was smooth and quick.

Alex came home and unpacked his groceries. He was glad to finally buy portions that suited one person. Tt saved him the mental effort of figuring out how to use up food before it expired. He also felt good about supporting local vendors and noticed that he had spent much less compared to shopping at supermarkets. That evening, he made mashed potatoes and soup with the fresh ingredients he'd bought. The meal felt satisfying. They're fresh, affordable, and easy.

Community Garden

Origins

Community gardens can be dated back the 19th century. It was created as a response to the overcrowding and poverty in urban environments. Like Germany's Schrebergärten. Families were given small plots for planting crops. It was later spread across the world as a way for communities repurposing vacant land for civic and social use. (Batchelor, 1969)

Variants

Other forms include school gardens for education, therapeutic gardens for mental wellbeing, and edible landscapes in public parks. This flexibility allows gardens to adapt to local needs and contexts. (Kato & Boules, 2024)

Evidence of Success

Study has shown that community gardens is beneficial in reducing food insecurity by providing more access to fresh produce and at the same time lowering household costs. strengthen the social connection, trust, and civic pride within communities. Environmentally, it has a positive effect on biodiversity, cooling effects, and healthier soils. Their persistence across countries demonstrates resilience and long-term value. (Egli et al., 2016)

Key Design to be applied to our design

The shared service and resource can be a great way to redistribute access material. And the success is heavily depended on the process of building trust. The system should provide a transparent and credible way in managing the shared resource. Just like tasks and harvests are shared, the responsibilities in Sharecart can also be distributed with transparently, ensuring fairness and turning limited individual means into greater collective value.

Usability Rationale

Chosen Principle Constraints (Norman, 1988)

When designing the wireframes for the checkout flow, the main usability rationale is Don Norman's concept of constraints, which involves the intentional use of restrictions or limitations to guide user behaviour, prevent errors, and simplify interactions.

Firstly, before proceeding to payment, a separate screen is designed with only 2 buttons for pick-up and delivery to prevent users from choosing the wrong delivery method. Choosing Pick-up directs users to a checkout page that displays the pick-up address, while Delivery leads to a form for entering a delivery address, with fees automatically adjusted based on the option selected.

Secondly, input constraints are applied to enhance accuracy and efficiency. Inputs like delivery address will be based on the search result from google map database, to ensure the address is valid. Payment details such as account number are restricted to valid number of digits and card format before submission. Otherwise, and error message will appear.

Thirdly, the confirm pick-up button will not be visible until the scheduled pick-up time to prevent premature confirmation. After it becomes available, the user will have to swipe to confirm rather than simply tap on the button. This will minimise the possibility of accidentally confirming the pick-up.

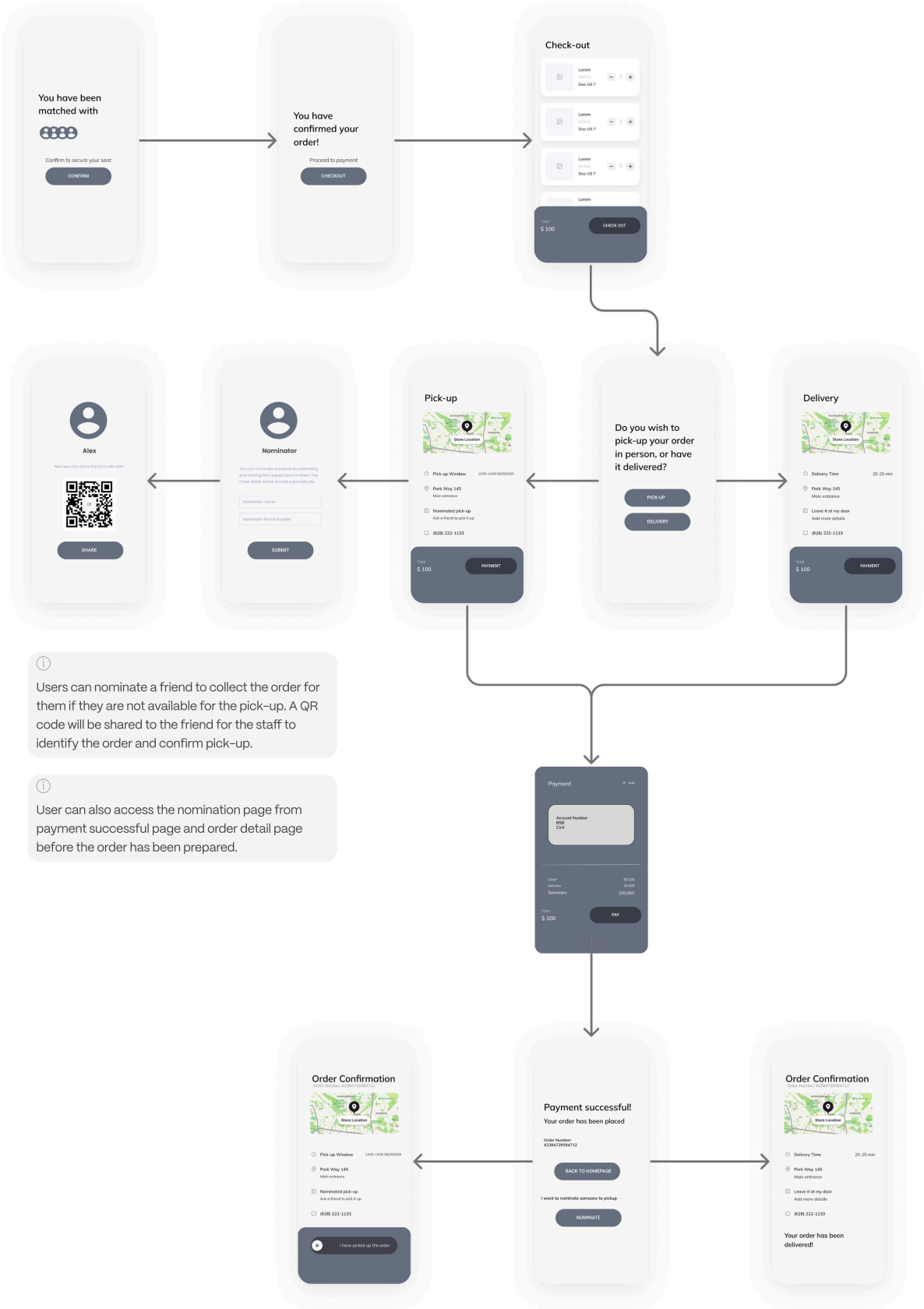
Finally, the wireframe is based on the confirm action. User will have to first accept the join order invite, then authorise the payment to ensure the seat in the order. This will prevent the error of forming an order even when there's user dropped out.

By setting the boundaries and providing clear cues throughout the interaction flow, constraints guide users towards finishing the checkout with accuracy and minimise possible error to reduce the chance of mistakes in delivery and payment. They are crucial in enhancing the usability, reducing cognitive load, and preventing errors.

Interactive Sequence: Public Order – Checkout

1st Iteration

Interactive Sequence: Public Order – Checkout 2nd Iteration



ⓘ Users can nominate a friend to collect the order for them if they are not available for the pick-up. A QR code will be shared to the friend for the staff to identify the order and confirm pick-up.

ⓘ User can also access the nomination page from payment successful page and order detail page before the order has been prepared.

Participants

Participant 5 (P5) used to work in a large chain supermarket. The participant is in their early 20s, and is currently a student. The participant lives with their family of 4, and buys groceries from local chain supermarkets and sometimes speciality stores on a weekly basis. Due to the large family size, they don't usually buy in bulk. The participant was involved in the previous interview, so they have a rough understanding of the concept of the prototype.

Participant 6 (P6) is a international student between 18 to 24 years olds. They live alone in a small apartment in the CBD and often shop at the supermarket near the apartment building every 3-4 days. Sometimes they would go to the local market because it's cheap and close to where they live. They rarely buy in bulk and would be motivated by cost savings, convenience and stocking up. They didn't participated in the previous interview so they were new to the concept.

Findings

Interactive Sequences Tested: Adding items to Wishlist

✓ Postive Findings | Works well. This approach is recommendable

! Minor Problem | Minor Dissatisfaction; noticeable delays; or superficial difficulties

!! Major Problem | Substantial Delays; or moderatedissatisfaction

!!! Critical Problem | Users gave up; substantial dissatisfaction; or minor financial damage

✓ Participants found the app easy, consistent, and well-integrated

According to the SUS, both participants are satisfied with the overall flow.

