



The Design

rev3

HCI 598
Milestone 3

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February 26, 2014

Summary

The System

The IDEO Method Cards Refresh are a digital application for mobile and tablet devices which will provide designers a method for brainstorming design solutions. The system being designed is based on the original IDEO paper based 51-card deck that, in IDEOs words, are 'meant to inspire design' ("Method Cards for IDEO").

User Goals

While there are numerous design roles that can be characterized as users of the Cards, focus will be on a particular set of users for purposes of the project. Research into users of the existing Cards (paper or digital) show a tendency of either using the Cards as an educational instrument with a group of students (in a teaching capacity) or, conversely, being a student who has used the system. As such, focus will be on users in an academic context rather than practicing design professionals. These users are often studying design processes in an academic environment at the graduate or undergraduate level. For instance, a Professor may use the Cards in a classroom setting to explain different approaches to design planning. Or, a student in graphic arts or HCI, for example, may use the cards as they begin a project that requires soliciting user input and they are open to new and diverse methods to gather user data. These users are tech savvy, own a popular and current smart phone, and expect applications to be designed 'well' with a pleasing visual interface. Whether as a student or from the teaching side, they are comfortable working in groups and appreciate discussions involving the 'design process'.

Tasks

1. Tasks the users **must** be able to complete with the system include:

- Choose a card from the deck and view both the front and back sides. The cards will be presented in a standard grid fashion or as an ordered text list.
- Create a Group to place cards into. Groups icon will be represented on the UI for easy access.
- Add to a Group. Adding to a group will be straight forward as a familiar add icon.
- Delete a Group or an entity within a Group. Standard icons will be presented to delete.
- View and action on links to understand more about the company or the Cards themselves. The secondary setting menu will be available for non primary actions.
- Change the theme of the application. The secondary setting menu will be available for non primary actions.
- Understand how to navigate through the application. Clear navigational constructs should be used to allow forward/backward navigation with no user guessing.
- Allow a concept of sharing the cards in some capacity
- Allow text annotations to be attached in some capacity.

2. Tasks the users **may appreciate** being able to complete with the system include:

- A 'random' function (like a deal in card games) that displays a few random cards or a group of cards for the user to explore.
- Emulate certain aspects of the paper version of the cards. This could be in the form of a better sharing mechanism or simple contrivances such as a weathered visual appearance, sound effects etc..
- Better, more current, gesture support

Requirements

To accomplish the user tasks and goals, the systems will need to meet the following functional requirements:

- The system should be easy to use and a familiar experience to users on their respective mobile or tablet devices. Ease of use should be a quantifiable measure through some type of user testing. (*"System usability scale,"*)
- The Cards will need to render correctly to the various screen sizes on the Android and iOS platforms.
- The Cards will need to be presented in an iconographical grid (thumbnails) or list view, and each view must be able to be selectable to the user.
- A single card must be able to be collected in a group and persisted in this group by the system.
- A group of Cards will need to be stored by the system and presentable to the user. More than 1 group may need to be stored and all groups should be presented for selection by the user when desired.
- The Cards should have a function attached which allows sharing with other users of the cards.
- The system must show links to a Settings page.
- The settings page must contain a set of hyper links to out-of-application content.
- The settings page must show a theme switcher, allowing the user to personalize the experience.
- The system must allow appropriate, conventional gesture support on the system platforms.
- The system should allow some form of user annotation to individual cards or groups.

Design Space

In Product and Application design, there is often a choice between time to completion and the quality or thoroughness of the solution. When considering feedback of the existing IDEO Method Cards, the chief ask is to add some utility to the Cards beyond their use as a novelty item or as an academic exercise. The biggest additional feature would be incorporating a concept of sharing the cards to the revised app. Additionally, the feedback on the early draft design of the revised Cards was, again, to add some significance or practical use to the Cards. In considering this goal, there may be some aspects of the Card design which may be compromised.

1. What are some key functions that would make the Cards more useful/significant?

- Sharing function: From a development perspective this could be as easy as sharing a url or as complex as proximity sharing, the latter being likely beyond scope.
- Annotation of the Cards: Some type of input to add personal information to the cards, whether as text or voice input. This could be, likewise, fairly simple or complex given the level of integration required.
- A Comparison function: The ability to easily show, or navigate to and fro, between two cards to compare the methods.

2. What compromises would need to be addressed when attention is given to adding some of the key functions in #1?

- The visual design may not conform to all the multitude of device resolutions and OS's in the mobile/tablet ecosystem. A representative system resolution and OS should be the target. Statistics on device characteristics February 23, 2014 would indicate the following targets:
 - i. iOS- iOS 6+, 640x960 resolution ("App store distribution,")
 - ii. Android- Android OS 4.0+, 480 x 800 resolution ("Dashboards | android developers,")
- Some of the less primary function could be phased out.
 - i. Links to web content etc.. may not be included
 - ii. The theme switcher may not be included.
 - iii. The sharing function may be simple. Not intelligent enough to be truly useful.

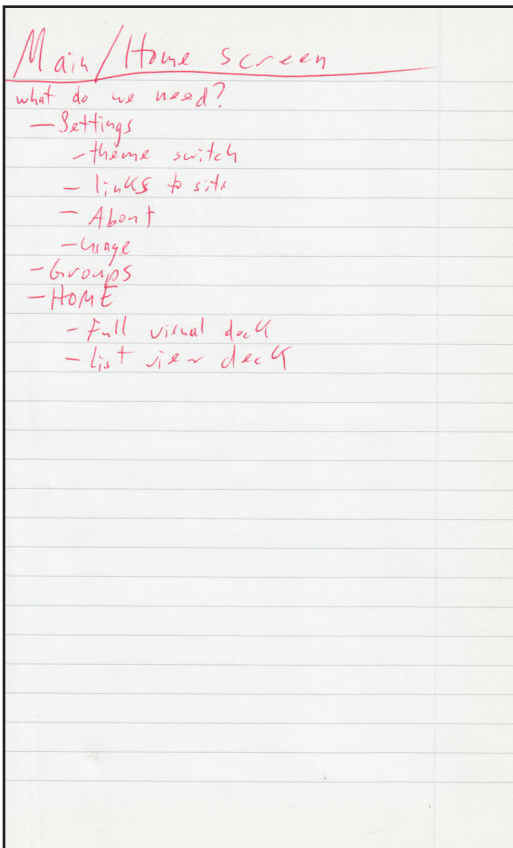
The Design

Overview

The Cards in their present state, and in the proposed re-design effort, seek to provide design inspiration through a simple, intuitive and aesthetically pleasing interface. Feedback from users both familiar with as well as those with no knowledge of the Cards was used in justifying design decisions. Additionally, the heuristic review completed earlier on the present state of the Cards also drove design decisions.

The planned improvements include: **a refreshed aesthetic, a sharing function, added personalization, and a more intuitive approach to the user interface.**

- All users reported liking the visual design, both the original IDEO design as well as the design refresh.
"...like your visual design elements, and love the idea of making the cards customizable."
- The use of photographic imagery prompted mixed responses. Eliminating photographic imagery will, additionally, aid in the 'porting' process when considering the state of mobile device resolution fragmentation. ("Android fragmentation," 2013)
"...some of them, I don't want to click on. They don't look very interesting"
- Functions should be visible for common tasks and not require additional actions to disclose
In creating a Group, a user was confused as to where the initial invocation to start the action was located. Additionally the number of clicks could be reduced. This could be considered more as an 'ease of use' revision more-so than a concern for the number of clicks (Porter, 2003).
- The language of cards is appropriate, concise and easy to understand. This is part of my original directive to keep original IDEO content intact, the methods themselves remain unchanged in the design refresh
"I like that there is only a short introduction on the card"
- Consistent and mobile oriented navigation and organization constructs.
Users on mobile think of an application in terms of pages, they understand how to go backward and forward through system defined UI patterns. For instance, on iOS a common backward paradigm is a backward pointing arrow in an top justified navigation bar in many apps. Apples HIG goes to lengths of how best to present a user interface on their platform. ("iOS human interface,")
- Limit or eliminate error conditions and messaging to arise
The current IDEO app does not (appear) to present any error messaging and from a QA perspective, I was unable to generate any error condition. With the inclusion of a Sharing function, this may not be possible, given the uncertainty of network connectivity.
- Could include a pinch to zoom function.
This could act as an intuitive enabler to toggle from Macro to Micro views.



