Doordash : Operations Tool

Design Sprint

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Initial PRD

Link your PRD

How Might We

How might we know that robot is going to right adress?

How might we teach robot to re route?

Routing

How might we teach robot to follow on for next delivery on queue?

Other

How might we communicate user about robots delivery time?

Delays, Missing Items, and Cancellations

How might we teach robot to talk to pedestrian?

How might we program robot to avoid obstruction?

Issues on route

How might we stop thief from stealing robot?

Incident Prevention and Recovery

How might we take control of robot in real time?

Tracking and Remote Control

Routing and delivery

How might we mitigate accidents between robots and pedestrians?

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

How might we know that robot is going to right adress?

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?

How might we teach robot to re route?

Routing

How might we teach robot to talk to pedestrian?

How might we teach robots to avoid trouble?

How might we program robots to address delays in deliveries?

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

How might we program robot to avoid obstruction?

Issues on route

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?

Environmental Factors

When things go wrong

How might we share robot progress with consumers?

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

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

How might we program robots to address customer returns?

How might we alert consumers if their delivery is delayed?

How might we program robots to address order cancellations?

How might we communicate user about robots delivery time?

Delays, Missing Items, and Cancellations

How might we address a sudden power outage?

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

How might we determine when to recharge robot batteries?

How might we anticipate mechanical failures?

Maintenance and mechanical issues

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

How might we handle edge case issues that may arise?

How might we deal with accidents that might occur?

How might we overcome technical glitches during a delivery?

How might we ensure food gets delivered without incident?

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

How might we stop thief from stealing robot?

How might we detect when a robot needs help?

How might we build redundancy into our system?

Incident Prevention and Recovery

How might we take control of robot in real time?

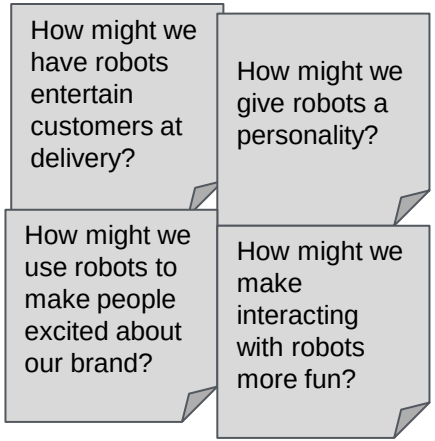
How might we control robots?

How might we track each robot?

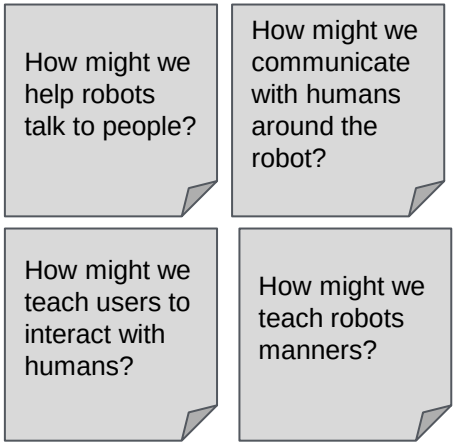
How might we monitor robot progress?

Tracking and Remote Control

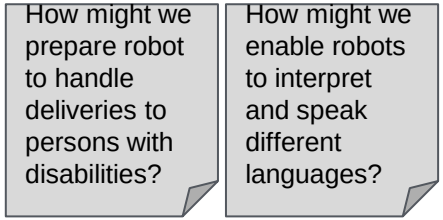
Human/Robot Interaction



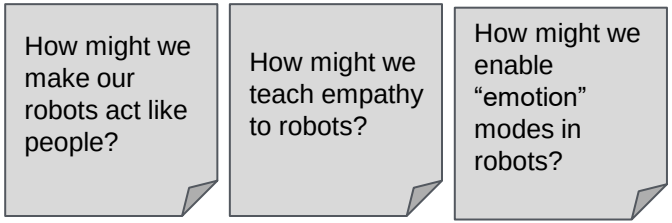
Delight



Communication with people



Deliveries for everyone



Human-like

Other

How might we teach robot to follow on for next delivery on queue?

