



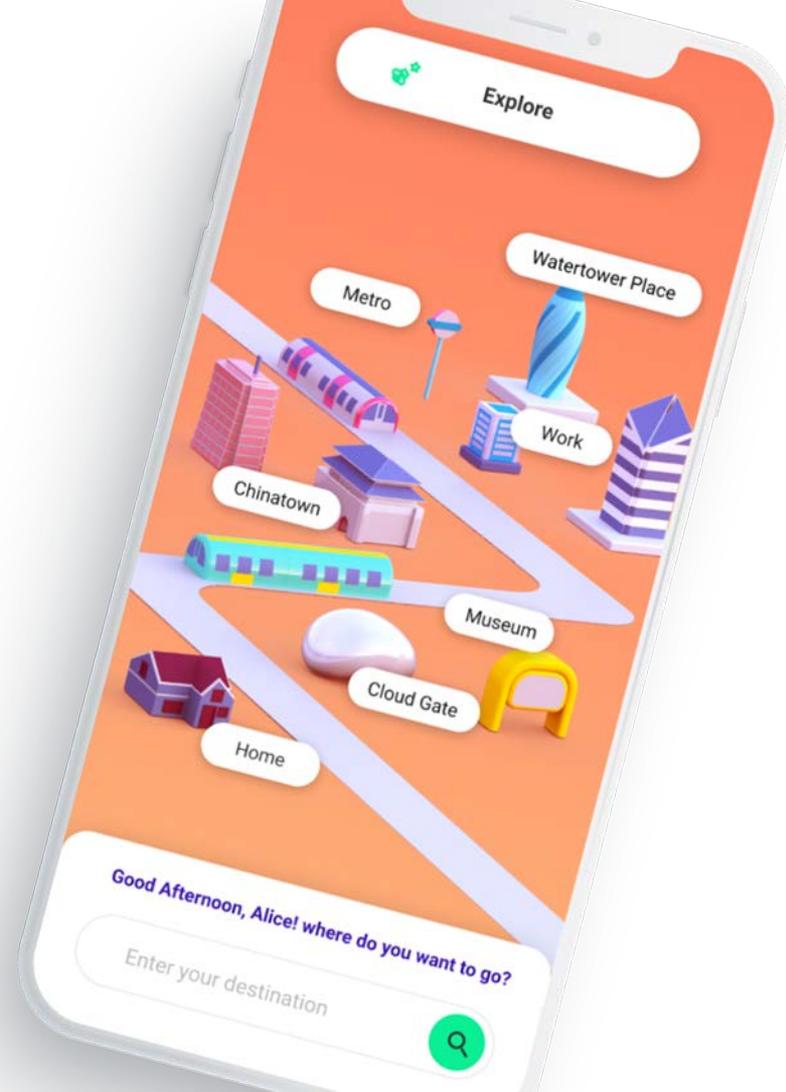
Google Walk

One step closer to a healthier life

Meet Google Walk

The quickest way is rarely the best way –
Google Walk is an Navigation app that brings a healthier lifestyle by helping you to walk a little bit more

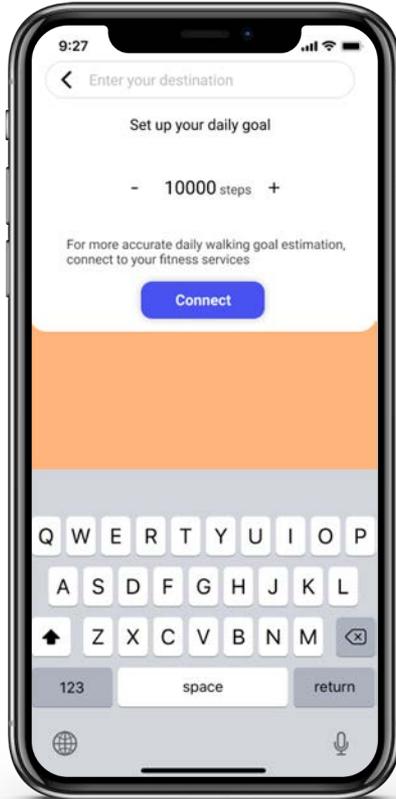
- Designed for walkers who wants to have walking habit
- Takes account walker's safety concerns
- Fits walking into people's everyday life
- Show walkers more enjoyable routes to explore
- Simplify way finding



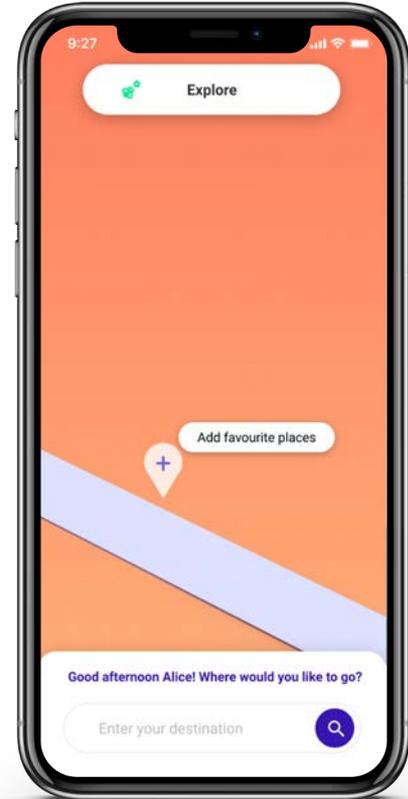
Onboarding with Google Walk



#Minimal



#Well Timed



#Building your own story

Our core Features

Use Case # Safe

Go back home from school at night time

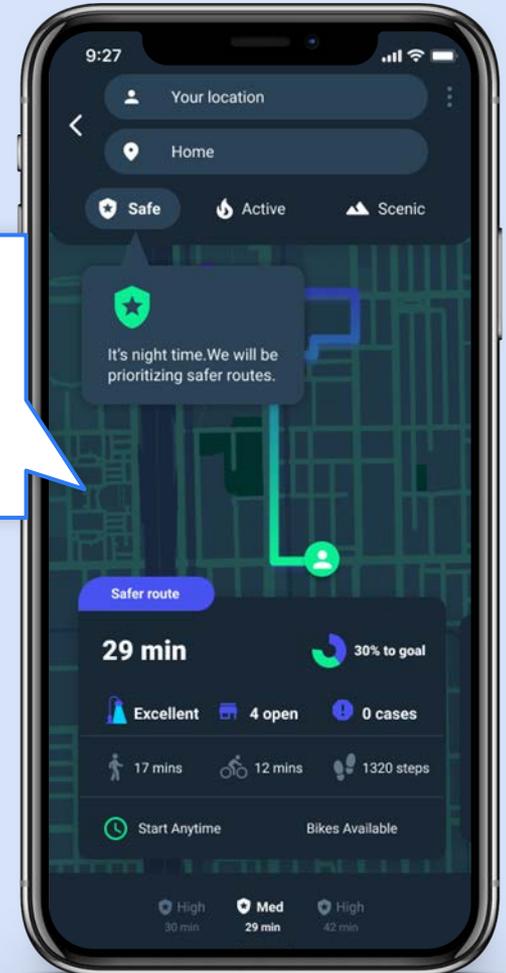


I want to **stay safe**

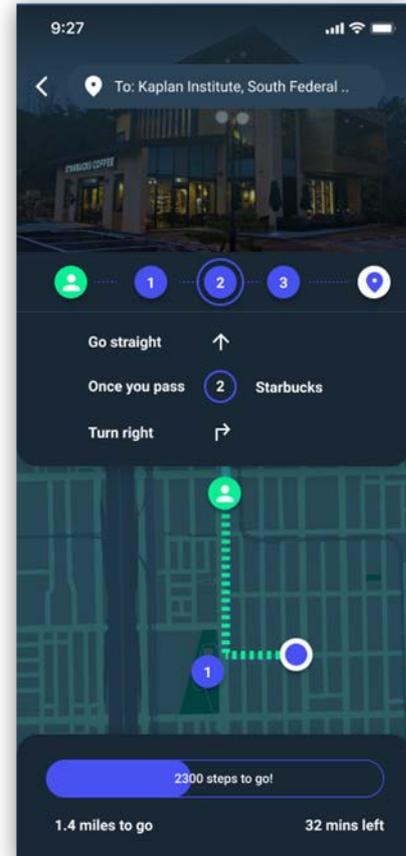
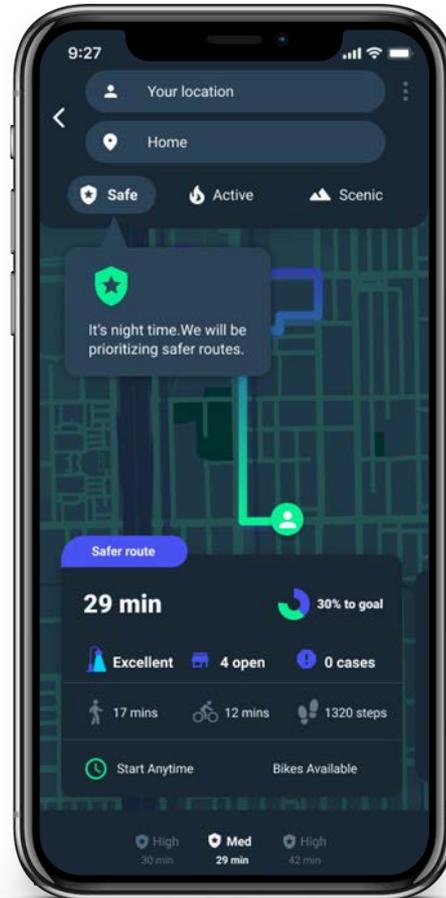
I **have no idea** what is ahead.

Don't worry. I get your back.
I will offer you **safer routes** with:

- **Better lighting**
- **More open stores**
- **Less crime record**



Use Case # Safe



Use Case #Active

Meet fitness goal through daily commute

I need to **reach my destination on time**

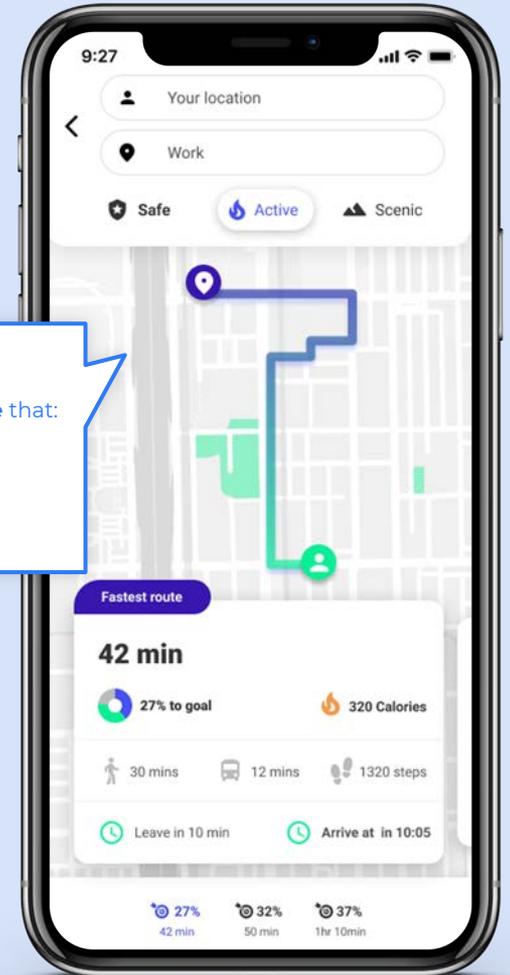
I want to make progress **whenever I can.**

It's a **hassle to arrange time for exercise**

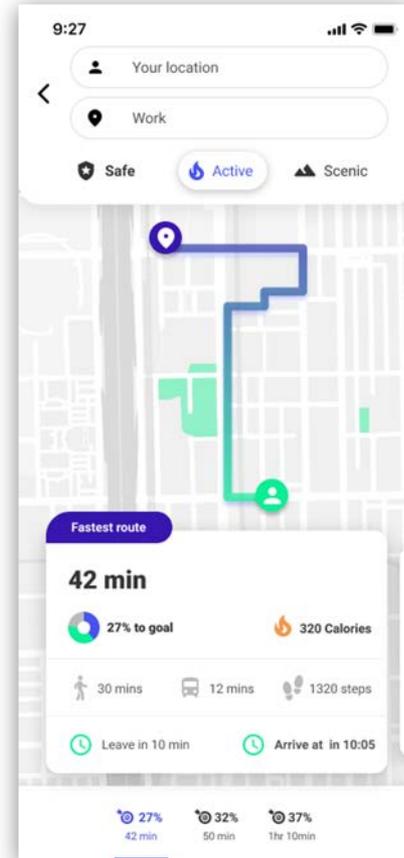
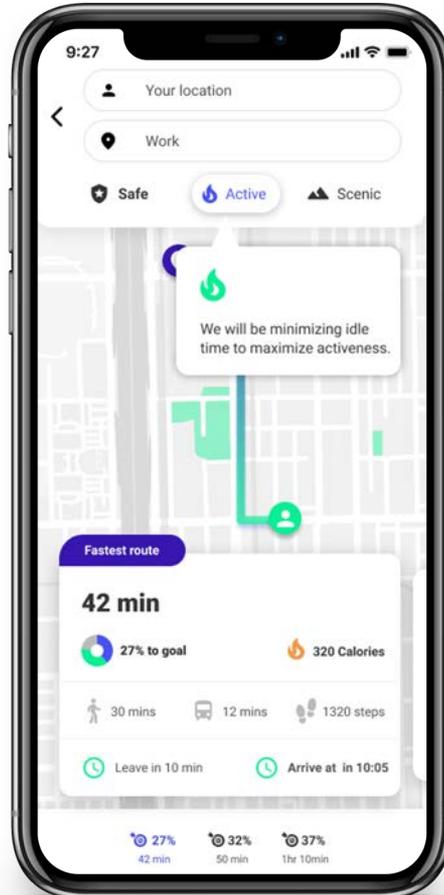
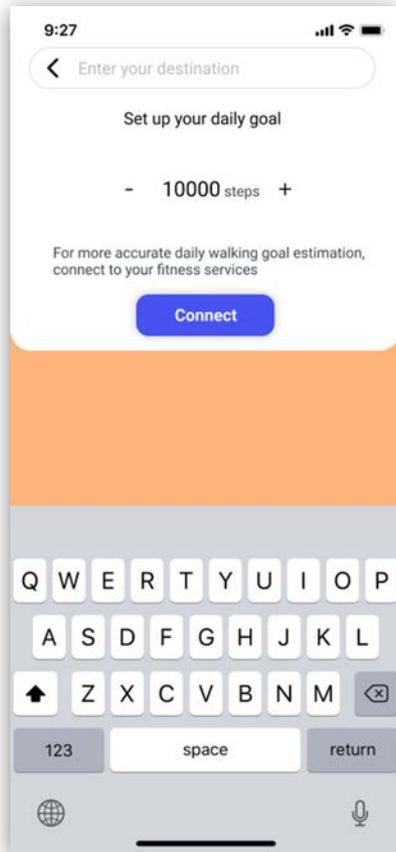


Got it! Let me take care of it.
I will offer you **routes for commute** that:

- **Get you to destination on time**
- **Reduce time wasted on waiting**
- **Help you make progress on fitness**

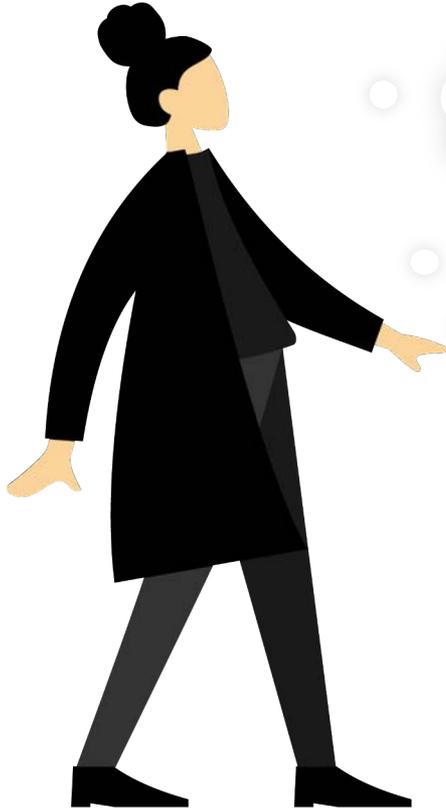


Use Case #Active



Use Case # Scenic

Enjoy the scenery when taking a stroll

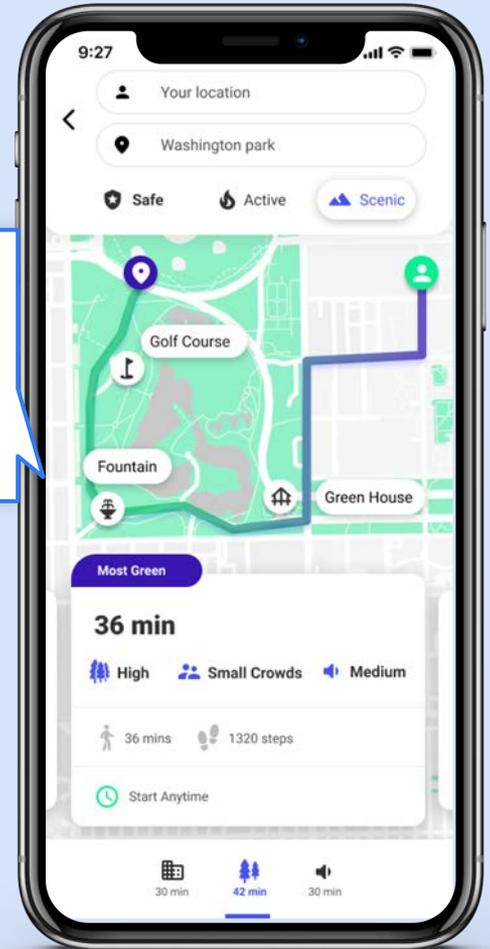


It's **boring** to take the same route every time.

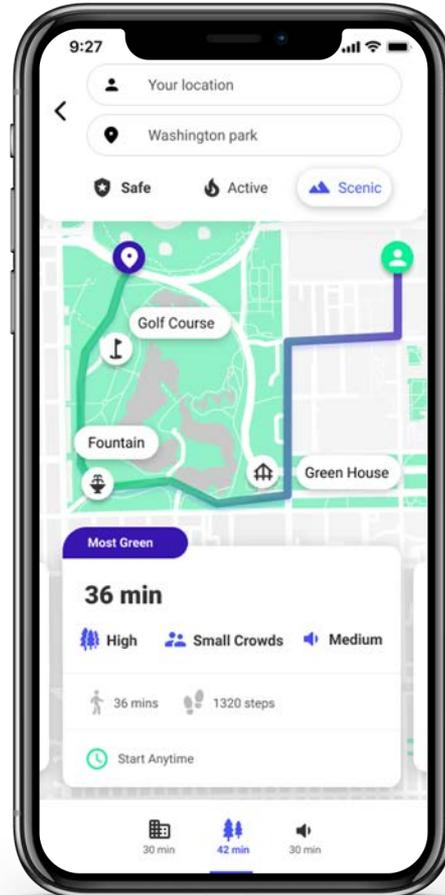
A **quiet place with greenery** in the great would help me relieve stress and have a better mood!

No problem. I am here to help. I will offer you **an enjoyable walk** with:

- More trees and green
- Far away from traffic and noise
- Interesting places to explore



Use Case # Scenic



Use Case # Explore

Exploring your interests on foot

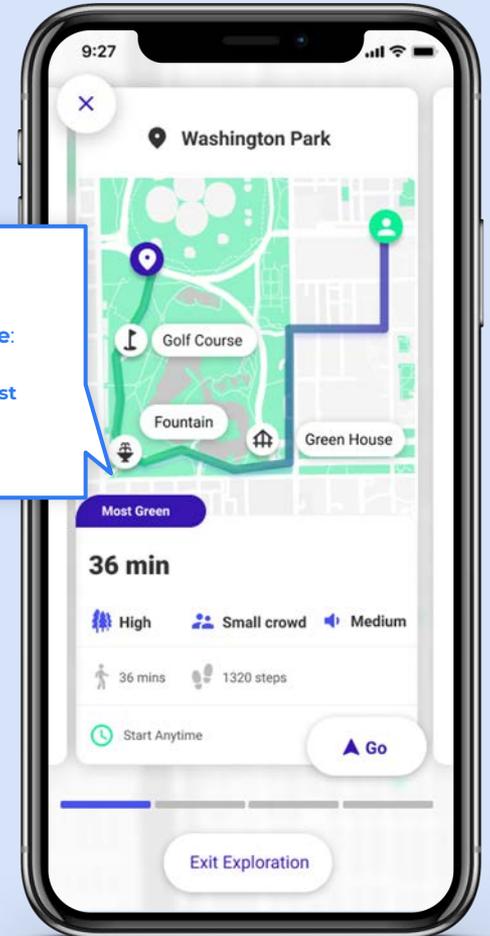


I have some free time but I don't know **where to go**.

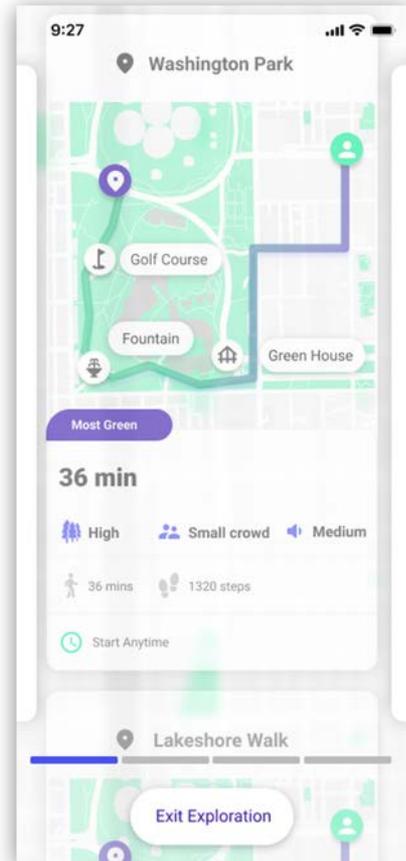
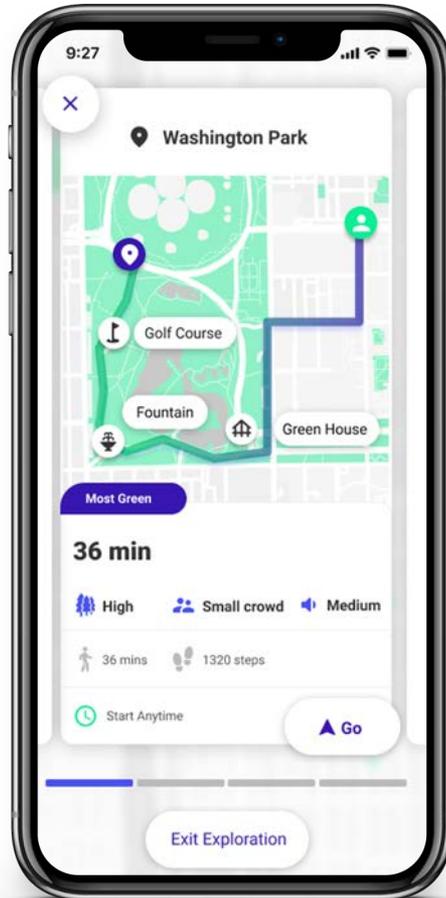
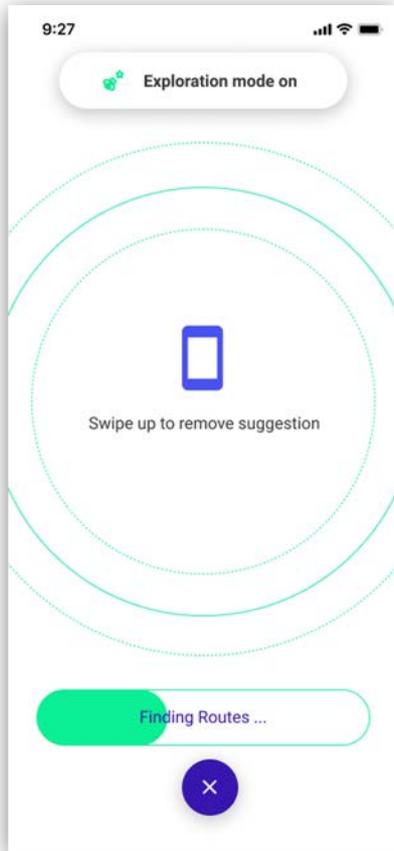
Doing **research** on attractions **is tiring**. I would **give up** on places that are **hard to reach**.

Just a second. I will figure it out.
Check out these **routes to explore**:

- **Cover attractions of personal interest**
- **Within walking distance**



Use Case # Explore



Use Case #Landmark Navigation

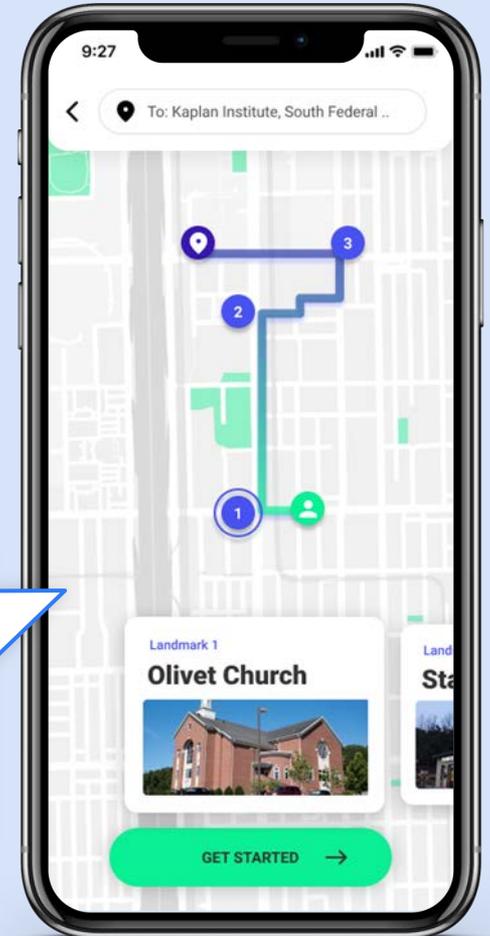
Make wayfinding crystal clear

Map is **hard to read or relate** to the real world.

Even if I **keep checking my phone** to stay on track, **network delay and jitter** can lead me to a wrong path.

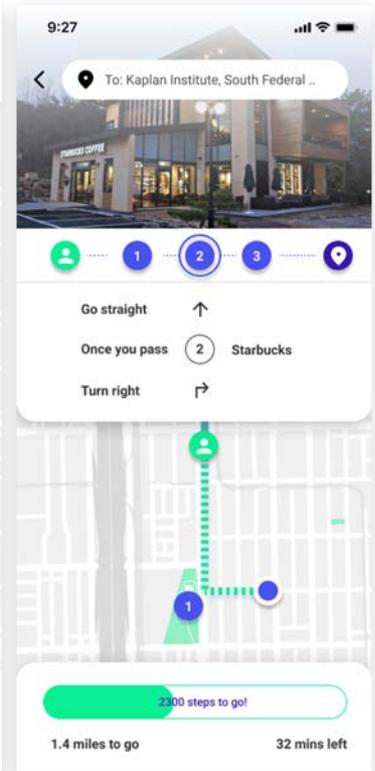
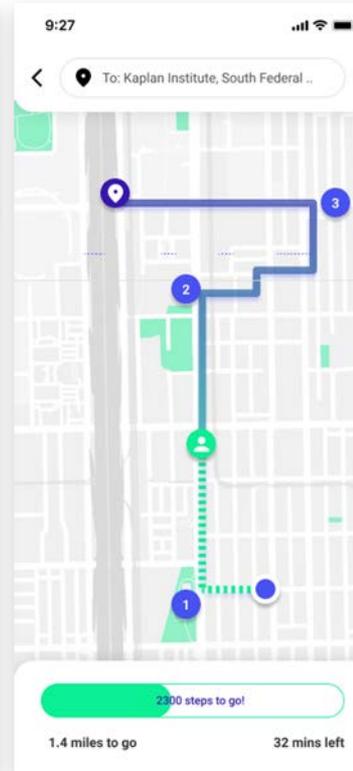
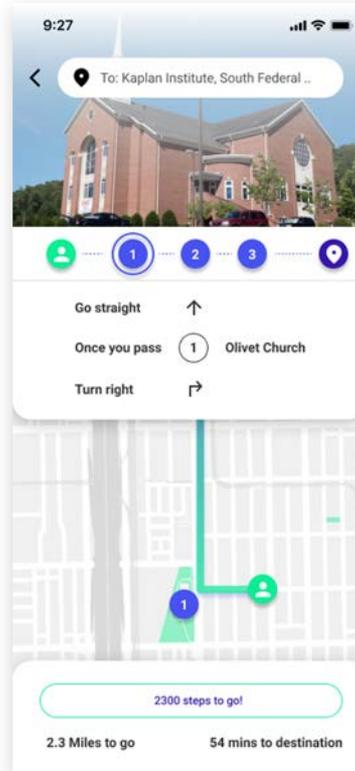
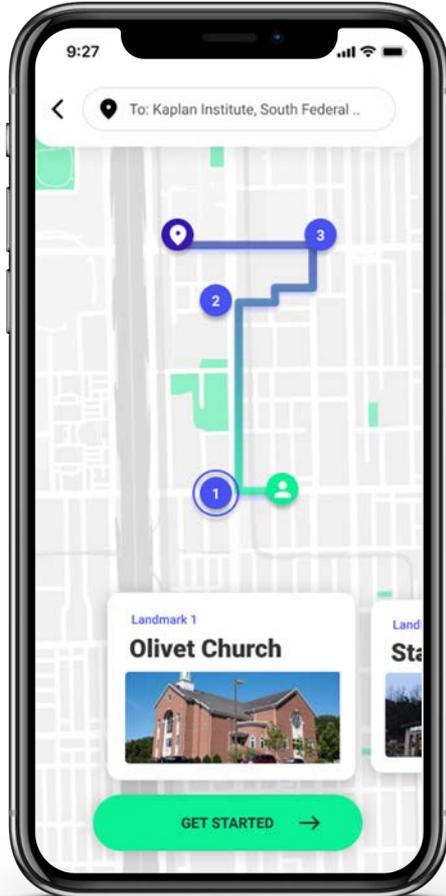
I understand. Here's our solution.
With **landmark navigation**, you are provided

- An overview of route before setting off
- Digestible chunks of trip to track progress
- Intelligible instructions to set you free from the screen



Use Case #Landmark Navigation

“Go straight, once you pass Starbucks, turn right.”



Let's go behind
the Scenes

Why AI is a good fit for our user needs?

	Route Suggestion						Navigation	
User Needs	Safety			Pleasure		Reduce Idle Time		Ease of Navigation
Offerings	Risk reduction	Access to help	Adequate light	Better scenery and environment	Attractions and interests	Motivation of fitness	Fit walking in the time frame	A more intuitive way to navigate
AI's Capabilities	Improving journey experience by considering variables related to safety/pleasure/efficiency . Generating routes based on location, time and user preferences.						Selecting landmarks based on location, time and user habits. Showing dynamic instructions on wayfinding.	
Features	Safe Mode			Scenic Mode	Explore	Active Mode		Landmark Navigation

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Why AI is a good fit for our user needs?

Overall, we use AI to

1. Deploy real-time data
2. Evaluate all possible options against a set of factors
3. Customize recommendations/instructions for different users
4. Iterate and develop upon user data to increase efficiency and accuracy

Automation vs Augmentation

Automation

Overall, we use Ai to **automate data collection** and **analysis tasks** for all the variations, provide user multiple best routes regarding various criteria. Automation **enables users to enhance efficiency and accuracy** in route planning, including:

Pick the routes that are more safe by:

Analyzing safety incident case # happened nearby

Analyzing how well-lid the route is through public open source data

Pick the routes that are more enjoyable by:

Analyzing the noise level by calculating real time traffic flow

Analyzing which routes are more sceneretic by

Picking the appropriate landmarks that are easy to identify and relate to by:

Pick the landmarks that are larger & easy to identify at the time of day

Pick the landmarks that the walker visited more;

Help walkers to fit fitness goals into their daily life by:

Tracking real-time commute options to accommodate user's fitness goals while saving time

Data & ML Model

Professional raters for model building/ training

Raters recruited from Amazon SageMaker Platform

Datasets

Sample Routes

Sample Landmarks

Features



Safe



Scenic



Navigation

Labels

Safety Level

Enjoyment Level

Ease level to recognize landmarks

Output

Route Suggestions with safety and scenery concerns + proper navigation landmarks

User Feedback for Fine-tuning

Stages

Implicit Feedback

Explicit Feedback

Destination Select

Time + Destination

Mode select

Time + Mode Selected

Route Select

Route rejected / Selected

Navigation

Patterns of route track/
instruction skip

Stop route
reason survey

Journey End

Feedback survey skip

Binary Survey
Dissatisfaction survey

Output

Improved ML for Accuracy and Personalized Experience

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Binary Survey
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Output

Improved ML for Accuracy and Personalized Experience

ML output:

Safe Mode Route suggestion

ML system trying to learn:

Evaluate how safe a route is

Raters:

US Residents; at least 60% Females; Diverse Age Groups; Diverse Culture Groups.

Source of the data:

50,000 routes from Google Map, City Crime and Street Light Outage Database.

		FEATURES							
EXAMPLES	Route ID	Google Map Street View	Time of the day	# of open shops along the route	# Crime case along the route from last 90 days	# of streetlight all out	Walking duration	Sense of safety	LABELS
	A1AU3		21:00	14	6	5	25 m 13s	High	
	XUQ2D		19:00	9	4	10	20 m 23s	Medium	
	IUY2I		20:00	2	5	10	15 m 11 s	Low	
	OIY3P		23:00	4	7	3	20 m 10s	Low	

ML output:

Scenic mode route suggestion

ML system trying to learn:

How enjoyable a route is

Raters:

US Residents; Diverse Culture groups, Fitness level (good, average, below average)

Source of the data:

50,000 routes from Google Map.

		FEATURES							
EXAMPLES	Route ID	Location	Street View	# of POI along the route	Tree Density	Congestion Level	Walking Duration	Sense of Enjoyment	LABELS
	A1AU3	Magnificent Mile		3		High	25 min	Low	
	XUQ2D	Chinatown		5		High	15 min	Medium	
	IUY2I	South Loop		3		Medium	20 min	Medium	
	OIY3P	Millennium Park		5		Low	18 min	High	

ML output:

Landmarks for navigation in route suggestion

ML system trying to learn:

Which landmarks are easy to recognize

Raters:

US Residents; Diverse Gender and Culture Groups; People with Different Visual Ability Levels (near sighted, far sighted, color deficiency);

Source of the data:

50,000 landmarks from Google Map street views

		FEATURES				
EXAMPLES	Landmark ID	Time	Street View	Landmark	Ease to recognize the landmark	LABELS
	A1AU3	23:00		Nike	Low	
	XUQ2D	13:00		Target	Medium	
	IUY2I	21:00		Marriott	Low	
	OIY3P	9:00		BP oil	High	

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Sample Routes

Sample Landmarks

Features



Safe



Scenic



Navigation

Labels

Safety Level

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Route Suggestions with safety and scenery concerns + proper navigation landmarks

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Stop route
reason survey

Journey End

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Binary Survey
Dissatisfaction survey

Output

Improved ML for Accuracy and Personalized Experience

'Safe' mode feedback

To improve:

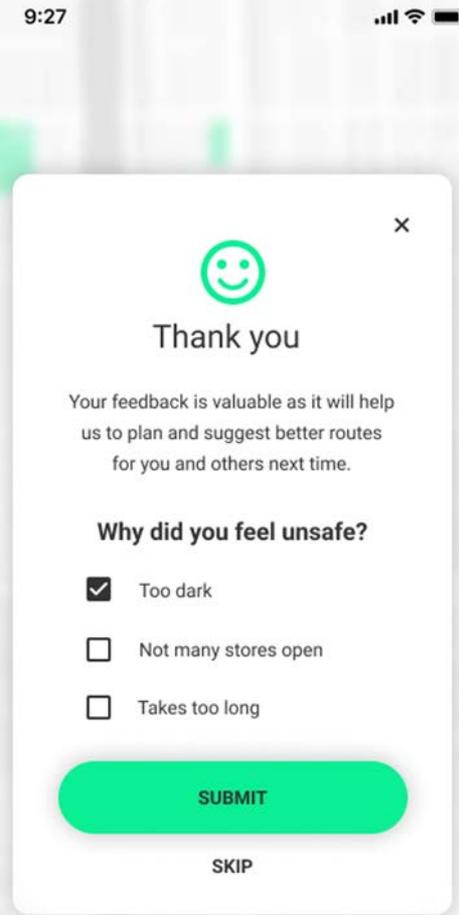
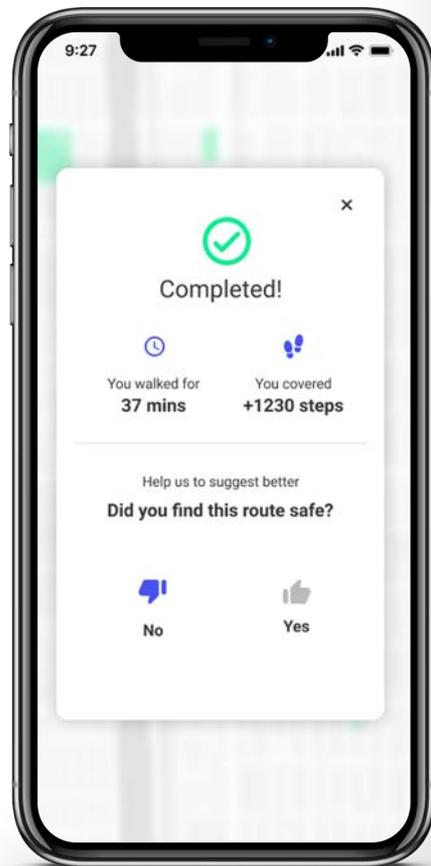
- Route suggestion for safety.
- Personalized experience

Prompt Survey for User feedback:

- Why user think the route is not safe enough.

When to ask:

- When user not satisfied with suggested route after finishing or stopping a route.



'Active' mode feedback

To improve:

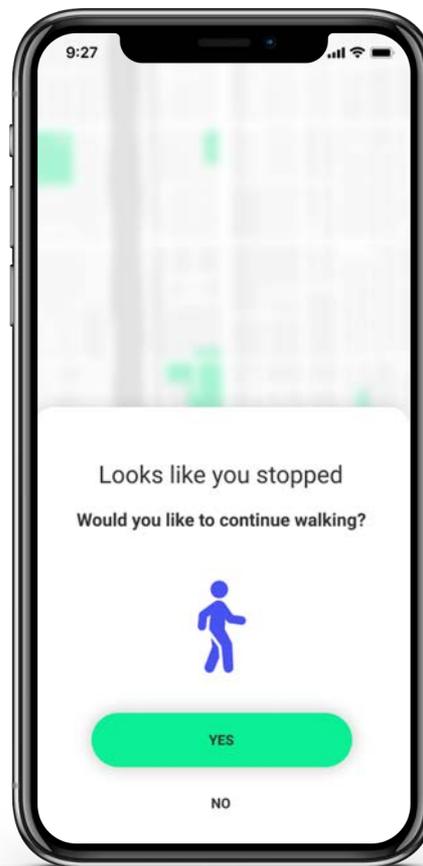
- Route recommendation process that understand user's walking limitations and time constraints better.

Prompt Survey for User feedback:

- Why user stopped route in active mode with time constraints

When to ask:

- User ended a route in the middle of the journey.



9:27



9:27



Looks like you stopped
Would you like to continue walking?



YES

NO

Why did you stop?

The feedback provided will be used to
improve your next route

- I got tired
- Too much waiting
- I ran out of time

SUBMIT

SKIP

'Scenic' mode feedback

To improve:

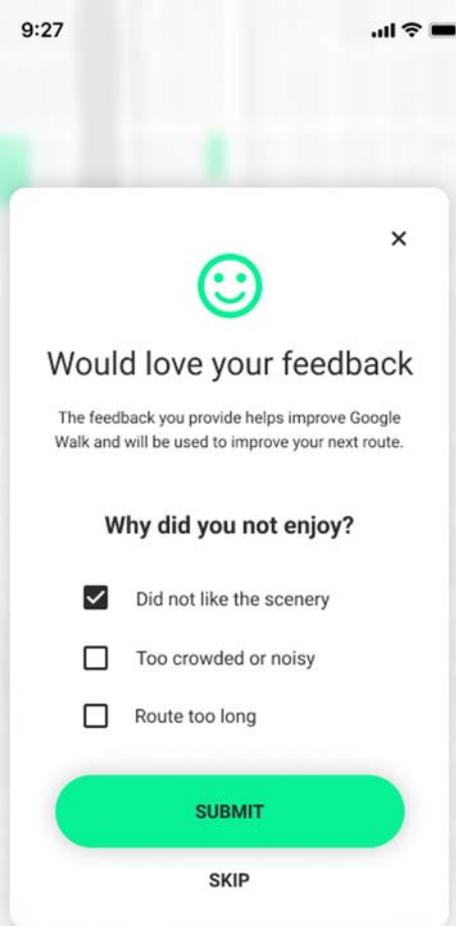
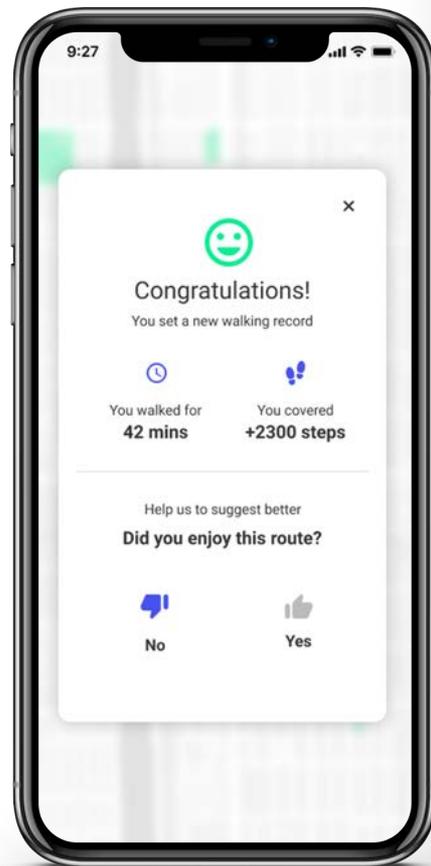
- Route suggestion in enjoyment mode based on personal preference

Prompt Survey for User feedback:

- Why user not satisfied with the route

When to ask:

- When user click the thumb down button



Success Metrics

	Goal	Signal	Metrics
Google Walk	More users enjoy using our to walk	<ol style="list-style-type: none">1. How many users use our app2. What is their satisfaction	Daily Active Users & Monthly Active Users App Rating
Safe	Users feel more safe to walk	How safe do users feel about their walk	Medium rating of sense of safety by prompt survey
Active	<ol style="list-style-type: none">1. Encourage users to walk more2. Save their time waiting for public transit	<ol style="list-style-type: none">1. How many people complete their fitness goal?2. How much time do users spend on waiting for public transit	Medium completion rate of fitness goal Average waiting time per user per trip
Scenic	Help users find more pleasant routes to walk	How do user enjoy the suggested routes	Medium rating of sense of enjoyment by prompt survey
Explore	Users enjoy walking to explore the city	How often do users use this feature	Session frequency per user per month

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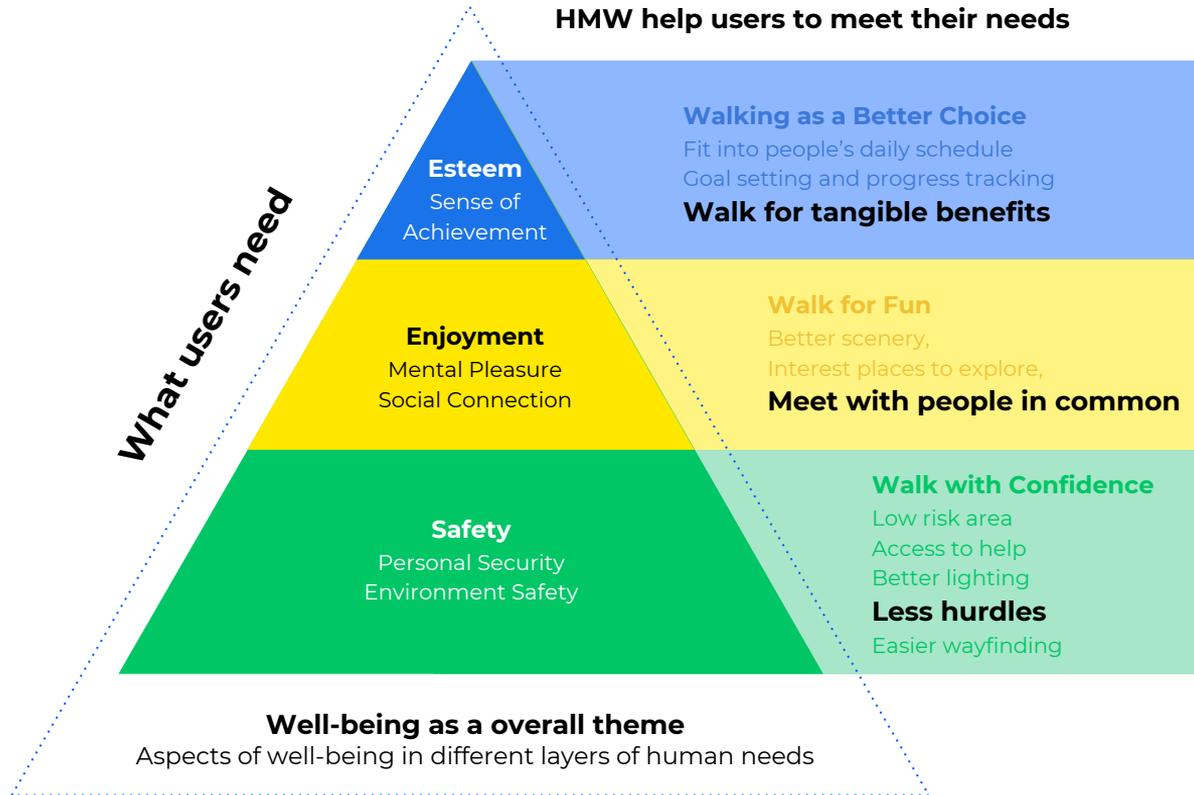
Success Metrics

If the metrics drop below our target, depending on the severity, we will:

1. Low severity: Check our ML model
2. Mid severity: Conduct heuristic evaluation on usability
3. High severity: Conduct User Research Again & Market research

More to be expected

User Needs Hierarchy



Incentivisation Structure

Nudging people to **walk a little more**, by suggesting them **locations based offerings**



User



Business



Use Case

3 min more walk to a place you would be interested	Landmark navigation for easier way finding	Display open stores on a safer route	Walk more to save more
<i>Bring customer to door</i>	<i>More foot traffic to local brands</i>	<i>Raise awareness of businesses</i>	<i>Increase visits to stores and potentially increase sales</i>
Explore/ wander Mode If the user likes technology, we will suggest to cover an additional technology store on their path	Landmark Navigation If the user's path involves partner stores, we can use them as landmarks when appropriate. Benefit small business impacted by COVID	Safe Mode When user is using safety mode, we will give information of open stores to boost confidence	All Modes Fitness points as credits/ discount points for business partners, showing up on the route user regular uses
# Curiosity	# Confidence	# Confidence	# Self Fulfillment # Tangible Reward

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Product Roadmap

Our features ahead

Safe, Active & Scenic

1

MVP with
Essential
Features

Inclusiveness

2

Accessibility
Mode

Connectedness

3

Social Mode

Engaging



Rewards

8 months after 1st
release

2

MVP
Essential
Features

Accessibility Improvement

Connected
Walking

Accessibility Mode

- Device setting detection for recommendation

Navigation optimization

- Deeper customization for people with accessibility issues



12 months after 1st
release

3

MVP
Essential
Features

Accessibility
Improvement

**Connected
Walking**

Walk together with a group

- Allow walkers to join a walking group and walk together

Meet new walkers

- Meet new friends through walking



**Safe, Active &
Scenic**

The core



Accessibility Mode

Inclusiveness

**Google Walk
Roadmap**

Rewards

Motivation



**Connected
walking**

Engaging

**Safe, Active &
Scenic**

The core



Accessibility Mode

Inclusiveness

A step closer to a
healthier life
in all aspects



Rewards

Motivation

**Connected
walking**

Engaging

Walking ...

Walking with **Google Walk**

Walking no longer limits itself to only covering the ground between **cars** and **buildings** and the short distances within the latter.

