A Weather App Case Study

WeatherWear

Brett Sebbio

Building a better weather app

INTRODUCTION

Solving Weather?

Why do people check the weather? Why are there so many different ways to check the weather?

I set out on a quest to not just make ‘another’ weather app, but to make something better. I wanted to take one specific reason that people check the weather and solve it. As it turned out, there were many different reasons that people check the weather (surely a major surprise, right?), but one reason stood out across age, gender, and economic status – *checking the weather in the morning to determine what they should wear for that particular day.*

Additionally, it became clear that even though people wanted to discover what they should be wearing that day, they were doing so for different reasons. Some cared about precipitation, others about temperature, others about what it “feels like” outside.

Solving Weather?

In short, *checking the weather doesn't tell this group of users the most crucial piece of information they need to know* – what they need to wear that day.

The solution?

Building an app that lets the user instantly know what they need to wear. They don't need to focus on the temperature, humidity, precipitation, or anything else. They just need to glance at an image which tells them everything they need to know.

There's no relative comparisons, no pondering the different weather factors. The app does it all for you.

Just look at a picture - you are done checking the weather and ready to get on with the day.

Learning about the market and the users

PART I - DISCOVERY

RESEARCH & ANALYSIS

Interviews

Insights

- Eight subjects were interviewed, in various settings (phone, in-person)
- Subjects were asked questions about how they checked the weather – devices they used, times they checked, and why they checked
- Every single person checked the weather, every day
- Every single person checked the weather to determine their dress for the day, including those who have a work uniform or dress code
- Some subjects had multiple responses, with the second most common response being “prepared for their commute”

Interviews

Insights

- Male subjects did not necessarily realize why they were actually checking the weather so habitually, only articulated they were checking to determine their outfit after drilling deeper

- About 50 additional subjects were contacted after being scouted for their geographic location (using Facebook), getting subjects from all parts of the United States, Canada, the Caribbean, and various parts of Europe

- These subjects were asked only a few questions, survey style

Competitive Analysis

Insights

- 10 different weather apps were reviewed, including two versions of The Weather Channel app
- Two websites were discovered and reviewed, WhatToWear, and Daily Dress Me
- A study was recently conducted noting that The Weather Channel had the most accurate weather data – this was consistent with my notes
- I discovered many different APIs available for weather data – some free, others quite expensive
- All of the apps had strengths and weaknesses from an experience standpoint and from a usability standpoint
- Only one app, Swackett, had a variation of the "what to wear" theme included – and it was a small part of the overall app, not the focus

The Weather Channel 6.0

Competitive Analysis

Insights

- Many weather apps had unique and interesting interaction patterns
- Weather apps either compete on features or visual design
- Most weather apps utilize card swiping to navigate between cities
- Severe weather alerts are handled in various and mostly inelegant ways
- Dark Sky had one of the most useful, unique features – accurate (push message) alerts, to the minute, of when it was about to rain or snow

Apple Weather

Dark Sky

Competitive Analysis

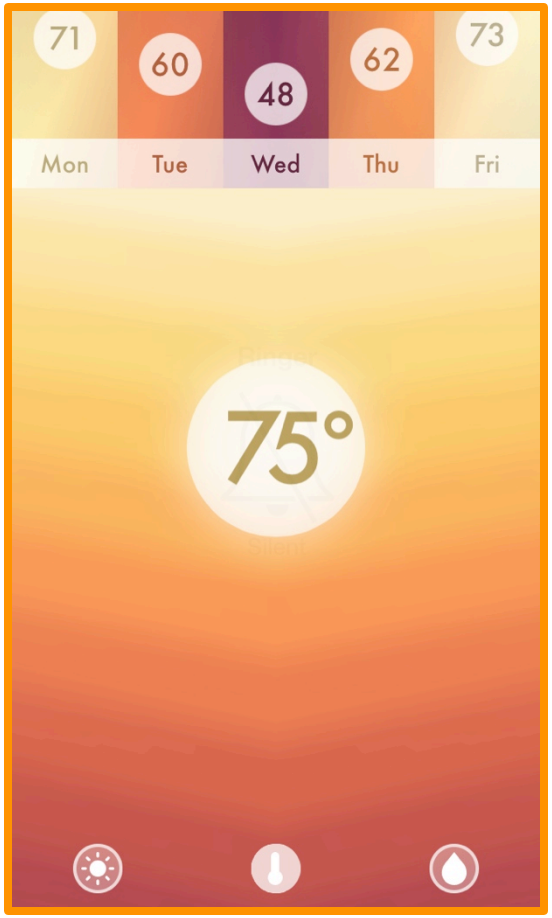
Insights

- Apps that used the “hamburger” menu did a good job of using it to hide non-essential information (cities or settings), rather than using it as a container for the navigation, which would promote poor usability

- Performance, specifically the loading of information was critical to every app – slower loading led to frustration – notably with The Weather Channel

- These weather apps tell you the temperature, precipitation, etc. – but they don’t tell you why, either implicitly or explicitly, each of these things is important

Yahoo! Weather

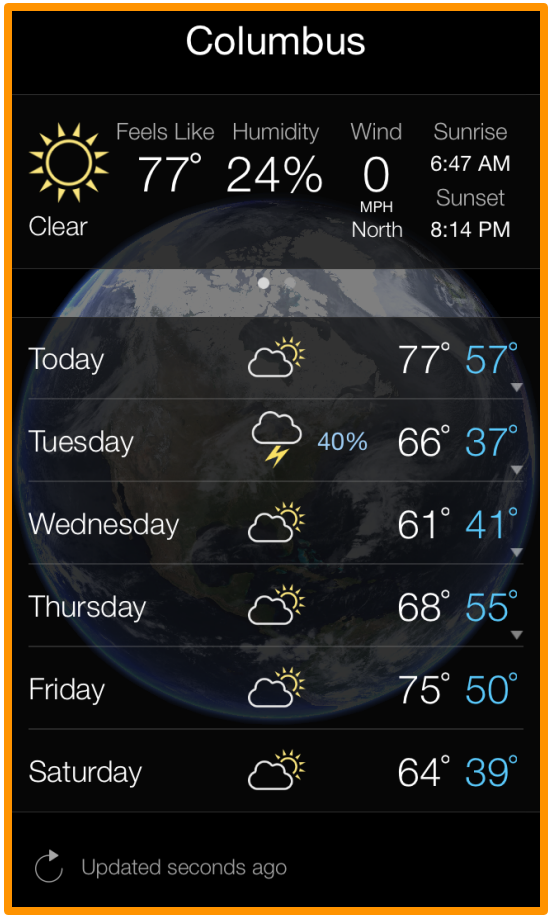


Haze

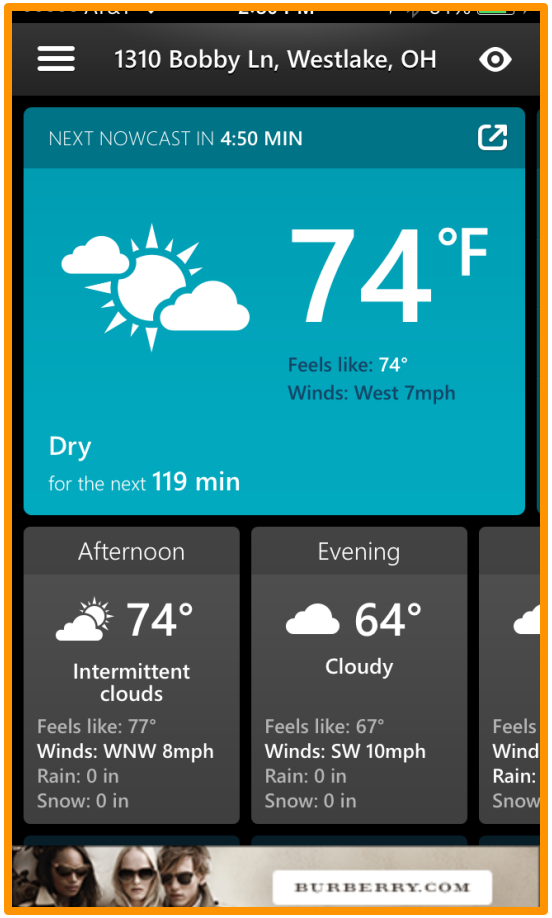
Competitive Analysis

Insights

- Living Earth came the closest to satisfying users needs – the app is meant to function as both a weather app and an alarm clock – meant to be the first thing a user sees in the morning
- SkyMotion also had a unique selling point, the ability to predict rain (accurately) by the minute
- The Weather Channel app's update from 6.0 to 7.0 actually made the usability worse, although it improved the visual design
- Automatic refreshing/ reloading happened as often as every 60 seconds



