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Supermarket Sweep

Introduction

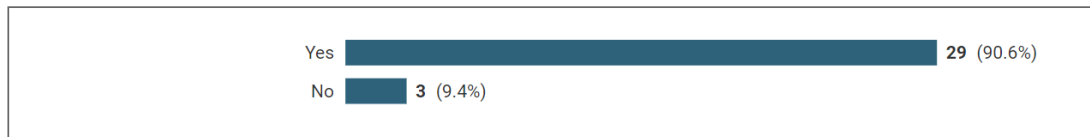
This report will discuss the research, design and evaluation of the app 'Supermarket Sweep' which is an app aimed for students, who are concerned about food waste and want to make a difference. The app works by showing a catalogue of food in local UK supermarkets, that have a reduced price and are about to go out of date. Users will then be able to save products to a shopping list and venture to the local supermarket to buy groceries and save money at the same time. The goal of 'Supermarket Sweep' is to reduce food waste from UK supermarkets and allow students to save money.

Research

Food waste is a major issue all over the world and in the UK alone, it is estimated that around 10.2 million tonnes of food and drink is thrown away annually, and households throws away food worth around £15bn each year (Petter, 2019).

In a questionnaire with 33 respondents, conducted by this team (figure 1), it was found that 90.6% of respondents thinks an app like Supermarket Sweep would be useful, however, only 28.1% were aware of other existing food waste apps. The apps, that most knew about were OLIO and Too Good To Go, so these apps were part of this teams' competitor analysis, to see how they have succeeded in this domain.

10 Do you think a food waste app would be useful?



11 Are you aware of any other food waste apps?

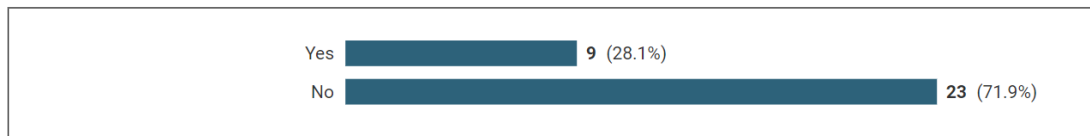


Figure 1: Stats on usefulness of our app and awareness of other food waste apps

Asking students how likely they were to use an app that helps reduce food waste, 56.3% answered 'very likely' or 'likely', with only 18.7% saying they would not use this app (figure 2), so there is a potential to fill a gap that students are looking for, with 59.4% of students, also showing an interest in buying food that is about to go out of date and at a reduced price.

11.b How likely are you to use an app that helps reduce the amount of food waste in the UK?

Export ▾

Display ▾

Jump ▾

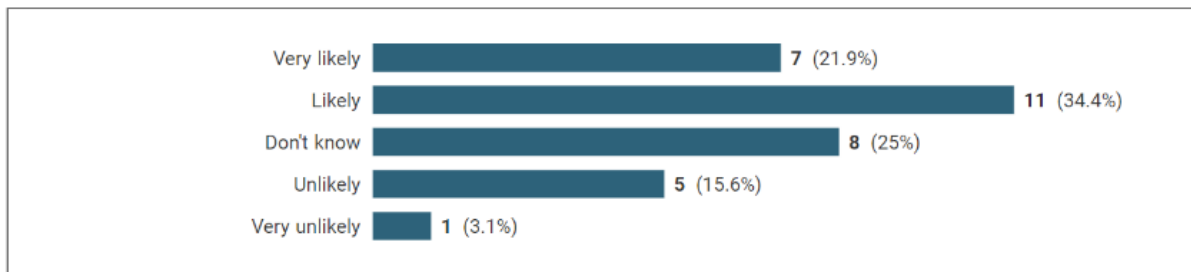


Figure 2: Stats on respondents' likeliness to use a food waste app

Competitor Analysis

Based on the questionnaire conducted by this team, OLIO and Too Good To Go was identified as direct competitors. Deliveroo and Uber Eats were also

identified as indirect competitors as they offer a delivery service for fast food.

Main findings

Upon analysing OLIO, their use of brand colours was evident throughout the whole user experience.

OLIO uses a combination approach for their onboarding. Starting with a self-select model asking users to select preferences, for example what type of food they will give away and if they are most likely to give away or pick up food.

OLIO also uses a features approach when the user has successfully signed up, to introduce the core features on the home screen, which helps users get comfortable with their app (Oragui, 2019).

Similar to OLIO, Too Good To Go and Deliveroo are also using green as their brand colour, however, they are not using a strong secondary colour to highlight important UI elements, but have chosen to stick to their brand colour for their call to action buttons.

OLIO and Too Good To Go also utilises a bottom navigation with the most important and relevant menu items, and a hamburger menu for the ones, users are not frequenting that often. Both apps also use character illustrations to make the storytelling aspect more powerful, furthermore, it adds a certain personality and liveliness to the design to separate the apps and make the experience more unique and memorable (Tubik Studio, 2018).

Key design requirements

1. Good use of brand colour or strong colours to highlight call to action buttons and other important UI elements
2. Onboarding to introduce the users to essential features.
3. Use of illustrations for storytelling and originality.
4. Intuitive menu and good use of hamburger menu.

Part of the OLIO Onboarding experience

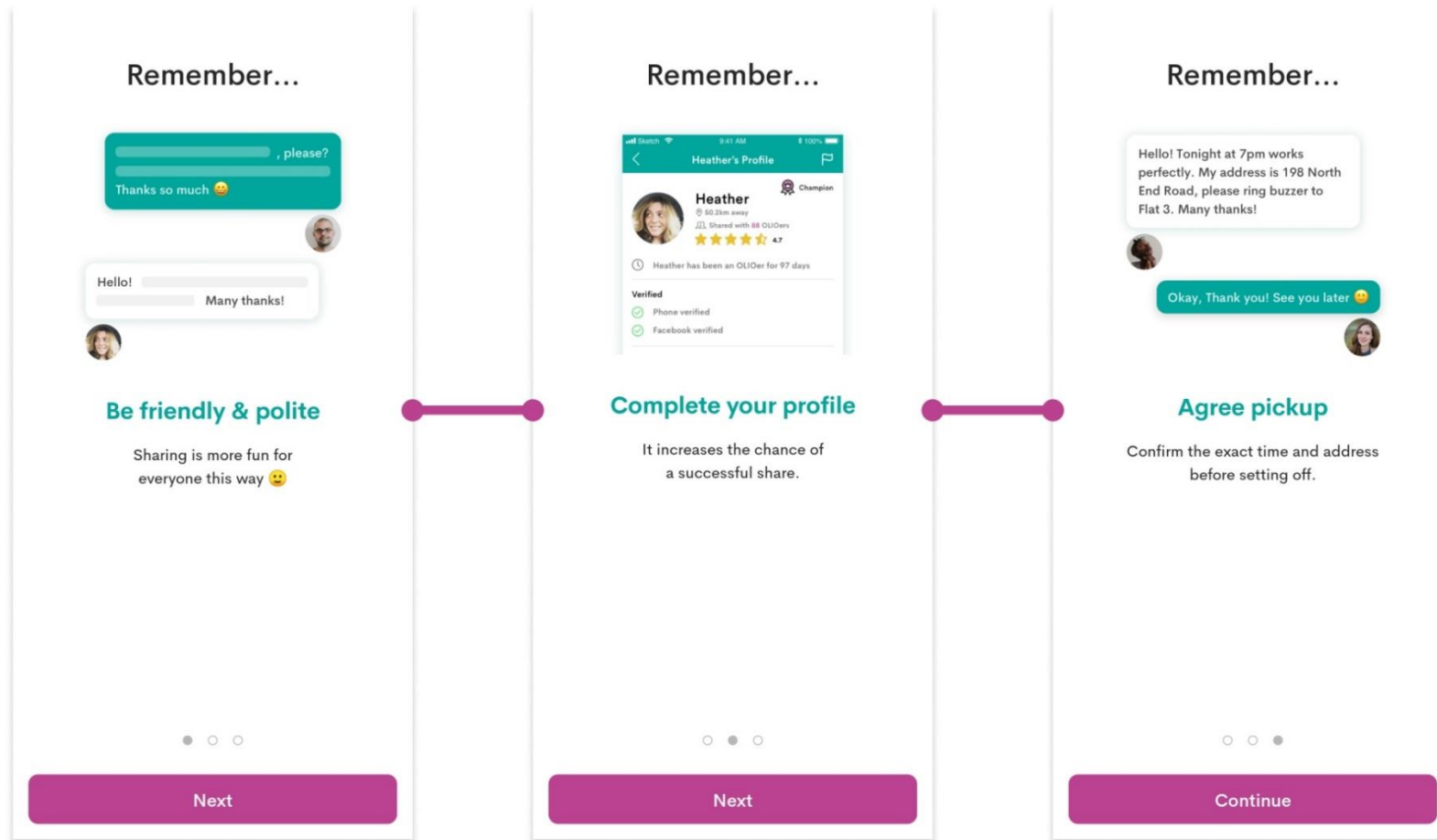


Figure 3: OLIO onboarding experience when first opening the app

Competitor name:

Olio

Describe the product / service:

A food waste prevention app that allows users to connect with other users and local retailers in their area (Olio, no date). To make an item available all you have to do is add a photo and description and then specify when and where the item will be available.

Content:

The ability to give away and in turn, pick up unwanted food and general household possessions in order to reduce waste.

Key features:

To access items you would browse available listings near you, see what takes your fancy and then arrange a time and a place to pick it up via private message.

Describe the brand:

Fun, Resourceful, Energetic, Positive, Passionate

Image of the competitor:



Any other observations: Olio is an independent company run by Tessa Clarke and Saasha Celestial-One (Olio, no date). One grew up on a farm, understanding the hardship of the process of getting food from the farm to the table, and the other from a poor family with the understanding that "one man's trash is another man's treasure". So, their message is core to the brands values.

Figure 4: Competitor analysis of OLIO

Competitor name:

Too Good To Go

Describe the product / service:

A website/app where people are able to get leftover food from restaurants and takeaways at cheaper prices, therefore being beneficial to the consumer whilst reducing food waste and having a positive environmental impact.

Content:

Focuses on environmental impact of food waste and how we can fight it by using the app, website recruits people to join them in their mission.