Sketches

Main Menu

What: Trying to enumerate the options that should be available to the user on the home screen.

Home

- Deck view
- List view

Groups

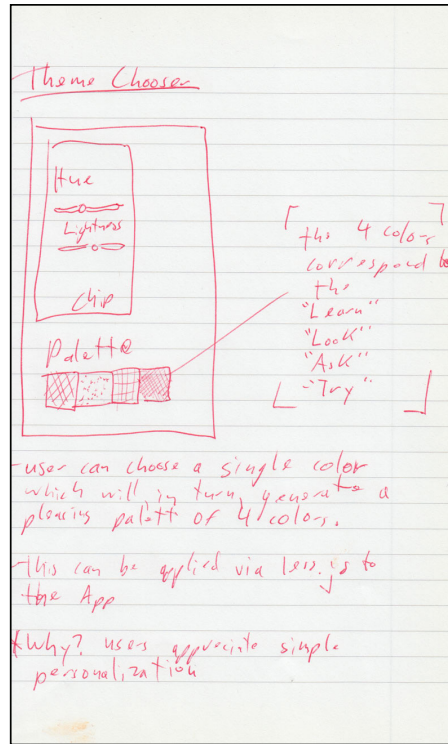
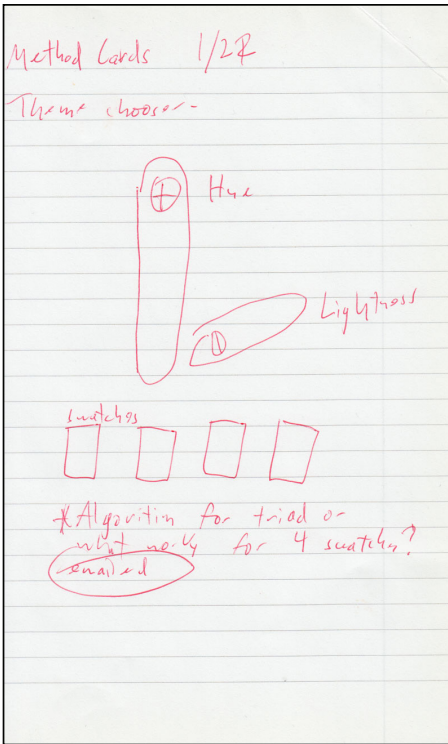
- Group XX
- Group YY
- Group ZZ

Share

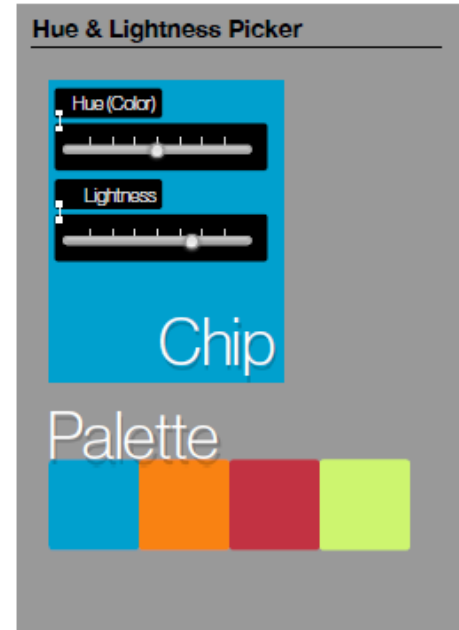
- Some mechanism for sharing but this is probably on a per card/group view

Settings

- Theme switch
- IDEO links
- How to Use Groups



Theme Chooser



Theme Manager

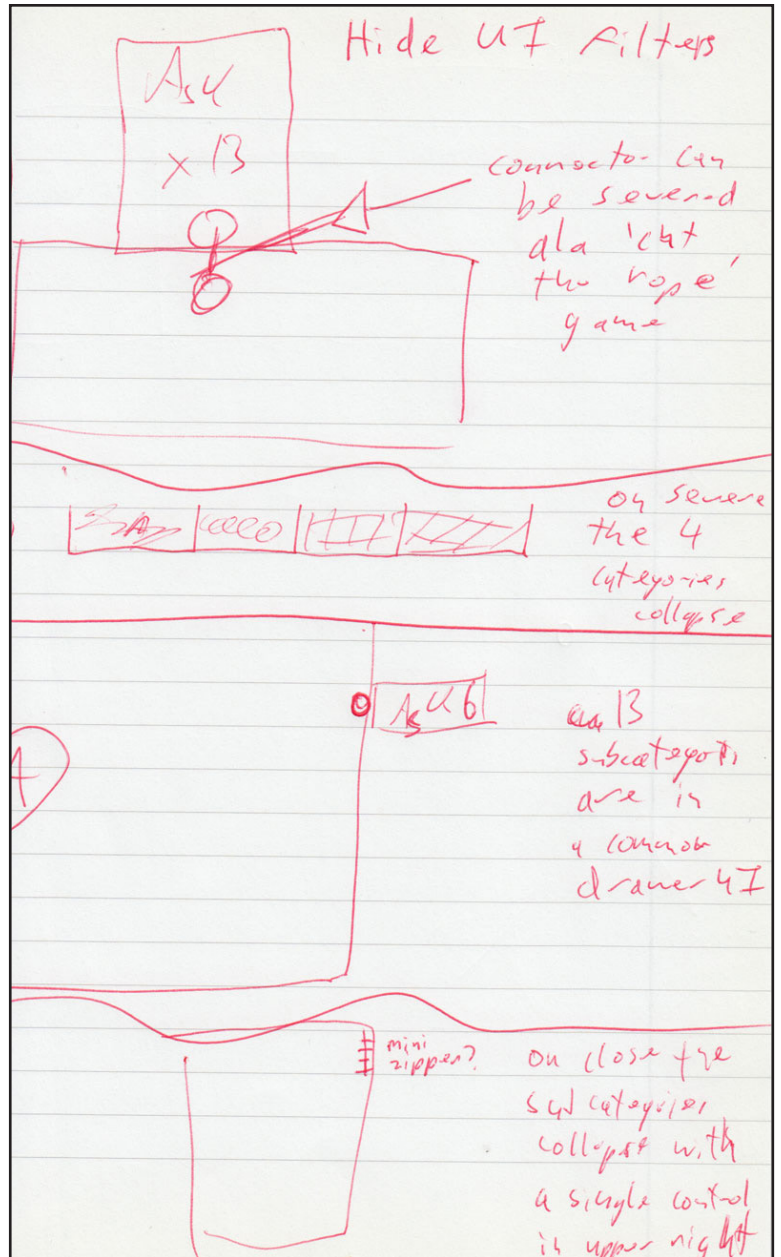
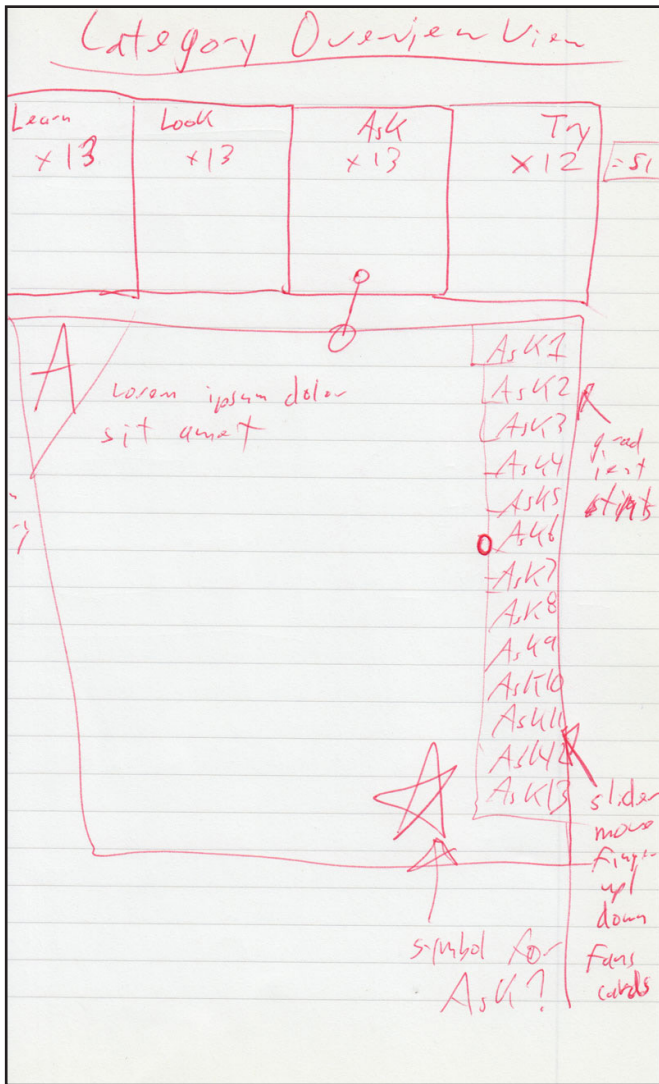
What: A theme manager for personalizing the experience.