P5 - "It seems that I purchase items in bulk, and then... they take portions from that, and give me the items, the amount that I ordered."

P6 - "I'm satisfied with the overall process."

Both participants responded "strongly" positively to the following post-questionnaire items:

I found the system unnecessarily complex

I found the various functions of this system were well integrated

I thought there was too much inconsistency in this system

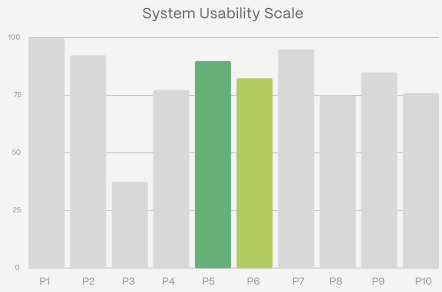
I would imagine that most people would learn to use this system very quickly

I found this system cumbersome to use

I felt very confident using the system

How easy was the app to use?

The answers indicate that they found the app easy to use, consistent, and well-integrated.



Findings

✓ The interaction flow is fluent and efficient

Both participants express they think the interaction flow is overall fluent and efficient.

P5 – "Yeah I think it went pretty smooth."

Both participants didn't encounter major delay in completing the task. Participant 5 spent 12.7 seconds on each step on average. While being a non-native English speaker who might spend more time in reading, participant 6 spent 20 seconds on each step on average.

Step	Description	P5 Duration (approx.)	P6 Duration (approx.)
1	Adds coffee	12 s	30 s
2	Adds blueberries	16 s	28 s
3	Adds mangoes	11 s	13 s
4	Adds onions	5 s	28 s
5	Adds carrots	11 s	21 s
6	Adds snap peas	12 s	
7	Adds lettuce (extra item)	22 s	20 s
Average Time Spent Each Step		12.7 s	20 s

!! The "In Season" category causing confusion

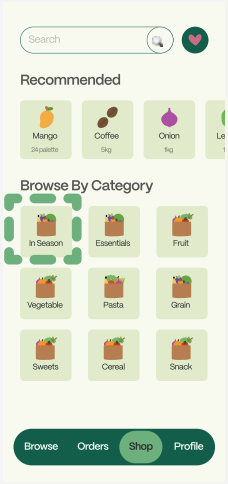
Participant 5 struggled to find snap peas while browsing the product list. Because they expected the product to fall under "Vegetables", but it is actually in "In Season".

P5 – "It's kinda hard to find what I needed. Like... sometimes it was easy, and sometimes it was hard — like, going for peas. I wanted to click into, vegetable or fruit, but I had to go into in-season."

Participant 6 also found a similar issue where she couldn't find carrots because its in "In Season" instead of "Vegetables"

P6 – "But I find maybe when I find the carrots I want to go to vegetable categories, but it's actually in in season."

Resolution: Move seasonal items to the Recommended section and displayed as In Season. Products listed under In Season will also appear in other relevant categories.

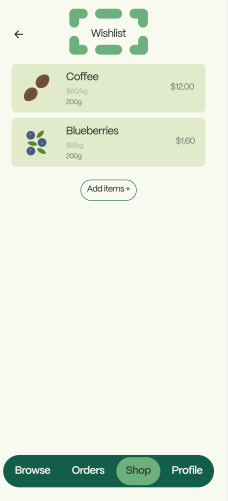


! Confusion with Wishlist page title

Participant 5 raised concern towards misunderstanding the actual function of the "Wishlist", due to they assumed the word "wishlist" is often used to describe something that people don't want to buy immediately, such as subscribing to the notification for price changes. They suggest Cart might be a better word for this function.

P5 – "It's kinda hard to find what I needed. Sometimes it was easy, and sometimes it was hard, like, going for peas. I was like, I wanted to click into, like, vegetable or fruit. But I had to go into in-season."

Resolution: Change the title *Wishlist* into *Cart*



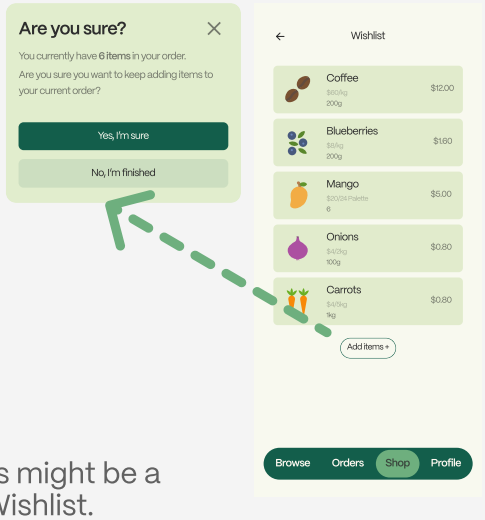
Findings

!!! Feel interrupted by the reaching items limit prompt

Participant 5 was confused when the pop up of confirmation when keep adding items when reaching 6 items in the Wishlist. They felt interrupted during the shopping process and felt that the limitation of 6 items is too low especially for larger families.

P5 – "Overt 6 items, what is that? You currently have 6 items in your order. You sure you want to keep adding items to your current order? Yes.....I'm not sure why that's there."

P5 – "I feel like... 6 items might be too small. Like, if someone... if someone is using this, especially to buy a bulk products, then they're probably gonna buy a lot more, right? Like, if you're gonna do your weekly shopping, it's gonna be a lot more than six items."



Resolution: They also suggested using weight instead of items might be a better way to measure the actual quantity of the food in the Wishlist.

P5 – "So I think that's probably a good idea, but you might need to calibrate how many items it is a bit more. Maybe you can do it depending on how many items are actually in the cart, like in terms of weight as well. Since they're getting 200 grams of coffee and a kilo of carrots and so on, you could take that into account to gauge how big the overall order size would be."

!!! Need guidance to understand the mechanic of Wishlist

Participant 6 showed confusion when they answer the questions after the task. The interviewer explained how the orders are made through matching the users according to the items in their Wishlist.

P6 – "I think it's good. It will ask me whether I actually need a certain product to make sure I needs it. But I'm not sure what it actually means"
(She is unsure what the Wishlist does and why the app asks if an item is needed.)

Resolution: Develop a more comprehensive onboarding screen to help new users understand the matching mechanic.

! Hard to distinguish between different categories due to similar icons

Participant 6 reported that category icons looked too similar, making it hard to distinguish sections.

P6 – "Maybe the category icon, they look a bit similar. I can't find the different way by just look at it. Like I need to look at the titles underneath to check."

Resolution: Use a representative product icon instead of a generic shopping bag with the items within the category.

References

Batchelor, P. (1969). The Origin of the Garden City Concept of Urban Form. Journal of the Society of Architectural Historians, 28(3), 184–200. https://doi.org/10.2307/988557

Egli, V., Oliver, M., & Tautolo, E.-S. (2016). The development of a model of community garden benefits to wellbeing. Preventive Medicine Reports, 3, 348–352. https://doi.org/10.1016/j.pmedr.2016.04.005

Kato, Y., & Boules, C. (2024). Pandemic gardening: Variant adaptations to COVID-19 disruptions by community gardens, school gardens, and urban farms. Journal of Urban Affairs, 46(7), 1308–1328. https://doi.org/10.1080/07352166.2022.2110887

Laubheimer, P. (2018, February 11). Beyond the NPS: Measuring perceived usability with the SUS, NASA-TLX, and the single ease question after tasks and usability tests. Nielsen Norman Group. https://www.nngroup.com/articles/measuring-perceived-usability/ Nielsen Norman Group

Norman, D. A. (2002). The design of everyday things. Nielsen Norman Group. https://www.nngroup.com/books/the-design-of-everyday-things/ Nielsen Norman Group

Statement of AI use

I used Chat GPT to assist with expression and as a thesaurus for writing Usability Rationale and Design Precedent.

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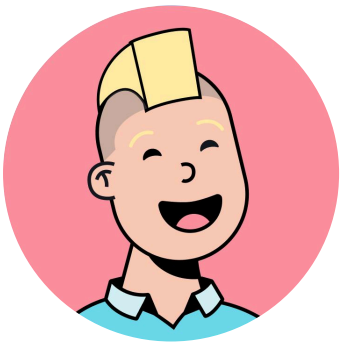


Jack Smith

Bio

- 📅 28 years old
- 🏠 Lives with his girlfriend in Brisbane CBD
- ⭐ Dual-income household with a busy schedule
- 💼 Aged care support worker
- 🐶 No children or pets

Device Proficiency

IPhone

IPad

Interests and Values

Efficiency

As a support worker, Jack manages a range of clients across Brisbane's suburbs. Balancing multiple clients means his days are packed with travel, errands, and household responsibilities of his own. To keep everything running smoothly, he likes to explore tools and systems that save time and reduce repetitive tasks.

