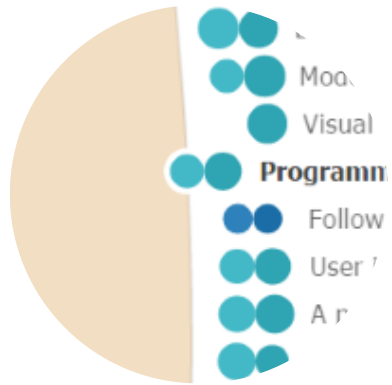




Antoine Ponsard

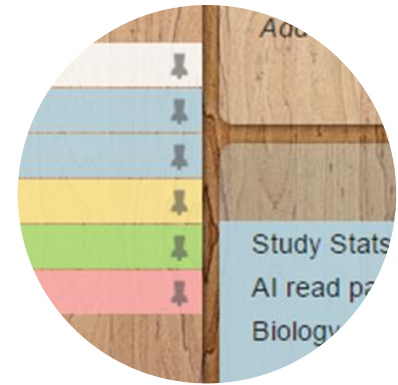
Interaction Designer



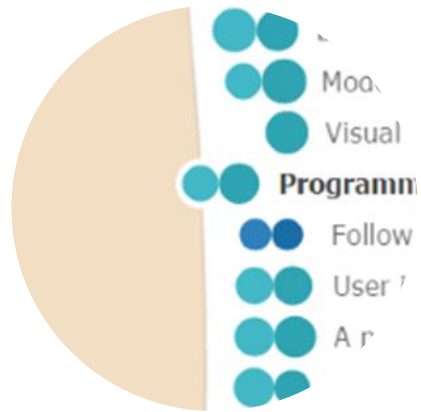
PaperQuest



Anchored
Customization



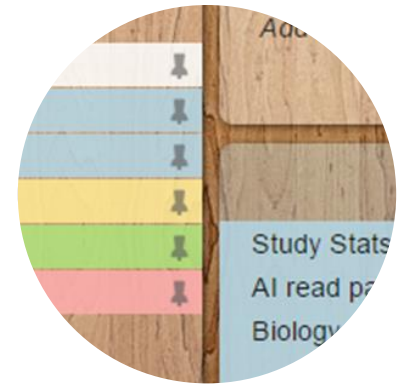
Calendar &
To-do lists



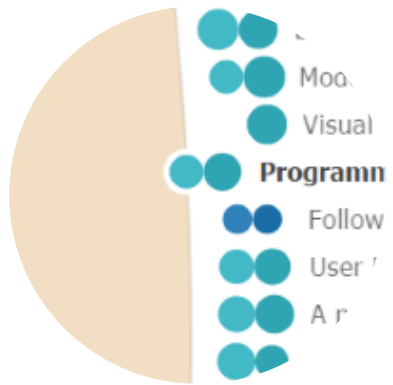
PaperQuest



Anchored
Customization



Calendar &
To-do lists



PaperQuest

A visualization tool to support literature review

GOAL

Help academics find relevant papers faster

PROBLEM

Thousands of papers
each with dozens of references & citations

→ “exponential explosion”

Google Scholar is great for **retrieving** papers
but does not take into account your research domain

→ lots of irrelevant search results

Google

instrumental interaction

Scholar

About 1,170,000 results (0.03 sec)

My Citations

Articles

Case law

My library

Any time

Since 2015

Since 2014

Since 2011

Custom range...

Sort by relevance

Sort by date

☒ include patents

☒ include citations

Create alert

Instrumental interaction: an **interaction** model for designing post-WIMP user interfaces [PDF] from imag.fr

[M.Beaudouin-Lafon](#) - Proceedings of the SIGCHI conference on Human ... , 2000 - dl.acm.org
Abstract This article introduces a new **interaction** model called **Instrumental Interaction** that extends and generalizes the principles of direct manipulation. It covers existing **interaction** styles, including traditional WIMP interfaces, as well as new **interaction** styles such as two- ...
Cited by 448 Related articles All 34 versions Cite Save More

VIGO: instrumental interaction in multi-surface environments [PDF] from researchgate.net

[CH Klokossa](#) [M.Beaudouin-Lafon](#) - Proceedings of the SIGCHI ... , 2009 - dl.acm.org
Abstract This paper addresses **interaction** in multi-surface environments and questions whether the current application-centric approaches to user interfaces are adequate in this context, and presents an alternative approach based on **instrumental interaction**. The ...
Cited by 25 Related articles All 6 versions Cite Save More

[PDF] Affective and **instrumental** components in the physician-patient relationship: an additional dimension of **interaction** theory [PDF] from jstor.org

[Z Ben-Sira](#) - Journal of Health and social Behavior, 1980 - JSTOR
This study examines the empirical support for the assumptions underlying a previously published model of the professional-client **interaction** by investigating the affective and **instrumental** components in the physician-patient relationship. The findings stress the ...
Cited by 274 Related articles All 4 versions Cite Save More

Functional **Interaction** Between NMDA and mGluS Receptors: Effects on Working Memory, **Instrumental** Learning, Motor Behaviors, and Dopamine Release. UBC eLink

[H Homayoun](#) [MB Stefani](#) [BW Adams](#) - ... , 2004 - psycnet.apa.org
Abstract. 1. Pharmacological manipulation of N-methyl-D-aspartate (NMDA) receptors may be critical for the treatment of many neurological and psychiatric disorders. Metabotropic glutamate (mGlu5) receptors are abundant in corticolimbic circuitry, where they modulate ...
Cited by 187 Related articles All 5 versions Cite Save More

[PDF] Towards a model for **instrumental** mapping in expert musical **interaction** [PDF] from ircam.fr

[A Hunt](#) [M Wandlerley](#) [R Kirk](#) - ... of the 2000 International Computer Music ... , 2000 - ircam.fr
ABSTRACT This paper reviews models of the ways in which performer **instrumental** actions can be linked to sound synthesis parameters. We analyse available literature on both acoustical instrument simulation and mapping of input devices to sound synthesis in ...
Cited by 141 Related articles All 6 versions Cite Save More

The effect of postnatal depression on mother--infant **interaction**, infant response to the still-face perturbation, and performance on an **instrumental** learning task [HTML] from proquest.com

[C Stanley](#) [L Murray](#) [A Stein](#) - Development and ... , 2004 - Cambridge Univ Press
Abstract. A representative community sample of primiparous depressed women and a nondepressed control group were assessed while in **interaction** with their infants at 2 months postpartum. At 3 months, infants were assessed on the Still-face perturbation of ...

CONTEXTUAL INQUIRY

How do academics use Google Scholar to find papers?

TASKS

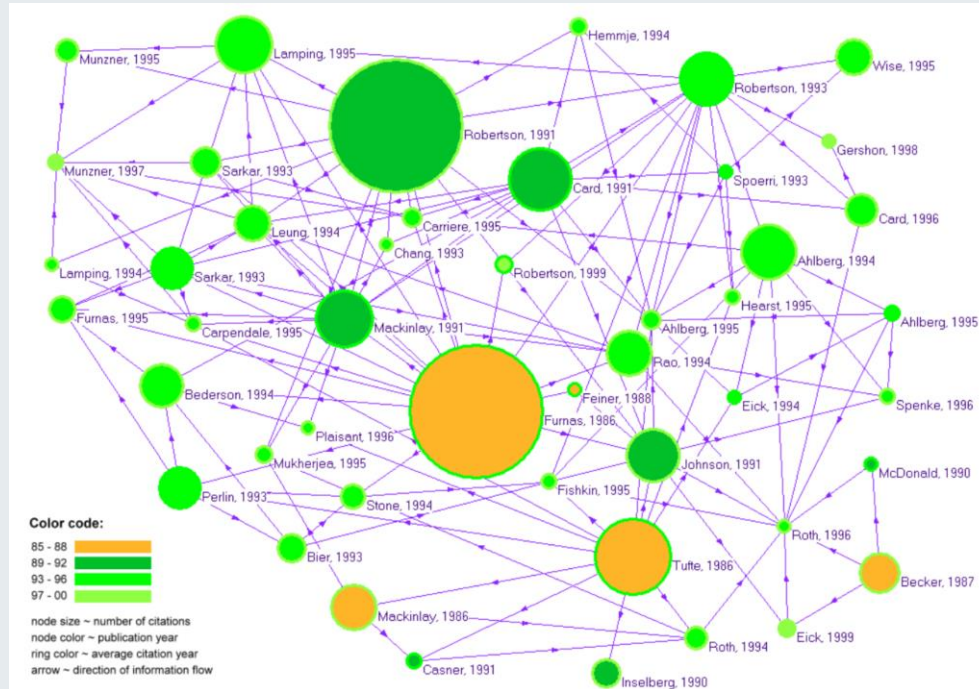
For each paper:

1. Read title
2. If good, read authors and/or metadata
3. If good, read abstract and/or watch video
4. If good, plan to read full paper

Contextual inquiry findings

An efficient literature review is a **multi-level decision process**

Academics need to maximize the **information gain** at each step



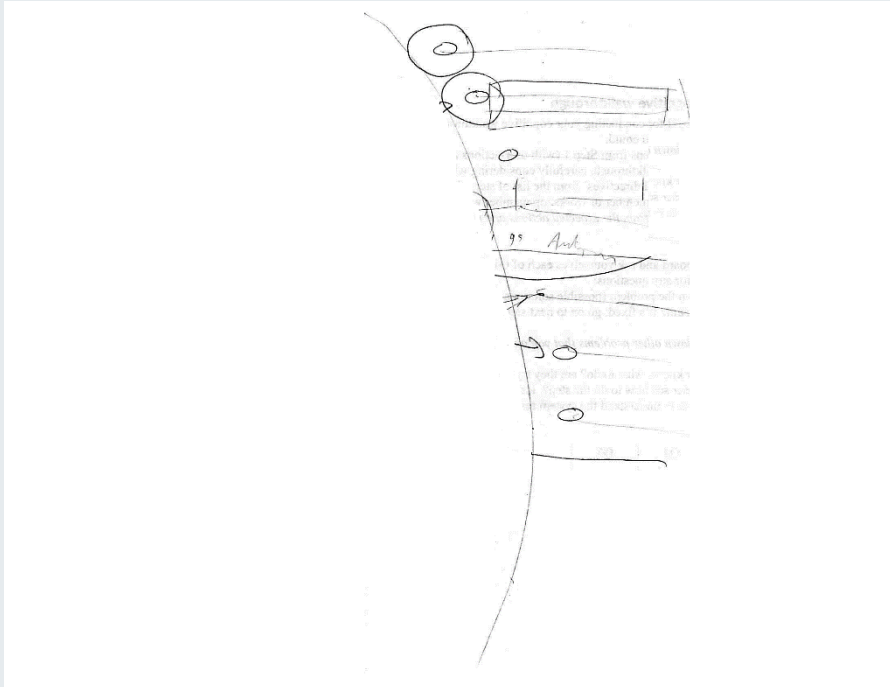
[Ke *et al.*, INFOVIS 2004]

DECISION 1

don't represent papers
as a node-link diagram

RATIONALE

reading paper titles
>> network topology

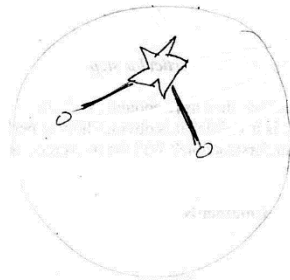


DECISION 1

Instead, show a list of papers with full titles

RATIONALE

reading paper titles
>> network topology



CONCEPTUAL MODEL

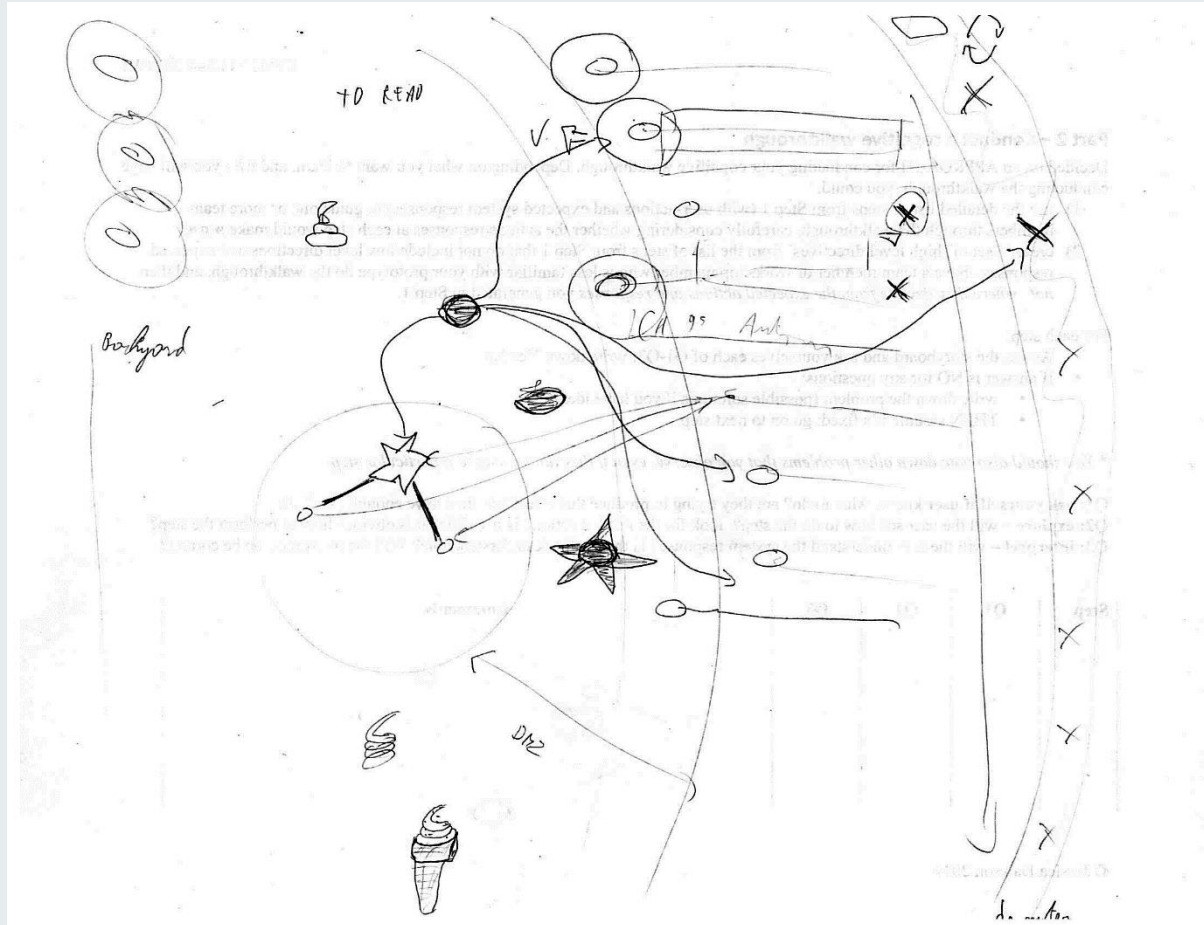
start with a few seed papers...



CONCEPTUAL MODEL

start with a few seed papers...

then every paper you read
expand your fringe of knowledge

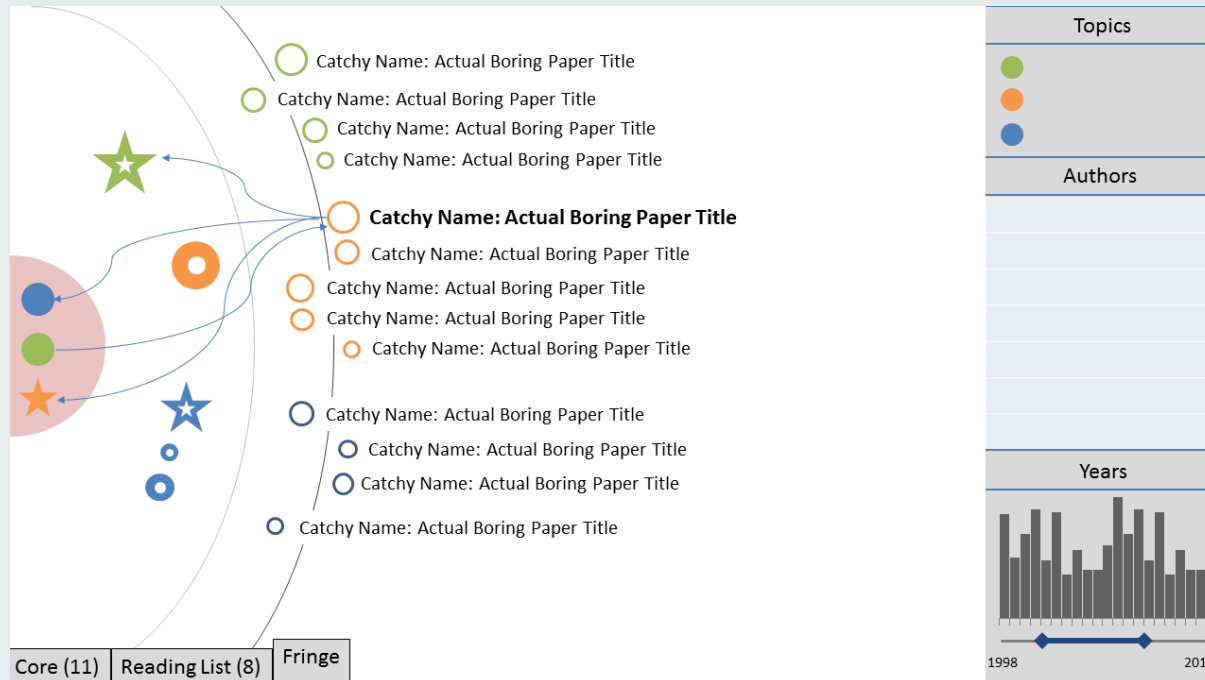


CONCEPTUAL MODEL

start with a few seed papers...