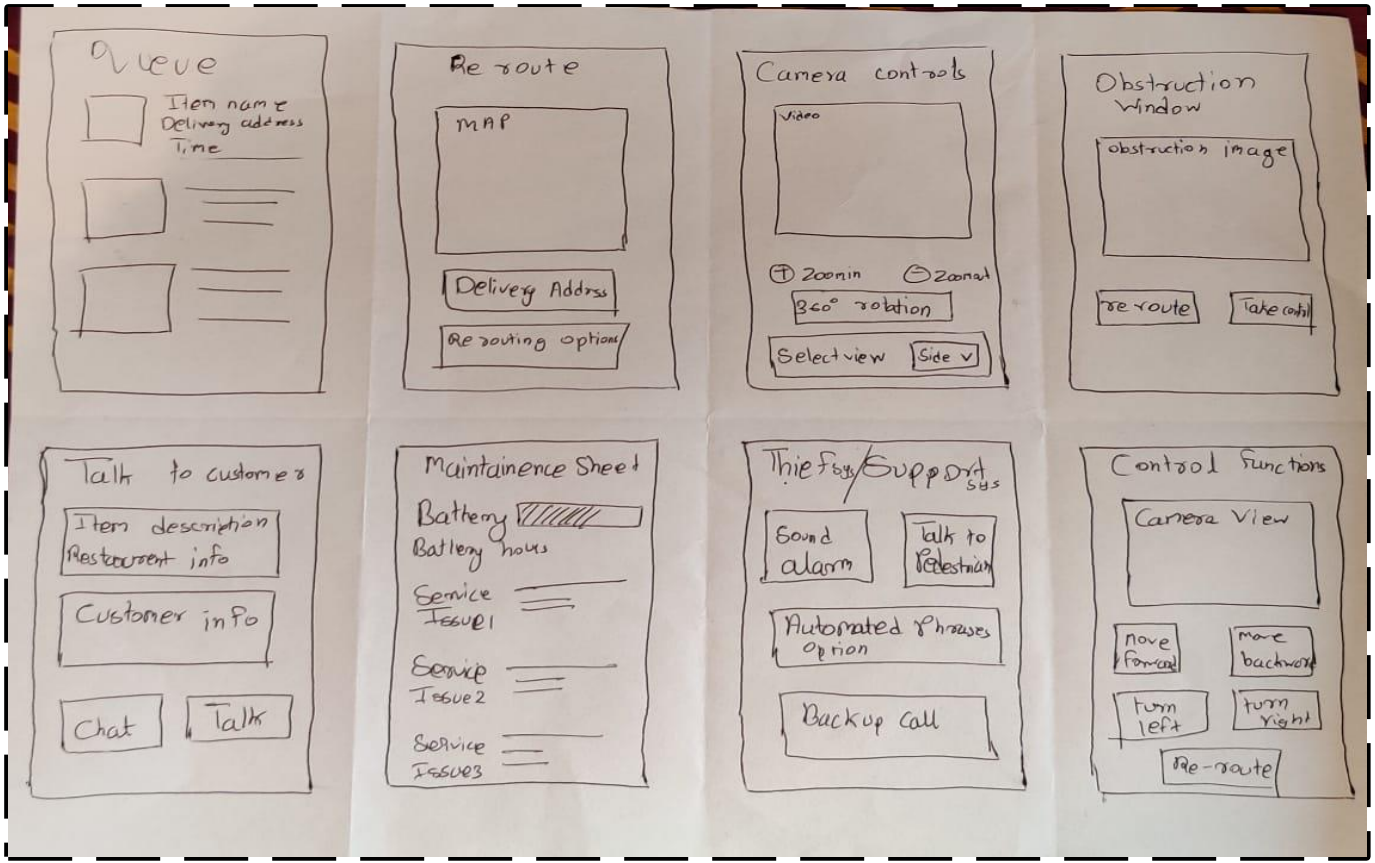
Sprint Focus

Focus	Routing and Delivery
Slide #	11 - 12
I selected this theme because	At times the robot may find difficulty in crossing road or pathway or any technical problem arises which makes it unable to move on the path designated, controlling the robot will help with it. If any real-time obstruction arises we will need to find quickest and easiest route for robot to complete deliveries and hence rerouting is another important function we need.