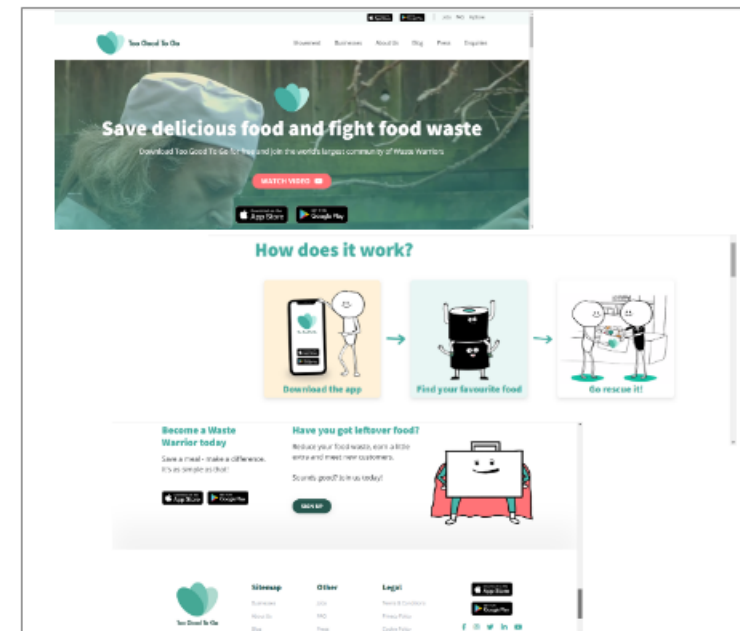
Key features:

You are able to become a 'Waste Warrior' and buy food from outlets, or retailers can use the service to get rid of their food waste.

Describe the brand:

Eco-friendly, Fun, Positive, Happy, Cheap, Efficient, Clever

Image of the competitor:



Any other observations:

Uses videos and cartoons, uses a colour scheme of blue, green and red, uses facts and statistics to show environmental issues.

Figure 5: Competitor analysis of Too Good To Go

Competitor name:

Deliveroo

Describe the product / service:

Deliveroo is an app/website where you can order takeaway food from restaurants, cafes, bars and shops and have it delivered to your door/location of your choice. The service operates in 200 countries including the UK.

Content:

App/website with the option to choose between restaurants/takeaways/fast food places all over the UK. They have a list/recommendations for different cuisines. They have multiple categories such as 'Top rated', 'Featured' or 'Offers'

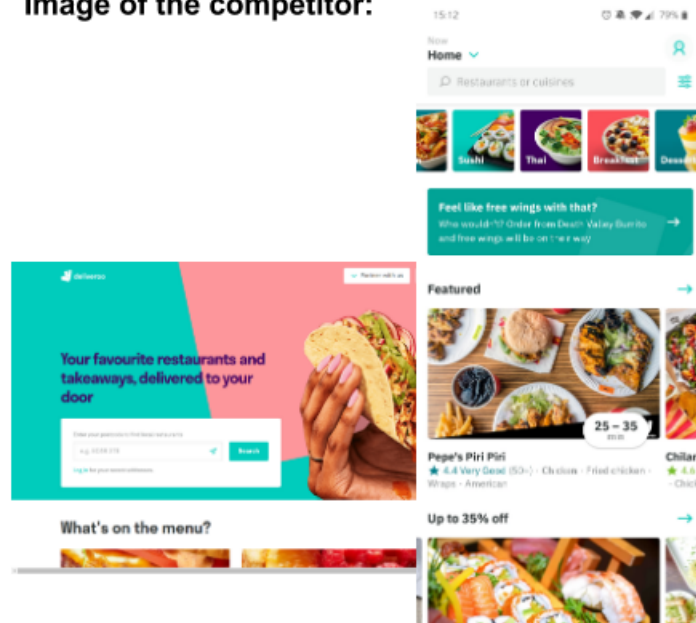
Key features:

Extensive menu of several different cuisines/types of food
Saves your favourite restaurants/takeaways.
Custom delivery times, live tracking of delivery

Describe the brand:

Bold, convenient and trustworthy.
They use their logo and brand colour throughout their designs resulting in a familiar experience when using their services

Image of the competitor:



Any other observations:

They have a premium subscription service, giving customers free delivery and extra discounts/offers

Figure 6: Competitor analysis of Deliveroo

Personas

After examining the results from the teams' questionnaire, the needs, triggers and goals were identified, and three personas were developed.

It could be concluded, bases on the teams' research (figure 7), that most students were concerned about food waste in the UK, however, from figure 1, it is evident that most students are also not aware of the existing apps to help reduce food waste.

4 Are you aware of food waste being an issue in the UK?

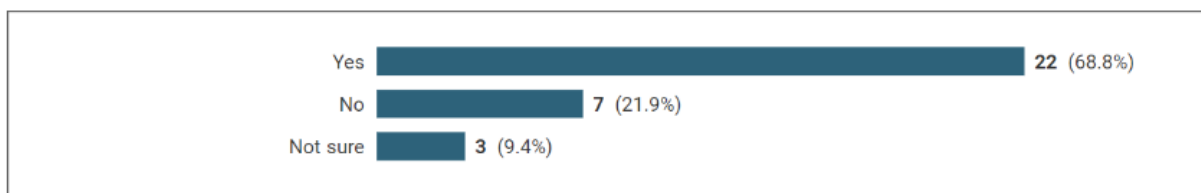


Figure 7: Statistics on awareness about food waste

12 What features would you like to see in an app based on food waste?

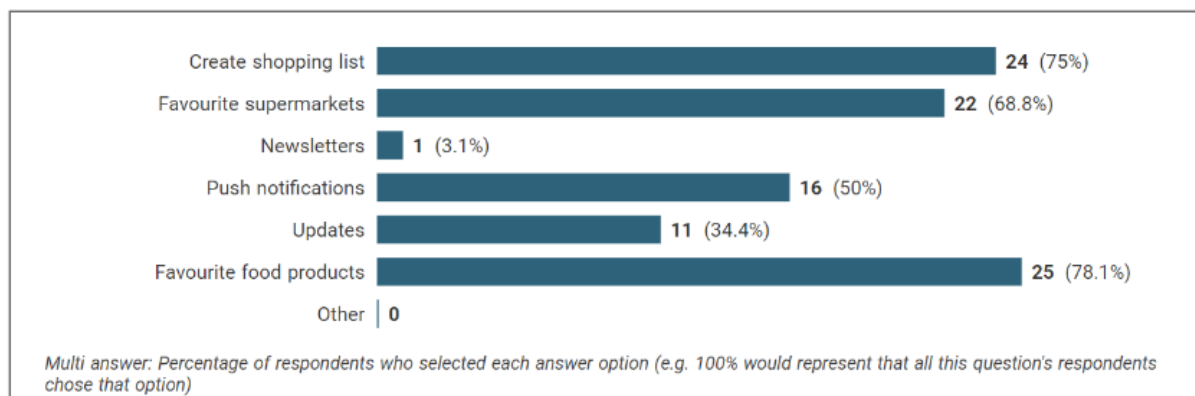


Figure 8: What features would respondents like to see in this app

The team also asked students what features they would like to see in an app like Supermarket Sweep. The personas were used as a reference point throughout the design process and used as a guide for any design decisions, to prevent self-referential design, and to ensure the app would fulfil the users' needs (Babich, 2017).

User Experience Design

Daniel Sødning

13th December 2019

2167 words

Key design requirements

1. Shopping list.
2. Saving supermarkets or food products as favourites.
3. Ability to enable push notifications for sales or updates.



Anna Gilbert

Age: 19

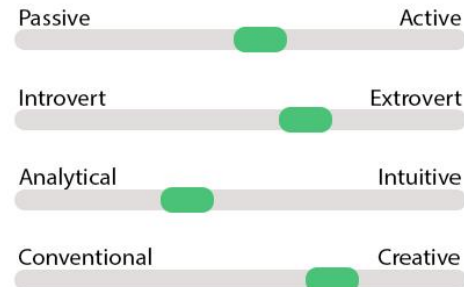
Gender: female

Location: Manchester

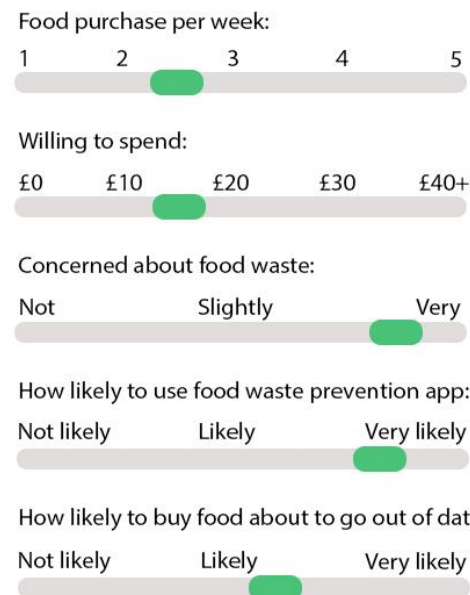
Occupation: student

Hobbies: drawing, shopping,
hanging out with friends

Personality



Food Habits



Worries

- amount of food being wasted instead of being given to those in need
- homeless people starving while having other people wasting food
- people suffering from malnutrition due to not being able to afford certain food

Triggers

- seeing food being wasted on a daily bases and people not being concerned about it
- seeing homeless people who are starving and unable to purchase good quality food to get the necessary nutritions for the body

App Design Needs

- create a shopping list with the items she would buy from the store
- mark favourite supermarkets so they appear first when reduced food is available
- mark favourite food products so she receives notifications when marked item is available in the stores

Goals

- increase awareness of food waste in the UK so more people would pay attention to the food they buy and reduce their wastage
- help people find cheaper food items



Sherry Wood

Age: 23

Gender: female

Location: Leeds

Occupation: student/
works part time

Hobbies: photography,
reading, playing pool

Personality



Food Habits



Worries

- overproduction leading to food waste and polluting the environment
- polluted environment leading to endangering wildlife
- people who do not care about food being wasted and the environment polluted

Triggers

- seeing food being wasted on a daily bases and people not being concerned about it
- seeing garbage and unfinished food being thrown carelessly by people, resulting in more wastage and pollution

App Design Needs

- create a shopping list with the items she would buy from the store
- mark favourite supermarkets so they appear first when reduced food is available
- mark favourite food products so she receives notifications when marked item is available in the stores
- push notifications and updates

Goals

- increase awareness of food waste in the UK so more people would pay attention to the food they buy and reduce their wastage, while protecting the environment from pollution



