An introduction to

INTERACTION DESIGN

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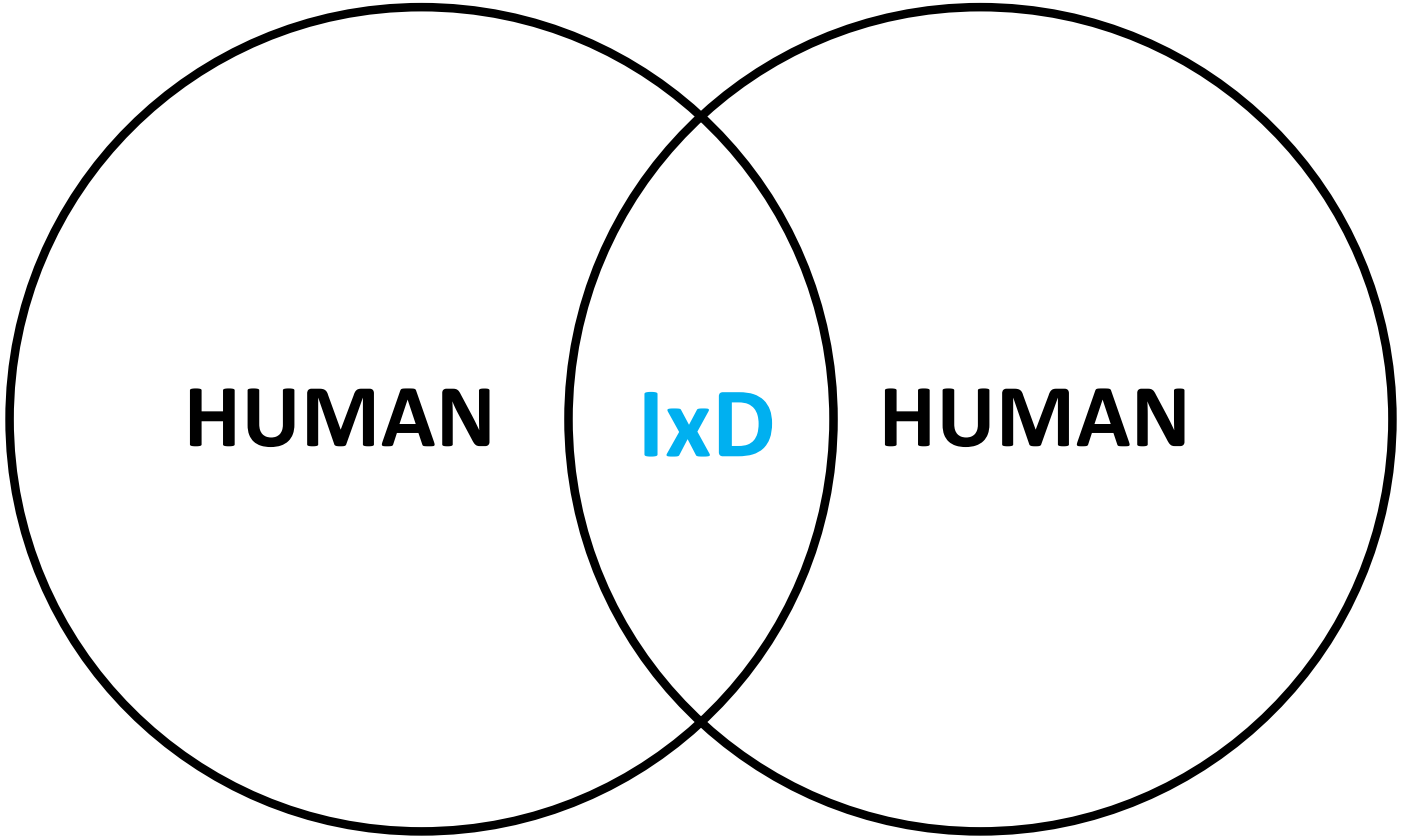
Interaction | ɪntərˈakʃ(ə)n |

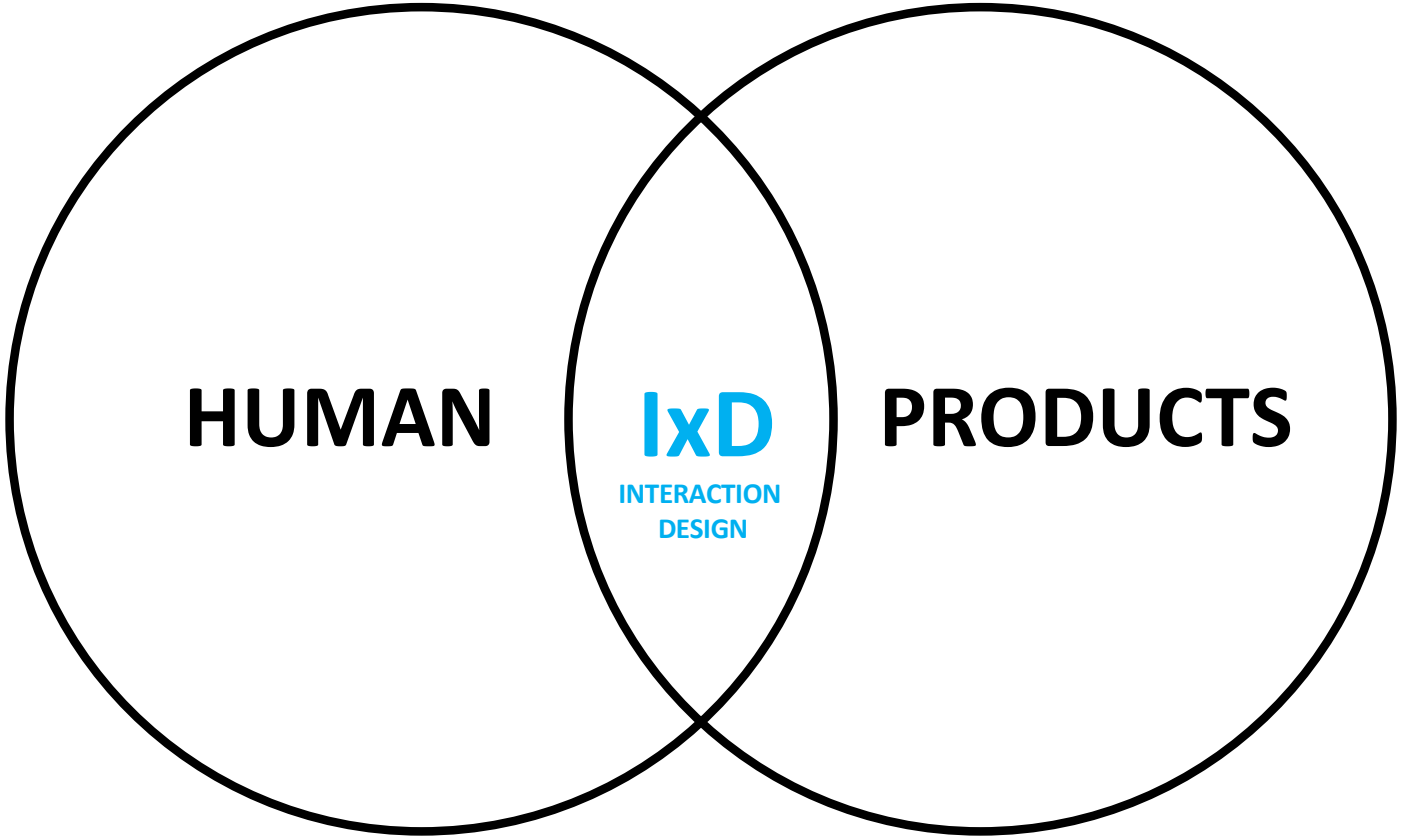
reciprocal action or influence:

*ongoing **interaction between** the two languages*.

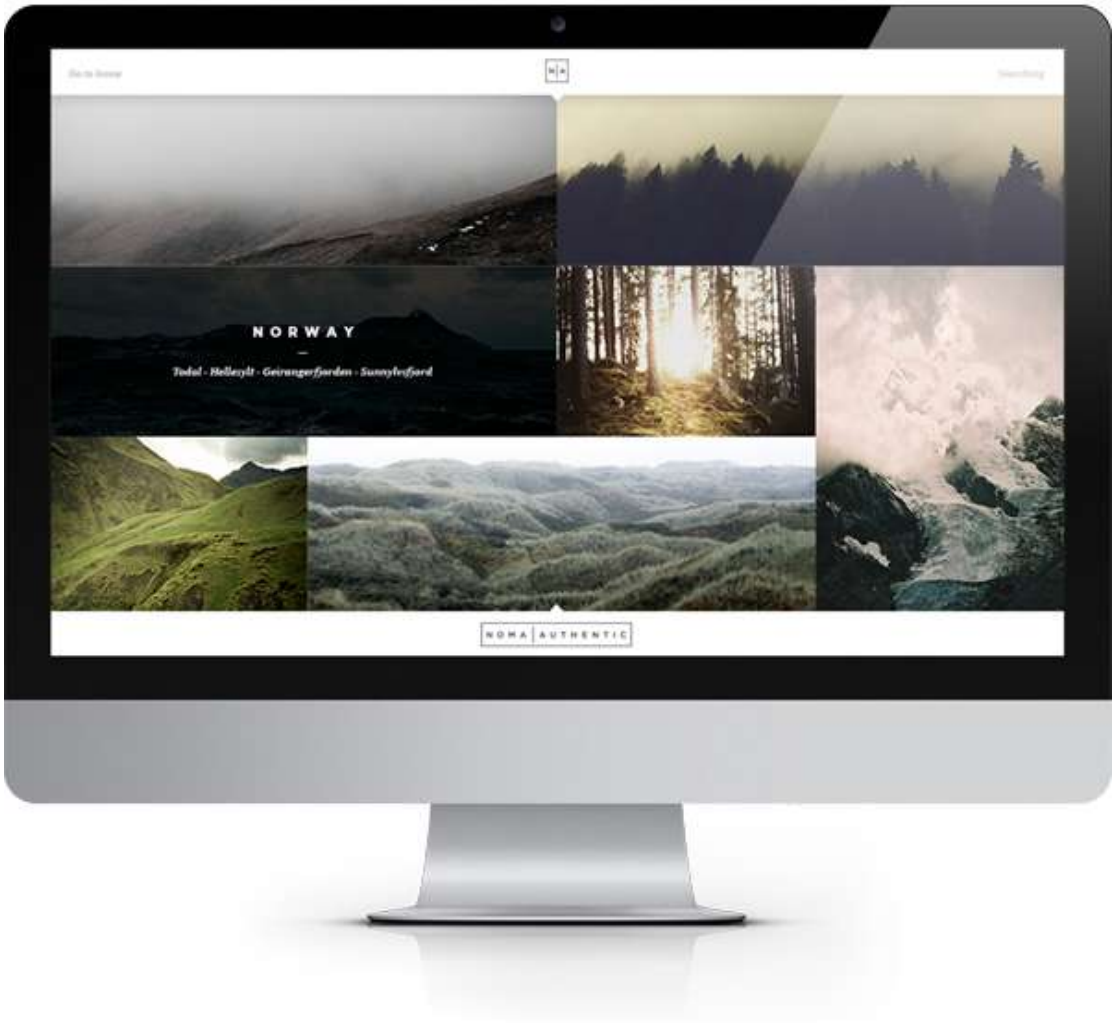
If there is a simple, easy principle that binds everything I have done together, it is my interest in people and their relationship to things