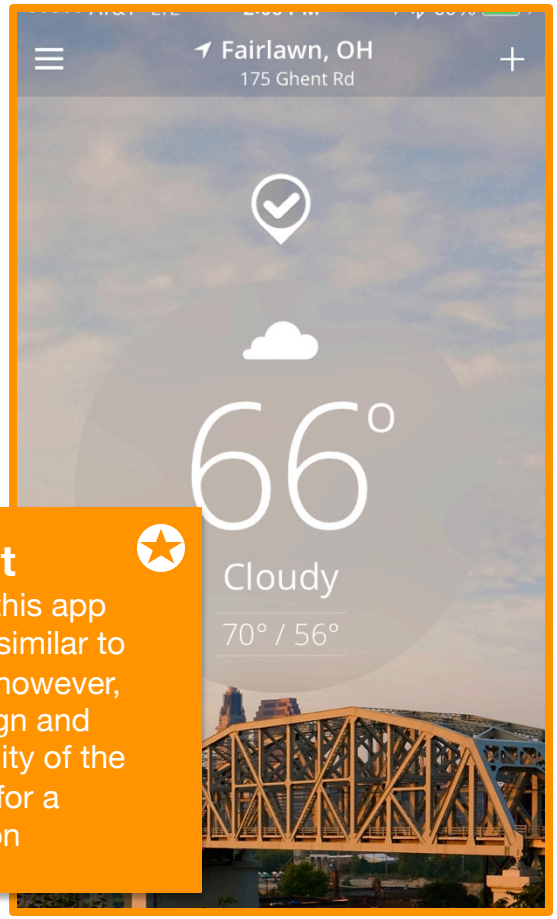
Living Earth



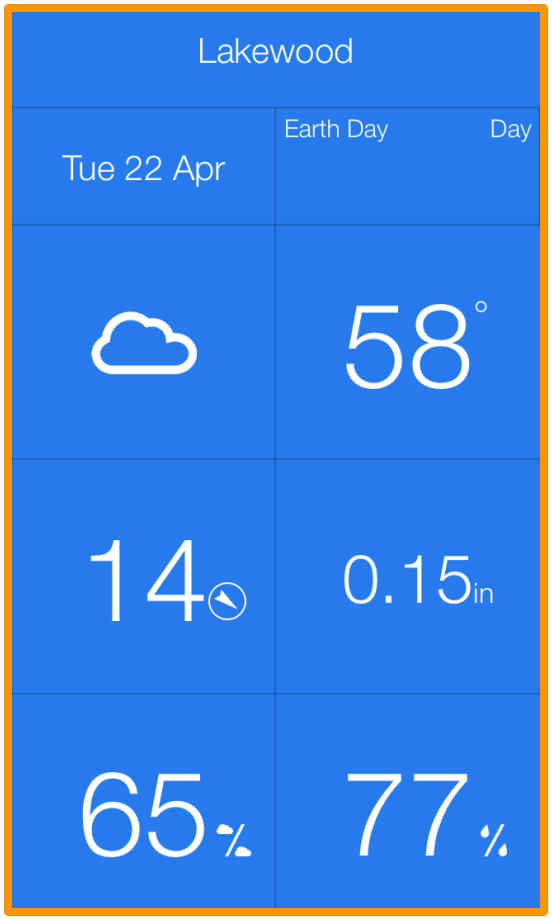
SkyMotion

Competitive Analysis

Swackett



The Weather Channel 7.0



Weather Cube

Key Insight

Conceptually, this app appears to be similar to WeatherWear, however, the visual design and the poor usability of the UI leave room for a better execution

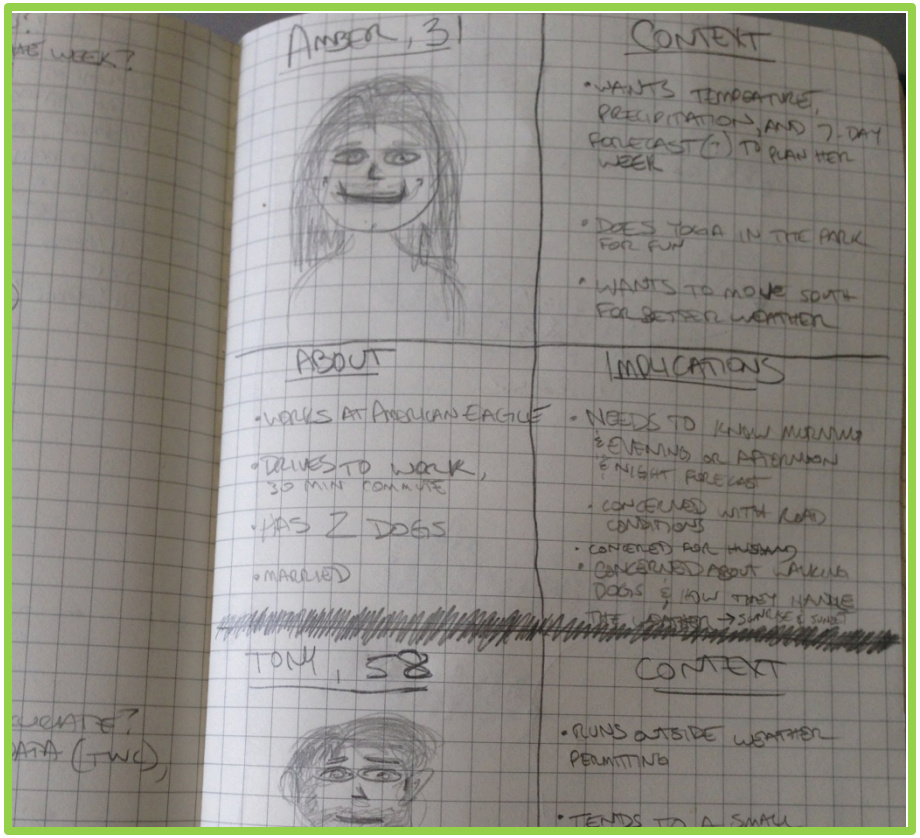
From personas to the finished design

PART II - DESIGN

USER TASK MODELING

Personas

- Personas were created to represent the interview subjects
- Two major personas were created, Amber and Tony; both represented users who checked the weather immediately upon waking up
- They included some of the secondary reasons that users would use a weather app (other than deciding what to wear), including some of these considerations:
  - Checking the weather on their commute
  - Checking to see if they can walk their dog (mainly for rain)
  - Natural disasters/Severe weather (mainly the coast)
  - School bus drop off
  - Airport/flights
  - Checking whether allergies will be bad that day
  - Whether the conditions are ripe for illness (flu)
  - Ski conditions