In a survey of 18 different card systems enabling design inspiration, the authors noted "It was surprising that only few examples were found that offer customization directly, or in some form of digital component to augment the tool" (Wölfel).

The color palette can be generated with a javascript color harmony library. A user picks a single color, adjusts the light or darkness, and 3 additional colors are generated meant to work as a 'pleasing palette' that will be applied as a theme via less.js to the Cards.

<http://tools.medialab.sciences-po.fr/iwanthue/index.php>

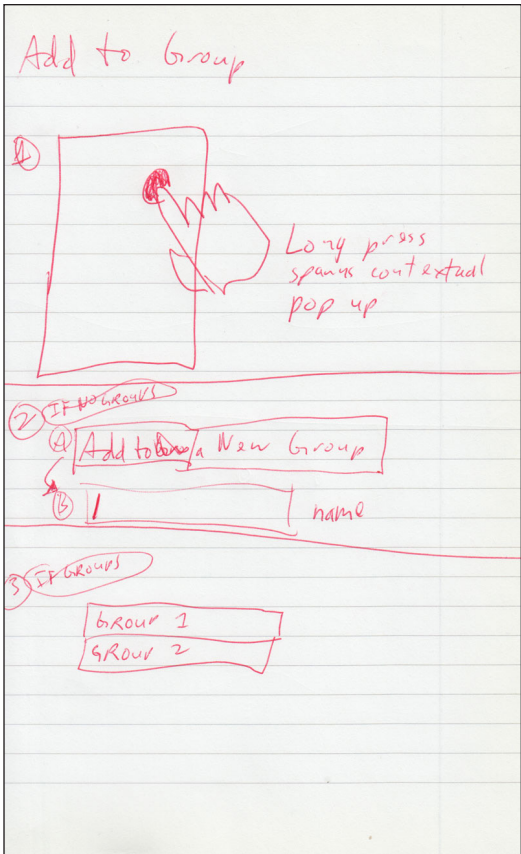
<http://lesscss.org/>



Category Overview

What: This shows the card layout with a category 'filter'. This could be one of 3 ways to render the cards in a 'macro' view. The other two being a simple visual grid (thumbnails), or a standard text based list view.

The category view is unique in that it is not a part of the current Method Cards and that it assumes the user is interested in studying specific categories (e.g. all the Ask cards and not interested in Try). This view would show a breakdown of the 4 main categories and each of the sub components respectively. If a user was interested in the particular topic of "Ask", for example, they could flip through the relevant cards for the topic.



Group: Add To

What: This shows different methods of adding cards to a group. Ideally, the methods would be more intuitive and easily discovered by the user in comparison to the IDEO implementation.

This would show the interaction of adding a single card to a Group, taking into account whether a group exists or not.

User Scenarios

To illustrate a user actively engaged with the Cards, we have created a brief persona and some task walk throughs.

Karen is a designer working at a large software company. Her professional title is user experience designer and her job often requires being adaptable to several different design endeavors. Some days she may be informally testing a design she created with co-workers by asking them simple questions. Other days she may be taking notes in a usability session where 'recruits' poke and prod her designs. And still other days, she is simply creating design comps in Photoshop or wire frames in Visio.

Karen was introduced to the cards by a design professor when she was an undergraduate at Art school. Since then, she hasn't had much use for the cards but lately has been lacking inspiration on new projects and decided to download a mobile based version of the cards.



Scenario 1: Downloading the app and first run experience

Karen downloads the app to her mobile device and taps the icon to begin. She is presented with a colorful main menu or home screen and taps settings to see if there are any details she needs to be aware of (e.g. requires a data plan, authentication, etc..). She sees the option to select a theme and decides to explore that function. She plays around with the color wheel to see the different palettes that can be generated. She selects one based on her favorite color, an earthy green. She then taps the back button located in the upper left on the settings page.

Scenario 2: Exploring the Cards

From the Main Menu she taps on "Cards" and is presented with a grid view of the cards in miniature format (128 px wide). She selects a card at random that has a picture of a dragonfly on it. A new view is created that shows the card in full screen view. In this view she can see some text at the top that says "Empathy Tools" along with some other icons that look like navigational controls. She remembers from using the card some time ago that a description usually accompanies each card. She instinctively swipes the card and it flips over to reveal the textual description of "How" and "Why" in regards to the use of a design method 'Empathy Tools'. From here she navigates back to the Card view and is again presented with the grid view of all the cards.

Scenario 3: Creating a Group

After browsing the cards a bit more, Karen decides to create a group to try out later when a new design project starts. From the Card view she selects one and taps an icon in the navigation bar that looks like 4 rectangles (or cards). She is presented with an input field prompting her to assign a name to this newly created group. She types "Design methods" and taps 'OK'. She is returned back to the card she had selected and a small message is displayed on top of the card that states "Design methods group created". Karen returns back to the Card view and selects another card. Upon tapping the group icon, this time she is presented with a list with 2 options. 1 list item states "Design methods" and the other states "New group". Karen taps the "Design methods" list item and the same small message is displayed on top of her selected card. She repeats this process 2 more times, each with a new, unique card, and then exits the application.

Emerging Technologies & Social Implications

Mobile technologies are perhaps the most ubiquitous tool now known to human kind. They are everywhere, largely unbound by social or economic bounds. Often it is merely such differences as processing power or display size that relate to user and economic demographics. As a technology, it is possibly considered the most indispensable tool a user owns. Because of this widespread adoption and corporate focus on constantly evolving mobile technologies, there are many emergent technologies attempting to bridge the digital and physical worlds. As users of the current Method Cards have noted, many find the physical cards more pleasurable and useful than their digital counterpart. This, despite, the fact that the digital version is available at (nearly) any time to the user and a digital version could offer several advantages a physical version simply cannot.

