Doordash: Automated Delivery Management

Design Sprint

Product Manager:Abdalaziz Aldultli

Set the stage

Set the stage for the Design Sprint by framing the problem

Initial PRD

- **Background:** The revenue in the Online Food Delivery market is forecasted to reach US$1.22tn in 2024 (Statista). However, traditional food delivery services face challenges related to delivery efficiency, cost optimization, and customer satisfaction, especially in dense urban areas.

- **Problem:** The opportunity lies in leveraging autonomous delivery technology to revolutionize last-mile logistics, 14% of deliveries experience delays (Statista).By implementing autonomous robots for food delivery, we can significantly improve delivery efficiency, reduce operational costs, and enhance the overall customer experience.

- **Goals:** The success of this initiative will be measured by:
  - Achieving a 20% reduction in delivery times through optimized routing and automation.

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 decrease delivery wait times for customers?

How Might We reduce delivery costs without compromising service quality?

How Might We enhance real-time tracking capabilities for delivery orders?

How Might We improve order accuracy and minimize delivery errors?

How Might We optimize route planning to maximize efficiency and minimize travel distance?

How Might We ensure seamless integration of autonomous delivery robots ?

How Might We increase customer satisfaction by offering flexible delivery options?

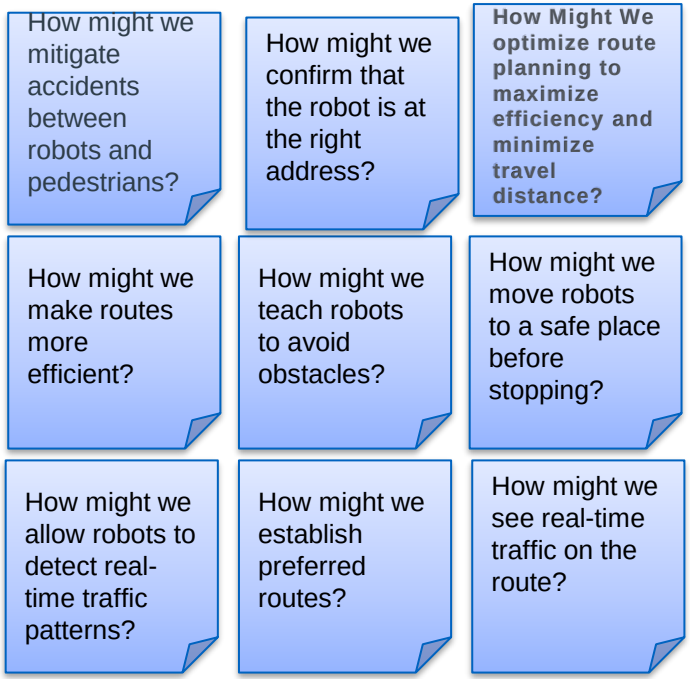
How Might We streamline order fulfillment processes to expedite deliveries?

How Might We Other Team Member Stickies

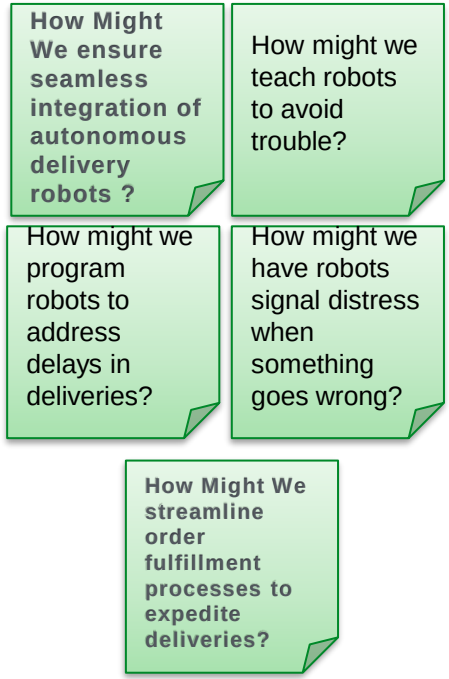
DoorDash project scenario

Doordash is looking to automate food delivery using self-driving robots for trips that are less than 2 miles in order to reduce its operating costs and provide more reliable delivery times. The long term goal is that these delivery robots will navigate sidewalks fully autonomously. But initially there may be times when manual intervention will be required. Your team has been tasked with building a tool for the operations team-- to view status of deliveries and remotely take control of robots that need intervention (ie: rerouting)