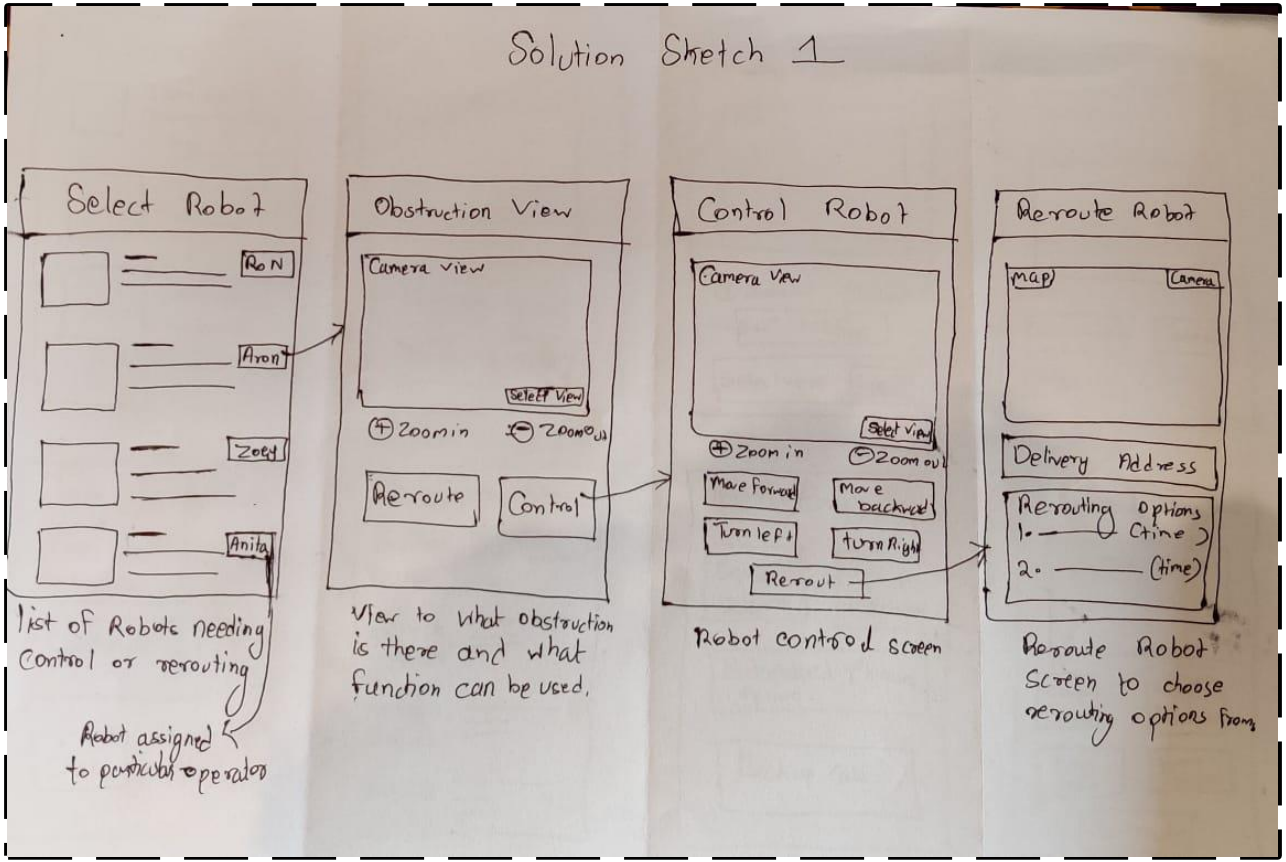
Future Press Release

Autonomous technology is one of the emerging technology for delivery of food,ecommerce and retail companies. With companies trying to create efficeint delivery system and reduce the waiting time for customer, they are constantly innovating. We at Doordash are automating our food delivery system using self driving robots for trips that are less than 2 miles. The robot will have the ability to pick up orders in 2 miles and give fastest option available The robot will pick up the food from restaurant and then navigate itself through sidewalks to reach customer. In case of any real time obstruction the robot will be rerouted. The robot can also avoid obstructions and navigate itself through obstacles. The robot can also be controlled remotely. This is an exciting initiative for us and marks our first step towards autonomous deliveries. This will also help in tr With new technologies on the horizon we keep on experimenting to be the best version of ourselves.

