M4

The Prototype

HCI 598
Milestone 3

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Strategy

Prototyping of the IDEO Method Cards Refresh will be two-fold:

1. A number of aspects can be evaluated with a high fidelity functioning mobile device based prototype (Android & iOS)
2. A smaller, but perhaps more significant, set of tasks will need to be evaluated with 'mid' level paper prototypes in a rapid prototyping fashion. Mid-level is defined as visual designs of relative accuracy including color, typography, object definition, and more. These tasks are those which, from a user understanding (intuitive, cognitively meaningful, familiar), are more complex. These screens will be printed in color and cut out from the wire frames

This approach was taken primarily from a standpoint of time constraint and fit with our design process. The trade-off with this aspect of the prototype is balancing time with an ability to write the code to satisfy a solution. For example, creating a 'card-view', one which shows a number of playing -like cards, is not difficult from a code perspective. Contrast that with a concept of Groups, saving a set of customized cards and persisting that group indefinitely, and it is evident that compromises needed to be made.

Justification

Ideally, in an authentic environment with additional team members, a complete high fidelity solution would be created. As Nielsen notes, evaluators are more apt to find major usability issues with higher fidelity prototypes (Nielsen, 1990). However, by combining rapid low fidelity prototyping along with a few key scenarios of the high fidelity system, we should be able to adequately evaluate the design at this stage in the process. This evaluation should vet what has been generated thus far and drive direction for design and functionality changes.

Rapid prototyping is a method advocated by Tripp and Bichelmeyer (1990) to synthesize and modify artifacts quickly. Their belief in a design process not being a strictly linear process may complement rapid prototyping as it lends itself to how people solve problems in the real world. That is, we may approach a problem with one set of beliefs as to it's solution but these beliefs may change as we work to the solution. Rapid prototyping, as opposed to a more traditional concept of prototyping, differentiates itself by "rapid synthesis and utilization of designs because the medium affords it" (Tripp and Bichelmeyer). In other words, we can do more versions cheaply and quickly given the nature of software, tools, etc...

Description

The **low fidelity** screens as shown in pages 4-14 will be used to generate the paper prototypes.

The **high fidelity** prototype can be experienced in the following 3 formats:

1. To display and interact with the in progress high fidelity prototype, open a modern browser with the following url:
   https://dl.dropboxusercontent.com/u/1036052/www/iframe.html
2. Install an Android APK* by opening this url in your Android browser:
   http://bit.ly/methodcard
   ** Note that this may require your confirmation to allow install of 3rd party/non Play based applications*
3. A Youtube video of the screens and walk-through is here:
   http://youtu.be/iCSe-k1Nl4E

Tasks supported

The tasks created should be easily completed by the recruits. When preparing the design and prototype, a key consideration is the "physical and cognitive actions associated with the design (functions) falling within human capability limits" (Wickens et al., 2004, p. 50).

The basic task set must include the following:

- Find and launch Method Cards app on a device
- View the Cards
- View an opposite side of a Card (e.g. 'flip')
- View the Cards in a list view rendering
- View the cards in any other view
- Create a Group
- Add a voice or text annotation to a group
- Delete a group
- View general information about the Cards or IDEO
- Change your app theme

Tasks not supported

Reflection

Prototyping is essential in a design process for a number of reasons. First and foremost, it allows designers to 'cheaply and quickly' vet designs they do not have significant attachment to. It allows both design and development to pivot when something in the design does not evaluate well from a user test perspective and/or succeed from an engineering perspective.

The most valuable takeaway from the prototyping aspect of this project was one of compromise. Wireframing design, especially one that is meant to capture multiple & differing mobile platforms, needs to be flexible in consideration of established design conventions. For instance, the placement of primary tab interfaces on iOS vs. Android differs significantly. This leads to some interesting choices when trying to define a single paradigm to satisfy multiple platform best practices rin regards to interface design. In general, it helps to have a sense of detachment to early, wire frame level design as the prototyping process should act to evaluate the efficacy of the design.

I spent a good deal of time evaluating the technological frameworks that would aid in the development and design of the project. From the following 3 perspectives of framework, presentation, and functionality, my evaluation included:

Frameworks for mobile development (balance between an interface drag drop and native-like code)

- PhoneGap/Cordova- long history of cross platform mobile development, great license, new ties with Adobe to make more design friendly
- Ionic-new and with a focus on simplicity to provide almost native like controls and latency akin to native applications
- Intel XDK: new and with an interface builder, buggy
- Adobe Edge

Presentation (html/css)

- bootstrap
- purecss.io-by yahoo
- grid style sheets
- kube style sheets
- ionic

