MeetFresh Recommendation System: Brainstorming, Solution Design and Prototyping

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Brainstorming plan

Before brainstorming, our team decided on the below plan:

1. Have 3 individual brainstorming sessions across 2-3 days.
2. Try to come up with 10 ideas in each session, the more the merrier.
3. Be bold and think outside of the box.
4. Come up with ideas not just about online ordering.
5. Think more broadly during the thinking process. Don't limit ideas only on improving online ordering. Think about the ultimate goal, how to help the business attract new customers.

Individual brainstorming

Our team members each performed individual brainstorming sessions on our own as planned and logged ideas in a shared document. We only logged our ideas after we each finished all 3 brainstorming sessions to keep the individual sessions productive and avoid bias. And by logging the ideas in one place, it's easier for the team to reference and check so we don't miss any good ideas.

Team Member	Xiaoyao Liu			Haozhen Xu			Han			Zan
1	Opening page with best seller/new item pop up	recomm - same	1	set an option that allows users to freely choose the languages EN/CH		1	recommend 3 items: traditional taste, good for cold/hot days	recomm - same	1	Add bundle options for one people or group order, like a bowl + drink
2	Opening page with staff picked special of the day pop up based on store selection	recomm - location	2	There should be a place that let people input their zipcode to navigate them to the nearest stores		2	recommend ingredients based on selected base	recomm - base	2	Collect keywords based on yelp reveiws and add that to the menu or use that in the filtering by customers review
3	Spinning wheel with several recommended products and let customer to click and choose a random item to add in cart	recomm - random	3	There should be big and attractive pictures for best sellers and seasonal items so that users can get information about them as soon as they open the app		3	rank ingredients based on selected ingredients	recomm - ingredients	3	For quick purchase, use more visuals and pictures instead of words. For example, clear pictures of the main ingredients. Red for hot drinks and blue background for icy drinks
4	Questionnaire using scales then show reccomendation based on answers	recomm - taste	4	sort the products by the sweetness level, from low to high (or high to low)		4	ask what you like: tea/coffee/milk tea, banana, potato, jelly, pudding, ...	recomm - taste	4	For more accurate recommendations, collect user preference through scrolling bars by key features (size, sweetness, hot/cold)
5	Questionnaire with choices then show recommendation		5	sort the products by the calorie level, from low to high (or high to low)		5	recommend based on local weather: sunny, cloudy, windy, dry	recomm - time/location	5	Create customized product by draging and throwing icons of key ingredient/feature into a bowl/cup
6	Questionnaire with demographic questions that updates database and improve recommender	recomm - demographic	6	list all the ingredienets to make users choose what they want. For example, users can choose "Taro" "Ice" "Peanuts", then products with taro, ice, peanuts will appear		6	recommend randomly: do you like spider man or super man...., like mountain/sea	recomm - random		
7	Questionnaire with more random questions and see if there are relations in order choice	recomm - random	7	Show the best sellers and seasonal products based on users' locatioin						
8	At the end of order page, promote something that goes with items in cart (show bundles available in shopping cart)	combo	8	separate iced and hot products						
9	Ask questions regarding budget and ingredient then recommend menu item	recomm - ingredients	9	set up users reviews for each product			Jason			
10	Let customers choose their preference between two menu items with pictures and do this several rounds and end with recommendation	recomm - food pic	10	let users quickly pick up where they leave off if they quit the app accidentally		1	Add the weather nofitication/alarm, with the adjusted open hour for each store	recomm -location		
11	Show ingredient pictures and let customer select and cross out preferences and show recommendation based on choices	recomm - ingredients	11	set up user profiles, so it can let users log in to see that they purchased recently		2	Data Collection - Using coupon as a motivation, attract user to register the account			
12	Add option to filter with category and ingredients	recomm - ingredients	12	real person voice or video introduction about products in English and Chinese would be better than only the text, just like advertises on TV		3	Recoomend based on the profile or. demographic data we collected, by region, by race, etc.			
13	Recommend based on choices more traditional American desserts/brands. Such as starbucks drink, cake flavor etc.	recomm - other brands	13	a short survey at the beginning to get the information about users. For example, whether users are familiar with Asian desserts		4	Can include more langauage to attract other groups of people, such as spanish			
14	Design combo meals for people to choose	combo	14	add a function that can detect the local time and weather. For example, if the ordering time is August 1st and temperatiure is over 40°C, some iced products can be recommended	recomm - time/location					