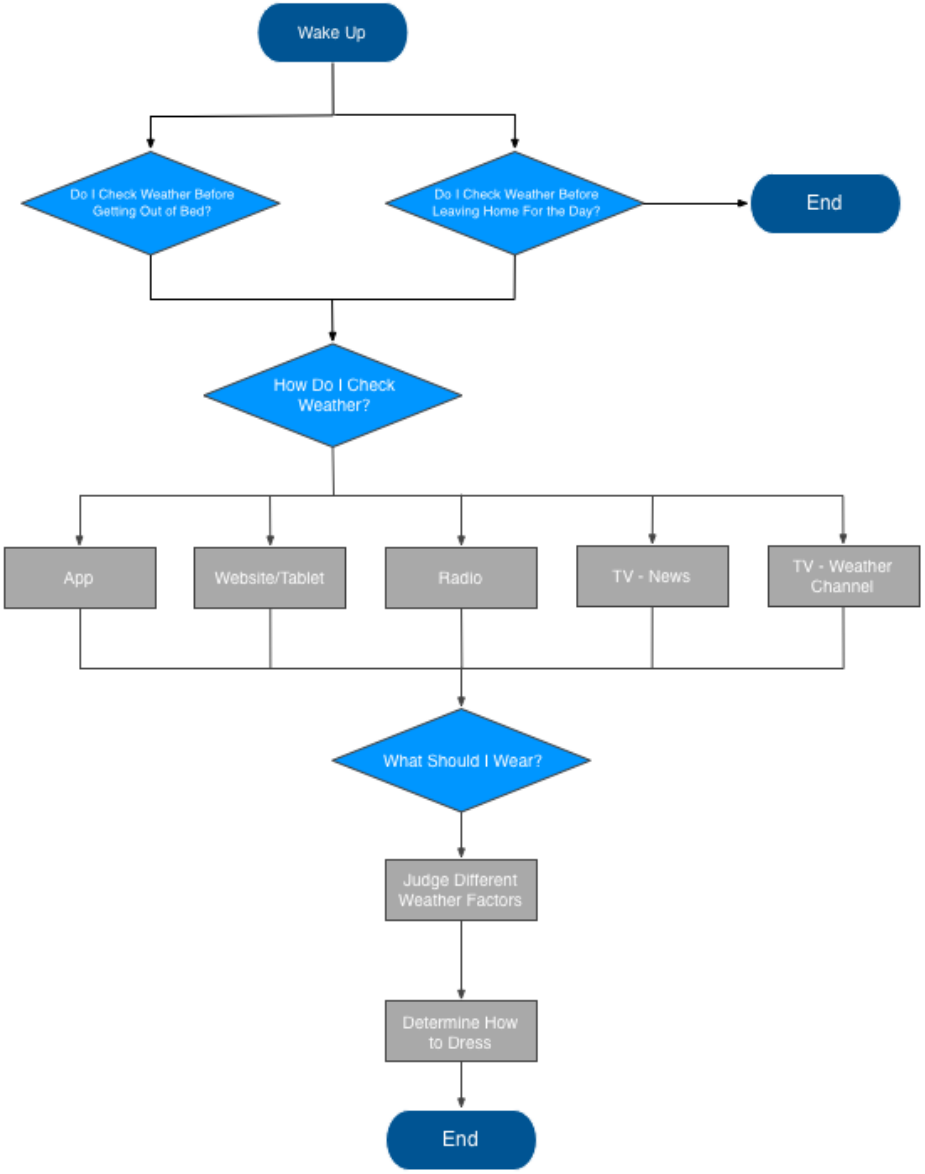


Initial Sketches of Personas

Task Analysis

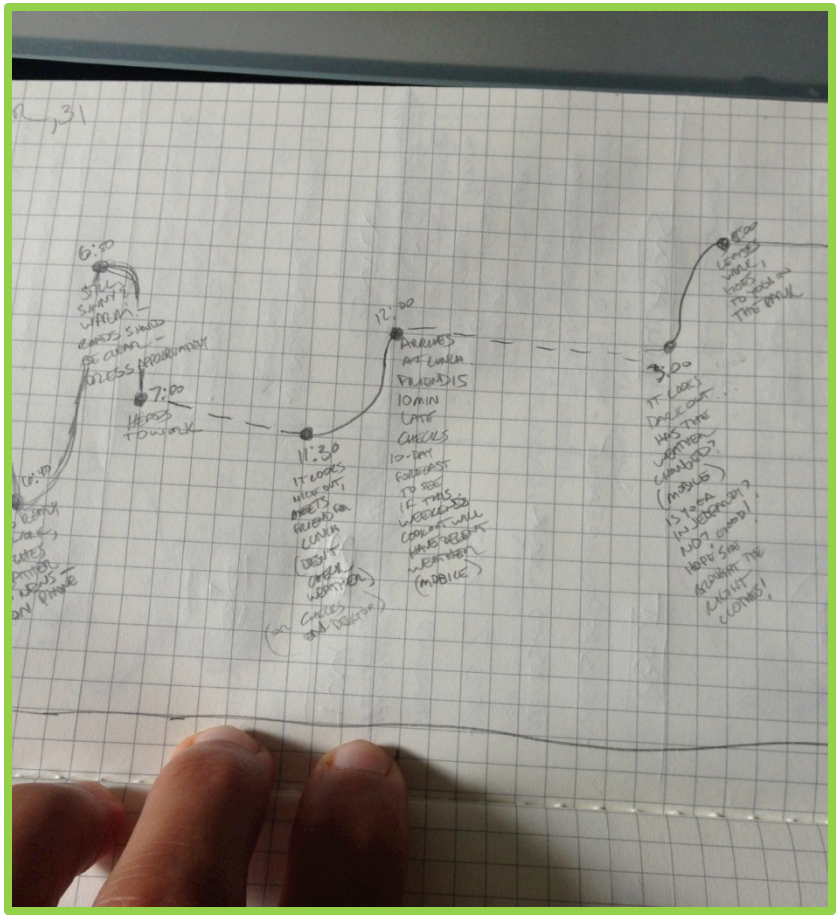
A small task analysis was created to map out the mental process a user takes when they are checking the weather to determine how to dress for the day.

This was based on existing methods of checking the weather.



User Journeys

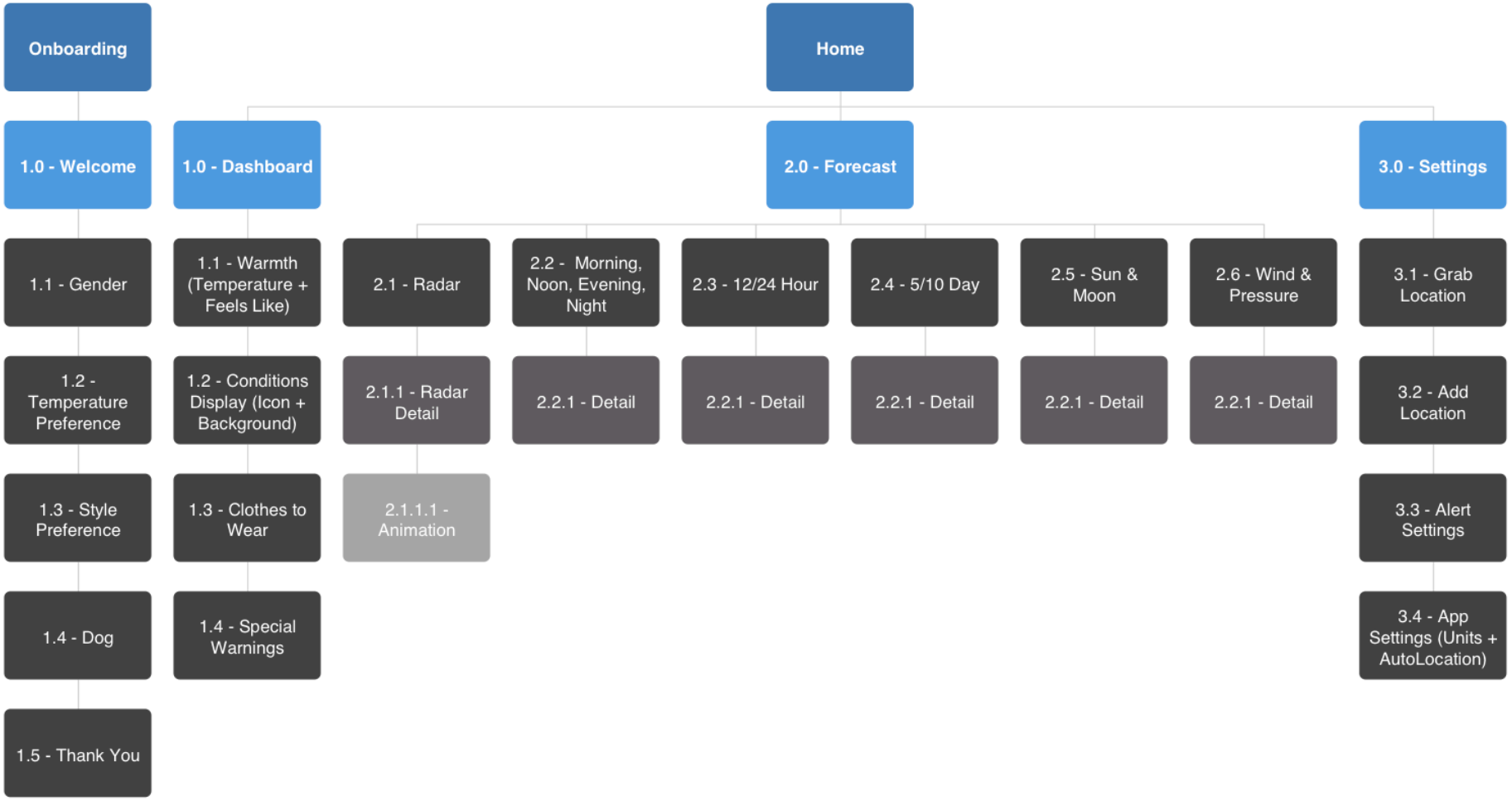
- User Journeys were also created, based on the personas
- The timeframe is not based on a purchase cycle, rather on a single day in the life of a persona
- The weather seems to have a major effect on the mood of some people, but no effect on others – the difference in mood of those that are affected (self-reported) seemed large enough to impact the visual design of the app
- Users checked the weather far more often than they initially realized



User Journey Sketch

NAVIGATION MODELING

Site Maps



After several drafts, this site map was created.

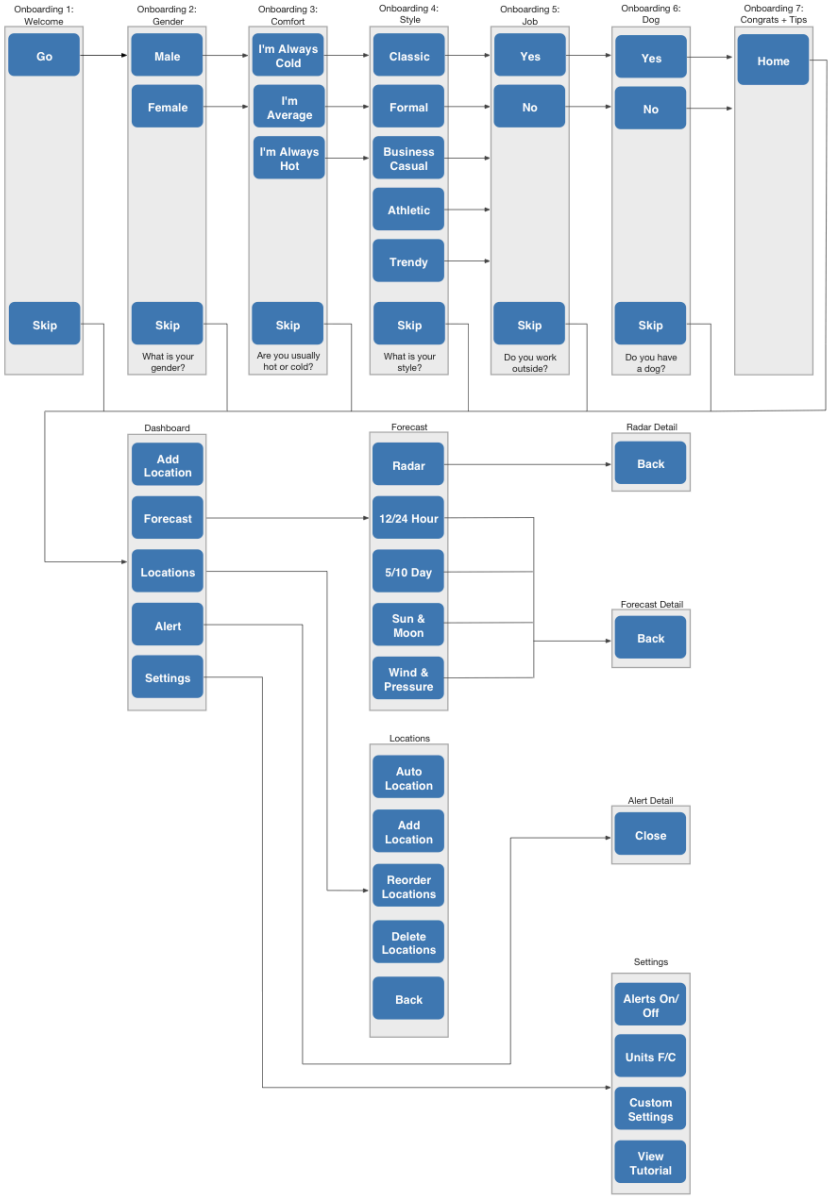
Screen Flows

These screen flows show the path a user will take through the app.