But instead, it is regaining its meaning as

a Cultural Activity

a Pleasure

a Way of Getting Around

Thank you



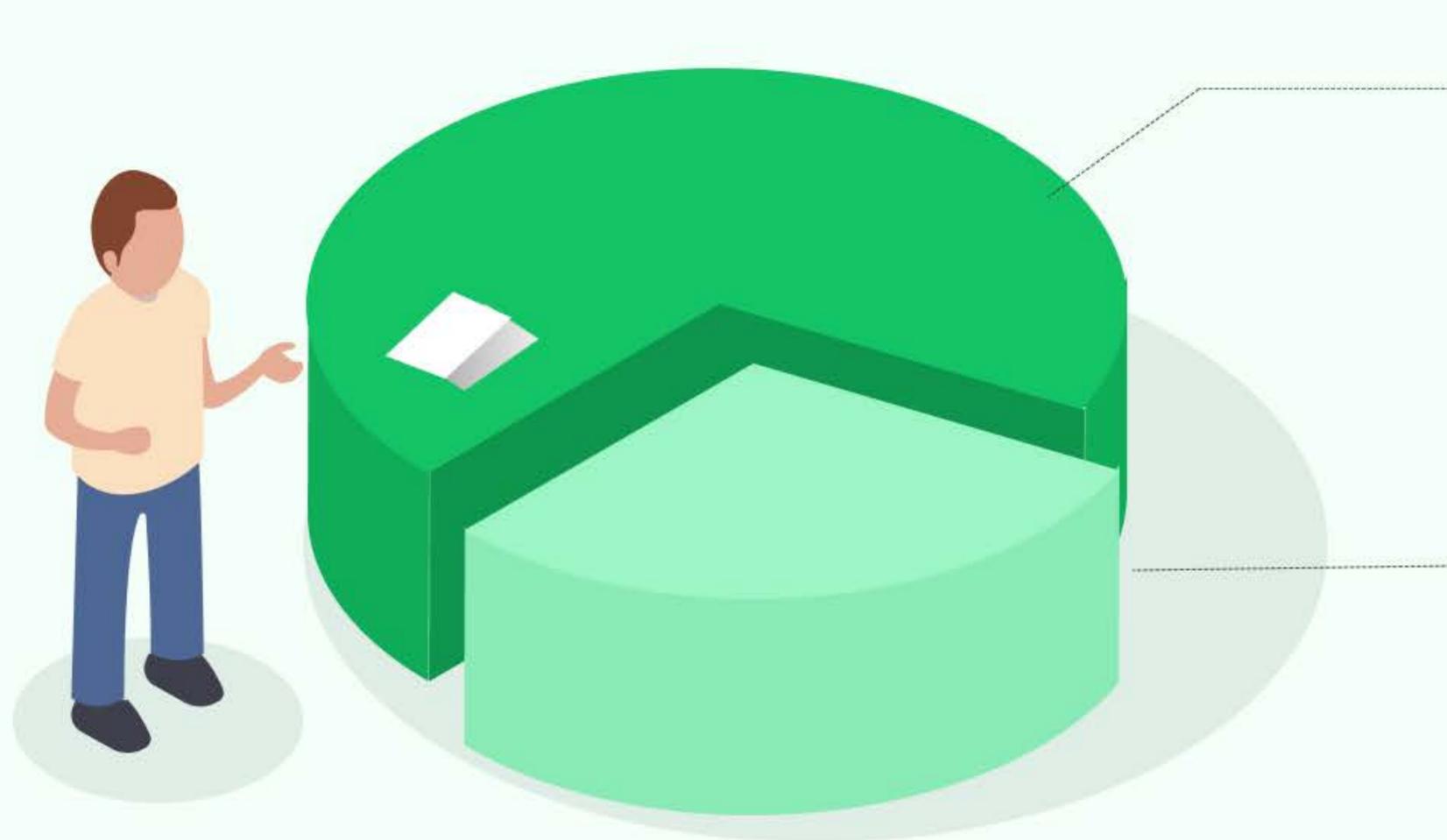
ESSENTIAL

AI-powered grocery delivery service keeps your kitchen stocked with just enough essentials

WHEN WE TALK ABOUT GROCERY STORE SHOPPING...

Keeping essentials stocked at home accounts for **most time** spent grocery shopping.

But it's the **least enjoyable** part of the shopping experience.



Most of the time is tedious and boring
grabbing the essential necessities

"It's boring to spend most of your time in the grocery store picking up the same things from the same shelves every time." --- Jesse



Few of the time is delightful: exploring
new foods at the grocery store

"Exploring new items in the grocery store with your family is a ritual that makes life more interesting." ---- Hugo

PAIN POINTS



At home, it's hard to...

- Control **different consumption rate** of essentials
- Remember **what items** are already used up
- Plan **when and how much** to stock



Online, it's hard to...

- **Compare attributes** (i.e. nutrition, price) of different items
- **Know accurate delivery times** to avoid parcels being stolen
- Always get the right item and brand



In store, it's boring to...

- Go to **same aisles to get same things** as always
- **Track how much** has been added
- **Stand in line**
- Balance overall nutrition

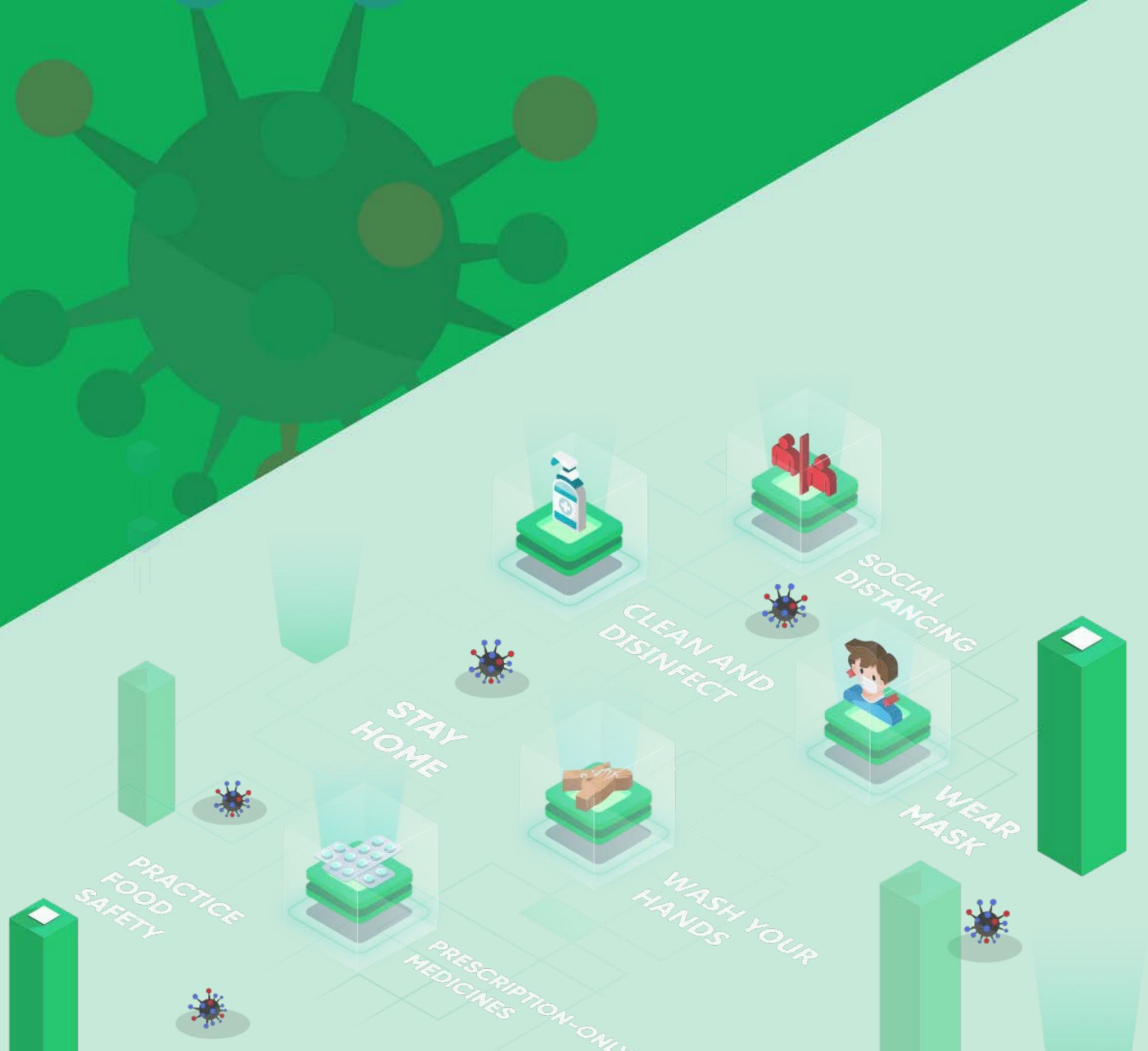
COVID-19 PANDEMIC

72% of people are still hitting the grocery store;

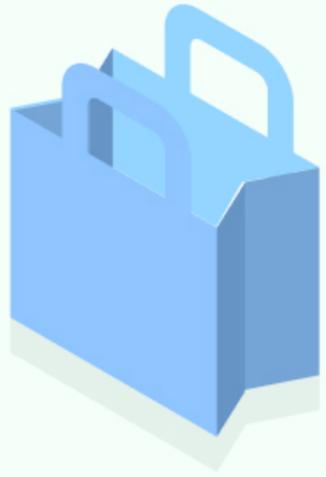
83% of people have had issues with grocery delivery.

People need to **minimize the time** in stores and **improve efficiency.**

--- Bankrate.com & YouGov



USER NEEDS



Predict
food amount



Delivery
just-in-time



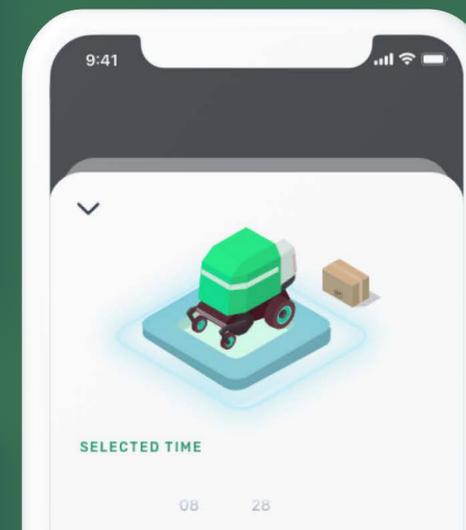
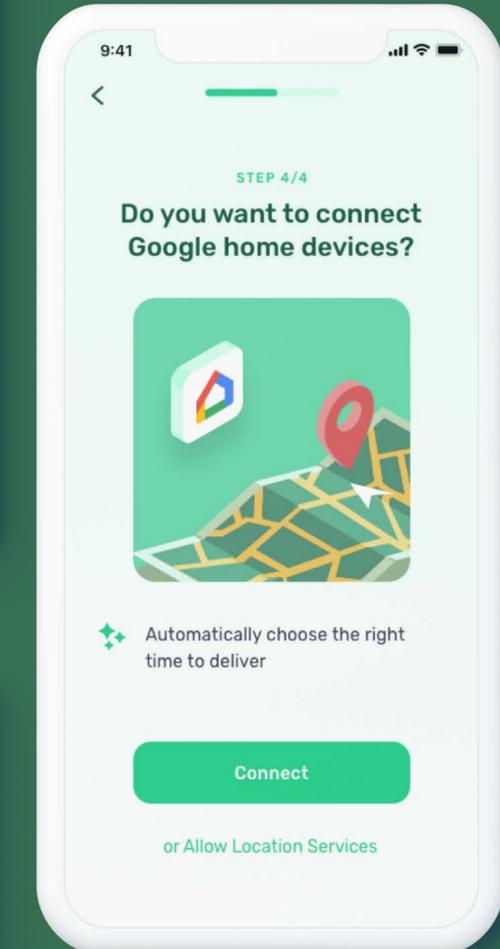
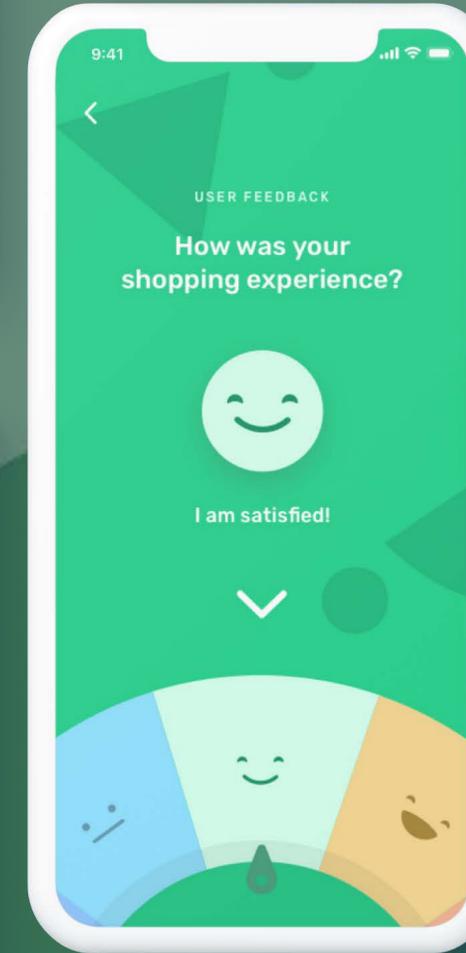
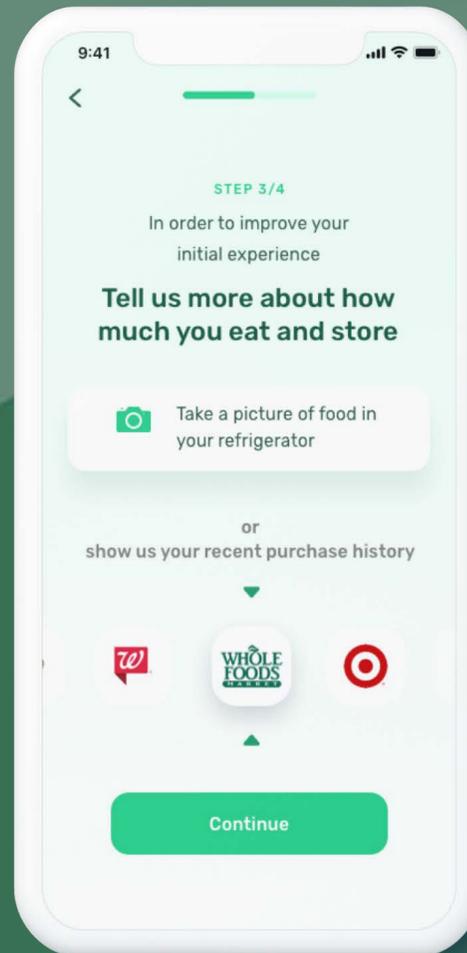
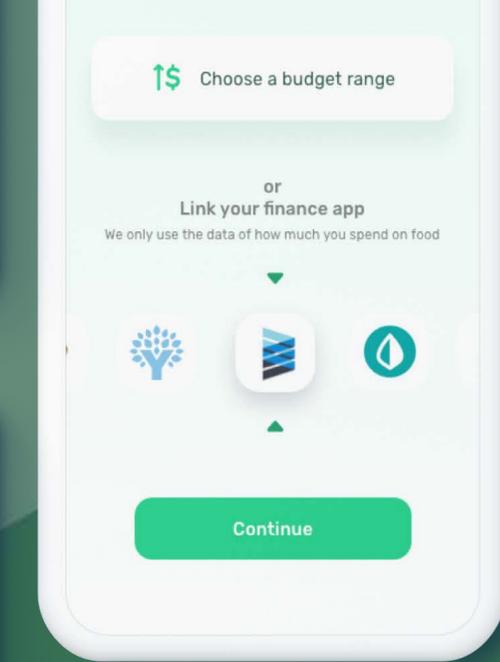
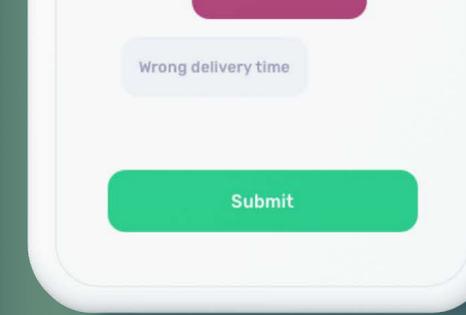
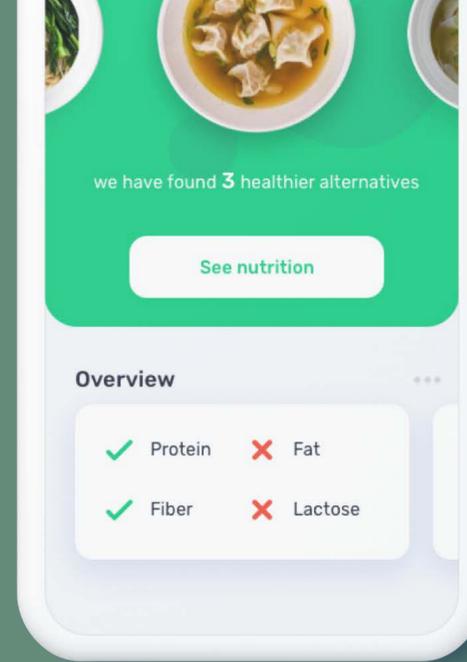
Eat healthier
at home



Control spending
on food

Essential

AI-powered grocery delivery service keeps your kitchen stocked with just enough essentials



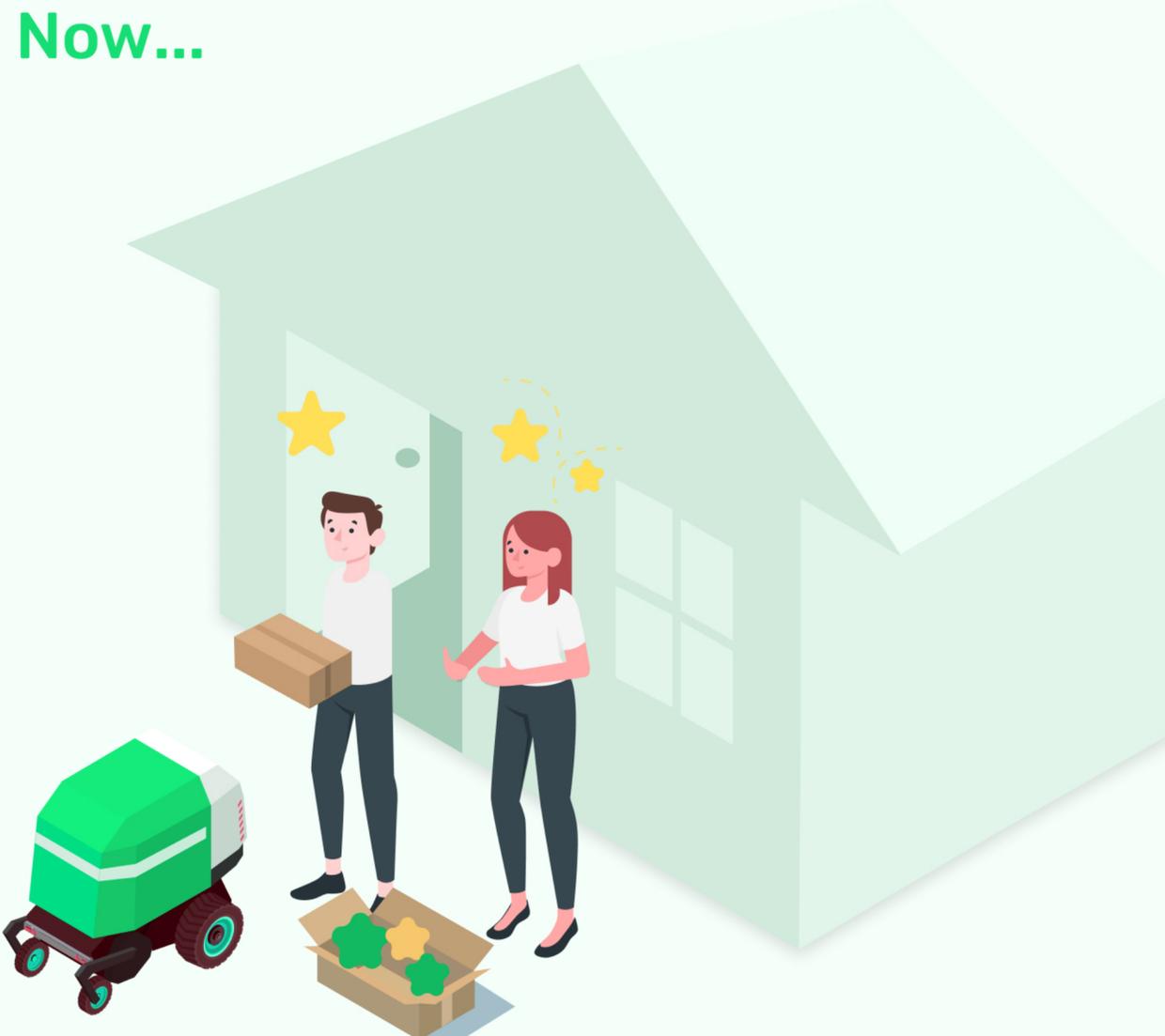
HOW WOULD ESSENTIAL CHANGE THE GROCERY SHOPPING EXPERIENCE?

Before...



VS

Now...



PREREQUISITES

- Food consumption rate
- Available time schedule





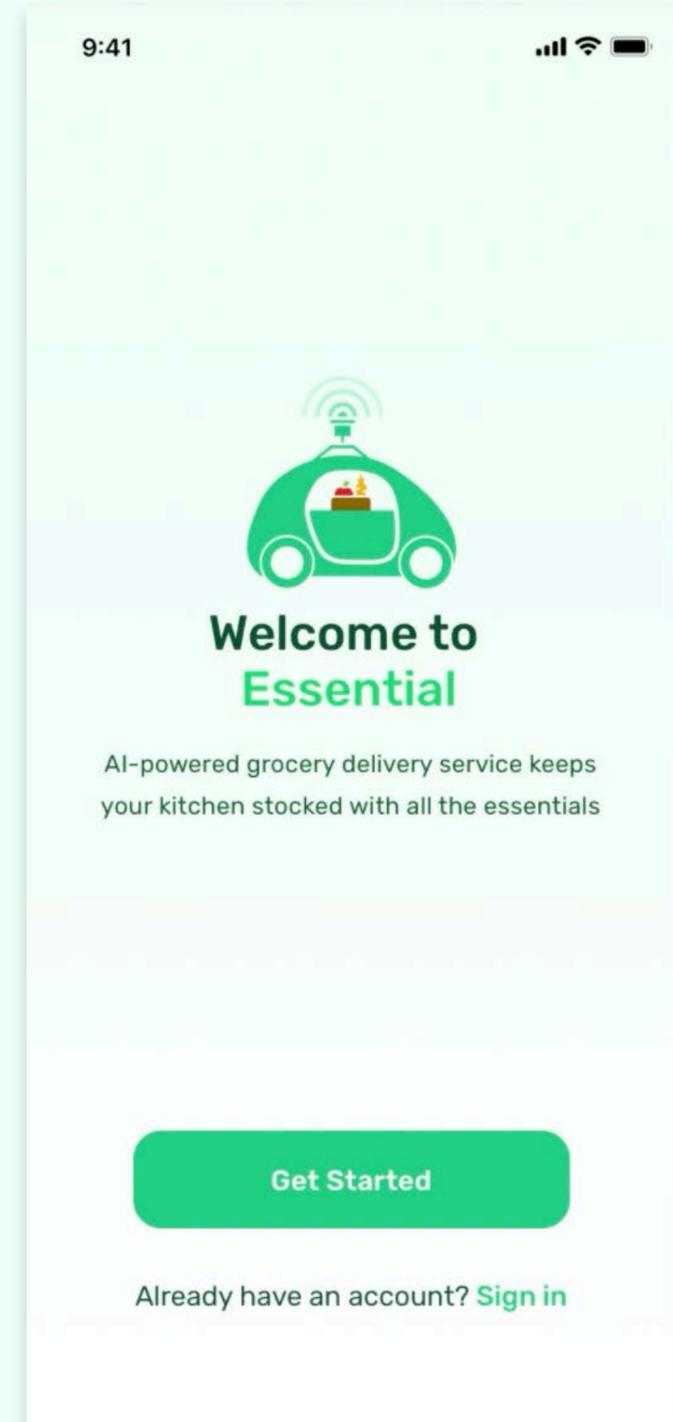
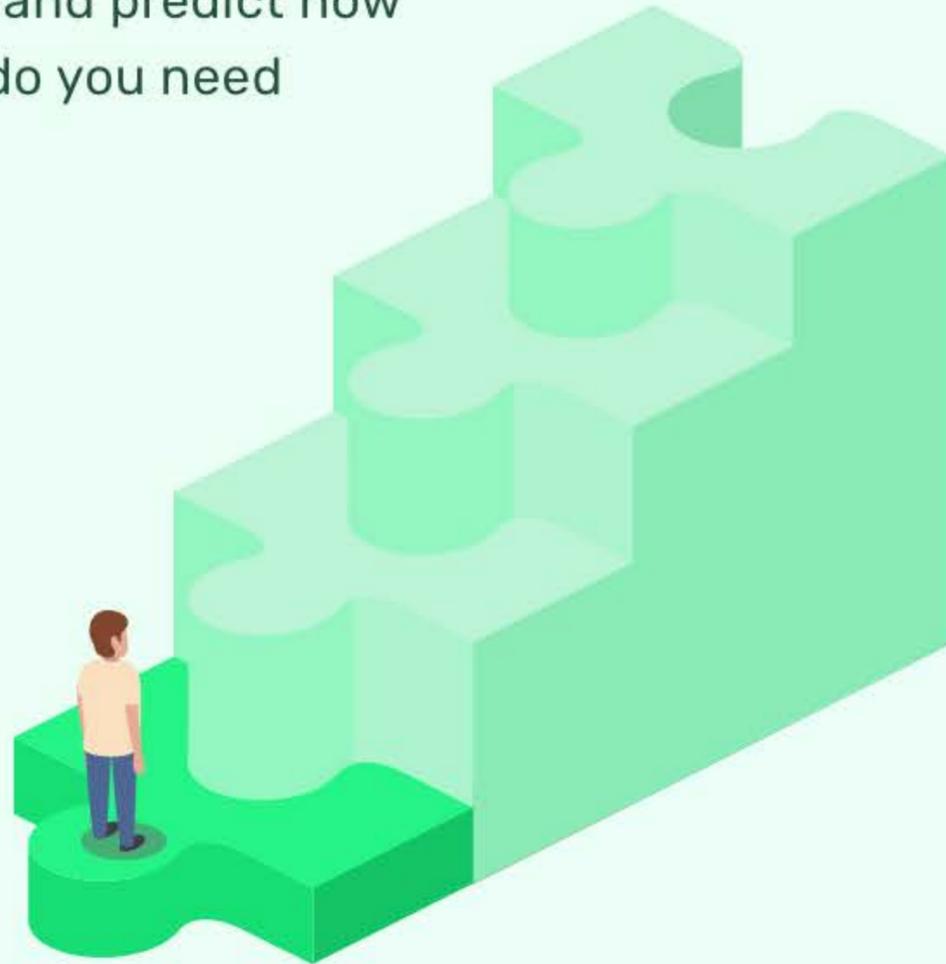
ONBOARDING QUICKLY

- Household structure
 - Eating habits
 - Purchase history
 - Smart home devices
-
- Food consumption rate
 - Available time schedule

STEP 1/4

Tell us about your household structure

In order to help us better understand and predict how much food do you need



STEP 2/4

Tell us about your eating habits

In order to help us better adjust our recommendation frequency



9:41 📶 🔋

< ▬

STEP 1/4

In order to help us better understand and predict how much food do you need

Tell us about your household structure

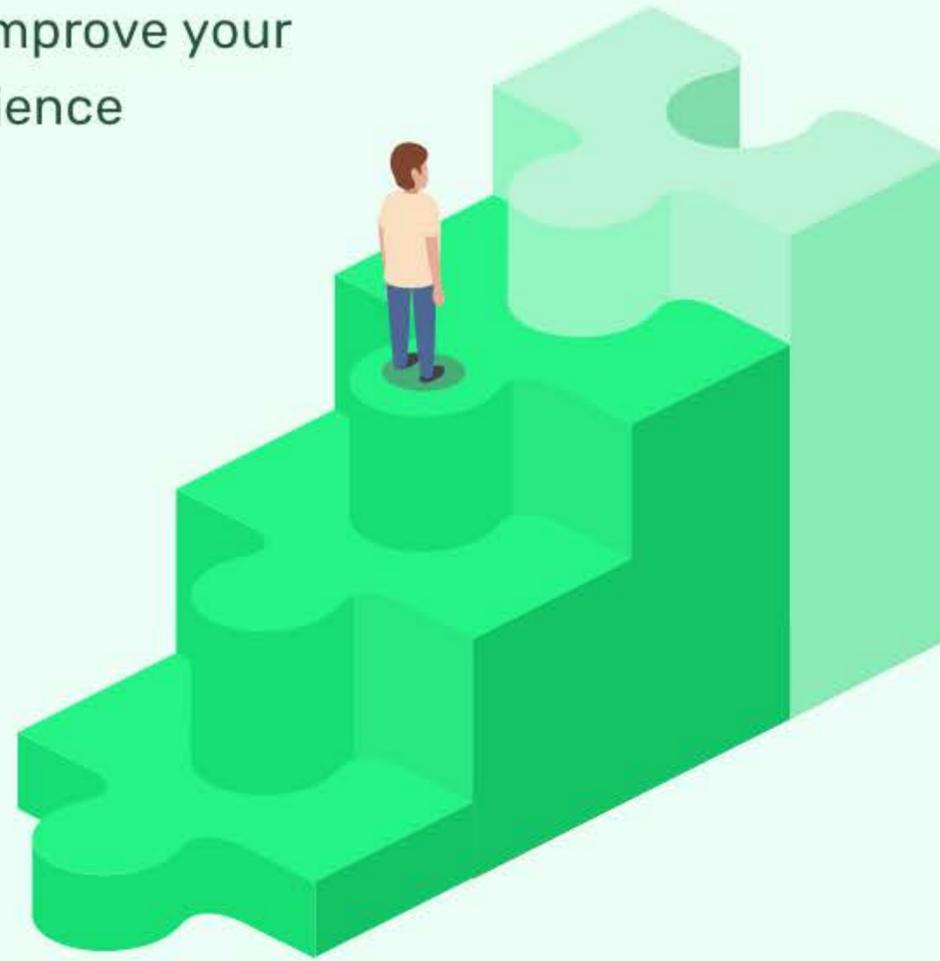
Senior >65	- 0 +
Adult 20-64	- 1 +
Teenager 13-19	- 0 +
Children <12	- 0 +

Continue

STEP 3/4

Tell us more about how much you eat and store

In order to improve your initial experience



9:41 📶 🔋

< ██████████

STEP 2/4

In order to help us better adjust our recommendation frequency

Tell us about your eating habits

I USUALLY ORDER FOOD:

1-2 times a week 3-5 times a week

>5 times a week 1-3 times a month

I USUALLY EAT OUTSIDE:

1-2 times a week 3-5 times a week

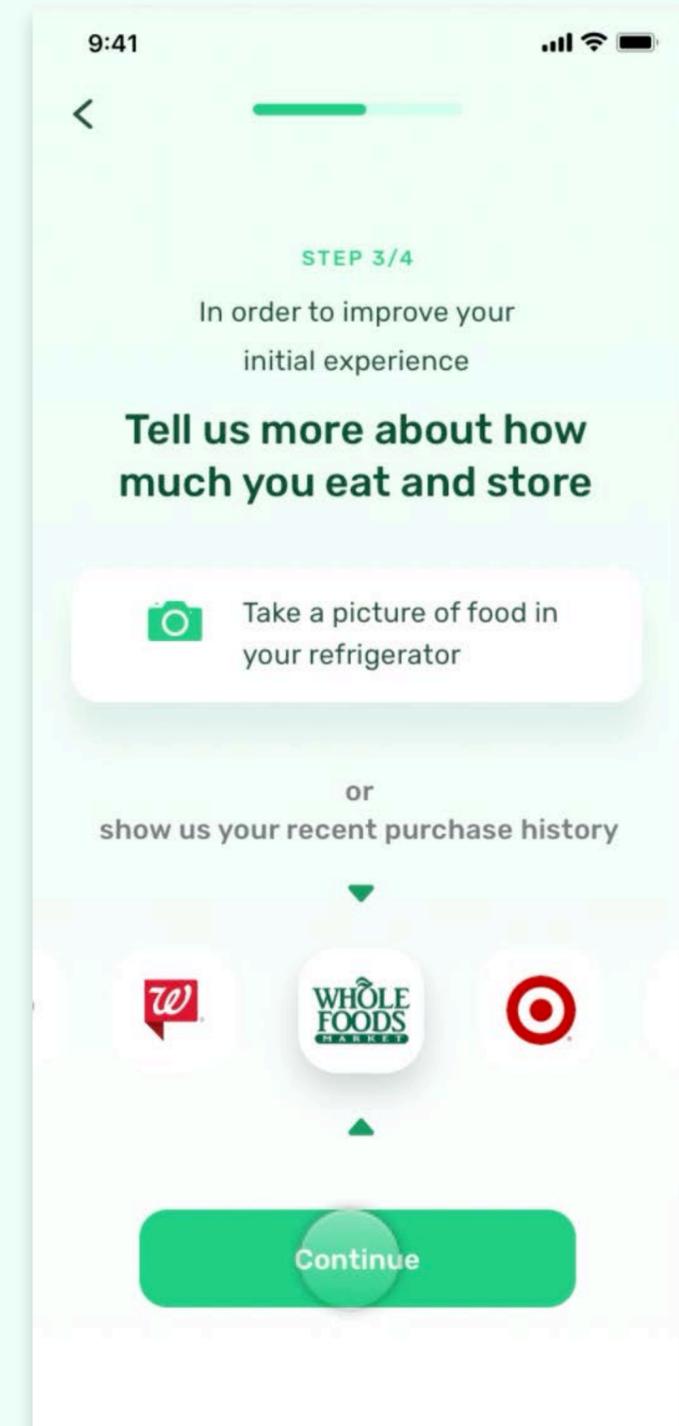
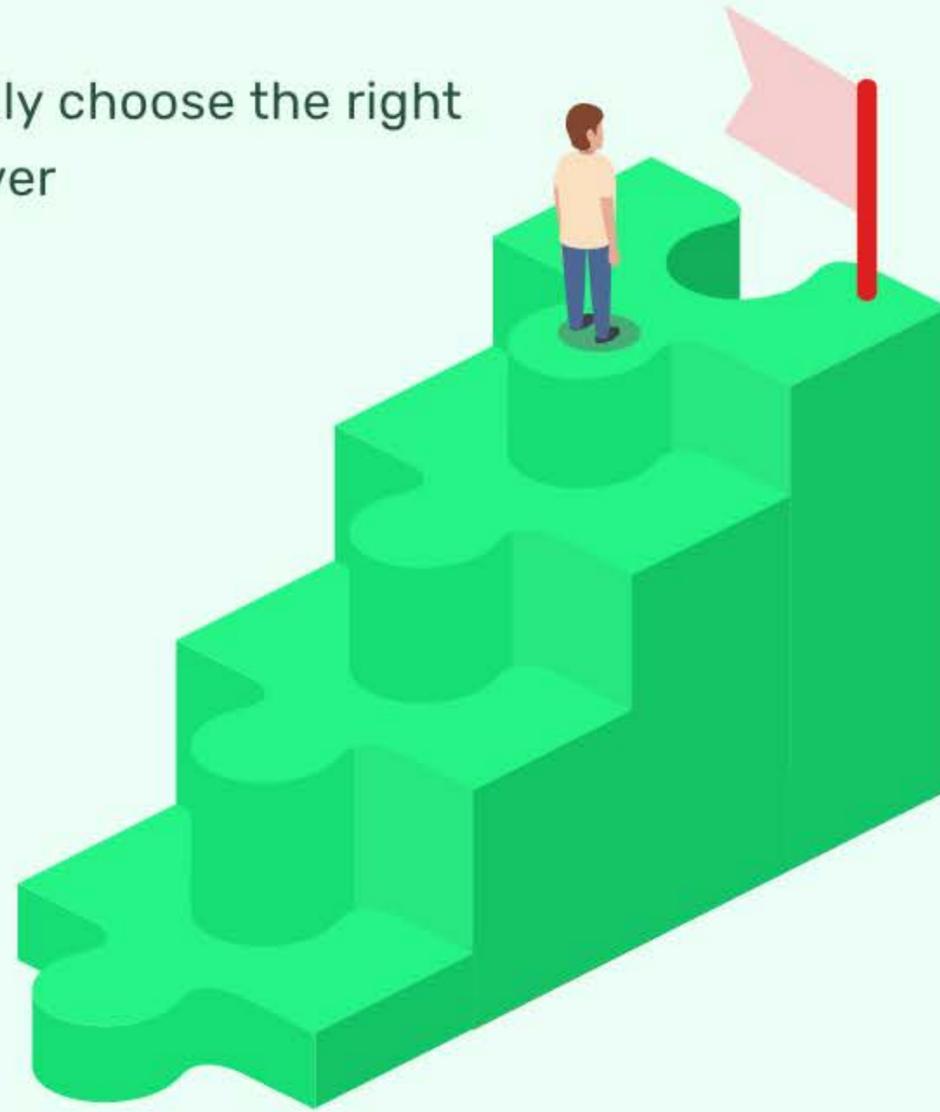
>5 times a week 1-3 times a month

[Continue](#)

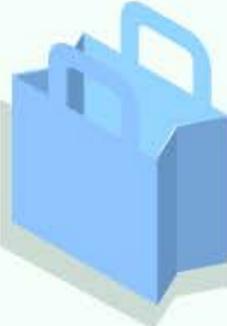
STEP 4/4

Do you want to connect Google home devices?

Automatically choose the right
time to deliver



CORE USER SCENARIOS



**Perfect
quantity**



**Just-in-time
delivery**

Primary



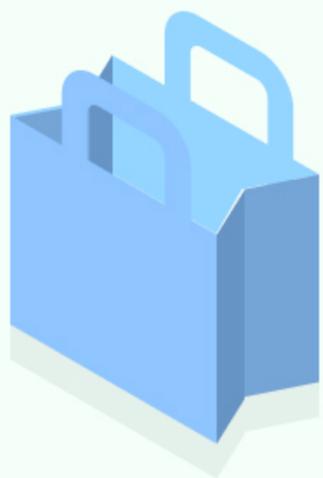
**Healthier
substitution**



**Prudent
budget management**

Secondary

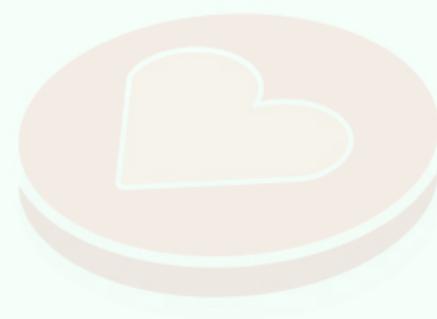
CORE USER SCENARIOS



Predict
food amount



Delivery
just-in-time



Eat healthier
at home



Control spending
on food



PERFECT QUANTITY

Food consumption rate

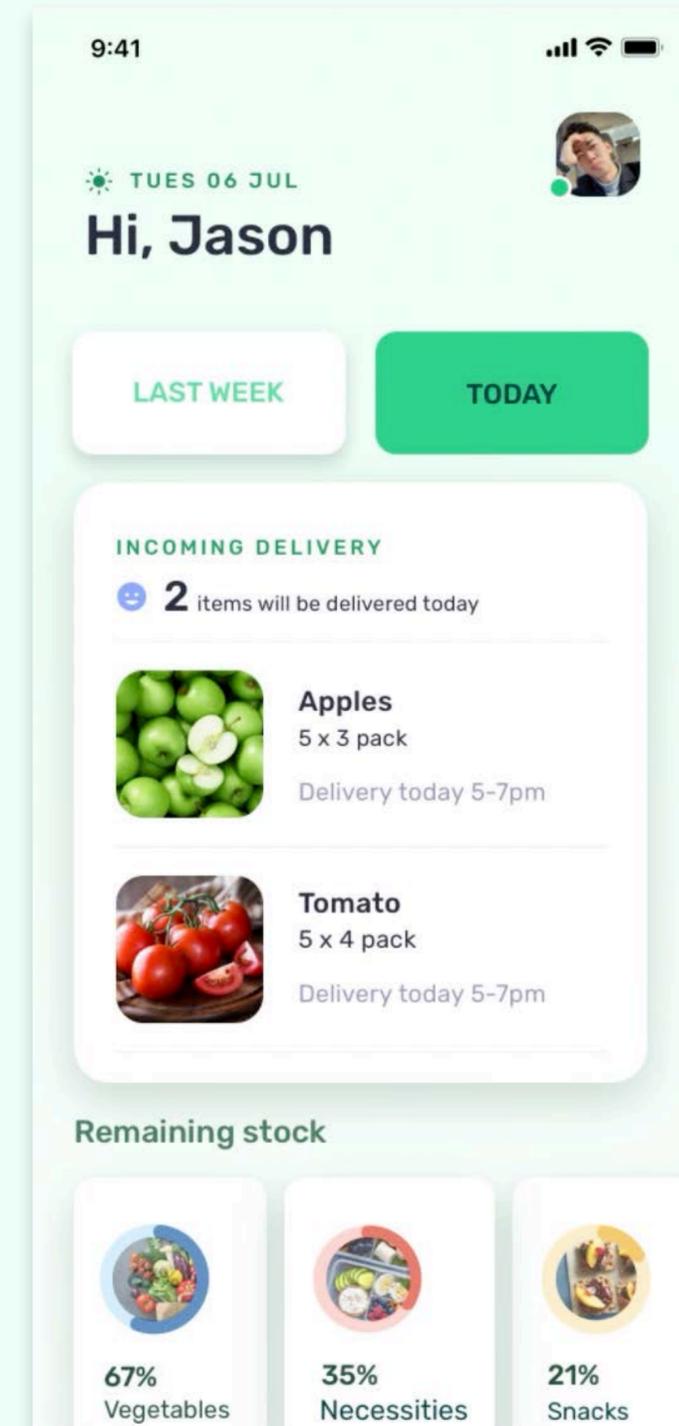


- Perfect quantity
- Perfect delivery frequency

PERFECT QUANTITY

Home page - Essentials' status check (current, past, future)

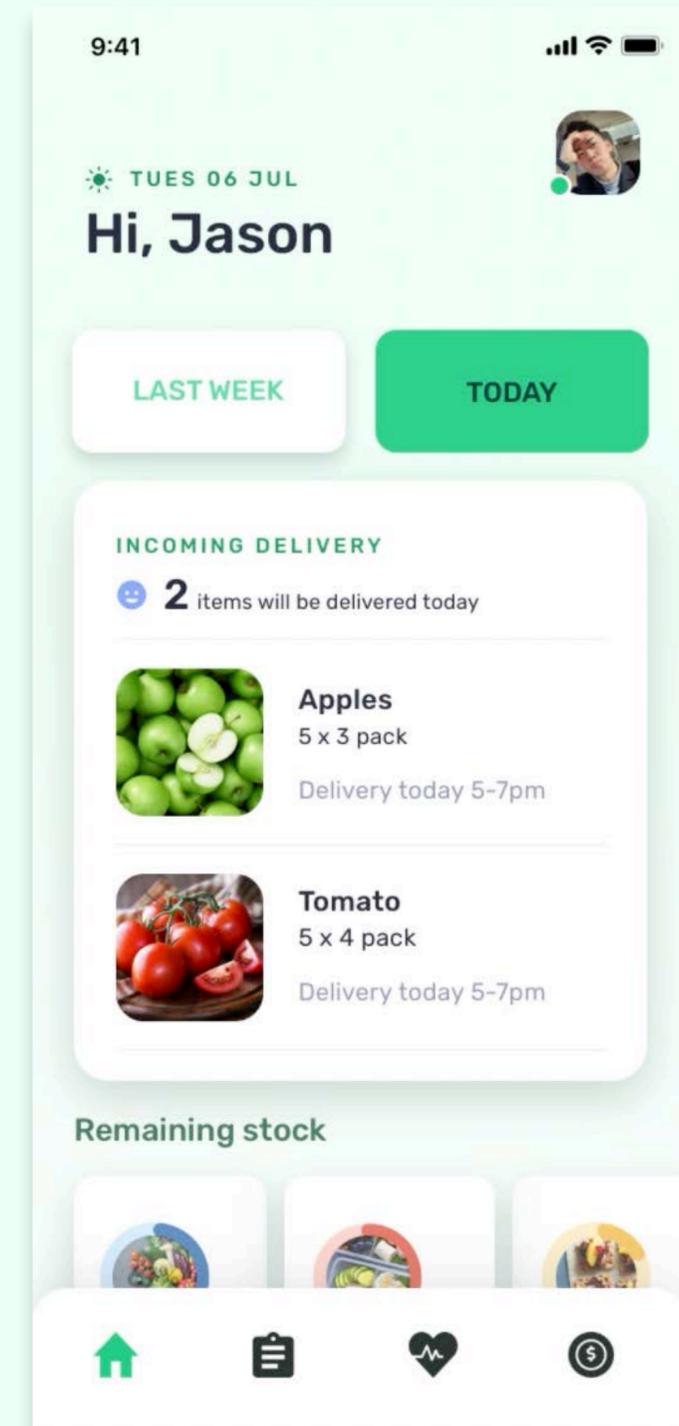
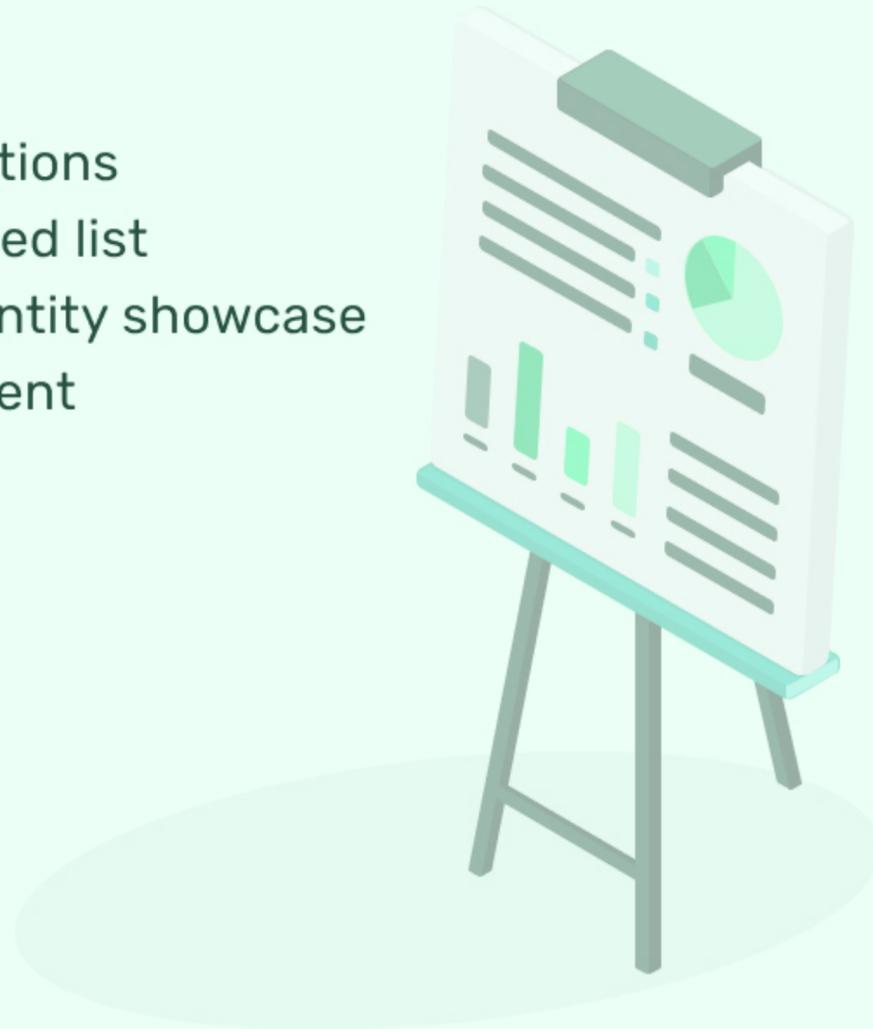
- Incoming delivery
- Remaining essentials
- Future consumption



PERFECT QUANTITY

Recommended Essential List

- Personalized recommendations
- Auto-generated list
- Accurate quantity showcase
- Easy adjustment