Sean O'Neill

Age: 21

Gender: male

Location: Newcastle

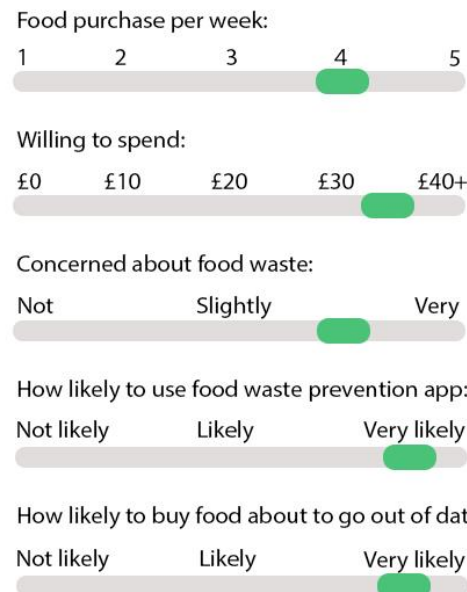
Occupation: student/
works part time

Hobbies: gaming, playing
football, volunteering

Personality



Food Habits



Worries

- how much food is being wasted on a daily basis by industries, such as supermarkets, restaurants, hotels.
- people who do not care about food being wasted by industries

Triggers

- seeing food being wasted on a daily basis and people not being concerned about it
- seeing restaurants/supermarkets throwing away food that is still edible instead of giving it to people who might be in need

App Design Needs

- create a shopping list with the items he would buy from the store
- mark favourite supermarkets so they appear first when reduced food is available
- mark favourite food products so he receives notifications when marked item is available in the stores
- push notifications

Goals

- increase awareness of food waste in the UK and prevent supermarkets/restaurants from wasting the food that goes out of date

Storyboards

The storyboards depicts two students, with needs, goals and triggers, identified from the personas and questionnaire. Even though storyboarding is a technique used in motion picture production, it is a powerful tool in UX, to visualise a concept and create empathy with the end users, by putting a face on the data and ensuring a human-centred design approach (Babich, 2017).

The first storyboard describes the journey of Sean O'Neill, who through his job at a supermarket, notices all the food waste and finds Supermarket Sweep by searching online, and convinces his local supermarket to sign up.

The second storyboard depicts the journey of Anna Gilbert, who wants to do help reduce food waste and finds our app by searching online and uses it to look for local supermarkets and to create shopping lists.

As both storyboards depicts an individual using this app while on the move and trying to achieve a specific task, having a clear user journey and intuitive UI, with text and buttons large and legible enough to be used on the go was a key factor in designing this app.

Key design requirements

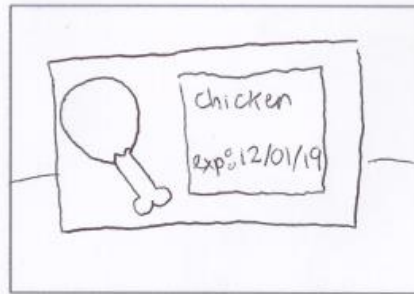
1. Highly legible, large text and buttons.
2. Easy to use UI, with a clear user journey.

PERSONA: Sean O'Neill

USER STORY/SCENARIO: Supermarket worker



Meet Sean, he is a 21 year old student working part time at a supermarket.



Sean notices a lot of food is going to waste and wants to reduce this.



After researching ways to reduce food waste, he finds the Supermarket Sweep app and likes the idea.



He lets the supermarket know they can sell their food that is about to expire through the app.



The supermarket signs up and their food is now available to buy.



The supermarket sells more food, the customer gets this at a lower price and food waste is reduced, everyone is happy!

PAGE #

PROJECT/TEAM:

DATE:

STORYBOARD NNGROUP.COM

PERSONA: Anna Gilbert

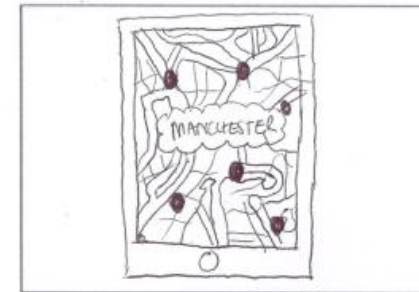
USER STORY/SCENARIO: student buying food



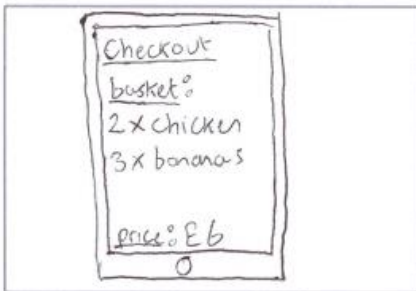
meet Anna, she is a 19
year old student who wants
to prevent food waste - she is
also hungry!



she looks for an eco-friendly
app for buying food and finds
Supermarket Sweep



she uses the app to find
participating supermarkets near
her location



Anna adds the items to her
basket and selects collection. The
store get the order ready.



Anna travels to her local
supermarket to collect her
items.



Anna gets her food at an
affordable price whilst reducing
food waste, saving the environment!

User Journey

This user journey describes the actions an individual would go through from finding the app, first opening it and using it to complete a task and achieving their goal. For this user journey, the user's feelings throughout this journey has been mapped, to help this team identify any potential pain points the users may have while using this app.

Key design requirements

1. Feature to easily locate sections with reduced food, if the user is not familiar with the layout of the supermarket.
2. Make it easy to find local supermarkets.

1.	Student reads online about supermarket food waste; decides she wants to do something about the problem.	Unhappy
2.	Decides to look for solution online and finds Supermarket Sweep.	Happy
3.	Downloads the app and signs up	Happy
4.	User getting familiar with the app.	Neutral
5.	Finds local supermarkets.	Neutral
6.	Checks out the food available at the closest supermarket.	Happy
7.	Goes to the nearest supermarket with the available food. But doesn't know where to look.	Unhappy
8.	Opens app to find information on where reduced food is located.	Unhappy
9.	Locates the reduced food section.	Happy
10.	Purchases the reduced Food.	Happy
11.	Contributes to reducing food waste and saves money.	Happy



Design Requirements

These are the design requirements identified through the variety of research methods conducted by this team

- Good use of brand colour or strong colours to highlight call to action buttons and other important UI elements.
- Onboarding to introduce the users to essential features.
- Use of illustrations for storytelling and originality.
- Intuitive menu and good use of hamburger menu.
- Shopping list to save food products.
- Saving supermarkets or food products as favourites.
- Ability to enable push notifications for sales or updates.
- Highly legible, large text and buttons.
- Easy to use UI, with a clear user journey.
- Feature to easily locate sections with reduced food, if the user is not familiar with the layout of the supermarket.
- Make it easy to find local supermarkets.

Sketches

The user flow from the home, supermarkets and products page were sketched out on paper, this was done to rapidly iterate a few different ideas and user flows (CanvasFlip, 2016). The team decided to move forward with the low fidelity sketches, that best adhered to the design requirements.

As students will also be using the app while walking around the supermarket, a UI with highly legible text and few to no distractions such as large images were one of the principles that was followed in the early design stages of this app. Figure 9 shows the user flow going from the home screen to the products screen. Figure 10, 11 and 12 goes into more detail with annotations on each low fidelity sketch.

