

# DoorDash: d2d program

Design Sprint

**Product Manager: Tibor Zahorecz**



# Set the stage

Set the stage for the Design Sprint by framing the problem

# Initial PRD



Link your PRD

# Understand

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

# How Might We by Tibor

How might we make robots more secure?

How might we move robots if they stopped?

How might we have robots 100% clean?

How might we keep people away from the robots?

How might we have feedback something goes wrong?

How might we improve robots self-learning algo?

How might we recognize traffic lights?

How might we give robots nice look?

How might we share robot success stories?

How might we teach robots to avoid dogs?

How might we use robots when there is no orders?

How might we make our robots can not be hacked through wireless?

How might we change robot's appearance?

How might we teach robots to avoid cars?

How might we keep robots on the route?

How might we check the batteries?

How might we monitor robot delivery tasks?

How might we confirm that customer got the food?

How might we do robot troubleshooting?

How might we make robots don't kill people?

# How Might We by Pat

How might we make robots not scary for dogs?

How might we make routes more efficient?

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

How might we have robots entertain customers at delivery?

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

How might we give robots a personality?

How might we teach robots to interact with humans?

How might we keep vermin away from the robots?

How might we share robot progress with consumers?

How might we teach robots to avoid obstacles?

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

How might we make our robots tamperproof?

How might we change robot's appearance?

How might we teach robots to avoid trouble?

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

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

How might we communicate with humans around the robot?

How might we monitor robot progress?

How might we confirm that the robot is at the right address?

How might we anticipate mechanical failures?

# How Might We by Case

How might we ensure food gets delivered without incident?

How might we alert consumers if their delivery is delayed?

How might we determine when to recharge robot batteries?

How might we establish preferred routes?

How might we determine the best area for launching this program?

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

How might we teach robots manners?

How might we control robots?

How might we mitigate accidents between robots and pedestrians?

How might we train our operations team on monitoring and controlling a robot?

How might we use existing technologies?

How might we track each robot?

How might we collect data about where the robot got stuck?

How might we handle edge case issues that may arise?

How might we deal with accidents that might occur?

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

How might we use greener energy to power our robots?

How might we leverage existing tools to better track our robots?

How might we create ML/AI models to help robots learn to get better overtime?

How might we build redundancy into our system?

# How Might We by Noel

How might we overcome technical glitches during a delivery?

How might we streamline communications between operators and robots?

How might we address a sudden power outage?

How might we program robots to address delays in deliveries?

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

How might we make interacting with robots more fun?

How might we detect when a robot needs help?

How might we program robots to address customer returns?

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

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

How might we accept tips that some customers may want to give a robot?

How might we enable robots to detect missing items in the order during pickup?

How might we make our robots act like people?

How might we enable "emotion" modes in robots?

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

How might we program robots to address order cancellations?

How might we teach empathy to robots?

