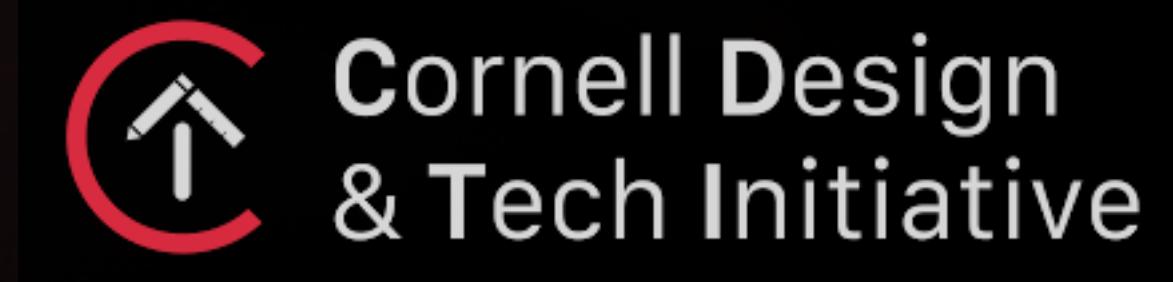


Cornell DTI Case Study

Kathy Wang



Our Goal

Create a mobile app that allows Cornell students to gauge the crowdedness of facilities (i.e. dining halls, gyms, libraries).



The Process

User Research

Synthesis

Market Research

Data Collection

Prototyping

Launch

Next Steps

A photograph of a person sitting at a desk, viewed from the side. They are wearing a grey hoodie and are looking down at a laptop screen. Their right hand holds a silver pen over an open notebook, and their left hand rests on the laptop's trackpad. A white mug sits on the desk to the left, and a small potted plant is visible in the bottom left corner.

User Research

User Research

Interviews

Goals:

- We want to see if people will use our app, if there's a need for it
- What type of experience they would want from an app like this
- What factors determine your behavior on where you go to study/go to the gym/etc
- What they like/dislike about their current situation



1. Which libraries/eateries/facilities did you go to yesterday?
2. Why did you go to those particular facilities?
3. What detracts/deters you from going sometimes, if anything?
4. What promotes you to go?
5. What are your ideal study conditions?
6. On a scale from 1-10, how important of a factor is crowdedness in a study space?
7. How often have you switched facilities as a result of crowding?
8. Do you experience crowding or a lack of space at Cornell facilities? If so, which facilities?
 - a. How often do you feel these facilities are overcrowded?
9. How do you plan where to study? (e.g. Do you plan in advance, day-of)
10. How often do you ask your friends how busy a facility on campus is before going to that facility?
11. How long do you spend looking for a spot in a study space if it looks completely full, but you want to work there?
12. What do you do when a gym/dining hall/library looks full? (e.g. leave)
13. Where do you study during prelims/midterms/finals?
14. How long do you spend on average at the gym, dining hall, or library in a single sitting/use?
15. How many devices do you regularly carry with you when leaving your room? Which ones of those do you typically connect to WiFi?
16. How important is it that you workout at a time where the gym is fairly empty or eat at a dining hall that's not very occupied? (Does this ever encourage you to modify your personal schedule?)
17. Would you prefer this information to be accessed via web or mobile app?

We conducted 62 student interviews in order to identify pain points of students.

Synthesis



Synthesis

Affinity Mapping

These interviews were informative, so to make sense of all the data I had, we created an affinity map.



Synthesis

Requirements

We narrowed down on the places people commonly went to, their ideal study conditions, why they chose to go to certain study spots, and what deterred them from going to others.

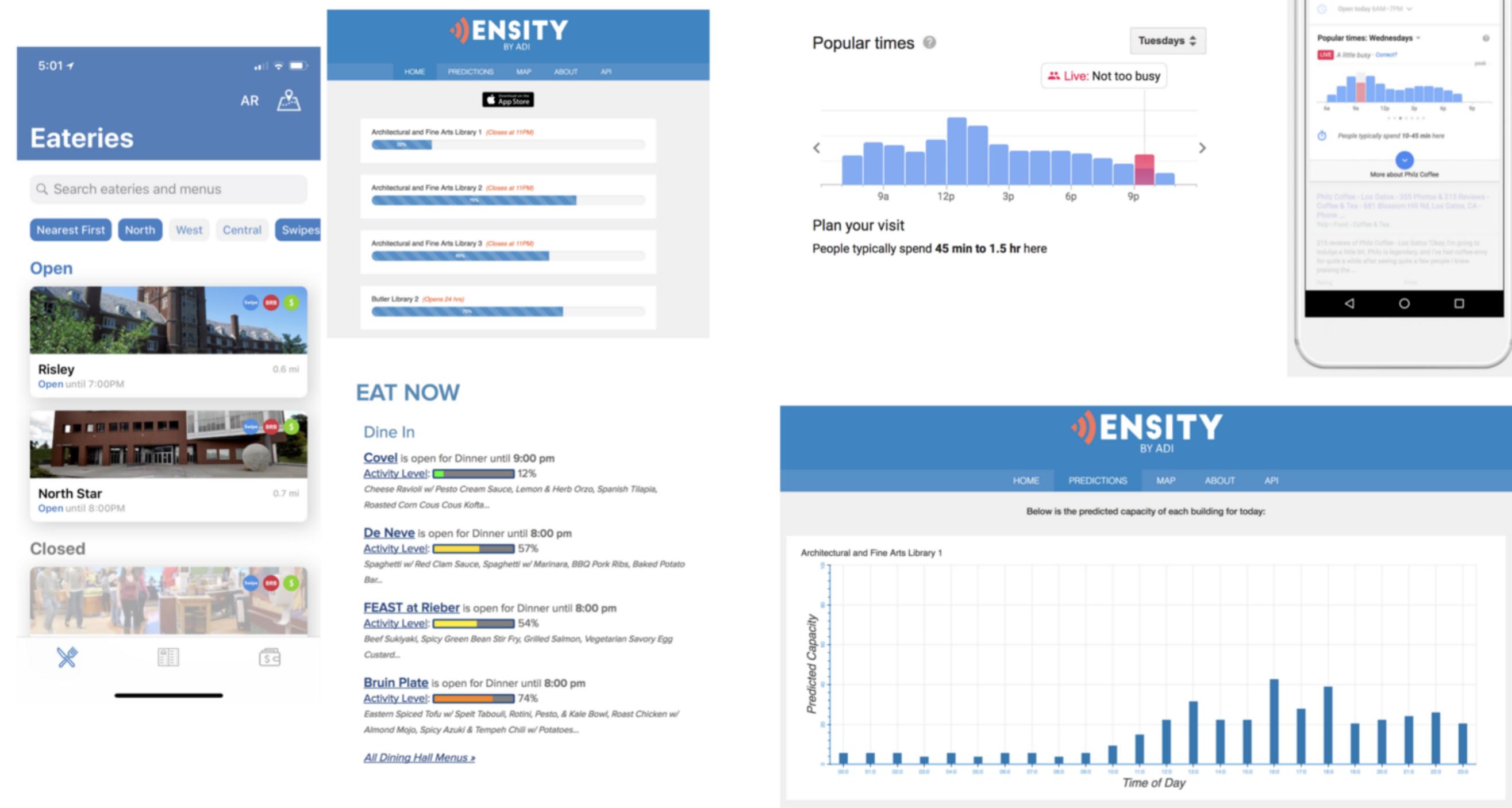


Market Research



Looking at Other Solutions

This is not a Cornell-only problem, so we looked at how other schools approached this problem. We also looked at current market solutions



Data Collection

Talking to Facilities

We knew we would need the help of the other facilities (i.e. the gyms, dining halls and libraries), so we set up meetings with the decision-makers of these facilities, and asked about their APIs and how they measure traffic flow.

The screenshot shows a Google Sheets spreadsheet with the title "Meeting with facilities". The sheet has columns labeled A, B, C, D, and E. Column A contains row numbers from 1 to 13. Columns B, C, and D contain data for each facility, while column E contains notes. Row 13 is empty. A purple box highlights the cell in column E, row 8, containing the text "Got email (ian Gannon ig 268@cornell.edu)".

	A	B	C	D	E
1		Location	Assignee	Outcome?	What to ask
2	Olin Library	Libe Cafe	Neha		
3	Olin Library	Olin front desk	Andrew		
4	Uris Library	Uris front desk	April		
5	Cornell Store	Cafe Jennie			
6	PSB	Goldie's			
7	Noyes	Noyes Front desk	Kaushik		
8	Teagle	Teagle front desk	Kathy	Got email (ian Gannon ig 268@cornell.edu)	
9	Helen Newman	HN front desk			
10	West	West Dining hall	Evan/Kaushik		Max. capacity
11	Central	Okenshields			Max. capacity
12	North	North Dining Hall			Max. capacity
13					