Once through the onboarding, a user will only have three levels of screens to navigate.

The goal was to reduce the amount of cognitive load on the dashboard (home screen) as much as possible. The user needed to be able to glance at the main image showing the outfit and not need/ care to know about any of the specific weather details. Essentially, the choice paradox was eliminated.

The weather detail was placed one level in, with the idea for it to be consistent with users current expectations.

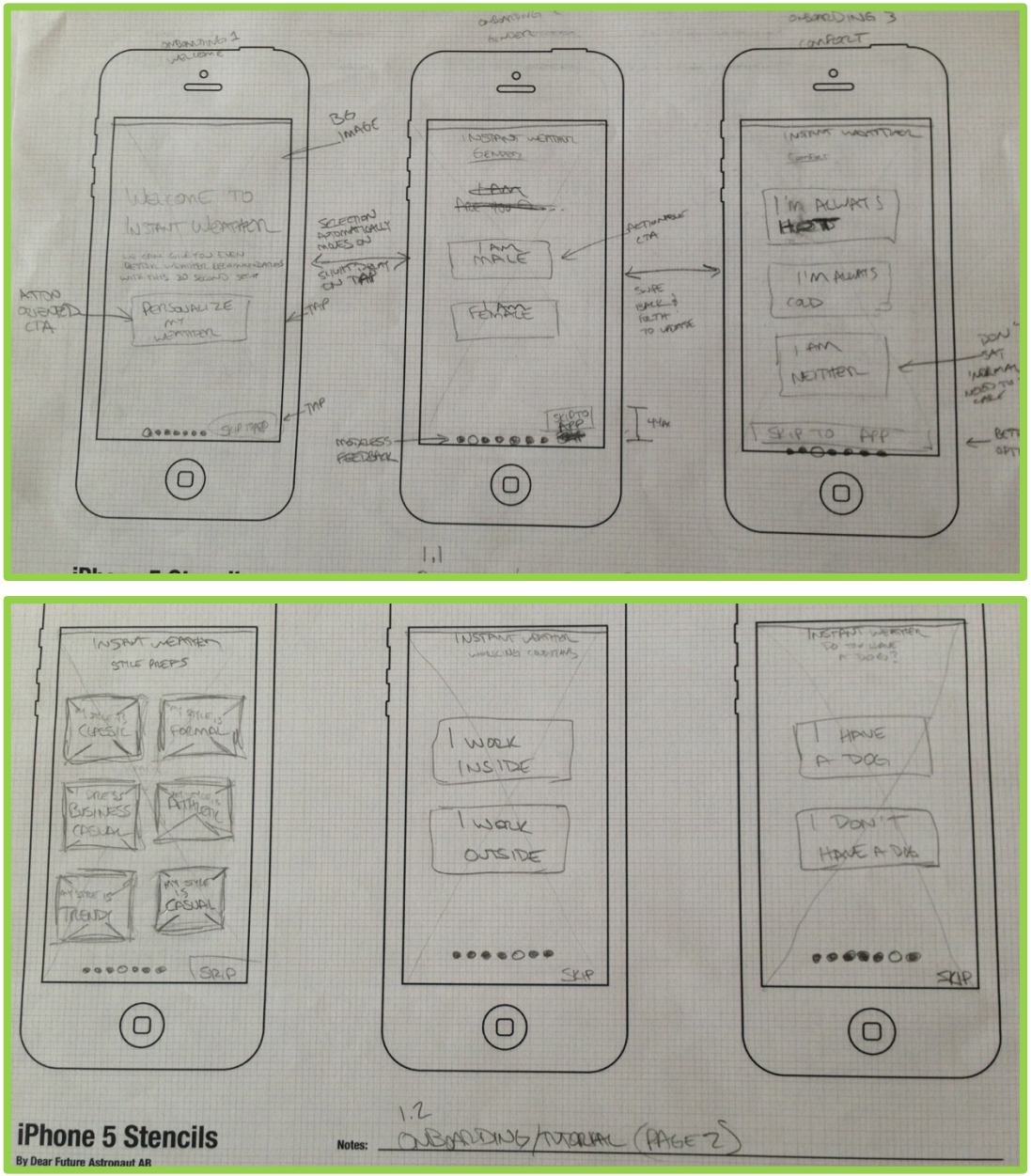


Screen Flow

SCREEN LAYOUT

Sketches

After a few rounds of sketching, most of the UI and the interactions were worked out and ready for wireframes.

