Appendix

Appendix 1.1:
Project brief

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Scope & solution space:
This project will target white-collar consumers in China's big cities and reduce avoidable waste in takeaway food by changing consumers' attitudes and behaviors.

Learning objectives:
What are the main barriers and potential opportunities for consumers to reduce avoidable food delivery waste?
What knowledge does each stakeholder need to make informed decisions?
What method is more likely to change consumer behavior?

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Design a package and a functional service for food waste in an existing food delivery service platform with researching insights, educational knowledge and behavior model.

Expected deliverables:
Research insights - Major barriers and opportunities for consumers to reduce food delivery waste
Education knowledge - Stakeholders' understanding of reducing food delivery waste
Behavior model - Combine behavioral models to change unconventional habits

Expected solutions:
Design a package and a functional service for food waste in an existing food delivery service platform

1. Raise stakeholders' awareness of avoidable food delivery waste
2. Build a greener and more sustainable consumption habits
3. Consider the value of more stakeholders

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date   7   7   2022   22   6   2022   end date

Kick off - Kick-off:
-Quantitative and qualitative research: main barriers and opportunities of reducing avoidable food delivery waste
knowledge that main stakeholders need
- Plan: first round concept ideation.

Midterm - Green light:
- Test initial concept
- Iterate based on feedback and insight analysis
- Test iterated concept and analyze

Green light - Graduation:
- Finalize and polish final design
- Document deliverables and reflect

P.S. The time schedule is based on the tasks of each stage, and the specific time may be fine-tuned according to the actual situation or unexpected situation.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective(s) you followed, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

Competences you want to prove and learn:
From the undergraduate graduation project (about setting alone) to the personal named project (family food waste), I am interested in food design topics and have some personal understanding. The elective course food and eating design also helped me learn from more different aspects to consider the design of food. This elective material. In the compulsory course PI, I learned that from the perspective of interaction design, and in UXAD, I learned to systematically conduct user tests of different dimensions, and obtain better solutions based on analysis and insights. So I expect, in the thesis project, these competences will be consolidated and even more research and design methodology will be explored.

Personal learning ambitions:
- Better understand the problems and opportunities of food waste under the current Chinese food delivery service system
- Learn how to apply and even improve existing behavioral models
- Independently manage the progress of the project

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

Appendix 1.2: Literature review

In order to study the current status of food delivery waste and what objective factors and consumer subjective factors lead to FDW, a literature review was conducted on some related papers.

Literature review

Appendix 2.1:
Summary of user characteristics

This table summarizes the basic information of the interviewed users, such as gender, age, city, and occupation; as well as their views on takeout, such as the purpose of ordering, frequency, waste reasons, and value ranking.

	Participant	Gender	Age	Profession	City	Food intake size	Motivation for ordering takeout	Frequency(per week)	Reason for waste	Sort by value
1	Zack	Male	27	Industrial designer	Shanghai	Normal	Change taste/lazy	2-4	too unpalatable	Hygiene, ratings, prices, signature dishes
2	WenXue	Male	39	Structural engineer	Shanghai	Normal	Routine	2	unpalatable	Impressions, tastes, review pictures, sanitation
3	YunZhao	Female	24	Intern	Chengdu	Small	Change taste/lazy	4-7	Too much rice, order more for nutritional balance，Feels like plastic touching hot food is unhealthy	Combination of meat and vegetables, taste, price, delivery time, reliability, hygiene
4	ZiHan	Female	26	Purchasing Engineer	Shanghai	Small	Change taste	4-5	Too many staples in the set meal，Worry about fruit spoiling in summer	Hygiene, delivery time, price concessions
5	Jason	Male	26	Industrial designer	Shanghai	Normal	No time in morning/lazy/change taste	7	Unpalatable, poor appetite	The type of food want to eat, user reviews, distance, time, price
6	Daniel	Male	26	Supply chain engineer	Beijing/Shenzhen	Large	Workday lazy	2-3	Unpalatable	brand, taste orientation, price
7	Zzh	Male	26	Programmer	WuHan	Small	Don't want to cook	4	can't eat, no appetite, don't like soup	price, fast delivery, is it yummy
8	Ye	Female	27	Reporter	Shanghai	Small	Cooking by herself is not tasty/can't	not fixed	I order too much and can't finish it (staple	Taste, price, hygiene, reviews, delivery time

							cook, busy with work/lazy，no kitchen condition		food/meat), I feel that the soup is not clean	
9	Gu	Female	23	Office clerk	Shanghai	Small	Don't cook	12	Don't like to eat (staple food), too full (meat), feel irregular (drinks)	Personal taste, merchant rating, brand marketing, user feedback
10	Ziyang	Male	27	Programmer	Shanghai	Normal	Don't want to cook	2-3	Not tasty/dislike	Three-party comprehensive evaluation (self, colleagues, platform), monthly sales, time
11	Qiaona	Female	26	Programmer	Beijing	Normal	Lazy to cook	2-3	The full reduction leads to too much order and can't be eaten	The type of food, discount , no shipping fee
12	Wu	Female	28	Programmer	Beijing	Big	Fast,worry-free,convenient, Don't cook	14, Almost every day	Unpalatable, too much portion in order to make up for the discount	Taste, price - full discount, store rating (monthly sales, favorable rate), pictures of dishes, user reviews
13	Weilun	Male	27	Programmer	Shenzhen	Small	Don't cook	3-4	Unpalatable, staple food -too much rice	taste, price
14	Xintong	Female	29	Biostatistician	Beijing	Normal	Too lazy to move, kitchen hygiene is not suitable for cooking，convenient	14, Almost every day	There are too many rice and few dishes, there are things in the set that do not suit your taste/unpala	The type of food she want to eat, feedback evaluation, full reduction,

									table.	
15	Xin	Female	30	Civil servant	Shanghai	Normal	The takeaways that you can't make by yourself/ are more delicious，change the taste	10-12	The main food rice will be left, and the side dishes may be left to eat next time	The type of food you want, merchant rating, delivery distance, price

A different type of persona can be summarized
(small food intake/large food intake, strong environmental awareness/weak environmental awareness, high food requirements/low food requirements, strong purpose/weak purpose, strong goal/weak goal, more choices/less choices, Takeaway demand/dependency big/small...

Categorize persona according to the needs of ordering takeaways- lazy map convenient / change taste / poor cooking skills (no conditions) / big stomach king / exquisite diet / satiety and convenient / order every day /

Insights:
- Various evaluation criteria for ordering constitute the level of trust in the store, trust = evaluation + picture + brand + past ordering experience + past offline dining experience +...
- Many white-collar companies in big cities have canteens to provide meals, so these people order takeout mainly to change their taste or to be lazy and don't want to cook by themselves. The white-collar workers who do not have a cafeteria order takeout more frequently, which may be because they cannot cook or do not have time to cook or feel that cooking is very troublesome. The main choices for white-collar workers to eat are: 1. Company cafeteria 2. Takeaway 3. Cooking for yourself 4. Dine-in in restaurants 5. Convenience store/street breakfast 6. Going to someone else's house 7. Bringing meals
- Since the price of a meal is basically enough for delivery, and everyone has their own preferences, most people will choose to order takeaway by themselves, because they feel that there is not much benefit in ordering meals together (benefits < trouble) only in the company dinner / Afternoon tea or when there is not enough delivery time (breakfast/milk tea/snack), I will order meals with my colleagues.
- User feedback (evaluation pictures, evaluation text, favorable rate, sales)
- Passive acceptance (people around you/Internet push/current events), active understanding (when there are personal needs - search/interests)
- Some people think that takeout is not very healthy because of heavy taste, heavy oil and salt, more meat and less vegetables, and it is not easy to balance nutrition, or think that it is a small workshop and not a big brand
- Delivery time/distance is also an important factor for users to order food, because long delivery time may affect the taste of dishes, and if they are not delicious, they will lead to more waste
- There are several different purposes for users to pay attention to physical objects: 1. Their own needs (to understand and buy delicious food) 2. Passive acceptance (policy promotion, negative news - food safety)
- In terms of environmental protection, we have a better understanding of disposable non-recyclable materials,

Appendix 2.2:
Interview structure script

This interview structure draft shows the purpose, process, background questions, extension questions, etc. of this semi-structured interview with target users. As the basis for the interview, the real interview is not limited to the questions in this draft.

Structure

Interview goal:
- Understand the steps and stages of a consumer's FDS journey
- Barriers/reasons for consumers not prioritizing food waste
- Opportunities that consumers may be concerned about food waste

Warm up/Basic information:
Gender, Age, Occupation, Years of Work, Frequency of Ordering Takeout, Food intake size, Favorite type of food

Introduction:
Thank you for coming to my interview. Let me briefly introduce this project. I am currently studying interaction design at Delft Institute of Technology. This project is mainly to study the understanding of Chinese young white-collar workers on food waste in food delivery. Today's interview is about 30 minutes, there are three main parts, firstly, I will first let you talk about the usual ordering habits, and then I need you to share the screen to show the usual ordering process, and finally there are a few simple questions, this process I may need to record the screen, just use it as a record, and no personal information will be passed on, is that okay?

Background questions:
Can you briefly describe how you usually order takeout?
- Do you usually order takeout? How often (frequency)?
- When? Morning, noon, afternoon tea, evening, early morning?
- What do you like to order?
- How do you feel about your food intake? For example, can a normal serving of one person be eaten? Or do you need to order something else?
- When would you want to order takeout (motivation)?
- Do you usually order by yourself, or with someone else? with whom? (Order more by yourself or with others? Why?)

User journey:
Suppose you want to order takeout now, as usual (the common scene just mentioned), please share the screen before starting, you need to think out loud during the process, that is to say, you can say whatever you think in your mind, and say whatever comes to your mind.

- In this interface (select a restaurant), what do you generally judge what you want to eat? What factors affect you?
- In this interface (choose dishes), what do you generally judge what you want to eat? What factors will affect you?
- How long to order? Different situations can be listed.
- After ordering, do you write a review/questionnaire?

Summary questions:
- How do you feel about your food intake? For example, can you eat a normal serving for one person? Or do you need to order something else?
- Can you finish your usual takeout? (Frequency) If there is waste, why? (reasons, such as ordering too much (why ordering too much), unpalatable)
- What are the main factors to consider when ordering takeout? (After finishing speaking, let the sorting order, such as price, taste, evaluation, hygiene, etc.)
- What kind of service do you think the takeaway platform provides you can help you order more (appropriate? Taste?) takeaway? What can be improved? What can food delivery platforms improve to help you avoid buying (inappropriate, i.e. not meeting expectations) food?

