

Existing Tasks

1. Finding the nearest/cheapest/safest parking space by filtering search results

Hannah is a sophomore student at the University of Washington. She commutes to campus daily and on an average day it takes her about 25 minutes to find an ideal parking spot. The reason for this is that she tries to find a parking location closest to her English class located in Kane Hall. As a student, she also tries to find the most inexpensive parking location. She tries to limit her parking price to \$10 or less. In addition to this, the car she commutes in is not her own, but her parents. When looking for parking, she also has to consider which location will keep the car safe while she is away. Some of the practices that Hannah would change while locating for her parking would be to call out for assistance to Social Park. She'd be interacting with Social Park and guiding her way to the safest predicted parking spot near her destination.

2. Finding the best availability during specific times of the day

Gemma works at the University of Washington Medical Center and has a parking pass for the E-18 lot. She usually gets to campus around 9:30 and has been finding it very difficult to find a good spot without having to search for a long time. She's considering coming in earlier in the morning so it is easier to find parking. She would like to have a way to look at historic availability data for lot E-18 and find out how much earlier she needs to leave the house so she spends less time searching. She doesn't mind getting there early because she can use the extra time to get prepared for the day. While most of Gemma's ability to find a parking spot was based on intuition and her prior experience of finding spots during specific hours of the day. She could have her calendar shared with Social Park and the parking spot predicted well in advance for her comfortable journey.

3. Finding the best location during a big event

Mike and Alice have tickets for the Fall Out Boy concert in Key Arena next month. They decide to take Mike's car since it is more compact and easier to find parking for but they are not too familiar with the area since they both live in Redmond. They would like to plan for parking before they leave the house so that they can be navigated directly to a parking area close to the venue so they can get there in time instead of wandering around Seattle streets looking for a good spot. Mike and Alice would be connected to the car through Social Park. In the event of lack of available parking, they would be notified to search for parking in nearby places. Social Park would help them re-route to the suggested direction and move towards an available parking spot.

4. Rate parking locations based on different factors (feedback system)

Jeff is on his way home from work and he is looking to pick up some food on his way there. He remembers that his favorite restaurant is on his route, but because it is a small location, he always finds it difficult to find parking. He decides to get some help from Google Maps to direct him to an area where finding a spot would not take so long. He gives the application his destination's address and he is directed to a large parking lot not too far from the restaurant. As he gets to the lot, he finds that it is almost full. He circles around for about 15 minutes before actually finding an open spot. Jeff wants to warn other drivers of the sparse availability of the lot during this time so he decides to leave a review.

5. Reporting and sharing availability data as lot owners using a business accounts

Owners of a parking lot called Diamond Garage have noticed that their facility is usually full of cars by 10:00 A.M. However, their database suggests that drivers usually assume the lot is full and won't try parking there in the afternoon. They would like to be able to report to Social Park via the business account that new spots are available when some of the cars leave the lot during the day so that nearby drivers can see there is room in the Diamond Garage and consider parking there.

