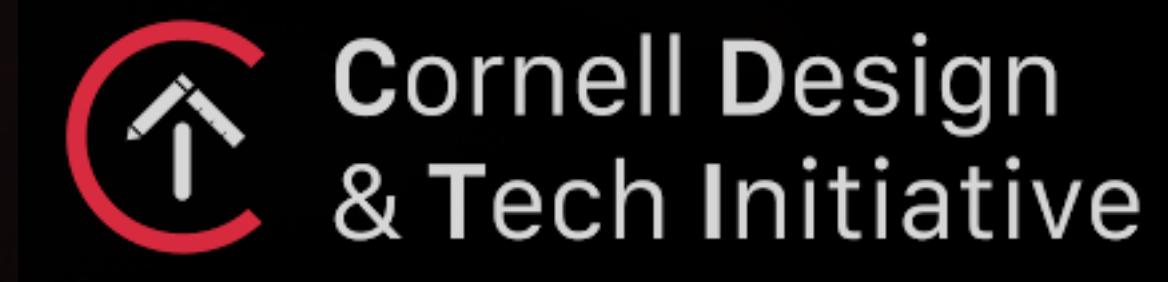


Cornell DTI Case Study

Kathy Wang



Our Goal

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



Agenda

User Research

Synthesis

Market Research

Data Collection

Prototyping

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

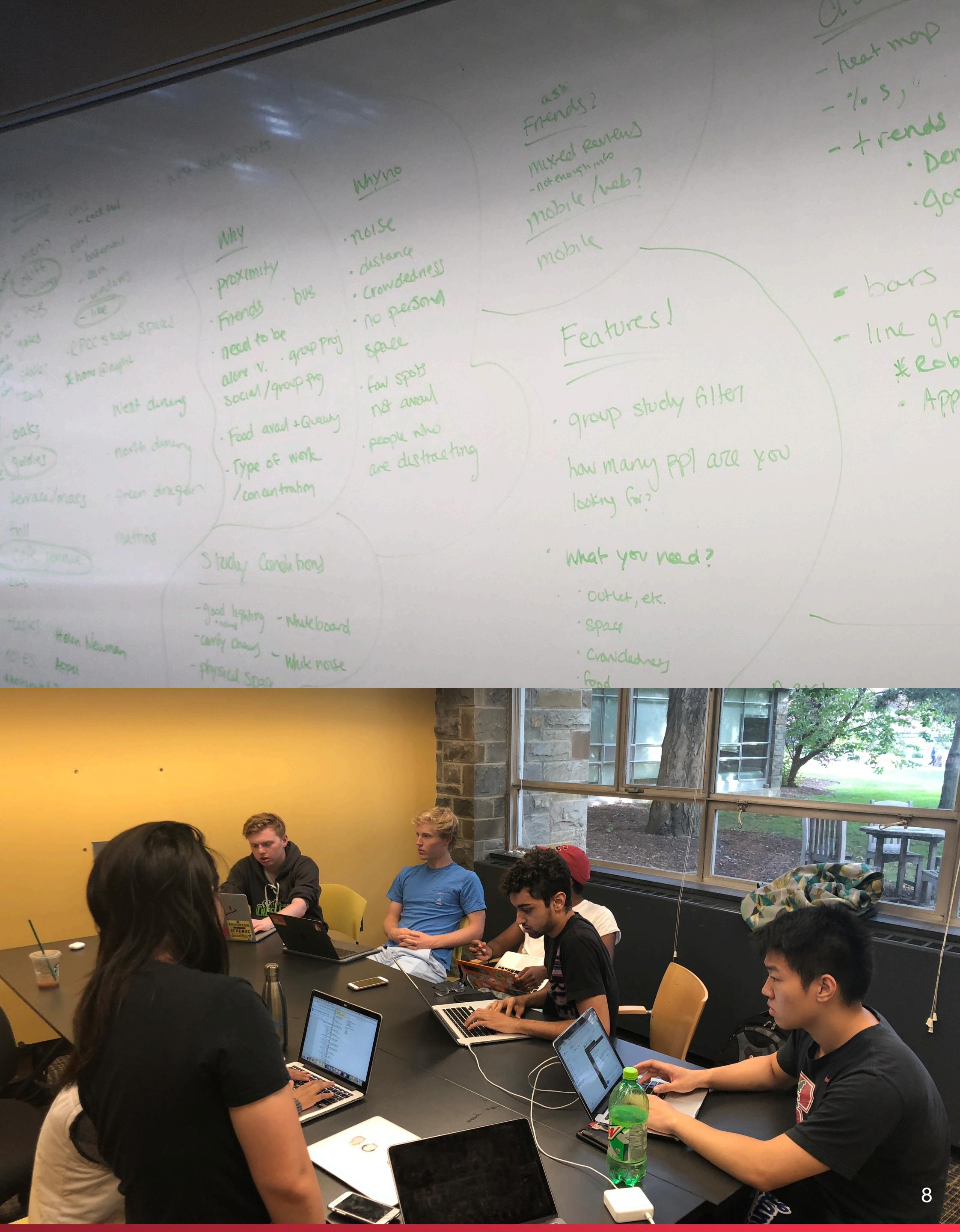
These interviews were informative, so to make sense of all the data I had, we created an affinity map.



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.