Extended question:
- Do you usually pay attention to information about food? Any food related can. Through what to know? Why are you interested?
- Do you usually pay attention to some environmental protection related information? what is it? Why interest you?

<u>Interview structure</u>

Appendix 2.3:
Interview key notes

Since all interviews are conducted in Chinese, the transcripts are also in Chinese. In order to facilitate English users to understand the details of the interviews, there is a translation in Appendix D for each interviewee's interview answers based on important questions and some important quotations.

<u>Interview key notes</u>

Appendix 3:
User journey maps

Based on four different personas, the user flow map describes in detail the takeout ordering habits of four different groups of consumers, focusing on the five stages of pre-order, order, wait, eat, and after.

Hungry eater
39 years old, Male
The company has a cafeteria, so I only order takeaway when there is no cafeteria to eat.

Demand	Pursue convenience and speed (no time)
Time	10 mins to order
Order frequency	5-6 per week
Sort by value	delivery time, delivery distance...

Phases	Order				Wait	Eat	After
Actions	View Home Recommendations	Choose a store	Choose a meal	Redeem coupon & pay	Busy with his own business	Eat takeaway	Throw away garbage
Influencing factors		Is the past experience good	Does user evaluation picture look hygienic	Is the delivery time fast		Is it delicious	Is it necessary to eat again
Quotations	"I usually order the shops I have eaten at, and the others are basically looking at the pictures to decide whether I want to eat them or not."	"I'm not interested in these, don't want to spend a lot of time ordering food, as long as I can eat it"	"I like to eat noodles, so it doesn't taste bad if it's not delivered fast enough"		"I won't open for viewing if it's no longer than expected time"	"If I can't finish it, it's usually because it's too unpalatable, or it doesn't taste right."	"If it doesn't taste good, I won't eat it again, just throw it away"

Figure *: User journey map-hungry eater

Hungry eaters are more concerned about delivery speed than food quality. They consider less factors when ordering, and the process is faster. Generally, food is wasted only when it is very unplatable.

Health seeker
27 years old, Female
In addition to the cafeteria, I often go to restaurants to eat or cook by myself, so I only order takeout occasionally.

Demand	Pursue nutritional balance and quality assurance (too lazy to cook)
Time	30 mins to order
Order frequency	3-4 per week
Sort by value	Rich variety of meat and vegetable combinations, brand trust, user feedback...

Phases	Search			Order	Wait	Eat	After	
Actions	View food recommendations	Choose a store (may repeat)	Choose a meal	Check delivery time and pay	Busy with his own business	Eat takeaway	Write a review	Throw away leftovers
Influencing factors	Is it a chain brand with hygiene guarantee?	Whether there is a complete food safety file	Whether the meat and vegetables are matched, the nutrition is balanced / View sales, positive ratings, detailed descriptions, and negative reviews	Is the delivery time appropriate? / Whether the delivery fee and price are appropriate		Is it as tasty as expected	Is the serving size appropriate?	Are leftovers easy to handle?
Quotations	"I usually choose the one I have seen offline with a brick and mortar store, it feels safe and more hygienic."		"In order to balance nutrition, I will order one meat and one vegetarian food, which is a bit too much for me alone."	"I will write a note to order less rice, but the merchant may have packaged it in advance or be afraid of bad reviews, and will still give the same amount."	"Sometimes merchants and riders will communicate with me in the app to change dishes or change the time."	"Sometimes there are dishes or soups that I don't like in the set menu. I order a lot, so I will choose what I want to eat first."	"The 'small noodles' in Sichuan are very good in weight, there are different grams, and the weight of their snacks is just right for me to eat as a staple food."	"The company doesn't have a refrigerator, there's not enough left over for a meal, and the plastic box doesn't heat well, so I won't keep it."

Figure *: User journey map-health seeker

Health seekers have high requirements for food, and will comprehensively consider various aspects, such as merchant reputation, nutritional balance, hygiene garantee, taste, etc., and will spend more time looking for suitable stores and dishes. They may waste food because ordering too much or feeling unsanitary.

Figure *: User journey map-taste seeker

Taste seeker — 26 years old, Male

The company has a canteen, and the living place has the conditions to cook, and only order takeout when there is something special he want to eat.

Demand	Pursue good taste (change the taste)
Time	5 mins to order
Order frequency	2-4 per week
Sort by value	the kind they want to eat...

	Want		Order			Eat	After	
Phases	Want		Order			Eat	After	
Actions	Think about what he wants to eat	Search for food directly	Choose a store	Choose a meal	Check prices and distances and pay	Eat takeaway	Keep leftover	Throw away leftover
Influencing factors	Does it the type he want to eat?		Does user evaluation picture look tasty / Is the store rated high?	Whether the pictures of the dishes and the evaluation pictures look appetizing / Is the serving size appropriate?	Are full discounts really cheap? / Can it be delivered quickly	Is it as tasty as expected	Can I eat it all	
Quotations	"Generally, I buy things with a strong purpose. If it is something I want to eat, even if it is expensive, I will find a way to find someone to order it together. Delicious restaurants may be more expensive, so cost performance is not the most important thing."	"Knowing the environment, I try not to order it, but it is really not delicious to cook by myself, and I still order takeout when I am thirsty."		"Barbecue requires at least a few of each dish before you can buy it, and you can order too much if you are not careful."	"There are many reminders for the full reduction, which is actually to induce you to consume it. One is that you can't eat that much at all, and the other is that it is basically not worthwhile after the full reduction, because you spend more."	"Sometimes you just want to satisfy your appetite, but when you find that you can't finish it, you feel bad and don't want to order any more."	"When the appetite is not good, or it is really bad, it will be left over."	"The rest will be put in the refrigerator but may be forgotten and will eventually be thrown away."

Taste seekers are more purposeful and will think about specific food types in advance. They have higher requirements for taste, and will pay more attention to evaluation or feedback when ordering food, and food will be wasted when it is unpalatable or the portion is too large.

Figure *: User journey map-everyday diners

Everyday diners — 23 years old, Female

The company doesn't have a canteen, so I don't know how to cook, so I order takeout for almost every meal.

Demand	Pursue cheap (daily routine)
Time	20 mins to order
Order frequency	12-14 per week
Sort by value	Price promotions, red envelopes, full-reduction discount...

	Check discount		Order		Wait		Order again	Eat	After
Phases	Check discount		Order		Wait		Order again	Eat	After
Actions	Get coupon	Select the store in the discount interface	Choose a store	Choose a meal	Check delivery time	Add shop discount group	Choose a store and meal	Eat takeaway	Write a review
Influencing factors	Is there a lot of discount		Is there a lot of discount	Do I need pay for packaging, tableware, and seasoning?	Can it be delivered on time	Will there be more deals next time?	Is there a free shipping fee	Is the serving size appropriate?	Is there a cashback
Quotations	"I only click on the discount interface, because the price inside is more cost-effective."		"I will definitely make up for the full reduction, because I like to 'smash wool', and I get more things for less money. Although I can't eat it, it's cheaper, and I can also share it with others."		"Because there was a delivery problem before, but I didn't get a phone call and it was too late to eat, so after I ordered, I would open it from time to time to see if it was delivered on time."	"In general, there will be more coupons in the group, which can be used next time and are cheaper."	"Sometimes there will be free delivery for a limited time, I will order another fruit dish, it is very cheap anyway."	"Sometimes the full discount is very big, and the order will be more, usually it takes one and a half people to eat it all."	"Generally I do not write small questionnaires, because it is very troublesome, unless there is cash back, I will write the feedback."

Everyday diners pursue discounts and cost-effectiveness. They will spend more time researching how to save money and get more food, and even pay more because of reduced shipping costs, which may be wasted because of excessive portions or inappropriate tastes.

Appendix 4.1:
Co-creation assignment

Prior to conducting the co-creation session, a week before the one-to-many interviews and collaborative activities, a preliminary assignment was distributed. This assignment aimed to encourage participants to reflect on their usual post-ordering behaviors, particularly their attitudes and specific actions towards leftovers.

在线上标画出你消费外卖的过程：
(e.g.写出从想点单到扔垃圾整个过程中的主要动作、关于食物浪费的心情变化、内心想法等，可以附上照片或截图～)

e.g.饿了-打开 app-选买...

e.g."纵想***正为**，但是****

e.g.没完的剩余、最后打包的垃圾...

Draw the whole process of takeaway ordering below:

e.g. write from thinking about ordering until throw the trash, including main behavior you did, emotional change about food waste, other thoughts in mind and etc. You can also put in some pictures or screenshots to explain.

在线上标画出你消费外卖的过程：
(e.g.写出从想点单到扔垃圾整个过程中的主要动作、关于食物浪费的心情变化、内心想法等，可以附上照片或截图～)

e.g.饿了-打开 app-选菜...

e.g."我想***因为**，但是****

e.g.吃完的剩余、最后打包的垃圾...

miro

After working overtime, Participant 1 found that the ordering time was too late and the waiting time at large chain stores was too long. The app recommended Burger King, which he had ordered before. It was the fastest and most hygienic, so he decided quickly. He was very hungry and waited anxiously. I ordered a much larger portion than usual, but since the company would reimburse me, I thought it was okay. Because I knew I wouldn't be able to finish everything, I chose to eat less carb bread first. The chicken legs were spicy and dry, so I wasted them. I didn't finish the drinks and chicken nuggets, but I didn't feel much guilt because I finished the staple burger and felt good.

在线上标画出你消费外卖的过程：
(e.g.写出从想点单到扔垃圾整个过程中的主要动作、关于食物浪费的心情变化、内心想法等，可以附上照片或截图～)

点开 APP 美食选项 | 观察品类评分及配送费 | 在想吃的店铺内找有没有想吃的食物 | 查看带图片的评论，以及差评(判断食物品相) | 一般我会选择品相好一点的，感觉这种的店铺会显得比较干净，包装是否好也是我的判断依据 | 点之前我会看下有没有满减，如果有满减可以用小食凑一下满减，如果我非常饿，或者比较急会直接下单 | 因为食量不是特别大，而且家里也有可以储藏食物的地方，往往不会点特别多 | 食物拿到后偶尔会拍照，因为带照片评论会增加积分，可以兑换优惠券 | 一般我点的量基本都能吃完，除非食物特别难吃，或者真的特别多。 | 遇到真的特别难吃的我还是会尝试着吃几口，还是不想浪费太多，但是如果遇见不干净或者坏了的食物还是会果断扔掉 | 扔之前我会把吃完的盒子和垃圾等一并放进外卖的袋子里，厨余垃圾会单独扔在其他不用的塑料袋里

Participant 2 first checked the ratings and delivery fees of the recommended stores, and then looked at the pictures and negative reviews of the food he wanted to eat to judge hygiene. Check to see if there are any offers before clicking. If you don't have time, you will skip this step. Because I have a small appetite and no room to store it at home, I order less. Take photos and comment to get points and discounts. It can be eaten normally. If it is particularly unpalatable, unclean or broken, it will be thrown away decisively. Classify kitchen waste and box garbage and throw them away.