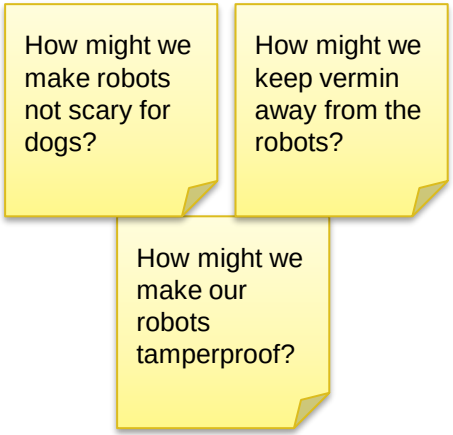
Routing and delivery



Routing

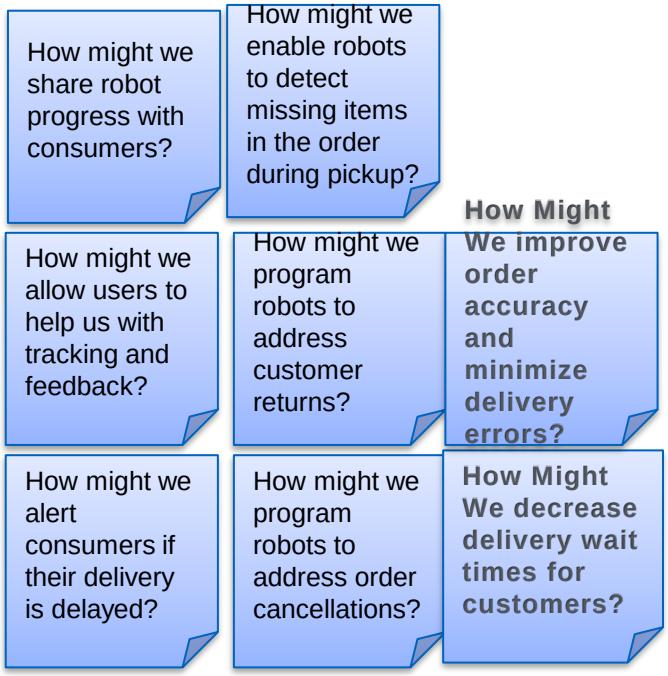


Issues on route

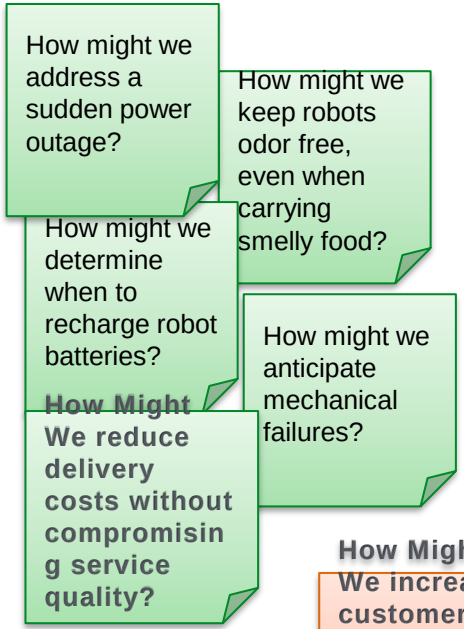


Environmental Factors

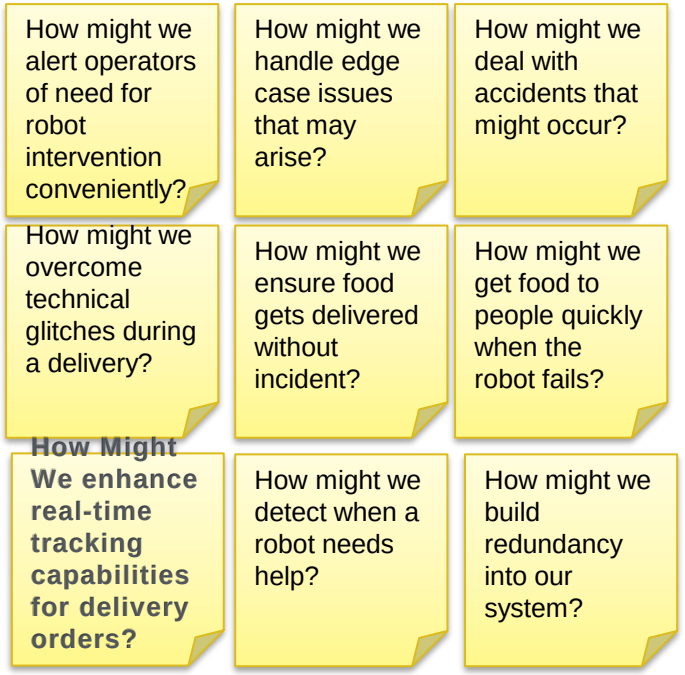
When things go wrong



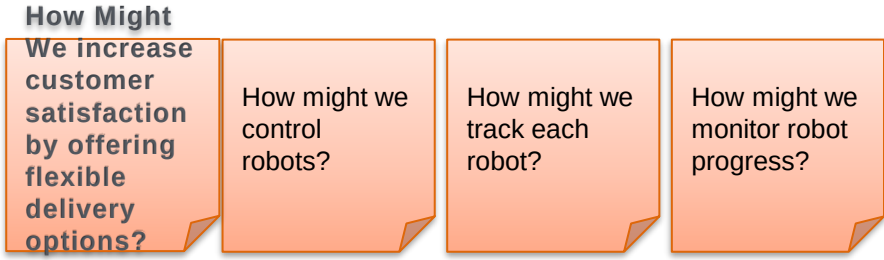
Delays, Missing Items, and Cancellations



Maintenance and mechanical issues



Incident Prevention and Recovery



Tracking and Remote Control

Human/Robot Interaction

How might we have robots entertain customers at delivery?

How might we give robots a personality?

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

How might we make interacting with robots more fun?

Delight

How might we help robots talk to people?

How might we communicate with humans around the robot?

How might we teach users to interact with humans?

How might we teach robots manners?

Communication with people

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

Other

Sprint Focus

Focus	Human/Robot Interaction
Slide #	9
I selected this theme because	The theme of "Human/Robot Interaction " directly addresses the goal of enhancing customer satisfaction and providing a superior delivery experience.

Define

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

Autonomous Delivery Revolution: Transforming Urban Logistics

Publisher: UrbanTech Innovations

Who is it for?

Imagine you're a busy professional living in a bustling city, juggling work, family, and personal commitments. This autonomous delivery system is designed specifically for individuals like you who value time, convenience, and reliability in their daily lives.

What does it solve? How does it change a customer’s life?

This revolutionary system solves the common frustrations associated with traditional delivery services. It eliminates the stress of waiting for deliveries by providing precise and efficient delivery times. Imagine never having to worry about missing an important package or dealing with incorrect orders again. With this system, your life becomes more streamlined, allowing you to focus on what matters most without interruptions or delays.

Why should customers love it?

Customers will love this system for its transformative impact on daily life. It empowers you with control over your schedule, reduces unnecessary stress, and enhances overall convenience. By offering reliable and accurate deliveries, along with real-time tracking and personalized options, this system enhances your lifestyle and simplifies your day-to-day routines. It's not just a delivery service; it's a game-changer that brings peace of mind and efficiency to urban living.