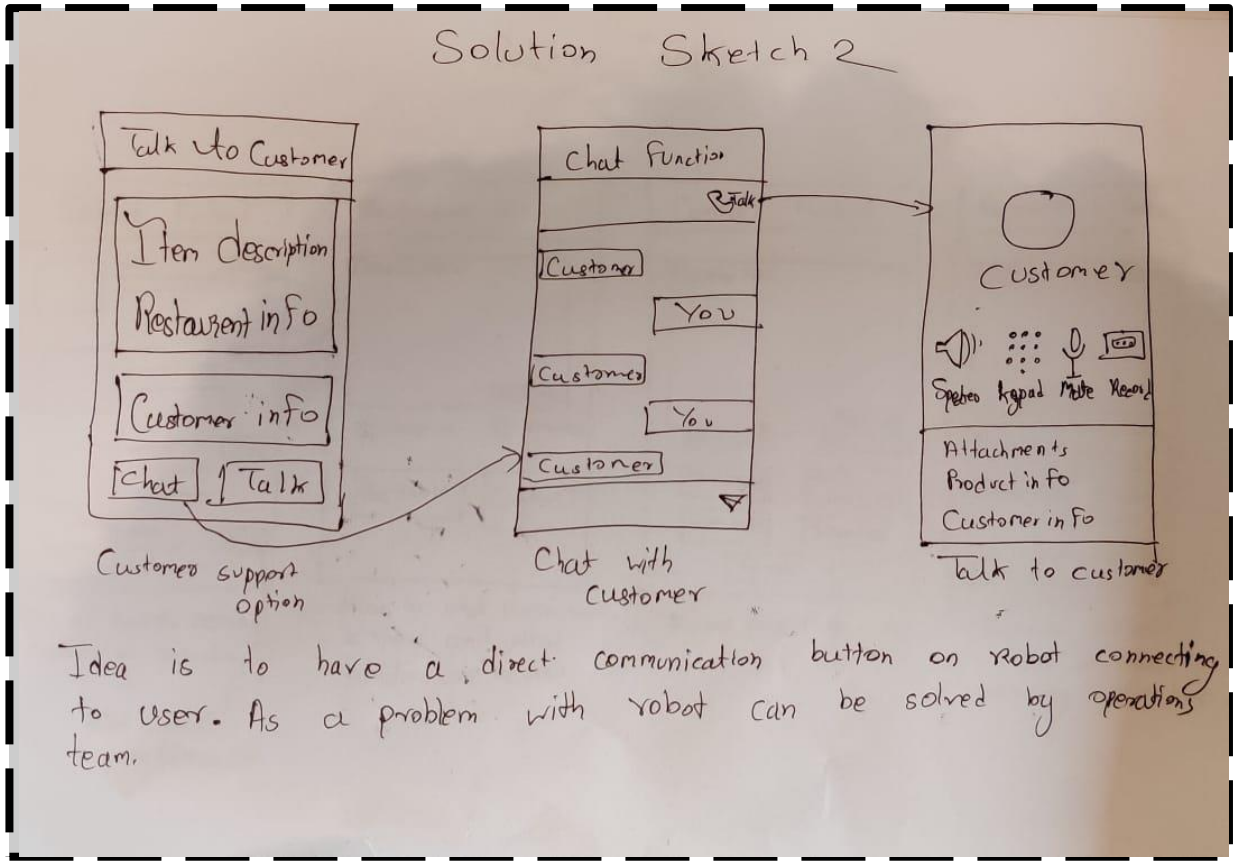
8 Sketches


Queue
Item name
Delivery address
Time
Re route
MAP
Delivery Address
Re routing options
Camera controls
Video
Zoom in
Zoom out
360° rotation
Select view
Side v
Obstruction Window
obstruction image
re route
Take control
Talk to customers
Item description
Restaurant info
Customer info
Chat
Talk
Maintainence Sheet
Battery
Battery hours
Service Issue1
Service Issue2
Service Issue3
Thief/Support Sys
Sound alarm
Talk to Pedestrian
Automated Phrases option
Backup Call
Control functions