在线上标画出你消费外卖的过程：
(e.g.写出从想点单到扔垃圾整个过程中的主要动作、关于食物浪费的心情变化、内心想法等，可以附上照片或截图～)

我会在选择上纠结很久，真正的吃饭过程和处理垃圾的过程反而没有那么重要了。

选择过程　　　等待　　吃饭过程　　处理垃圾

现在快到饭点了，要不点一下外卖吧？ | 打开支付宝，找到小程序-慎了么。 | 开始刷手机，思考具体要点什么。 | 这个店多久能送到呀？一个小时，太长了。 | 这个点好像半个小时就可以，那我来筛选一下半个小时能送到的店吧。 | 我看看我的会员卡有没有过期。这个点的优惠还挺多。 | 这里有我喜欢的咖喱牛肉，但是感觉好多诶？有没有少一点的呢？ | 这个咖喱鸡看起来也好吃，要不要尝试一下新菜�？要不还是算了吧，别待会不好吃，还浪费钱。 | 饭来了！终于可以吃饭了！ | 今天的分量还是好多！不过咖喱还是挺好吃！ | 吃不动了...太撑了，剩下的也不是我喜欢吃的，多吃了还会长胖 | 垃圾桶在哪儿呢？我赶紧处理一下，下午还有活儿呢。

Participant 3 opened the app to see what he wanted to eat at meal time. He mainly checked the delivery time, filtered the restaurants within half an hour, and checked the membership card discounts. I liked the beef curry but the portion was too big. I wanted to try something else but was afraid it wouldn't taste good and would be a waste of money, so I ended up choosing what I originally wanted to order. The portion was really big, so I quickly threw it away because I had to go to work in the afternoon as I thought the rest would not be my favorite and would make me gain weight. Overall, I will struggle with the selection process for a long time. Eating and disposing of garbage are not very important.

Appendix 4.2:
Co-creation process

For the brainstorming aspect of co-creation, participants were presented with ideation questions based on the opportunities arising from the objective obstacles I identified in section 3.2.6. These questions aimed to guide participants in generating targeted ideas and suggestions.
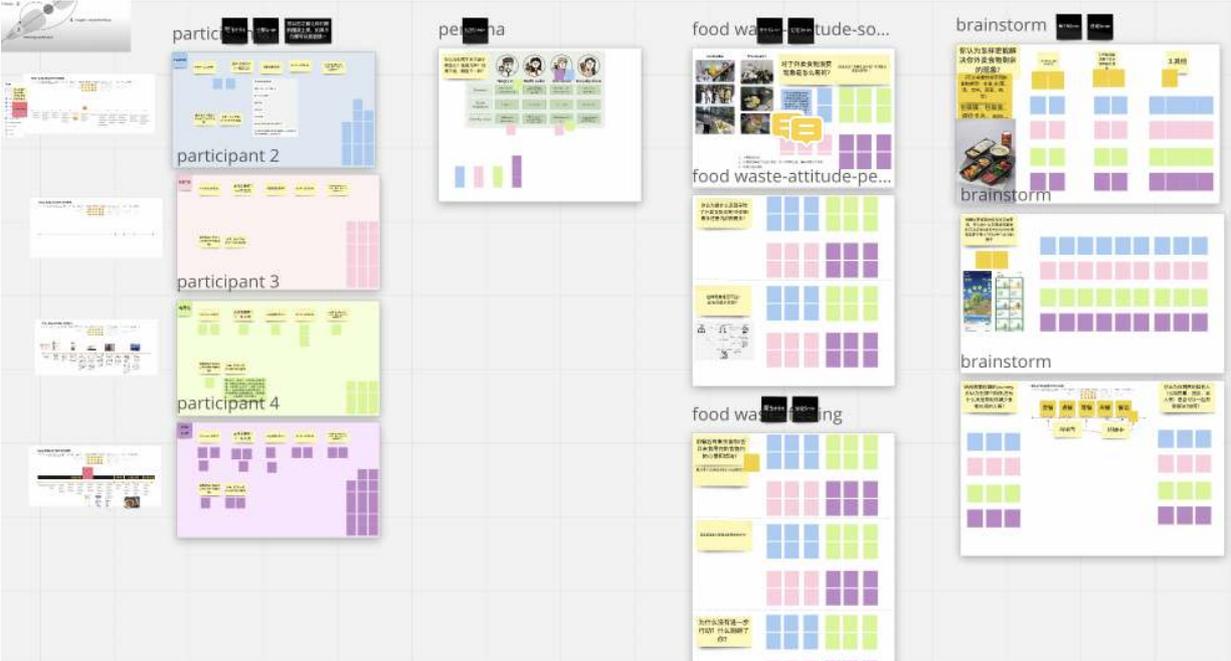
Figure : Co-creation Miro board
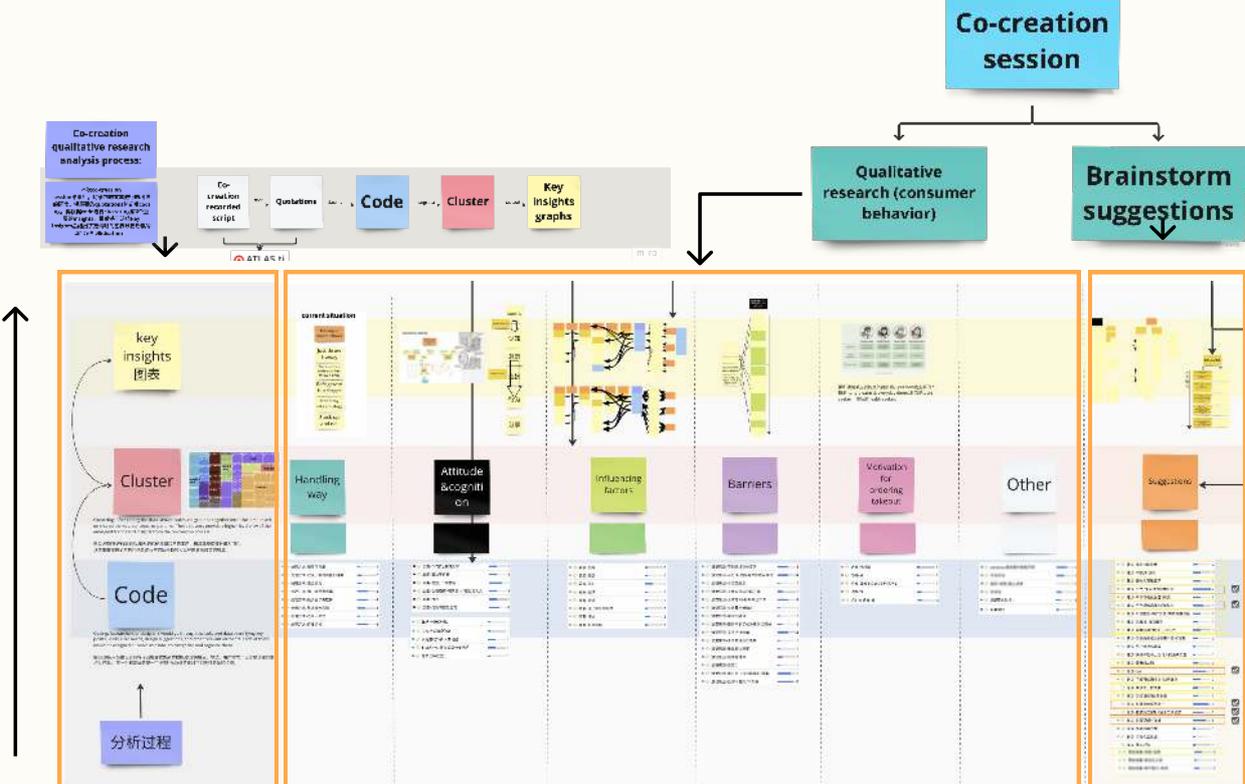
Figure : Co-creation analysis process

Preparation homework:
Draw your usual meal ordering process

warm up/understand habits:
-Why do you usually order takeout?
-How often do you order takeout? (several times a week)
-Where do you usually order?
-Temporarily or plan in advance?
-What do you care about most when ordering takeout? (price, health, hygiene, delivery speed, etc.)
-Is it usually possible to consume all the food?
-Share a takeaway story you can't finish eating

Persona:
Regarding the four personas in the picture, which one or several types do you think you belong to? If not, what's different?

Key issues regarding food waste:
- food waste-attitude-social
What do you think of the waste of takeaway food? (Is it urgent? Does it affect the living environment? Does it affect the allocation of social resources, etc.?)

- food waste-attitude-personal
What do you think causes takeaway food waste? Are there more external factors or internal factors?
Is this phenomenon controllable? Who should change it?

-food waste-feeling
What are your feelings and thoughts about having leftover food/discarding uneaten food after a meal? Or the mood and thoughts of never wasting food? How do you deal with these leftover foods now?
Why was there no further action? What's holding you back?

Brainstorm co-creation:
How do you think you can better solve the problem of leftover food in your takeout? (You can consider targeting different food types: staple food-rice/noodles, soup, drinks, vegetables, meat, etc.) packaging bags, packaging boxes, evaluation cards, apps...

Based on the reasons for not changing mentioned above, what do you think can inspire you to take action? Or is it effortless for you to do? You can give a similar example.
e.g. Gamification, reward, collection e.g. Ant Forest

Based on the journey you drew, at what stage do you think there are other solutions to help you reduce food waste?
Do you think other people around you (such as colleagues, friends, family, etc.) can come together to help solve it? How?