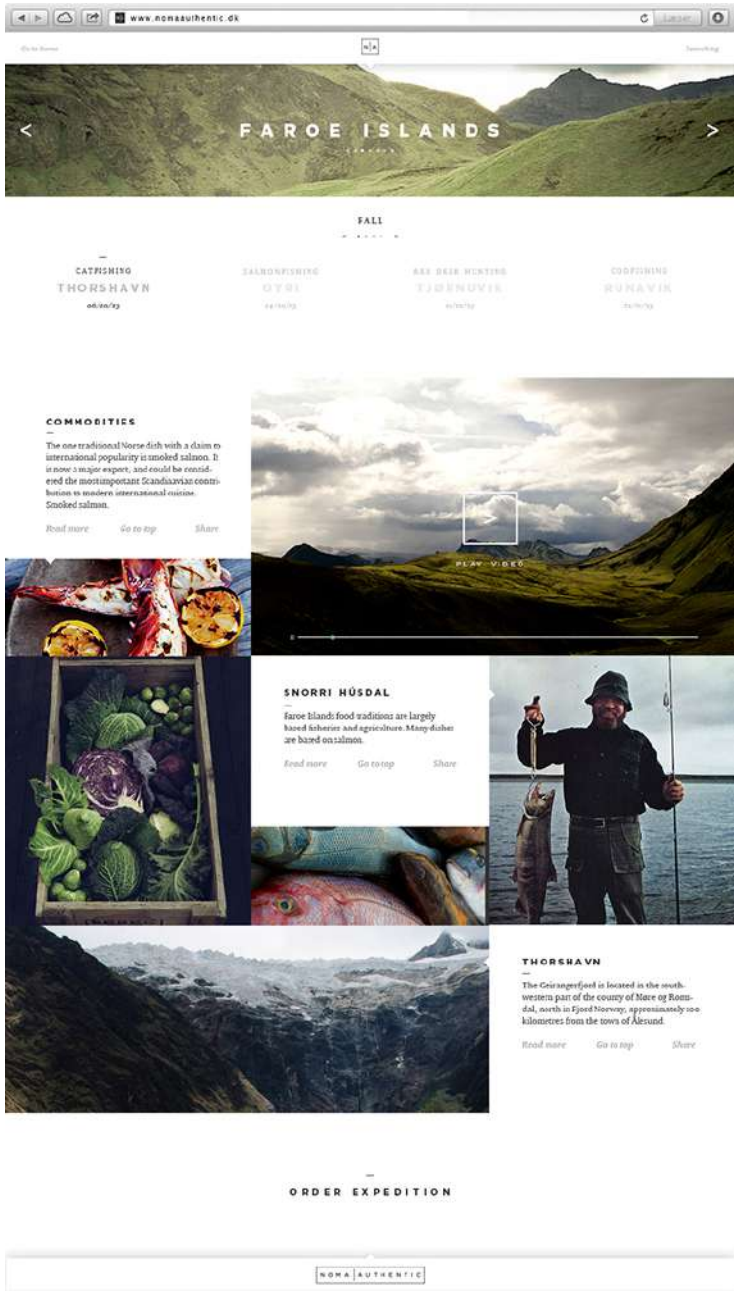
Bill Moggridge


HUMAN
IxD
HUMAN


HUMAN
IxD
INTERACTION
DESIGN
PRODUCTS

The products we design, must have a conversation with their users


NORWAY
Todal · Hellesylt · Geirangerfjorden · Sunnylvsfjord
NOMA AUTHENTIC


www.nomaauthentic.dk
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FALL
CATFISHING
THORSHAVN
SALMONFISHING
GYRI
REX DEER HUNTING
TJØRNUVIK
CODFISHING
RUNAVIK
COMMODITIES
The one traditional Norse dish with a claim to international popularity is smoked salmon. It is now a major export, and could be considered the most important Scandinavian contribution to modern international cuisine. Smoked salmon.
Read more
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SNORRI HÚSDAL
Faroe Islands food traditions are largely based fisheries and agriculture. Many dishes are based on salmon.
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THORSHAVN
The Geirangerfjord is located in the south-western part of the county of Møre og Romsdal, north in Fjord Norway, approximately 100 kilometres from the town of Ålesund.
Read more
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ORDER EXPEDITION
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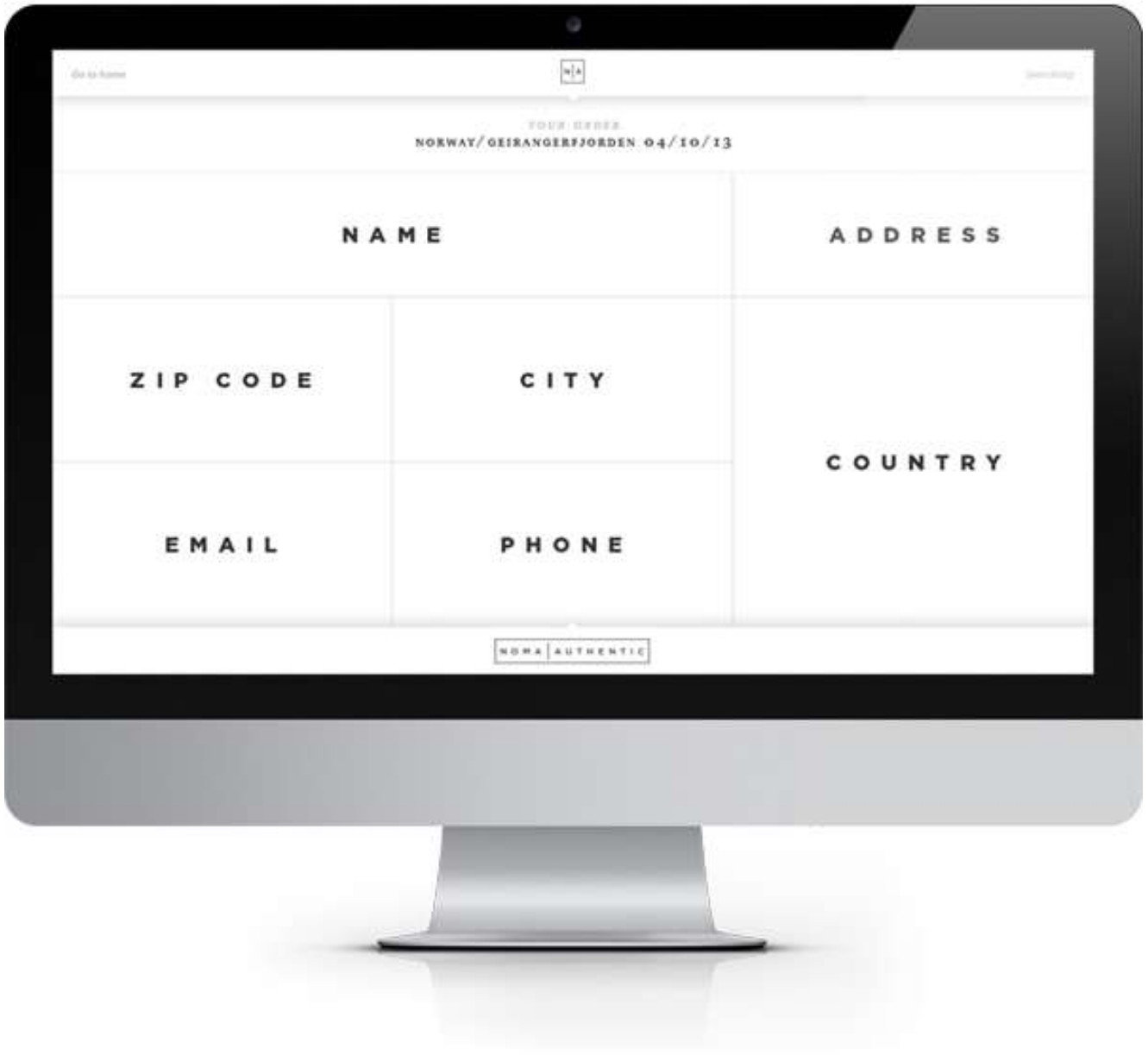
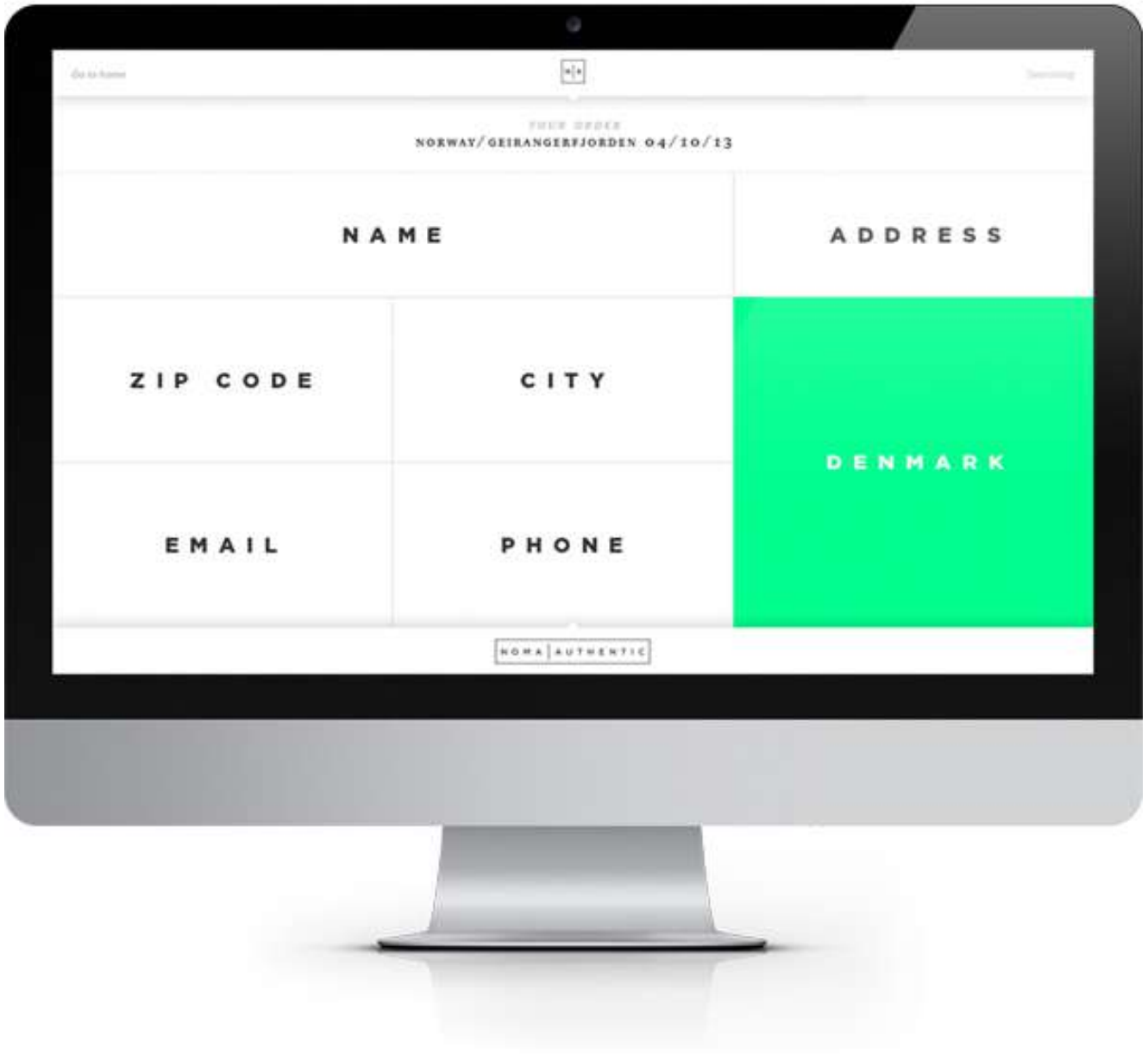
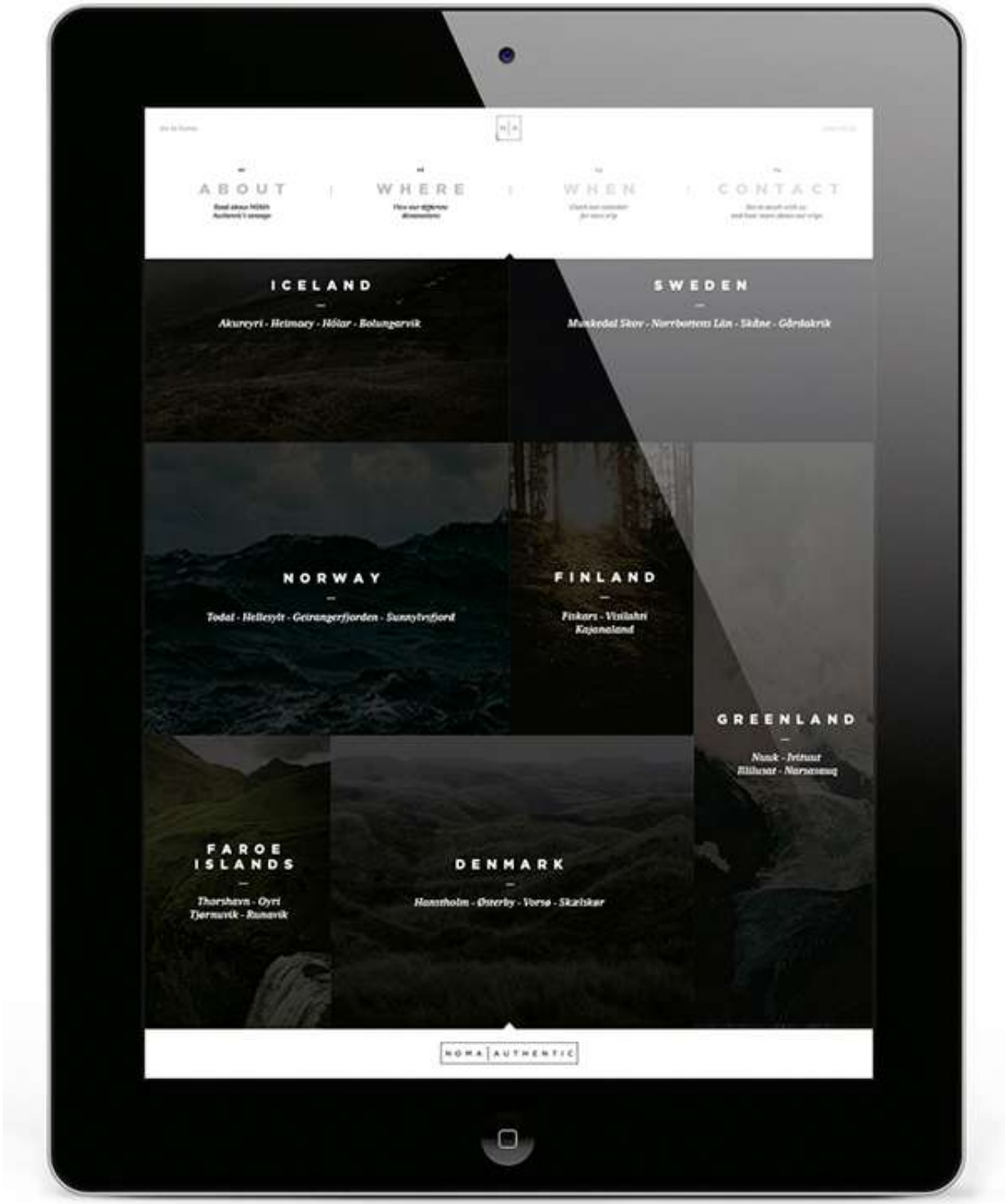
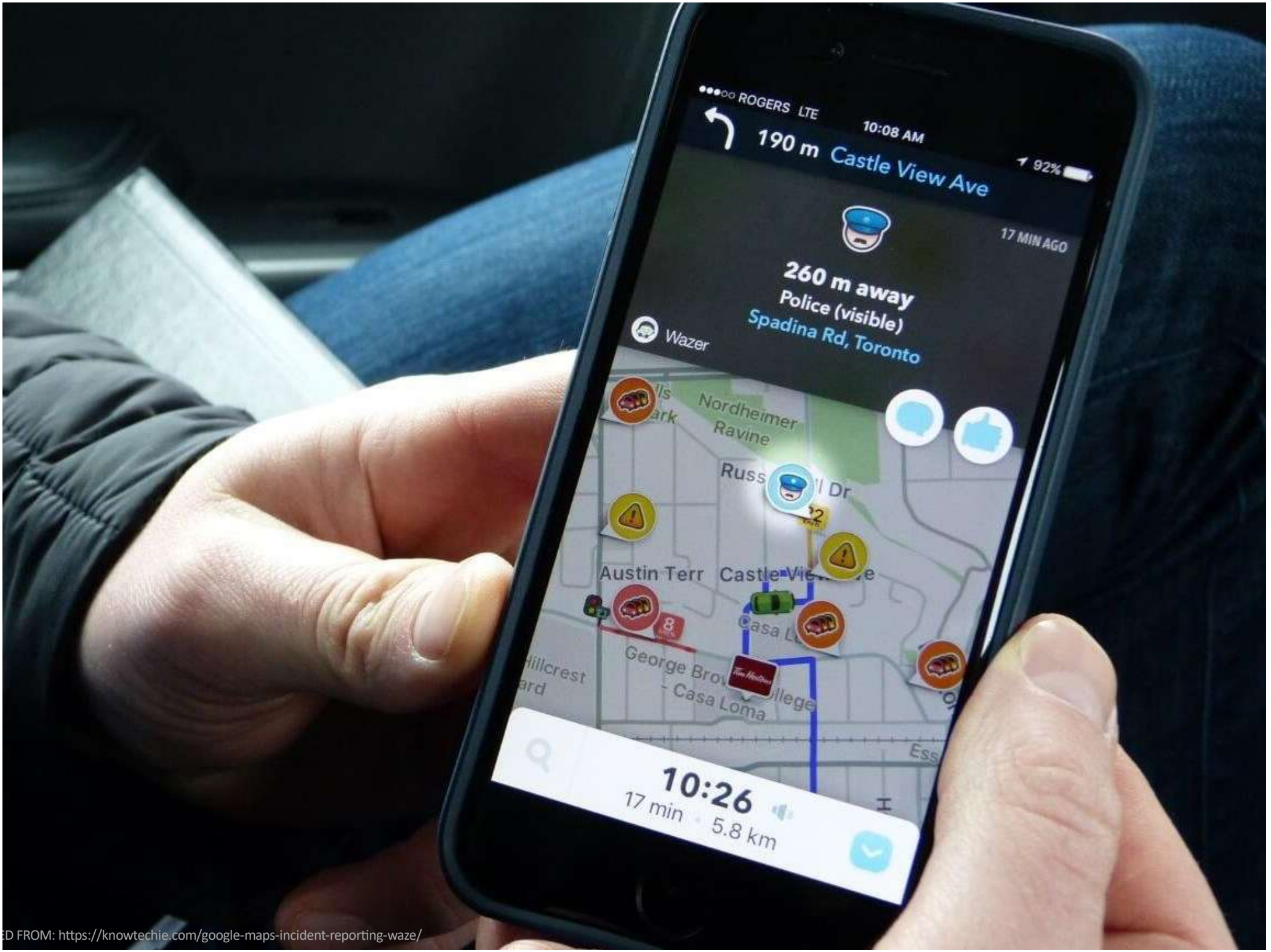