Group brainstorming and ideas for low fidelity prototyping

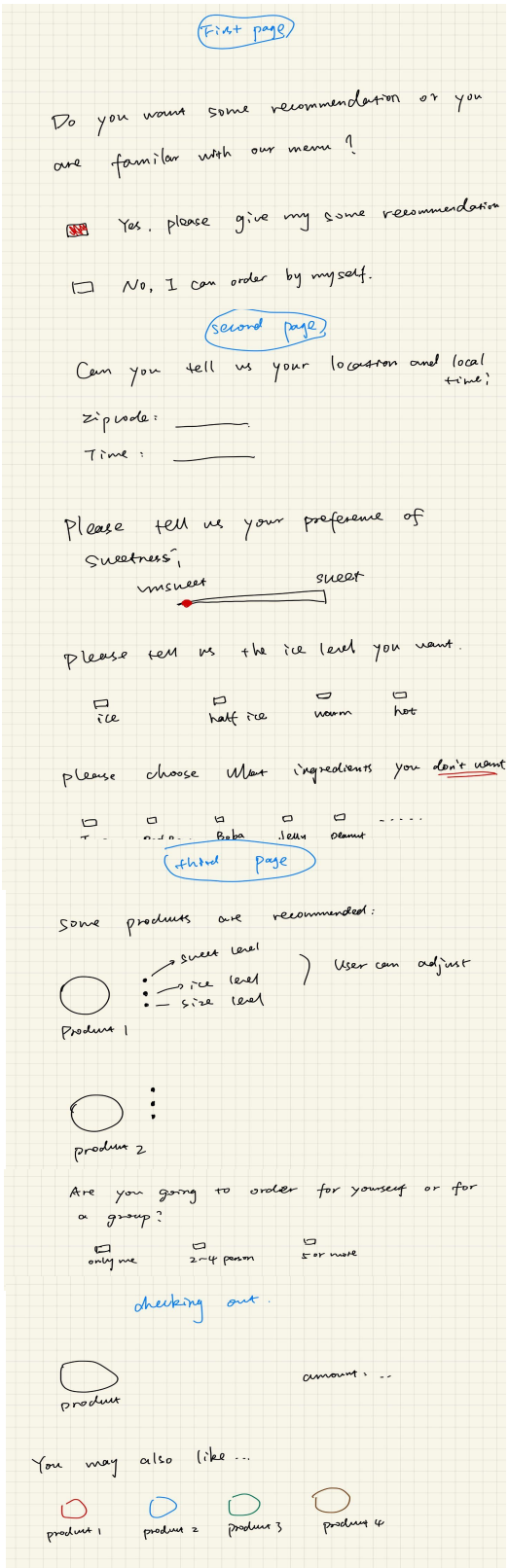
After going through all the ideas in our group brainstorming session, we grouped the ideas into different categories. We first agreed on the main purpose of the recommendation system we are building, which is to improve customer's online ordering experience by recommending products they may like and reduce order time and boost store sales at the same time. We then agreed on the following areas to focus on when building the low fidelity prototypes:

recomm - same	**recomm - location/time**	recomm - random	**recomm - taste**	recomm - demographic	**recomm - combo**	**recomm - ingredients**	**UI design**
Opening page with best seller/new item pop up	Opening page with staff picked special of the day pop up based on store selection	Spinning wheel with several recommended products and let customer to click and choose a random item to add in cart	Questionnaire using scales then show reccomendation based on answers	Questionnaire with demographic questions that updates database and improve recommender	At the end of order page, promote something that goes with items in cart (show bundles available in shopping cart)	Ask questions regarding budget and ingredient then recommend menu item	set an option that allows users to freely choose the languages EN/CH
Food Pic: Let customers choose their preference between two menu items with pictures and do this several rounds and end with recommendation	Different recommendation based on time of day	Questionnaire with more random questions and see if there are relations in order choice	sort the products by the sweetness level, from low to high (or high to low)	set up users reviews for each product	Design combo meals for people to choose	Show ingredient pictures and let customer select and cross out preferences and show recommendation based on choices	let users quickly pick up where they leave off if they quit the app accidentally
Other brand: Recommend based on choices more traditional American desserts/brands. Such as starbucks drink, cake flavor etc.	There should be a place that let people input their zipcode to navigate them to the nearest stores	Puzzle game for customer to play and get a special discount to try new item to encourage sale	separate iced and hot products	a short survey at the beginning to get the information about users. For example, whether users are familiar with Asian desserts	Add bundle options for one people or group order, like a bowl + drink	Add option to filter with category and ingredients	set up user profiles, so it can let users log in to see that they purchased recently
Contest: Custom build your own dessert contest and have these custom items on menu and option to vote and buy	Show the best sellers and seasonal products based on users' locatioin	recommend randomly: do you like spider man or super man...., like mountain/sea	recommend 3 items: traditional taste, good for cold/hot days	Data Collection - Using coupon as a motivation, attract user to register the account		sort the products by the calorie level, from low to high (or high to low)	Collect keywords based on yelp reveiws and add that to the menu or use that in the filtering by customers review
Questionnaire with choices then show recommendation	add a function that can detect the local time and weather. For example, if the ordering time is August 1st and temperatiure is over 40°C, some iced products can be recommended		ask what you like: tea/coffee/milk tea, banana, potato, jelly, pudding, ...			list all the ingredienets to make users choose what they want. For example, users can choose "Taro" "Ice" "Peanuts", then products with taro, ice, peanuts will appear	For quick purchase, use more visuals and pictures instead of words. For example, clear pictures of the main ingredients. Red for hot drinks and blue background for icy drinks
There should be big and attractive pictures for best sellers and seasonal items so that users can get information about them as soon as they open the app	recommend based on local weather: sunny, cloudy, windy, dry		For more accurate recommendations, collect user preference through scrolling bars by key features (size, sweetness, hot/cold)			recommend ingredients based on selected base	Create customized product by draging and throwing icons of key ingredient/feature into a bowl/cup
real person voice or video introduction about products in English and Chinese would be better than only the text, just like advertises on TV	Add the weather nofitication/alarm, with the adjusted open hour for each store					rank ingredients based on selected ingredients	Can include more langauage to attract other groups of people, such as spanish
give users some coupons for the future pruchase after they check out.							
Recoomend based on the profile or. demographic data we collected, by region, by race, etc.							

1. Location/time: readily available from online ordering system and contains information like weather, time of day and store stock to help with recommendation algorithm
2. Taste: customers may already have some preference regarding ice/hot and sweetness level before ordering, asking this can filter out a good amount of menu items
3. Combo: consider recommending combos or items complementary to items in shopping cart at checkout to boost sales
4. Ingredient: option to filter through ingredients can greatly reduce ordering time (e.g. allergens)
5. UI Design: we will explore more of this during prototyping stage

3 low fidelity prototypes

Prototype 1: the collection of users' information and preferences



The first idea we prototyped is to design a process to collect users' information and preferences. The paper prototype above shows this process.

On the first page, we set a choice question to want users to give their answers, which is whether they want to use this recommendation system. For some users who are familiar with the Meet Fresh menu, they can choose "No", and jump to the existing online ordering system, while for some new users, may click "Yes", and move forward to the next page of this process.

On the second page, we want to get some information and product preferences from users. We want them to tell us their location and time, their preferences for sweetness, the ice level they want, the ingredients they don't want, and ordering for themselves or for a group of people.

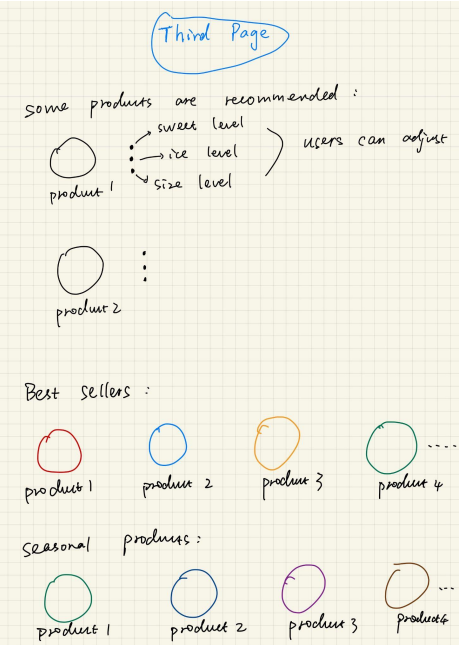
After users submit their answers, the recommendation system will list all the products recommended on the third page. Users can conveniently adjust the sweet level, ice level, and size level by clicking the dots beside the products. And then, the selected products will be put into the shopping cart.

