DELICIOUS LIFE

Motivating young Chinese migrants to try novel foods

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Msc.Design for interaction
Graduation thesis
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Master thesis

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-Motivating young Chinese migrants to try novel foods

CONTENT

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Abstract

Food is of great significance in the lives of Chinese people. In addition to nutrition, it is also closely related to emotions, social interactions, environment, and culture. China's food culture is not only diverse but also developed its own characteristics in various regions.

In recent years, the phenomenon of Chinese young people migrating to big cities has become more widespread. It is inevitable that many people have moved to new cities, but find that they are facing a completely different eating environment. Some people have trouble deal with the situation and lead to an imbalanced diet. Imbalance in diet can cause many negative effects on people's lives, such as lacked nutrition and obesity. In order to help young Chinese migrants adapt to the local diet, how should they be encouraged to try new foods?

In this project, through literature research and user research, a deep insight into the life status and needs of the target group was gained. After that, through multiple iterations, a mobile application developed for them was tested and evaluated.

This project aims to provide a relaxing and fun way to explore new foods for young migrants. The idea behind this is to strengthen their emotional connection with the local area through the exploration of new foods here, thereby having a positive impact on their overall lifestyle.

01
Introduction

This chapter first introduces the origination of this graduation project, how it was developed from the diet theory "Omnivore's paradox", and finally focused on young Chinese migrants. In the exploration of the specific project goals, research questions are first formulated to guide subsequent research activities.

1.1 Motivation

This graduation project was developed from the diet theory called "Omnivore's paradox" (Rozin, 1976). In this theory, two kinds of eating behavior were defined, the "Neophilia" as loving to try novel foods and the "Neophobia" as refusing to try novel foods(Fischler,1980). By reading literature and combining it with my own experience, I realized that neophobia is also widespread in China, and due to the unique food culture of various regions in China, this kind of dietary conflict may be more serious, especially for migrants. Therefore, I focused my attention on young Chinese migrants who left their birthplace and moved to a new area because of work.

This project focuses on trying to understand young people's eating habits, preferences, and cultural differences, and explore the underlying causes of existing eating behaviors. I believe that helping young migrants integrate into the local food environment and even the living environment could be a major challenge that young migrants face after leaving their families.

Based on the above preliminary insights, this project was launched in cooperation with professor Pinar to further developed into a graduation project with the purpose of finding a way to support the diet adaptation of young Chinese migrants in their new places of residence.

Figure 1-1: The young migrants in big city.

1.2 Project overview

The target group of the project is young migrants who move to different places in China due to work reasons. They usually face obvious changes in their dietary structure because they move from their hometowns to areas with different food cultures. The initial goal is to encourage these young migrants to try more new foods. Therefore, literature research and user research were made to verify whether they show negative emotions about trying new foods in their new place of residence, whether they have the need to try new foods and why this need is hindered(see figure 1-2).
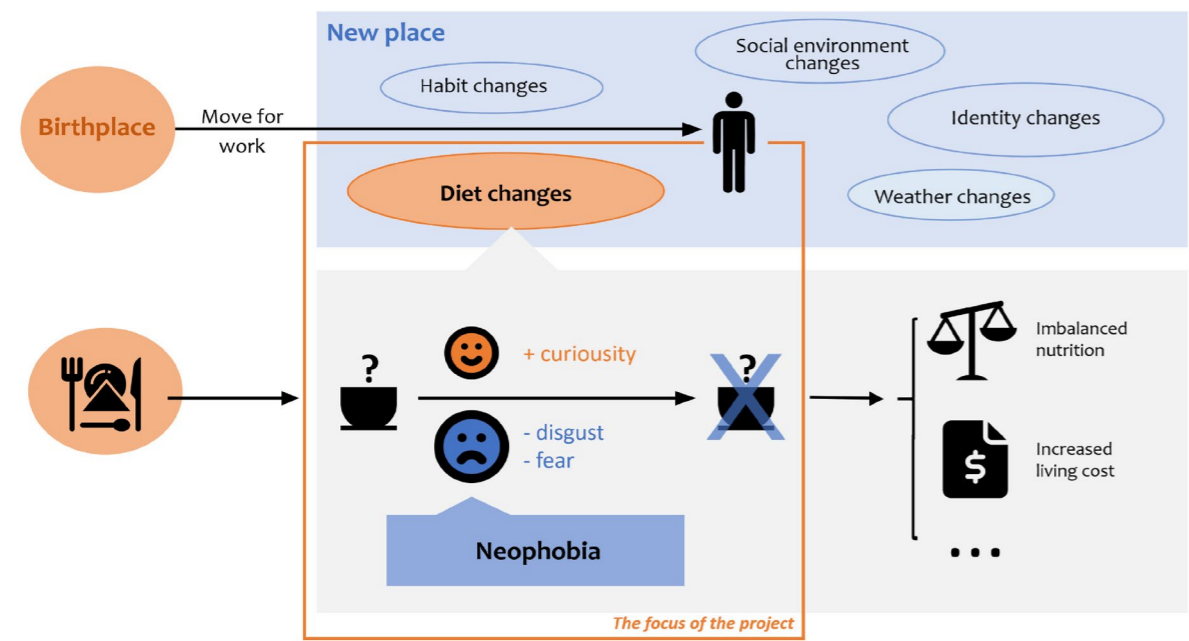

Figure 1-2: The problem definition of the project

After the research process, the results were analyzed and summarized into design guidelines, and the goals were adjusted based on these guidelines. In order to explore how to help young migrants overcome these obstacles to try new foods, fragmentary ideas were generated through different ideation methods. After that, the ideas were combined into several specific concept directions for testing, in order to clarify the potential diet needs of the target group, and help form the final concept.

After the final concept was generated using the previously set design criteria, the concept was refined and tested, and feedback from the target group was obtained. Based on this, the interactive quality of the final concept can be evaluated, whether the design goal is reached the goal, and the expected impact of this design on the diet habits of the target group.

02
Background

Through literature research, this chapter outlines the Chinese food culture and the status of young Chinese migrants, and then discussed the relationship between food and emotion in connection with these two aspects, in order to understand how diet changes affect the life experience and mental health of young migrants. In the last part, Chinese consumer behavior will be discussed.

2.1 Chinese food culture

The development of Chinese food culture

China is the third-largest country in the world. With a vast area, rich terrain, and rich climate, it can meet the growing conditions of most crops. The original kinds of crops on Asia land were not very much, but in the long history of China, several large-scale ethnic fusions happened, which have introduced many new crops, ingredients, and food culture to Chinese cuisine. Prosperous sea and land trade also contributed to it (Simoons, 1990). The continuous farming civilization gave people here a chance to make diets more refined. With the abundant reserve of ingredients and the fusion and improvement of food, Chinese cuisine developed fast and now is developed into a huge system.

The relationship between Chinese and food is inseparable. So far, China is still the number one producer of several crops, like watermelons, peas, and cucumbers. It is also number one of consuming certain food products. Take pork as an example, China is the world's largest pork producer and pork consumer. In 2016, Chinese pork consumption accounted for 50.1% of global pork consumption (USDA, 2016).

Extreme food

Extreme foods, or unusual foods, are foods that are not very commonly eaten, and could evoke quite positive or negative reaction such as adventurous or "picky" (Veeck, 2010). The main categories of extreme foods including animal organs, raw meat or live animals, spicy food, and so on. In Chinese cuisine, there are no doubt quite a lot of foods could be defined as "extreme foods".

Chinese have a wide choice of ingredients, and the methods of processing them are also very diverse. From the leaves of plants to roots, to the internal organs, claws, and bones of animals, they are all used to make food. In ancient times, food preservation was difficult and people widely used pickling, air-drying, and fermentation to make and store food. Some of these methods made food produce a special bad smell, such as preserved egg(see figure 2-1), but it is still loved by some people. In China, there are people who reject specific ingredients, and some are not used to excessive food differences, but they have to admit that tolerance of extreme foods is also part of Chinese food culture.

Figure 2-1: The preservef egg

Figure 2-2: Classic Chinese food

Food: as important as life

Chinese people attach great importance to food and diet. In ancient Chinese myths, due to lack of food, people were often starving at that time. In order to find more food, a man named "Shennong" personally tasted hundreds of plants and finally found many plants that could become crops or medicinal plants (Yang, 2005). His founding helped humans solve the problems of survival and health. He eventually died of tasting a poisonous herb. The name "Shennong" means "God of Agriculture", and he is commemorated by the Chinese to now.

After the establishment of the feudal dynasty, agriculture is recognized as of great importance by the emperor. In each dynasty, there were sacrificial acts related to agriculture in various forms. Generally speaking, the emperor would pray for a good harvest of crops during the sacrifice. It is believed that the emperor's sincerity can impress the gods to make the weather better for crops to grow(Shuichi, 2006). During the Qing Dynasty (1644-1912), the emperor would cultivate the land and sow seeds during the sacrifice. The "24 solar terms" practiced in the ancient calendar is also with the theme of agriculture. Its naming is intended to reveal the changing trends of the weather and remind farmers when and what to do. For example, "Guyu" means the rainwater is abundant now and suitable for planting, and "Mangzhong" means that the autumn arrives and the rice grains are set.

Eating can be said to be the top priority of the Chinese. When meeting someone accidentally, people often ask: "Have you eaten yet?" The folk every Chinese knows saying "Hunger breeds discontentment" clearly expresses people's desire to a full meal. Therefore, waste is considered to be a matter of severe condemnation. There have been many famines in China's history, which are generally caused by natural disasters, such as droughts and floods. The most recent famine occurred after the founding of the People's Republic of China, from 1959 to 1961. The memory of this famine is passed on to the children by those who have witnessed it, and the children are taught to cherish food (Yang, 2012). Nowadays, with the development of productivity, people are gradually turning the expectation of a full meal into the expectation of eating delicious food. However, food-cherish education is still prevailing, and after the Covid-19 epidemic, President Xi called for promoting the social custom of practicing thrift and opposing waste.

Unlike typical industrial food such as sandwiches, the food that Chinese people often eat rarely enters the process of industrialization. In other words, they are usually processed by the chef in the kitchen. Although industrial food is developing here, it is always seen as having a worse taste than fresh food.

Local food

Food is seen as the central to people's identity (Fischler, 1988). Although "Chinese cuisine" is usually used to summarize all the local foods in China, with the changes in climate, geography, and types of local agricultural products, actually there are great differences in cuisine characteristics between regions (Chuankang, 1994). The main food flavors are as follows(see figure 2-3).

From ancient times to modern times, China has always implemented a household registration system, requiring people to settle in a certain place in order to enjoy the corresponding local policies. This system does not encourage migration. Because of the household registration system, Chinese people generally grow in a stable environment and form cultural awareness during this period.

A stable living environment brings them a deep impression of local culture. So after they grow up, local food preferences become an important part of their cultural identity.

With the development of modern technology, the Internet has become a huge communication square for Chinese people living all around the country, where food discussions and food culture conflicts are also frequent. For example, on China's largest social platform "Weibo", debates such as "should mooncakes be sweet or salty" often rushed to the trend list. In similar debates, people try their best to support their own food preferences and food memories, behind which is the defense of their own cultural identity. Various media outlets love the theme of food, live broadcasting of enjoying meals, searching for food in travel, and cooking teaching is the most popular direction now.

In 2012, a food documentary called "A Bite of China" was launched in China produced a huge response. The production team expressed the hope that this documentary will show the relationship between Chinese people, food, and society. The various delicacies that appeared in the documentary eventually stimulated the prosperity of the local tourism and catering industry (Jia, 2012).

Figure 2-3: The major Chinese food types map

Food and social meaning

Food is often used as an indispensable part to increase the sense of ritual (Cooper, 1986). In almost every traditional festival in China, people have to eat specific food to express their best wishes for life. For example, the mooncakes are only used for the Mid-Autumn Festival, and dumplings usually are eaten in the Spring Festival. During this festival, family members usually stay together, sharing this specific food with their best wishes.

In addition to expressing wishes and praying for happiness, food has also been seen as medicine, which is believed to improve the health of the body. An important concept of traditional Chinese medicine is the medicated diet, people believe that eating appropriate food (sometimes mixed with herbs) could help prevent or cure illnesses (Hou, 1994). The well-known theory of "you are what you eat" is the expansion of the medicated diet and has even spread to this day because of its simplicity, and it is still admired by many people. This theory believes that food that has a specific appearance can be eaten to benefit a specific disease. That's why parents will cook pig brains to help children replenish intelligence, and men believe eating bullwhip is good for impotence.

In China, food plays an important social function, almost makes the restaurant a totally social occasion. If there are guests, inviting them to a restaurant is a decent act, and is used to show respect to the guests (Dobsons, 2006). Depending on the purpose of the treatment, most people will go to Chinese restaurants, but sometimes they also choose Western restaurants, Southeast Asian restaurants, and hot pot restaurants to entertain guests. A typical Chinese meal in a restaurant is composed of several main dishes (made of chicken, duck, meat, fish), several side dishes (vegetables, eggs, fruits), one or two pots of soup, and several cold dishes (preserved or raw food). The total number is generally equal to the number of diners, or slightly more. People also like to use food as a gift when visiting someone at home or in the hospital. Food symbolizes emotional communication in this context (zhou,2005).

Drinking culture and dine together culture looks similar but are actually quite different. In both cases, it looks like a group of people eats together in a restaurant. But the drinking culture usually occurs in the middle-aged people's occasions(see figure 2-4), the "upper" person persuading the "lower" person to drink more, the lower person drinking to show obedience (Thibaud,2018), thereby establishing a power system and closer relations. Dine together culture is much more peaceful which means that people of the same age or a group of friends eat out together. Because Chinese people do not have the habit of holding parties at home, they usually go outside to find entertainment and then eat out together.

Figure 2-4: The major Chinese food types map

2.2 Chinese migrants

Definition of Chinese migrants

Internationally, people who immigrate to a new country are usually called immigrants. Most Western literature also studies the flow of immigrants from country to country in the Western world. These immigrants will face various problems such as different cultures, languages, employment policies, and discrimination. In China, things are different, Chinese migrants mainly refer to people who move from their birthplace to other places in the country (Xia ,2020). Because Mandarin is widely used as a common language in China, and the Han nationality as the main ethnic group accounts for 91.60% of the population (Li, 2019), language and ethnic barriers are relatively small.
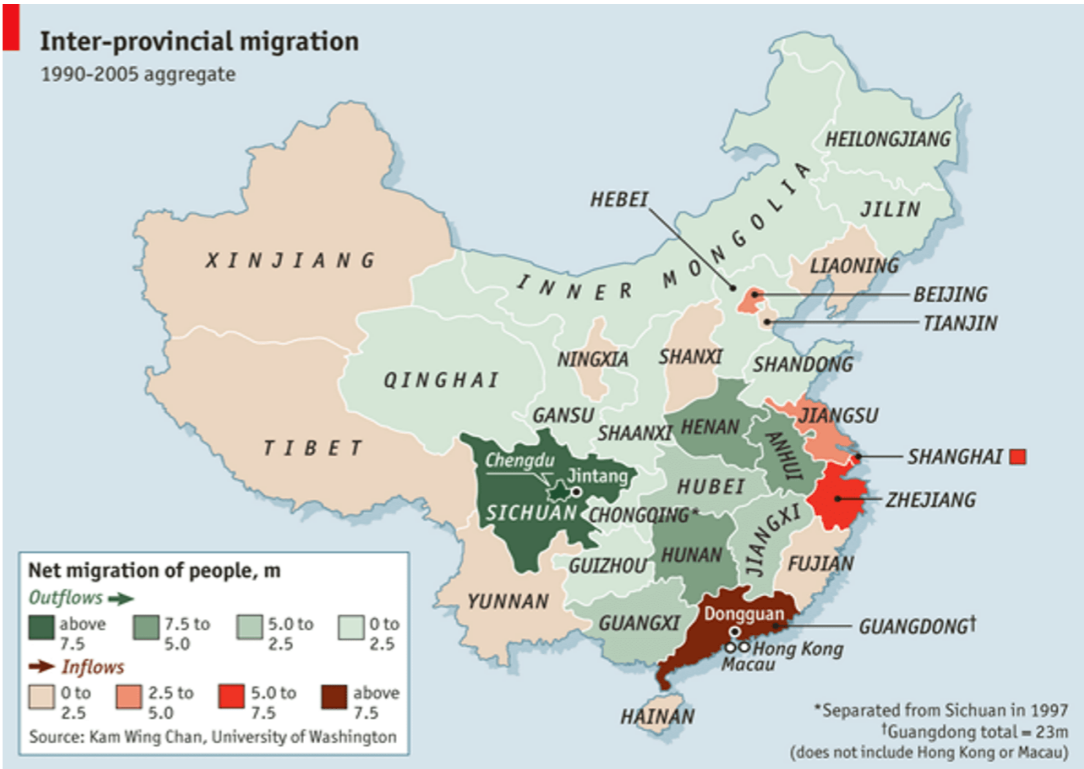

Figure 2-5: the Chinese migration map

Since the 1980s, the Reform and Opening Policy has relaxed China's household registration limitation, thus encouraging population migration. With the rapid urbanization process, a large number of farmers have poured into the cities(see figure 2-5), enduring hard work and harsh environments to participate in urban construction in order to earn more money than farming. They are known as migrant workers, and they go to cities to work mainly to earn money, not to immigrate to cities.

Then, the new generation of migrant workers who mainly born after the 1980s, began to become the main labor force, and their purpose has also changed to settle in big cities to enjoy better conditions for education, entertainment, and medical care (Xia,2020). At the same time, with the continuous expansion of Chinese colleges and universities, the number of graduates in China is also increasing every year. These highly educated new migrants also want to work and settle down in big cities (Lu, 2012).

Migrants and Chinese traditional culture

Figure 2-6: Li Bai and the moon.

China has always implemented a strict household registration system, to make sure the personnel movement is not frequent. In modern China, this is called the "hukou" system (Jason, 2013). Such a system has deepened people's attachment to their birthplace, and also made leaving their hometown a physical and spiritual "wandering" behavior, always be called "homeless". That reflects Chinese is hard to generate a sense of belonging to other places than their hometown.

Since ancient times, there have been a lot of creations about "homesickness", which are generally used to express the loneliness and melancholy when far away from home (Carlos, 2015). The folk saying "fallen leaves return to roots" was used to refer to the behavior of backing home no matter how far away, even if people died, they would want to be buried on the land of their hometown. The famous Chinese

poet Li Bai of the Tang Dynasty expresses his parting feelings in his poems, "Lifting my head to look, I found that it was moonlight. Sinking back again, I thought suddenly of home."(see figure 2-6) This poem is included in elementary school textbooks as a classic poem hat every Chinese must learn. There are countless creations on similar themes.

In such a culture, traveling far away from home or living elsewhere brings a strong sense of uncertainty and loneliness. Now, even if more and more people begin to move to big cities, the loneliness brought about by their inner cultural identity is difficult to eliminate.

Work and life of migrants

Heavy and long-time work is making the lives of young people in big cities unbalanced. Young Chinese are very familiar with the word "996". "996" is first proposed by a Chinese programmer in March 2019, which means "working from 9 am to 9 pm, and 6 days per week" overload work mode. Programmers then use the slogan "Work 996, sick ICU" to oppose such a phenomenon. This online labor movement was reported a lot.

Figure 2-7: Overtime work harms health and mental state

But so far, the phenomenon of overtime working in the Internet industry has not improved, and it has even affected other industries. One reason is, there are more and more young people with high degrees graduated, but the number of jobs has not increased significantly. As a result, competition becomes fierce. Many companies canceled the two-day break and changed it to a single-day break, or used the name of "flexible working system" to actually force the workers to work overtime without pay.

Therefore, 996 has gradually become a common term, used by modern young people to describe hard work. Data shows that in 2018, the average working time of young people in Beijing reached 10 hours, and the average commute time also reached 1 hour and 29 minutes (Beijing Daily, 2019). Longer working hours mean less personal disposable time, so consumer behavior is also virtually suppressed. Living in big cities, especially those super large cities like Beijing and Shanghai, migrants need to afford both higher rents and longer commuting time.