Technologies such as e-ink could provide a more tactile experience than a mobile or tablet device. As a future consideration, a port of the Cards could be made available on devices taking advantage of e-ink and/or thin or flexible displays. There are many corporate and academic projects taking advantage of e-ink display in an effort to mimic the qualities of paper or print based material (Barber, 2013). Consideration of the Cards coupled with such a technology would go far in bridging the connection to the physical world that the digital Cards lack.

Emergent technologies already available on some mobile platforms that could be included in a 'blue sky' version of the Cards would include: speech input, advanced gesture input, collaboration technologies. Speech input at a basic level could involve simply accepting voice input to annotate a card. At a secondary level, it could provide dictation like capabilities, allowing a digital text based artifact from the captured audio file. And to truly push speech technology, it could involve speech recognition in such a manner as to allow the user to literally be having a conversation with the device as below:

USER: *"Method Cards, I've got a new project that I need some help with. It is building a website that promises some pretty neat social technologies. Can you help?"*

CARDS: *"Sure, let me deal a few from the ASK category and see what you think. These would help you probe potential users about what they are looking for in new social experiences."*

USER: *"Great, make those top three and the last one into a new Group"*

CARDS: *"Done, what would you like to call this group? . . ."*

Gestural input can be simply swiping to flip a card over, shaking the dice to 'shuffle' the cards and more. When we consider a large gesture 'vocabulary', supporting gestures beyond what the system itself recognizes, we have to consider the notion of learn-ability. As such, non-standard gestures, for instance spinning the phone to shuffle, are not intuitive enough for a user to unearth without some type of learning or tutorial. Additionally, the user needs confirmation of a successful gesture input such as audio or visual cues. In a study researching the use of gesture input via a touch panel music player, the authors note "Our results showed it was very important to have explicit and immediate audio feedback on the gestures" (Pirhonen, Brewster, & Holguin, 2002).

These types of complementary but decidedly different technologies, when applied with diligence, could go a long way in delivering an excellent multi-modal experience. Bill Buxton refers to this convergence of converging emergent technologies as a NUI or Natural User Interface (Buxton, 2010). A system that fits the NUI category is one that feels natural, intuitive, and is essentially invisible to the user.

Social Implications

The social implications of the cards are fairly benign when considering their use in the context of other mobile applications. There is no user data collected beyond the concept of groups nor any need to store any private user information. When we consider the potential of sharing and collaboration with other Card users, the ethical aspect is not compromising. Sharing of the Cards would require a name to be attached else users would not be able to identify themselves or others in the Cards 'network'. By giving the user

due warning before they initially undertake the sharing experience could obviate concerns of user data being shared without their consent.

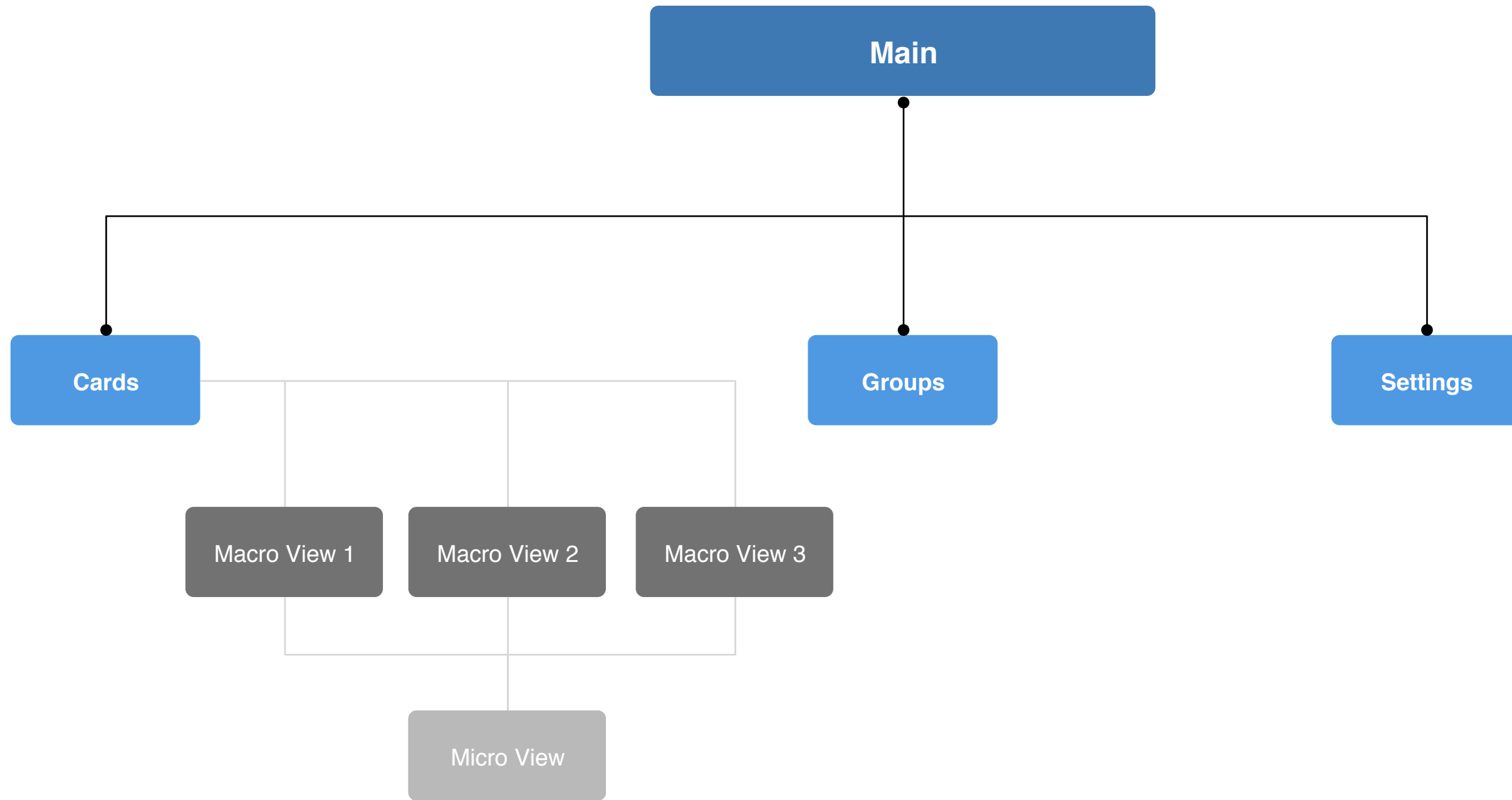
Often, modern society finds itself isolated by the very gadgets we deem indispensable. Designers need to work well with other designers as well as team members in general. There could be a case made for the paper, physical cards being a more socially engaging or team building experience than the digital version. Two respondents to the surveys mentioned just this type of preference when comparing the two. They felt it was more “workshop” like and got their students to start thinking about design processes. I don’t believe there is an argument to be made against the natural and familiar aspect of physical cards. I do think that an improvement could be made that, as mentioned earlier, bridge the lack of a physical connection the current digital Cards embody.