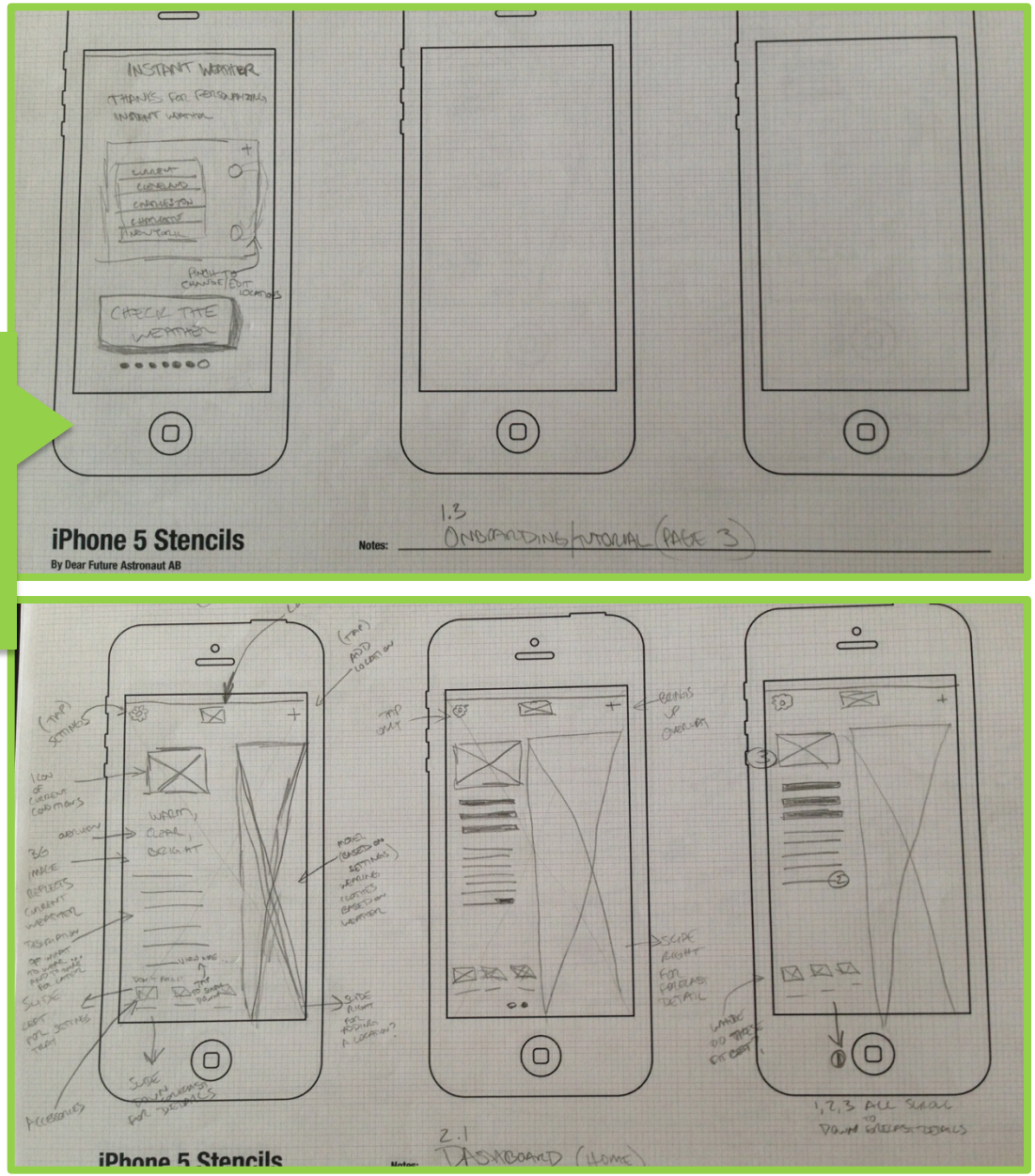


Top: Onboarding 1 Sketch, Bottom: Onboarding 2 Sketch

Sketches

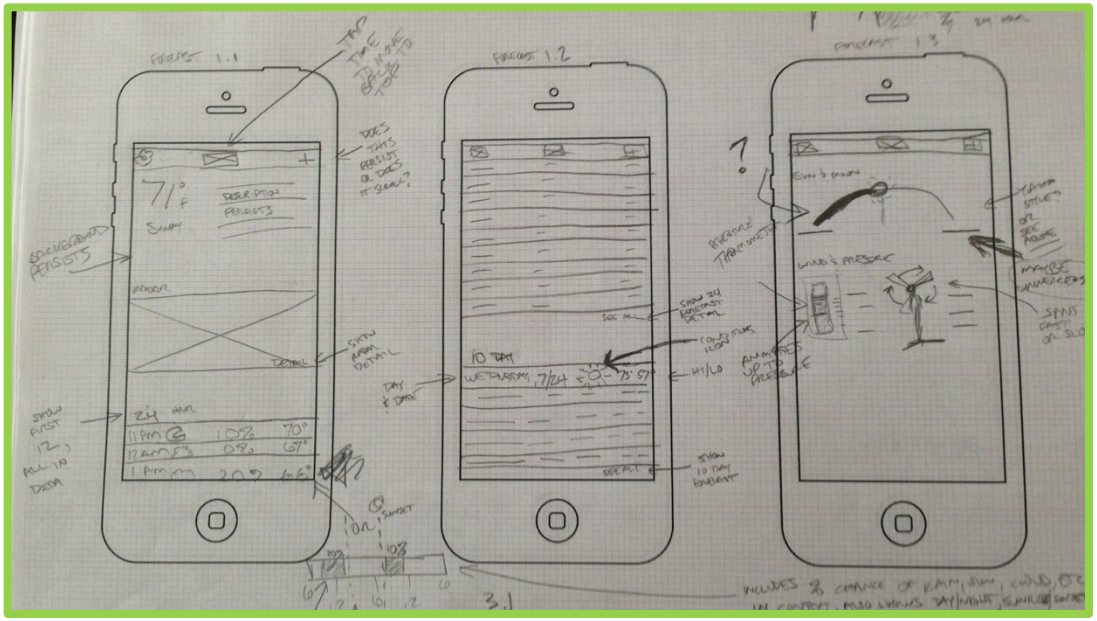
Key Insight

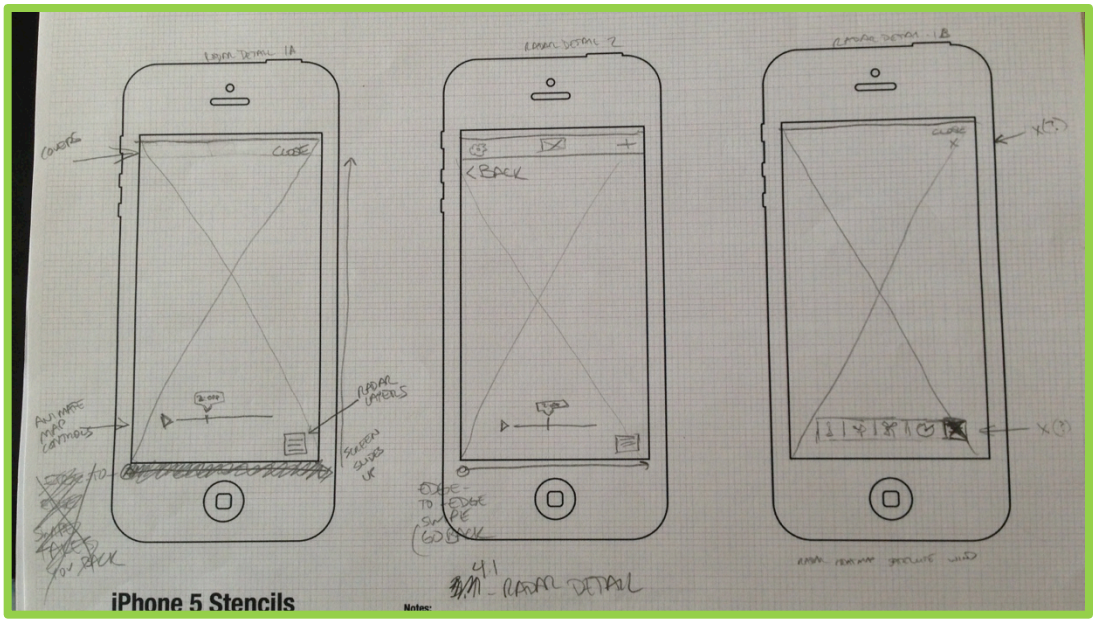
The onboarding allows the user to personalize the app while being introduced to the concept and interactions



Top: Onboarding 3 Sketch, Bottom: Dashboard Sketch

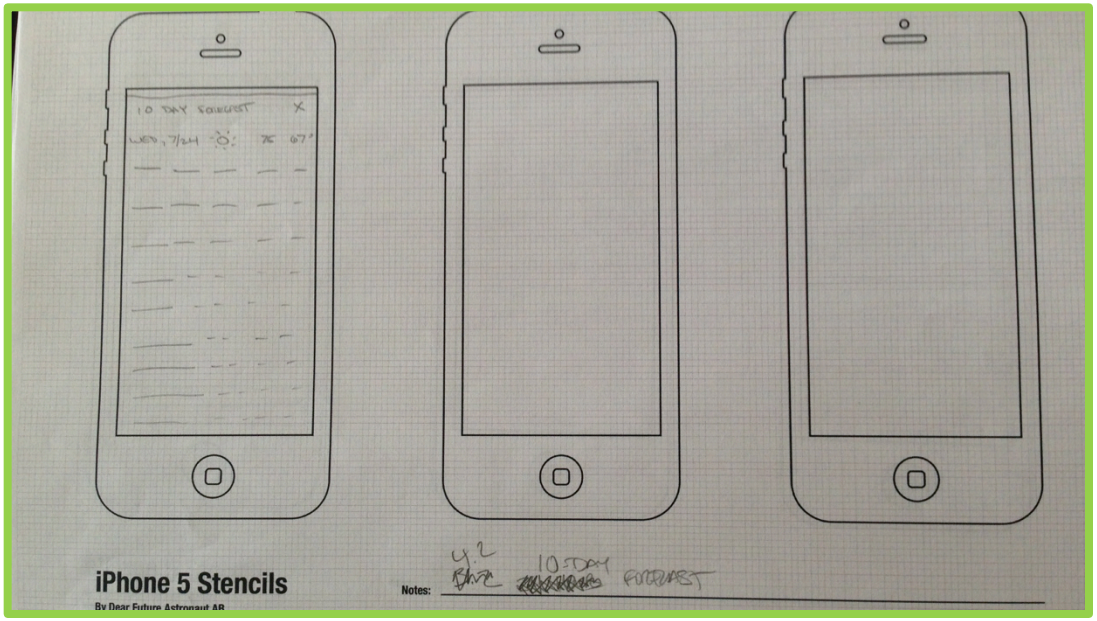
Sketches





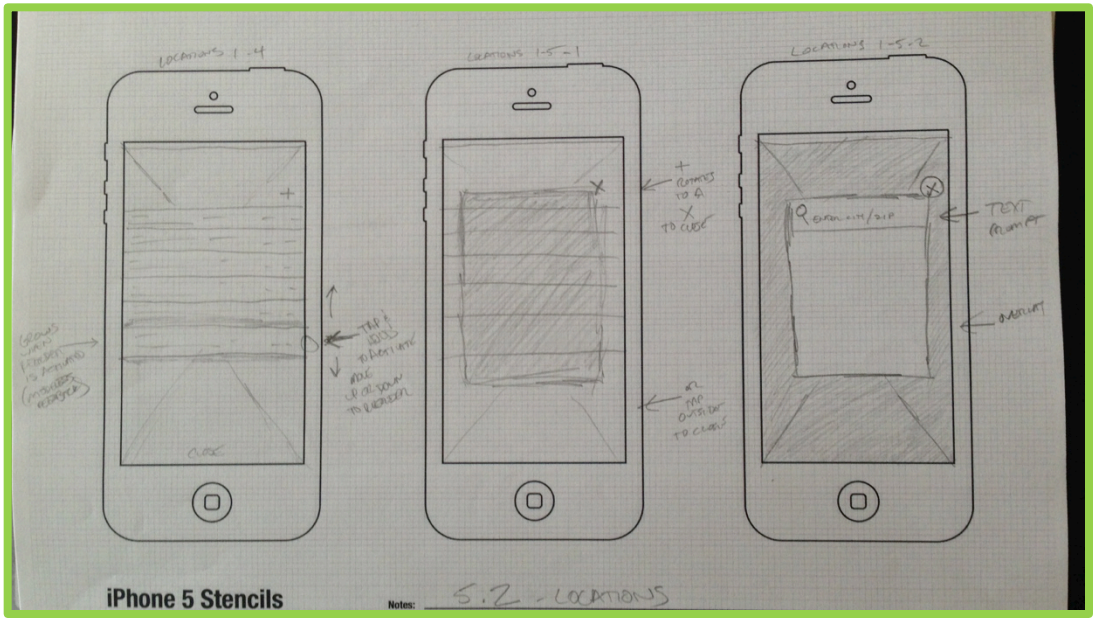
Top: Forecast Sketch, Bottom: Radar Sketch