Working with Technology

Jack is curious and open-minded about technology that can make caregiving more effective. He's not afraid to experiment with new tools or methods if it means improving outcomes for his clients or simplifying his workload.

Caregiving

Jack's motivation ultimately comes from a genuine desire to help others live comfortably and independently. He values the sense of connection built through consistent, meaningful interactions with his clients. Beyond simply delivering groceries, he checks in, listens, and tailors his help to each person's needs.

Money

Jack and his girlfriend are currently saving to buy their first home so they're careful about how they spend. They plan their weekly expenses closely and look for ways to make their money go further without having to sacrifice too much of their time or life quality.

Goals

Make the repetitive parts of his job as efficient as possible to save time and focus more on providing meaningful interactions with his clients.

Jack always looks for ways to reduce unnecessary efforts and expenses to make smart, practical choices in both his personal and professional life.

Task Scenario

Jack is an aged care support worker based in Queensland who regularly assists elderly clients like Jim, a retiree with limited mobility living independently.

Many of Jack's clients face both physical and financial challenges when managing household tasks such as grocery shopping. For example, Jim struggles to carry groceries, travel long distances, and accurately estimate how much food he needs each week. To avoid running out, he often buys in bulk when Jack is there to help, but this frequently results in wasted food, causing financial strain and frustration. At the same time, Jim feels anxious about purchasing too little, as additional shopping trips are difficult and time-consuming. Jack has also noticed that, because many older clients have simple tastes, they often request the same items each week. This means he frequently ends up buying multiples of the same products, which could be cheaper if purchased in bulk.

Jack's goal is to help his clients reduce food waste, save money, and ensure they always have enough groceries without overbuying. He also wants to make his own support visits more efficient by simplifying the grocery process and reducing the physical and logistical burden of managing multiple clients' needs.

To address these challenges, Jack introduces his clients to ShareCart, an app he already uses personally to buy staple goods for his two people household. While he normally participates in public shared orders, he leverages ShareCart's private order feature to manage his clients' groceries in a controlled and transparent way.

Each week, Jack collects a list of essential groceries and approximate quantities from each client. He then combines these into a single private group order, placing the bulk purchase efficiently. During his visits, Jack divides the groceries into the appropriate portions for each client and provides receipts to ensure transparency.

This system allows Jack to streamline repetitive and time-consuming tasks such as carrying, sorting, and repacking groceries, while also giving his clients confidence that their needs are met fairly. By combining efficiency with an organised process, Jack can support his clients effectively while maintaining his own schedule and energy.

Splitting Gifts

Origins

Splitting gifts is a common practice for special occasions like birthdays, where friends and family members contribute together to purchase something meaningful that an individual might not be able to afford alone. This system benefits both the giver and the receiver, givers spend less individually while collectively offering a more valuable gift, and the receiver gains something more meaningful and desirable. In order for splitting gifts to be successful, coordination and participation from everyone involved is crucial as someone must take responsibility for organising contributions, collecting payments, and ensuring everything runs smoothly.

Variants

Digital money pooling platforms like PayPal Pool, GoFundMe, or Splitwise are digital adaptations that enable groups to collectively contribute funds toward a shared goal or cause. Typically, the host sets a funding target and shares a link for others to contribute. Once the target is met or when the host decides to close the pool, the collection ends. This makes the process more efficient as it allows the process of splitting gifts to be managed collectively.

Evidence of Success

Practical success can be observed as offices, friend groups and families consistently rely on pooling for significant life events. Its adaptations into digital platforms further reinforces the relevance of this social practice.

Key Design to be applied to our design

Gift splitting works best when it is simple, transparent and goal-oriented, making it easy for everyone to see the target, track contributions, and trust where the money is going. Similarly, developing a system that can successfully navigate the grocery pooling process with the same clarity and trust would make ShareCart both reliable and easy to adopt.

Usability Rationale

Chosen Principle Consistency & Standard (Nielsen, 1994)

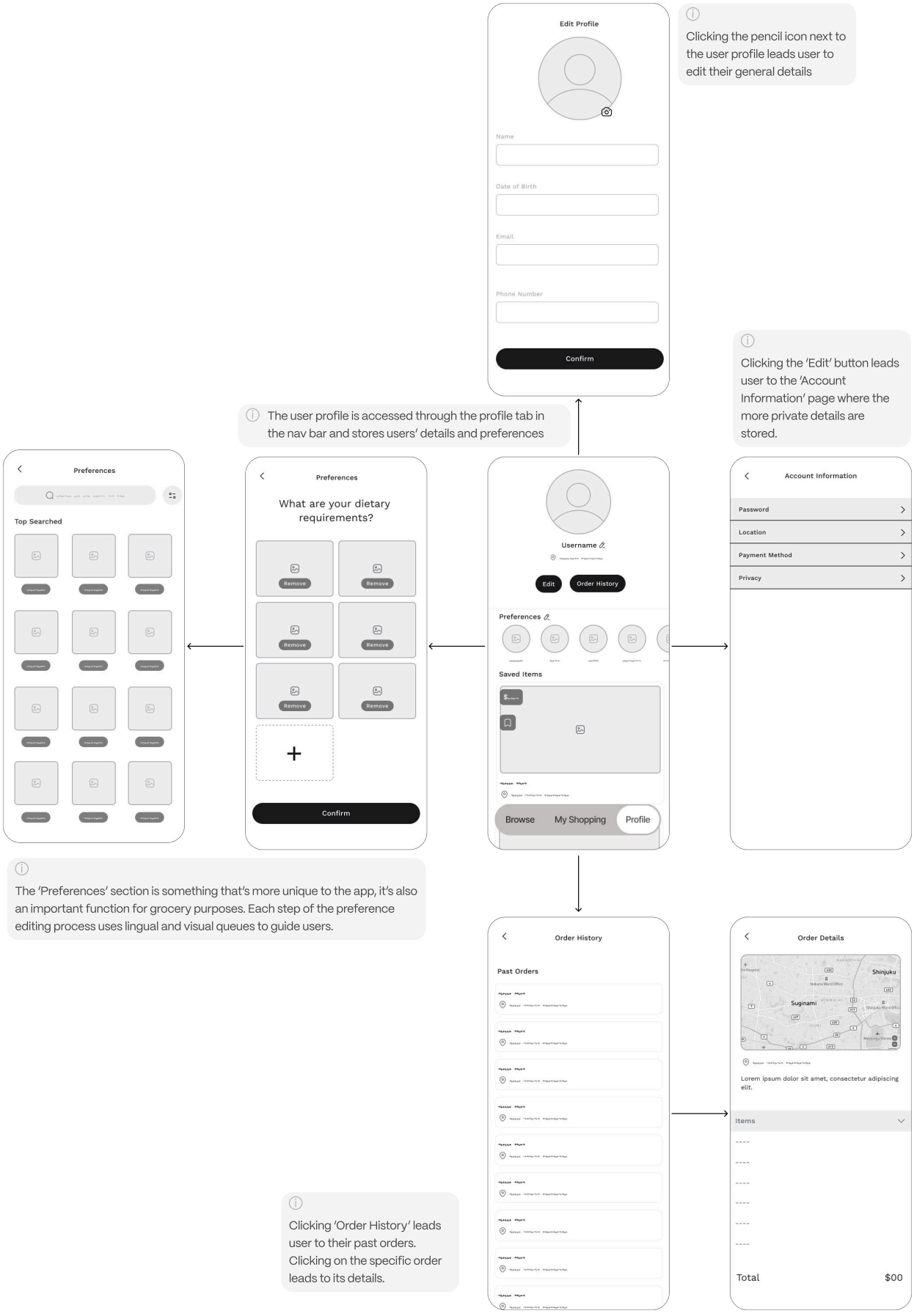
Consistency and standards emphasise the importance of designing interfaces that align with familiar patterns and user expectations. Within ShareCart, this principle is applied to the user profile page and its related actions, ensuring that navigation, visual hierarchy, and interaction patterns mirror those commonly found in similar grocery ordering or delivery applications. By aligning with established conventions such as clear profile navigation, accessible order history, editable personal information, and recognisable icons ShareCart reduces the learning curve for first-time users.

