

DECO3200

DESIGN REPORT

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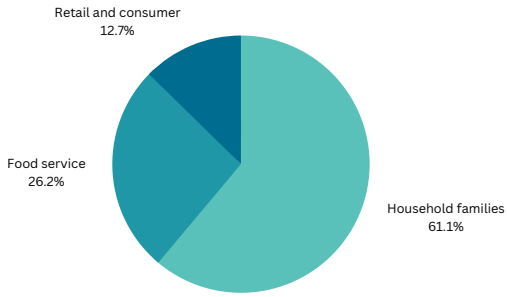
INTRODUCTION

In response to the design brief, “Appropriate Solutions for All,” we decided to focus on SDG 12 "Responsible consumption and production", which is doing more and better actions with less cost(United Nations, 2022). The key to achieving sustainable consumption and production patterns is to prevent, reduce and eventually solve the food waste problem. While some existing technological design solutions have mainly focused on solving food loss during the supply chain and increasing food production, managing food waste is too large to be ignored(assignment 1_design proposal).

SDG 12: Responsible consumption and production
Target 12.3:
“By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.”

Core Background Research

In our initial background research, we explored the complexity and seriousness of food waste problems through some academic and industrial research. As a result, nearly one-third of human production food was wasted in 2021, around 931 million tonnes, and food waste caused by **household families** took the most significant part(McCarthy, 2021). To scope our design work, we investigated household families' experience with wasting food, understood the reasons behind food waste behaviours, and sought potential user needs and design opportunities.



Problem Statement

Australian private households lack acknowledgement of proper food management and conscious daily ingredient oversight, causing unexpected food waste. By assisting target users in tracking and managing their food storage, it is achievable to prevent any food waste regarding overbuying and improper food management.

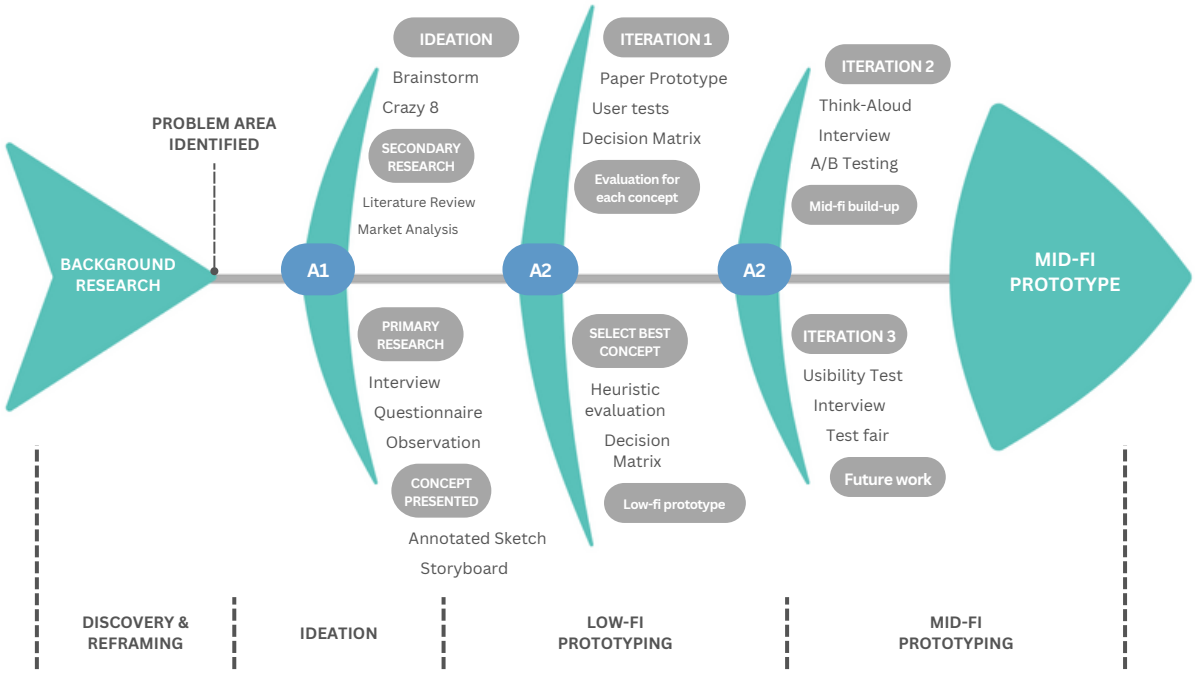
User Needs & Issues

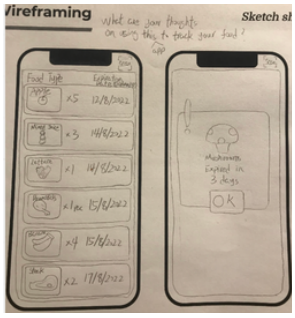
According to previous primary research (please refer to A1's Appendix: interviews and questionaries), the core user issue of food waste in Australian household families is that ***people often find it challenging to keep on track with what they have in their fridge***, leading users to over-purchase or overcook dishes.

Rationale

Based on the previous research findings, we intended to provide a digital interactive solution for minimising Australian food waste in private households by optimising and avoiding unnecessary food waste due to improper recognitional oversight of daily food. The issues can be solved by allowing the users to track their fridge's current situation to avoid buying too many products during grocery shopping. In addition, improving food preparation for each user is also essential.

OVERVIEW OF DESIGN PROCESS





A1 Annotated Sketch Example

Iteration Process -- Ideation to 4 concepts

In the design proposal at the very beginning, our team identified our problem area, targeted our user group, and undertook further primary research to develop four unique design concepts to address our problem space.

Concepts 1
Food Good

Food Good is an app that allows users to scan their groceries while they are checking out, the food information such as food type, and date of expiration will be automatically uploaded to their app as they scan through.

Concept 2
Fantasy Recipe

Fantasy Recipe is a mobile application that could measure the users' food consumption, reminding users of the appropriate quantities they should purchase without wasting.

Concept 3
Fridge scanner

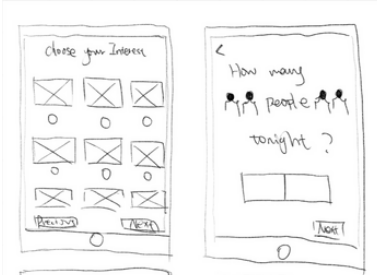
Problem of food waste in the local household was mainly the lack of food management in the fridge. Fridger is designed to help people to organise and control the inside of their refrigerator so they do not have to worry about leaving food inside for too long.

Concept 3
ToSave

ToSave is a service application based on the concept of saving money, which provides and interactive platform for supermarkets and people to deal with wasted food more quickly.

Iteration Process -- Low to Mid-Fi

Our team worked on selecting the most functional concept from the proposed concepts in the first part of the mid-term report. We individually develop the paper prototype for four concepts and use various research methods to evaluate them (Refer to A1 appendix: Annotated Sketch) .



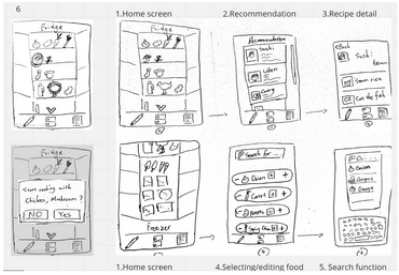
A2 Paper Prototype Example

	Concept 1 FOOD-GOOD	Concept 2 FantacyRecipe	Concept 3 Fridger	Concept 4 ToSave
Reduce food waste	0/3	3/3	1/3	2/3
Prepared grocery experience	0/3	3/3	3/3	2/3
Improve cooking skill	0/3	3/3	1/3	3/3
Improve food storage	3/3	1/3	3/3	2/3
Feasibility	3/3	2/3	3/3	1/3
Technology (achievability)	3/3	2/3	3/3	1/3
Effciency	2/3	2/3	3/3	1/3
Accessibility	3/3	3/3	3/3	3/3
Usability	2/3	3/3	3/3	2/3
Total	16	21	23	17

Decision Matrix to decide which concept we were going to continue with

We utilized a decision matrix to choose the most workable concept(s) to continue iterating with. By considering product pillars and other relevant criteria based on the tested result from user research, concept2 FantacyRecipe and concept3 Fridger were chosen. (Refer to A2 appendix: Decision Matrix)

After selecting the concept that addresses our problem the best, the team worked on developing low-fi and mid-fi prototypes. As the timeline showed on page 2, there were three main iterations to usability and UI design. Our team mainly paid attention to UI design and overall user flow in this iteration. A/B testing was conducted to finalise our visual design of an app and persona walkthrough to understand the usability of the app. (Refer to A2 appendix: Paper prototype)



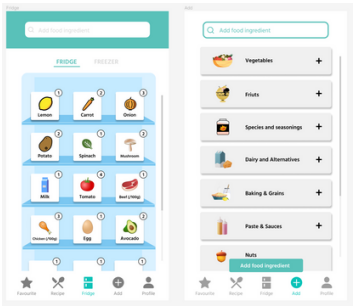
Give the target users two version of design in **A/B Testing**



Usibility Test for Mid-fi prototype by Figma

After the concept was narrowed, the team started user testing that mainly focuses on the functionality of the app. We have done usability testing and interview to understand the user flow by observing the participants interacting with an app and interviewing them to find out detailed feedback about the usability of the app.

Based on all the previous user testing, our mid-fi was completed in Figma at the end of the mid-term report （Refer to A2 appendix: Mid-fi prototype） . We will be developing the application through Flutterflow to be able to publish the app so the users can deeply interact with it as an actual application and we will be able to achieve more reliable feedback to complete the project.



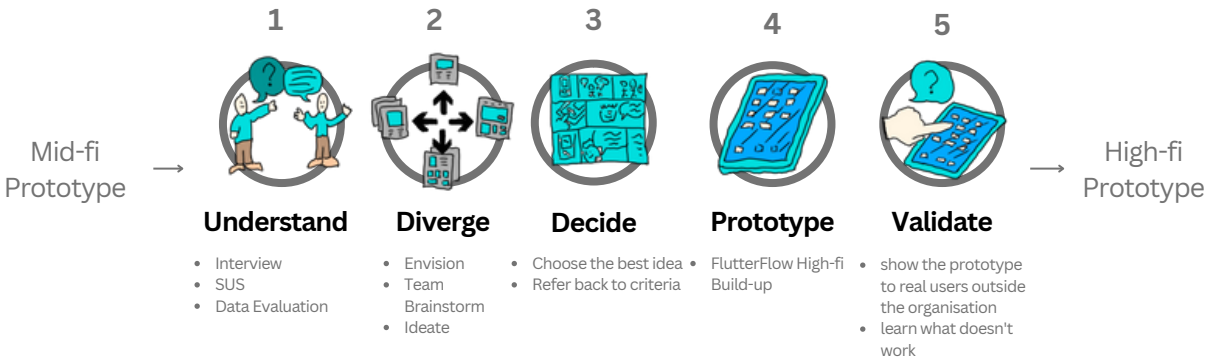
A2 Mid-fi prototype Example

Iteration Process -- Mid to High-fi

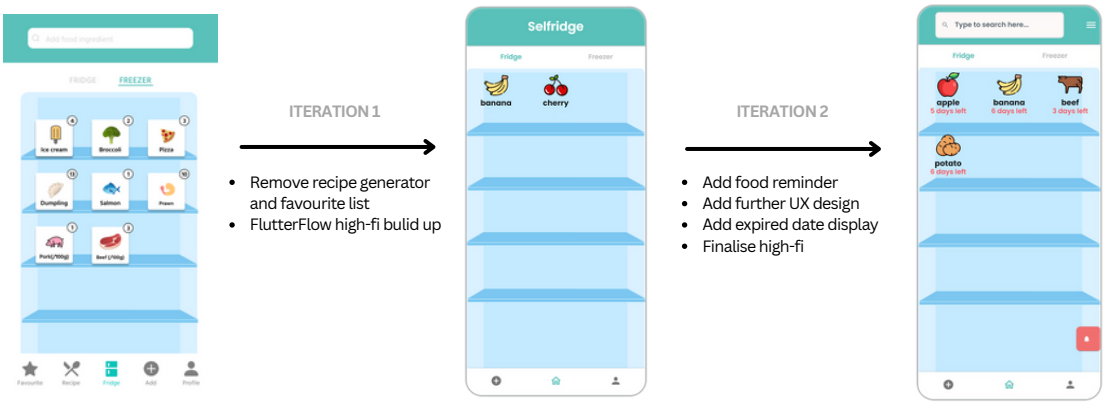
The design process section portrays our team's iteration work from mid-fi to the final high-fi prototype, which can be roughly summarized as two essential iterations. The first round is mainly a mid-fi primary feature test, and the second round is a high-fid usability test. The team developed product criteria before the iteration to ensure our design was on the right track.