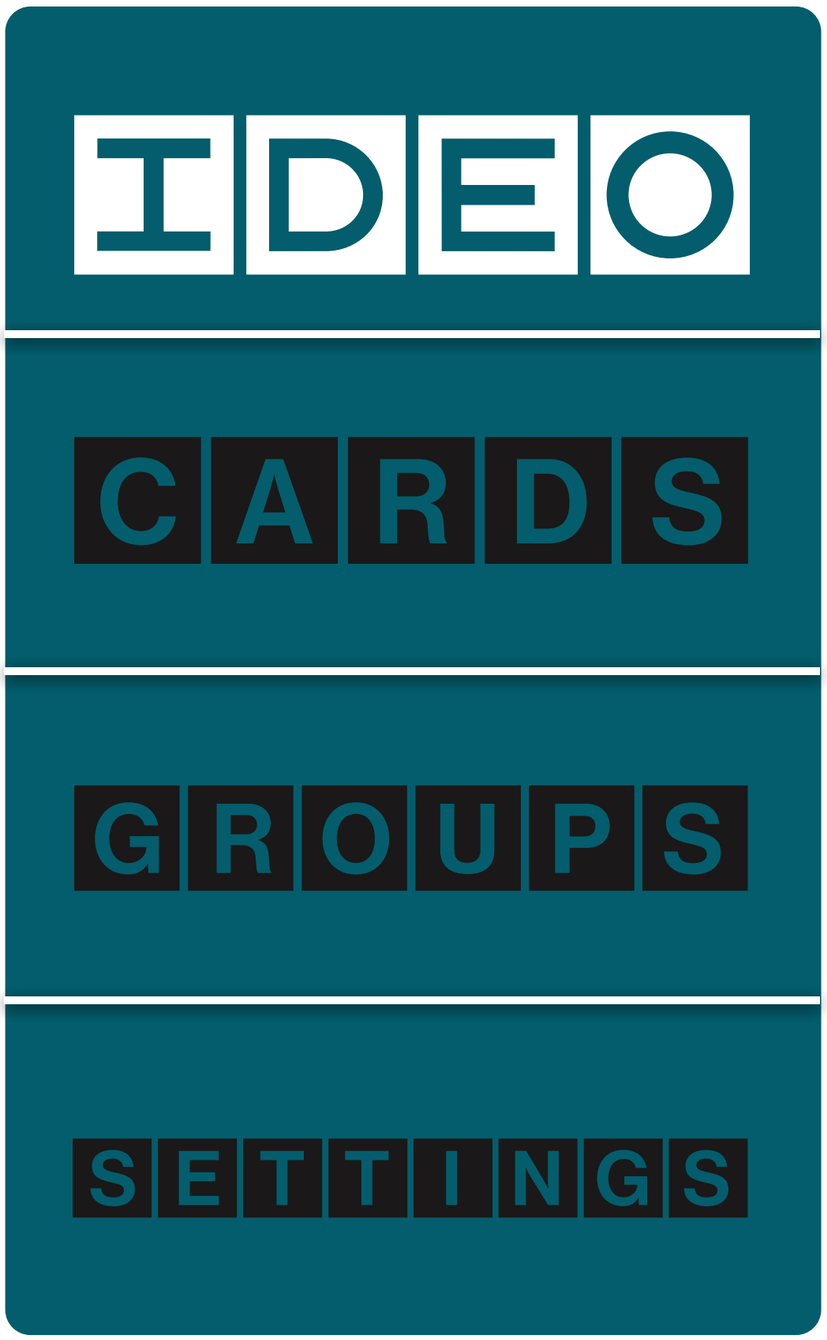
Functionality

- jquery
- jquery various plugins for design and ui
- metrojs=http://www.drewgreenwell.com/projects/metrojs
- xcode
- android sdk

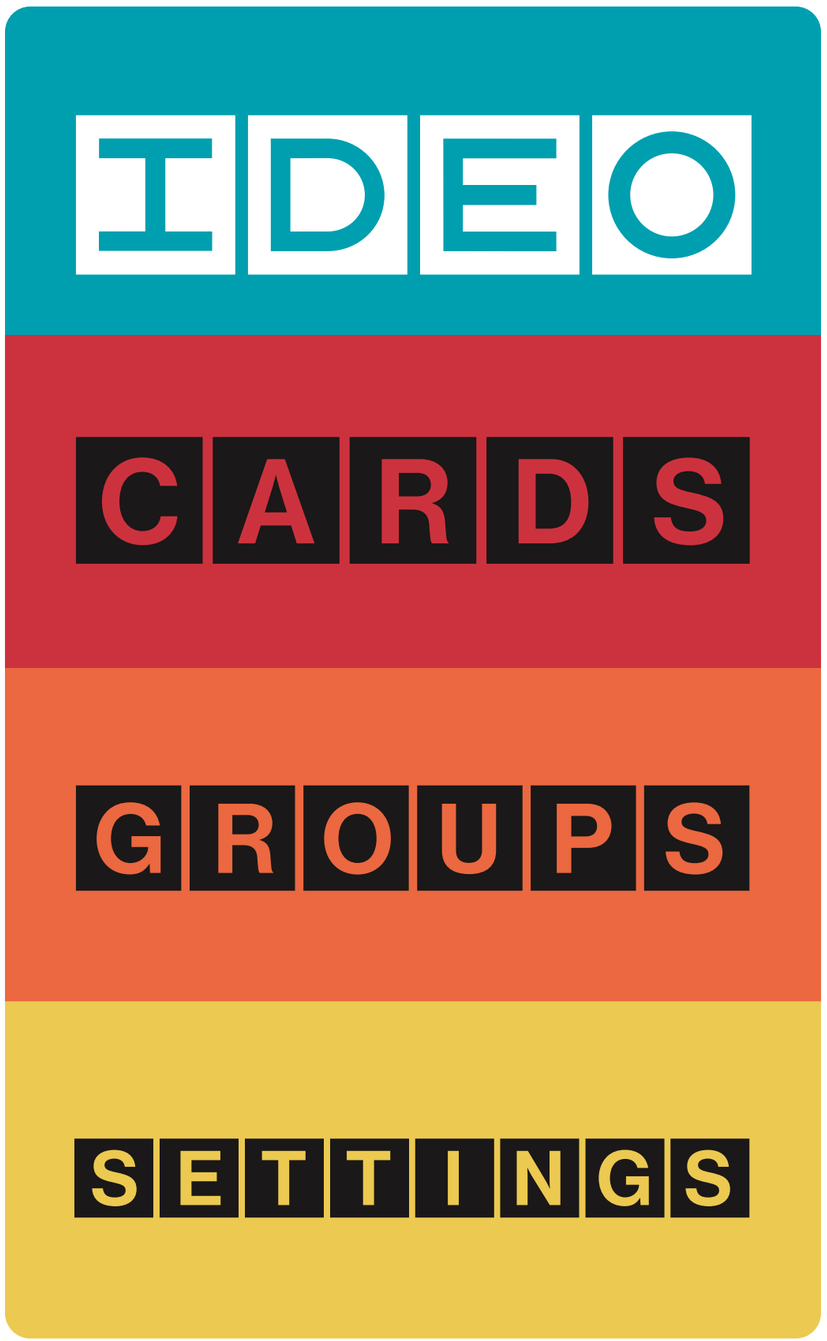
Ultimately my software 'stack' looked like this:

- Ionic Framework: This bundles up both UI presentation (css buttons, UI components, etc) with mobile centric functionality (gestures, out of box navigation, tab controls) with:
    - Small footprint, especially in regards to the css and javascript. Things like jquery and bootstrap contain too many elements/functions that are not needed when mobile specific.
    - Speed (my limited testing of ionic vs. phonegap vs. intel xdk) led me to believe that ionic is the only framework that gets anywhere near 'native feeling' experience
    - jquery
    - Phonegap/Cordova for native deployment
    - Acceptable latency threshold for native app like experience, close to 0.1 ms per Nielsens research on response time limits (Nielsen, 1994)

v1


IDEO
CARDS
GROUPS
SETTINGS

v2


IDEO
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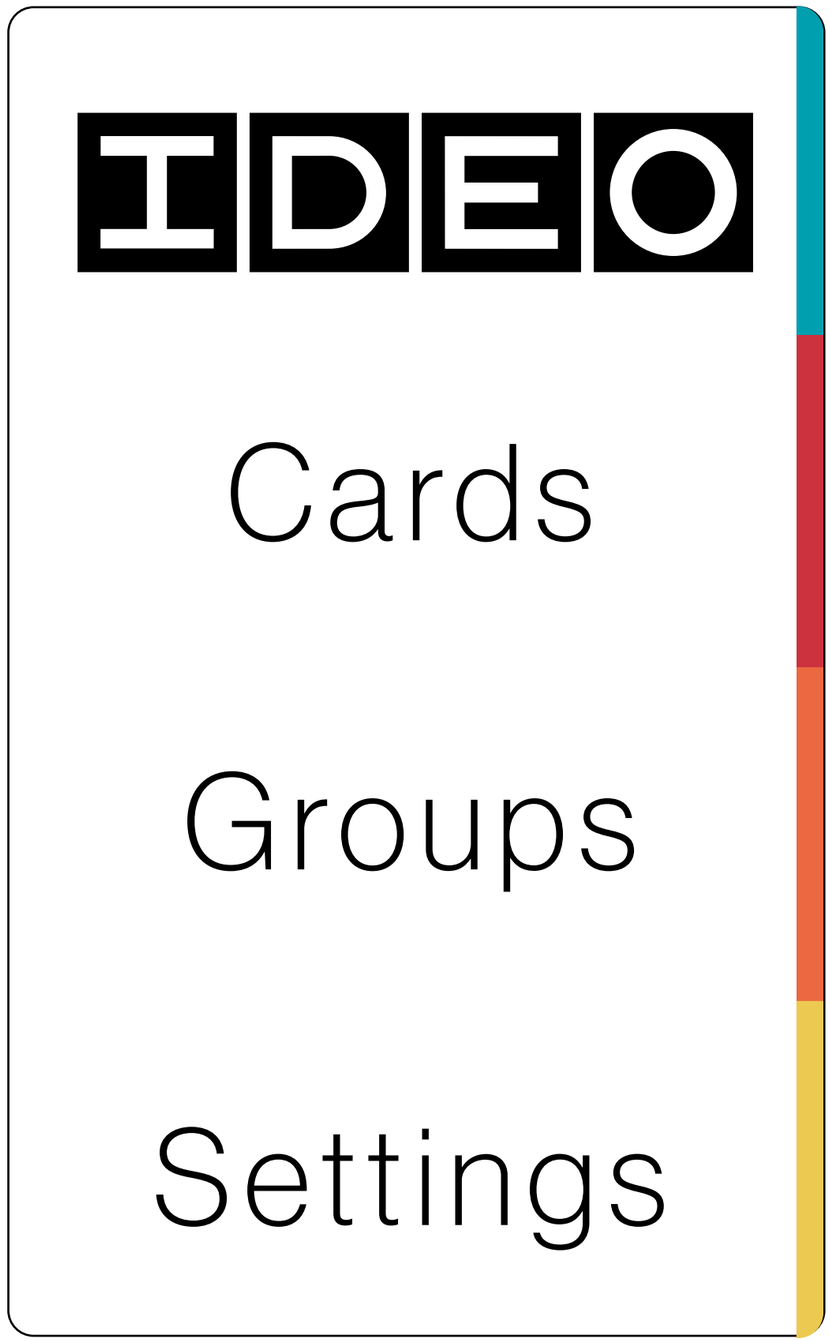
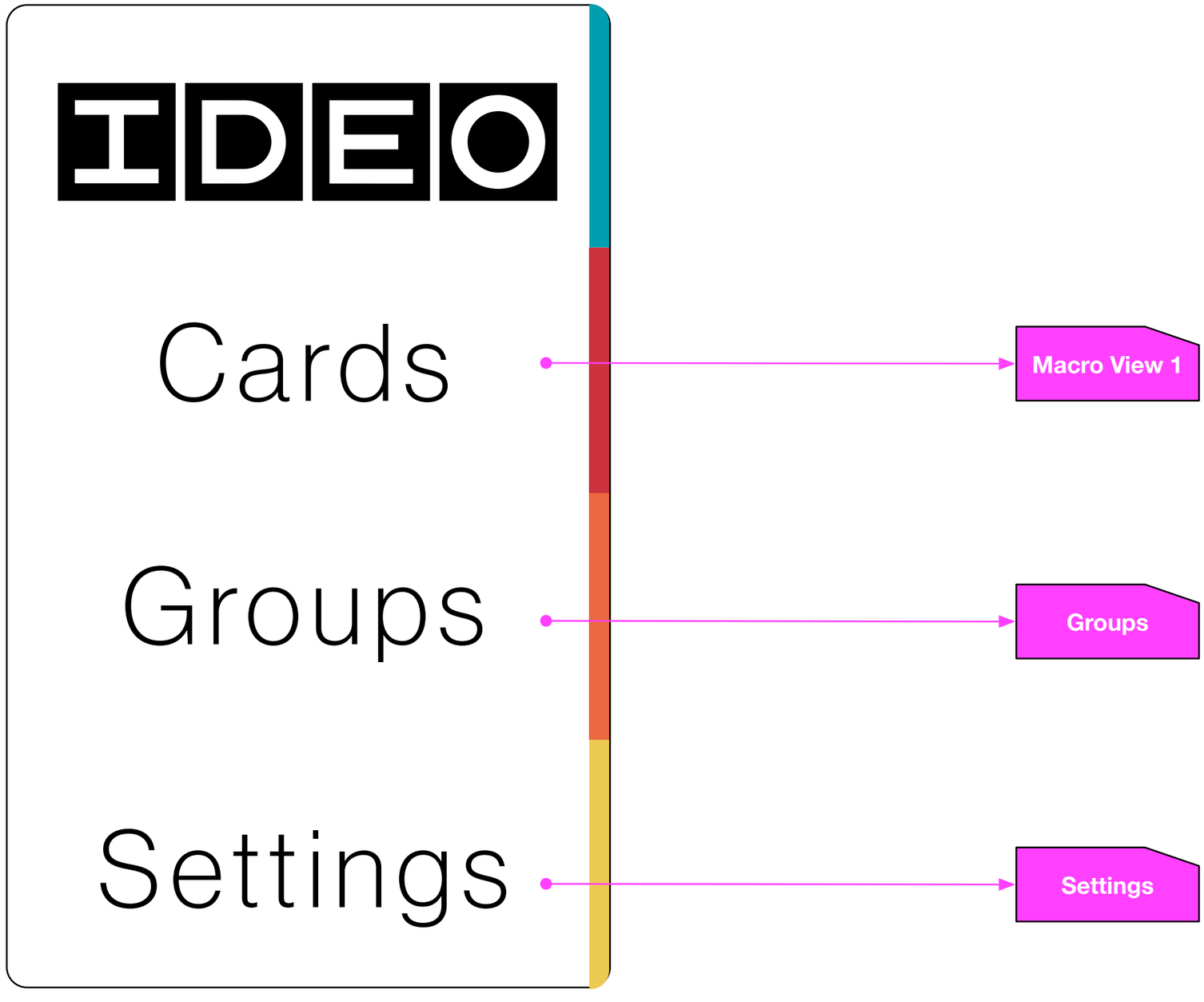
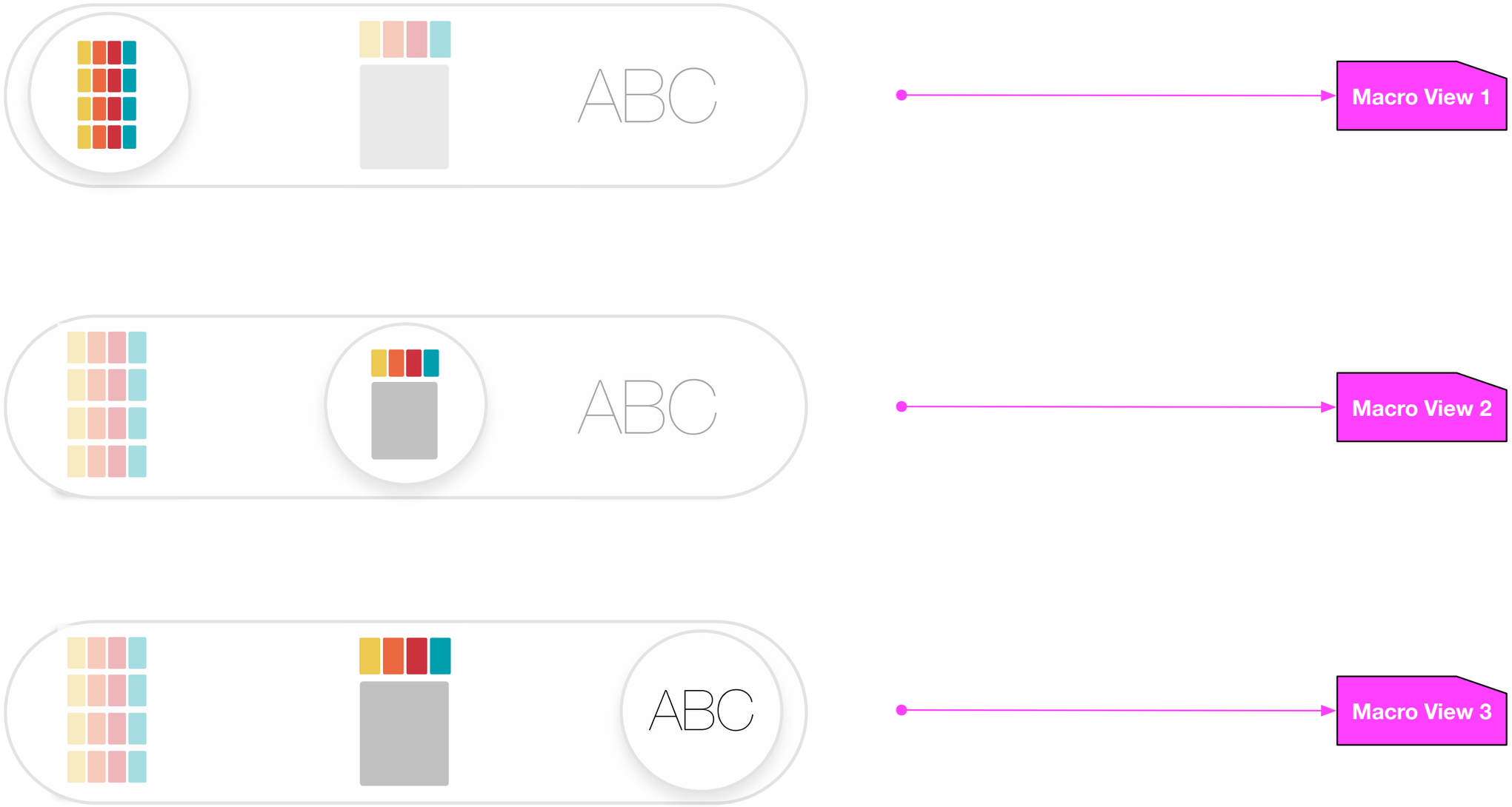
GROUPS
SETTINGS