Appendix 4.3:
Co-creation insight clusters

Following the conclusion of the session, an in-depth examination was conducted on the transcribed transcripts of the recorded audio, which had been granted permission for use. The ATLAS.ti tool was employed to facilitate this process. A total of 168 significant quotations were highlighted, and based on these quotes, 81 codes were generated through careful categorization. Subsequently, these codes were clustered into 6 pivotal insight clusters. Drawing from these insight clusters, a more coherent visualization was constructed to facilitate subsequent in-depth analysis and ideation efforts.
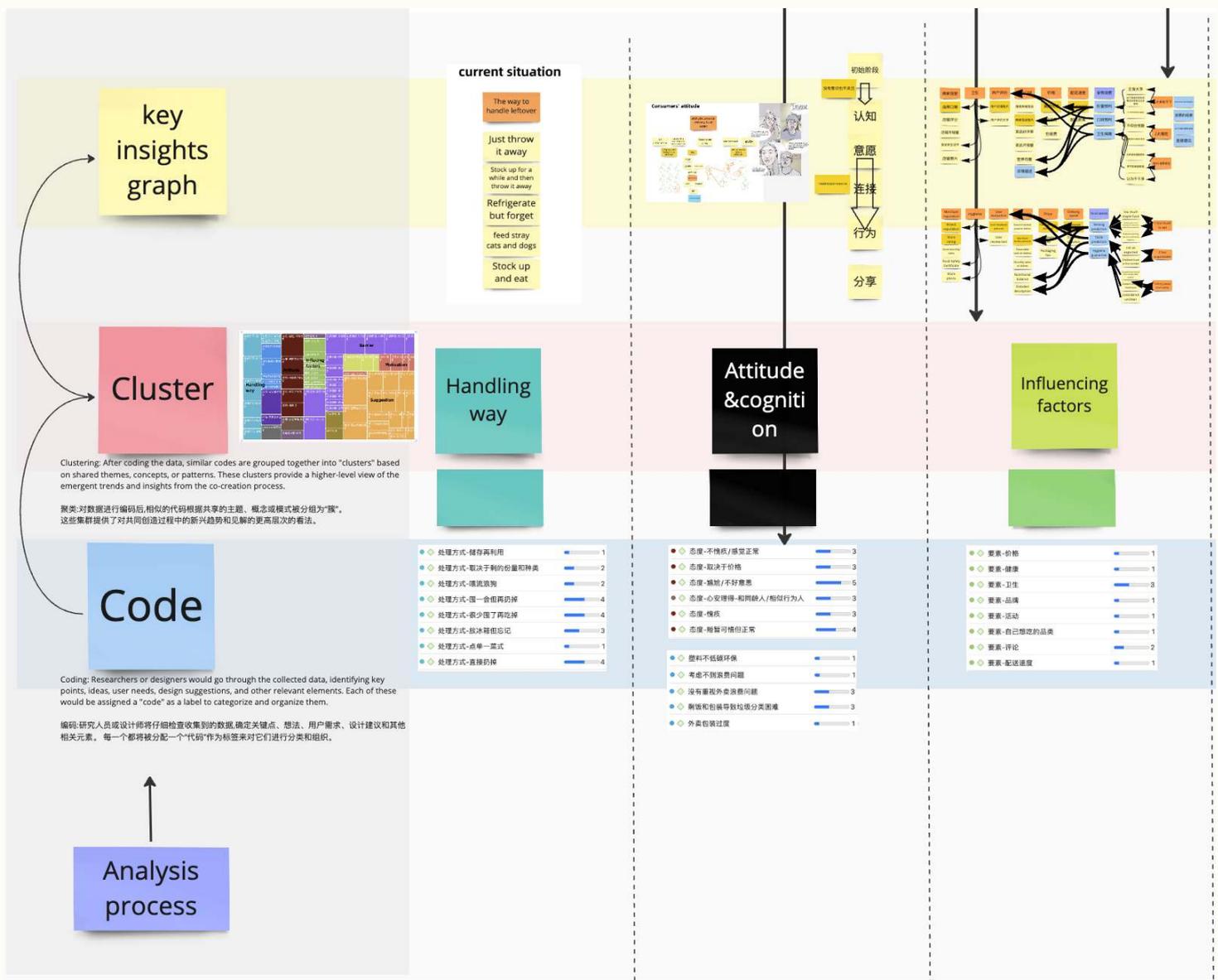
Coding: Researchers or designers would go through the collected data, identifying key points, ideas, user needs, design suggestions, and other relevant elements. Each of these would be assigned a "code" as a label to categorize and organize them.

Clustering: After coding the data, similar codes are grouped together into "clusters" based on shared themes, concepts, or patterns. These clusters provide a higher-level view of the emergent trends and insights from the co-creation process.
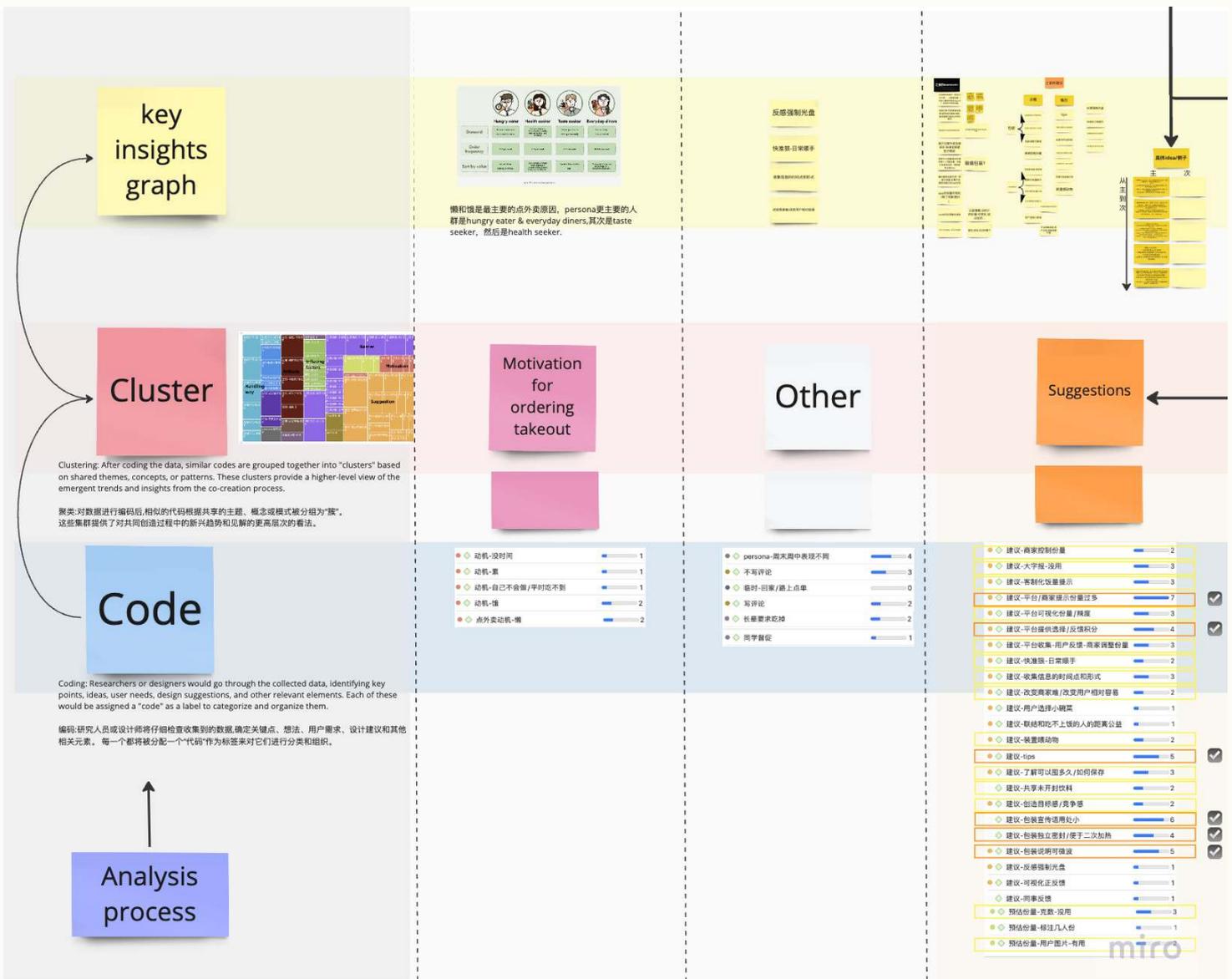
Appendix 4.4:
Co-creation brainstorm suggestions

In the co-creation brainstorming phase, consumers offered numerous insightful suggestions rooted in consumer behavior psychology. After coding and clustering these key insights, five primary recommendations and several secondary suggestions were distilled. The suggestions, ranked from most to least important, are as follows:

1. Platform/Merchant Portion Reminders: Offline, waitstaff often help users gauge portions; online, users sometimes lack awareness of portion sizes. Tailoring suggestions based on individual ordering habits could be beneficial.
2. Hollow Slogans Have Limited Impact: Vague slogans lack significance; users prefer practical guidance. Information on placemats can be obstructed by food, and aesthetically appealing packaging could encourage users to collect and reuse it.
3. Packaging Instructions for Microwave/Sealing/Reheating: Unclear plastic packaging labels lead to uncertainty about microwaving suitability. Users are more inclined to save and re-consume leftover food if it's packaged hygienically and suitable for reheating.
4. Provide Reuse Tips: Offering guidance on repurposing leftovers, specifying the shelf life of different foods, and including separate pouches with instructions.
5. Platform Offers Selection/Feedback Incentives: Providing varying portion sizes for staple food; users choosing smaller portions could receive incentives like charitable donations, points, or discounts.