IDEO Method Cards

MODIFICATION DATE Thu Apr 03 2014
CREATOR Jay Hilwig
FILE NAME Method_Cards.graffle

DESCRIPTION Information Architecture for IDEO Method Cards *redux*, HCI 598 Capstone Project

VERSION HISTORY 1.4



v1

v2

v3

IDEO

CARDS

GROUPS

SETTINGS

IDEO

CARDS

GROUPS

SETTINGS

IDEO

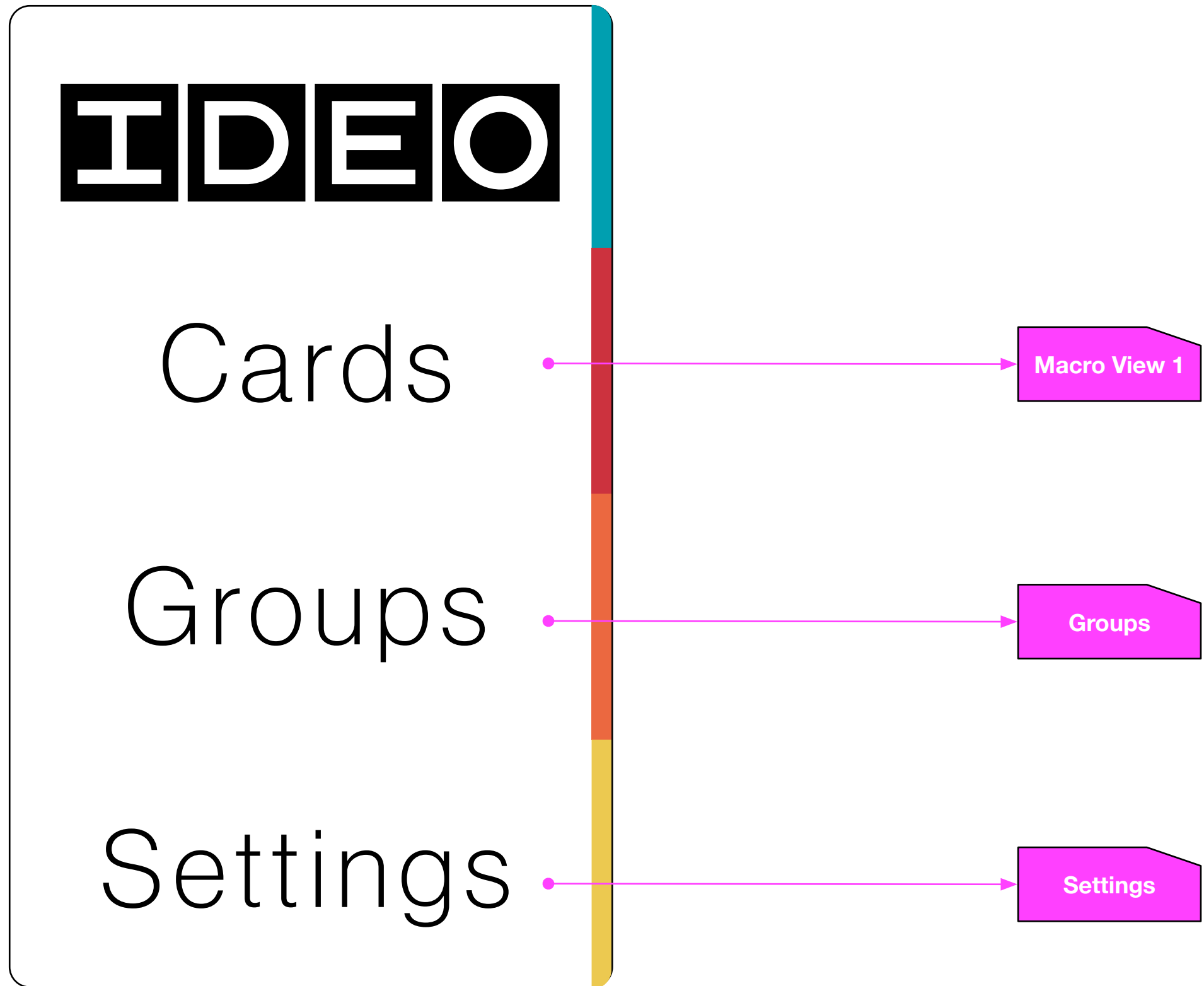
Cards

Groups

Settings

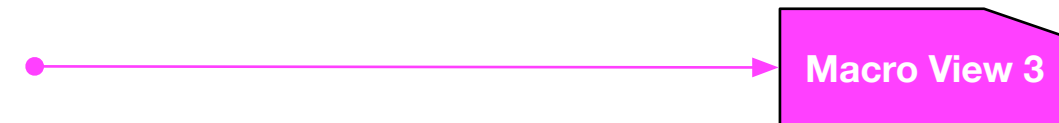
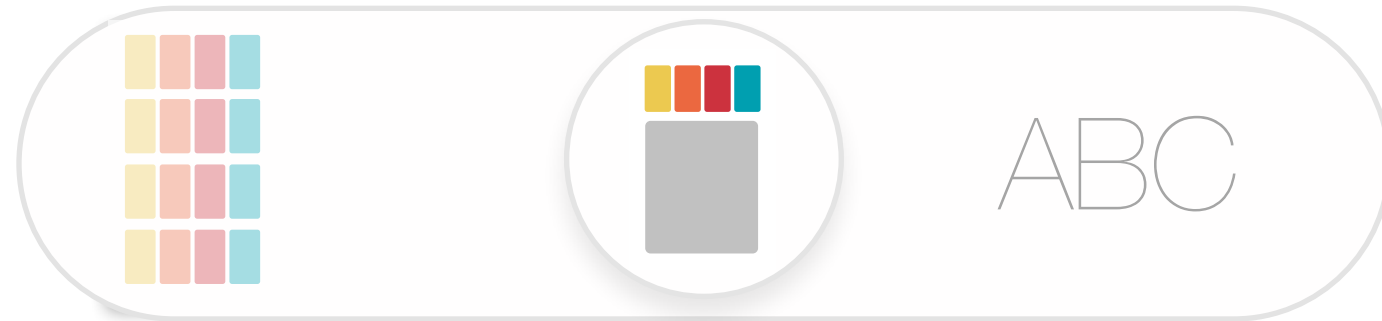
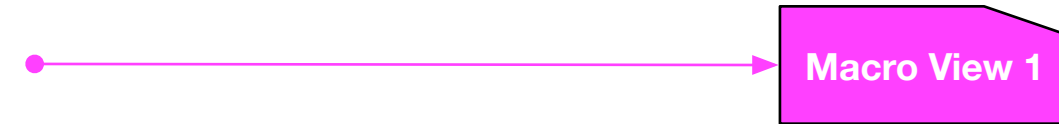
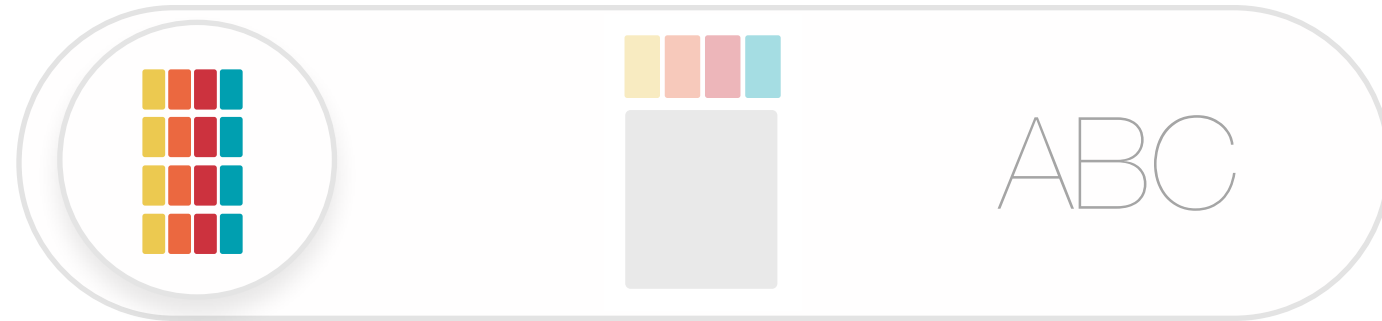
Notes:

Design variations at an early stage. What was ultimately created is a variation of v3



Notes:

The Main or landing screen view and categories.