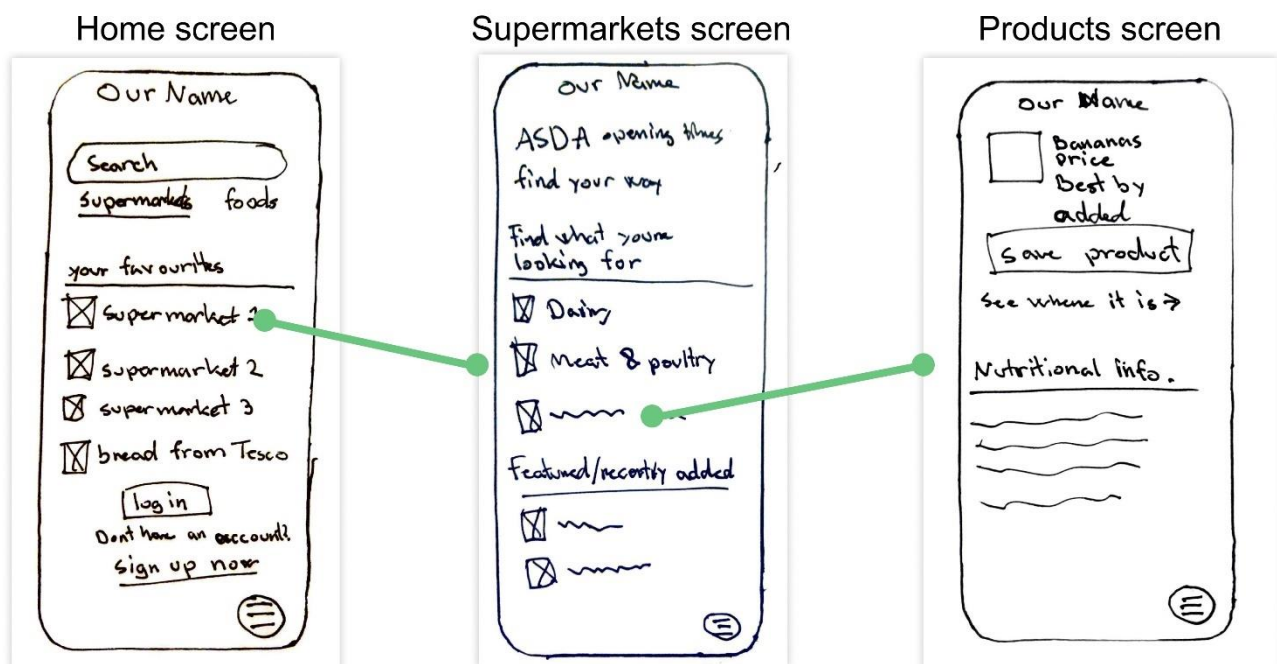


Figure 9: User flow from home screen to the products screen

Home screen

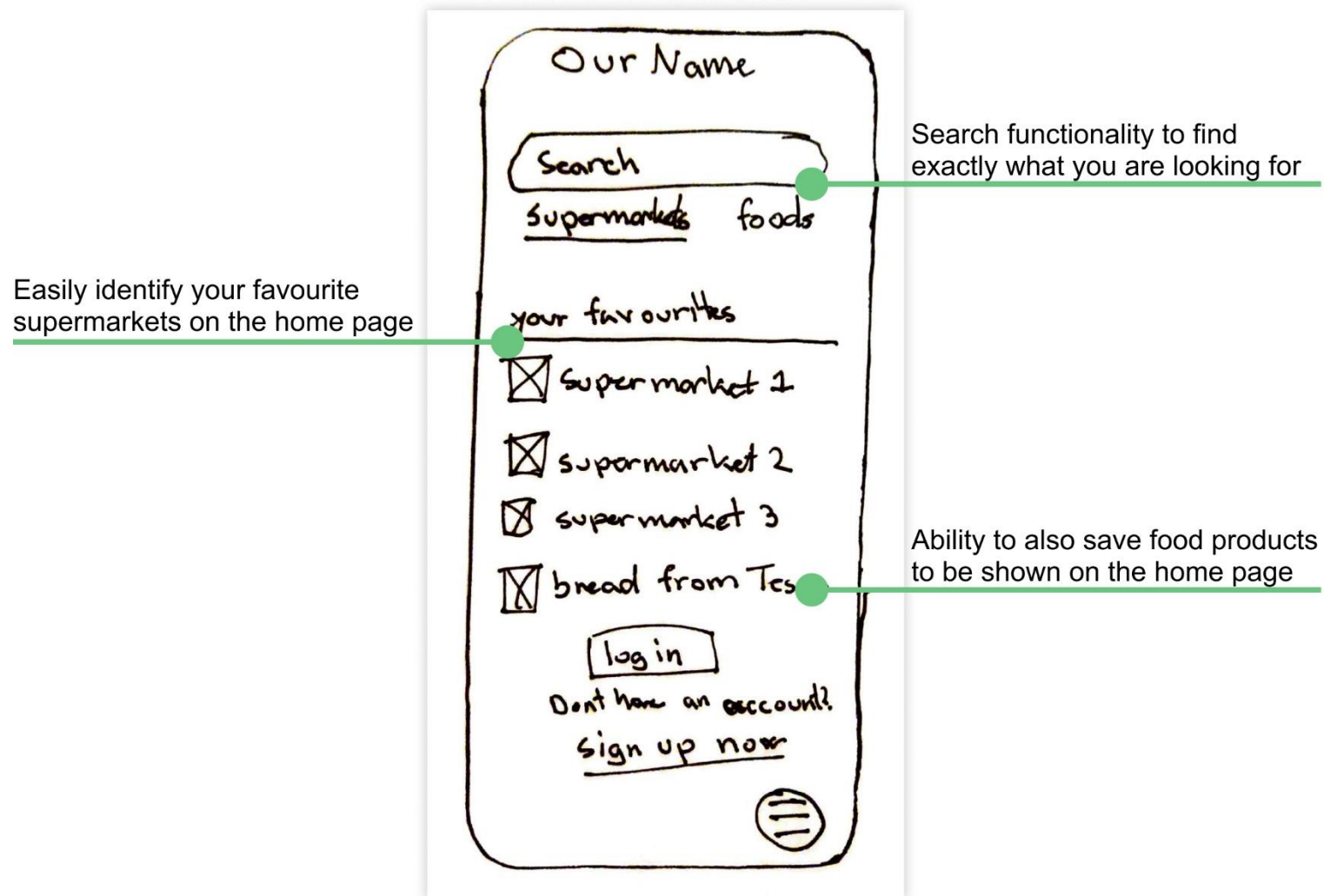


Figure 10: Low fidelity sketch of the home screen

Supermarkets screen

Takes the user to their favoured navigation app and directs them to the supermarket



Overview of different food categories

List of recently added food items

Figure 11: Low fidelity sketch of the supermarkets screen

Products screen

Feature to easily locate sections with reduced food, if the user is not familiar with the layout of the supermarket

Call to action style button to save items to the shopping list

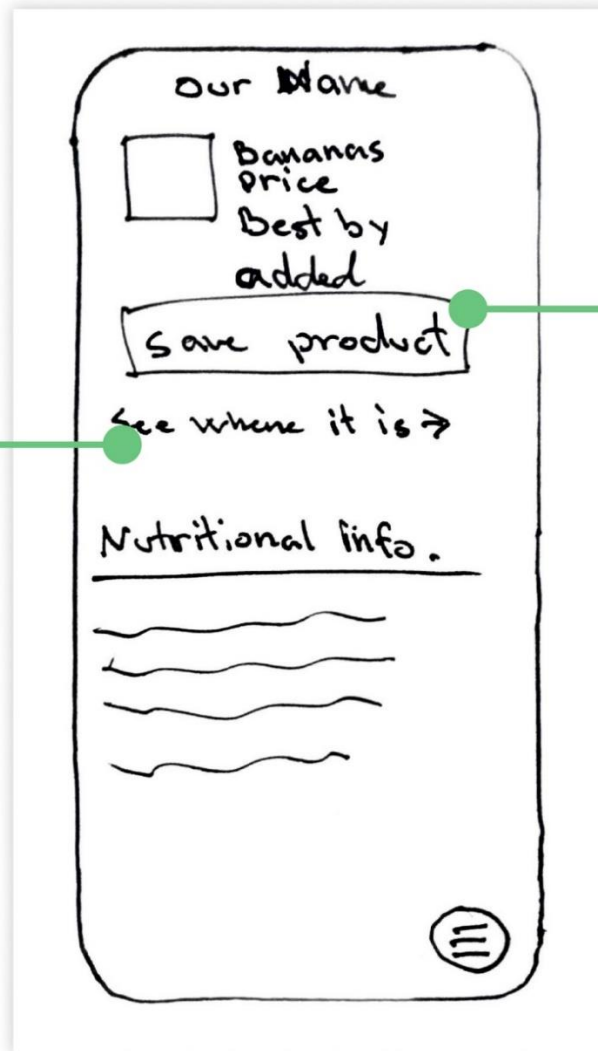


Figure 12: Low fidelity sketch of the products screen

Digital Prototype

[Link to digital prototype](#)

The digital prototype was developed in Figma. A simple pattern library (figure 13) was created to make the design process smoother, to ensure a consistent user interface across all the screens, and allow the team to make easy changes to certain UI elements (Boag, 2017).

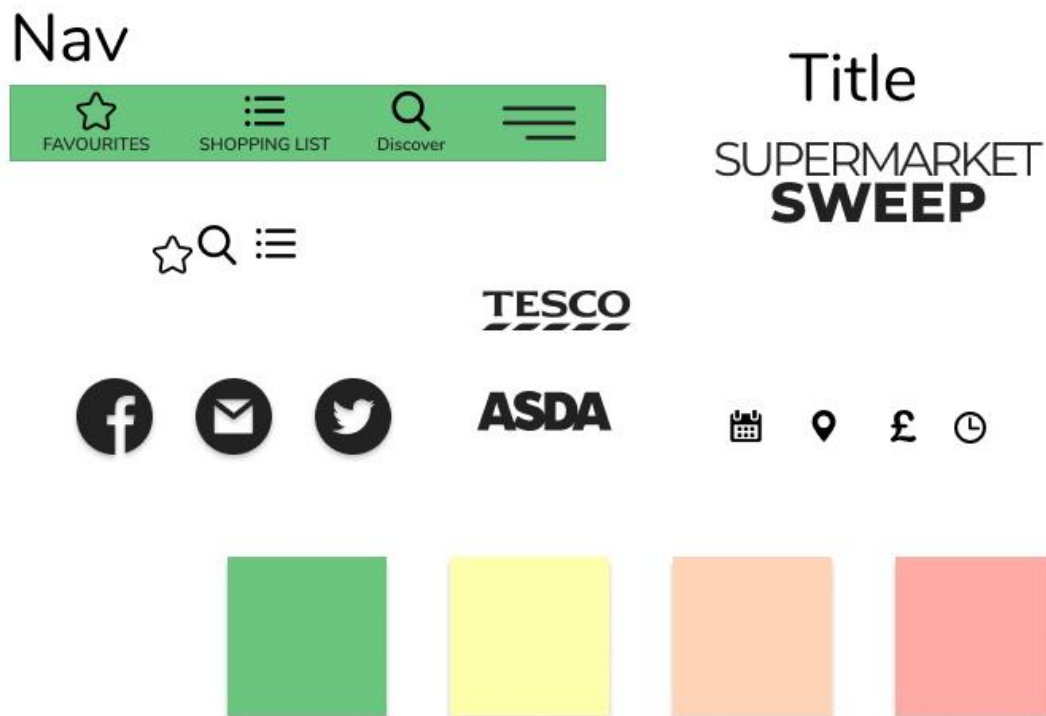


Figure 13: Screenshot of pattern library used to create the digital prototype

A lot of considerations was made throughout the design process. Figure 14 shows the empty state illustration that was designed for the favourites page, to let users know why this page is empty, and what to do next (Chaiffetz, 2019). The colour scheme for this app was based on the competing apps Too Good To Go and OLIO, both using green as their brand colour. Green also representing nature, renewal and the environment (Bourn, 2011), it was decided this should be the brand colour, with a set of lighter pastel colours to add liveliness to the user interface.