CORE USER SCENARIOS



Predict
food amount



Delivery
just-in-time



Eat healthier
at home



Control spending
on food



JUST-IN-TIME DELIVERY

Available time periods

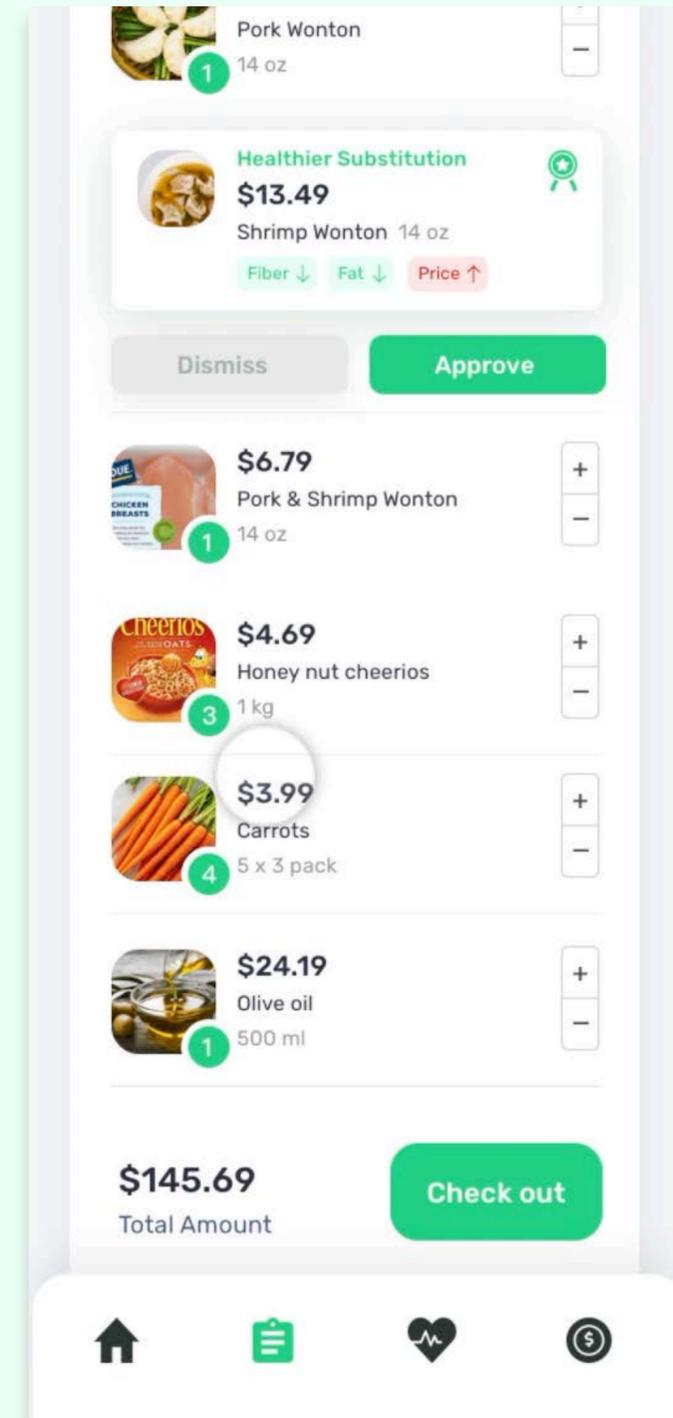


- Easy time scheduling
- Deliver whenever it is convenient for you

JUST-IN-TIME DELIVERY

Time scheduling

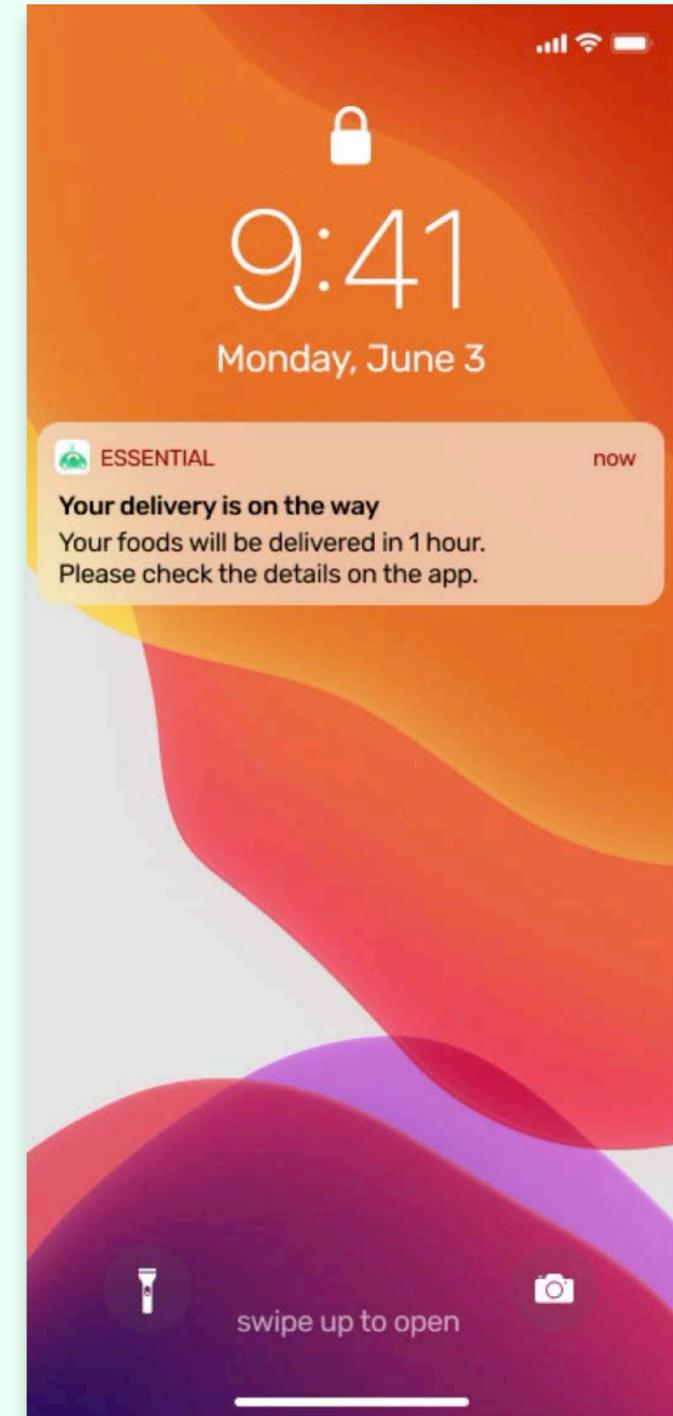
- Quick access
- Batch adjustment



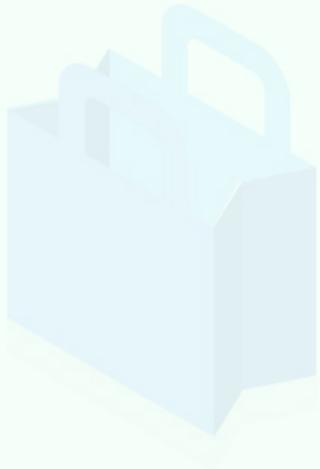
JUST-IN-TIME DELIVERY

Whenever you need

- Personalized adjustable time interval
- Delivery time/address adjustment
- Order cancellation



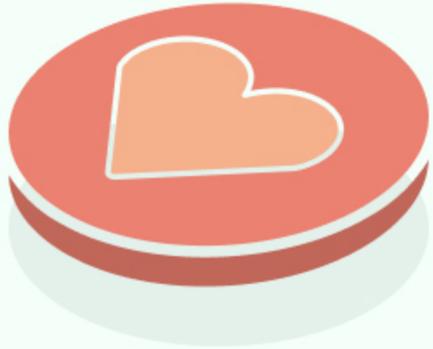
CORE USER SCENARIOS



Predict
food amount



Delivery
just-in-time



Eat healthier
at home



Control spending
on food



HEALTHIER SUBSTITUTION

- Health condition
- Food preference
- Goal (optional)

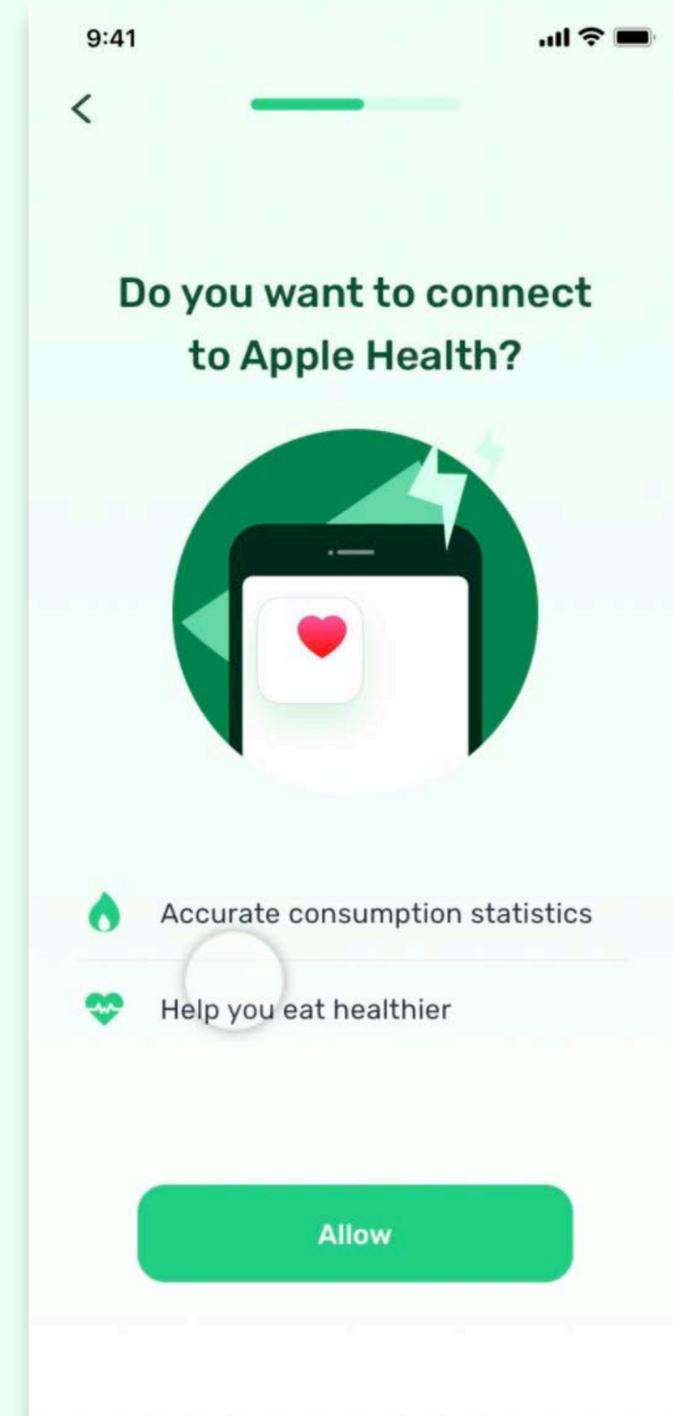
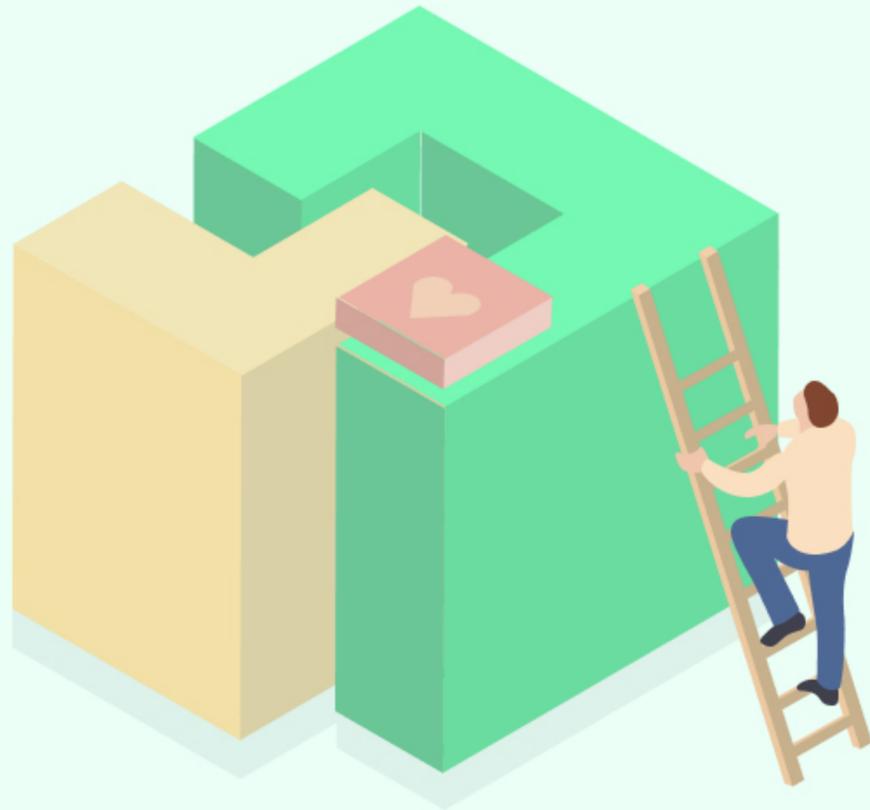


- Biometrics & Diet profile
- Healthier substitution recommendations

HEALTHIER SUBSTITUTION

Biometrics & Diet profile

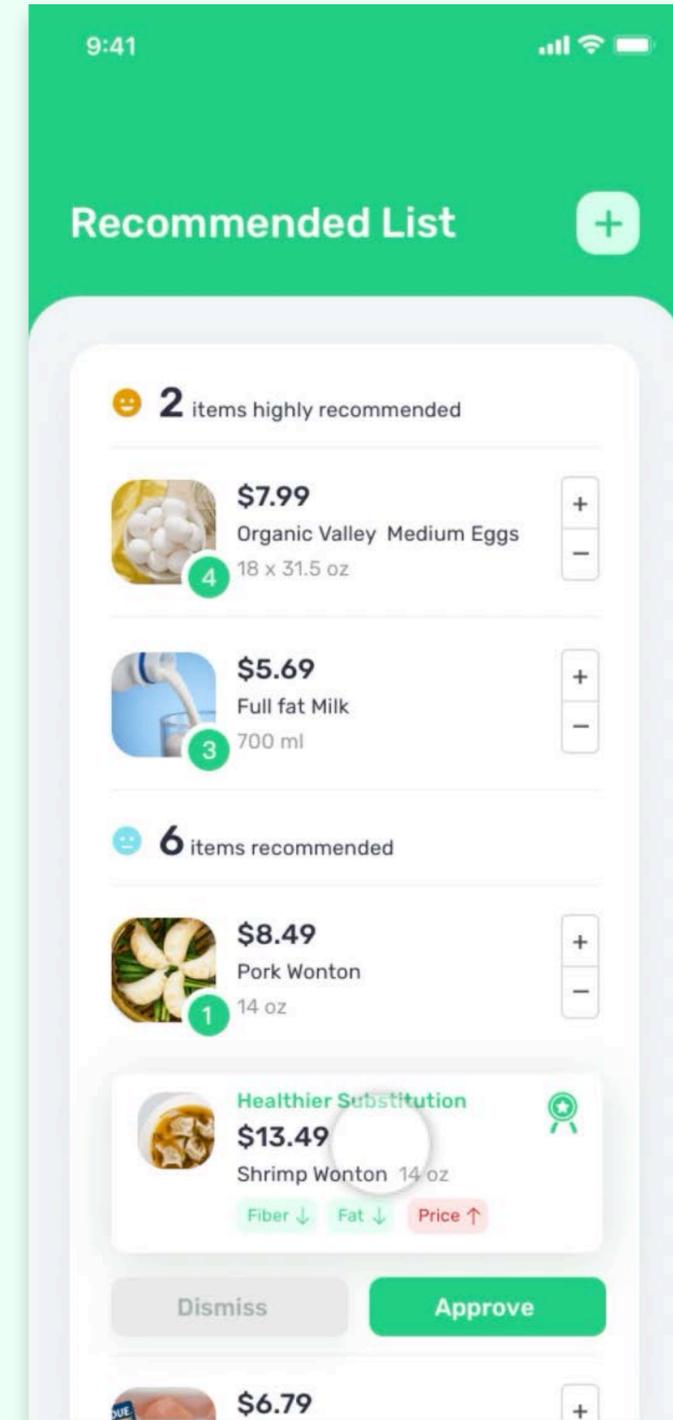
- Basic health info
- Health concerns
- Dietary dislikes



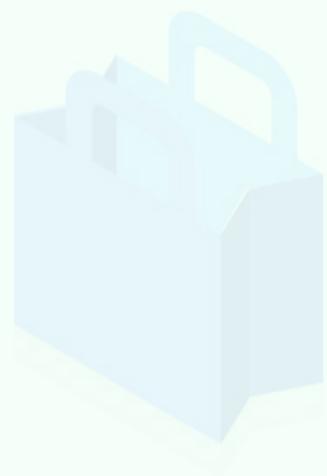
HEALTHIER SUBSTITUTION

Healthier substitution

- Multidimensional parameter considerations
- Eating healthier at home without any pressure



CORE USER SCENARIOS



Predict
food amount



Delivery
just-in-time



Eat healthier
at home



Control spending
on food



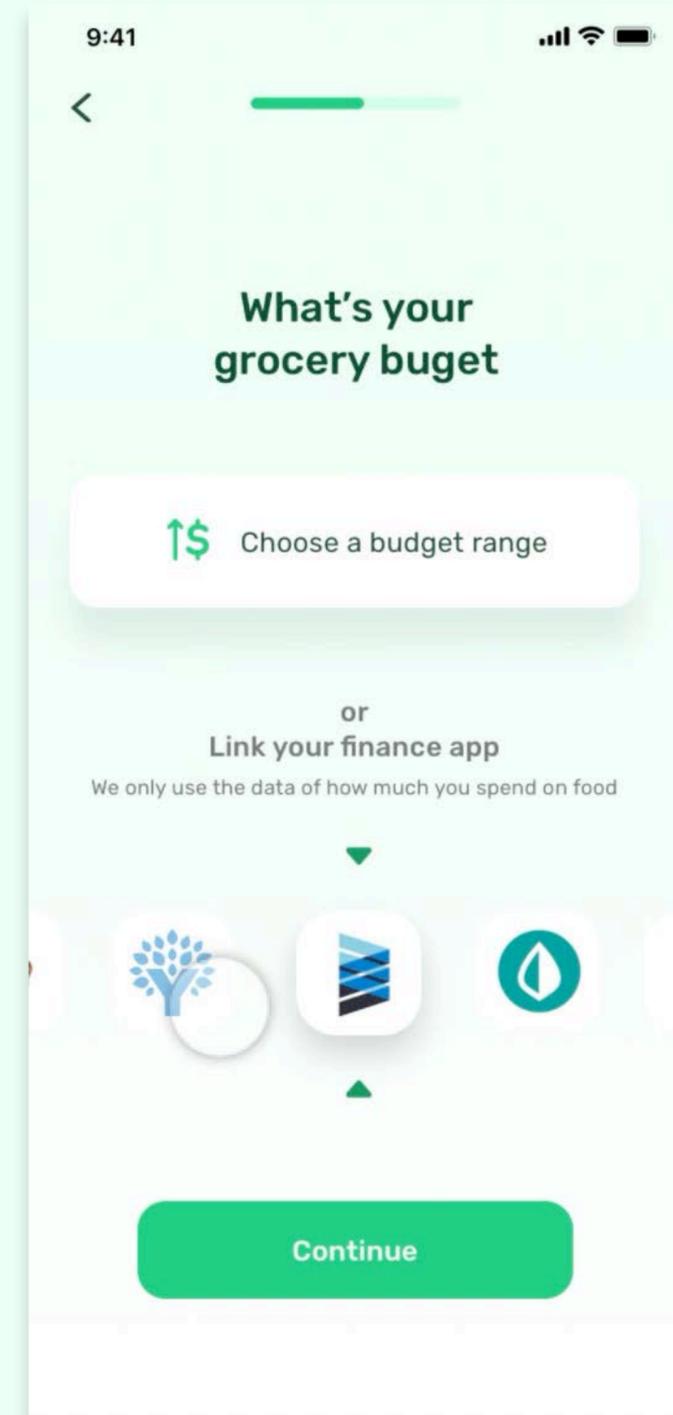
PRUDENT BUDGET MANAGEMENT

- Budget range
 - Food expenditure
- ➔
- Budget reference and evaluation

PRUDENT BUDGET MANAGEMENT

Budget overview & evaluation

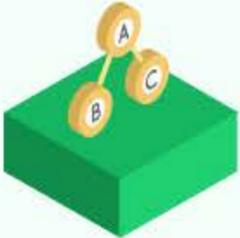
- All food channels' spending overview
- Eating wisely without pressure



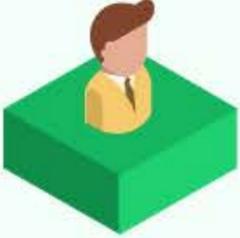
HOW AI HELP US ACHIEVE CORE SCENARIOS?

AI is good at

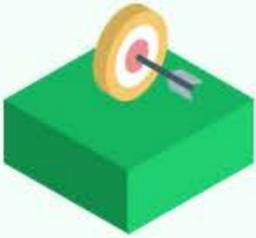
Recognizing an entire class of entities



Personalizing recommendations



Predicting the future events



Predict food amount



Delivery just-in-time



Eat healthier at home



Control spend on food

ROADMAP

For a delightful grocery shopping experience

PHASE 4
Build up an holistic and fun virtual grocery shopping experience at home

Augmentation



PHASE 3
Augment the delight and efficiency of in-store shopping

Augmentation



PHASE 2
Help people explore new foods more efficiently online

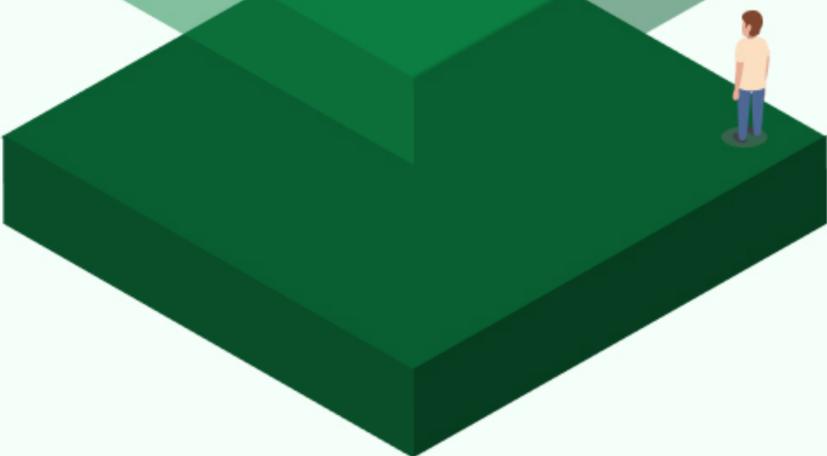
Augmentation



Customize food options by preference

PHASE 1
Help people get essential food more efficiently online

Automation



Essential

Delivery just-in-time



Predict food amount



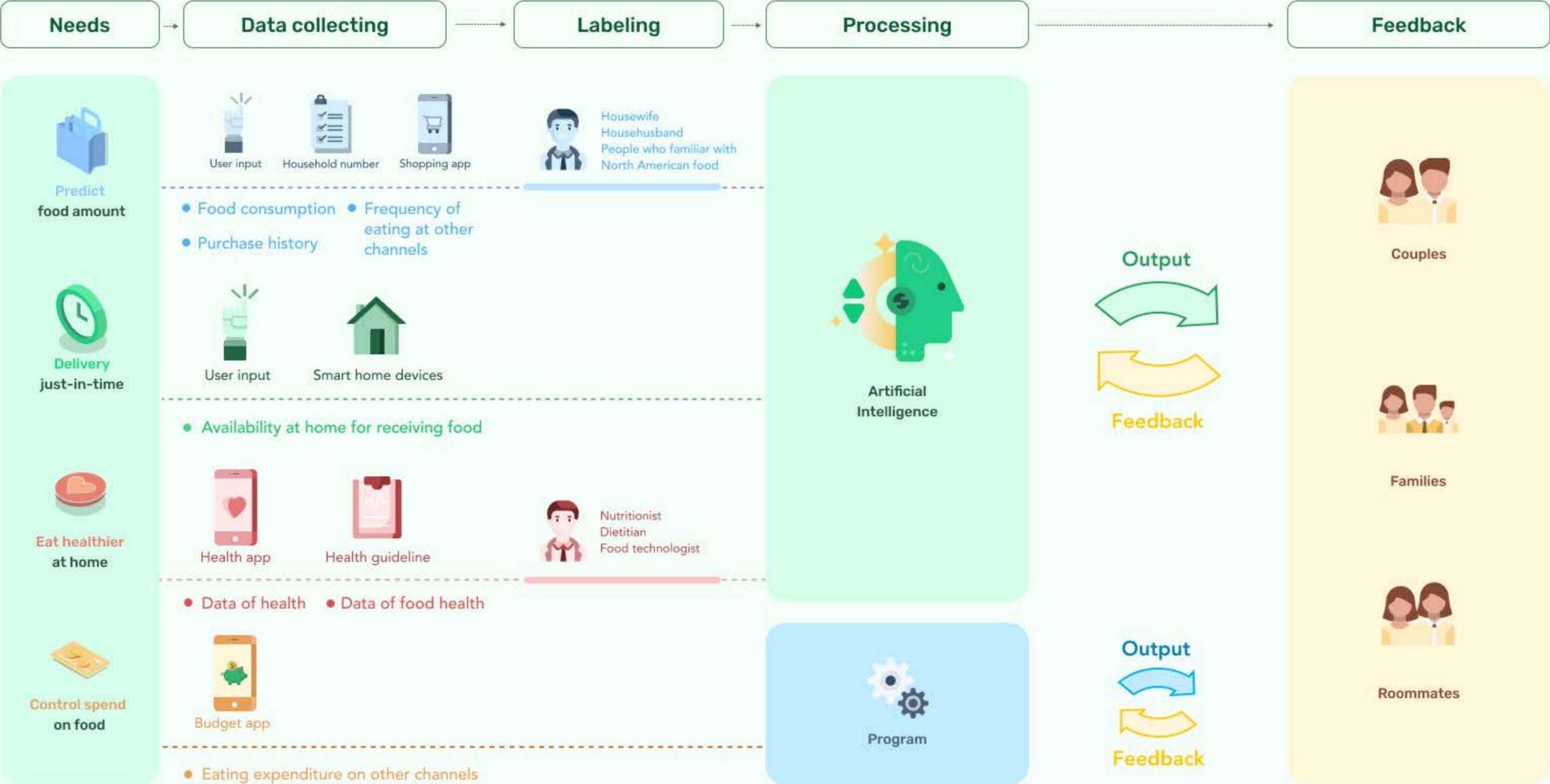
Eat healthier at home



Control spend on food



HOW WE LEVERAGE AI



FOOD QUANTITY DATASET

Purchase history

EXAMPLES		FEATURES					
Customer ID	Food Name	Date	Number of the item	Total weight (oz)	Price (\$)	Brand	Ave. Frequency of purchase (days)
User A	Eggs	6/14/2020	1	30	2.99	Egg Land's Best	7
User B	Milk	6/15/2020	1	133	2.49	Dean's	12
User C	Chicken	6/18/2020	2	50	10.5	Jewel Osco	5

Datasource

- Purchase history from Amazon
- Quantitative survey of 10,000 households across the U.S.
- Qualitative research - observing different types of families

Food storage and consumption

EXAMPLES					FEATURES					LABELS	
Customer ID	Household structure				Food Name	Number of item	Food weight on the fridge shelf (oz / day)	Frequency of the fridge door opening (times / day)	Frequency of ordering food	Frequency of eating outside	Food storage for one week
	Adult	Seniors	Teenagers	Under teens							
User A	2	0	0	0	Eggs	1	-1.4	12	1-2 / week	1-2 / week	Middle
User B	2	0	2	1	Milk	1	-0.8	20	3-5 / week	1-3 / month	Low
User C	0	1	0	0	Cucumber	5	-3.1	8	>5 / week	3-5 / week	High

- User input
- Partnering with Samsung to detect when items in the refrigerator have been depleted
- Weight data from the refrigerator or food containers to see how fast foods are eaten

FOOD QUANTITY DATASET

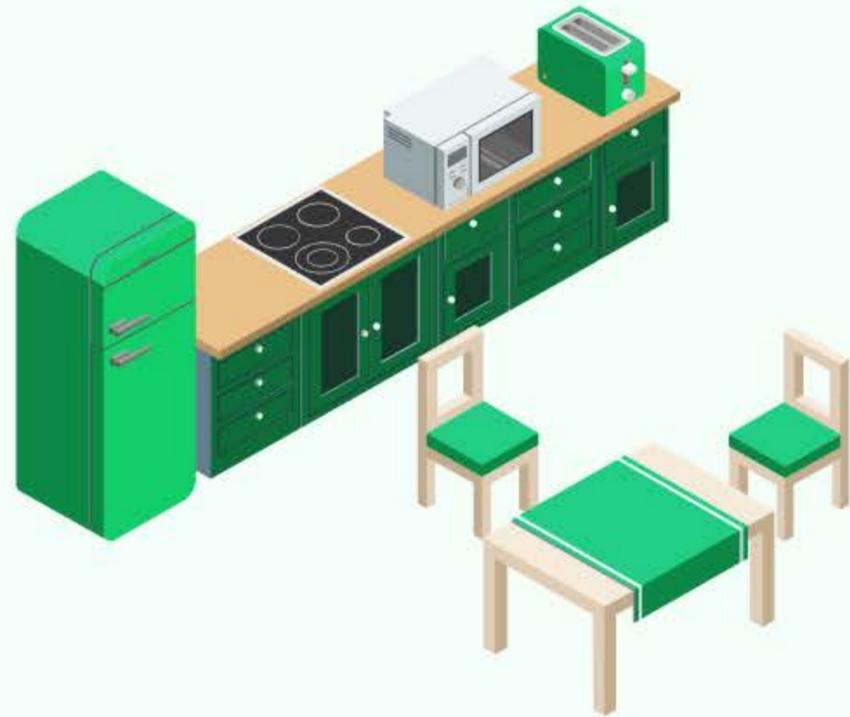
Food storage and consumption

EXAMPLES					FEATURE	LABELS	
Customer ID	Household structure				Picture in the refrigerator	Food name	Food storage for one week
	Adult	Seniors	Teenagers	Under teens			
User A	2	0	0	0		Eggs	High
User B	2	0	2	1		Eggs	Middle
						Apples	High
						Yogurt	Low

Datasource

- User input
- Partnering with Samsung to detect when items in the refrigerator have been depleted

POSSIBLE RATERS



- Understand how to estimate food consumption rate
- Be familiar with North American foods and how they are stored



American homemaker, Chef, Tidying expert, etc

HEALTHINESS DATASET

User Healthiness

EXAMPLES	FEATURES				LABELS
Customer ID	Age	BMI (Body mass index)	Blood Pressure	Calorie Consumption	Health Level (A-E)
User A	18	16 - underweight	116/76	2000	B
User B	32	22 - normal weight	112/78	1800	A
User C	45	33 - obese	135/88	2500	C

Datasource

- Exercise/lifestyle IoT/App (Apple Health, Peloton, Shopwell, etc)
- USDA Datasets (Food nutrition facts, Dietary guideline)

Food Healthiness

EXAMPLES	FEATURES								LABELS	
Food Name	Brand	Calories(kcal/100g)	Carbs(g)	Fat(g)	Protein(g)	Cholesterols(mg)	Sugar(g)	Possible Allergens	Health level (A-E)	Not friendly to...
Pork belly	Cermark	518	0	53.01	9.34	72	0	Albumin	B	High Cholesterol
Milk	Dean's	67	5.42	3.33	3.75	15	5	Lactose	A	Lactose intolerance
Cheesecake	The Cheese Factory	321	25.5	22.5	5.5	55	21.8	Cheese	C	Diabetes

POSSIBLE RATERS

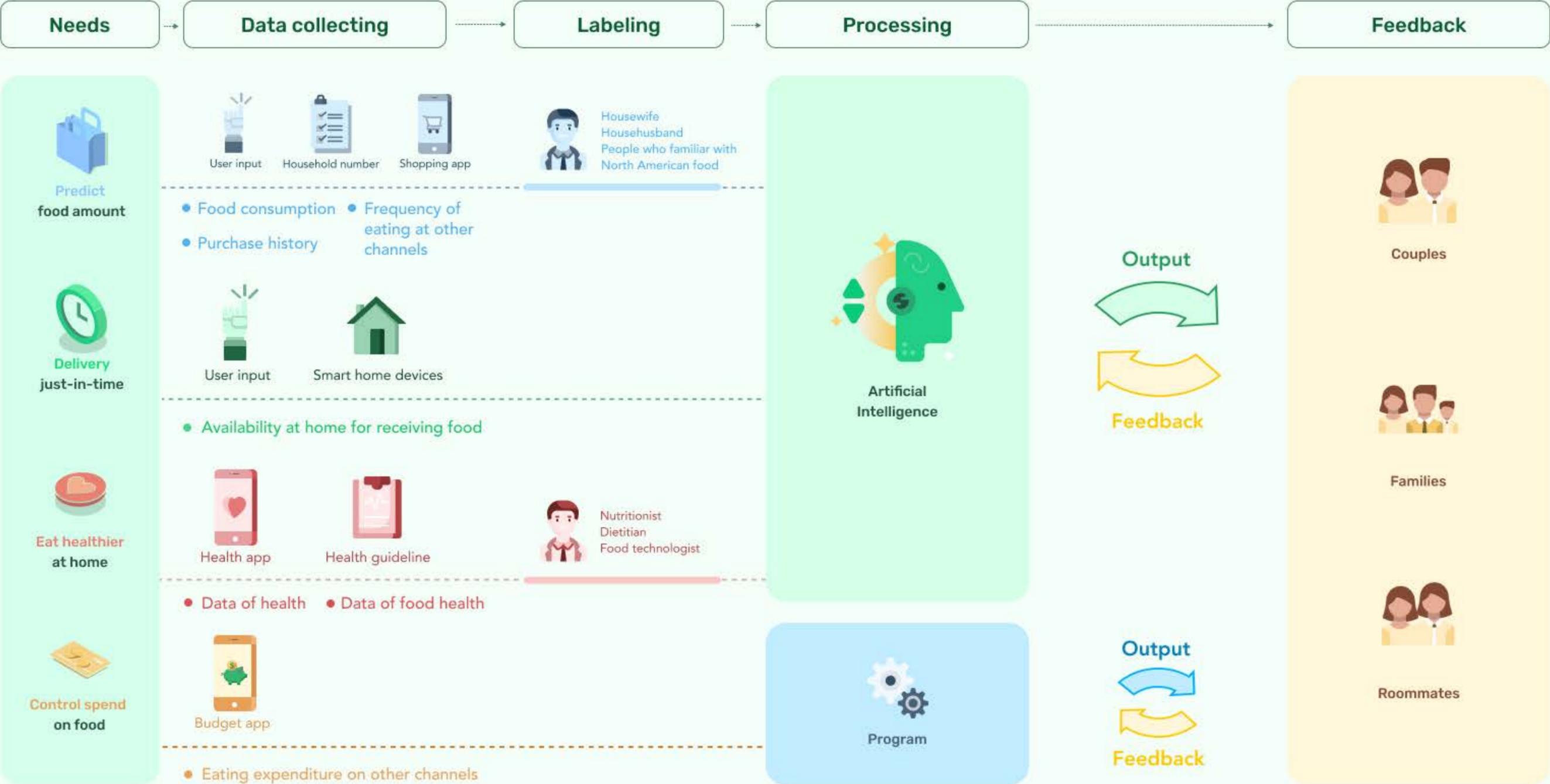


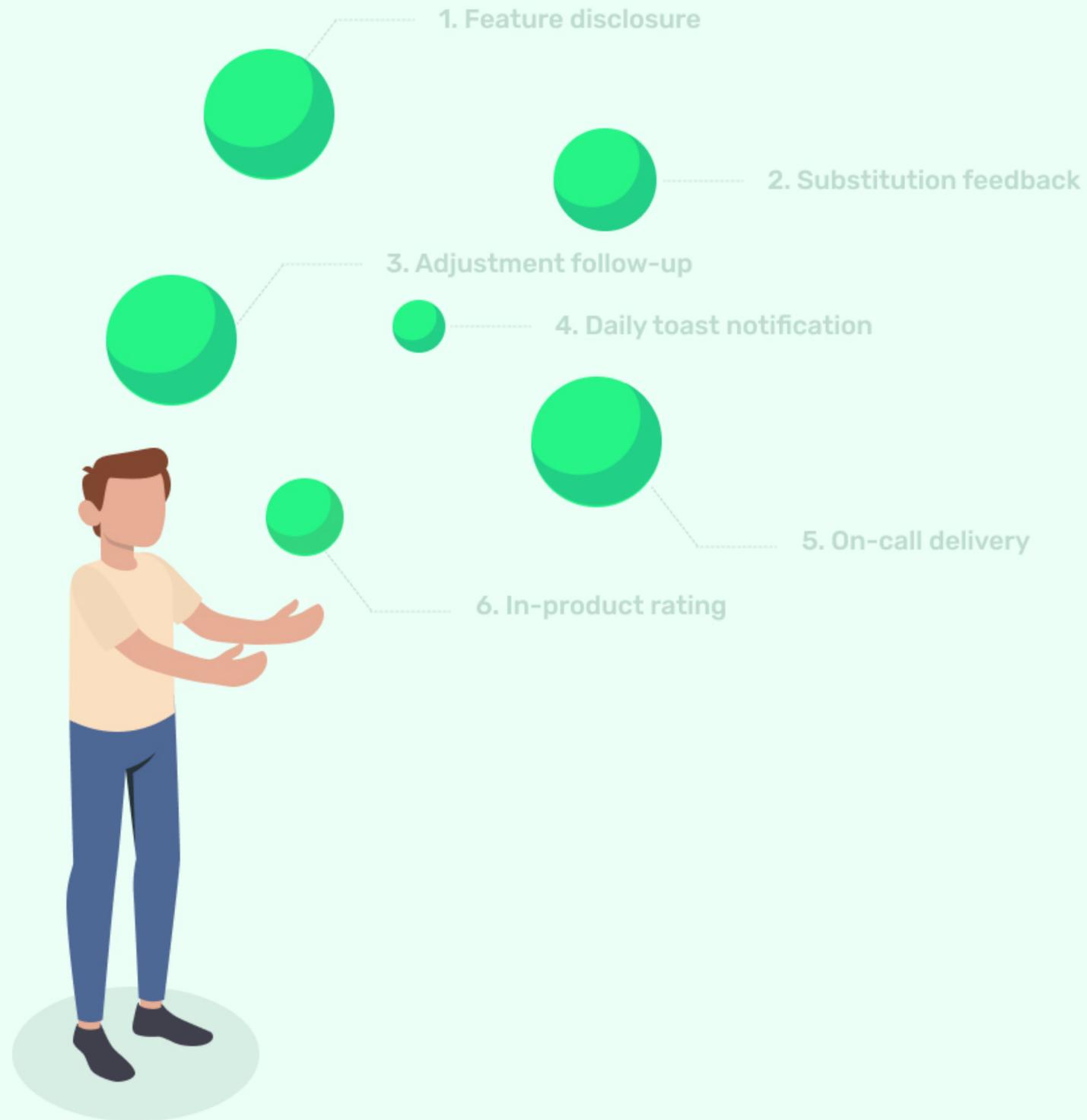
- **Understand how to estimate food consumption rate**
- **Possess a background in nutrition-related disciplines.**



Nutritionist, Dietitian, Food Technologist, etc

HOW WE LEVERAGE AI





FEEDBACK

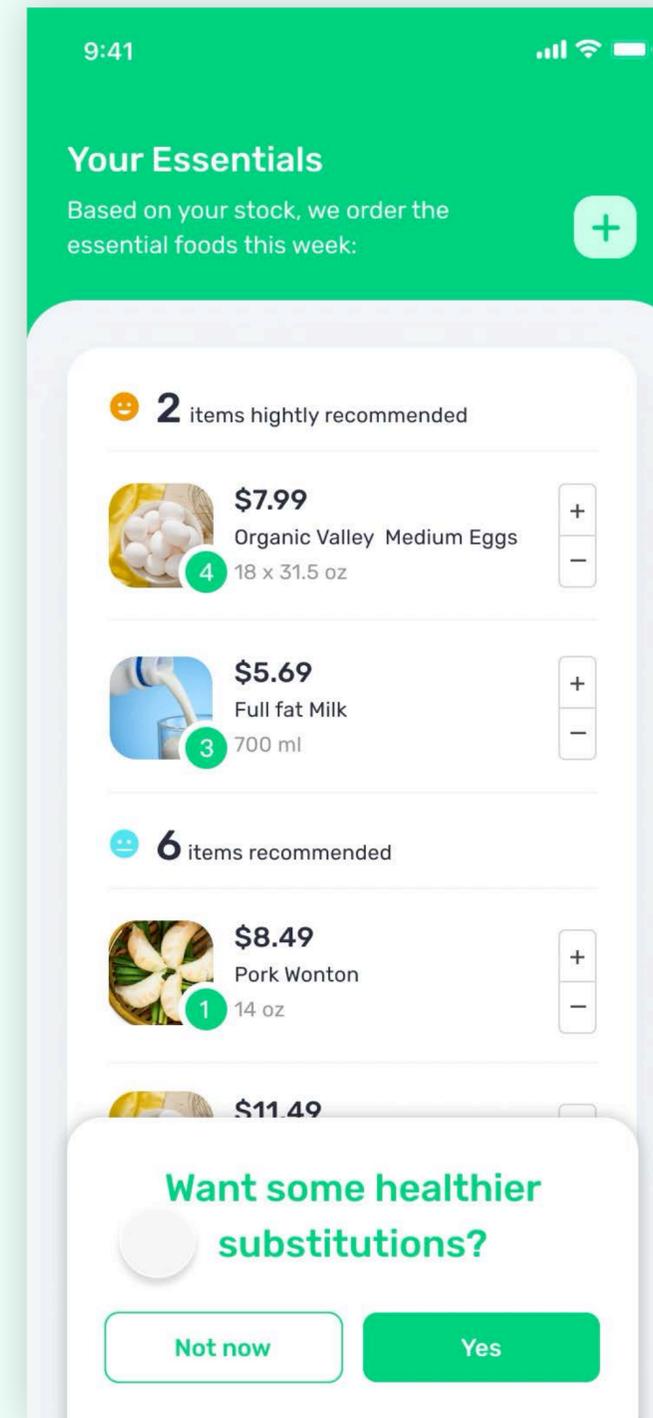
- Introduce features at the right moment
- Collect user feedback in easy and gamified ways



IMPLICIT

Feature disclosure

Introduce healthy substitution and budget management features in-context

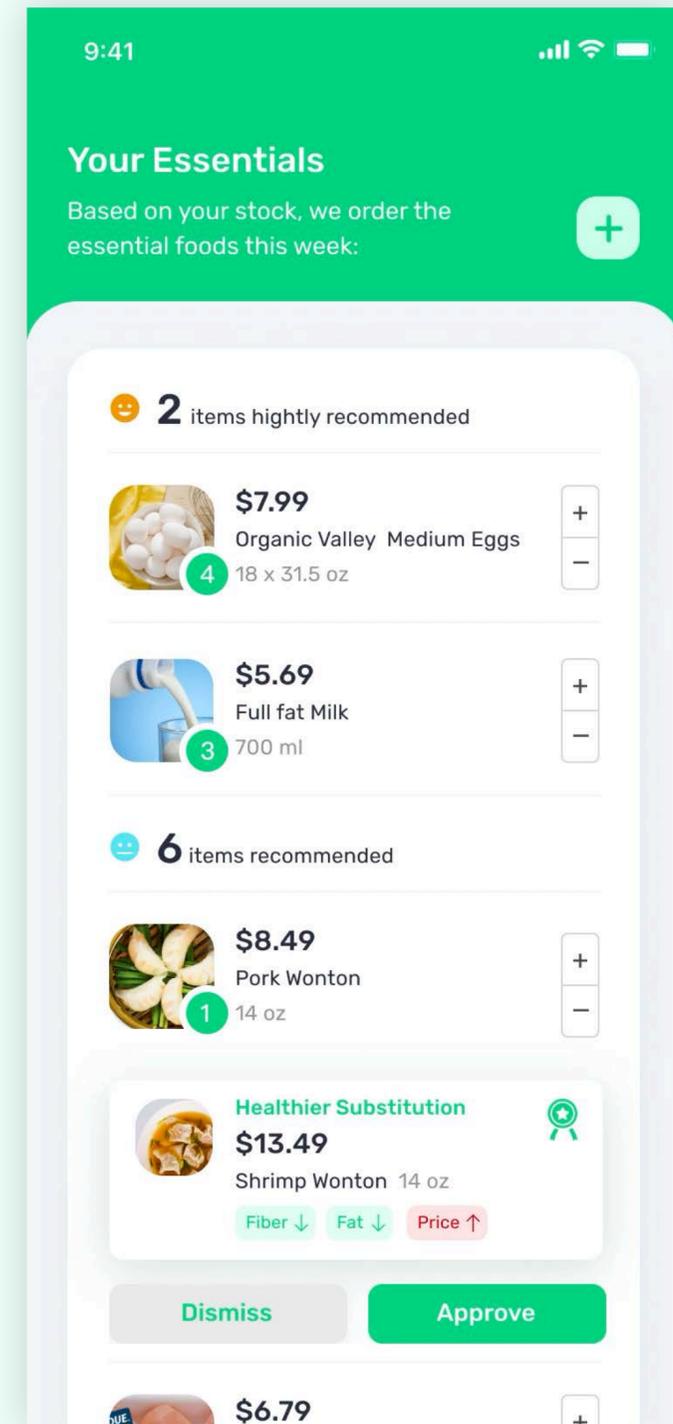




EXPLICIT

Substitution feedback

Check with a quick follow-up question when people dismiss the healthier food suggestion to understand users preference thoroughly.