YOUR ORDER
NORWAY/GEIRANGERFJORDEN 04/10/13
NAME
ADDRESS
ZIP CODE
CITY
COUNTRY
EMAIL
PHONE
NOMA | AUTHENTIC


NORWAY/GEIRANGERFJORDEN 04/10/13
NAME
ADDRESS
ZIP CODE
CITY
DENMARK
EMAIL
PHONE
NOMA AUTHENTIC


ABOUT
WHERE
WHEN
CONTACT
ICELAND
Akureyri · Heimaey · Hólar · Bolungarvik
SWEDEN
Munkedal Skov · Norrbottens Län · Skåne · Gårdskrik
NORWAY
Todal · Hellesylt · Geirangerfjorden · Sunnylvsfjord
FINLAND
Finkaro · Vinilahti
Kajanaland
GREENLAND
Nuuk · Ivittuut
Illiluuat · Narsarsuaq
FAROE ISLANDS
Thorshavn · Oyri
Tjernuvik · Runavik
DENMARK
Hanstholm · Østerby · Vorse · Skalskor
NOMA AUTHENTIC

Discover
Art Hard
Jim Denevan



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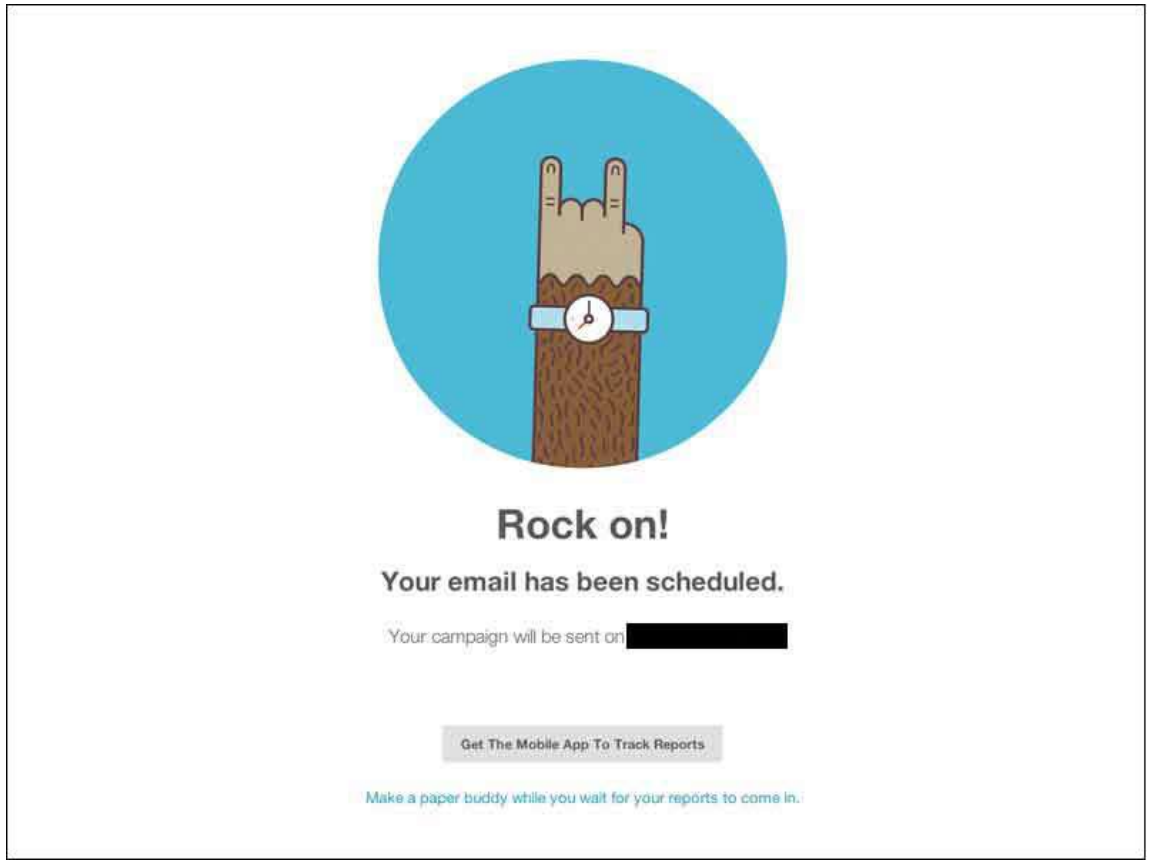

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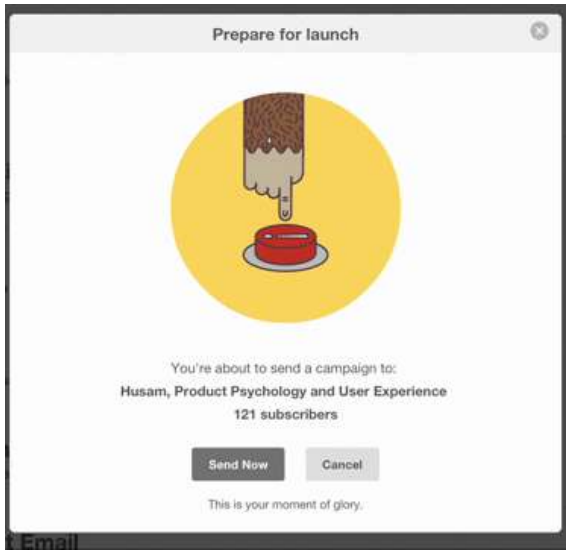

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Olly

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Retrieved from: https://careerfoundry.com/en/blog/ux-design/15-inspirational-ux-design-quotes-that-every-designer-should-read/

”

What would a helpful human do?