This is particularly important for ShareCart's target audience, which includes users of varying digital literacy levels such as elderly clients or support workers managing multiple profiles. When design elements behave as users expect, they can focus on their goals (e.g., managing group orders or checking payment status) rather than on figuring out how to use the system. This predictability helps make the app feel more trustworthy and encouraging continued use.

Additionally, consistency between pages such as shared button placement, typography, and colour use helps reinforce recognition over recall. Once users learn an interaction pattern (e.g., how to confirm participation in a group order), they can easily transfer that knowledge to other sections of the app, developing familiarity with each use. This adherence to industry standards not only improves usability but also supports broader adoption by making ShareCart approachable, intuitive, and efficient across different user types.

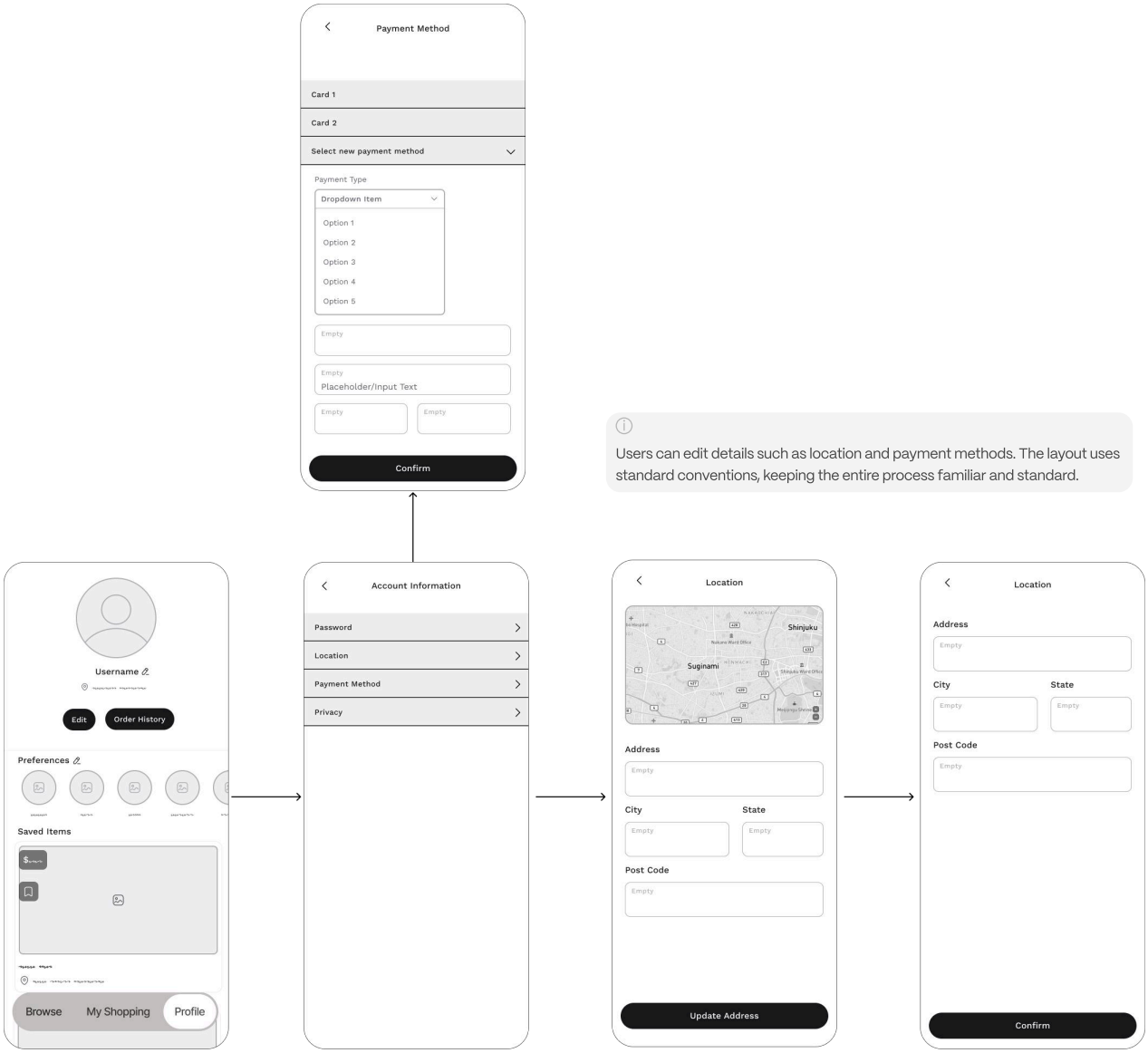
Interactive Sequence: Edit User Profile

1st Iteration



Interactive Sequence: Edit User Profile

1st Iteration



Participants

Participant 3 (P3) is a 21 years old office worker who currently lives with their family. They formerly participated in both the initial and prototype interviews, at which point they were living alone in a shared apartment with one roommate. They now buy bulk more often due an increase in household heads. Cost and convenience are still the main motivation factors in their grocery shopping habits. P3 is familiar with the problem domain and concept of ShareCart.

Participant 7 (P7) is a 22 years old student who currently lives alone in an apartment complex. As a small household, they rarely buy in bulk and often pay supermarket shelf prices for their groceries. Their grocery shopping habits are motivated mostly by convenience as they often use delivery services like Uber Eats to save time going to the store. P7 is not familiar with the concept and problem domain of ShareCart, and has not engaged with the project at all prior to this interview.

Findings

Interactive Sequences Tested: Joining the App, Starting a Group Order based on your Wishlist

✓ Postive Findings | Works well. This approach is recommendable

! Minor Problem | Minor Dissatisfaction; noticeable delays; or superficial difficulties

!! Major Problem | Substantial Delays; or moderate dissatisfaction

!!! Critical Problem | Users gave up; substantial dissatisfaction; or minor financial damage

✓ Users enjoyed the overall aesthetic of the app

Both users responded positively to the Join Flow, especially with the mix of illustrations, colours and text. They felt that this approach introduced ShareCart in an approachable and friendly way.

P3 – "I like the animations. It's fun. It kind of introduces you very nicely into what the app does."

P7 – "From reading the text and looking at the illustrations, I can tell that it's a grocery shopping app."

P7 – "I feel like the illustrations makes [getting started with the app] less intimidating."

✓ The concept of ShareCart was well received by users

Despite not being passionate about food waste, both P3 and P7 still responded positively to the concept of the app and thought that it could be a convenient way for them to get cheaper grocery for less.

P3– "If you think about it, it's kind of ridiculous that I have to pay more just because I can't, like, finish 20 rolls of bread before they go bad."

P7 – "I like the idea. I like that you can get it delivered as well. That would save a lot of time when I'm busy. Yeah, I'd probably try it out once."

✓ Users find the interaction flows to be intuitive and straightforward

Both users were able to complete tasks quickly and within three seconds of being read the instructions. They said that the tasks felt straightforward and similar to interactions they have encountered in other apps.

P3– "I mean it's pretty straight forward. I just click here."

P7 – "It's very clear what to do."

Findings

✓ Users easily learned what to expect after the first use

After the first scenario, subsequent tasks involving the checking of orders and order status were executed quickly by both users. They indicated that once they know what to expect, the order management system is quite easy to navigate.

P3 – "It's quite straightforward. Very familiar to me."

P7 – "After doing that task. I think now it comes naturally."

! Users thought that details were lacking in some places

Both users thought that some aspects of the app could have been better explained or elaborated upon.

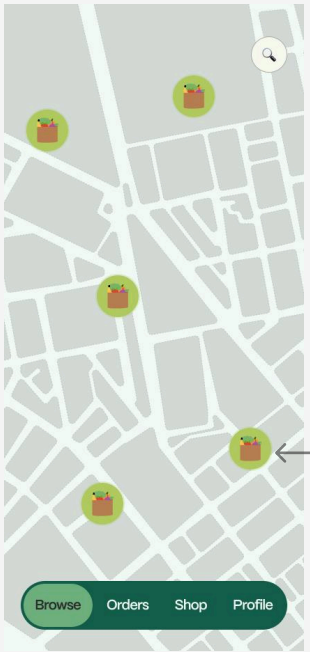
The intention behind the landing page was not immediately clear to both users, leading to different speculations of what the shopping bag icon is meant to represent.