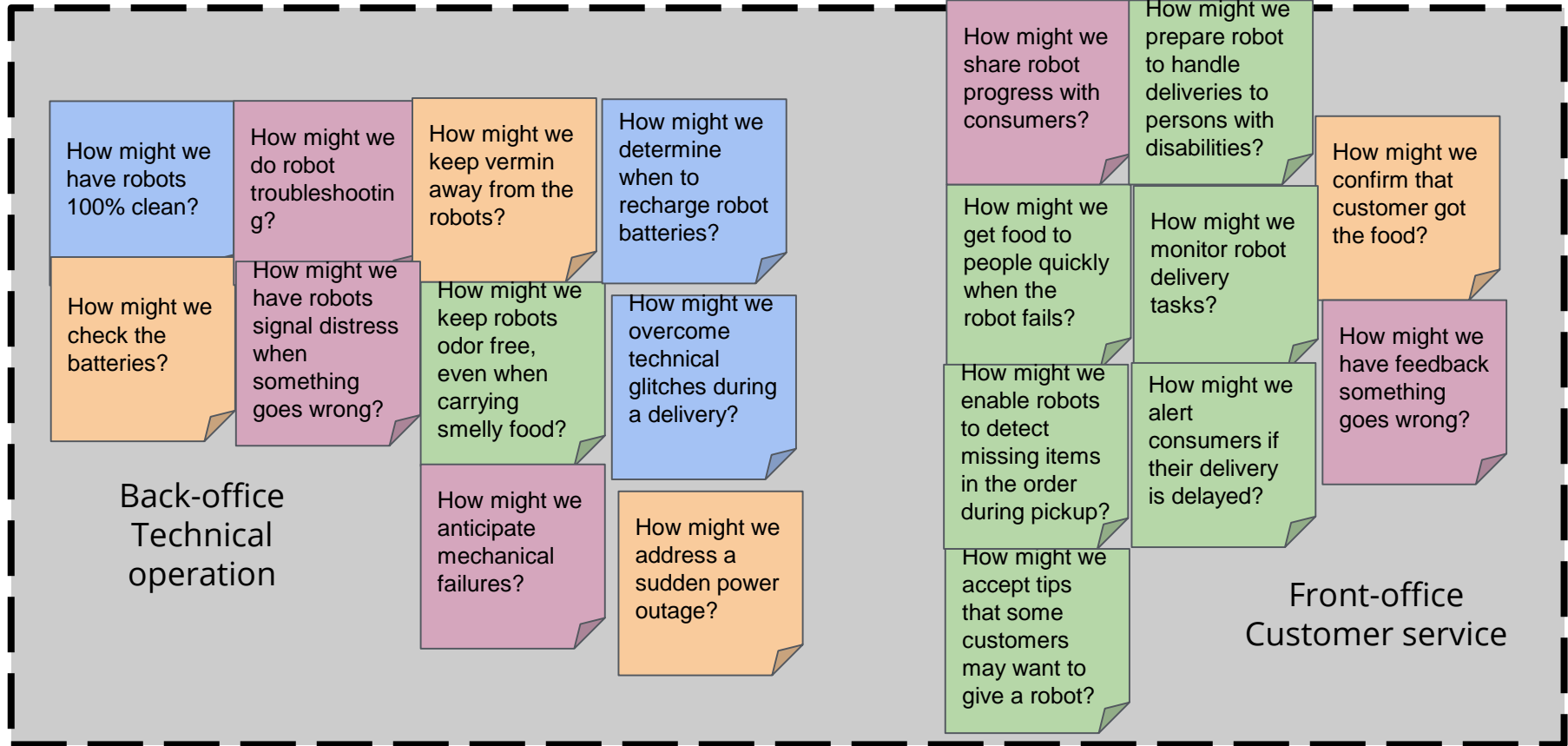
How might we enable robots enter a crowded restaurant to pickup food?

How might we help robots talk to people?

How might we increase robot speed?



# Quality & Service



# Algo: Route planning & RL

How might we keep robots on the route?

How might we move robots if they stopped?

How might we make routes more efficient?

How might we establish preferred routes?

Route planning

How might we improve robots self-learning algo?

How might we recognize traffic lights?

How might we teach robots to avoid trouble?

How might we create ML/AI models to help robots learn to get better overtime?

How might we teach robots to avoid dogs?

How might we teach robots to avoid cars?

How might we teach robots to avoid obstacles?

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

Object detection & reinforcement learning

# Safety

How might we have feedback something goes wrong?

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

How might we handle edge case issues that may arise?

How might we teach robots to avoid cars?

Safety control

How might we mitigate accidents between robots and pedestrians?

How might we deal with accidents that might occur?

How might we keep people away from the robots?