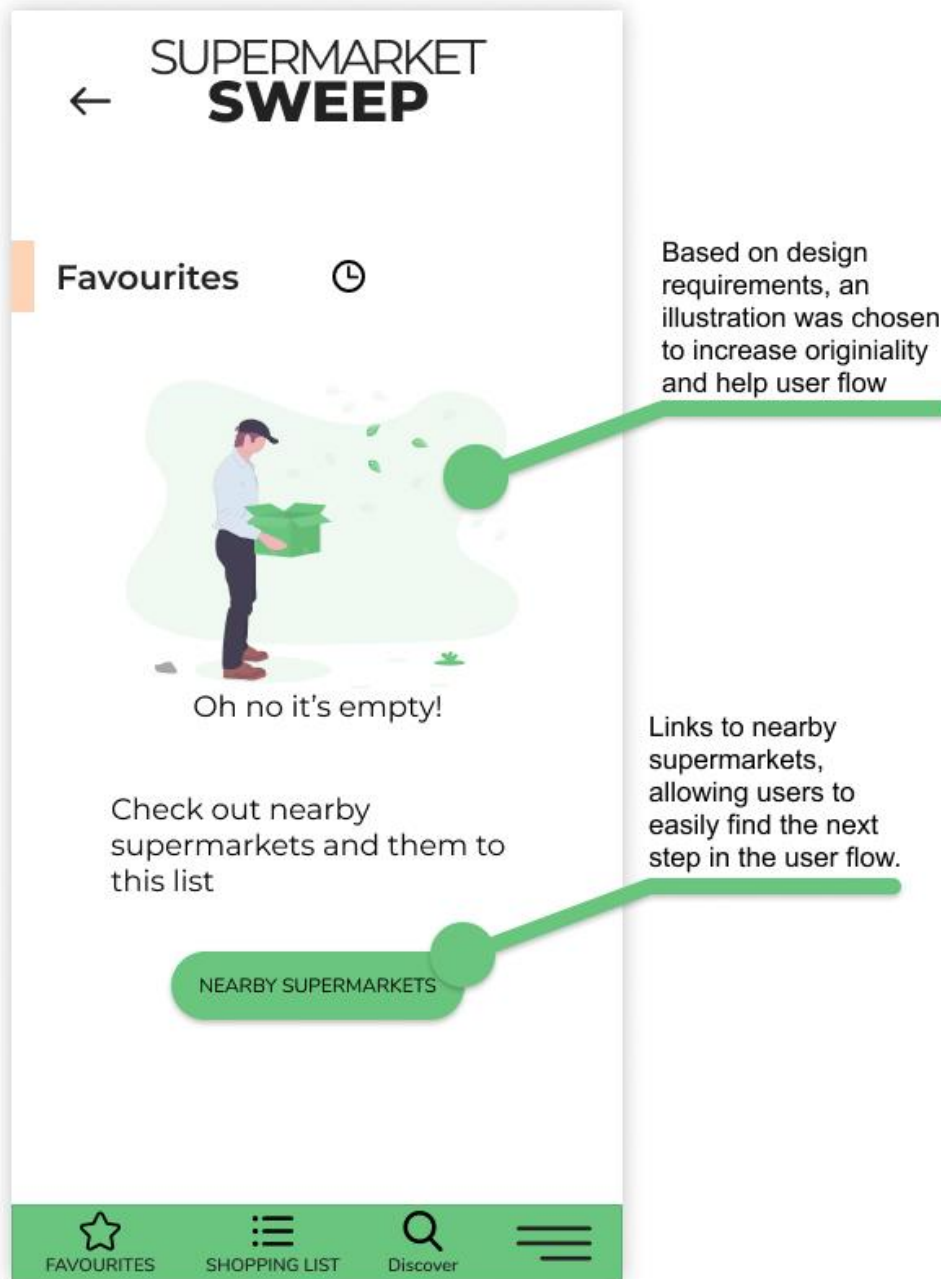


Figure 14: Empty state on the favourites page

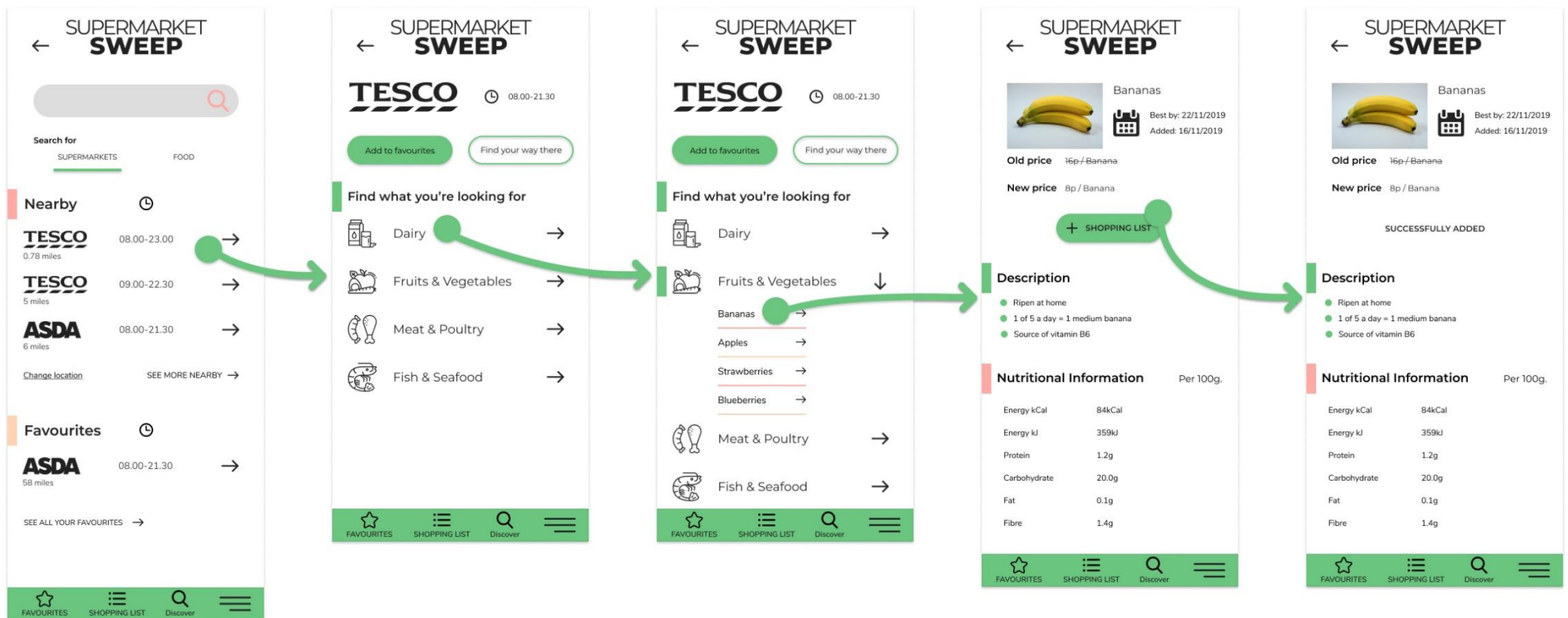
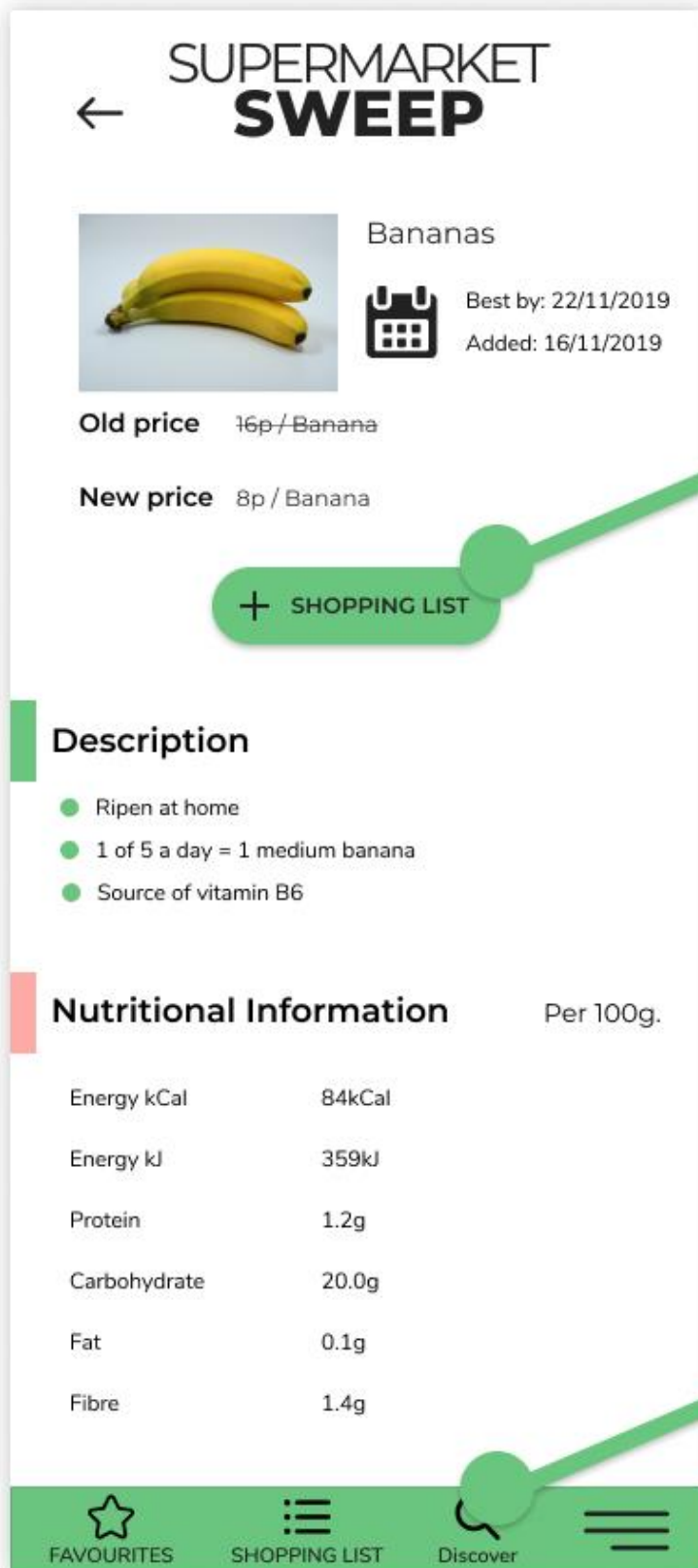


Figure 15: User flow for adding bananas to the shopping list



From design requirements: Brand colour used to identify the call to action button on this page, allows users to add items to their shopping list.

Easy to use, mobile friendly menu, following the trend of Too Good To Go, OLIO and Facebook.