then every paper you read
expand your fringe of knowledge

read | to read | fringe | The Unknown

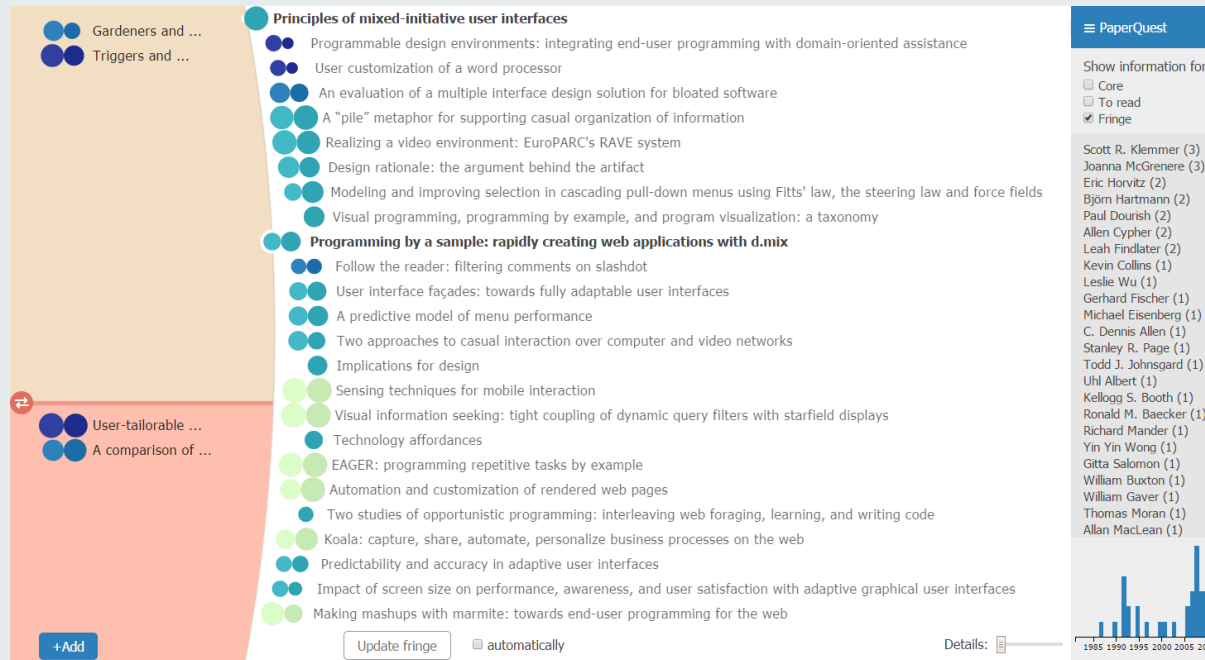


read | to read | fringe

CONCEPTUAL MODEL

start with a few seed papers...

then every paper you read
expand your fringe of knowledge



CONCEPTUAL MODEL

start with a few seed papers...

then every paper you read
expand your fringe of knowledge

read | to read | fringe



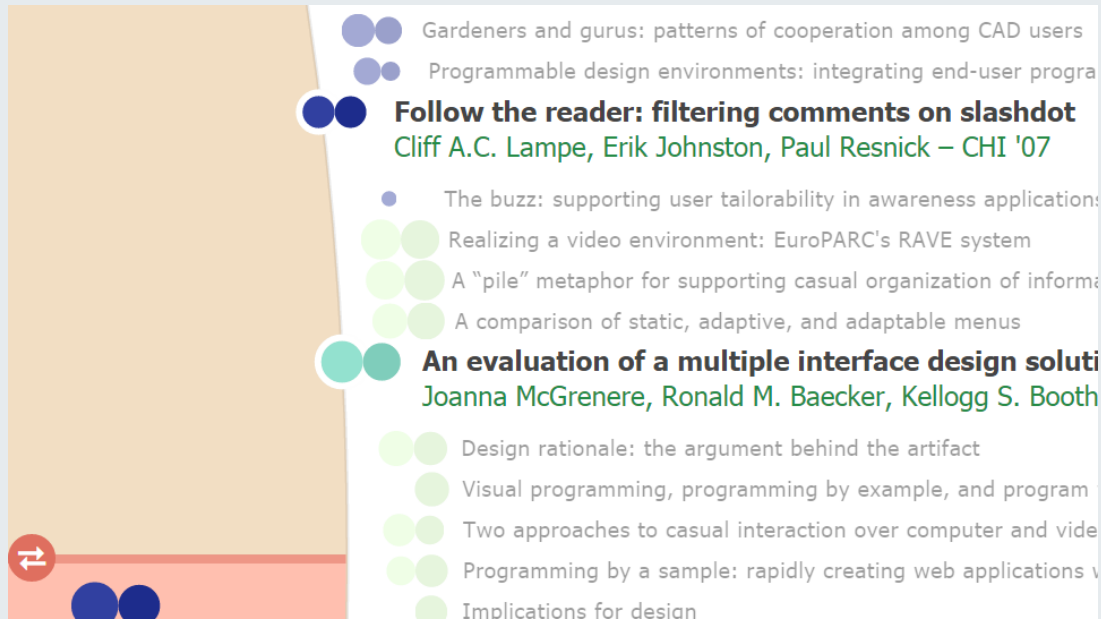
DECISION 2

Encode citation counts with size
Encode connectedness with color



RATIONALE

Two highly effective and
separable visual channels

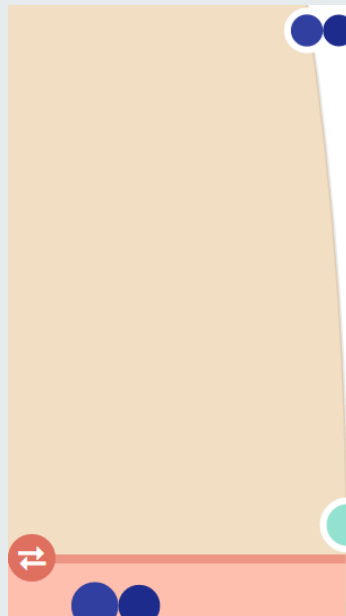


DECISION 4

Semantic zoom to reveal
1. authors, conference & year

RATIONALE

Fluid transition between levels of
granularity + batch process



Follow the reader: filtering comments on slashdot
Cliff A.C. Lampe, Erik Johnston, Paul Resnick – CHI '07

Large-scale online communities need to manage the tension between providing a mechanism for users to filter content. By default, Slashdot is a news and discussion site that has used comment ratings to suppress the use of comment ratings. Nearly half of registered users who changed the defaults, more than three times as many as the default filtering settings, suggesting that the costs of exploring the expected benefit for many users. We recommend leveraging user filter settings to reduce the cost of changing settings for all users. We propose schemas that capture the filtering preferences of different user groups and dynamically set filtering thresholds for each conversation. For predicting later readers' choices, the choices of earlier readers are features such as the number of comments or the ratings of comments.

