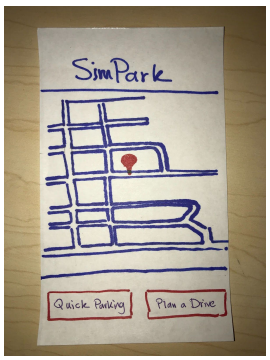
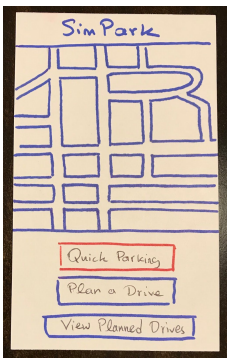
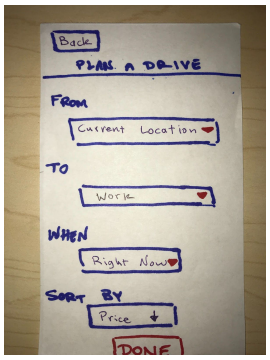
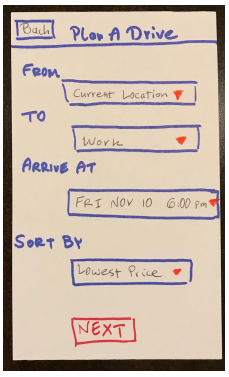
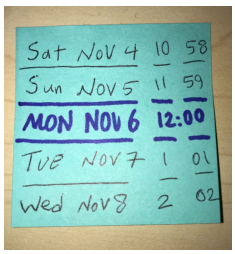
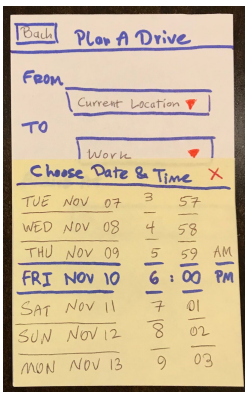
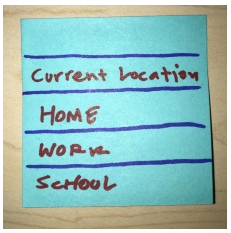
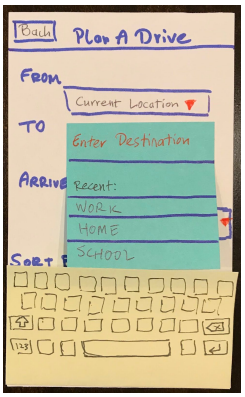
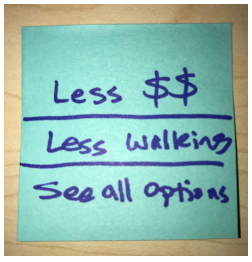
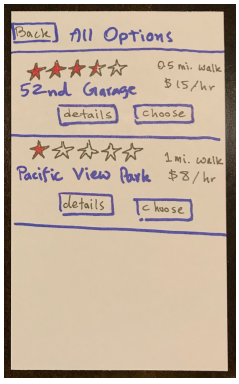
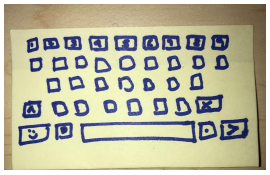
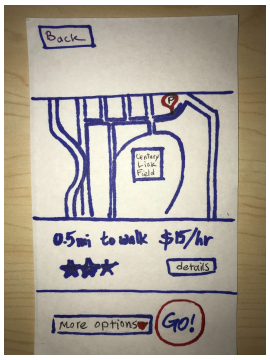
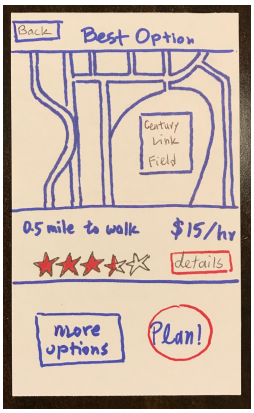
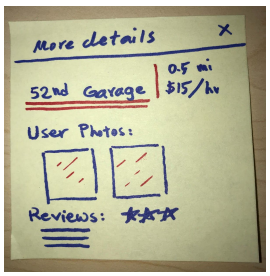
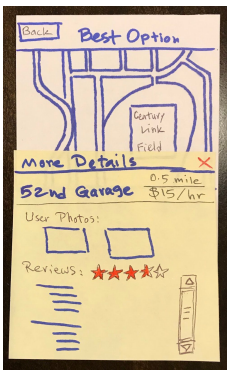
SimPark - 3c: Usability Test Check-In

