

Beyond Food Delivery

Design Sprint

Product Manager: Patricia Paulo



Set the stage

Set the stage for the Design Sprint by framing the problem

Initial PRD

[PRD \(Product Requirement Document Link\)](#)

Background

The food delivery service is consistently growing and is predicted to have compounding growth in the coming years. In fact, it is projected to reach \$98 billion by 2027. Big players like Amazon, eBay, and Uber are now using robots for their last-mile deliveries. Deploying driverless vehicles to pick up and deliver food can improve delivery times while reducing costs. Now, more delivery services are looking at autonomous vehicle (AV) technology to improve distribution. It's predicted that by 2024, the autonomous delivery robot marketplace will reach \$34 billion USD.

Problem

The adoption of AV(autonomous vehicle) is inevitable due to the growing demand in the market. A number of businesses are now using delivery robots and it poses a huge threat to our business. Having delivery robots improves efficiency, cost savings, and delivery times. It allows these businesses to reduce the commissions charged to merchants, offer higher rates to their drivers, and improve the overall customer experience.

We are already exploring the integration of self-driving robots to deliver food. But we need to think about how can we better optimize the use of AV(autonomous vehicle) across deliveries within short distances to improve the scalability of our company.

Goals

- Build an app that allows the operations team to remotely take control of robots.
- Increase the speed of deliveries
- Reduce the need for manual intervention



Understand

Create a shared understanding of the space, problem, and goals

How Might We

Use these digital stickies to capture your ideas. Feel free to rearrange. Colorize. Etc

How might we ensure the safety of the quality of the food?

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How might we help operators navigate the self-driving robots?

Patricia Paulo

How might we ensure that orders are delivered?

Patricia Paulo

How might we....ensure that orders are delivered on time?

Patricia Paulo

How might we ensure that no one steals the food?

Patricia Paulo

How might we know that the robot is going to the right address?

Patricia Paulo

How might we prevent the robot from road accidents?

Patricia Paulo

How might we ensure that we don't lose the robots?

Patricia Paulo

Routing and delivery

Routing

How might we mitigate accidents between robots and people? How might we prevent the robot from road accidents?

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How might we make routes more efficient?

How might we teach robots to avoid obstacles?

How might we move robots to a safe place before stopping?

How might we allow robots to detect real-time traffic patterns?

How might we establish preferred routes?

How might we see real-time traffic on the route?

Issues on route

How might we confirm the robot is going to the right address?

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How might we program robots to address delays in deliveries?

How might we teach robots to avoid trouble?

How might we have robots signal distress when something goes wrong?

Environmental Factors

How might we make robots not scary for dogs?

How might we keep vermin away from the robots?

How might we make our robots tamperproof?

When things go wrong

Delays, Missing Items, and Cancellations

How might we share robot progress with consumers?

How might we enable users to detect item damage during delivery?

How might we allow users to help us with tracking and feedback?

How might we program robots to address customer returns?

How might we...
a How might if we....ensure
d that orders are delivered on time?

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Maintenance and mechanical issues

How might we ensure the safety of the quality of the food?

How might we address a sudden power outage?

How might we determine when to recharge robot batteries?

How might we ensure that no one steals the food?

How might we keep robots odor free, even when carrying smelly food?

How might we anticipate mechanical failures?

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Tracking and Remote Control

How might we help operators navigate the self-driving robots?

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How might we ensure that we don't lose the robots?

Patricia Paulo

How might we monitor robot progress?

Incident Prevention and Recovery

How might we alert operators of need for robot intervention conveniently?

How might we overcome technical glitches during a delivery?

How might we detect when a robot needs help?

How might we handle edge case issues that may arise?

How might we ensure food gets delivered without incident?

How might we build redundancy into our system?

How might we deal with accidents that might occur?

How might we get food to people quickly when the robot fails?



Human/Robot Interaction

How might we have robots entertain customers at delivery?

How might we use robots to make people excited about our brand?

Delight

How might we give robots a personality?

How might we make interacting with robots more fun?

How might we help robots talk to people?

How might we teach users to interact with humans?

Communication
with people

How might we communicate with humans around the robot?

How might we teach robots manners?

How might we prepare robot to handle deliveries to persons with disabilities?

How might we enable robots to interpret and speak different languages?

Deliveries for everyone

How might we make our robots act like people?

How might we teach empathy to robots?

How might we enable “emotion” modes in robots?