Figure 16: Screenshot of the products page

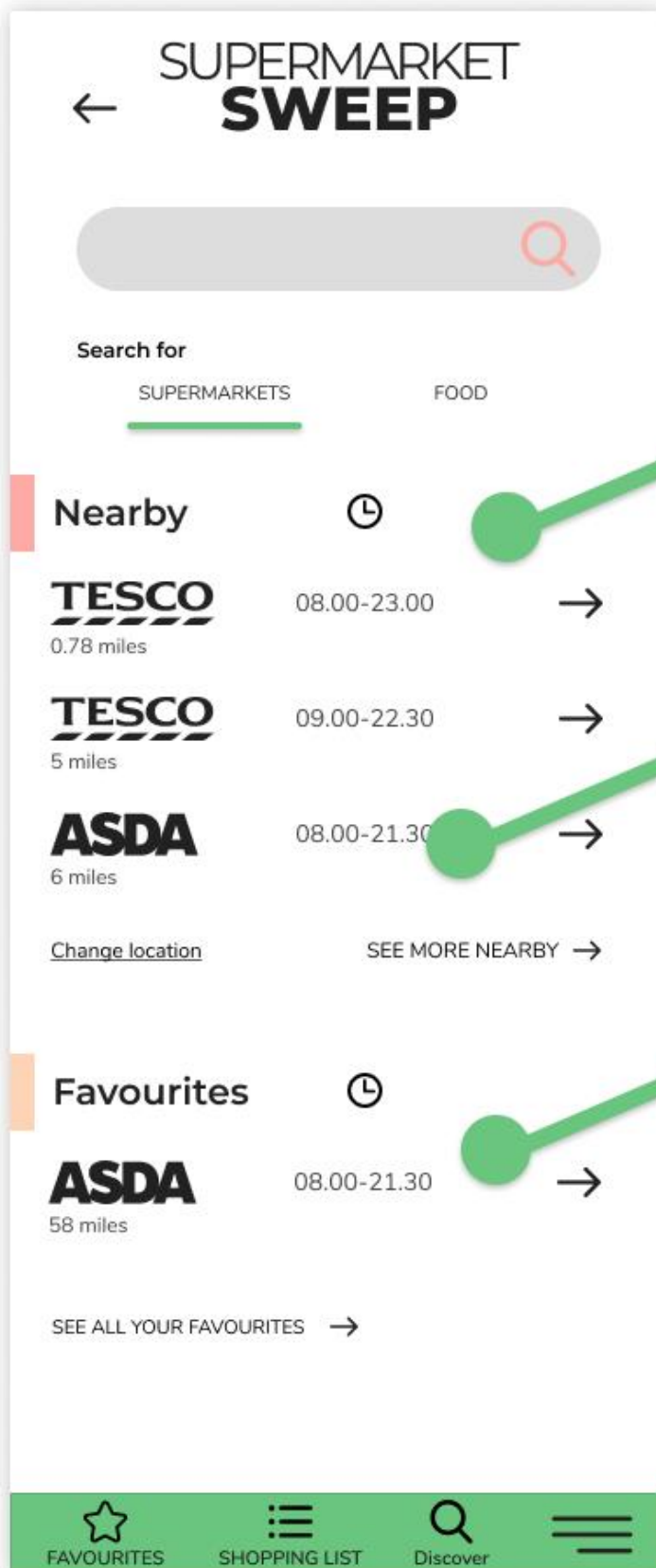


Figure 17: Screenshot of the home/discover page

Design Evaluation

A usability test plan was created to plan out how the tests will be conducted, what metrics will be captured, the tasks and how many participants. The test was done on a smartphone to best simulate a real-world scenario, and five students were chosen as participants, as testing with five users, generally reveals 85% of the core usability problems (Babich, 2017).

Rather than giving the users five different tasks, they were provided with a scenario. Scenarios are better at providing context and will allow users to perform the test more naturally (Babich, 2017). Following this principle as well as adhering to the recommendations by the Nielsen Norman Group, such as not telling users where to go, keeping the tasks simple and avoiding scenarios that are too elaborate (Schade, 2017), the following scenarios were created.

1. You're interested in creating an account, please sign up with Facebook.
2. You need to go shopping, but forgot to delete your previous shopping list, please remove all items from the existing one.
3. You are unsure what Supermarket Sweep is about and want to learn more about their mission statement and what they are trying to achieve.
4. You just moved to a new town and want to remove ASDA from where you previously lived and add the new local Tesco to your favourites instead.
5. Check if they have bananas at a reduced price in your local Tesco and if they do add them to your shopping list.

The sessions were conducted using the Think Aloud Protocol, which is a very unnatural way of using a product, so reminding the users throughout the session. to explain their thoughts or asking why they had clicked certain UI elements (Nielsen, 2012), helped the team gain further insight, into the usability of this app. An effort to avoid priming was also done with the tasks, and by staying neutral and not helping the users in any way during the sessions, as it may skew the results and bias users into clicking or saying things they otherwise would not have (Budiu, 2016).

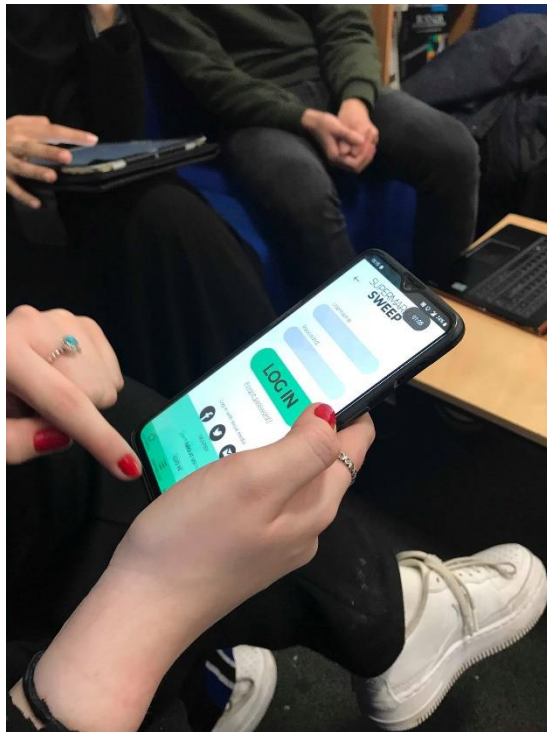
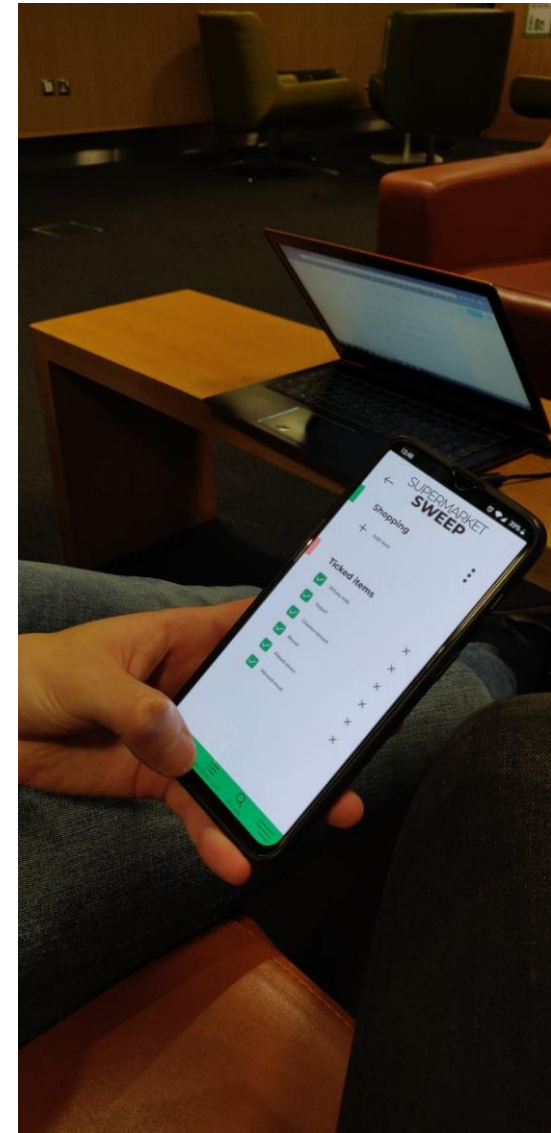
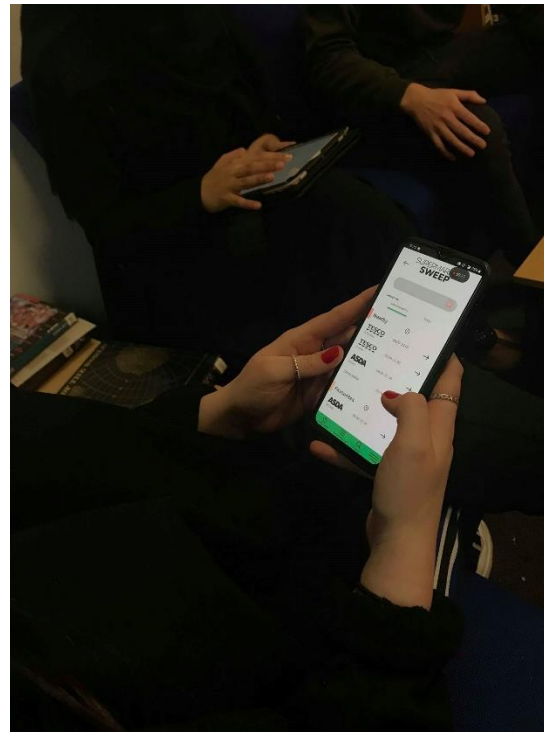


Figure 18: Usability testing the app



The metric this team tracked, were:

- Success rate (Observation)
- User confidence during the task (Observation)
- Users rating how easy the task was (Perception)

Success rate	Direct	Indirect	Fail
Task 1	0%	80%	20%
Task 2	20%	40%	40%
Task 3	100%	0%	0%
Task 4	80%	20%	0%
Task 5	80%	20%	0%

	Confidence
Task 1	Mostly struggled
Task 2	Mostly struggled/unsure
Task 3	All confident
Task 4	All confident
Task 5	Mostly confident

	Rating 1-5 (5 being easiest)
Task 1	3.6
Task 2	2.8
Task 3	4.6
Task 4	4.4
Task 5	4

Analysing these results, it was clear that task 1 did not work well with an 80% indirect success rate and 20% fail rate. In task 2 the objective was to test a specific button that allows users to delete all ticked items, the phrasing of the question and design of the page deceived users and skewed the results.

Task 3, 4 and 5 went well with an 80-100% direct success rate.

User feedback included changing the text colour as the contrast was too high, despite all the text already being a darker grey, some changes could be made, at the risk of having the contrast not meeting the WCAG guidelines. Another user suggested using the real supermarket logos.

Four out of five users had different suggestions for how the menu should be designed, however, the approach currently used is very similar to OLIO and Too Good To Go, as it is very accommodating to larger screens and the menu items are not all hidden behind an arbitrary hamburger menu, but rather the most commonly used menu icons are shown, and the lesser used ones will be hidden.