v3


IDEO
Cards
Groups
Settings


IDEO
Cards
Groups
Settings
Macro View 1
Groups
Settings


ABC
Macro View 1
ABC
Macro View 2
ABC
Macro View 3


Main
CARDS
Learn
Look
Ask
Try
ABC


Main
CARDS
Learn
Activity Analysis
Affinity Diagrams
Anthropometric Analysis
Character Profiles
Look
A Day in the Life
Lorem ipsum...
Lorem ipsum...
Lorem ipsum...
Ask
Lorem ipsum...
Lorem ipsum...
Lorem ipsum...
Lorem ipsum...
Try
Empathy Tools
Lorem ipsum...
Lorem ipsum...
Lorem ipsum...
ABC

Main CARDS

L earn | L O ok | A sk | T ry

Empathy Tools T

HOW: Use tools like clouded glasses and weighted gloves to experience processes as though you yourself have the abilities of different users.

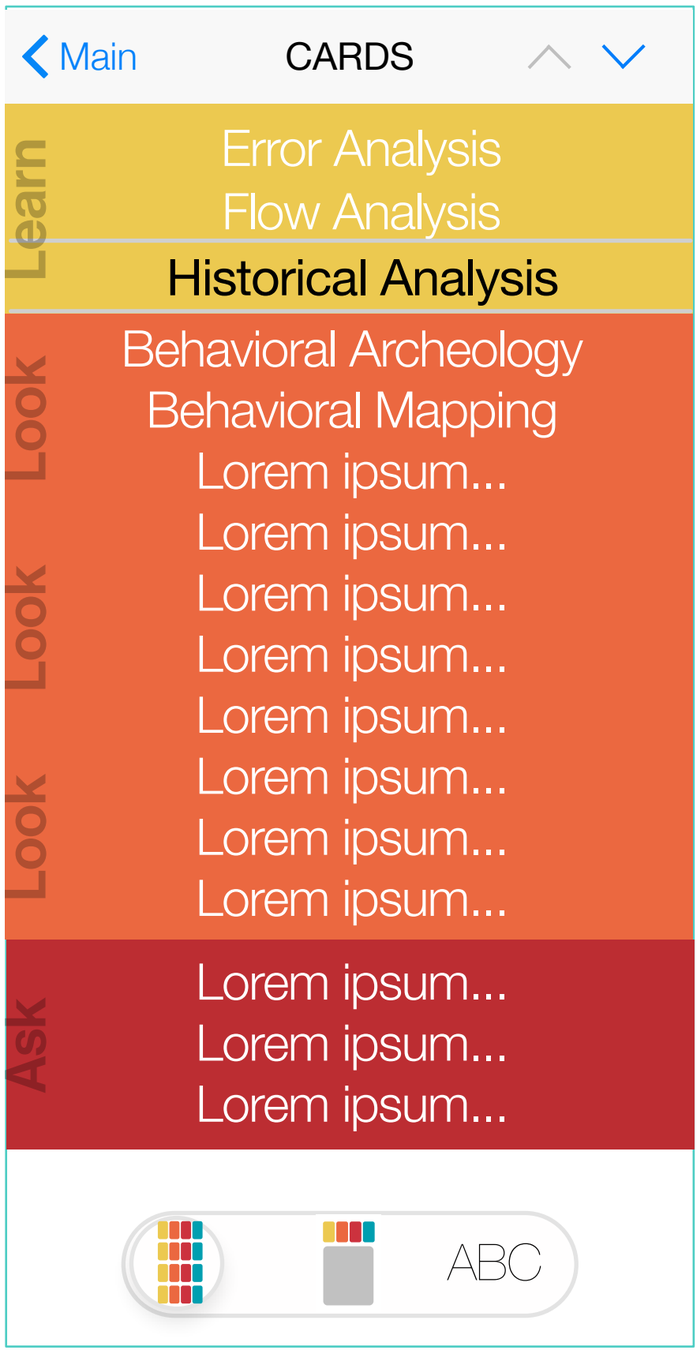
WHY: This is an easy way to prompt an empathic understanding for users with disabilities or special conditions.

IDEO designers wore gloves to help them evaluate the suitability of cords and buttons for a home-health monitor designed for people with reduced dexterity and tactile sensation.