Human-like



Sprint Focus

Focus	Tracking and Remote Control
Slide #	7
I selected this theme because	Most of the themes I have noticed are very good points. However, it is more focused on the features of the self-driving robot. Since we are outsourcing the robot from Starship, those concerns seem to be covered by them. The only thing we need to prioritize for our MVP is how to remotely navigate the AVs should an intervention is needed.



Define

With an understanding of the problem space, create focus and align on specific outcomes for the Design Sprint

Doordash Navi: The Future of Delivery Tracking is Here



Doordash Navi ✨
@DoordashNavi

Doordash Navi is proud to launch our iOS app, enabling operators to navigate & track deliveries for self-driving robots with ease & precision. Our app offers real-time visibility into every step of the delivery process, transforming logistics & shaping the future of delivery tracking. #innovation #logistics

1:22 PM · Mar 4, 2023 · 156.4K Views

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Define Success Metrics (OPTIONAL)

How will you know if your product is successful?

H.E.A.R.T



Happiness

Goal: Seemless tracking of deliveries.

Signal: Click the "view status" button.

Metric: # of deliveries on time.



Task Success

Goal: Remotely navigate the robot when needed.

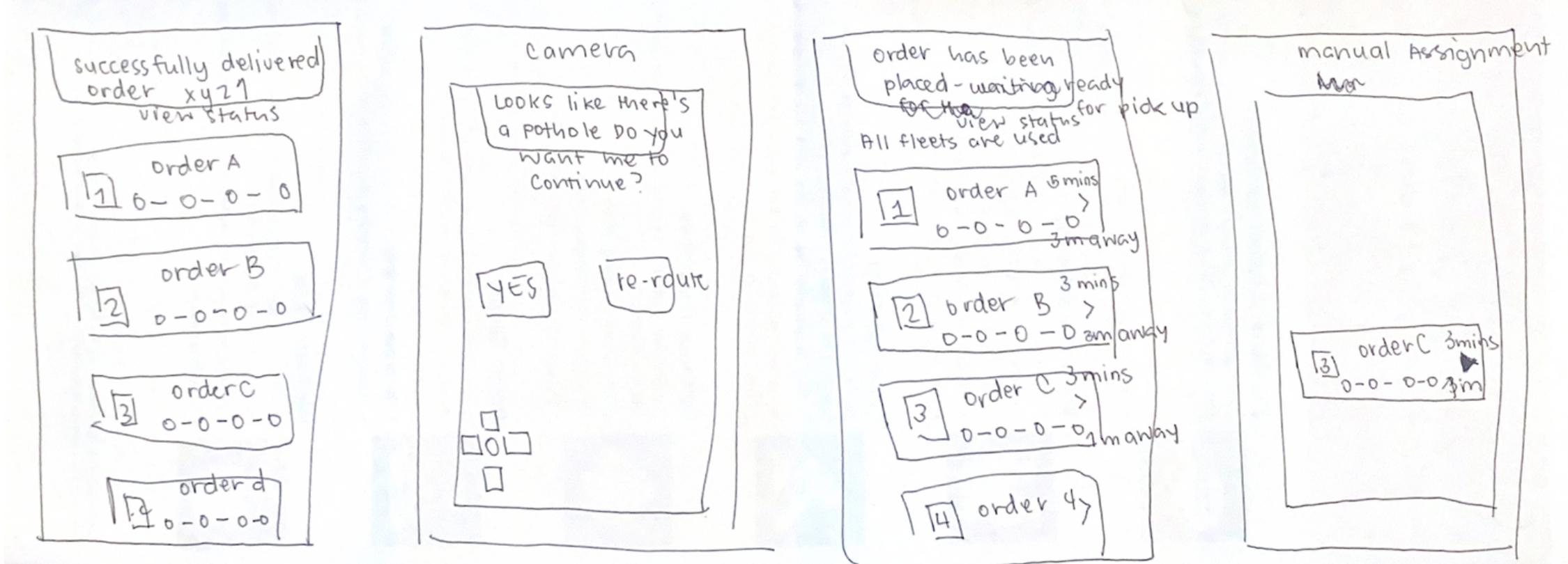
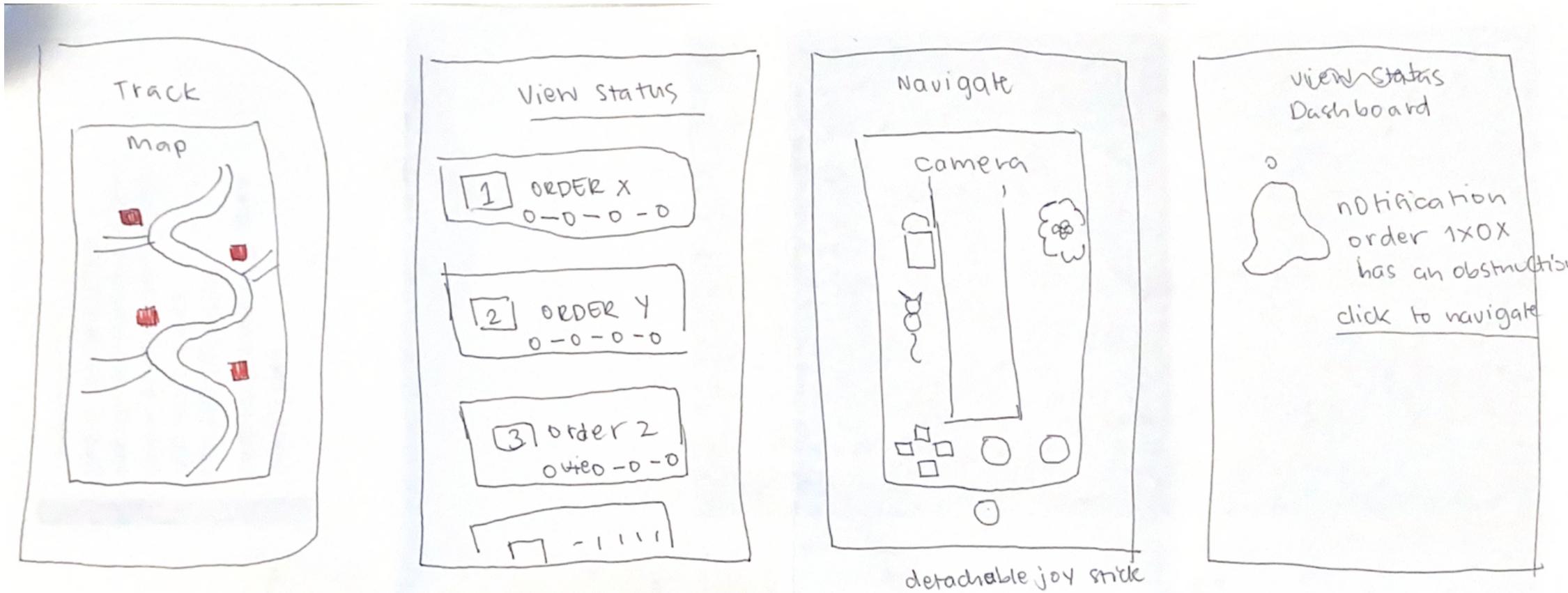
Signal: Click the "Navigate" Button.