An evaluation of a multiple interface design solution
Joanna McGrenere, Ronald M. Baecker, Kellogg S. Booth

This study examines a novel interface design for heavy

DECISION 4

Semantic zoom to reveal

1. authors, conference & year
2. abstracts

RATIONALE

Fluid transition between levels of granularity + batch process

Update fringe

☐ automatically

or

Update fringe

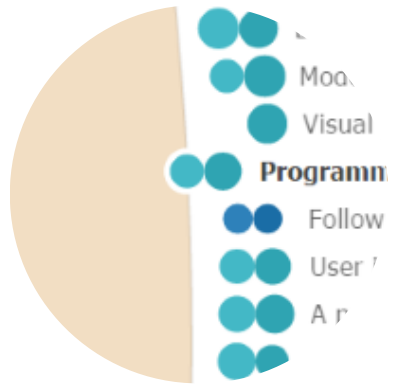
☒ automatically

DECISION 5

Two modes for updating the fringe
1. manual, by clicking update button
2. automatic, after each user action

RATIONALE

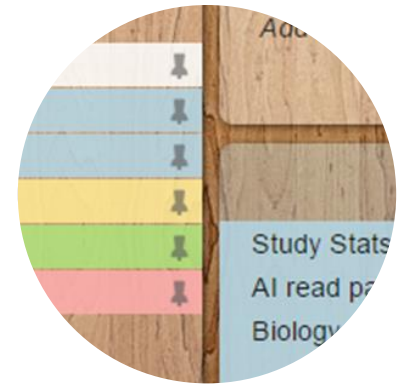
Keep user in control
More efficiency for advanced users



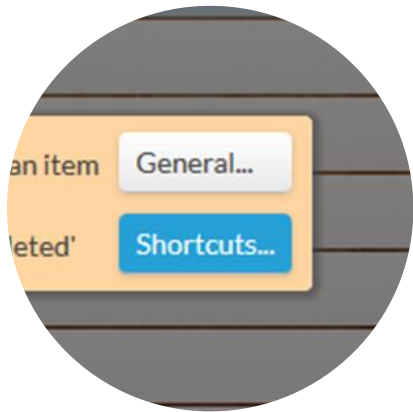
PaperQuest



**Anchored
Customization**



Calendar &
To-do lists



Anchored Customization

Anchoring settings to the application interface

GOAL

Improve the standard customization
mechanism: settings panels

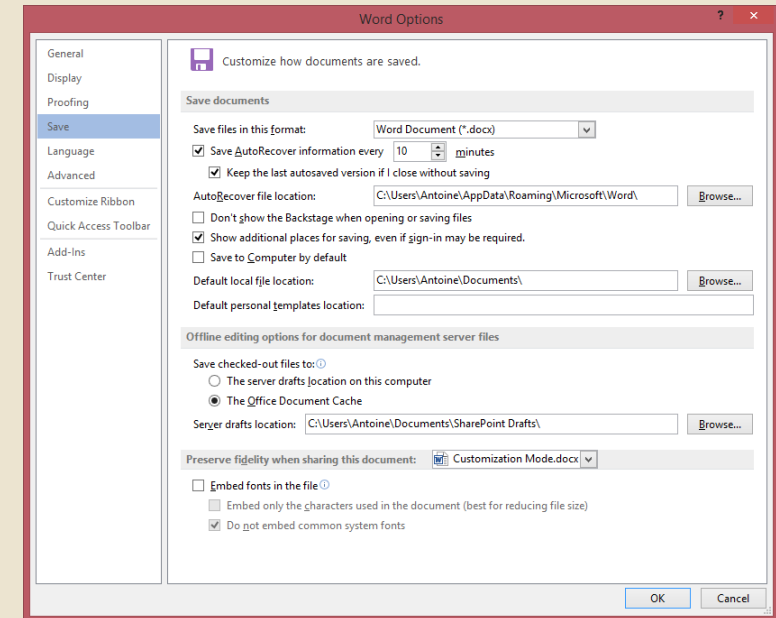
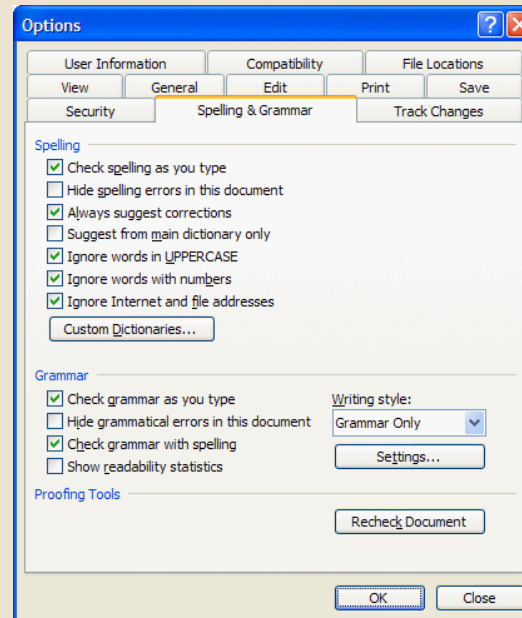
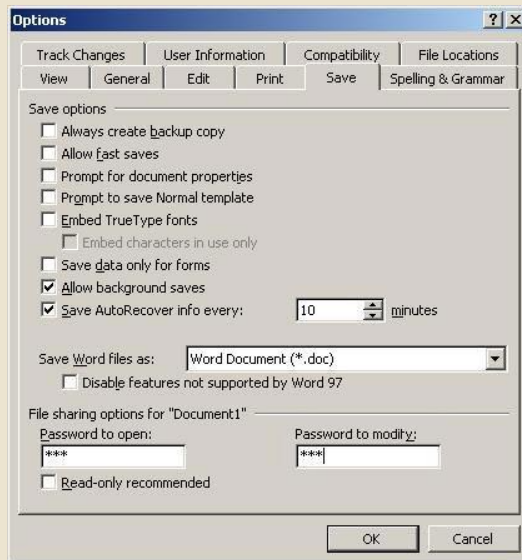
TASK

Customize an application by changing settings

PROBLEM

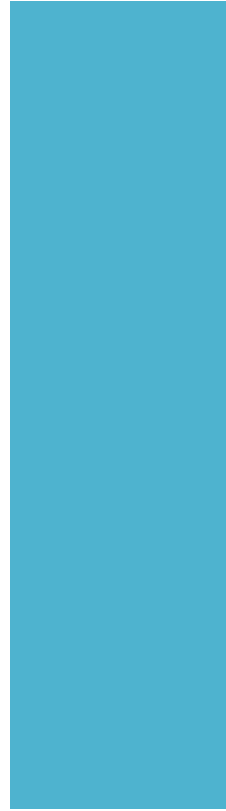
Settings panels are everywhere, but have serious **usability issues**:

- disconnected from what users are familiar with = the app interface
- vocabulary problem: rely on (often cryptic) text labels
- no affordance in the app: *"Can I customize this?"*
- deep gulfs of execution and interpretation