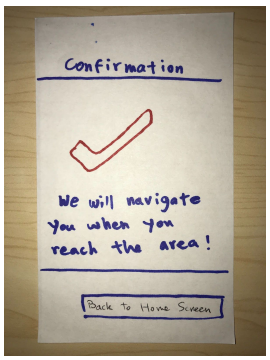
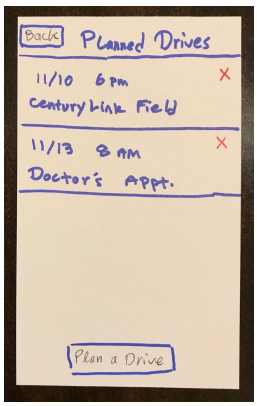
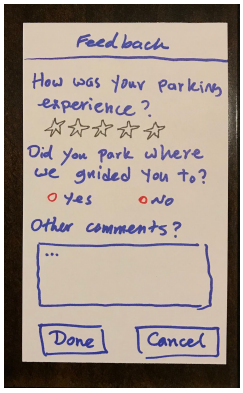
Kathryn Chan, Sepehr Hakami, Adilene Pulgarin, Umang Sehgal

Heuristic Evaluations: Before and After

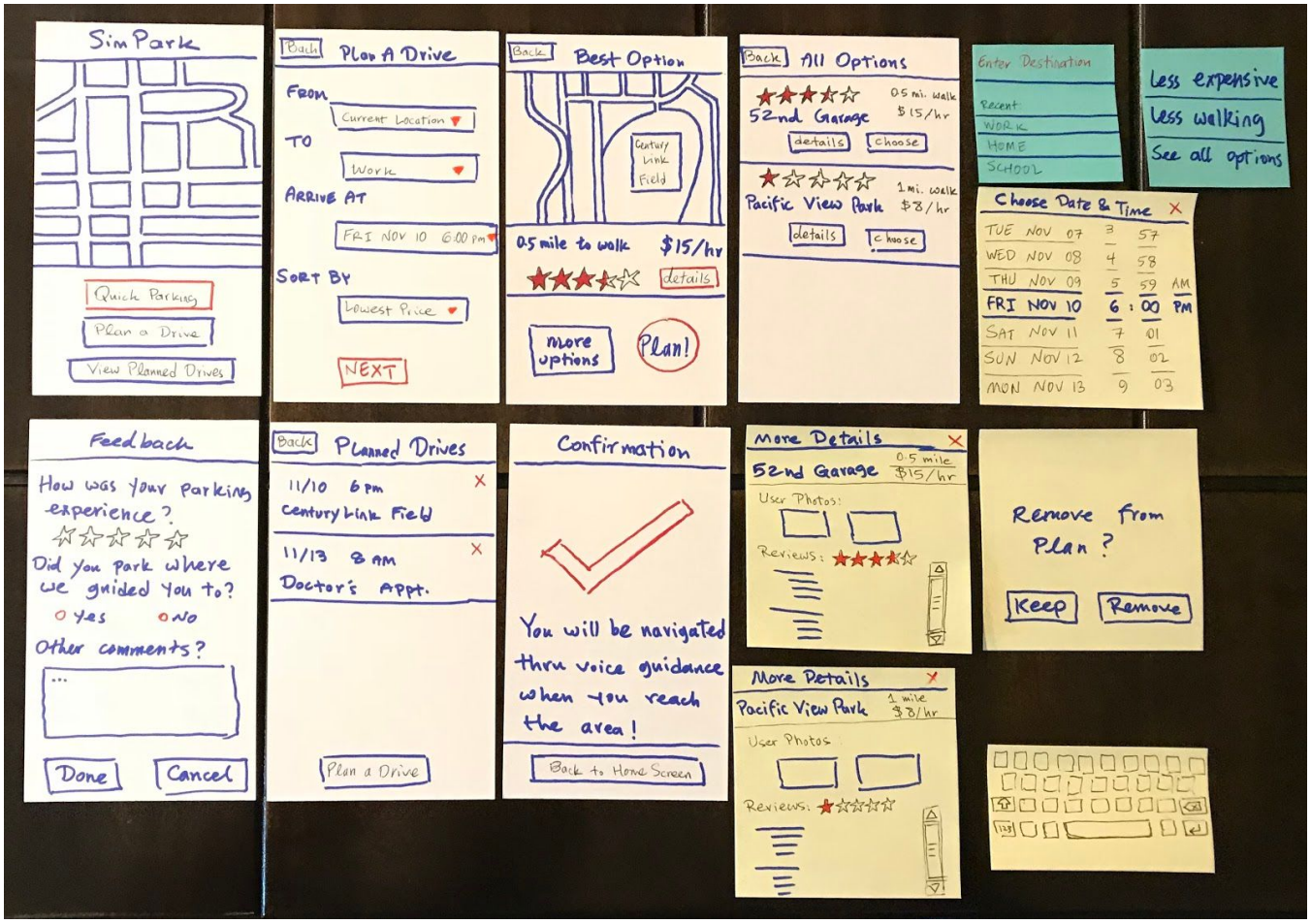
Original Image	Heuristic	Severity	Revision	New image
	No access to the planned trips. **Heuristic: Flexibility and Efficiency of Use**	2	Include option to view planned trips.	
	Planned time in “When” option is ambiguous. When you leave or when you want to arrive **Heuristic: Consistency and standards**	3	Specify it as “Arriving Time”, because it makes more sense to find parking when the user is near the destination.	
	“Done” button is confusing since the planning has not been completed at this point. **Heuristic: Match between system and real world**	2	Change to “Next”	