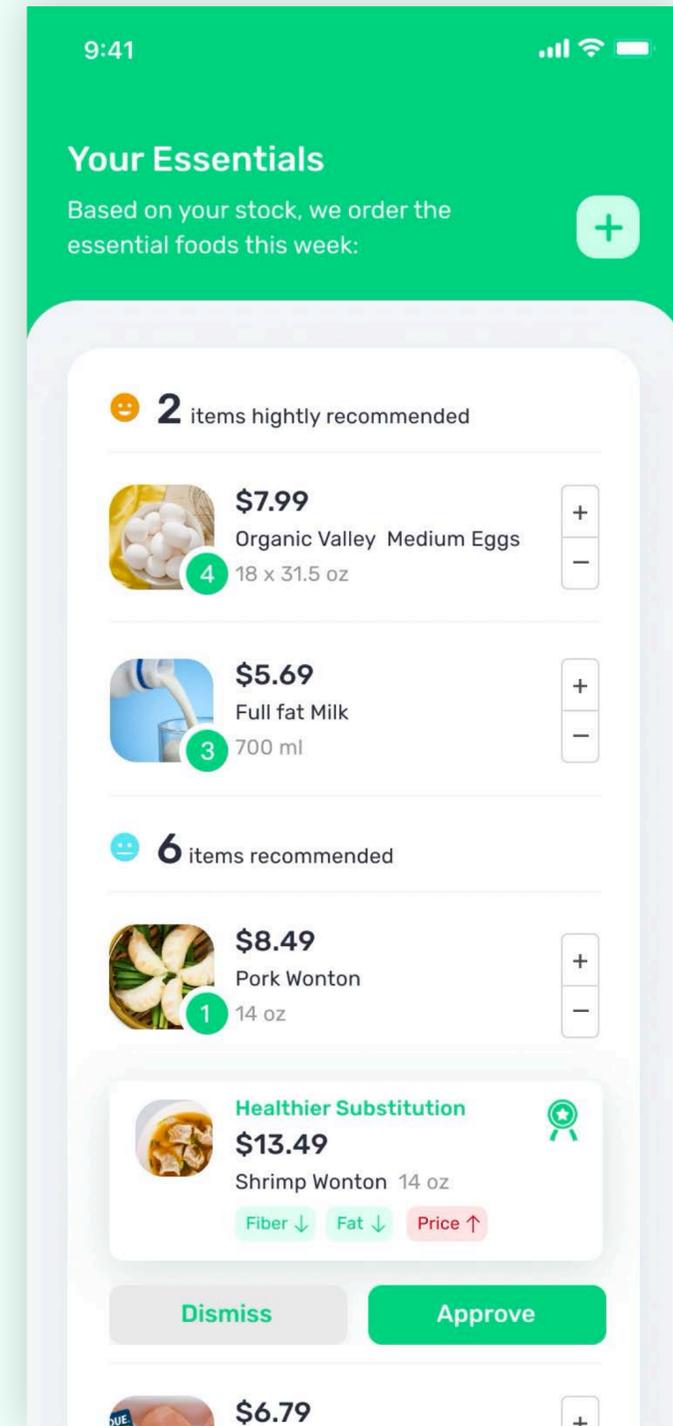


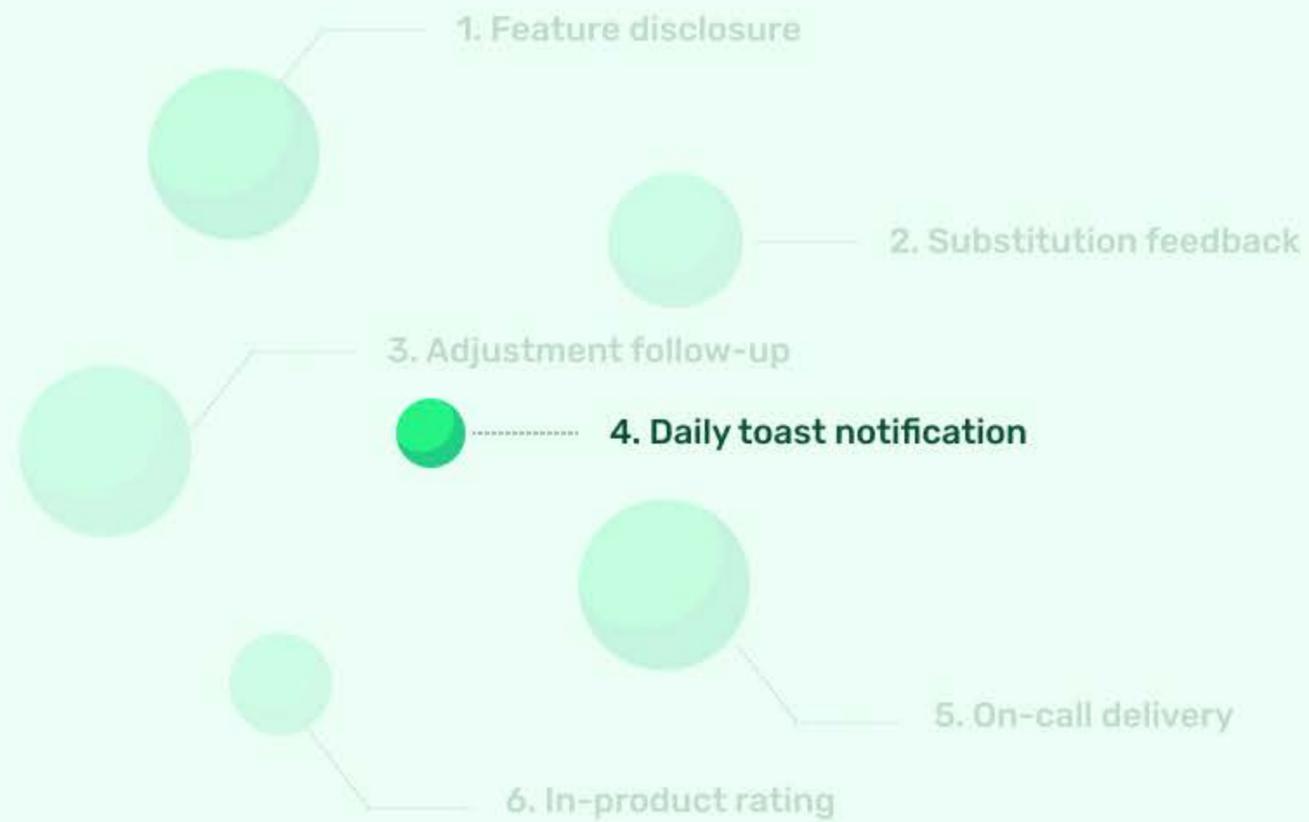


EXPLICIT

Adjustment follow-up

Tie explanations to user actions by asking simple question when users manually adjust the food quantity

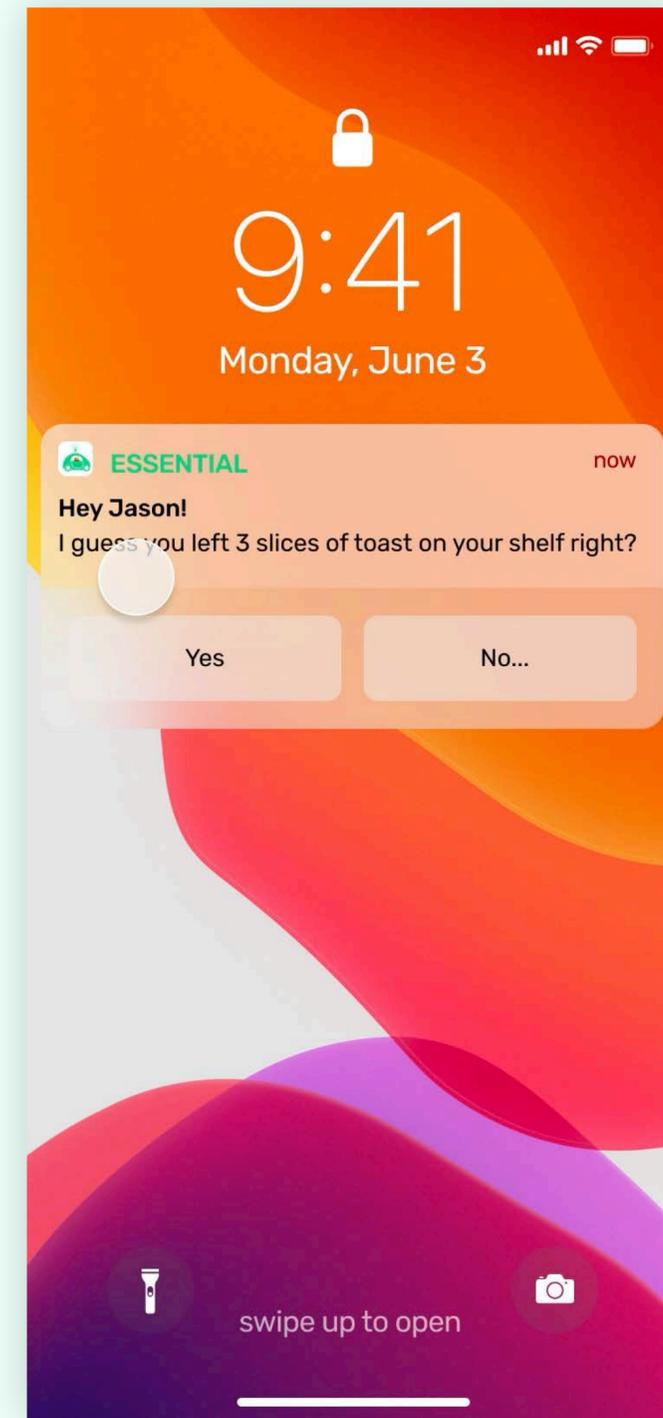




EXPLICIT

Daily toast notification

Display model confidence in a gamified way, optimize users' understanding with example-based explanations

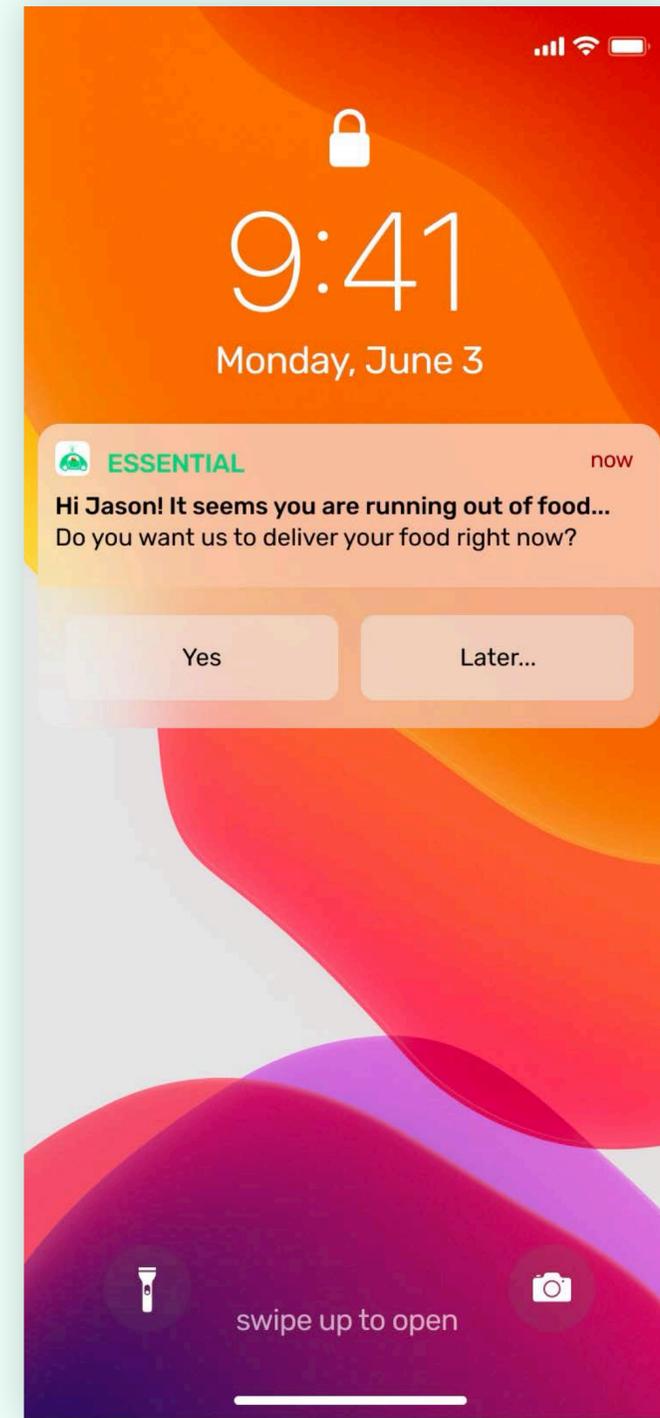




EXPLICIT

On-call delivery

Simplify the delivery process by reminding users with a notification shortcut and collect users' feedback on delivery time to improve the accuracy of future delivery time options.

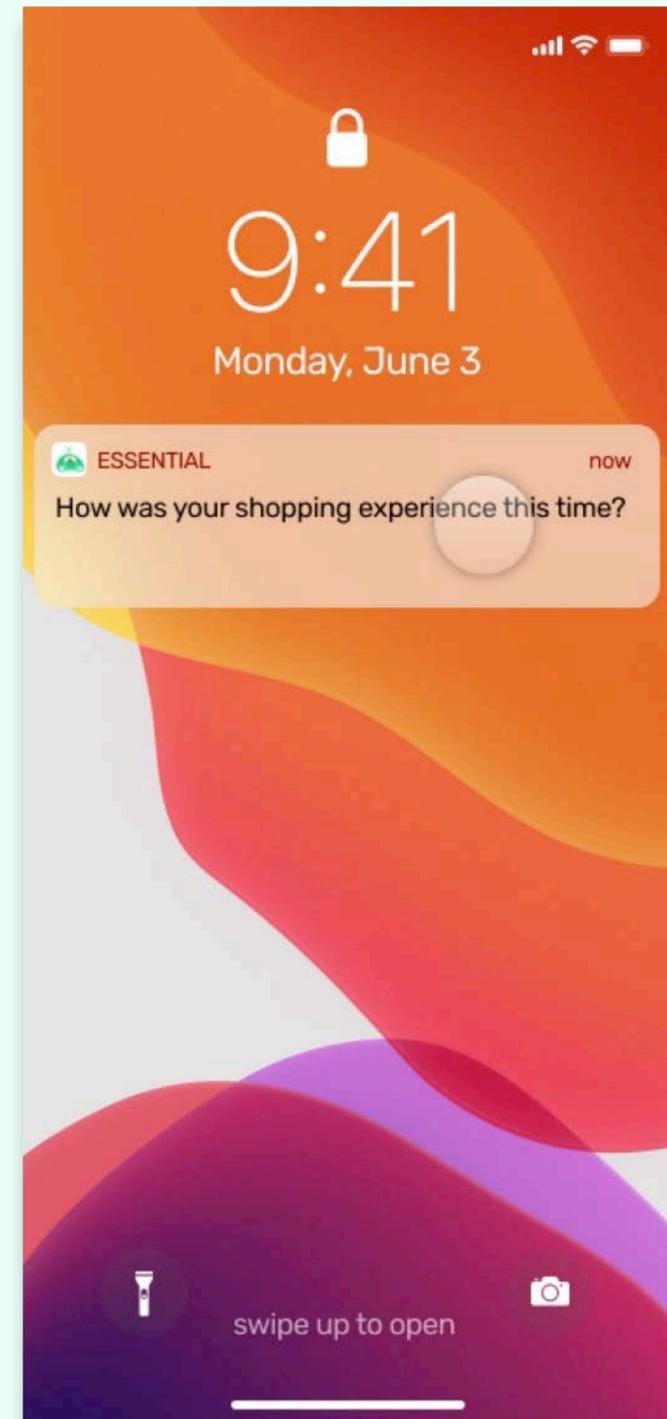




EXPLICIT

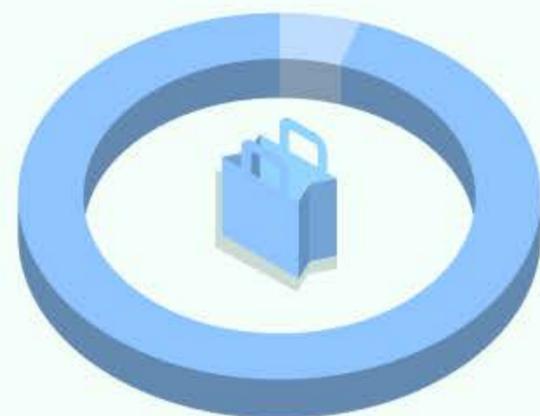
In-product rating

Ask users to recall and rate their latest delivery experience in order to improve the future service accordingly.



SUCCESS METRICS

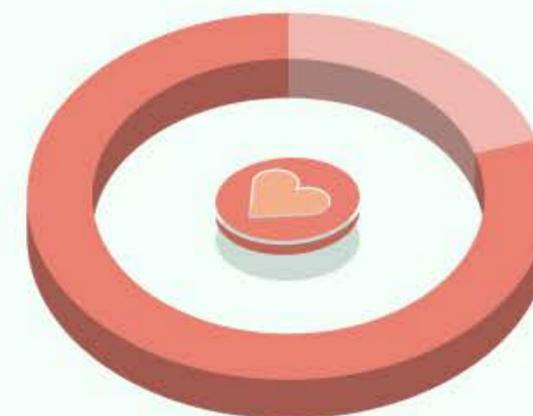
Our target of user acceptance



Quantity 95%



Delivery time 90%



Health substitution 80%

Our principle & action

If the user's average rate of acceptance in the last 30 days drops below the target, We will talk to users about their experience & check our ML model.



THANK YOU !

Next generation of Google Maps

Google Go!

Life is more than going from A to B.



Team 3 | Xuanyu Chen, Sike Liu, Shiya Xiao, Evie Yu, instructed by Ryan Powell

People rely on digital maps for travel almost everyday

The current Google Maps is already the best solution for people to navigate during the trip.

The current experience, however, can always get better.

There are still many ways for Google Maps to fit better into people's real-life behaviors.

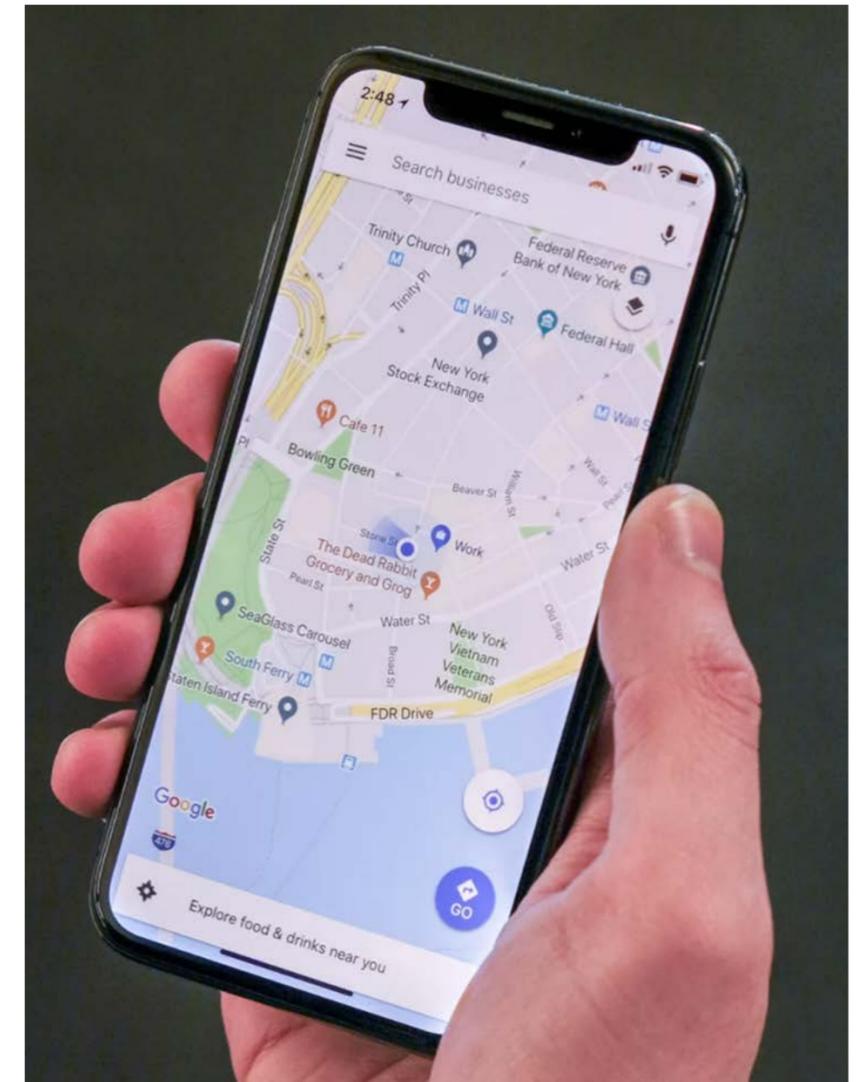


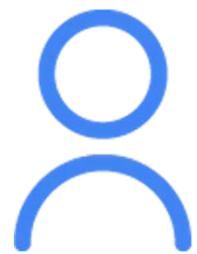
Photo: Chris Welch / The Verge



Users rarely go from point A to B, but real life is more about going from A to [B, C, D].

The current Google Maps is just about going from A to B and finding the shortest distance for users.

*"There are so many Trader Joe's in the city. But I want to go to the one at South Loop **instead of the one near me** because I can go to the Jewel Osco as well if I can't find what I want to buy."*



Jennifer

closest



best



trader joe's

Sort by Open now More Filters

Specialty grocer with housebrand items

Trader Joe's Specialty grocer with housebrand items

Trader Joe's Specialty grocer with housebrand items

NEAR WEST SIDE

LITTLE VILLAGE

Trader Joe's 4.6 ★★★★★ (1,687) · \$\$ · 1.9 km Grocery store · 44 E Ontario St Open · Closes 20:00

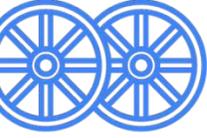
Trader Joe's 4.6 ★★★★★ (2,096) · \$\$ · 2.1 km Grocery store · 1147 S Wabash Ave Open · Closes 20:00

Trader Joe's 4.6 ★★★★★ (757) · \$\$ · 3.8 km Grocery store · 1840 N Clybourn Ave Open · Closes 20:00

Trader Joe's 4.7 ★★★★★ (1,231) · \$\$ · 5.7 km Grocery store · 667 W Diversey Pkwy Open · Closes 20:00

Trader Joe's

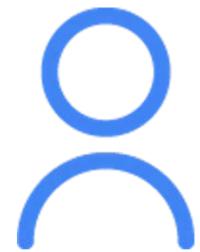
Current Google Maps



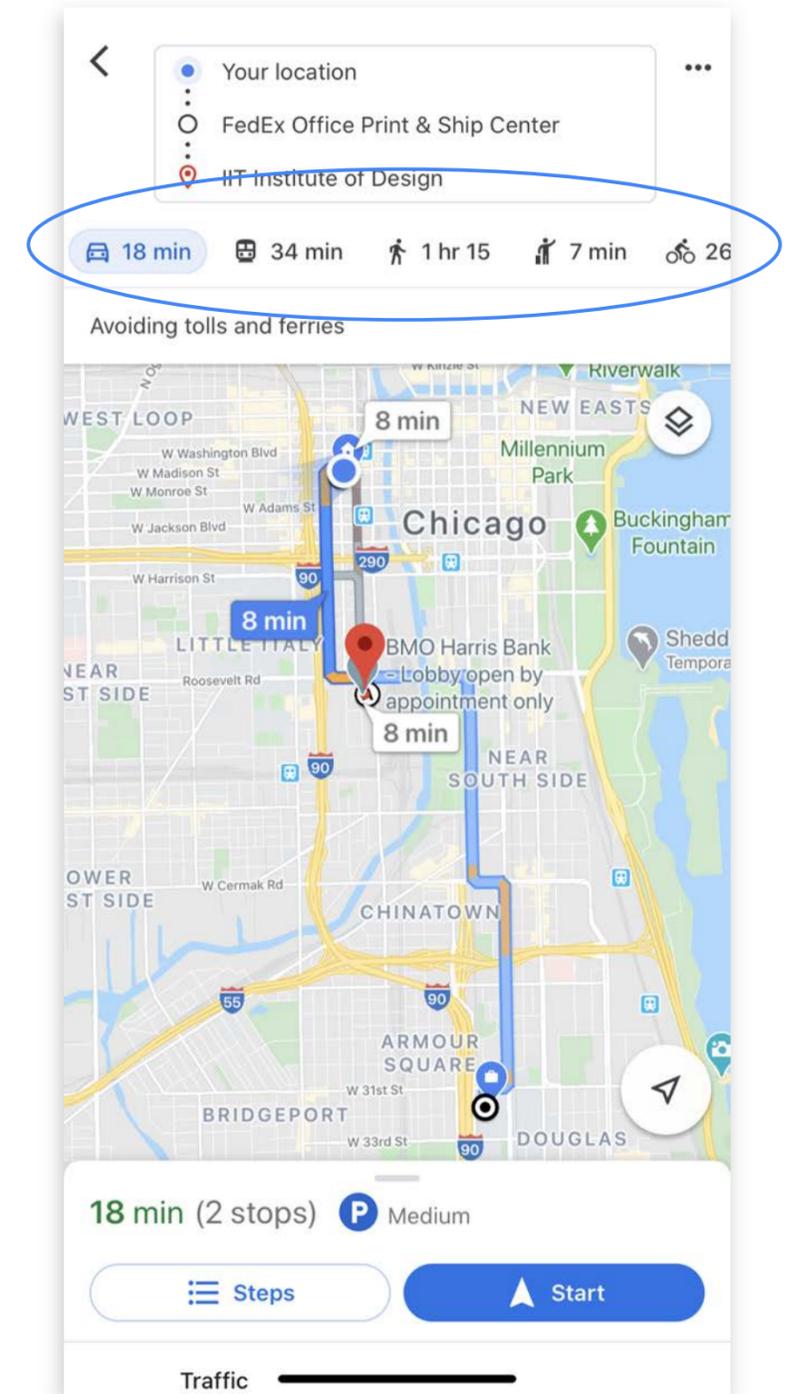
Users would more like to use multiple transportation modes in one single trip.

The current Google Maps forces users to choose only one mode.

*"I have my regular route for school, but sometimes I want to stop at the post office on the way to school. It is too pricey to call **Uber** twice, but **walking** is also not my first option because of Chicago's long winter."*



Emily



Current Google Maps



Users need an easy, straight-forward, intuitive experience.

The current Google Maps navigates users with no priority. This leads to repeated interactions with the app during the trip.

“ When I am driving alone, if I want to go to the gas station during the trip, I have to pull over, take the phone off from the stand, and search for it and re-plan my trip. ”



Creator: Jordan Siemens | Provider: Getty Images



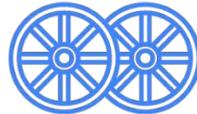
Yousef

Opportunity: A more user-centered solution that considers real life usage

User needs



Users rarely go from point A to B, but real life is more about going from A to [B, C, D].



Users would more like to use multiple transportation modes in one single trip.



Users need an easy, straightforward, intuitive experience.

Current Google Maps

The Google Maps is just about going from A to B and finding the shortest distance for users.

The Google Maps forces users to choose only one mode.

The Google Maps navigates users with no priority. This leads to repeated interactions with the app during the trip.

Opportunity

A tool helps users' tasks in multiple locations done.

A tool is more flexible: customize route and transportation modes based on personal needs and conditions.

A tool can recommend users of key points during the trip and predict possible middle stops.

Google Go!

Life is more than going from A to B.

AI-powered Google Go!
helps people complete
their multiple tasks.

Let's go from A to B, C, D,
and places you need!

Google Go!

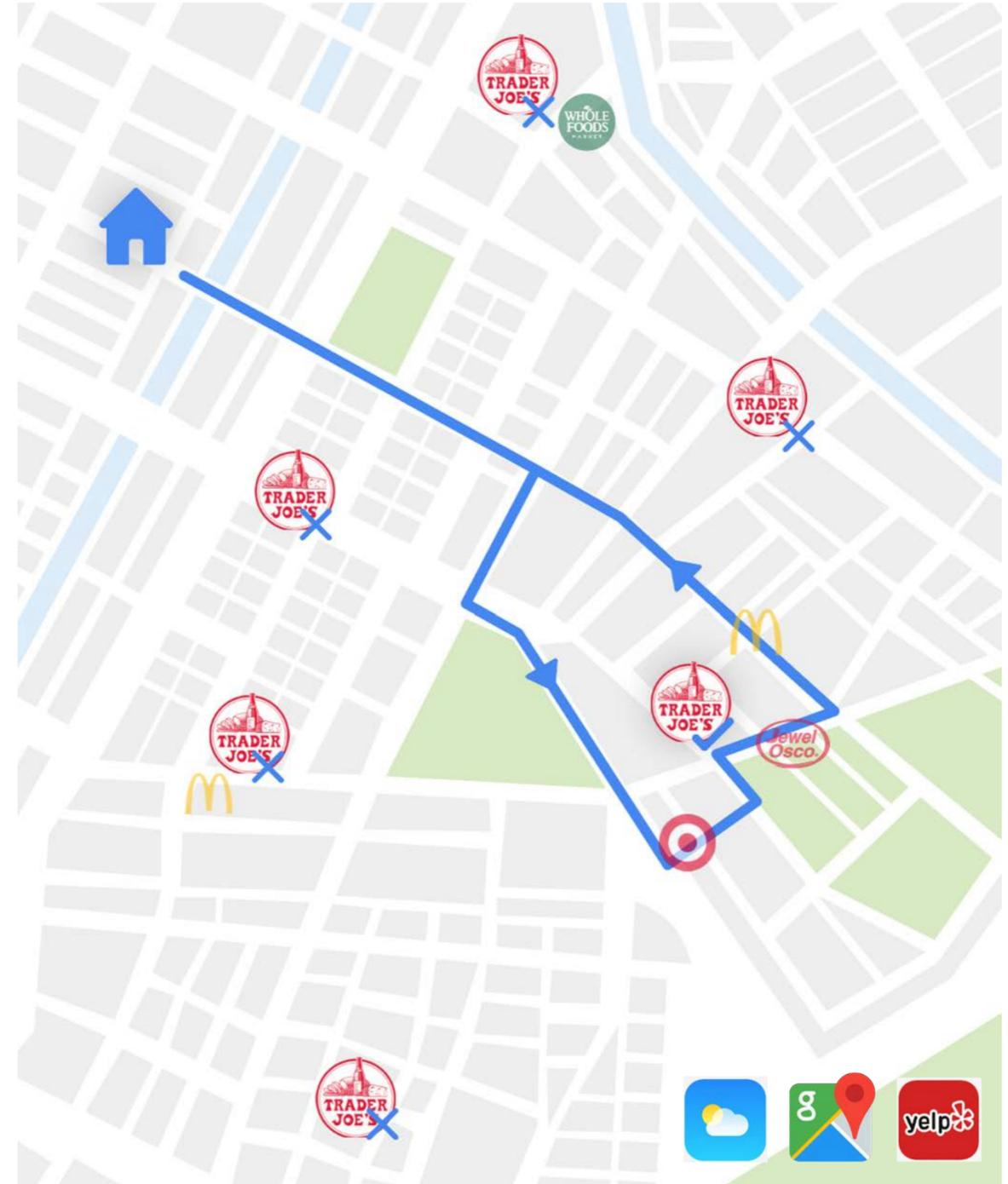
Google Go! focuses on the user journey from planning to on-the-road experience.

Google Go! suggests **combinations of stops** to users to help them **plan and customize their multiple-stop trip** based on their personal needs and conditions.

Google Go! uses AI to augment users' ability to find the right route based on their daily needs and conditions.

With Google Go!, figuring out a suitable route to finish multiple tasks while considering various factors will no longer be a challenge to users.

- Users' ability to choose could to be enhanced by AI suggestions.
 - Mainly based on patterns learned from a large number of users' daily trips. The AI-powered Map can predict personalized routes and give proper suggestions for different users to plan their route.
 - Users can also take advantage of AI's ability to consider multiple factors (e.g., place busyness, daily weather, route cost) during their route planning process to help them find the best route easily.



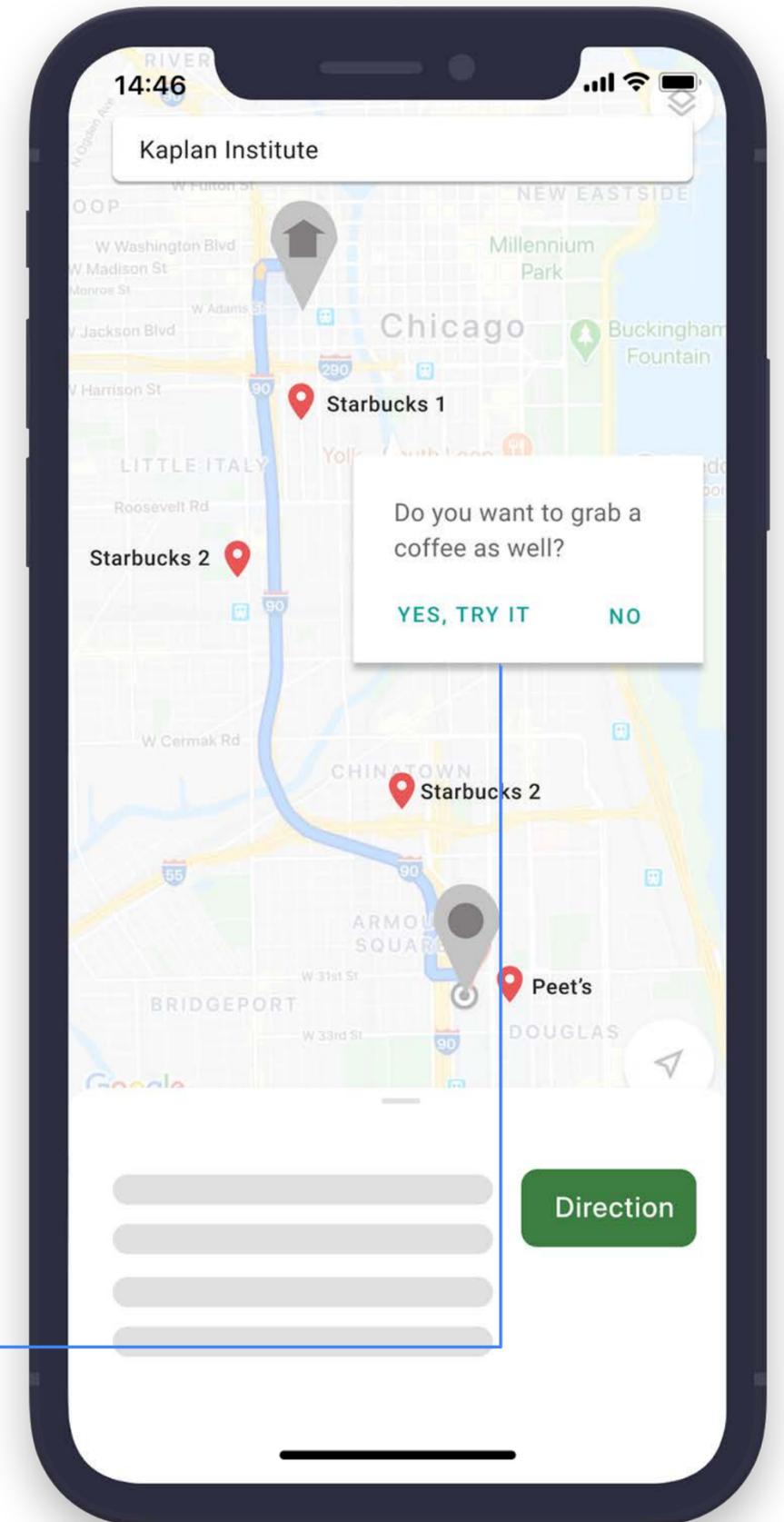
Onboarding

- Do you hate reading maps?
- Do you get tired of choosing the destinations to meet your various daily needs?
- Do you get bored with calculating and comparing the routes by yourself all the time?

If yes, try the new version of Google Maps! Google Go!

Mainly based on your preference and also patterns learned from a large number of users' daily trips. It will gradually adapt to the pace of your everyday life and recommend routes even for multi-tasks.

When the user search a specific place as usual (previous mental model), the app gives the user a recommendation/prediction to help transition



Start the Experience



Meet Nick

28 years old

Live in Chicago

Heavy map user

Commute - Scenario 1

Monday, 7 am



Monday morning, Nick wakes at 7 am.



He wants to **get a coffee and a sandwich** on the way to work.

Snowing... "Will I be late?"



The weather is about to **snow**, which makes him worried about being late.



He opens the Google Go!.

Primary Goal:

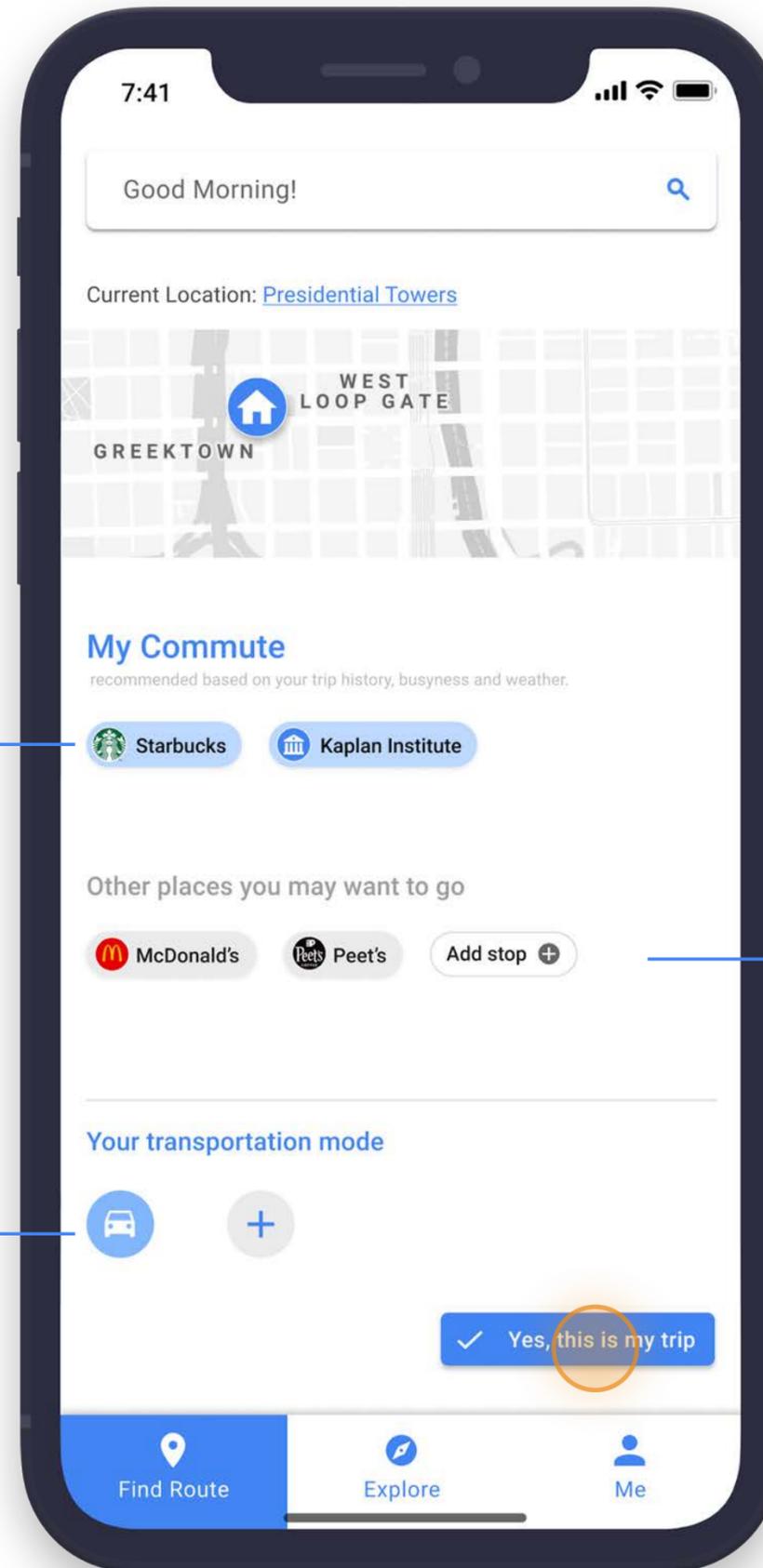
Arrive to work on time, while dropping by Starbucks on the way (considering weather issues).



Recommend stops based on the user's trip history, store busyness, weather, etc.

Drag the stop buttons to add to/ remove from your trip, or change the sequence of these stops

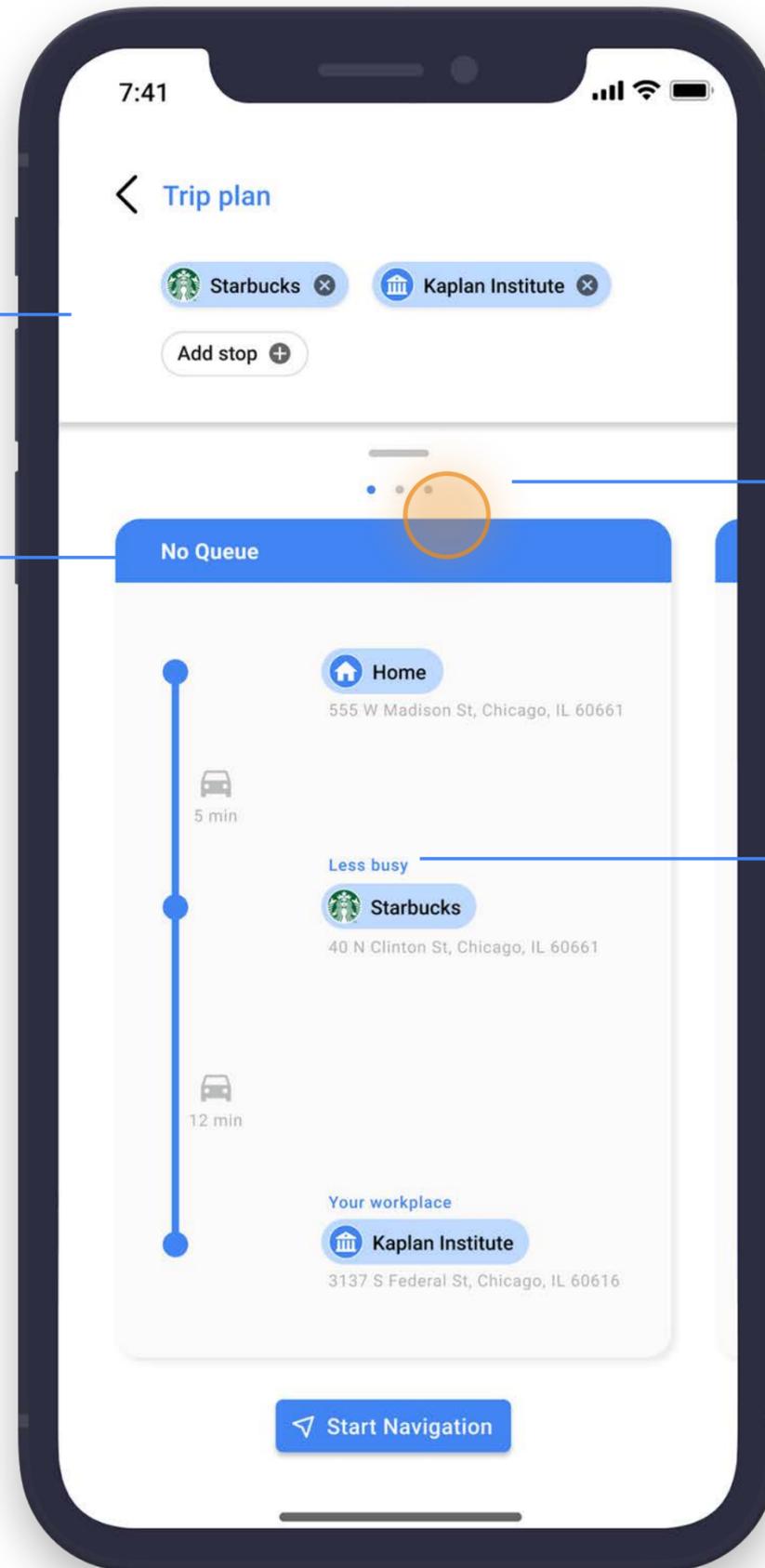
Change the user's regular transportation modes



Predict and suggest other places that the user's may want to go

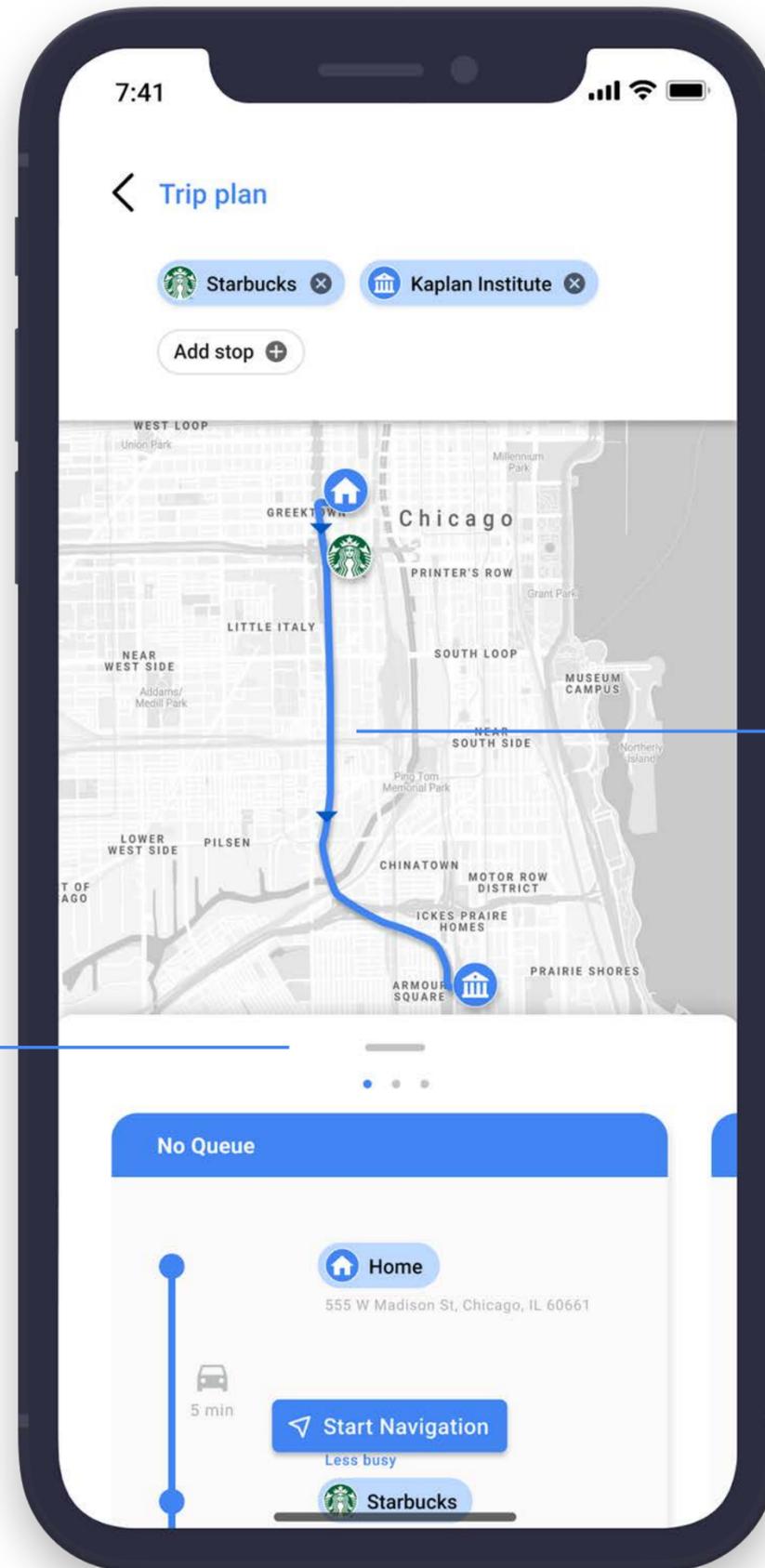
The user is able to edit stops

The value of this route option



Swipe to check other route options

The reason for the recommendation



Swipe down to see the route plan on map

Compare the routes visually

Run errands - Scenario 2

Saturday, 11 am



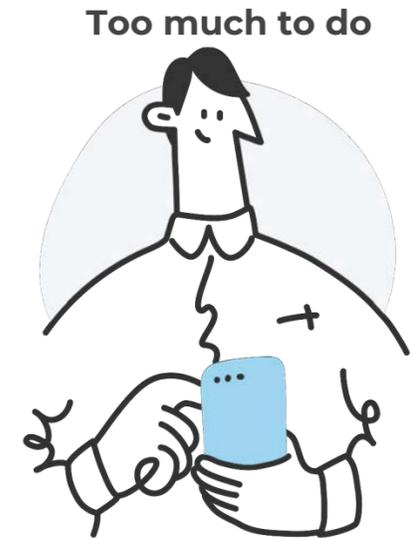
Nick wakes up at 11 am. He realizes he needs to **buy some groceries** as usual.



Also, it's almost lunchtime. He wants to eat something.



He also wants to **return a book to his friends**.



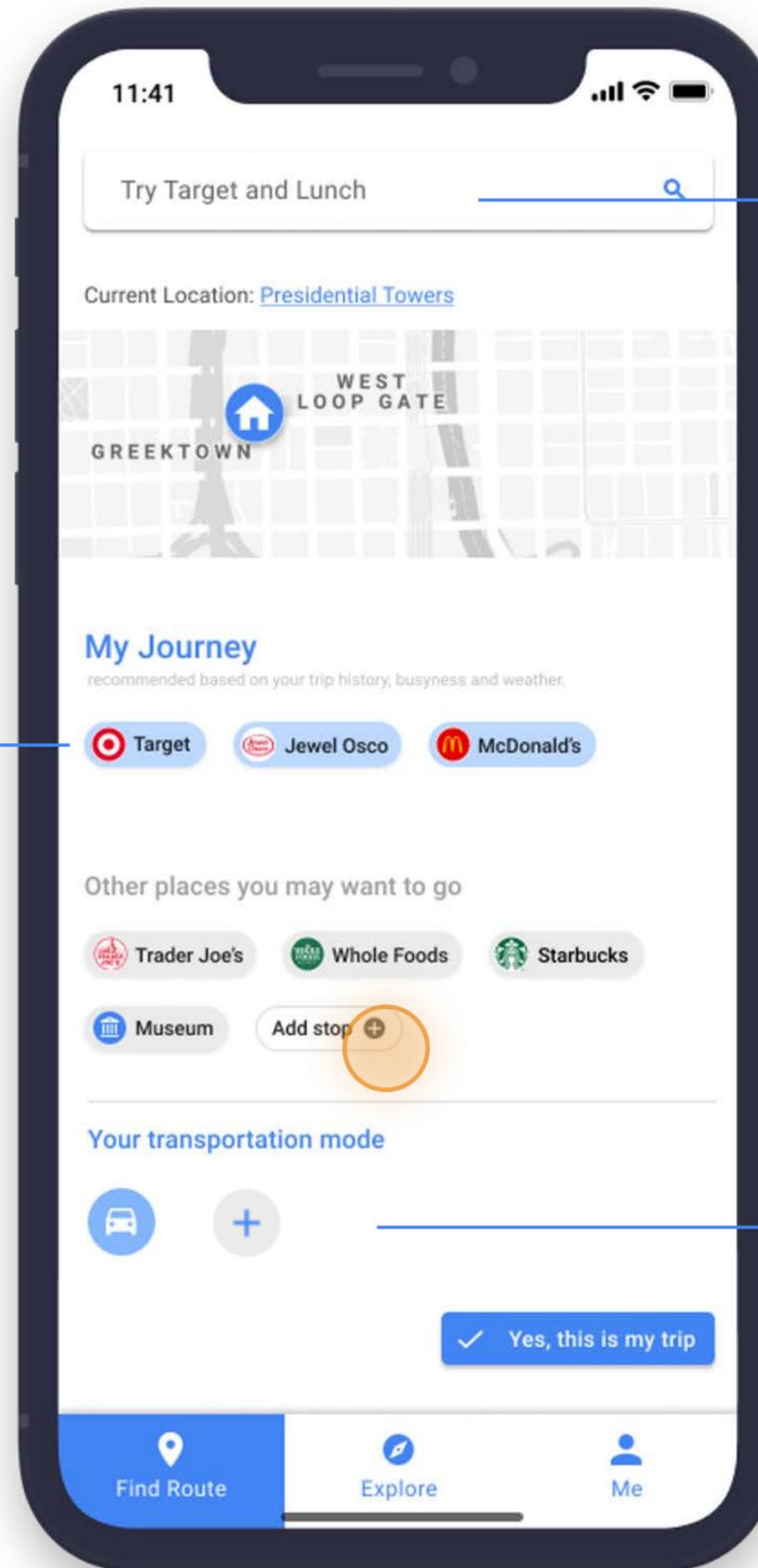
He opens the Google Go!.

Primary Goal:

Efficiently do weekly tasks and go to multiple places in one trip

Recommend stops based on the user's trip history, store busyness, etc.