Minimal improvements over time

Settings



config file

Config files = most barebone representation of settings

Settings



categorize



Settings panel

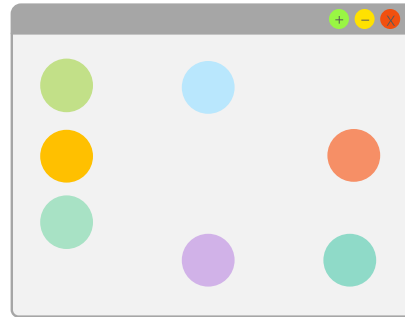


Settings panels = static **partition** of settings, based on abstract categories

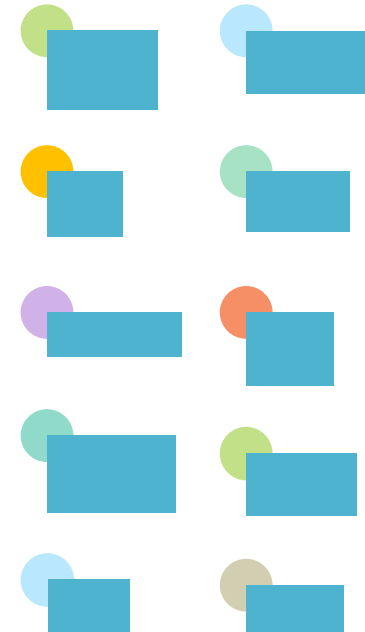
Settings



map to application UI

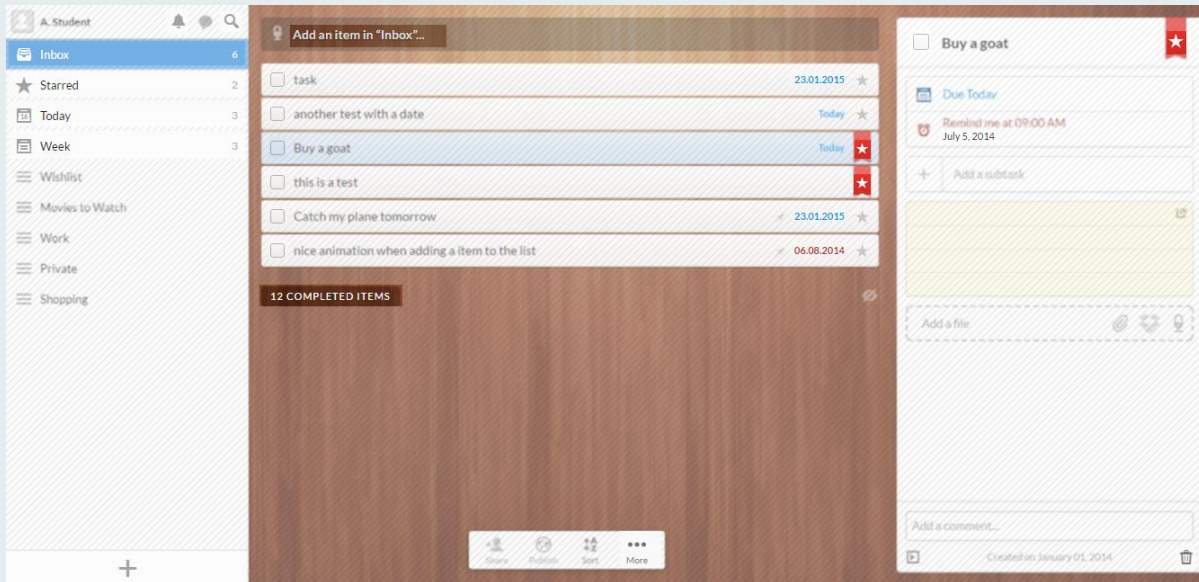


Anchored Customization



Anchored Customization = many-to-many **mapping** of settings to UI elements





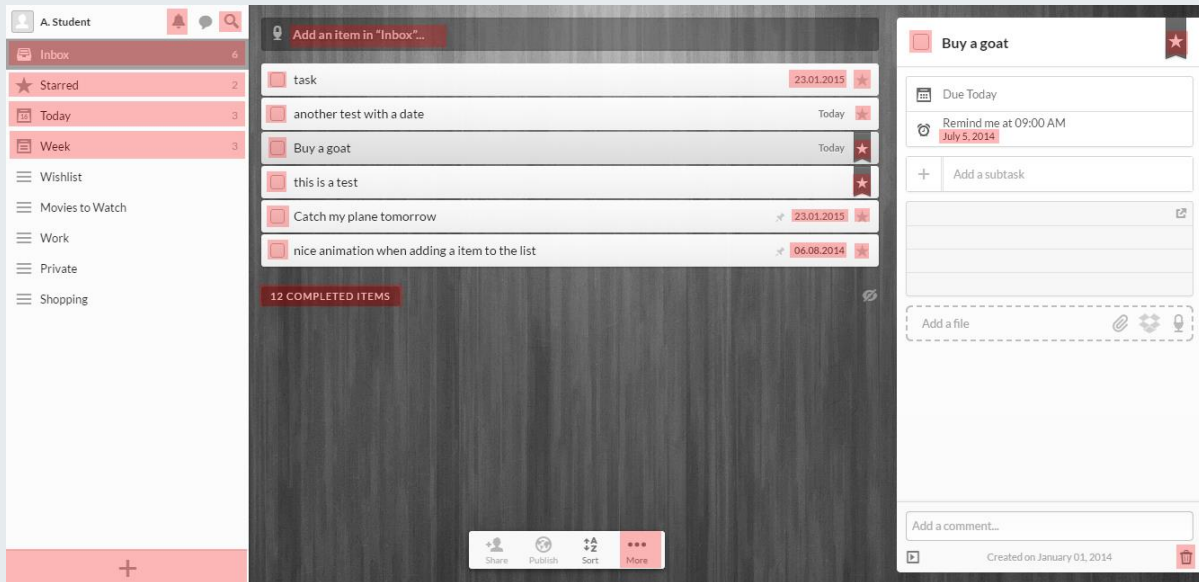
here, displayed on top of Wunderlist (version 1)

DECISION 1

Highlight UI elements mapped to a setting in a Customization Layer

RATIONALE

Provide a global overview of customization opportunities



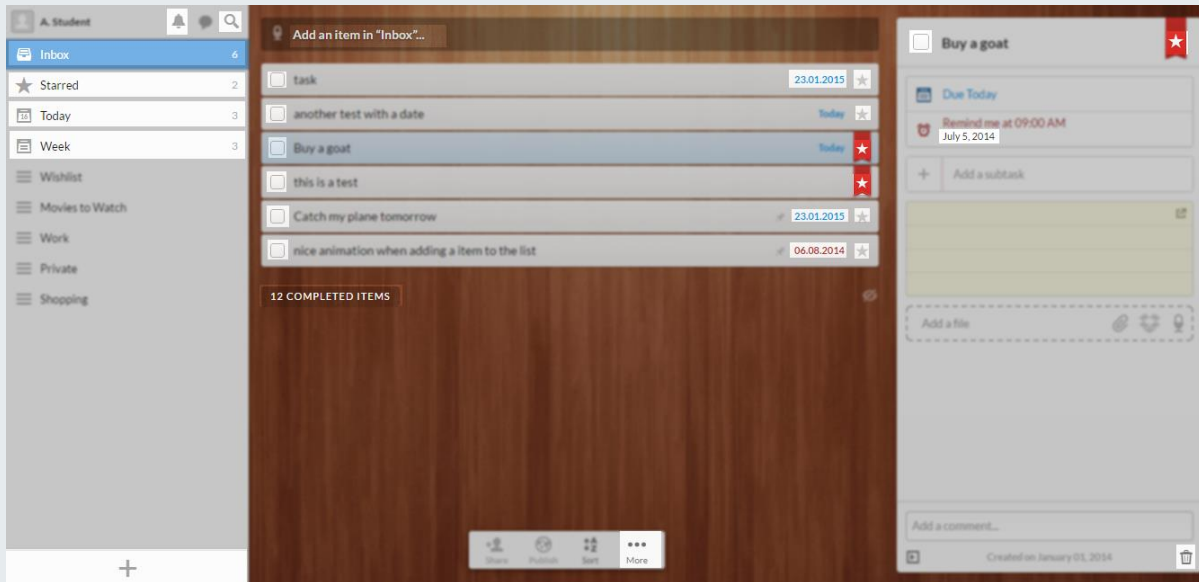
version 2: red markers over black & white app

DECISION 1

Highlight UI elements mapped to a setting in a Customization Layer

RATIONALE

Provide a global overview of customization opportunities



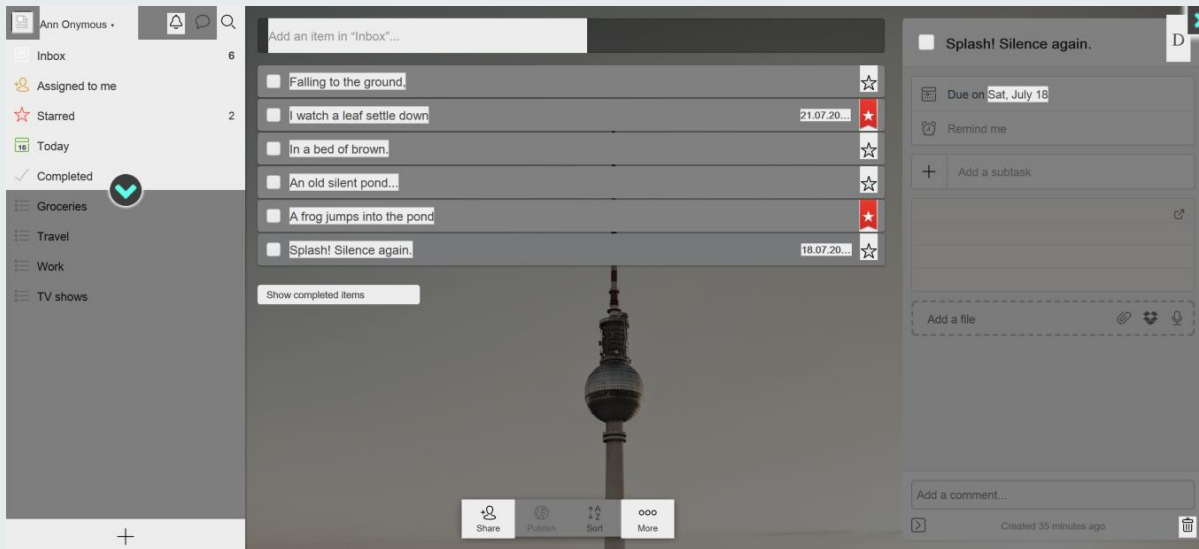
version 3: Gaussian blur and slightly darker