Success Metrics

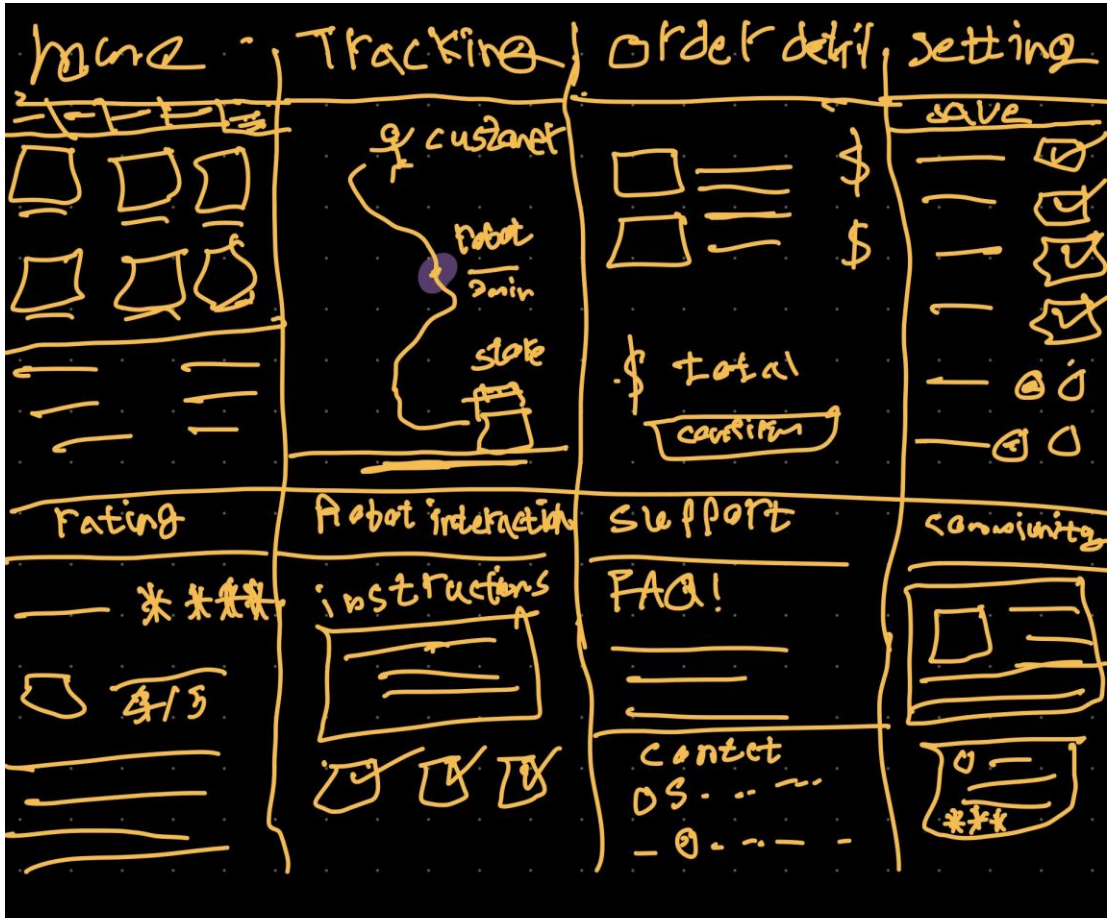
	Goals	Signals	Metrics
Happiness	• Increase Customer Happiness and Satisfaction • Enhance Emotional Connection with the Service	• Positive Sentiment in Customer Feedback • High Ratings in Post-Delivery Surveys	Customer Satisfaction Score (based on surveys or feedback ratings)
Engagement	• Enhance User Engagement with Service Features • Promote Habit Formation and Daily Use	• Positive Sentiment in Customer Feedback • High Ratings in Post-Delivery Surveys	Customer Satisfaction Score (based on surveys or feedback ratings)
Adoption	• Enhance User Engagement with Service Features • Facilitate Seamless Onboarding and First-Time Success	Frequency of Service Feature Usage	Average Number of Unique Features Accessed per User Session
Retention	• Increase Adoption and Onboarding Success • Encourage Long-Term Loyalty and Repeat Usage	Rate of New Users Completing First Delivery	Percentage of New Users Completing Their First Delivery
Task Success	• Enhance User Retention and Long-Term Engagement • Ensure Seamless and Error-Free Task Completion	Continuity of Service Usage Over Time	Retention Rate (Percentage of Active Users Over a Specific Time Period)