Data Collection

Manual Tracking

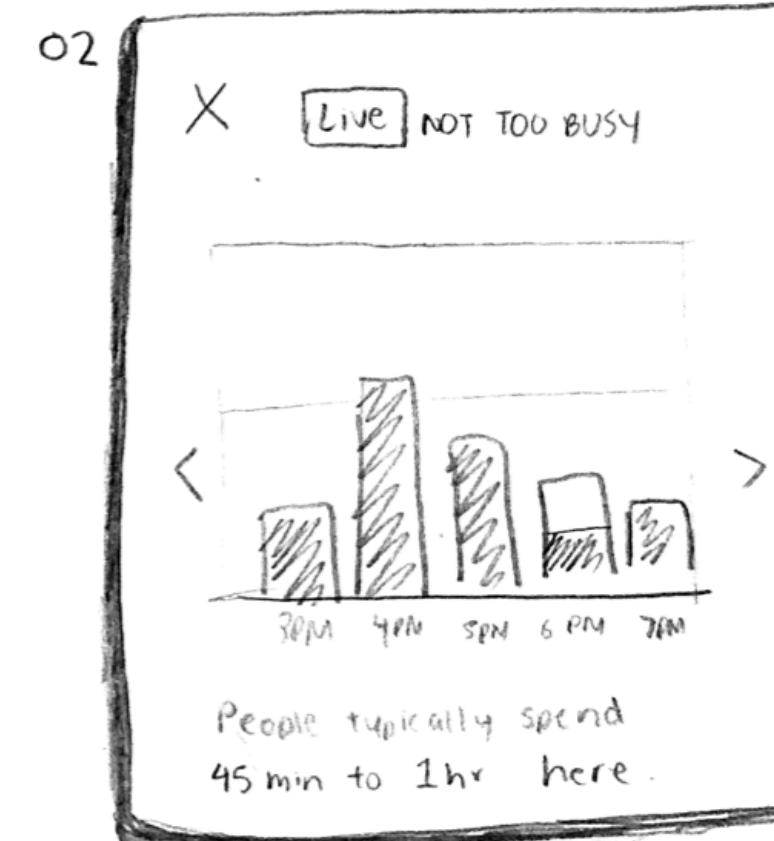
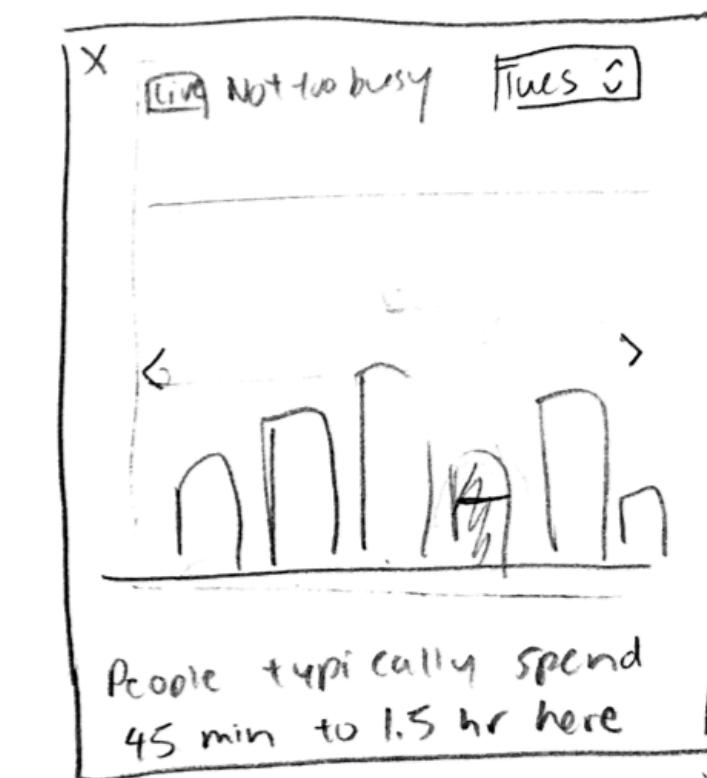
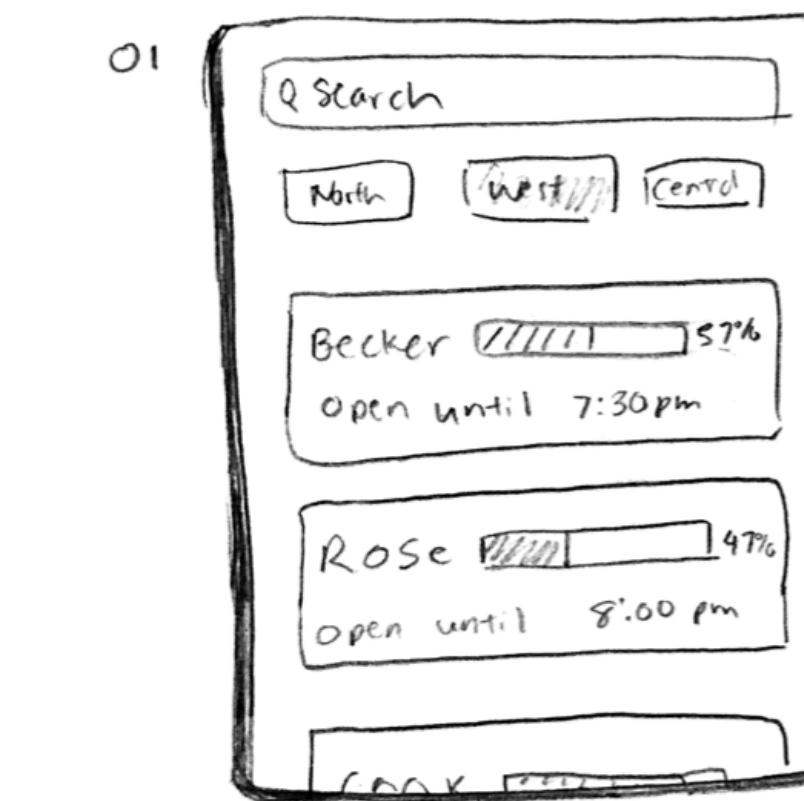
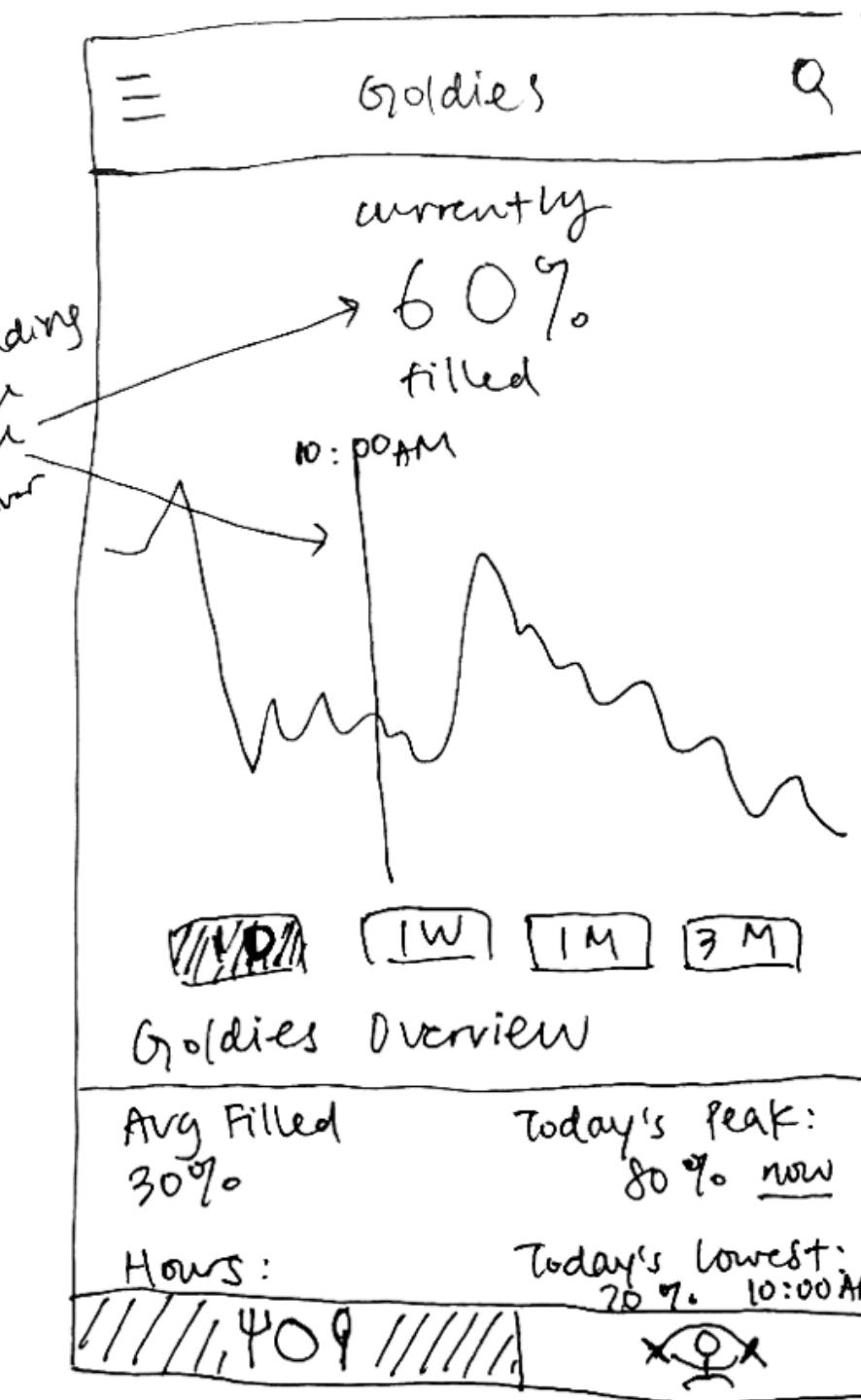
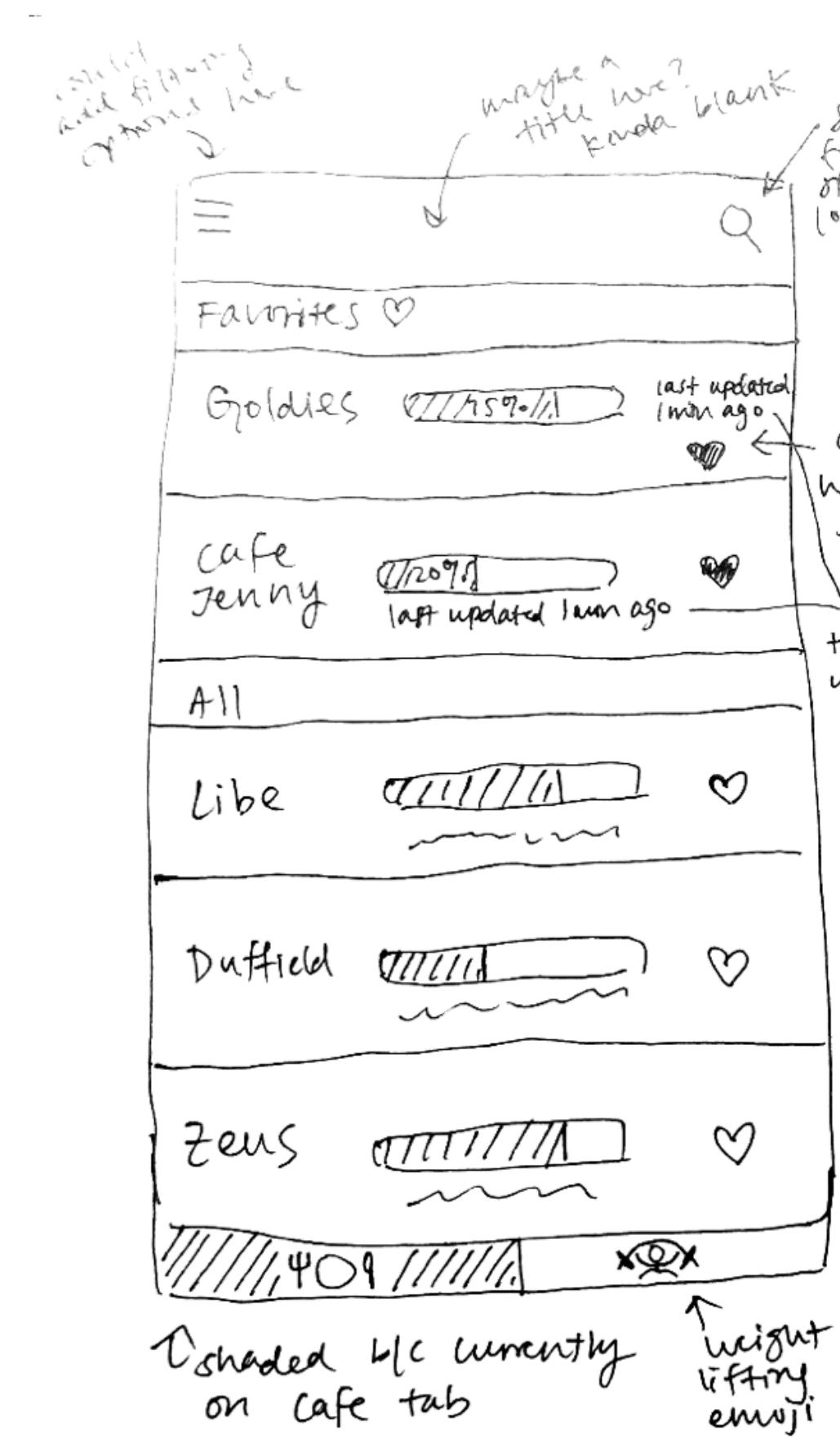
Libe Cafe		
Monday		
<hr/>		
Time	Scale	# ppl in line
3:00	Some seats (36)	10
3:20	Some seats (31)	5
3:40	Full (39)	8
4:00	Full (52)	14
4:20	Full (48)	12
<hr/>		
Time	Scale	# ppl in line
1:30	Full (41)	5
1:50	Some seats (40)	2
2:10	Some seats (45)	0