DECISION 1

Highlight UI elements mapped to a setting in a Customization Layer

RATIONALE

Provide a global overview of customization opportunities



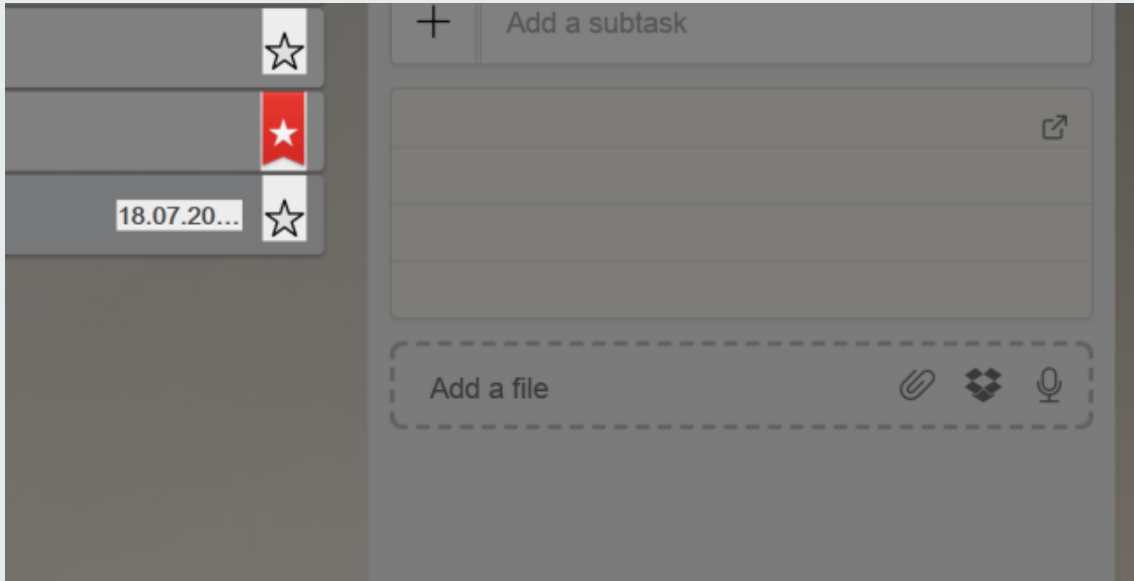
DECISION 1

Highlight UI elements mapped to a setting in a Customization Layer

RATIONALE

Provide a global overview of customization opportunities

final design: dark overlay, white elements backgrounds



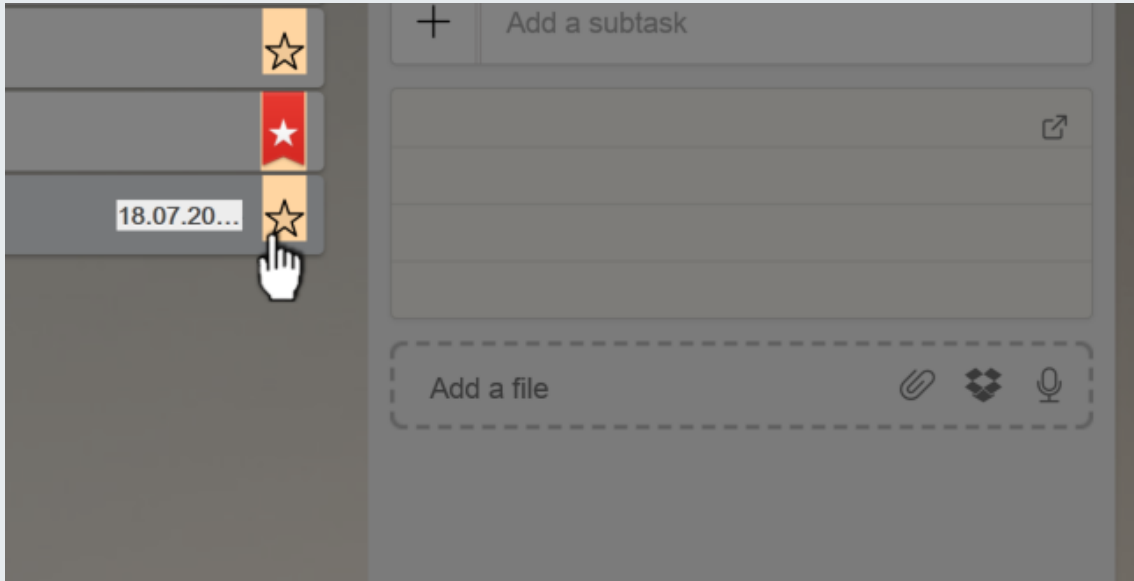
DECISION 2

Linked highlighting on hover

RATIONALE

Indicate if multiple anchors are mapped to the same setting

the 3 stars icons are “anchors” for the same settings



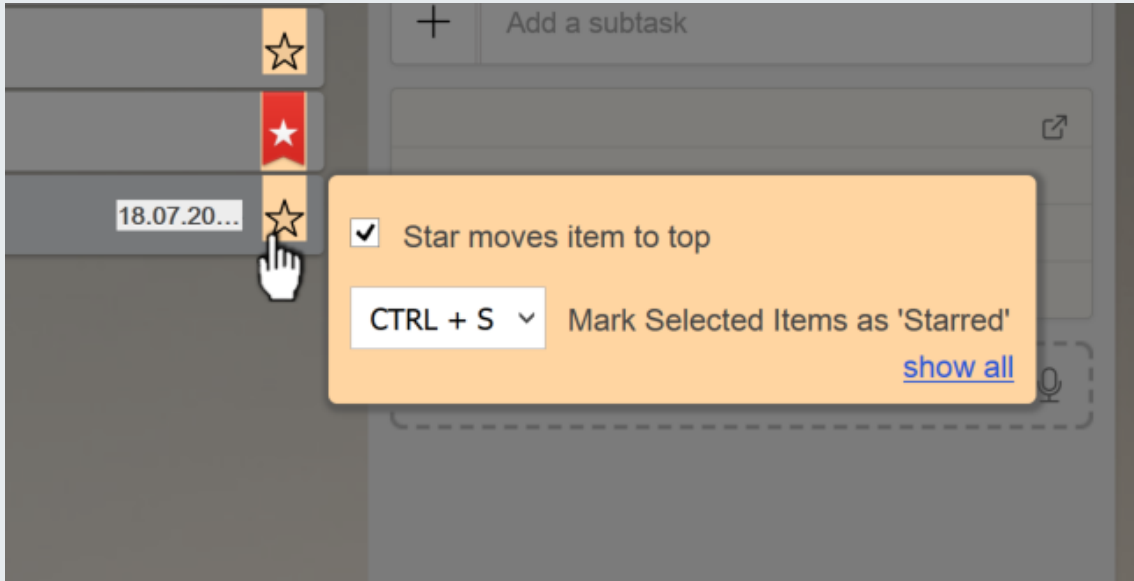
when one anchor is hovered, all three are highlighted