	No clear way to set a date and time. **Heuristic: Flexibility and Efficiency of Use**	1	Add some form of "Done" button.	
	History is not intuitive to the user. **Heuristic: Flexibility and Efficiency of Use**	2		
	Not clear to user that they can enter their custom destination. **Heuristic: Flexibility and Efficiency of Use**	2	Shows the keyboard automatically when user is inputting the destination to indicate that they can customize the destination.	
	Not clear how "see all options" will be displayed **Heuristic: Flexibility and Efficiency of Use**	1	Create another section when "See all options" is clicked	
	Arrangement of keyboard and drop down when "To" option is clicked is confusing.	2	Keyboard and drop down menu will only appear if user is entering custom destination.	

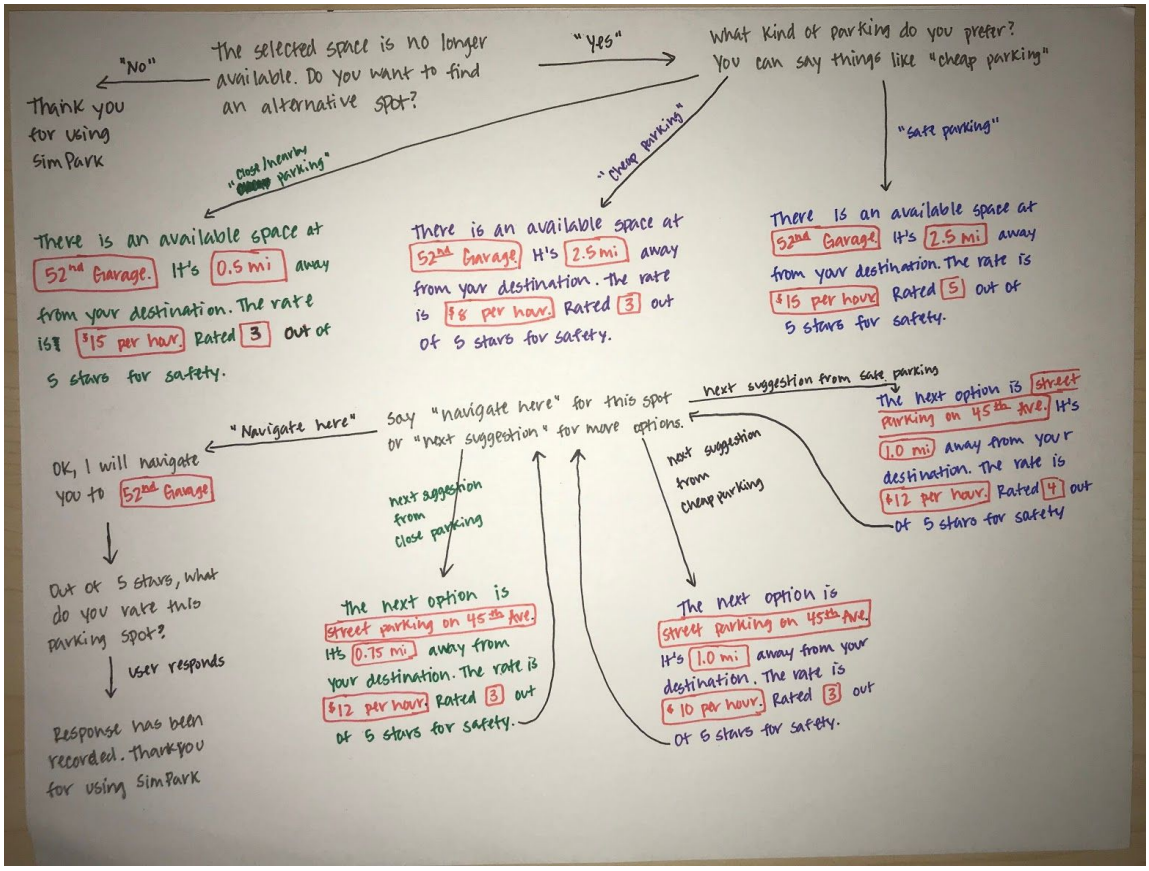
	Heuristic: Match Between System and Real World			
	"More options" button was overlooked, make it stand out more. **Heuristic: Flexibility and Efficiency of Use**	1		
	Selecting "Go" when planning ahead is confusing to user if planning ahead. **Heuristic: Match Between System and Real World**	2	Change to "Plan"	
	Not intuitive that this is the best suggestion. **Heuristic: Visibility of System Status**	1	Adds title to indicate what is the best option.	
	Not clear how to navigate through the reviews. **Heuristic: Flexibility and Efficiency of Use**	2	Add *some way* to scroll through the available reviews.	
	Not clear how many stars the reviews are out of. **Heuristic: Consistency and Standards**	2	Specifies the rating is out of 5 stars.	

	Not clear how to see and modify planned events. **Heuristic: Flexibility and Efficiency of Use**	2	Direct to some kind of list or calendar showing planned events. Have option to modify/delete.	
	Not clear how to give reviews. **Heuristic: Match Between System and Real World**	1	Include screen for prompting user for review after returning to parked car.	
	No friendly reminder for planned trips. **Heuristic: Flexibility and Efficiency of Use**	2	Include some way to get notified of planned trips coming up.	

New Prototype for Mobile Application:

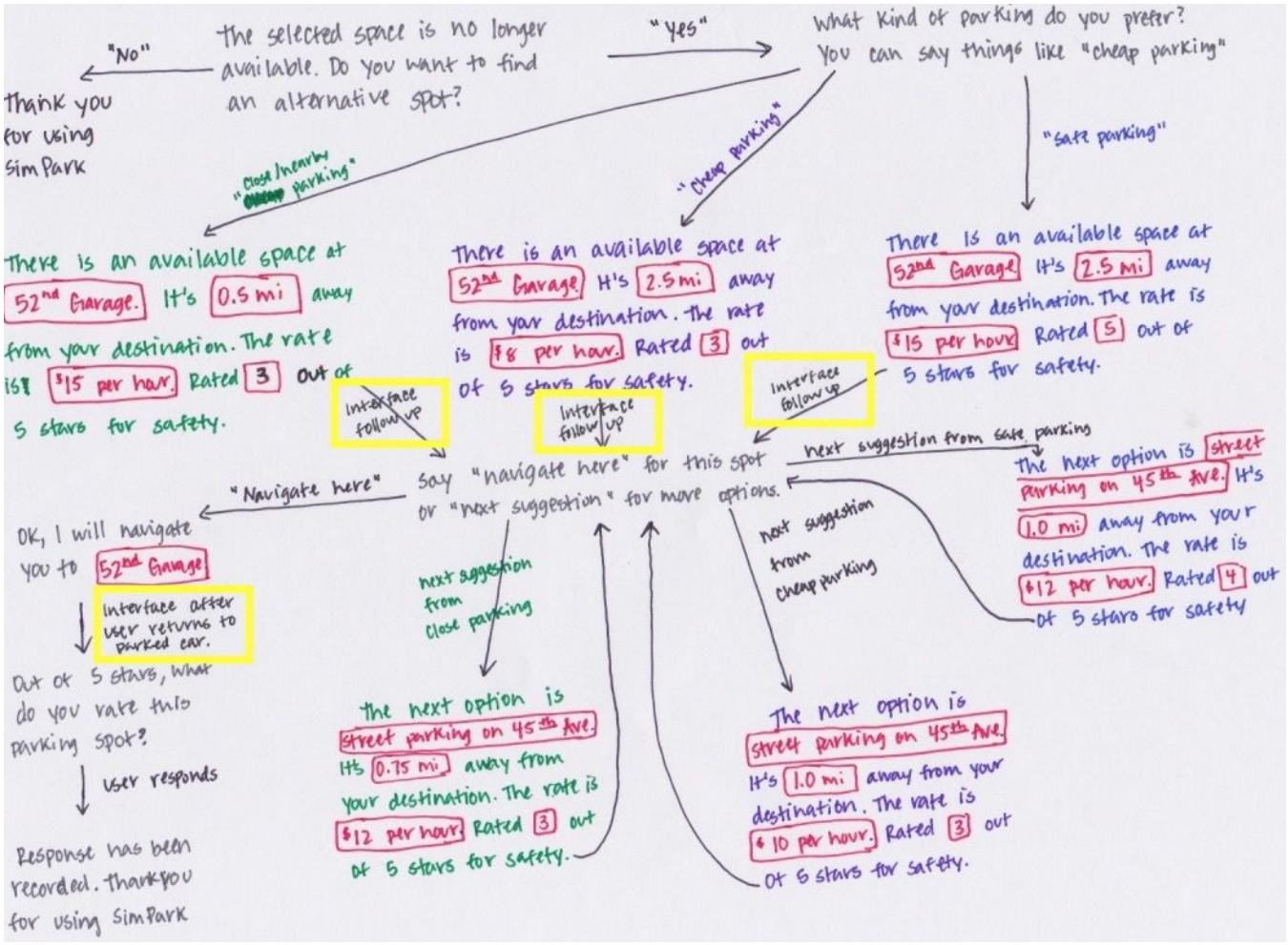


Voice Assistant:
<Original Design>



Heuristic	Severity	Revision
Not clear about how the app is displaying when the trip has started. **Heuristic: Visibility of System Status**	1	Let user know that the speech interface is activated automatically.
Not intuitive that from suggestion the interface follows up with prompt on what to do next. **Heuristic: Consistency and Standards**	1	Add arrows on diagram from first option to prompt indicating the follow up.
Not clear about how the app works after user has selected a parking space. **Heuristic: Recognition Rather than Recall**	1	After selecting a space, show navigation to spot or image of it on the app.

<Revised Design>



First Usability Test

Our first usability test was conducted with a male, 22 years old pursuing a MS in Construction Management. We performed the test at his respective apartment. For the study, we let the participant explore and work around the app by himself and understand the interface.