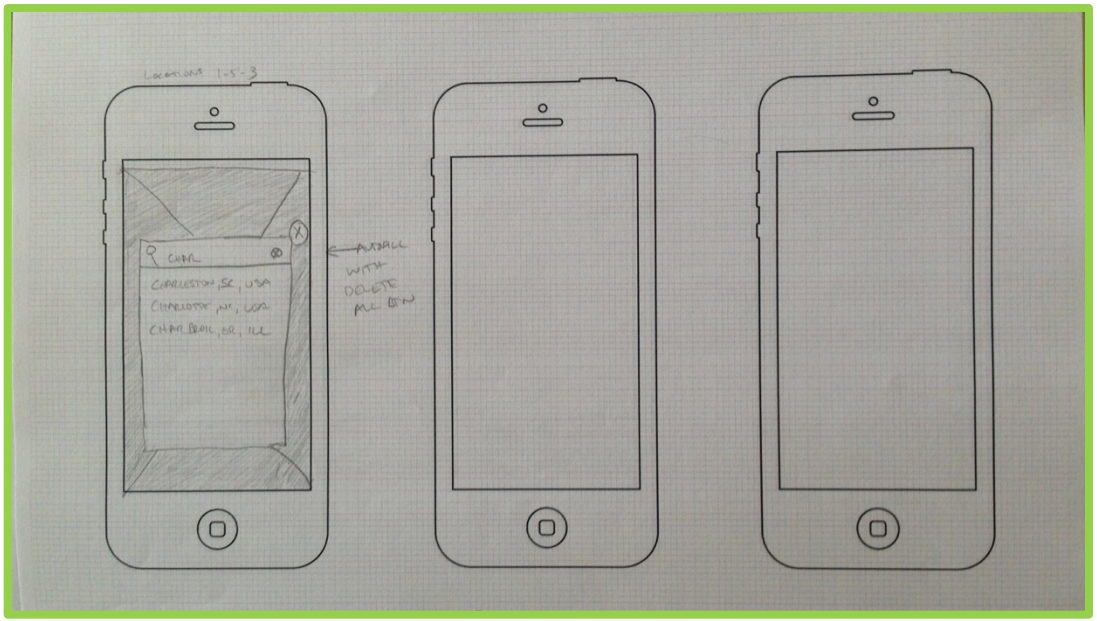
Sketches



Top: 10 Day Forecast Sketch, Bottom: Locations 1 Sketch

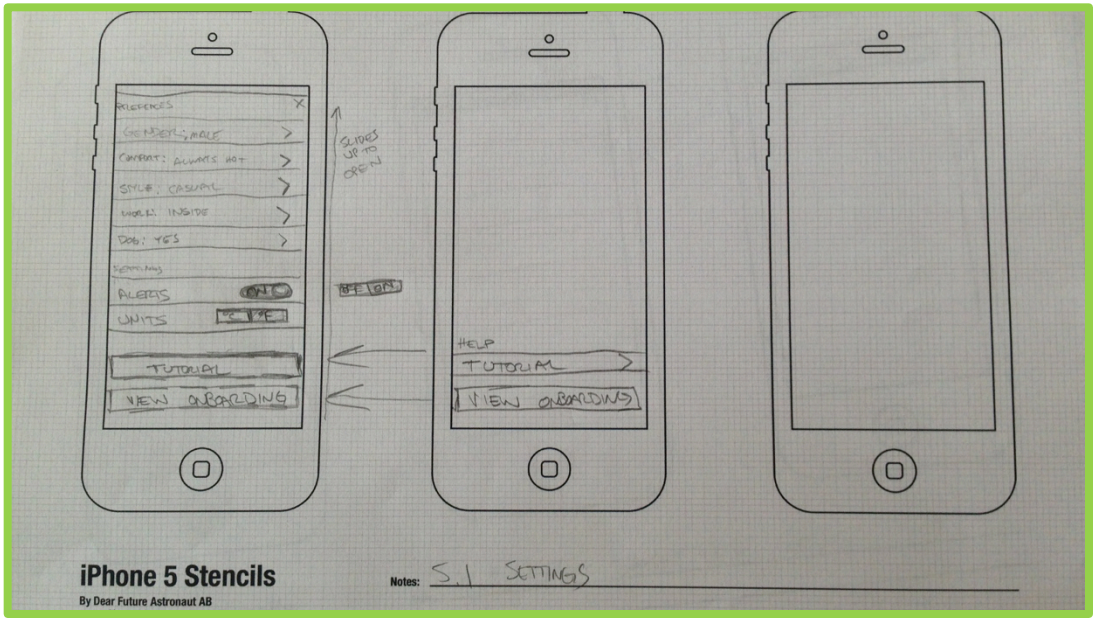
Sketches

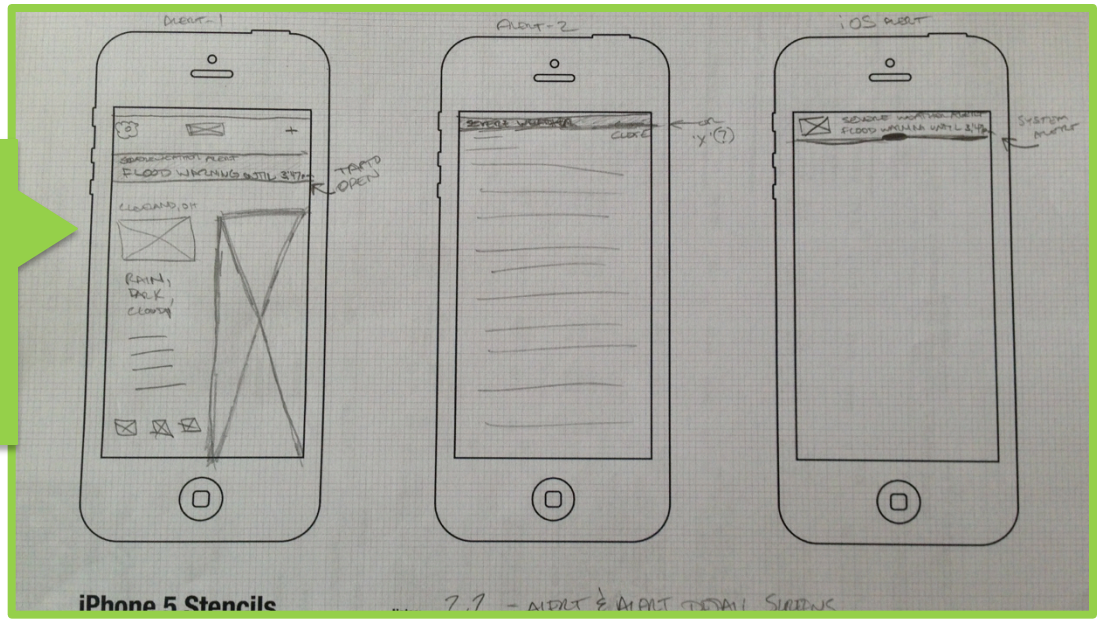




Top: Locations 2 Sketch, Bottom: Locations 3 Sketch

Sketches





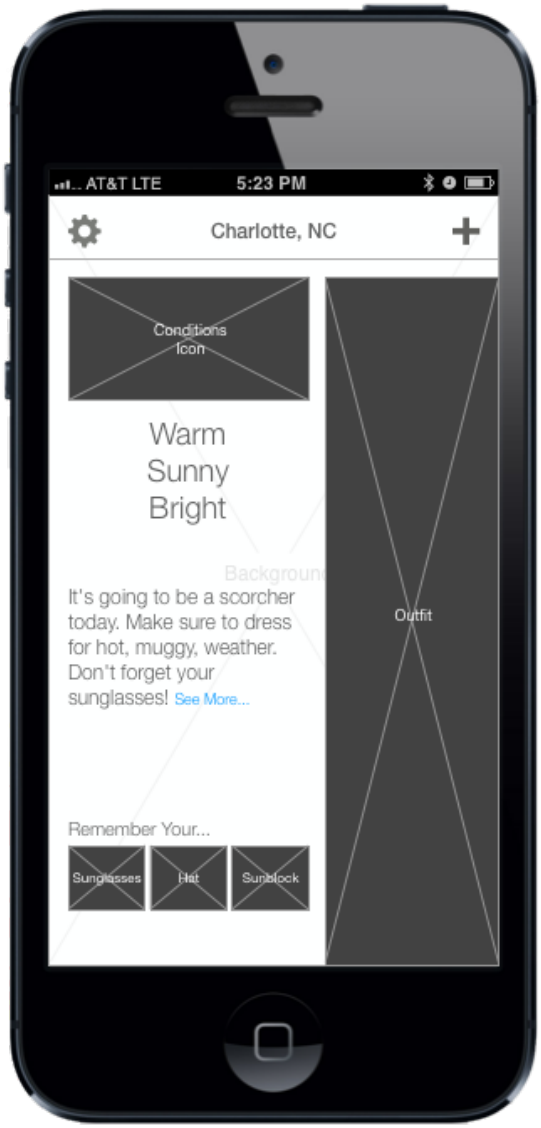
Key Insight

The alerts and warnings interact as a third screen, but are presented inline on the dashboard