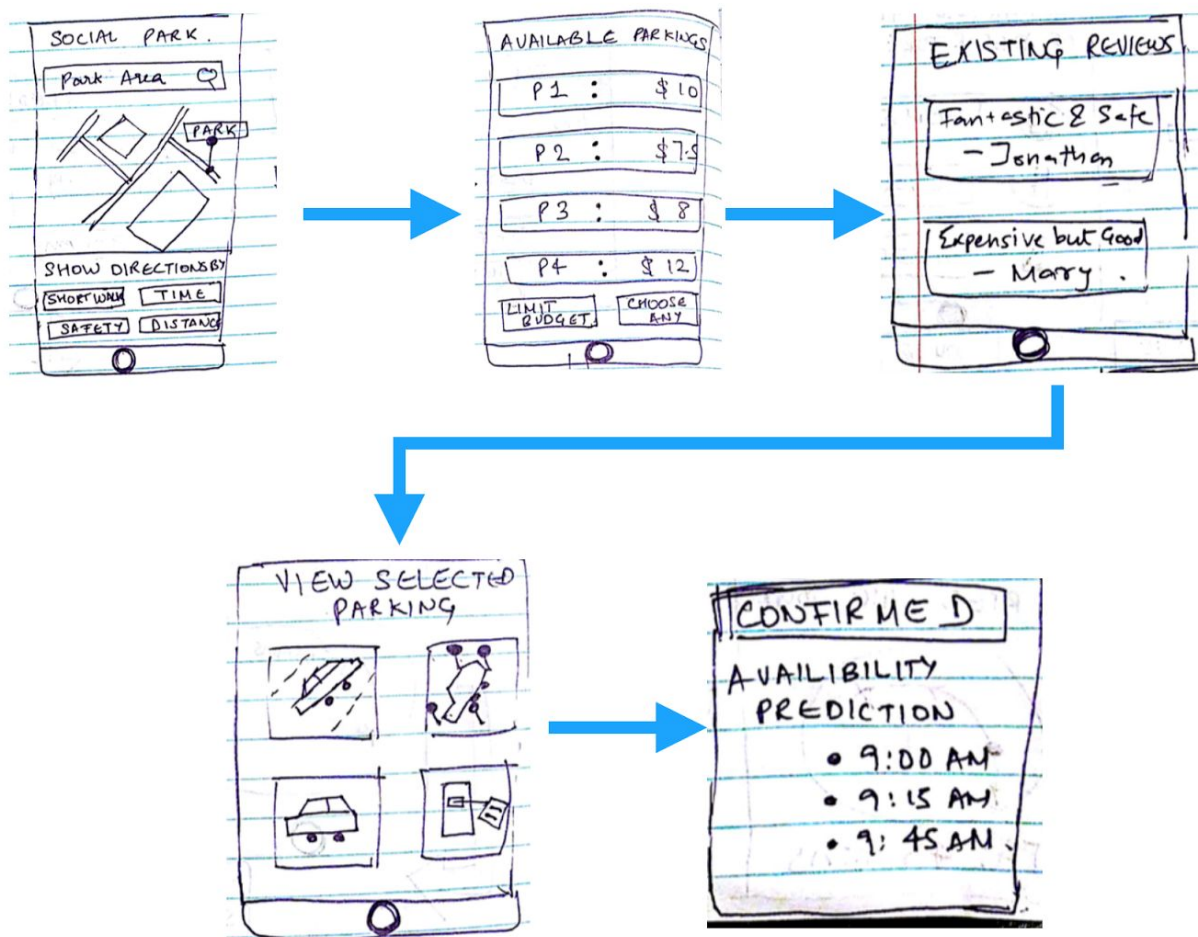
6. Finding the parked car

Ashley is on the way to Northgate Mall with her friends. She is supposed to be meeting them at 5 pm, but she is running a little late. She gets to the parking garage and takes about 20 minutes to find an available space. In a hurry, she gets out of her car and starts running towards the meeting spot. She spends the next couple of hours shopping with her friends. It is now about 8 pm and they decide to end their shopping. She forgot which entrance she took to get into the mall and she has no idea in what location she parked in. She makes her way outside and begins her car search. Having no general strategy in the search, it takes her about 40 minutes until she finally finds her car. Ashley turns to her phone which is connected to Social Park in her car that provides her with the shortest and the safest walking route to her parking spot.