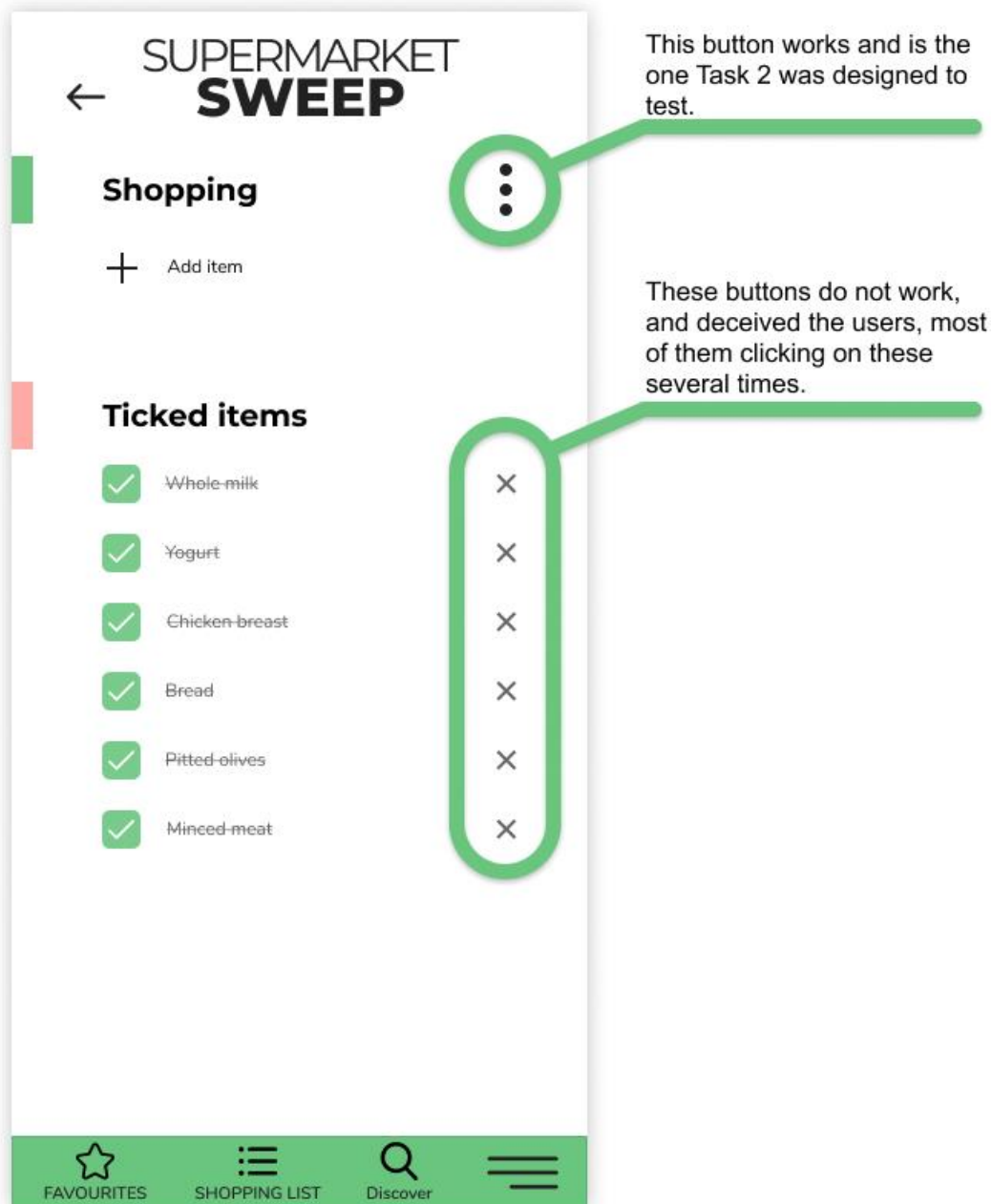


Figure 19: Page for task 2, showing how users got deceived

Final Iteration

After reviewing the data from the usability tests, the following changes were made:

- Differentiate the 'shopping list' and 'discover' icons further.
- Make it more apparent the 'three-dot menu' is click-able on the shopping list.

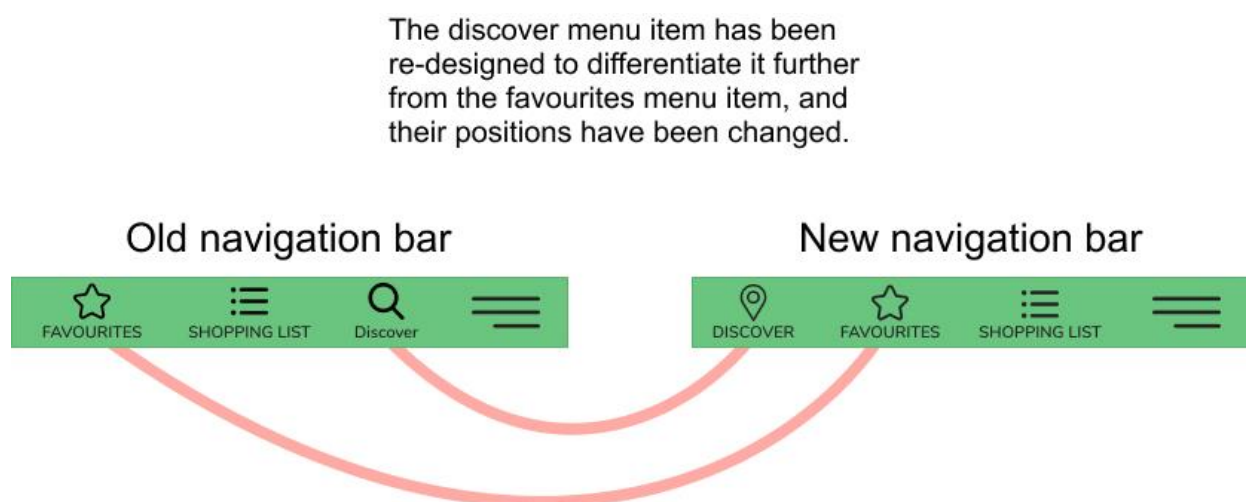
- One user struggled to find the shopping list, they misheard and was looking for a shopping cart, so the title was changed from 'Shopping' to 'Shopping list' to match the menu icon.
- Use real supermarket logos, instead of black and white versions.

The majority of users reported that the 'back animation' felt off, similar to closing tabs, rather than navigating back to a previous screen, however, due to the limitations in Figma, this animation could not be changed, but it is a thing to note, if this app should get developed.

To address the issue with task 2, as shown in figure 20, an onboarding approach similar to OLIO was chosen and a hint-box will show during the first visit to the shopping list, to let users know the three-dot menu is click-able.

Looking at the high indirect success rate of task 1, the user flow for signing up was changed, as most users tried to click the Facebook icon on the log in page, and not the sign-up page.

Figure 21 shows the old user flow for signing up and figure 22 shows the new, revised user flow.



One right-handed user reported that the favourite icon being on the far left instead of the discover icon, felt off, as they would be using the discover menu more often.

