

Group - 4 | Project - 4

FEEDING THE HUNGRY

# **MEAL GREENHOUSE**

FOOD FOR ALL

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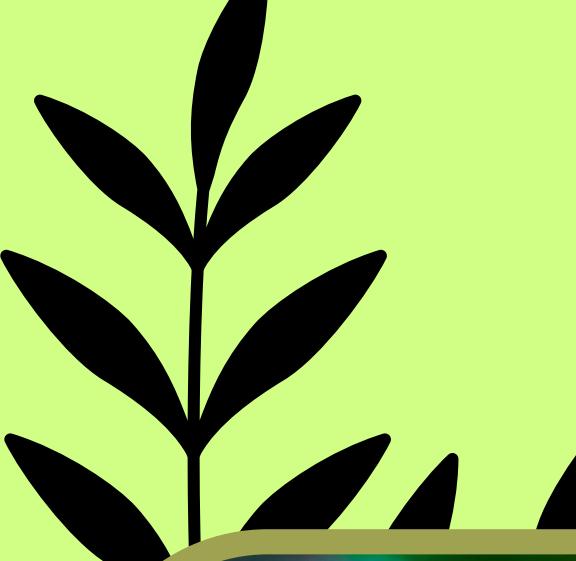
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# PROBLEM STATEMENT

To develop a platform that connects people in need of food to those who have it in excess, hence minimizing food wastage.





# BACKGROUND OF THE PROBLEM AND MOTIVATION



- 40% of the food produced in mass quantities is discarded, on average. This means that 7.5 tons of food is discarded every single day.
- About 85% of the excess food is thrown directly into the bin. The others give away the excess food to native laborers and employees, for free.
- A big portion of the excess food can be utilized instead of being thrown away.

From the statistics mentioned above, it's clearly evident that food wastage is a matter of great concern in India. And this has been the case for some time now. Not only is it limited to grand celebrations like weddings, parties, and ceremonies where the food's generated in massive quantities but we also witness food wastage in restaurants and hostel messes daily.

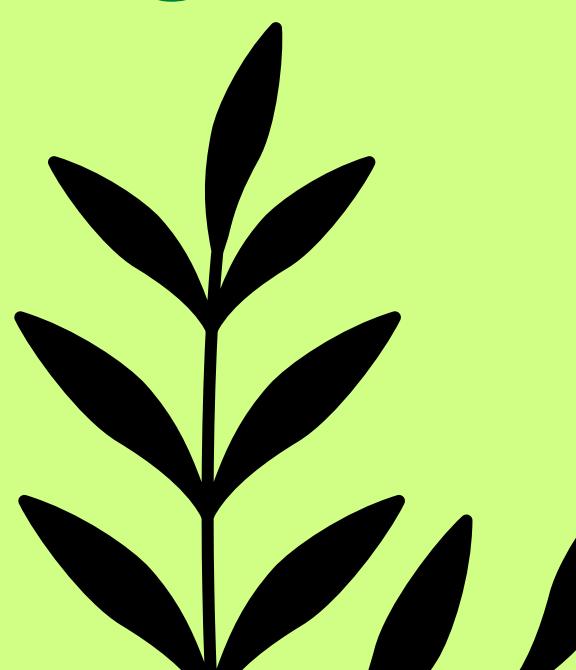
India ranks 101 out of the 121 countries listed in the Global Hunger Index 2022. According to FAO (The Food and Agricultural Organization of the United Nations) estimates, 14% of the population (189.2 million people) is undernourished in India. This motivates us even further to bridge this gap and get the food to reach the needy.



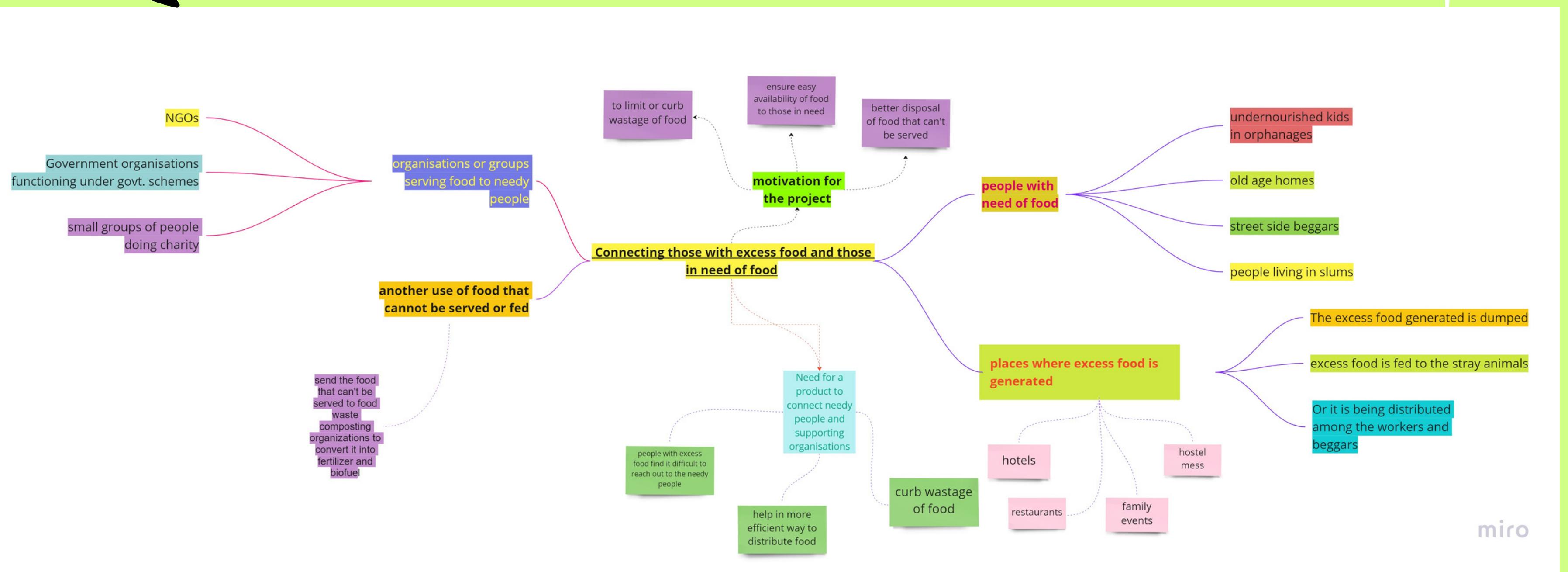
## SCOPE

Our solution aims to provide a platform where people that generate surplus food on a regular basis can get in touch with organizations that can distribute the leftover food to people in need.

This conserves resources and fills empty stomachs alongside.



# MIND MAP



# MAJOR STAKEHOLDERS

Through our surveys and mindmaps, we were able to identify the following stakeholders' challenges, requirements, and expectations:

# The Regular Food Producer

Regular food producers such as hotels, restaurants, and mess owners would serve as the primary source of distributable food. They must deal with large quantities of excess food daily that may even be impractical to throw out.

They require a solution they can truly depend on that is flexible to the dynamic aspects of their food products, such as time, temperature, food type, and more.

# The Occasional Food Producer

The occasional food producer is not a consistent food source, and they have relatively lower quantities of excess food. Their primary challenge is not having enough food to contact NGOs and work together.

They require a solution that considers smaller amounts of food.

# The Distributor

The occasional food producer is not a consistent food source, and they have relatively lower quantities of excess food. Their primary challenge is not having enough food to contact NGOs and work together.

They require a solution that will bridge this gap easily and help in smoother operations during rush hour. The distributor expects that the solution will be able to reach out to all relevant producers without the need for personal intervention.

# The Composting Organization

The composting/fertilizer organization is another important stakeholder as they can use waste food that is no longer safe to eat. The organization requires a solution that connects them with waste producers and does so without a scope of confusion.

As they likely require a certain amount of food to produce compost/fertilizer, they require the solution to get the specifics from the producers and minimize miscommunication.

# The Consumer

The consumer has to go without food for many days. They do not know who to reach out to. They are shooed away from places where food is being prepared. Their only contact is the distributor, and it is up to luck whether the distributor comes across them at all.

The consumer requires a solution that allows them to contact distributors with minimal effort. They expect the solution to be consistent and straightforward, so they are not left with the impression that their meal is ensured when it may not be.

# PERSONAS



**Jai Sharma**

**Age:** 65 years  
**Occupation:** Mess Owner  
**Location:** Delhi

*"Food Shortage is a major problem so we must take steps to prevent it "*

## BIO:

Jai Sharma is a mess owner at a college since 5 years. He is a very warm, kind and caring person who believes in social service. Since a very long time he is being bothered by the amount of leftover food that is thrown away at his mess on a daily basis.

### MOTIVATIONS

- Desire to help those in need.  
Your paragraph text
- Wants to help build a better community

### GOALS

- To prevent wastage of leftover food at his mess
- To provide the leftover food to those in need
- To find an app that helps distribute leftover food at his mess to prevent it from being wasted

### FRUSTRATIONS

- Daily leftover food that is being wasted at his mess
- Worried if the food that he sends goes to needy people by time, without being spoilt

# PERSONAS



Seema Singh

Age: 38 years  
Occupation: Wedding Caterer  
Location: Mumbai

*"Every grain of food is important, think before throwing it away"*

## BIO:

Seema Singh is a Caterer at weddings. She is a very helpful and giving person. On a daily basis, she approximately caters food to at least 3 weddings and has noticed the quantity of food that is being wasted. She is in search of a way to make use of the leftover food at these weddings

### MOTIVATIONS

- Wants to be a part of system that helps people in need
- Wants to prevent dumping of leftover food in the trash at weddings and provide it to hungry people on the streets

### GOALS

- To provide the leftover food to those in need
- To locate an app that assists in the distribution of leftover food to avoid its waste.

### FRUSTRATIONS

- Bothered by the quantity of food that is being wasted on a daily basis at weddings
- Hygiene factors taken into consideration while transportation of the leftover food

# PERSONAS



Ravi Verma

**Age:** 35 years  
**Occupation:** NGO representative  
**Location:** Pune

*“Think Of The Poor Before You Waste Your Food”*

## BIO:

Ravi Verma is a representative of an NGO named “SAFAA”. This organization is willing to take the responsibility of distributing leftover food to the people in need. It's a very well known organization that has successfully completed the drives like save water and save trees

## MOTIVATIONS

- Wishes to contribute to the development of a nice nation
- To provide food to the groups of poor people living on the streets

## GOALS

- To utilize the food resources instead of letting them go waste
- Distributing the food received from places like caterers, mess, etc. to help the people in need
- To pass the credibility check

## FRUSTRATIONS

- Taking into account hygiene concerns when transporting the leftover meals
- Wrong address information provided due to poor communication

# PERSONAS



**Shekhar Roy**

**Age:** 28 years

**Occupation:** Chief Manager at ORGANICS

**Location:** Ludhiana

*"Food waste reduction is the appropriate way to save money while also helping to feed the world and protect the environment."*

## BIO:

Shekar Roy is the Chief Manager at "ORGANICS", which is a Food Waste Composting organization. This organization converts food that cannot be distributed for consumption, to compost or fertilizers rather than letting it go waste.

### MOTIVATIONS

- Making use of food waste by converting it into compost
- Using food leftovers that have been spoilt to make fertilizers

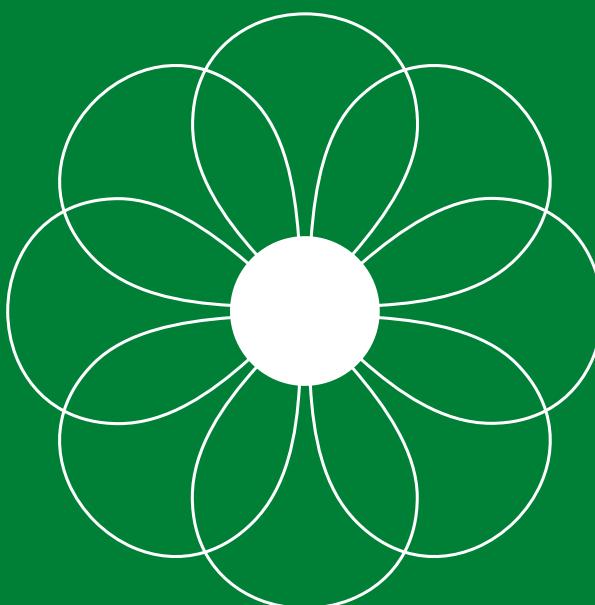
### GOALS

- Passing the credibility test
- To find an app that connects their organization to caterers, mess owners,etc.
- Receiving food waste and converting it into compost or fertilizers

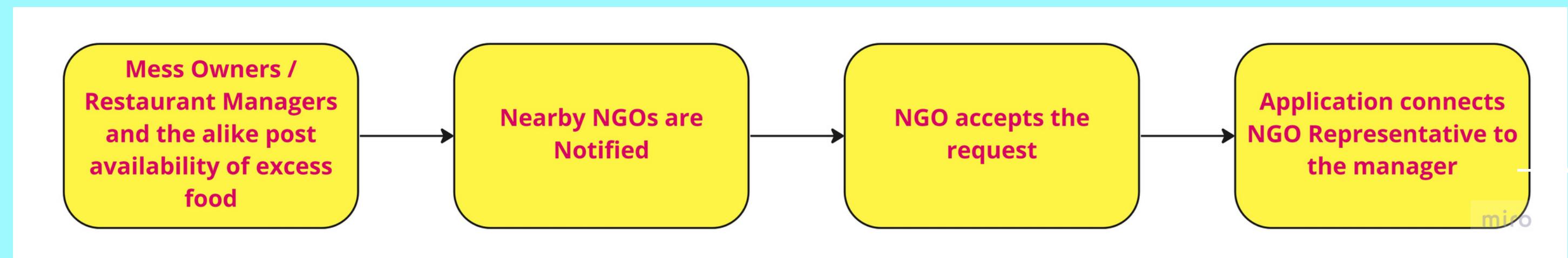
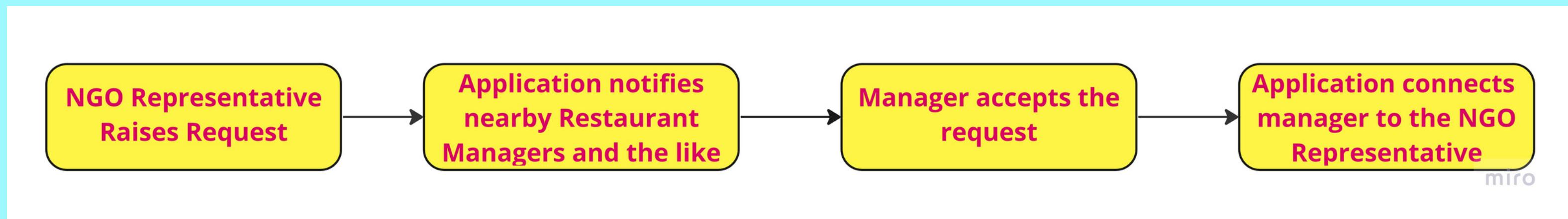
### FRUSTRATIONS