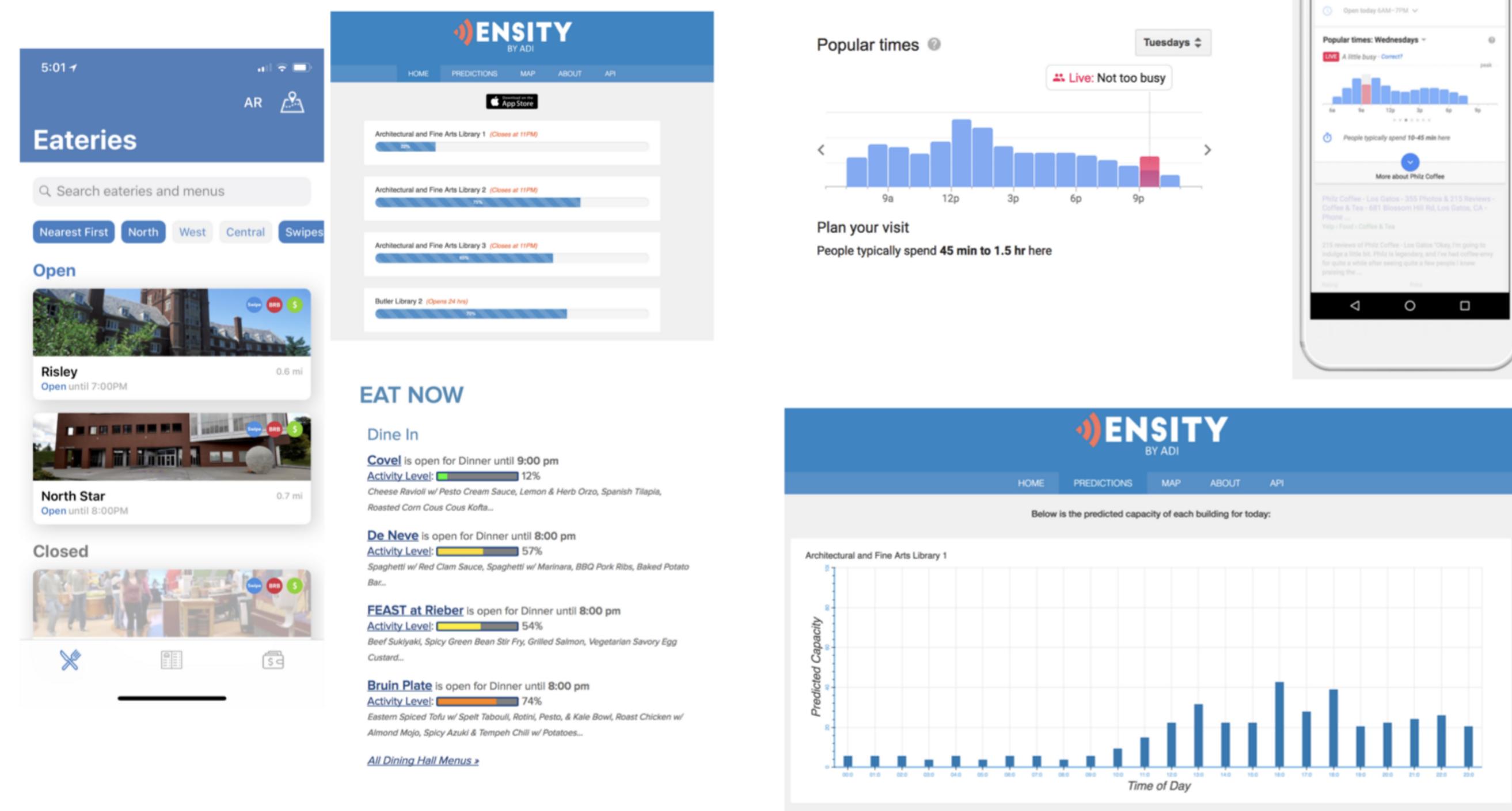


Market Research



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 spreadsheet has columns labeled A, B, C, D, and E. Column A contains row numbers from 1 to 13. Column B lists facility names: Olin Library, Olin Library, Uris Library, Cornell Store, PSB, Noyes, Teagle, Helen Newman, West, Central, North, and an empty row. Column C lists locations: Libe Cafe, Olin front desk, Uris front desk, Cafe Jennie, Goldie's, Noyes Front desk, Teagle front desk, HN front desk, West Dining hall, Okenshields, North Dining Hall, and an empty row. Column D lists assignees: Neha, Andrew, April, Kaushik, Kathy, Evan/Kaushik, and an empty row. Column E is labeled "What to ask" and contains a single entry: "Got email (ian Gannon ig 268@cornell.edu)". The status bar at the bottom right indicates "All changes saved in Drive".

	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		
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