These insights, illustrated further in the graphic, will guide the development of concrete design ideas in the next phases of the project.
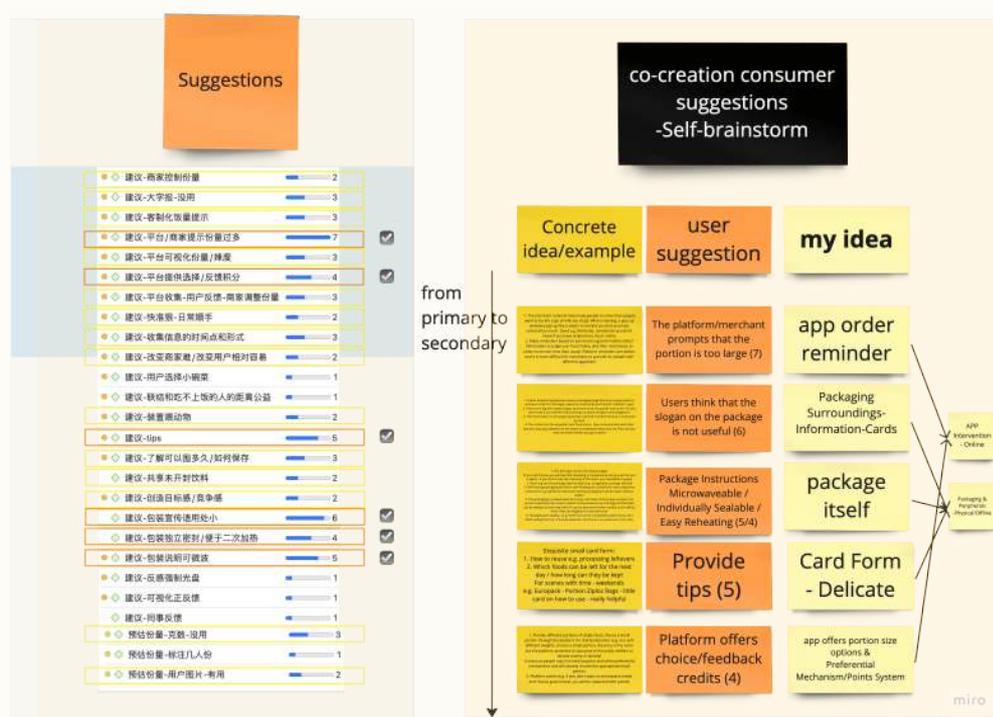
Figure: Suggestion analysis

Appendix 5.1:
Self-brainstorm ideas-after co-creation

Based on suggestions in appendix 4.4, the key design points to focus on during the ideation phase can be summarized as follows:

1.Ordering Prompts on the App: Enhancing user awareness of portion sizes through order prompts on the app based on individual ordering habits.
2. App Offers Portion Options & Incentives: Providing portion size options on the app along with incentives such as discounts, points, or a rewards system.
3. Packaging Design: Designing packaging that is clearly marked for microwave suitability and resealing, ensuring it's convenient for users to store and reheat leftovers.
4.1 Packaging Accessories: Creating visually appealing packaging accessories that encourage users to collect and engage with information aimed at raising awareness about reducing food waste.
4.2 Information Cards: Including cards inside the packaging with tips on repurposing leftovers and extending the shelf life of different foods.

These design points primarily manifest in two main touchpoints: online app interventions (points 1 and 2) and offline packaging and related products (points 3 and 4). By aligning these points along the user journey, a solid foundation is provided for the subsequent brainstorming of design ideas.
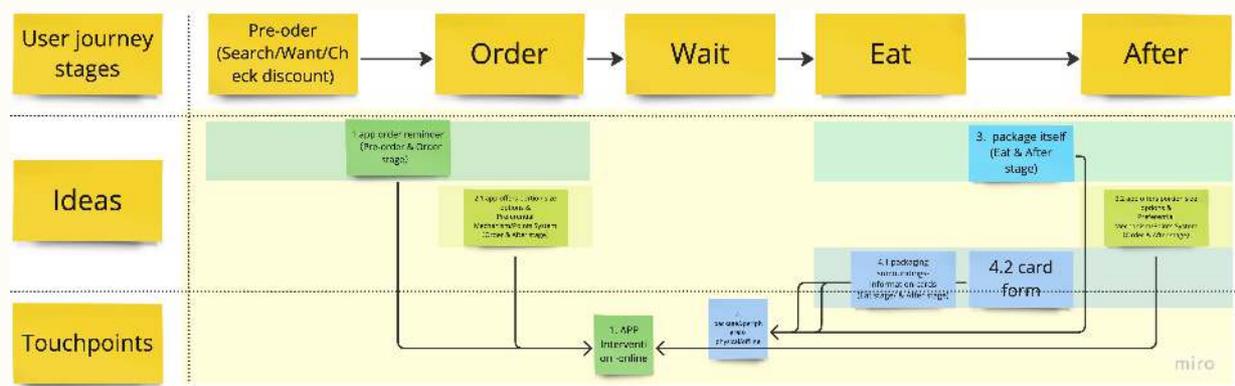
Figure: Ideas in User Journey

During the ideation phase, I expanded on the consumer suggestions gathered earlier and drew inspiration from successful cases, such as Southern Airlines' introduction of green loyalty points and offline DIY workshops to raise awareness for SDGs. Another noteworthy example is Asahi Weipin, a milk and yogurt brand, which effectively utilized packaging and social media campaigns for promoting their products.

Figure*: Brainstorming ideas

After considering these inputs and referencing successful cases, I further expanded the ideas in alignment with the project's design challenge, addressing both subjective and objective barriers. Once I had generated a sufficient number of design ideas, I organized them using a matrix that incorporated the user journey and criteria. I placed each important idea within the matrix and then filled in any gaps with additional ideas, resulting in a comprehensive matrix map filled with a wide range of ideas.

Figure*: Criteria Matrix

Figure*: Ideas about visualizing portion & taste

Appendix 5.2:
Self-brainstorm ideas-after reframing design goal

After co-creation, due to the reframed design goal and new interaction vision and criteria, a new round of self-brainstorm was conducted based on these contents.

Concept 1-Clear info
Ideation-converge

Workday scenario-Confident

- portion size
- flavor

- On the menu page, the taste of the dishes is marked by color---allowing users to understand the taste of each dish at a glance
- On the dish details page, mark specific ingredients and allergens---let users know whether there are taboos and foods they don't like to eat.
- On the dish details page, mark the specific flavor and cuisine---let users know the specific taste of the dish.
- On the dish details page, mark the specific amount---to help users predict the portion size.
- In the main dish options, provide "normal" and "small portion" options
- In the package options, indicate how many people it is suitable for
- In the set menu options, options are provided such as "Whether you want soup/drink", "Taboos", etc.
- Before confirming the order, it was prompted that the portion size exceeds the normal "e.g. one serving for a man"
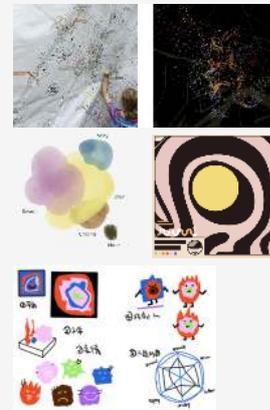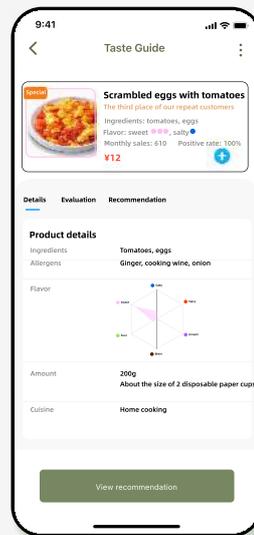
Concept 2-Food & taste guide
Ideation-converge

Weekend scenario-Confident

- portion size
- flavor

- Before ordering, allow users to take 2 minutes to fill in their personal food&taste guide, allowing the platform to retain their personal files.
- guide can add other frequent diners
- In addition to classification tags for restaurant types, the platform also provides classification tags for food intake and taste to search for restaurants, e.g. light/heavy, Cantonese/Sichuan cuisine, traditional cuisine/innovative cuisine, Chinese food/Western food, sweet and sour/spicy/sour/ Savory taste...
- After completing the guide, you can also send your profile to friends and family to help others understand their eating habits. e.g. Dinner with friends to learn about taboos and preferences

- When choosing a restaurant, based on personal profiles and feedback from users with similar tastes/food intake, restaurants that match the food capacity/taste are automatically recommended.
- When ordering a dish, it will automatically remind you that it contains taboos/disliked food types/disliked flavors based on your personal profile, e.g. onions, ginger, garlic/cilantro, fish/shrimp/vegetables/tofu,
- When ordering, automatically remind you that the food portion exceeds the usual portion based on your personal profile
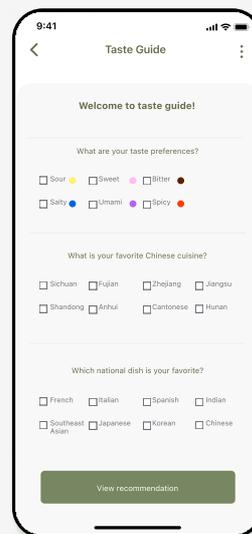
Concept 1-Clear info

Goal 1.1 Portion-confident
Environment-Workday

Design points

Clear Visual
- Picture - there is a reference for the size of the bowl
- Add reference standard, reference object-tennis🎾, e.g. 1.5🎾

Clear Information
- Staple food is increased into large and small portions
- Control color to highlight smaller options and use gray to downplay larger options
- Automatically select small portions, then select large portions if needed
- Rename small portion to medium portion? (Similar to Starbucks
- Add description, small - light food friendly, large - weight gain friendly
- Modify the "one person" tags and use multiple reference tags such as 🎾, g, kcal, etc.
- Detailed information: name, category, main raw materials, taste, portion size, preparation method

Confirmation
- Before confirming the order, add "are you sure" and recommend users to try a small portion first

Concept 2-Portion guide

Goal 1.1 Portion-confident
Mind-Weekend
Design points

Understand their habits & what they can do in routine
- At the beginning of the guide, "By filling in this guide, you can learn about your habits and contribute to reducing food waste.
- By asking questions about gender, height and weight, age, goals (weight loss/maintenance/gain), and preferences (how full/dietary structure), we help users understand the amount of food that suits them, and propose specific kcal intake per day/meal. suggestion.
- You can refer to kcal's tag when ordering food
- Automatically calculate the kcal of this meal and select the appropriate portion size

Understand platform's goal
- Inform the progress of achieving the goal, China's Anti-Food Waste Law (provide food portions, specifications or recommended number of consumers)/"3060" dual carbon goals & "1+N" policy-Platform goals--Personal goals
- Inform the impact, e.g. "A person can save 50g of rice waste by choosing a small portion of staple food each time. When ordering twice a week, he can save about 5000g of rice in a year, which is equivalent to saving about 10kg of carbon emissions. Not only healthy, but also reducing carbon emissions, Reduce food waste."
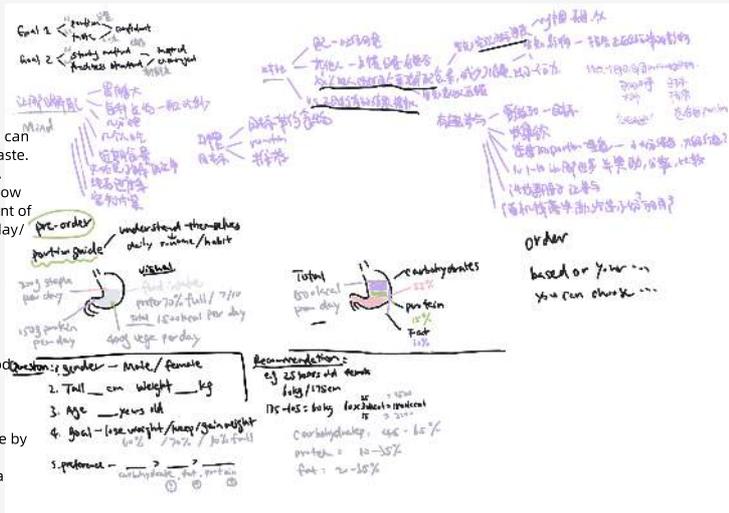
Concept 3-Package & instruction card

Workday scenario-Inspired

- Tips to store, reuse, reheat, reuse
- Freshness

- A more obvious "microwaveable" mark on the packaging
- The instruction introduces that the PP5 material of the packaging can be heated, e.g. it usually takes a few minutes to heat, whether it can be heated together with the lid, and whether the lid needs to be opened.
- The instruction introduces the best eating time, which dishes are not recommended to be saved for the second meal, and which dishes are okay to reheat.