- Poor communication
- Wrong address information provided
- The quantity or measure of waste specified is incorrect

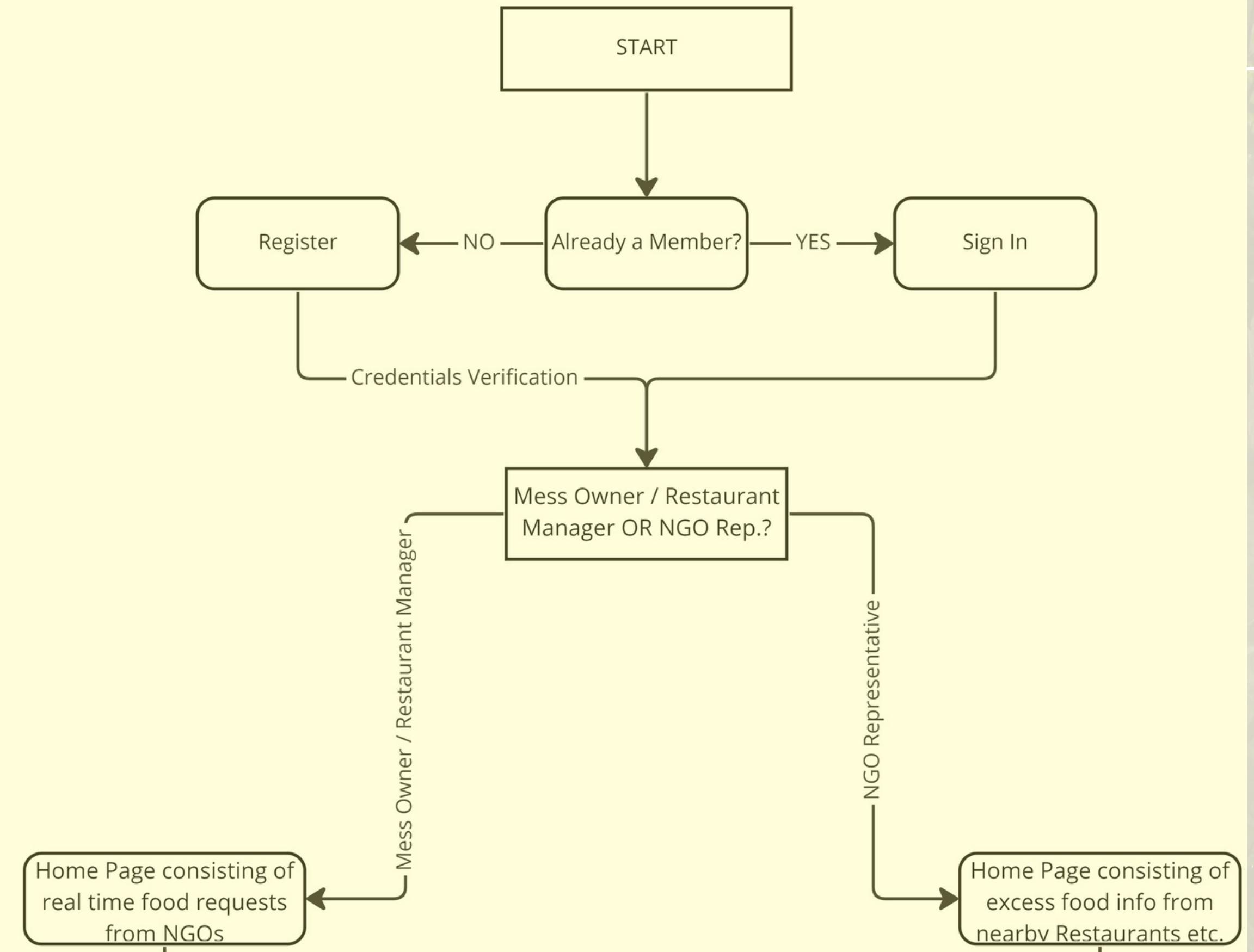
# FUNCTIONING

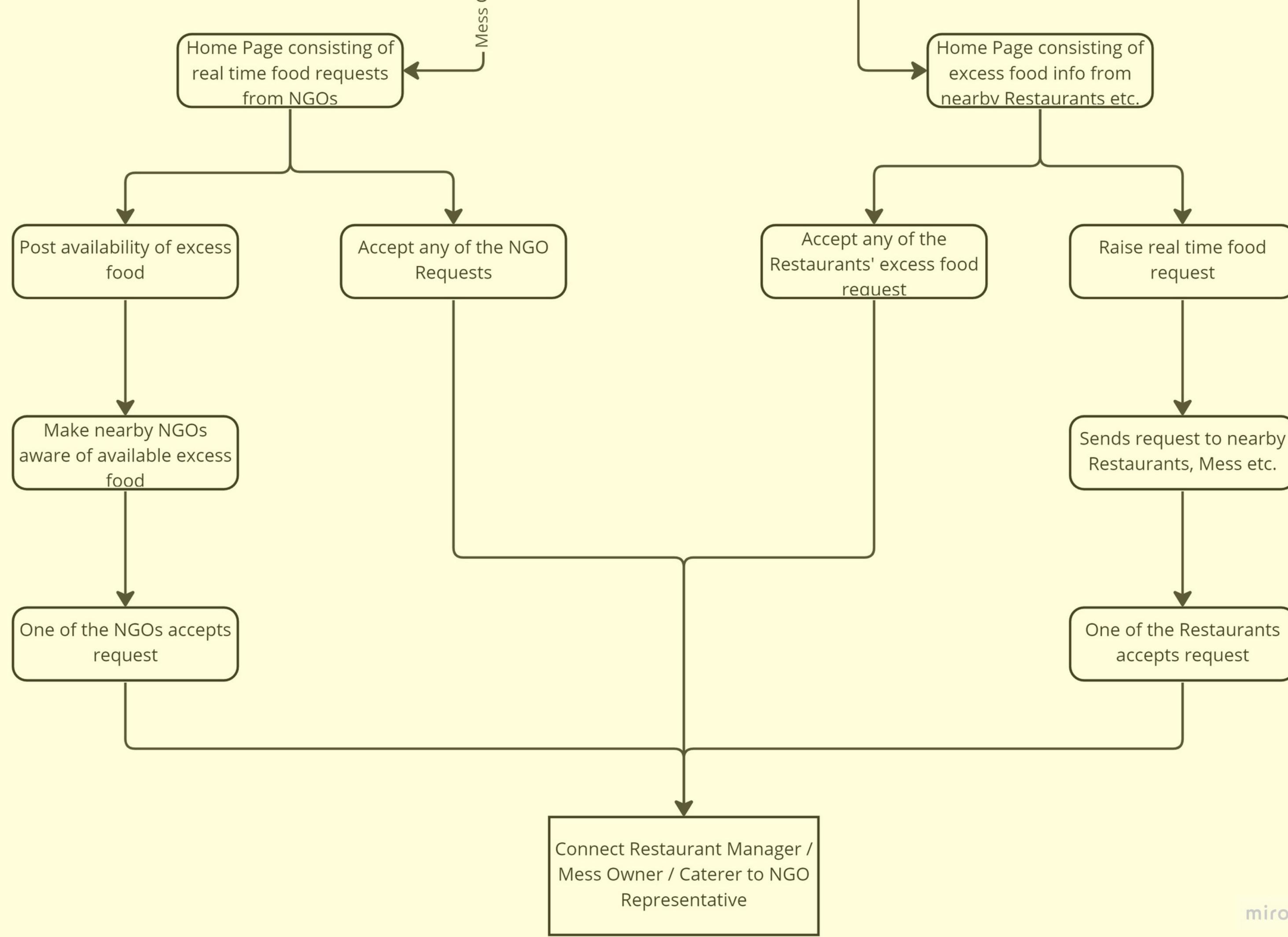


Can be done via either of the two processes :-



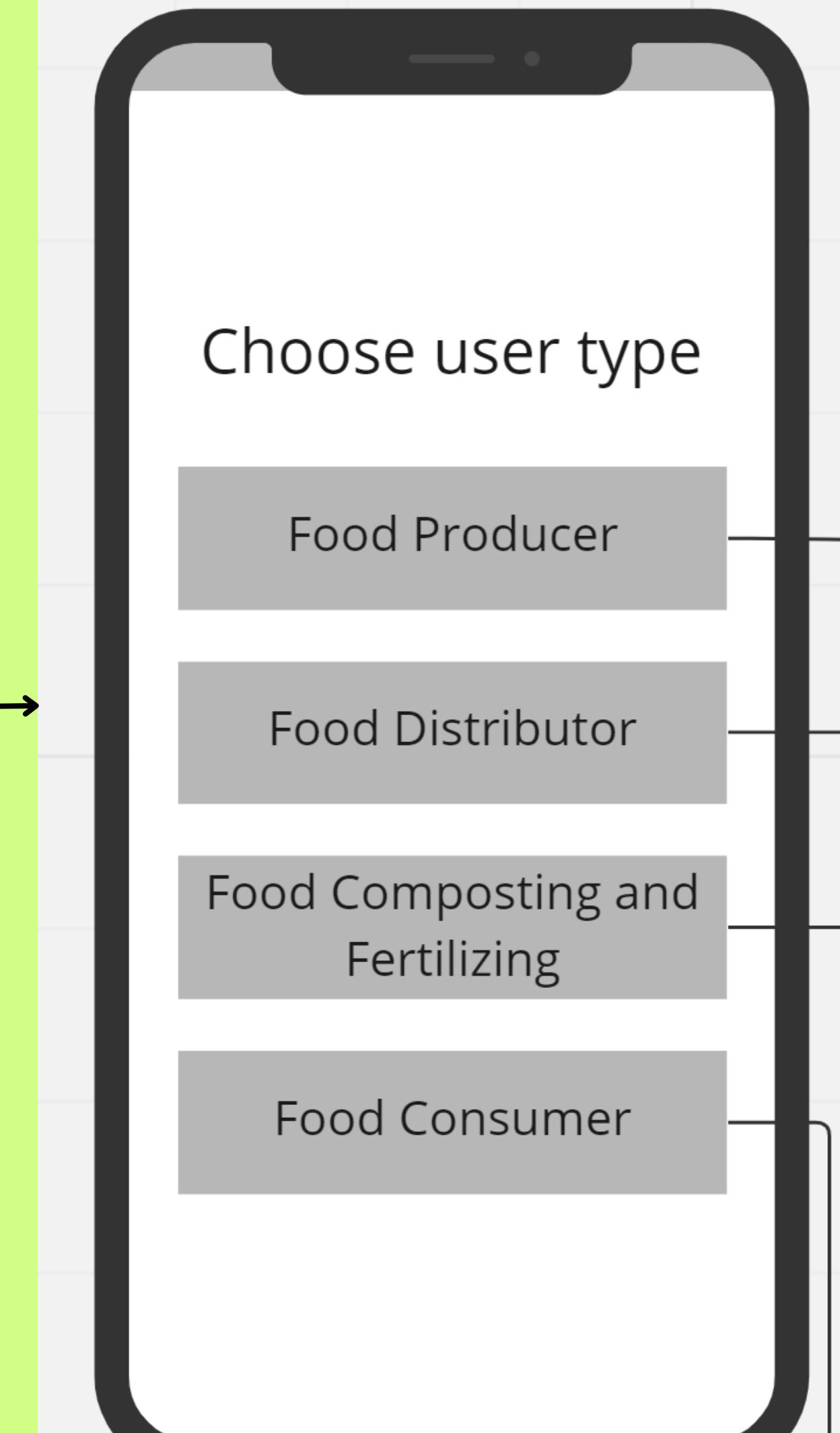
# APPLICATION TASK FLOW



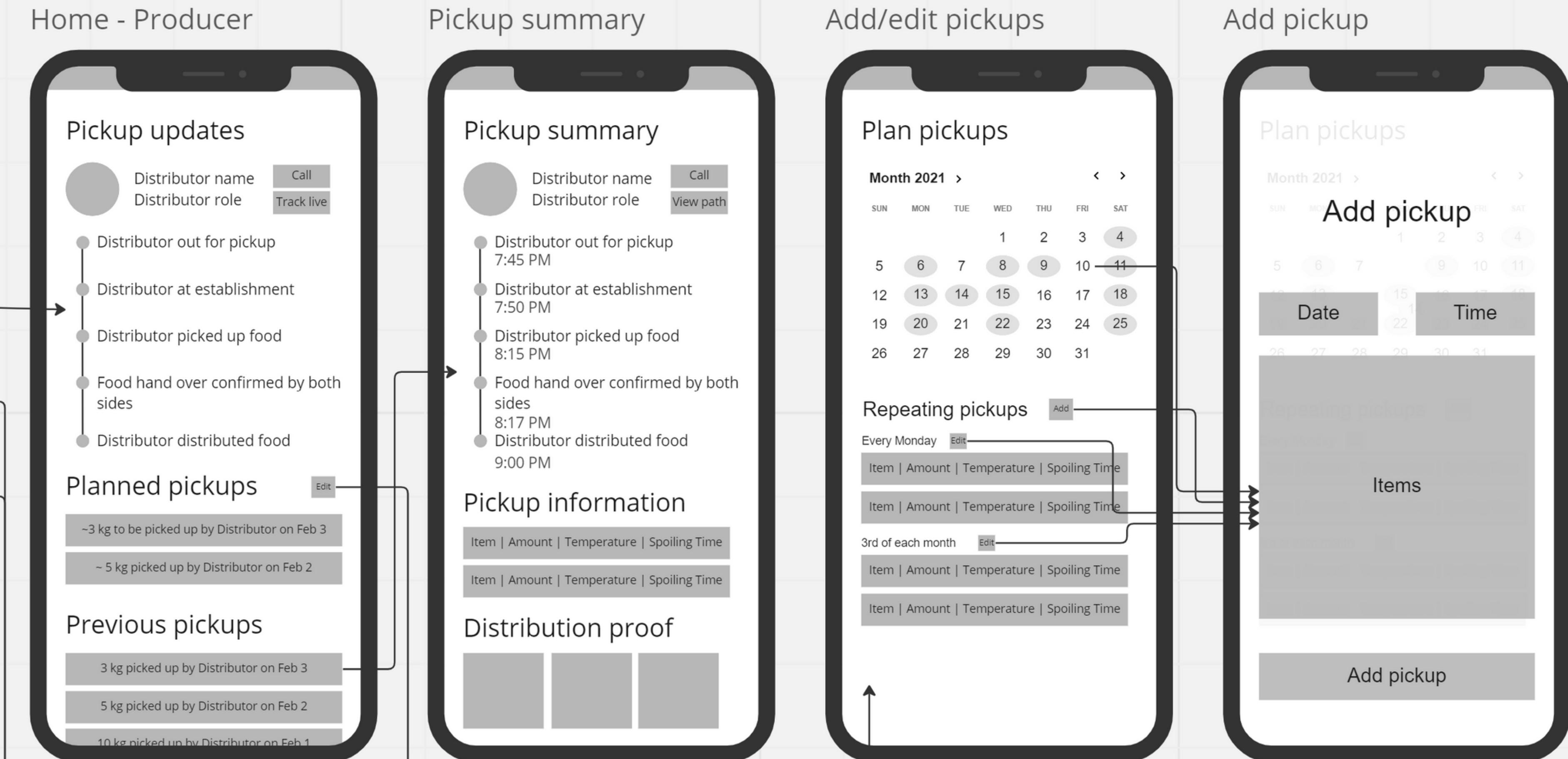


# FIRST LO-FI DESIGN

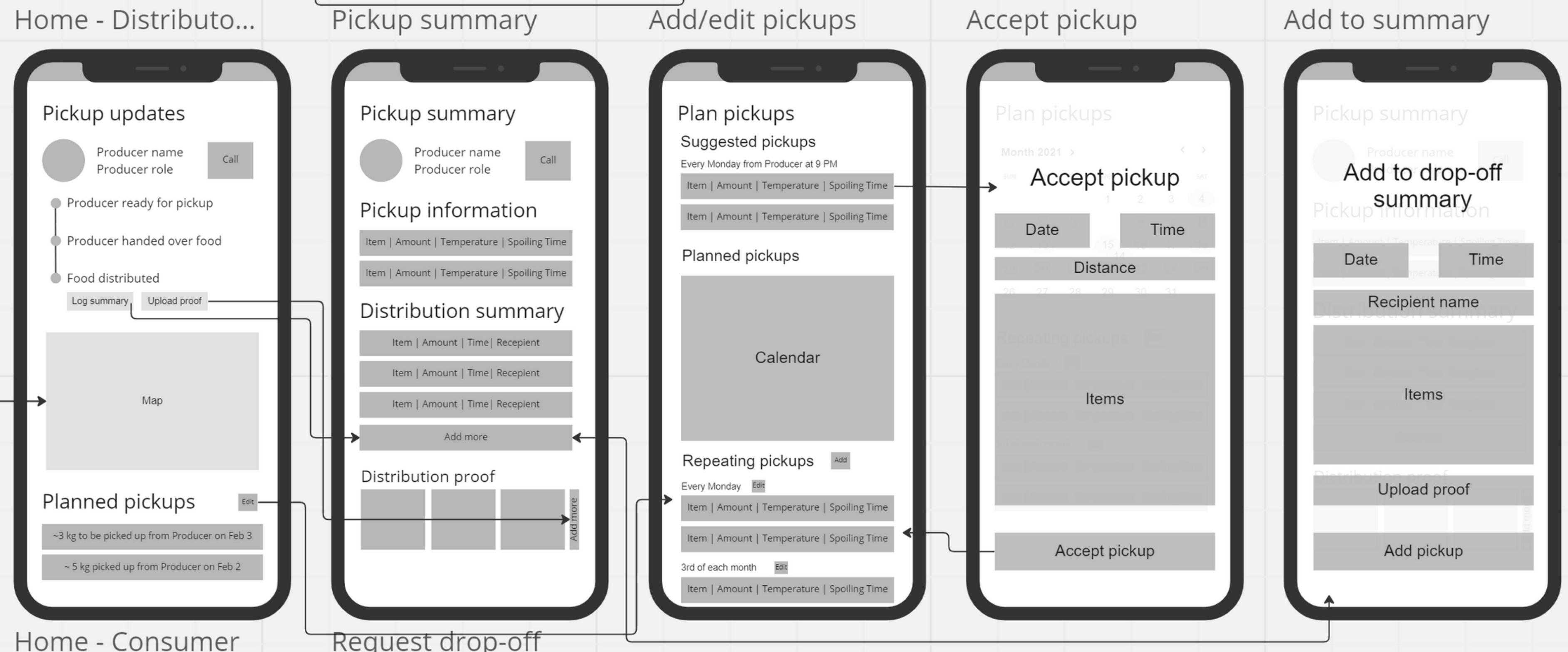
Common  
starting →  
menu



# App screens for the producers



# App screens for the distributors and the composting agency





App screens for  
the consumer



Home - Consumer

Pickup updates

- Distributor name Distributor role Call Track live
- Distributor out for pickup
- Distributor at establishment
- Distributor picked up food
- Food hand over confirmed by both sides
- Distributor at drop-off location Confirm drop-off

Planned drop-offs