As the participant performed, observations were being noted. Also, there was feedback time given to the participant regarding every step of the app.

The participant would think aloud for every step. The key points were:

- Operating the app from the launch until the exit by themselves unless asked for assistance.
- Contextualizing themselves based on the scenario of the usage of the app.
- Providing feedback on the relevant missing features.
- Enabling observations on priorities in restricted accessibility with a single hand. (Considering the case for left handed individuals).
- Exhibiting driver behaviour in place of “parking issues” behaviour.

Some of the tasks performed were:

- Launch the app.
- Navigate the destination.
- Select preference of the parking.
- Choose the parking.
- Set reminder for chosen parking which was predicted.
- Exit the app.
- Interact with the app via voice.
- Give suggestions on real time requests in parking.
- Navigate to the desired parking.

Observations from the test. (By Page)

<u>Start Page of App:</u>
The user felt no purpose of the current location being shown to help/assist in finding parking and if needed proposed, missing functionalities like circle for current location, zoom in/out. The user had difficulty understanding “Quick Parking.” Agreed on renaming to “Park Now” and “Park Later.”

<u>Next Page of the App:</u>
The user could easily navigate through this page. The user felt “From” does not serve any purpose. The user also suggested that we add the following options:
1. Add: Favorite “To” location.
2. Add: “Duration of Park” option.
3. Add “Limit Radius” to “Details”

Details Page of App:
The user could easily comprehend the usage of the details. However, he would have loved it if it suggested a dotted line to display walking distance of parking from destination.

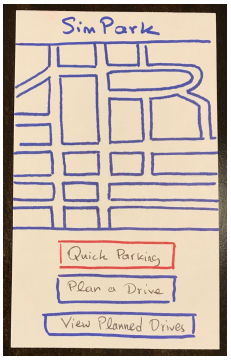
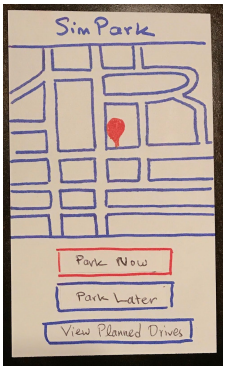
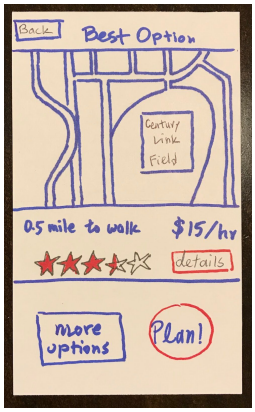
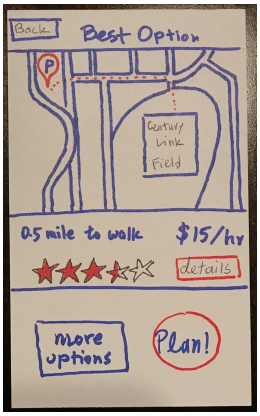
2nd Page of App:
The user had no difficulty in navigating the page. He suggested that we have a slight menu option showing the following options: Best, Cheapest, Closest, Safest. Where default is the “Best” suggestion by the system. He can select from that drop down to see other parking options instead of just one.
The user suggested to add the following 2 options with Price, Safety and Distance:
1. Accessibility to Main Road. (High to Low)
2. Congestion on Road. (High to Low)

Last Page of App:
The user appreciated the minimal display and suggested that we show information on when the user will be alarmed. Ex. Based on GPS and Time.

Voice Interface:
The user had fairly clear navigation through our flow diagram. No special difficulty faced. Our abrupt start made him comment that we start with a notification about the voice guidance system. Abrupt starting was observed too ideal.