Behavior Sampling | Experience Prototype

ABC

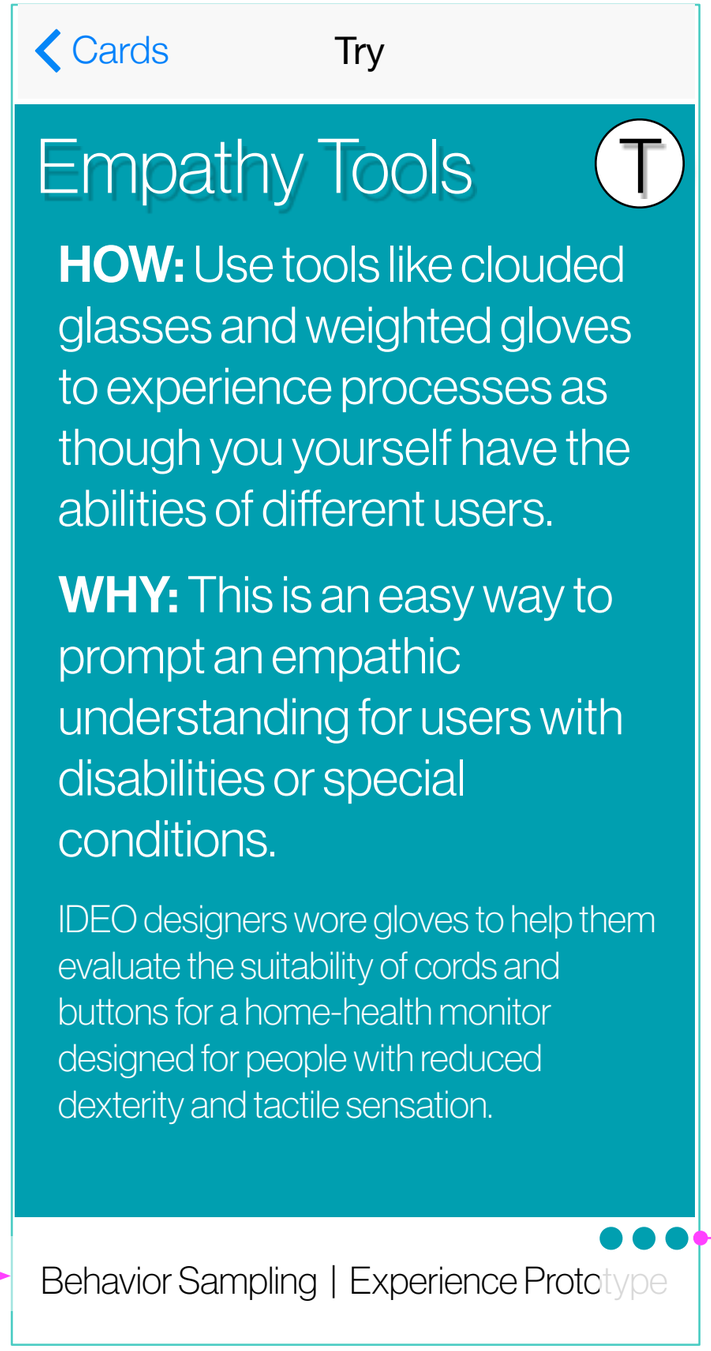
All other cards in the group, alphabetically ordered in a horizontal list



Standard list view with color assignments

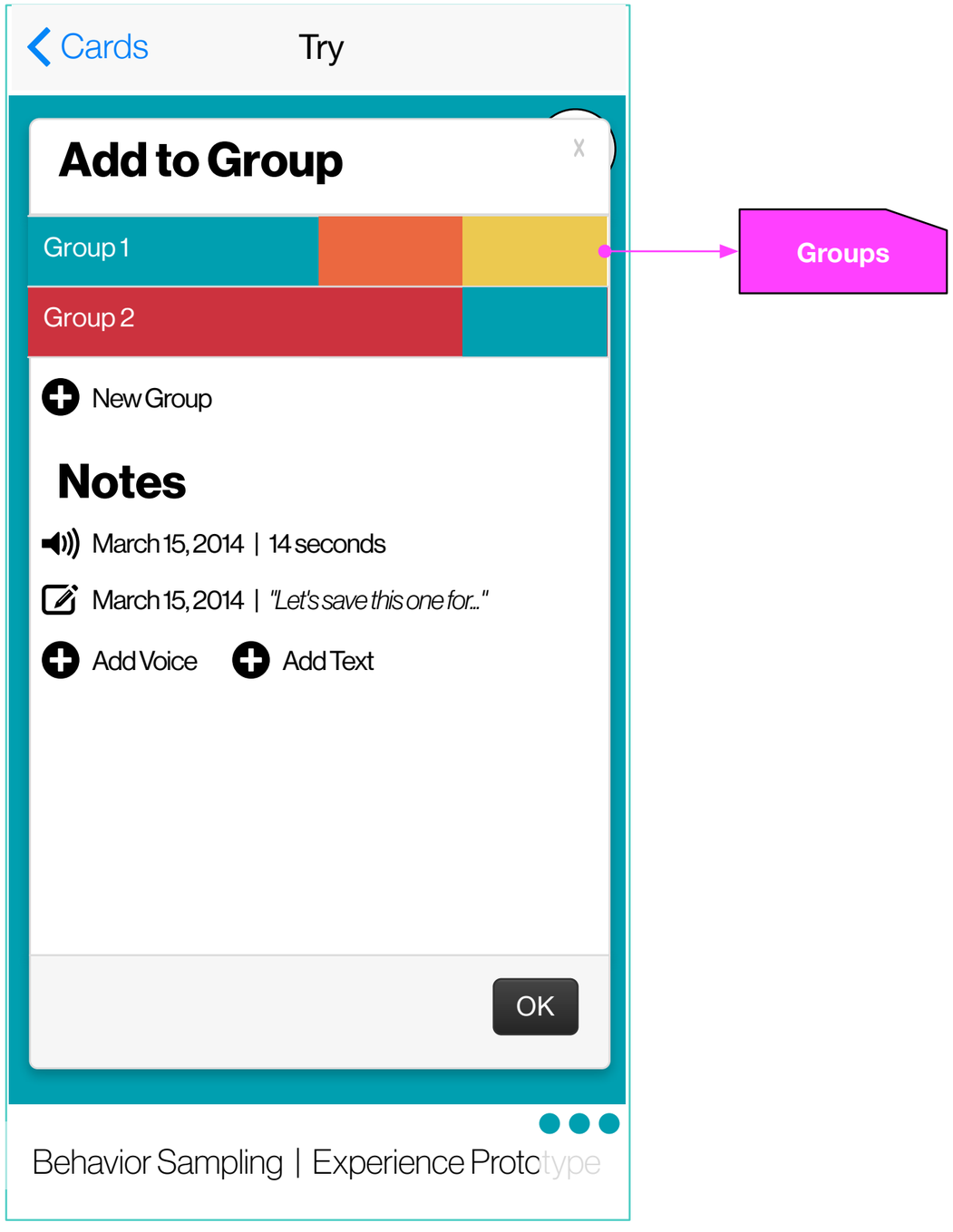
All other cards in the group, alphabetically ordered in a horizontal list