- Items | Amount | Date | Time | Distributor
- Items | Amount | Date | Time | Distributor

Requested drop-offs Add

- Items | Amount | Date | Time | Distributor
- Items | Amount | Date | Time | Distributor

Request drop-off

Request drop-off

Location

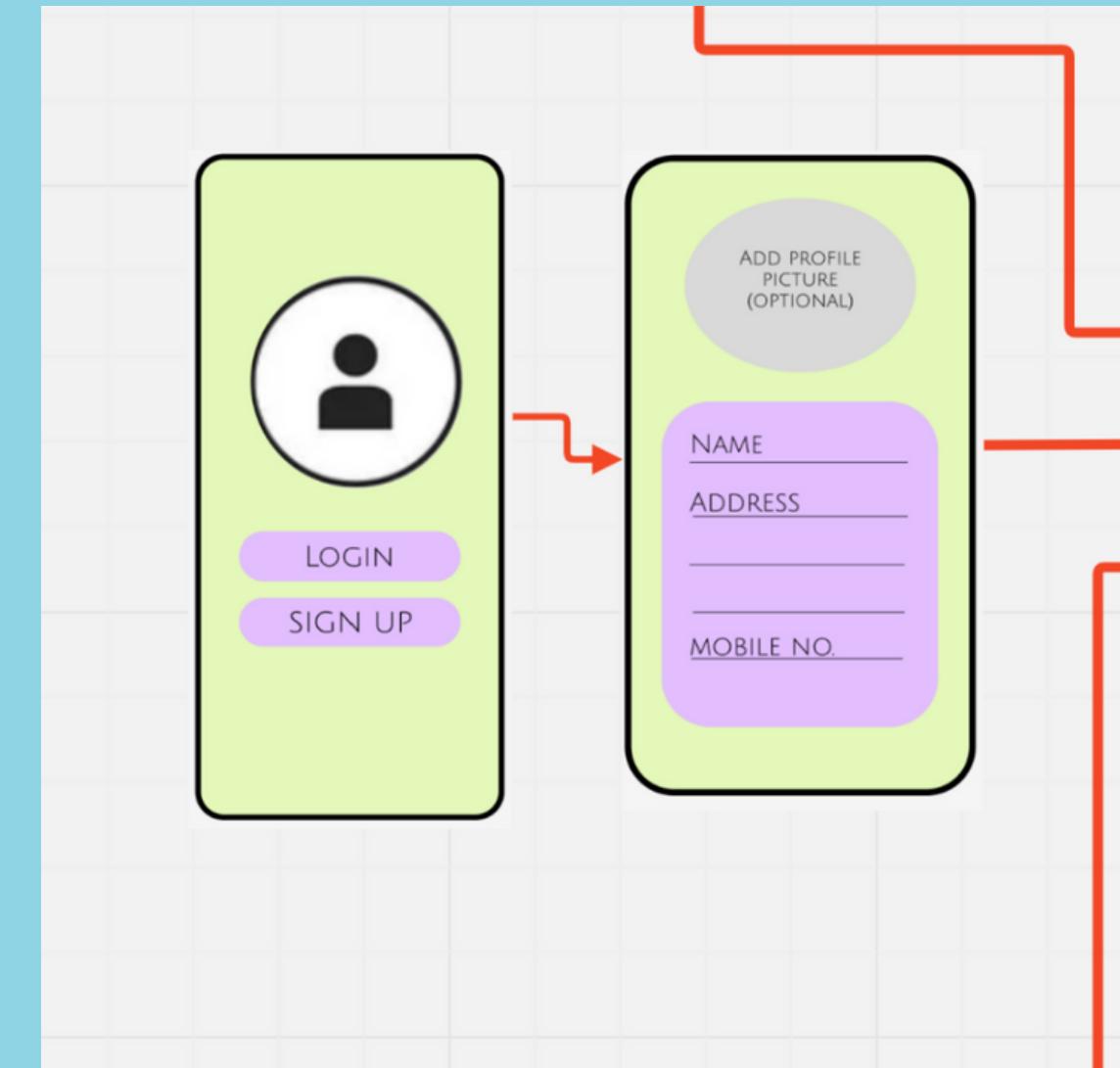
Previous receivals

Items | Amount | Date | Time | Distributor

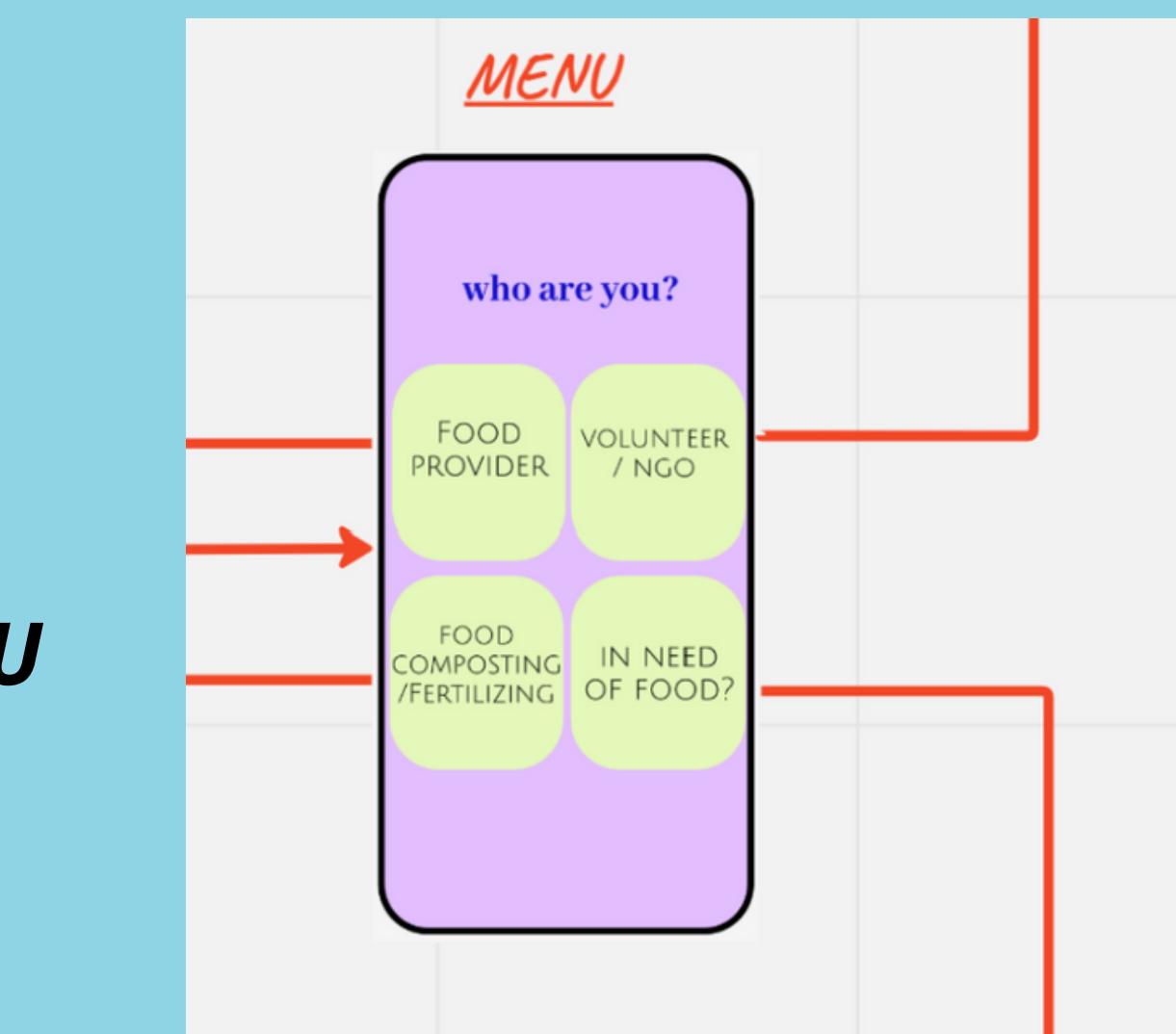
Request drop-off

The diagram illustrates two mobile application screens for consumers. The left screen, titled 'Home - Consumer', displays 'Pickup updates' with a list of distributor status changes and a 'Confirm drop-off' button. It also shows sections for 'Planned drop-offs' and 'Requested drop-offs'. The right screen, titled 'Request drop-off', shows a similar layout but with a prominent 'Request drop-off' button at the bottom. Arrows indicate the flow from the consumer's home screen to the request screen.