We also wanted to have some data of my own, so that we could provide some initial information for users when the app is first released. Thus, we physically went to the facility and manually recorded the density every twenty minutes.

Prototyping

Prototyping

Low-Fidelity Explorations

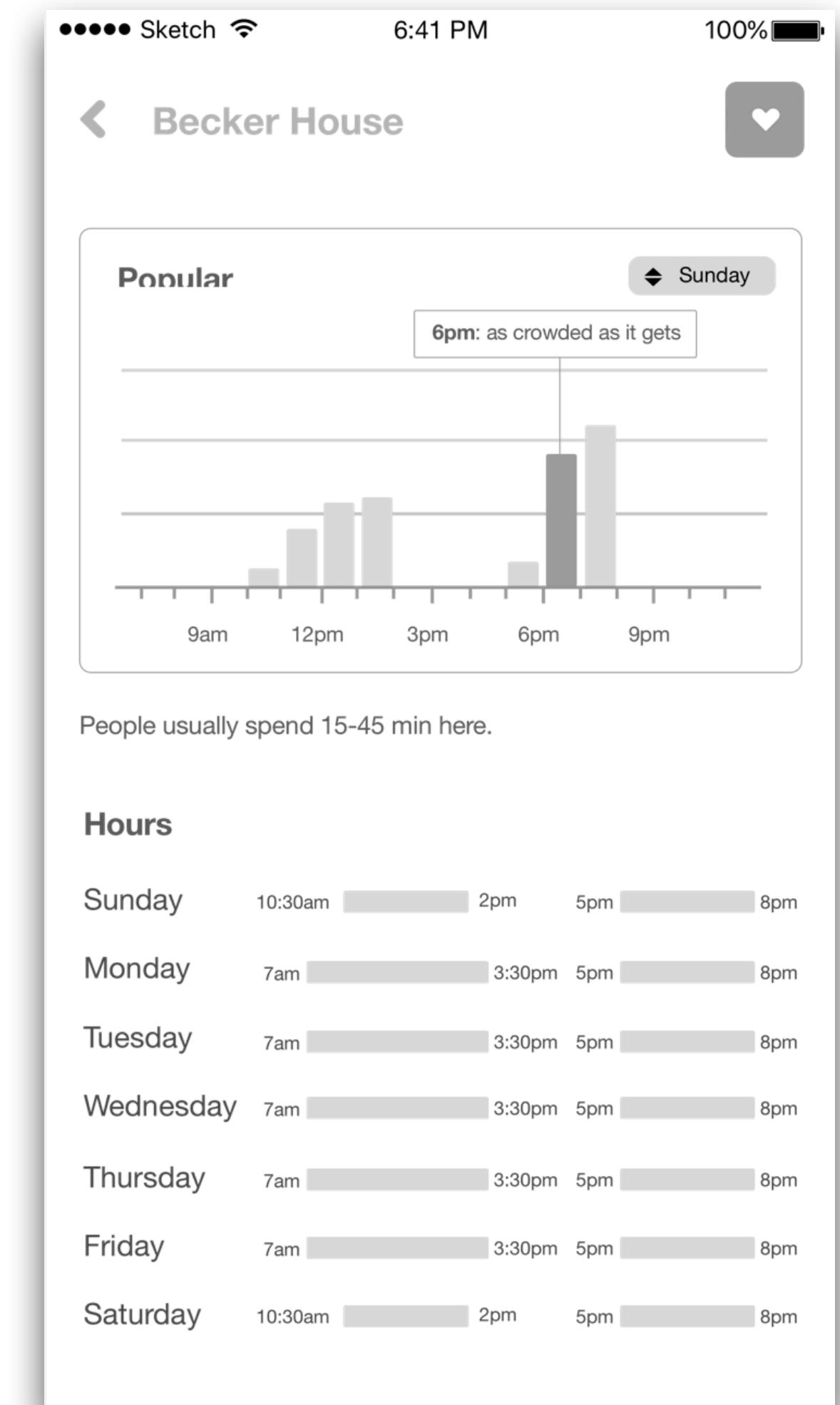
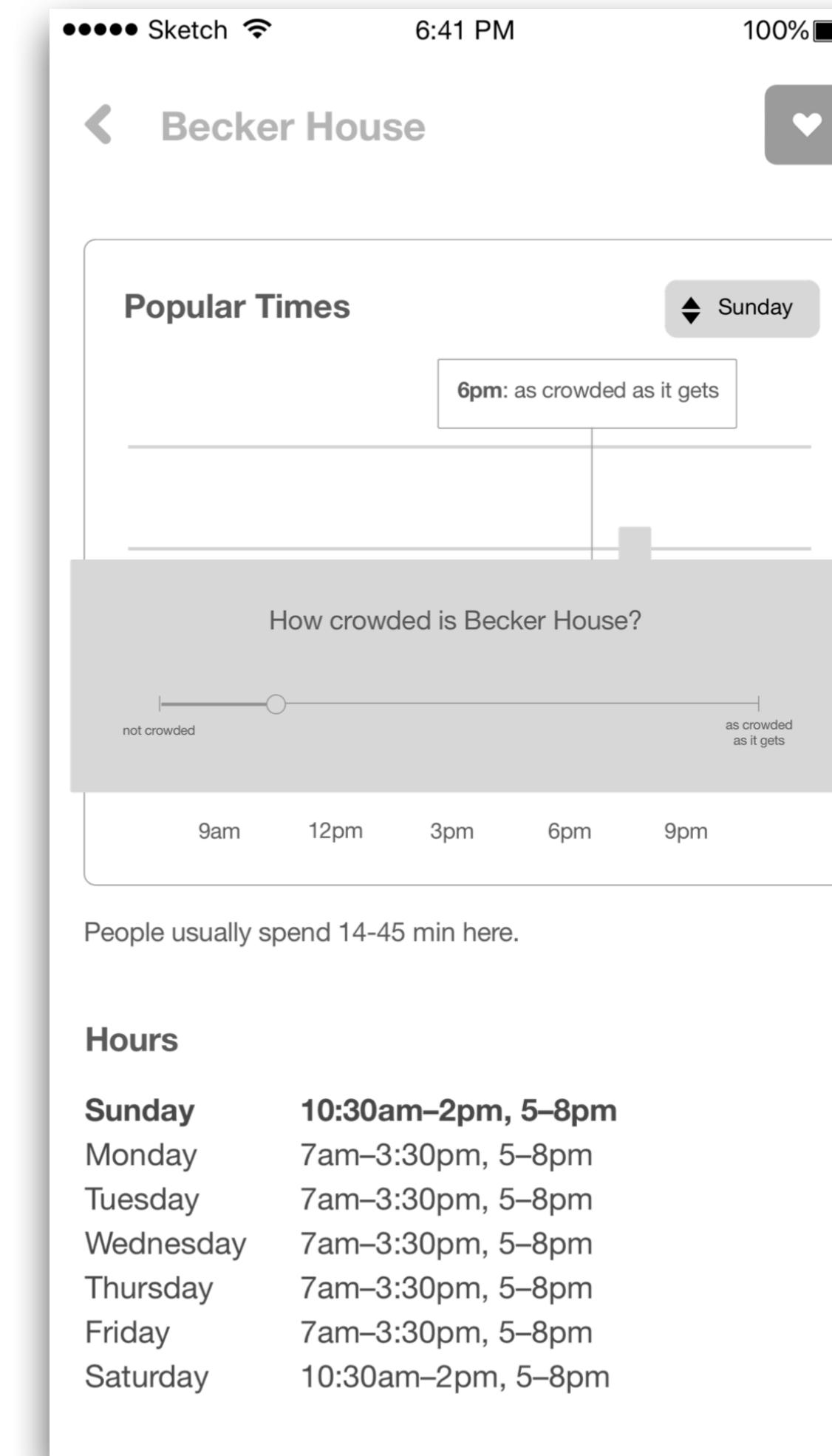
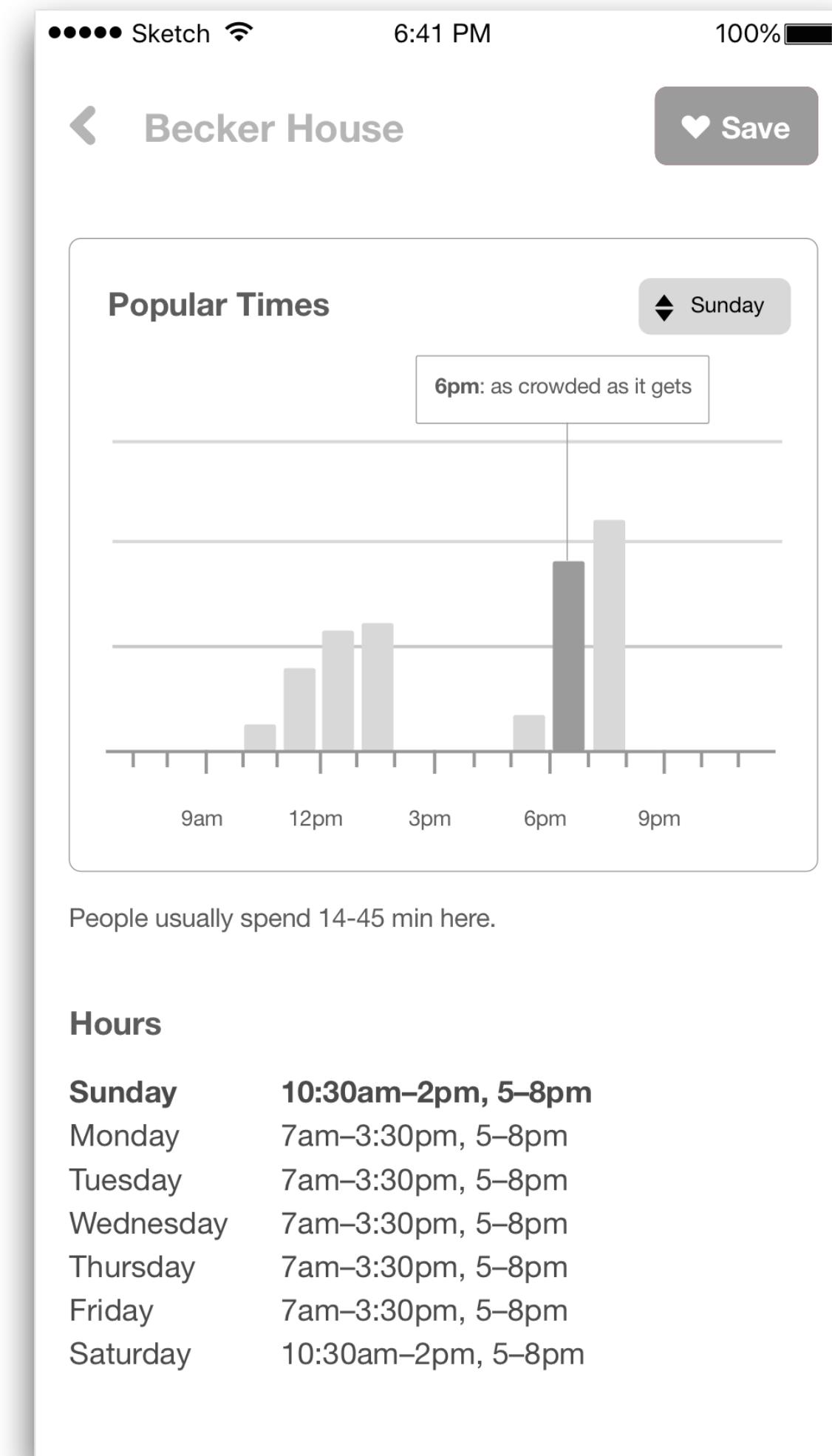
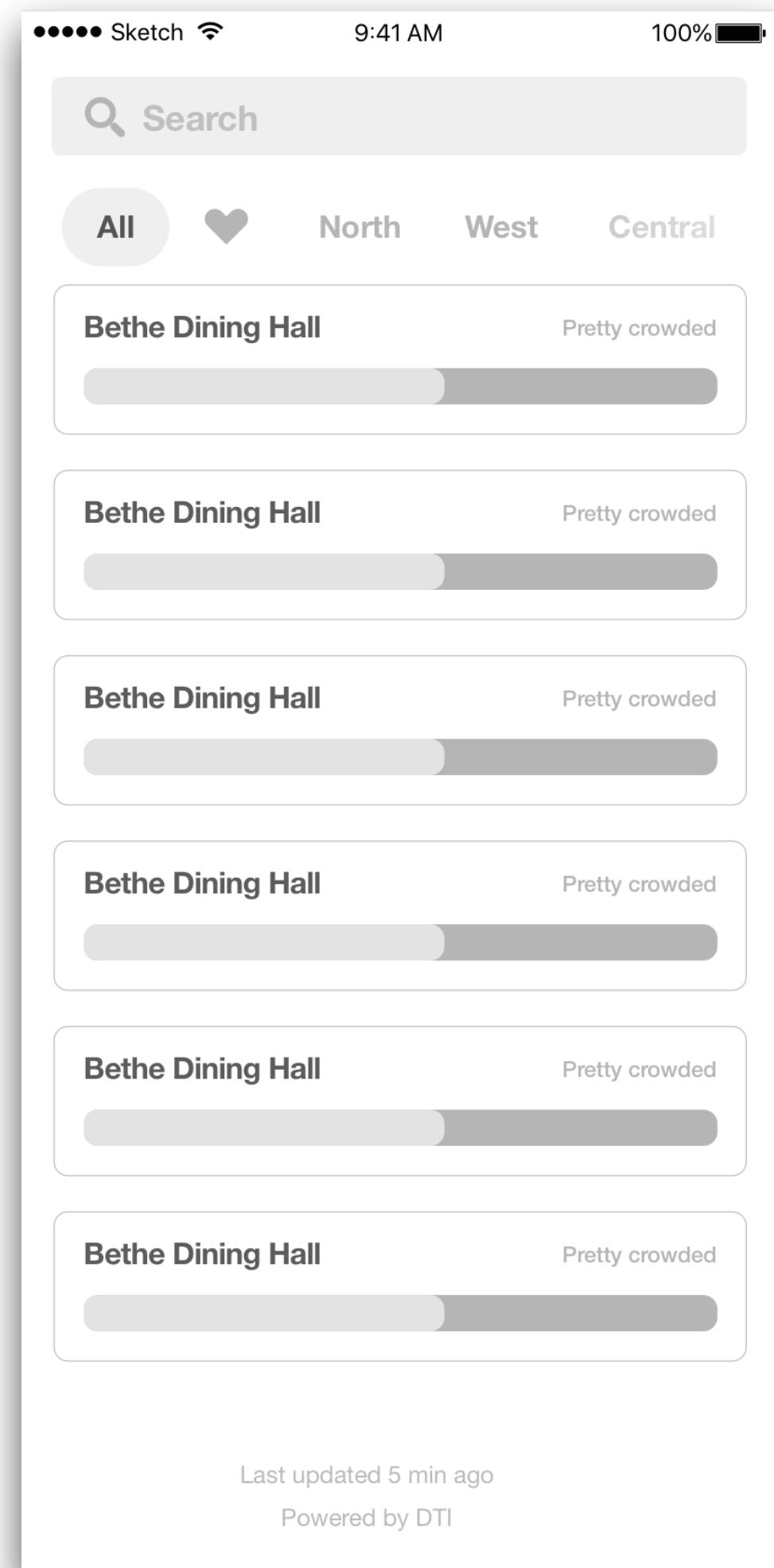