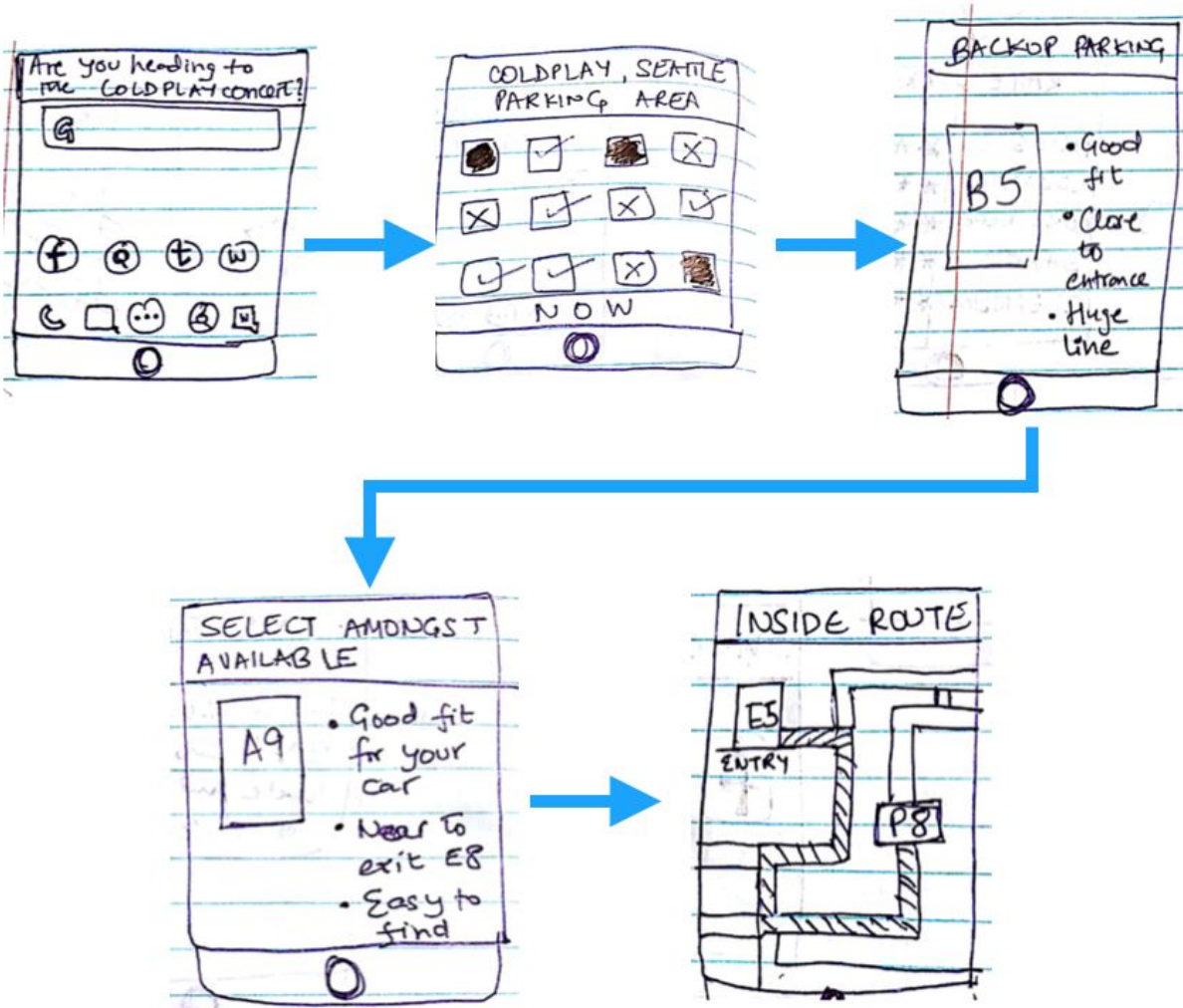
Design Idea #1 - Smartphone App

For this design, we are solely relying on a mobile app as our platform. Since we're focusing in parking around University of Washington, we can safely say most drivers will have access to a smartphone and reliable internet connection. So we consider this to be a good solution for a large number of users. Most drivers have experience using some sort of a navigation app such as Google Maps or Waze, so they will have a good foundation to start using our app with minimal learning required.