Criteria

- Must help to reduce food waste
- Must address target users' needs
- Must be user-friendly and supportive
- Must be accessible and inclusive



The overall iteration pathway follows the Google Design Sprint, an efficient and accurate design process created by Google Ventures. The strength of Google sprints is to provide a design perspective to agile and quality user validation, allowing us to apply qualitative research methods to discover actual user problems at this stage. As mentioned, there were two rounds of iteration; we removed the recipe feature in the first round and improved our user flow in the second round. The prototype user tests mainly utilized the research methods of interview and SUS respectively; the methodology and results will be further detailed in the following pages.



RESEARCH APPROACH

Interview

The previous mid-fi prototype had two main features （appendix_mid-fidelity prototype）, 'refrigerator management' and 'recipe generator', and under this branch, along with secondary features such as 'leftovers utilization' and 'recipe collection'. Referenced to feedback from peers, too many features can easily lead to the failure of the target group focused on the product and possibly, cause complexity and uncertainty from too many possible diverging directions and design validation for the following iteration (Fernandes, 2021). Therefore, the interview aims to determine the user's attitude towards the various features contained in mid-fi and compare the pros and cons of each feature, to select the most suitable feature for our subsequent development.



The interview questions mainly revolve around the interval rating scale and are supplemented by asking the reasons for such a score of each feature. Although the rating scale is a quantitative survey question, as a numerical result of visualization, the rating scale's primary benefit is more flexibility and intuitiveness with the analysis, which allows for conducting more advanced research like clustering response ranges or A/B testing (Tracy, 2022). Therefore, the rating scale can be straightforward to understand what the user thinks in the interview.

Conceptualizing the advantages and disadvantages of different conceptual features through an objective perspective, and gauging users' opinions about concepts could be crucial for the next study stage.(Tomitsch et al.,2020)

Data Gathered

Decision matrix allows researchers to systematically identify, analyse, and rate the performance of prototypes, which prioritize tasks and craft arguments to defend a decision further. (Tomitsch, 2020). To weigh variables based on our design pillars, a decision matrix was conducted to compare different main features and eliminate any unnecessary features that confused our original user goal.

	Recipe Function	Fridge Function	Recommendations
Reduce food waste	1/3	3/3	2/3
Prepared grocery experience	0/3	3/3	1/3
Improve cooking skill	3/3	1/3	3/3
Improve food storage	1/3	3/3	1/3
Feasibility	1/3	3/3	1/3
Technology (achievability)	1/3	3/3	1/3
Effciency	2/3	2/3	1/3
Accessibility	3/3	3/3	2/3
Usability	2/3	3/3	1/3
Total	14	24	13

The Fridge feature scored the highest when comparing three main features by conducting a decision matrix within the group. The Fridge function focuses on promoting more straightforward and more effective food management conditions to the users. Food waste can be avoided by preventing any waste due to overbuying and mismanagement. However, the efficiency which is how effective the app could be for the target users is relatively low, because we examined the concept and thought changing food management habits to avoid food waste is a long-term goal which was needed to be further considered in the next research step.

SUS (System Usability Scale)

After building up a high-fi prototype of the 'fridge' feature, to further identify our prototype issues and potential design opportunities, the SUS was conducted to validate the functionality and usability of our high-fi prototype with eight target-user participants.

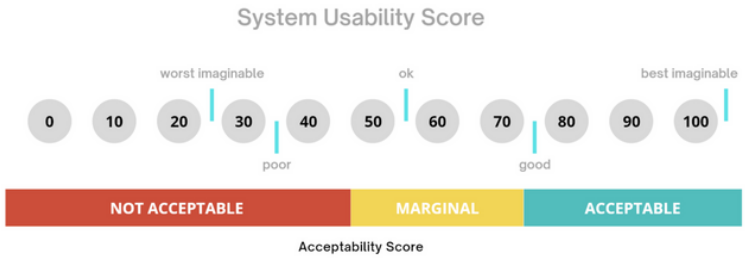


The SUS provides precise measurements to examine product efficiency(how fast someone can use it), intuitiveness(how effortlessly someone can understand it) and user satisfaction (how much a user subjectively likes or dislikes using it). It is a data analysis tool to systematically validate the prototype, providing an at-a-glance exposure of how usable the product is for this study stage (Chinn, 2022). SUS's rating questions revolve around the standard product criteria and more pillars that describe our design goals, such as efficiency in reducing food waste. The team also plans to ask some semi-structured interview questions at the end of SUS to get more substantive ideas and suggestions.

User tests near the end focus more on 'review' rather than 'implement'; locating problems from the broad user journey is more significant than focusing on minutiae (Indeed Editorial Team, 2021).

Data Gathered

Throughout the SUS, we were seeking for the application's usability to test whether the app is functional and to find out more about the confusion that users are facing.



Once the data from the SUS was gathered, it scored an average of 77.65 in interpreting, which is relatively high for the average SUS score of an application. Therefore, the usability of the application is understandable for most users. At the end of each SUS, a few questions were asked to determine the advantage and disadvantages of the app to improve our prototype further. Many participants mentioned that once they had added each item, they were still unfamiliar with whether they had added the item correctly until they got to the last screen. At the same time, many claims were mentioned about the overall navigation of the app being poorly made because many users were confused or stopped once they added the item. Hence, further improvement in overall user flow, especially in navigation is required.

- Most participants mentioned that the UX design seems unfunctional to them. Two of them particularly pointed out that the system lacks functionality if there was no prompt or other UX factors after adding items.
- 4 participants thought that it was difficult to change their current lifestyle habits somehow.
- Our team noticed that respondents with different cultural backgrounds would have a massive perspective towards reducing food waste.
- The respondents who do not often do the housework have a worse acknowledgement of the importance of reducing food waste, causing overbuying or lousy food management.

KEY INSIGHTS

Target users feel lost when identifying targeted behaviour without instant informational feedback, causing conceptual confusion and user pathway misjudgment.

The current rapid technological change is very distressing to some middle-aged family members. Some of the older target users did not use similar apps because they were used to traditional storage methods. Feedback can help people understand what's going on, discover what they can do next, understand the results of actions, and avoid mistakes. In our high-fed prototype, many interfaces and specific behaviours lacked information interaction prompts, which made the user experience irritating.

The app needs to support real-time system feedback, either text or graphics so that users can view the status of the current interactive behavior while passively displaying status information

"I don't know what to do next, it's so confusing, I don't even know if I've already added it or not..."
---- Interview with Zechariah Whitlock

"I found it confuse when I add items. Like I have to go all the way to the main page to check if my items were added correctly."
---- Interview with Carol Watson

Lack of consideration for different food storage habits of target users leads to passive behaviours and negative attitudes towards reducing food waste in terms of culture gap and family role.

The awareness of the concept of food waste is pronounced in different cultural backgrounds and social classes. For example, the feast culture in Asian countries "guides" the host to cook more dishes to make the feast look luxurious, resulting in nearly one-third of the food being wasted (Sirieix et al., 2017). Furthermore, due to the current popularization and application of smart homes, many family members have become careless about housework (including managing food), and even some parents of Australian families have more resistance to managing housework, especially the side who do not often do housework.

Provide an active incentive system to allow users to consciously manage food more systematically to achieve better results in reducing food waste.

"if it's made for busy people, I don't know if they are going to check the app everyday."
---- Interview with Ping Yuan

"When my friends come over, I wouldn't able to check everything in the app"
---- Interview with Joe Zhou

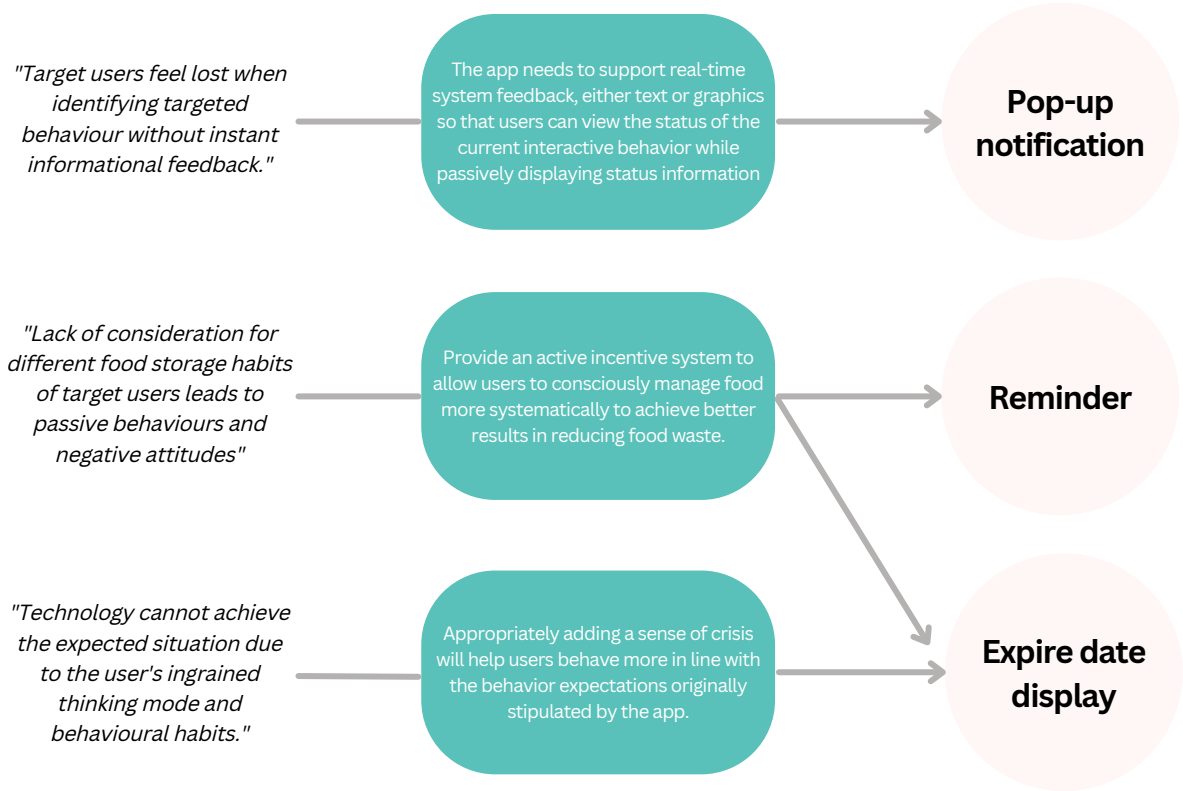
When technology intends to change user behaviour but lacks a high-level warning or crisis, it cannot achieve the expected situation due to the user's ingrained thinking mode and behavioural habits.