# ALTERNATE LO-FI DESIGN



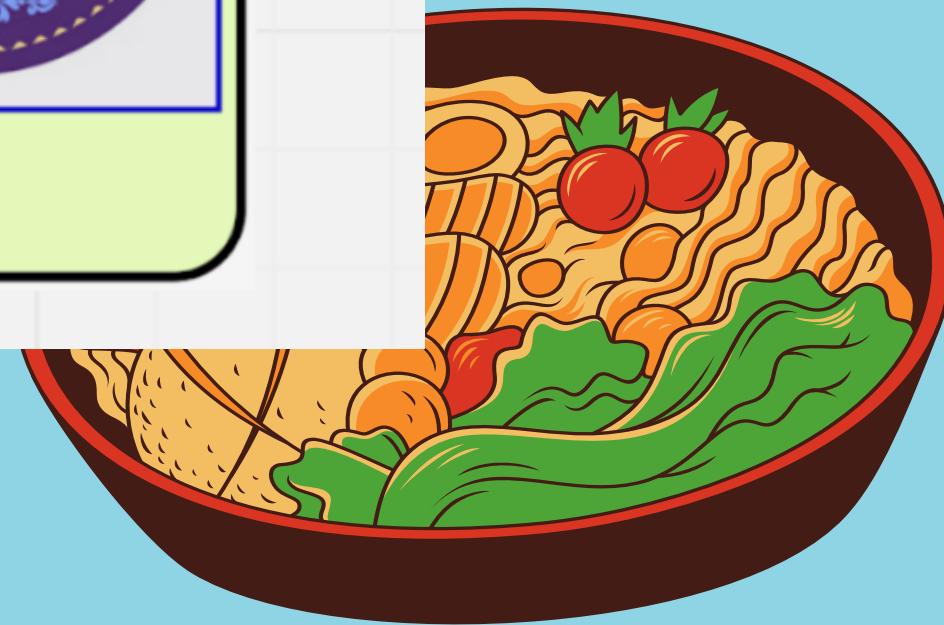
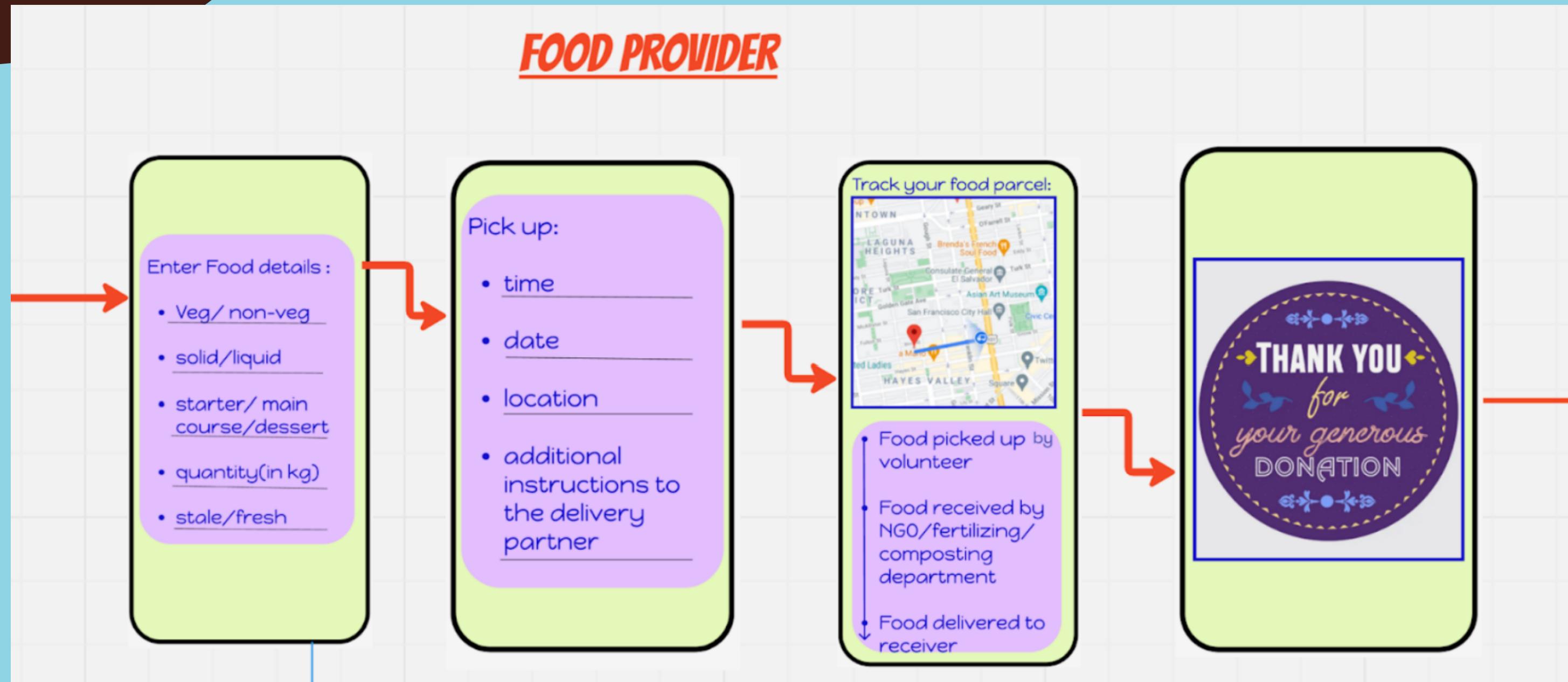
*App screen for  
MENU*