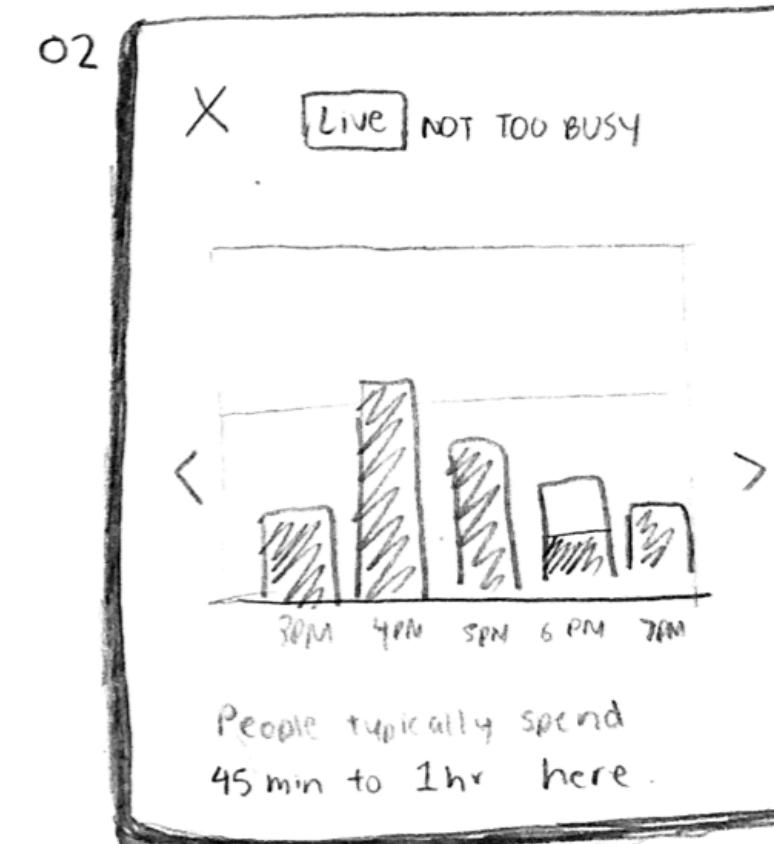
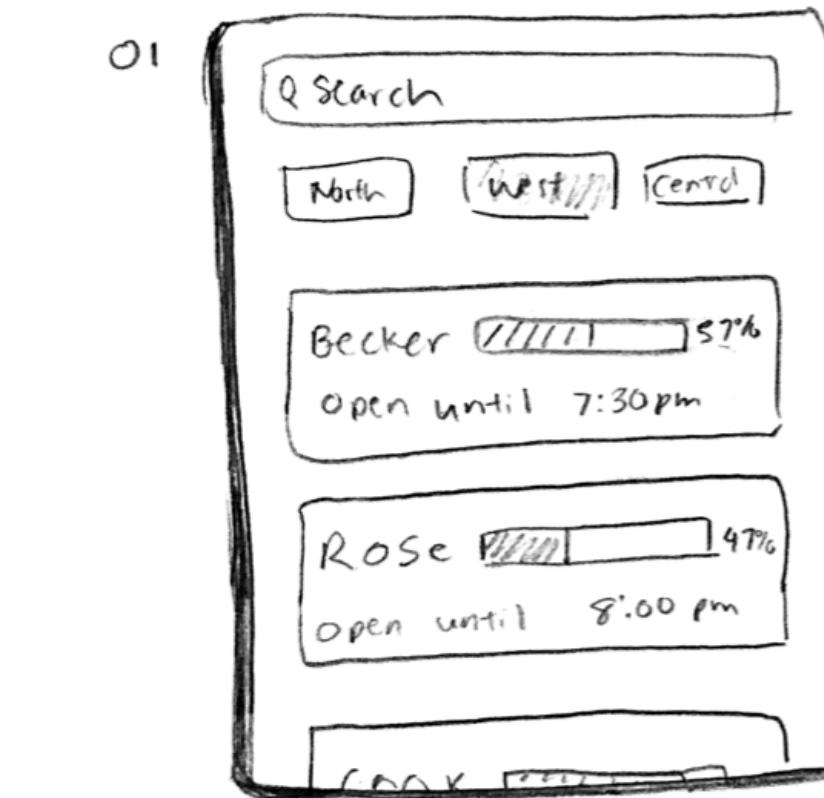
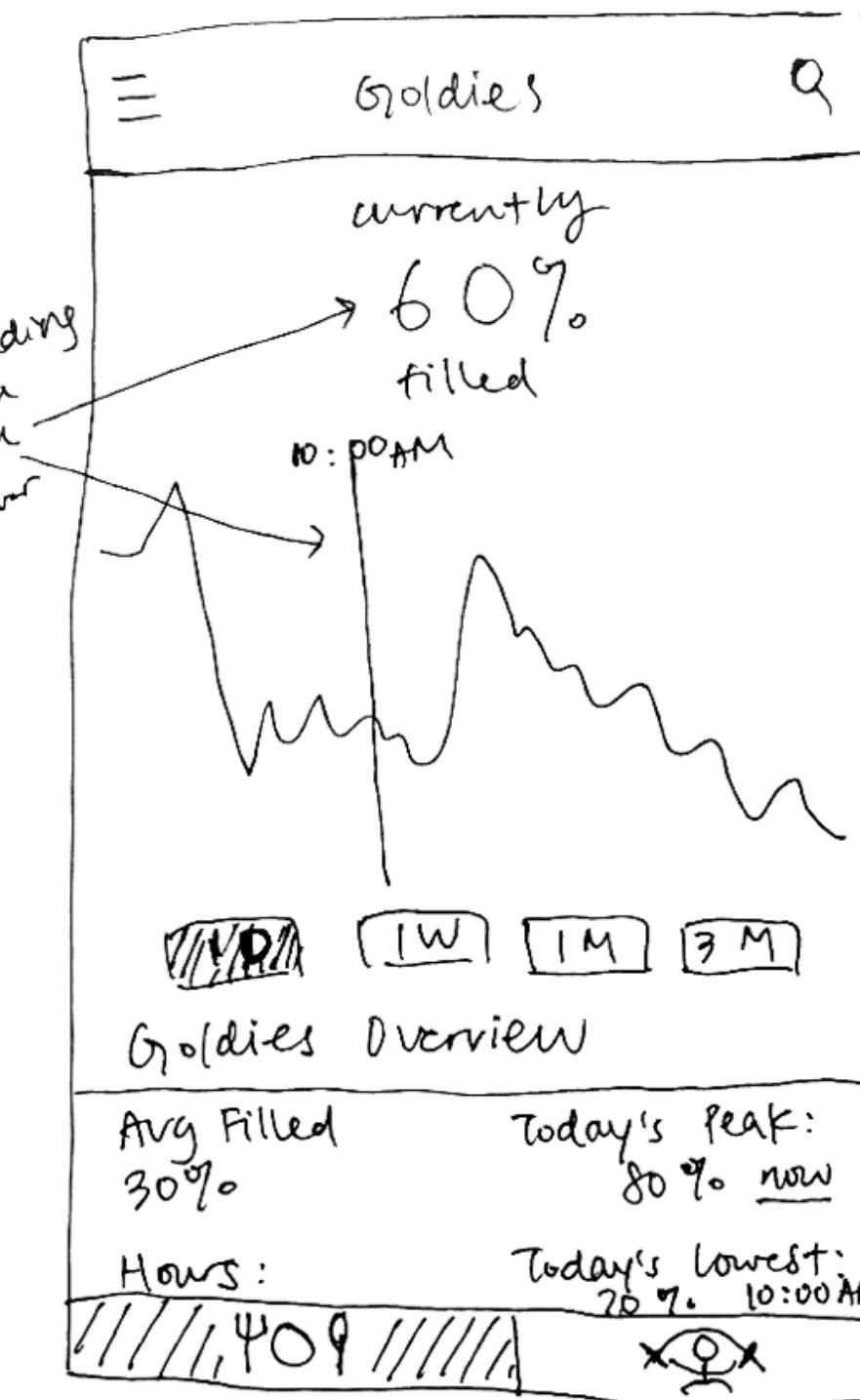