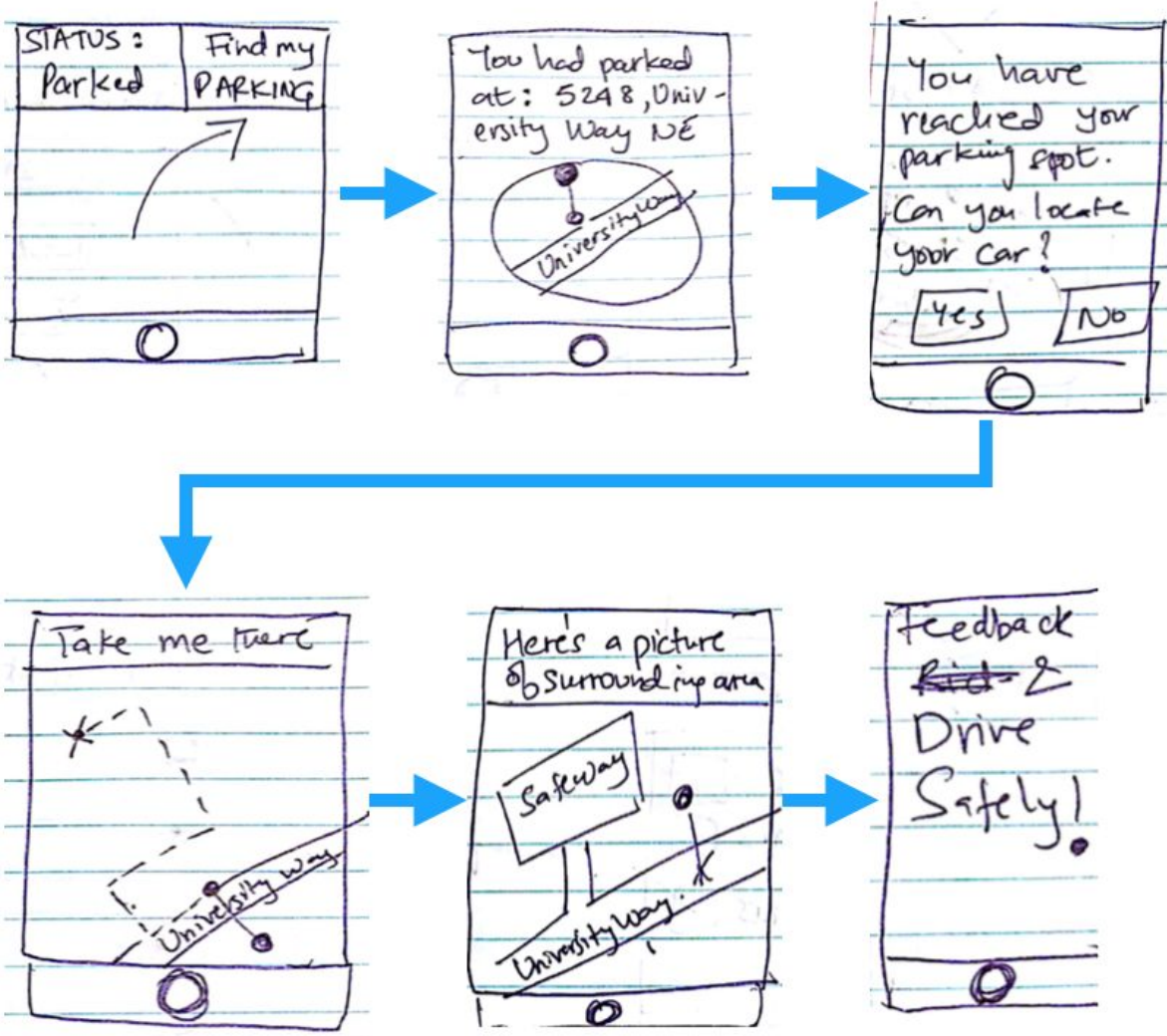
Task #1: Here's how filtering search results could look like:



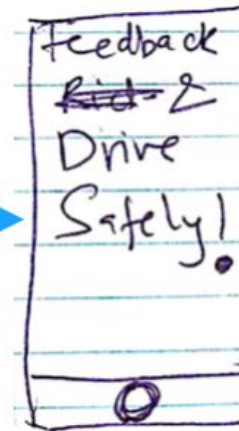
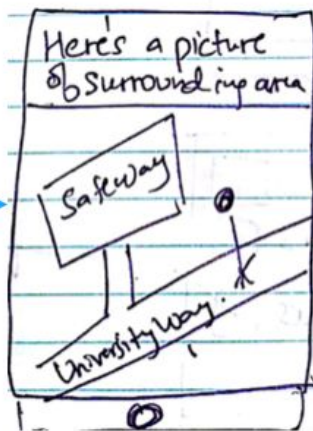
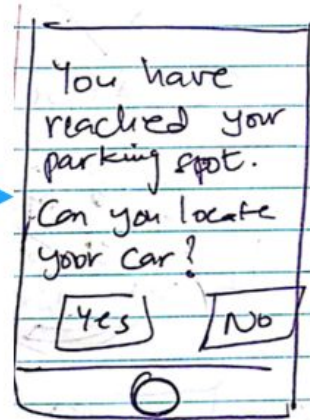
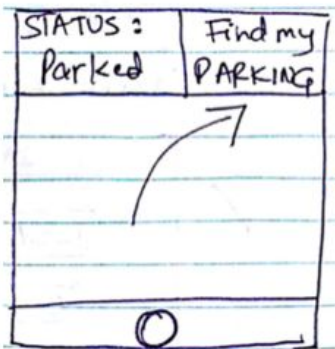
Task #3 - Big Event Parking:



Task #5:



Task #6:

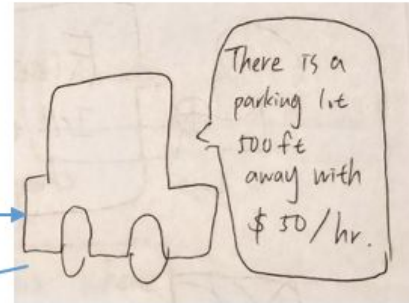
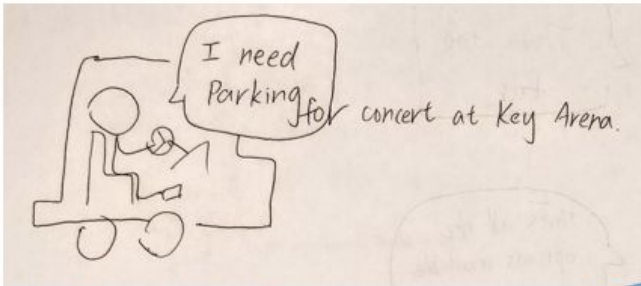


Design Idea #2 - Voice Guidance System Inside the Head Unit

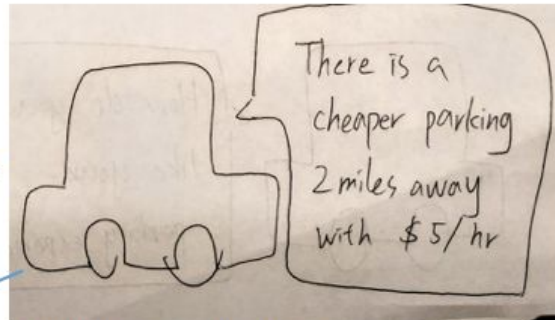
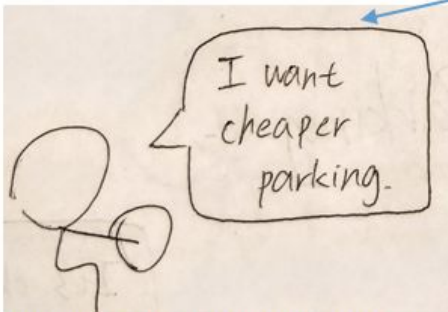
This solution can be implemented in partnership with car manufacturers. Most modern cars have a main head unit or control module that the driver can interact with. More expensive cars will also have a screen (sometimes touch-enabled) and sometimes built-in navigation. Incorporating our design into the existing vehicle head unit will allow for a more seamless user interaction. It can potentially be a safer solution compared to a cell phone app because there are no other distractions involved with the head unit (e.g. facebook messages, snapchat notifications, etc.)