Discussion Points

- **Should we have an image for each facility?** We decided that images take away from the percentage bars, which is the main focus of the app.
- **Should we include a map feature?** We noted that people who are looking for crowdedness information of a place most likely already know how to get to that place. We decided not to include a map feature.
- **Should we represent the density trends via a line graph or bar graph?** We decided that the bar graph is more intuitive.

Prototyping

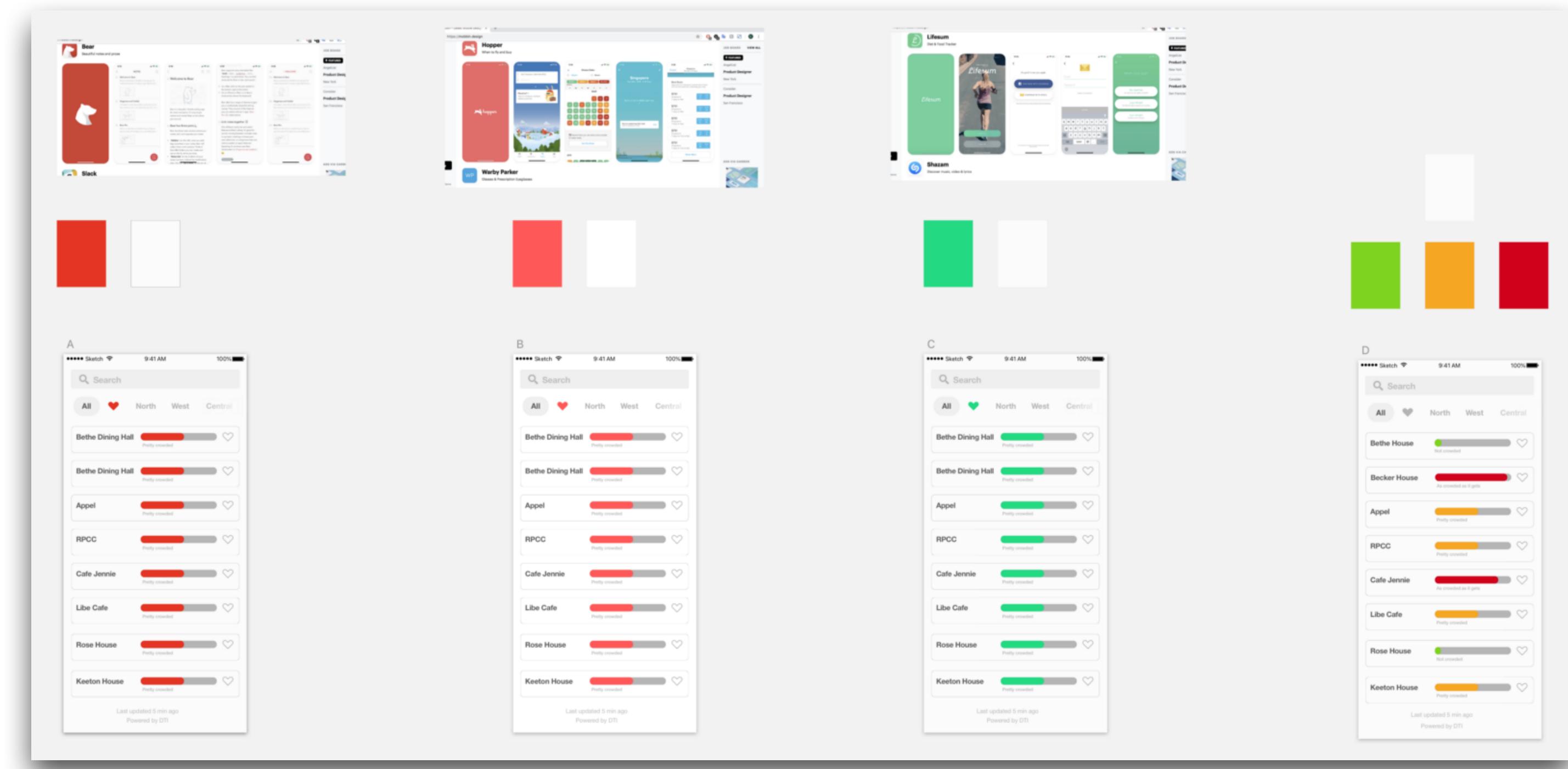
Medium-Fidelity Mockups



Prototyping

High-Fidelity Prototyping

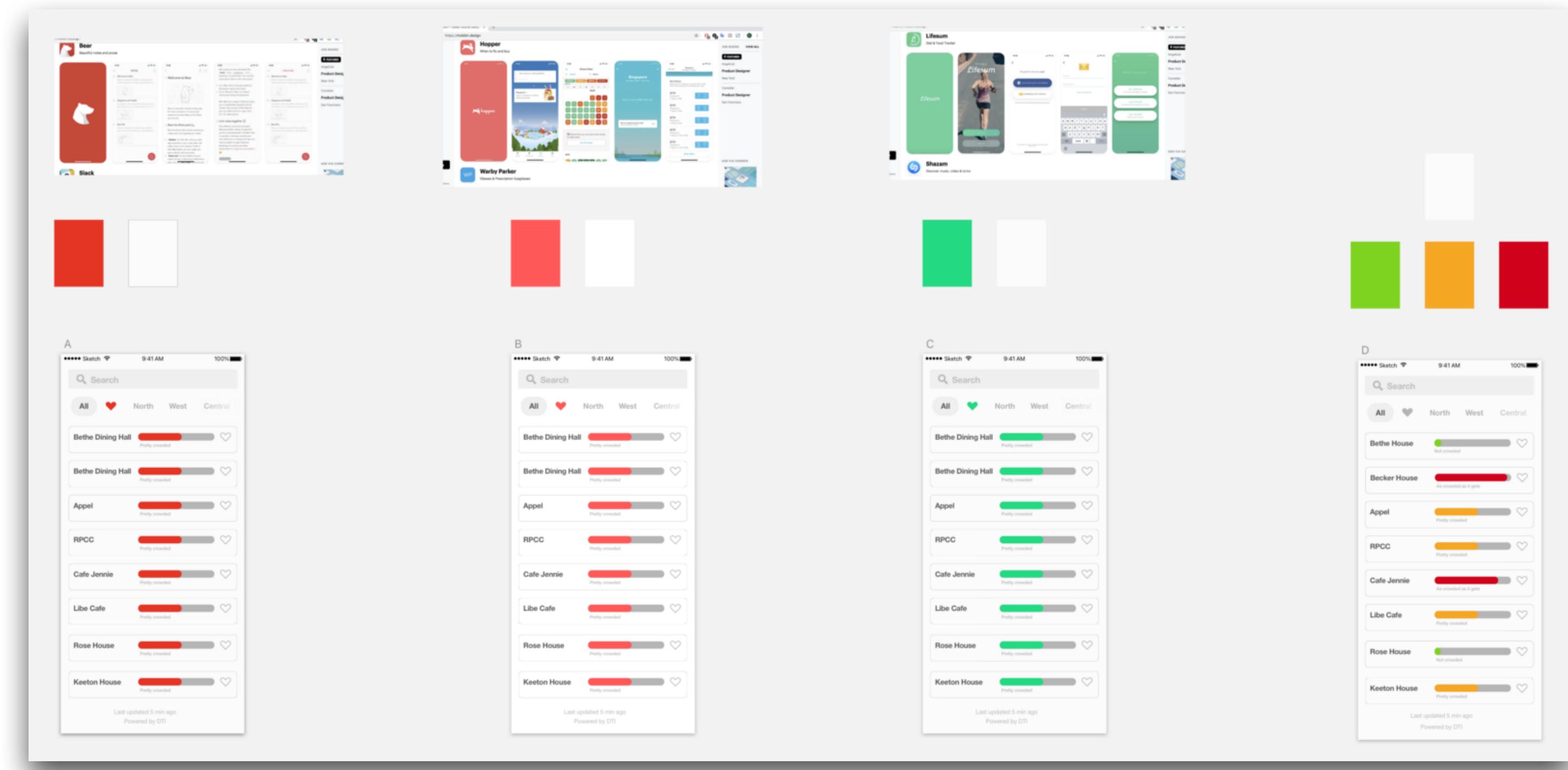
We then went into high-fidelity prototyping, with the design team exploring different colors to represent the crowdedness of facilities.



Prototyping

High-Fidelity Prototyping

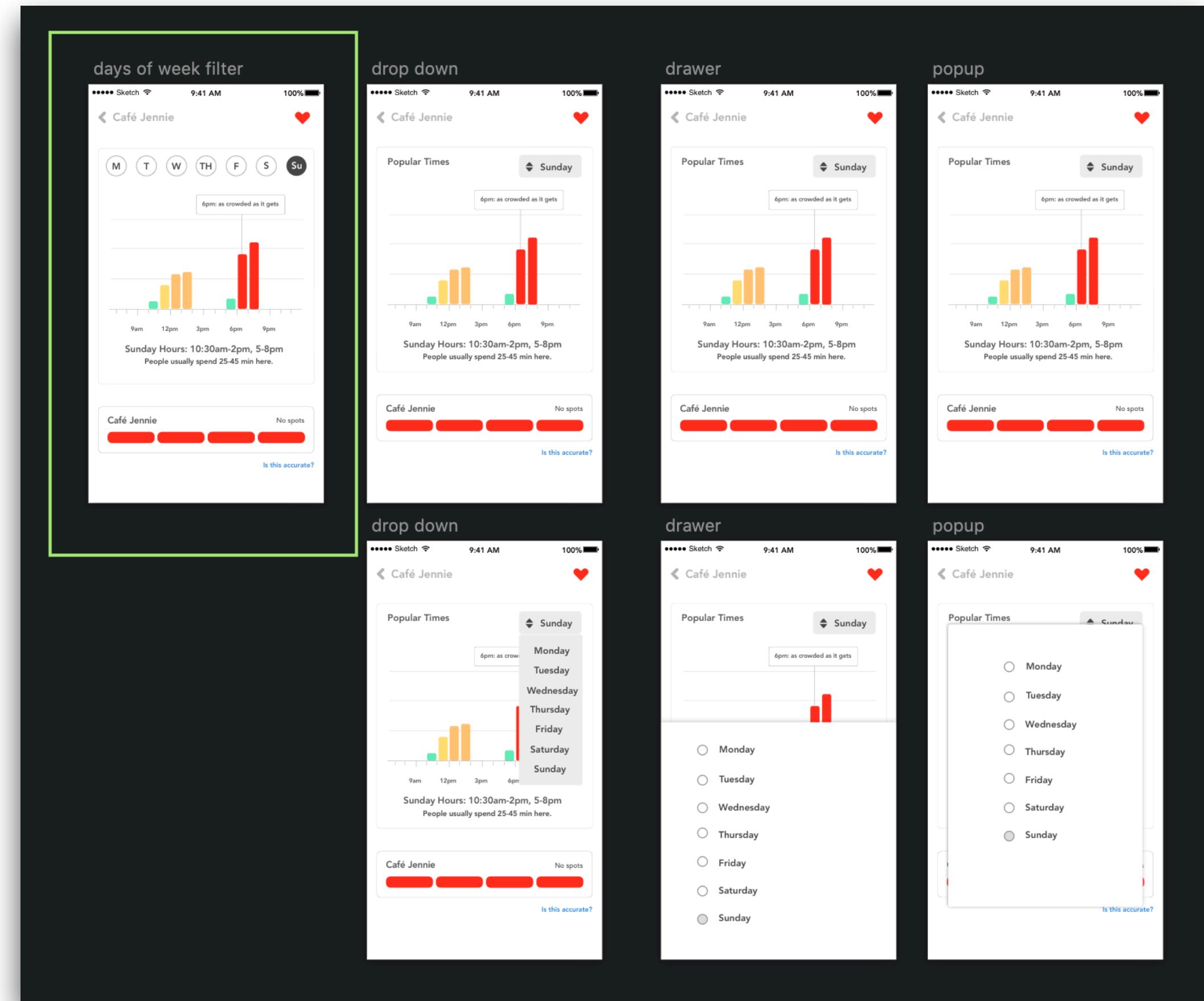
We decided to go with a color scheme with multiple colors so that users can receive instant visual feedback via two indicators (length and color of the bar).