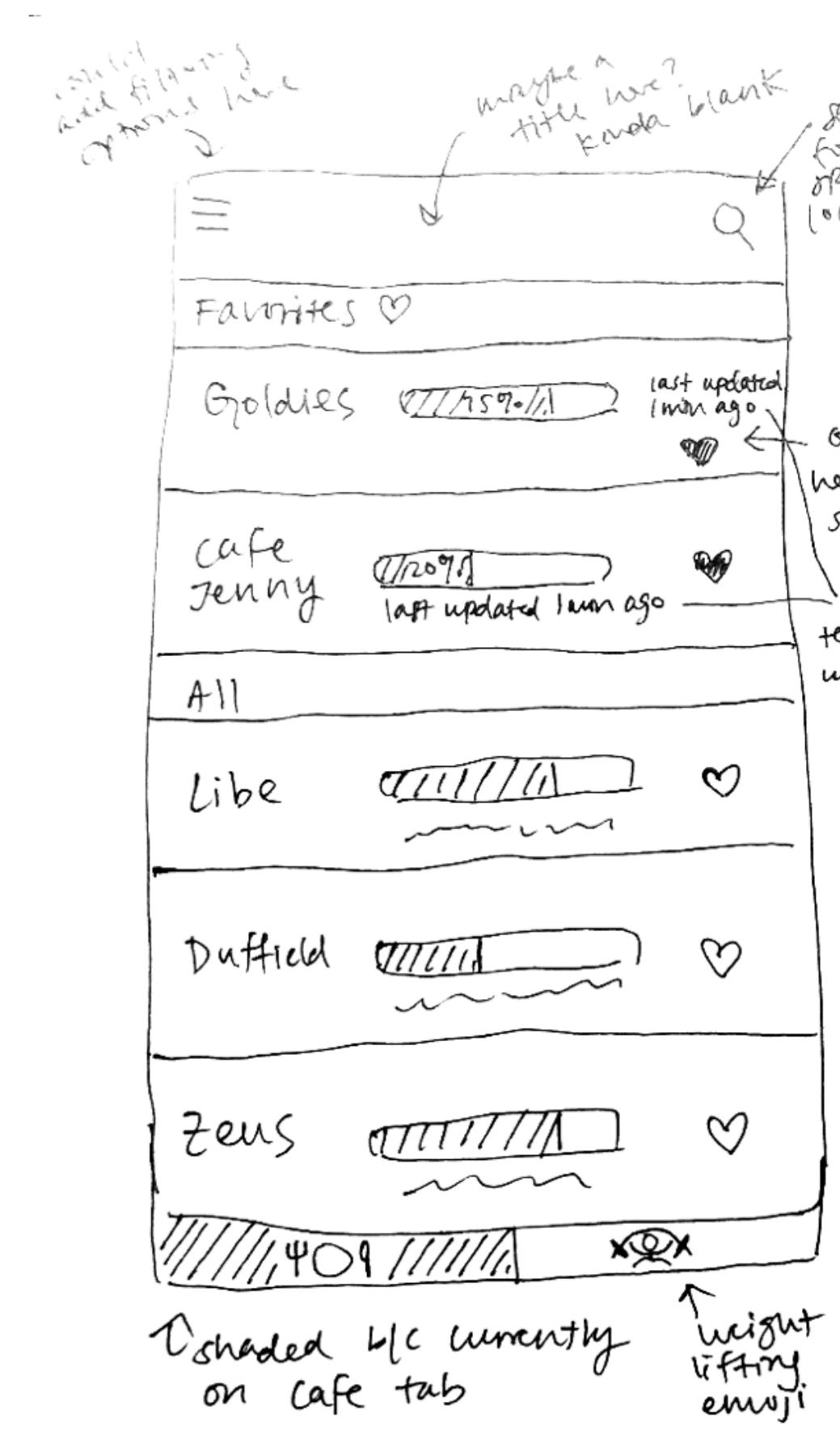
Time	Scale	# ppl in line
1:30	Full (41)	5
1:50	Some seats (40)	2
2:10	Some seats (45)	0