Notes:
Methods to toggle between the CARDS views



Notes:

This can be considered the default view and mimics the original IDEO grid like view.
 This view allows a user an easy way to browse through the cards in a singular view without having to use forward/back navigation.

← Main CARDS ^ v

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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.

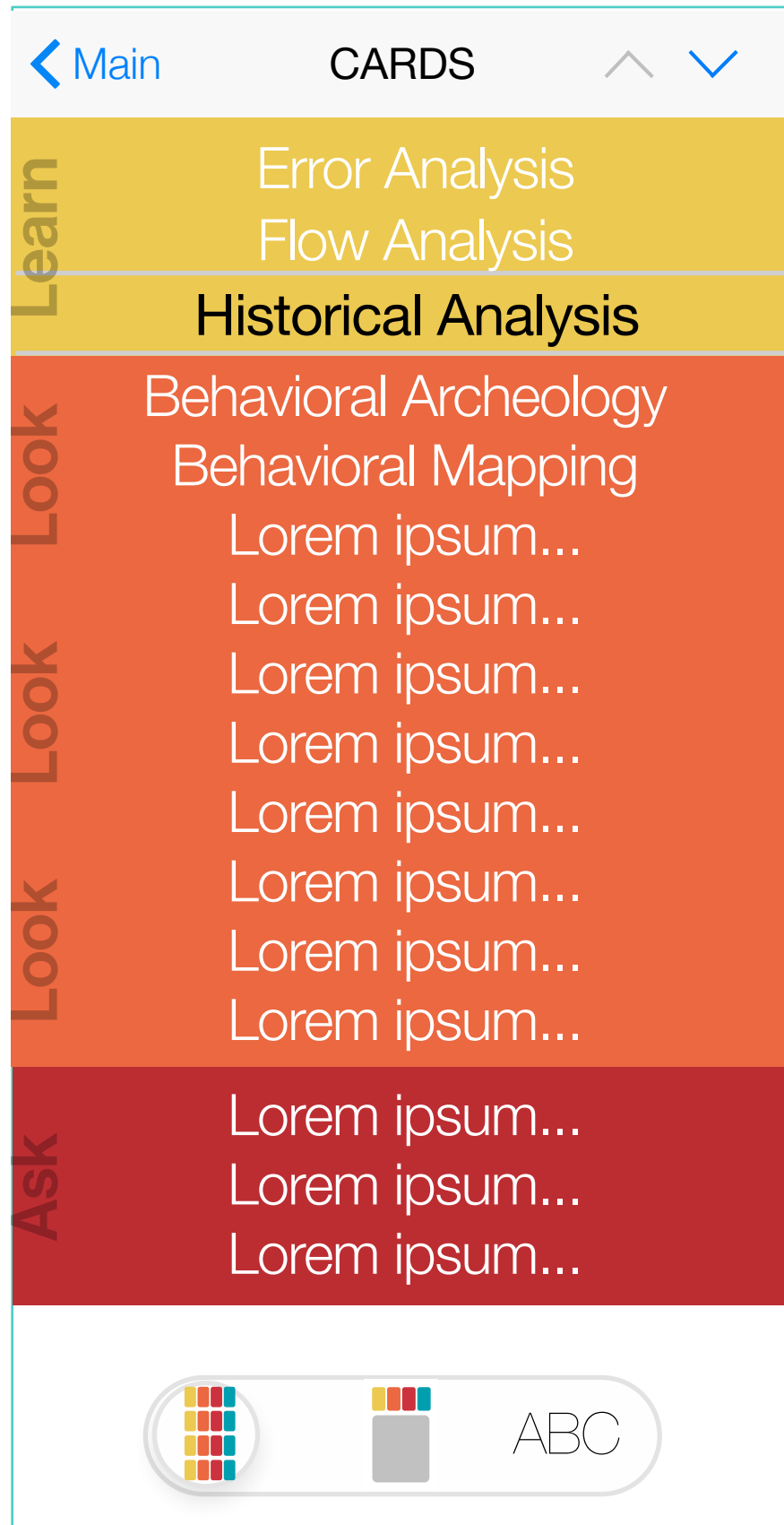
IDEO designers wore gloves to help them evaluate the suitability of cords and buttons for a home-health monitor designed for people with reduced dexterity and tactile sensation.

Behavior Sampling | Experience Prototype

  ABC

Notes:

This view allows the user to focus in on a single category. While we have no underlying data, this is likely to be a strong use case.



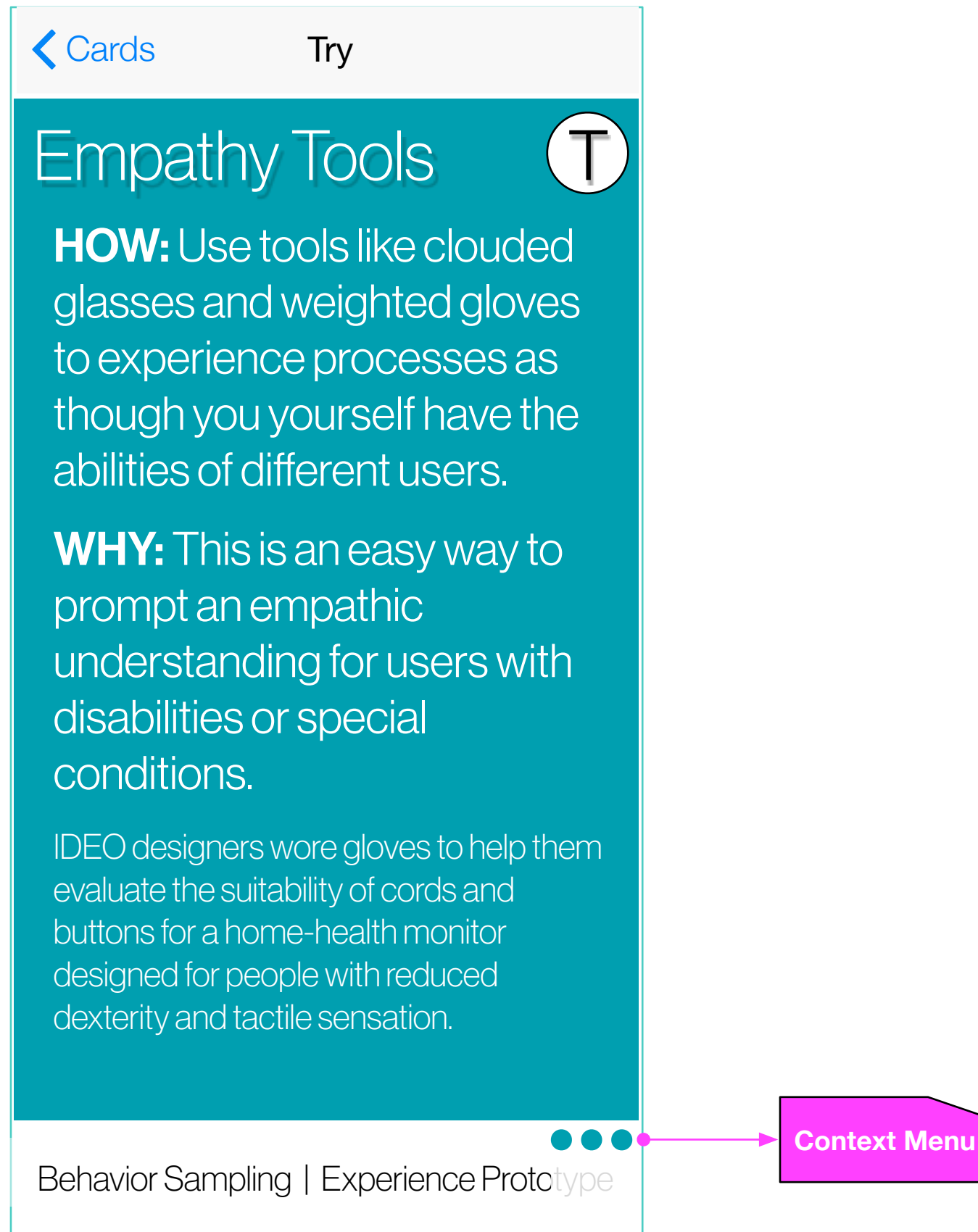
Standard list view with color assignments

Notes:
A standard, efficient list view. This presents a non image based view to the user who may wish to focus on the title of the card rather than the icon associated with the card.