On the checking out page, based on the analysis of the purchasing behaviors of previous users, we add a function that can recommend some other products to users to expect them to purchase together.

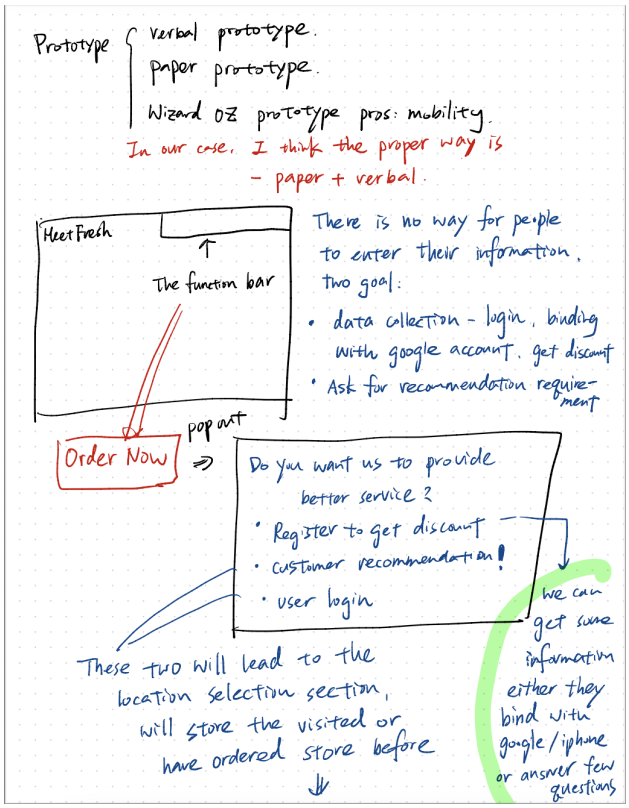
User interviews for prototype 1:

The interviewee thought this prototype indeed saved her much time in the ordering process and recommended desired products to her. At the same time, she suggested that we may add information about the best sellers and seasonal products after the products recommended on the third page. And she expected attractive pictures and detailed descriptions of products.

According to her suggestion, we modified the prototype by listing the best sellers and seasonal products on the third page.