Metric: # of obstructions or accidents.

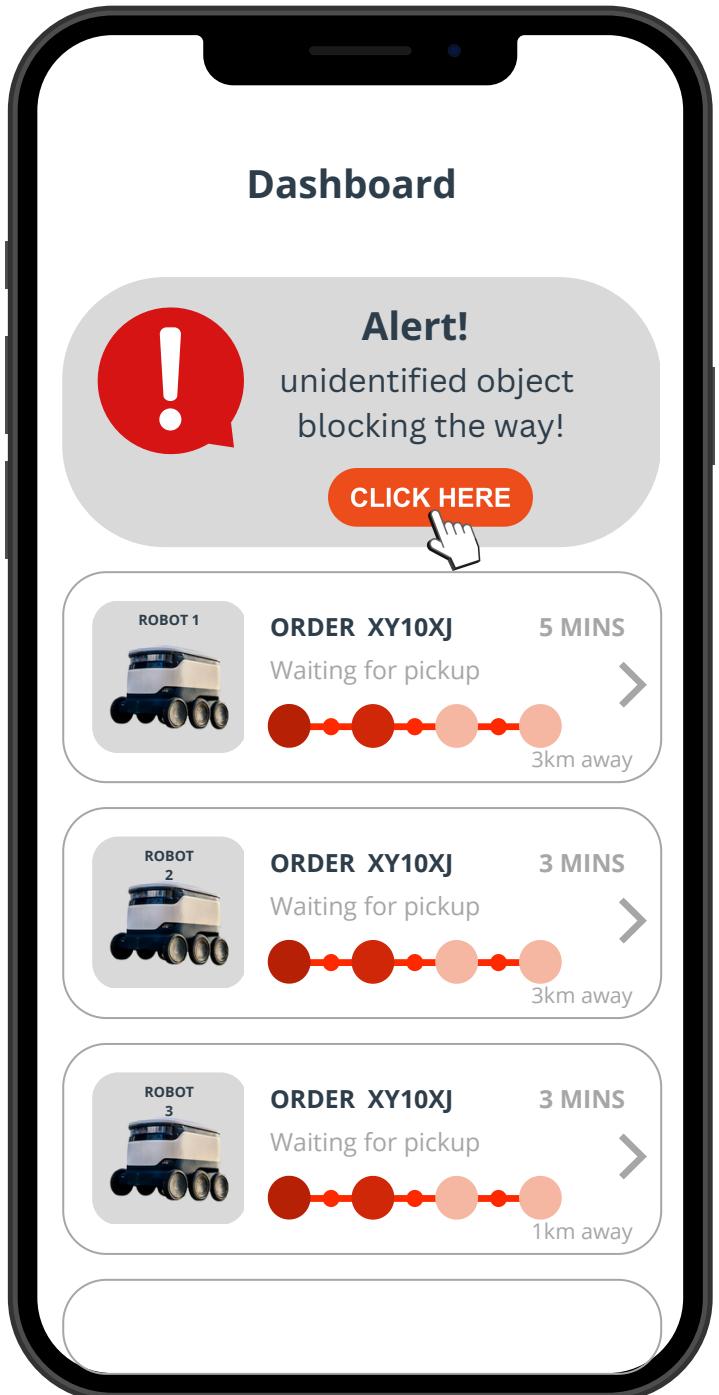
Sketch