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

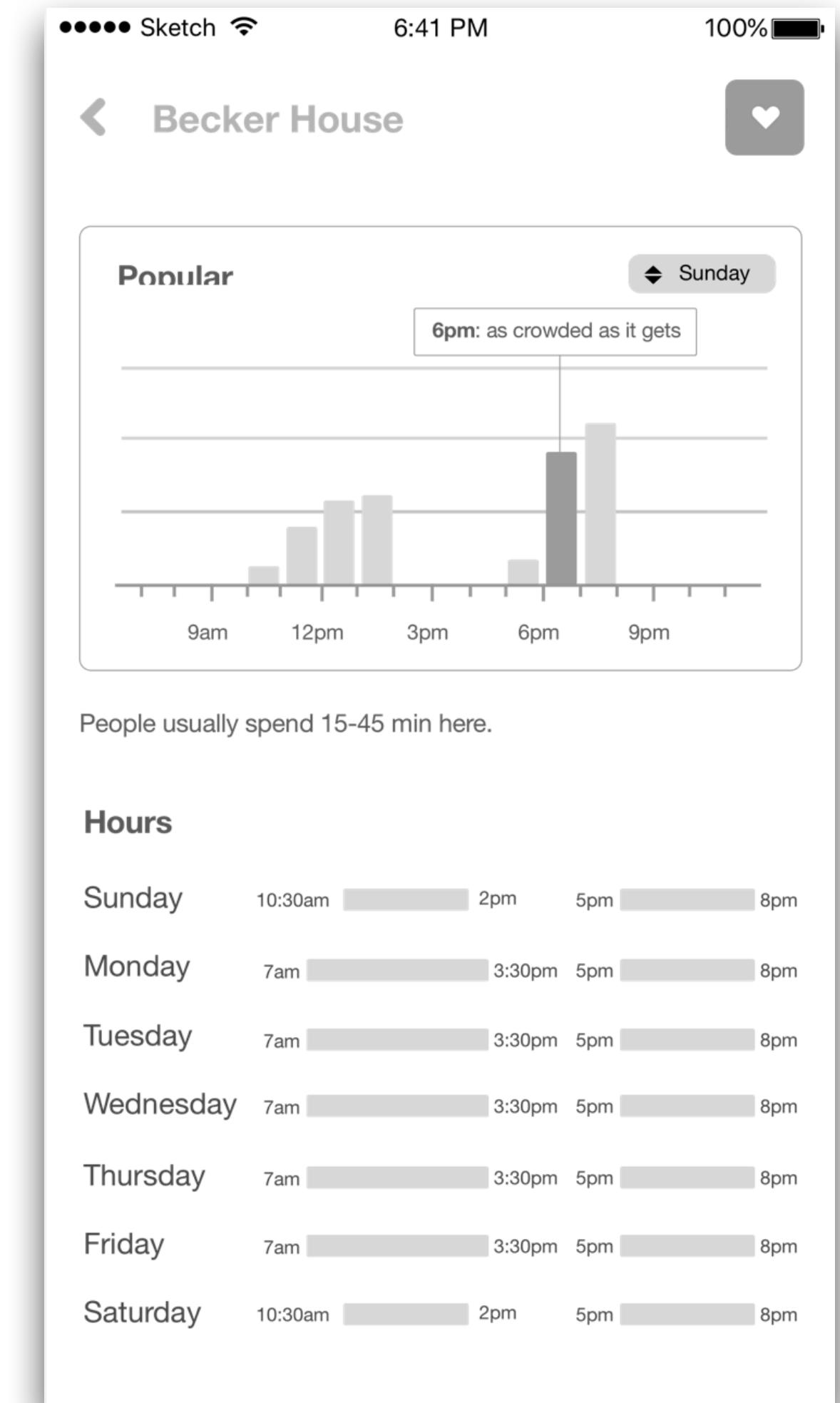