Migrants' living environment

Even if most of the new migrants have the idea of settling down after finding a job in a big city, in the early days of work, they rarely can afford a house. Therefore, renting a house has become the only feasible option. At present, the most common option for renting houses is sharing an apartment with others.

The problem with this choice is that some houses will be illegally renovated in order to earn money from renting to more people. In this way, some small apartments could have 4 and even more rooms for tenants to live in but have no kitchens and other necessary facilities. This phenomenon is difficult to be supervised by the government, and it caters to many people's demand for cheap rent, so it is very popular. But for the tenants living in it, the hidden dangers of the apartment, poor sound insulation, unclean and missing infrastructure, and conflicts with other people have become the price they need to pay.

Figure 2-8: A girl in the room she rented

Migrants and foods

After moving to a new city, the original eating habits of migrants are likely to be deeply rooted (Calvo, 1982). However, for this reason, only few people cook their own dinner to meet their taste needs.

Takeaways
Eating takeaway food has become the norm in migrants' lives. In the absence of time and energy, and lacking the necessary facilities for cooking, insisting on cooking dinner by yourself has become an irrational choice. Faced with this situation, some people choose to use mini appliances instead of kitchens for cooking, some people choose to eat out, but most people choose to use the takeaway app to order food.

Advantages of takeaways
Relying on China's developed infrastructure and low-cost labor, the types of takeaways are very rich, and people can also purchase them at relatively low costs to ultimately meet their food needs. The two most important food delivery apps in China are called "Eleme" and "Meituan". In order to gain more users, they often release various coupons and discounts on their platform. This behavior increases the migrants' frequency of buying takeaways.

Disadvantages of takeaways
However, people also worry about takeaways. The most widespread concern is food safety. People worry that small takeaway restaurants lack supervision, use cheap food ingredients, or do not strictly disinfect in the production process. People are also worried that in order to increase the flavor of takeaway food, too much seasoning is added during the production process, which is harmful to health. In addition, the recommendation mechanism of food delivery websites is based on people's purchase records, which may invisibly strengthen people's behavior of only eating certain types of food.

Figure 2-9: Social integration illustration

Migrants and social integration

Chinese migrants show a low social integration and a low sense of belonging in their new places of residence (Xia,2020). Social integration has several different definitions, in here it was defined as migrants can receive equal attention and care in the social, political, economic, and cultural life of the community, and have mutual trust, appreciation, and respect among family, friends, and communities(Towards, 2003). For young Chinese migrants, working in a certain city does not mean being accepted locally. Various obstacles to integrating into society are deepening their negative emotions and reducing their happiness in life.

2.3 Food and Emotion

Food is closely related to human emotions. People will prefer certain foods, and also hate certain foods. Discussing common food aversions also helps us understand the mentality of immigrants towards food, and seek the similarities and differences between them.

The omnivore's paradox

Human's omnivore instinct significantly influences the way they treat food. Because of the omnivore instinct, humans can develop a wide range of diets to get rid of dependence on certain species and certain environments, so they have strong adaptability. This instinct is indispensable to help humans move around and spread all over the earth. But the natural balance is that omnivores also have their disadvantages.

In the "omnivore's paradox" theory proposed by Rozin in 1976, he affirmed the advantages of omnivores: adaptability, autonomy, and independence, and also put forward its disadvantages: dependence on diversity, the need to take in nutrients from a variety of foods. It sounds simple, but it is difficult to do. The exploration of food edibility is accompanied by a lot of risks. In human nature, curiosity and fear co-exist when meeting novel food. Among them, the fear and disgust aroused by novel foods lead to avoid eating, which is called "Neophobia"; on the other hand, the curious and excitement evoked by novel foods and willingness to try is called "Neophilia"(Fischler, 1980).

"Neophobia" mainly exists in the study of children's eating behavior. Studies have found that children often develop this specific behavior after 2 years old: only accept foods within a small range that they are familiar with, and reject other foods outside this range, no matter the food itself is unknown, uncommon, disease-causing, or mixed with other foods. At the age of 5 or later, such behavior will gradually weaken or even disappear (Hartmann, 2020)(see figure 2-10). For adults, completely rejecting certain foods because they have not tried it may rarely happen, but they are more or less affected by neophobia. This kind of influence is manifested in food decision-making, people tend to buy and try familiar foods, and avoid unfamiliar options intentionally or unintentionally.

Figure 2-10: Food neophobia of children

Eating psychology

Avoidance of unfamiliar food is inseparable from physical disgust and psychological fear. Many studies have discussed "disgust". Pliner believes that neophobia can be regarded as a quantifiable personality trait, and developed a scale based on its influencing factors, summarizing factors related to the new phobia: anxiety, age, experience to measure feelings, and so on, while excluding gender and critical phases influences (Pliner, 1992).

In the experimental summary of Pliner, the image of neophobia is like this: a person avoids eating novel foods because they (wrongly) believe that the novel foods will not taste good, and because of this avoidance, this belief was never corrected. An obvious intervention is to "force" exposure to novel foods to disrupt people's expectations of unpalatability. In other words, patients with neophobia can use their experience to "teach" themselves that novel food will not taste bad; perhaps such an experience will reduce neophobia. This intervention has been proven effective in the short term.

Food and sense of belonging

Food and the sense of belonging are considered to have a strong connection. In a study of international migrants, migrants are obsessed with the taste of homeland food, and this familiar taste helped evoke their good memories of home. By strengthening this taste-memory connection in the current residence place, the sense of belonging is also improved (Bailey, 2017).

In addition, sharing food in a group is considered an important social behavior. Migrants strengthened their cultural identity with each other by sharing their hometown food. Therefore, the act of sharing broke the social barriers and made them see each other as members of a big family. This social function is also reflected in the process of making food together. For example, Chinese people are used to eating dumplings during the Spring Festival, so making dumplings with the whole family is regarded as an important family activity. (see figure 2-11)

Figure 2-11: Chinese families making dumpings together

2.4 Chinese consumer behavior

Society of acquaintances

In the society of acquaintances, people are better at accepting recommendations from friends and relatives (Huang, 2020). Chinese people are full of mistrust of food companies and advertising, which may be caused by several large-scale public food safety incidents. 2008 Chinese milc scandal is the most famous one. After experiencing incidents in which food companies illegally added compounds to milk powder that caused thousands of babies with head deformities, people believed that blind trust in large companies should be withdrawn, and they called on the government to have stricter supervision. Excessive use of the Internet for marketing can also easily lead to disgust, especially when people find foods is so easy to exaggerate their taste too much.

But recommendations from acquaintances are rarely against. Chinese people value their relationships with others, and they tend to regard other people's recommendations as well-intentioned and authentic behaviors that use mutual relationships as a guarantee. Therefore, recommendations from friends and relatives are much more useful than advertising in China, which shows "word of mouth" is powerful.

2.5 Conclusion

After a multi-faceted understanding of food, migration, emotions, and consumer behavior, the direction of this design's attention is gradually becoming clear.

First of all, food plays a very important role in Chinese life and emotions. Sharing food is a very effective form of social interaction. When far away from home, Chinese people are easy to show homesickness, and food could be an effective way to evoke good memories and a sense of belonging when they meet such problems.

For young migrants, they must rebuild their lifestyle in a new environment, which is not easy. Food culture conflict is one aspect. The deep-seated problem under food culture conflict is that many aspects of social integration are not fully supported, which leads to a decrease in sense of belonging and happiness, and affects mental health. Here, from the surface behavior (food conflict), the deep-seated expectations that users may have (to achieve social integration) appeared.

Based on the above point of view, it seems possible to form more new sense of belonging memories by encouraging tasting of local food. But the obstacle to doing this is that people may be fear of trying novel foods due to their nature (Neophobia). Recommendations from acquaintances can reduce this fear, but in a new environment, it is often difficult for people to establish new social relationships.

It is necessary to learn more about the actual lives of young Chinese migrants and their true attitudes towards these things. In the process, some of the refined views can be more usefully supplemented or adjusted. In the user research phase, the author will follow the previous definition of social integration and divide the interview questions into six main aspects. By understanding the most important issue of young migrants' social integration, the entry point to encouragement in eating could finally be find.

03
Methods & Materials

This chapter proposes research questions and will answer them by combining literature research and user research. Then, introduced the basic model followed by the project, and generated an overview with the design methods used in each phase.

3.1 Research questions

The research question is formulated based on the preliminary exploration direction at the beginning of this graduation project. Chapters 2 and 3 will answer these questions through literature research and user research.

Main research questions:

How could a design encourage young Chinese people who moved to a new region to try new food items?

Sub research questions:

Which factors influence the willingness of young Chinese people to try new food items once they have moved to a new region?

3.2 Project approach

DISCOVER   DEFINE   DEVELOP   DELIVER

PROBLEM

SOLUTION

RESEARCH, ANALYZE , SYNTHESIZE
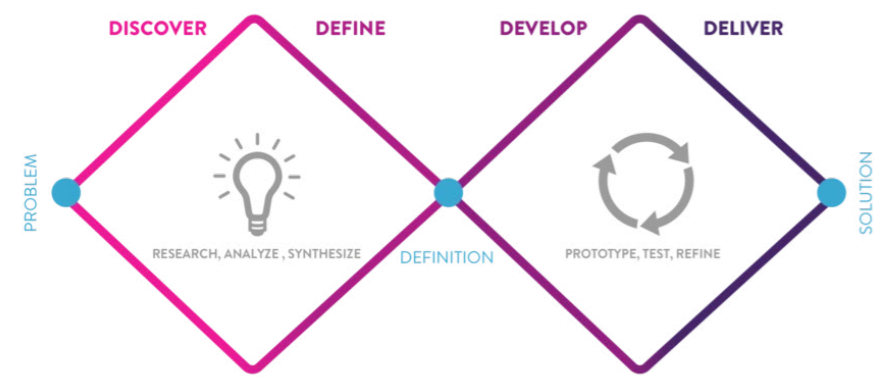
DEFINITION

PROTOTYPE, TEST, REFINE

Figure 3-1: Double diamond framework

The design project used the "Double Diamond" model developed by the British Design Association in 2005. The integrated design process including four phases, discover, define, develop, and deliver.
Research has been done to understand the general situation of Chinese food culture and migrant's life, the actual difficulties and potential needs of migrants, and the target

group's experience in dealing with diet conflicts and cultivating new eating habits in a new environment. The purpose of the literature research and user research conducted in the discovery phase is to verify the problems of the target users in real life and discover their unmet needs and find opportunities as the basis for the development phase.

04
User research

This chapter outlines the user research activities that were conducted to understand the real-life experience and dietary issues of young Chinese migrants. Interviews were analysed using thematic analysis. The developed themes outline the characteristics of the target group the living environment, their feelings and reflections on the current eating behavior, the user's experience of using food-decision tools, and the degree of local social integration.

4.1 User interview

Interview setting

A number of semi-structured interviews was conducted with young Chinese migrants. The focus of the interview was to collect insights on the following five aspects:

1. Their living environment and habits
2. Future planning
3. Eating habits and preferences
4. Time arrangement in daily life
5. Social relations and psychological belonging
See Figure 4-1 for an overview.

Detailed interview questions can be found in Appendix A.

The interviews was divided into four main elements:
project introduction-project; consent form; sending-interview-interviewee; sending pictures related to the interview as supplementary materials (The photos are provided by the interviewers themselves, showing their real living environment, the food they consumed, the food they mentioned in interview, etc.)

During the interview, used the interview guide form to guide the discussion and record key information. After the interview, the interview records and key information were combined. Then thematic analysis methods were used to generate thematic maps. The results are summarized into several themes. Specific insights will be elaborated on in the data analysis section.
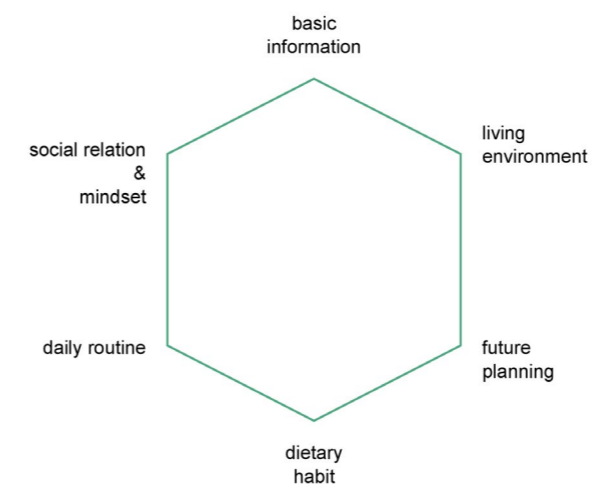

Figure 4-1: Six aspects of interview questions based on the definition of social integration.

Due to the impact of the Covid-19 pandemic, a safe method of online video/voice interviews was adopted, and make sure interviewees were at home during the interview. Starting the topic from the environment they are familiar with, in order to have a natural dialogue with them, and may have a more comprehensive understanding of the target group.

Participants

The interview selects young Chinese who have moved form their hometown to another place to work within 3 years due to work reasons as the interview participants. They are between the ages of 18-29 and all have experience in renting a house.

4.2 Data analysis

Thematic analysis

The analysis used the thematic analysis method to identify the themes in the interview data and analyzed the seven interviews. All interview records and supplementary photos and other information was reviewed to understand the participants' real living environment, attitudes toward foods, and eating experience. Then, the information was transformed into text form, then coded and classified, and made into a relational chart to identify the importance of the information and the degree of interconnection.
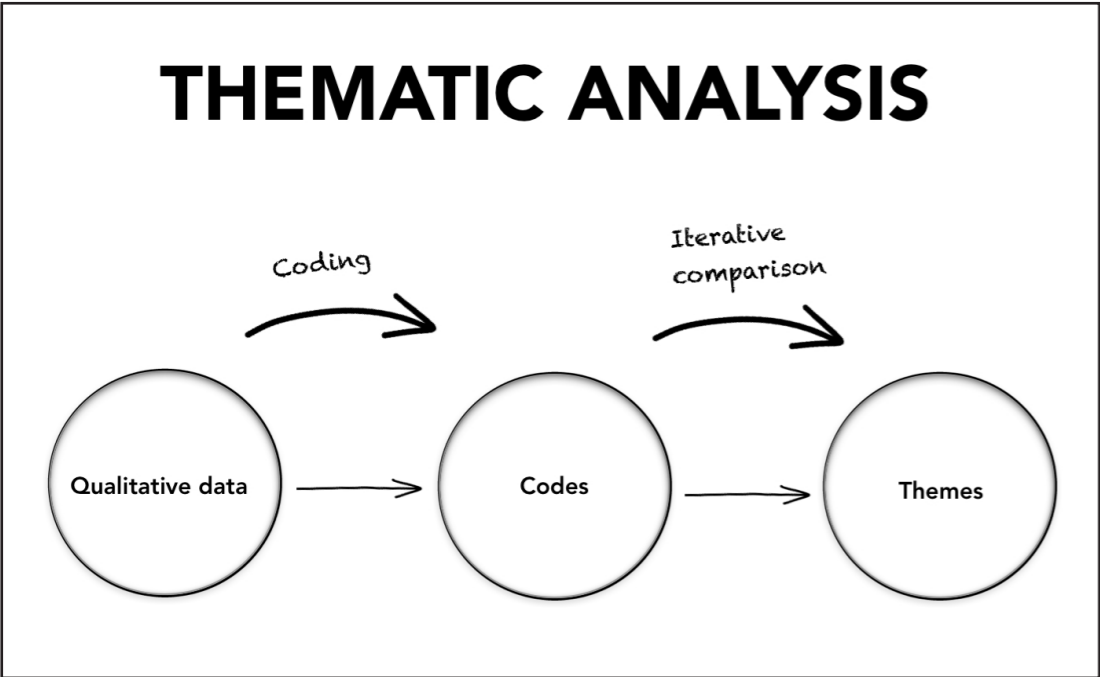

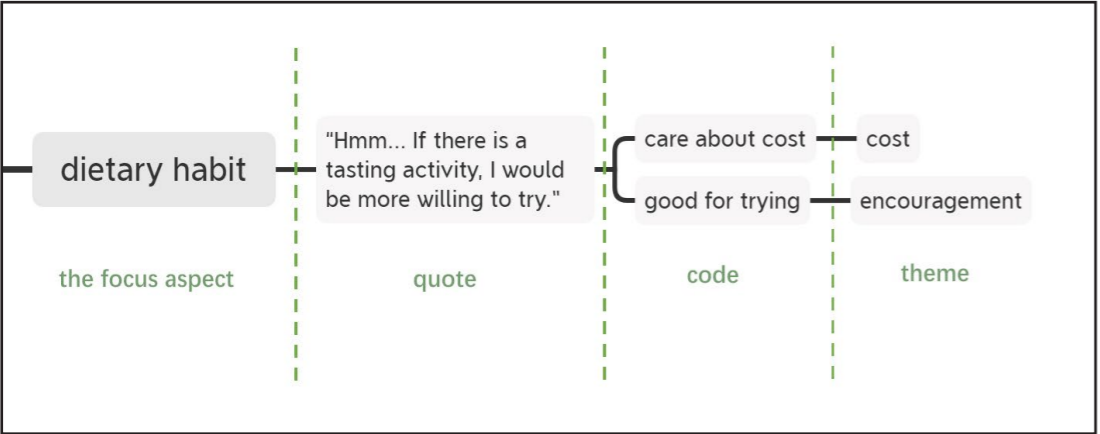*Figure 4-2: Thematic analysis coding process*

Figure 4-3: An example of coding process

Figure 4-4: analysis of 7 participants. Materials were printed out to keep an oveview on all informations.

4.3 User research insights

The basic information of users was analyzed here, and then the current obstacles that hindering young Chinese migrants from trying new foods were explained from the three aspects of "users and context", "users and food", and "food anc context".

Figure 4-6 The distribution of the recruited interviewees in China

The user characteristics

Partcipant	Gender	Age	Working years	Hometown	Residence	Living condition
1	Male	23	2 years	Chengdu	Changsha	Apartment
2	Female	22	3 months	Nanchang	Changsha	Apartment
3	Female	25	2 years	Changsha	Beijing	Apartment
4	Male	26	3 years	Changsha	Guilin	Apartment
5	Female	25	1 year	Suqian	Shenzhen	Studio
6	Female	24	6 months	Zhoushan	Beijing	Studio
7	Female	24	1 year	Changsha	Shanghai	Apartment

Figure 4-5: The participant basic information chart

The author recruited 3 people from the place of residence by distributing questionnaires and recruited 4 people through the Internet. So, a total of 7 participants participated in the interview. The interviewees were in their own rooms at the time of the interview and completed the interview via video calls or phone calls (depends on which way makes them more relaxed).

Participants came from different cities in China and now lived outside the province where they were born (see figure 4-6).
Among the participants, there are 2 males and 5 females. Participants are between 18-29 years old and were renting a house.

As can be seen in figure x, different colors match different areas of flavor. 6 of the 7 participants experienced migration across the areas of different flavors. They did mention this major change in diet and related effects in the interview. The in-depth summary and examples could be seen in the next section.

Users and context

work is busy, life should be easy

Young Chinese migrants tend to value the career development that works brings to them, so they are willing to endure heavy work. During the disposable time after getting off work, they maintain a relatively simple and regular life to save energy that is excessively consumed during work. Therefore, mobile games, short videos, and social networks are very popular, while activities such as reading and exercise are rarely mentioned. That's also why they finally choose to have the same meals but not willing to exploring novel foods.

P3(Shorthand for participant 3)
"Usually, I don't bother to find delicious, just eat something that is not annoying... I was tired after getting off work and just wanted to lie down."

Tend to spend time and energy on weekends

Due to the busyness of work, the free time during the working day is compressed very short. Usually, young Chinese migrants spend this time for rest and entertainment. The takeaway is their common choice, which can save cooking time. The entertainment they enjoy at this time is also in a very relaxed type: playing small games, browsing social media, having a chat with friends, etc.