Top: Settings Sketch, Bottom: Alerts & Warnings Sketch

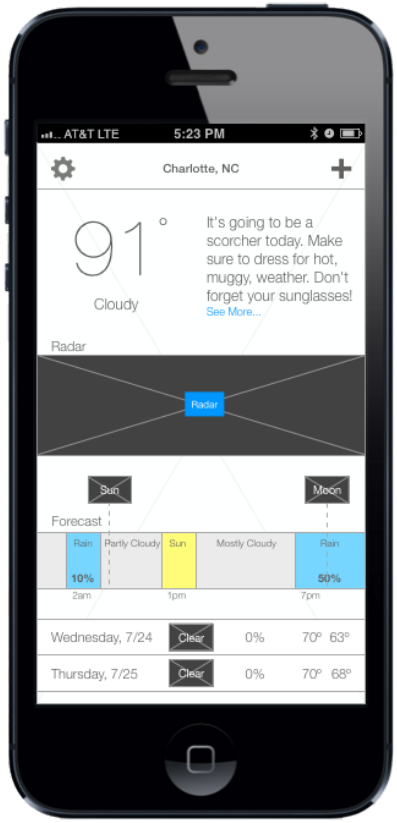
Wireframes

The wireframes were created to help bring the UI from concept to a more concrete idea. Ideas from the sketches were iterated in and out as the layout matured.



1.0 Dashboard

Wireframes



Key Insight

The third level of screens are presented as overlays to maintain clarity for the user

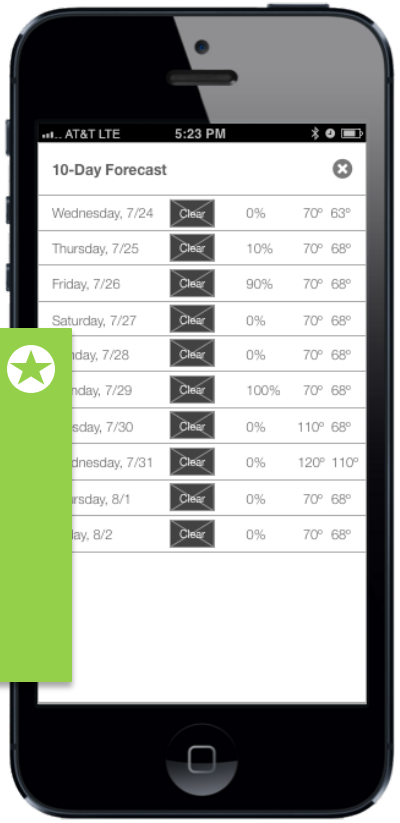
2.0 Forecast

2.1 Radar Detail

Wireframes

2.1.1 Radar Detail Open

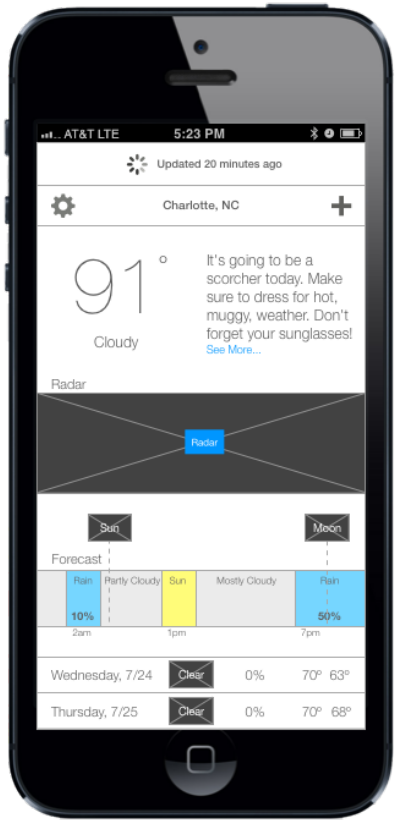
2.2 Forecast Scroll



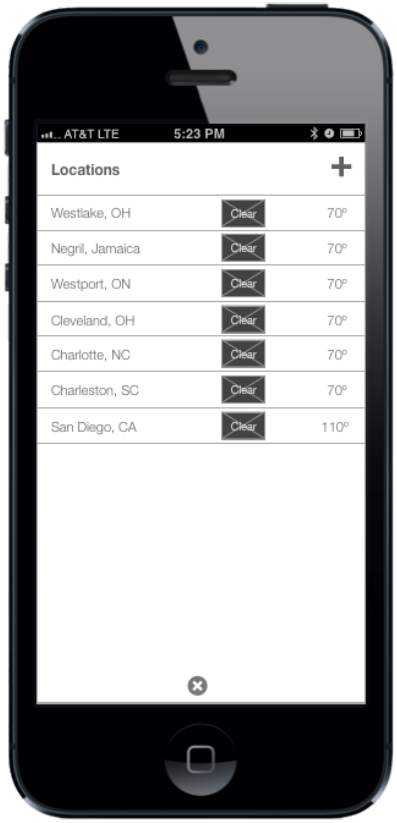
2.2.1 10 Day Forecast

Key Insight
Non-essential information to the target users is deemphasized or eliminated in the UI

Wireframes



2.3 Refresh

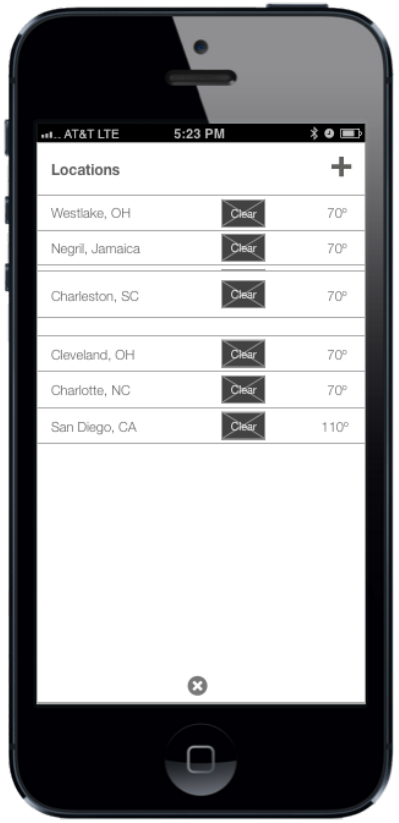


3.0 Locations

3.1 Add Location

Wireframes

3.2 Delete Location



3.3 Reorder Location

INTERACTION FLOWS

Interaction Flows

The interaction flows show the gestures a user will take to navigate the app. They are designed to be consistent with smartphone (iOS) standards, staying consistent with user expectations.

The only novel interaction is a “Pinch-To-Open Locations” shortcut, although tapping the Plus icon to add a location will get you to the same place. There will be a guide accessible from the settings, and users are notified as part of the onboarding. Screens 3.0 – 3.5 provide additional detail on pages 37 and 38.

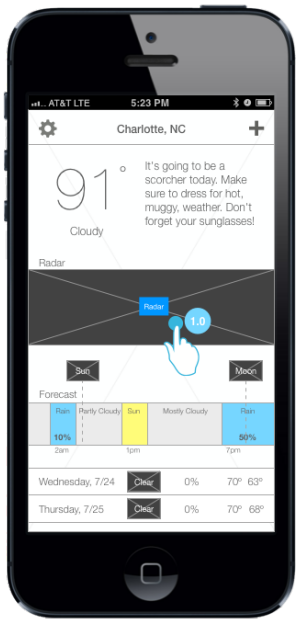
Key Insight
Reducing the cognitive load on the Dashboard allows the user to know what to wear, *without having to make a decision*

1.0 Swiping up scrolls the page down, to the Forecast screen

1.1 Tapping 'See More...' autoscrolls the page down to the Forecast screen

1.0 Dashboard

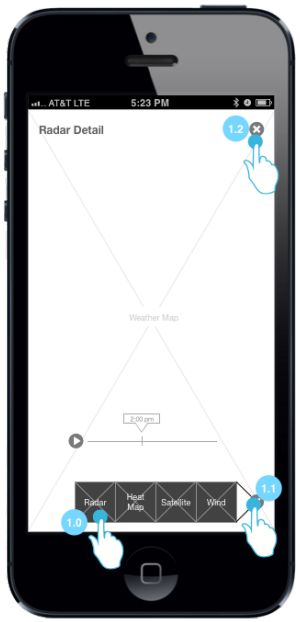
Interaction Flows



1.0 Tapping on Radar map opens the full screen radar - the radar slides in as an overlay up from the bottom

1.0 Tapping on the Play/Pause button starts and stops the radar animation, while toggling the button

1.1 Tapping the Map Layers button slides open the map layers from right to left



1.0 Tapping on a map type brings brings that layer to the top, making it visible

1.1 Tapping the Close Map Layers button slides the map types closed

1.2 Tapping the Close Map button slides the entire overlay closed, from top to bottom

2.0 Radar Flow

2.1 Radar Detail 1

2.2 Radar Detail 2

Interaction Flows

Key Insight

Discovering a new interaction pattern, Pinch-To-Locations, causes delight, engaging a user in an emotionally positive manner

1.0 Pinching the screen at any point in the application opens the Locations screen, which split slides in from top and bottom