Drag the stop buttons to add to/ remove from your trip, or change the sequence of these stops

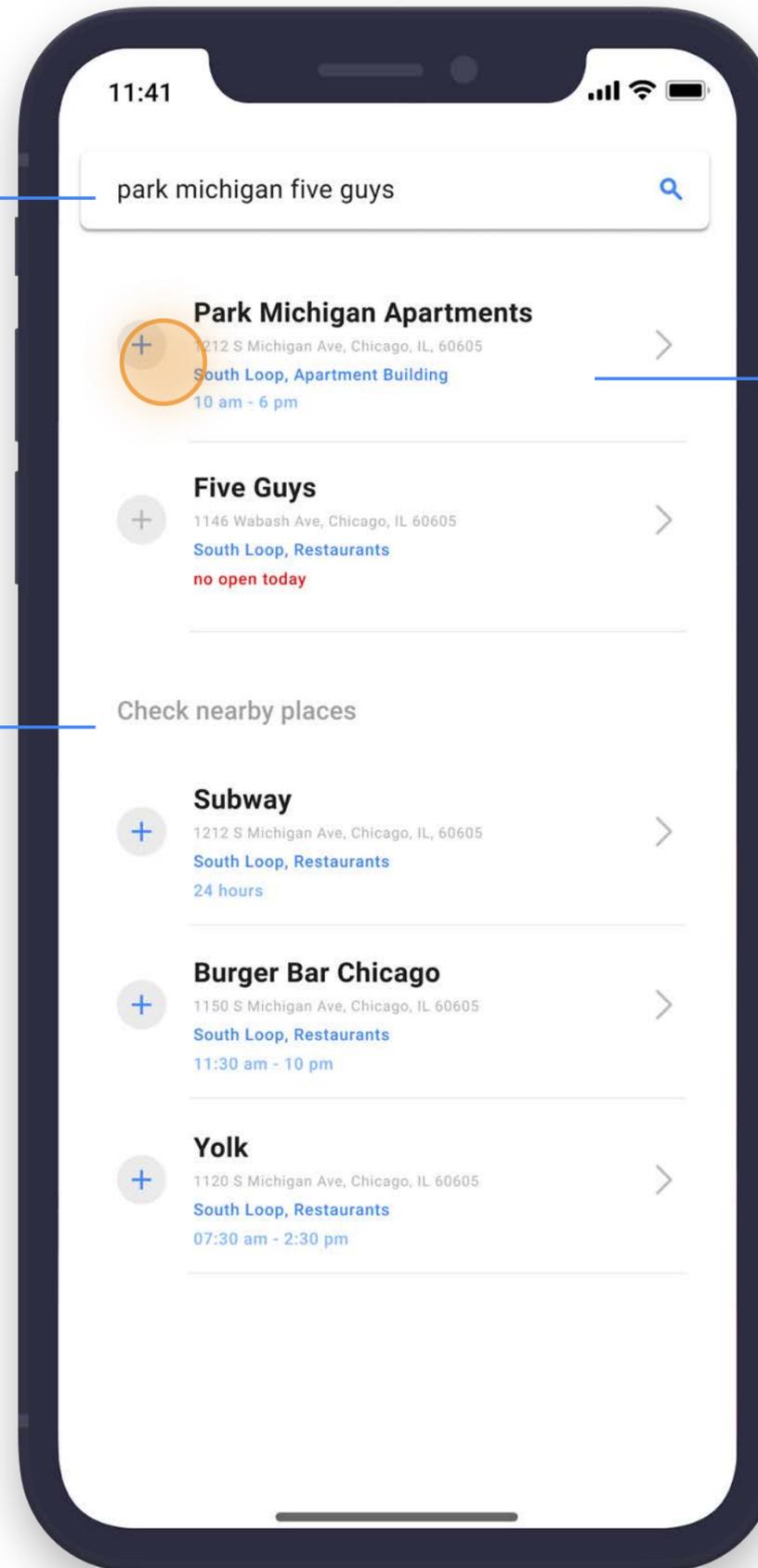


Search hint

User can add multiple transportation modes for this trip

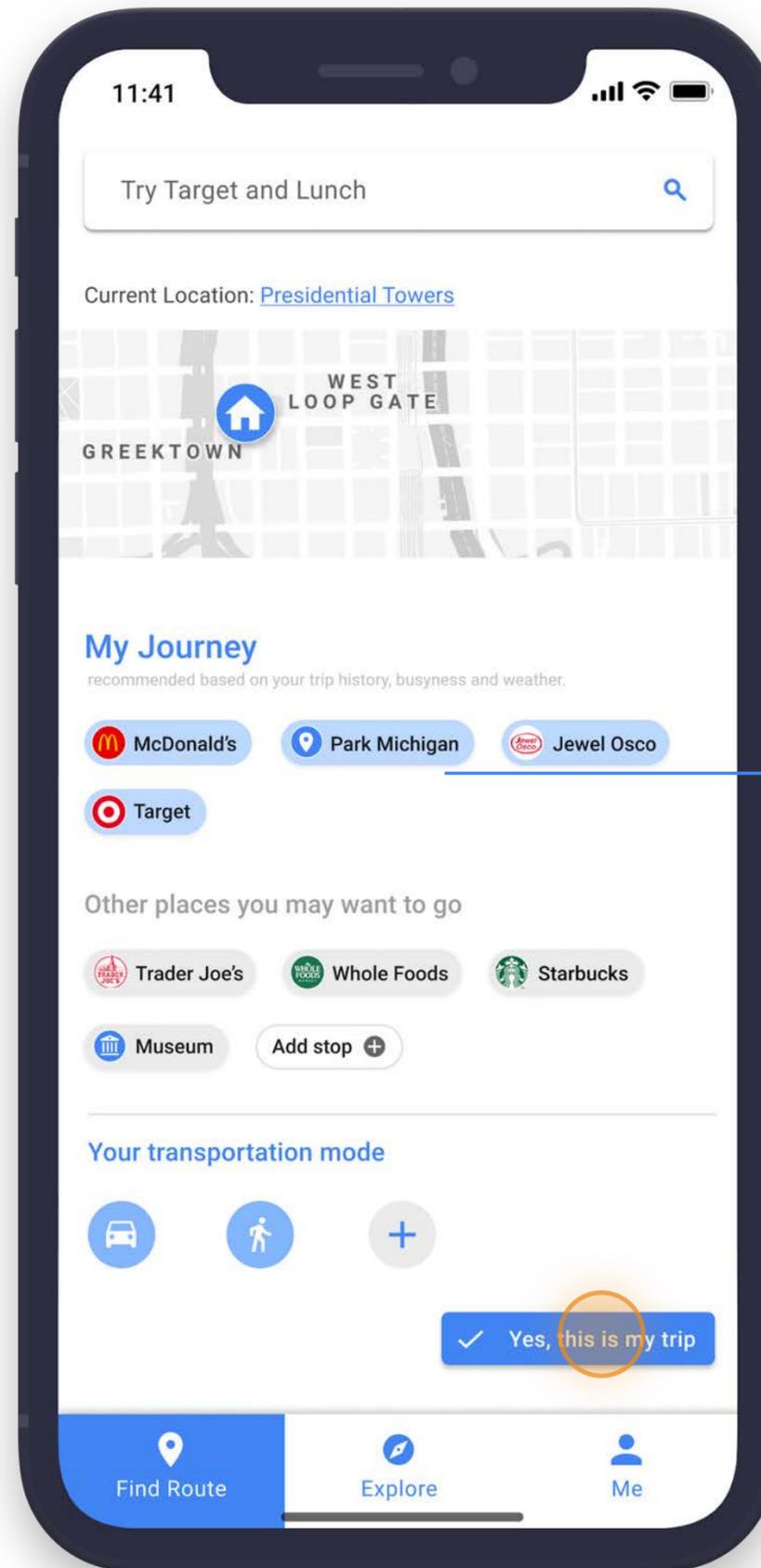
Search multiple places at one time

Recommend nearby and similar places based on the user's preference



The user can directly add stops into the trip on this search page

Show the most important information for users to find places quickly

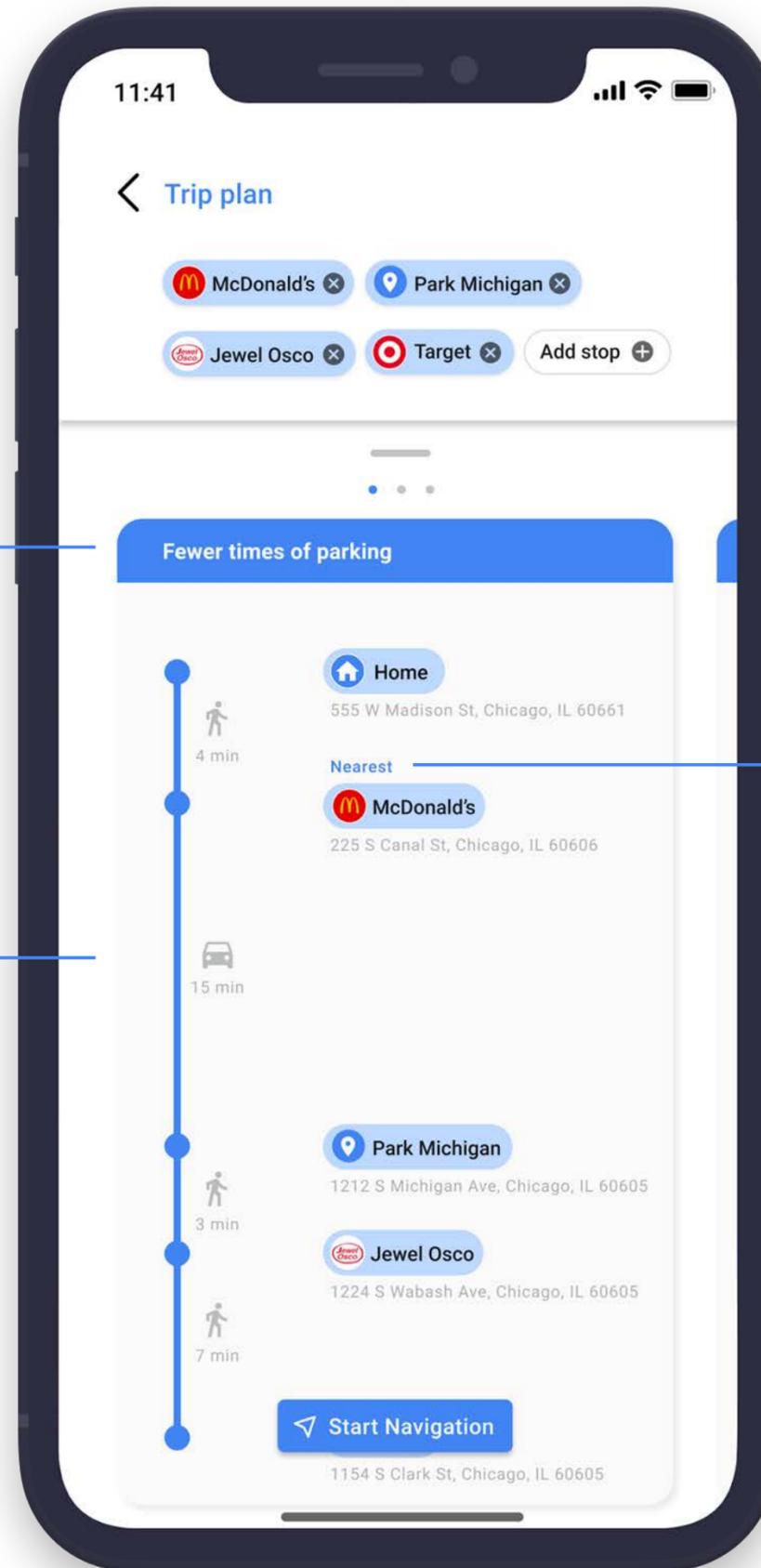


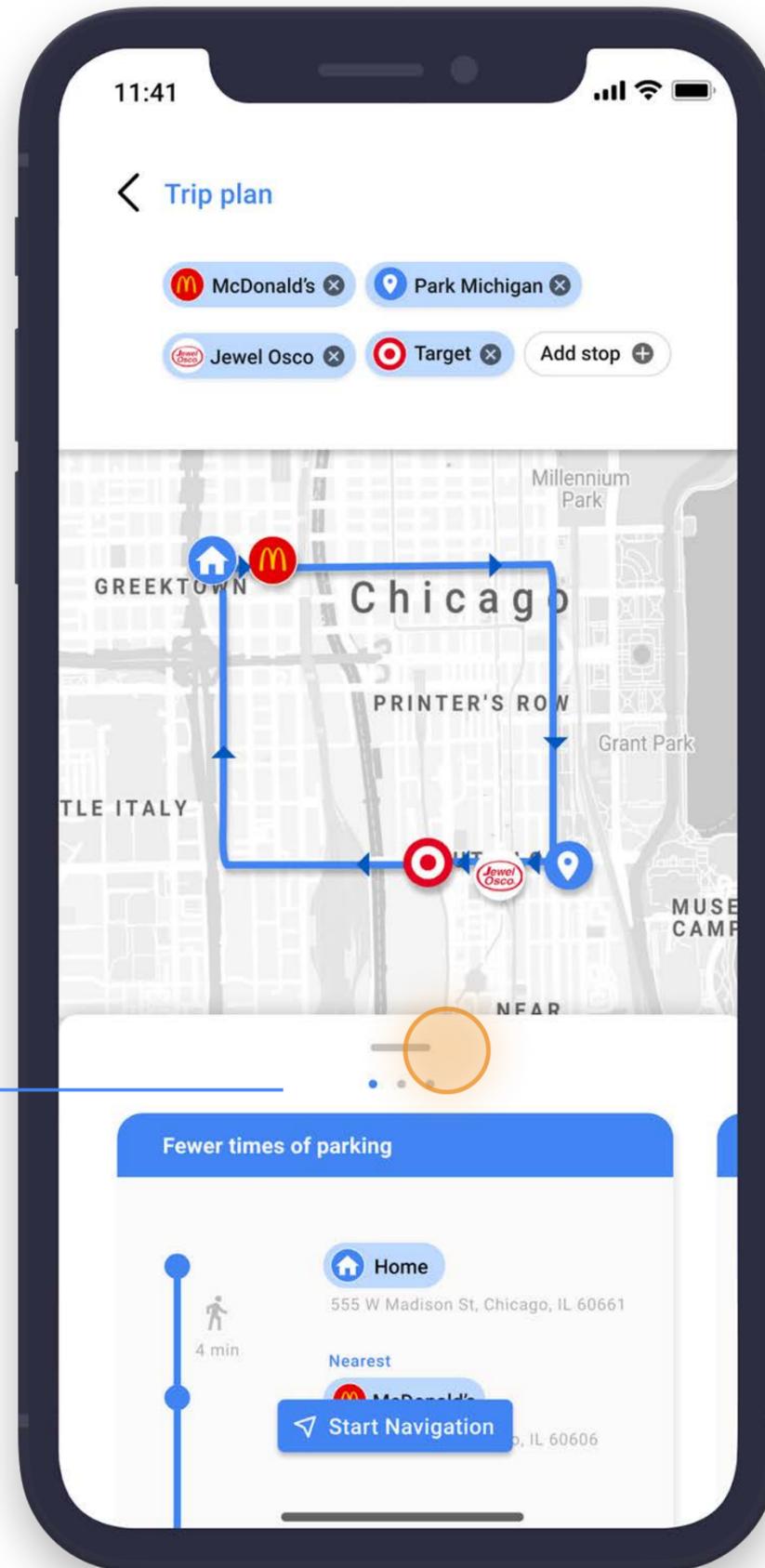
The user can add new stops to the trip, and change the order

The main value of the trip is articulated in keywords

Transportation modes and time needed

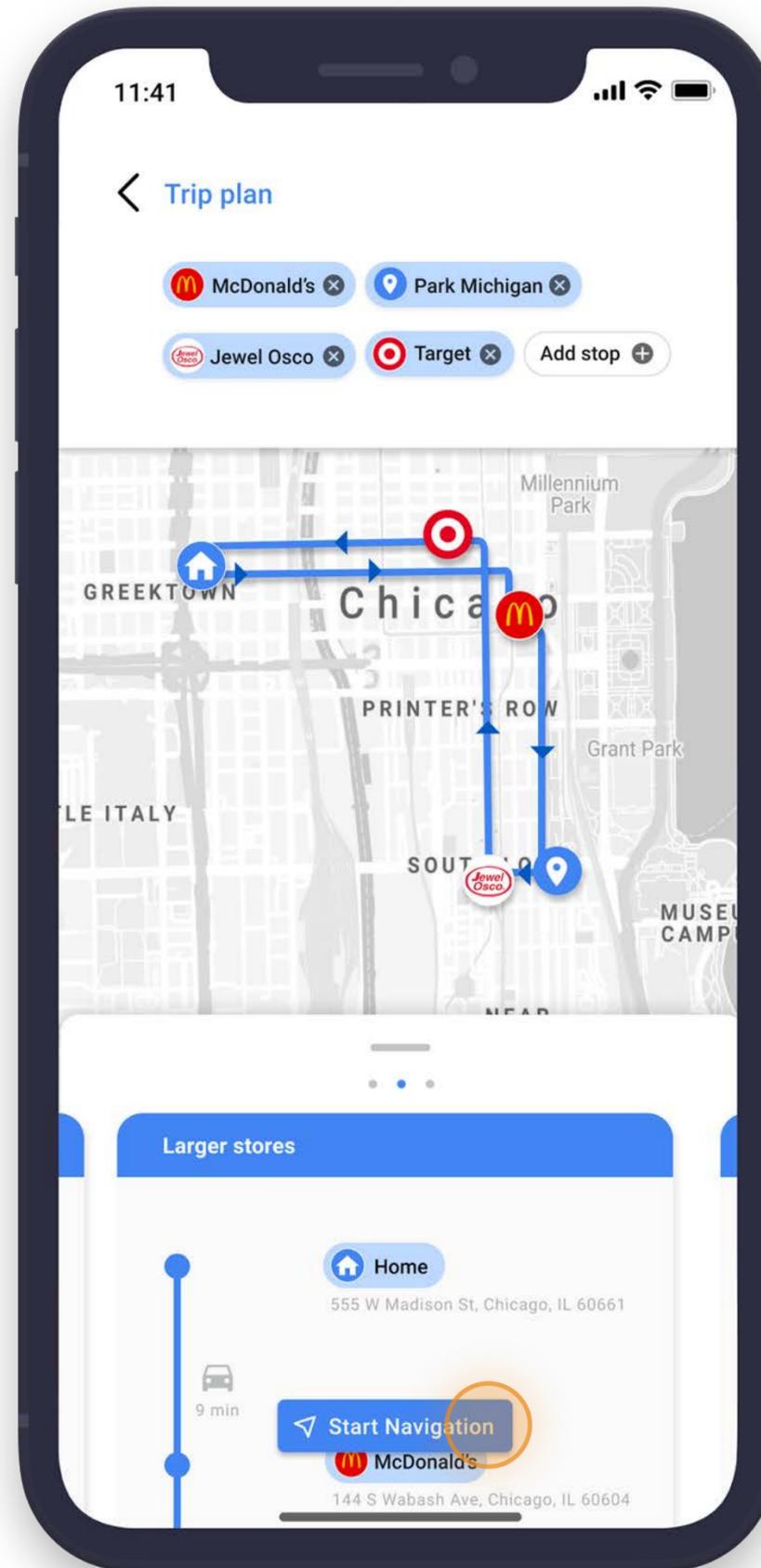
The reason of the recommendation



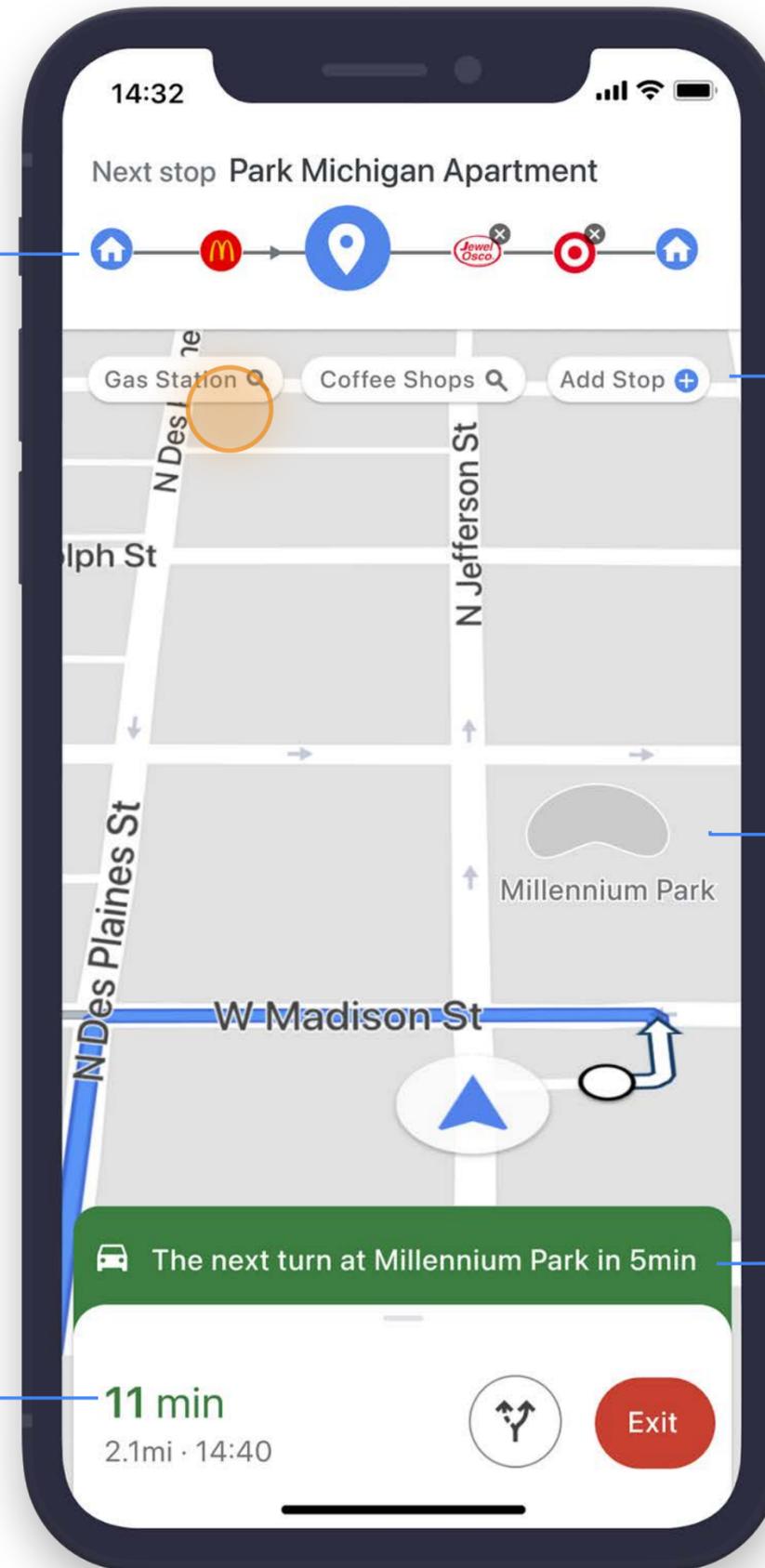


Swipe right or left to check different route options





The next stop:
Showing the progress
of the route

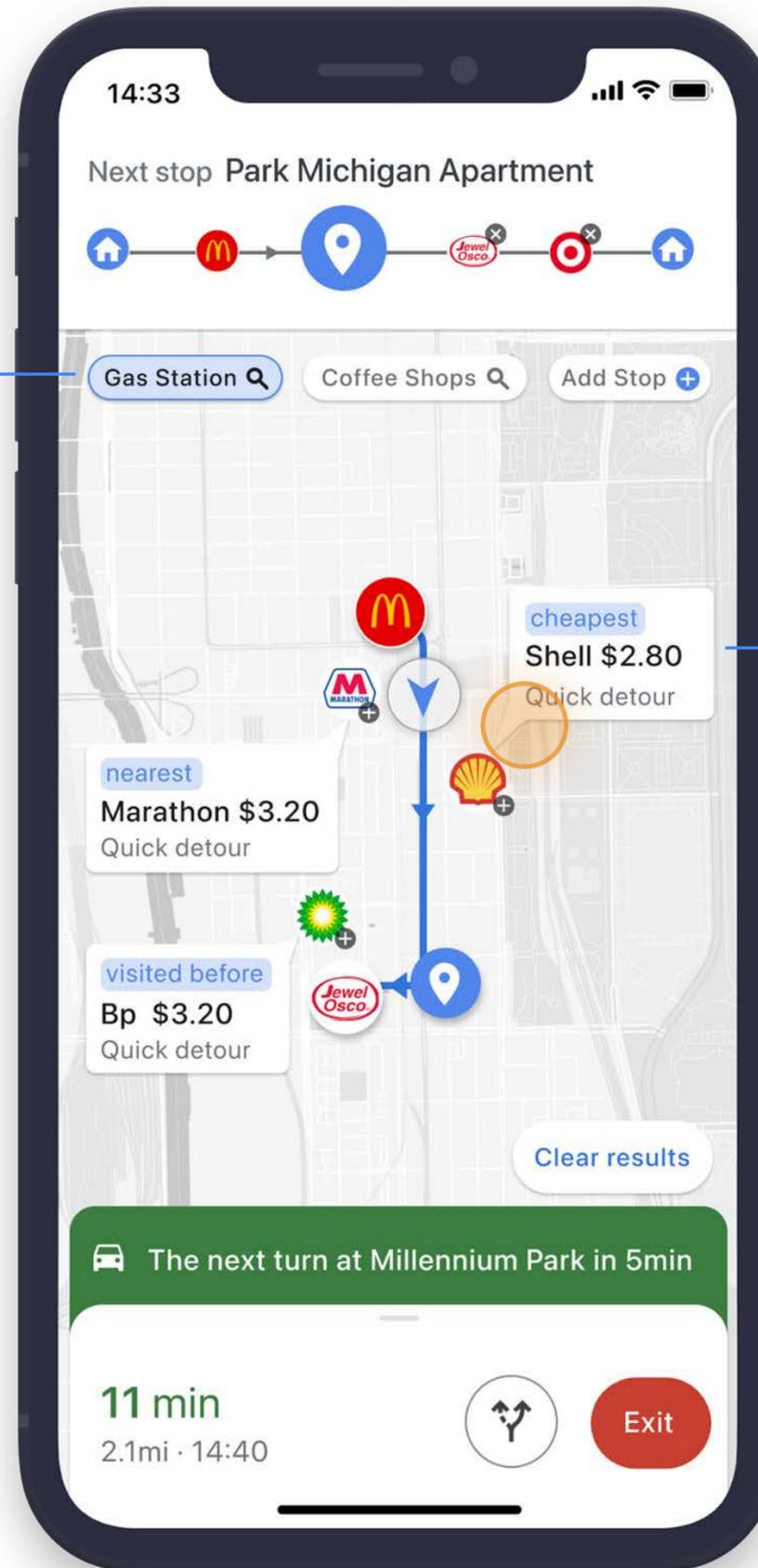


Recommend possible middle
stops to add to the trip

An intuitive way to estimate
the key point of the trip by
using time and give users a
sense of security

Show landmarks as
references to help better
locate the place

The user selects the option to add the gas station to the trip

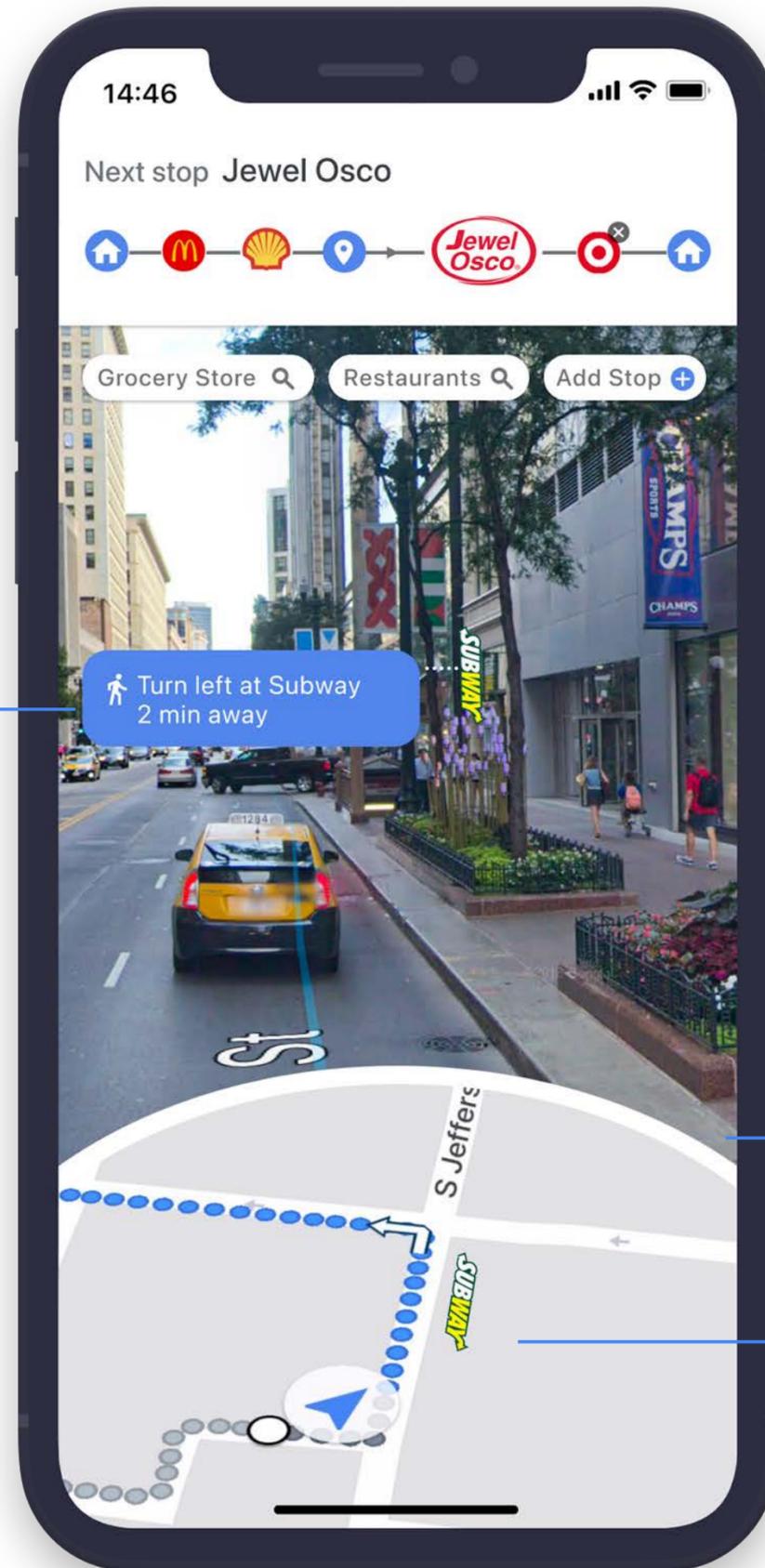


Showing the best stops around with values

Click the logo to add the stop to the trip

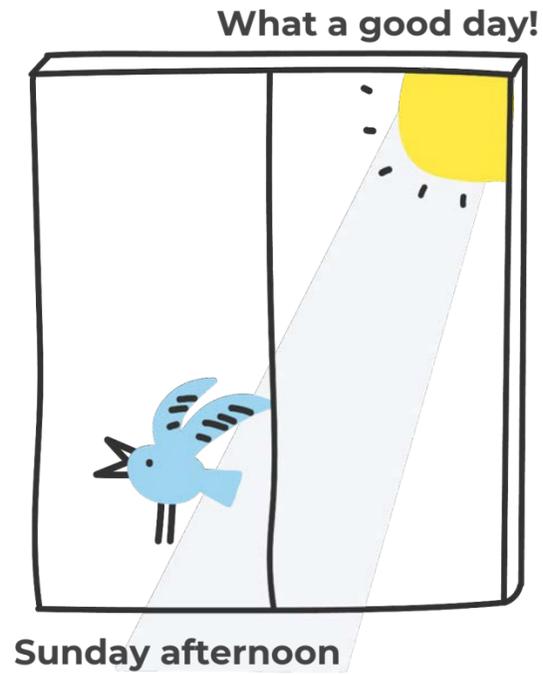
Users can also use the voice commands to interact with the app during the navigation

Key notification



The combination of two kinds of maps to help navigation

Show important landmarks

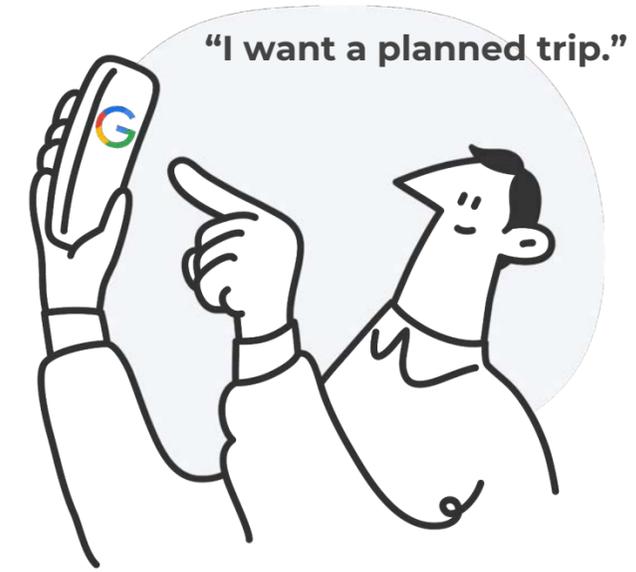


The weather is really nice!

Where to go? No plan.



Nick wants to explore places he has not been to alone, but he has **no plan about it.**



He opens the Google Go!.

Primary Goal:

Wants to have fun, but doesn't have specific destinations in mind (but he does have time constraints).

Select a theme for the trip

My theme

Relax

My time availability

4 hours

Select time availability

Present several pre-bundled trip options and label them

My Journey

recommended based on your saved places, busyness and weather.

Art + Taco + Sun



The Art Institute of Chicago



Taqueria San Jose



Millennium Park



Shopping + Coffee



Water Tower Place



Sawada Coffee



Bloomingdale's



SPA + Film + Drink



Renu Day Spa



AMC River East 21



Pleasant House Pub



Click to have a detail view of this route



Change the options like a slot machine

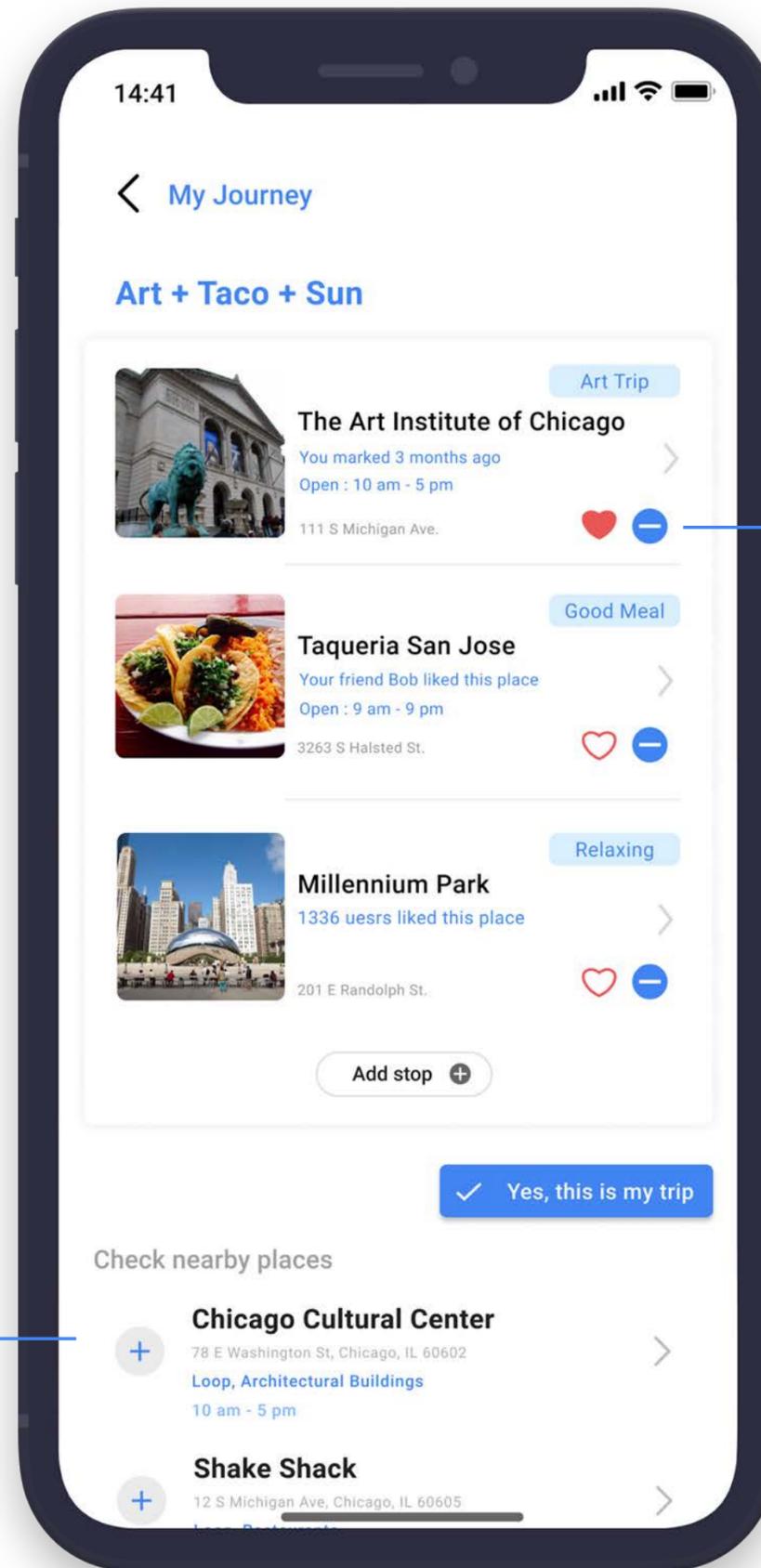
Change a bundle

Yes, this is my trip

Find Route

Explore

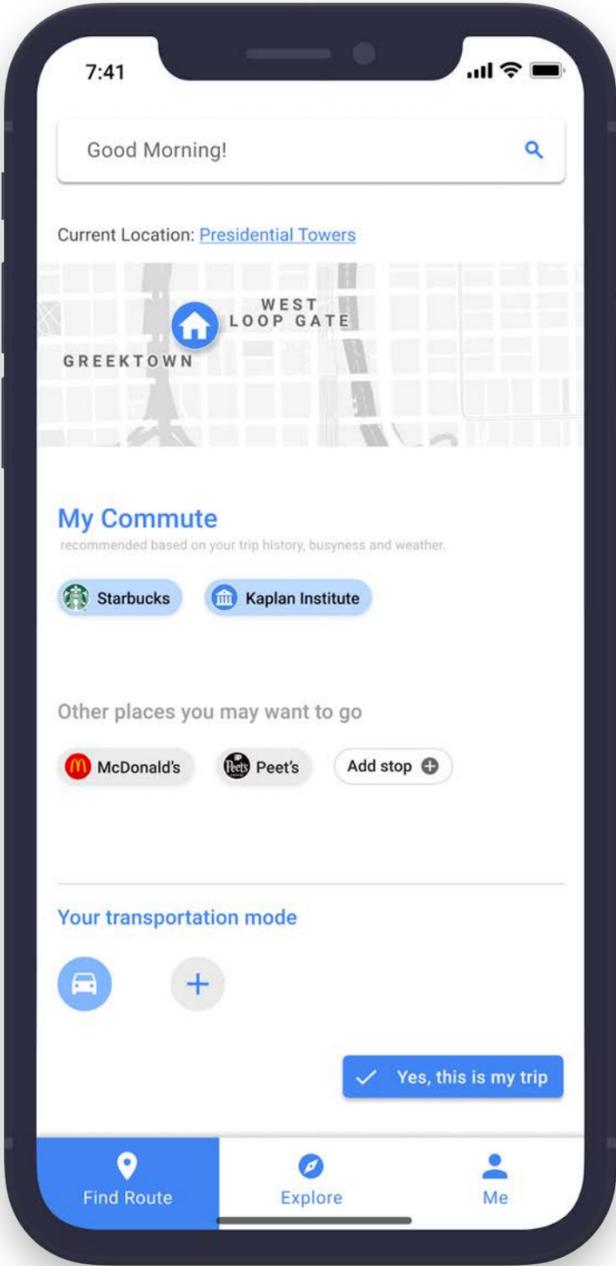
Me



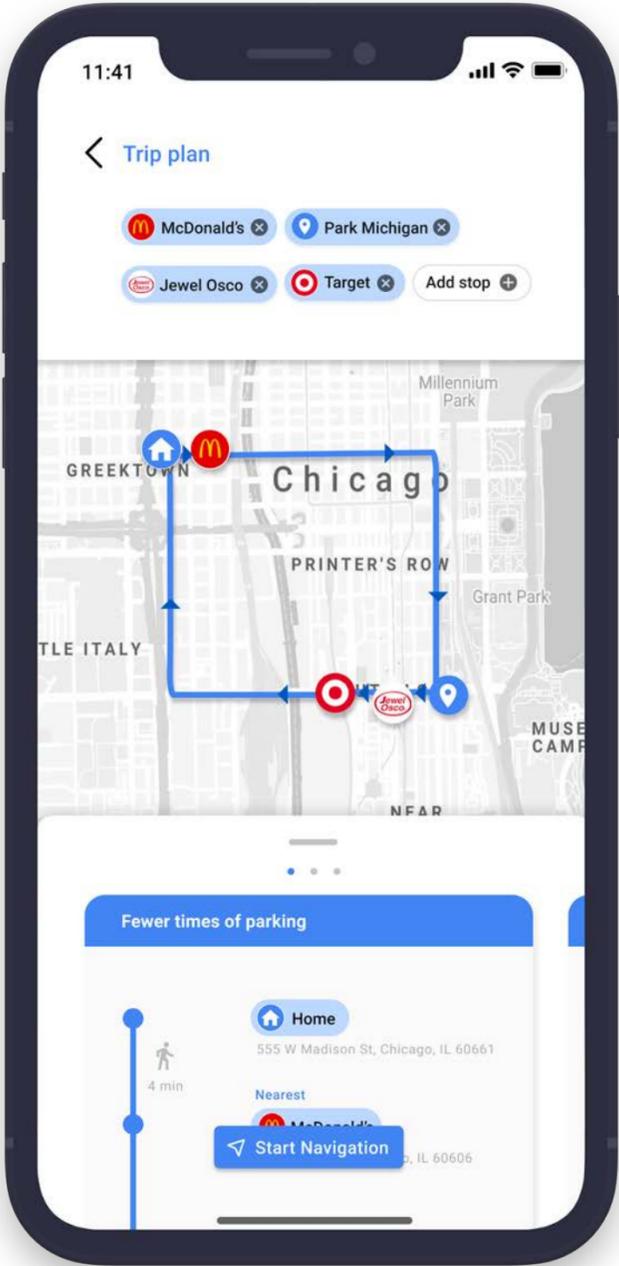
User can add stops, remove stops and favorite stops

Suggest nearby and similar places that user might have interests

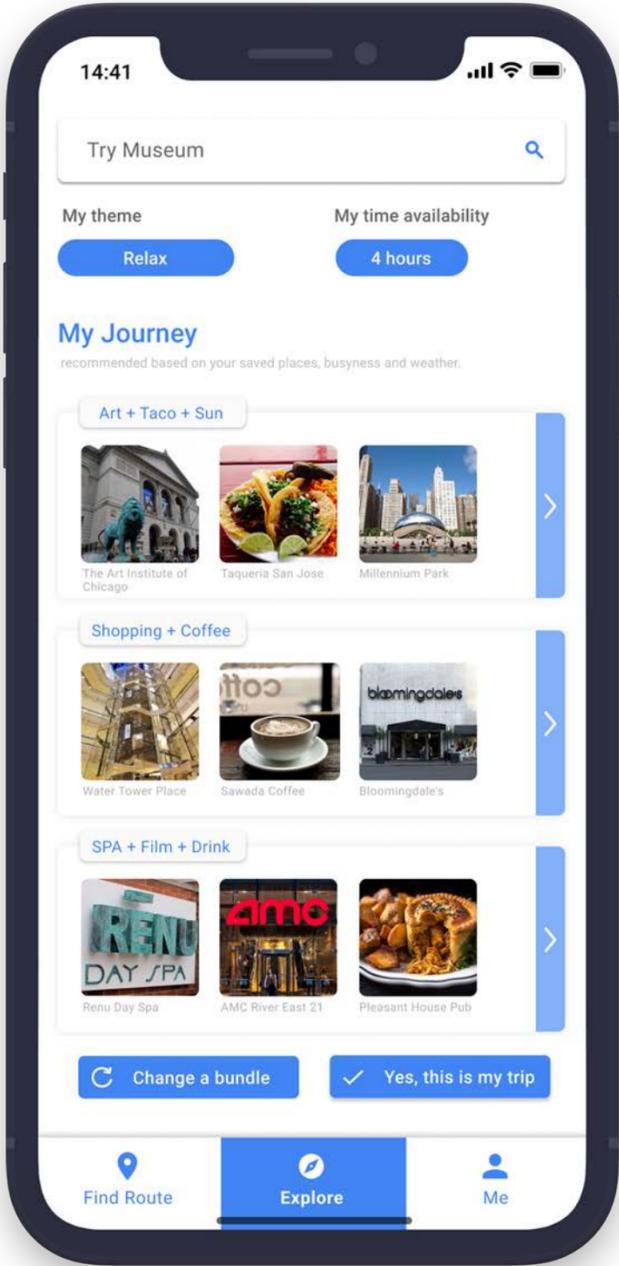
Summary for Three Scenarios



Commute - Scenario 1



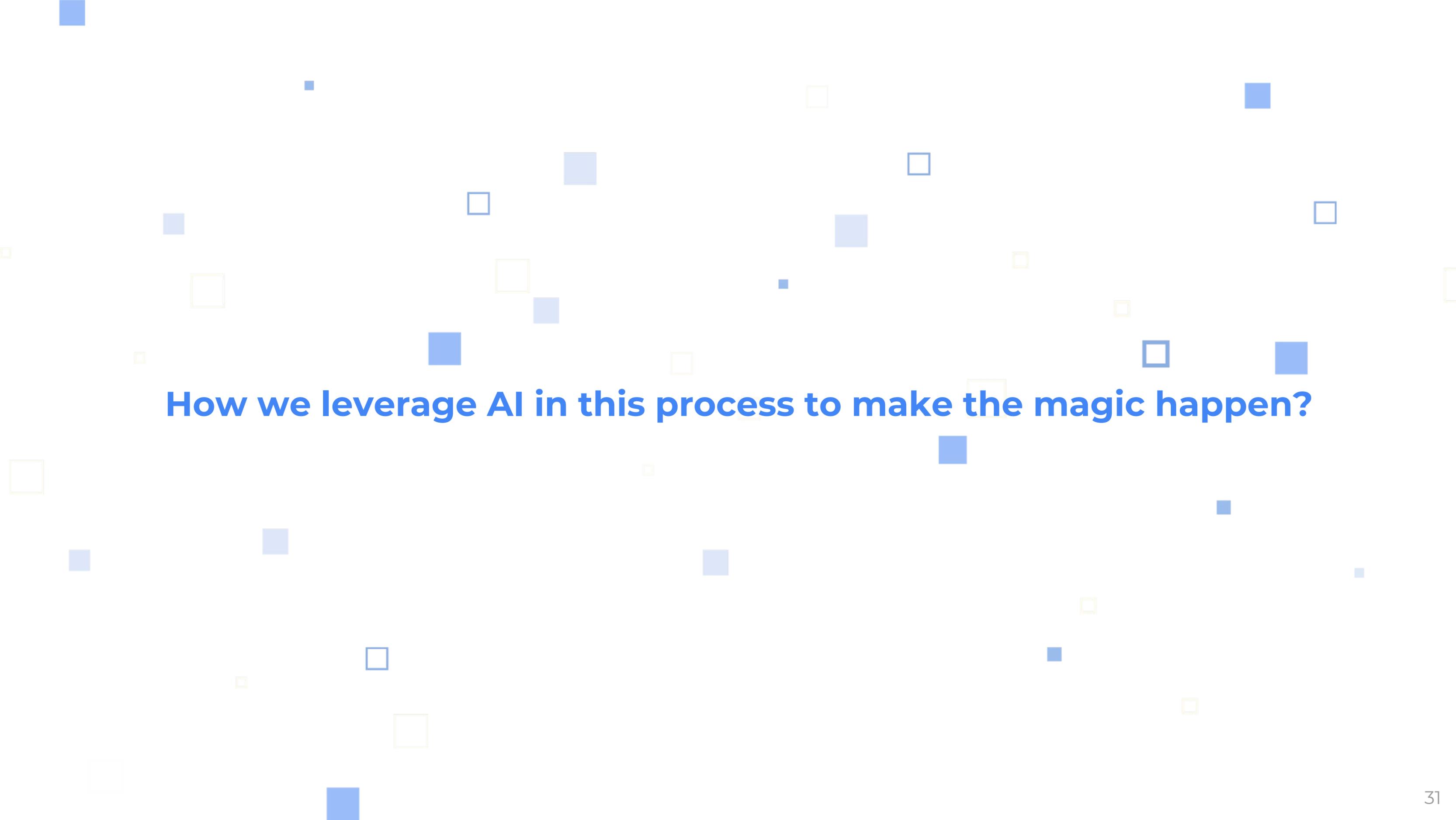
Run errands - Scenario 2



Exploration - Scenario 3

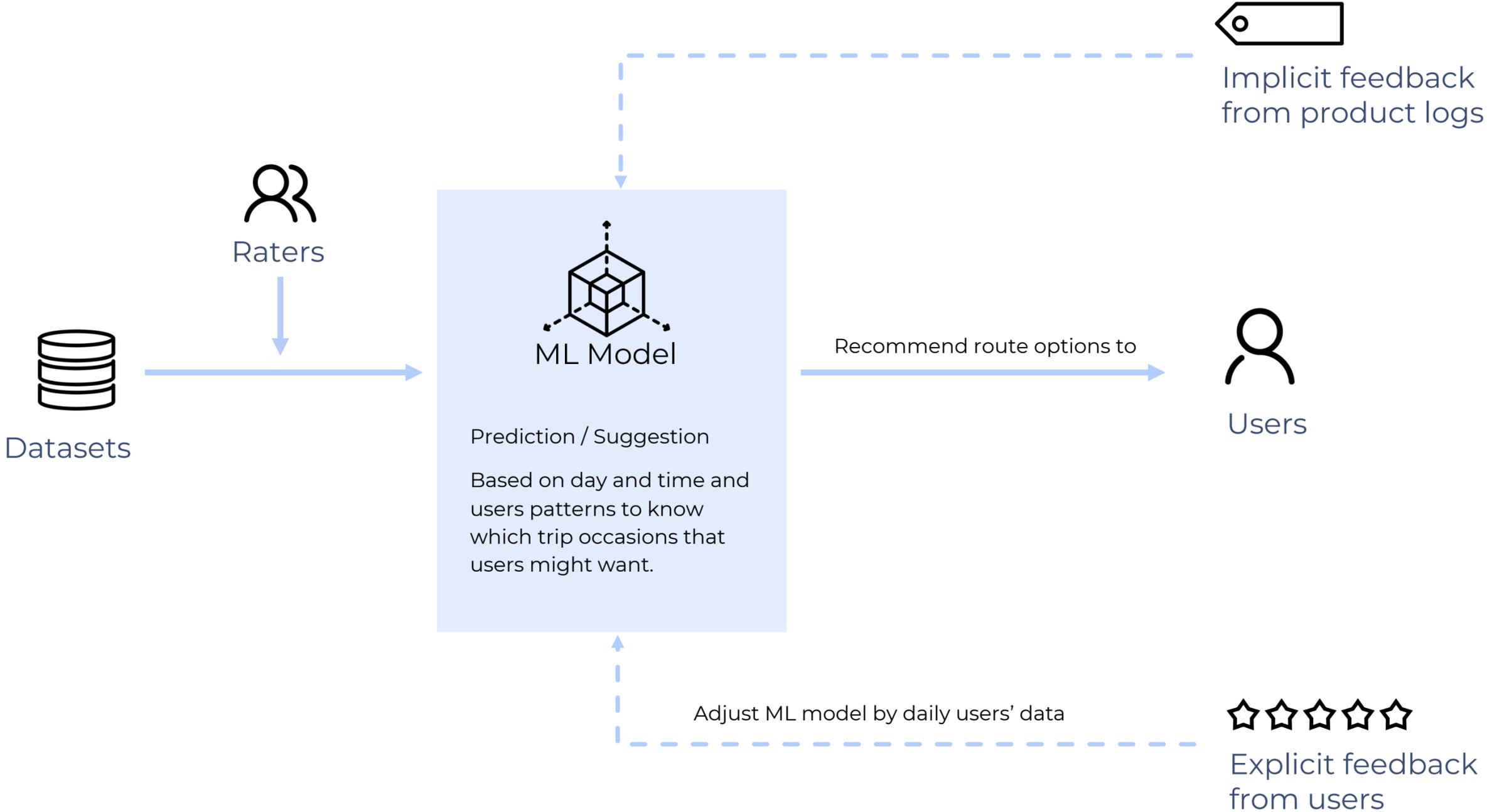
Nick gives 5 stars





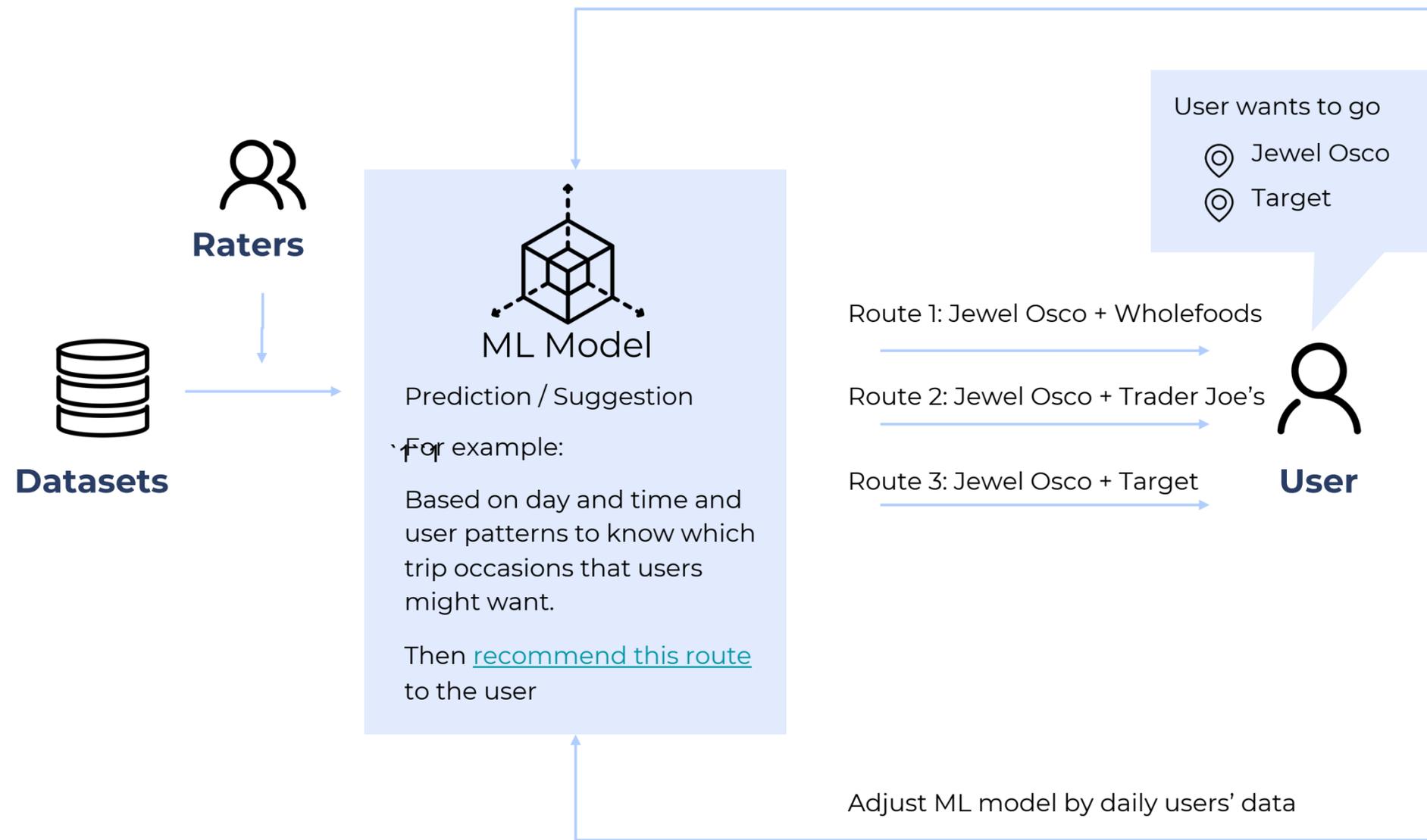
How we leverage AI in this process to make the magic happen?