What would a thoughtful, considerate interaction feel like?

Does the product treat the primary persona humanely?

How can the software offer helpful information without getting in the way?

How can it minimize the person’s effort in reaching goals?

Cooper, A., Reimann, R., Cronnin, D., Noessel, C., Csizmadi, J., & LeMoine, D. (2014). *About Face* (4th Editio). John Wiley & Sons. Inc.

Interaction Design is the creation of a dialogue between a person and a product, system, or service. This dialogue is both physical and emotional in nature and is manifested in the interplay between form, function, and technology as experienced over time.

John Kolko, Author of Thoughts on Interaction Design (2011)

Interaction Design Foundation. (n.d.). Interaction Design | Interaction Design Foundation. Retrieved September 2, 2019, from https://www.interaction-design.org/literature/topics/interaction-design

”

What is being designed, then,
is not a thing but a human-world relation
in which practices and experiences take shape.

Verbeek, P.-P. (2015). Beyond Interaction: A Short Introduction to Mediation Theory. *Interactions*, *22*(3), 26–31. https://doi.org/10.1145/2751314

INTERACTION DESIGN DIMENSIONS

5 DIMENSIONS OF INTERACTION DESIGN

1D: Words

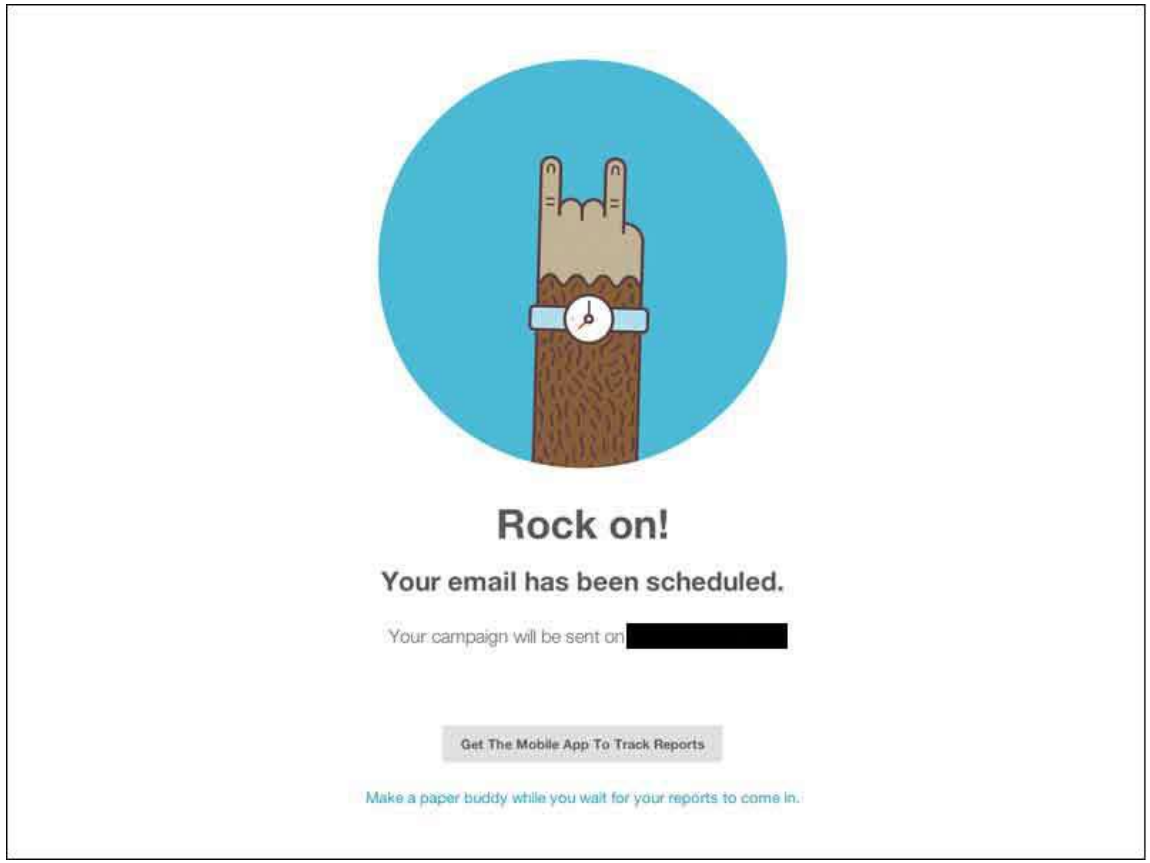
Should be meaningful, consistent and with a suitable “tone of voice”

Moggridge, B., & Atkinson, B. (2007). *Designing interactions*. Cambridge, Massachusetts: MIT Press.
Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation.

DON’T

RETRIEVED FROM: https://uxdesign.cc/good-design-vs-bad-design-examples-from-everyday-experiences-18a7d1ba002c

DO



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2D: Visual representations

Usually supplement the words used to communicate. Colors, typography, icons etc. should be aligned with words

Moggridge, B., & Atkinson, B. (2007). *Designing interactions*. Cambridge, Massachusetts: MIT Press.
Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation.

DON’T

DO

Looking at Sydney Opera House

There are countless philosophies for guiding design as the design values and its accompanying aspects within modern design vary, both between different schools of thought and among practicing designers.

Modern day engineering

In engineering, design is a component of the engineering process. Many overlapping methods and processes can be seen when comparing Product design, Industrial design and Engineering.

Looking at Sydney Opera House

There are countless philosophies for guiding design as the design values and its accompanying aspects within modern design vary, both between different schools of thought and among practicing designers.

Modern day engineering

In engineering, design is a component of the engineering process. Many overlapping methods and processes can be seen when comparing Product design, Industrial design and Engineering.

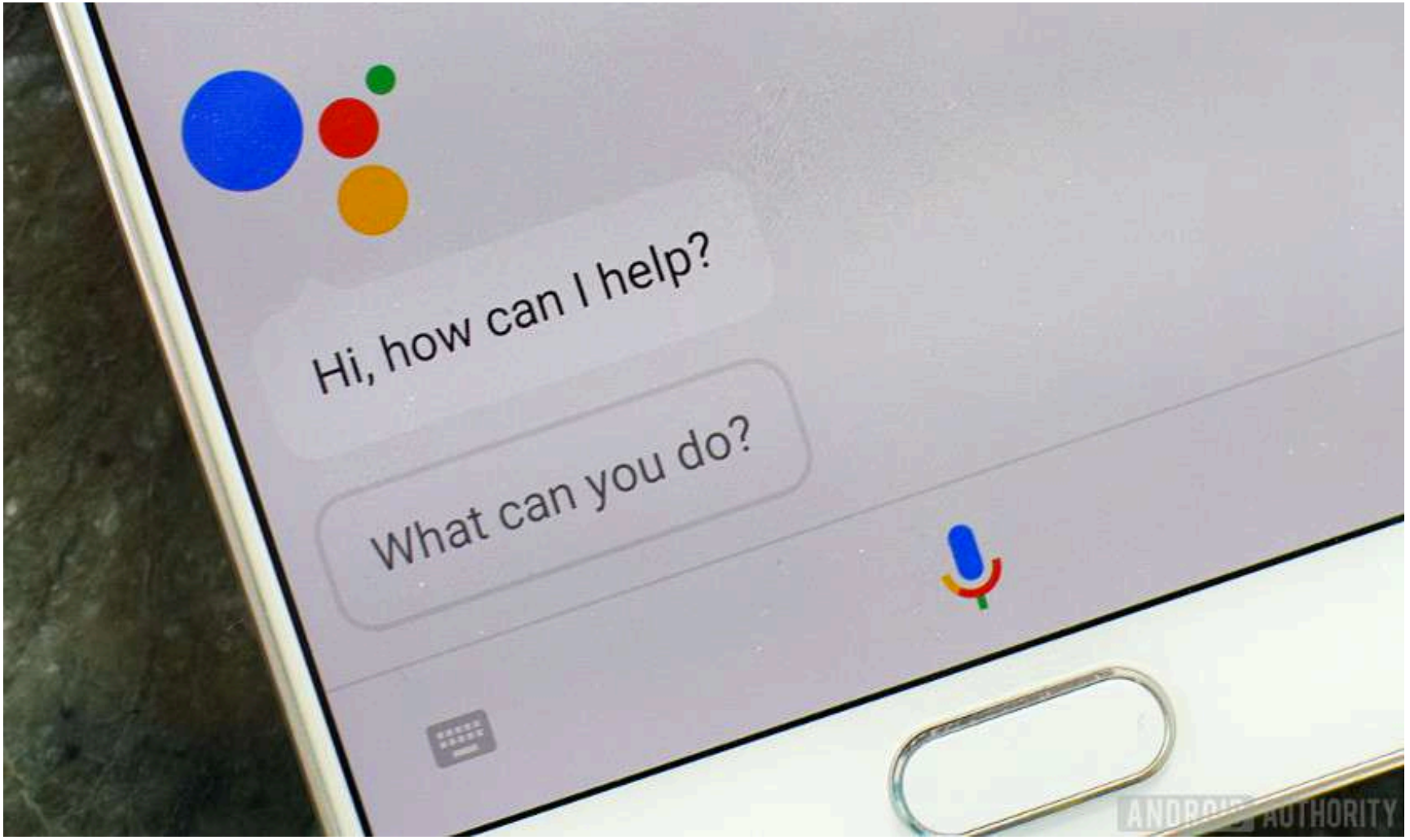
RETRIEVED FROM: https://99designs.pt/blog/tips/typographic-hierarchy-web-design/

3D: Physical objects or space

The context and the object has an important role in interaction definition

Moggridge, B., & Atkinson, B. (2007). *Designing interactions*. Cambridge, Massachusetts: MIT Press.
Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation.

DO



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4D: Time

It’s mostly related with motion. Motion increases meaning. Could also be concerned with the time a user spend interacting with the product

Moggridge, B., & Atkinson, B. (2007). *Designing interactions*. Cambridge, Massachusetts: MIT Press.
Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation.