On the weekends, things are different. Young people show their full enthusiasm for going out. Many people choose to do the necessary housework at home one day and get enough rest and spent the other day going out for social activities or cultural activities. Watching movies, visiting exhibitions, and gathering with friends have become common reasons to go out. In this process, they are also more energetic and interested to search for what they want to eat and make positive attempts.

I wanna try, but...

When talking about the food in their residence place, all the interviewees mentioned their own experiences of trying new local food. The strongest reason for them to do this is curiosity and anticipation for a new life.

The freshness of just coming to a new city will prompt them to try something, but such behaviors quickly stopped completely. When asked "When was the last time you tried a new food?", the interviewee said it was difficult to answer, but when asked "What new food did you try in this city?", the answer was much faster.

High cost of trying

For these young people, curiosity is natural. They will want to try some new things and seek more novel experiences, but it also means the energy and time spent in the food decision making process, the cost of money for trying novel foods, and the potential result "things to try are not tasty". The worries that come have become a cost that will stop people from trying new foods.

P1
"Hmm... If there is a tasting activity, I would be more willing to try."

P3
"I'm used to ordering takeaways I ate before, or looking for foods that I have eaten in the restaurant, and then ordering...I rarely try something that I haven't eaten before, because I have to consider money, and it is difficult to find something both delicious and cheap enough."

P2
"I will try something new when I feel really good. That means if things I tried do not meet my expectation, I wouldn't feel too upset."

Too many choices means no choice

Nowadays, mainstream take-out software and review apps have included as many options as possible for users to choose from. But choosing one of all possible options requires comparison and consideration. In particular, there are so many categories of Chinese cuisine, and apps also provide a wide variety of food, making food decisions a hard work.

P5
"...so I will search for nearby restaurants to see if there is anything I want to eat, and if not, I will look at historical orders. But I will not try other functions, nor have I compared the pros and cons of different apps. That's too troublesome."

The food comfort zone

People's food preferences are closely related to their identity, and the food of their hometown rarely exceeds their "comfort zone". After arriving in a new city, migrants will want to learn about the local specialties, but they may also refuse to try some tastes because they are beyond their acceptance. When almost everyone mentioned the experience of trying new and strange things, they compared them with familiar foods. For them, looking for familiar points in ingredients, cooking methods, collocations, and appearance can increase familiarity and make the food no longer looks unacceptable.

P2
"Jiangxi Province is next to Hunan Province. The dishes in Jiangxi and Hunan are all spicy. I feel almost no differences in the taste and like them very much."

P3
"...Is taco in Mexico a new food? It is similar to Chinese hand-cooked pancake, and the ingredients are also known to me, so I tried it."

P4
"I have tried Guilin's specialties. They tasted like a combination of Hunan, Cantonese, and Yunnan cuisine."

Food and social

In China, food and social interaction are closely related. Eating behavior becomes social behavior when eating with others. Chinese tend to trust people they know, so their acquaintance's evaluation of food will significantly influence their willingness to try. If something is judged as not tasty by people they know, they seldom eat it. But conversely, if it is with friends, people will become more positive about trying new foods, and they will pay more attention to the "experience of trying together" rather than the "costs and benefits to be paid."

P6
"I will want to make new friends when I come to a new environment, and eating together is a good way to quickly make people familiar with each other."

P4
"...sometimes people in the cycling club I joined would take us to eat new food, I would go with them."

During the interview, people's attitude toward the local food was complicated. On the one hand, people admit that there are many unique local foods, which has always attracted them to try. On the other hand, with the popularity of delivery services and online shopping, local food is not the only daily choice. In a place, especially in a big city, all kinds of delicacies can be eaten anytime, anywhere, so that people do not have the urge to try local specialty foods.

Another problem is that the local food culture is not well connected with people's daily life. People see local food as an interesting and worth exploring food category, but they rarely explore the local culture behind the food through their food experience. Therefore, even if they eat local foods, they still lack contact with the local culture and local environment, and rarely develop the sense of identity in this way.

4.4 Conclusion

What problems do young Chinese migrants encounter when trying new foods?

The main problem is that most young migrants have the idea of trying something new, especially when they come to a new city. But such an idea is always hindered by various factors in life. Loss of energy, complicated process of decision making, and other hidden costs, all make people have more negative emotions when trying.

Too many choices make it impossible to start. Existing apps have developed many functions in food evaluation and recommendation, but they cannot meet people's needs well. Most people choose to browse the recommended foods on the homepage and then return to the history menu to order repeated dishes.

All interviewees mentioned the connection between eating behavior and social interaction, and when eating with others or being recommended by others, people's willingness to try is significantly higher than usual. When referring to bad eating experiences, they often quote the comments of friends and relatives as evidence. Social connection has not been taken seriously in the existing methods of encouraging new food attempts.

The relationship between food and society is also very weak in research. Young people do not regard local food as part of the local lifestyle, have no motivation to try local food, and have no sense of connecting with the city through local food.

05
Design Vision

ww

Introduction

From the literature research results in chapter 2, it can be concluded that food in China has multiple attributes such as social and cultural in addition to its own eating attributes. The food environment affects people's local life experience. To a certain extent, food can help increase young migrants' acceptance and integration into the new area. In addition, food disgust may also be widespread in the Chinese population. How to weaken the negative emotions generated in this phenomenon may be able to use social relationships as a starting point, or to move the user's attention away from the food itself to something else. In addition, emphasizing the added value and cultural significance of trying new foods can also become a potential design direction.

From the user research activities in chapter 4, it can be found that the target users' curiosity and exploratory desire for new eating environments have always existed, but the main reason hindering them from practicing this exploration is that the cost of food exploratory behavior is too high. In addition, the tools and environment they used failed to provide them with inspiring choices, further weakening their motivation to explore. For the common choices that existing tools can provide, too many choices also increase the difficulty of decision-making. The last point is that in common situations, people rely on social networks to expand their eating experience with friends, but it is difficult to form new relationships in new cities, which also reduces their willingness to try.

5.1 Approach

Simplify the food decision-making process to reduce exploration costs, and provide discoverable options.

In user research, you can feel the user's enthusiasm for "exploring new food," but the high cost of trying often stopped their trying behaviors. And this is because the limited energy and time make the cost of trying "expensive." Based on this, simplifying the decision-making process can be the basis for reducing costs and encouraging new food attempts.

In addition, the research also found that people's attitude towards food is often too focus on the taste and they don't understand the value and significance of trying new foods. By broadening the focus of food attempts from the food itself to the food context, social context, and cultural context, providing users with inspiration about themselves and other factors, can help them improve their understanding of the meaning of this behavior.

5.2 Design guidelines

01

Simplify the decision-making process

to save people's energy and time.

02

Motivate people to make decisions to try new foods by involving social factors

for example:
Introduce different cultural backgrounds as a starting point for trying new food.
Meet social needs by trying new foods. Help build new social connections in this experience.

03

Broaden people's understanding of trying new foods.

Redefine the value of this experience.
Reduce the worries of trying costs.

5.3 Design goal & Interaction vision

Design goal

Encourage young Chinese migrants to try novel foods when they are eating out on the weekend.

Interaction vision

The interaction should be like a fish jumps out of the water.

Curious
The design should be able to stimulate users' curiosity about new foods.

Inspiring
Using this design should give users inspiration about food, allowing them to look at food choices from different perspectives. Through the enlightening thinking triggered by the design, people have the opportunity to rebuild their relationship with food and society.

Controllable
The design should make the user feel controllable, safe, and easy to understand in interaction and presentation.

06
Concept development

In this chapter, ideas were developed based on the design guidelines and interaction vision summarized in the previous chapter, which produced three initial concepts. Then, these concepts were tested. In the process of testing and integrating concepts, new ideas were recorded, and as the understanding of the project got deeper, the structure and focus of the project were adjusted accordingly. At the end of the chapter, the core idea of the final concept was explained, and the detailed setting was presented.

6.1 Ideation process

The ideation phase is a connection between the research phase and the design phase, which aims to "translate" the previously discovered problems into a potential design direction, so as to further develop the concept into a mature design. Two methods of personal brainstorming and co-creation session are mainly used here to discuss the problems previously found. The specific steps and ideas generated can be found in Appendix B.

The ideation phase is mainly divided into the following stages: ideas were generated during personal brainstorming and co-design session and were visualized to show their differences and commonalities. Then, these ideas were combined into three concepts. The Harris profile and user tests helped evaluate the interaction quality of the concepts. Finally, combined with the extra investigation of similar applications and products, the final design direction was determined.

Figure 6-1: The ideation illustration

6.2 Concept directions

Three concept directions were generated during the ideation process. The first one tends to inspire people in the search process of finding food. The second uses the visual presentation of the food location to deepen the connection between people and their living context. The third concept focuses on food decision-making in social situations. The details of the three concept directions and the test results are elaborated in this part.

Since this project revolves around food decision-making and the three important influencing factors besides food are people, their living context, and social activities, the different focus of the three factors in the three concepts were illustrated in figure 6-2.
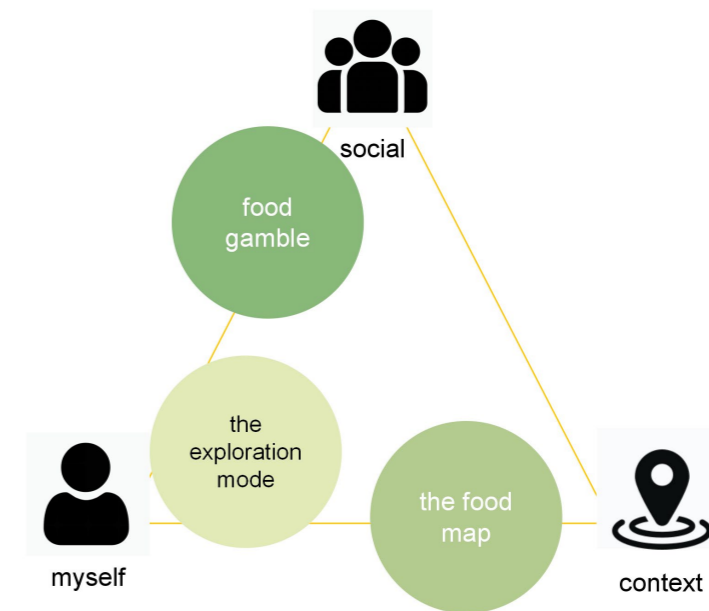

Figure 6-2: The different focus of the three concepts

Concept 1 - The exploration mode

An extra function mode for people to explore and try food from a different perspective in existing food order and review apps.

Concept 2 - The food map

A food map for people to record their food experiences and remind them of foods they tried and didn't try. People could show their food trips on social media with their friends.

Concept 3 - Food gamble

A game for friends to play together. They choose the food they would like to have, discuss with others, and share them, then the dice help make the final food decision for them.

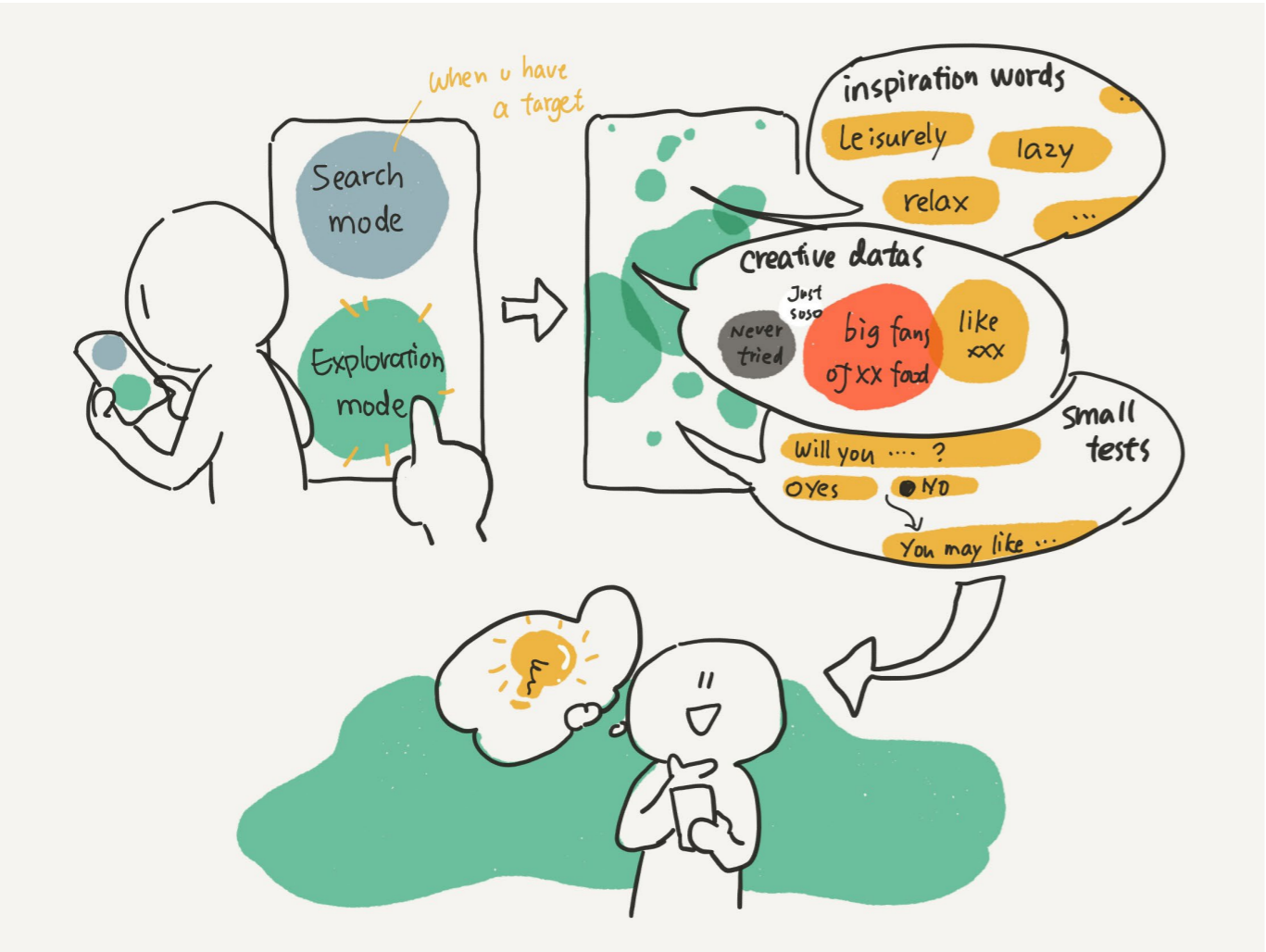# Concept 1 - The exploration mode

Figure 6-3: the sketch of concept 1

Prototype

Figure 6-4: Main interfaces of the exploration mode

An extra function mode for people to explore and try food from a different perspective in existing food order and review apps.

This concept hopes to give users more inspiration beyond the commonly used food search and recommendation modes. The main interface will display common search modes (including food type, distance, evaluation, and other elements familiar to users) and exploration mode. The exploration mode provides users with some new food decision-making elements, some focus on the user's own state: personal preferences, moods, etc., and others are matched with dining scenarios: classmates reunions, couple anniversaries, etc. The "more inspiration" functions of the App can provide more random elements for users to use. When clicking on the category of their interest, it will provide a more detailed classification. After determining several main decision-making elements, the system

filters and presents the results according to the degree of relevance.

This concept wants users will not only consider what they want to eat, but also add the dining environment, personal status, and social mode into the decision-making process, which will bring them more inspiration of what they really need, and help them understand themselves. The food recommended by the system can also convince users that "this result suits me" and "the result can meet my needs". So they are more willing to try new foods.

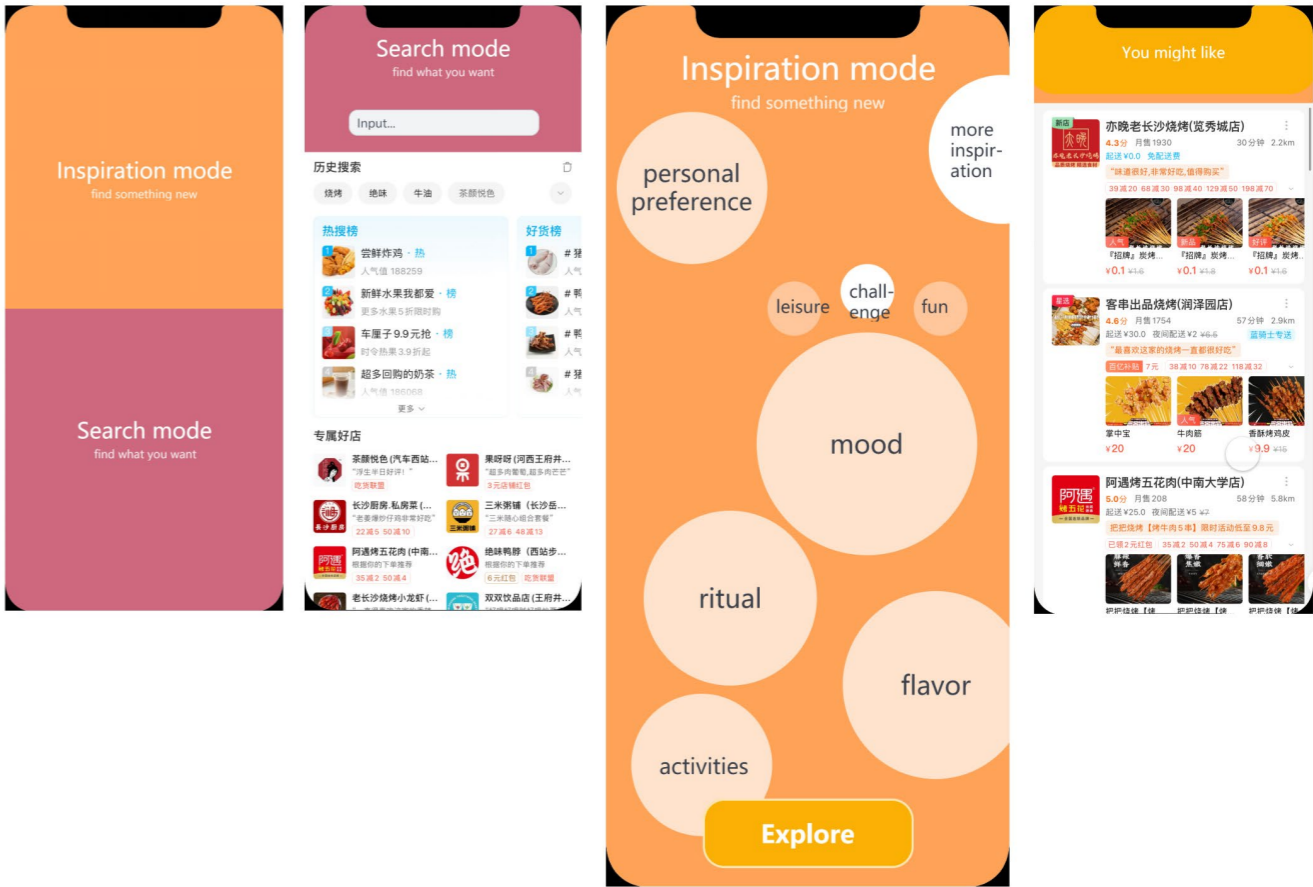When making the interface, the pink color of the search mode came from the brand color of the app Meituan, which is commonly used by Chinese people, and the exploration mode uses the vibrant orange as the background color because orange could easily evoke people's feeling of "freedom" (Birren, 1950). The round bubble-shaped options also want to bring them the feeling of openness and freedom.
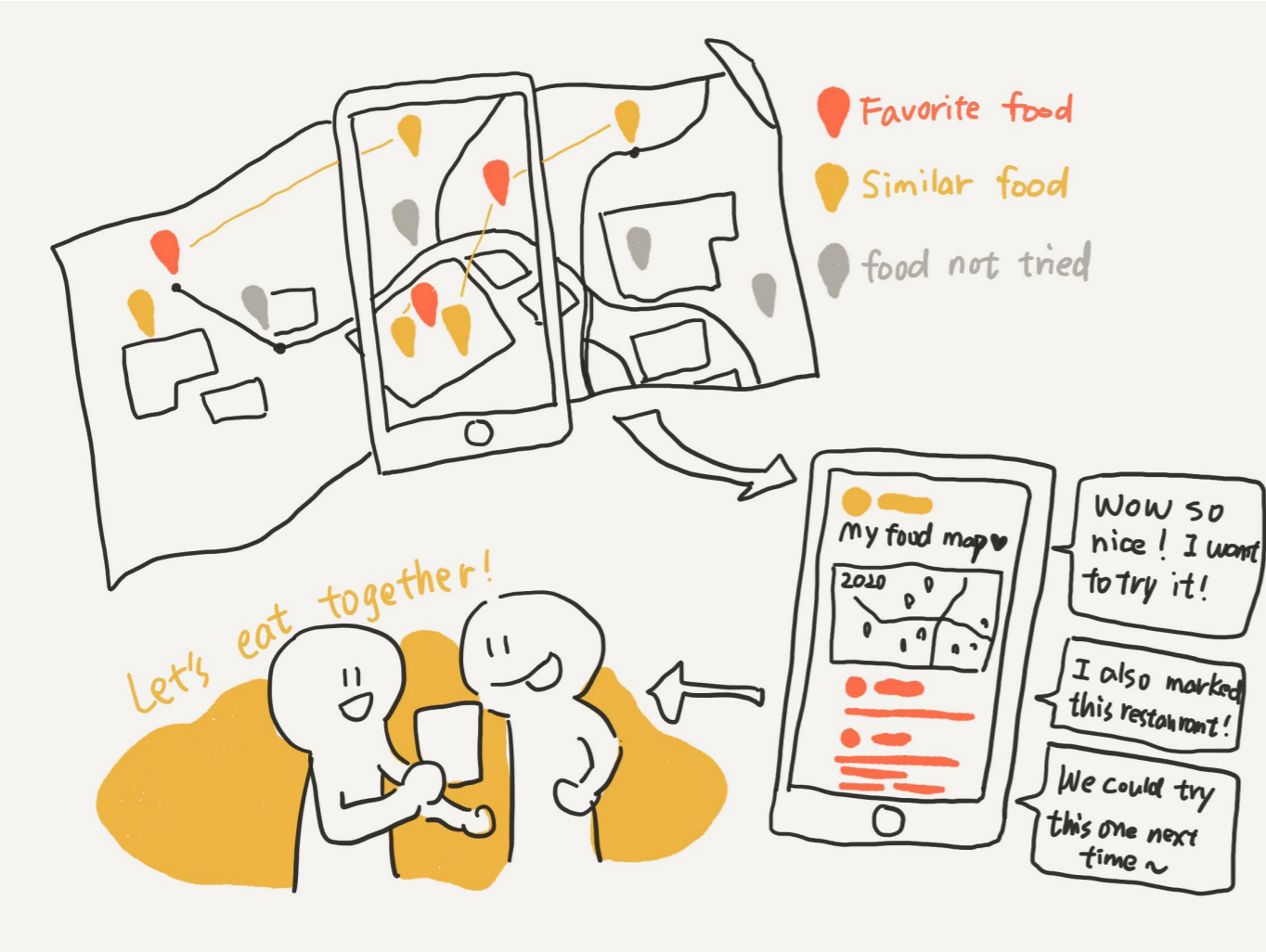
Concept 2 - The food map