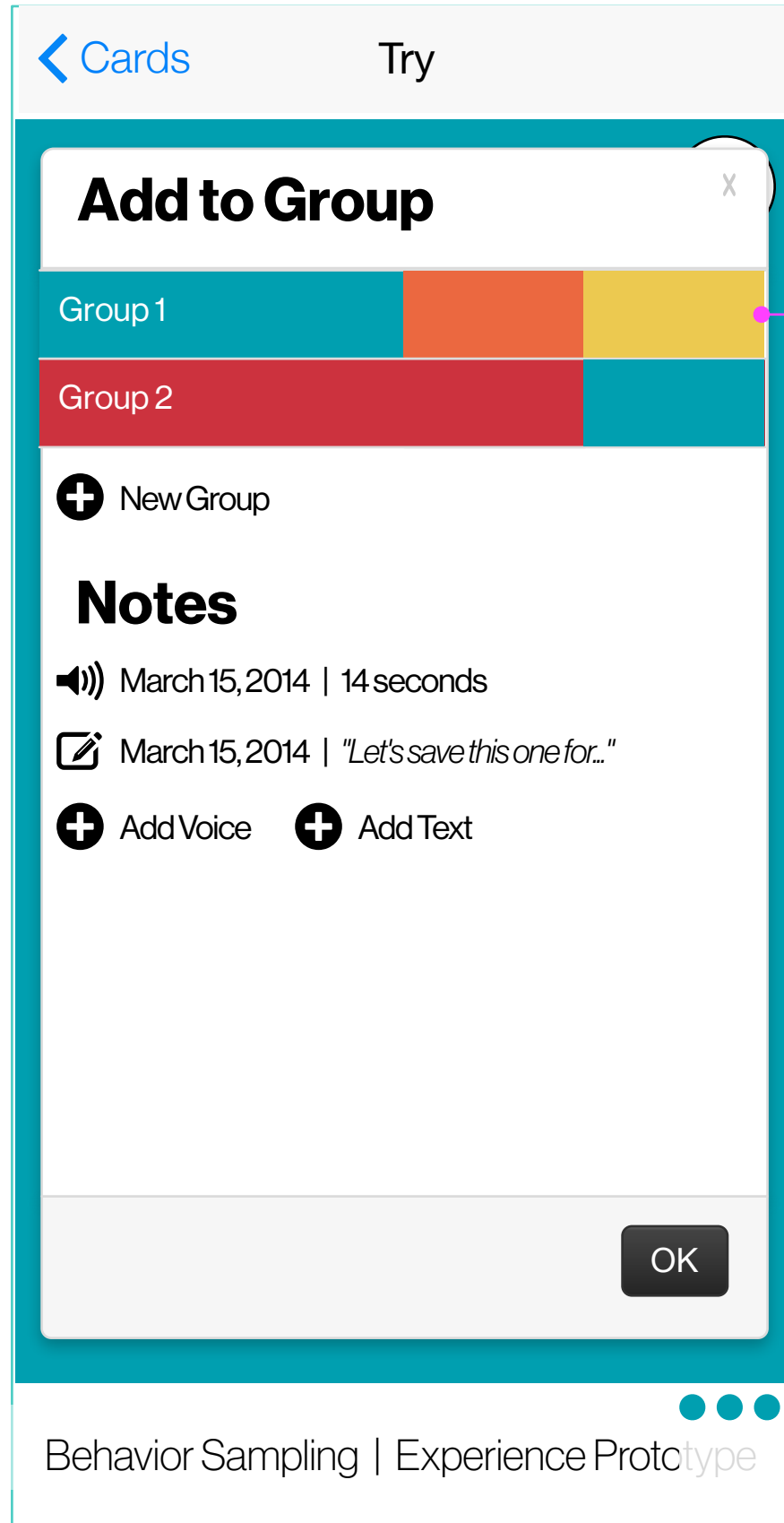


Notes:

This mimics the current IDEO method cards layout of a single card with a front and back. In the refreshed app, we focused on more responsive, simple images rather than photographic imagery for both style and port-ability.



Notes:
This mimics the current IDEO method cards layout of a single card with a front and back. Type style, size, and weight are very similar to the IDEO original.



Groups

Notes:

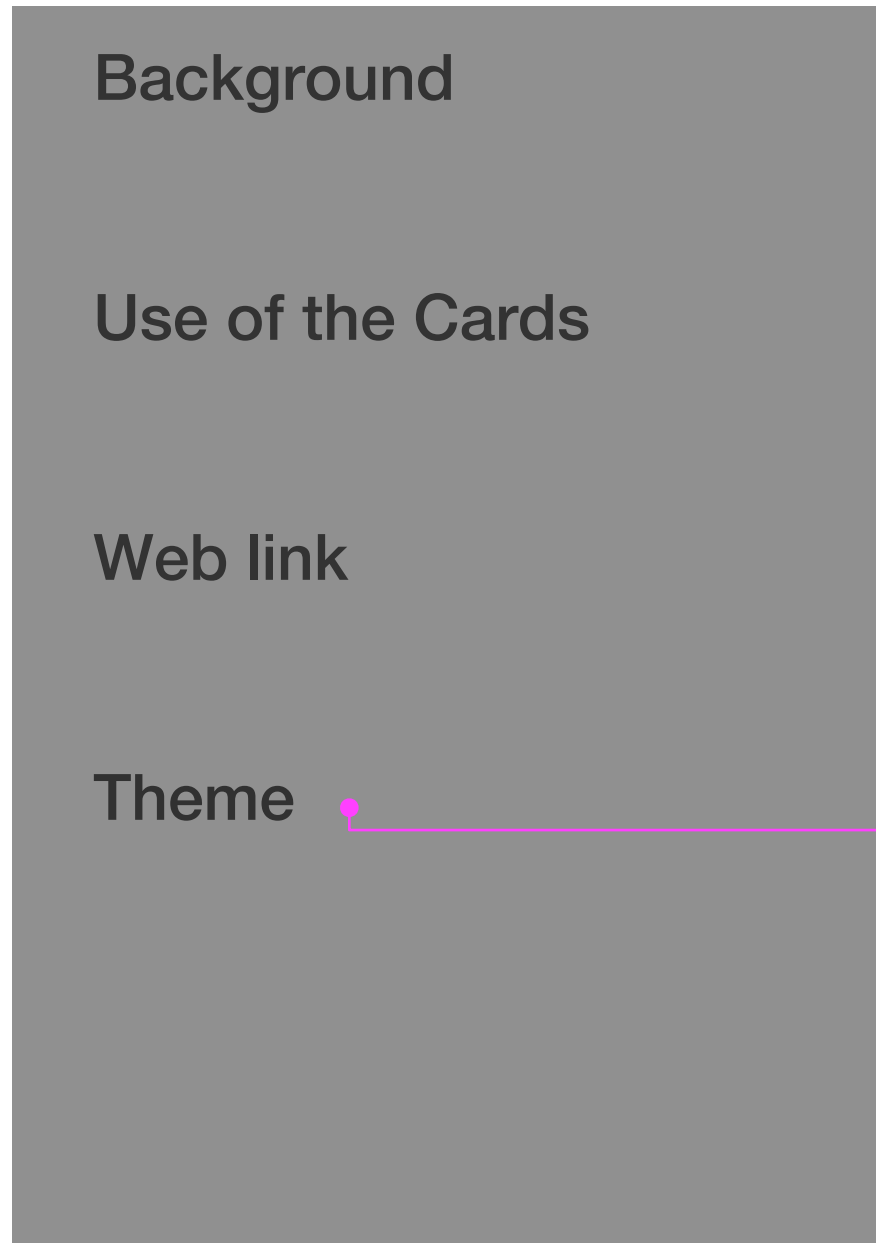
Display of existing groups denotes their category (by color), this add some metadata that the current IDEO Cards do not have. In an ideal world, additional forms of user input would be allowed such as voice and/or text annotation.