P3 – "You're not really telling me what it is. Like, I guess I can click around and see. But it's not immediately obvious to me."

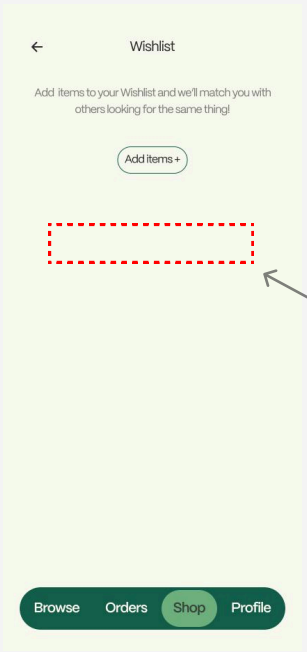
P7 – " I think some annotations would help. [Q: Was it not immediately clear to you what the icons are then?] No, not really."

P3, who tried to place an order out of interest, also pointed out that the ordering system require further clarifications.

P3 – "I get what you guys are going for. But at the same time still it's kind of unnatural for me to not see a buy option, you know what I mean? I think as a first timer, I would like to be walked through the entire thing step by step. Yeah."



The shopping cart icons does not immediately read as 'existing group orders' for new users. P3 was not sure what it is, and P7 thought it was their purchased orders.



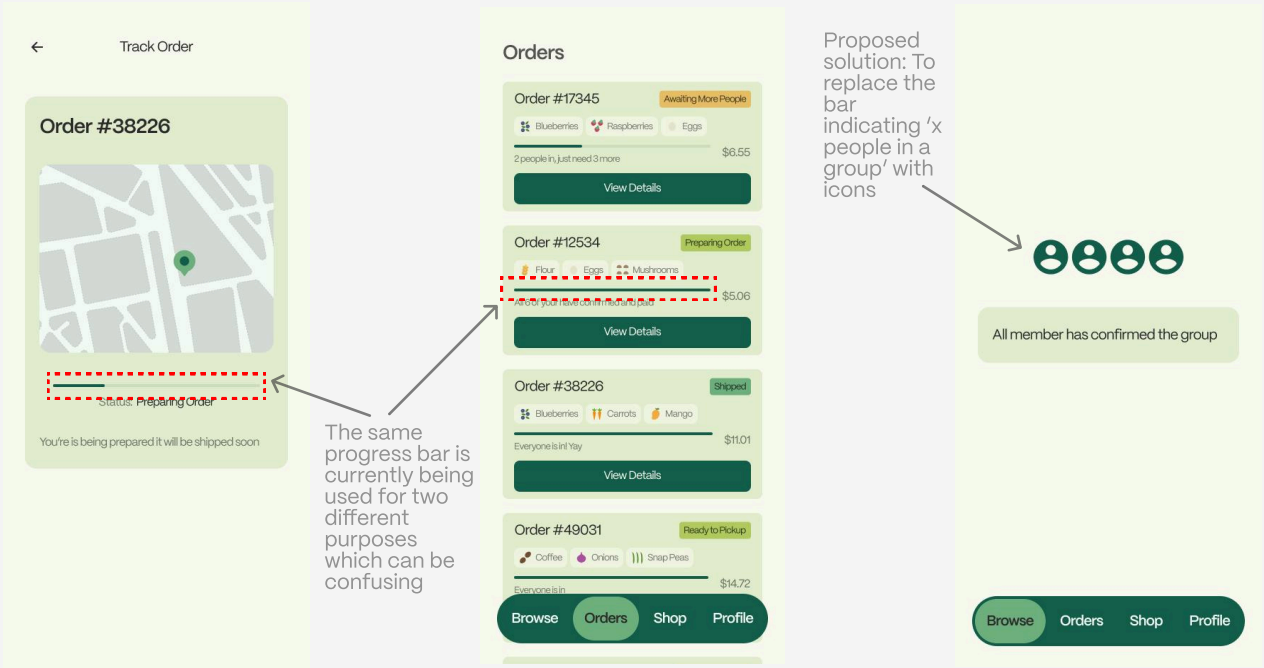
The lack of a 'check out' or 'confirm' order button felt unnatural and made users confused on what to make of the wishlist.

P3 suggests that it an affirmative action may be lacking from the interface sequence

Findings

! Users felt that some usage of icons and graphics were inconsistent

While P7's response to the use of graphic elements was positive overall, P3 thought that the progress bar was used too much across the interfaces and needs to be limited to one function only.



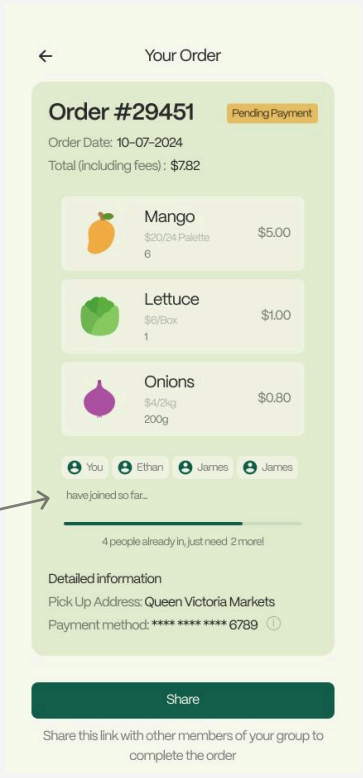
!! Users had trouble accessing information due to small UI elements

Both users encountered some accessibility issues regarding the size of the UI elements. P7, who has long nails, evidently struggled to click on some of the buttons due to their small sizes. P3 struggled to read the screen text when going through the task scenarios.

P3 – "The text, by the way, is quite small. It's really hard to read. Like you know, my phone is already really big and I can't read this."

P3 suggested enlarging body texts improve the legibility of the design.

This is important as poor accessibility may translate to real life user frustrations that drive them away from using the app.



Findings

!! Users were confused about app logistics despite understanding navigation

While both users were able to quickly pick up the navigations of the app, they also had a lot of questions regarding how ShareCart actually works.

P3 – "So how does the wishlist actually work? Where am I actually making a purchase? I don't really get it."

P7 – "So can we start our own orders or do we have to always join in with others?" What if I want to buy something but it exceeds my budget?"

Although some of the confusion can be attributed to participants only being shown a prototype version of the app, these responses also highlight the need to further clarify the concept and logistics of ShareCart for the average user.

However, across the larger sample size, most participants demonstrated a good understanding of how ShareCart works. It is also possible that the findings for P3 and P7 were influenced by the fact that they were tested while checking orders that had already been made, rather than experiencing the ordering process.

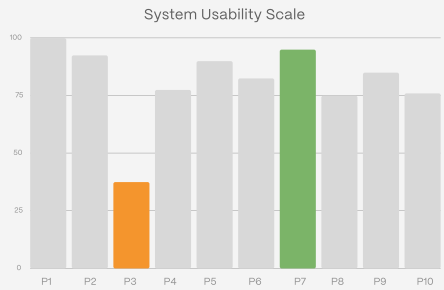
! Logistical barriers may challenge future development

While users appreciated ShareCart's concept, difficulties with understanding the logistics and flow of the app may sometimes reduced their confidence in using it.

These challenges could limit the app's development if not addressed, highlighting the importance of clearer guidance and simplified processes.

P3 – "It is very different from my expectations of the app by reading the description. It is more complex and confusing the more I use it."

In the post questionnaire, P3 and P7 gave the app polarising scores. P3 scored 37.5 and P7 scored 95 on the System Usability Scale (SUS).



P3's score stands out as an outlier among the otherwise positive responses. While it's possible that they were simply more critical than others, their concerns about logistical issues and repeated questions highlight potential limitations that may need to be addressed in future development.

P3 – "I still love the concept. I think it has a lot of potential, and it's something that hits close to home for me as well. But maybe it's being overworked a little bit. Or underworked, I don't know. A lot of questions remain unsolved [for you guys]."

P7 – "I like it. I think the idea is really cool."

Overall, the concept was well received, with most users expressing genuine interest in ShareCart's idea. Even P3 who gave the prototype a low rating still responded positively to the concept itself, suggesting strong potential. While the system shows promise, its logistics and flow still need refinement, interview findings also suggest that many logistical questions will need to be addressed in further concept development.

References

Nielsen, J. (1994) 10 Usability Heuristics for User Interface Design, Nielsen Norman Group. Available at: https://www.nngroup.com/articles/ten-usability-heuristics/ (Accessed: October 24, 2025).