In order to make this design work with a larger variety of vehicles (that may not have a screen), we propose a design that is mostly based on voice commands from the driver that are followed by voice guidance from the head unit.

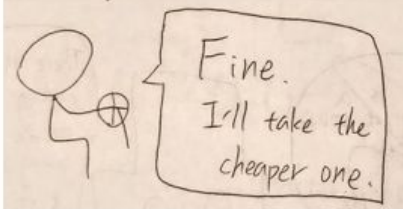
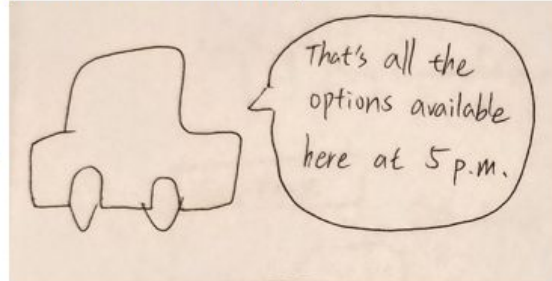
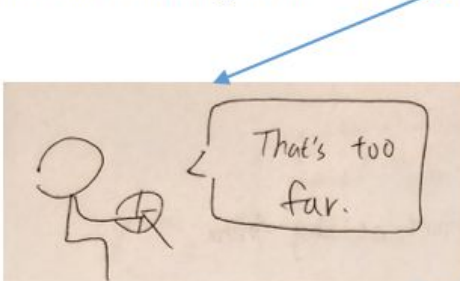
Task #3 - big event parking searching



Task #1 - sorting by factors

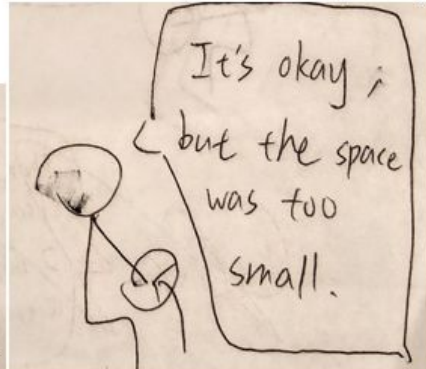
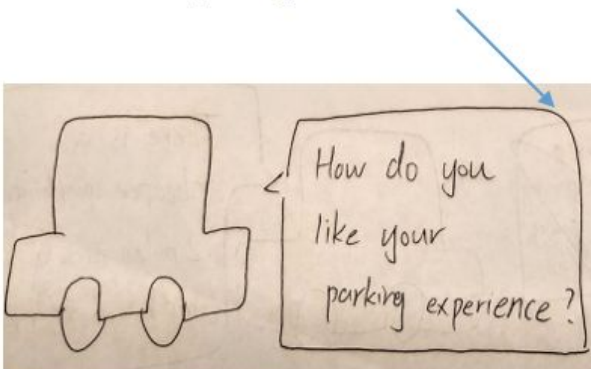


Task #2 - Finding the best availability during specific times of the day



After Parking ...