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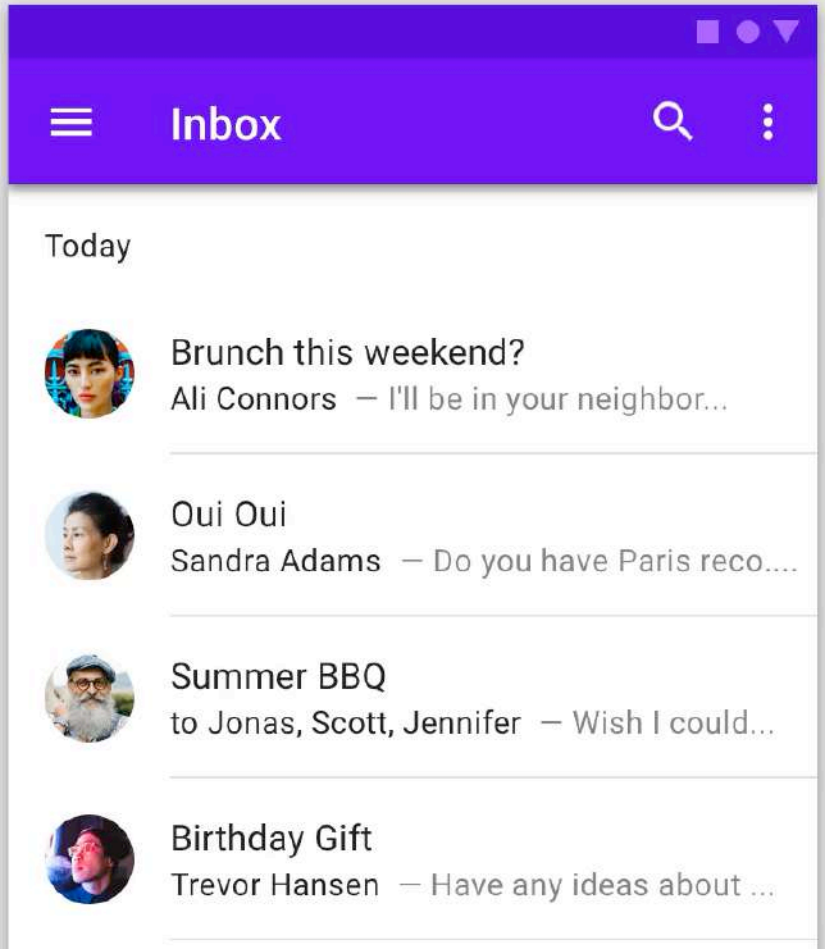


RETRIEVED FROM: https://material.io/design/navigation/navigation-transitions.html#hierarchical-transitions

5D: Behaviour

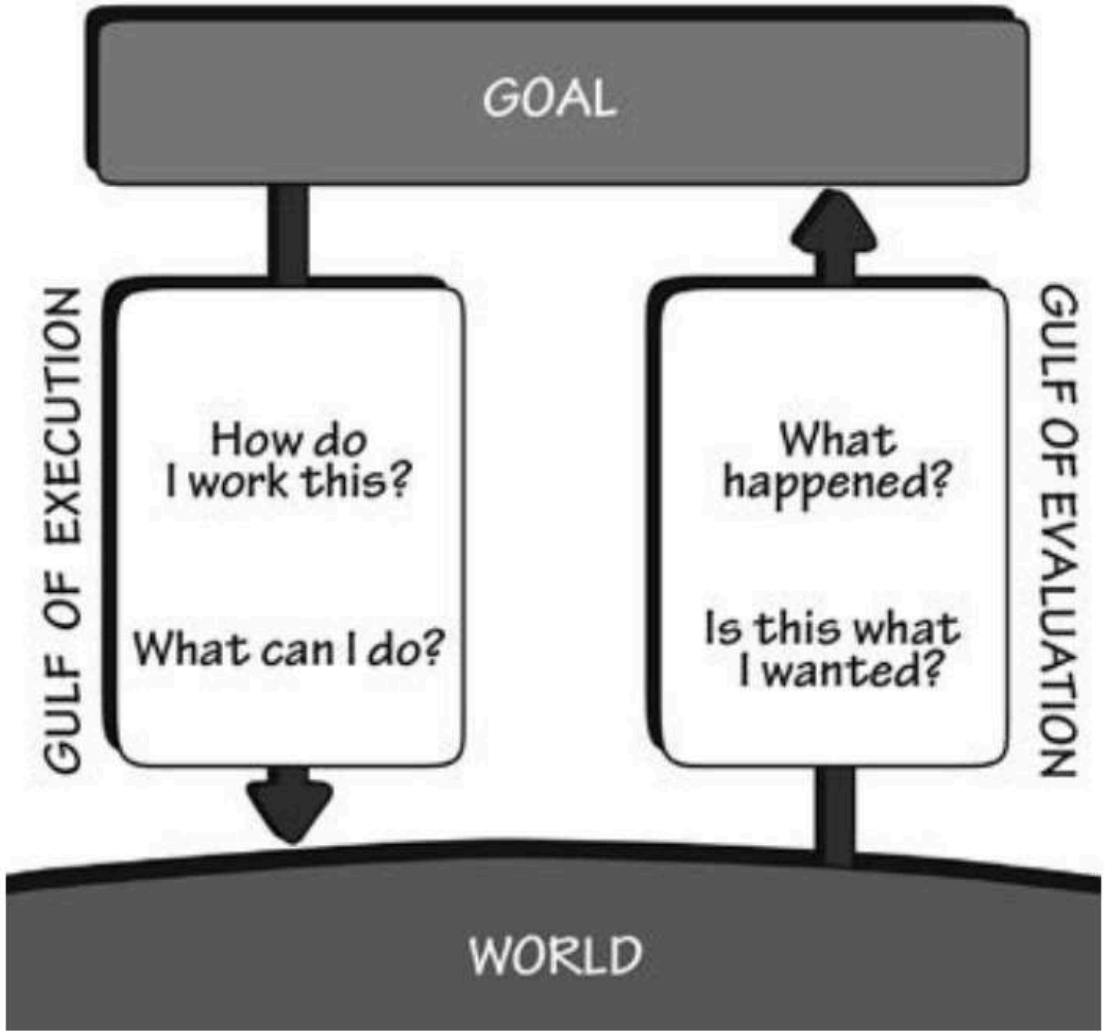
How do users perform actions on the website and what is their emotional response

Moggridge, B., & Atkinson, B. (2007). *Designing interactions*. Cambridge, Massachusetts: MIT Press.
Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation.

HOW DO WE INTERACT

by Donald Norman

Norman, D. (2002). *The design of everyday things* (Vol. 16). Basic Books New York.



Ko, A. j. (n.d.). *User Interface Software and Technology*. *Faculty Washington*. Retrieved from https://faculty.washington.edu/ajko/books/uist/index.html

Ensure that at each stage,
the product provides the information
required to answer the question.

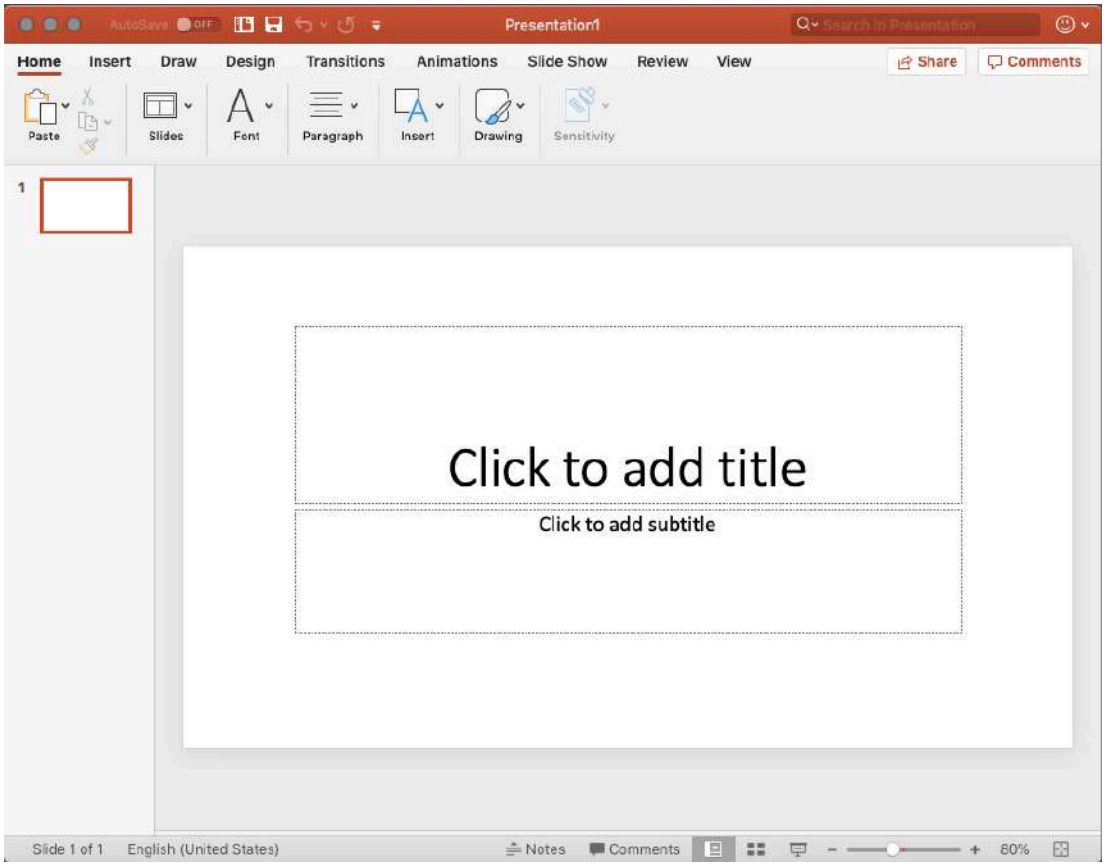
Norman, D. (2013). *The design of everyday things*. *Choice Reviews Online* (Vol. 51). New York: Basic Books. https://doi.org/10.5860/choice.51-5559

FUNDAMENTAL PRINCIPLES OF INTERACTION

by Donald Norman

•Norman, D. (2013). *The design of everyday things*. *Choice Reviews Online* (Vol. 51). New York: Basic Books. https://doi.org/10.5860/choice.51-5559

DISCOVERABILITY

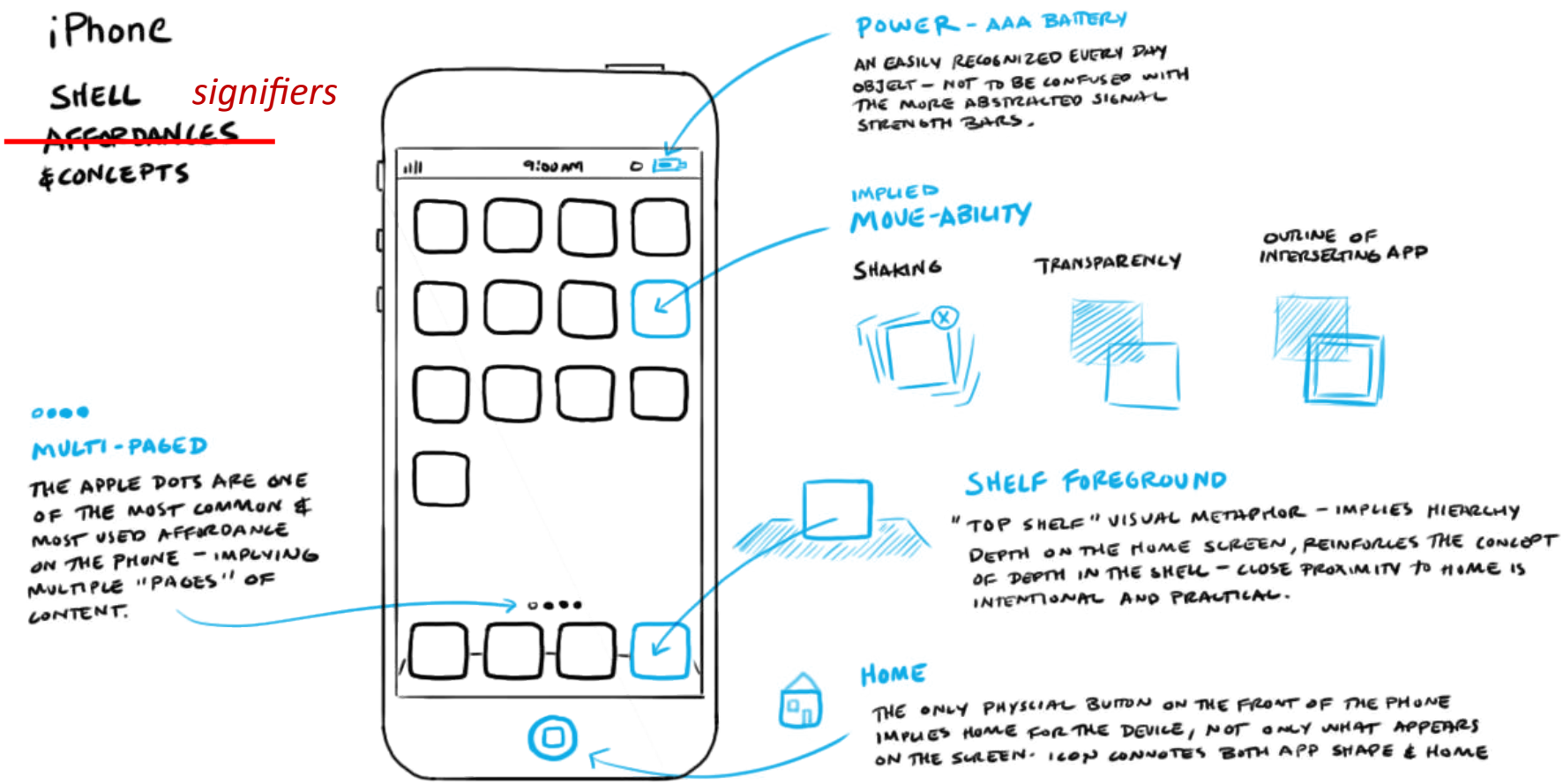


Norman, D. (2013). *The design of everyday things*. *Choice Reviews Online* (Vol. 51). New York: Basic Books. https://doi.org/10.5860/choice.51-5559