Generate tons of ideas, then narrow them down to two in depth solution sketches

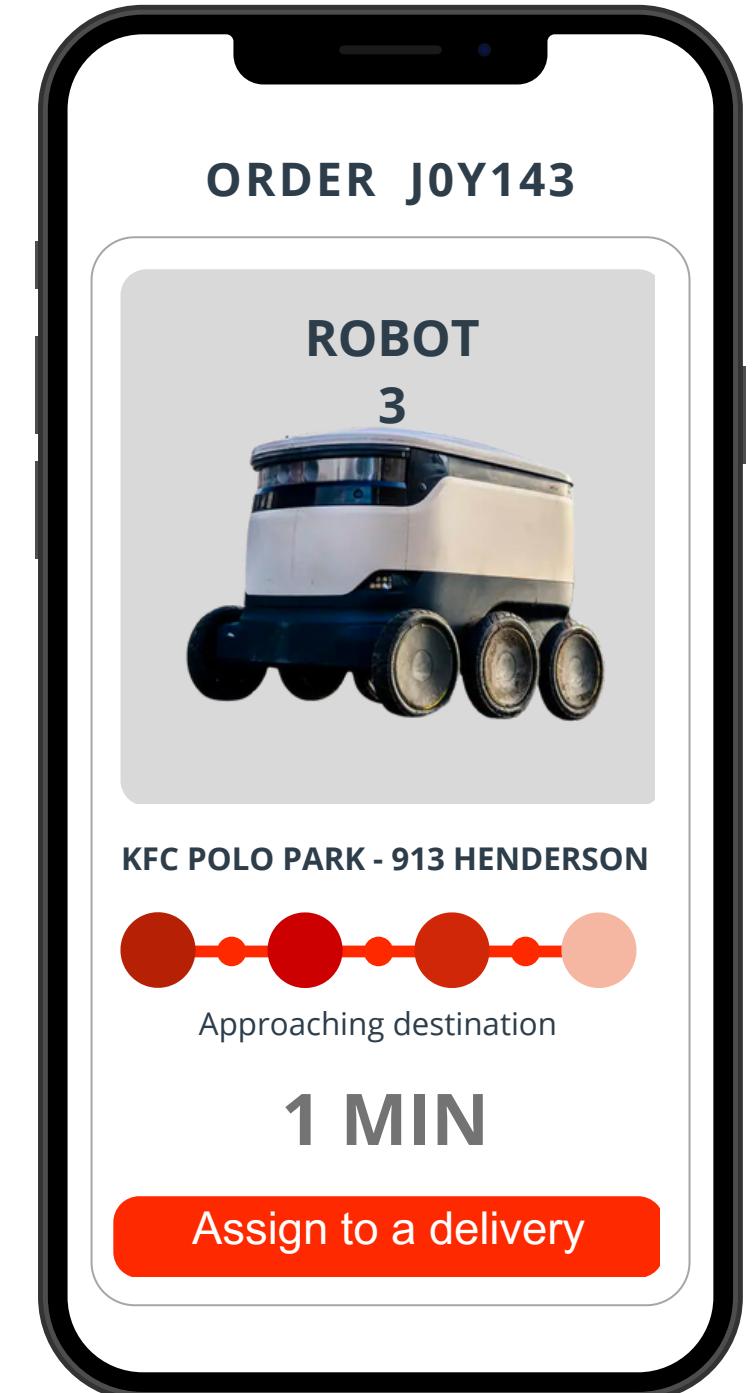