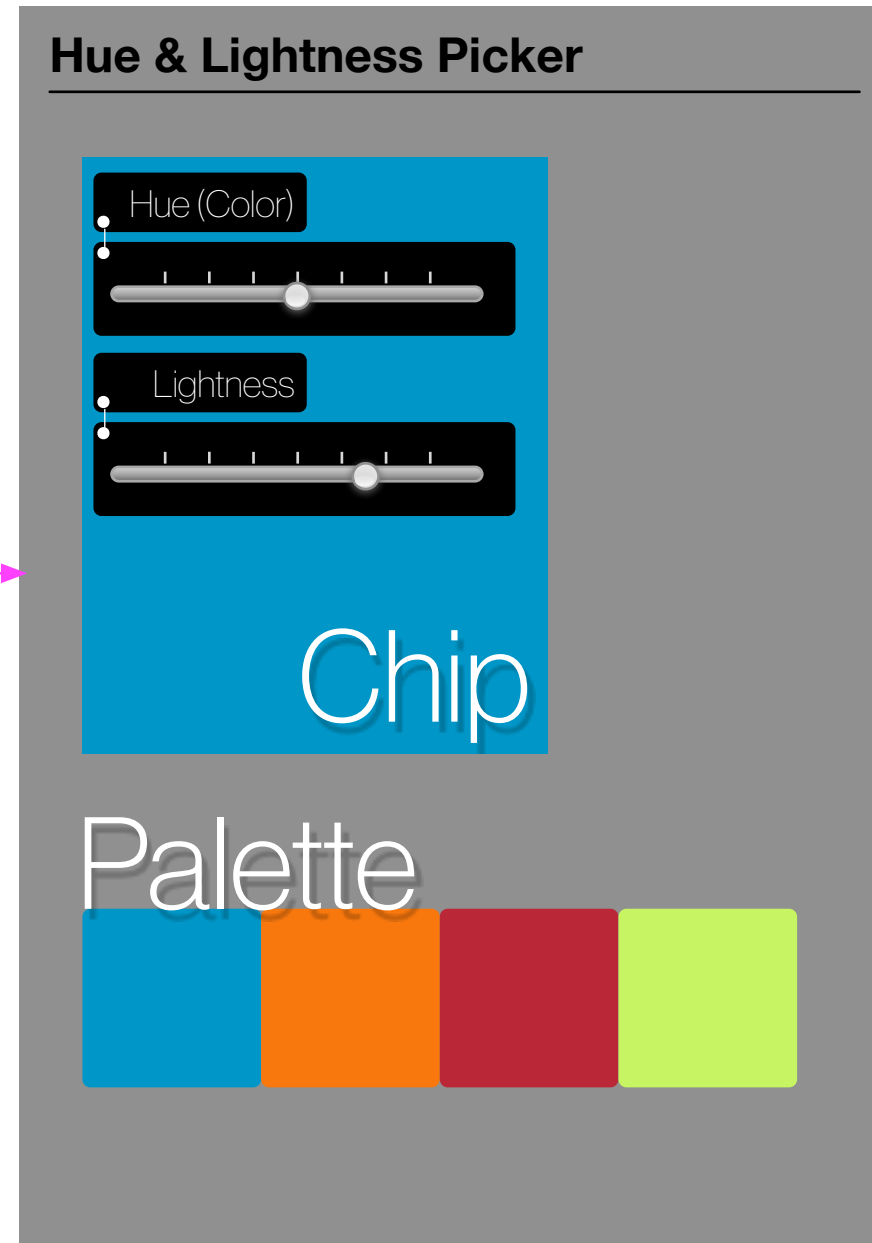
Notes:

Groups view in a Metro/Modern microsoft like style.
Additionally, allow for scrolling through groups for a comparative evaluation.

Settings



Theme Chooser



Notes:
The background, use, and web link are common static content as existing in the current IDEO Cards. Theme would allow for some personalization in the Cards.

javascript palette generator

<http://tools.medialab.sciences-po.fr/iwanthue/index.php>

Citations

- Android fragmentation*. (2013, July). Retrieved from <http://opensignal.com/reports/fragmentation-2013/>
- App store distribution - support*. (n.d.). Retrieved from <https://developer.apple.com/SUPPORT/APP-STORE/>
- Barber, N. (2013, May 3). *Flexible, networked e-ink displays mimic physical documents*. Retrieved from <http://cacm.acm.org/news/164040-flexible-networked-e-ink-displays-mimic-physical-documents/fulltext>
- Buxton, B. (2010, January 10). Interview by L Larsen []. *Ces 2010: Nui with bill buxton.*, Retrieved from <http://channel9.msdn.com/blogs/larrylarsen/ces-2010-nui-with-bill-buxton>
- Dashboards | android developers*. (n.d.). Retrieved from <http://developer.android.com/about/dashboards/index.html>
- iOS human interface guidelines: Designing for iOS 7*. (n.d.). Retrieved from <HTTPS://DEVELOPER.AP-PL.E.COM/LIBRARY/IOS/DOCUMENTATION/USEREXPERIENCE/CONCEPTUAL/MOBILEHIG/INDEX.HTML>
- Method cards*. (n.d.). Retrieved from <http://www.ixd.net/research/method-cards/>
- Nielsen, J. (1995, January 1). *10 usability heuristics for user interface design*. Retrieved from <http://www.nngroup.com/articles/ten-usability-heuristics/>
- Antti Pirhonen, Stephen Brewster, and Christopher Holguin. 2002. Gestural and audio metaphors as a means of control for mobile devices. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '02). ACM, New York, NY, USA, 291-298. DOI=10.1145/503376.503428 <http://doi.acm.org/10.1145/503376.503428>
- Porter, J. (2003, April 16). Retrieved from http://www.uie.com/articles/three_click_rule/
- Preece, J., Rogers, Y., Sharp, H. (2002), *Interaction Design: Beyond Human-Computer Interaction*, New York: Wiley, p.21
- Shneiderman, B. (n.d.). *Shneiderman's "eight golden rules of interface design"*. Retrieved from <http://faculty.washington.edu/jtenenbg/courses/360/f04/sessions/schneidermanGoldenRules.html>
- System usability scale (sus)*. (n.d.). Retrieved from <http://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html>
- Wölfel, C., Merritt, T., *Method Card Design Dimensions: A Survey of Card-Based Design Tools*. In P. Kotz, et al. (Eds.): *INTERACT 2013, Part I, LNCS 8117*, pp. 479–486. IFIP International Federation for Information Processing (2013).