Context Menu



All other cards in the group, alphabetically ordered in a horizontal list

Context Menu


Cards
Try
Add to Group
Group 1
Group 2
New Group
Notes
March 15, 2014 | 14 seconds
March 15, 2014 | "Let's save this one for..."
Add Voice
Add Text
OK
Groups
Behavior Sampling | Experience Prototype


Empathy...
Group 1
Empathy Tools
T
Experience Pro...
T
Fly on the Wall
O
Flow Analysis
L
Group 2 | Group 3

Settings

Background

Use of the Cards

Web link

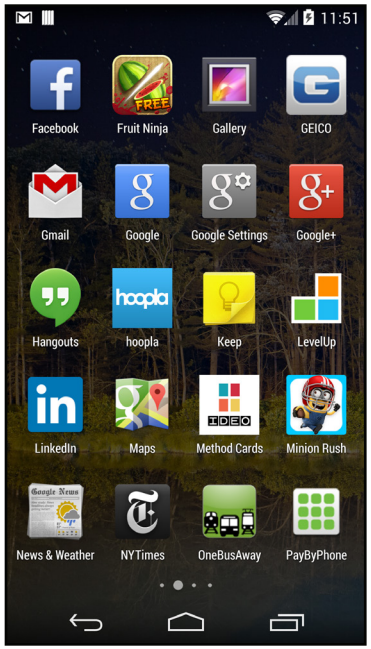
Theme

Theme Chooser

Hue & Lightness Picker

javascript palette generator

http://tools.medialab.sciences-po.fr/iwanthue/index.php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Facebook
Fruit Ninja
Gallery
GEICO
Gmail
Google
Google Settings
Google+
Hangouts
hoopla
Keep
LevelUp
LinkedIn
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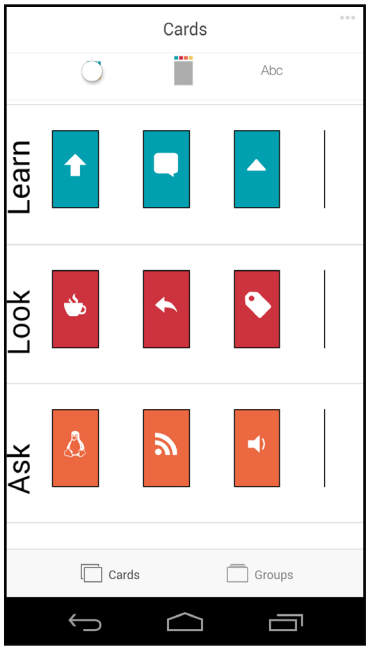
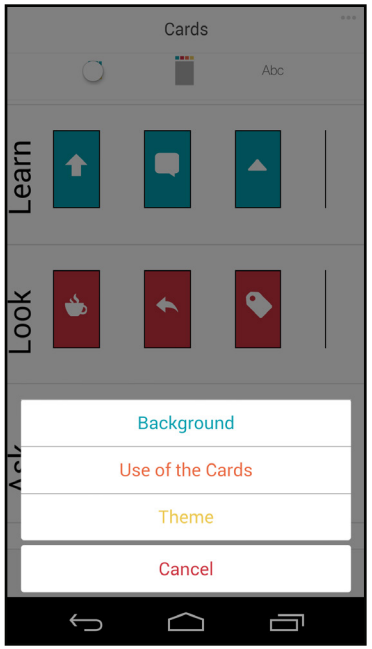
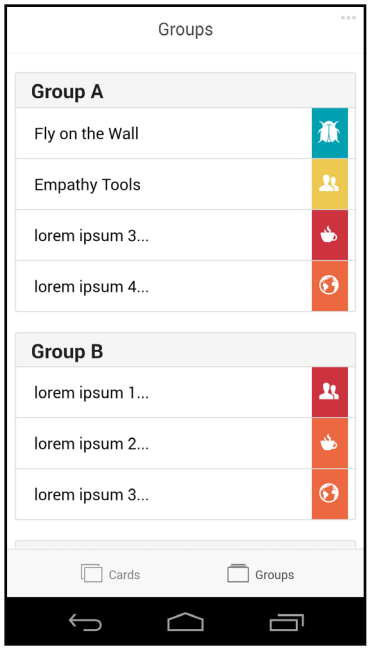
NYTimes
OneBusAway
PayByPhone


IDEO
Cards
Groups
Wildcards!