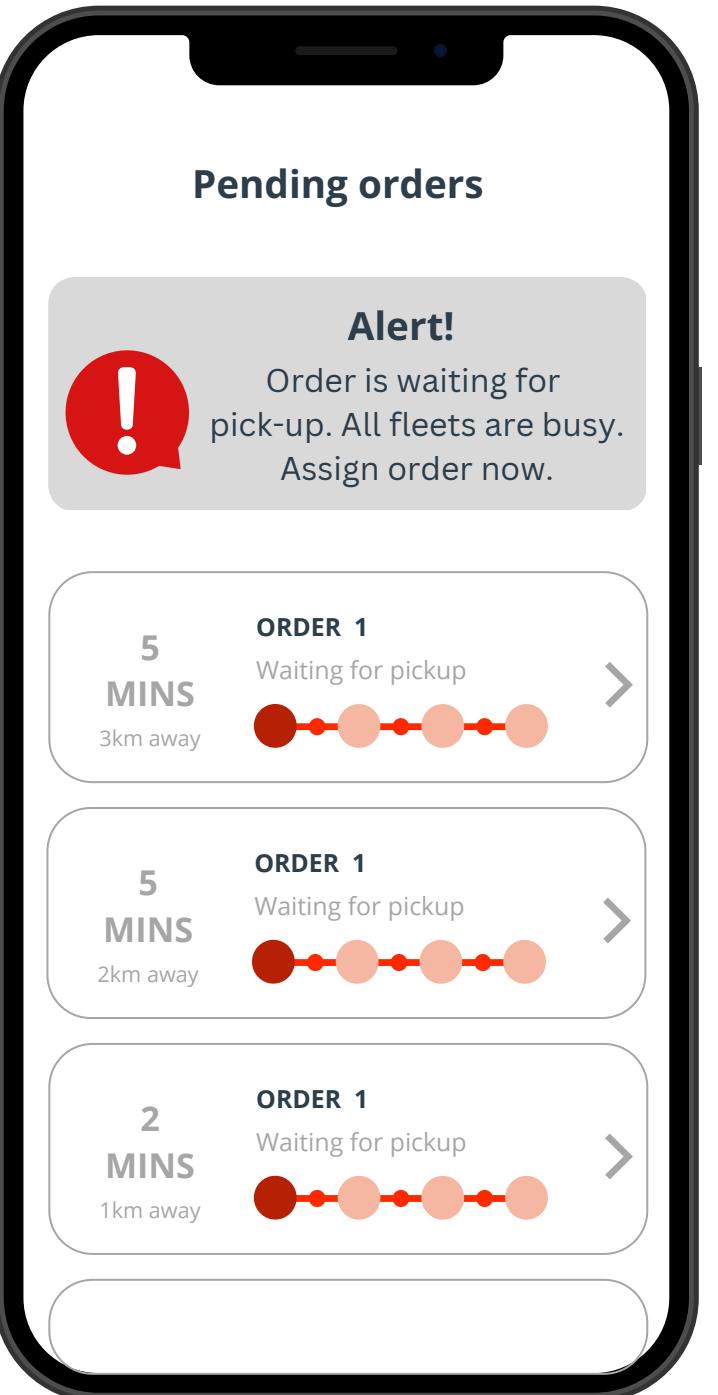
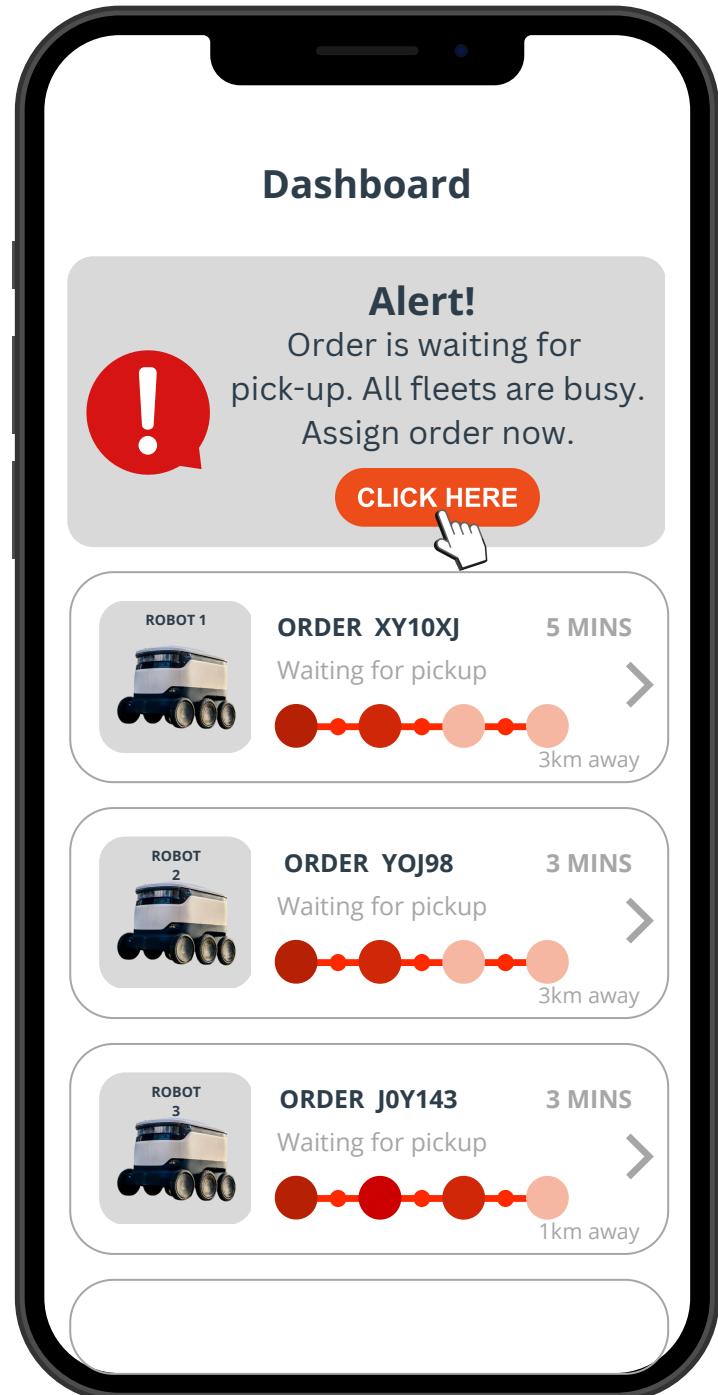
8 Sketches