*App screen for  
login and Profile*

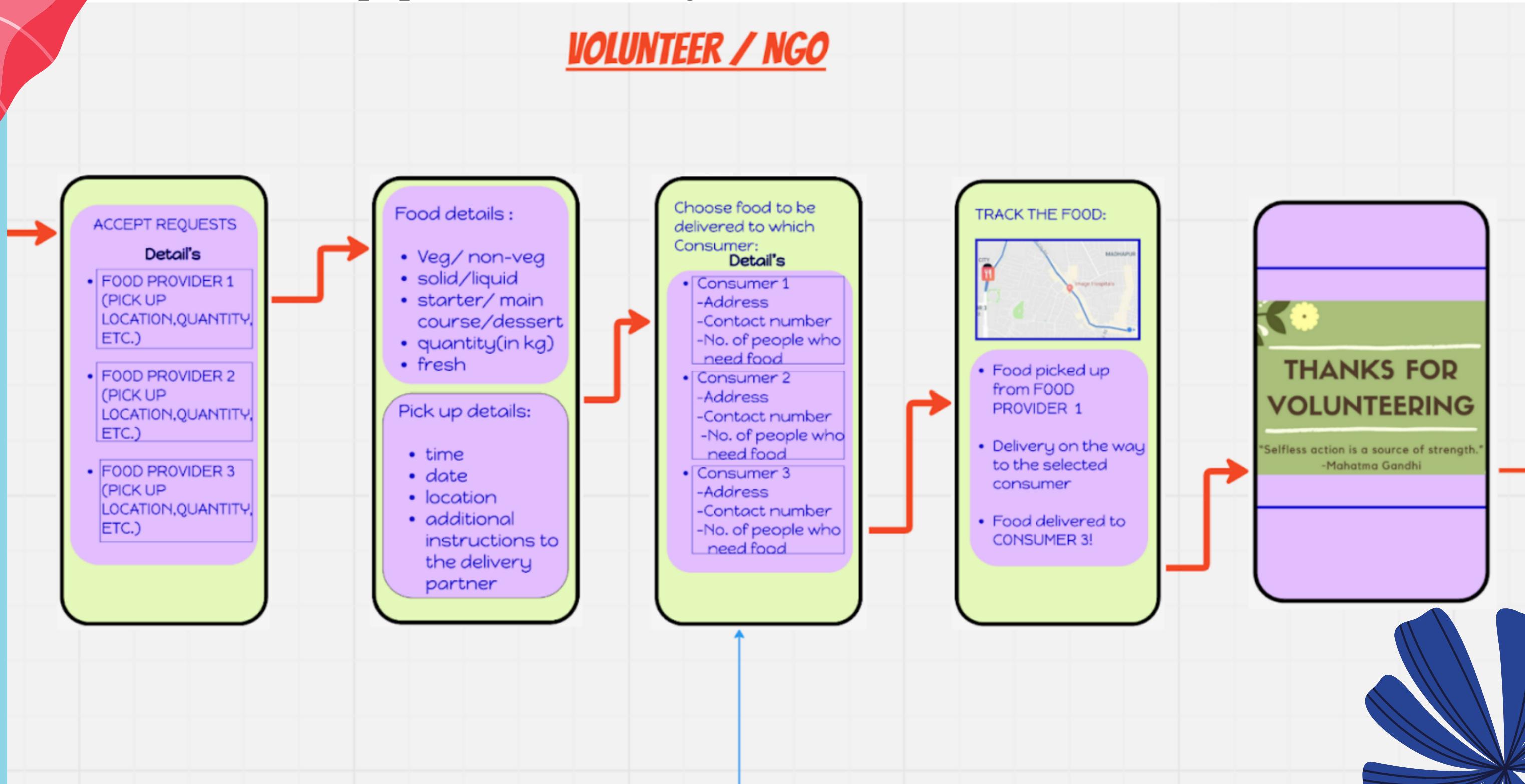


# App screen for FOOD PROVIDER

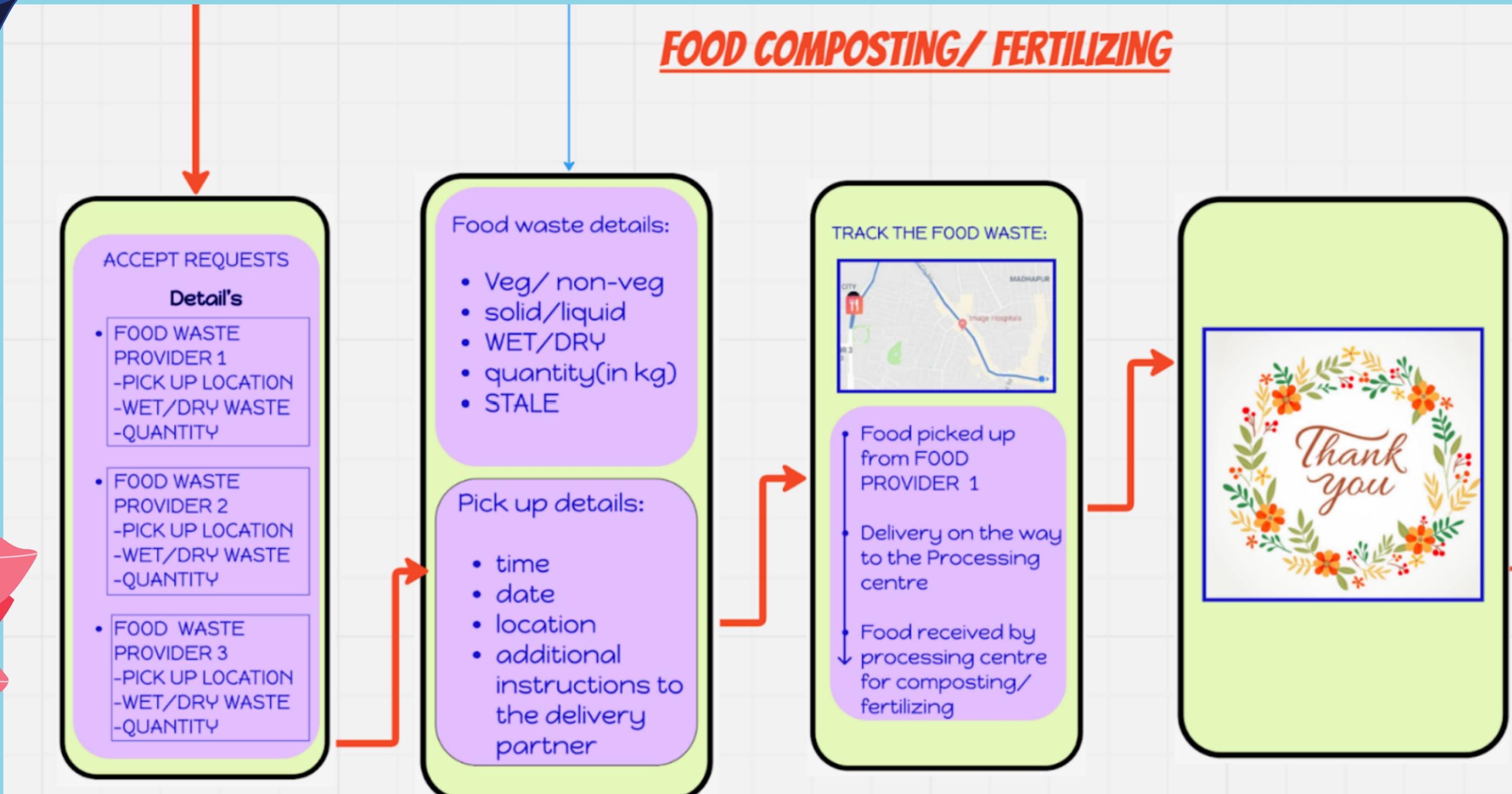


# *App screen for VOLUNTEER/NGO*

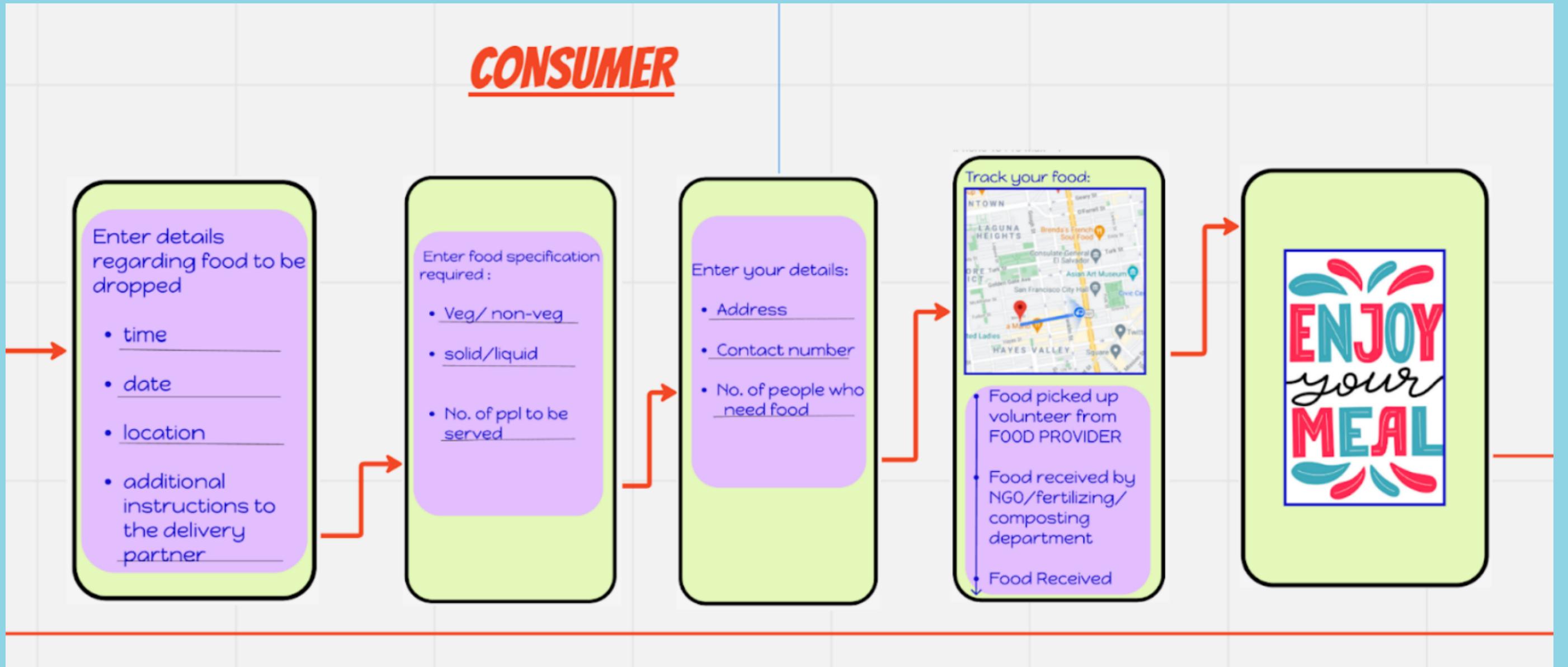
**VOLUNTEER / NGO**



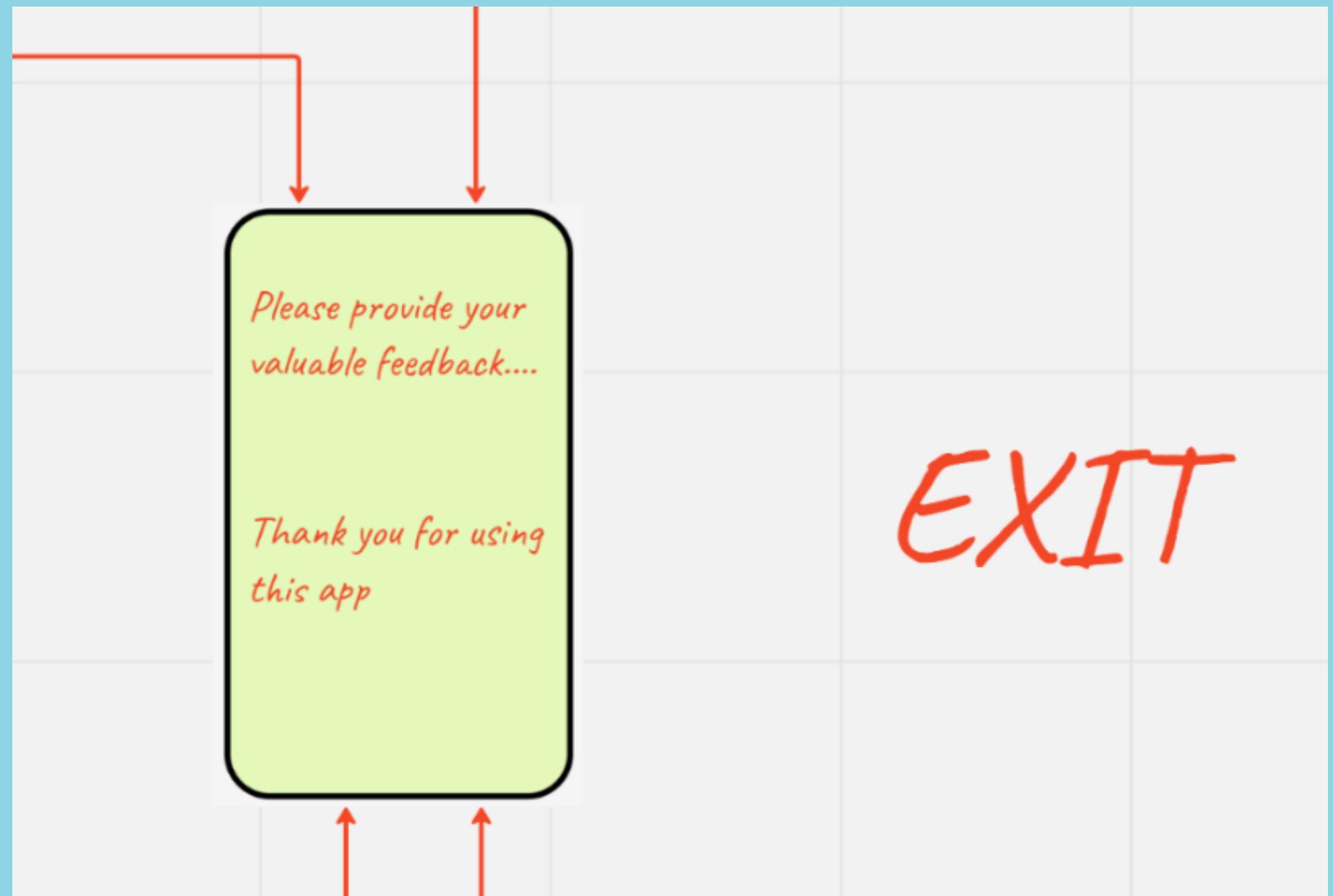
# *App screen for FOOD COMPOSTING/FERTILIZING*



## *App screen for CONSUMER*



# *App screen for FEEDBACK*



# Sign up & Account Creation

HI-FI  
DESIGN

The image displays three screenshots of the MEAL Greenhouse app's sign-up process, showing a progression from the main landing screen to account creation and role selection.

**Screenshot 1: iPhone 13 Pro Max - 11**

This screenshot shows the main landing screen of the app. It features a green background with a faint illustration of a greenhouse. At the top, there is a white header bar with the MEAL logo (MEAL in a stylized font with colored squares, followed by GREENHOUSE). Below the header, the text "Together we can tackle hunger!" is displayed in green. At the bottom, there is a green button labeled "Sign up free" and three black buttons for "Continue with Google", "Continue with Facebook", and "Continue with Apple".

**Screenshot 2: Create Account**

This screenshot shows the "Create Account" screen. It has a light green background with a white header bar. The title "Create Account" is at the top. Below it are four input fields: "Enter your full name", "Enter your email", "Enter your phone number", and a dropdown menu labeled "Select your role". A "Next" button is located at the bottom right of the input area. A keyboard is visible at the bottom of the screen.

**Screenshot 3: Choose Role**

This screenshot shows the "Choose Role" screen, which is identical in layout to the previous one but with a different title. The title "Create Account" is at the top. Below it are the same four input fields: "Enter your full name", "Enter your email", "Enter your phone number", and a dropdown menu labeled "Select your role". The dropdown menu now lists five options: "Food Producer", "Food Distributor", "Food Composting/Fertilizing", and "Food Consumer". A keyboard is visible at the bottom of the screen.

# App screens for consumers

Home - Producer

## Pickup Updates

Distributor Name  
Distributor Role

CALL TRACK

- Distributor out for pickup
- Distributor at establishment
- Distributor picked up food
- Food handover confirmed by both sides
- Distributor distributed food

## Planned Pickups

3 kg pick up by Roshan Sura on 3rd Feb at 19:30

5 kg pick up on 3rd Feb at 19:30 (Not confirmed)

## Previous Pickups

3 kg picked up by Gauri Kunda on 3rd March at 20:30

5 kg picked up by Tara Deo on 23rd March at 20:45

Pickup Summary Alt

## Pickup Summary

Distributor Name  
Distributor Role

CALL TRACK

- Distributor out for pickup 7:45 AM
- Distributor at establishment 7:50 AM
- Distributor picked up food 8:15 AM
- Food handover confirmed by both sides 8:17 AM
- Distributor distributed food 9:00 AM

## Pickup Items

Urad Chana Dal 1.2 kg 25°C 2-3h

Sarson ka Saag 0.5 kg 30°C 2-4h

Roti 1 kg 30°C 2-4h

## Distribution Proof



Plan Pickups

## Plan Pickups

February 2023

S	M	T	W	T	F	S
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	1	2	3	4
5	6	7	8	9	10	11

## Repeating Pickups

+ 2-3 kg pick up every Monday at 19:30

## Add pickup

**Plan Pickups**

February 2023 < >

S M T W T F S

**Add pickup**

23rd Jan 9:30 PM

**Items**

- Urad Chana Dal**  
1.2 kg 25°C 2-3h
- Sarson ka Saag**  
0.5 kg 30°C 2-4h
- Roti**  
1 kg 30°C 2-4h

**ADD PICKUP**

123 space return

smile microphone

## Add pickup - Add/Edit it...

23rd Jan 9:30 PM

**Items**

- Urad Chana Dal**  
1.2 kg 25°C 2-3h
- Sarson ka Saag**  
0.5 kg 30°C 2-4h

**Item name**  
Weight kg Temperature °C Spoiling time h

**ADD PICKUP**

123 space return

smile microphone

## Edit pickup

**Plan Pickups**

February 2023 < >

S M T W T F S

**Edit pickup**

23rd Jan 9:30 PM

**Items**

- Urad Chana Dal**  
1.2 kg 25°C 2-3h
- Sarson ka Saag**  
0.5 kg 30°C 2-4h
- Roti**  
1 kg 30°C 2-4h

**EDIT PICKUP**

123 space return

smile microphone

## Add pickup - Add/Edit it...

23rd Jan 9:30 PM

**Items**

- Urad Chana Dal**  
1.2 kg 25°C 2-3h
- Sarson ka Saag**  
0.5 kg 30°C 2-4h
- Roti**  
1 kg 30°C 2-4h

**Item name** trash  
Weight kg Temperature °C Spoiling time h

**EDIT PICKUP**

123 space return

smile microphone

# App screens for distributors

iPhone 13 Pro Max - 2

## Pickup Updates

Producer/Consumer  
Producer/Consumer Role

CALL

Producer Name ready for pickup

Producer Name handed over food

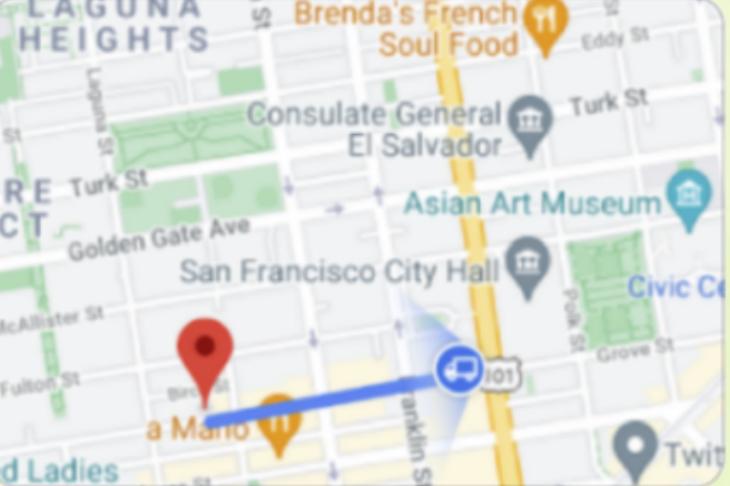
Distributing food (67%)

To Vasudha, Location at 19:30

To Vasudha, Location at 20:15

To Vasudha, Location at 20:30

SUMMARY LOG DISTRIBUTION



### Planned Pickups

3 kg pick up from Roshan Sura on 3rd Feb at 19:30

iPhone 13 Pro Max - 4

## Pickup Summary

Producer Name  
Producer Role

CALL

### Pickup Information

Urad Chana Dal 1.2 kg 25°C 2-3h

Urad Chana Dal 1.2 kg 25°C 2-3h

Urad Chana Dal 1.2 kg 25°C 2-3h

### Distribution Summary

Urad Chan... 0.2 kg 20:15 Vasudha

### Distribution Proof



ADD MORE

iPhone 13 Pro Max - 7

## Plan pickups

### Suggested pickups

2-3 kg pick up on Monday at 19:30

2-3 kg pick up every Monday at 19:30

2-3 kg pick up every Monday at 19:30

### Planned pickups

February 2023

S	M	T	W	T	F	S
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	1	2	3	4
5	6	7	8	9	10	11