DECISION 2

Linked highlighting on hover

RATIONALE

Indicate if multiple anchors are mapped to the same setting



DECISION 2

Linked highlighting on hover

RATIONALE

Indicate if multiple anchors are mapped to the same setting

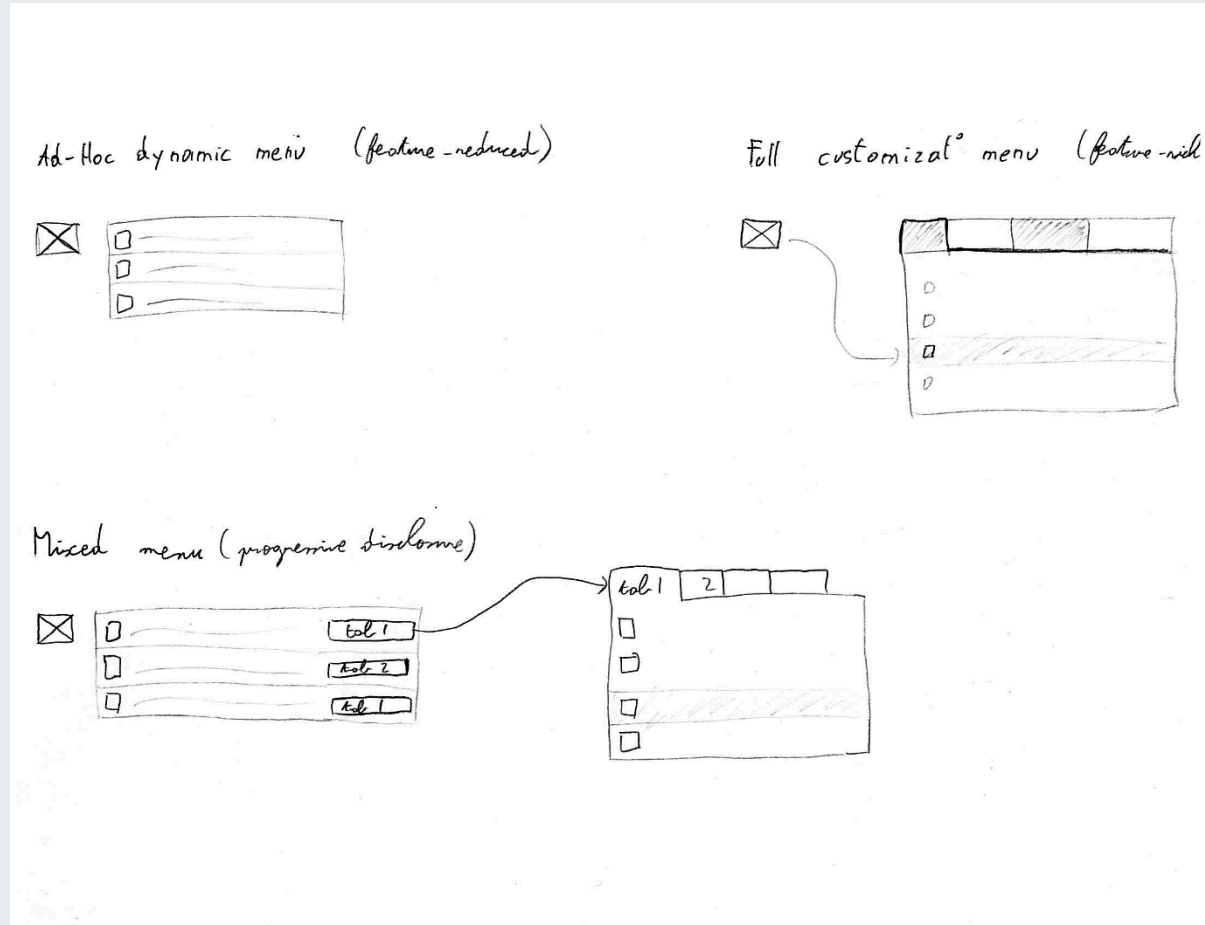
on click, show the settings mapped to these anchors

DECISION 3

Promote the subset of settings mapped to the anchor clicked; but the full settings panel must always be accessible.

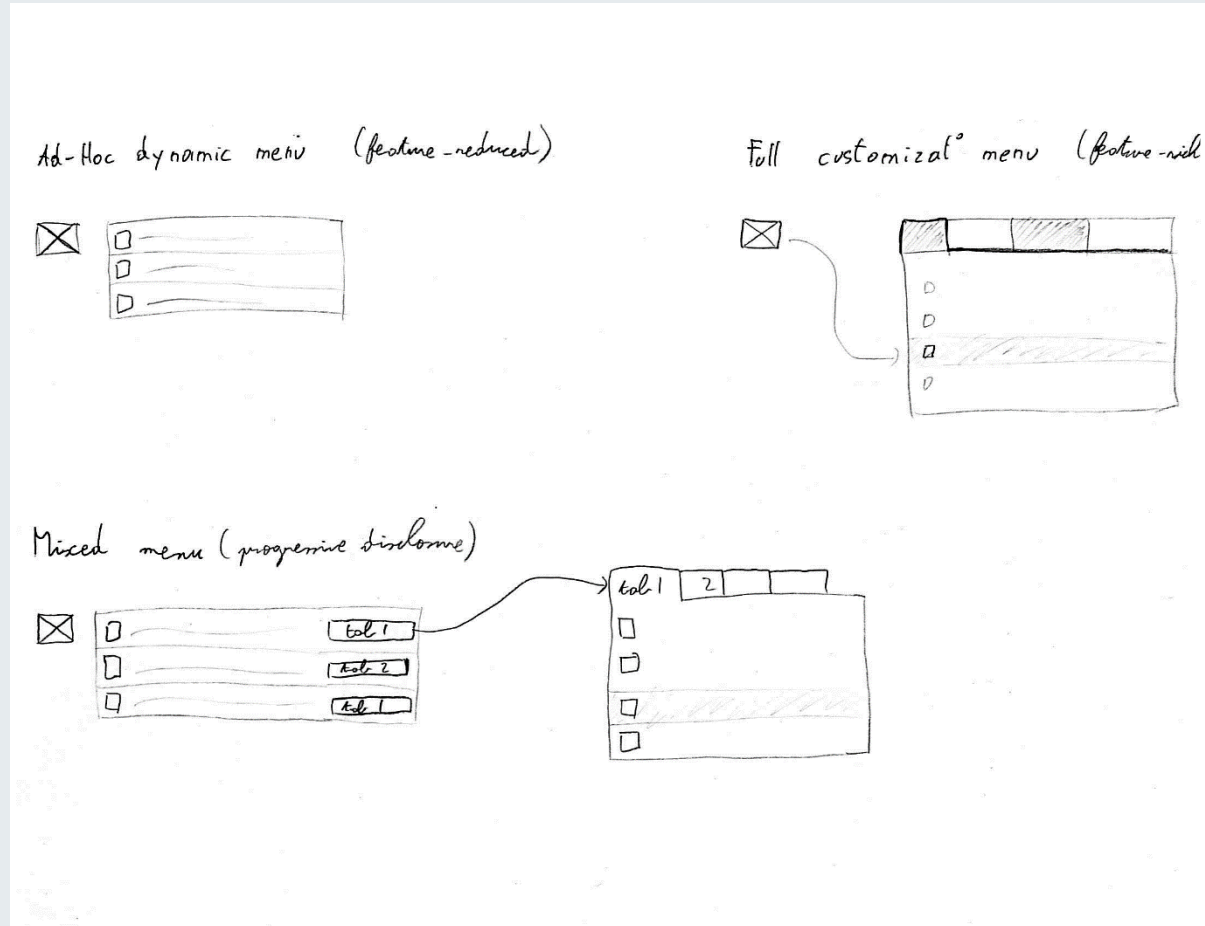
RATIONALE

Not all settings can be anchored
+ some users might prefer the familiarity of settings panels