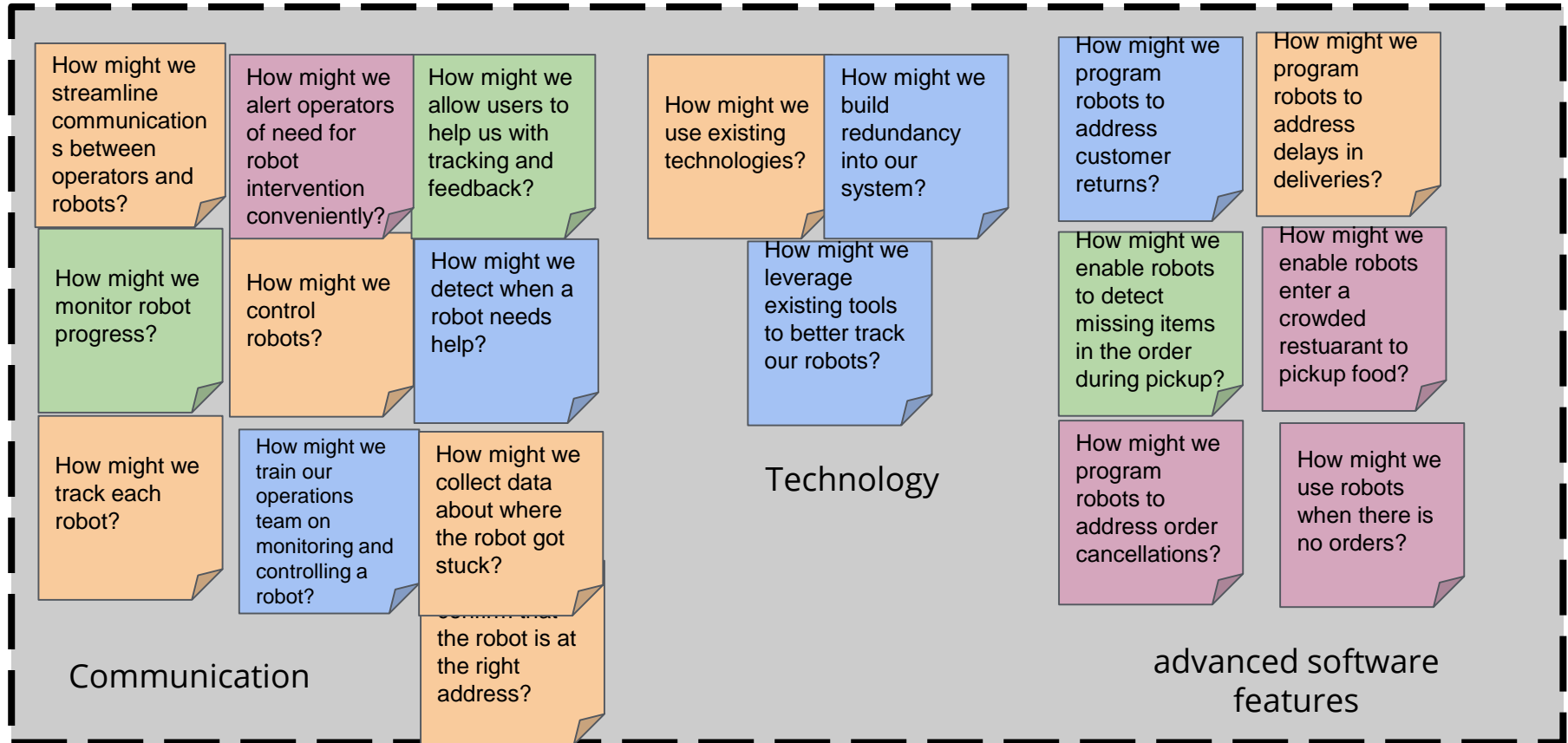
How might we teach robots to avoid dogs?

How might we make robots not scary for dogs?

How might we make robots don't kill people?

Organic life safety

# Software engineering



# Power features: Security, Emotion & Intell.

How might we make robots more secure?

How might we make our robots can not be hacked through wireless?

How might we address a sudden power outage?

How might we make our robots tamperproof?

Security

How might we help robots talk to people?

How might we give robots a personality?

How might we teach robots manners?