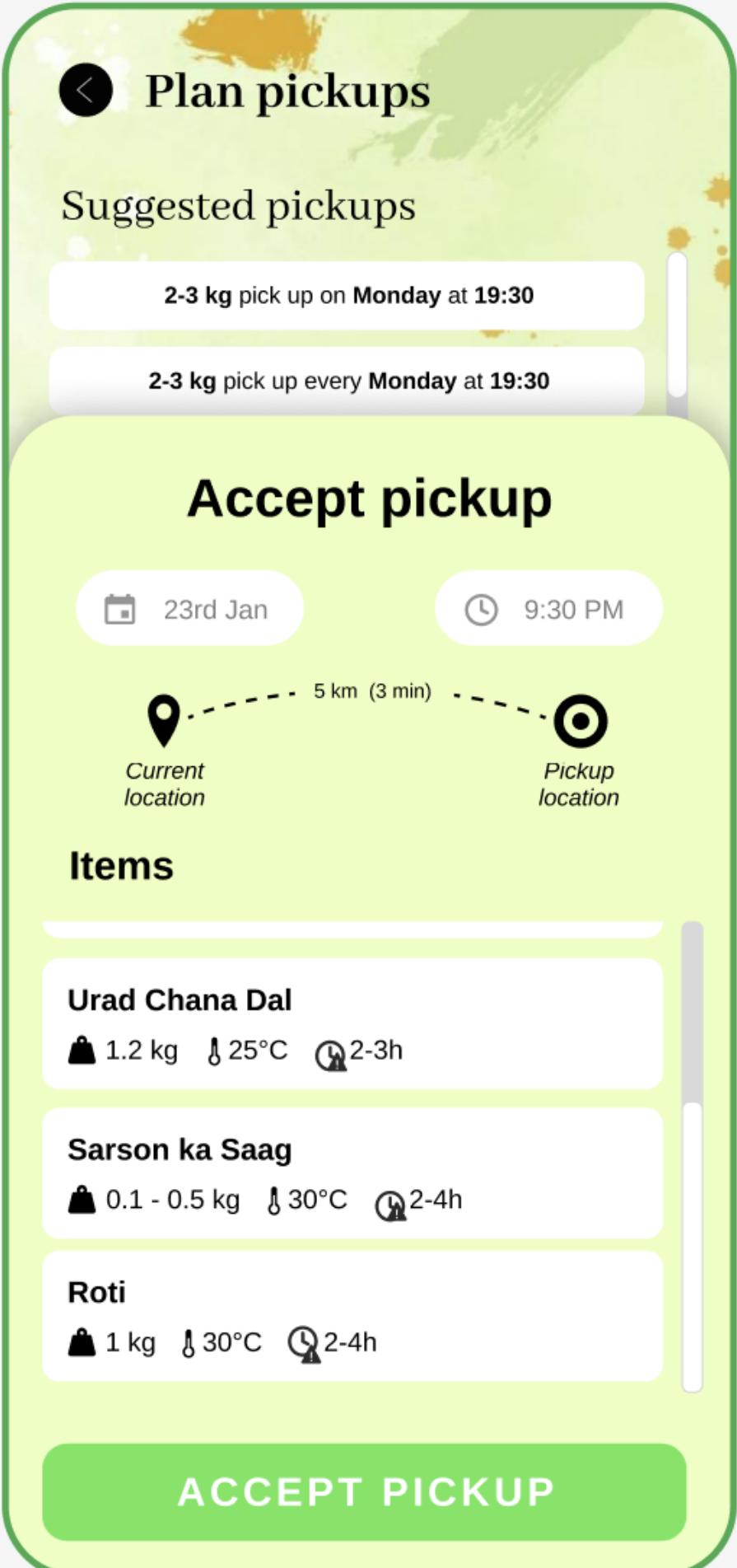
### Repeating pickups

2-3 kg pick up on Monday at 19:30

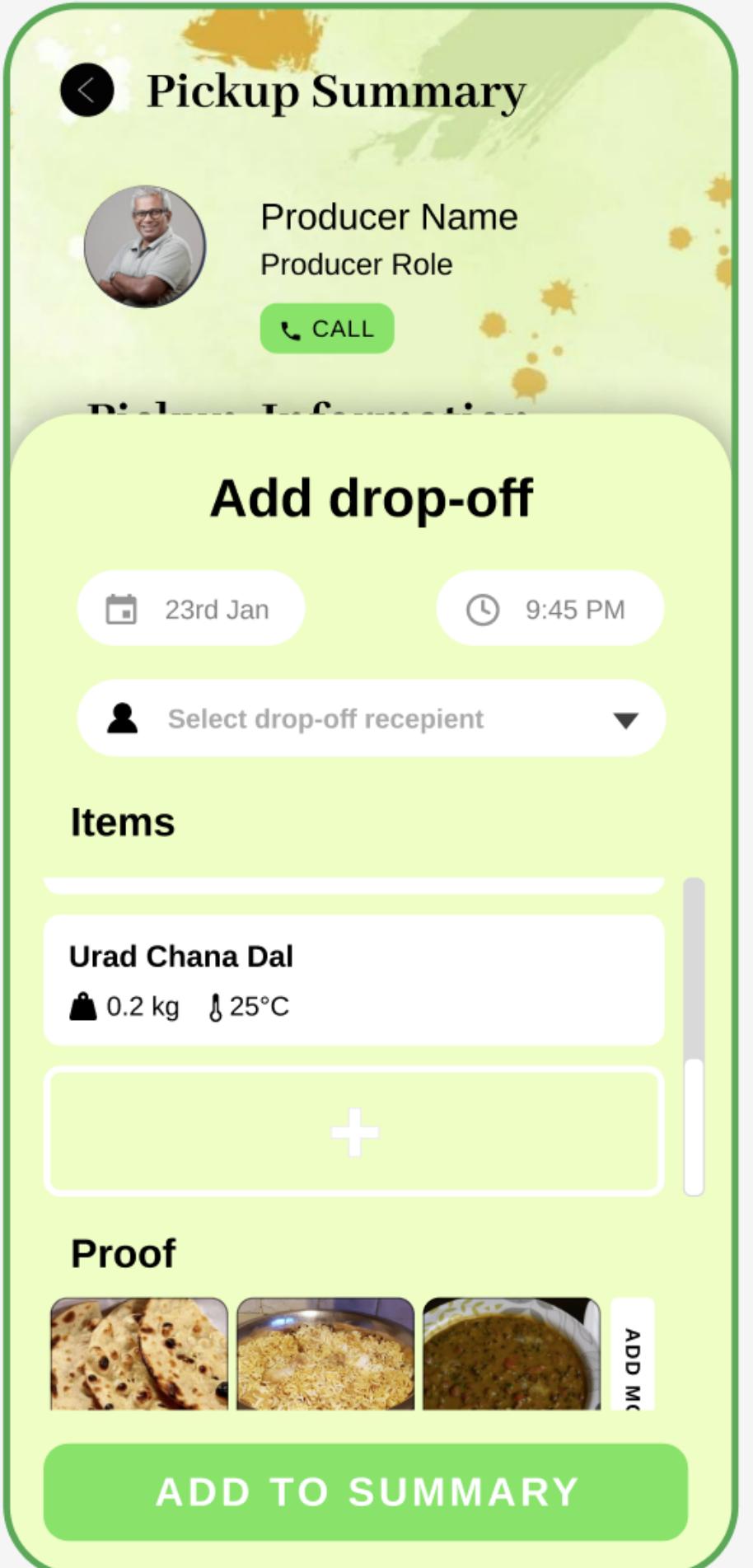
2-3 kg pick up every Monday at 19:30

2-3 kg pick up every Monday at 19:30

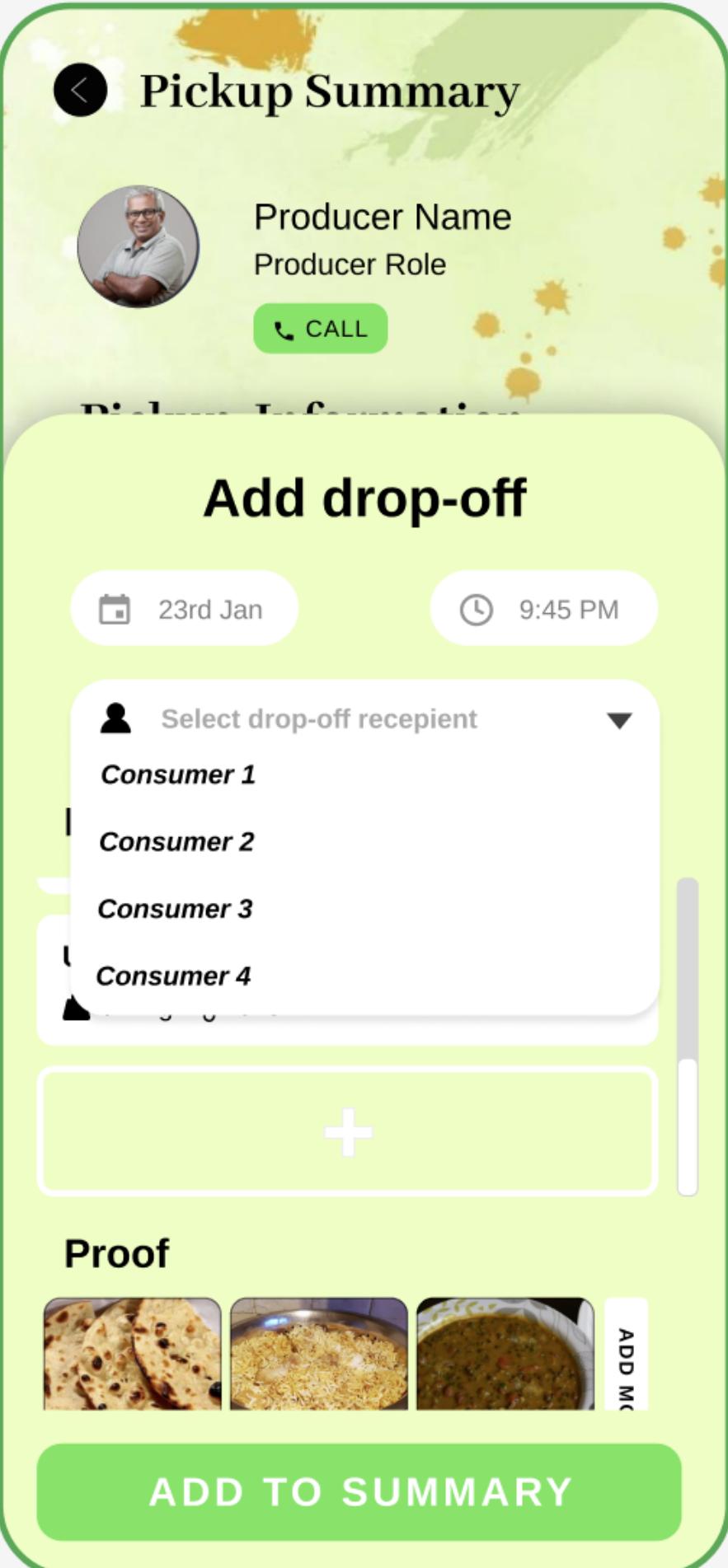
iPhone 13 Pro Max - 13



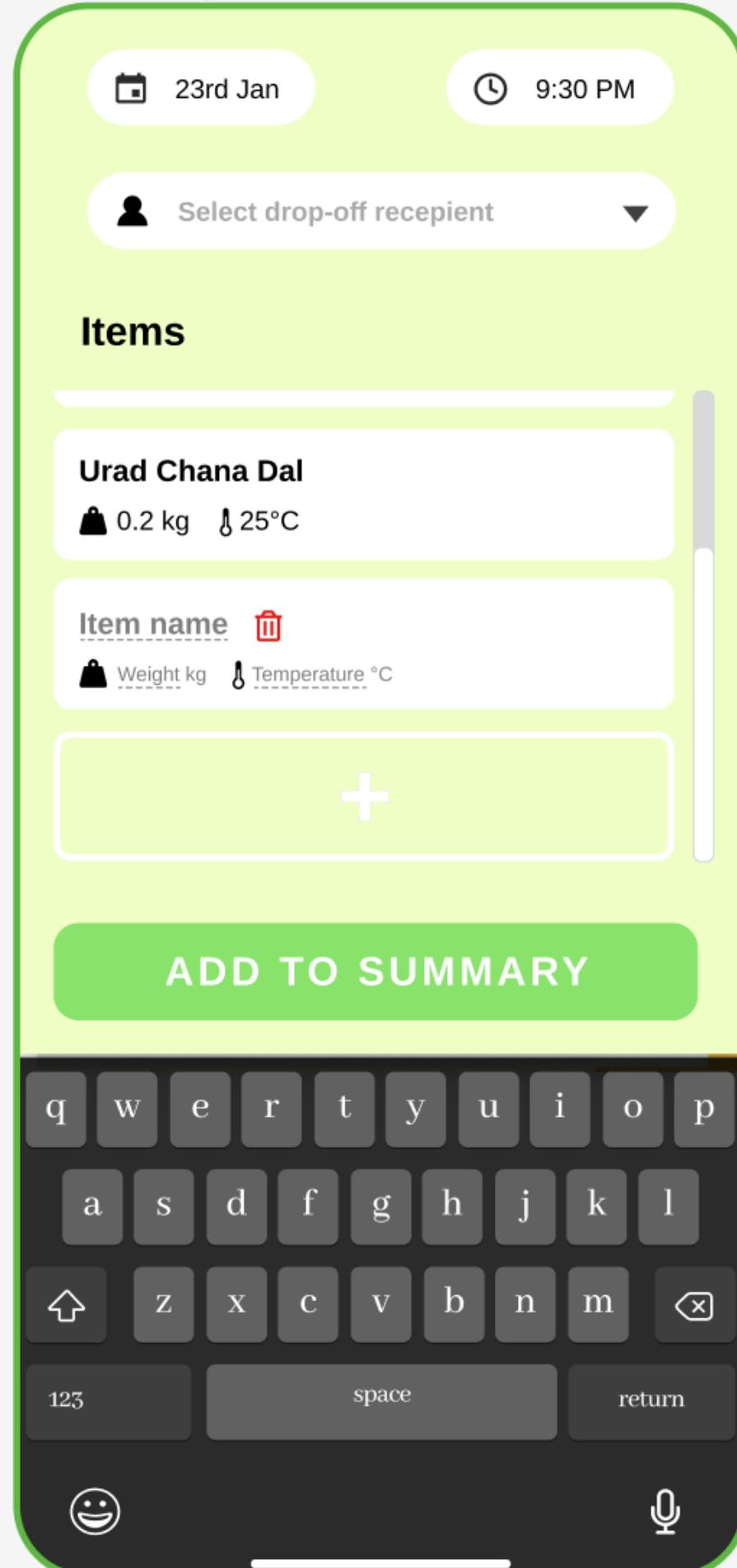
iPhone 13 Pro Max - 14



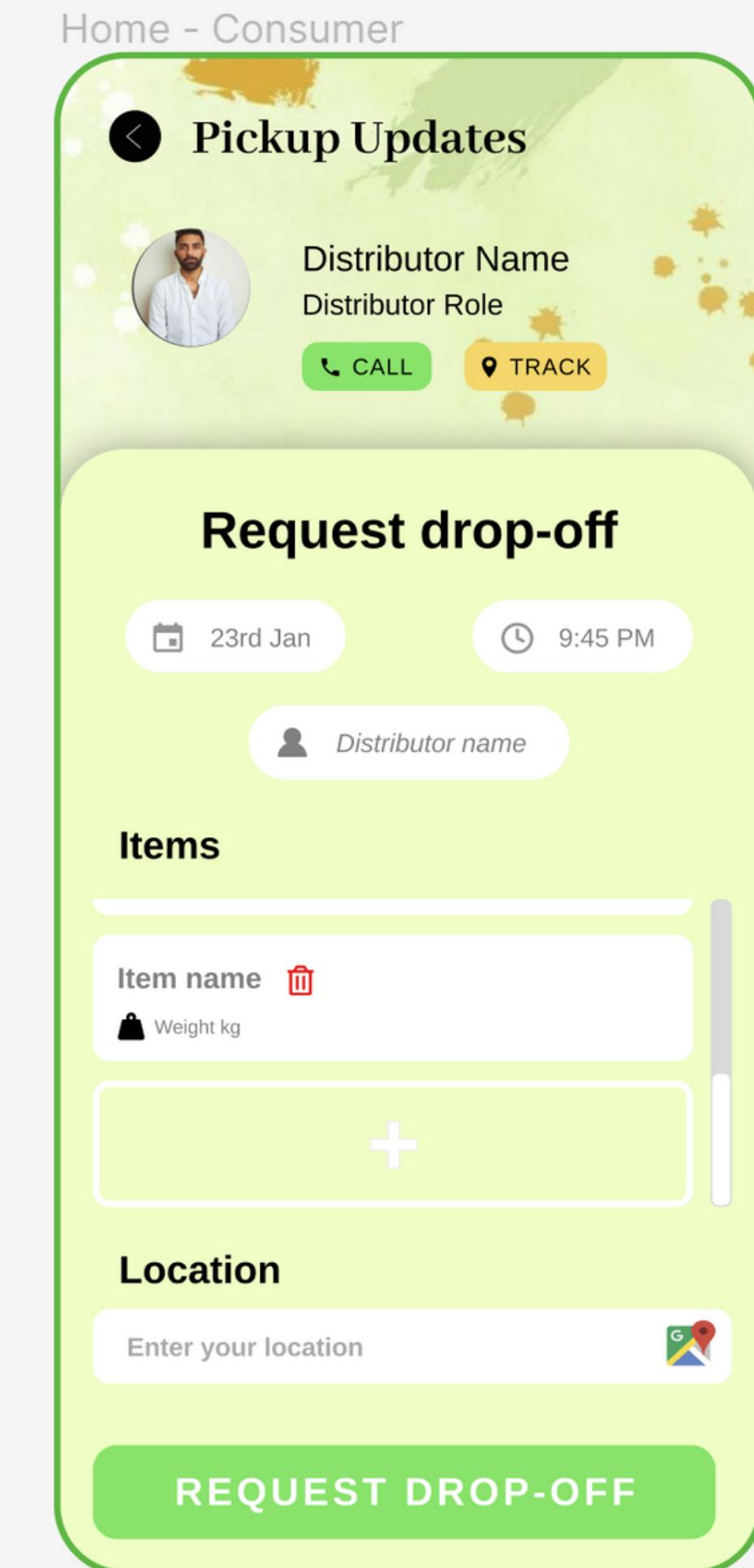
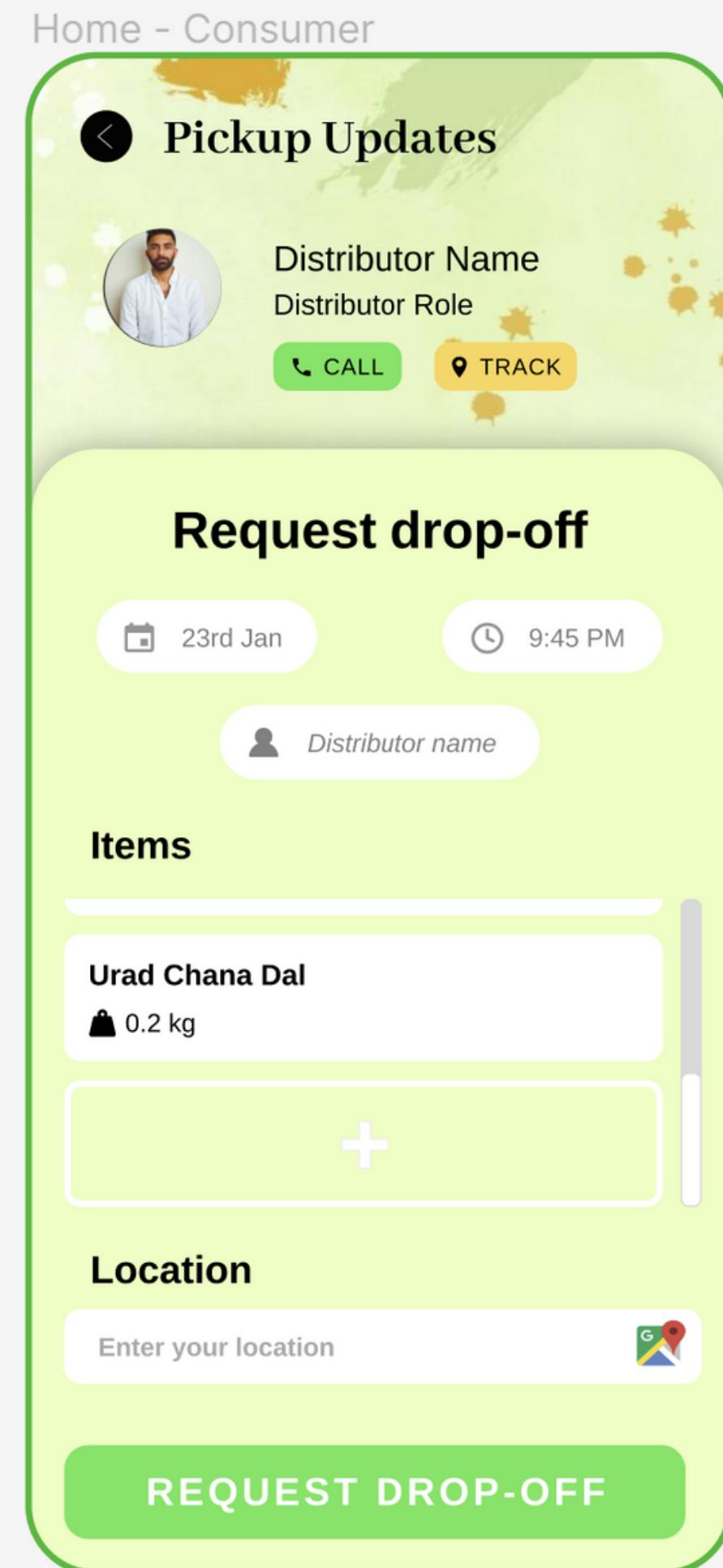
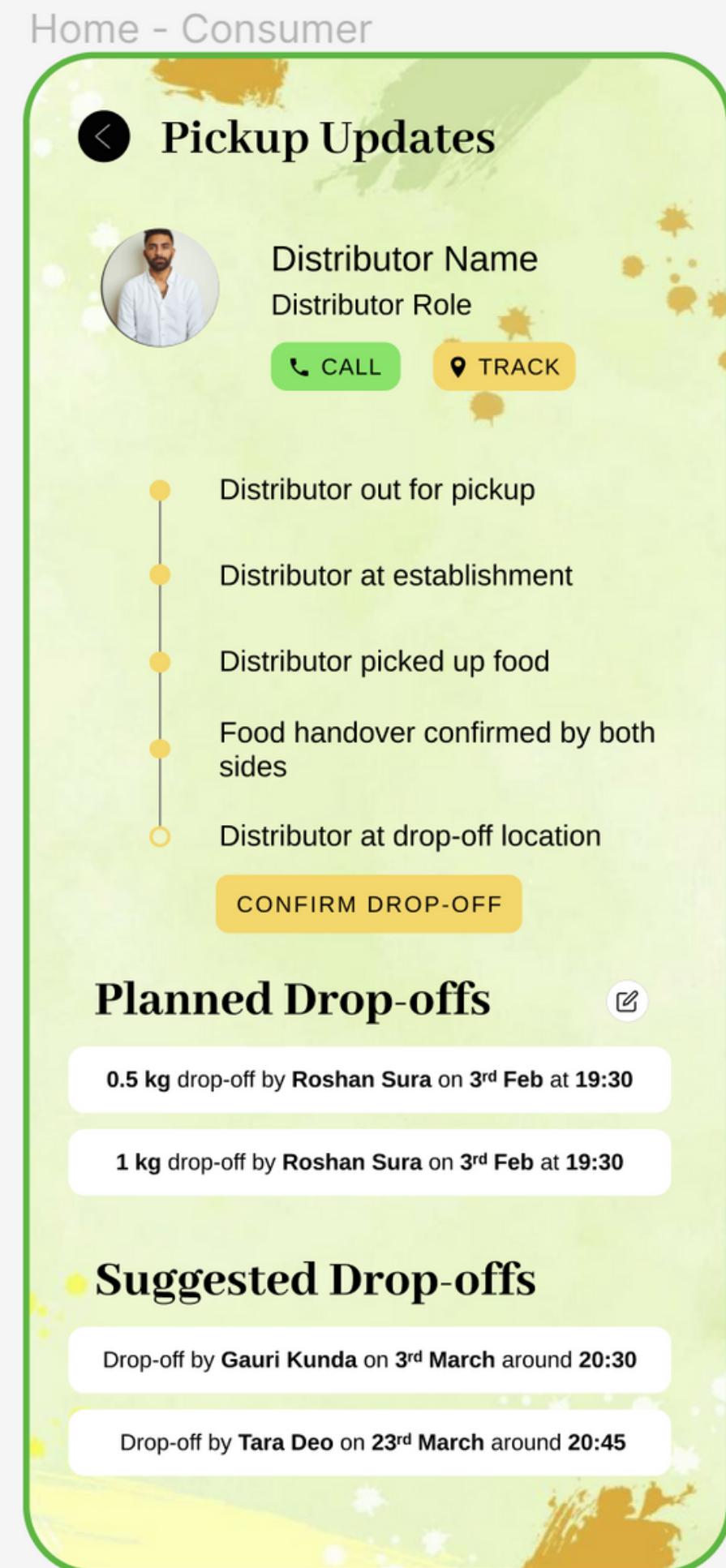
iPhone 13 Pro Max - 15



Add drop-off



# App screens for consumers

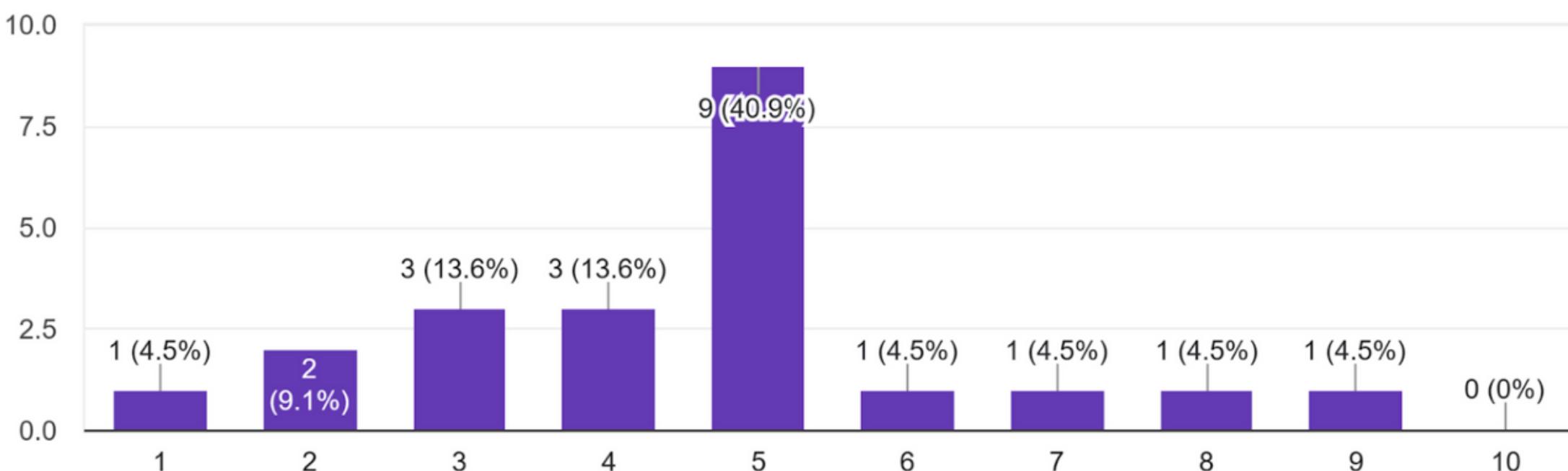