Model training process (logistics)



Model training process (logistics)

Eg. Task: grocery shopping



Implicit feedback from product logs

If dwell time is less than 10 mins:

Label - Tasks Type
Return items

If dwell time is more than 20 mins:

Label - Tasks Type
Grocery

Explicit feedback from users

Themes of trip

Trip satisfaction

Rate the last trip

Home Jewel Osco Shell Jewel Osco Jewel Osco Jewel Osco Home

What theme was your last trip?

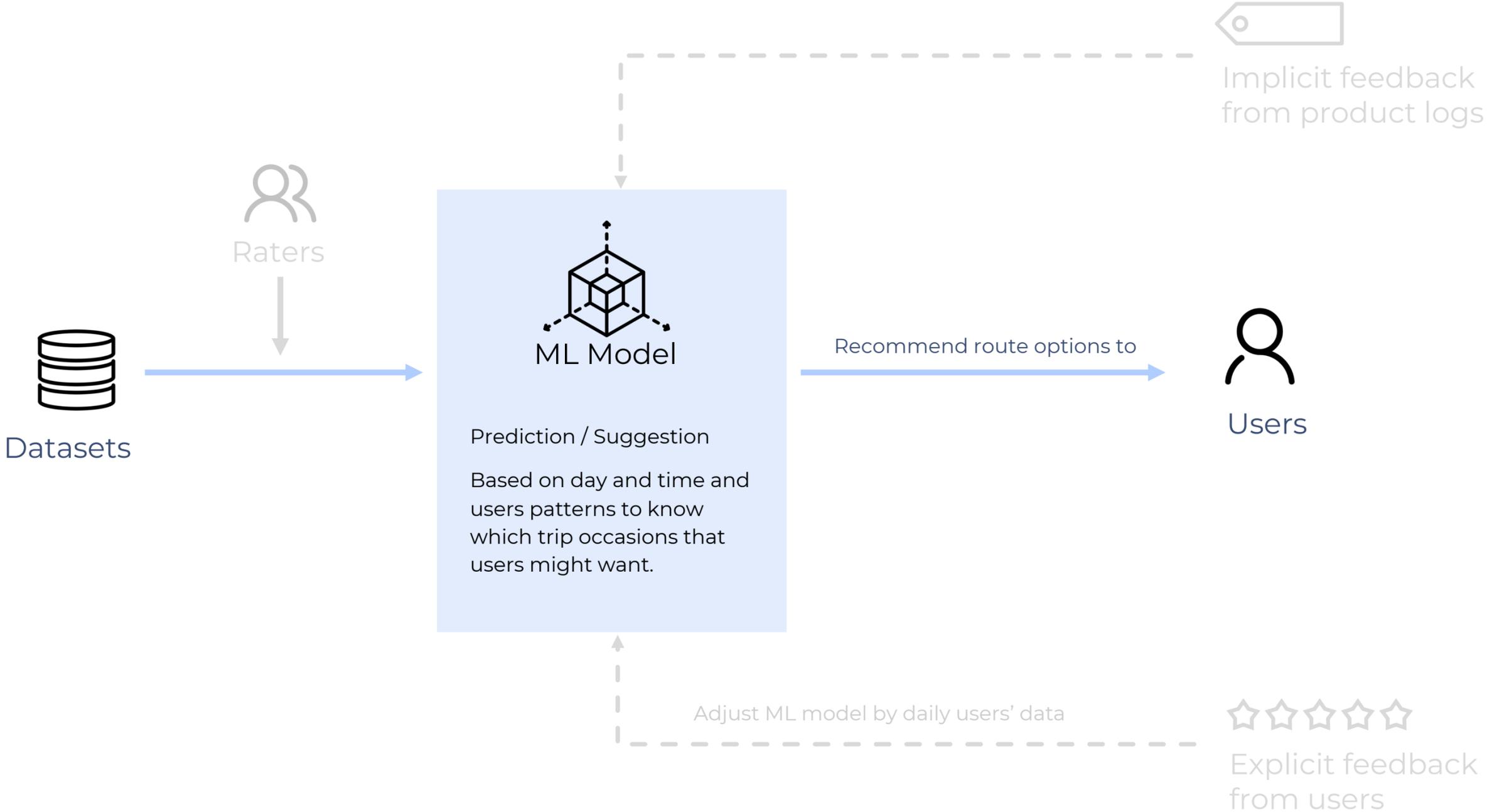
Art Food Shopping Study Other

How was your last trip?

★★★★☆

Later

ML Model Dataset (related to the rater dataset)



ML Model Dataset (related to the rater dataset)

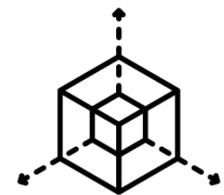


User need

Make multiple stops in a single trip as efficiently as possible (across different trip occasions)

User action

- Try the recommended trip options to finish multiple tasks during one single trip
- Edit the initial recommended trip option according to the user's needs
- Search specific places that the user wants to go



Training datasets needed

Actual trips with information like number of stops, place types, etc.

ML system learning

Pattern of user behaviors when doing multiple tasks during one single trip

ML system output

- Suggest **trip options for the specific trip occasion** including stops, orders, etc., based on the user's current situation
- Present **several trip bundles** based on personal interests

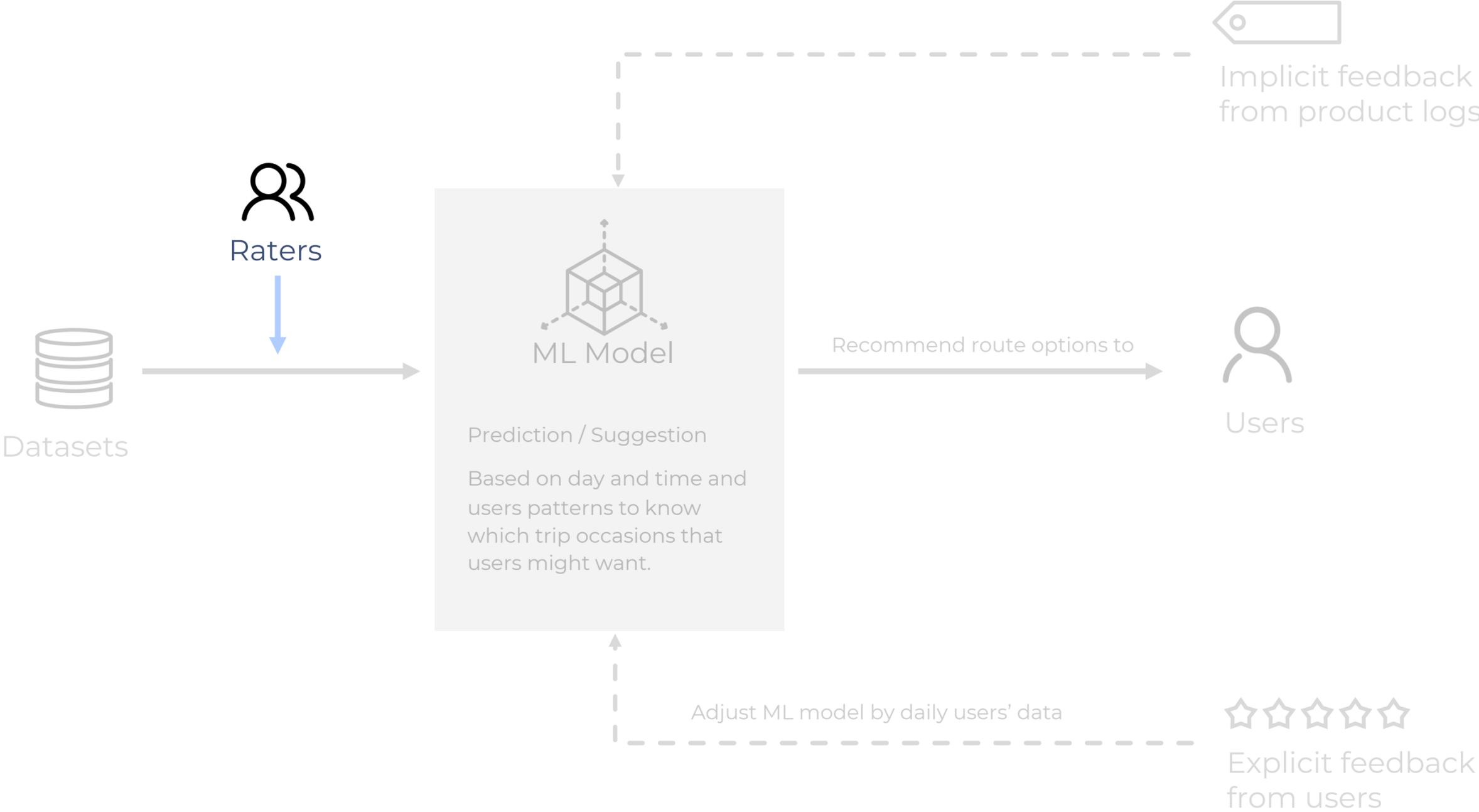
Determine the type of routes

(data cleaning) Threshold for a **single trip**:

Single Trip = dwell time of each stop < 3 hours, and proximity of stops < 15 miles

		FEATURES					
User ID	Day & Time	Number of stops (including destination)	Starting point	Place Type	Dwell time	Trip Occasions (group in different number pocket)	
EXAMPLES	AV3DE	Monday 8:34 am	2	Home	Coffee shop + Institution	00:10:04, 6:05:56 (starbucks+kaplan)	Commute to work/school
	X8KGF	Saturday 11:43 am	4	Home	Grocery + Restaurant + Home	01:06:35,00:28:00, 00:07:23, 7:00:43 (restaurant+grocery+grocery+home)	Grocery shopping
	BH9IU	Friday 6:00 pm	3	Work	Restaurant + Bar + Club	00:40:00, 01:20:00, 3:00:43	Nightlife / have fun
	EROPL	Sunday 2:00 pm	4	Park	Art + Shop + Park + Home	01:03:45, 00:20:34, 01:37:29, 13:00:12	Relax
	PO1EB	Wednesday 11:00 pm	1	Work	Home	07:33:16	Go home
						LABELS	

ML Model Raters





ML Model Raters

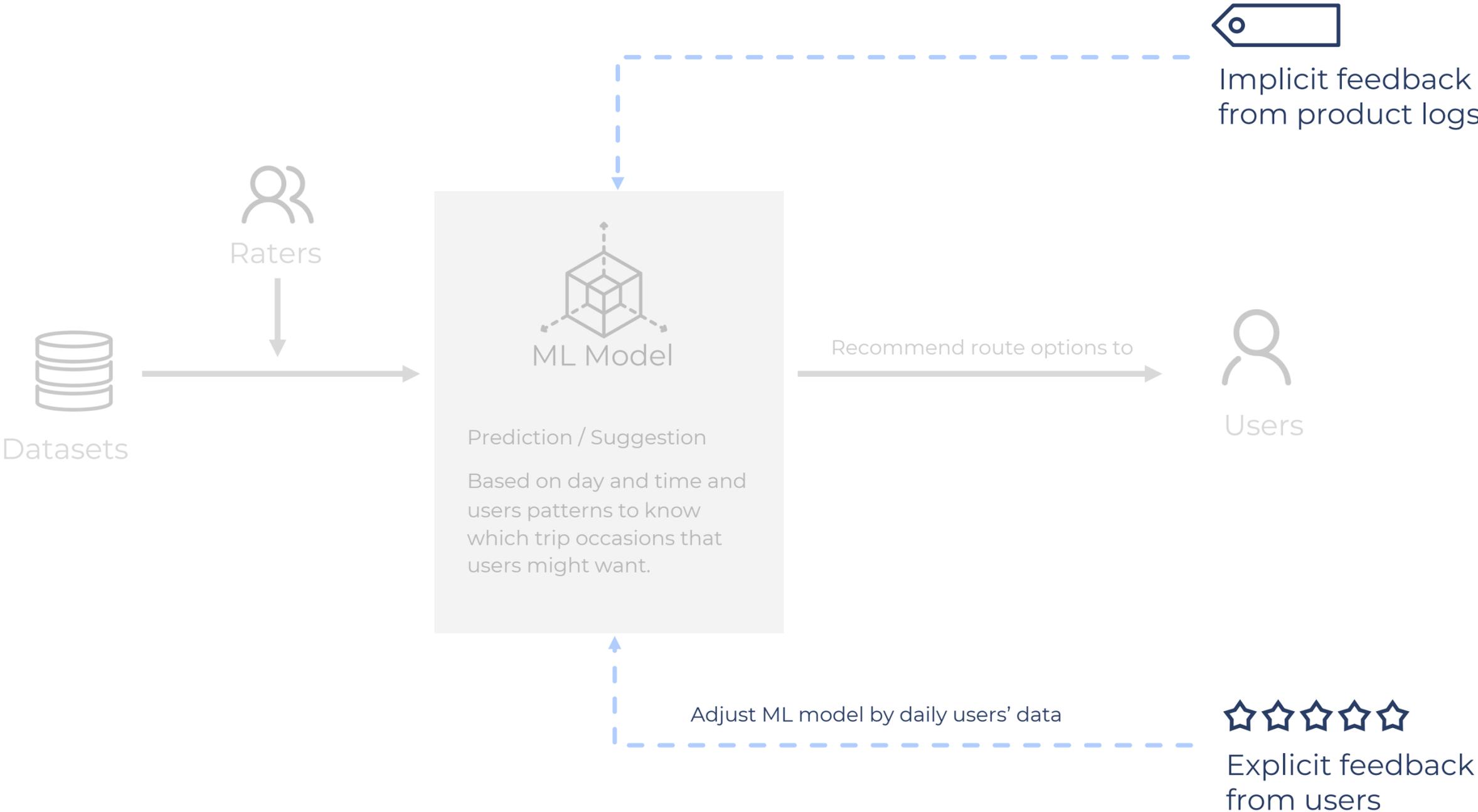
Rater Recruitment & Qualification:

- People live in different parts of the city(for example suburbs v.s. city), of different demographics(for example different ages and ethnicities)
- People who rely on map applications, active users of Google Maps
- Both drivers and riders
- Diverse profession groups

Particular perspectives or possible bias:

- Proficiency in using smartphones
- Search using different language terms
- Residents v.s. Traveler (people new to the city)

User feedback for refining Google Go! 's ML model



User feedback for refining Google Go! 's ML model

Implicit Feedback

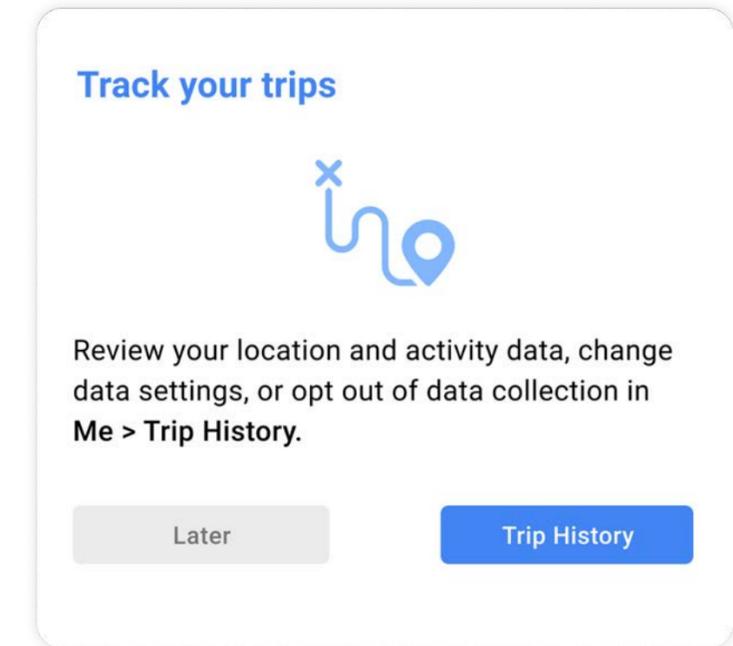
Collect data about user behavior and interactions from the product logs.

1. The number of times users accept or reject the recommendations
2. The number of times users change the initially recommended options, like editing specific stops, orders, etc.
3. How users change the initially recommended options

Explicit Feedback

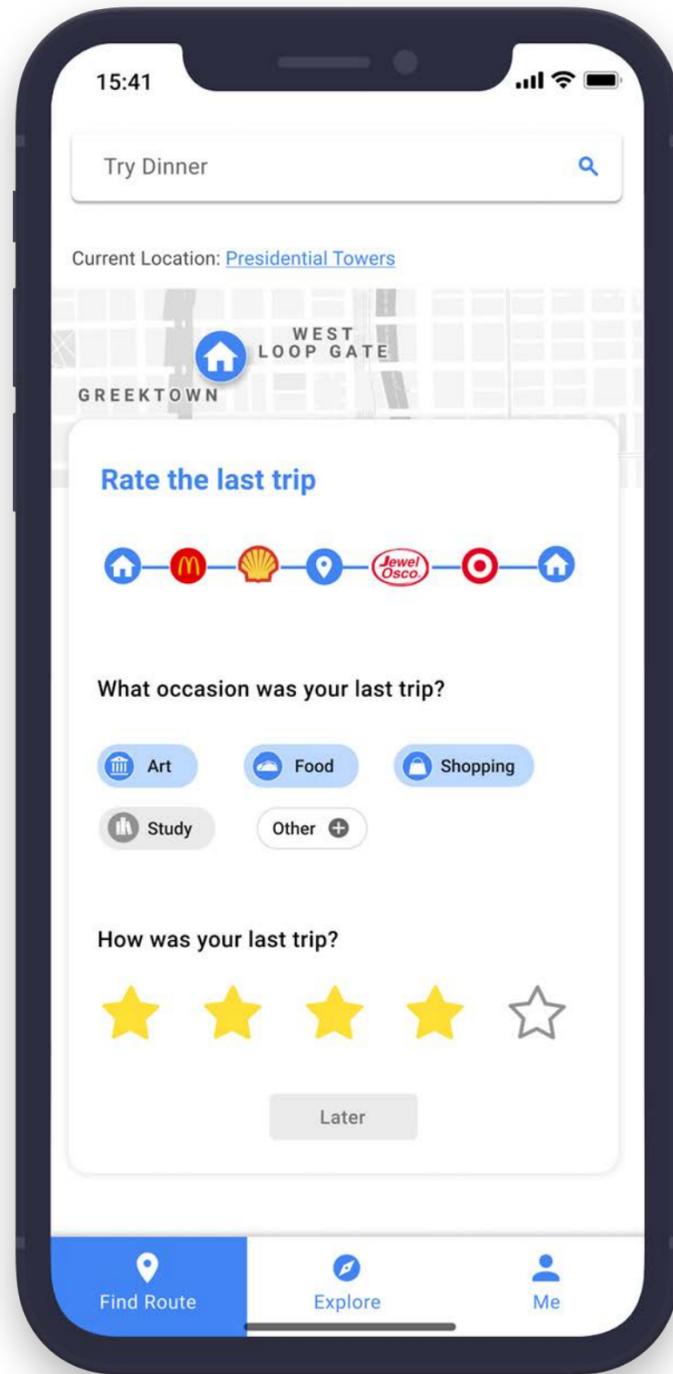
Get feedback from users after finishing or stopping the trip. Randomly select users from the whole user groups to ask feedback.

1. The satisfaction of recommended stops. (10% Users)
2. The satisfaction of recommended routes and labels for routes. (20% Users)
3. The satisfaction of exploration recommendation. (10% Users)
4. Reasons for quitting or dissatisfaction

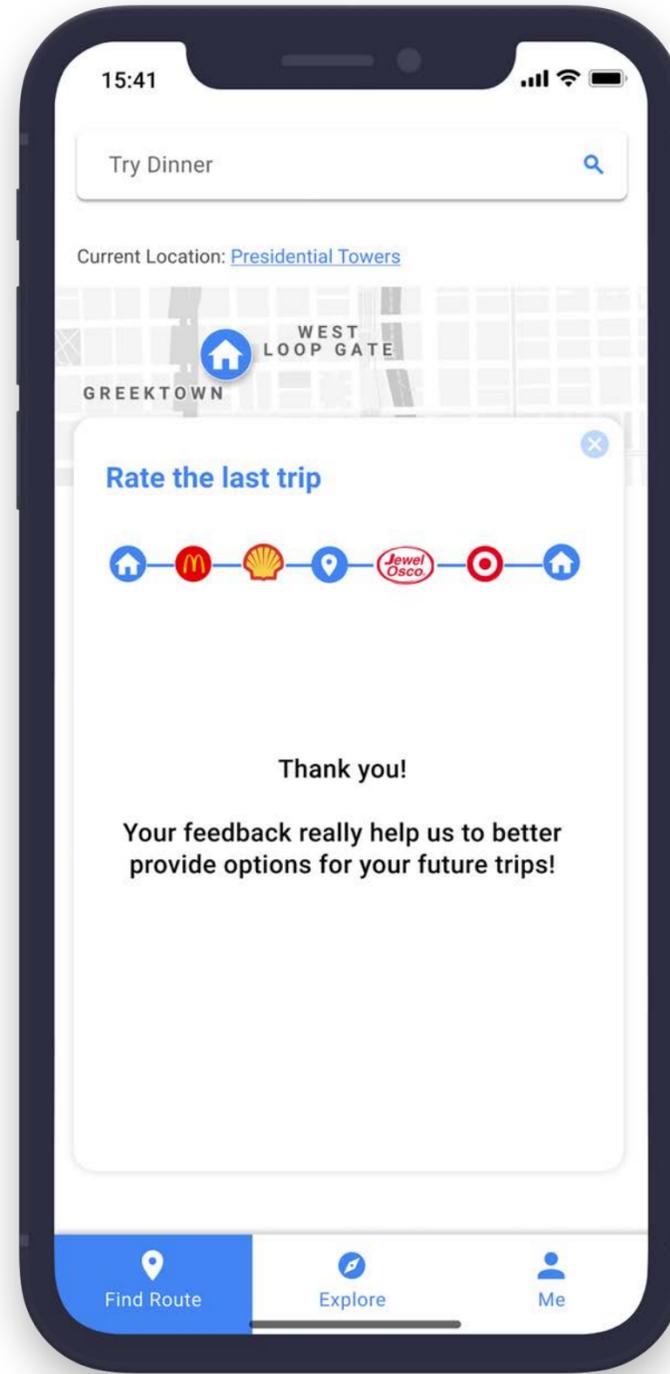


Allow users to change the settings of data collection

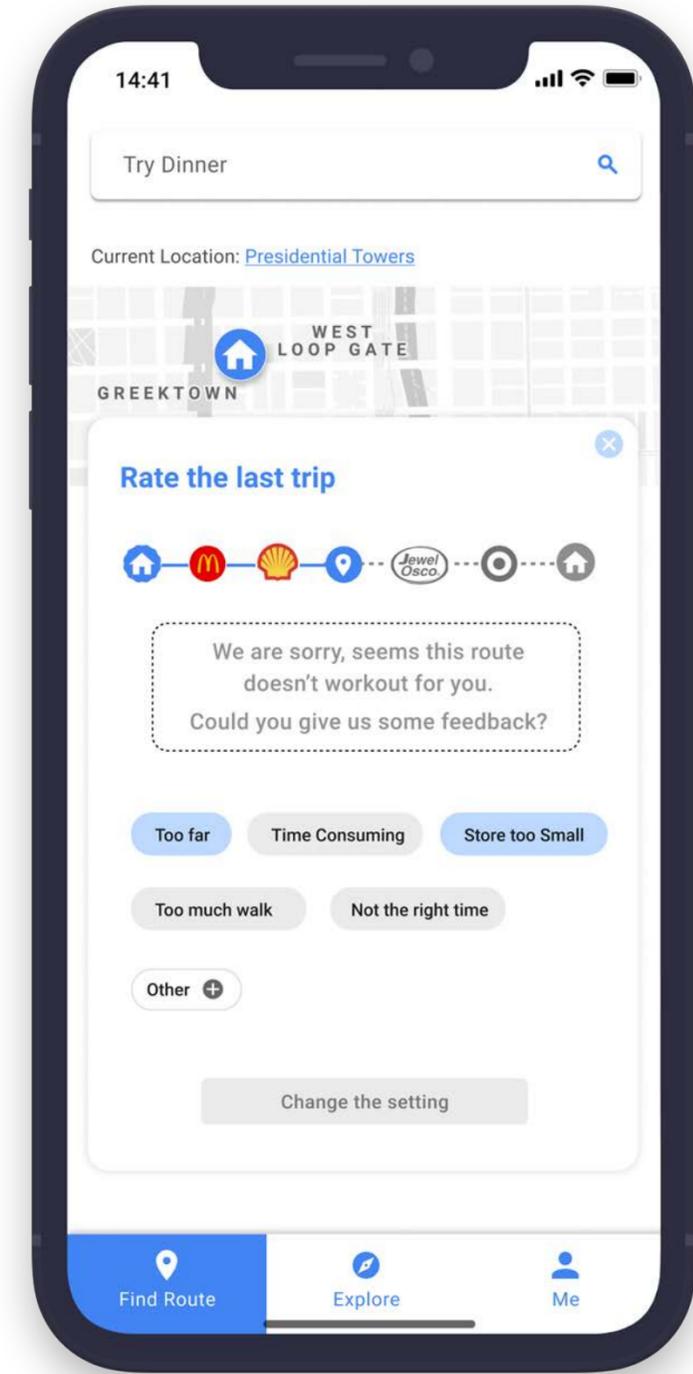
User feedback for refining Google Go! 's ML model



Ask for feedback



Response after user give feedback



Feedback of quitting in the middle

Success Metrics 1 :

Task Success (Effectiveness, Efficiency)

Related Google Go! features:

- Recommend stop combinations and prioritize routes according to the current situation, user choices, and past behaviors
- Optimized destination searching results based on user preference

If

Effectiveness
Percent of users select the recommended stops/route plans instead of editing by themselves.

Drops below
↓
85%

We will

Check the user profile, do more user study, and iterate the ML model.

If

Efficiency
The time it takes users to swipe through route options and select one.

Goes above
↑
45 seconds

We will

Analyze how user interaction in each step, do users research and revisit the ML model.

Success Metrics 2 : Engagement (Involvement)

Related Google Go! features:

- Appropriate key points prediction during the trip

If

Users' involvement

Choose the popping up recommendations directly during the trip.

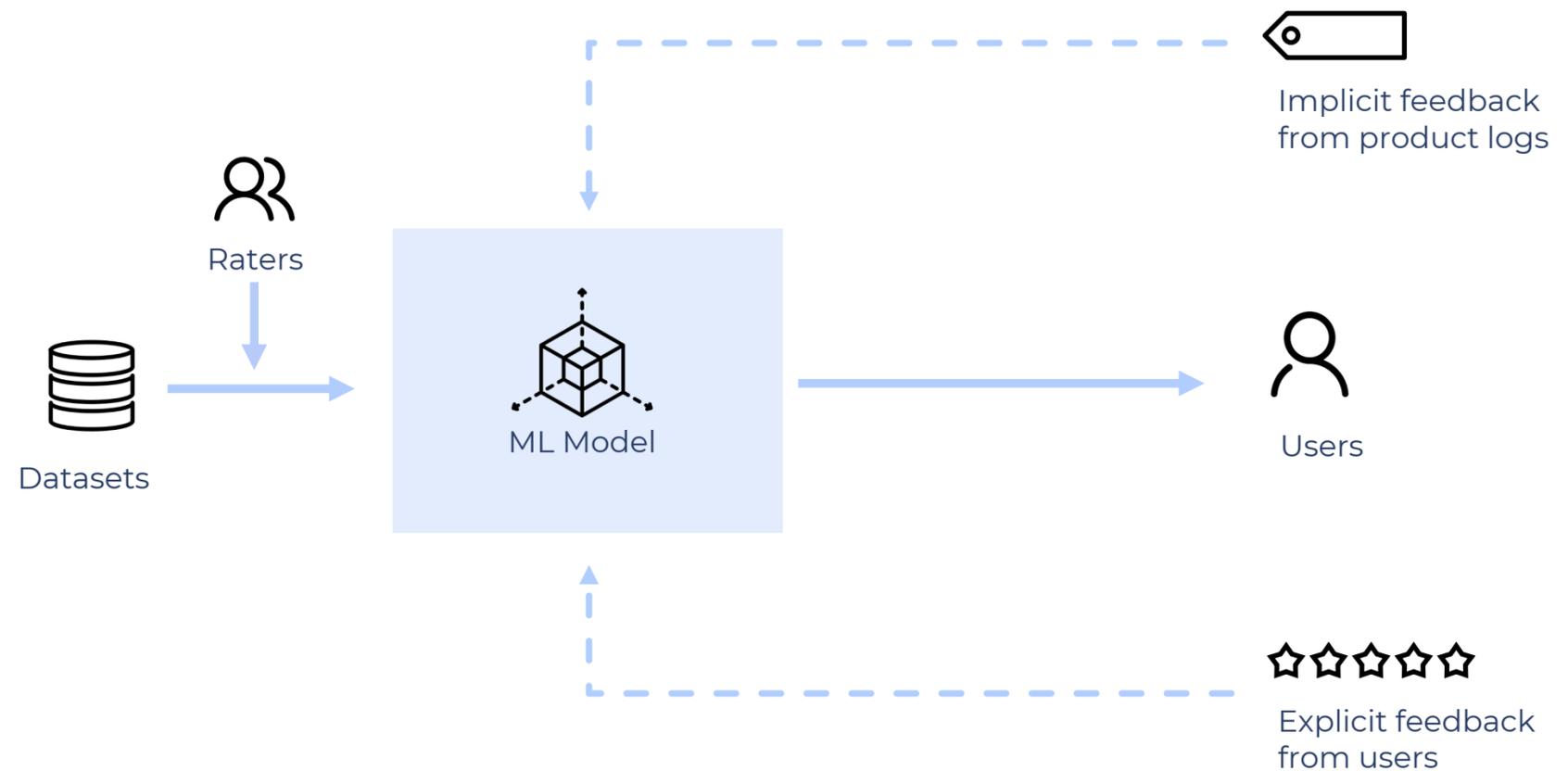
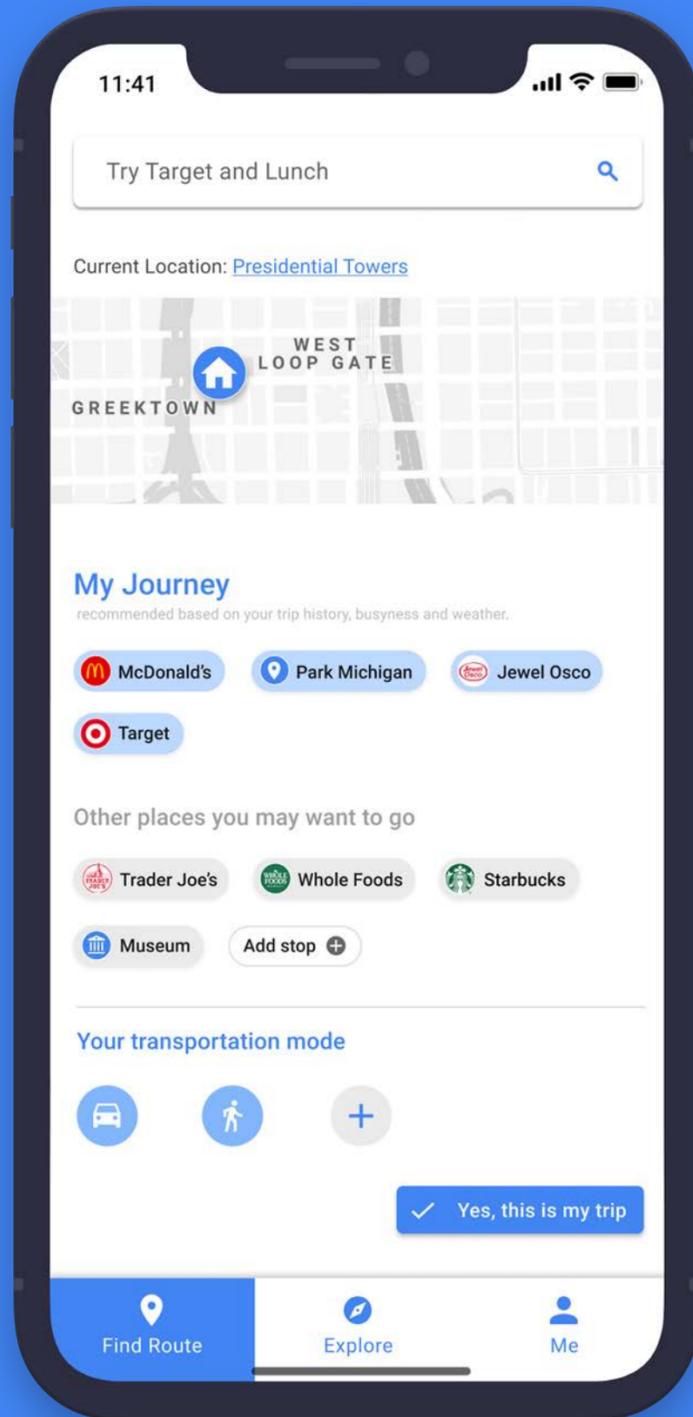
Drops below

↓ **80%**

We will

Check the ML model of immediate recommendations.

Make Google Go! the best product for people to explore and navigate their world.



Thank you!

Team 3 | Xuanyu Chen, Sike Liu, Shiya Xiao, Evie Yu

Google Go!

Life is more than going from A to B.

Google Nav.

A navigation app that generate and prioritize safe and reliable travel plans tailored for people with visual impairments through machine learning.



Google Nav.

Google Nav+

5.0  (31,356,352)

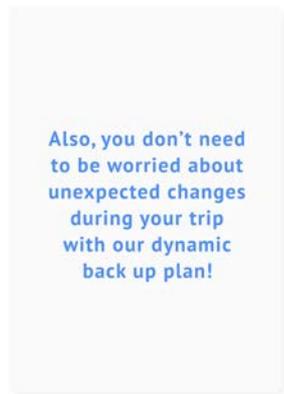
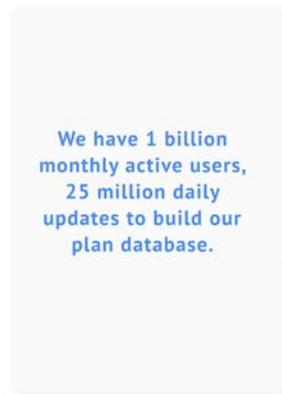
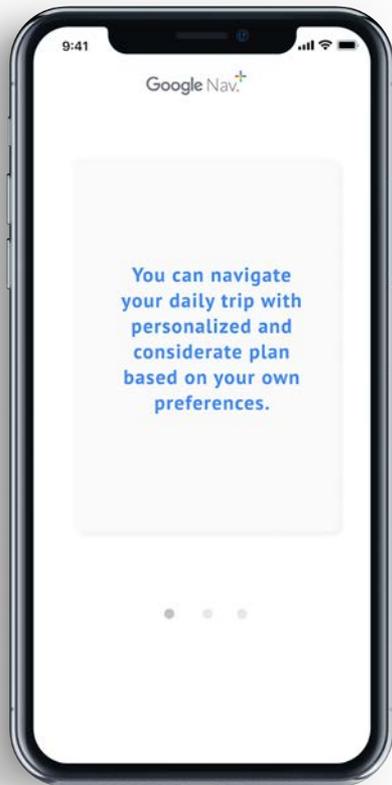
Google Nav+ is a free navigation app for people with VI that adapts users' personal preferences and habits to help them navigate to their destinations on time safely and comfortably.



Nav+

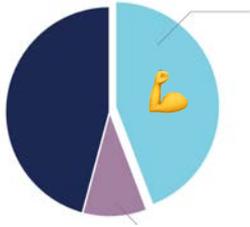
Download

On-boarding



Ready to Go

Globally, at least 2.2 billion people have a vision impairment or blindness, 44.2% economically support their family like everyone else.



44.2% of people who are blind are employed, they are supporting families and rising children just like people without disabilities

Reference :
<https://www.nfb.org/images/nfb/publications/jbir/jbir15/jbir050202.html>

“They are been afforded their own independence, their own freedom.”

Mar-Moliner, talking about the importance of designing with inclusion in mind.



Opportunity

Traveling is still one of the major challenges in their daily lives.

With visual impairment, people with visual impairment receive far less information during their trip outside than people without visual impairment, Which prevent them making decision of trip quickly and increase the intense in their daily trip.

We want help them to have confidence so that they can go wherever and whenever they want with comfort and safety. For their own independence, their own freedom.

Why is AI a good fit?



It can manage a huge amount of real-time information. **Reducing the mental stress in that high stakes situation** when they travel.



Keep monitor and Quickly respond unexpected external information to users. **Augment the capabilities of gaining information from outside.** Enable user to feel responsible for navigation.



Machine learning has memory to track and understand complicated personal preference. To record user-specific travel preferences, resulting in more accurate and time-sensitive plans.

Augmentation

Prediction

Massive
Calculation

Personalization

Adapt
Evolving
Situation

Problem 1

How might we support users with a specific and considerate plan before trip ?

Problem 2

How might we enable users to handle the various unexpected changes during their trip ?



Introduce your solution

Base on the original navigation function of Google map, consider more elements that will affect the travel experience of people with visual impairment , to generate more considerate trip plan.

Keep tracking and learning user's selection and behaviors and using at internal dataset to generate personalized plan.

- Travel route planning in advance
- Real-time reroute/ replan
- Potential unexpected changes pre-alert
- Plan optimization/personalization

ML mainly to help identify two patterns in supporting our users navigate independently.



ML System Learning

Patterns of behavior around accepting plan, completing trip, and improving suggesting accuracy



Patterns of behavior around accepting change plan prompts, completing trips, and decreasing anxiety level

ML Goal

Determine what plans are the best choices for the current situation and what information the users needed most to follow that plan.

Determine in what situation the product need to prompt users to consider changing their plan.

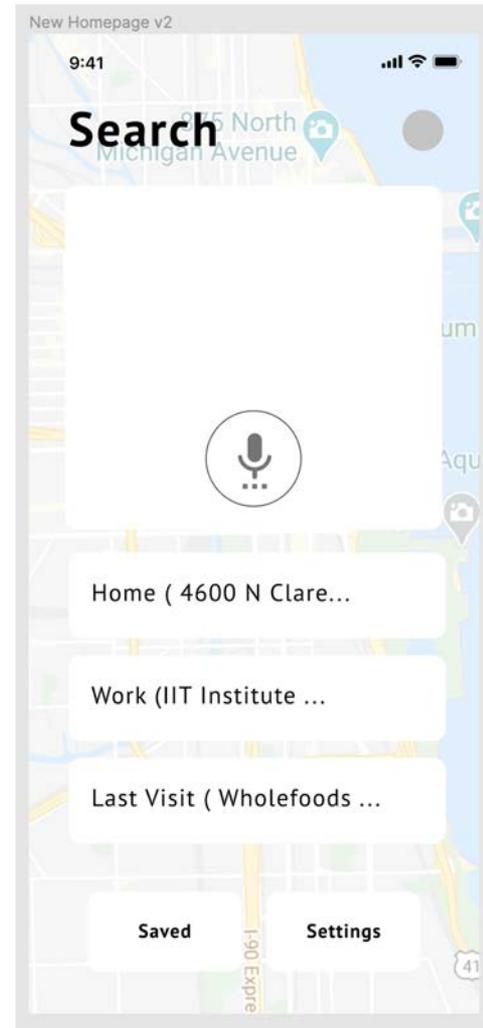
AI related Design Challenge

How can we leverage the understanding of user behaviour pattern without over-predict where user want to go?

ML outcome: user travel pattern



Andy needs to go to a place on his own for the first time, he is expected to arrive 5 days later Monday 9 a.m. It will be his new routine for the following 3 months.



AI related Design Challenge

How can we leverage the ML outcome to prioritize plans for Andy in a meaningful way?

Pattern: User preference

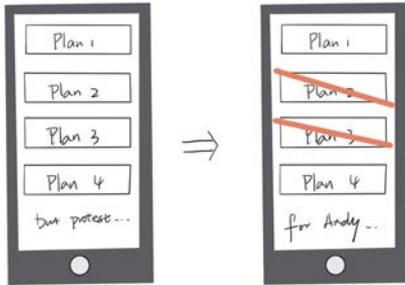


Nav+ read through plan options with personalized filtered information that matters to Andy most.

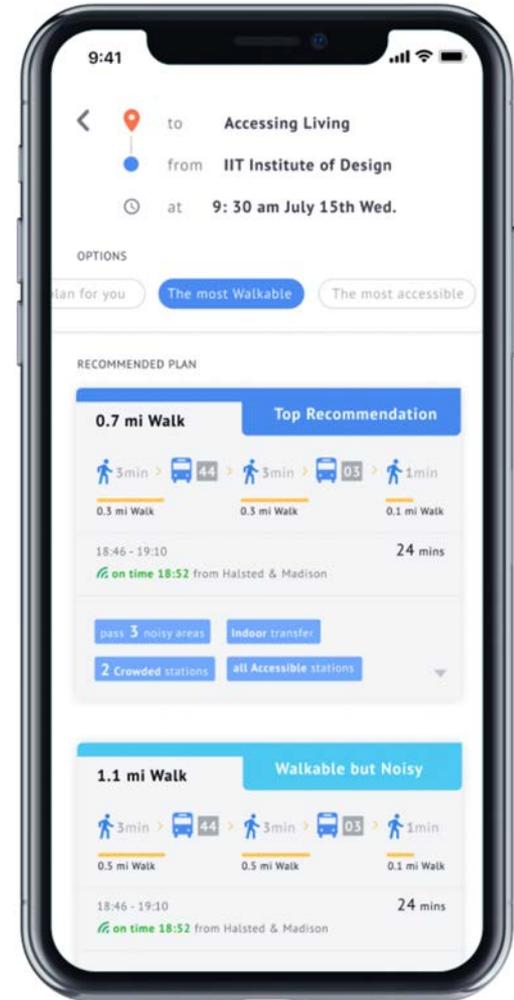
AI related Design Challenge

How can we help Andy navigate through different options and learn from his choice?

Pattern: User preference



Andy went through different options and picked his favourite option. He also agreed to the system recommendation in double check the feasibility of the plan a day ahead, Sunday night.