Task #4 - rate parking locations based on different factors (feedback system)

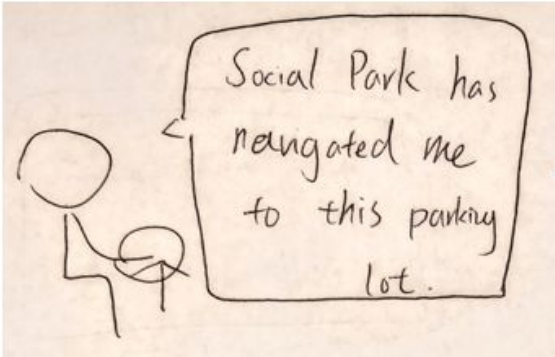


Design Idea #3 - Integrated Parking Assistant

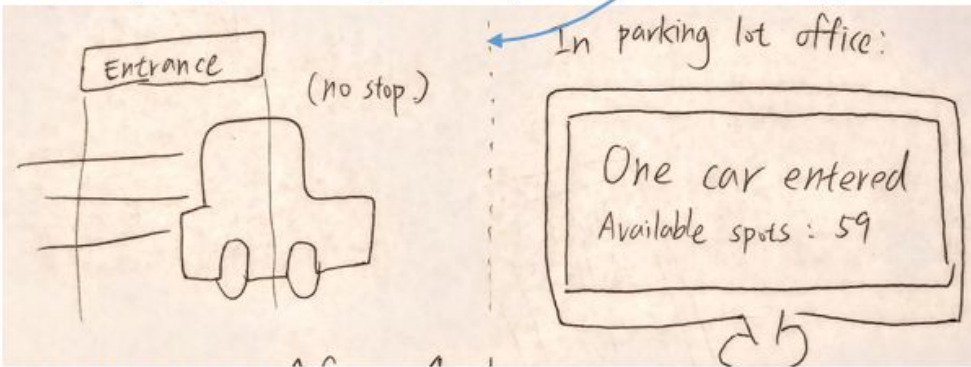
For our third design, we propose a small device that already comes integrated in the car. This device can serve multiple purposes for both the driver and the parking lot owners. For the driver, it can help expedite the process of getting into a parking lot by eliminating the need of stopping when coming in and out of the lot. The device will instead recognize when the driver has arrived at a lot and will also let the parking lot owner know that there is a new car. With this information, the parking lot owner can keep an updated number of available spots. Once the driver has departed from the lot, the lot owner is notified once again, updating the available spots number, and the driver receives a bill with their total for the parking session sent to their phone. The biggest advantage to this device is that because the car is recognized as its own entity, the driver is able to use their phone to track their parking location.

The downside for this design might be that it won't appeal to as many users because not everyone might be comfortable with a device that is always tracking their vehicle information. This was a concern that we came across during our initial interviews as well.

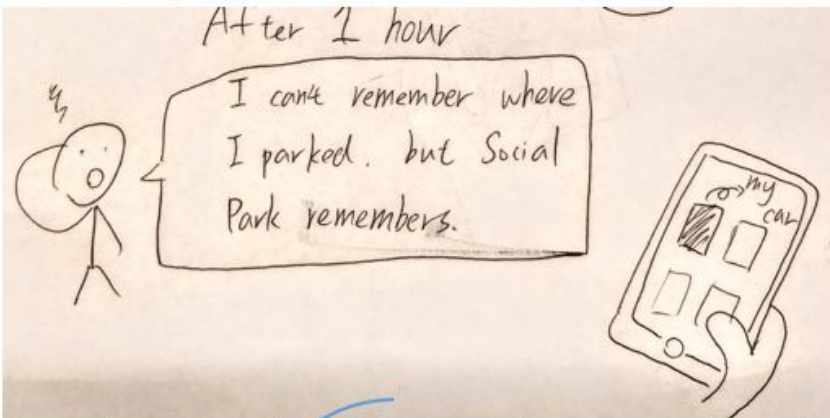
Task1,2,3 – finding parking



Task5 - Reporting and sharing availability data as lot owners using a business accounts



Task6- Finding the parked car



New Task: tracking vehicle behaviors and outcomes in the parking lot