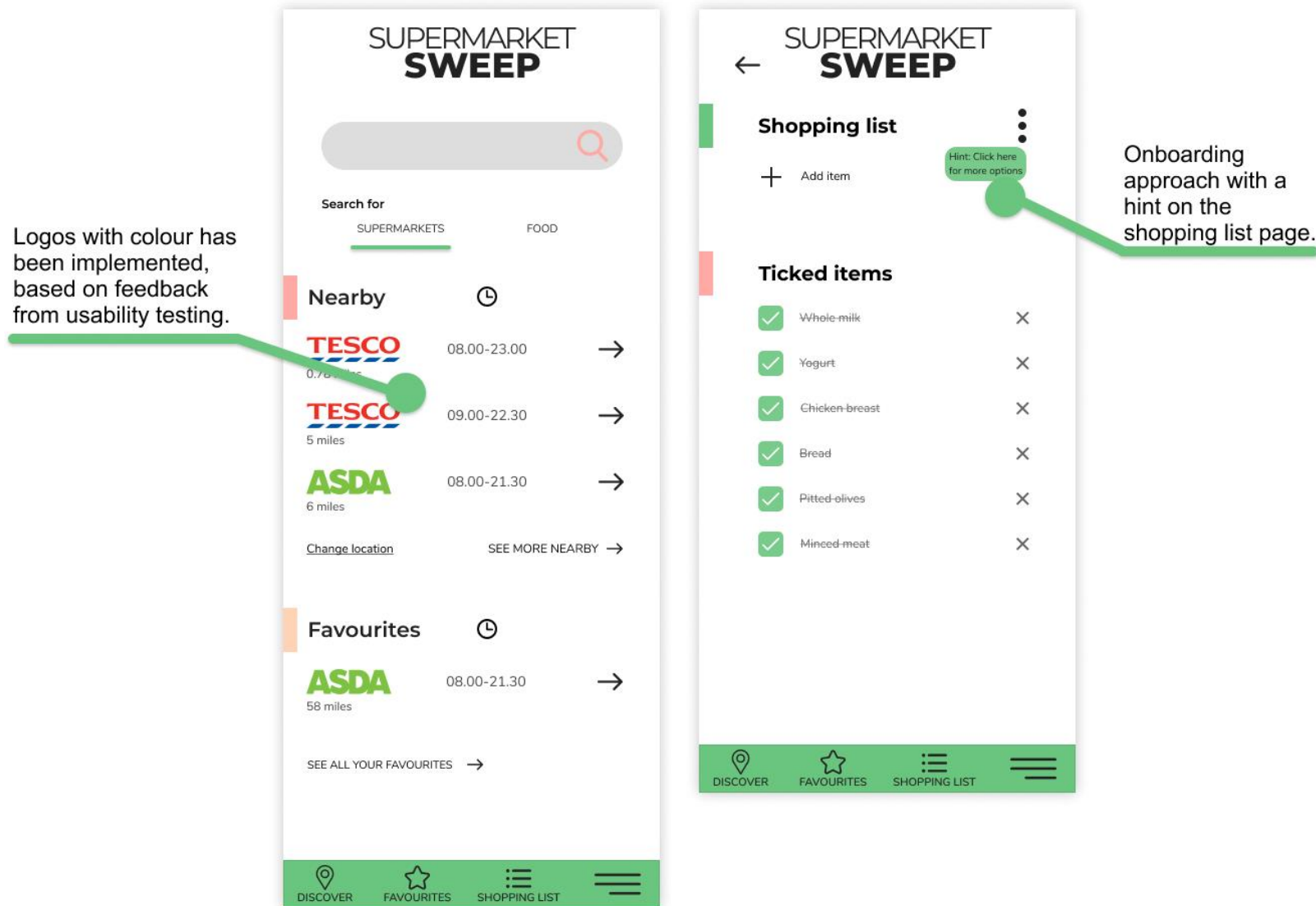


Figure 20: Coloured logos and onboarding approach

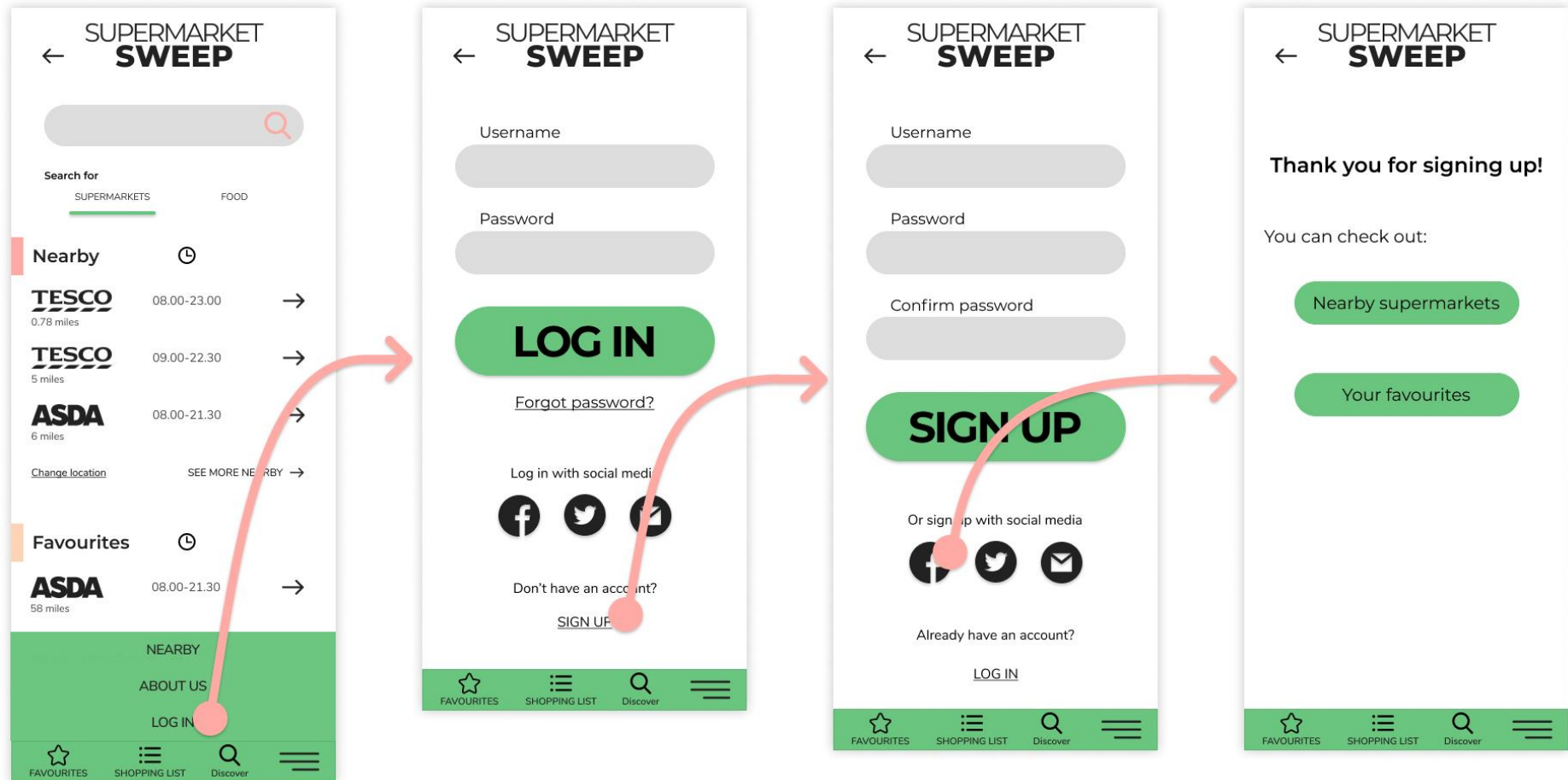


Figure 21: Old user flow for signing up with Facebook

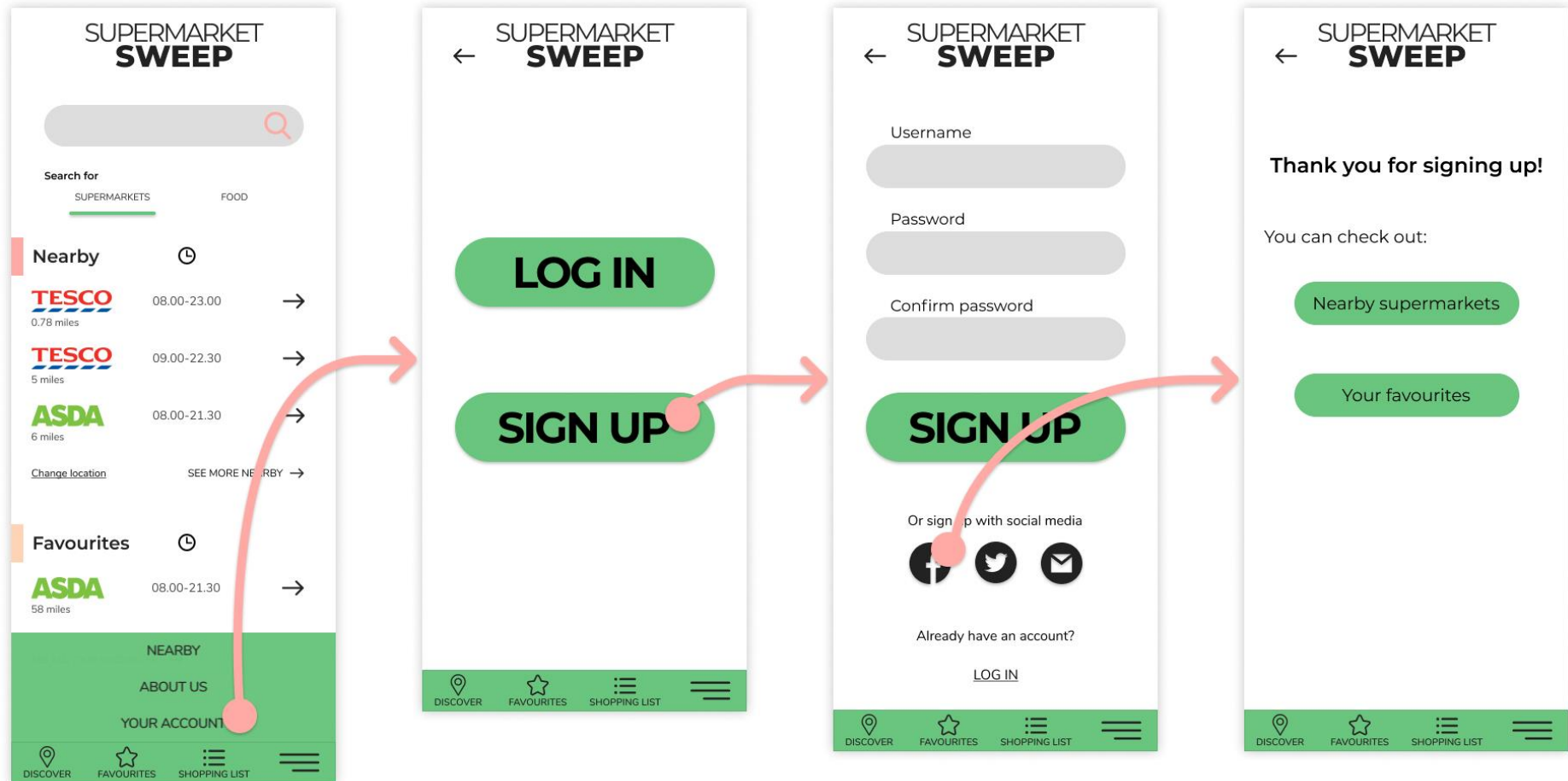


Figure 22: New and revised user flow for signing up with Facebook

Conclusion

This team identified a major issue with food waste in the UK and developed Supermarket Sweep to combat it, with an appealing bonus of saving money as well.

Using UX tools such as storyboards, user journeys and personas, empathy and a human-centred design approach was guaranteed, to help put the users front and centre of this product, as this app is designed for them to use.

References

Petter, O. (2019) 'British Supermarkets sign government pledge to halve food waste by 2030.' *The Independent*. [Online] June 13th. [Accessed December 7th, 2019]

<https://www.independent.co.uk/life-style/food-and-drink/supermarkets-food-waste-pledge-sign-government-environment-food-rural-affairs-a8956686.html>

Oragui, D. (2018) *6 User Onboarding Flows for Mobile Apps*. May 1st. The Manifest. [Online] [Accessed December 8th, 2019]

<https://themanifest.com/app-development/6-user-onboarding-flows-mobile-apps>

Tubik Studio. (2018) *15 Hot Trends in UI Design for Web and Mobile in 2018*. August 31st. [Online] [Accessed December 8th, 2019]

<https://uxplanet.org/15-hot-trends-in-ui-design-for-web-and-mobile-in-2018-eff86df6d868>

Babich, N. (2017) *Putting Personas to Work in UX Design: What They Are and Why They're Important*. September 29th. Adobe Blog. [Online] [Accessed December 9th, 2019]

<https://theblog.adobe.com/putting-personas-to-work-in-ux-design-what-they-are-and-why-theyre-important/>

User Experience Design

Daniel Sødning

13th December 2019

2167 words

Babich, N (2017) *The Role Of Storyboarding In UX Design*. October 25th. Smashing Magazine. [Online] [Accessed December 10th, 2019]

<https://www.smashingmagazine.com/2017/10/storyboarding-ux-design/>

CanvasFlip. (2016) *The art of UX sketching and paper prototyping*. September 5th. [Online] [Accessed December 10th, 2019]

<https://uxplanet.org/the-art-of-ux-sketching-and-paper-prototyping-5dae5a1efc7d>

Boag, P. (2017) *How to create a pattern library and why you should bother*. July 11th. Boagworld. [Online] [Accessed December 10th, 2019]

<https://boagworld.com/design/pattern-library/>

Chaiffetz, D. (2015) *Why empty states deserve more design time*. June 22nd. InVision. [Online] [Accessed December 10th, 2019]

<https://www.invisionapp.com/inside-design/why-empty-states-deserve-more-design-time/>

Bourn, Jennifer. (2011) *Color Meaning: Meaning of The Color Green*. January 25th. BournCreative. [Online] [Accessed December 10th, 2019]

<https://www.bourncreative.com/meaning-of-the-color-green/>

Babich, N. (2017) *10 Simple Tips To Improve User Testing*. November 9th. Smashing Magazine. [Online] [Accessed December 11th, 2019]

<https://www.smashingmagazine.com/2017/11/improve-user-testing/>

Schade, A. (2017) *Write Better Qualitative Tasks: Top 10 Mistakes to Avoid*. April 9th. Nielsen Norman Group. [Online] [Accessed December 11th, 2019]

<https://www.nngroup.com/articles/better-usability-tasks/>

Nielsen, J. (2012) *Thinking Aloud: The #1 Usability Tool*. January 15th. Nielsen Norman Group. [Online] [Accessed December 11th, 2019]

<https://www.nngroup.com/articles/thinking-aloud-the-1-usability-tool/>

User Experience Design

Daniel Sødning

13th December 2019

2167 words

Budiu, R. (2016) *Priming and User Interfaces*. January 24th. Nielsen Norman Group.

[Online] [Accessed December 11th, 2019]

<https://www.nngroup.com/articles/priming/>