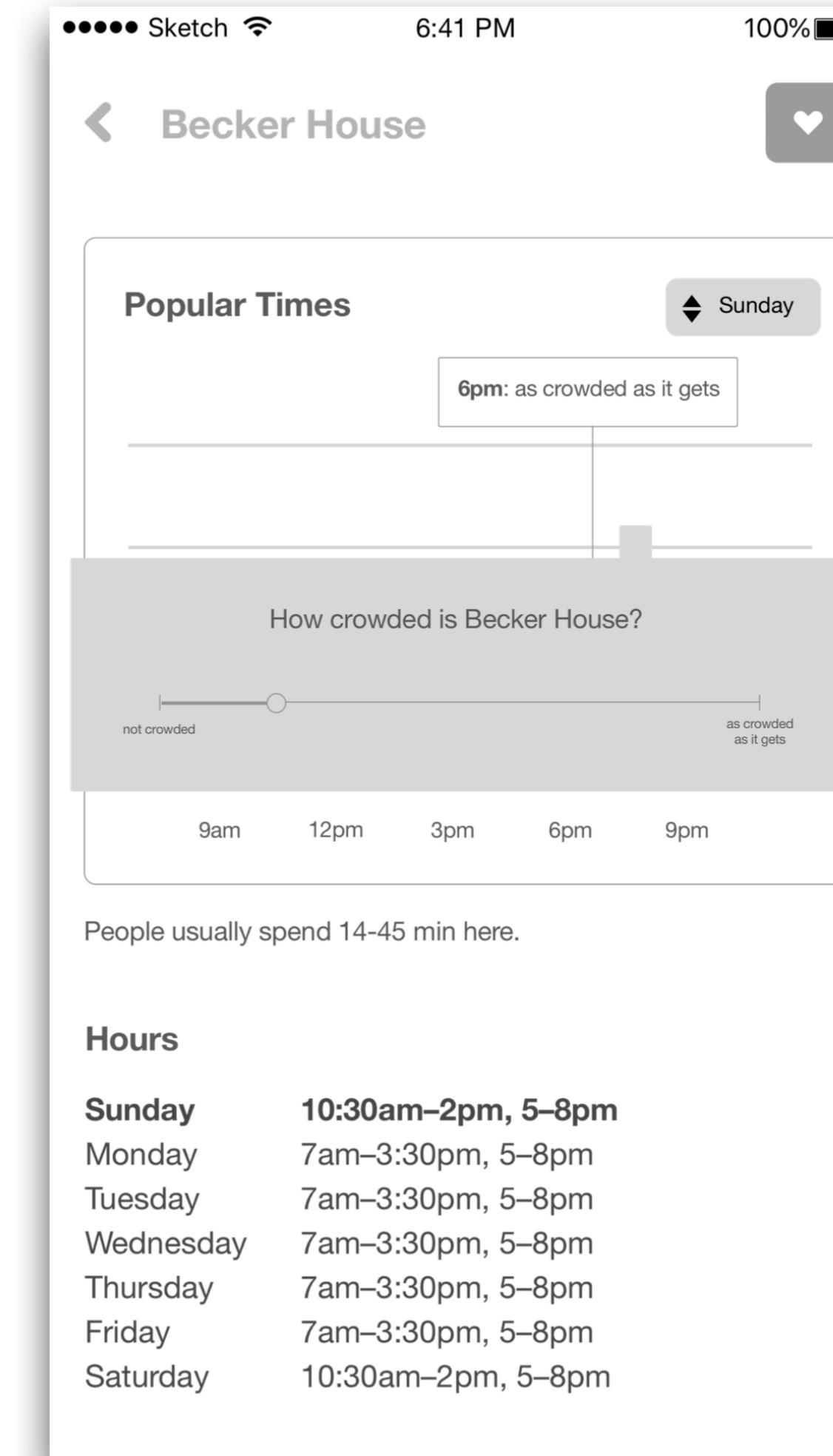
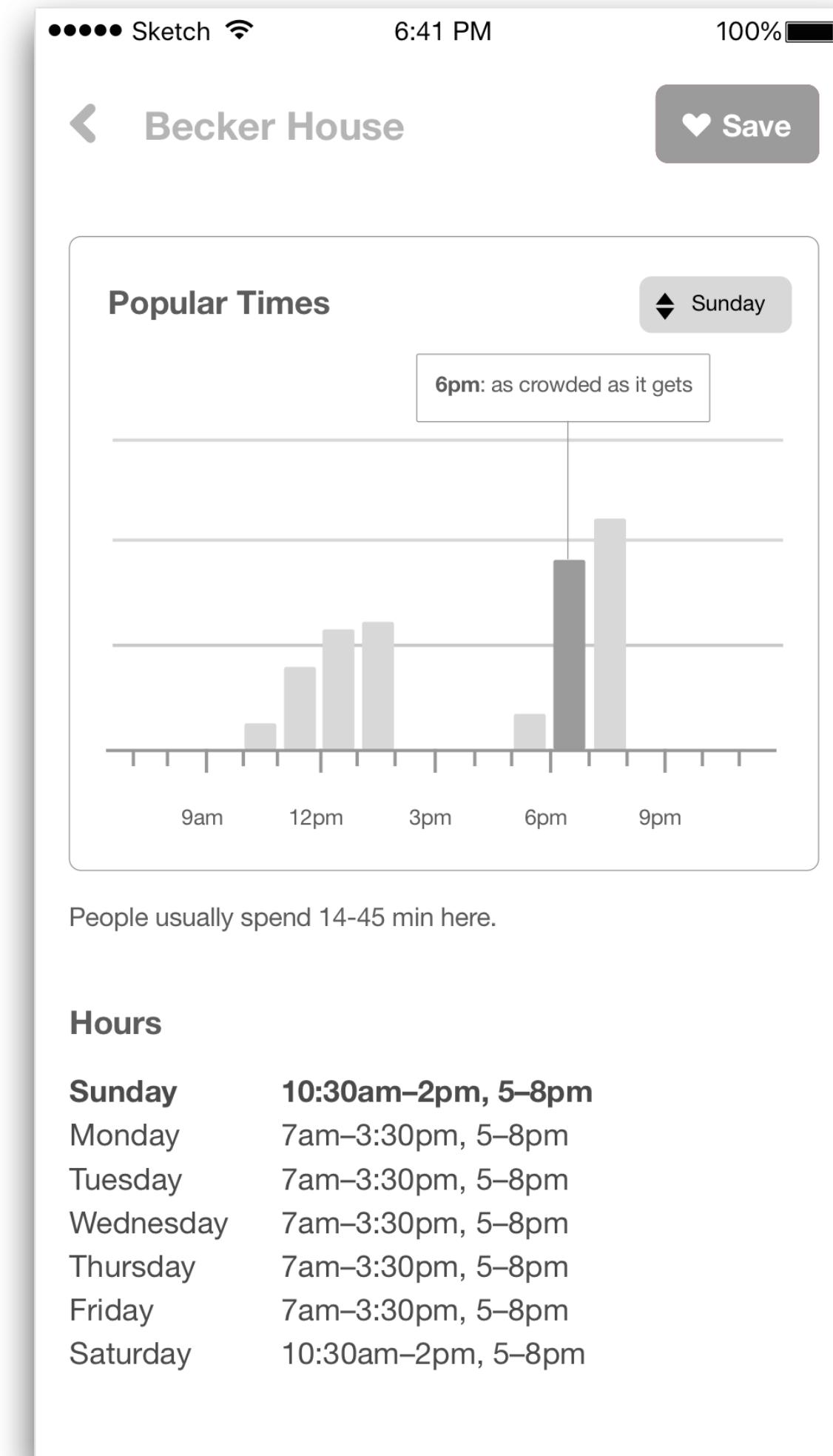
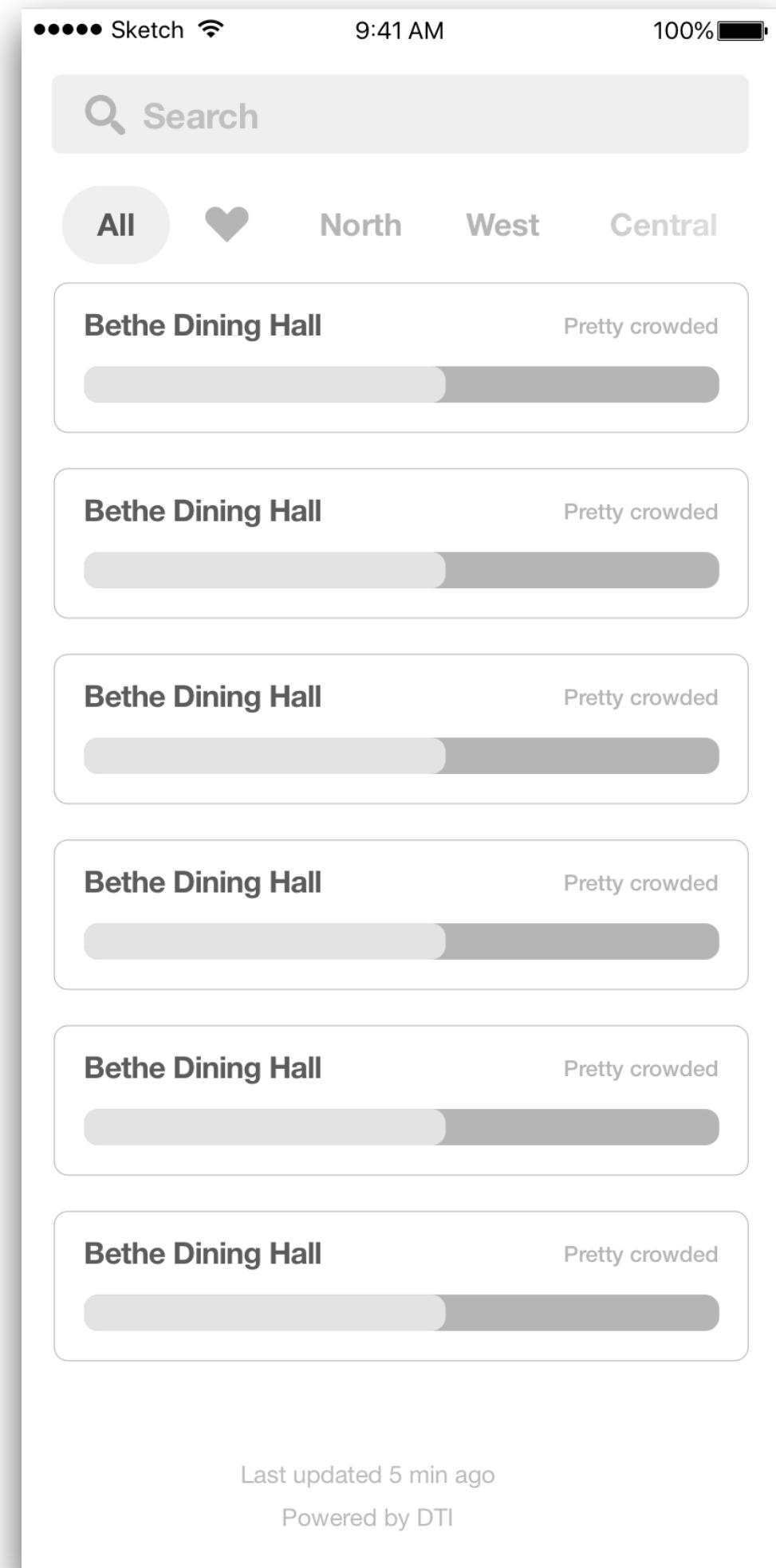