# SURVEYS

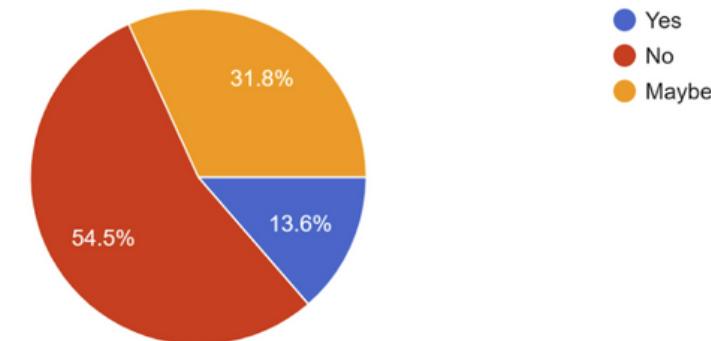
Learning about  
our users

How frequently do you go out to eat? (Hotels, restaurants etc.)

22 responses

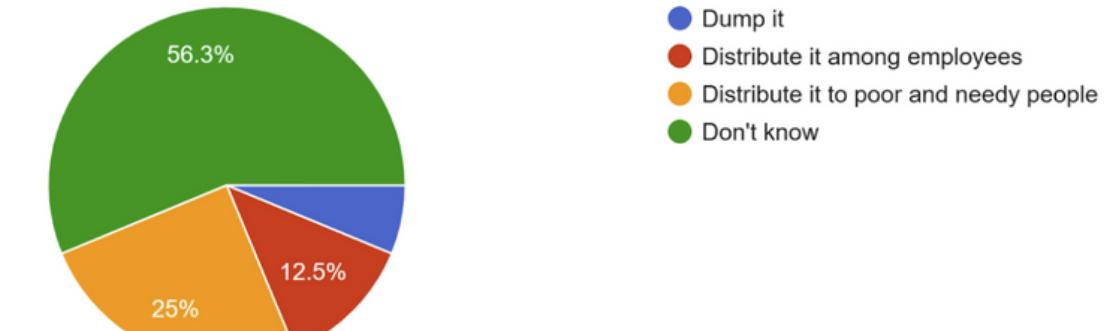


Do you know someone who is into catering business?  
22 responses



If you know someone who is into catering business, then what do they do with the food that has been prepared in excess?

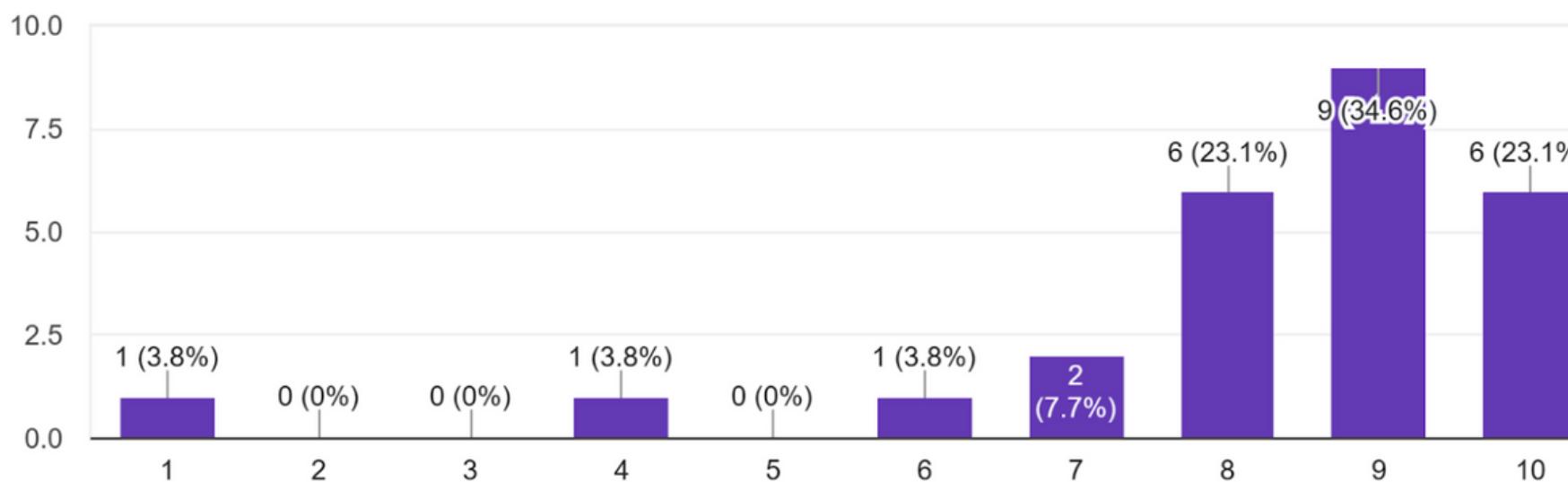
16 responses



# Feedback on our prototype

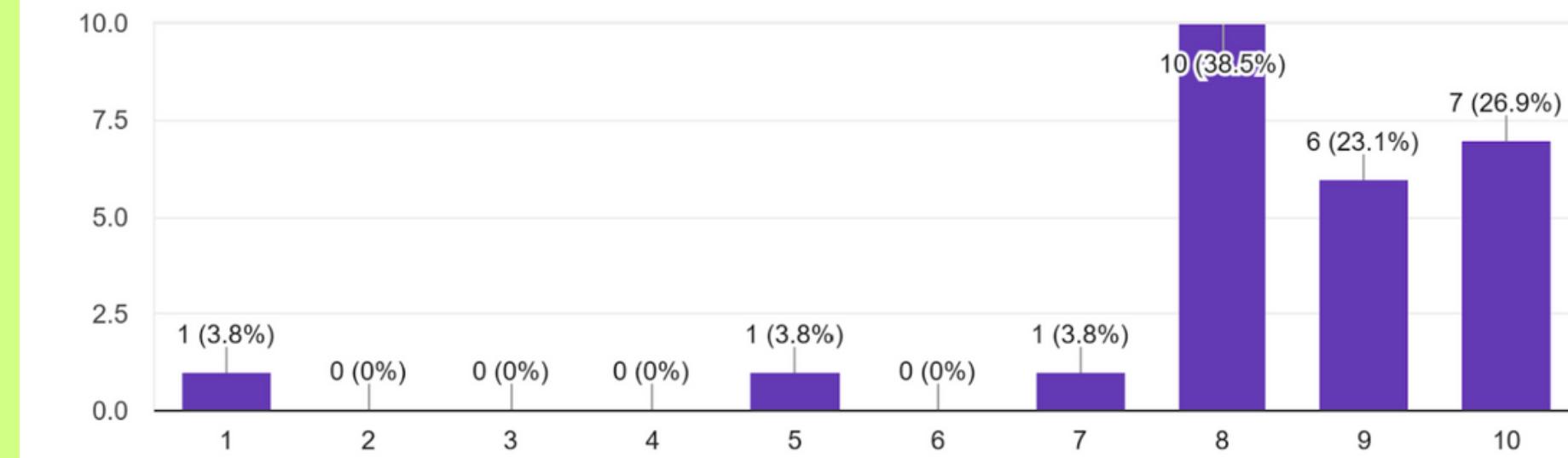
Do you think this app satisfies all the customer needs?