Kagan, J. (no date) Gift splitting: Definition, example, and tax rules, Investopedia. Available at: https://www.investopedia.com/terms/g/gift-splitting.asp (Accessed: 24 October 2025).

Kim, D. et al. (2024) The radical economics of lending your friends money, VICE. Available at: https://www.vice.com/en/article/the-radical-economics-of-lending-your-friends-money/ (Accessed: 24 October 2025).

Out of the Shadow, these money-pooling apps are thriving (2021) HT Tech. Available at: https://tech.hindustantimes.com/tech/news/out-of-the-shadow-these-money-pooling-apps-thrive-71636309657063.html (Accessed: 24 October 2025).

Statement of AI use

I used Chat GPT to assist with expression and as a thesaurus for writing Usability Rationale, Design Precedent and Data Collection.

SYNA MEHTA

Noah Roklov

Bio

- 40 years old
- Lives with wife in an apartment in Caulfield
- Newly married, learning to manage the house together
- Keeps a strictly kosher household

Device Proficiency

IPhone

IPad

Interests and Values

Money

Noah is conscious of grocery costs, especially since kosher-certified products are often more expensive. He values affordability but doesn't want to compromise on quality or certification. He's learned that buying in bulk saves money in the long term. But also, it can lead to food waste if not managed carefully. He's motivated by finding smarter ways to shop that balance savings and his household's religious needs.

Tradition and Community

Keeping a kosher home is central to Noah's identity and values. He sees it not only as a dietary choice but as a way of maintaining cultural and spiritual connection. However, access to kosher goods can be limited, so he's open to digital solutions that make it easier to source what he needs.

Convenience

With a busy work life and household routine, Noah appreciates efficiency. He prefers digital tools that simplify meal planning. He want to be able to automate recurring orders, and help him find kosher products nearby. He doesn't enjoy spending time comparing stores or brands. Instead, he wants a seamless system that fits naturally into his weekly routine.

Technology

Noah isn't tech-obsessed, but he's comfortable using apps and digital platforms if they make his life easier. He prefers simple, intuitive interfaces that help him save time and money without unnecessary complexity.

Goals

Buy kosher-certified groceries affordably without overbuying or waste to maintain a kosher kitchen that's organised, sustainable, and easy to manage.

Find systems that connect kosher households for shared purchasing and cost-saving opportunities.

Wants an easier way to manage joint orders, payments, and deliveries in one place.

Task Scenario

Noah and his wife, Joanne, recently moved into their first home together. They're still adjusting to cooking and meal planning together. They are working to find their rhythm in managing expenses and keeping a kosher kitchen. Each Friday, they prepare for Shabbat dinner. It is a tradition they both value but find increasingly costly, especially when buying kosher-certified ingredients in small quantities.

One evening, Noah checks their pantry and realises they're low on challah flour, olive oil, and kosher-certified chicken. The local kosher store has everything they need, but in larger quantities. Noah hesitates as he doesn't want to overbuy and waste food. However, buying smaller portions elsewhere nearly doubles the price per unit.

Later that night, while leaving the temple, one of Noah's friends introduced him to ShareCart. She showed him the kosher-certified pantry items available for group order and purchases some items she needed right there. Interested; he downloads the app immediately. During setup, he sees the feature he was looking for that allows users to join group orders specifically filtered by dietary needs, including kosher products.

Noah searches for olive oil and discovers a nearby group order for kosher-certified brands from a small store. The group needed only one more member to complete the order. He adds his quantity and joins the order, completing it. He then selects the delivery option, instead of opting to pick it up. The cost he saved on purchasing the order more than made up for the delivery cost.

Immediately, ShareCart notifies him that the order has been processed and the payment he had authorised had gone through. The order would be sent for delivery first thing the next morning. He shares the confirmation with Joanne, so she can track it as she would be home from work at the shown delivery time. Once the order had been delivered, she confirmed the delivery on the app so Noah could know that the order was successfully completed too.

That evening, as they prepare for Shabbat, Noah feels relieved. They have saved money, avoided overbuying, and supported a system that aligns with their kosher lifestyle. Over time, Noah and Joanne begin using ShareCart regularly, particularly for kosher staples like flour, wine, and olive oil. The app helps them maintain their traditions affordably and sustainably, without compromising their standards or creating excess food waste.

Pooling Savings

Origins

Pooling savings emerged as a grassroots financial strategy within communities that lacked access to formal banking systems. By contributing small amounts regularly into a collective fund, participants could access a larger lump sum in rotation. This system was built on trust, accountability, and social connection. This provided financial security, mutual aid, and a sense of shared empowerment. Over time, it evolved into both informal and semi-formal systems that continue to support economic resilience across diverse cultures.

Variants

Pooling savings takes many cultural forms around the world. It is often grouped under ROSCA (Rotating Savings and Credit Associations) as a general global model

- *Tanda* in Latin America
- Chit Funds or *Bhishi* in India
- *Susu* in West Africa and the Caribbean

Each variant reflects local traditions and social structures. These range from small neighbourhood circles to workplace-based groups. However, they all share the same core value of collective trust and rotational access to savings.

Evidence of Success

Research and case studies show that pooling savings significantly improves financial inclusion, especially among low- and middle-income communities. Participants benefit from consistent saving habits and reduced dependence on high-interest loans. They can manage irregular income, access emergency funds, and invest in major life events. Beyond the financial gains, these systems create a safety net where formal credit systems are limited or inaccessible.

Key Design to be applied to our design

Pooling savings relies on rotation, trust, transparency, and shared commitment. Its design is inherently social. It works to blend collective discipline with personal benefit. By pooling resources, individuals gain access to larger sums without needing collateral or credit checks. Modern adaptations integrate digital tools to manage contributions and enhance transparency. This splitting, pooling and dividing is the essence of our current design for ShareCart. It also maintains the community-driven essence that has sustained these systems for generations.