Sketch 1: Tracking and Remote Control



Sketch 2: Manual Assignment



Decide

Pick the final concept that you develop into a prototype

Decision

Decision

Tracking and Remote Control

Rationale

We are choosing this sketch because our long-term goal is for these robots to navigate autonomously with minimal interference. Since we are using machine learning, it is important that we can navigate them remotely so that we can feed them information at the early stage of testing on how to handle obstructions. So that the AVs can develop algorithms and utilize the pattern and relationships in data to make predictions. This will help them drive more autonomously.

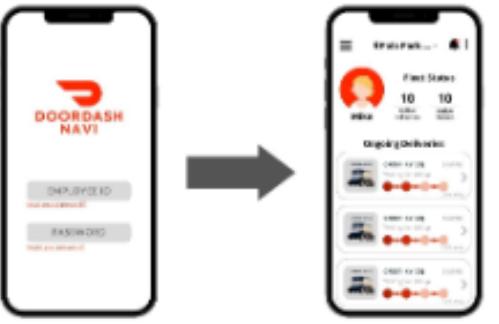
Prototype

Turn your concept into a realistic, interactive prototype that you will use to validate your assumptions and ideas

Storyboard

[storyboard link](#)

Operator signs-in



SCRIPT
Operator starts his shift.

ACTION
Operator signs-in to his Doordash operator tool.



SCRIPT
a self-driving robot "Starship 05" encounters a traffic cone on the side-walk and pauses. The self-driving robot doesn't know to do since it encountered a foreign object.

ACTION
App sends notification to the operator.

Notification



SCRIPT
operator gets an option whether to proceed or to reroute.

ACTION
operator chooses the option to re-route.

Navigation



SCRIPT
operator navigates the "Starship 05" remotely.

ACTION
operator re-routes to avoid the traffic cone.

Navigation



SCRIPT
Now, "Starship 05" has a clear path.

ACTION
"Starship 05" carry ons with the task of delivering the food to the customer.

Customer receives a notification



SCRIPT
"Starship 05" arrives at the customer's door.

ACTION
customer clicks the "open" my delivery button in the doordash app.



SCRIPT
customer receives the delivery.

ACTION
customer is happy.

Customer is satisfied



SCRIPT
customer is satisfied

ACTION
Gives us a good CSAT score



Prototype

Description

- High level overview of the prototype
- What does it do?

This prototype shows the user journey of an operator when the self-driving robot (AV) encounters an obstruction on the street.

Assumptions

- Any assumptions within the prototype

Tasks

- What are the tasks that a user can complete in the prototype?

- That the AV has a camera on all sides.
- That the AV has radars to anticipate obstruction 0.5 meters away.
- The tool is fully integrated with the AV.

- Users can re-route the AV when an obstruction is alerted.
- Users can sign in to their dashboard and see the ff.
 - Location they are assigned in
 - Number of robots active
 - Number of ongoing deliveries
 - status of deliveries



[Prototype Link](#)



Validate

Users will go through your prototype and provide feedback on your concept. This is also an opportunity to have an engineering feasibility discussion

Doordash Navi Research Plan

PM: Patricia Paulo
STATUS: Completed

[Link to Research Plan](#)

Objectives

- Have you tried navigating a device remotely? e.g. drone What was that experience like?
- If you were to be an AV operator what are the things that you want to see on your dashboard?
- How do you feel about online food delivery being delivered by self-driving robots?
- Are there any concerns that you would have?

Methodology

Usability Testing

Participants

Doordash Customers

Doordash Navi Interview Sessions

[Link to Interview session template](#)



User Testing: Participant 1 Key Findings



What worked well

The user was able to complete all tasks.

[Link your audio recording](#)

Where participants got stuck

When I asked him "how would they track all the fleets that they have?" from Task 2.