Many older target users are indifferent to reducing food waste because of their aversion to changing habits. Procrastination and acceptance of the status quo are ordinary, even when older adults claim to want change. Research has shown that the elderly often cannot adjust to unknown environments due to the deterioration of a brain circuit, which plays a crucial part in goal-directing understanding (IANS, 2016). When we looked for design inspiration, constraints of gamification design addressed this insight thoroughly, which can motivate users to react faster and take action. Countdowns are often utilised in games to encourage players to achieve a particular task or level within a limited period.

Appropriately adding a sense of crisis will help users behave more in line with the behavior expectations originally stipulated by the app.

Frame Insights into Design Opportunites

Through reframing, our team intended to understand how the key insights undercovered in the research can inspire the way we think about the potential solutions in our ideation phase. We step back to our persona, criteria and any critical assumptions about our problem area to ensure the solution can be compelling in the last design step of this study phase.



FINAL DESIGN - SELFRIDGE

Our final product Selfridge is a mobile app based on a food storage tracker. Users can track what food ingredients are being left in their houses at any time. The overall design focuses on refrigerator management and pursues a simple and efficient user experience.



IT'S MORE THAN A FRIDGE APP

Manage & track your food better

Based on the notion of user-centred, Selfridge can help users no matter while they go home after getting off work without knowing what to buy, or when they forget that there are leftovers at home; Selfridge can provide users with better food management to avoid food waste caused by storing too much food or buying excess food.

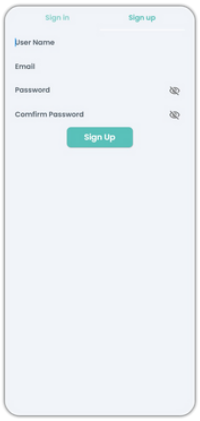
Core functionality

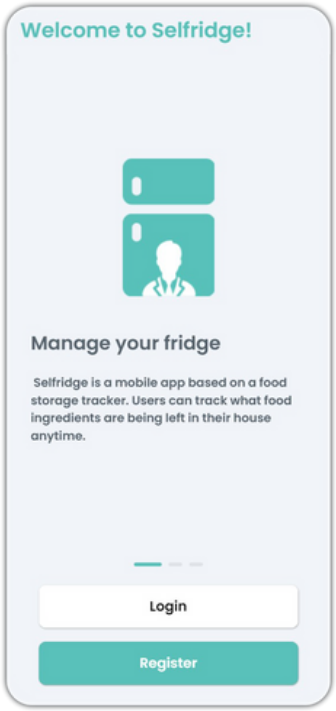
The core functionality of Selfridge is to track and manage food and remind you of the food that will expire soon in your fridge, preventing any food waste due to overbuying and mismanagement.

Operation Procedures

Welcome page

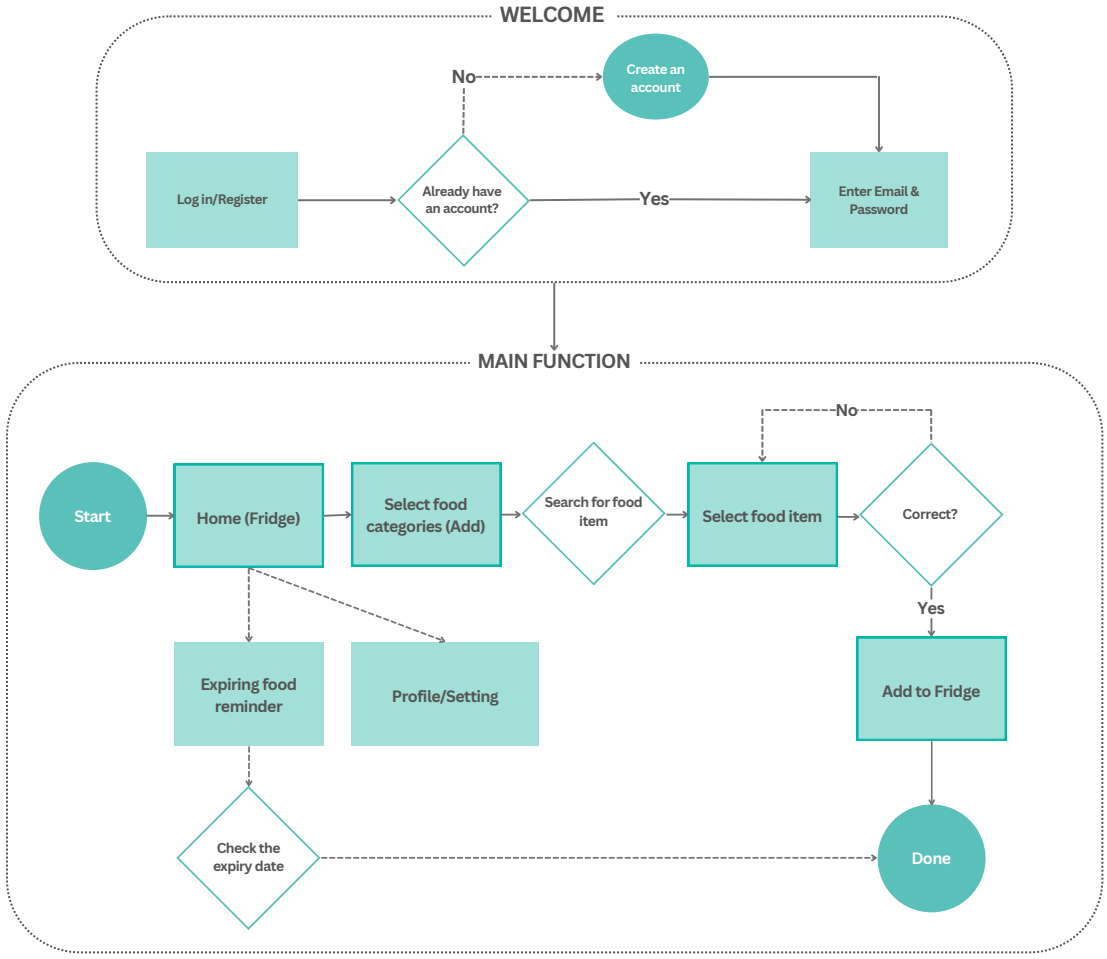
This is where the user starts using the app for the first time. The welcome page introduces the app's functions and comprehensive instructions to users and allows them to either login or sign up for their account.





User Flow

To begin with, showing the path a user will take in our application to complete a task will help us to finalise the flow of the correct information to users at the right time, and also to complete the desired task in as few steps as possible.



Fridge page

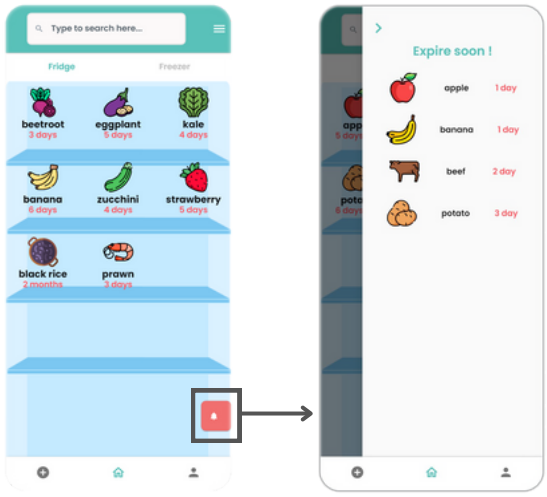
The fridge page is the most important page in the app, where the user can manage food and check their expiration dates in the 'fridge'.

The pop-up reminder section is also browsable in this page, user can see the food that is going to be expired soon in this list.



Plus button shows up when nothing in your fridge which will direct users to the add page when they click

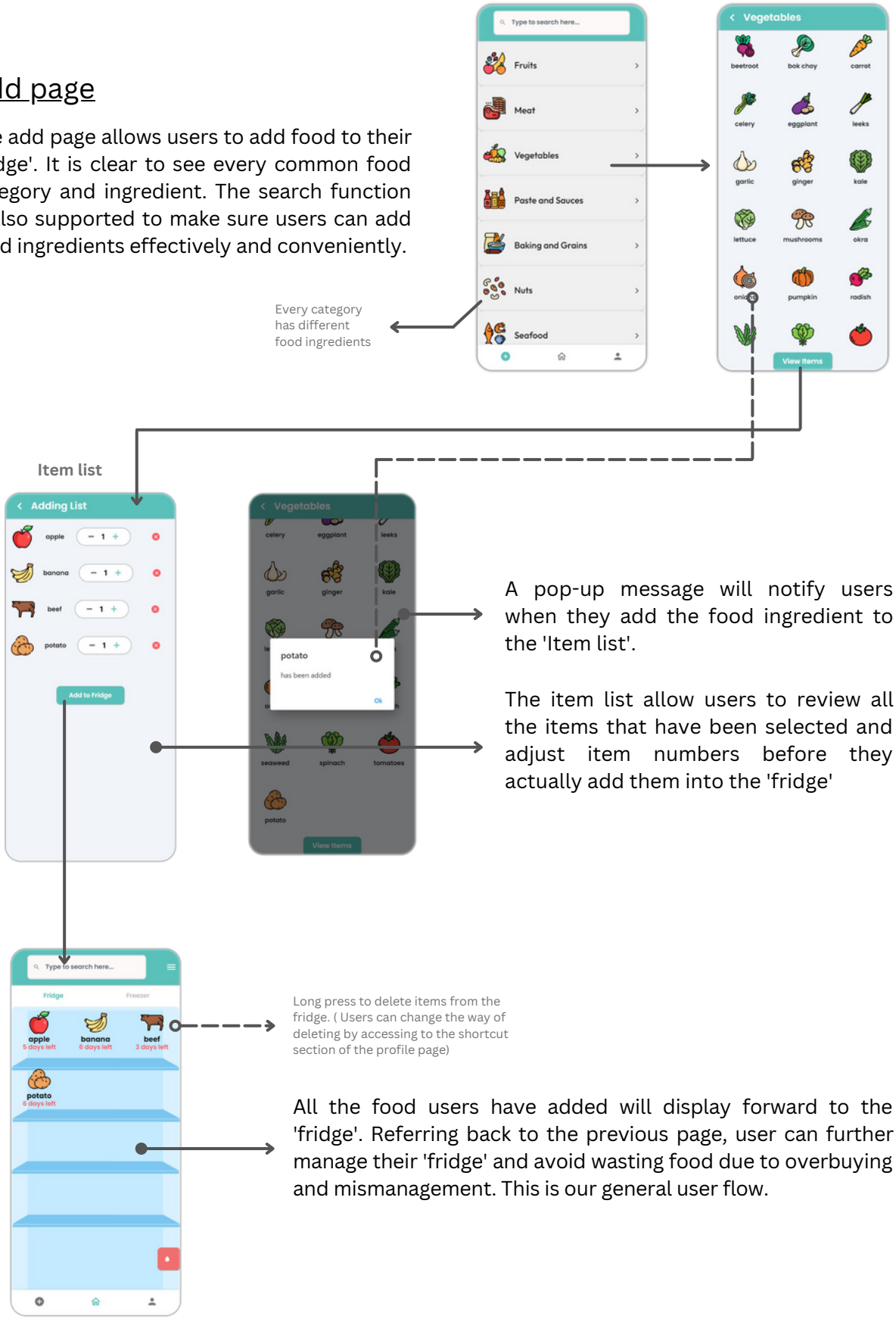
Pop-up Reminder



Centre page

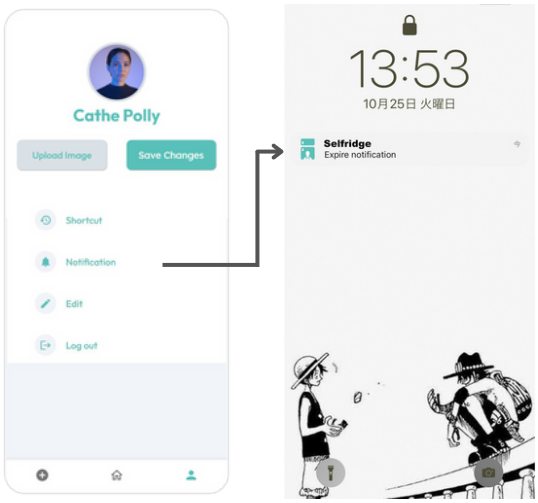
Add page

The add page allows users to add food to their 'fridge'. It is clear to see every common food category and ingredient. The search function is also supported to make sure users can add food ingredients effectively and conveniently.