Concept 4-Tips
Ideation-converge

Weekend scenario-Inspired

- Tips to store, reuse, reheat, reuse
- Freshness

- When ordering is completed, it will prompt how long it will take for the ingredients in the order to be eaten after cooking, and how to judge whether they are fresh and edible by sight/smell, e.g. Fungus should be stored under refrigerated conditions at 4 degrees Celsius and is best not to be eaten. Fungus more than one day old. At the same time, the fungus should be slippery in its normal state. If you find it sticky and smelly, please do not eat it to prevent poisoning.
- When prompted for user reviews, tips for reusing staple food are provided, e.g. next time only order dishes and make rice bowls with leftovers, and recommend suitable restaurants and dishes.

Concept 5-Green points system
Ideation-converge

Workday scenario-encouraged

- long-term habit

- When ordering, you will receive green points when you choose small portions of staple food.
- Share tips or actions to reduce FDW to earn green points
- A certain number of green points can be used to exchange for free staple food next time, e.g. collect points, and it will be free once after 5 times.
- A certain number of green points can also be converted into coupons/cash discounts
- A large amount of green points can be used to redeem or discount other restaurant packages or platform peripheral products that can help reduce FDW, e.g. heatable lunch boxes, reusable portable tableware, microwave ovens, small refrigerators, kitchen utensils

Concept 6-Weekly report
Ideation-converge

Weekend scenario-encouraged

- long-term habit

- A review report is given to the user every two weeks to help the user understand their food intake and taste in the past week or two, and to ask if there are any changes in the future. Update the file, e.g. Eat less to lose weight, and control the choice of meals with smaller portions next week.
- The review reviews the tips that users have learned in the past two weeks, as well as the number of shares and the number of green points. It is mainly for users to review and form better habits next time.

Appendix 6.1:
Brainstorm session process

This brainstorm session provided more divergent ideas and helped identify several conceptual directions with room for development.

3.project goal

design challenge

How might we increase the conversion rate of consumers' willingness to reduce Food Delivery Waste into actual actions?

design goal

I would like urban white-collar consumers of food delivery service in China to feel in control and confident about food portion and
goal 1 — taste, and feel inspired and encouraged about storing methods
goal 2 — and freshness standards for leftovers ..so they can increase willingness to reduce food delivery waste into action.

goal	rationale
1.1 feel in control and confident about **food portion**	The more it provides too many supple food, and the user does not know the portion's availability, amount, and orders too much.
1.2 feel in control and confident about **taste**	Because different from the expected or actual, leading up to poor understanding the hype and the complexity, richness and more, that consumers unable to meet preference.
2.1 feel inspired and encouraged about **storing methods**	Consumer do not advise, for storage or heating, than the intelligent are needs the routine, and... want on critical level reduced defrost and fright leftovers after ongoing expand.
2.2 feel inspired and encouraged about **freshness standards** for leftovers	Vague criteria for judging storage time, freshness, and freshliness of leftovers.

Interaction vision

Interaction Vision
design focus

confident   inspired   encouraged

COOKING INTEREST WORKSHOP

It's the participating a cooking interest workshop initiated by... where consumers... workshops... during which to users feel confident, inspired and encouraged

- In four aspects: phase, the chef provides consumers recipes, recipes to... and have particle cooking guide confidence to taste... and confident when the storage or practice... render.
- During the hands-on experience, the chef offers even more specific assist to consumers... so... to solve issues discussed and solved immediately.
- Towards the end, the chef... feel encouraged at the end by this program, participants feel encouraged to practice and consult and further consider the workshop.

4.Ideation

According to the HMW question divergent ideas, please refer to the insights on the left

Steps:
1. quickly go through left side
2. use HMW question to ideate/brainstorm
3. read barrier, add stickers to behavior, benefit, and especially motivator and ideas

Hint: from **stakeholders** perspective (consumer, merchant, platform, government)

Hint: from **journey stage** perspective (pre-order, order, wait, eat, after)

Hint: from **persona** perspective (health, hungry, taste, everyday)

2 main scenarios

Hint: from **scenario** perspective (workday, off-day)

working day	off day
busy/have no time	order better, more food
tired	
lazy	hungry

why order

strategy could be	quick/easy/daily	in depth
	short term	long term

Stickies

HMW better help consumers feel in control & confident about estimating meal portions?

| | Primary barrier | | Priority behavior | | Benefit | | Motivator | | Ideas |

HMW better help consumers feel in control & confident about predicting food taste?

HMW help consumers feel inspired & encouraged to improve understanding of freshness standards?

HMW create/provide knowledge of the objective conditions for storage and reuse leftover so that consumers feel inspired and encouraged?

Classify all brainstorming ideas and vote on the resulting conceptual directions.

Brainstorm session
Cluster & Analysis

pre-order & order stage

| 个人档案 Personal profile | 健康 Healthy related | 环保 Environment -protection related | 推荐 Friend recommend | 包装/大小份 Big&small size package | 标签化评 labeled evaluation | 人工智能小助手 AI assistant | 可视化 Visualized description | 提示 Reminder |

✔✔ AI assistant

✔✔ Personal profile

✔ Healthy related

✔ labeled evaluation

✔ Visualized description ✖

✖✖ Friend recommend

✖✖ Big&small size package

✖✖ Environment-protection related

✖ Reminder

HMW better help consumers feel in control & confident about estimating meal portion and taste?

Brainstorm session
Cluster & Analysis

eat & after stage

| 存储建议 storage suggestions | 易加热包装 heatable package | 喂宠物 feat pets | 提示/科普 popular science reminder/tips | 堆肥 compost | 环保 Environment-protection related | 游戏类 game | 社群活动 community activity | 合作宣传 Cooperation &promotion | 共享 share |

✔✔✔ storage suggestions

✔✔ heatable package

✔✔ compost

✔ popular science reminder/tips

✔ feat pets

✔ Cooperation &promotion

Environment-protection related

game

✖✖ community activity

✖✖✖ share

HMW help consumers feel inspired & encouraged to improve understanding of freshness standards and create/provide knowledge of the objective conditions for storage and reuse leftover?

Appendix 6.2:
Brainstorm session analysis

Score each direction according to the criteria, and draw more specific details of your own ideas. Finally, put all concepts into the matrix of criteria to check which concept can cover more design goals.

Brainstorm session
Cluster & Analysis

- opportunity, ability, motivation

Fogg behavior change model

Ideation
Ideation & analysis

1. AI assistant
- order-meal: ask/search-answer-recommend
- after-store/reuse: ask-answer-suggestions
- recommend more accurate based on need (portion&taste)

Ideation
Ideation & analysis

2. Personal profile
- short interactive questionnaire
- fun character/icons
- understand own needs (portion&taste) better
- recommend based on needs
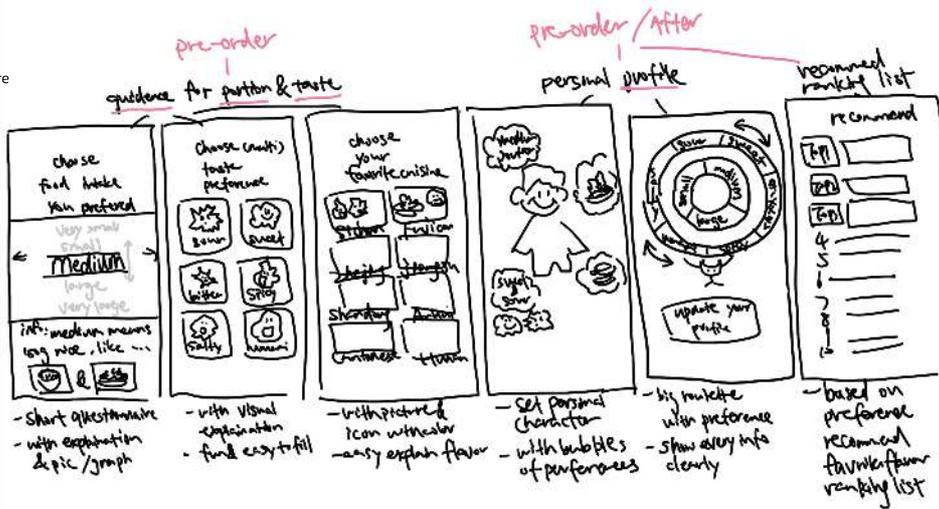
Ideation
Ideation & analysis

3. Healthy related
- set healthy goal
- recommend portion&taste by kcal/nutritional balance

4. Labeled evaluation
- label both merchant & user
- quickly understand portion&taste

5. Visualized description
- visual clearly show info
- 🌍 as a compare standard
- color flavors
- detailed describe portion&taste
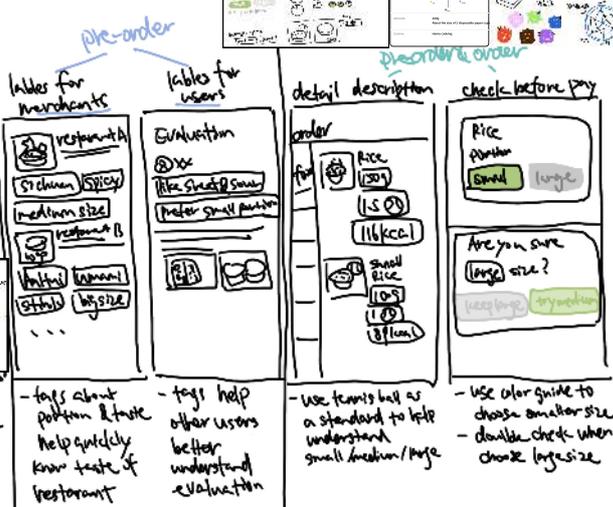
Ideation
Ideation & analysis