Prototyping

High-Fidelity Prototyping

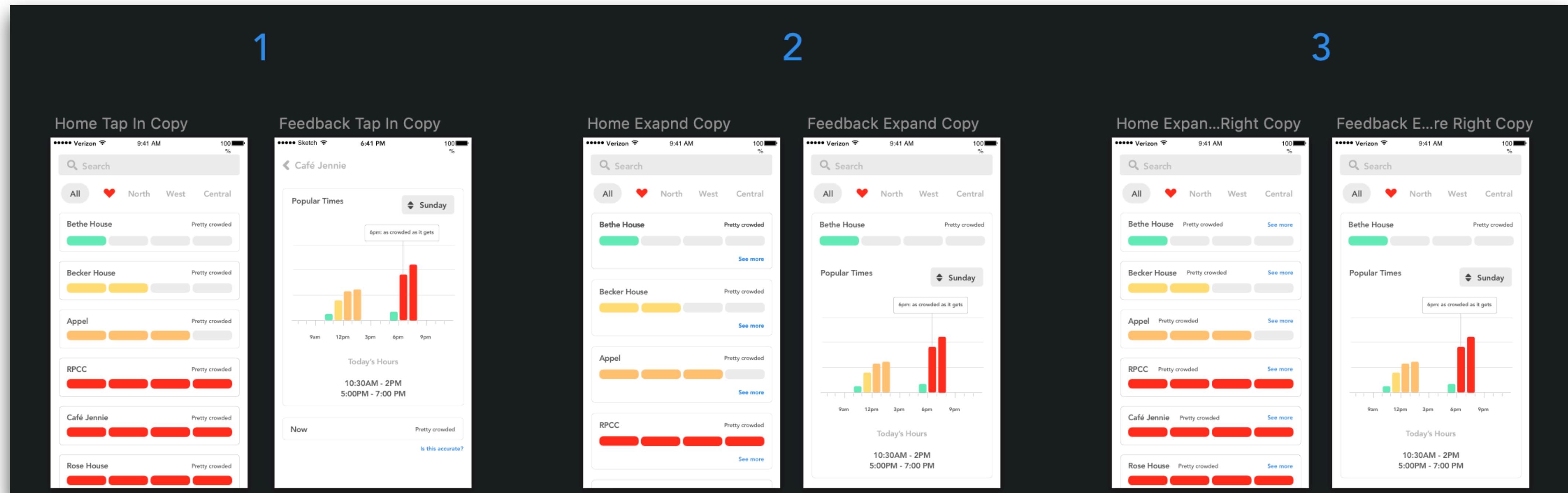
We also explored different ways for the user to pick the day. We decided to go with the filter version, because it was most simple and effective.



Prototyping

High-Fidelity Prototyping

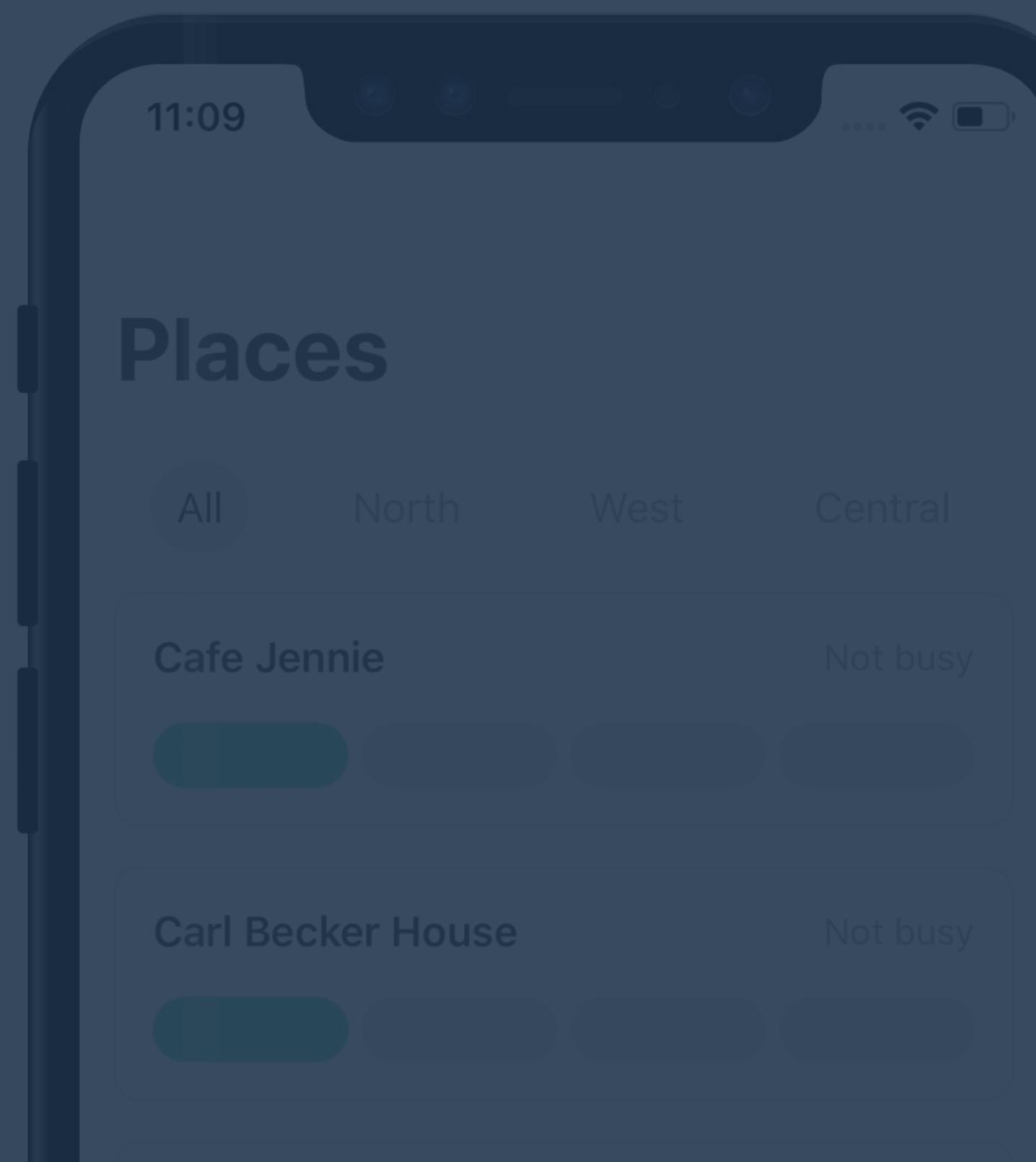
We looked at different ways to repeat the current data. While we considered a card expansion, we decided against it because a card expansion implies additional information, but does not imply other user actions.





Skip the crowd.

Flux measures the real time
occupancy of facilities on campus.



Launch

11 AM - Usually pretty busy



Saturday

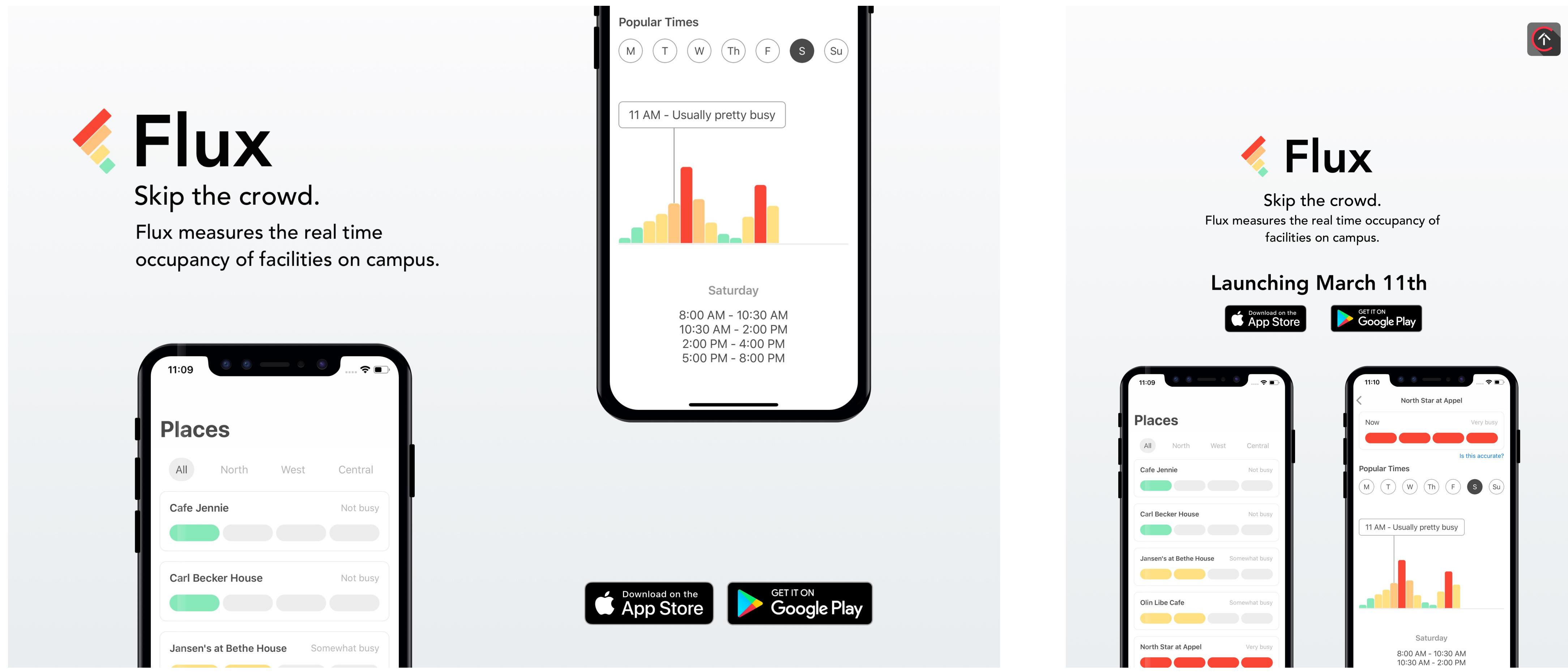
8:00 AM - 10:30 AM
10:30 AM - 2:00 PM
2:00 PM - 4:00 PM
5:00 PM - 8:00 PM