Profile page

This is a general profile page to allows users to edit their personal information and log out of the account. Two unique settings related to this app will also be displayed here, which are 'Shortcut' and 'Notification'. 'Shortcut' allows the user to change the way of command to interact with the app, such as the way to delete items from the fridge. 'Notification' is basically linked with the reminder which will push you a notification for that food that going to be wasted soon.



HARDWARE/SOFTWARE REQUIREMENT

Mobile

Smart mobile phones have become an essential item in people's daily life. As the purpose of the app is to help users to track their food ingredients, a mobile app would be the most suitable interface that will allow users to access the app anywhere at any time.



Andorid app store & Apple app store

Users can download the Selfridge app through both the Android app store and the Apple app store, the Selfridge app builds a bridge between users and the app, and these two app stores provide them with a platform to help them better manage their food ingredients.

KNOWN ISSUES

Timer function



The initial purpose of the timer function is to indicate to the users a countdown time of food ingredients expiring dates, therefore allowing users to keep on trucks with expiring dates will help them to plan ahead for meal preparation. However, currently expiring dates are inputted individually through Firebase. Thus, it is required for the app to individually recognise and mention the expiring dates.

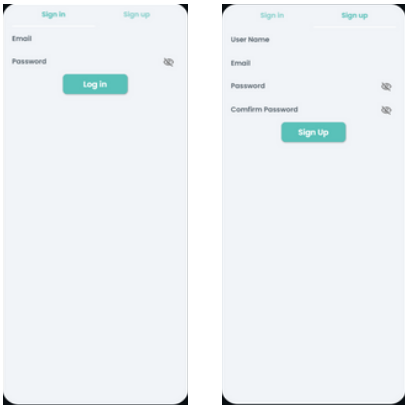
Search function



The search function allows users to find a specific type of food that is currently unavailable. so far it only allows users to search the data that has been presented locally on their device, therefore, the search function hasn't been fully developed since it is time-consuming. As the number of item increase, we believe the search function will be helpful for users to find the specific items.

Sign up/in page

The sign-up/in function allows users to input their personal information into the Selfridge so that the app can access to their personal accounts. After users have signed in/up, they are guided to the home(Fridge) page. On the profile page, they are able to adjust settings for their app such as notifications, shortcut buttons, profile name and picture through their personal preference. While developing the sign-in/up function through Flutterflow, the issue was that although users are able to input words in their sign-in/up section, their data such as their email address and password won't be saved in the Selfridge and to solve this, it is required for Firestone to store all the input data from the users.



The design team also realized that it is unnecessary for the Selfridge app to authenticate user information at the moment, the function will be developed later when users can set their preferable tastes on their profile page.

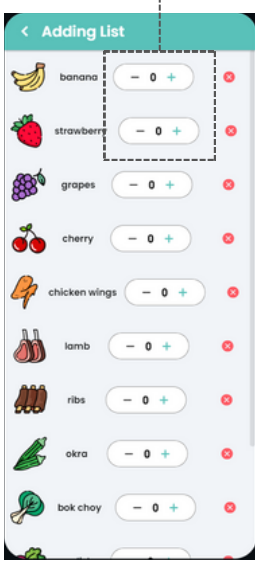
Freezer function

The goal of the freezer function is for users to separate food ingredients by attributes. The current issue is that when the items are added, they appear on both, the fridge and freezer pages. The team were unable to figure out how to separately save the items that was been added. Therefore, improvement is required as it is one of the essential features reacquired.



Add/reduce function

Based on feedback from the users, the design team decided to include add/reduce function so that users do not need to repeatedly add the same items. The function is built to allow the users to adjust the number of items they are willing to add, however, by adding the first item, the rest of the other items also gets added or reduced, and the design team is unable to fix this problem currently due to a lack of technology experience.



FUTURE WORK & VERSIONS

According to the findings from the evaluation of our user tests. The following demonstrates the future additions we would like to make to our application.



Add Food Function:

At this stage, the food choices in each category are limited. For example, we need more time to implement every fruit inside the back-end firebase. In the future, we would like to implement more food choices for each category to ensure users can find the exact item they are looking for. As well as, make some sub-categories under each big one, which allows users quickly access the right food they purchased.



Suggestion Function:

While the fridge function helps users manage and track the food they have at home, food waste can be further prevented if we add the suggestion function in the future. After users manage their food in the fridge, they gain an understanding of what food and how much food they have at home. Therefore, users could use the suggestion function to explore what dishes they can cook by using the food at home straightaway and avoid buying too many products during grocery shopping.



Camera Function:

Finding the correct food item and selecting them to upload to the fridge would take considerable time if they purchased too much food at once. Therefore, instead of manually typing each item they purchased, the camera function would be helpful for users to take a photo of their shopping receipt or food themselves, and the food items will be automatically verified and uploaded to the fridge, saving users much more time.

Once the full functionality app is logged, we intend to put it in the App store or Google play to ensure all users can download and use it. In addition, the promotional video will be presented during the shareholders' general meeting and used as a marketing tool for the future.

Since this app aims to target users who are facing or potentially having food waste problems, which results in users needing to manage and track the food in their fridges. Therefore, we are desired to market our app during users' shopping process; for example, supermarkets like Coles and Woolworths would be ideal. To get users to experience these exciting new features and new app versions, feature awareness campaigns are also going to be implemented to encourage users to stay engaged with our app as we continue to improve our app's functionality(“Feature Awareness and New App Version,” n.d.).

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All icons are from Canva

Appendix

Low-fi Prototype in the concept proposal phase
Low-fi Prototype of the final concept
Mid-fi Prototype of the final concept
Interview Transcript
Interview Consent Form
SUS Results
User Flow
High-fi Prototype
Iterated High-fi Prototype
Teamwork View Links

Miro 1
https://miro.com/welcomeonboard/eGhxcXV2b2RZQTdxYWthcWRJbmdzMXNyb2taVXZnRmtXdVdqUnlvTGtldmN1b3RrS3plc2dielVyOEZlTG1hUnwzMDc0NDU3MzQ5NTQxNzcxNjA4?share_link_id=342433823229

Miro 2
https://miro.com/app/board/uXjVPLbnyVA=/

Firebase
https://console.firebase.google.com/project/fskin-758ac/firestore/data/~2FCategories~2F1hksf1rBvJuVQcFCUK1O

Figma
https://www.figma.com/file/BgnrKlwnHs7kGZZznS6ZUv/DECO3200-A2-Mid-Semester?node-id=0%3A1

Flutterflow
https://app.flutterflow.io/project/fskin-h1t2po

Demo Video
https://youtu.be/4zwbNYPcWVs

Interview transcript 1

Mike(interviewee): What do you feel about the app?
Allen(interviewer):I can see there are a lot of functions embedded in the app, there is a lot of stuff going on, I can tell this is a food related app, I supposed is for fridge management and food recipes. It is looking good, I like the navigation that guides through favourite, recipe, fridge, add, and personal profile. It's good to make log in as an optional function, I know sometimes it can allow you to do some personal operations, but at least this app didn't ask you to sign in or sign up as the first step, you know, it's not a bank app. Other than that, I'm satisfied with the overall look.
Mike(interviewee): What are the things you think need to be improved?
Allen(interviewer):For me personally, the cartoon looking display sometimes could be difficult for me to use, anyways, and when editing food stuff, I can't really tell how many stuff is in there, egg and speech bubble "1", is that means one pack of eggs left or one egg left? Would be better if specific.
Mike(interviewee): What was something that frustrated you throughout the testing.
Allen(interviewer): If I am looking for a specific type of dish, where do I go? I understand that the result is cooking based on what's in the fridge, but I personally think I should also provide recipes for users to check out, so that they can buy food groceries that are not in the fridge.
Mike(interviewee): What do you feel about the visual design of the user interfaces? (Font? color?
Icon?)
Allen(interviewer): It is an appropriate use of color, I like that. Maybe a more warm color in the add page? I'm not sure.
Mike(interviewee): Any additional thoughts?
Allen(interviewer): emm... I think that's all from me, just indicate the number with a unit if necessary, plus making the user select their preferred recipe, thank you.

Interview transcript 2

Final concept interview transcript
Q: Hello, thank you for taking the time with me for my interviews. Once you have interacted with our app, I would like to ask you some questions to get some feedback for future improvement. Before we begin, I will roughly explain our app concept. The app "SelFridge" is designed to prevent people from food waste and get better at their food management.
A: Okay, that sounds interesting.
Q: From 1-10, how useful is the fridge function? Why?
A: I would say 8, I think it is something very realistic and useful for me because I'm really bad at managing my fridge. Like I often forget that I still have butter in my fridge and bought another one.
Q: From 1-10, how useful is the recipe function? Why?
A: Let's go with 6, It is useful as it will help me to find out something new to feed my family member. But I often just search in google what to make or I follow some of the food recipe accounts on Instagram so I look at that, so it won't be that necessary for me.
Q: From 1-10, how useful is the recommendation function? Why?
A: I'll say 8, I think this is a really helpful function for people who cook every day. As my kids are growing, they won't be satisfied with the same meals every day or every week so if the app can recommend to me what to cook, that'll be a great function.
Q: What are some of the improvements we can make to this app? Why?
A: Ummm, I think the way we have to input each item is pretty hard to do as I always try to shop everything on the weekend and there is a lot of stuff so maybe you guys can improve something on that.
Q: If you can only pick one feature from the app, what would that be?
A: I think I'll pick the Fridge function. I think it really helps me to be more managed with my fridge and it suits your purpose as well as you want to improve people from food waste right? I feel like managing is the first thing we have to do to prevent food waste.
Q: Thank you for your time. The interview is done.
A: No problem, Thank you and good luck with your assessment, hope it helped.

Interview transcript 3

Mike(interviewee): What do you feel about the app?
Lawrence (interviewer): I think the overall is good, could be better if there is shown of expiration date, the app also should allows user to comments on recipes, and allows the user to upload their own recipe.

Mike(interviewee): What are the things you think need to be improved?
Lawrence(interviewer): With all things been said, there should be an extra function for expiration the style of fridge page are a bit simple, there are two much gray scale in the recipe page and favourite page,

Mike(interviewee): What was something that frustrated you throughout the testing.
Lawrence(interviewer): Firstly i thought i can add food stuff within the fridge page, but then i realize is in the different page, and also the main page is a bit unclear for me.

Mike(interviewee): What do you feel about the visual design of the user interfaces? (Font? color?
Icon?)
Lawrence(interviewer): Fonts are good, a little bit small for me to read though, the fridge page is cartoon style, a bit too childish for me to use, also should more color should be add into the recipe page.