6. Storage suggestions
- remind on physical object- package, recipe, card, magnet
- clear info how to store

7. Heatable package
- offer choice to purchase different package
- provide condition to store&reheat

9. Popular science reminders
- specific suggestion how to store different type of food
- reminder, description, interactive search manual, AI assistant

Ideation
Ideation & analysis

8. Composting
- provide composting machine
- transport to dispose food waste

10. Feed animals
- tips/reminder how to feed pet

Other-charge fee
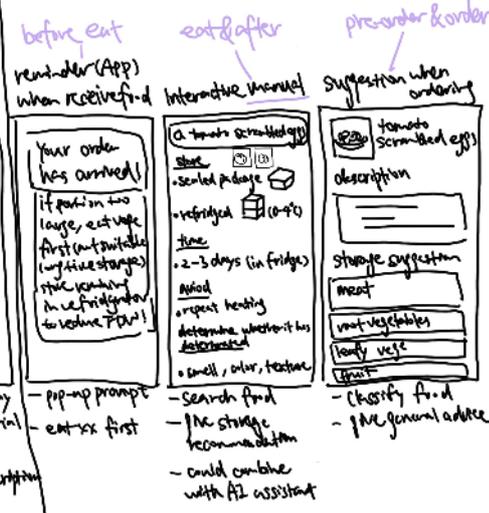- charge food waste fee
- different type garbage pay different, distinguish by garbage bag color/ weight

---

Ideation
Converge ideas

confident | inspired | encouraged

Pre-order&order

Eat&after

Overall experience

1. AI assistant
2. personal profile
3. healthy related
4. labeled evaluation
5. visualized description
6. storage suggestion
7. heatable package
8. compost
9. popular science reminders
10. feat pets

Concept
Converge

- Consumers who are less concerned about food waste
- Consumers who are more aware of waste reduction

Off-day	Personal profile	AI assistant	Heatable package	Storage suggestions	Composting

Pre-order → Order → Eat → After

Workday

Labeling and visualization

Hungry eater

Health seeker — Search

Taste seeker — Want

Everyday diners — Check discount

Order again

Appendix 7.1:
Low-fidelity prototype-concept 1

In order to test specific design points and to select or combine conceptual directions, low-fidelity prototypes as well as simple interactivity were produced on Figma.

Concept direction
Intuitive v.s. Conscious

Labeling and visualization

Direction1:Intuitive

- Combine idea（labeling & visualization）
- Use tags, color/icon/graphics to help consumers quickly to judge if the restaurant/dish fit consumers' needs
- journey similar to original, but contents are different

Browse → Select restaurant → Select dishes → Checkout → Receive takeout → Eat → Throw away

*Pages in bold are the main design pages.

Home — Restaurant— Menu
Dish detail— Specifications— Add to cart — To check out — Submit order — Evaluate
Reviews   Cart info   Reminder

Lo-fi Prototype
Concept direction 1: Intuitive

Home — Restaurant— Menu
Dish detail— Specifications— Add to cart — To check out — Submit order — Evaluate
Reviews   Cart info   Reminder

Home & restaurant **Tag-recommendation** **Search recommendation**

- Use search bar to find food
- can also select tags to filter by flavor, portion, ingredients

- Choose tag about cuisine/flavor/portion types
- choose which cuisine they want to get recommendation
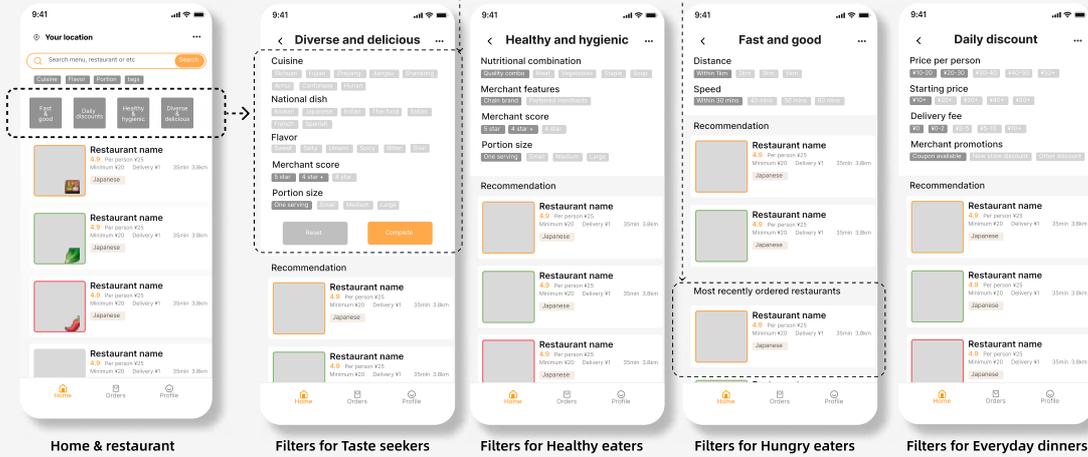
Lo-fi Prototype
Concept direction 1: Intuitive

- Only show this type of personas' needs
- Auto-select possible tags as default
- can also choose other tags

- Other than recommendations, add most recently ordered restaurants for hungry eaters
- help fastest and easiest to order takeout, avoid getting bogged down in too many choices

- Design for 4 different personas
- Each persona have their priority needs
- these 4 filters help users quickly find the meal fits their needs, so that decrease the possibility producing leftover & FDW due to unsuitable portion & taste

Home & restaurant

Filters for Taste seekers

Filters for Healthy eaters

Filters for Hungry eaters

Filters for Everyday dinners

Lo-fi Prototype
Concept direction 1: Intuitive

- Use different colored borders and small icons to distinguish the restaurant's taste
- Tags on the right show more info about portion and taste

- Use emoji to express the flavor in detail
- lower the threshold to understand
- balance the visual (abstract color blocks/characters) and text (boring charts)

- Show the most important info in tags, such as spiciness, what food need to be noticed, portion and taste
- Use colors and icons to display preference for flavors on the user's avatar, and tags indicate food intake.

- Use emoji to express the flavor in detail
- lower the threshold to understand
- balance the visual (abstract color blocks/characters) and text (boring charts)

Home & restaurant

Restaurant-Menu

Dish detail

**Dish review**

Specification
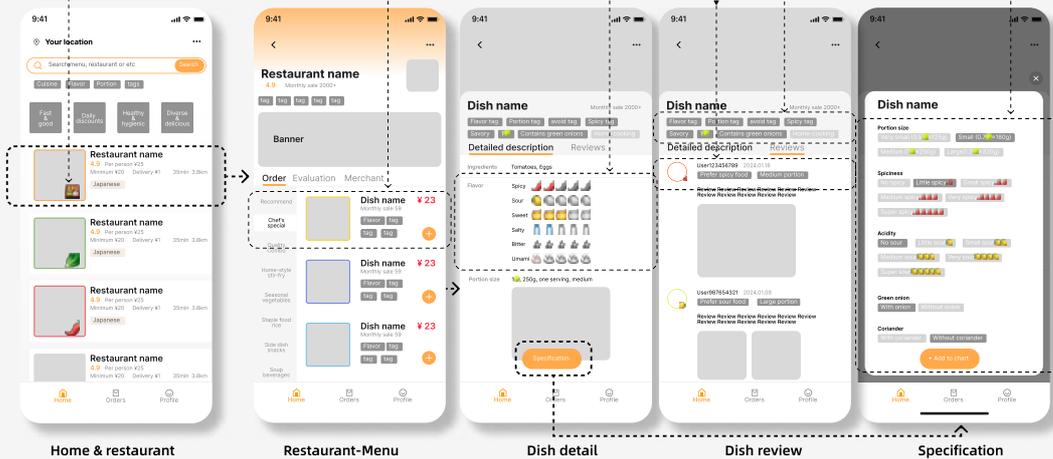
Lo-fi Prototype
Concept direction 1: Intuitive

- View all orders
- Quickly order again
- Evaluate orders

- Evaluate deliveryman

- Evaluate merchant & dish
- Use star to review---Overall
  -Merchant
- Use sliders to review---Taste, portion and package

- The review will reflect on both merchant's tags--flavor, portion size, and consumer's tags--Prefer flavor/food intake...

Home & restaurant

Orders

Evaluate
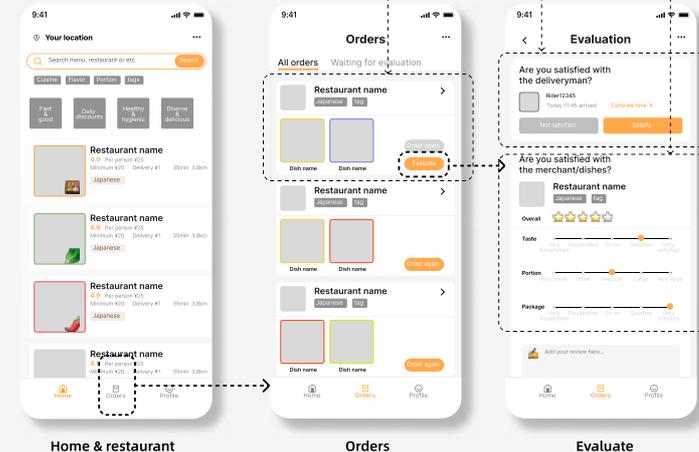
Restaurant visual & tags
Concept direction 1: Intuitive
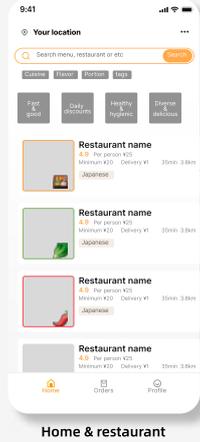
Variations

Home & restaurant

Restaurant name
4.9 Per person ¥25
Minimum ¥20 Delivery ¥1 35min 3.8km
Japanese bento | Salty | Sweet
Medium portion | 1🥬

Color box + type icon
colorful tag(Show cuisine/type/flavor/portion size)

Restaurant name
4.9 Per person ¥25
Minimum ¥20 Delivery ¥1 35min 3.8km
Spicy
Japanese bento | Salty | Sweet
Medium portion | 1🥬

Multi-color fusion color box + flavor text icon

Restaurant name
4.9 Per person ¥25
Minimum ¥20 Delivery ¥1 35min 3.8km
Japanese bento | Sour | Sweet
Medium portion

Two-color color box + flavor icon

Restaurant name
4.9 Per person ¥25
Minimum ¥20 Delivery ¥1 35min 3.8km
Japanese bento | Sour | Sweet
Medium portion | 1🥬