Launch

Marketing

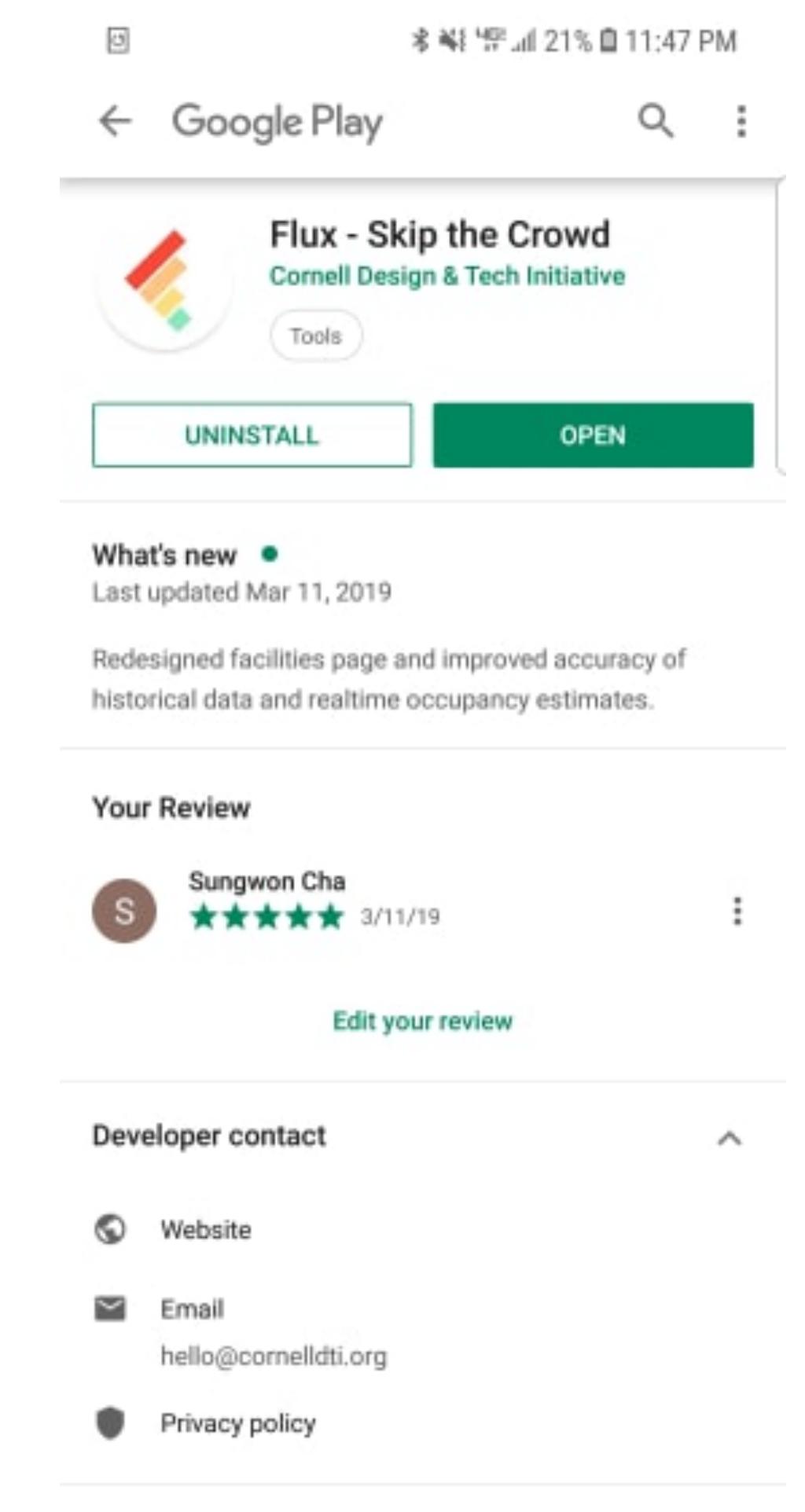
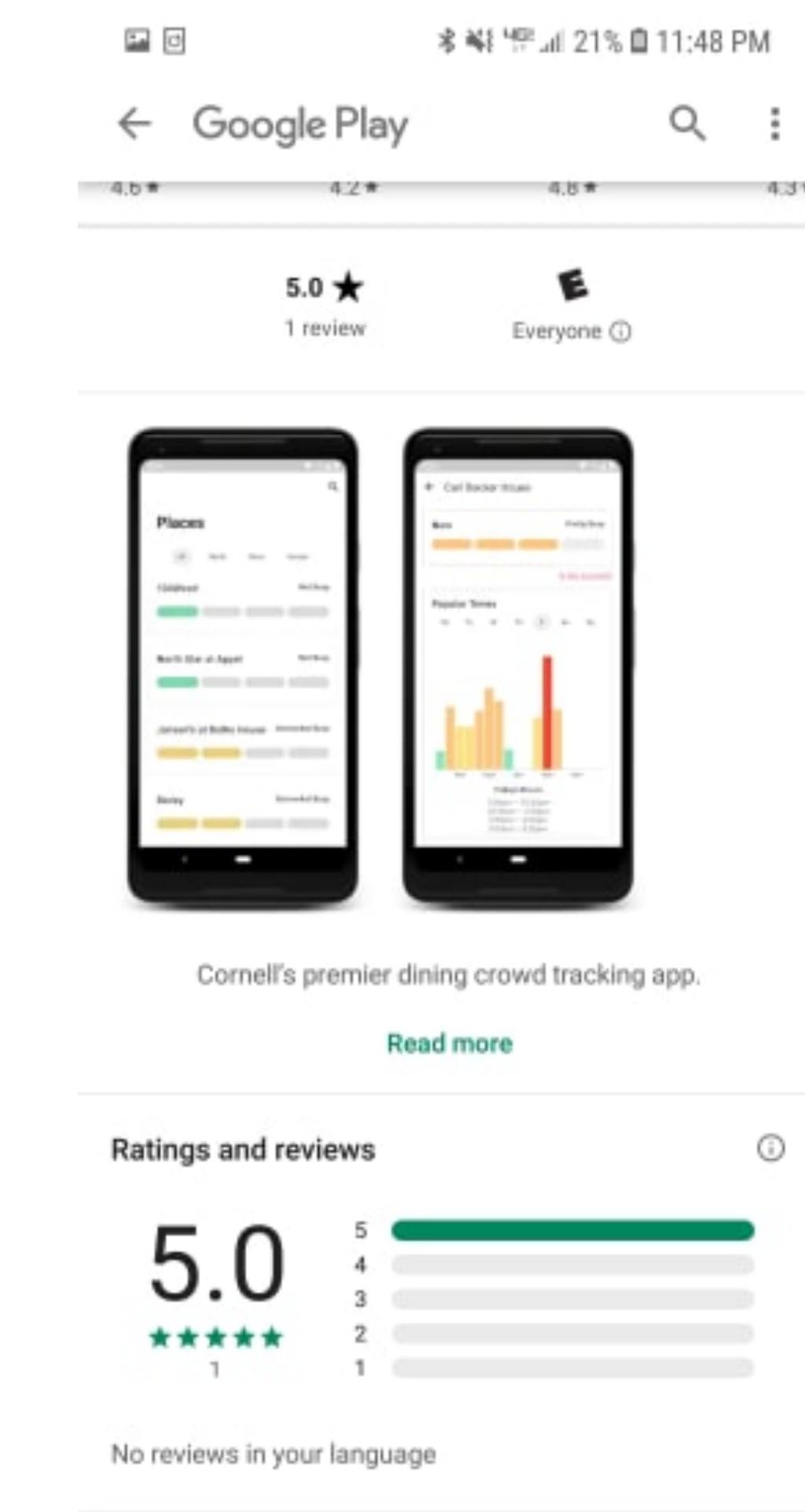
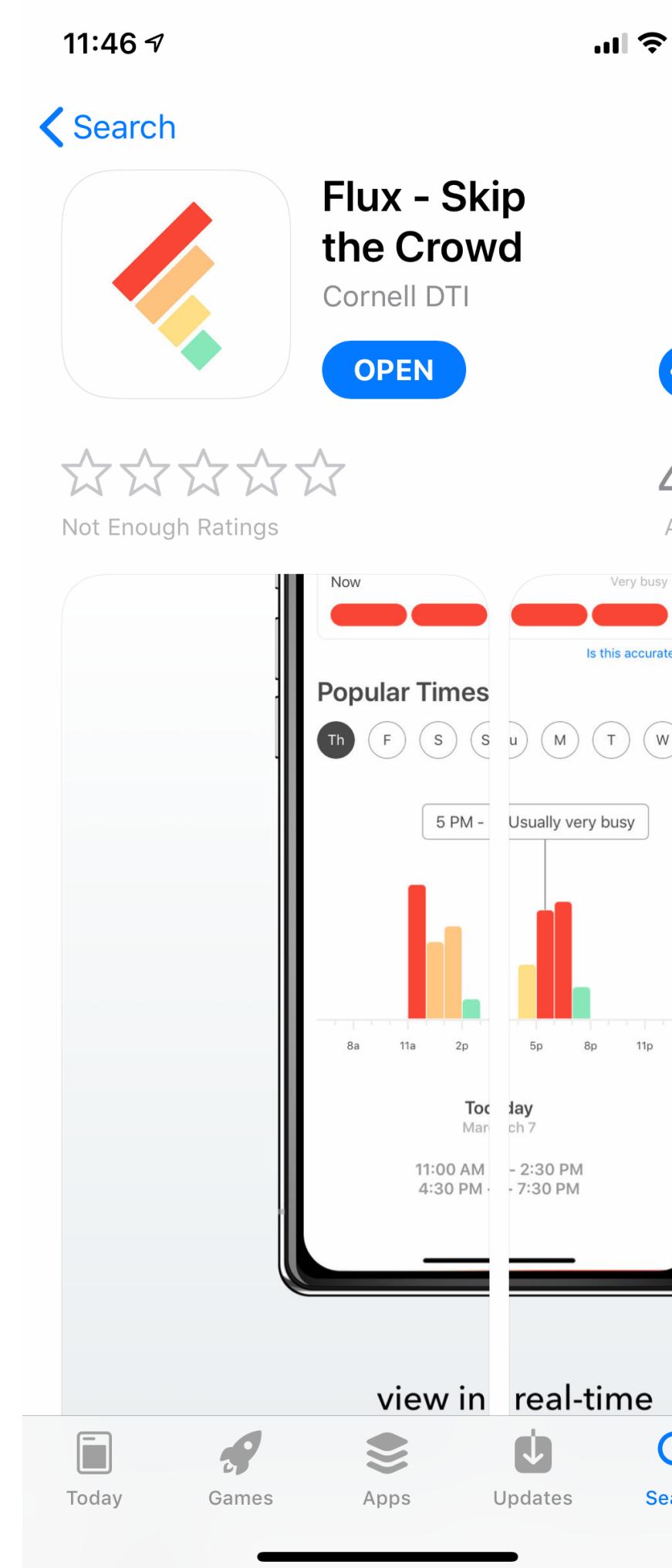
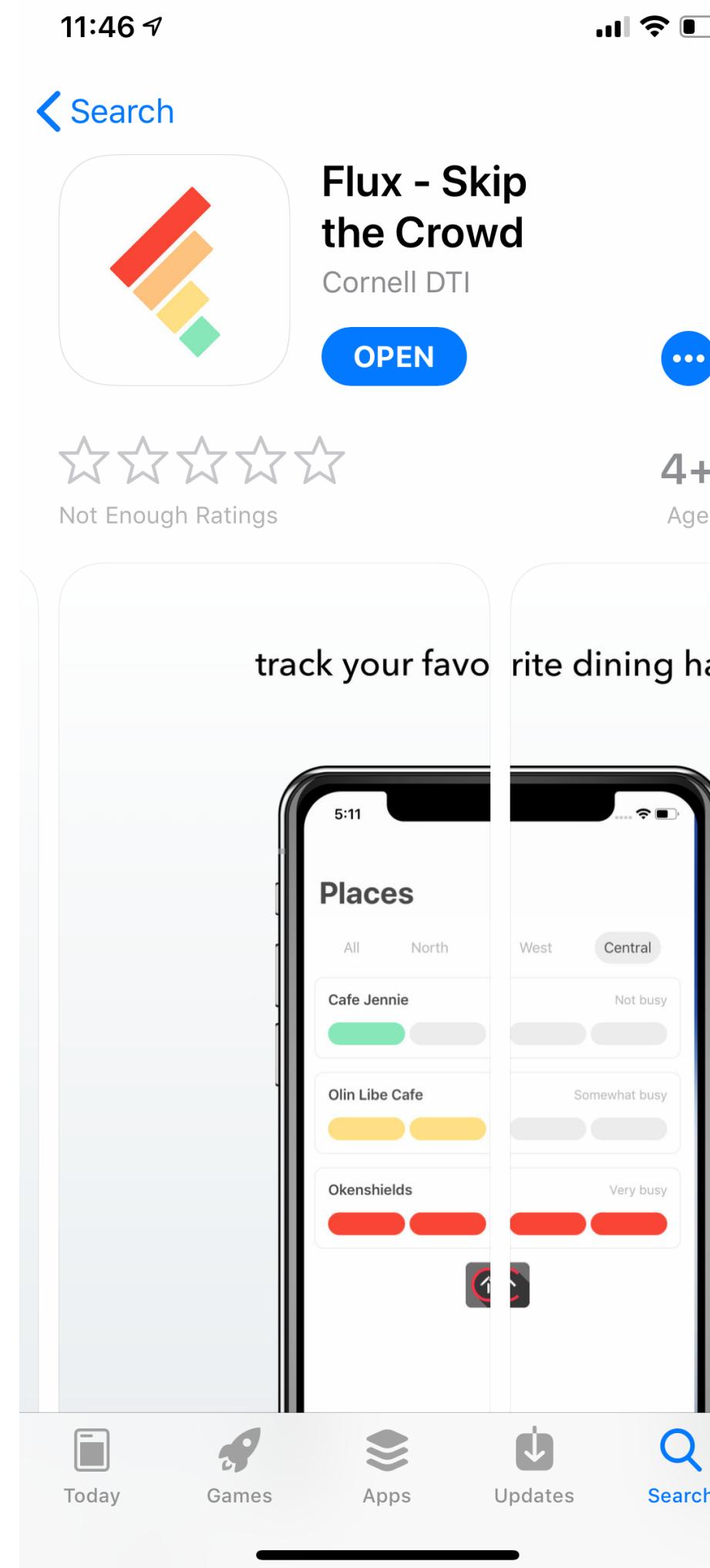
We designed posters and quarter cards to market the launch of our app.