AFFORDANCE

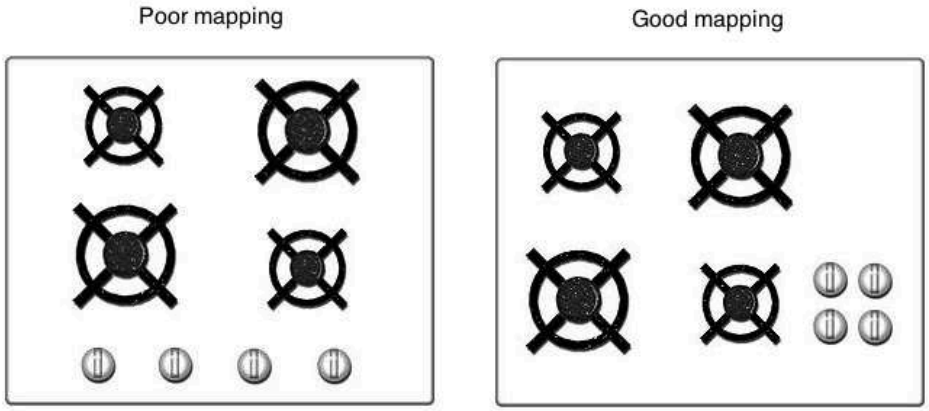
Exemplos retirados de: https://medium.com/@sachinrekhi/don-normans-principles-of-interaction-design-51025a2c0f33

SIGNIFIERS



Exemplos retirados de: http://mattink.com/post/66003190793/affordance-shell

MAPPING



Min: -10

Max: 40

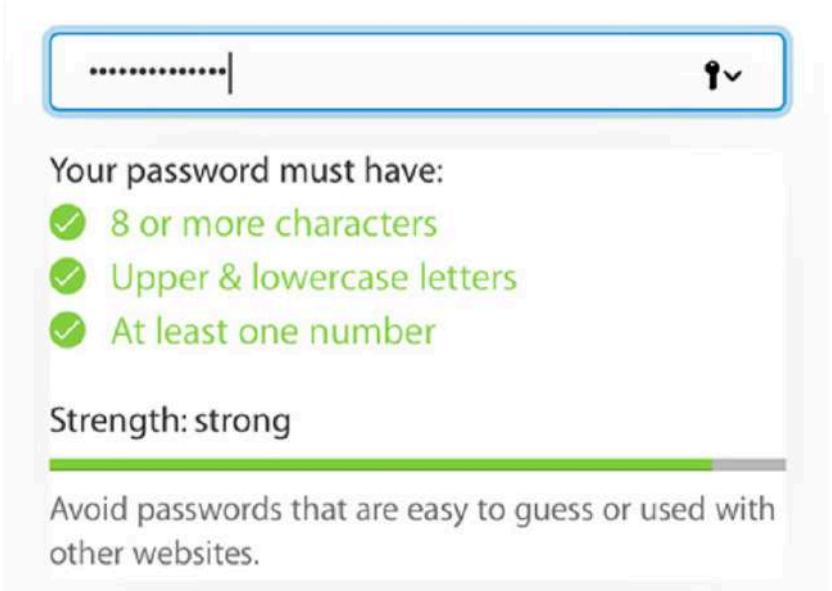
3

It's responsive too!

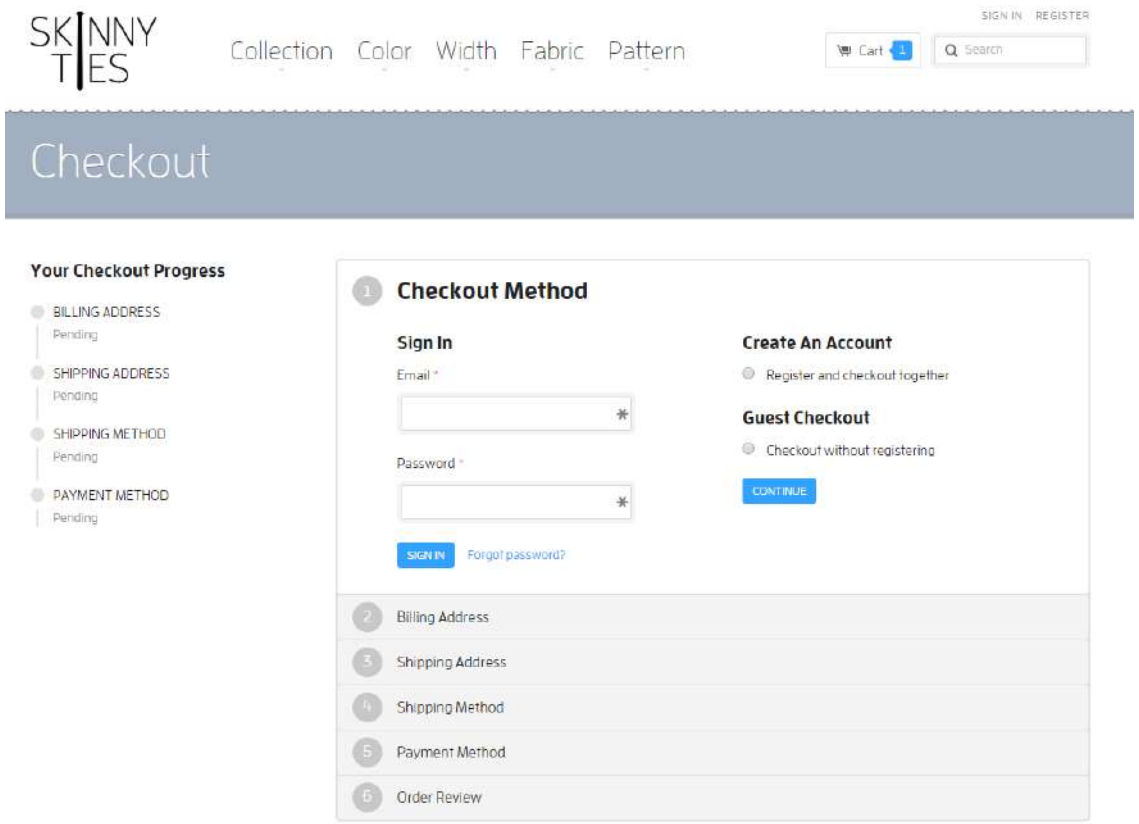
Exemplos retirados de: https://medium.com/@sachinrekhi/don-normans-principles-of-interaction-design-51025a2c0f33

FEEDBACK

Submit



CONSTRAINTS



Exemplo retirado de: https://www.howdesign.com/web-design-resources-technology/donald-normans-design-principles-applied-modern-web-design-part-2/

CONSTRAINTS

A.

B.

Exemplo retirado de: https://www.howdesign.com/web-design-resources-technology/donald-normans-design-principles-applied-modern-web-design-part-2/

”

There is a sixth principle,
perhaps most important of all:
the **conceptual model** of the system.

Norman, D. (2013). *The design of everyday things*. *Choice Reviews Online* (Vol. 51). New York: Basic Books. https://doi.org/10.5860/choice.51-5559

CONCEPTUAL MODEL

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In early 2016 Fiat Chrysler automobiles recall over 1 million vehicles

121 accidents
30 injuries

https://www.cbsnews.com/news/fiat-chrysler-recalls-1-1-million-cars-for-gear-shifters/

”

Follow user’s mental models

Cooper, A., Reimann, R., Cronnin, D., Noessel, C., Csizmadi, J., & LeMoine, D. (2014). *About Face* (4th Editio). John Wiley & Sons. Inc.

MENTAL MODEL

DISCOVERABILITY
SIGNIFIERS
CONSTRAINTS
MAPPINGS
AFFORDANCES

FEEDBACK

Norman, D. (2013). *The design of everyday things*. *Choice Reviews Online* (Vol. 51). New York: Basic Books. https://doi.org/10.5860/choice.51-5559

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Once we learn them,
we can act upon a user interface,
perceive its reaction, and productively
achieve our goals,
as we do with the natural world.

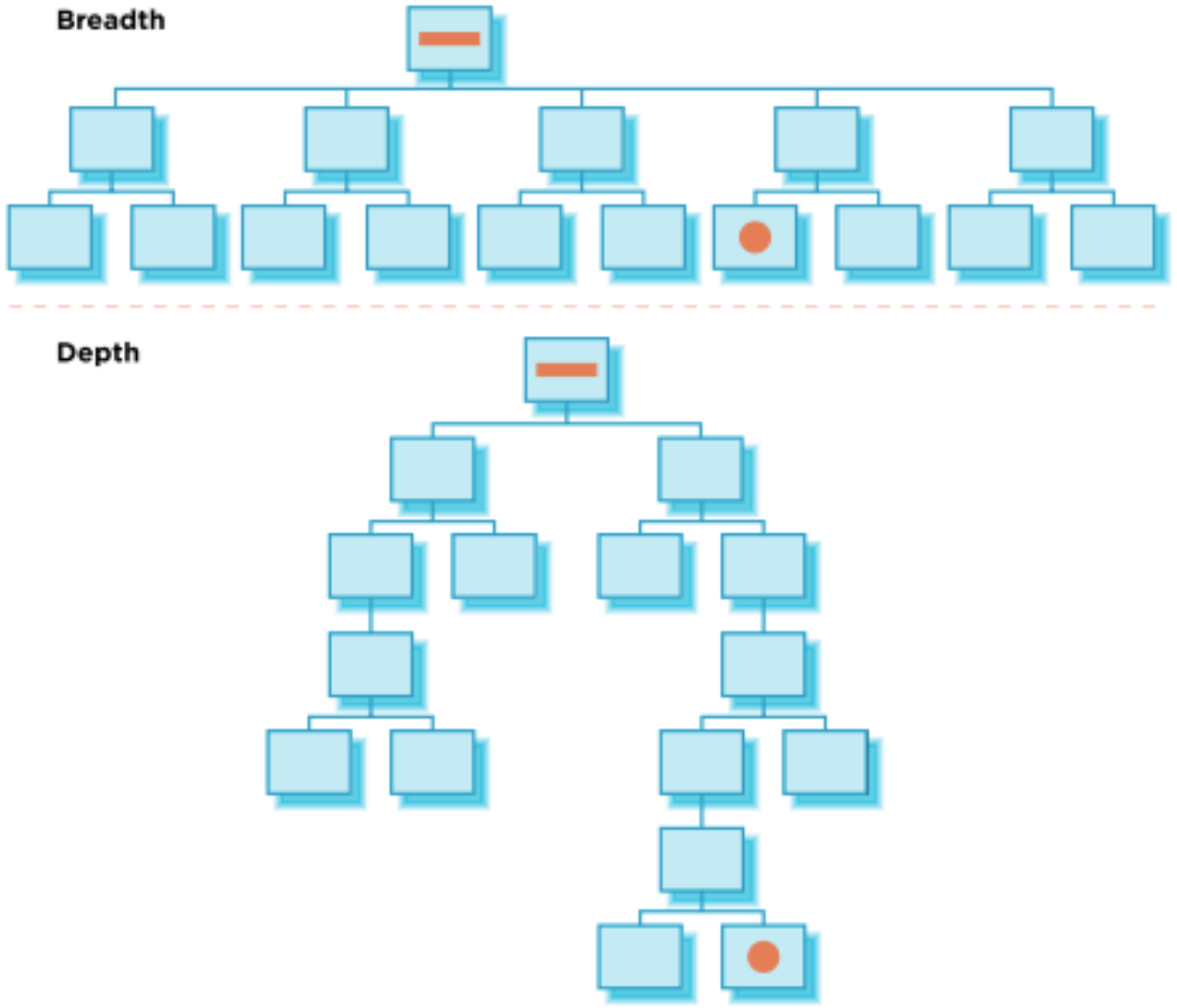
Ko, A. j. (n.d.). *User Interface Software and Technology*. *Faculty Washington*. Retrieved from https://faculty.washington.edu/ajko/books/uist/index.html

QUALITIES OF SUCCESSFUL NAVIGATION

by James Kalback

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

BALANCE



Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

BALANCE

Between the number of visible menu items on a page (breath) and the number of hierarchical levels in a structure (depth);

Broader structures works better than deeper ones;

Create clusters of information;

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

EASE OF LEARNING

The ease of learning is directly related to ease of navigation;

On the Web there is no idea of training that was associated with applications in the beginning of the computational systems;

The duration of time spent on the web is measured in seconds.