Camera View
move forward
move backward
turn left
turn right
Re-route

Solution Sketch 1



Solution Sketch 2

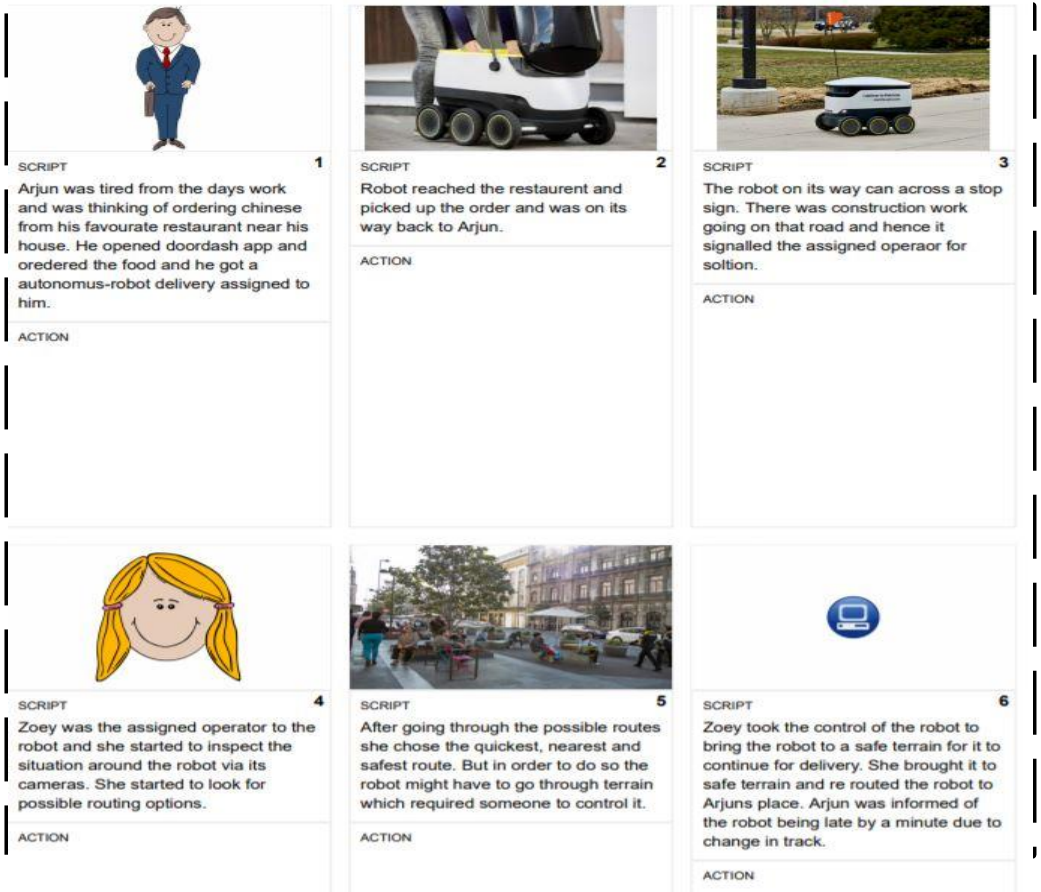


Decision

Decision	Solution Sketch 1- Routing and Delivery
Rationale	The most important function would be to have a control and rerouting function as the customer talking option via robot although an important function isn't the one to start with to start with. For now we can have a regular customer support option help and we can focus on smooth deliveries by robots.