26 responses



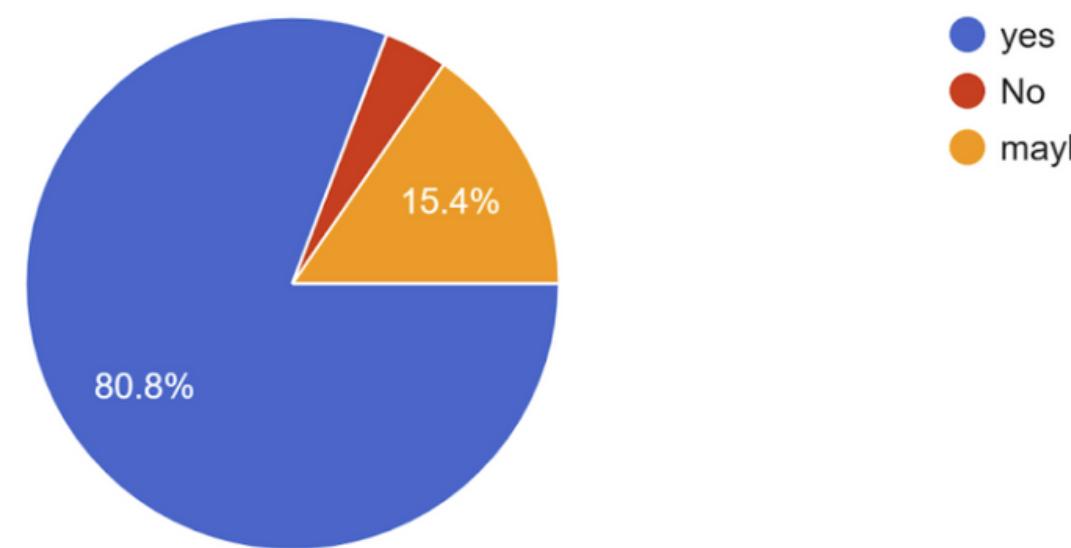
Do you think this app will help us to curb wastage of food?

26 responses



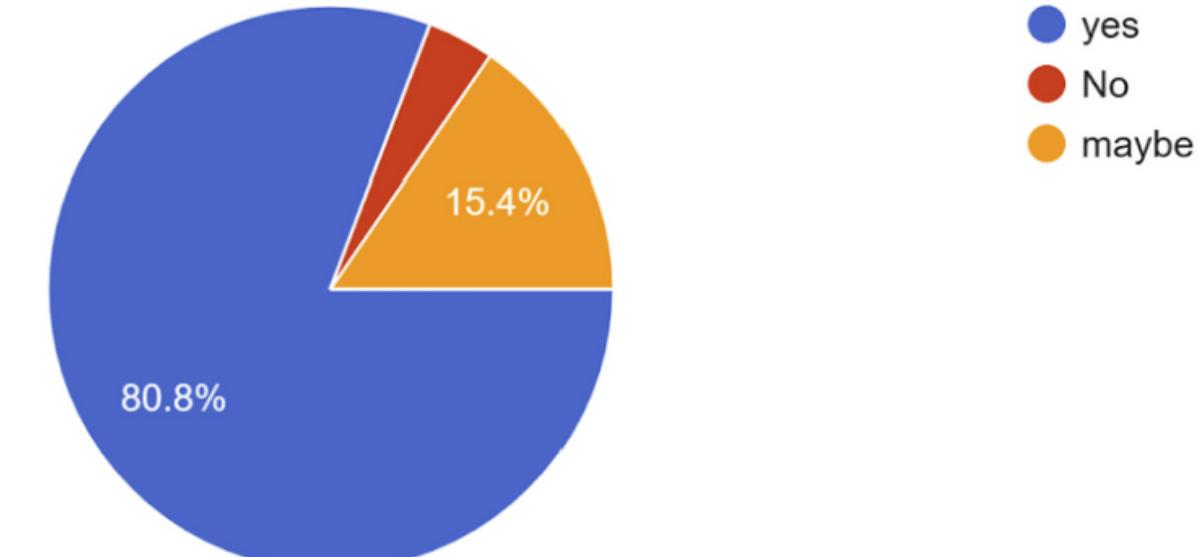
Will this app help us to raise consciousness amongst people to donate the excess food?

26 responses



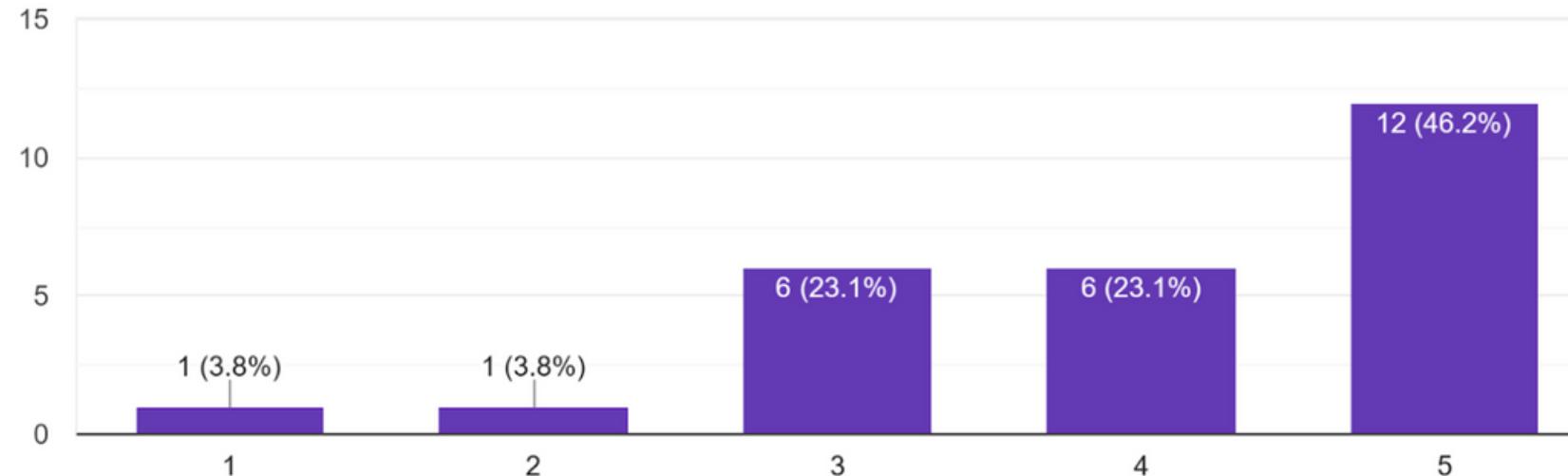
Will this app help ease out the disposal of the food which is not fit to be served?

26 responses



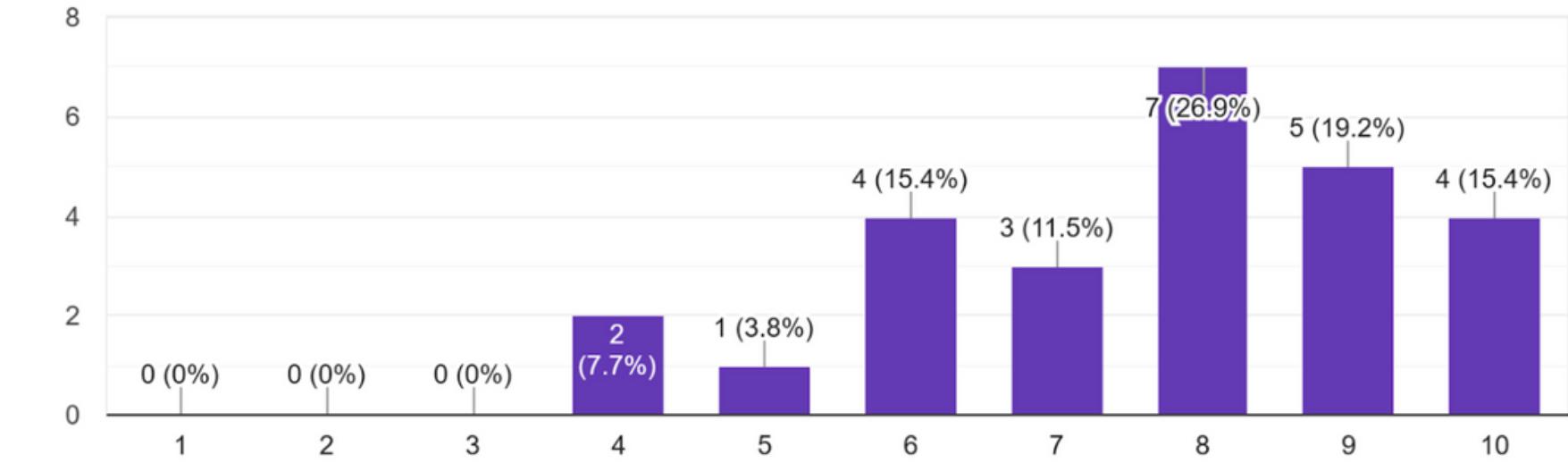
### Is the app interface easy to use?

26 responses



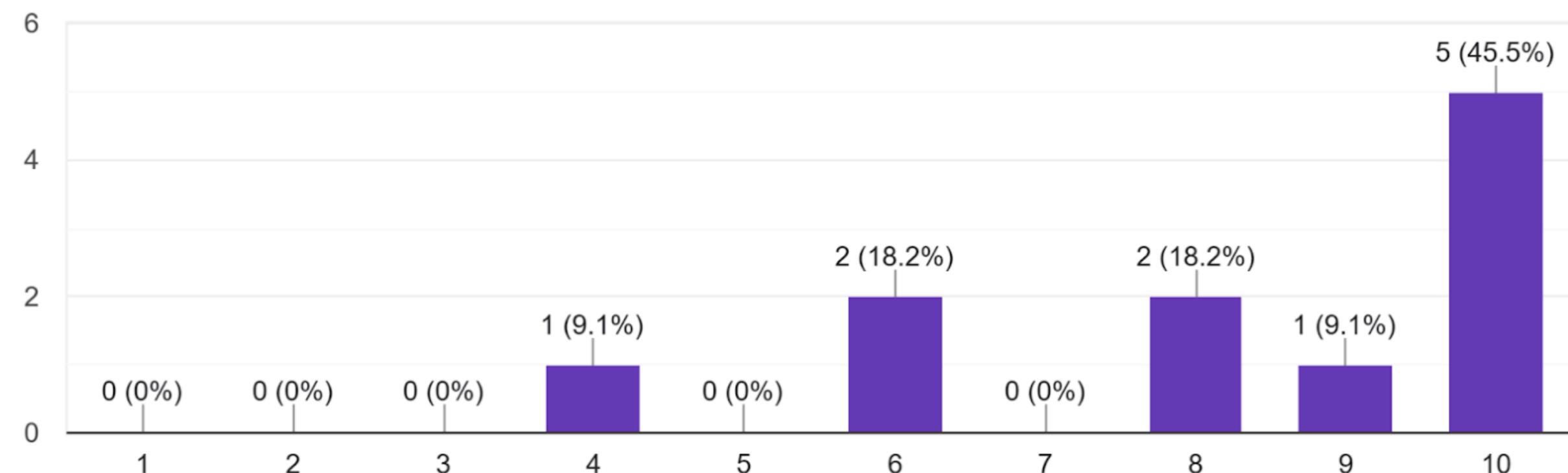
### Is the app easy to learn and memorise

26 responses



### How much would you like to rate our HI-FI prototype?

11 responses



## LEARNINGS AND REFLECTIONS

The learnings that we got after conducting our surveys were that we can make our prototype easier to learn, and more vibrant with lesser and easy features as it confuses the user.

As a team, we faced challenges but learned to overcome them understand each other's strengths and weaknesses, and work accordingly. We have tried our best to incorporate most of the ideas in the best possible way

Most importantly we learned how to understand the concerns of the user and how to address it in order to make our product more convenient, easy, and handy to use and learn, by conducting surveys at each and every step of prototyping. We also learned that how hard we try there is still scope for improving our designs and making it more user friendly.

How can we make the app more user friendly and efficient?

11 responses

No words

Make it more easy to learn

make it more colorful

Just by giving some credit points or rewards

NA

UI can be improved. Lot of unnecessary text is there in UI

It's fine

can include a bot that tells the user how to use the app.

I don't know

make it more vibrant

# REFERENCES AND LINKS

Mind Map - [https://miro.com/app/board/uXjVP3fKMaY=/?  
share\\_link\\_id=675870679767](https://miro.com/app/board/uXjVP3fKMaY=/?share_link_id=675870679767)

Application Task Flow - [https://miro.com/app/board/uXjVP2VNJag=/?  
share\\_link\\_id=166770886406](https://miro.com/app/board/uXjVP2VNJag=/?share_link_id=166770886406)

Lo-Fi Design - [https://miro.com/app/board/uXjVP2Uj4hc=/?  
share\\_link\\_id=271534855912](https://miro.com/app/board/uXjVP2Uj4hc=/?share_link_id=271534855912)

Lo-Fi Alternative Design - <https://miro.com/app/board/uXjVP2fMFPM=/>

Hi-Fi Design - <https://www.figma.com/proto/tvZ8XXD5zDK2P6CKSHvuqv/HCI-Hi-Fi?node-id=13%3A742&scaling=scale-down&page-id=0%3A1&starting-point-node-id=13%3A742&show-proto-sidebar=1>



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