How might we teach robots to interact with humans?

How might we make inertacting with robots more fun?

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

How might we communicate with humans around the robot?

How might we enable "emotion" modes in robots?

How might we make our robots act like people?

Emotion & Intelligence

# Others

How might we determine the best area for launching this program?

How might we have robots entertain customers at delivery?

How might we share robot success stories?

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

Marketing, PR

How might we increase robot speed?

How might we change robot's appearance?

How might we give robots nice look?

[Others]

# Sprint Focus

<b>Focus</b>	<b>Algo: Route planning &amp; RL</b>
<b>Slide #</b>	List slide # 10
<b>I selected this theme because</b>	Implementing this theme can provide a real competitive advantage over the competition as the robots adapt to the given environment thus achieving the perfect customer experience and efficiency.

# Define

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



# Success Metrics: Route planning & RL

	Goals	Signals	Metrics
Happiness	<ul style="list-style-type: none"><li>- robot finds the fastest and safest way to the customer</li><li>- DoorDash brand ratings improve</li></ul>	<ul style="list-style-type: none"><li>- customer provides positive reviews online</li></ul>	<ul style="list-style-type: none"><li>- Nr. of positive ratings online</li><li>- Nr. of positive feedback in the media</li></ul>
Engagement	<ul style="list-style-type: none"><li>- users track the path of the robot</li><li>- users teach robots</li></ul>	<ul style="list-style-type: none"><li>- users spend more and more time teaching robots</li></ul>	<ul style="list-style-type: none"><li>- % increase of time spent in the app to follow robots</li><li>- % increase of nr. of route planning feedbacks to robots in the app</li></ul>
Adoption	<ul style="list-style-type: none"><li>- users recommend app to friends</li><li>- users use robot service more frequently</li></ul>	<ul style="list-style-type: none"><li>- growth of new users</li><li>- users ask robot delivery more frequently</li></ul>	<ul style="list-style-type: none"><li>- % increase of new users</li><li>- % increase of robot delivery per week</li></ul>
Retention	<ul style="list-style-type: none"><li>- users don't use competitor's apps</li><li>- users use food delivery service more frequently</li></ul>	<ul style="list-style-type: none"><li>- decrease competitors market share in the region</li></ul>	<ul style="list-style-type: none"><li>- % decrease competitors market share</li><li>- % increase of service usage per week</li></ul>
Task Success	<ul style="list-style-type: none"><li>- users can easily follow robot's route</li><li>- users can easily teach robots through the app</li></ul>	<ul style="list-style-type: none"><li>- increase of customers numbers to use app's route planning feature</li></ul>	<ul style="list-style-type: none"><li>- % increase of the users numbers use route planning feature of the app</li><li>- % incerase of user feedbacks to teaching robot through app's feature</li></ul>

# Designed for food delivery: the new d2d fleet by Techcrunch

San Francisco, CA—April 09, 2020 — Fresh, hot food on your table right after you ordered – thanks to DoorDash d2d robot fleet. Several research have shown people love to eat fresh, healthy food but because of lack of time simply grab some trash foods. Starting today, people in San Francisco will have been served fresh, hot foods with by the quickest human like robots.

“When developing the d2d series, we have been very careful to provide our robots with intelligent algorithms that not only help them with the shortest and safest routing, but also to become self-learning, eg. to recognize dangerous situations and serving our customers in human way.” explains Tibor Zahorecz product manager of d2d product line.

## **Fashions change in food delivery too**

“With the d2d robots, we had our first dedicated intelligent robots perfectly fit to our modern customers,” explains Zahorecz, “but there were two factors which prompted us to develop things further: the costs for our customers and their preferred sound esthetics.”

To help celebrate the launch of our fleet in SF DoorDash are partnering with McDonalds and offering free burgers for our first 1000 customers.