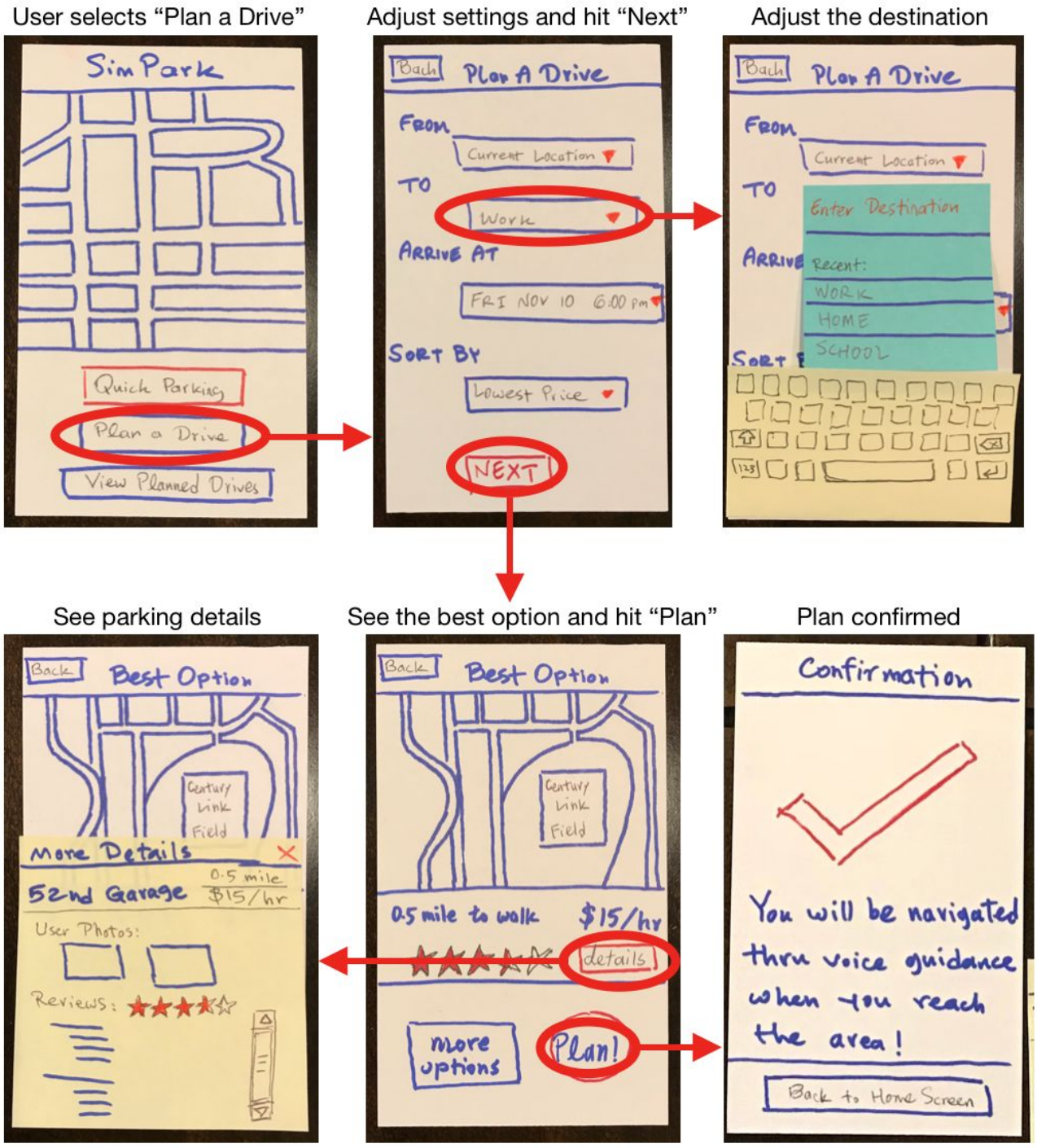
He also proposed the option of a better “shared by someone” realtime parking than the chosen one.
The user felt the conversation to be Pre-Recorded and less conversational.

Usability Test: Before and After

Original Image	Heuristic	Severity	Revision	New image
	Wording of the two options for finding parking were found to be confusing. **Heuristic: Match Between System and the Real World**	1	Change “Quick Parking” to “Park Now” and “Plan a Drive” to “Park Later.”	
	Indicate the user’s walk from their parking location to the destination. **Heuristic: Recognition Rather than Recall**	1	Include a dotted line that indicated the path from the car to the destination.	