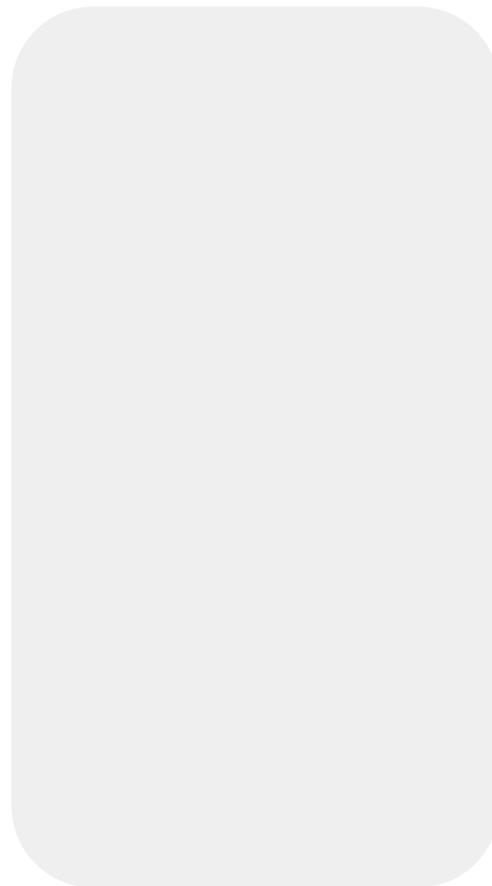
AI related Design Challenge

How can we leverage the prediction to prompt useful tips to our users?

Pattern: General prediction



Sunday night, Andy received a confirmation from nav+ that everything seems fine. Nav also made a suggestion that since Andy is expected to have a “noisy but walkable” 10 min walk during transfer, he should take earphones with him.



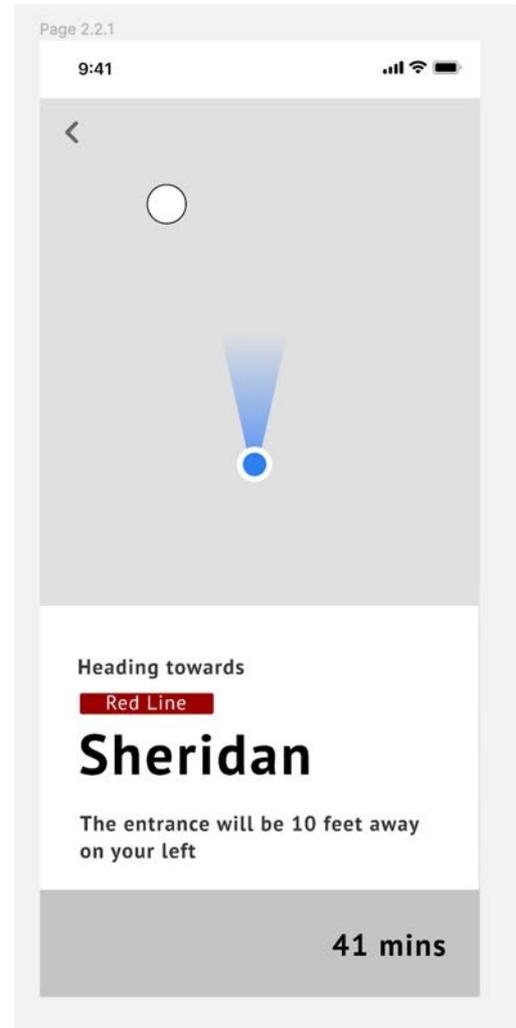
AI related Design Challenge

How can we tailor the guidance for different users?

Pattern: User uncertainty tolerance level.



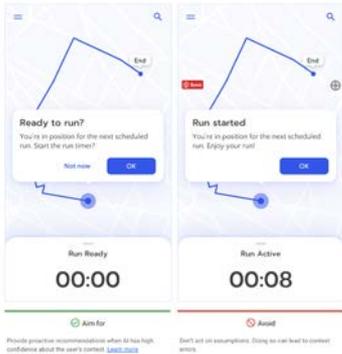
While walking to the new train station, there is a moment Andy got very confused. Nav confirmed with Andy that he is walking in the right direction but he heard train coming on his right. Nav noticed Andy stopped and double checked the Nav instruction. Nav prompted a guidance and



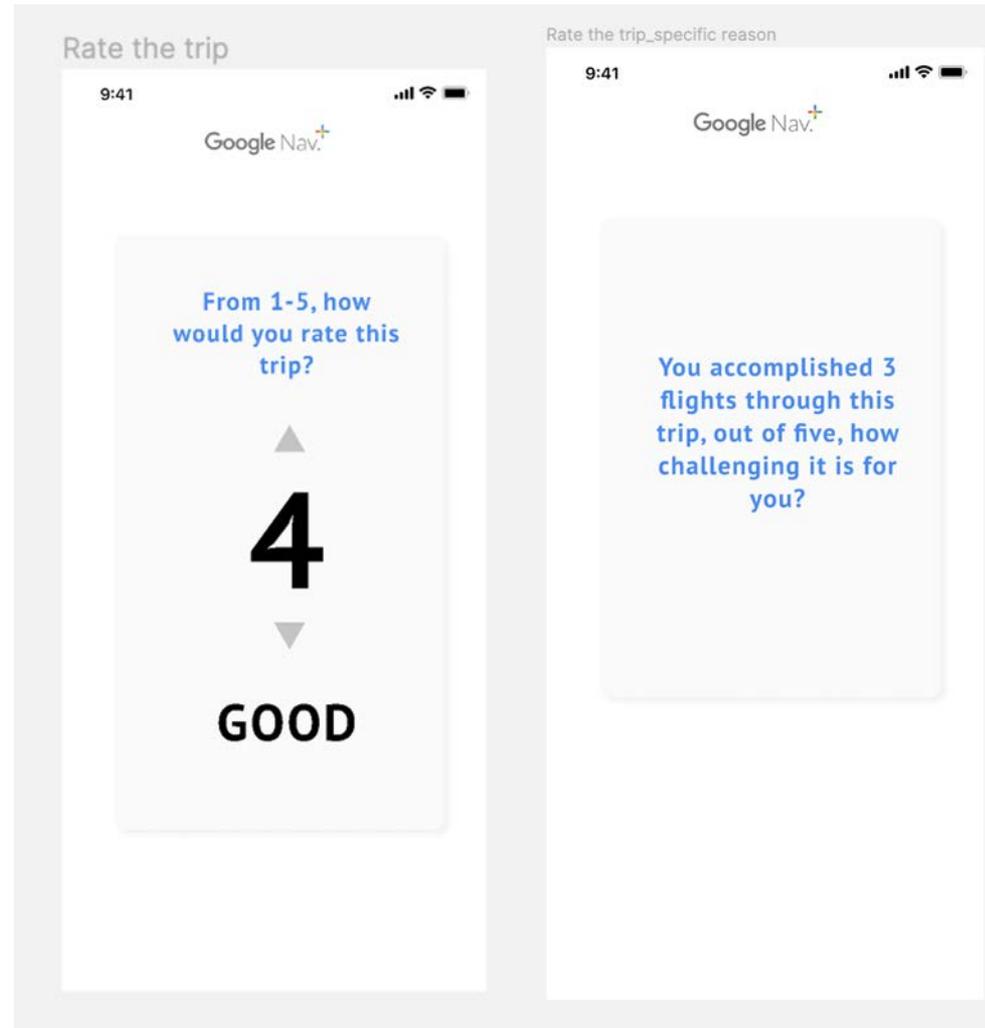
AI related Design Challenge

How can we collect meaningful user feedback to help improve the system and personalization without them feel overwhelmed ?

Pattern: User's preference



On arriving the place, Nav+ confirmed with Andy that he had no trouble finding the entrance. Andy was asked to rate the trip in general. Nav also saved the trip to Andy's history where he can come and give more qualitative feedback in details.



External Public Dataset

Generic geo-based info

Weather Condition _ Snowfall/Rainfall/Temperature

Noise Level

Crowdedness

Crime Rate

Traffic

POI

POI Info _ Accessibility / Business Hour / Dog friendly

Public Vehicle Condition

Vehicle Situation _ Accessibility/Hygiene

Transfer Condition _ Indoor-outdoor / Payment / Service Compatibility (change in brail location)

Internal Product Dataset

Active User Input

Trip planning

Time_Date/Expected Arriving

Location_Start/End/Middle Point

Transit type for the current trip_Public Transit

Marked POI_Favourite/Want to go/ ...

Quantative Feedback_Rating/Label

Qualitative Feedback

System Setting

Preference Setting (Language/ word size/ rigid request)

Basic Processed data

Walking_distance

Time offset _ Extra time/saved time

Visit History/frequency

Passive user data collection

Acceptance

Usage_timing/ location

Visit History

???

ML Outcome Referring Points dataset

Walking comfort level

Time efficiency

Acceptable weather condition

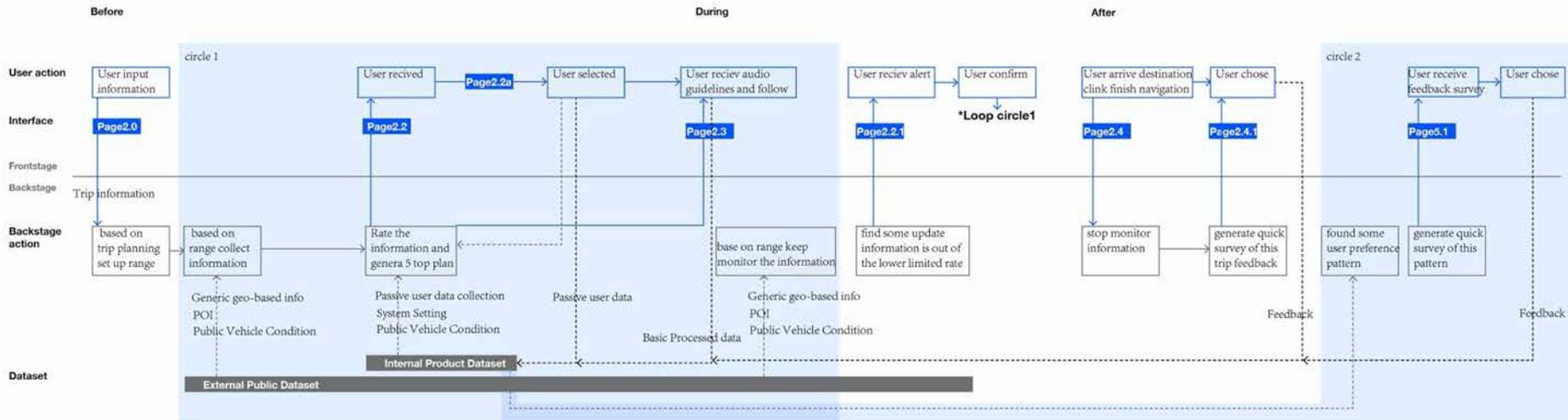
Accessible level of Transportation & Facilities

Vehicle safety level

Axiety trigger potentiality

.....

Information flow



Scenario 01 behind the scene

		FEATURES									
		Weather Condition			Length of the trip			Transfer Condition			
	Plan ID	Temperature	Rainfall	Snowfall	Overall	Walking in total	Walking outdoor	Same service provider?	Counts	Indoor?	<i>In station crowdedness</i>
EXAMPLES	L3S98NM	25(ac)	1.8mm	0mm	40mins	<15mins	>10min	Yes	3	Yes	<i>4-5 people wait on each side of the station</i>
	NM19S0L	-15(n)	0.3mm	3mm	1hr 10mins	>30mins	>30min	Yes	2	Yes	<i>You can barely avoid people while walking</i>
	S34LW7B	18 (ac)	0mm	0mm	20mins	15-30mins	>15min	No	0	No	<i>The station is almost empty</i>

Noise Level		Accessible Entrance		Vehicle Situation				Elevation		Relevant event				
High	Medium	Destination	Station	Hygeine(Hypthetical)	Predicted Crowdedness(Hypthetical)	crime rate	predicted time that user will find it hard to hear the voice	flights	elevator?	the impact of Parade/curfew/campaign/etc	Overall Comfort	Physically challenging?	Dog friendly?	
10 mins	10 mins	Yes	Yes	No smell	All seats taken	Low	0	2	Yes		high	high	high	LABELS
15min 8min	15min 8min	Yes	Yes	Heave smell	sually many seats availabl	Low	50%	3	Yes		low	low	low	
7min 3min	7min 3min	Yes	No	No smell	Only a few seats left	Medium	30%	3	No		high	high	high	

Success metrics



Google Maps



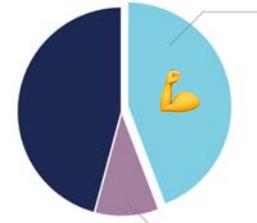
Nav.⁺



“He’s been afforded his own independence, his own freedom.”

Mar-Molinero, talking about the importance of designing with inclusion in mind.

Globally, at least 2.2 billion people have a vision impairment or blindness, 44.2% economically support their family like everyone else.



44.2% of people who are blind are employed, they are supporting families and rising children just like people without disabilities

Reference :

<https://www.nfb.org/images/nfb/publications/jbir/jbir15/jbir050202.html>

Insights

People with visual impairment needs more support in navigating independently.



Plan with specific info needs in details

There are several information critical for our algorithm to learn in order to generate considerate plan for our users to follow.

“If it go to a large building downtown, that can actually be kind of **challenging to find that accessible door.**”



Support a holistic understanding of the surroundings

There are only one place where blind people can find speaker that announces all train schedule.

“There are only one place where blind people can find speaker that announces all train schedule.”



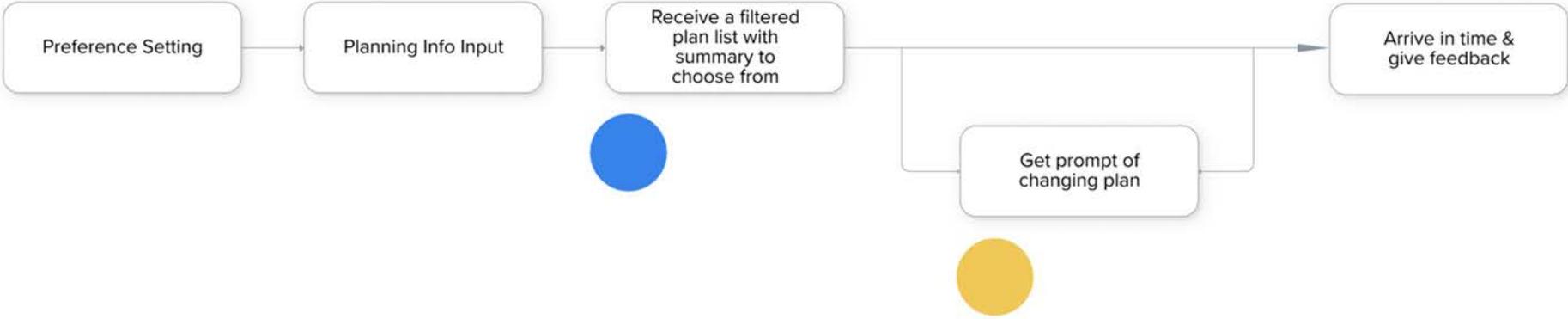
Plan for two

The plans we generated need to take our users best friend's into consideration.

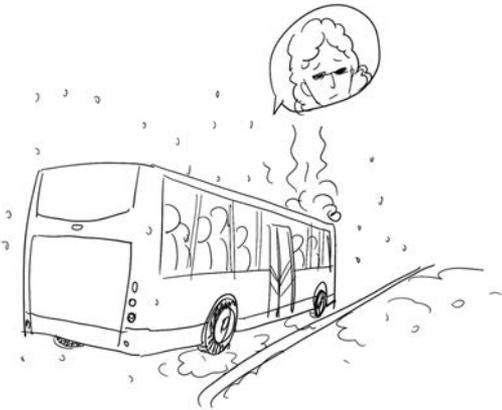
“If there are wintry weather conditions/fresh snow, the sidewalks aren't clear, **it's hard for my dog to find the route** because the sidewalk is covered.”

How it works?

User journey in our product



Scenario 02: The users want to be able to easily **adjust their trip in response to the changing situation**



User journey in product

Data flow

Interface interaction (screens)

ML mainly to help identify two patterns in supporting our users navigate independently.



ML System Learning

Patterns of behavior around accepting plan, completing trip, and improving suggesting accuracy



Patterns of behavior around accepting change plan prompts, completing trips, and decreasing anxiety level

ML Goal

Determine what plans are the best choices for the current situation and what information the users needed most to follow that plan.

Determine in what situation the product need to prompt users to consider changing their plan.

Google Nav.

怎么从Google跳转过来的

Google Nav.

Google Nav+

5.0  (31,356,352)

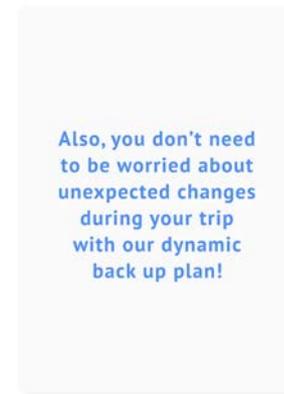
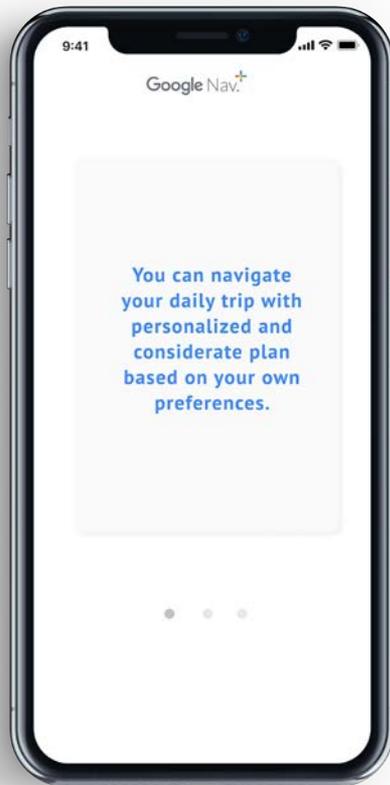
Google Nav+ is a free navigation app for people with VI that adapts users' personal preferences and habits to help them navigate to their destinations on time safely and comfortably.



Nav+

Download

Onboarding



Ready to Go

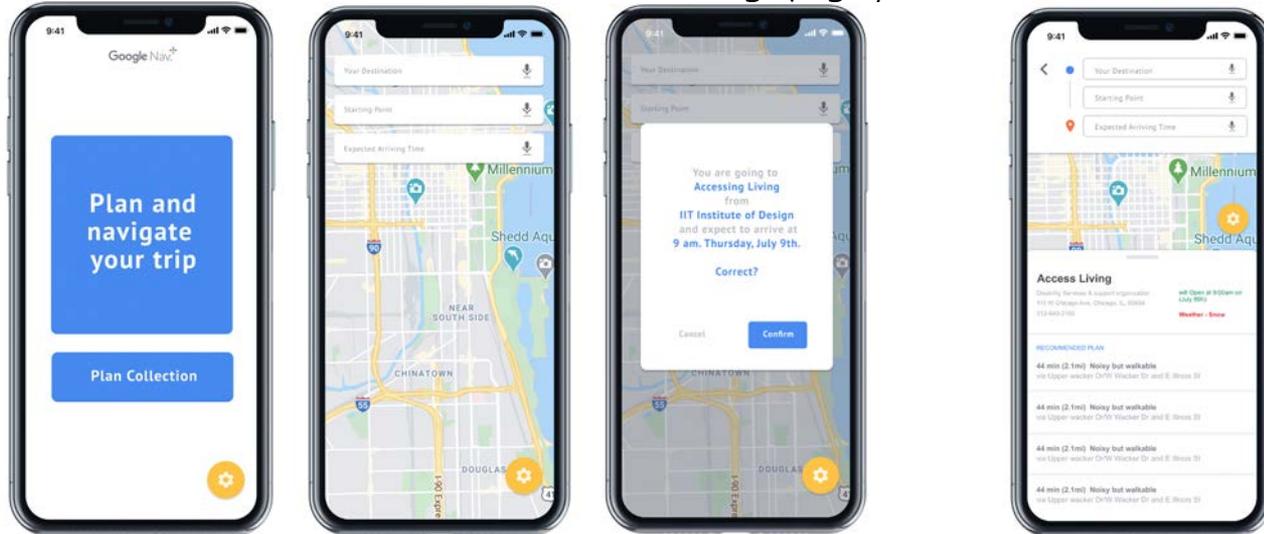
Design Principle

1. 兼顾low vision 和 blind, 在保证audio interaction合理的同时, 还要明确有视觉信息优先级
2. Screen reader 的模式下, 如何保证blind people的信息获取最高效化

如何及时确定用户对于信息的接受情况 -是否有lost或者信息的误读

Screen :

1. navigation
2. collection
3. Real Time location sharing. (login/ confirmation/ use)



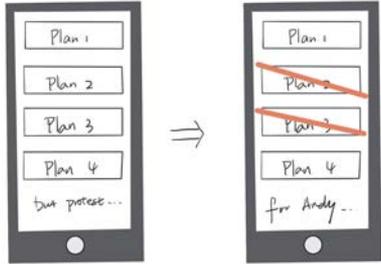
Scenario 01: The users want to have a personalized and considerate plan to support them **navigate to a new place on time**

Let me plan for it...

Client from Access Living...



Thursday morning...



We have two plans for you...



Design Challenge

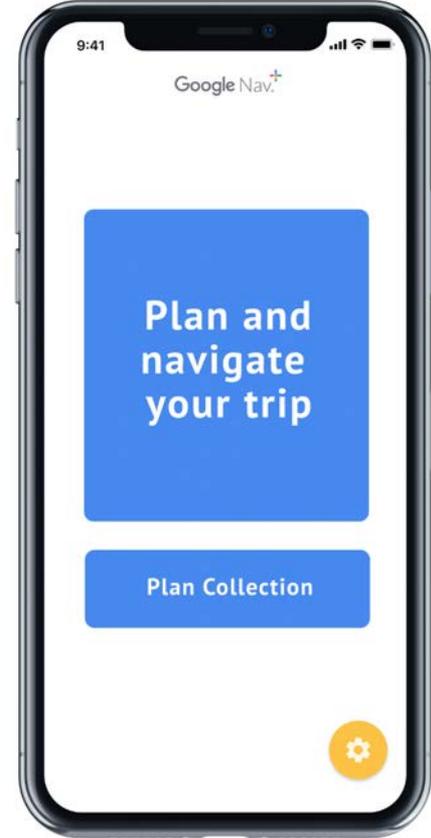
How can we



**Scenario:
Description**

**Insights
Quotes**

**Screen
reader
order?**

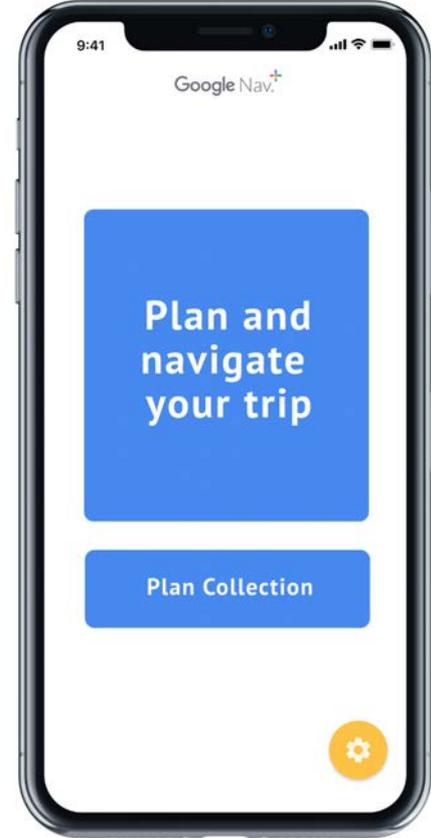


Design Challenge

How can we



**Scenrio:
description**

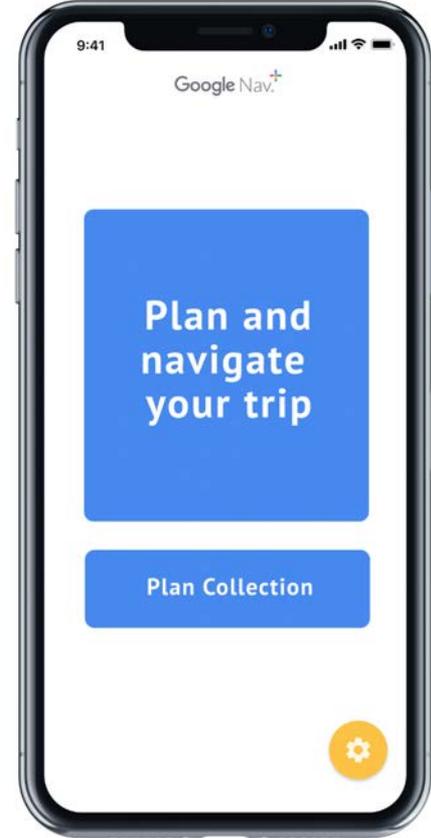


Design Challenge

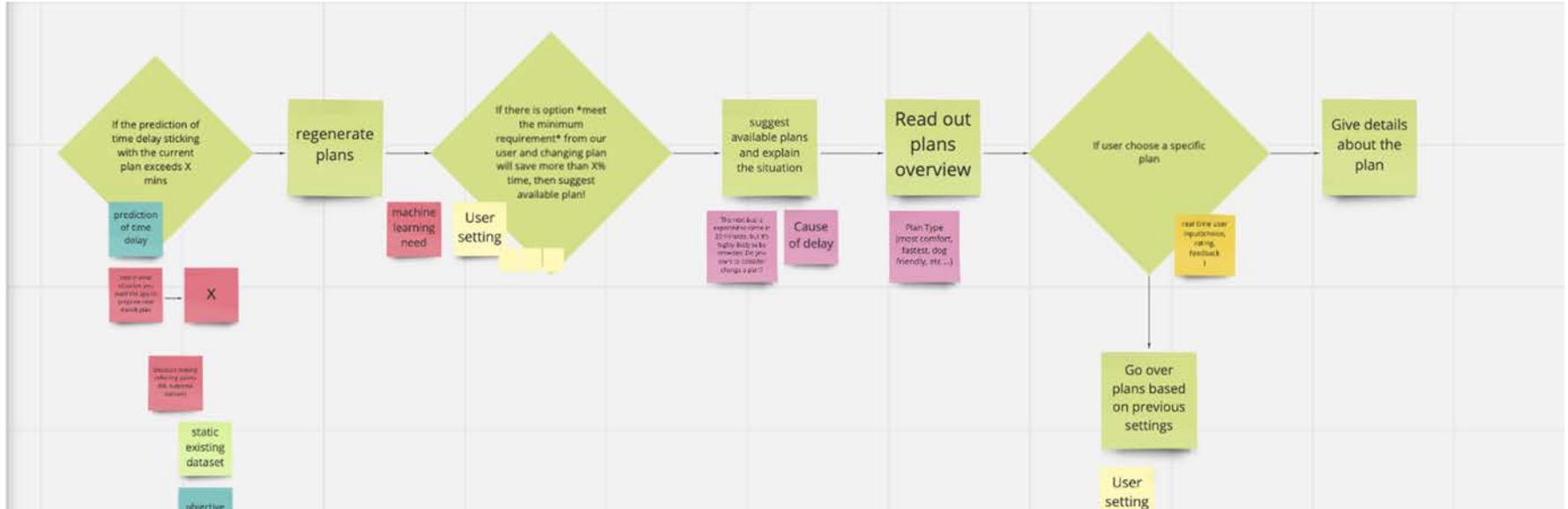
How can we



**Scenrio:
description**



Behind the scene



5 Insight Statements

By selecting a combination of the most interesting and most recurring observations, we chose a small number of themes to write short insight statements, ranging from full sentences to high level thoughts.

1 Lack of consistency

Even though accessible details and communications have been added for people with disabilities, they are often unhelpful because of poor and inconsistent placement.

2 Not afraid to defend their rights

When other passengers and transit employees break rules and show a lack of empathy and respect, people with disabilities often have to defend the rights and dignity ADA has granted to them.

3 Multiple confirmations

People with disabilities are unable to easily overcome problems they incur on their journey and therefore spend much more time confirming every detail before their trip to avoid them as much as possible.

4 Limited options

Unreliable service issues can cause people with disabilities to become stranded without a way home since they don't have a wide range of transit options available when public transportation fails them.

5 Assistant tools

Based off their own prior experiences, each person with a disability will develop a unique routine and personalized set of accessories to prepare them for anything on their journey.

5 Guiding Principles

Each individual insight statement has led us to a coupled guiding principle that might help develop of more equitable transit system for people with disabilities.

1 Be consistent to improve navigation

Enable clear navigation through predictable, consistent placement of accessible features, the built environment near access points and the transfer throughout the whole transportation system.

2 Create respectful interactions

Foster meaningful, dignifying communication and interactions between people with disabilities, public transit employees, and other passengers through the public awareness of the rules.

3 Provide a wider spectrum of important information

Provide reliable, on-demand access to all relevant information necessary to navigate the public transit journey.

4 Improve access to alternatives

Connect passengers quickly to alternate modes of transit when unpredictable barriers prevent them from reaching the destination.

5 Facilitate personalized navigation needs

Support a steep reduction in the learning curve to navigating public transit and finding the best routes for each person by accommodating the use of any unique situational and personal tools that aid to reach their destination safely.

How it works?

https://docs.google.com/spreadsheets/d/1Zqado_b48n3MyYw7gZ9m0Tb1kDrivk8_F02us9DqfqY/edit#gid=0

Users	People with VI (low vision & blind specifically)	People with VI (low vision & blind specifically)
User need	The users want to have a personalized and considerate plan to support them navigate to a new place on time	The users want to be able to easily adjust their trip in response to the changing situation
User action	Based on their preferences, user will 1) Receive a filtered plan list with summary to choose from 2) Get reminder if they saved a pre-planned trip (optional) 3) Rate the plan or adjust the preference (optional)	Based on their preferences, user will 1) Get notified about the cause of the changing situation 2) Get notified about the predicted outcome if they stick with the current plan 3) Receive a filtered regenerated plan list with summary to consider 4) Choose a plan 5) Rate the plan
ML system output	Recommendations for the trip plan	1) the predicted outcome if they stick with the current plan 2) the current situation get identified as a "change your plan alert" trigger 3) a filtered regenerated plan list with summary to consider
ML system learning	Patterns of behavior around accepting plan, completing trip, and improving suggesting accuracy (Patterns of perceiving certain situation as walking friendly for people with VI)	Patterns of behavior around accepting change plan prompts, completing trips, and decreasing anxiety level
Training dataset needed	Set of travel plans that users are familiar with, have used and liked.	1) Sets of situation user might consider change their plan 2) Set of solutions to help user adjust their plan when they run into situation that meet the criteria of triggering alert
Key features needed in dataset	Weather condition (Rainfall/ Snowfall/ Temprture) Soundscape(noise level & audio accessibility) Transfer situation (Consistency / times/ spending/ indoor-outdoor) Relevant event Crowdedness Accessibility Situation of Vehicle Walkability*	Time delay/saved Changes in: Weather condition (Rainfall/ Snowfall/ Temprture) Soundscape(noise level & audio accessibility) Transfer situation (Consistency / times/ spending/ indoor-outdoor) Relevant event Crowdedness Accessibility Situation of Vehicle
Key labels needed in dataset	1) The functionality of suggested plan 2) User acceptance or rejection of suggested plans 3) Reasons for "dislike" or "rejection" (preferences) : Users' level of acceptance of individual key features priority of different key features	users reject/accept the recommended new routes, users reject/accept the pre-informed information of real-time changes, users rating for routes (if changed) User generated feedback as to why suggestion was rejected(quick survey)
Data source key questions	"How can the app know the real-time changes in my surroundings?" "is this information up to date?"	"How can the app know the real-time changes in my surroundings?" "is this information up to date?"
Possible questions from Raters	"Is the recommended plan can make users go to work on time?" (function normally?) "could user possibly accept this plan?" "If not, what's the reasons?"--> "can users accept this level of xxx (key attributes)? too high or too low?" "If this number of key attributes affect the plan at the same time, which one have more impact? would users prioritize any specific attributes?"	"How can the app know the real-time changes in my surroundings?" "Where does the new suggested alternative plans come from?" "How certain is the app in its recommendation?"



We focus

Public transit

Why Google map

1. Google map has the largest user-group in the market, which has huge-amount of data base.
2. Google map has a special accessible version, and also has more detailed navigation services for visually impaired people like voice guidance service.

So our scope is building an add-on service for Google Maps, which can better serve visually impaired users, and can also help Google improve the existing voice guidance service for people with difficulty to navigation.

How Nav+ want to add on Google Map? What Google did

Formulate universal travel plans. The priority of the planned route is still based on time and the occurrence of very serious incidents.

Detailed voice navigation instructions.

- a. Number of pedestrians ahead,
- b. Signal lights,
- c. Where is the train and cross road
- d. How long does it take to turn, etc.

Real-time feedback or description from the user. (Is this bus crowded?)

What is our goal to add-on

Automatic user identification (low vision/blind/ regular)

Formulate travel plans that better support more specific user group - people with VI. Engaging more detailed needs of the visually impaired user.

- a. Weather
- b. Noise

Detailed voice navigation instructions.

- a. Situation of public transit vehicles
- b. Adjustable back up plan(route)

How it works?

Users	People with VI (low vision & blind specifically)	People with VI (low vision & blind specifically)
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Why include AI Machine learning for these features.



It can manage a huge amount of real-time information. **Reducing the mental stress** that people with VI have when they travel.



Quickly process information and respond to users in a timely manner. **Making up for the problem of weak information collection capabilities** caused by visual deficiencies.



Machine learning has memory and can record user-specific travel preferences, resulting in more accurate and time-sensitive plans

Prediction

Massive
Calculation

Personalization

Adapt
Evolving
Situation

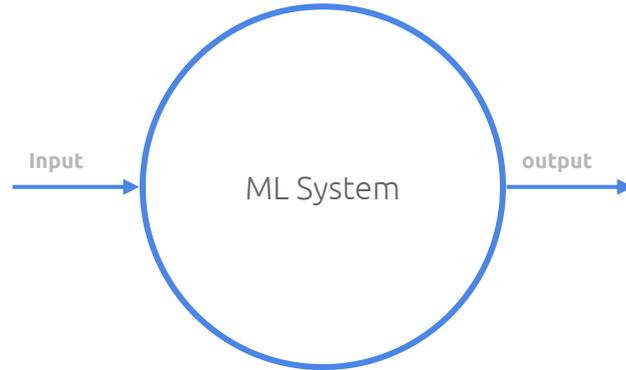
The impact of Weather

The users want to access reliable weather data and get suggestions about trip plan and relevant tips based on the impact the weather has on users' navigation experience.

Dataset training needs

Set of travel plan that users used and liked

Users' behaviors in special weather situation.



Evaluation of each routes that google map provides to users based on weather information

Possible suggestions for users to get ready for navigating in some special weather occasions.

Users Actions

User go to work using the navigation plan based on recommendation and get prepared with the weather information beforehand

System Learning

Patterns of the influence caused by weather around choosing recommendation plan

Key features & key Labels

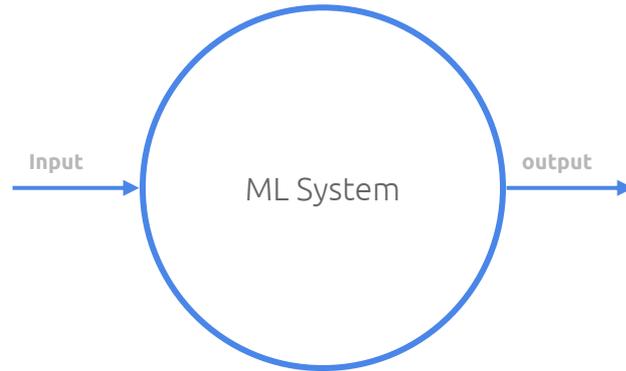
		FEATURES								
	User ID	Temperature	Rainfall	Snowfall	Ridership	Time of transfer	Time of wait	Include outside transfer	satisfaction	
EXAMPLES	L3S98NM	71	1.3mm	0mm	2068	1	3min	Yes	high	LABELS
	NM19S0L	22	4.3mm	3mm	7603 759	2	15min 8min	Yes	low	
	S34LW7B	89	0mm	0mm	3405 1073	2	7min 3min	No	high	

The impact of Transportation tool situation

The users want to get to know more about the situation of specific transit vehicles so that they are able to make the choices based on their own preferences.

Dataset training needs

Set of solutions (new routes/ reactions) users will have when they pump into unexpected changes in the real-world during rush hours



Users Actions

The users arrive their destinations on time safely and comfortably.

Recommended new plan/routes with improved experience

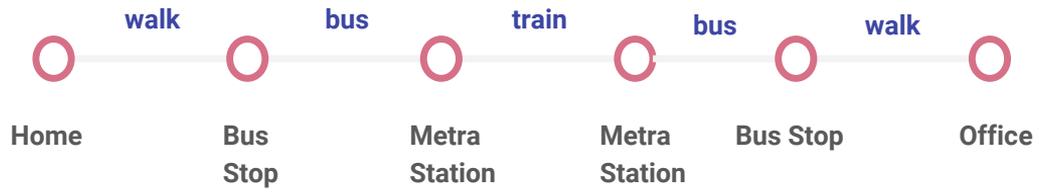
Reminder(information) of possible unexpected upcoming changes on users' existing route

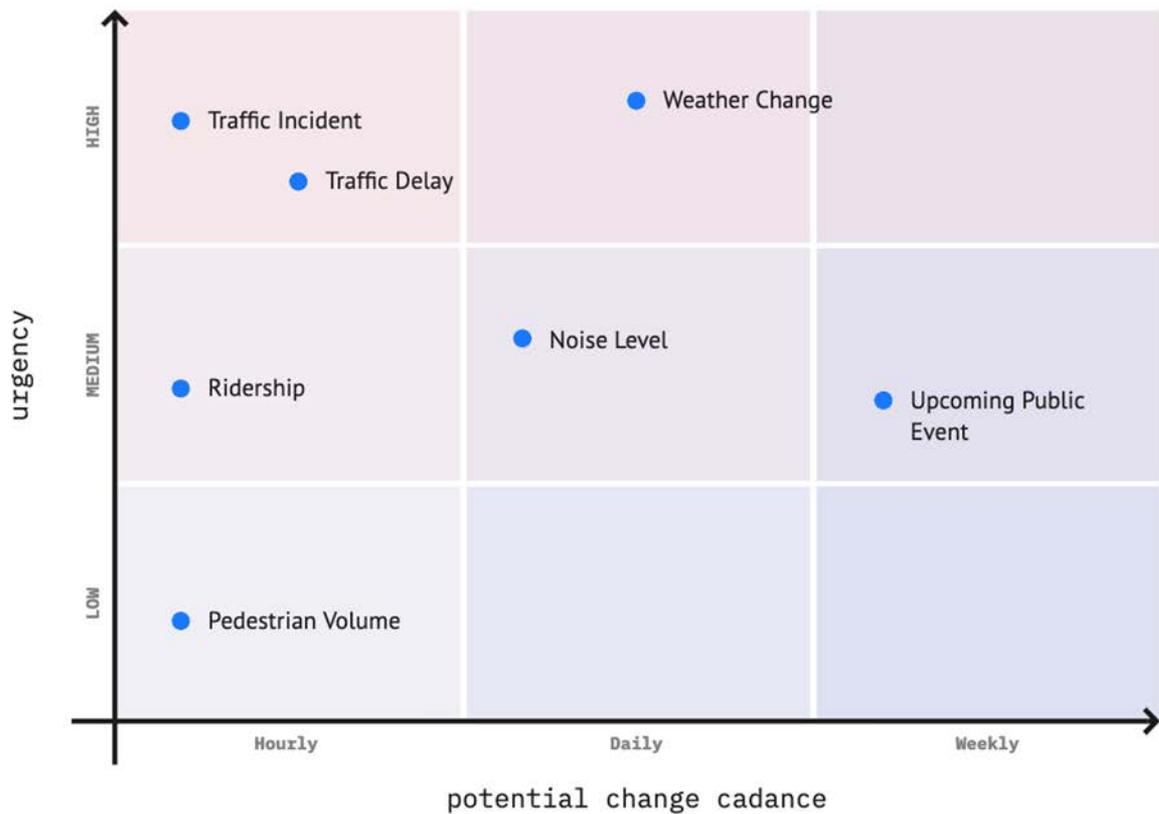
System Learning

Patterns of users' reactions/feedback to the recommended plan/routes and information

Key features & key Labels

		FEATURES							
	Bus ID	Capacity/ridership	Bus/train number	Delay	Safety issue history record	Accessibility	hygiene	Needs to give suggestion and make another choice	
EXAMPLES	AV234DB							High	LABELS
	SD138VC							Medium	
	BN746SK							Low	





Persona



ANDY

Attorney whose office is located in Michigan ave. Chicago.

**Living in Glenview, the suburb of Chicago City
With wife and kids**

Lost vision long time ago, already get used to blind life

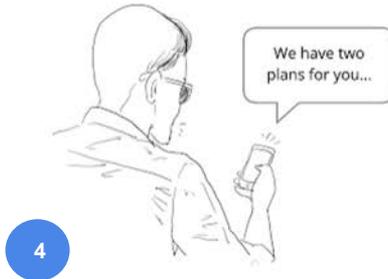
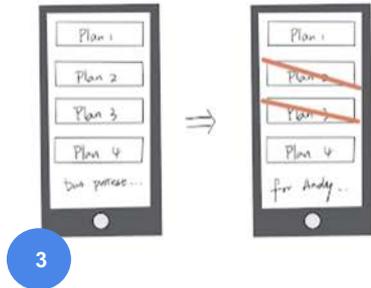
Hearing is impaired as well

Daily work is from 9am - 5pm in Downtown

Sometimes need to visit other places for cases

**Most of time, he uses white cane and his guide dog - Lance to
navigate his trip**

Scenario 1



Comments from Ryan

UI - remind people where the recommendation comes from - have a very light weight where this recommendation comes from (for andy)
(everytime he is trying to use app to navigate - "in bad weather, some users prefer to stick to one mode ...")

Senario 2

On the bus



At the bus station



Comments from Ryan

Want the person do that every morning - so machine learning can understand the pattern - it's hard to collect real-time data from people on the bus.

"You can take the 29, but it's little bit crowded"

Have the risk to collect real-time data from people consistently ...

- So the difference is the data from different resources -(collecting from people/ or existing database
- How the data is collected...from camera, from people, from other sensors..?

Senario 3

Comments from Ryan

The things to trigger the plan should come from the human labelers ...

Triggered form machine learning - there is a barrier in taking solution 1, also a huger advantage in solution 2, so nudge andy to go to the second solution

In this case , people will go to another plan because of some attributes compared to some other attributes - and system learn that first attribute more likely can be a trigger

Start Nav + for daily commute

Workday, Andy left home at 8 o'clock as usual.

He opened Nav +, chose his daily navigation plan, and follow the voice guide to his office.

Receive alarm

But when he hope off metran train and try to transfer to bus, he got the alarm from Nav + that told him the bus he would ride got into traffic incident and next bus will be delay for a hour.

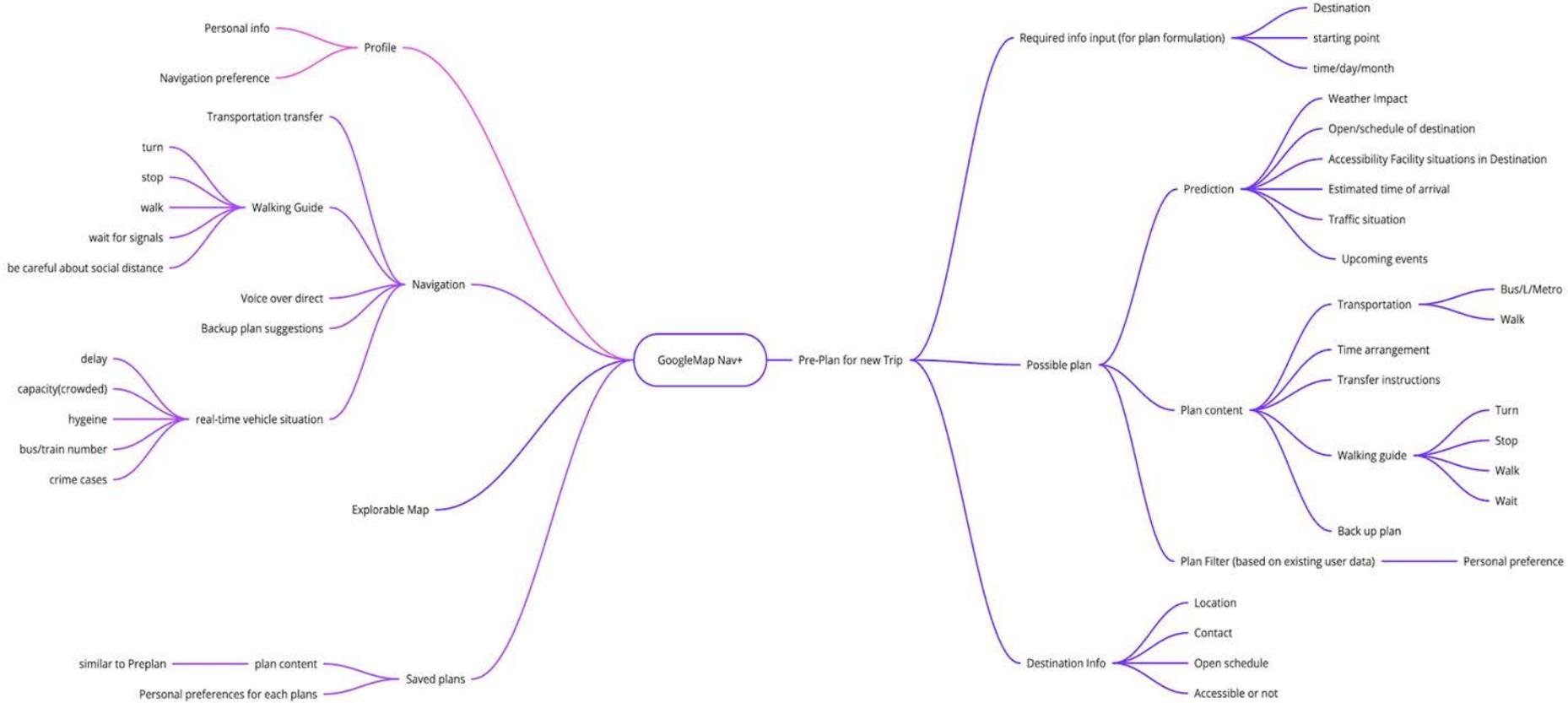
Receive new plan

At the same time, he received a new adjusted plan to direct him to his office on time

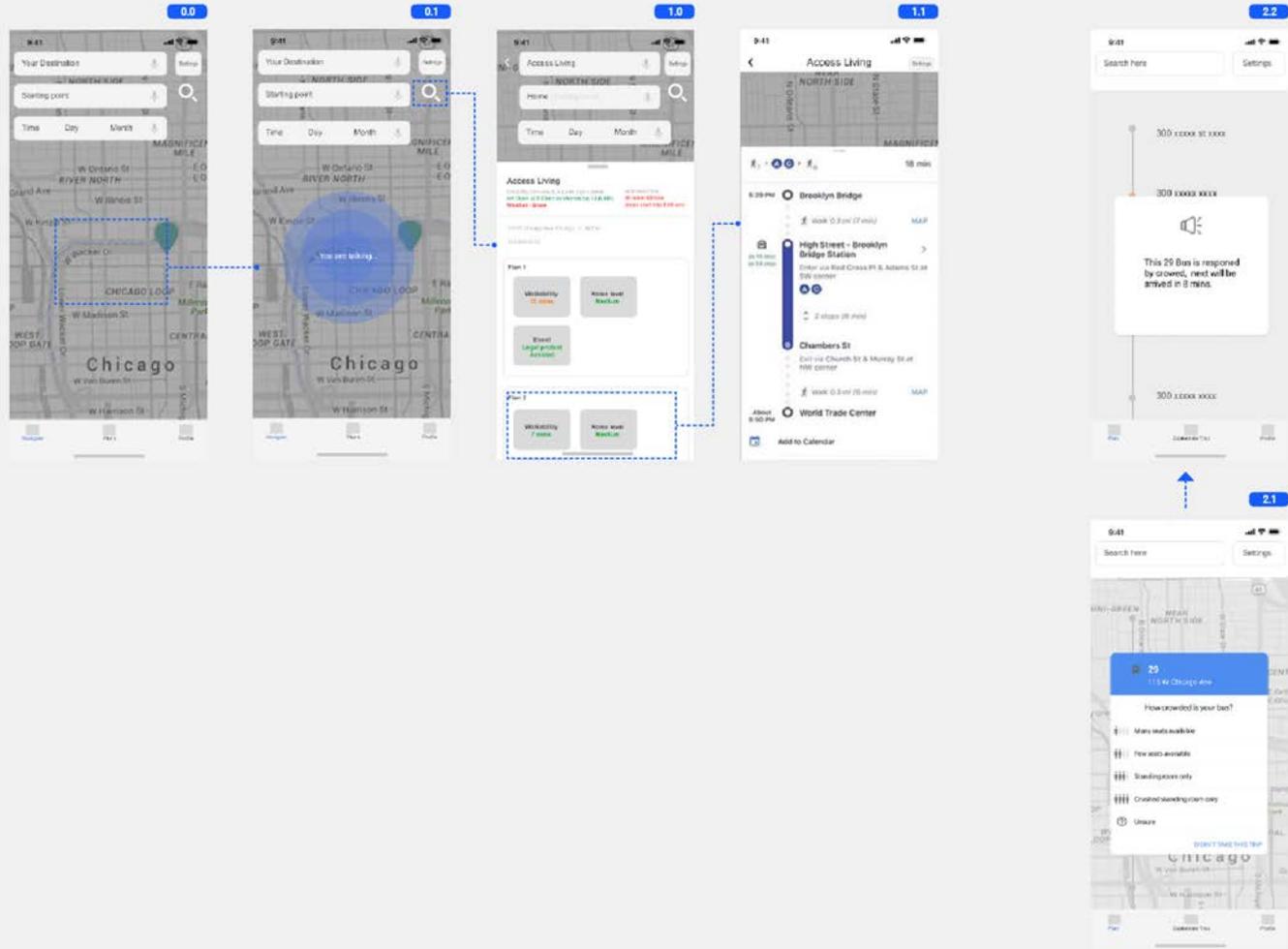
Confirm and transfer to new plan

He think it makes sense so he transfer to another plan.