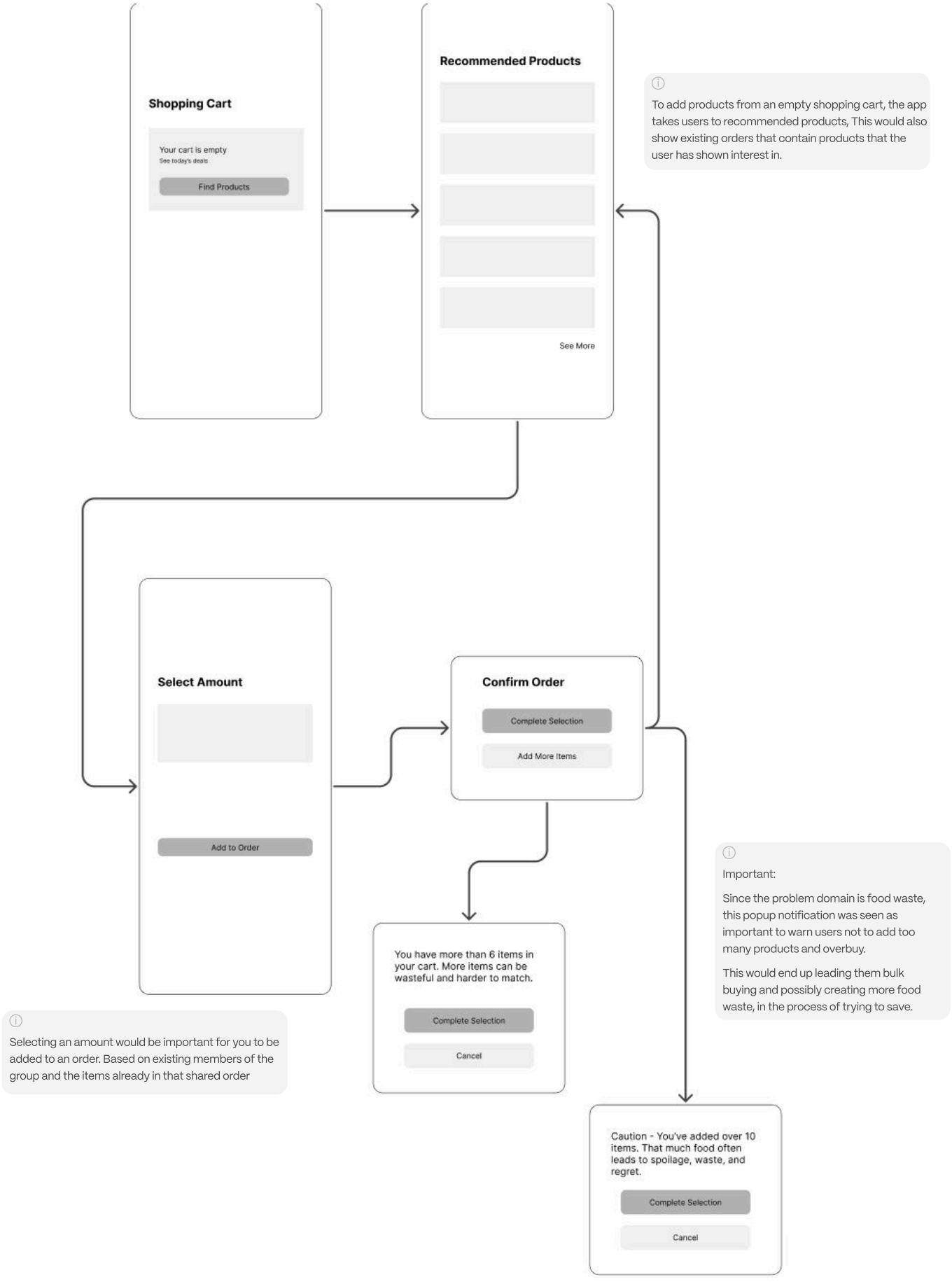
Usability Rationale

Chosen Principle User Control and Freedom

Allowing users to add products from their shopping cart or leave a group order aligns with Nielsen's (1994) usability heuristic of User Control and Freedom. This emphasises that users should be able to easily undo and redo actions or recover from unintended states. This principle recognises that people often make choices by exploration and may need straightforward ways to reverse decisions. This should be possible without frustration or negative consequences.

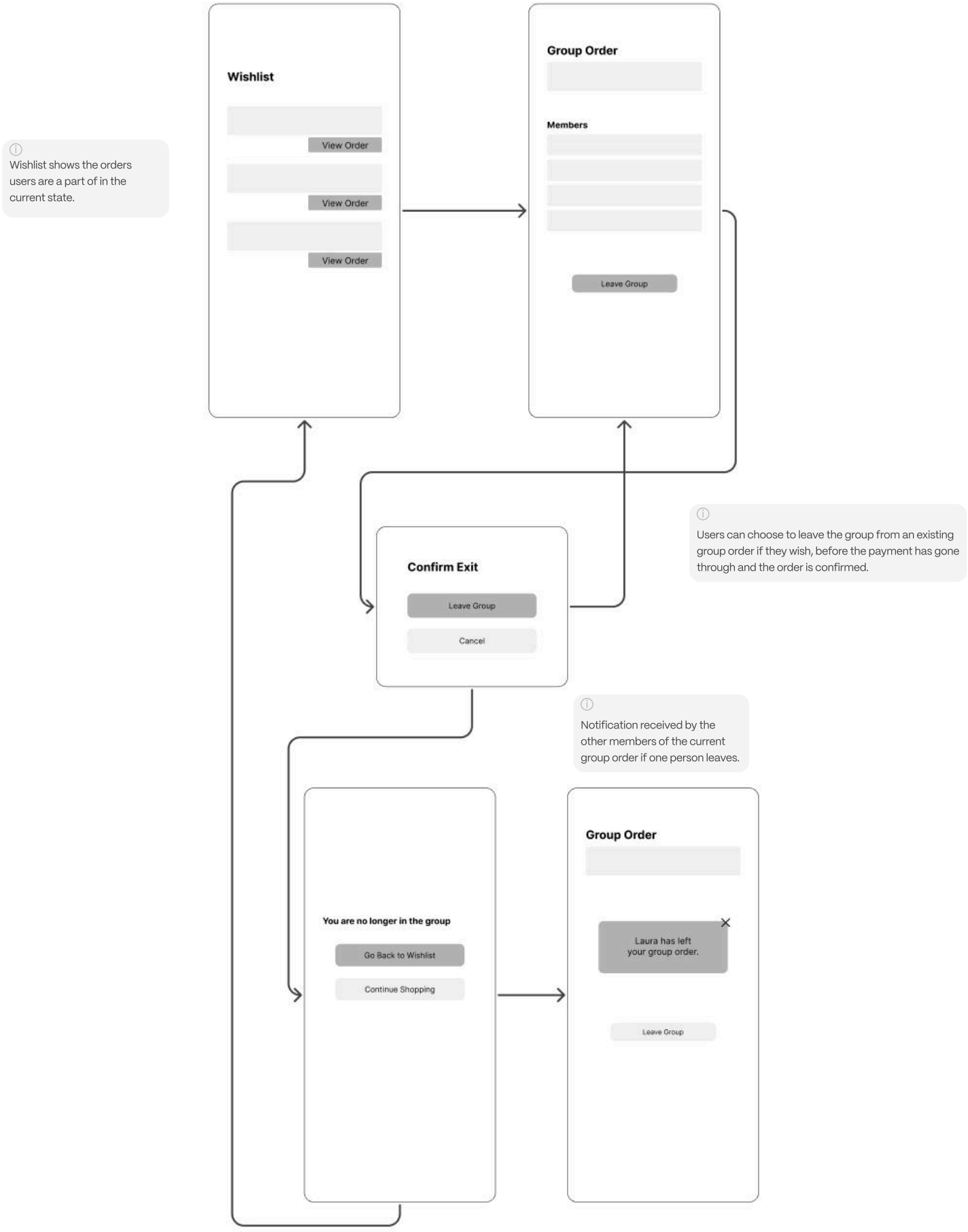
In ShareCart, users are enabled to manage their participation, such as freely adding items or exiting a group order. This ensures they maintain autonomy over their experience and are never "trapped" in a process. Providing these options enhances flexibility and trust, allowing users to interact confidently with the system. It also supports error recovery and gives a sense of control. As Nielsen (1994) notes, interfaces should "support freedom to leave unwanted states," and incorporating such mechanisms ensures that the app feels forgiving, intuitive, and user-centred in collaborative shopping contexts.

Interactive Sequence: Add Products to Cart from Cart 1st Iteration



Interactive Sequence: Leaving Group Orders

1st Iteration



Participants

Participant 2 (P2) is a student between 18 and 24 years old. They live with their family and shop infrequently. However, when they do, it's in smaller quantities for specific needs. As a university student, budget is their main concern and they are looking for ways to save on groceries for the family. They had participated in both initial and prototype interview, so they were familiar with the concept of the app.

Participant 10 (P10) is a data scientist over 30 years old. They live wth roommates and usually cook in bulk and mea l plan to last the week. As such, they usually buy in bulk, but do end up wasting a lot of the cooked food as they are motivated to use up all the ingredients they bought. This is because they feel it reduces costs. Cost saving is important to them, and so they were very intrigued with the concept of the app, though unfamiliar at the start of testing.

Findings

Interactive Sequences Tested: Joining an Existing Group Order

✓ Postive Findings | Works well. This approach is recommendable

! Minor Problem | Minor Dissatisfaction; noticeable delays; or superficial difficulties

!! Major Problem | Substantial Delays; or moderate dissatisfaction

!!! Critical Problem | Users gave up; substantial dissatisfaction; or minor financial damage

✓ The interaction flow and interface were intuitive and easy to understand.

Both users were able to easily navigate through the app to complete the tasks. There was little hesitation whole clicking the buttons and moving through the app, and they completed the entire flow within minutes.

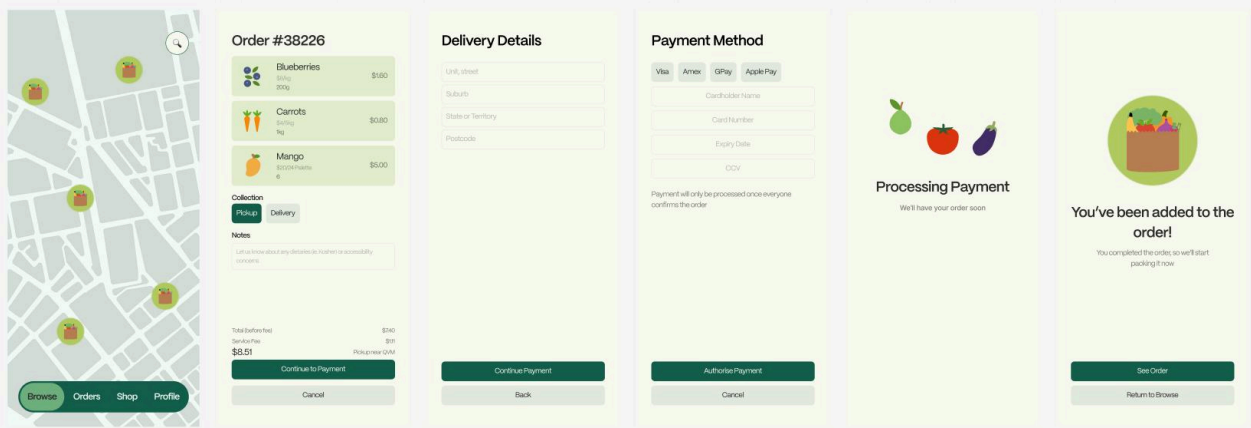
P2 – "It looks really good, it works really well, and overall feels very intuitive"

P2 – "The actual interaction of me using the app was so comfortable, it feels like a proper professional system I would use.