1.1 Tapping the Plus icon (Add Button) opens the Add New Locations screen

3.0 Locations 1-1

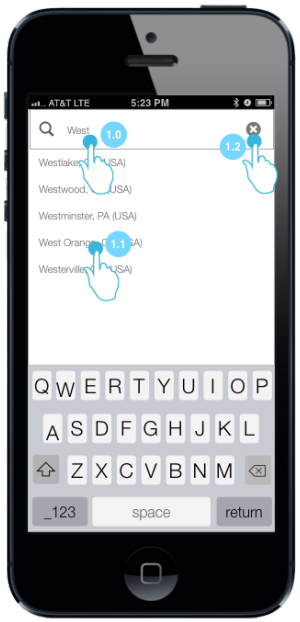
1.0 (Continued from last screen - Shows more of the animation)

3.1 Locations 1-2

1.0 Tap the Add button to add a new location - changes the top field to a search box and the bottom field to search results

3.2 Locations 2

Interaction Flows

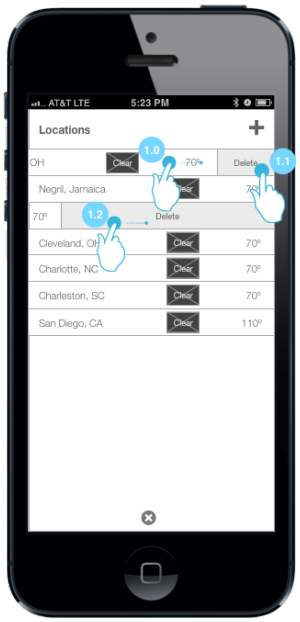


1.0 Tapping in the field allows you to start typing a city or zip code - autosuggestions show up below

1.1 Tapping an autosuggestion adds this location to a saved list and returns the users to the Main Locations overlay

1.2 Tapping the Close button closes the entire screen and returns the user to the Main Locations overlay

3.3 Locations 3

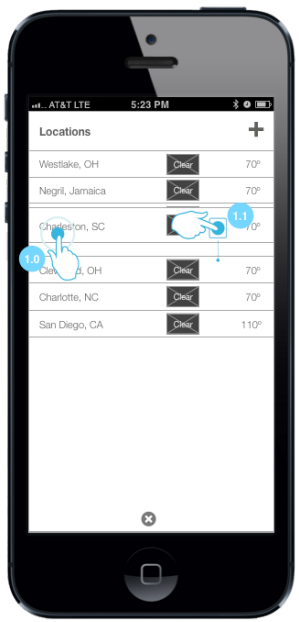


1.0 Dragging left and letting go will present the user with an option to delete the entry

1.1 Tapping the Delete button once visible will confirm the deletion

1.2 Dragging all the way across the screen (a "longswipe") will delete the location - a second interaction is not required - there is a strong tween on this gesture

3.4 Locations 4



1.0 Press and hold on a location to activate the reordering option

1.1 Continue holding and drag the entire row of data up or down. release to complete the reordering

3.5 Locations 5

VISUAL DESIGN

Mockups

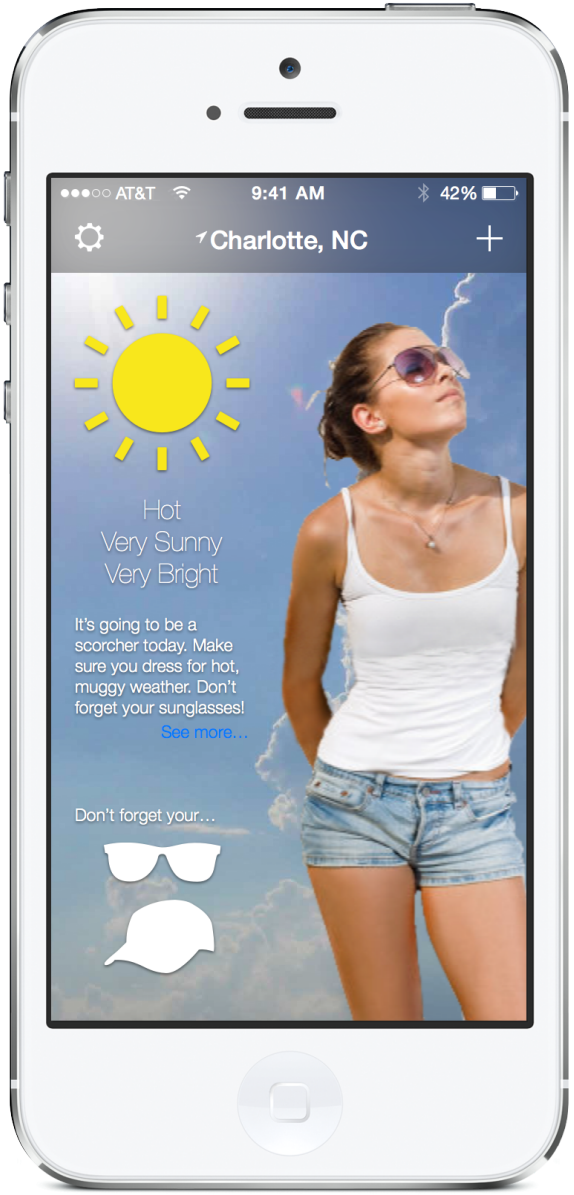
Not all of the mockups are currently completed, but there are enough to convey the idea of the app.

The design is mostly light and flat. I kept most of the information density off the dashboard (the home screen) and used the majority of the screen to show an image of a person wearing an outfit you could wear that day. So, you could theoretically open the app, see the picture, and not worry about the weather for the rest of the day.

Also included on the dashboard are an icon of the conditions, a short description of the forecast, and icons matching any accessories you may need in addition to your outfit.

Tapping or scrolling will move you down to the actual forecast, which is structured in a way consistent with user's mental model for a weather app.

Of course, this design is not perfect, and there are several interactions and visual elements that I'll be changing pending some more testing.



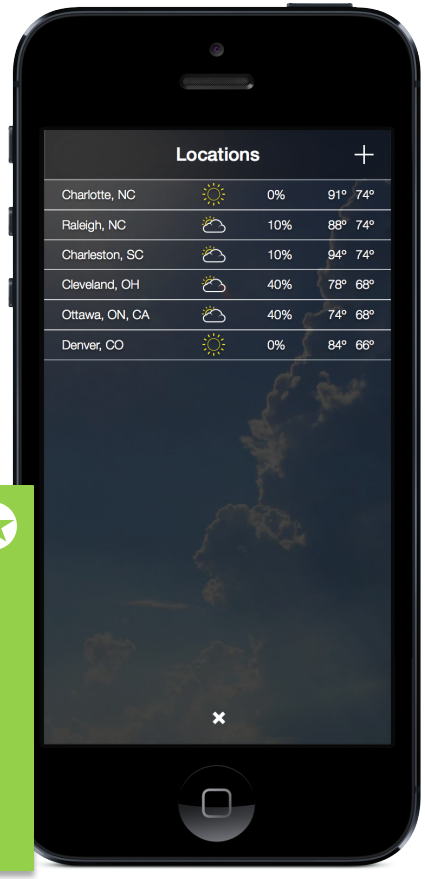
Dashboard

Mockups

Forecast

Key Insight

Showing the 24 hour forecast as a graph significantly reduces the load and the footprint of the information, improving the spacing and usability



Locations

Testing the ideas and developing the app

PART III - PUTTING IT TOGETHER

DEVELOPMENT AND EVALUATION

Testing and Developing

Testing

- Guerilla style efficiency tests were performed, based on the sitemap and screen flows
- Additional task-completion tests were performed based on the wireframes and compared to results on other weather apps (from the interviews)
- Some surprising results – even though users had a mental model of ‘swiping cards’, vertical scrolling was much easier to both use and quickly understand
- Users preferred the apps that provided useful information rather than focused on flashy, flat design or gesture-based interactions based on different mental models

Developing

- The rest of the mockups and low-fi prototypes are currently being worked on
- They will need to be tested and updated
- There are plans to develop the app within the year

OTHER CONSIDERATIONS

Potential Improvements

Changing Behavior

- Can there be a limited release of the app to promote exclusivity? Possibly a waiting list?
- Are there any other places the app can surprise or delight the user to engage them emotionally? Will the pinch-to-location gesture qualify? Does the app need one or does it need several?
- Is there a way use self-expression, personalization, or curiosity to encourage repeat usage of the app? Anything additional to what has already been included?
- What else will motivate a user to check the app first thing in the morning or before they leave the house for the day? An alarm? Sleep statistics? Would it be possible to partner with other apps and build connectivity between them?
- Can the app include triggers that signal the user to trust the recommendations – the weather must be accurate and the recommendations must be accurate – but the app must also communicate that fact.

Testing for…

- …a way to eliminate the onboarding and allow the features to reveal themselves as needed to the user? Is using the goal-gradient effect (showing progress) enough? Is it ideal?
- …recognition over recall. Will the user recognize that the app is designed to save him or her the time and energy involved in making a clothing decision, or will the mental model prove to be too different?
- …clarity. Is the app clear and focused enough? Does the fact that you can drill down and get more detailed weather data take away from the simplicity and beauty of the decision-free experience? Do visuals (ex. the plus icon) need refinement?
- …feedback loops that encourage users to use the app daily or when they recognize a change in the weather.
- When iOS 8 is released, will the app need to include a widget that functions in the native notification center?

Questions?