Mike(interviewee): Any additional thoughts?
Lawrence(interviewer): That's all, i think,

Interview transcript 4

Good morning Joe, My name is Colleen. Thank you for participating in this interview. All the collected data is completely anonymous. All your identity information is protected and is only for this research report, with no other use.
Hi Colleen. I got it. No worries.
So, From 1 - 10, how useful is the Fridge function to you? Why?
Well, to me. I like this function very much. I feel like this could help me to manage the food I buy without wasting it. I think I will probably give it a 9.
Why is there one core missing? Do you feel we can improve anything on this?
Well, yeah. I think to make it more straightforward to access it. You know what I mean.
I see. That's a good idea. So, what about the Recipe function? From 1-10, how useful is it? And why?
Hmmm. I don't know. To be honest, I don't think this function relates to it that much, you know, but I got its usefulness, but I mean, I wouldn't need this one in particular. However, if you want to keep it, it's nothing wrong. I really get it to solve the leftover, but just to me, so a four, maybe.
That's insightful. Thanks, joe. Could you also rank for the recommendation function?
Cool, I kind of like it. But it may look too messy in the same app. So I put a five or something like this. I don't know.
Right. I got it. What are some of the improvements we can make to this app?
Well, make it more user-friendly. I mean, get rid of some functions since it looks like everything is in the same app. It's nice, but I worried it would look messy somehow.
If you were to pick one feature from the app, which one would you choose?
Hahaha. Definitely the first one.
Fridge Function?
Yeah, It was the unique one. Really cool and works well on me, i guess.
Okay. Thank you so much Today, Joe. I hope you had a good time with us. See you next time. Bye, Colleen.

Interview transcript 5

Zechariah Whitlock 18.10

"I think...Umm, it's about 9 points. First, I think it's a good feature for a separate software design. Umm, well, although it is a very common app to manage refrigerators, But I think that compared to other features, I think the refrigerator is the most helpful for your project, which is to reduce food waste. In addition, it is easy to operate and understand, and the accessibility of the app is also guaranteed. So I think It's good to just innovate a little more, such as gamification? Incorporate some other elements into it.

Well, I would say 6? I think this function is also a very useful function, but it is not suitable for continued design compared to refrigerators. . . Umm, from my personal point of view, the recipe app is difficult to innovate, and this feature is built based on the refrigerator function. . . So I thought it would be nothing new if it was just a regular recipe.

I would also say. . . 6.5? haha, because I think this is a lot better than a simple recipe. . . But by the same token, this feature is based on the food you have. . As far as you can think, if you don't have a refrigerator, how would you recommend a menu to you? As far as I think, this feature is more like an auxiliary function. If your group insists on using it as a design idea to continue your research, the results may not be satisfactory.

I think to focus on your goal of 'reduce food waste', Umm, yes, you can re-examine your criteria. It is better to turn the problem of how to improve the design into how to better meet the goals we want to achieve. I don't have much substantive advice either.

I would definitely pick the first one, like I said earlier. The refrigerator feature is more like a root, while the recipe and recommendation features are more like leaves. If there are no roots, what about leaves? haha.

SUS Result

Participant	1	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my daily life					X
2	The applications is easy to use					X
3	The features were esily to understand without any explanation				X	
4	The functionalities within the app are useful.					X
5	This would help me avoid food waste.				X	
6	I found the app too complex.	X				
7	I needed to learn a lot before understanding each part of the app.	X				
8	What did you like the most about the applicaiton?	I like the images, it's really cute and easier me to understand each items.				
9	What could be improved?	"I think the overall user flow is pretty good, however, I feel the images are too big maybe and I feel as the smart fridge app, it would be good if you can add some sub-functions to make the "				
10	Did you find any of the features confusing?	"Once I add the stuff in, I didn't know where it goes next, so you can make this part more clear."				
11	Any further comments?	Everything else was good, but in the future you guys can make more functions into this app to make it complete.				
Score	85.7					

Participant	4	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my daily life				X	
2	The applications is easy to use					X
3	The features were esily to understand without any explanation			X		
4	The functionalities within the app are useful.				X	
5	This would help me avoid food waste.				X	
6	I found the app not too complex.				X	
7	I did not need to learn a lot before understanding each part of the app.					
8	What did you like the most about the applicaiton?	I like the design of the app, I think the icons are cute and it's easy for us to understand with the images of the food				
9	What could be improved?	Icons are great but I think the main page can be more designed.				
10	Did you find any of the features confusing?	I found it confuse when I add items. Like I have to go all the way to the main page to check if my items were added correctly.				
11	Any further comments?	Like I said I feel like the overall design of the app can still improve as it looks a bit boring at the moment.				
Score	71.4					

Participant	1	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my dailt life					X
2	The applications is easy to use				X	
3	The features were esily to understand without any explanation				X	
4	The functionalities within the app are useful.					X
5	This would help me avoid food waste.					X
6	I found the app too complex.	X				
7	I needed to learn a lot before understanding each part of the app.		X			
8	What did you like the most about the applicaiton?	I like the idea of the app. I have never seen a app like this.				
9	What could be improved?	"Well I guess the add-on function, I couldn't realise if it was added correctly or not, I hope there can be some windows to show that I have added already."				
10	Did you find any of the features confusing?	"No, not as confusing, but I feel like I wouldn't know where is the checklist without your explanation, so maybe try to make it more obvious"				
11	Any further comments?	" I hope to see the final one, hahaha, but I feel you guys can make this app more				
Score	89.3					

Participant	3	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my daily life			X		
2	The applications is easy to use				X	
3	The features were esily to understand without any explanation			X		
4	The functionalities within the app are useful.					X
5	This would help me avoid food waste.					X
6	I found the app not too complex.				X	
7	I did not need to learn a lot before understanding each part of the app.					
8	What did you like the most about the applicaiton?	I like the functionalities, I think it's really something useful for people who do a lot of grocery shopping. It will help them to manage.				
9	What could be improved?	Ummm, like at the end, do I need to always check the app. I feel like it will be better, because if it's made for busy people I don't know if they are going to check the app everyday.				
10	Did you find any of the features confusing?	Yes, I didn't realise about the delete function until you have told me.				
11	Any further comments?	I think the idea is great, it is really helpful. Just some of the interaction for the app needs to be improved.				
Score	75					

Participant	5	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my dailt life					X
2	The applications is easy to use					X
3	The features were esily to understand without any explanation				X	
4	The functionalities within the app are useful.					X
5	This would help me avoid food waste.				X	
6	I found the app too complex.				X	
7	I needed to learn a lot before understanding each part of the app.	X				
8	What did you like the most about the applicaiton?	Ummm, I feel like the color is pretty good. it seems pretty simple and I like that.				
9	What could be improved?	I think more text to navigate. It's confusing sometime when I want to go back.				
10	Did you find any of the features confusing?	Yea, like I said, I was stuck for a long time sometime so maybe improve the each navigation.				
11	Any further comments?	I'm looking forward to see your completed one				
Score	71.4					

Participant	Aiee	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my daily life				X	
2	The applications is easy to use			X		
3	The features were esily to understand without any explanation					X
4	The functionalities within the app are useful.					X
5	This would help me avoid food waste.			X		
6	I found the app too complex.		X			
7	I needed to learn a lot before understanding each part of the app.	X				
8	What did you like the most about the applicaiton?	I like that it can show all the ingredients in such a layout, it is clear for me to look at and decide what to add in the fridge.				
9	What could be improved?	I really don't know what ingredients I added into the fridge, it would be good if there is a function that can remind me what I just pressed.				
10	Did you find any of the features confusing?	It is challenge for me to understand what does that each buttons mean, and the button beside search bar is unnessary for me to, is that a part of the function?				
11	Any further comments?	The cartoon images sometimes could be hard for me to recognize, even though they are in the same style, but it is not that friendly for me to look at.				
Score	75					

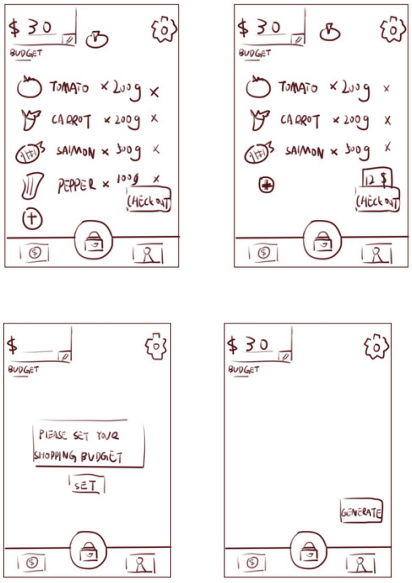
Participant	6	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my dailt life					X
2	The applications is easy to use				X	
3	The features were esily to understand without any explanation				X	
4	The functionalities within the app are useful.				X	
5	This would help me avoid food waste.					X
6	I found the app too complex.		X			
7	I needed to learn a lot before understanding each part of the app.		X			
8	What did you like the most about the applicaiton?	I liked the idea, I think it's really a good app for people who cook or have a lot of things in their fridge.				
9	What could be improved?	I think the placement of icons. I know it's a small thing but I think it's something important for easier the functionality of the app.				
10	Did you find any of the features confusing?	Not so far. maybe because I'm good at computer stuff. Just mention more navigation for people who are not familiar with application.				
11	Any further comments?	I really like the app. Keep it going!				
Score	71.4					

Participant	Pinguuan	(Strong disagree) 1	2	3	4	(strongly agree) 5
1	I would like to use this app in my daily life					X
2	The applications is easy to use				X	
3	The features were esily to understand without any explanation					X
4	The functionalities within the app are useful.				X	
5	This would help me avoid food waste.				X	
6	I found the app too complex.	X				
7	I needed to learn a lot before understanding each part of the app.	X				
8	What did you like the most about the applicaiton?	The idea of keeping my fridge updated and food tracking is great, it is definitely helpful because I can just check my fridge without opening it.				
9	What could be improved?	I wish there was a way to show how much ingredients are already in the fridge when I try to add food, so that I can adjust the amount of food whether I add it or reduce it.				
10	Did you find any of the features confusing?	I'm not sure what I should do after the food has been added into the fridge. How do I take a step back? That would be a struggle for me.				
11	Any further comments?	I'm still not sure when the app will remind me of the food that is about to go off, because I need to think ahead of what to cook, how to cook, and what other food ingredients need to be combined.				
Score	82					

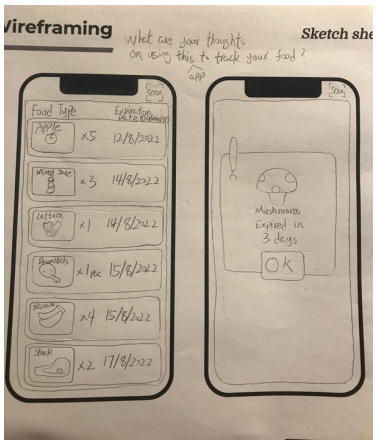
Decision Matrix

	Recipe Function	Fridge Function	Recommendations
Reduce food waste	1/3	3/3	2/3
Prepared grocery experience	0/3	3/3	1/3
Improve cooking skill	3/3	1/3	3/3
Improve food storage	1/3	3/3	1/3
Feasibility	1/3	3/3	1/3
Technology (achievability)	1/3	3/3	1/3
Effciency	2/3	2/3	1/3
Accessibility	3/3	3/3	2/3
Usability	2/3	3/3	1/3
Total	14	24	13

Low-fidelity prototype:
Concept 1 - ToSave



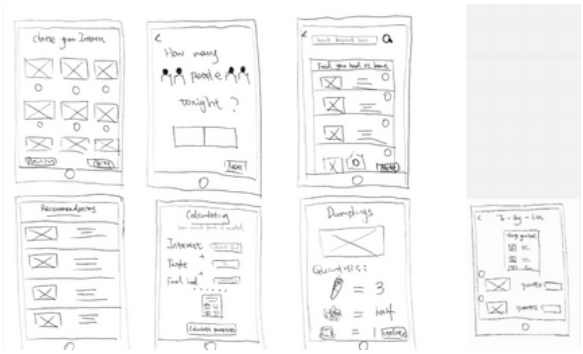
Low-fidelity prototype:
Concept 2 - Food Good