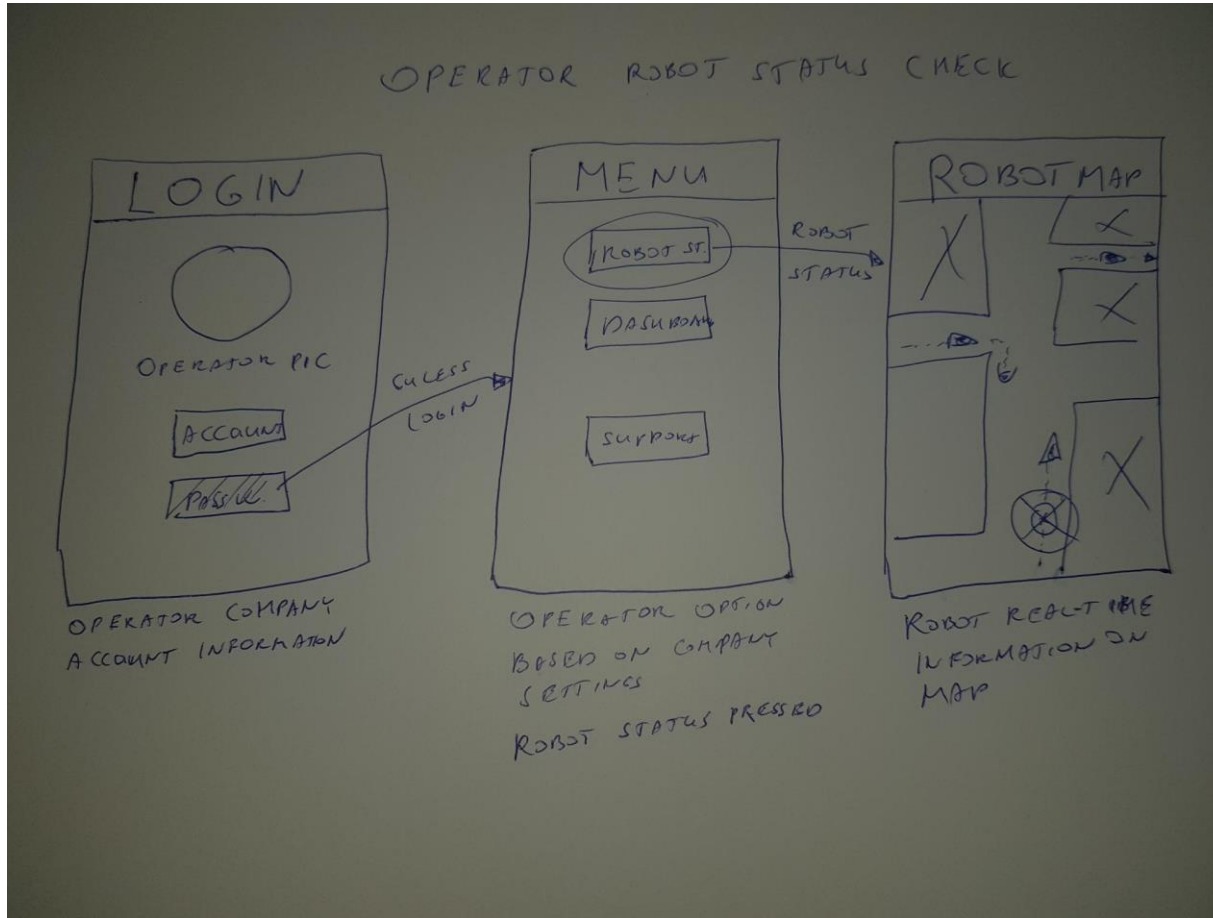
# Sketch

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

# 8 Sketches

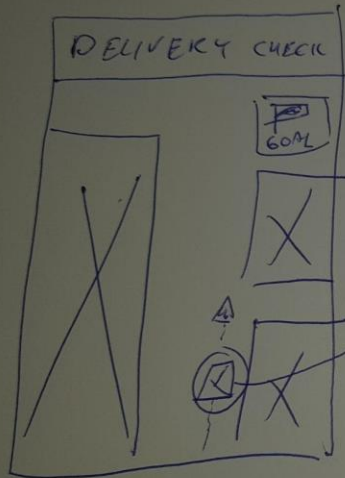


# Operator app: robot status check

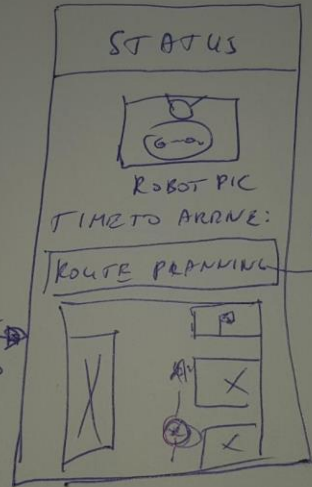


# Client app: robot follow-up

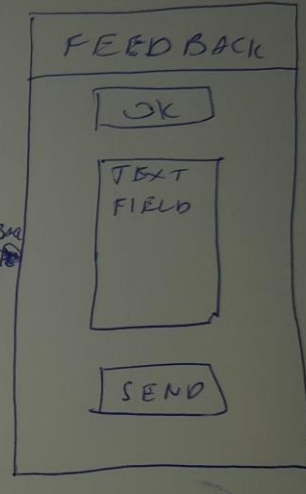
## CLIENT ROBOT FOLLOW UP



ORDERED FOOD  
DELIVERY SERVICE  
CHECK.  
ROBOT STATUS



ROBOT DETAIL  
OPTION TO  
FEED BACK &  
ROUTE PLANNING



OPTION TO TEXT  
BASED FEED BACK

# Decide

Pick the final concept that you develop into a prototype

# Decision

## Decision

*Client app: Robot follow-up*

## Rationale

I chose this feature because it can build a strong engagement with the users: gamification (robot teaching), robot tracking. This will be an important differentiator feature compared to our competitors.











# Prototype

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

# Storyboard



Link your plot

					
<p>SCRIPT 1</p> <p>I would love to eat a delicious hamburger! Let me order through DoorDash's app</p>	<p>SCRIPT 2</p> <p>jump in to sign in</p>	<p>SCRIPT 3</p> <p>I am very curious where my order goes. I heard from Steve that they were brought out with cool robots.</p>	<p>SCRIPT 4</p> <p>I can see the little cute robot coming ... but as I see it with a little detour. Can I tell him?</p>	<p>SCRIPT 5</p> <p>Oh but little cute robot! Let them help him find it here</p>	<p>SCRIPT 6</p> <p>Well, what should I add to the little robot. I'll write him a few lines to see if he understands. Turn right because the next corner was closed due to a car crash, go straight on two streets and you are already here</p>
<p>ACTION</p> <p>tap to log in</p>	<p>ACTION</p> <p>sign in and order the food</p>	<p>ACTION</p> <p>Check the order</p>	<p>ACTION</p> <p>click on robot icon</p>	<p>ACTION</p> <p>click to feedback button</p>	<p>ACTION</p> <p>add lines to the text field and click to send</p>
					
<p>SCRIPT 7</p> <p>Clever little robot. He recalculated the road. I can eat soon! This is a very cool little app!</p>	<p>SCRIPT 8</p> <p>Enjoy the food</p>				
<p>ACTION</p> <p>finish the app</p>	<p>ACTION</p> <p>end</p>				

# Prototype

## Description

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

The user can view the position and expected arrival time of the food delivery robot and intervene (teach) the robot's route planning.