Figure 6-5: the sketch of concept 2

A food map for people to record their food experiences and remind them of foods they tried and didn't try. People could show their food trips on social media with their friends.

This concept defines people's own preferences based on their existing eating experiences and marks them on the map. Then, based on their preferences, the map will also show two types of recommendations, one is for similar foods and another is for foods that have never been tried. When people click on any small dot, more detailed food information will be displayed on it. Based on the different types of information, people have a more intuitive understanding of "what's delicious near where I live", and can freely choose to continue to try foods with similar taste or follow the fresh choices provided by the app. After trying new foods, the relevant areas can be illuminated to create a sense of accomplishment in exploration.

The strategy here is to enhance the presence of new foods, let people know that there are fresh foods to try in easily accessible places, and they can also easily back to their familiar food areas. The pressure of choice has not increased, but the degree of freedom has increased. In addition, people can easily export this map and share it with friends for food-related discussions. Another consideration is that the setting of the map intuitively combines the food and the region. Through the accumulation of local eating experience, exploring and lighting up the unknown area, it can enhance people's connection with their living context.
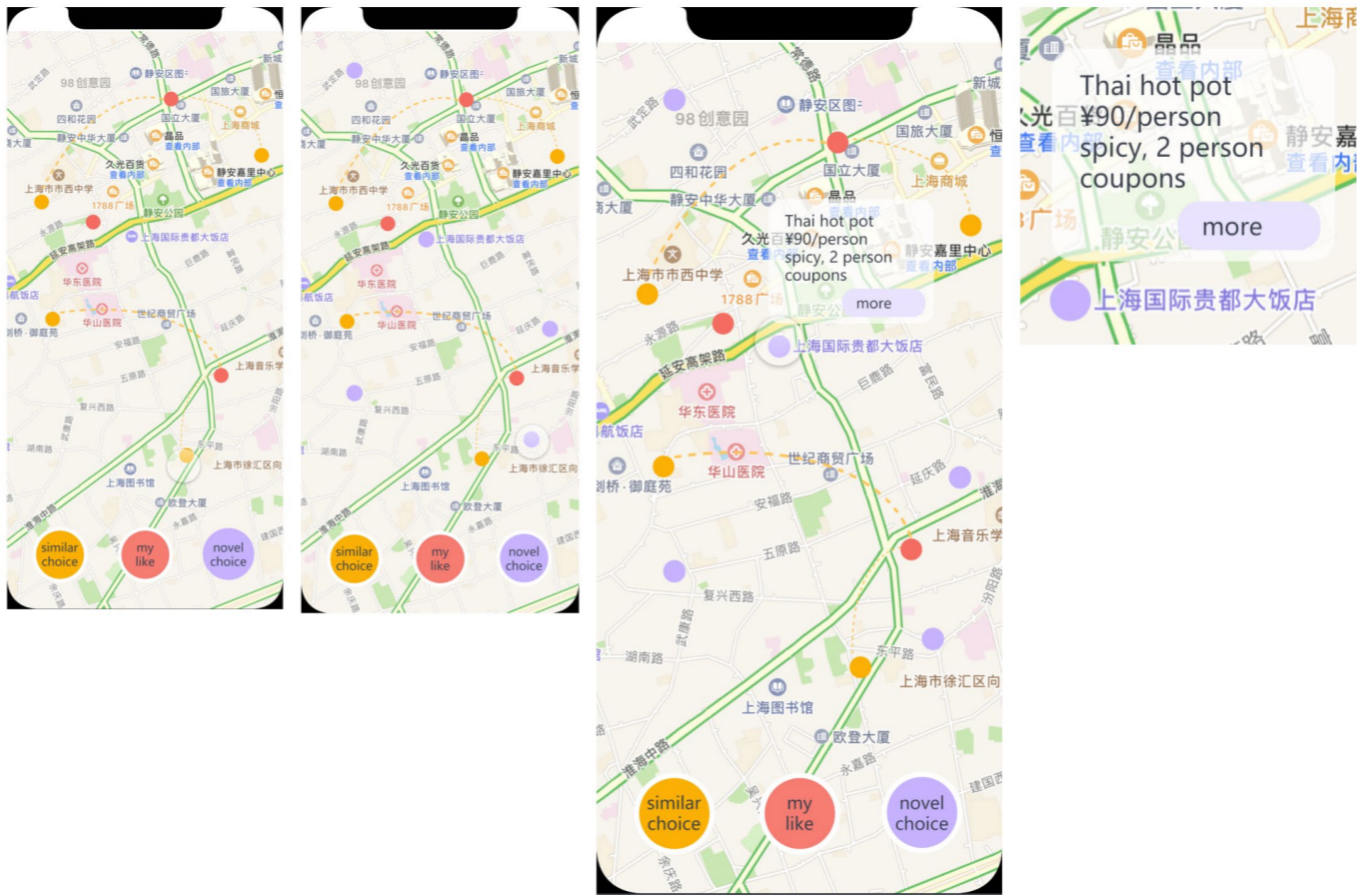
Prototype

Figure 6-6: Main interfaces of the food map

Two warm colors(red, orange) were used here to show people's dietary preferences and related recommendations, and the cool color(purple) was used to present new foods. Click the button below, and the relevant points will be marked on the map. The red dot representing "My like" and the orange dot representing "Similar choice" are connected by a dotted line to show that this recommended flavor is most similar to which one flavor the user has ever eaten. In addition, the red and orange dots are stationary, but the small purple dots are flashing, attracting people to click.

After clicking on any dot, a piece of short food information will be displayed above the small dot, including information that people most care about, like name, price, taste, and discount. Click the more button to directly enter the detailed page to view the information.

Concept 3 - The food gamble

Figure 6-7: the sketch of concept 2

Prototype

Figure 6-8: the food gamble using process(from personal view).

A game for friends to play together. They choose the food they would like to have, discuss with others, and share them, then the dice help make the final food decision for them.

This concept focuses on food decisions in a social context. On the interface, the user enters their three food ideas (or nothing). After everyone has entered, click the dice to get a random result. If any user is dissatisfied with the result, he/she can keep clicking the dice until all alternative results are eliminated. If all users are satisfied with the result, they can jump directly to the detailed page of the food.

Generally speaking, the food decision-making process of multiple people is more complicated than that of a single person. Here the concept tries to test whether people can simply produce random results in multi-person decision-making by introducing the simple random element(like dice), and agree with the results, so as to more easily accept the possibility of trying new foods.
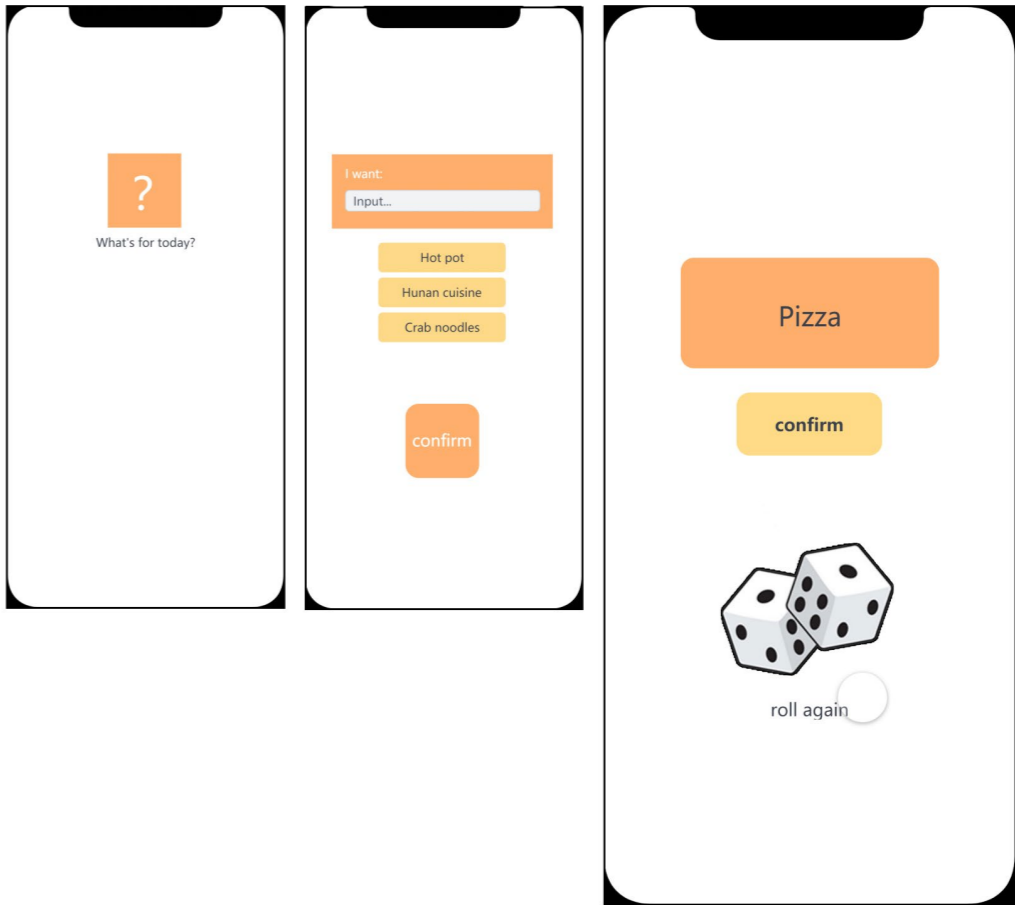
The interface is simple, with orange and yellow as the main color, with dice patterns. The main interface introduces the question "What are you eating today?" in the form of a question mark box, and then the user enters his own options, then confirm. Finally, in the shared interface, everyone can click to throw the dice, and they can accept random choices by default by doing nothing. All operations are performed anonymously to avoid disputes.

The Harris Profile

After the three concepts were generated, the Harris profile was used to evaluate the pros and cons of the three concepts. The image lists five evaluation criteria(see figure 6-9), which were proposed by previous design guidelines and potential design directions.
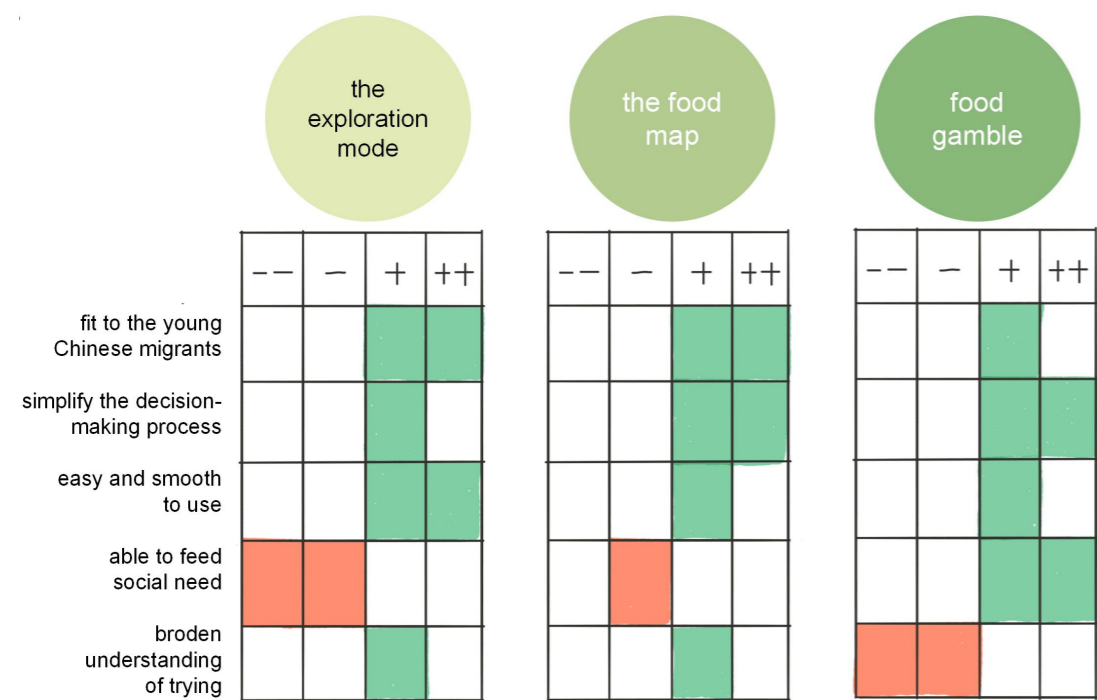

Figure 6-9: The harris profile results overview of the three concepts

In general, the overall performance of these three concept directions is similar. Comparing the advantages and disadvantages of Concept 1 and concept 2, concept 2 is slightly better in terms of social possibilities. However, concept 3 has strong social advantages, but it does a poor job of motivating people. After the comparison, it is still necessary to introduce participants to test them in order to better evaluate their interaction quality and provide necessary help for future concept selection or combination.

6.3 Concept testing

Prototype making

The interaction design software Protopie was used to simulate the interaction in the use process of the three concepts. Then all three prototypes were uploaded to the network. Therefore, participants can click on the link they received to enter the corresponding web page and test the interaction.

Interview setting

A safe online video interview method is adopted. The interview is divided into five main parts: project introduction, giving interactive behavior goals (for example: use the products to choose what you want to eat for dinner), sending interactive models, and then sharing screen to observe the interaction behavior of the participants, asking interview questions. After testing three concepts in total, ask participants to compare the three concepts together.

Participants

Three participants are marked as T1, T2 and T3 in the test results, to make it different with the participants in user research.
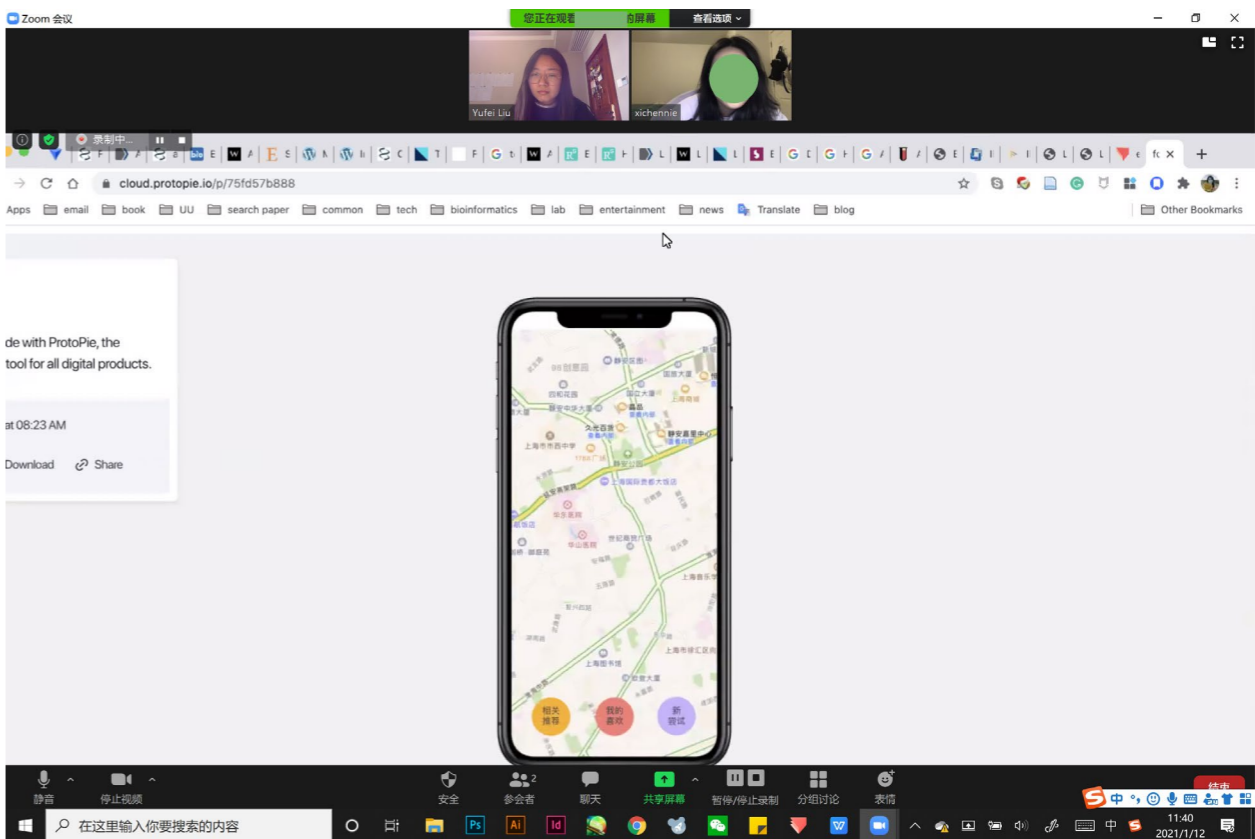
Time duration

1.5 hour

Figure 6-10: Screenshot of the online test with one participant

Testing results

After the interviews, meaningful content was organized into several sentences and divided into three types of content: advantages, disadvantages that can be improved, and new possible directions. The first two are conducive to judging the interaction quality of the concept itself, and the last type helps to generate inspiration.In the interview, people's main points were listed as follow:

Advantages

Concept 1
Getting inspiration from random elements.
Changing from caring about the taste of food to caring about people's own needs.