Sketch

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

8 Sketches

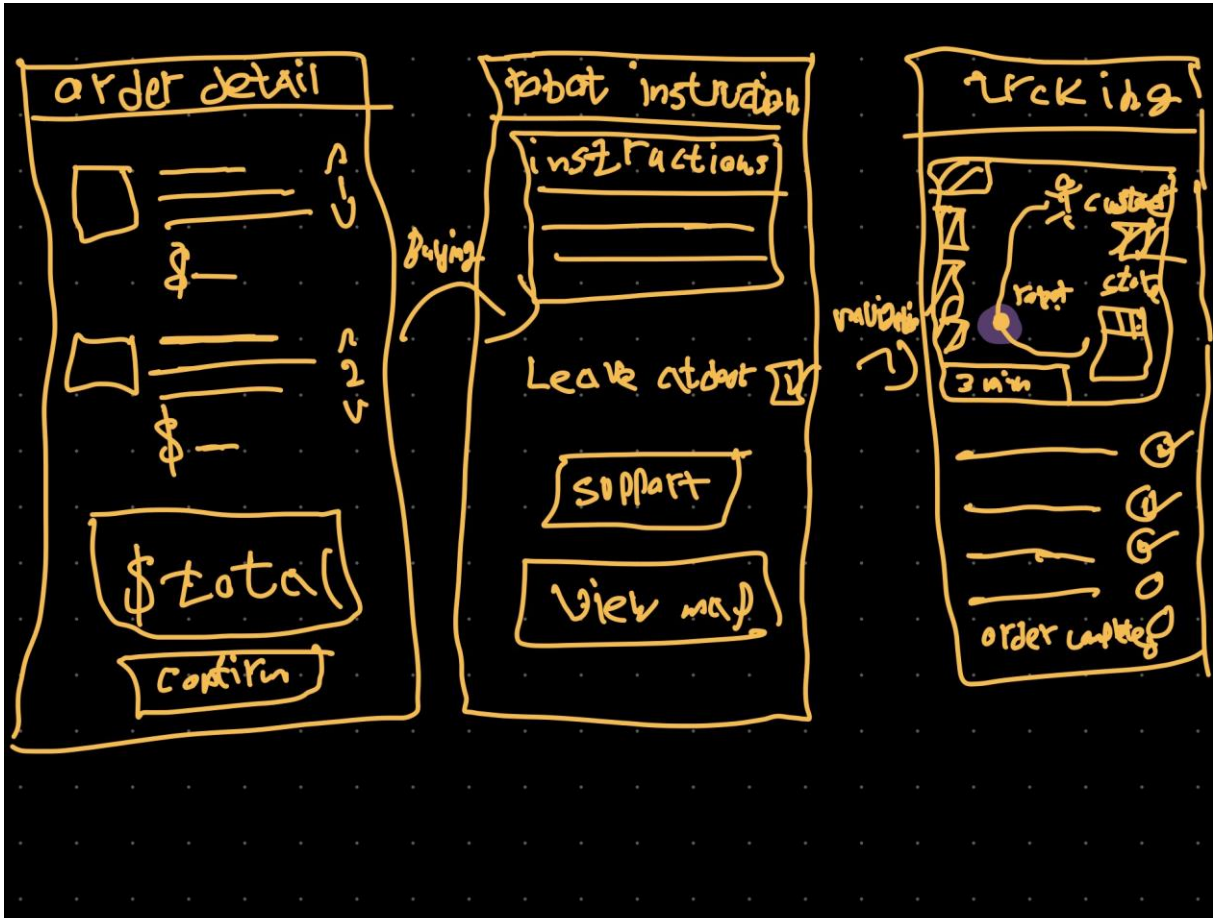
Home Screen:
the home screen of a mobile app for the autonomous delivery system. Include key navigation elements, such as delivery tracking, account settings.
Delivery Tracking Screen:
a screen that displays real-time tracking of a delivery. Include a map view showing the location of the delivery robot and status updates.
Order Details Screen:
a screen where users can view detailed information about their current and past orders. Include order status, item details, and delivery preferences.
Settings Screen:
a settings screen where users can customize their delivery preferences, notification settings, and account details.
Feedback and Rating Screen:
screen for users to provide feedback and ratings after a delivery. Include options for rating the delivery experience and leaving comments.
Robot Interaction Screen:
a screen that shows how users can interact with the delivery robot, such as confirming receipt of a delivery or providing instructions.
Support and Help Screen:
a screen where users can access customer support, FAQs, and troubleshooting guides for the autonomous delivery system.
Community Engagement Screen:
a screen that promotes community engagement, such as sharing delivery experiences on social media or participating in user forums related to the service.