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

CONSISTENCY AND INCONSISTENCY

Consistency is a perceived quality;

Should be present in mechanisms and links that appear in a steady location;

Consistency ≠ Uniformity!

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

FEEDBACK

The navigation system should give clues about how to navigate through the website;

Where are we?

What can we do?

Where can we go?

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

EFFICIENCY

The path to information should be efficient;

To improve efficiency:

- Duplicate access points
- Create shortcuts
- Create escape hatches

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

CLEAR LABELS

Labels, especially links, are essential for creating navigation.

Avoid jargon, brand names, abbreviations and overly cute or clever;

Meaningful categories that are mutually exclusive

Consistent forms of labels

A coordination of navigation labels with other text elements.

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

VISUAL CLARITY

Color, typography and layout all contribute to a richer experience.

Create a visual logic;

Foster scanning and make skimming options as easy as possible – **Scanability**;

Buttons and links should look clickable – **Clickability**.

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

APPROPRIATENESS FOR THE TYPE OF SITE

The success of navigation is relative to the kind of site it appears on;

An ecommerce website does not have the same structure as a social network;;

Patterns and guidelines should be selected based on site type.

Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

ALIGNING WITH USER NEEDS

Identify your target group;

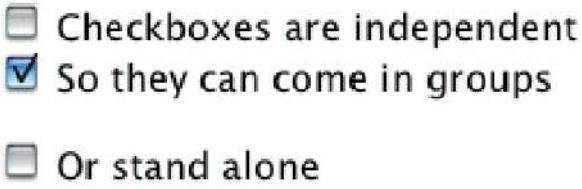
Identify the key information needs of each group;

Effective navigation is aligned with deeper user goals and expectations.

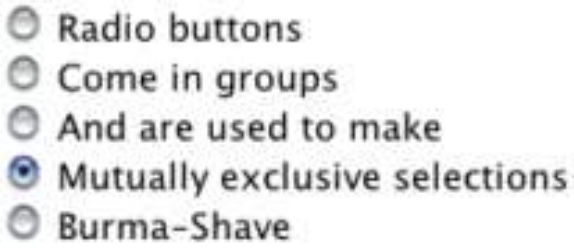
Kalbach, J. (2007). *Designing Web Navigation*. Sebastopol, CA: O'Reilly Media, Inc.

INTERACTION ELEMENTS

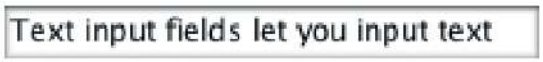
INPUT



Checkboxes – allow the user to select one or more options from a set. Multiple selection.



Radio buttons – allow users to select from a set of mutually exclusive options.

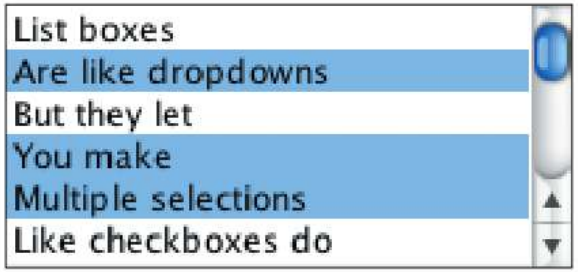


Text fields – allow users to enter text.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

INPUT

Dropdown lists – allow users to select one item at a time, similarly to radio buttons, but are more compact allowing you to save space. They also hide available options.



Lists boxes – provide the same functionality as checkboxes, but they take up less space.
They also hide available options.

Action buttons – can have different actions upon touch.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

INPUT

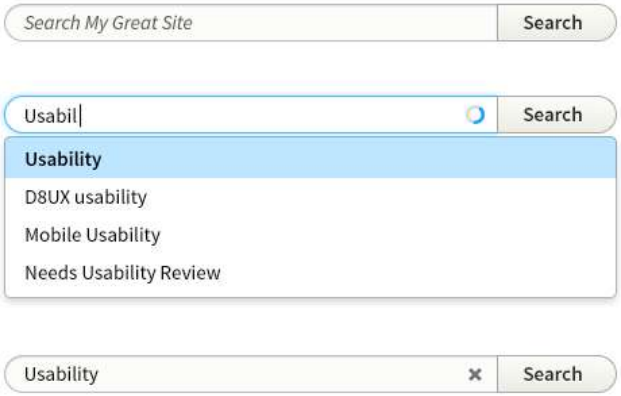
Date and time picker – allows users to select a date and/or time.

Toggles – allow the user to change a setting between two states.

List views — are toggles but are considered by many authors as navigation elements.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

NAVIGATION



Search field – allows users to enter a keyword or phrase (query) and submit it to search the index with the intention of getting back the most relevant results.

Typically search fields are single-line text boxes and are often accompanied by a search button.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

NAVIGATION

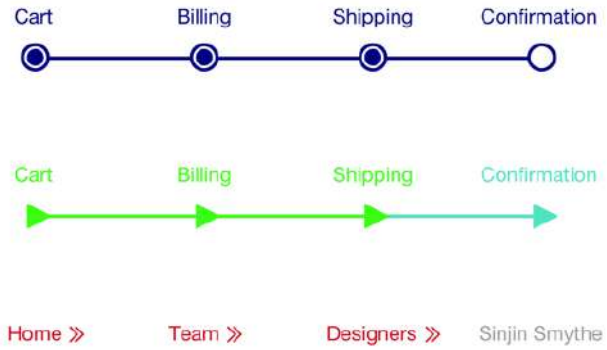
Pagination – allows users to skip between pages or go in order through the content.

Icons – typically combined with hyperlinks allows users to navigate the system.

Image carrousel – allows users to browse through a set of items and make a selection of one. Typically, the images are hyperlinked.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

NAVIGATION

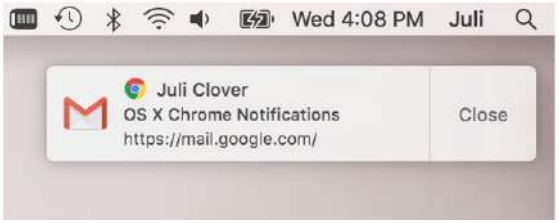


Breadcrumbs – allow users to identify their current location within the system by providing a clickable trail of proceeding pages to navigate by.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

OUTPUT

Notification – announces something new. They need an action for the notification to disappear.

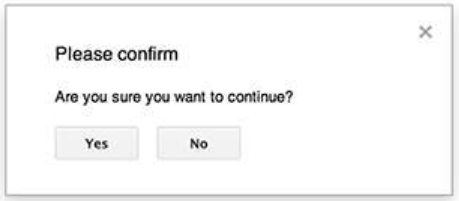


Flash notification – announces something new, but have an associated time.

Progress bar – A progress bar indicates where a user is as they advance through a series of steps in a process. Typically, progress bars are not clickable.

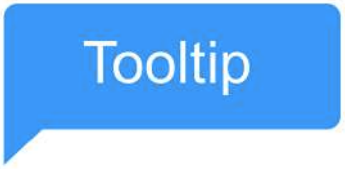
Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

OUTPUT



Message boxes – is a small window that provides information to users and requires them to take an action before they can move forward.

Modal window – requires users to interact with it in some way before they can return to the system.



Tooltips – allow a user to see hints when they hover over an item indicating the name or purpose of the item.

Usability.Gov. (2013, Outubro 9). User Interface Elements. Obtido 3 de Outubro de 2017, de http://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

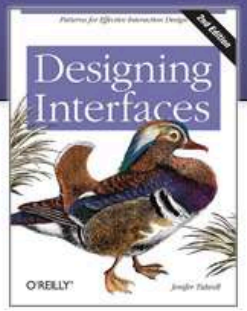
DESIGN PATTERNS

”

Patterns are **structural** and **behavioral** features that improve the "habitability" of something - a user interface, a Web site, or even a building.
They make things **more usable**, **easier to understand**, or **more beautiful**.

Tidwell, J. (2006). *Designing Interfaces - Patterns for Effective Interaction Design. O'Reilly Media, Inc .*

Excerpts from



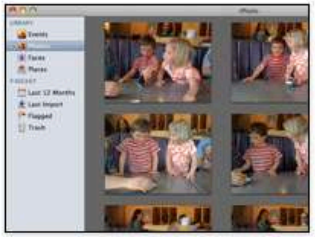
2nd Edition

Home
About the book
What's new in the second edition
Blog
Patterns
- Picture Manager
- News Stream
- Wizard
- Settings Editor
- Alternative Views
- Many Workspaces
- Fat Menus
- Sitemap Footer
- Animated Transition
- Two-Panel Selector
- One-Window Drilldown
- List Inlay
- Grid of Equals
- Radial Table
- Infinite List
- Password Strength Meter
- Liquid Layout
- Deep Background

Buy from Amazon

Patterns

Selected patterns from the book are featured here on the website, in their entirety.



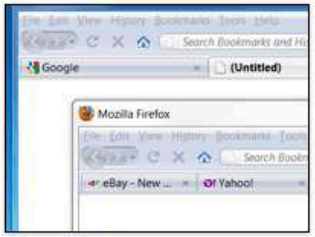
Picture Manager

News Stream

Wizard

Settings Editor

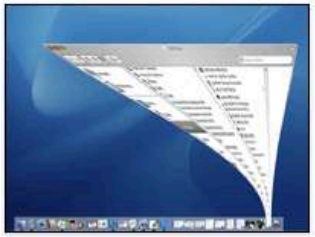
Alternative Views



Many Workspaces

Fat Menus

Sitemap Footer



Animated Transition

Excerpts from

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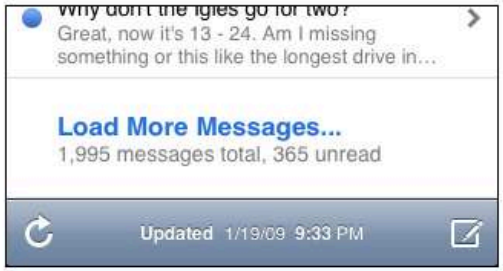
- Liquid Layout
- Deep Background

Buy from Amazon

Infinite List

What

At the bottom of a long list, put a button that loads and appends more items to the list.



Use when

You need to show long lists of email messages, search results, an archive of articles or blog posts, or anything else that is effectively "bottomless."

Users are likely to find desired items near the top, but they sometimes need to search further.