Concept 2
Intuitive feeling in map form, strong connection with life.

Concept 3
The form of dice is interesting and equal.

Disadvantages
 (which can be improved)

Concept 1
Some options are not intuitive enough, make users feel confused.
The logic of the selection is not clear, so users may not be convinced by it.

Concept 2
The map shows lots of location information that gives it a risk of privacy leakage when sharing with others or on social media.
The level of information is not clear and can easily lead to misunderstandings(the three buttons).

Concept 3
The motivation to use is not enough, and there are not that many suitable social occasions.
Functional limitations are strong.
No fun feeling of playing games.

Ideas

The ideas participants mentioned in interviews are very helpful for understanding what kind of information users are interested in. And it's also good for comparing and merging the three concepts, so the four main inspirations and quotes are listed as follows:

Storytelling may help users to understand.

T1 looking at the first interface of concept 1:
"I feel I need an opening guide to tell me what this is for. I'm confused. What's exploration mode means?"

Can consider using the method of storytelling to set up a context and roles for users before use, so that they can into the role and then generate their expectation of interaction naturally.

Add the seasonal and local food options.

T1 when using the inspiration button of concept 1:
"Local food!! Let me know what the local foods are here? All of them! I am interested, and if I can easily get all information about them, I may like to have a try."
T2 talking about the experience of using concept 2 prototype:
"I mean, the food changes every season...it would be fun if it reminds me to follow the changes."

In the interviews, people mentioned their interest in local food and seasonal food and believed that adding these elements can make the concept more in line with the needs of young Chinese migrants. This information is what they need when moving here.

Add their familiar filter conditions.

T3 after using all three concepts:
"I need to know the distance, price, and comments. If the restaurant it recommended is too expensive for me, I would never try it. It's sad if I get the price information when I almost make the decision."

People have a certain degree of dependence on the existing application experience, and a new design completely separate from their previous experience will cause difficulty in use. Could consider retaining some traditional functions to enhance the user's sense of control.

6.4 Related applications and products

Five main types of food applications and products

In order to understand which directions mentioned have more potential, and ensure that the final design results have their own uniqueness and novelty(could better serve the target users of the project), it is necessary to understand apps related to food decision-making in the current market and find the breakthrough point in the next stage by comparing the advantages and disadvantages.

The first survey is about the popular applications that are closely related to food delivery and food evaluation services. Then there are some interesting and sharing products or small programs. All collected programs are divided into five types together with the three initial concepts, as follows:
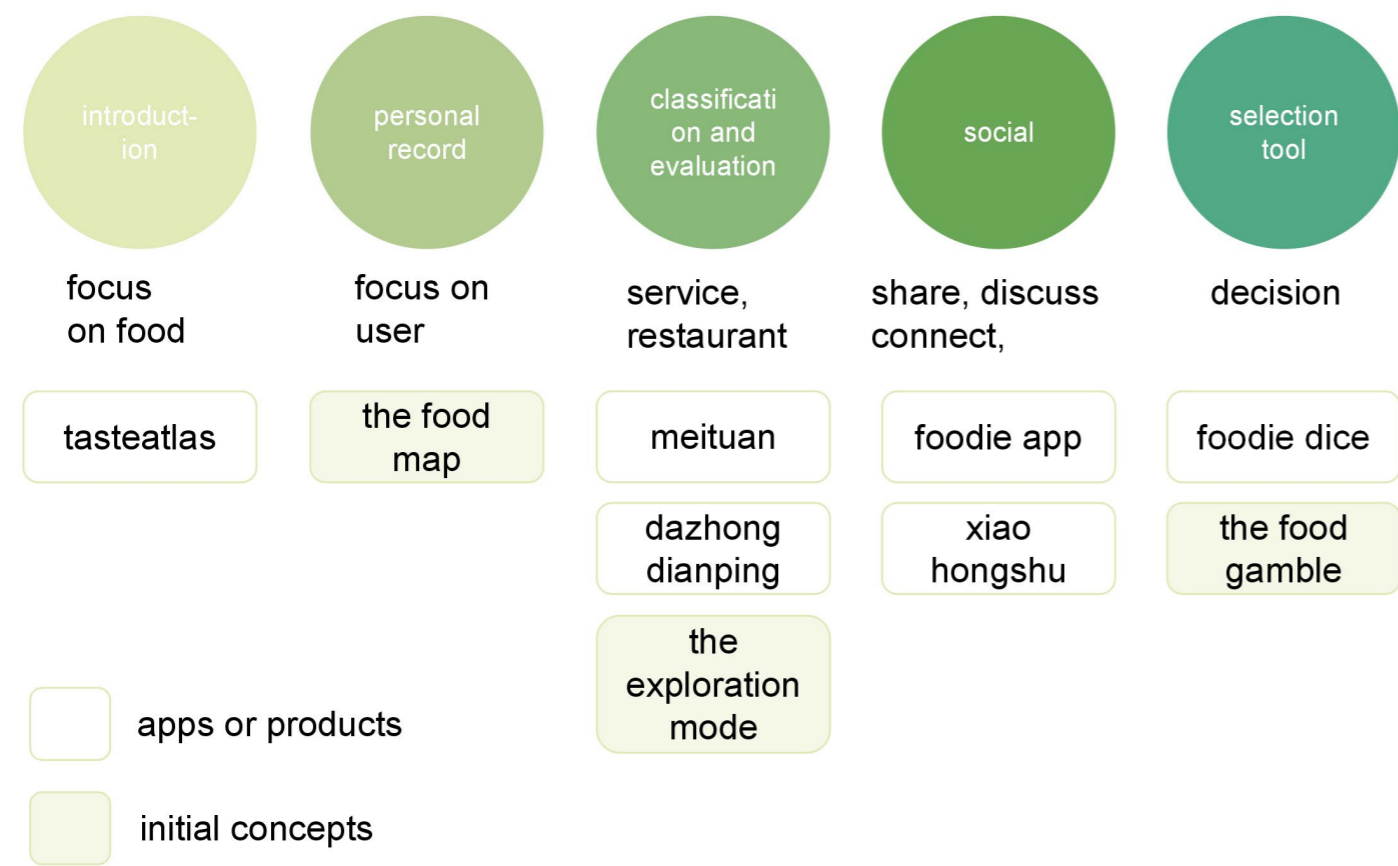
Conclusion

By comparing all the collected applications and products (see Appendix C for details), the other parts were found are well connected, but people and their living environment are not strongly connected through these products. This part is missing in related products on the market. In addition, according to the results of previous research, these two parts can be considered to be easily connected through food experience, as food is so strongly related to emotion and culture.

Therefore, the conclusion is that the design can focus on the use of food experience to increase the emotional connection between the user and the living environment, and in this regard, Concept 2 will be much more mature than Concepts 1 and 3.
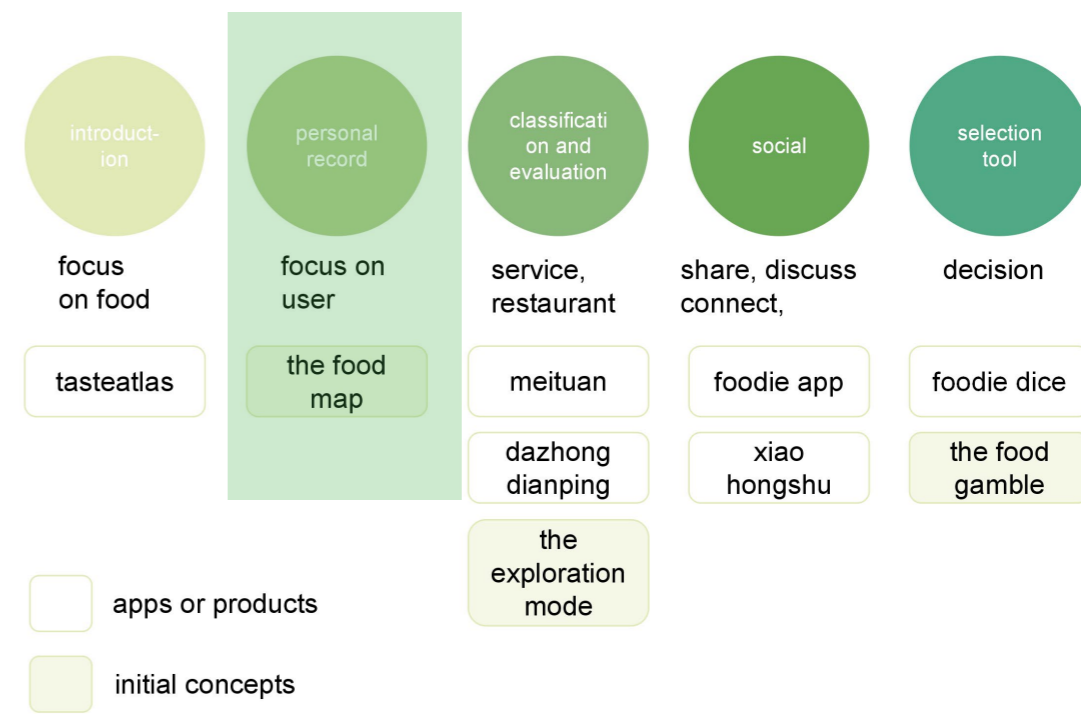

Figure 6-11: Five types of food related applications and products in the market

Figure 6-12: The chosen types of final concept direction

6.5 Concept direction selection

The final concept direction is formed by these elements in figure 6-13.

Figure 6-13: The formed final concept direction

6.6 Final concept development

The final concept is developed from Concept 2, with a food map as the core, and adding elements such as seasonal changes to enrich the user experience. At the same time, the personalized search in Concept 1 has also been integrated.

This application uses a map to help users discover and try more new food. It hopes that the increase in local food experience can bring users a stronger emotional connection with the city itself. So their mindset will change from "Live in the city" to "Live with the city".

Figure 6-14: the final concept sketch

Added elements

Solar terms

In 104 BC, in order to guide agricultural activities, the ancient Chinese divided a year into 24 periods by summarizing the laws of the movement of the sun(see figure 6-15). This is the solar term.

Solar terms are very important to agricultural society. It tells farmers when it is rainy, when it is hot, when to plant seeds, and when to harvest.

In modern times, Chinese people still use the concept of "solar terms" in their daily lives.
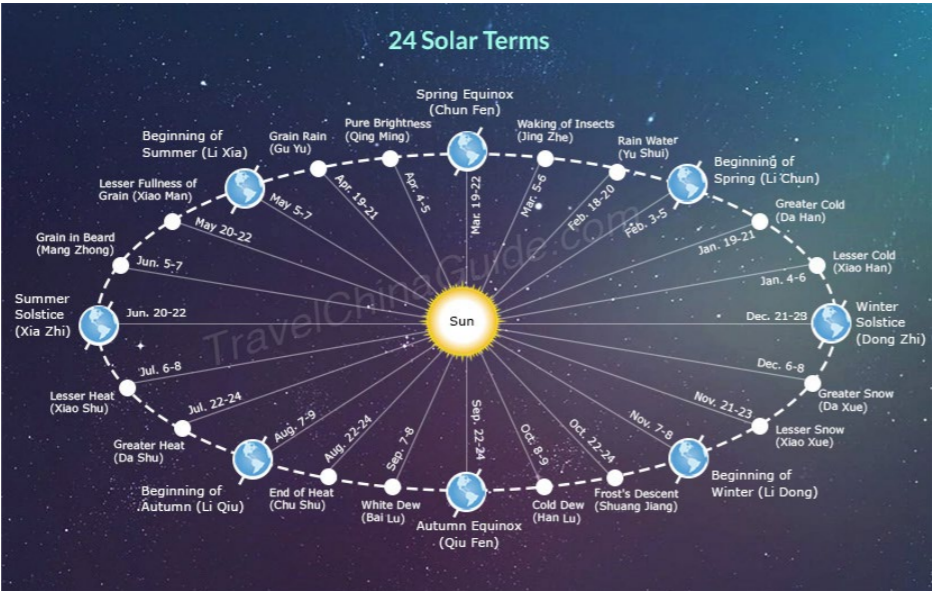

Figure 6-15: Schematic diagram of ''Solar terms'' division

Figure 6-16: the seasonal food collection

Seasonal food

In Wikipedia, "seasonal food" refers to the time of year when the harvest or flavor of a particular type of food reaches its peak.

Before the off-season planting techniques become popular, it is important to arrange food according to the season(see figure 6-16).

And in Chinese medical philosophy, arranging food according to the season is good for health and can prevent diseases.
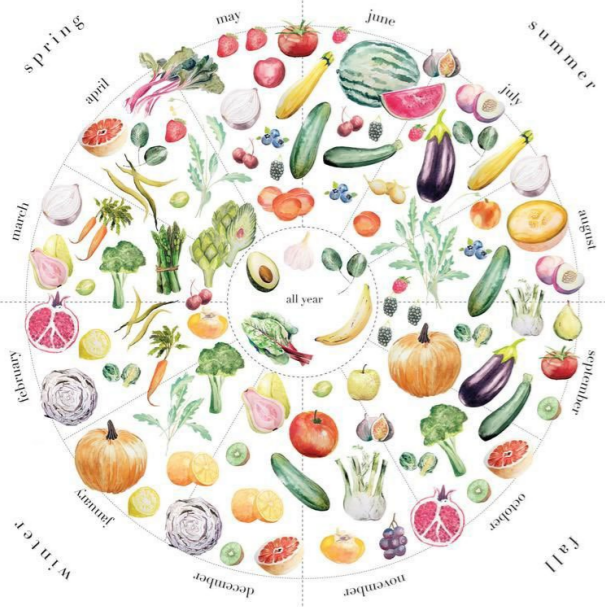
6.7 Final concept

Figure 6-17: the three main function pages of the concept

"Delicious Life" is a new concept related to food exploration. It recombined people's food search behavior in the form of a visual map and adds their food experience to bring them immediate feedback. It aims to strengthen the relationship between food and the local environment, the food and seasons, so as to enhance the emotional connection between users and the new city.

Visualized search process

By setting the three basic elements of the search range, food taste, and price, users can explore food in any area of the city. The food options as summarized as possible allow them to search aimlessly, while the distance and price settings make the search results easy to accept. The search process is also a process of increasing understanding of the city.

Interesting guides

The map information is not all given at the beginning but requires the user to unlock it by trying new foods and recording foods during use. At the same time, the seasonal changes set in the app make users feel that the app is in sync with real life and guide users not to miss the opportunity to actively enjoy the present (such as tasting seasonal food).

Feedback and encourage sharing

Through a period of use, users can get positive feedback through unlocking the map/marking more places on the map/writing their own food records, etc., which in turn encourages users to stick to it. By generating these records into pictures and sharing them with others, they can have discussions with others about their food experiences and their life.
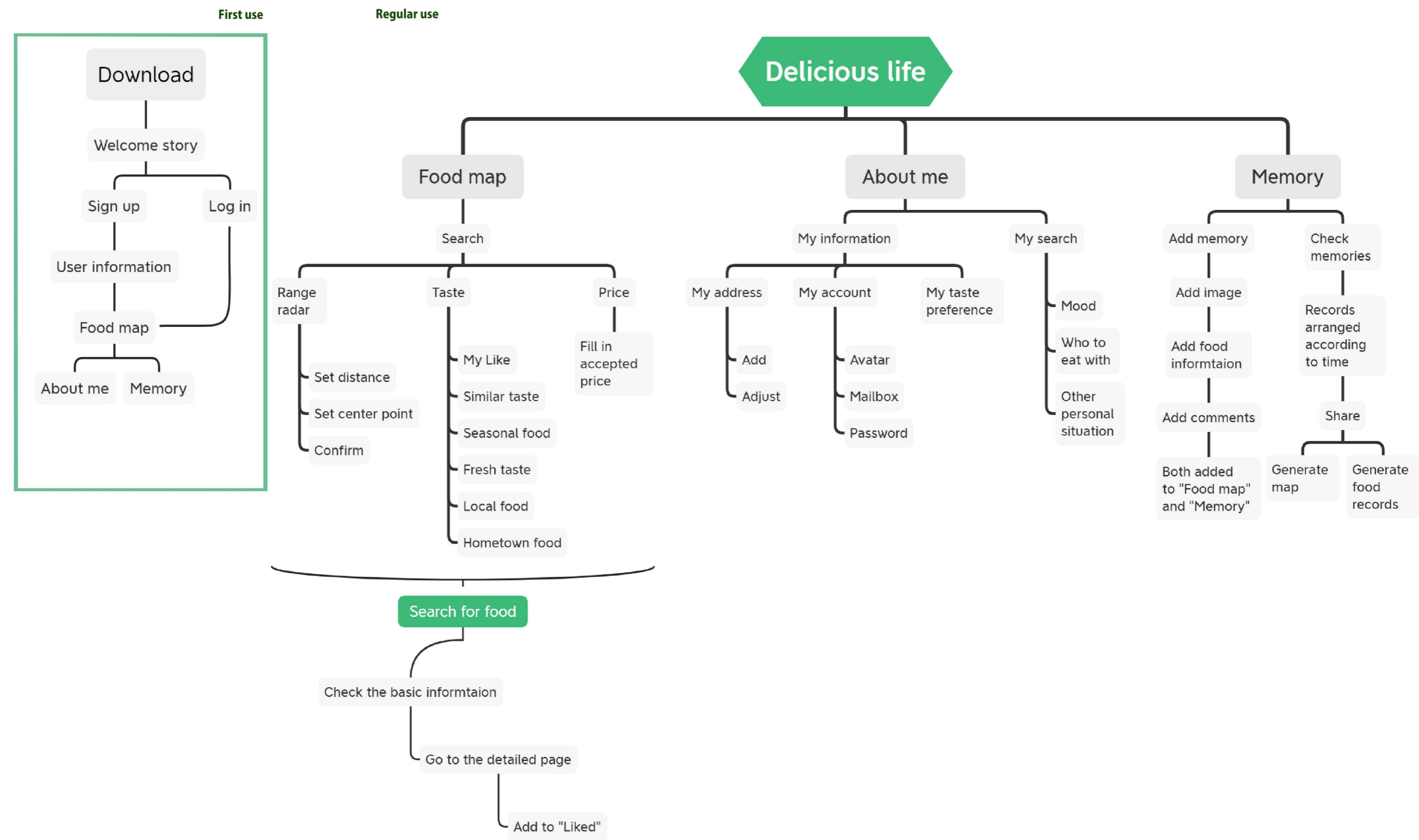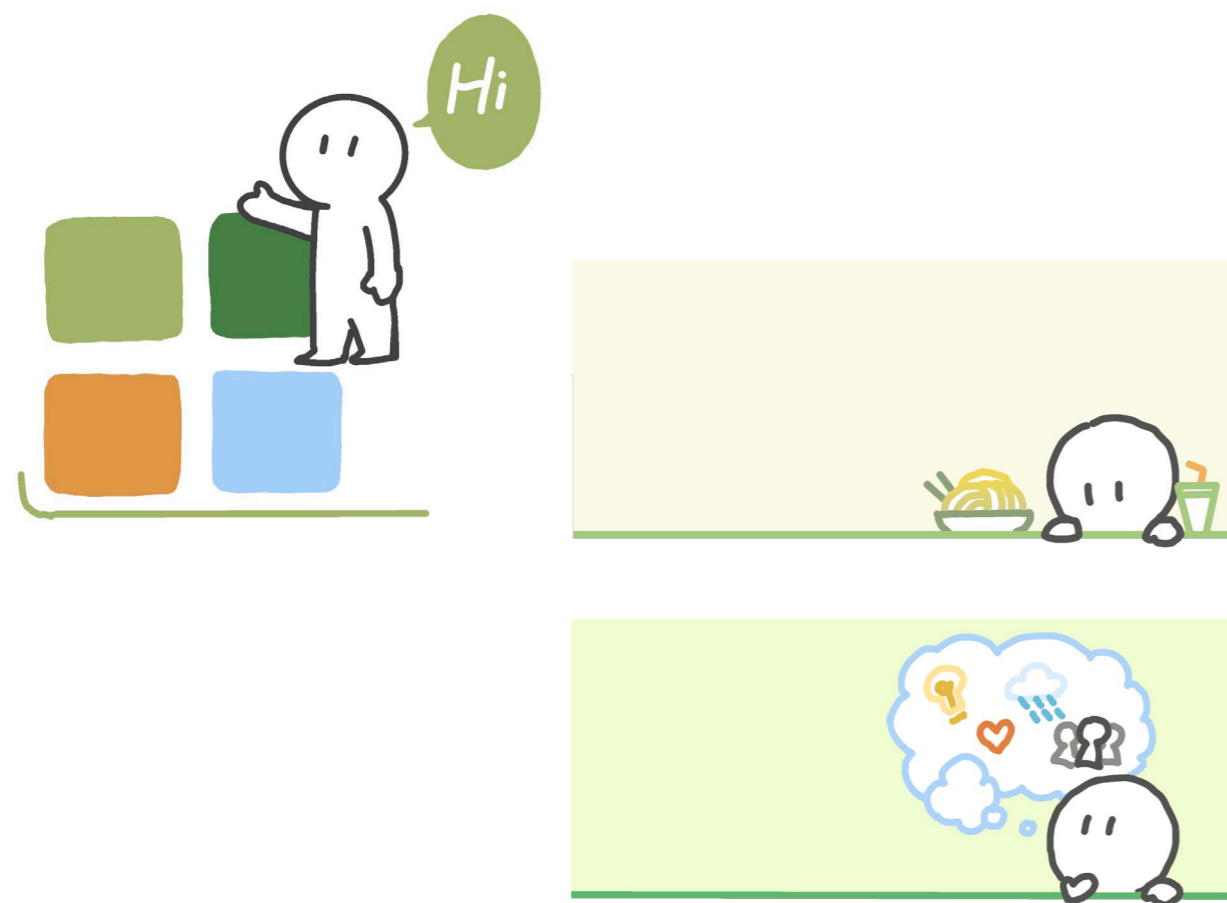
6.7.2 Application framework