Solution Sketch 1

Sketch: Order Detail, Robot Instructions, and Tracking

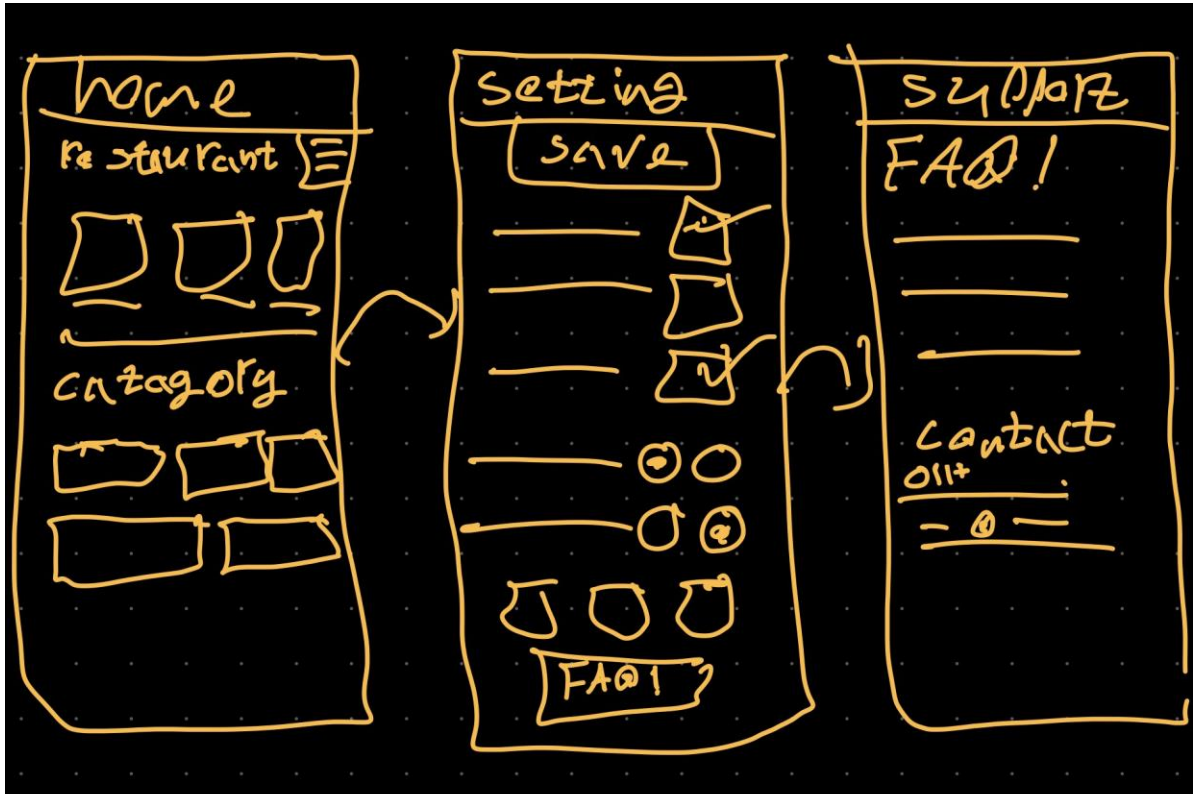
Order Detail Screen:
The user opens the app and navigates to the "Order Detail" screen, where they can view comprehensive information about their current delivery order.
Key details displayed include order items, estimated delivery time, delivery address, and order status (e.g., confirmed, in transit, delivered).
Robot Instructions Overlay:
Within the "Order Detail" screen, users have the option to access "Robot Instructions" by tapping a designated button or icon.
Upon activation, a modal overlay appears on the screen, displaying instructions for interacting with the delivery robot during order handover.
Instructions may include steps for scanning QR codes, entering access codes, or opening compartments to retrieve the order.
Tracking Interface Integration:
Simultaneously, the "Tracking" interface is seamlessly integrated into the "Order Detail" screen, providing users with real-time updates on the status and location of their delivery.
A dynamic map display showcases the delivery robot's current position, route trajectory, and estimated time of arrival (ETA) at the user's location.
Users can interact with the map interface by zooming in/out, panning across the map, or tapping on specific waypoints for additional details.



Solution Sketch 2

Sketch: Home, Settings, and Support

Home Screen:
Upon launching the app, users are directed to the "Home" screen, which serves as the central hub for accessing key functionalities and navigating through the app.
The "Home" screen displays various modules such as recent orders, featured promotions, and quick access buttons for common actions.
Settings Screen Integration:
Users have the option to access the "Settings" screen directly from the "Home" screen by tapping on a designated settings icon or accessing it through the app's main menu.
Upon tapping the settings icon, a modal or slide-in panel emerges, providing seamless access to user preferences and customization options.
Support Center Integration:
Similarly, users can access the "Support" center directly from the "Home" screen by tapping on a designated support icon or accessing it through the app's main menu.
Upon tapping the support icon, users are redirected to the "Support" center, where they can find FAQs, contact customer support, or access help articles.



Decide

Pick the final concept that you develop into a prototype

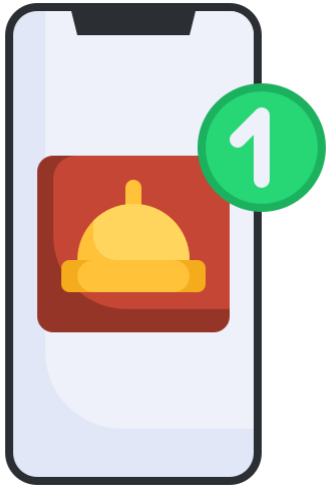
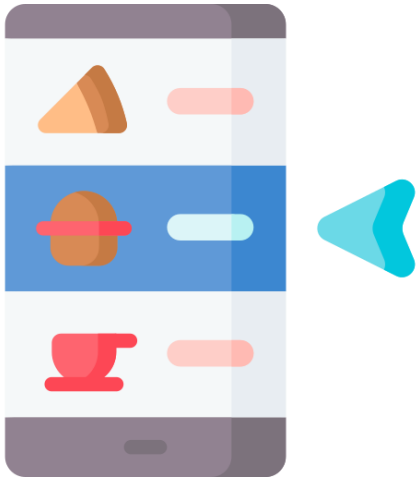
Decision

Decision	Delivery Details and Interaction Hub
Rationale	I chose the "Delivery Details and Interaction Hub" sketch because it serves as a central point for users to access comprehensive information about their deliveries while also providing interactive features for enhanced engagement and control.