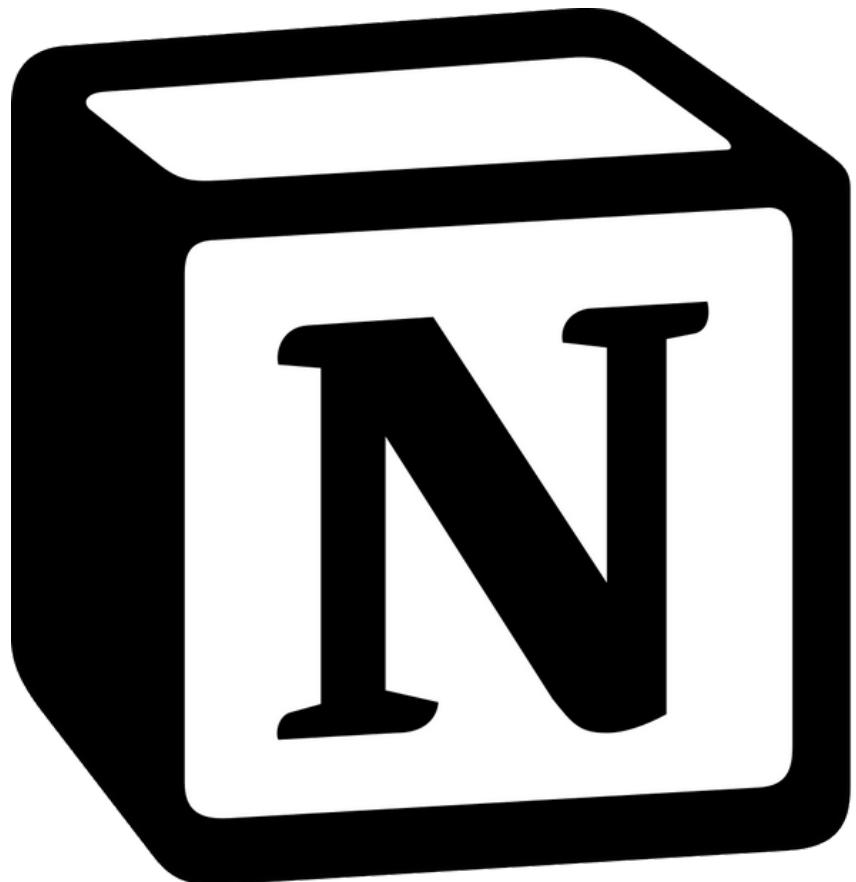
Other observations

- whenever I ask them how many robots he has, he tends to click the status of the fleet on the dashboard.
- The user was able to identify that he can check the number of active robots he has on the dashboard. But not right away. (not sure if my questions were unclear)
- when I asked him about the fleets he tends to check each robot on the home page instead of checking the GPS.
- also, he tends to click the navigate caption at the top. Maybe we can remove the capsule shape around it.



DOORDASH

Participant 1: Interview Notes



Mike from FedEx Notes & Video



User Testing: Participant 2 Key Findings



[Link your audio recording](#)

What worked well

User was able to complete 2 tasks.

1. navigate the robot
2. Check the active robots on the road.

Where participants got stuck

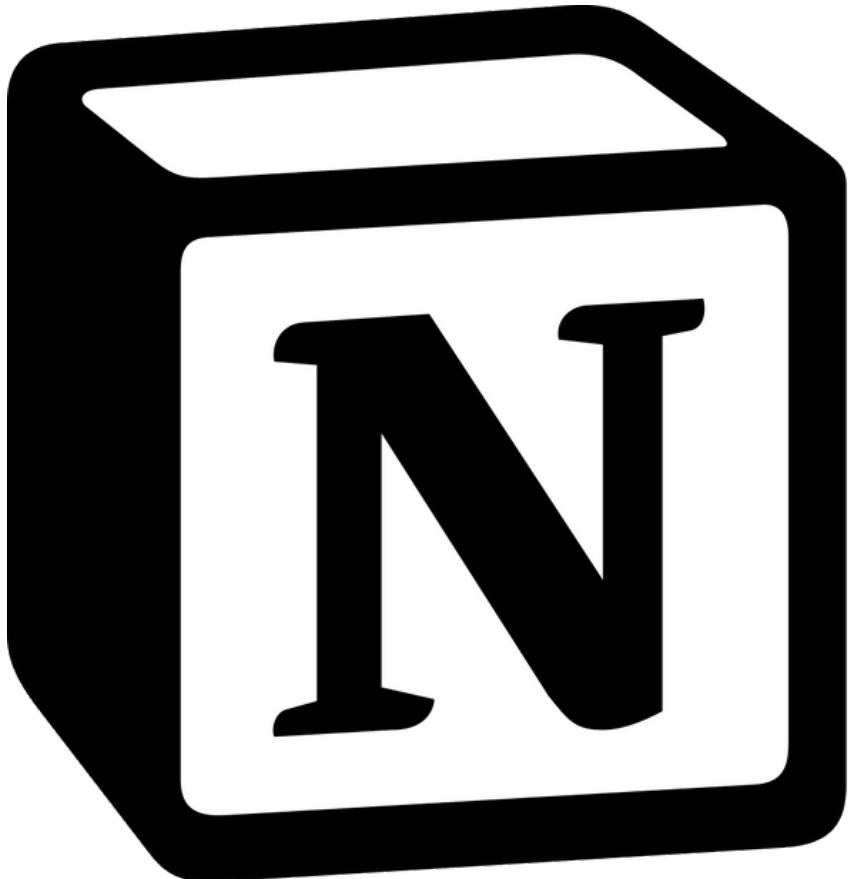
At the first task during navigation, when the user would click on "re-route" or "navigate". Not sure if it was the prototype or because the customer was using her phone.

Other observations

- Unsure if the user completely understood the purpose of the interview. - This is an opportunity to improve on how to be more clear w/ the agenda.
- Not sure if my questions were phrased properly as I had to re-explain them to her.



Participant 2: Interview Notes



Bea the hairdresser

Handoff

Updated PRD



Thank you

Product Owner: Patricia Paulo