Figure 6-18: the frame overview of application "Delicious life"

6.7.3 Key screens of the final concept

Visual style

The basic visual style is dominated by color blocks and thick lines, using four natural colors that remind people of the four seasons.

The character image continues the simple style in the previous concept sketches, no gender, no age, no personal style. But the mouth is removed, which makes it look expressionless. That means the projection of emotions is freer and it is more convenient for users to substitute themselves.

Figure 6-19: The visual style examples

Welcome story

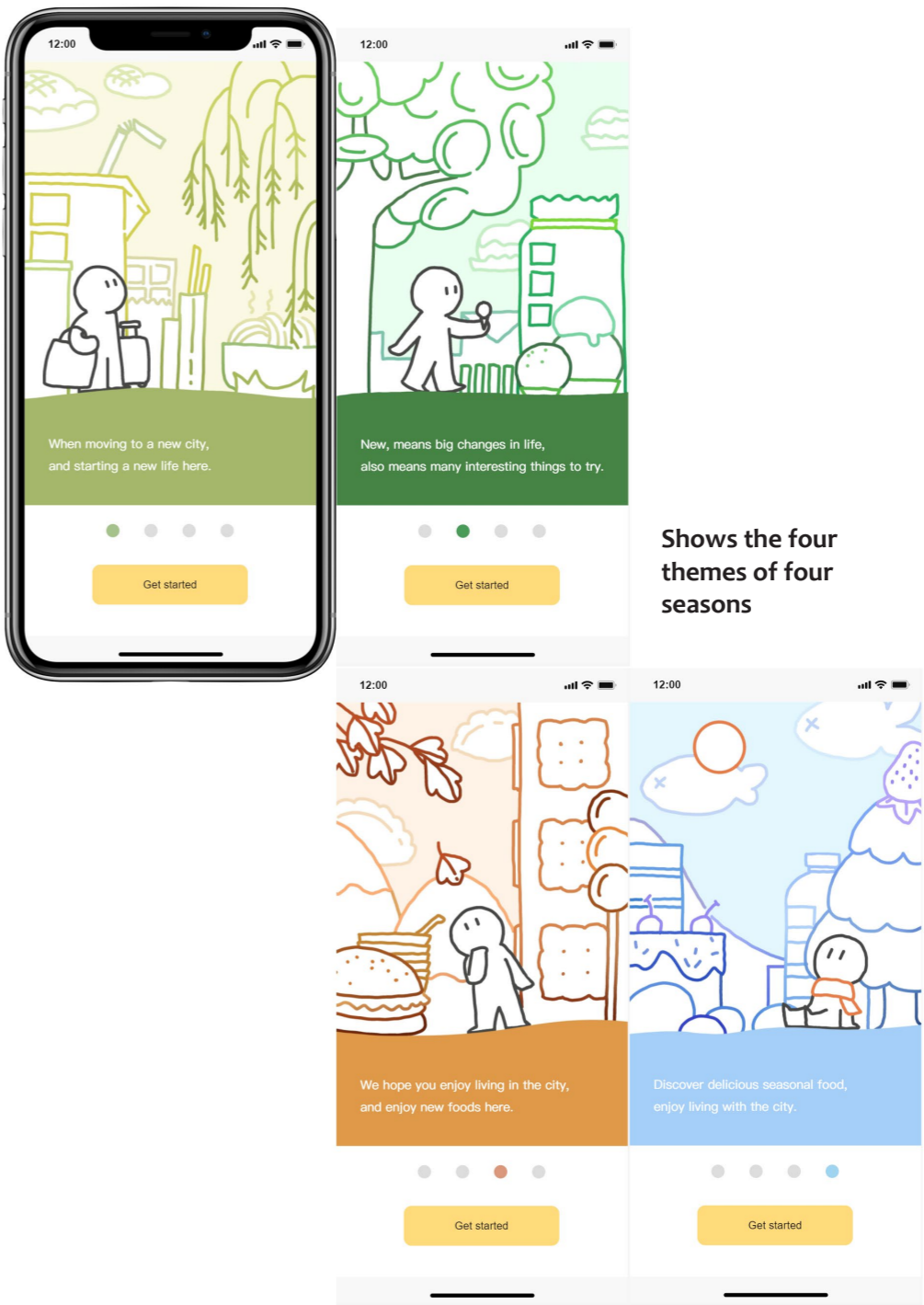**Shows the four themes of four seasons**

Figure 6-20: The four welcome pages

The welcome story is the first part of the user's contact, which could help users set their roles and making it easier for them to get into the story. The background uses the combination of food and urban landscape to show the connection between food and the city. Four colors for four seasons mean the time passed.

It shows the whole process of new migrants from coming to the city, exploring new food, getting acquainted with the city, and finally enjoying the new city life happily. This story also helps users clarify their expectations of using the application.

Register

For old users

For new users
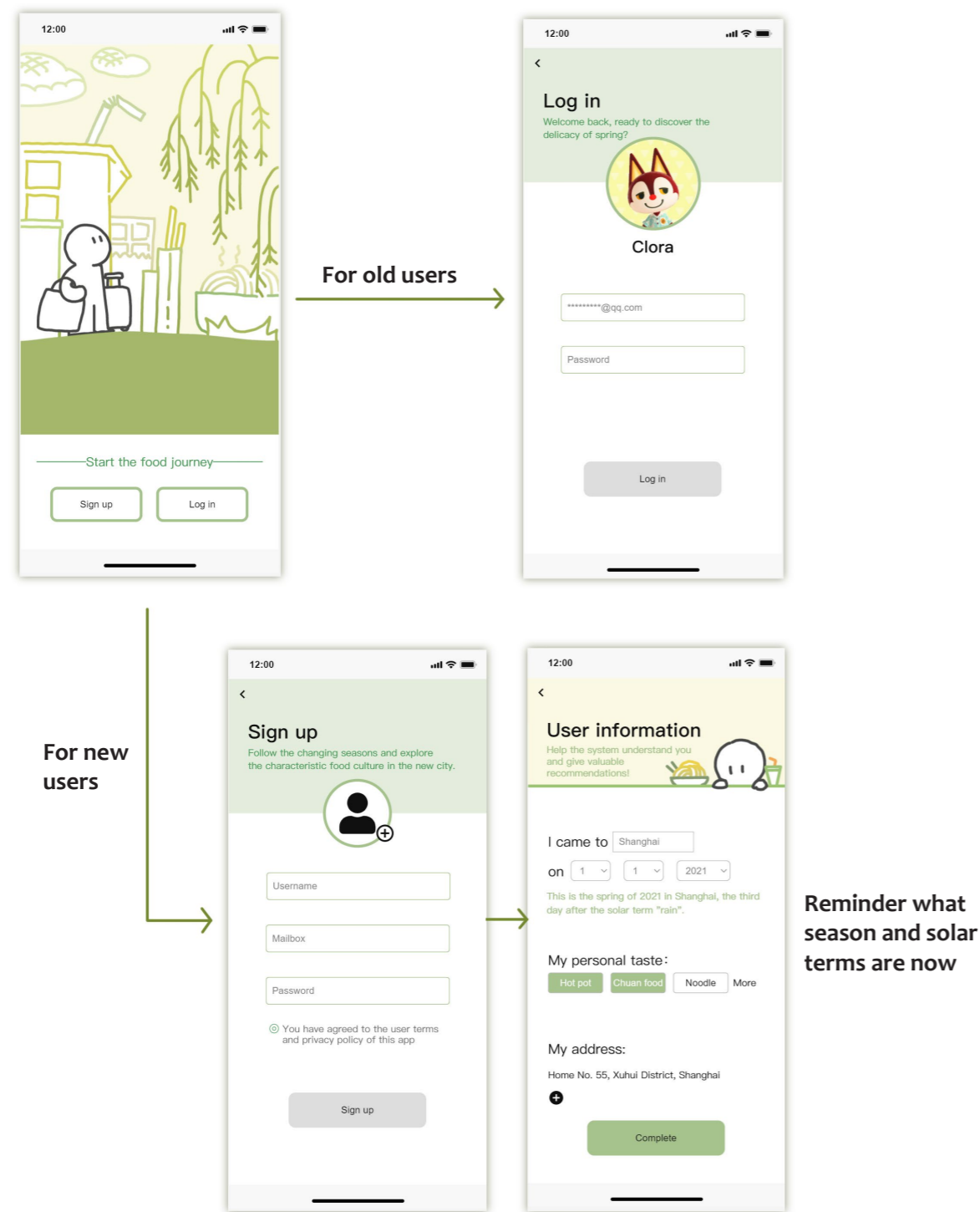
Reminder what season and solar terms are now

Figure 6-21: The sign up & log in pages

After new users register, by collecting their arrival time, taste preferences, residential address, it is possible to establish a preliminary understanding of users and recommend food around their homes to them. These recommendations will become part of the initial exploration motivation of users.

The food map

Start page

Here once again mentioned the changes of the seasons in this application, and the background intuitively shows how the map appearance changes with the seasons.(see figure 6-22)

Figure 6-22: The start page of food map

Operation guide page

(see figure 6-23)

Location button-up
click to quickly return to the set location of the home

Position button-down
click to quickly return to your current location

The heart icon on the map
at the beginning of use, it indicates the food recommended by the system for the user. then it is displayed as the food that the user collects.
(in the test, the user indicates that it is easy to cause confusion and should be properly distinguished)

The blank area on the map
can be explored and be unlocked by recording the experience of trying the food here. See the details in the next page.

Figure 6-23: Some operation guides
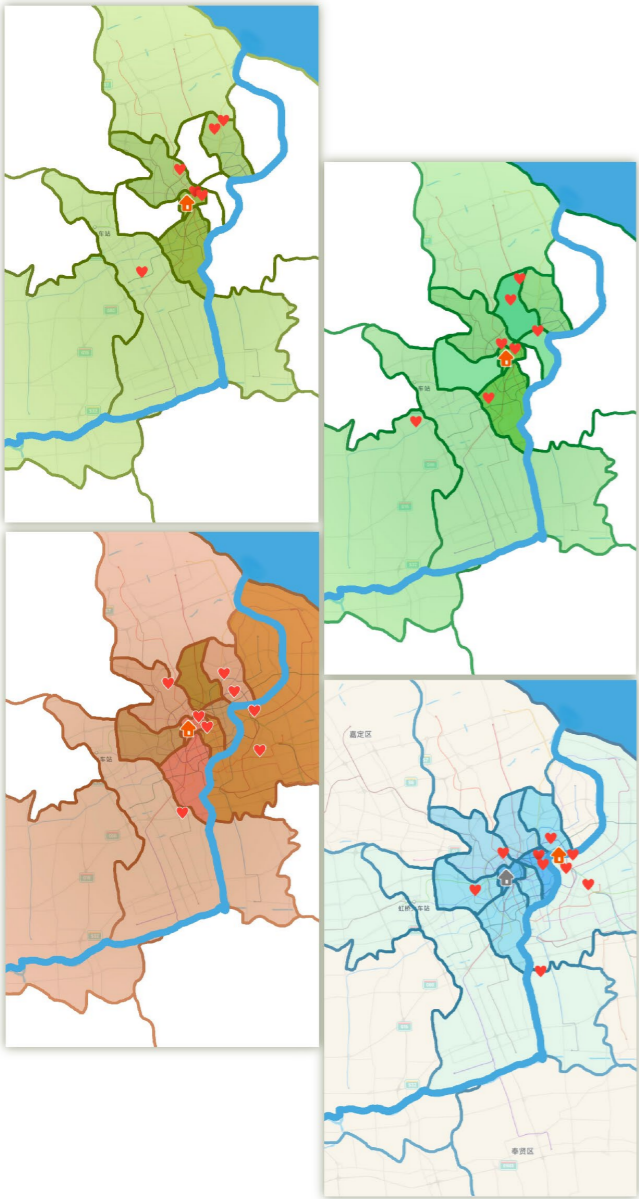
Explore and unlock the map

Figure 6-24: The example of unlocked the map

Three stages of unlocking the map

very beginning

Only the area where the user's home is located will be unlocked, but the system will still recommend food from areas that are not unlocked

Early use

If the user try food in an area that is not unlocked and record the food experience on the app, the area will be unlocked

Post-use

The maps of the entire city are basically unlocked, and users have developed a habit of using them in the process

The food map - seaching for food

Range radar

Set the distance and center point to define the search range
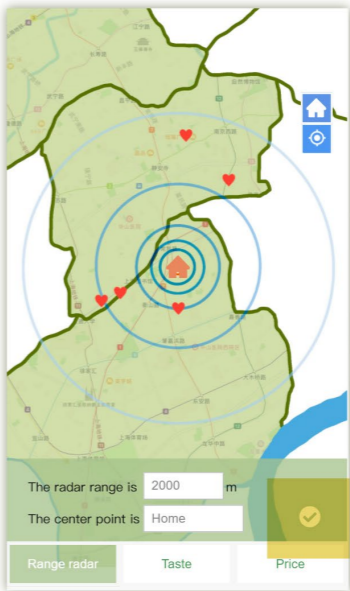
Taste

Choose from six types of taste

Six taste

My likes
Similar taste
Seasonal food
Fresh taste*
Local food
Hometown food

Figure 6-25: The food search process

Fresh taste*
Foods that taste are not at all within the user's preferred flavors and recorded food flavors.

Price
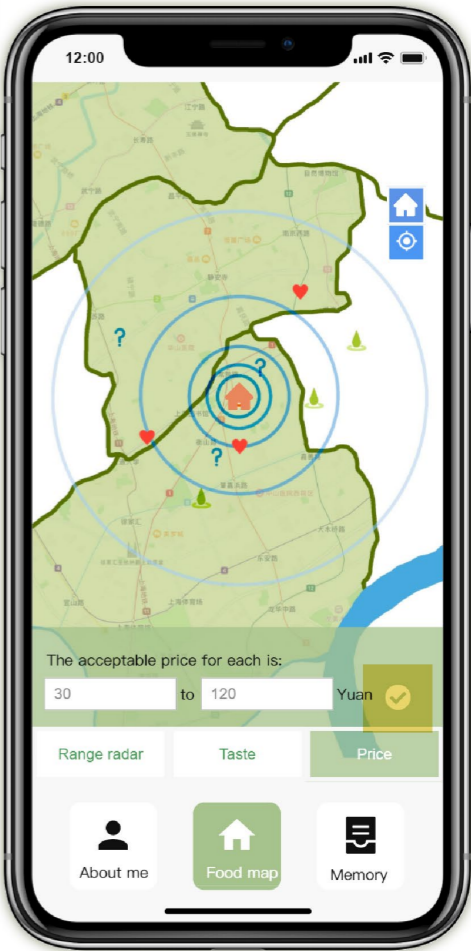
Set the accepted price from 0 to ∞.