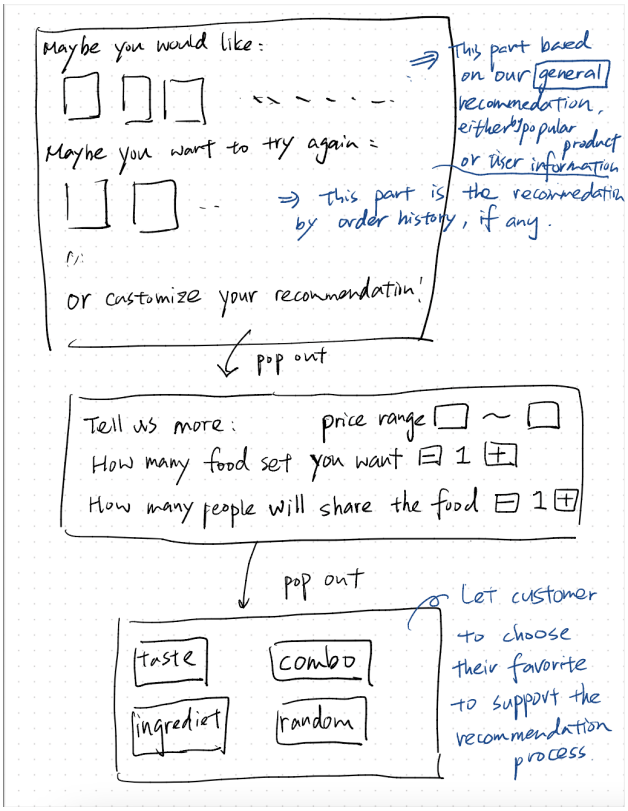


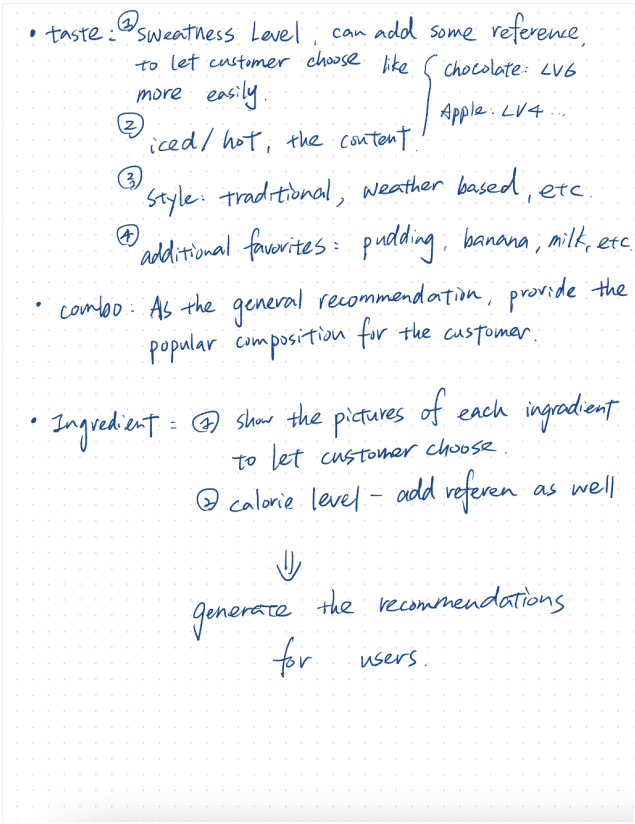
Prototype 2: Stepwise recommendation based on customer preference and leverage existing account information



The second paper prototype is based on the current web ordering interface and gives customers options to choose how personalized recommendations they'd like from us. This stepwise approach gives the customers freedom to explore the recommendation system to the extent they prefer and encourages customers to register accounts with MeetFresh for more accurate and fast recommendations and ordering experience.

Upon opening the MeetFresh website, there's an 'Order Now' button on the upper right corner. However, in order to gather some customer information to support the recommendation algorithm, we'd like to add a pop out window and provide options for customers to register and login to their account before ordering. They could login in with existing 3rd party accounts like Google or Apple for quicker





registration. By adding this option, we potentially can capture some basic user profile information to support the recommendations. Customers are also given the option to skip log in if they prefer and still use the recommendation tool.

After this page, customers are taken to select the location they'd like to order from. This is how the website currently works. We'd like to keep this step as it provides us information on the location and will influence and benefit the recommendation system.

In the next pop out window, we'd like to first show some general recommendations. This would typically be the bestsellers and new items. And then, if the user is logged in and we have history orders, we can ask if they would like to try items they've ordered before from their order history. Then finally, customers may choose to 'customize your recommendation' to provide inputs for more personalized recommendations.

In the next pop out window, customers can input their preferred price range, group size. And then they can proceed to select preferences in categories like taste and ingredients. For tastes like sweetness, we are going to add references to help customers make their selection. And for ingredients, we are going to show pictures and calorie references to help the user make their decision. Finally, with these additional inputs, we are able to predict what the customer's favorite dessert will be. In addition, we will also provide combos and complementary desserts that go with the recommended item.

User interviews for prototype 2:

I interviewed three different people separately, and all of them leave positive feedback on our prototype, saying that the functionality of the prototype is comprehensive and thoughtful. But all of them mention two points that need to be careful:

- They want the order process straightforward and rapid to recommend the right product. So the process needs to be as clear and efficient to direct them to the candidates. They recommend we can think about how fast food handles the online order process.
- The prototype's functionality is enough for the first version prototype, but there may be more defects that come up when more customers try our prototype, need to interview more people or survey them for more detailed perspectives.

Prototype 3: One-step recommendation based on local time and weather

The last idea that we prototyped (wireframing prototype) is a simple one with minimum user inputs and showing recommended items in one click. We'd like to insert, as shown on the first page, a floating action button Today's Special on MeetFresh's existing ordering website, which would direct users to the second page of only 8 recommended items: 3 food items, 3 drinks, and 2 snacks. These recommended items would be selected by our backend algorithm and refreshed every click. For either food or drink section, the algorithm would recommend one from each of the following perspectives:

- Best for this time of a day (hour, temperature, humidity): refresh every 2hr
- Random selection from top3 seasonal/new items: refresh every click
- Random selection from top3 best sellers of all time: refresh every click

One more algorithm as the final layer would make sure there are three distinct items and no item selected twice. Snack section would show two random items.

Page 1

Page 2

User interviews for prototype 3:

Interviewee likes the prototype, which only requires the pick-up location input and gives her a few options in one second.