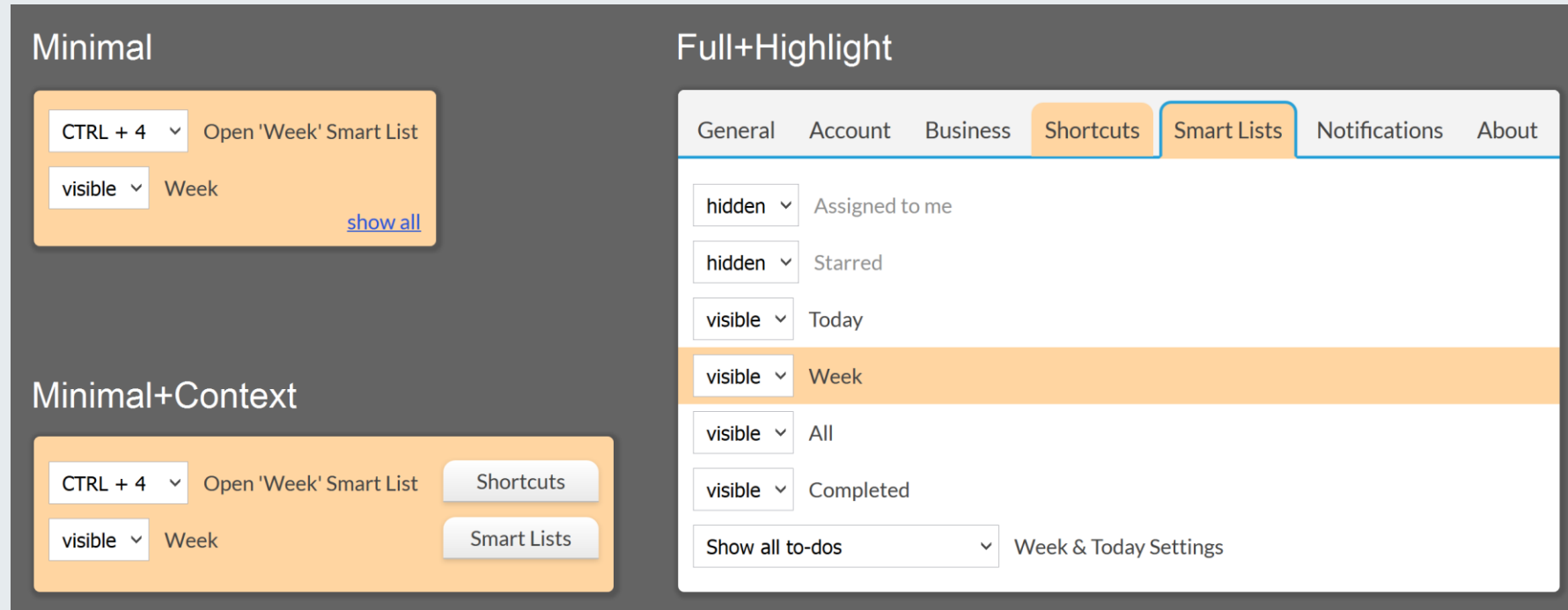


first description of the 3 variants

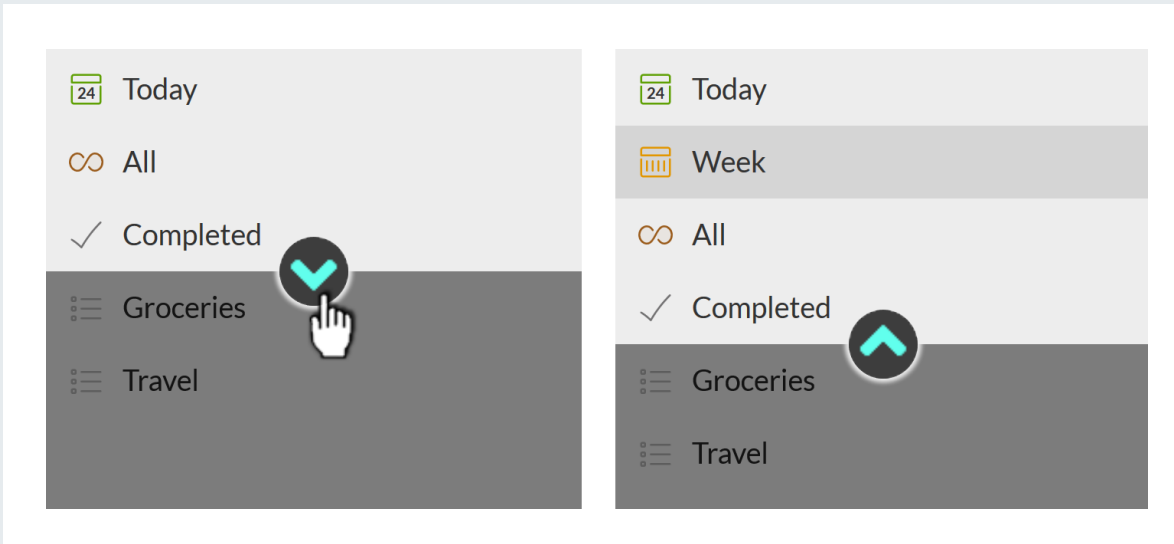
Exploring 3 variants of a **multi-layer interface** for displaying settings



Minimal, Minimal+Context, Full+Highlight



3 variants of a **multi-layer interface** for displaying settings



clicking on the chevron icon reveals a ghost anchor

DECISION 4

Represent hidden UI elements with collapsible **ghost anchors**

RATIONALE

Provide access to the settings associated with these elements while minimizing clutter



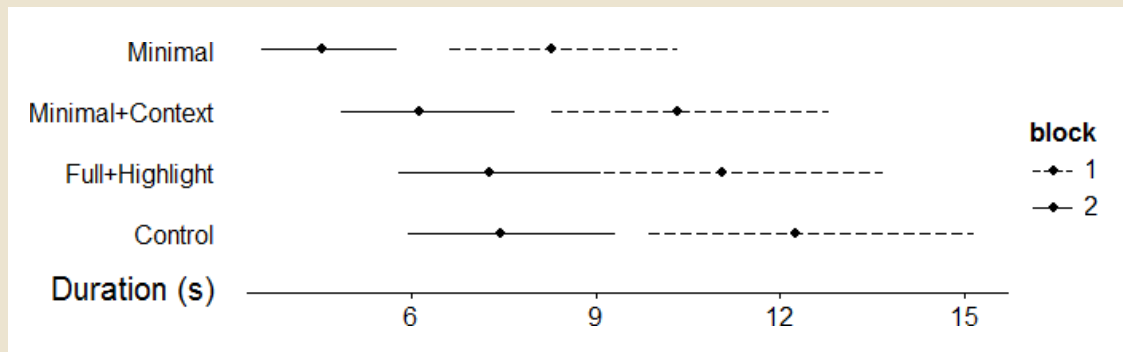
Mechanical Turk

48 participants
between-subjects

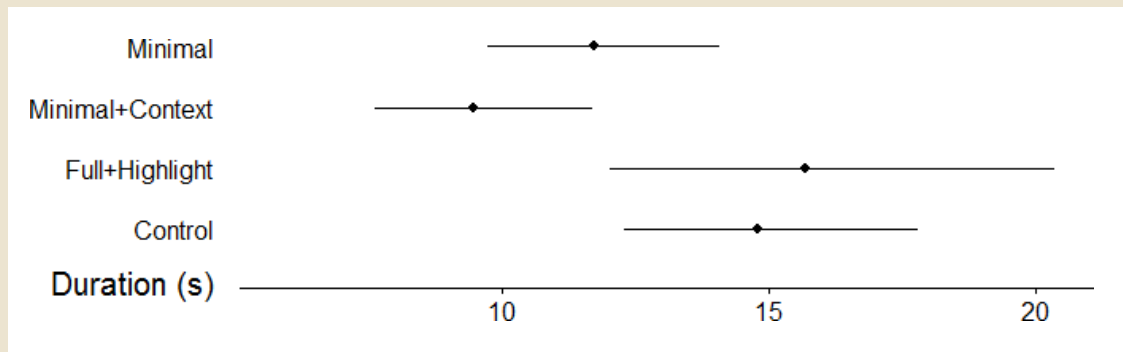


Lab

12 participants
within-subjects

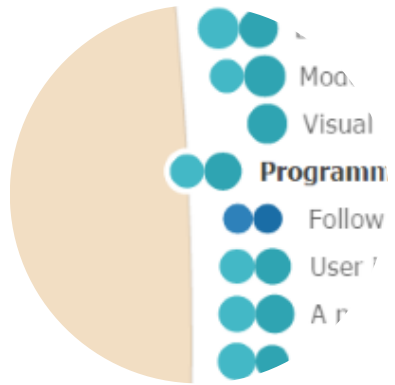


95% confidence intervals for MTurk



95% confidence intervals for Lab

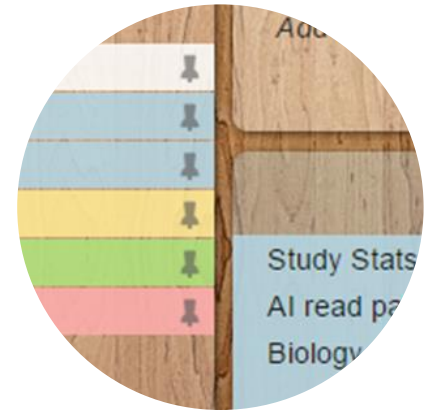
Minimal, Minimal+Context were **35% faster** than the traditional settings panel



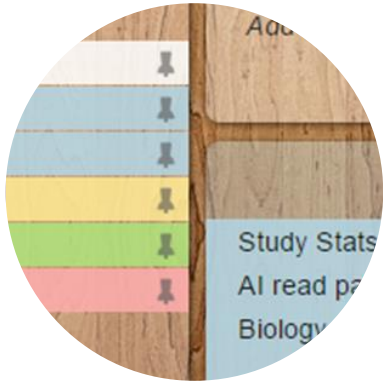
PaperQuest



Anchored
Customization



**Calendar &
To-do lists**



Calendars & To-do lists

Combining both to support time-sensitive tasks

To do :)