The food map -
See details of food

Zoom in to show more information
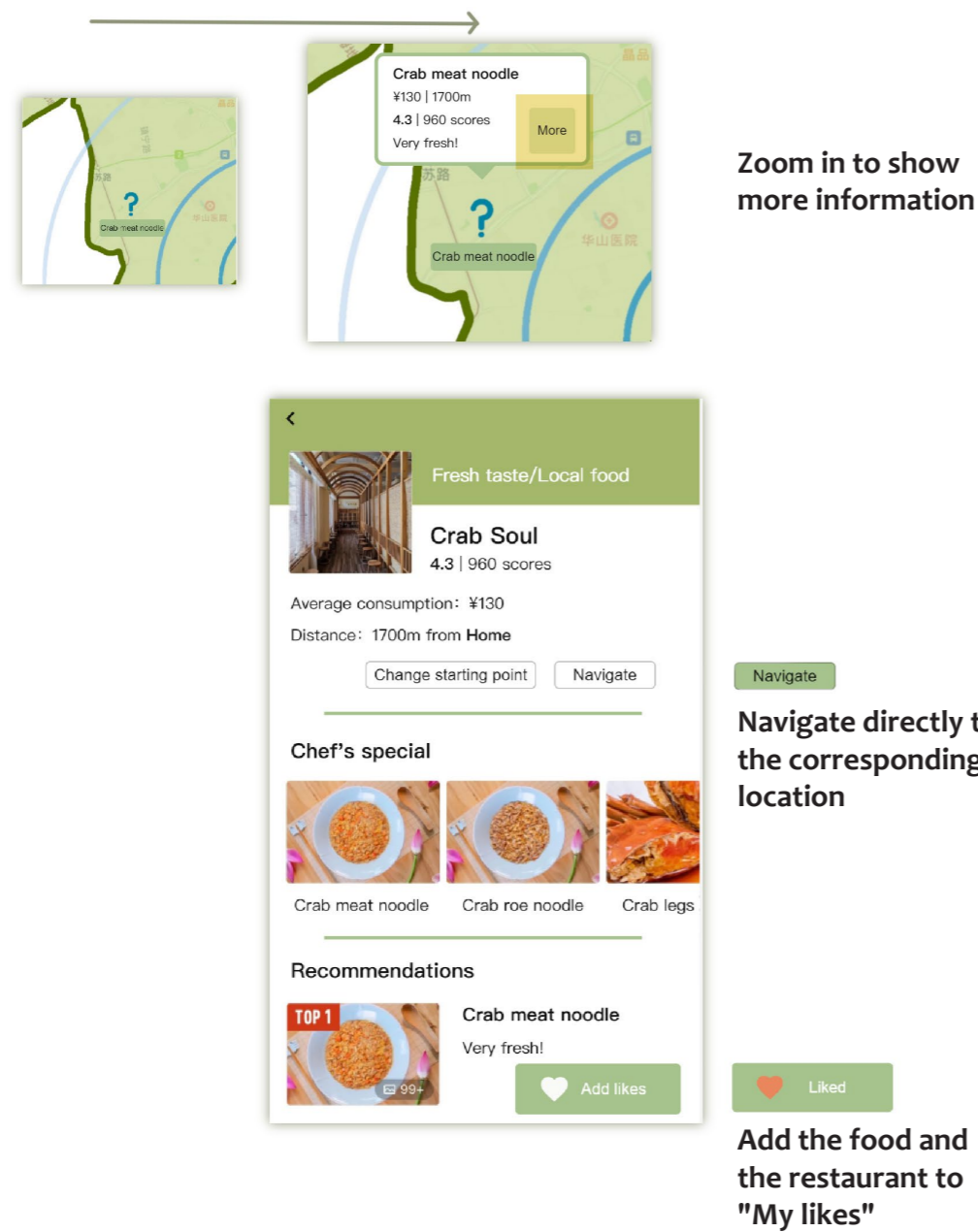
Figure 6-26: The food details page

Navigate directly to the corresponding location

Add the food and the restaurant to "My likes"

About me -
seaching by my need

More personal filter conditions for user to focus on their own need

Add/change account information here
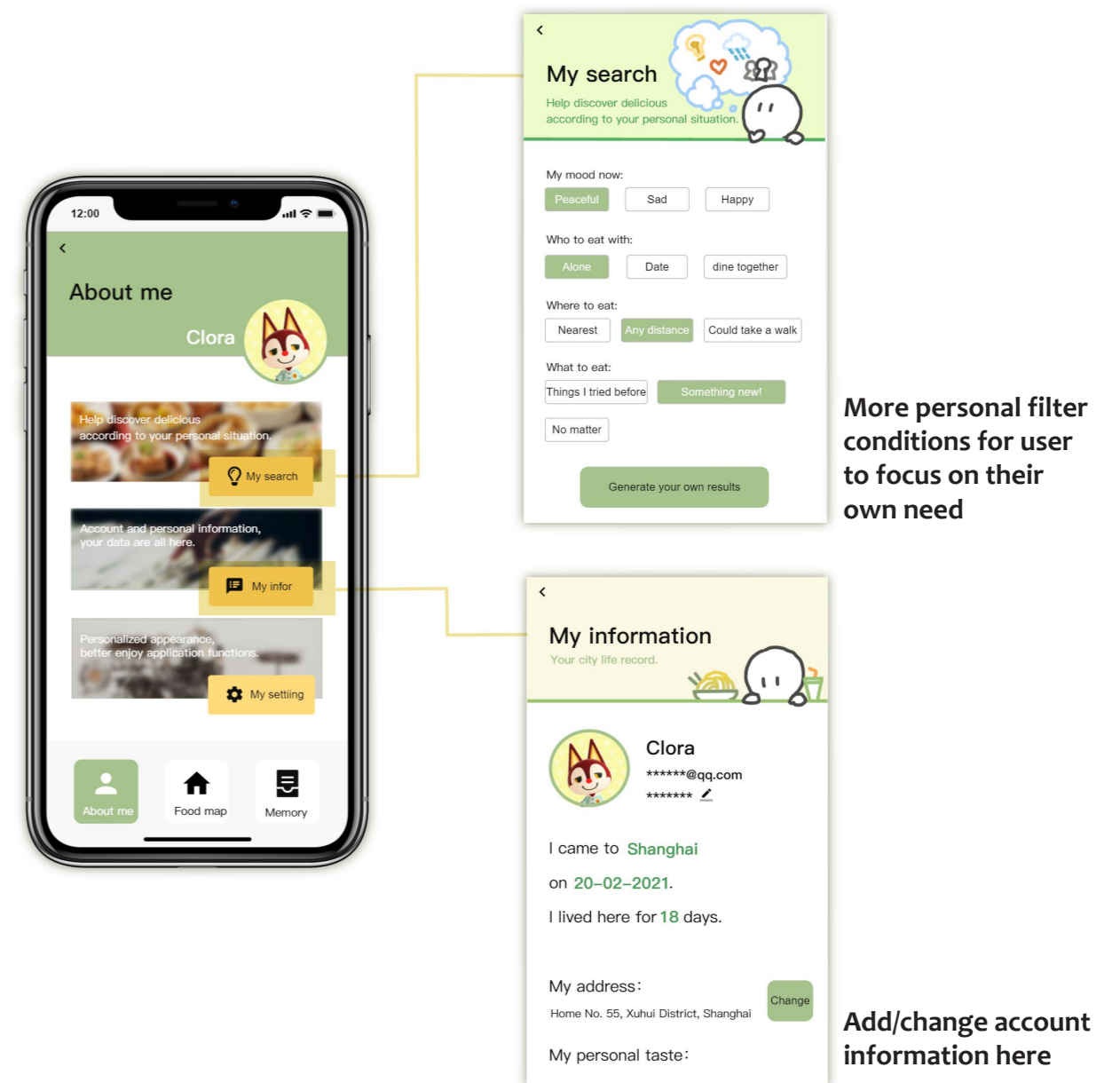
Figure 6-27: Overview of 'About me' function

The search function here is different from the function on the food map, but they can complement each other.

The search mode here is more suitable for users to have a clear plan: who to eat with, how many people, what type of meal, or users have clear personal needs, such as seeking choices that meet the current mood or willingness to go out.

Memory

A brief summary of this season's new food experiences

The most special meaning of this food experience is marked here by tag

Figure 6-28: Overview of 'Memory' function

Memory -
Share with others

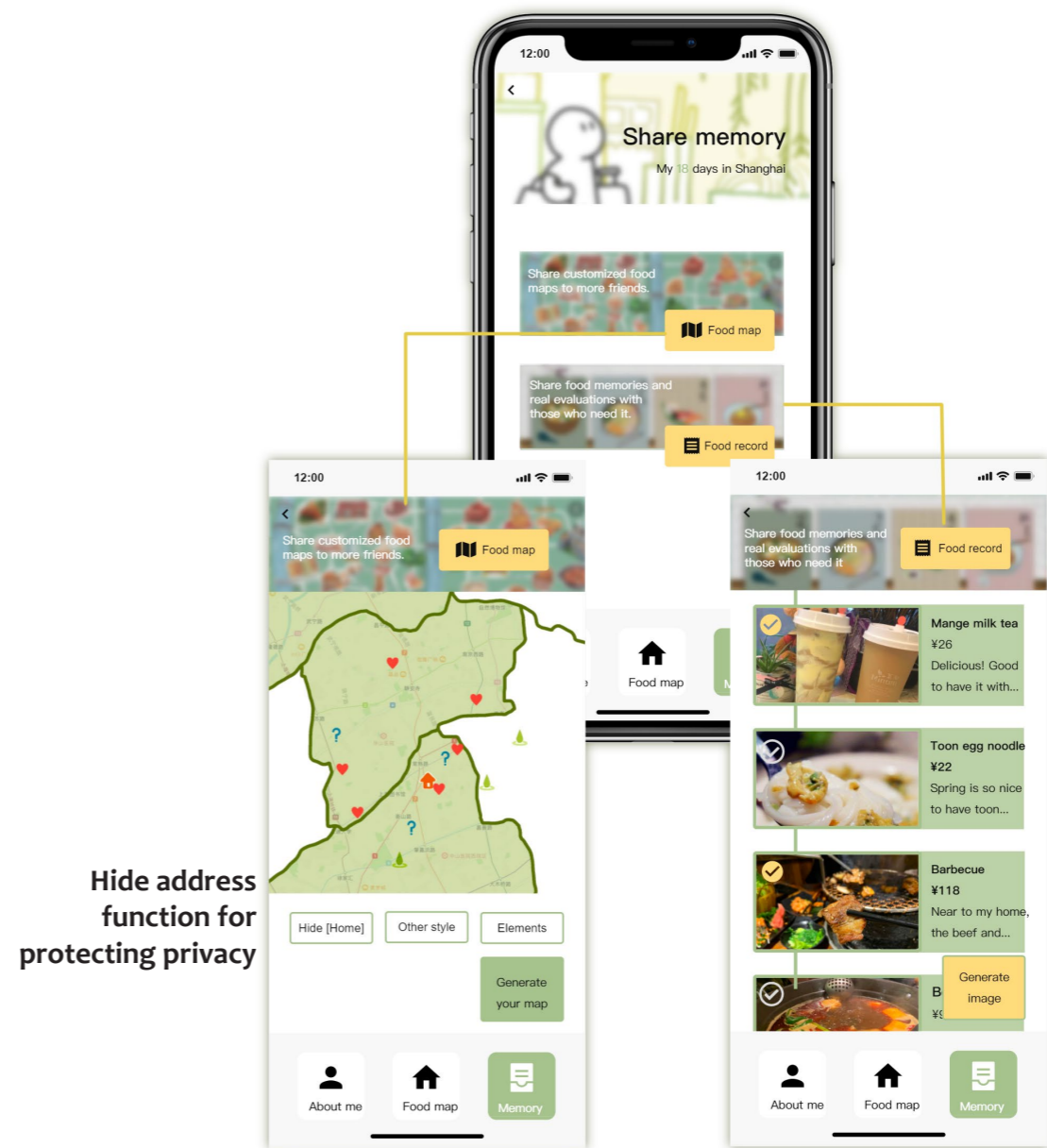**Hide address function for protecting privacy**

Figure 6-29: Two sharing types

Both of these sharing methods can export personalized images for users to share with others or upload to social media. For people who are concerned about privacy, hiding the address is a useful feature, it can help users hide the location of the home and the food records around the home when generating a map image.

**07
Evaluation**

In this chapter, the final prototype is tested and evaluated, and the evaluation results are shown in detail. Based on the test results, the whole project is summarized and the prospect of future improvement direction is carried out.

7.1 Evaluation test

Test goal

Verify whether the final concept of the food exploration application meets the design goals and achieves the expected interactive qualities. At the same time, collect feedback from test participants for future improvements.

Research questions

1. How does the concept encourage users to explore new foods?

2. How do participants experience and use the application?

3. How do participants experience the emotional connection with the city? Will they increase the behavior of trying new food by using the app?

Prototype

The interaction design software Modao was used to simulate the interaction in the concept use process, then the prototype was uploaded to the Internet. Therefore, participants can click on the link to enter the corresponding web page and test the prototype. Since the test participants are all Chinese, the model is in Chinese. The total duration of the test is 1 hour.

Interview

Use the online video interview for all tests, and the whole process of interview is divided into five main parts:

1. Brief project introduction

2. Short interview: understand the attitude and daily behavior of users who have not participated in the research before.

3. Give the interactive behavior goals (for example, register the application and enter the main interface/use this function to find what you want to eat), send the prototype and observe the interaction behavior of the participant through the sharing screen, and ask the questions after each scene is over.

> **Four interactive behavior goals**
>
> A- Register and enter the homepage
> B- Use the Food map function to find what you want to eat
> C- Use the About Me function for personalized search
> D- Use the Memory function to view and share memories

4. Discuss their overall experience with participants and invite them to make suggestions for improvement.

5. At the end, ask participants to participate in two small tests.

> **Small test 1**
> Using Premo, let participants select the three most intense emotions during test, and clarify the type of emotion and when do they feel this emotion.

> **Small test 2**
> Show participants the three iv qualities of the project and ask them to score each item from 1-7.

7.2 Evaluation results

Participants

A total of five participants were selected for the evaluation test, three were participants from previous user research (P1, P5, and P7), and the other two were newly recruited participants, aged between 18-29, in the results they are marked as P8 and P9. All five have experience in using mobile phone interactive software.
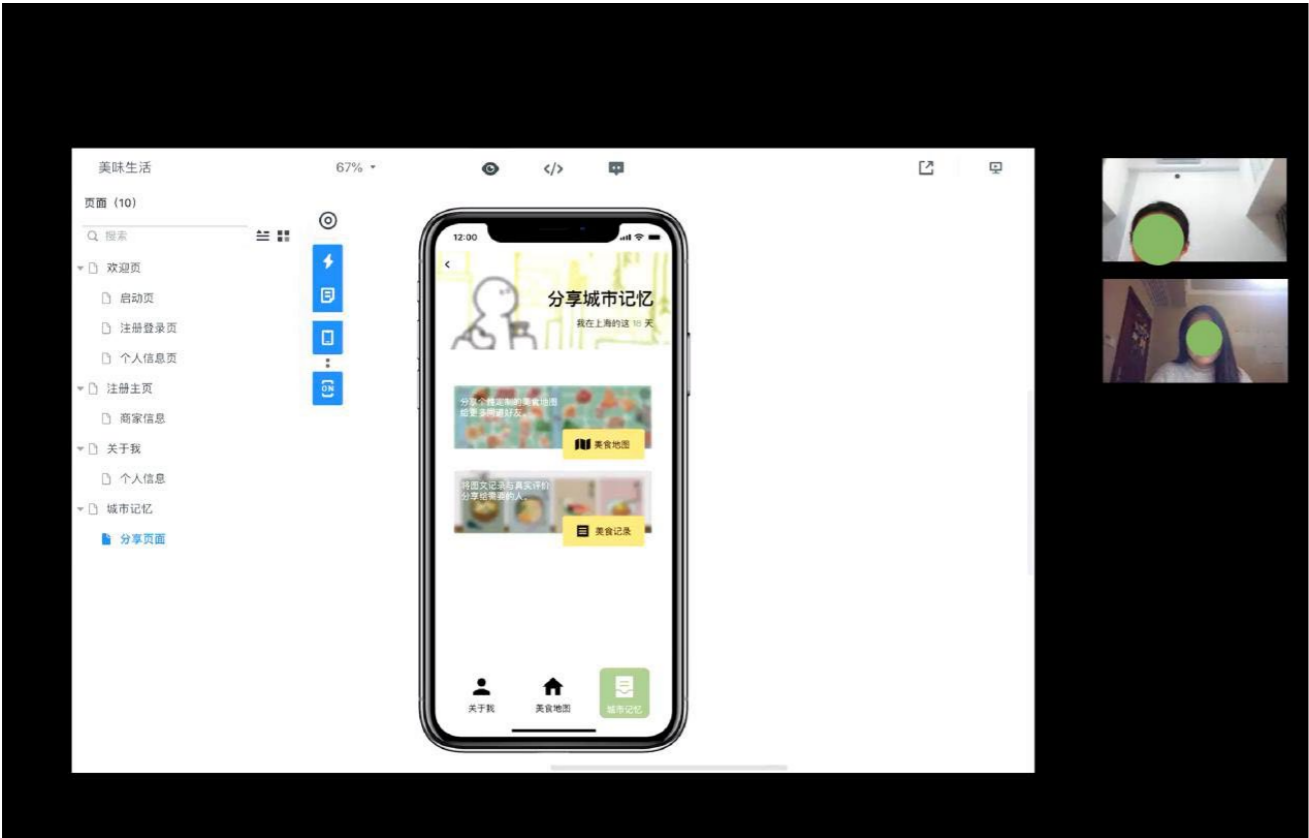

Figure 7-1: Screenshot of the evaluation test

Gamification

Participants 7 and 8 mentioned the strong sense of accomplishment that unlocking the map can bring them. In the initial user research, participant 7 showed love for food. She was willing to record food with her mobile phone and believed that the review would be meaningful. Participant 8 thought that a simple check-in function could better satisfy her idea of saving time.

P7 After understanding the map unlock function:
"It's like playing a game! When you've been there, the map there will be loaded (see Figure 7-2). I feel it's like treating my life as a big game... Hahahaha, I am willing to unlock all and try new things everywhere on the map. This is what I will do."

Seasons and colors

When asked how to look at the application settings that change themes with the seasons, P7 thought it was very attractive. She also gave more thoughts about this setting:
"It is fun to change colors according to the season! And even in the same season, there will be different color changes, such as light green in early spring, and then transition to dark green when it's almost summer. I like this feeling very much! Moreover, with time and food, when I read the records, I will think of the mood at that time and the road I walked at that time...it will evoke lots of memories."

Regarding the classification settings of seasonal foods and fresh taste, the participants basically said they would try them because they were curious about their classification.

P5 feels that she will not use the function of the taste filter, she prefers to explore freely. P7 and 8 feel that although seasonal food has gradually become an unfamiliar concept now, it is also very interesting. If they are reminded by the app that it's a good time to eat some seasonal food, they will be willing to seize the opportunity to try.

Figure 7-2: The game she mentioned during test, Zelda:Breath of the wild

Record or not?

Participants 1 and 9 are more like pragmatists. They are familiar with the operation of mobile phone software but rarely use the recording function. For them, searching for nearby food quickly is a good function, but the record is not so attractive.

P1 after testing:
"I would like to use this map function because I can quickly know the surrounding information and choose where to eat. I rarely use this type of function (referring to food memory and food record). Yes, I use my mobile phone to order food, but I just directly go to the corresponding application and search...I will only open the notifications of the communication apps. I use the others, but will not rely on them."

P9 when viewing the sharing function
"Although I am too lazy to record what I ate... if the sharing function is good enough, like the images it generated are very nice, I will want to record something to share.

Doubts about 'My search'

When using the 'My search' function, most people expressed their doubts. P1 thinks this function is interesting, but the logic behind it is very unclear.

P5 suggests that this function can be turned into a more game-like form, allowing the system to guess your preferences instead of analysis. Because the guessing game does not matter whether it is right or wrong, but the unconvincing analysis will bring negative feelings to users.

Positive influences

In the feedback from the participants, the positive influence of using this app is concentrated in three aspects

1. Increased understanding of the city
By using the map, they can have a more intuitive understanding of the surroundings of home and their frequently visited places, and by unlocking the map, they can also see where they have gone in the city, and achieved achievements sense.

2. Explore food more freely
a search based on geographic location connects their home with food and the city. In this case, the safety feeling of "I know this place" and curiosity about the nearby will make people more receptive to new ways of exploring (Search and compare on the map.)

3. Software feedback makes people understand themselves better
The setting of seasons can make people feel the passage of time. In this case, the feedback of the app will let users more aware of their own behavior (such as eating near home all the time or like to go out). In the long run, reflection on this basis may make people more willing to make new attempts.

Evaluation from results

At the end of the test, users were invited to conduct two small tests. The test results are as follows. The interaction vision set in the design vision section is basically realized(see figure 7-3). At the same time, according to the PrEmo test, the positive emotions of users have also been fully driven(see figure 7-4).
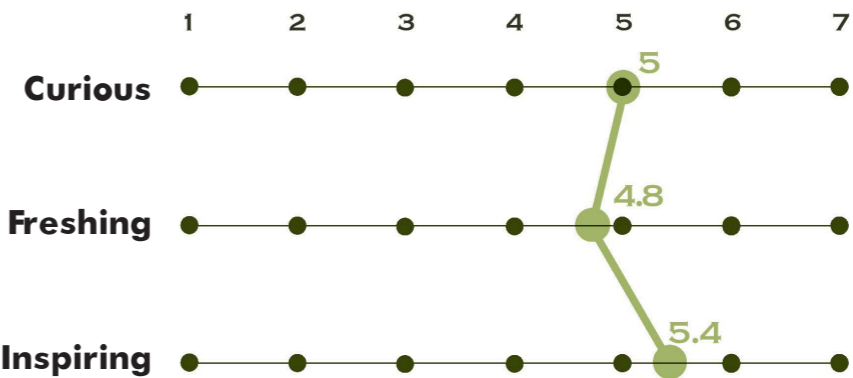

Figure 7-3: The score of three iv qualities

Figure 7-4: The main emotions participants chose

Limitations of the Evaluation

The evaluation test is based on the short-term experience of the participants, no long-term test is conducted. Therefore, the behavior that requires long-term observation of "whether the use of the application encourages people to try new foods" is hard to be evaluated. For now, participants can only answer whether it will happen or not based on the imagination. The user's actual long-term experience may be very different from the experience in the test.