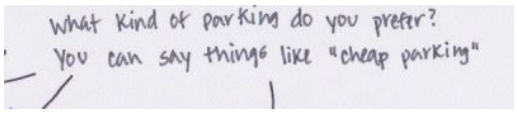
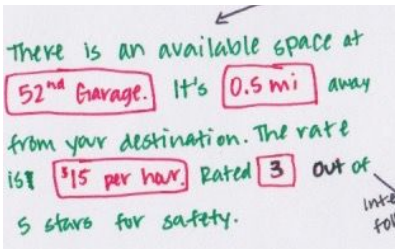
Walkthrough Tasks Using Prototype

Task 1: Planning where to park prior to the event.



Task 2: Finding parking when near the destination
Scenario: The user is in downtown Seattle looking to find parking near a restaurant.

Speech interface is activated automatically when driving.

<table>
<tr>
<td>User: “I need to find parking.”
Speech Interface:
 
</td>
<td>User: “ Close parking”
Speech Interface:
 
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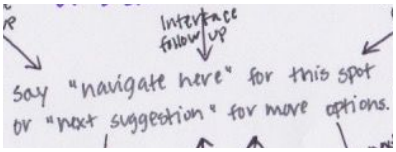
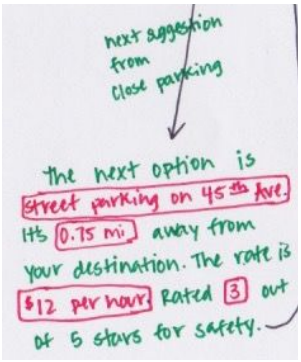
<tr>
<td>Speech Interface (follow up):
 
</td>
<td>User: “Next suggestion”
Speech Interface:
 
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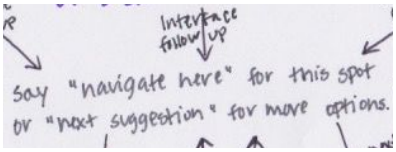
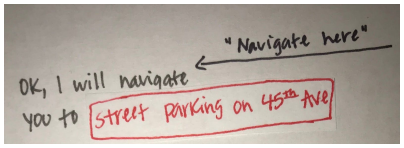
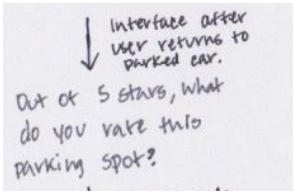
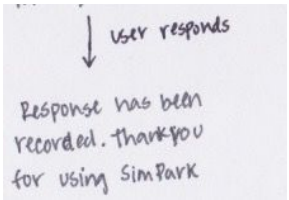
<td>Speech Interface (follow up):
 
</td>
<td>User: “Navigate here”
Speech Interface:
 
</td>
</tr>
<tr>
<td>Speech Interface (upon user’s return to car):
 
</td>
<td>User: “Four stars”
Speech Interface:
 
</td>
</tr>
</table>

Plan for Future Usability Tests

Target Participants

For our future usability tests, we would like to target people who are drivers that would be interested in being able to find a parking location ahead of time. In addition to this, we want to get the opinion of drivers who are generally interested in finding a spot even if it's not planned ahead. This way we get to test both components of our design. If possible, we would like to target drivers who tend to have a hard time finding parking no matter the situation since this would give us the opportunity to have a user use both components.

Goals for Additional Tests

In future tests, we would like to get a sense of whether or not our design is effective enough to recommend a spot using both of the components. We would also like to make sure that the revisions we have made to our prototypes over time make it easy to work through our tasks. We ultimately want to make sure that our design is simple and effective in either scenario. This is the reason we chose disregard some of the feedback because it would over complicate the task.

Team Member Roles

Kathryn - Facilitator
Sepehr - Facilitator
Umang - Observer
Adilene - Observer

New Approaches

Give the participant a scenario in which they will have to interact with both the mobile application and the speech interface. This will give us a better idea of how we can better combine the two components instead of having users think of them as two separate components. This will require that we give the participants enough time to explore both components.