Storyboard

Link your plot



1

SCRIPT

Arjun was tired from the days work and was thinking of ordering chinese from his favourate restaurant near his house. He opened doordash app and oredered the food and he got a autonomus-robot delivery assigned to him.

ACTION

2

SCRIPT

Robot reached the restaurent and picked up the order and was on its way back to Arjun.

ACTION

3

SCRIPT

The robot on its way can across a stop sign. There was construction work going on that road and hence it signalled the assigned operaor for soltion.

ACTION

4

SCRIPT

Zoey was the assigned operator to the robot and she started to inspect the situation around the robot via its cameras. She started to look for possible routing options.

ACTION

5

SCRIPT

After going through the possible routes she chose the quickest, nearest and safest route. But in order to do so the robot might have to go through terrain which required someone to control it.

ACTION

6

SCRIPT

Zoey took the control of the robot to bring the robot to a safe terrain for it to continue for delivery. She brought it to safe terrain and re routed the robot to Arjuns place. Arjun was informed of the robot being late by a minute due to change in track.

ACTION

Storyboard

Link your plot

SCRIPT 7

Arjun received the order and easily removed his food from robot and was happy for prompt delivery by robot.

ACTION

SCRIPT 8

The robot was assigned to another delivery and Zoey was assigned to another robot and Arjun enjoyed his favourite chicken kungpao while relaxing and watching netflix.

ACTION

Prototype

Description

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

The prototype describes the journey of user i.e. an operations team member from getting a robot in distress assigned to them. Given the particular problem the user can take number of actions. Here we consider the scenario of robot stopping due to real time obstruction and needing some control and rerouting to complete its delivery.

The prototype just goes through a basic functions of controlling and re-routing and the user flow for such.

Assumptions

- Any assumptions within the prototype

- We are assuming that robot has cameras on its all sides.
- We are assuming that robot can detect a real time obstruction.
- We are assuming that robot has technology to ping us when in problem.
- We are assuming that we have the technology to control and re-route and have connection with robot remotely.

Tasks

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

- A user can check the particular robot assigned to him/her.
- They can re-route or control the robot depending on the situation.
- They can move the robot forward, backword, left and right depending on the situation.
- They can see the map and wait the robot to complete its delivery so no prioblem arises.

Link your prototype

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	*The routing and control function were easy to use. The flow between re-routing, controlling and status was smooth.* *The appropriate information at each page was helpful such as delivery address on re-routing and status page.*
Where participants got stuck	*The participants got stuck at first page as the information provided was not enough or participants didn't understand their job functions.* *The control functions were arrows giving option to move forward, backward , left and right and could have been better.*
Other observations	*User liked the transition between routing, controlling and status and the option to be in loop when needed.* *The user was quite excited as the idea handling, controlling robot remotely was something new and could be fun for him.*

User Testing

Link your notes

Link your audio recording

Key Findings from Participant 2

What worked well	*The transition between routing, controlling and the status was easy. The relevant information on every page pertaining to give situation was helpful. The idea to be aware of your surroundings during controlling with the help of camera view setting will help a lot.*
Where participants got stuck	*The initial page gives a very little info for user to understand functions. The control function of robot can be much more easy.* *The color of the app can be better as the red color was very bright.*
Other observations	*The user was a regularly uses Dooordash and the idea of a robot delivering the food is very exciting for them.*

Improvements

Improvement #1	*Control of robot should be shaped liked joysticks*
Rationale	*As this will much more easy to maneuver the robot remotely. The joy stick function would give much more freedom to user to move it accordingly in which ever direction.*
Improvement #2	*For every user only the assigned robots to them will appear*
Rationale	*As the user by mistake might select robot other than the one assigned to them, it is better to show them just the robot they have been assigned rather then all robots.*

Updated PRD

Link your PRD