Discussion Points

- **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

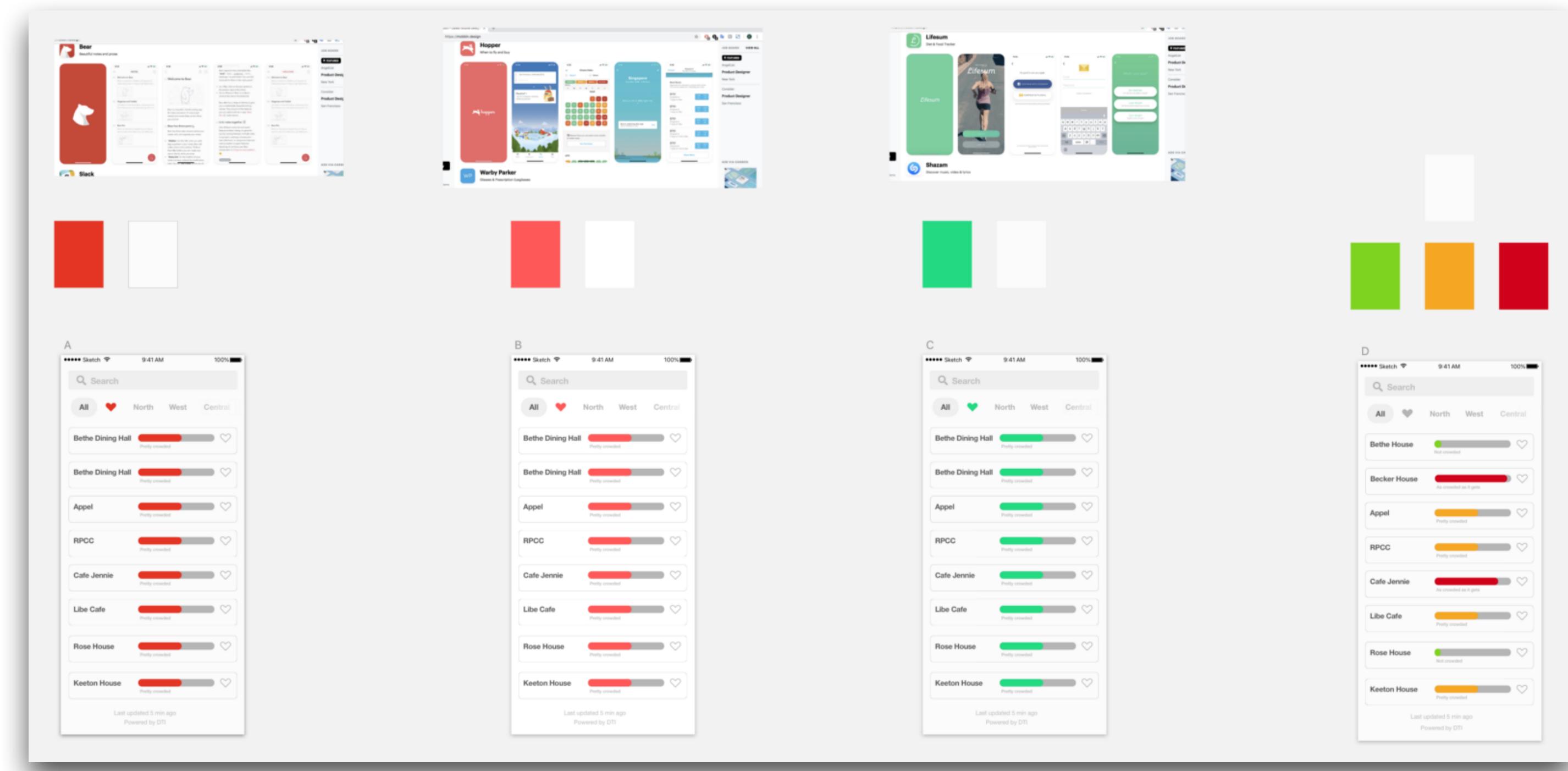
Medium-Fidelity Mockups



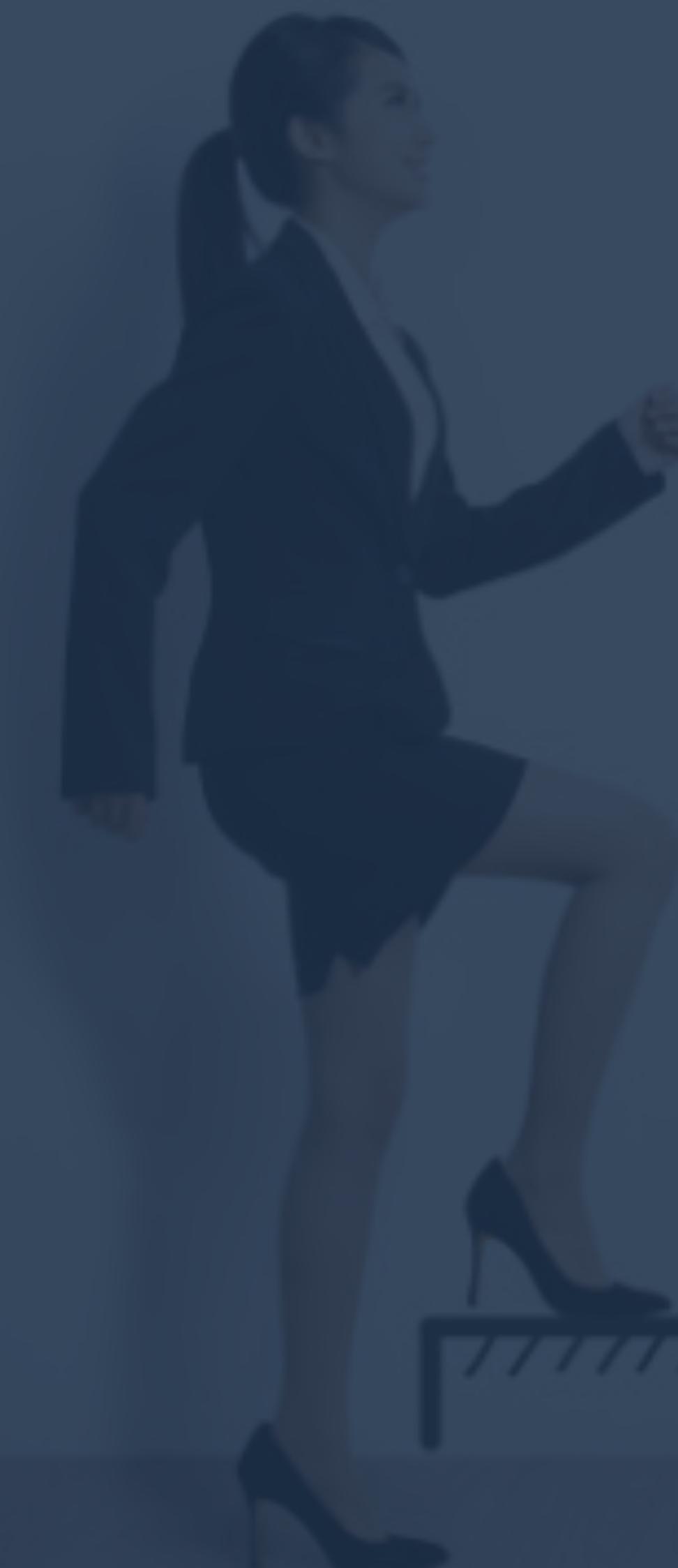
Prototyping

High-Fidelity Prototyping

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



Next Steps



Next Steps

Shipping

We recently submitted to the app store, and are currently under review.

App Store Connect [My Apps](#) ▾

D Density - Skip the Crowd ▾

Gilly Leshed ▾
Gilly Leshed | ?

App Store Features TestFlight Activity

APP STORE INFORMATION

iOS App 1.0

● Waiting for Review

Save

App Information

Pricing and Availability

iOS APP

● 1.0 Waiting for Review

VERSION OR PLATFORM

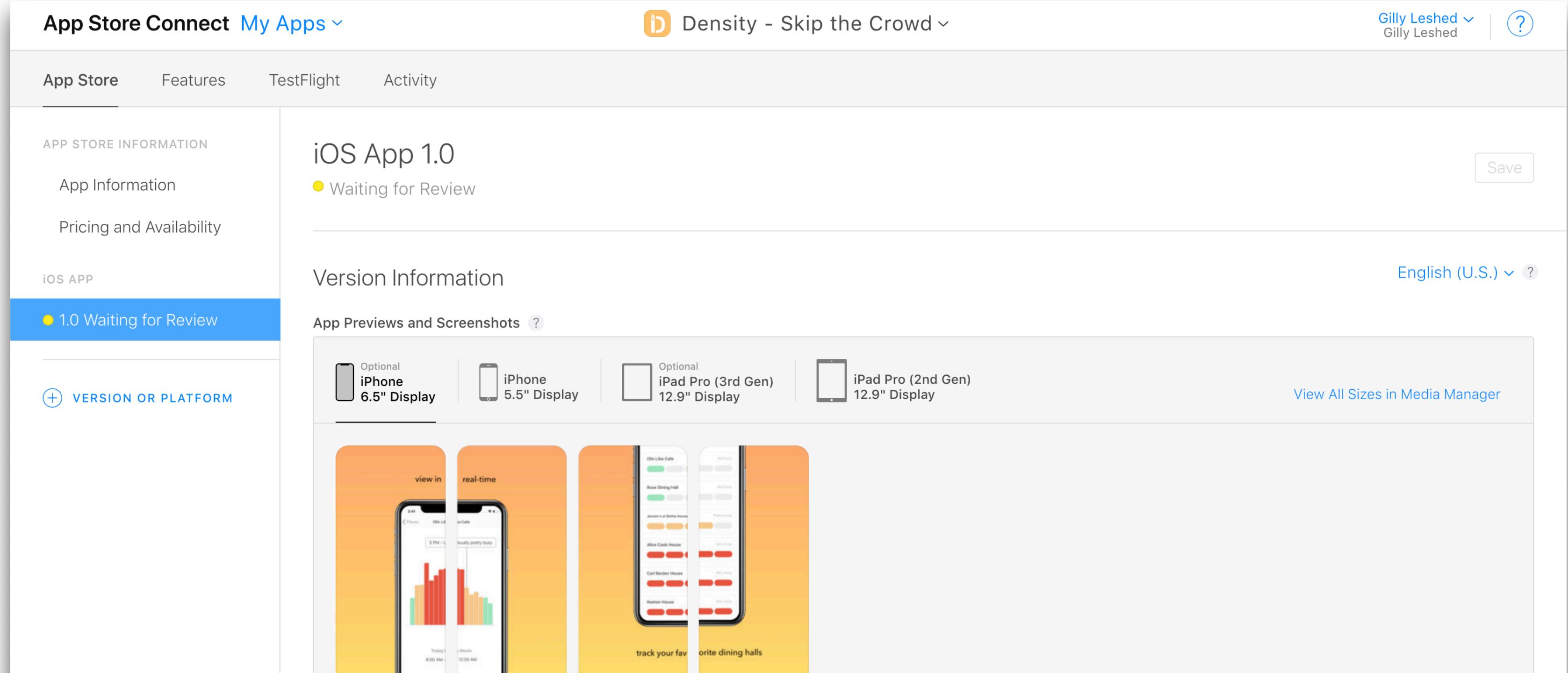
Version Information

English (U.S.) ▾ ?

App Previews and Screenshots ?

Optional iPhone 6.5" Display iPhone 5.5" Display Optional iPad Pro (3rd Gen) 12.9" Display iPad Pro (2nd Gen) 12.9" Display