Shape color box + abstract flavor icon

Sour / Sweet / Bitter / Spicy / Salty / Umami

Menu-dish visual & tags
Concept direction 1: Intuitive

Home & restaurant

Restaurant-Menu
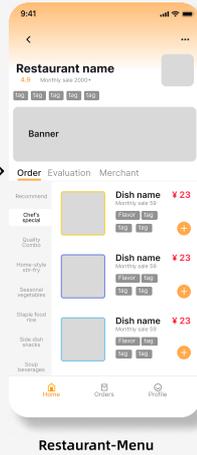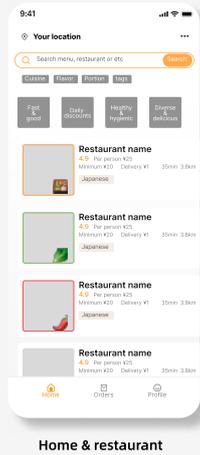
Dish name ¥ 23
Monthly sale 59
Sweet | Small portion
0.7🥬 | contain onion

color box+tags(flavor/portion/notice)

Portion tags variations

| text	Analogy to tennis 🎾 or apple 🍎 or?	g	combine
Very small	0.5🎾	125g	Very small (0.5🎾≈125g)
Small portion	0.7🎾	180g	Small (0.7🎾≈180g)
Medium portion	1🎾	250g	Medium (1🎾≈250g)
Large portion	1.3🎾	320g	Large(1.3🎾≈320g)

Dish description
Concept direction 1: Intuitive
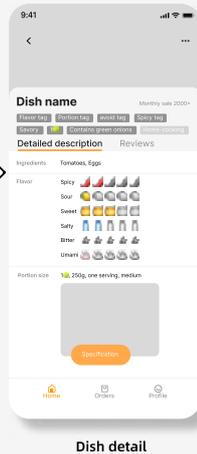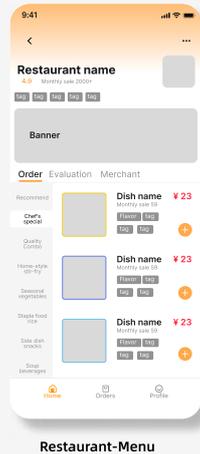
Important tags about portion&taste&notice

Flavor visual variations

Flavor					
Spicy	🌶️	🌶️	🌶️	🌶️	🌶️
Sour					
Sweet					
Salty					
Bitter					
Umami					

Emoji gragh

Restaurant-Menu

Dish detail
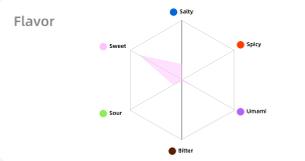
Flavor

Hexagon chart

abstract character

🔴Spicy 🟠Sour 🟡Sweet 🔵Salty ⚫Bitter 🟣Umami

Appendix 7.2:
Low-fidelity prototype-concept 2

In order to test specific design points and to select or combine conceptual directions, low-fidelity prototypes as well as simple interactivity were produced on Figma.

Ai assistant entrance
Concept direction 2: Conscious

Home — Search → Questions→ Recommendations → Compared → Final choice
↑   Why&how   Why&how   (restaurant&dish)
Profile ← Evaluate ← Submit order ← To check out
    Remarks
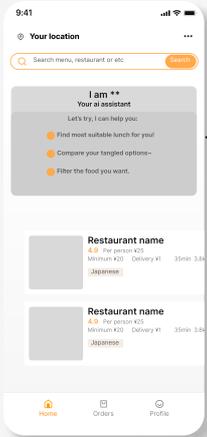
AI assistant 入口

I am **
Your ai assistant

Let's try, I can help you:

- Find most suitable lunch for you!
- Compare your tangled options~
- Filter the food you want.

Prompt AI can assist
Have goals - choose the meal you want
Very confused - help you compare options
No goals - find the flavors and portion sizes that suit you

Home & AI search

Questionnaire
Concept direction 2: Conscious

guide content

1. Choose your usual food intake: very small/small/medium/large/very large
Reference: Usually eat a portion of 180g of staple rice - too much/just enough/too little

2. Choose your favorite flavor: sweet, sour, spicy, salty and umami

3. diet-avoid/spicyness...

4. Choose your favorite type: light food/Sichuan cuisine/burger/pizza/Chinese simple meal...

5. The most important needs when ordering food: delivery speed, price, nutrition, portion size, taste...

recommend questions---taste/portion/other needs/top rated...

- Find most suitable meal for you!
- Top rated ***
- Taste questions
- e.g. category/flavor
- Need questions
- e.g. speed/coupon
- Portion questions
- e.g. combo/1 person
- questions

guide-little questionnaire-portion& taste preference

- Check guide, let me customize meals for you, save food and live green.🔒

Portion and taste guide

AI search

Concept direction
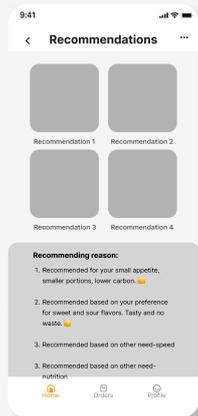Intuitive v.s. Conscious

AI assistant

Personal profile

Direction2:Conscious

- Combine idea（AI assist & Personal profile）
- AI assists consumers better understand their needs, so that to choose meal with suitable portion and taste
- shorten the original journey, so that giving more space for understanding needs

Browse → Select restaurant → Select dishes → Checkout → Receive takeout → Eat → Throw away

Check reviews

Evaluate

Store leftover → Eat

Home — Search — Questions→ Recommendations Why&how → Compared Why&how → Final choice (restaurant&dish) → To check out — Remarks

Profile ← Evaluate ← Submit order ←
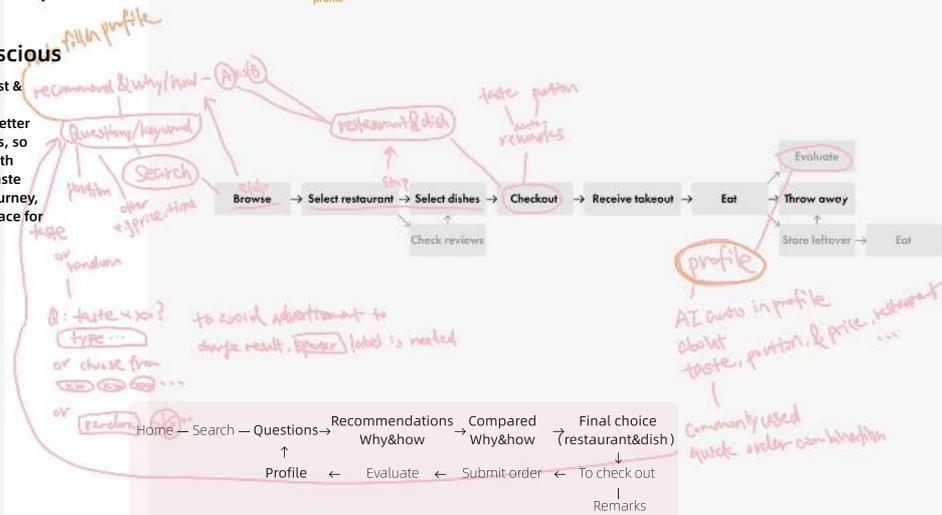
Recommendation
Concept direction 2: Conscious

9:41
Recommendations

Recommendation 1   Recommendation 2

Recommendation 3   Recommendation 4

Recommending reason:
1. Recommended for your small appetite, smaller portions, lower carbon.
2. Recommended based on your preference for sweet and sour flavors. Tasty and no waste.
3. Recommended based on other need-speed
3. Recommended based on other need- nutrition

Home   Orders   Profile

Recommendation results & reasons for recommendation

Recommending reason:
1. Recommended for your small appetite, smaller portions, lower carbon. 🥡
2. Recommended based on your preference for sweet and sour flavors. Tasty and no waste. 🥡
3. Recommended based on other need-speed
3. Recommended based on other need-nutrition

Quick tip: Choose the right portion sizes and flavors for lower carbs and less waste.

Compare recommended results (compare portion, flavor, etc.)

9:41
Compare

v.s.

Recommendation 1   Recommendation 4

Small portion
Sweet Sour
Burger
Price

Recommending reason:
Portion size of 1 is more suitable for you with small appetites.

Taste of 2 is more in line with your usual choice.
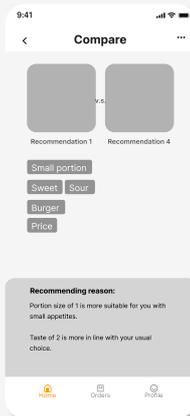
After selecting a meal, notes such as portion size, taste, taboos, etc. will be automatically filled in.
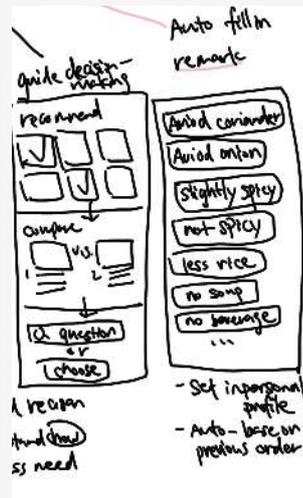
Profile
Concept direction 2: Conscious

9:41
Profile

Portion preference (Small portion)   Flavor preference (Sweet& sour)

Favorite food (Fried chicken/...)   Diet (Avoid coriander)

Home   Orders   Profile
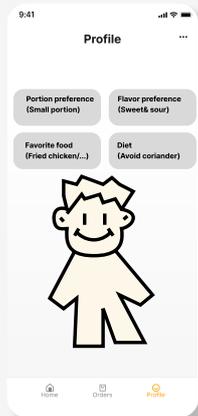
Profile

Preference-portion/flavor/favorite/avoid/demend

Portion preference (Small portion)   **Flavor preference (Sweet& sour)**

Favorite food (Fried chicken/...)   **Diet (Avoid coriander)**

Demend (Healthy&fast)

- Ai automatically updates the profile based on the latest order, or it can be updated manually.
- Quick recommendations directly from profile

monthly report
- Most visited restaurants (frequency, proportion)
- The most ordered dishes (reasons why you may like it)
- Recent changes in taste and food intake...

Appendix 7.3:
Low-fidelity testing storyboard & questionnaire

In the lofi test, in order to make participants more involved, personas and scene stories were set up. A questionnaire was set up through criteria to test whether the two concepts achieved the design goals.

Questionnaire-concept 1

Questionnaire-concept 2