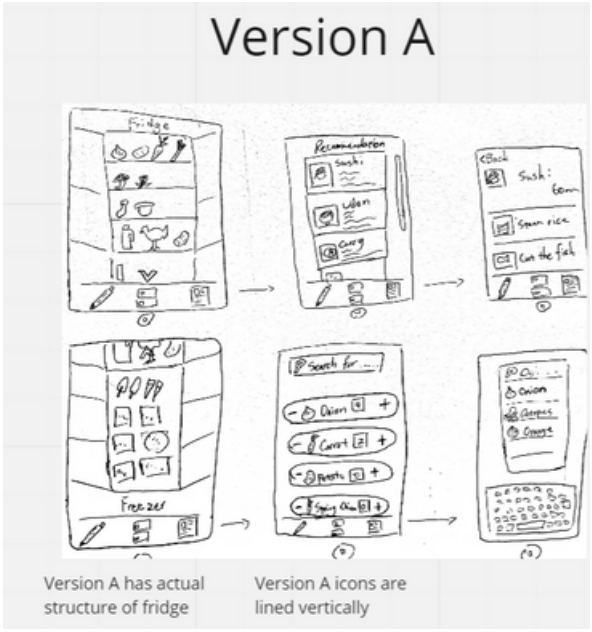
Low-fidelity prototype:
Concept 3 - Fridger