Info architecture

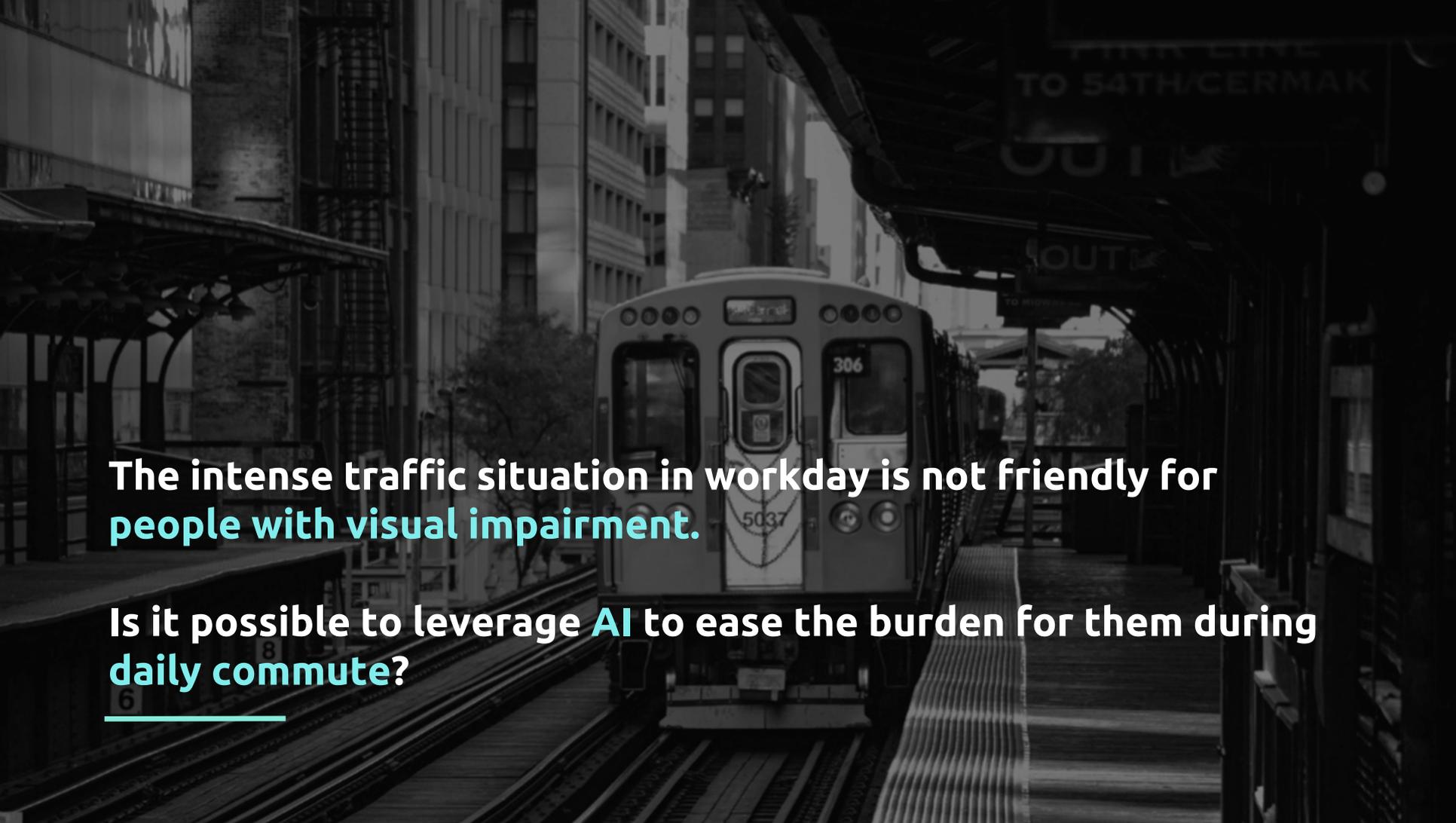


User interface flow





A personalized navigation plan constructor to support people with visual impairments in workdays

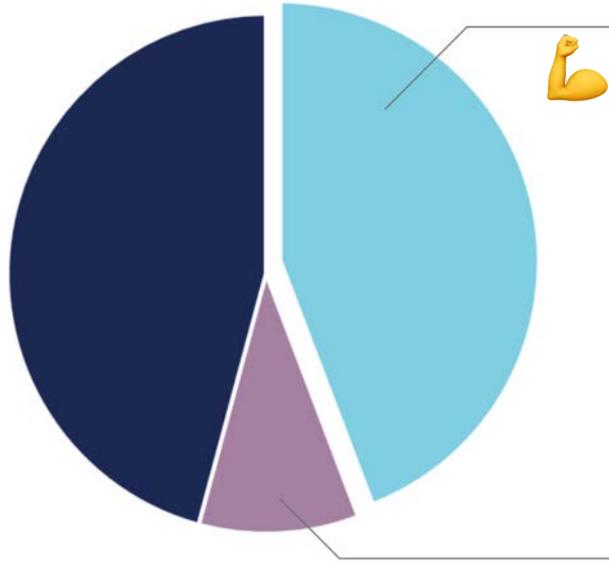


The intense traffic situation in workday is not friendly for people with visual impairment.

Is it possible to leverage AI to ease the burden for them during daily commute?

Work is an important part for people has visual impairment.

More than 7.5 million Americans are blind or have low vision.



44.2% of people who are blind are employed, they are supporting families and rising children just like people without disabilities

10% are unemployed.

Why is navigation essential in scenario of Work for people with visual impairments.

Working is a really specific scenario, the requirements of the **time schedule** and **right navigation** are more strict, compared to casual trip in everyday life..

Office/Home - a new place for work

One time

New

Business Related New Trip

Home - Office - Home

Long term

Familiar

Daily Commute

Construct plan

Monitoring & guiding

Updating the plan



USER NEEDS

User need 1

How might we support users with a specific and considerate plan before trip so that they can stick to their work schedule?

Yes

AI can improve this problem by

- Generating possible plans based on user's visual impairment situation and living environments
- Offering details of each steps of plan to users when they are navigating in the real world
 - Bus routes
 - Train routes
 - The arrival time of bus/train
 - Etc...
- ...

How can NavtoWork learn the necessary information to generate considerate plan before go out



Whether information



Event alert



Environment Noise Rate



Traffic information

- We can get predict weather information from “The Weather Channel”
- We can get predict event alert which will happen near your routes from “Chicago Data Portal”
- We can get noise level information from “Chicago Data Portal” and make prediction.
- We can get traffic situation information from “Google map” and make prediction



<https://weather.com>



<https://data.cityofchicago.org/>



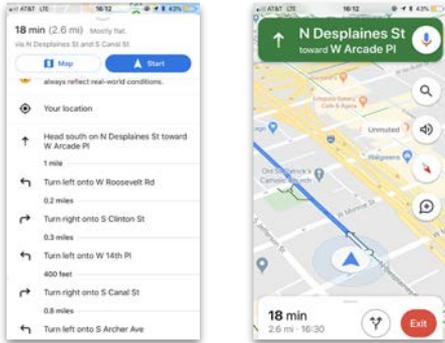
Google Maps

Reward function

Generate navigation plan for users when they try to go somewhere unfamiliar for work related purpose

Our AI model will be optimized for **precision** because we would like to **secure the user journey to decrease the randomness for people with visual impairments**.

We understand that the tradeoff for choosing this method means our model will **have less possibilities to prepare multiple alternatives as backup plans.(?)**



Reference

Prediction

		Prediction	
		Positive	Negative
Reference	Positive	<p>True Positive</p> <p>AI model suggests the multiple plans that guide users to their office on time</p>	<p>False Negative</p> <p>AI model didn't suggest the plans that guide users to their office on time</p>
	Negative	<p>False Positive No</p> <p>AI model suggests the multiple plans includes the ones misguide users to other places and cost extra time</p>	<p>True Negative</p> <p>AI model didn't suggest the multiple plans includes the ones misguide users to other places and cost extra time</p>

User need 2

How might we enable users to handle the various unexpected changes in rush hours via a more flexible plan?

Yes

AI can improve this problem by

- Collecting the day to day changes of accessibility services in the routes during rush hours
- Reflecting the impact of weather changes on routes and plans in real time
- Measuring the accessibility level of the possible routes offered in plan daily and adjust plans based on the results
 - Noise level at bus stop
 - Ridership & people flow in train station
 - Etc.
- Connecting users to the people who can offer real time support
- ...

How can NavtoWork learn the necessary information to adjust the plan during the navigation



Safety alert



People
Count



Traffic
information



Environment
Noise Rate

- We can get real-time safety alert of incidents happening near your routes from “citizen”/“Chicago Data Portal”
- We can get real-time information of the flow of pedestrian from “Chicago Data Portal”
- We can get real-time traffic situation information from “Google map”
- We can get real-time noise level from “Chicago Data Portal”

Reward function

During the navigation process, according to real-time data changes

our AI model adjusts the navigation plan in time to ensure users can arrive to work safely, comfortably and punctually

or give some pre-alarm to users to increase their awareness of their surroundings.

Our AI model will be optimized for **precision** because we would like to **collect multiple information and enable users has the ability to choose the safer, more comfortable way to go to work.**

We understand that the tradeoff for choosing this method means our model **will not give a lot options for users and they may not stick with the same trip even it is the same destination.**

Reference

		Prediction	
		Positive	Negative
Reference	Positive	<p>True Positive</p> <p>AI model adjust the plan based on the information of real-time changes that potentially affect the safety/punctuality of their trip</p>	<p>False Negative</p> <p>AI model didn't adjust plan based on the information of real-time changes that potentially affect the safety/punctuality of their trip</p>
	Negative	<p>False Positive No</p> <p>AI model adjust the plan based on the information of all possible changes in their trip</p>	<p>True Negative</p> <p>AI model didn't adjust the plan based on the information of changes that doesn't affect the safety/punctuality of their trip</p>



DATA COLLECTION

From user needs to datasets



Feature1:

Generate considerate plan for people with VI

Users	People with visual impairments (especially people with low vision & blindness) who need to commute to work.
User need	The users want to be able to make a considerate trip plan without stress
User action	User go to work using the navigation plan based on recommendation
ML system output	Generation thoughtful recommendation of trip plan Remind user base on the schadual before they leave, make sure they can go out on time.
ML system learning	Pattens of the influence elements around choosing recommendation plan
Training dataset needed	Set of travel plan that users used, liked.
Key features needed in dataset	Temperature Rainfall Snowfall Ridership Time of transportation Duration (time cost) of waiting Include outside transfer
Key lables needed in dataset	User acceptance or rejection of plan suggestion User generated feedback as to why suggestion was rejected(quick survey) Users enjoyment rate of recommended plan
Data source key questions	"Where the data from? Is it correct and latest?" "Is the recommeded plan can make me go to work on time?"

Dataset Example

TRIP ID		FEATURES							GOOD/BAD	
	User ID	Temperature	Rainfall	Snowfall	Ridership	Time of transfer	Time of wait	Include outside transfer	satisfaction	
EXAMPLES	L3S98NM	71	1.3mm	0mm	2068	1	3min	Yes	high	LABELS
	NM19S0L	22	4.3mm	3mm	7603 759	2	15min 8min	Yes	low	
	S34LW7B	89	0mm	0mm	3405 1073	2	7min 3min	No	high	

Data source

Existing dataset



<https://weather.com>



<https://data.cityofchicago.org/>



ANALYZE BOSTON

<https://data.boston.gov/data-set/traffic-related-data>

Feature2:

Empower the ability of handling the various unexpected changes for people with VI

Users	People with visual impairments (especially people with low vision & blindness) in rush hours
User need	The users want to be able to handle the various unexpected changes in rush hours
User action	The users arrive their destinations on time safely and comfortably.
ML system output	Recommended new plan/routes with improved experience Reminder(information) of possible unexpected upcoming changes on users' existing route
ML system learning	Patterns of users' reactions/feedback to the recommended plan/routes and information
Training dataset needed	Set of solutions (new routes/ reactions) users will have when they pump into unexpected changes in the real-world during rush hours
Key features needed in dataset	distance to ongoing event (parade, protest, etc.) noise level ridership Pedestrian volume traffic information-delay(mins)
Key labels needed in dataset	users reject/accept the recommended new routes, users reject/accept the pre-informed information of real-time changes, users rating for routes (if changed) User generated feedback as to why suggestion was rejected(quick survey)
Data source key questions	"How can the app know the real-time changes in my surroundings?" "Where does the new suggested alternative plans come from?" "How certain is the app in its recommendation?"

Dataset Example

		FEATURES						
	User ID	Distance to ongoing event (parade, protest, etc.)	Noise level	Pedestrian volume (depending on specific location)	Bus/train Delay	Traffic jam/car crash/ etc.	Needs for new recommendation	
EXAMPLES	AV234DB	1.52 km	73 db	1,290 - N Michigan ave	23 mins	yes	Medium	LABELS
	SD138VC	0.47 km	85 db	13,290 - S Michigan ave	2 hrs	yes	High	
	BN746SK	0.93 km	46 db	190 - W Madison st	3 mins	no	Low	

Data source

Existing dataset



<https://abc7chicago.com/traffic/>



<https://citizen.com/>



<https://data.cityofchicago.org/>



Google Maps

Design for your raters



Who are your raters?

Target raters

Our users (People with VI who has difficulty to achieve the work, study or activity that ordinary people can do)

Resources of Potential bias

The experience described by users is abstract
Their symptoms limits their experience and perspectives

What is their context and incentive?

Context (?)

After the raters finish a trip?

Incentive

Help people with visual impairments
Improve their daily trip experience.

Potential risks

Boredom of explaining experience , Incorection of abstract information

What tools are they using?

(In-product)

Easy to input

Raters can just pick the answer without texting

Avoid abstract description

Using questionnaire interaction to help raters decompose abstract information into specific data

(Specialized)

Quick survey

Will using 7-8 min to finish all the questions

Logic flowchart

Raters will not answer the questions which is not related their experience

What we thought:

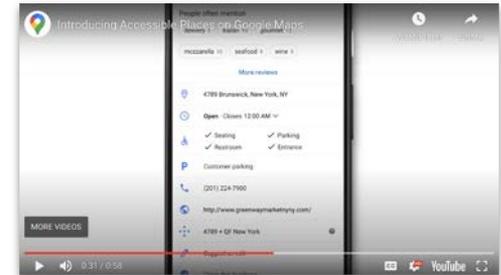
Based on what we had now and the time we have, we would like to iterate our Need 1 and Need 2 to specify them into a detailed scenario and build some add-on functions/services on the existing google products.

<https://www.blog.google/products/maps/better-maps-for-people-with-vision-impairments/>

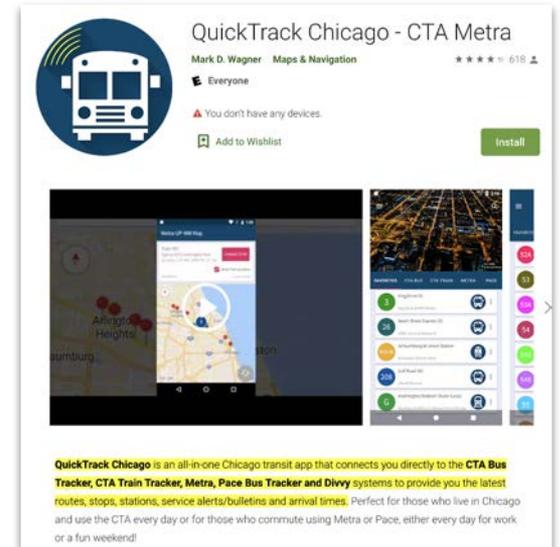
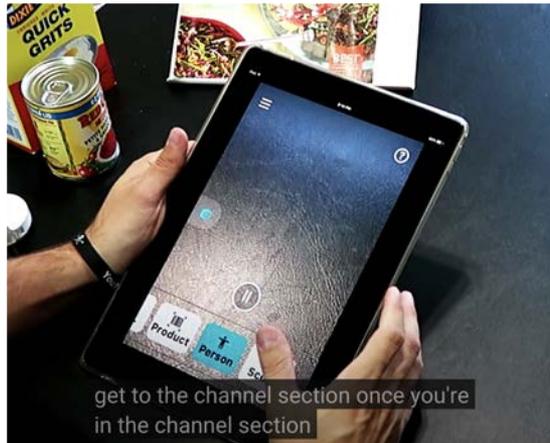
Our scope:

Google had launched a service for people with visual impairment last year.

We would like to reconstruct our scope similar to what google did, like an add-on service.



Talkback			Single tap to pause “L”shape for global context menu Upside down “L” for local context menu	
Google Lookout	Pixel, LG, Samsung	Free	Put down the phone to finish the function; Take a picture and let the device describe;	
Seeing AI	Identification(IOS)	Free	Swipe up and down to *circle” through the options	
Blindsquare	Navigation(IOS)	40	Set filter to hear information you need	



Team Members



Mridula Dasari



Sze Wing Alpha
Wong



Nanxi Yu



Minyi
Zhang

Walking ...



101 reasons not to walk

I don't have time for it

I don't think it's safe

I think it's tedious

.....

Barrier 1

Walking home,
or walking on eggshells

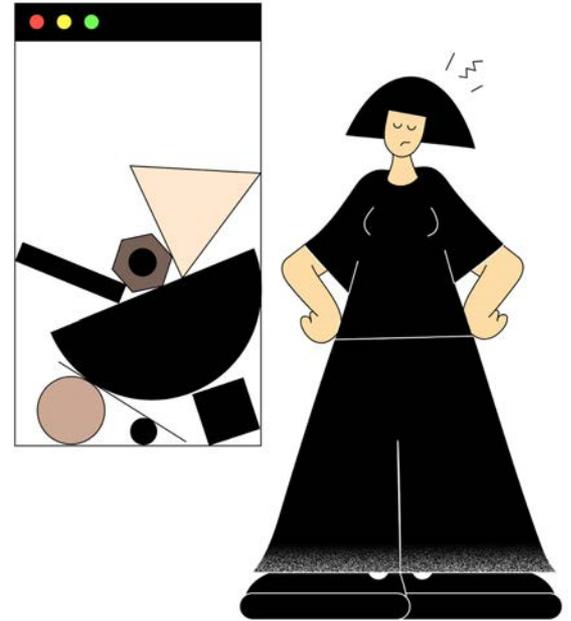
“37% of pedestrians feel unsafe while walking even a mile”



Barrier 2

Sorry, Apps are not optimized for walking

“Current navigation apps are optimized for driving more than walking”



Barrier 3

I think walking takes too long

“About 73% of people incorrectly estimated walking time.”

“U.S. commuters wait approximately 40 mins a day for public transit.”



Barrier 4

Walking is boring and not cool

“25-35% of American adults are completely inactive”

“83% of U.S. Adults Drive Frequently”

“Walking is for poor people”

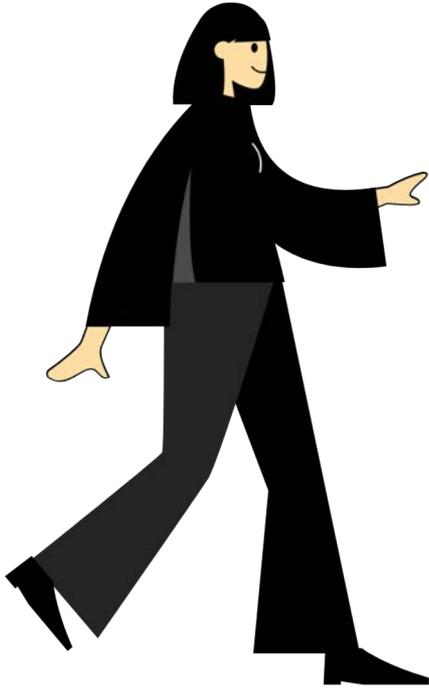




101 reason to walk

A great cardio exercise
Keeps the body healthy
Helps with mental stress
Improves cognitive ability

.....



Walking is good, but we don't walk enough

Walking **cuts the risk of dying by 32%**;

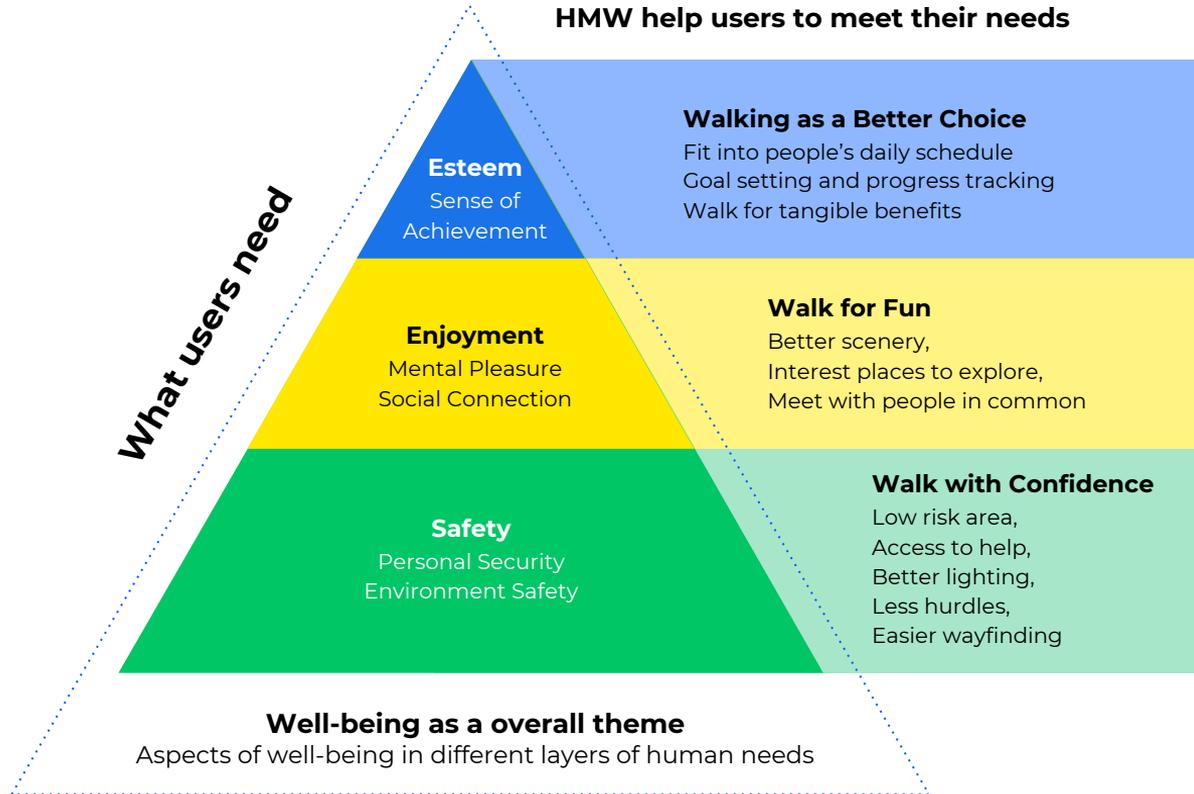
Average American walks 3-4k steps a day, while **10k** is recommended

“

HMW encourage people to **walk more** in order to stay **healthy** by addressing their personal considerations related to **safety, enjoyment and much more?**

”

User Needs Hierarchy



practice **ID**

New Normal Master Challenge

Chih Yuan (Hugo) Hsiao, Chunxuan (Kelvin) Yu, Siwei Sun, Yutian Sun,

Master Challenge - Project Description

Name of organization/department

New Normal Master Challenge

Project purpose:

Explore what kind of digital social product we can provide under the post COVID-25

Details of project/intended outcomes

Design a near-future conceptual product centered on Hologram + Haptic glove + Drone to improve the experience of young adults giving them the ability to reduce their loneliness and enhance their connection to the real world through traveling.

Media



Learning experience

John leads us to walk through the whole process of making a product. From a big scale like scenario planning which helped us defined how the product should look like in several possible futures to details like technology use and using the scenario. We all agreed it's very useful and gave us more understanding of “post-human centered design” and “speculative design”.



Mixxy

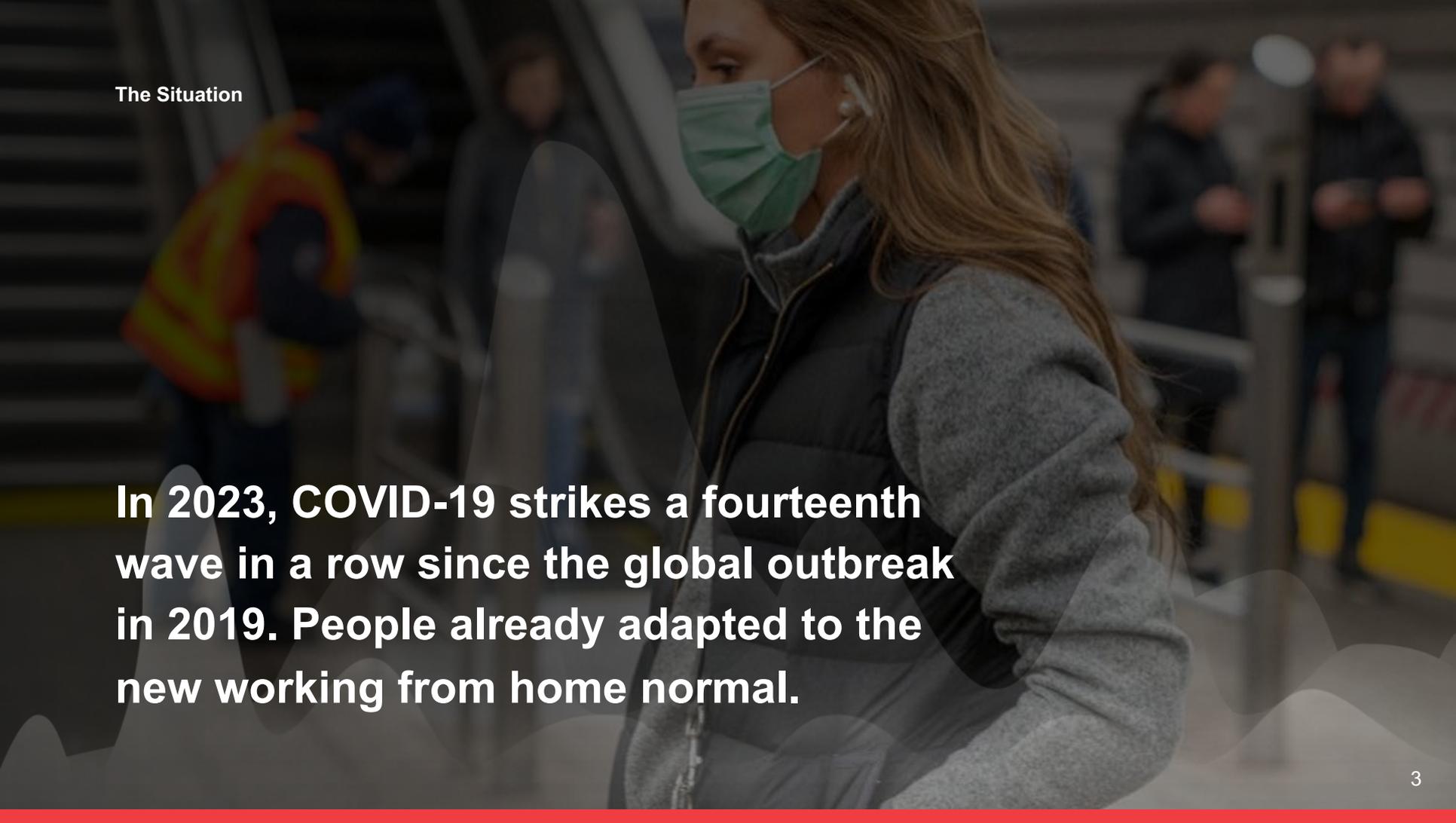
A Cyber Drinking Experience

Callie | Haiping | Jesse | Zeya

July 22, 2020

Agenda

- 01 **THE SITUATION** THE WORLD WE MAY BE LIVING IN
- 02 **THE CUSTOMER & THEIR NEEDS** THE DESIRES & FRUSTRATIONS
- 03 **THE SOLUTION** A STORY OF JD
- 04 **THE BENEFITS**
- 05 **THE UNINTENDED CONSEQUENCES**
- 06 **Q & A**



The Situation

In 2023, COVID-19 strikes a fourteenth wave in a row since the global outbreak in 2019. People already adapted to the new working from home normal.



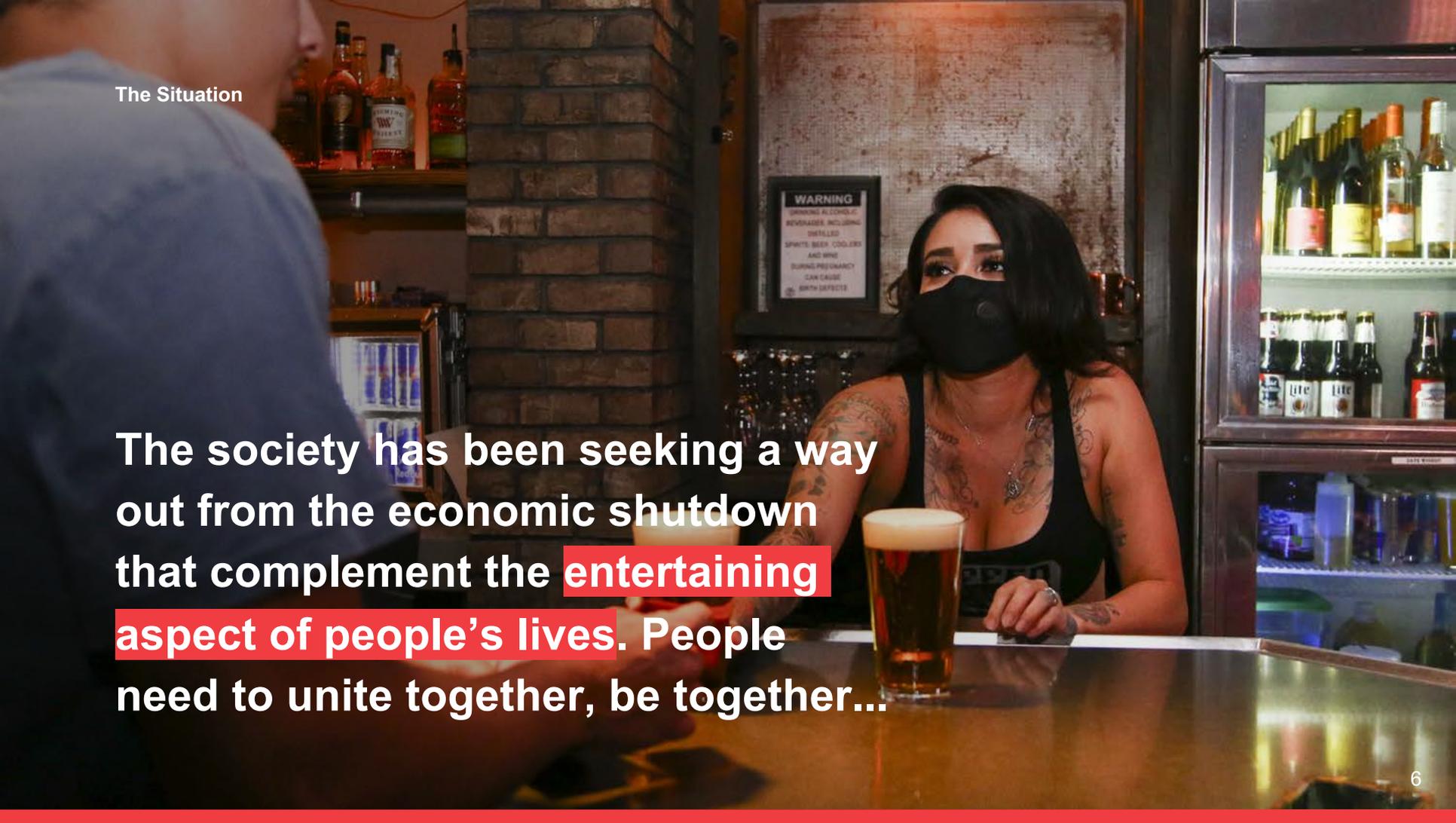
The Situation

The WFH shapes the people and they start to embrace new technologies in the digital era, and value community more than ever.

A vibrant nightclub scene with people dancing under colorful spotlights. The atmosphere is energetic, with bright beams of light in shades of blue, purple, and red illuminating the dance floor. Silhouettes of people are visible in the foreground, and a DJ is seen at a booth in the background.

The Situation

The young who can't bare the isolation anymore tried to ignore the risk and gathering together for clubbing or events. As a result, positive cases are increasing dramatically.



The Situation

The society has been seeking a way out from the economic shutdown that complement the **entertaining aspect of people's lives**. People need to unite together, be together...

The Customer & Their Needs

For young clubbers who regard clubbing as a way of **socializing**, **showing identity**, and **releasing stress**, they are looking for a contactless clubbing solution that can:

Keep social distance

Feel closer to people

Authentic club culture

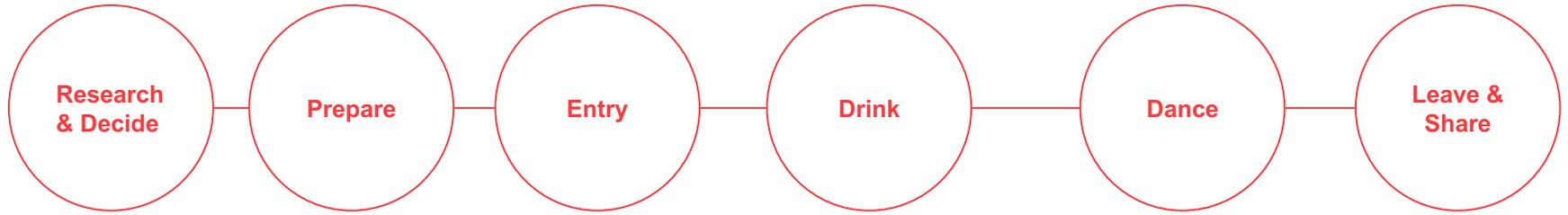
More modes of interaction



VS



1st Ideation - Mixxy, a Virtual Club Platform



Dancing

Drinking

Socializing

Order drinks

Buy drinks for others

Taste various beverage

Play drink games

Drink for warm-up

Toast

Drink while dancing

Feel tipsy

Making new friends while
drinking together

Their Desires & Frustrations During Drinking

	Risk of getting infected	Feel lonely	Limited interaction	
	Afraid of hangover	Hard to get drunk alone at home	No physical contact, feel distant with friends	
	Cause troubles to others affairs	Feel awkward drink in front of computers	No small group chat in a large scale video chat	
Frustrations	Health & Safety Concerns	Emotional feelings	Limited channel to meet new friends	Complicated process ordering alcohol delivery
			Hard to find alternatives channels(social, music...)	No more fancy-looking drinks
			No cultural vibe	
			Poor atmosphere	
Desires	Cyber drinking experience	Social function enhancement	Amazing club experience	Economic
	Stand out on social media	Meet people who have similar hobbies/taste	Have fancy effect	Cheap price
	Fun DIY beverage	More interaction activities with friends	Feel the amazing effect of the club	Without traveling
	Customized service		Enjoy music of certain genre	

HMW provide

a contactless and safe way of clubbing

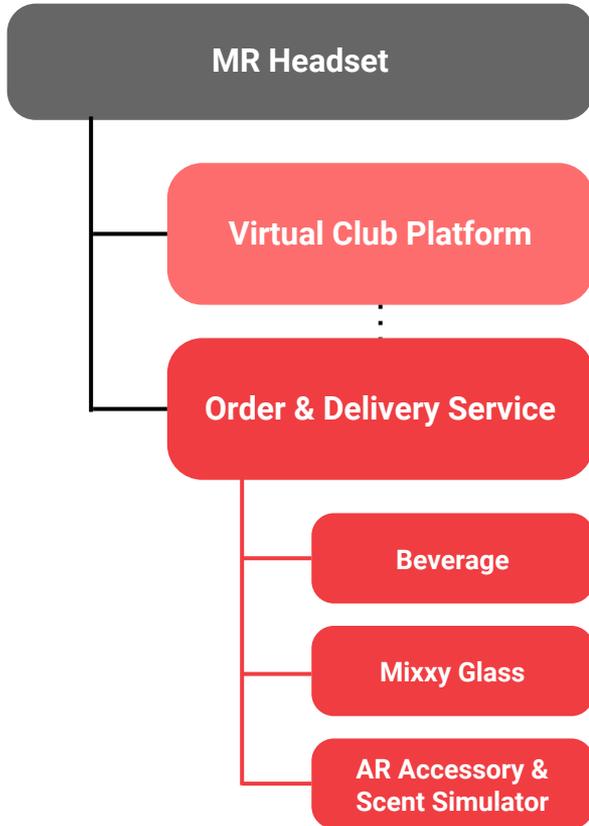
for people

in the new normal of a post-COVID world

so that

**they can experience in-club drinking to stay
connected with people and enjoy themselves?**

Products & Services



The **basic equipment** owned by users to provide immersive experience for them which engaged the visual sense, smell, hearing and haptic.

The core application(pc/mobile/mr headset) allows users to engage the service including browsing the clubs, joining the event, dancing or drinking in the club, etc. **All digital experiences** are provided by the platform.

A channel to provide **offline service** for the users. Users purchase the ticket, order the beverage and accessory on the virtual platform or the website. They receive the physical package including the beverage, Mixxy glass and other AR accessories.

Exclusive drinks from the club with the advanced features in the virtual club.

Multi-sensational glass to enhance the virtual drinking experience.

AR decorations for users' home interior which brings the club to their home.

Meet JD



Joel Douglas

Age: 26 **Location:** San Francisco **Occupation:** Software Engineer

JD loves playing video games and is willing to know new friends in digital world. After graduating from college, he becomes a software developer, while his best friends work in different cities all around the world.

Now he really wants to hang out with them as usual, drinking, talking and dancing freely not only to release stress but also to get rid of being lonely.

Recently his best friend invited him to a brand new virtual club. For the best experience of having fun, he was also suggested to buy the full package of the ticket.

JD's party night is about to begin...

A Story of JD

Unboxing

The beverage
The glass
AR Accessory



Preparation

Equipment Setup
Health Monitor
Setting



Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for friends



Party Climax

Virtual Toast
Premium Dizziness
Health Monitor Reminder



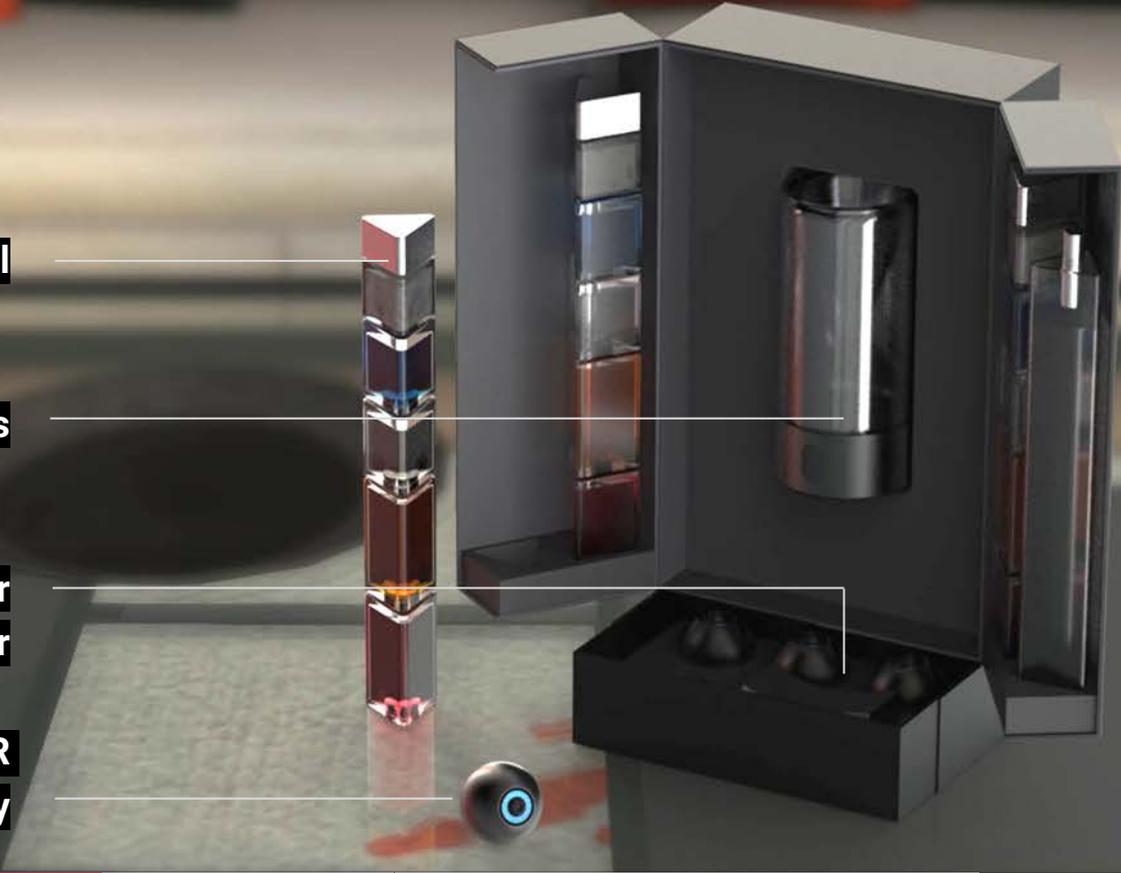
REALITY

Ordered Cocktail

Mixxy Glass

Modular
Scent Simulator

AR
Accessory



Unboxing

The beverage
The glass

Preparation

Start Drinking

Party Climax



REALITY



Low Volume Mode

High Volume Mode

Unboxing
The beverage
The glass

Preparation

Start Drinking

Party Climax





First-person perspective display

AR accessory

MR headset with Modular Scent Stimulator

Unboxing

Preparation

- Equipment Setup
- Health Monitor Setting

Start Drinking

Party Climax



Do you want to set a threshold to your drinking for the benefit of your health tonight?

Create New

Use Last time's Setting

Maximum
Recommended

Unboxing

Preparation

Equipment Setup
Health Monitor Setting

Start Drinking

Party Climax





Mixxy Signature Mojito
is opened! [Confirm](#)



twist & shake
before you open

Unboxing

Preparation

Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

Party Climax



REALITY



VIRTUAL



Unboxing

Preparation

Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

Party Climax





Unboxing

Preparation

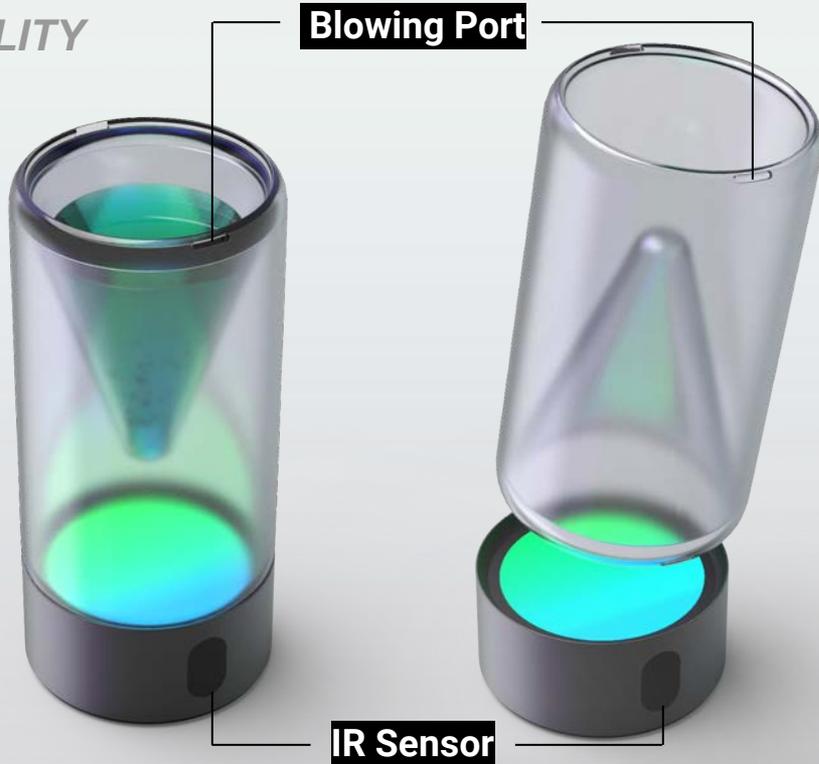
Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

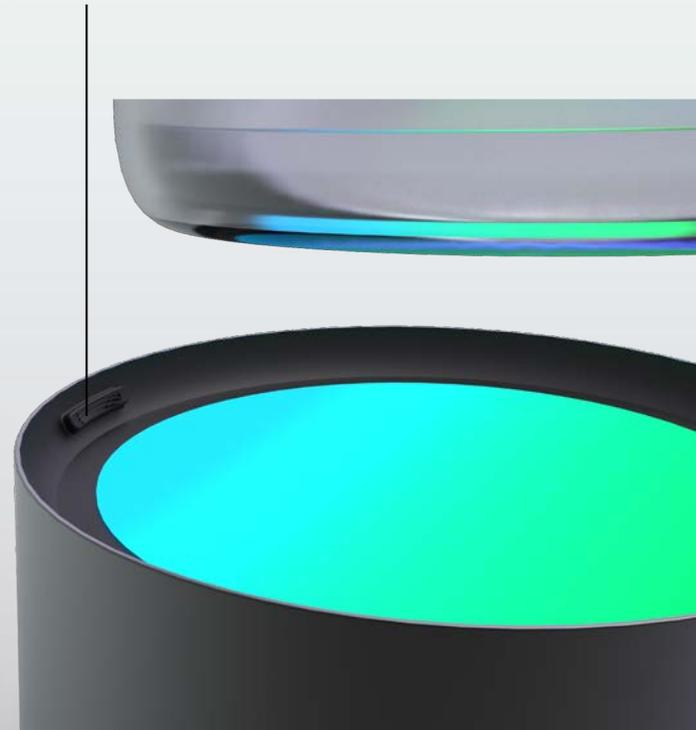
Party Climax



REALITY



Breath Alcohol Test Port



Unboxing

Preparation

Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

Party Climax





Unboxing

Preparation

Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

Party Climax



Saturday Special List



Unboxing

Preparation

Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

Party Climax





Unboxing

Preparation

Start Drinking

Beverage Enhancement
Health Monitor Tracking
Order for Friends

Party Climax



VIRTUAL
GALAXY

REALITY



Unboxing

Preparation

Start Drinking

Party Climax

Virtual Toast

Premium Dizziness

Health Monitor Reminder



You are about to enter **Premium Dzziness**

in **10** seconds

It's an additional service of the drinking package.

You can exit any time by
pointing here for 3 seconds

END

Unboxing

Preparation

Start Drinking

Party Climax

Virtual Toast

Premium Dzziness

Health Monitor Reminder





You can exit any time by pointing here for 3 seconds



END

Unboxing

Preparation

Start Drinking

Party Climax

Virtual Toast

Premium Dizziness

Health Monitor Reminder





Unboxing

Preparation

Start Drinking

Party Climax

Virtual Toast

Premium Dizziness

Health Monitor Reminder





Maybe slow down a little bit? I saw you're almost at the limit you set.



63 %

Take it easy from here...

Unboxing

Preparation

Start Drinking

Party Climax

- Virtual Toast
- Premium Dizziness
- Health Monitor Reminder



Setting demos



SYNC at the beginning

Using WebCam or cameras on smartphone to track player's body, movement and facial expression so that clubber can have a "real" avatar in the system.



Move in Virtual world

How to explore the Virtual Club in a common living room? The Mixed Reality system combined with camera can let players move without really walking around.

Effect demos



Drink Virtually

Facing a screen to drink is kind of awkward currently, but with the help of haptic feedback comes from the Mixxy Glass and the special visual effects, clubbers can drink virtually in the reality.



Premium Dizziness Effects

When the clubber gets tipsy, Premium Dizziness included in the drinking package will provide several visual effects to make the clubber stand out in the virtual world. On-fire, Speedy, Flying, etc.

The Benefits

For young people living in the post-COVID world

Who seek authentic drinking and clubbing experience while keeping the social distance.

We provide Mixxy, a MR-based virtual clubbing service and delivery service which includes our dedicated smart glass

That help clubbers feel the authentic club culture and stay connected with people in their favorite club environment

Unlike the awkward Zoom clubbing or in-person clubbing that risks life

We offer an immersive and multi-sensorial enhanced experience to provide various modes of interactions between people while keeping them safe at home

Unintended Consequences

Online Fraud

In a highly immersive digital environment, people can utilize their fraudulent avatars to make others believe they are someone they are actually not. Especially in a club environment, it's possible there will have people hired by the club to lure you into buying more drinks.



Privacy Issue

Even with the privacy settings, it's inevitable that some people may expose their vulnerability when they are drunk and get exploited by people with bad intentions. It may also cause social awkwardness when being over transparent about how drunk they are between friends.



Disturbing Noise

Without a dedicated, usually belowground club space, it can be too noisy and disturbing to the neighborhood when people are having fun dancing and drinking at home.



Q & A

Thank you!