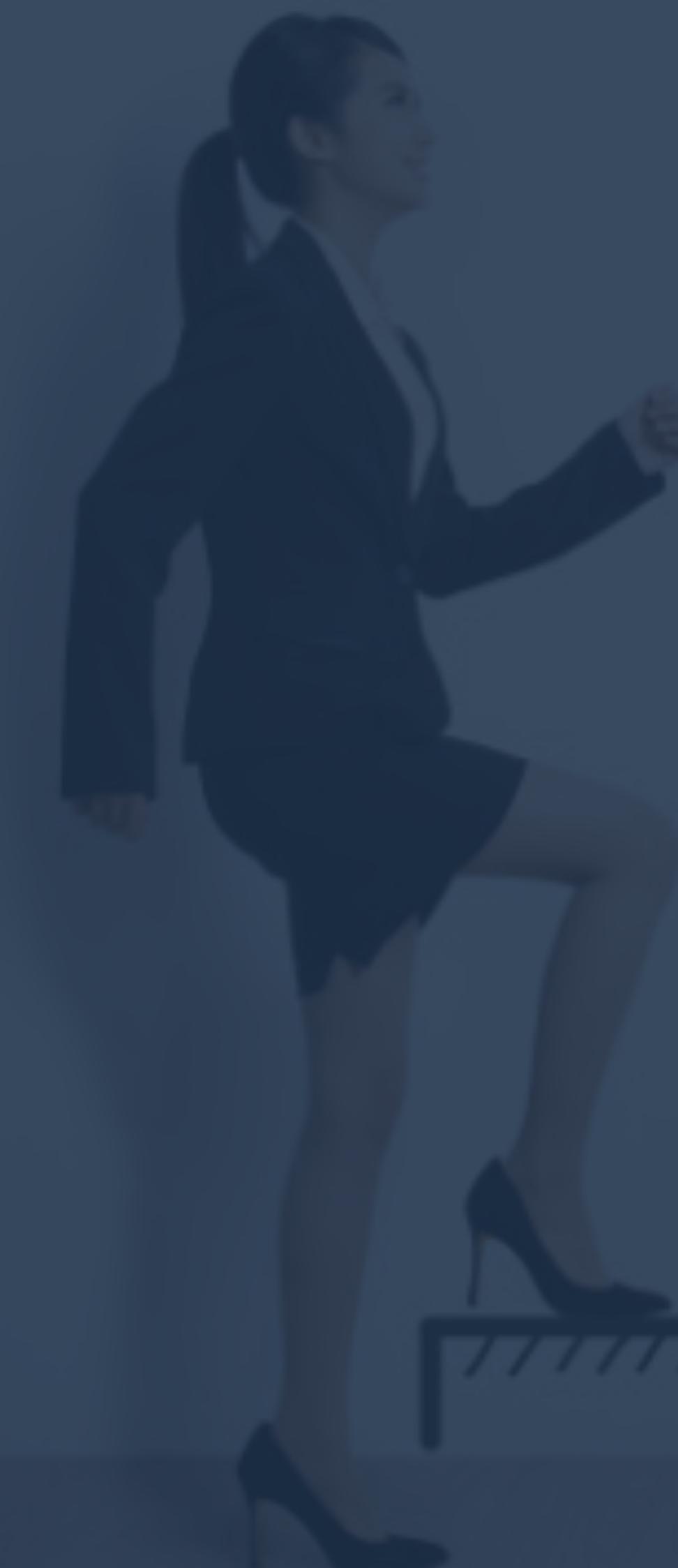
Launch

Shipping

We are officially out on the iOS and Android app stores!



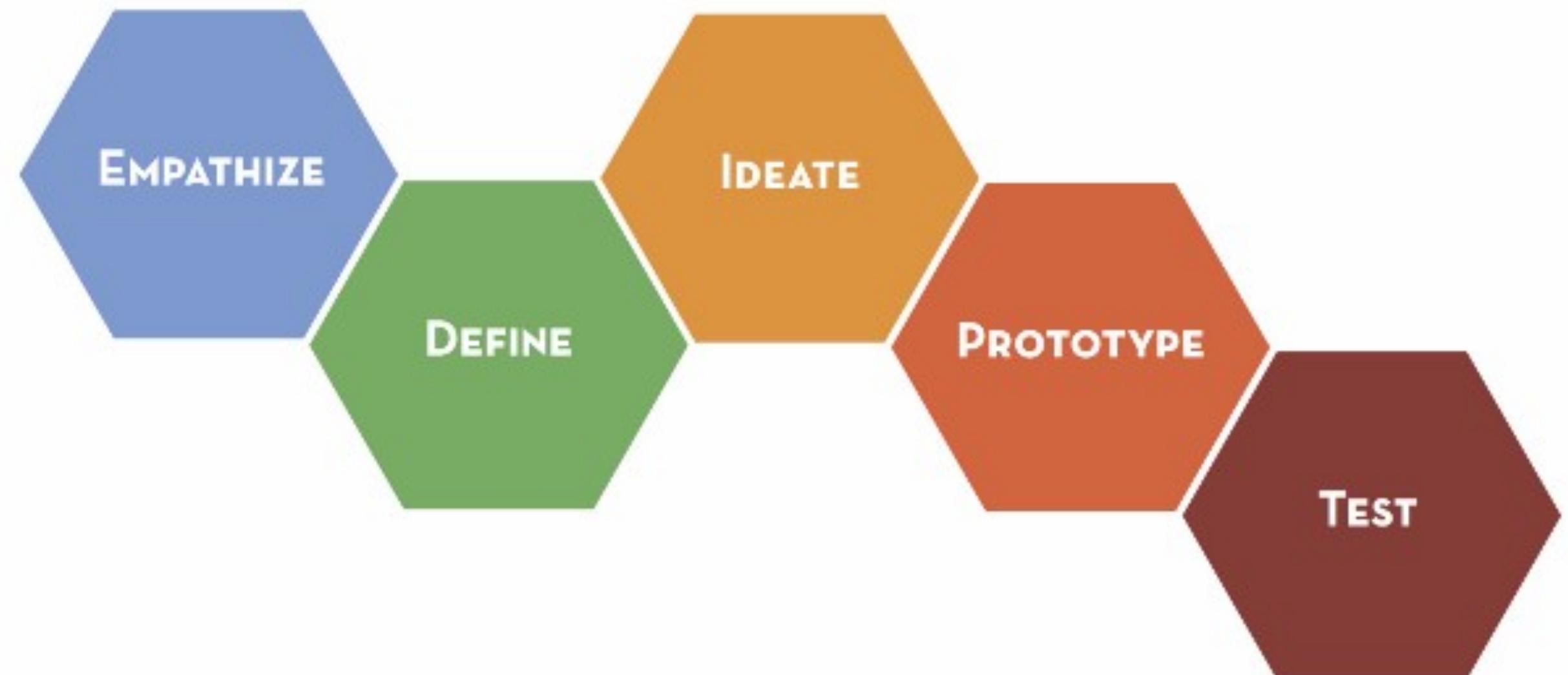
Next Steps



Next Steps

The next few weeks

- Conduct user testing
- Iterate accordingly



An aerial photograph of a city during autumn. In the foreground, a large, modern building with a dark, angular roof is visible. Behind it, a dense cluster of buildings and trees in shades of yellow, orange, and red are scattered across a hillside. In the background, a larger city skyline with various skyscrapers and buildings is visible under a clear blue sky.

Thank You!