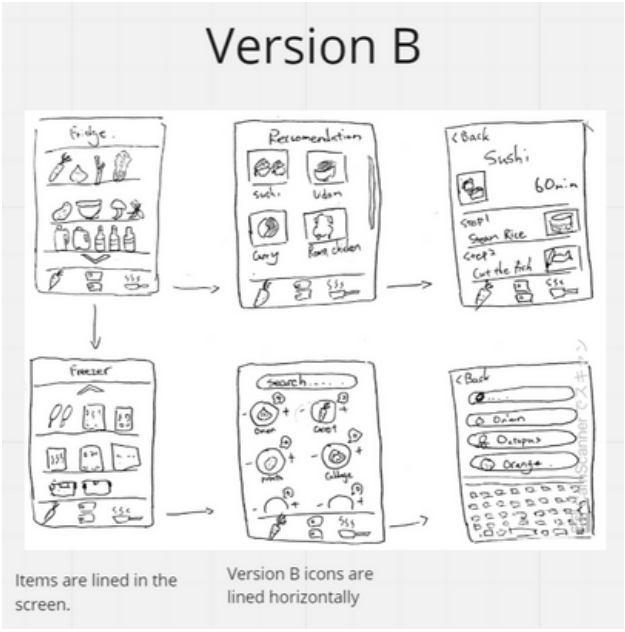


Low-fidelity prototype:
Concept 4 - Fantacy Recipe

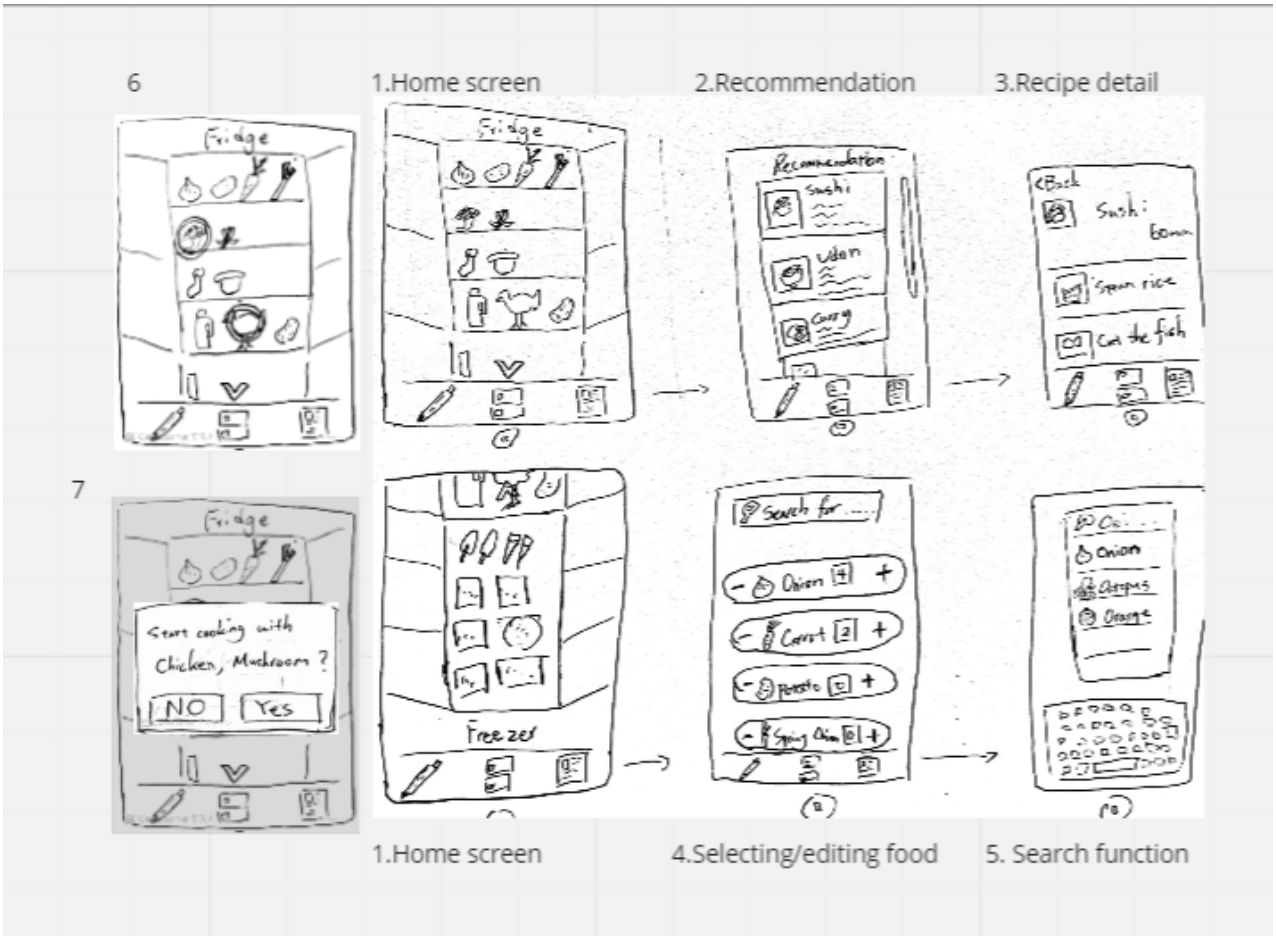


A/B Testing

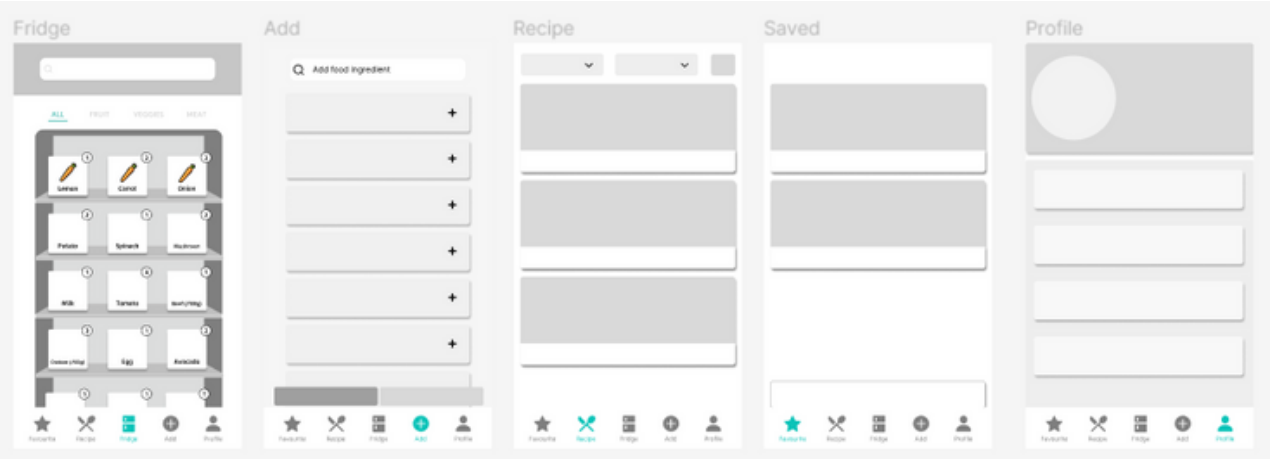




Version A - Final low fidelity prototype



Mid-fidelity prototype: Wireframes



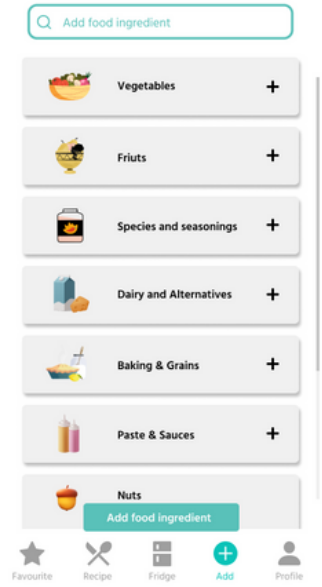
Mid-fidelity prototype: Fridge page



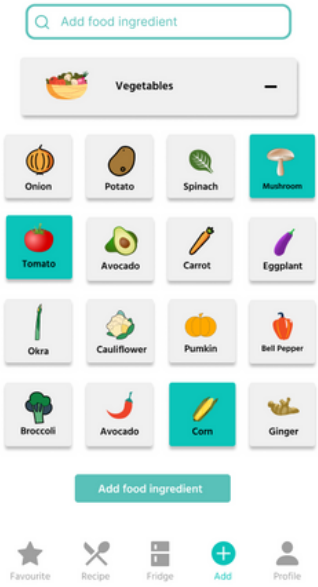


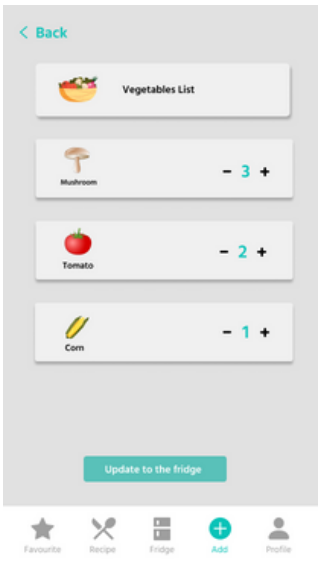


Mid-fidelity prototype: Add page



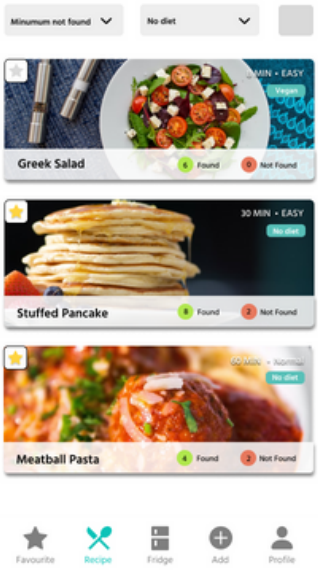


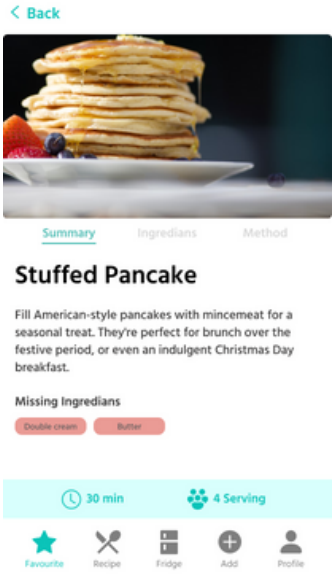


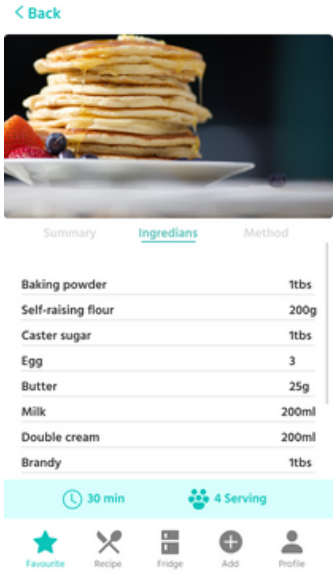




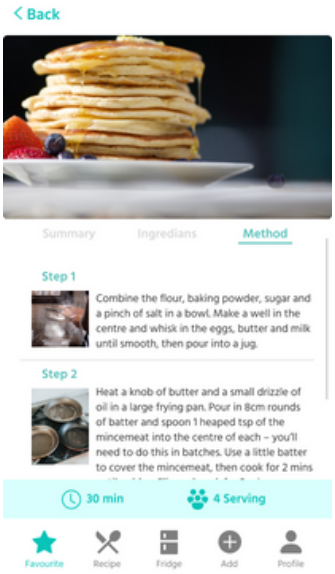
Mid-fidelity prototype: Recipe page

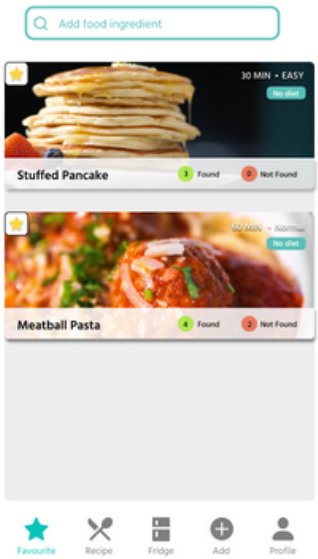




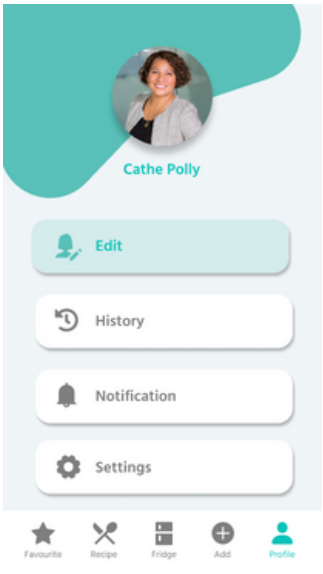


Favourite page

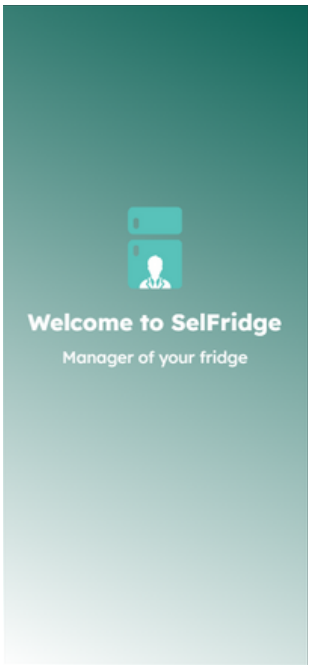


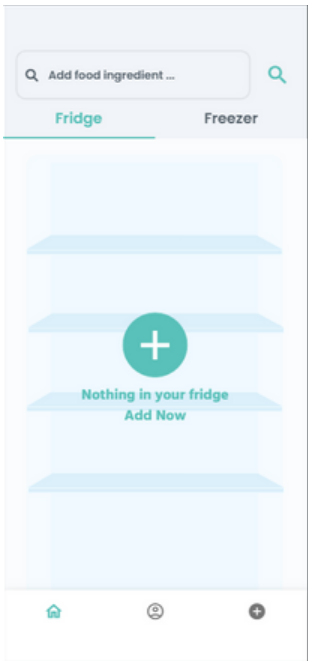


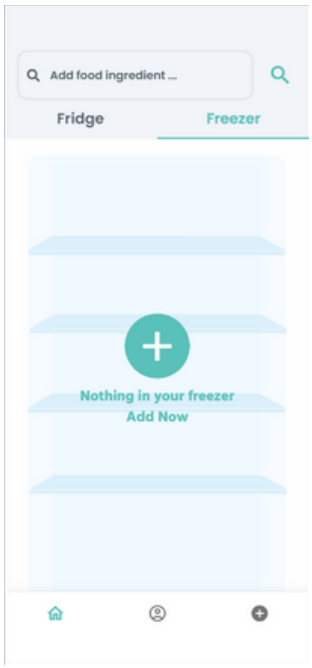
Profile page



High-fidelity prototype (Selfridge 1.0): Welcome page & Fridge page

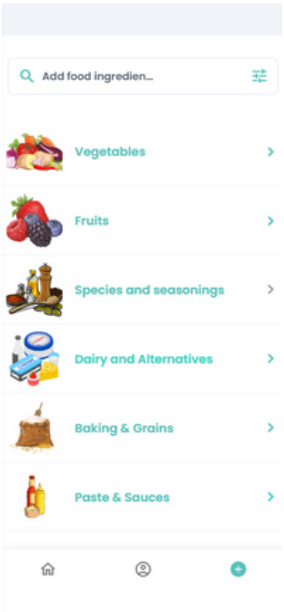


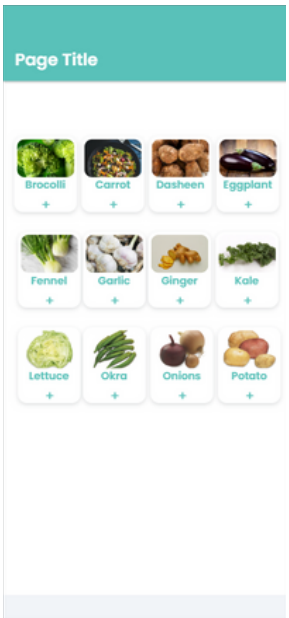


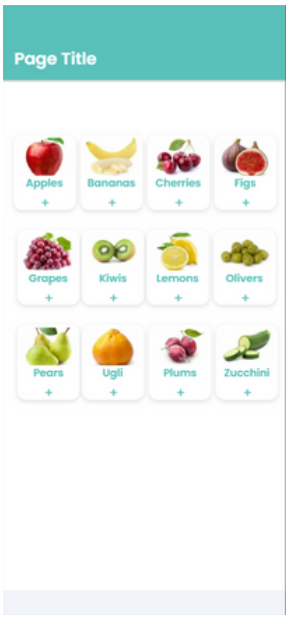


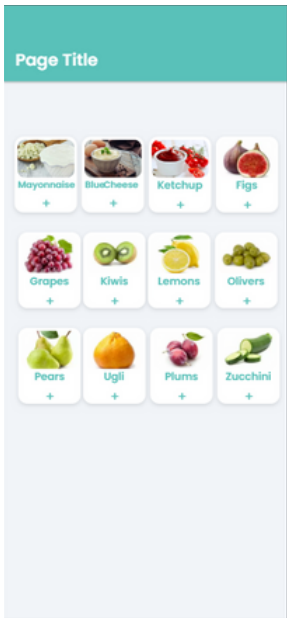
High-fidelity prototype (Selfridge 1.0): Add page

Add page - Vegetable category & Species and seasonings

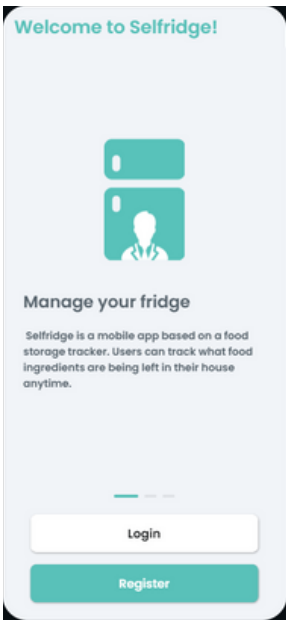


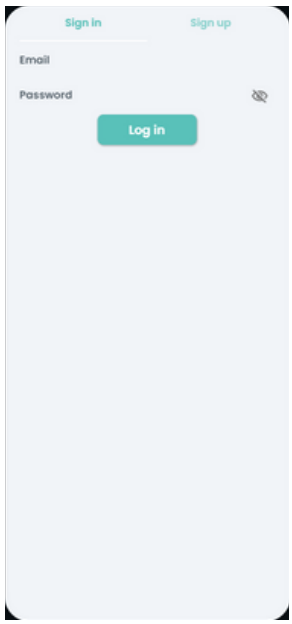


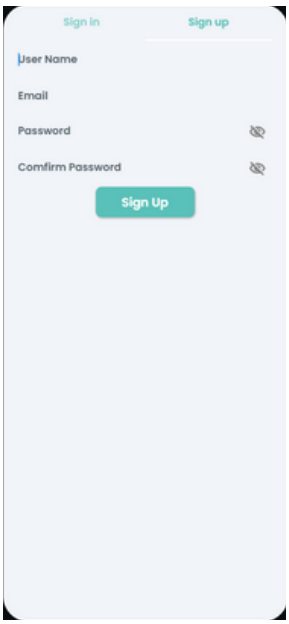




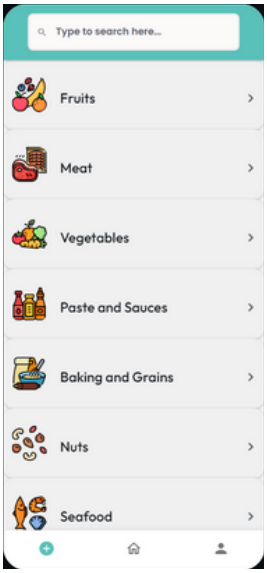
High-fidelity prototype (Selfridge 2.0): Welcome page & Sign up/in Page

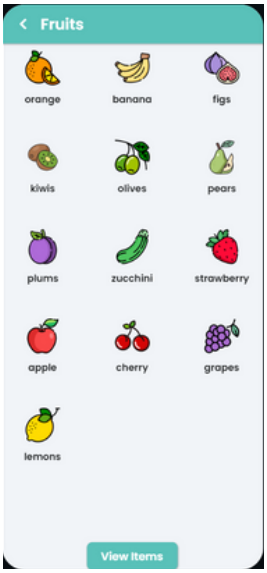






High-fidelity prototype (Selfridge 2.0): Add Function - Fruits, Meat, Vegetable Categories



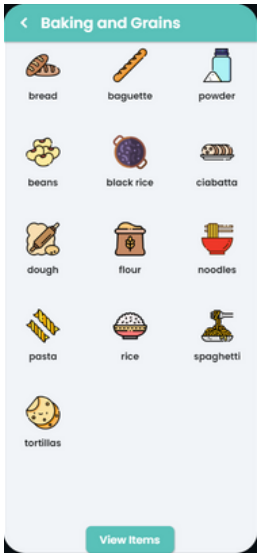


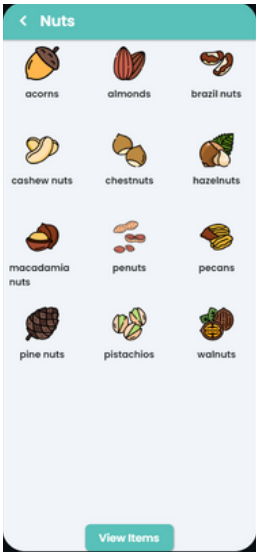


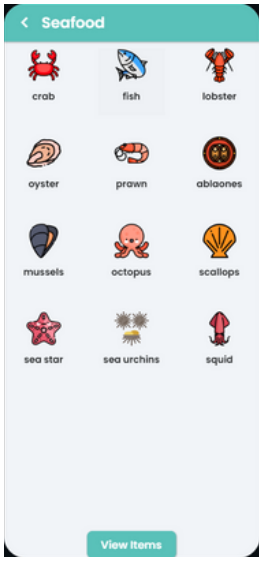


High-fidelity prototype (Selfridge 2.0): Add Function - Paste and Sauces, Baking and Grains, Nuts, Seafood Categories