In addition, only part of the functions have been tested using the clickable model, and the experience of using it will be different from using the real product. The product involves many outside scenarios like searching and eating in the city, but the participants only tested it at home, and their experience was very incomplete. To obtain more accurate evaluation data, further development of this application is required.

7.3 Conclusion

The dietary dilemma of migrants

Combining literature research and user research, we found that the reasons that make it difficult for young Chinese migrants to explore new foods are diverse. Busy work forces their personal life to be simple, and they also lack supportive tools in their life. These elements constitute this dilemma together, making the cost of trying new foods high. Then, by introducing the concept of social integration, the dietary issues of immigrants are regarded as part of this systemic issue, which undoubtedly provides a deeper insight into this project. To think about how to solve the dietary problems of immigrants in the social framework, method support, and emotional support are equally important.

Reconnect with the city by trying food

The biggest innovation of this concept is to guide intuitive food exploration behavior through the form of a map, and then use the experience gained from food exploration to reversely enhance the user's emotional connection with the city, thereby maximizing the development of the added value of the food experience.

The design allows people to rebuild their emotional connection with the new city through food exploration. The food exploration behavior itself includes not only tasting food but also the process of food decision-making and the experience of obtaining food after decision-making. This design dynamically combines these three processes. The food map helps simplify search and decision-making. The records on the map reflect the experience of obtaining food after the decision. The graphic record in the application retains the experience of tasting food. A virtuous circle has formed.

In this process, the application itself has been collecting information, and users can get their own understanding and reflection by understanding the information collected in the application, such as "I have so many places that have not been unlocked"-I should go out and turn around; "I have been eating desserts this fall"-I can consider eating something else. After being aware of one's own negative behavior patterns, positive attempting behaviors are more likely to be awakened spontaneously.

7.4 Recommendation

**Provide a simplified
food recording method**

Although the current food recording method
can be used well, according to the feedback in
the test, some users of the application will focus
on using its map search function instead of food
recording. A simplified recording mode is more
suitable for them to use. Therefore, can consider
developing two different recording modes for
different types of users to choose from.

**Increase the internal information
push function**

In the current final concept, the food information
presented is still basically the same as other food
search applications: price, distance, evaluation,
and other information about the restaurant.
Since this concept is more focused on the food
itself, you can try to dig out more food-related
knowledge from basic categories such as
"seasonal food", "local food", and "hometown
food" to increase users' attention to the food
itself.

Increase linkage with other cities

At present, this application is only designed for
specific young people who have just moved to
a new city, but in the future, its target group
can be broader. After extracting the concept of
"living with the city", it is possible to consider
the user's hometown, other places the user has
visited, and places he wants to go to be included
in the scope of exploration. Therefore, no matter
where the user is, this application will It can
provide him/her with contact with the current
location, and encourage the user to try new food
locally.

Test with more groups

This concept can also be extended from young
migrants to "all Chinese migrants". By testing a
wider age group, this application can be further
improved.

7.5 Reflection

Looking back at the entire project, the first
thing that needs to be improved is project time
management. In the stage of user research, it
is very useful to re-analyze the research results,
but it also delays the completion of the design
objectively. In the later stages of conception,
model making, and testing, more and more
unfinished tasks were accumulated, resulting in
many areas that did not achieve the expected
quality in the later stage. Another experience
learned from this incident is that it is best to find
the right method at the beginning and do the
thing right, otherwise, the reunification of the
project will become a big problem afterward.

The second is the planning of research. The same
situation appeared in both the literature research
phase and the user research phase: too much
information was collected to make effective
analysis difficult, and it became difficult to sort
out and find out the key points. The next project
should divide the primary and secondary order
of information collection around the survey
questions at the beginning of the survey. Then,
follows this order to investigate. If I find that
there is a more worthwhile research direction
in the process, you must first adjust the order
of information collection and then change the
direction. Setting a clear mainline is conducive to
the smooth development of the project.

Finally, start doing it early! I always delay the
start because I'm afraid of doing it not well.
Starting to produce as early as possible can help
save ample iteration time. And remember that
it does not need to be very complete at the
beginning.

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Appendix

Appendix A: User interview question
Appendix B: Ideation Process
Appendix C: Related applications and products

Appendix A: User interview question

Interview guide

Participant's basic information

Residence Information
How long have you lived in a rental house, and how long have you lived here?
What did you consider before renting?
Why choose to live here?
Your living conditions.
How do you get along with the other tenant? Do you have communication with them?
What are the ideal conditions for renting a house? (Where do you want to choose next time)

Future planning
Do you want to settle here? what plans for the future?
Will you participate in community activities or urban construction? Use city resources?
Concerned about future policies? Meet locals? And why?

Dietary habit
Talk about the features of your hometown cuisine.
Did you bring hometown food when you came here?
Will you look for hometown food here?
Have you tried the specialties here?
Give examples of your favorite dish and the most annoying dish that you have tried here.
What are the local delicacies you have recommended to your family and other friends?
What dishes will remind you of your hometown? why?

Please share your recent experience of trying new food.
Do you feel the influence of cultural conflict in terms of food? Is it strong?
What is your attitude towards things you haven't eaten?
Do you have any taboos about food?

What's the reason for you to try something you haven't eaten before?
Do you think the food recommendations on social networks and the food promoted by the media are attractive to you?

Do you cook by yourself? What kind of dishes do you usually have? why?
Do you often order takeaway food?
Which app to use?
What is your decision-making mode of ordering food?
Will you choose something you haven't eaten before when ordering takeaway?

Timeline of a day
Describe roughly the schedule of your leisure time on weekdays and weekends.
Working day
_____

weekend
_____

What are you doing in your available time?
Participant activities?

social relationship
Do you have many friends here? How do you meet friends?
Who can you communicate more with, your fellows or locals?
Where do you think you might be able to make friends in the future?

Mindset
When do you feel that it feels like home?
When will you have a sense of belonging?

Appendix B: Ideation Process

Ideation process

Personal brainstorming
Ideation session

Input:
Personal brainstorming ideas
Ideation session ideas

Process:
Connect similar ideas together.
Summarize their commonalities.
Mark several mature ideas.
Mark ideas that most people mentioned or discussed(see figure 1).

Output:
6 initial ideas(see figure 2)
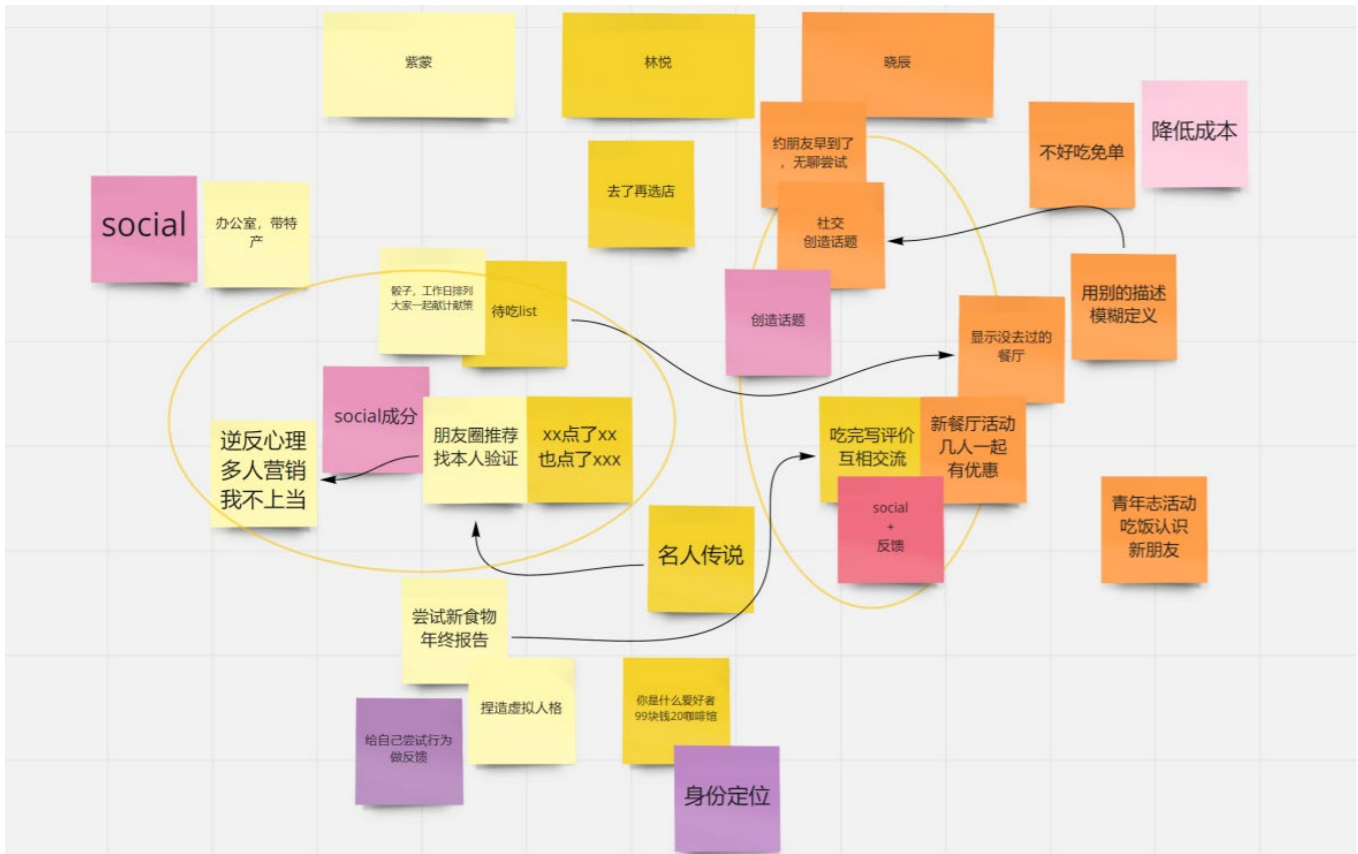3 initial concepts combined by these ideas

Figure 1: The ideas

Figure 2: The 6 initial ideas

use dice
(random+in control)

use abstract words to redefine food
(emphasize feeling/experience)

involve social connections
(make decision together/online)

task/challenge
(make life a game)

make people want to collect novel foods
(give them identity as novel food's lover)

coupon

Appendix C: Related applications and products

Among the apps collected here, 'Tasteatlas' is a special food sharing app based on maps. 'Dazhongdianping' and 'Meituan' are commonly used programs in China. The former is used to view ratings of various foods, restaurants, and other services, and the latter is used to buy takeaways, similar to "Uber eats". The 'Foodie app' is a lightweight small application that helps users generate and share their personalized food map. 'Xiaohongshu' is a Chinese social platform that encourages users to share life experiences including food.

The above are all digital applications, and 'Foodie dice' is a physical product that uses wood dice to help users decide the food mix for each meal in daily life.
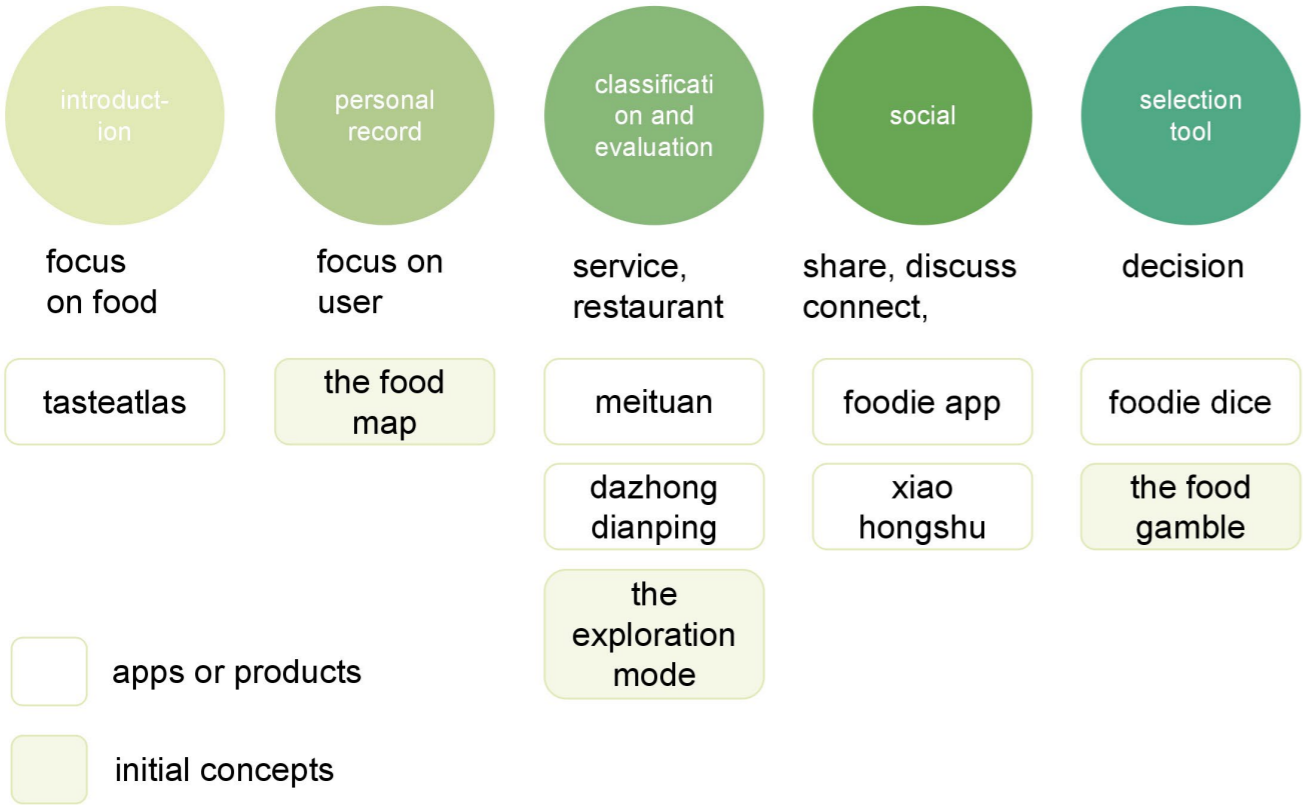

Figure 3: Five types of food related applications and products in the market

Type 1: Food introduction

This type of application focuses on food popularization and introduction, and also expand into other directions such as social interaction or service.
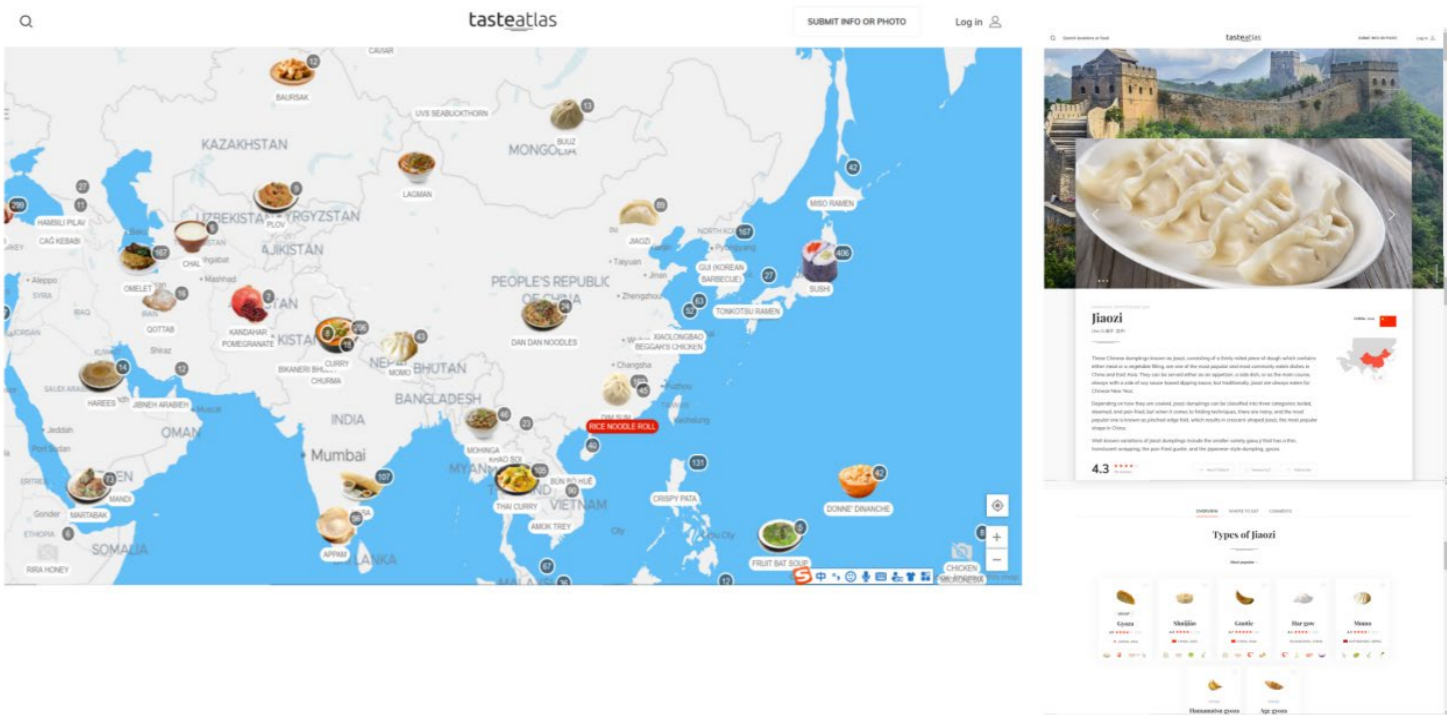
Tasteatlas

Figure 4: Food search and introduction pages of Tasteatlas

An online web application, users can click on any area on the world map to view local food pictures, and then learn about relevant knowledge through the introduction of the food(see figure 4). Users can also upload the local foods they know by themselves. In addition to introducing and recommending food, the website also provides the option of searching for this food in the user's location, so that people who are curious about food from other countries can go to the restaurant to really taste it.

Type 2: Personal record

This type of application helps users record their food experiences and personal preferences.

At present, there are many apps with food recording functions, but in these apps, the recording function only exists as additional functions. Other apps that use food recording as their main function are mainly health management apps. They use calorie recording to detect user health, which is far from food applications.

Type 3: Classification and evaluation

This type of application focus on classifying and filtering food information, and collecting evaluations for users to refer to when decision-making. It usually comes with related services such as ordering food and seat reservations.

Meituan

This is China's mainstream food classification and evaluation app and takeaway ordering app. Various information related to restaurants and food can be found in the app, and various other services can also be ordered. Most people use this type of app as a reference when searching for food, making food decisions, or conveniently ordering meals when they want some takeaway foods.

Figure 5: Main pages of Meituan app

Type 4: Social

Such applications are usually social platforms or additional programs that rely on social platforms. The above content is generally not limited to food but includes all aspects of life. People share food, have discussions, and establish social connections on it.

Foodie map

choose the map type (travel/fly/eat/work...)

choose the city you have been to

generate picture for sharing

Figure 6: The whole process of generating map on Foodie map

This type of app focuses on inputting simple data to help users generate interesting results for sharing. After users share them with other friends or upload them to social media, it can attract more people to use them.

Type 5: Selection tool

This type of application or product is designed to help users make food decisions. Usually list limited options, and then use randomness to help make the decision.

Foodie dice

This is a simple and beautiful selection tool. The six sides of the wooden dice are engraved with the names of the ingredients. The dice are random. Therefore, by throwing the dice, the user can randomly arrange and combine the ingredients and get rich results.

Dice are also controllable. If users are not satisfied with the result, they can get better results by controlling the number of dice, arranging to use specific dice or re-dice.

Figure x: [[