P10 – "Oh wow that was easy, yeah I think I'm done."

They were both satisfied that all the functions matched their mental models and both pointed out that everything was exactly where they expected it to be.

P2 – "Right I know I'm on the right page...ah yes, it opened up where I thought it would."



Findings

✓ Users liked the aesthetics and the simplicity

They like the visual interface of the app and said that the lack of excessive visuals an too much information on one page increased clarity and understanding. It made it possible to go through each of the functions easily.

P2 – "It looks really great"

P2 – "The little animations really add to it"

P10 – "The fact that the screen has only the information I need is great, makes it really really easy to work through."

✓ Users felt many features were well thought through and would be very useful

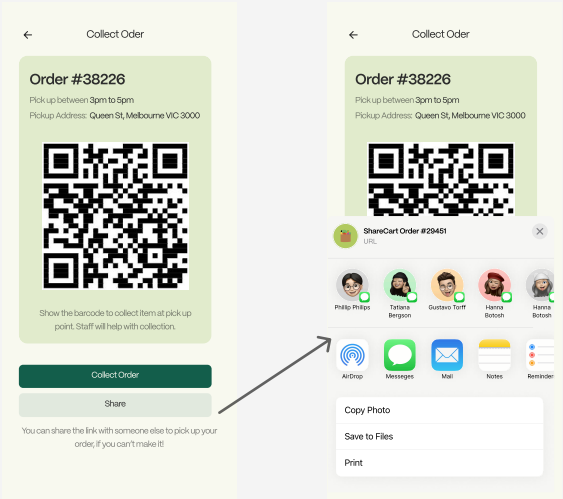
Both users were very interested in the availability of the share feature, and said it was a great addition when there was slight uncertainty in pickup times and order confirmation.

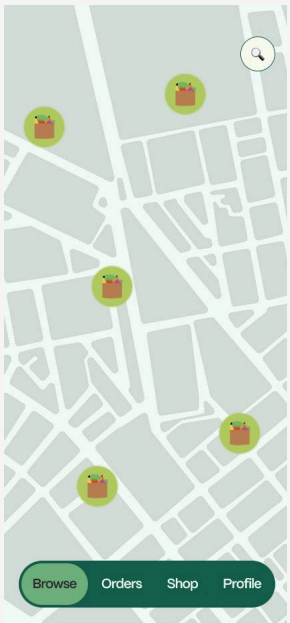
P2 – "Oh I didn't think about that, that's really smart, how would I be available to pick it up all the time...that's great."

P10 – "Oh share if I can't go, that's nice, I won't have to spend on delivery then"

They also really like the map on the home screen as they said the visual of them being able to see the area where the order was being generated was helpful

P2 – "The visual of the map is cute, I can sort of tell where my order is even before joining"





Findings

!! Wanted to be able to see specific deals and discounts

Users expressed that having clearer visibility of deals and discounts within the app would make the experience more engaging and provide stronger motivation to use ShareCart regularly for shared purchases.

This would be especially important if the supermarkets had their own discounts and offers.

P4 – "Oh what about specific discounts? Maybe I'd like to see them, oh especially if the store has some offers going on currently."

P10 – "I would want to see those actual bulk deals you were talking about saving from maybe"

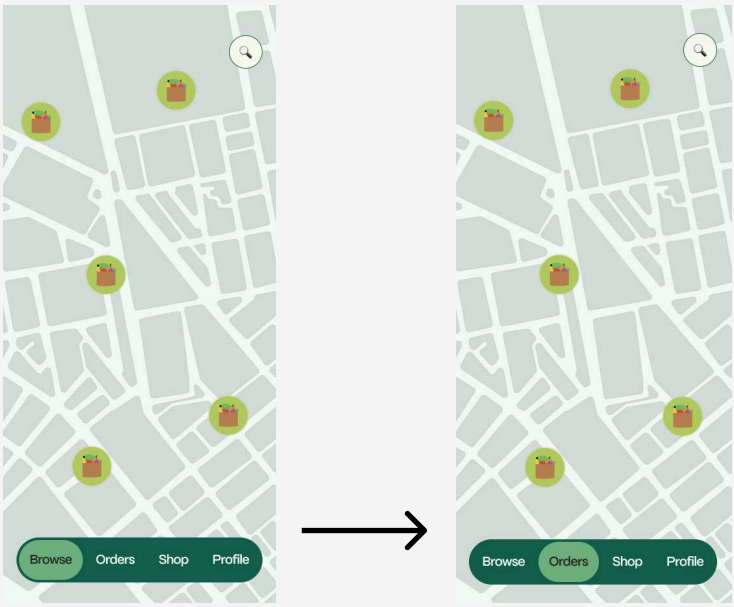
!! The navigation bar was a bit confusing

The motion and sliding of the highlight on the navigation bar made it feel like its moving and the wrong thing was selected.

P10 – "Oh oh the whole thing moved. Wait, am I on the right page....ah that was just the highlight, I though the pages flipped and I clicked it wrong."

This visual distraction disrupted focus and created uncertainty about which section was active, suggesting a need for more stable and consistent motion feedback to support clearer navigation and reduce cognitive load.

Resolution: The animation of the nav bar would be a simple slider highlight instead of the entire thing moving.



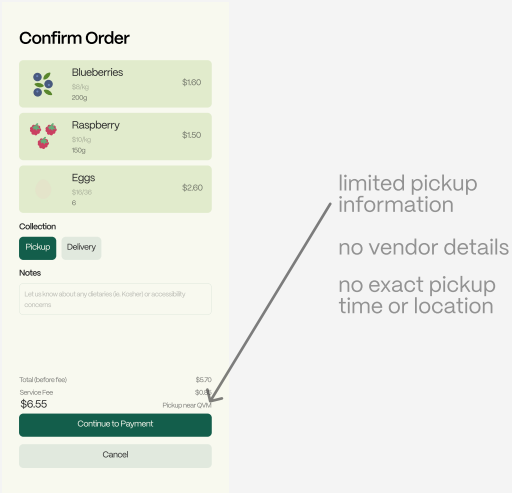
Findings

!!! Users wanted more information before confirming or joining an order.

Users wanted to know more information about the vendor and the exact pickup and delivery details for orders including time and location, before they confirmed an order. They felt uncomfortable and not confident enough to join the order based of off the existing information.

P2 – "Before I did the delivery, before I chose the delivery option, like it said $2.50, and there's a tracer, but I didn't know how much it was going to be...or how long I it was going to take before the purchase. "

P10 – "I'm still not sure when exactly I would get this? Can I go back and see how many people are left for the order to fill?"



P2 especially felt that vendor information was extremely important as they would not join an order at all without knowing where the food was coming from.

P4 – "It's great, but I would really need to know where it would be coming from. Like it would be great of before confirming, I could see what supermarket or grocer or anything...yeah just to know where it is from."

Resolution: Vendor details would be available on the order confirmation page

Resolution: A general estimated time of pickup should be given before confirming and/or more information should be given about when they will receive exact details (ie. "You will receive exact pickup and delivery details once everyone joins and order is confirmed). Alternatively we could allow for users to select from a set of pick up times when the order is confirmed.

References

Nielsen, J. (1994) 10 Usability Heuristics for User Interface Design, Nielsen Norman Group. Available at: https://www.nngroup.com/articles/ten-usability-heuristics/ (Accessed: October 24, 2025).

Statement of AI use

I used Chat GPT to assist with editing and refining for writing Usability Rationale and Design Precedent, and the Task Scenario