Cards
Abc
Learn
Look
Ask
Cards
Groups


Cards
Abc
Learn
Look
Background
Use of the Cards
Theme
Cancel


Groups
Group A
Fly on the Wall
Empathy Tools
lorem ipsum 3...
lorem ipsum 4...
Group B
lorem ipsum 1...
lorem ipsum 2...
lorem ipsum 3...
Cards
Groups

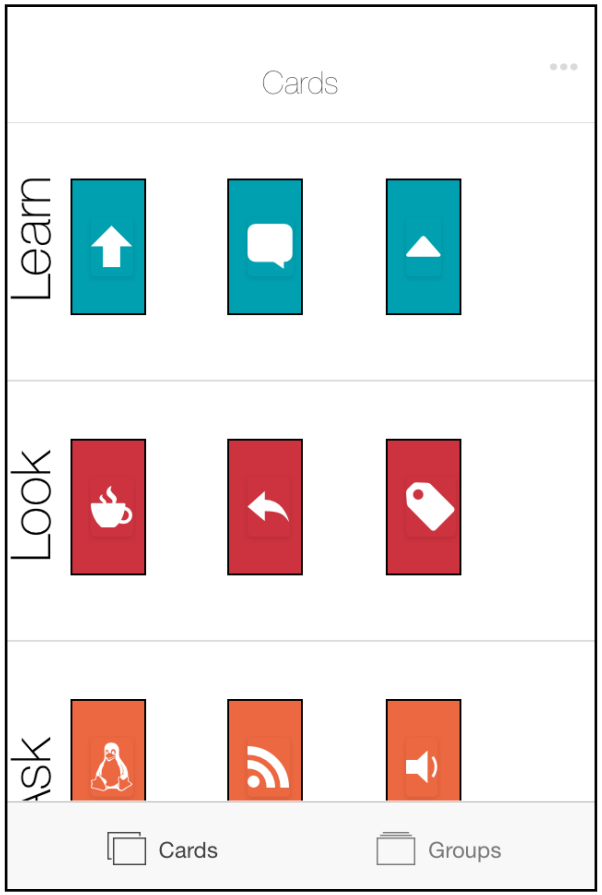
Android

IDEO

Cards

Groups

Settings



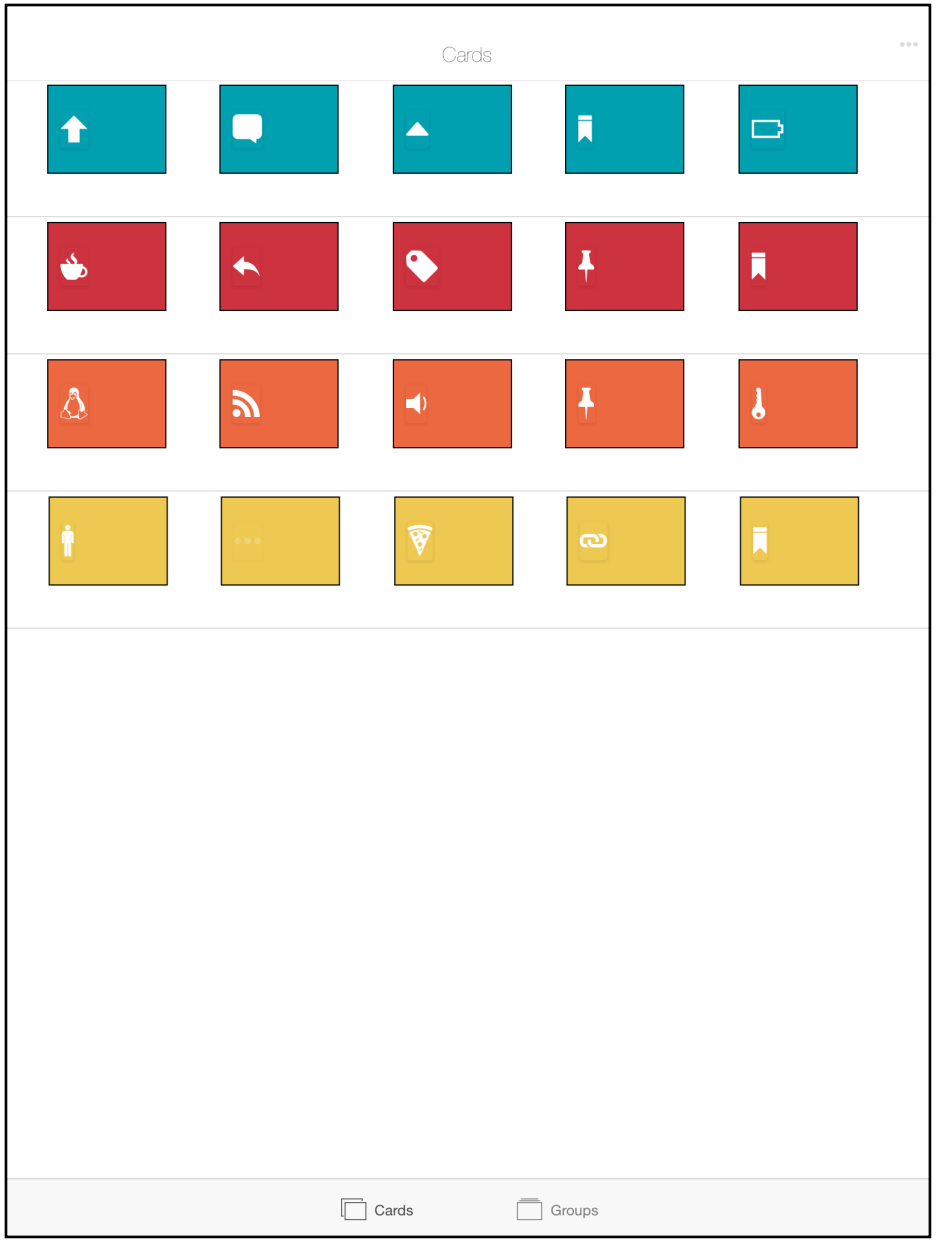
iPhone

IDEO

Cards

Groups

Settings



iPad

Citations

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