## Assumptions

- Any assumptions within the prototype

List all assumptions you have made about the prototype

- returning customer who is familiar with Doordash's services

## Tasks

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

Describe the flows/tasks that a user can complete in the prototype

- can check the position and route of the delivery robot
- can interfere in route-planning



Link your  
prototype

# Validate

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

# Plan and recruit for research



Link your  
research plan

# User Testing



Link your notes



Link your audio recording

## Key Findings from Participant 1

What worked well	<i>Went well, she is young and understand quickly the app's advantages</i>
Where participants got stuck	<i>Well she was stucked in ordering food section due to in this is a prototype I did not work out in detailed.</i>
Other observations	<i>She enjoyed to use it and was happy to see she can give feedback to the robot.</i>

# User Testing



Link your  
notes



Link your audio  
recording

## Key Findings from Participant 2

<b>What worked well</b>	<i>It didn't go too well as the lady couldn't use the prototype and tried to use it as a regular app</i>
<b>Where participants got stuck</b>	<i>Ordering food, feedback to robot</i>
<b>Other observations</b>	<i>She uses ubereats and didn't really know what to do with the robot feedback feature.</i>

# Improvements

## Improvement #1

*Improve the Order Food page*

Rationale

*It is important for prototype users to simulate an order*

## Improvement #2

*Improve the feedback to Robot page*

Rationale

*I only intended this to be a static page within the prototype, but I need to make it dynamic to understand*



# Feasibility

	Your Assumptions	Specific feasibility questions
<b>Drawing the UI</b> <ul style="list-style-type: none"><li>• <i>What data is needed to draw the UI on the screen?</i></li><li>• <i>Where is the data coming from</i></li></ul>	<ul style="list-style-type: none"><li>• User, delivery robot and restaurant data is constantly available.</li><li>• Robot position and route planning are updated and available every half second.</li><li>• The route planning advice given by the customer restarts the algorithm</li></ul>	<ul style="list-style-type: none"><li>• How do we know the position of the robot if there is no internet connection? What technological opportunities are there?</li><li>• What route planning algorithms can we implement that also take into account the inputs provided by the customer and can be displayed on the UI interface?</li></ul>
<b>User generated data</b> <ul style="list-style-type: none"><li>• <i>Is it stored?</i></li><li>• <i>Where/how?</i></li><li>• <i>How will that data be used again?</i></li></ul>	<ul style="list-style-type: none"><li>• User-generated data is used in personalization and to develop the robot route planning and service algorithm.</li><li>• it is important that we comply with privacy laws such as the European GDPR</li></ul>	<ul style="list-style-type: none"><li>• How can we technically implement user data to improve product features while complying with legal requirements?</li><li>• Can we store the date in the cloud or we should use a in-house server?</li></ul>
<b>Latency</b> <ul style="list-style-type: none"><li>• <i>How quickly should things load?</i></li><li>• <i>Are there any operations that might slow down load time (ie: a call to another</i></li></ul>	<ul style="list-style-type: none"><li>• The app should be available at all times even if bandwidth is limited</li><li>• The application is multi-threaded</li></ul>	<ul style="list-style-type: none"><li>• What technologies are available that support the app continuous availability? Such as Google PWA ...</li><li>• Are there any bottlenecks in calling services or response times for services that could affect the UX experience of the application?</li></ul>

# Iterate

Leverage learnings from your first two user interviews to make changes to your prototype. Then run another round of user interviews.

# Prototype v2

## Description

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

The user can view the position and expected arrival time of the food delivery robot and intervene (teach) the robot's route planning.

## Assumptions

- Any assumptions within the prototype

List all assumptions you have made about the prototype

- returning customer who is familiar with Doordash's services
- The food ordering page is not detailed, only two layers
- The robot feedback page is not detailed

## Tasks

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

Describe the flows/tasks that a user can complete in the prototype

- can check the position and route of the delivery robot
- can interfere in route-planning



Link your  
prototype v2

# User Testing Round 2



Link your  
notes



Link your audio  
recording

## Key Findings from Participant 3

<b>What worked well</b>	<i>This went very well, the user fully understands the business logic and can use the app easily</i>
<b>Where participants got stuck</b>	<i>No stuck</i>
<b>Other observations</b>	<i>She is a technologist and ordering food on daily basis so she is the target persona</i>

# Handoff

# Updated PRD



Link your PRD