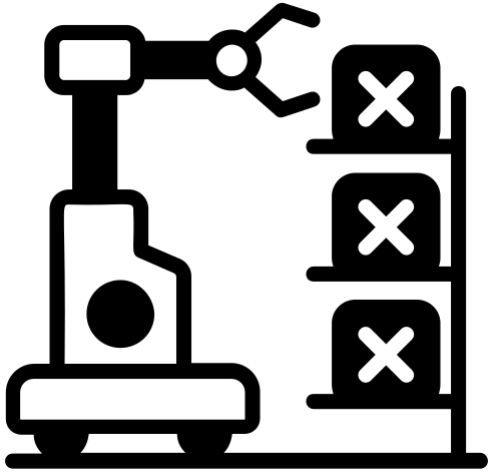
Prototype

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

Storyboard

		
The user is at home, expecting a delivery. They receive a notification on their phone indicating that the delivery is en route. The user is prompted to use the autonomous delivery app to track their package and ensure a smooth delivery experience.	*The user opens the autonomous delivery app on their smartphone. The app's home screen is displayed, featuring options for tracking deliveries and accessing order details. The user taps on the "Track My Delivery" button to monitor the progress of their package.*	*The app displays detailed information about the user's order on the order detail screen. This includes recipient details, itemized list of ordered items, and estimated time of arrival (ETA). The user checks the delivery status and verifies order specifics.*

Storyboard

		
The app provides a real-time map view showing the current location of the delivery robot moving along the designated route. The user monitors the robot's progress towards their location, ensuring they stay informed about the delivery status.	*The app presents interactive controls for user interaction with the delivery process. This includes buttons for providing delivery instructions, such as "Leave at Door" or "Contact Support." The user engages by tapping on a button to customize delivery instructions.*	*The app confirms delivery completion with a notification sent to the user. The notification indicates successful delivery of the package to the specified location. The user receives the notification and checks the delivered items to ensure everything is in order.*

Storyboard

The user retrieves the delivered package from their doorstep or designated location. They experience the convenience and efficiency of the autonomous delivery system, appreciating the customized delivery options and seamless experience provided by the app. The successful delivery enhances user satisfaction and reinforces trust in the autonomous delivery service.

Prototype

Description

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

The prototype simulates a mobile app for an autonomous delivery service, providing users with a seamless experience from home to delivery management. It incorporates key screens such as menu navigation, home screen, order tracking, and Review Order.

Assumptions

- Any assumptions within the prototype

Assumption: The menu navigation is intuitive and user-friendly, allowing seamless transitions between different sections.
Assumption: The home screen displays relevant and personalized content based on user preferences and delivery status.
Assumption: Delivery tracking utilizes real-time location data and map views to show the progress of deliveries.

Tasks

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

Navigation Menu:
Navigate through different sections of the app using the menu (e.g., Home, My Offers, Deliveries, Cart, Profile).
Home Screen:
View personalized content, delivery updates, and recommended offers based on user preferences.

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

Research Plan: Autonomous Delivery App Prototype

PM: Abdulaziz
STATUS: DRAFT

- **Objectives:** The research aims to understand user perceptions and expectations of autonomous delivery services, identify usability issues in the app prototype, and gather feedback on specific features.
- **Key Research Questions:** The study seeks to answer questions about user perceptions of autonomous delivery services, factors influencing user satisfaction with delivery apps, primary challenges encountered by users, and alignment of the prototype with user expectations.
- **Methodology:** One-on-one semi-structured interviews will be conducted using screen sharing or in-person demonstrations of the prototype. Open-ended discussions and probing questions will facilitate detailed feedback on usability, features, and overall experience.
- **Participants:** Target participants are urban residents aged 25-45 who frequently use delivery services. The selection will include individuals with diverse technology backgrounds and experiences related to delivery apps.

Autonomous Delivery App Prototype: Interview Sessions

Introduction:
Welcome to the interview session for Autonomous Delivery App Prototype. During this session, you can expect to explore and provide feedback on an autonomous delivery app prototype. We value your insights and feedback, which will help us improve the app's usability and functionality. The interview will involve discussing your experiences with delivery services and navigating through the prototype. We request permission to record the session for accurate documentation and analysis purposes. Your participation will remain confidential, and your feedback will be used solely for research and development purposes.

Background Questions:
Before we begin, we'd like to gather some background information:

Can you describe your experience with using delivery services (e.g., frequency, preferred platforms)?
What features do you typically look for in a delivery app?