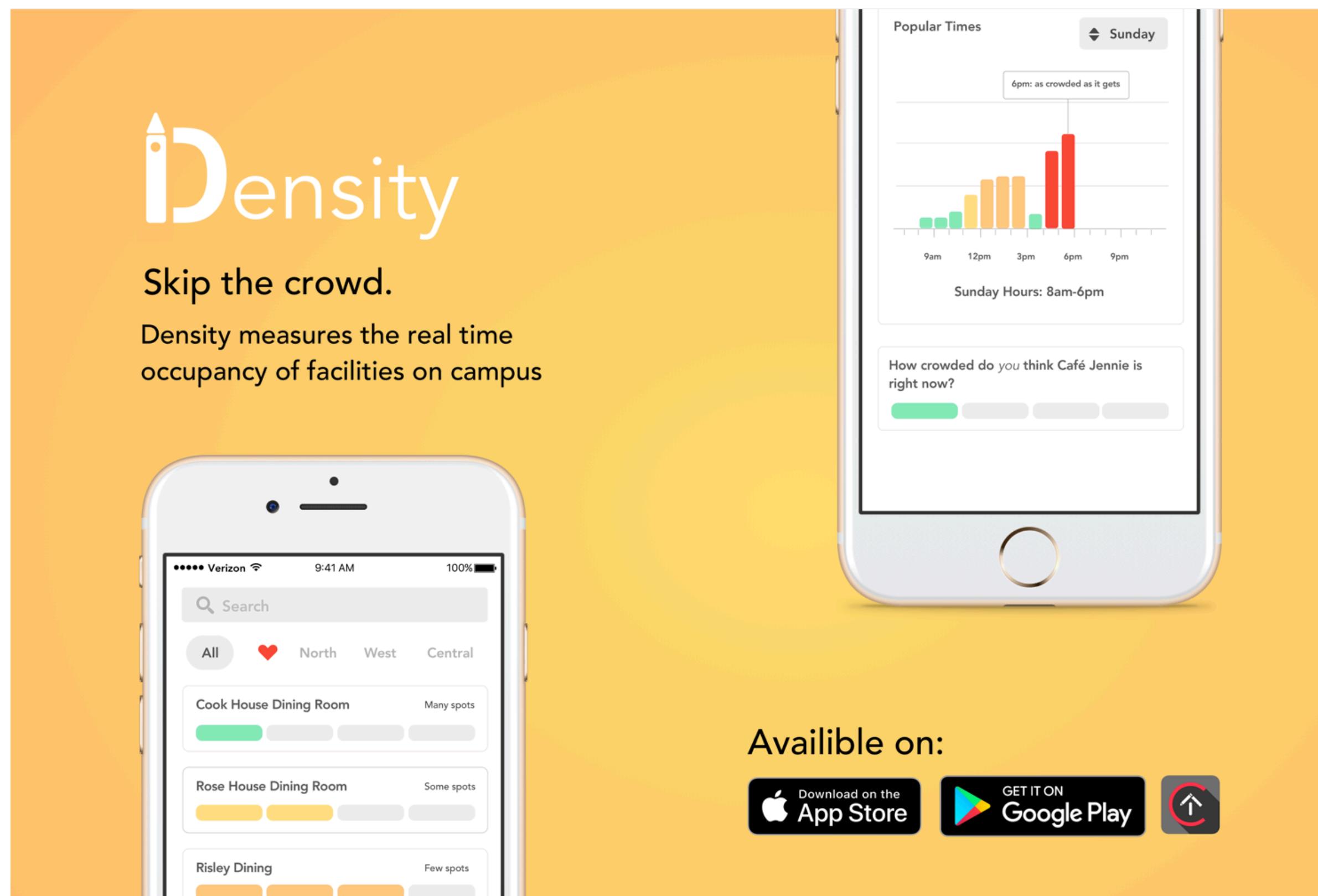
View All Sizes in Media Manager



Next Steps

Marketing

We will launch soon!

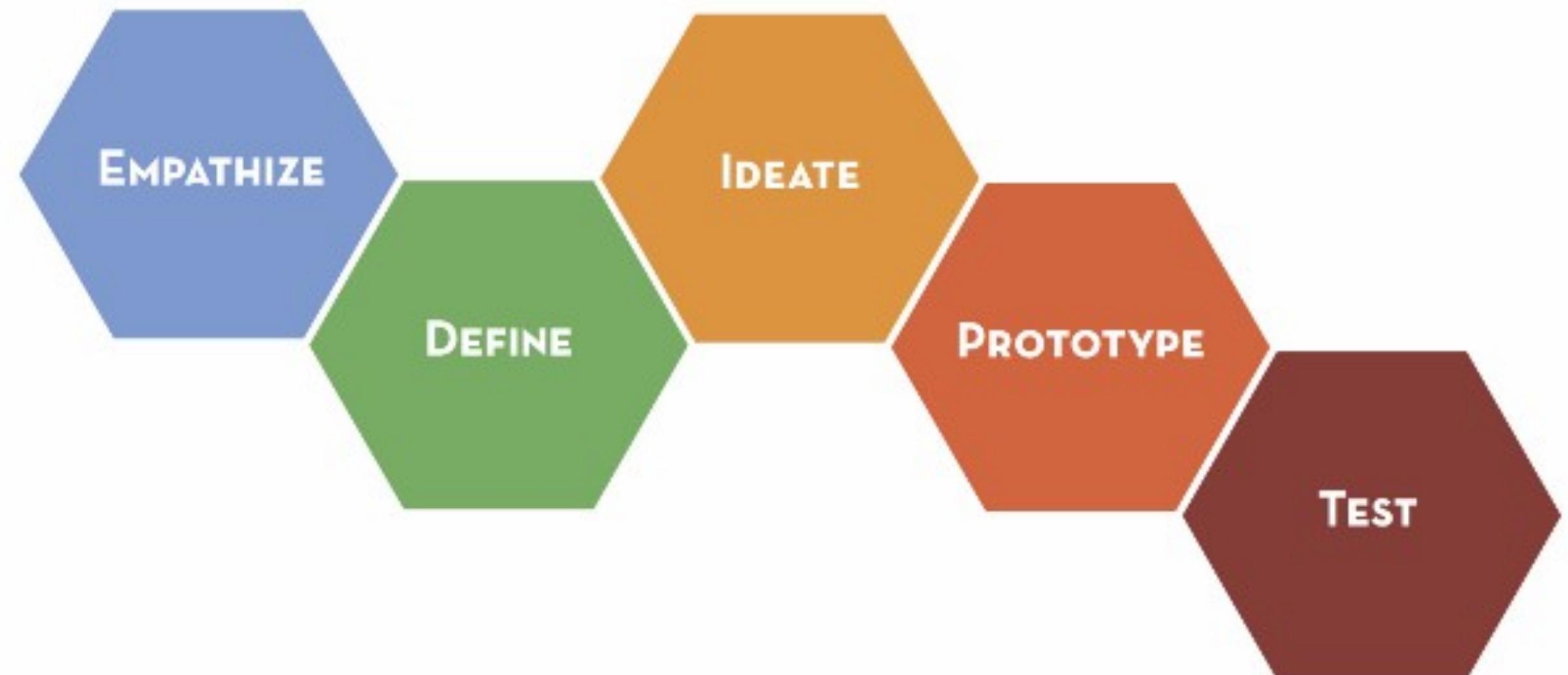


The image is a promotional landing page for the Density app. It features a large yellow header with the Density logo and the tagline 'Skip the Crowd.' Below this, it states 'Density measures the real time occupancy of facilities on campus'. A central callout says 'Launching December 1st' with download links for the [App Store](#) and [Google Play](#). Two phones at the bottom show examples of the app's interface, including a search screen and a facility details screen for Café Jennie.

Next Steps

The next few weeks

- We will launch soon!
- Conduct user testing
- Iterate accordingly



An aerial photograph of a city during autumn. In the foreground, a large, modern building with a distinctive angular, geometric roof is visible. The surrounding area is filled with trees displaying vibrant autumn colors of orange, yellow, and red. In the background, a dense urban landscape with numerous buildings of various heights stretches towards a range of mountains under a clear blue sky.

Thank You!