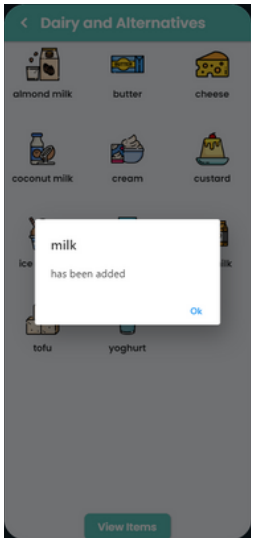




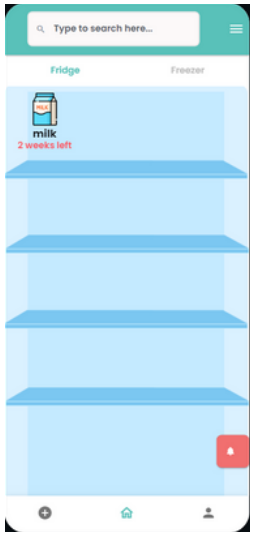


High-fidelity prototype (Selfridge 2.0): Add Function - Pop-up window



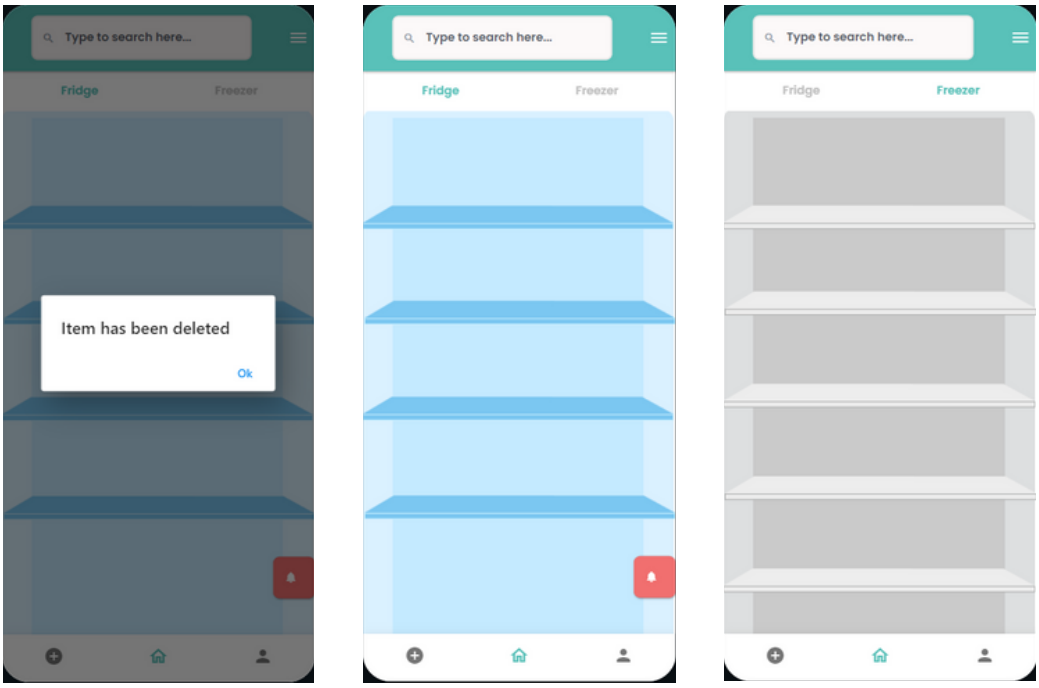


High-fidelity prototype (Selfridge 2.0): Add Function - Food ingredients been added to fridge page

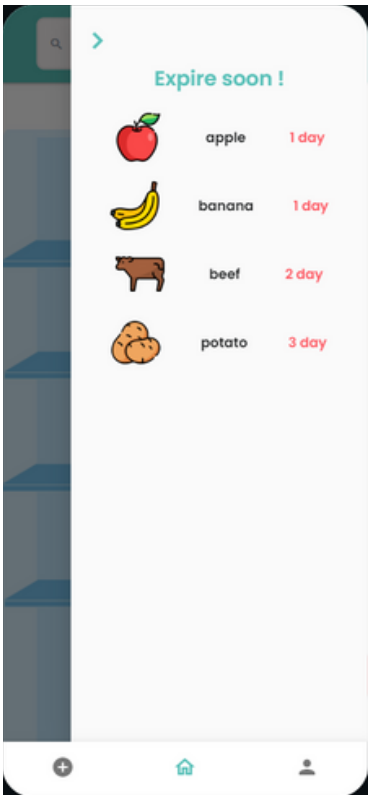




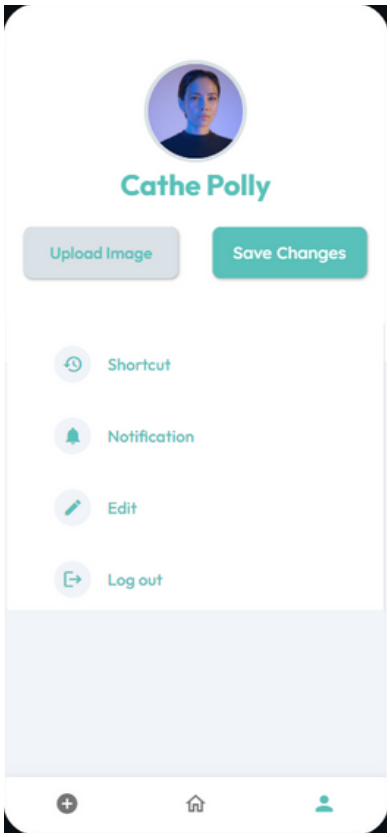
High-fidelity prototype (Selfridge 2.0): Delete Function - Food ingredients been deleted



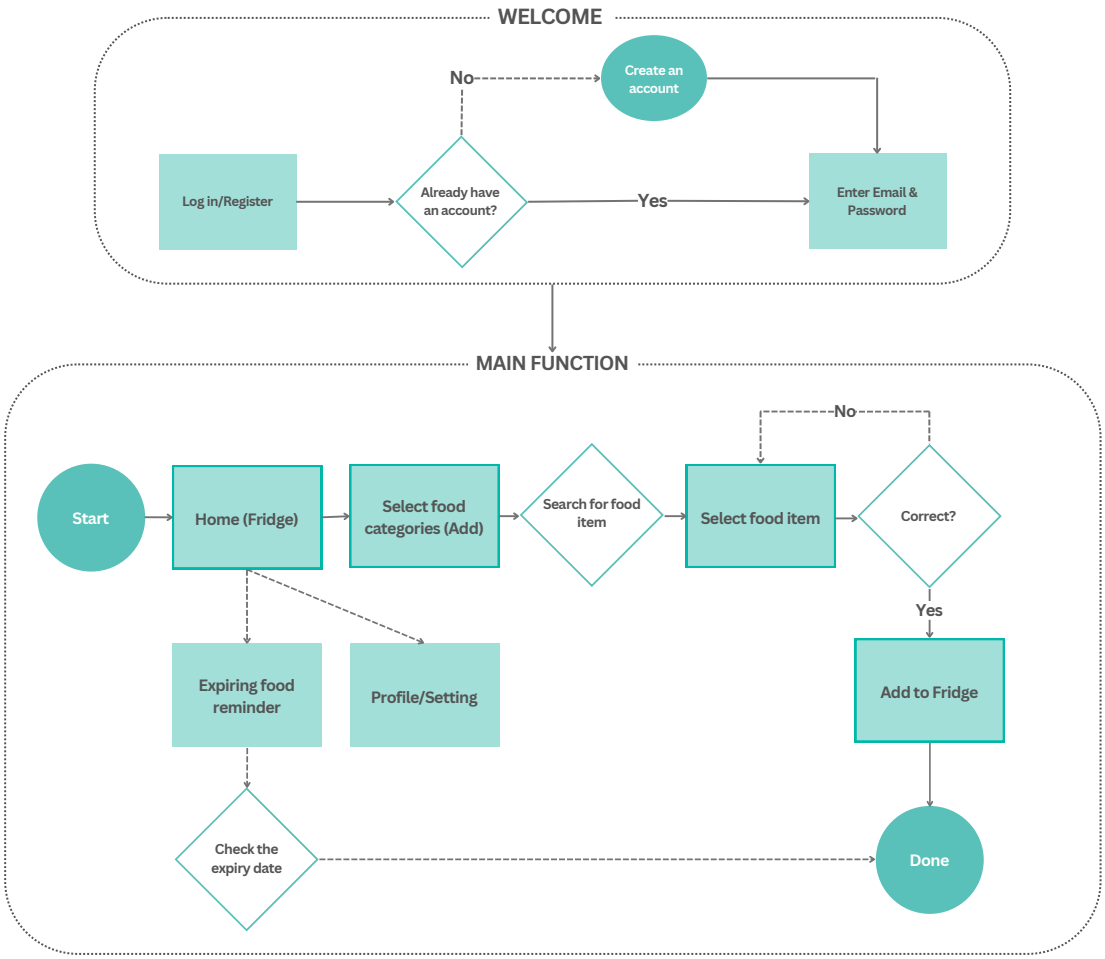
Notification Function - Reminder notify food ingredients that are about to expire



High-fidelity prototype (Selfridge 2.0): Profile Page



User Flow


WELCOME
No
Create an account
Log in/Register
Already have an account?
Yes
Enter Email & Password
MAIN FUNCTION
No
Start
Home (Fridge)
Select food categories (Add)
Search for food item
Select food item
Correct?
Yes
Expiring food reminder
Profile/Setting
Add to Fridge
Check the expiry date
Done

Consent form



Improving the User Experience

Consent Form

I agree to participate in the study conducted by [Name: Colleen Feng].

I understand that participation in this study is voluntary and I agree to immediately raise any concerns or areas of discomfort during the session with the study administrator.

I understand that these sessions will be video recorded, and used internally for data analysis.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date: 12/10/2022

Please print your name: Carol Watson

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

Consent Form

I agree to participate in the study conducted by [Name: LIUYU TANG].

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Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date: 12/10/22

Please print your name: Evan Chi

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

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Date: 12/10/2022

Please print your name: Joe Zhou

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

Consent Form

I agree to participate in the study conducted by [Name: Mike Yang].

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Date: 12/10/2022

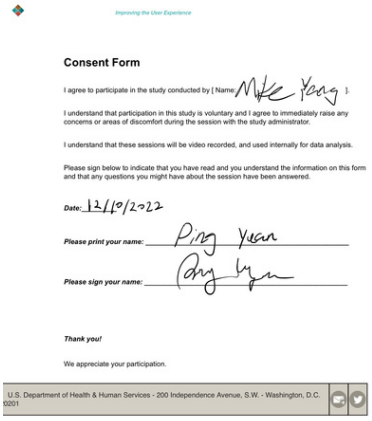
Please print your name: Alice

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

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Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date: 12/10/2022

Please print your name: Ping Yuan

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

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I agree to participate in the study conducted by [Name: LIUYU TANG].

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I understand that these sessions will be video recorded, and used internally for data analysis.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date: 15/10/22

Please print your name: Zechariah Whitlock

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

Consent Form

I agree to participate in the study conducted by [Name: Sho Kozuki].

I understand that participation in this study is voluntary and I agree to immediately raise any concerns or areas of discomfort during the session with the study administrator.

I understand that these sessions will be video recorded, and used internally for data analysis.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date: 15/10/22

Please print your name: Scott Tan

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201



Improving the User Experience

Consent Form

I agree to participate in the study conducted by [Name: Sho Kozuki].

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I understand that these sessions will be video recorded, and used internally for data analysis.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date: 15/10/22

Please print your name: Mayuri Kozuki

Please sign your name:

Thank you!

We appreciate your participation.

U.S. Department of Health & Human Services - 200 Independence Avenue, S.W. - Washington, D.C. 0201