Task 1:
Scenario: Imagine you want to order dinner for tonight using the app. Please proceed to explore the menu, select items, and proceed to checkout. While doing so, please share your thoughts and any challenges you encounter.
Follow-up Questions:
How intuitive was the menu navigation?
Did you encounter any difficulties while adding items to your cart?

Task 2:
Scenario: You have an upcoming delivery scheduled, and you want to track the status of your order. Please explore the delivery tracking feature and share your experience.
Follow-up Questions:
How clear was the delivery tracking interface?
Did you find it easy to track the progress of your delivery?

Wrap Up:
To conclude, we'd appreciate your overall feedback on the prototype:

Would you consider using this app for your delivery needs?

User Testing: Participant 1 Key Findings

What worked well	Participant expressed enthusiasm and willingness to explore the prototype. Menu navigation was generally intuitive during the ordering task. The participant found the delivery tracking feature clear and easy to use.
Where participants got stuck	Some minor challenges were encountered during the checkout process, particularly with item selection and adding items to the cart.
Other observations	The participant showed interest in using the app for delivery needs. Feedback included suggestions for improving the checkout process to enhance user experience. Overall positive impression of the prototype, with valuable insights for refinement and enhancements.

Participant 1: Interview Notes

- Expresses familiarity with using delivery services, especially for dinner orders.
- Encountered minor challenges during checkout process, specifically with item selection and adding items to cart.
- Overall positive impression of the prototype and willingness to consider using it for future deliveries.

User Testing: Participant 2 Key Findings

What worked well	Participant showed eagerness and interest in exploring the autonomous delivery app prototype. Menu navigation was generally straightforward and intuitive during the ordering task. The delivery tracking feature was perceived as clear and user-friendly.
Where participants got stuck	Minor issues were encountered during the checkout process, specifically with adding items to the cart.
Other observations	Participant expressed consideration of using the app for delivery needs. Valuable feedback included suggestions for improving the checkout process to optimize user experience. Overall positive reception of the prototype, highlighting areas for improvement and refinement.

Participant 2: Interview Notes

- Regular user of delivery services, particularly for meals and groceries.
- Found menu navigation intuitive and straightforward during ordering task.
- Suggested improvements for the checkout process to enhance user experience.
- Positive feedback on the delivery tracking feature, deemed clear and user-friendly.

Handoff

Updated PRD

- **Background:** The revenue in the Online Food Delivery market is forecasted to reach US$1.22tn in 2024 (Statista). However, traditional delivery methods often face challenges such as high operating costs, delivery delays, and limited scalability. There is a growing need for innovative solutions to optimize delivery processes and enhance user experience.

- **Problem:** 14% of deliveries experience delays (Statista). impacting customer satisfaction and retention rates. opportunity lies in developing an autonomous food delivery system that leverages self-driving robots to handle short-distance deliveries efficiently. This system aims to reduce operational costs, minimize delivery times, and improve overall service reliability. Key insights indicate that customers value timely and reliable deliveries, and there is a rising demand for contactless delivery options. Competitors in the market are exploring similar autonomous delivery solutions to gain a competitive edge and meet evolving consumer preferences. Implementing this solution is crucial to stay competitive and meet the changing demands of the food delivery market.

- **Goals:**
  - Successfully develop and implement an autonomous food delivery system using self-driving robots for trips less than 2 miles.
  - Reduce delivery costs by at least 20% compared to traditional delivery methods within the first year of implementation.

Updated PRD (page 2)

P0, P1, where

P0 = we shouldn't launch the product without it
P1 = is not launch blocking but nice to have

Key Features & Scope

Priority	Feature	Description
P0	**Autonomous Route Planning:** Users interact with this feature by selecting their desired delivery locations, and the system automatically calculates the most efficient route based on real-time traffic data and order destinations. Users can view the suggested route on a map interface and confirm their delivery preferences.	Implement an intelligent route planning system that utilizes machine learning algorithms to optimize delivery routes based on real-time traffic data
P0	**Real-time Tracking and Communication:** allows users to track their orders in real-time through the mobile app. Users can see the current status of their delivery, including estimated arrival times and the location of the delivery robot.	Enable users to track their orders in real-time through the mobile app, providing updates on order status, estimated arrival times, and the current location of the delivery robot.
P1	**Automated Order Pickup and Drop-off:** Users simply need to confirm their order details, and the delivery robot takes care of the rest.	Integrate a remote control interface into the system that allows operators to monitor and intervene in robot operations when necessary.
P1	**Remote Control and Intervention:** Operators can oversee the robot's operations, reroute deliveries if needed, or address any issues that may arise during the delivery process.	Implement a feedback and rating system within the app to gather user reviews and ratings for each delivery.