Why

The initial loading of a screenful or two of items is fast, and the user doesn't get stuck waiting for a very long initial page load before she sees anything useful.

Each subsequent loading of a new chunk of items is also fast, and it's under user control— the user decides when (and whether) she needs to load more items.

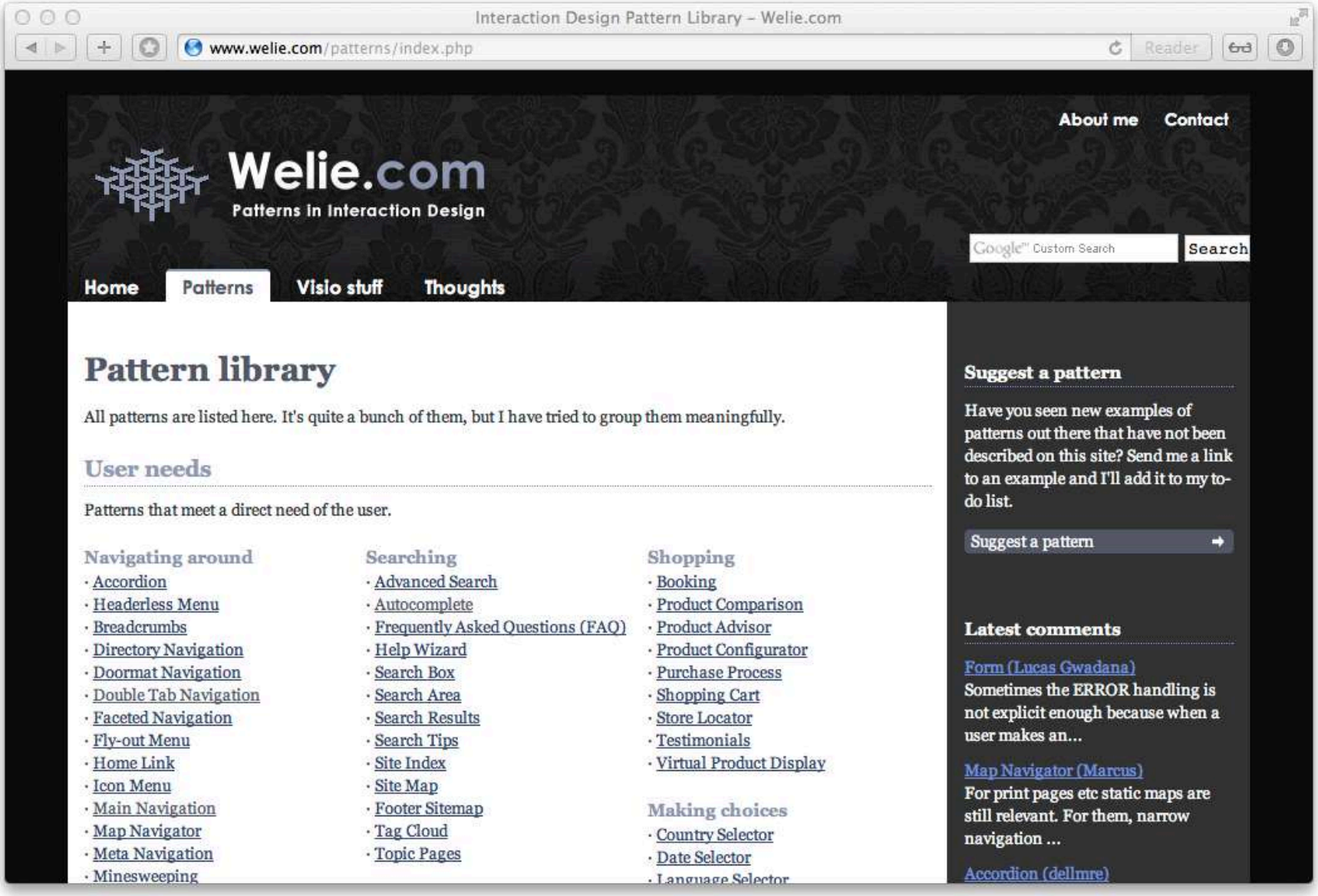
Since the new items are just appended to the current page, the user never has to context- shift by going to a new page to see new items, as she would with paginated search results.

How

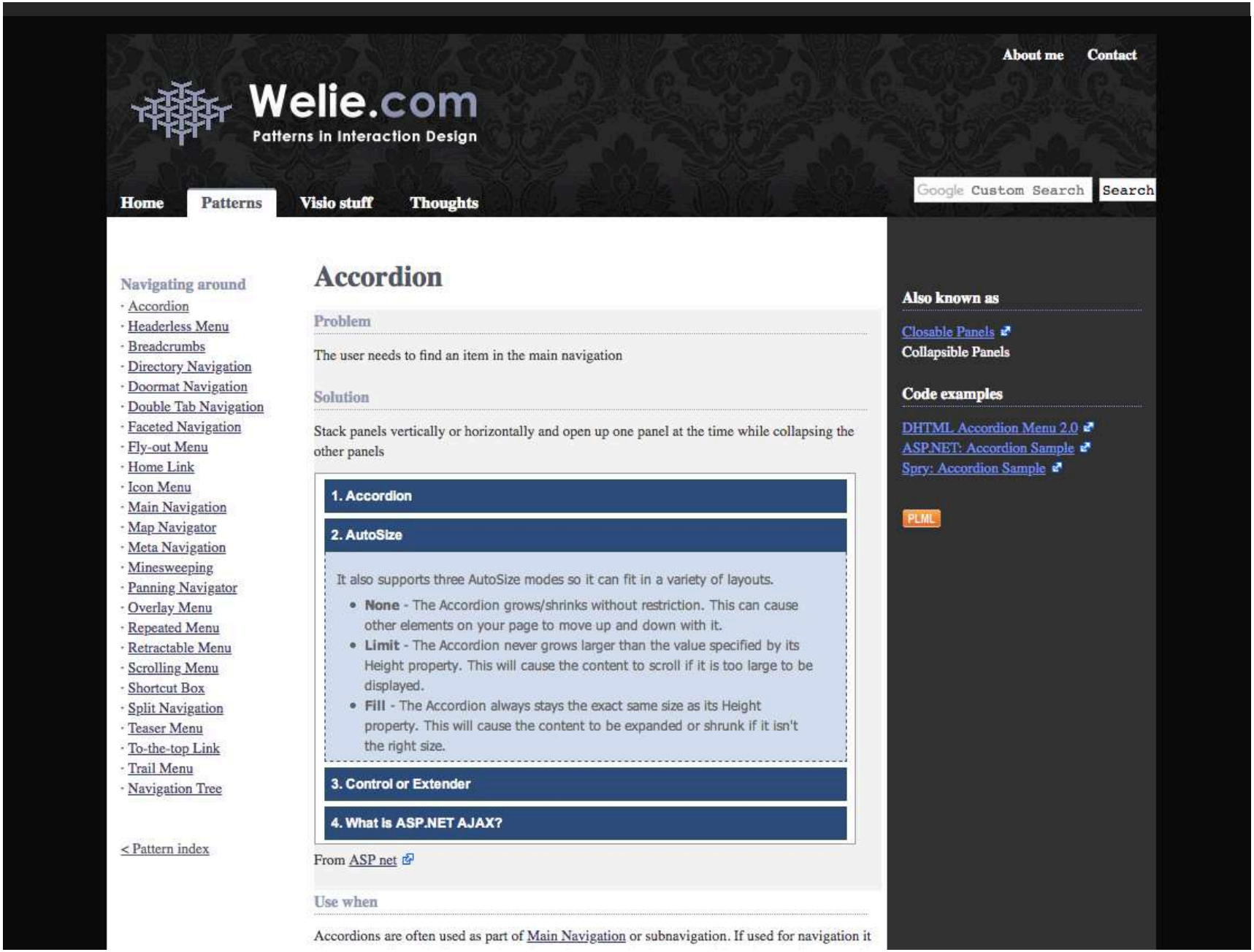
When the page or list is initially sent to the mobile device, truncate the list at a reasonable length. That length will vary greatly with item size, download time, and the user's goal—is she reading everything (as with Facebook), or just scanning a large number of items to find the one she wants (as with search results)?

At the bottom of the scrolled page, put a button that lets the user load and show more items. Let the user

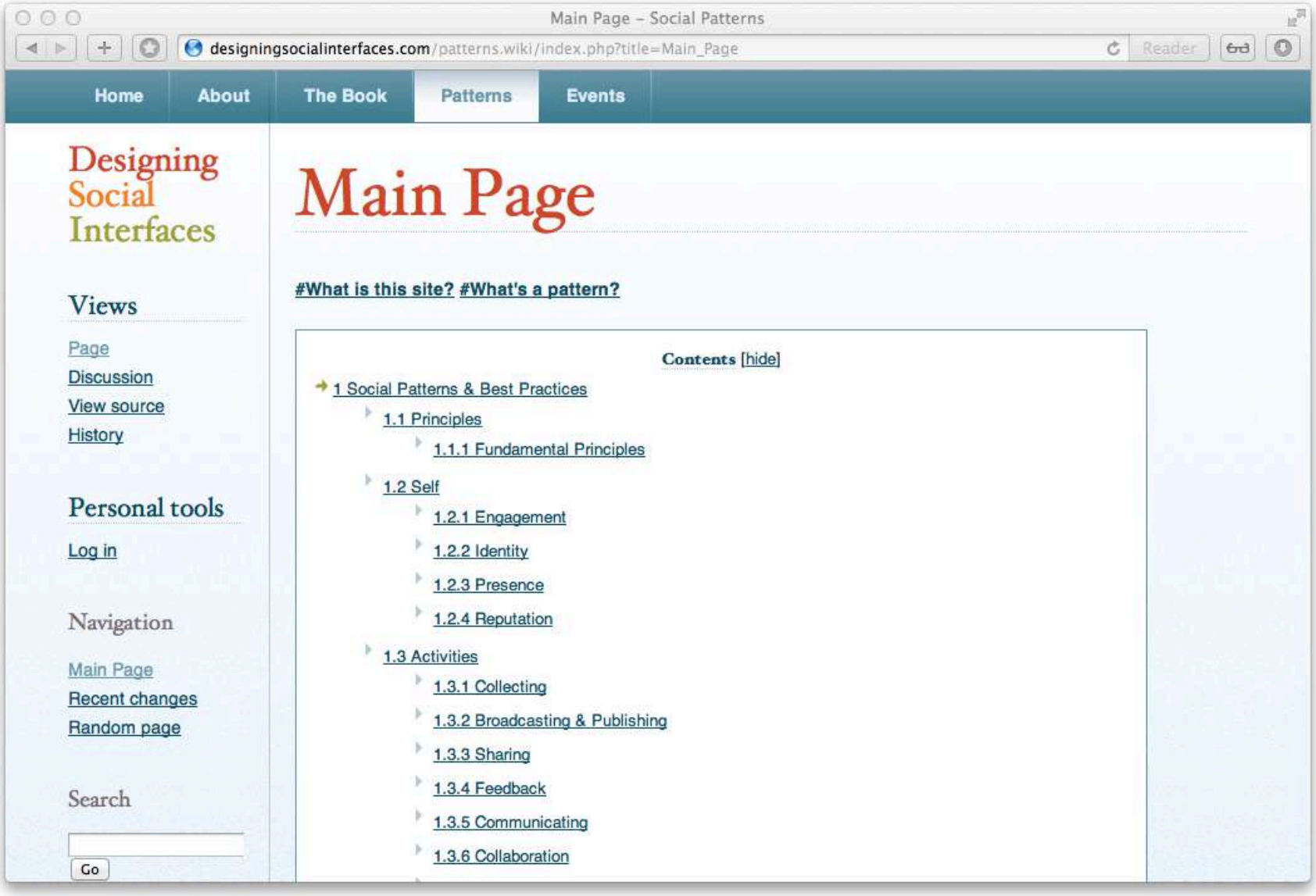
http://designinginterfaces.com/patterns/infinite-list/



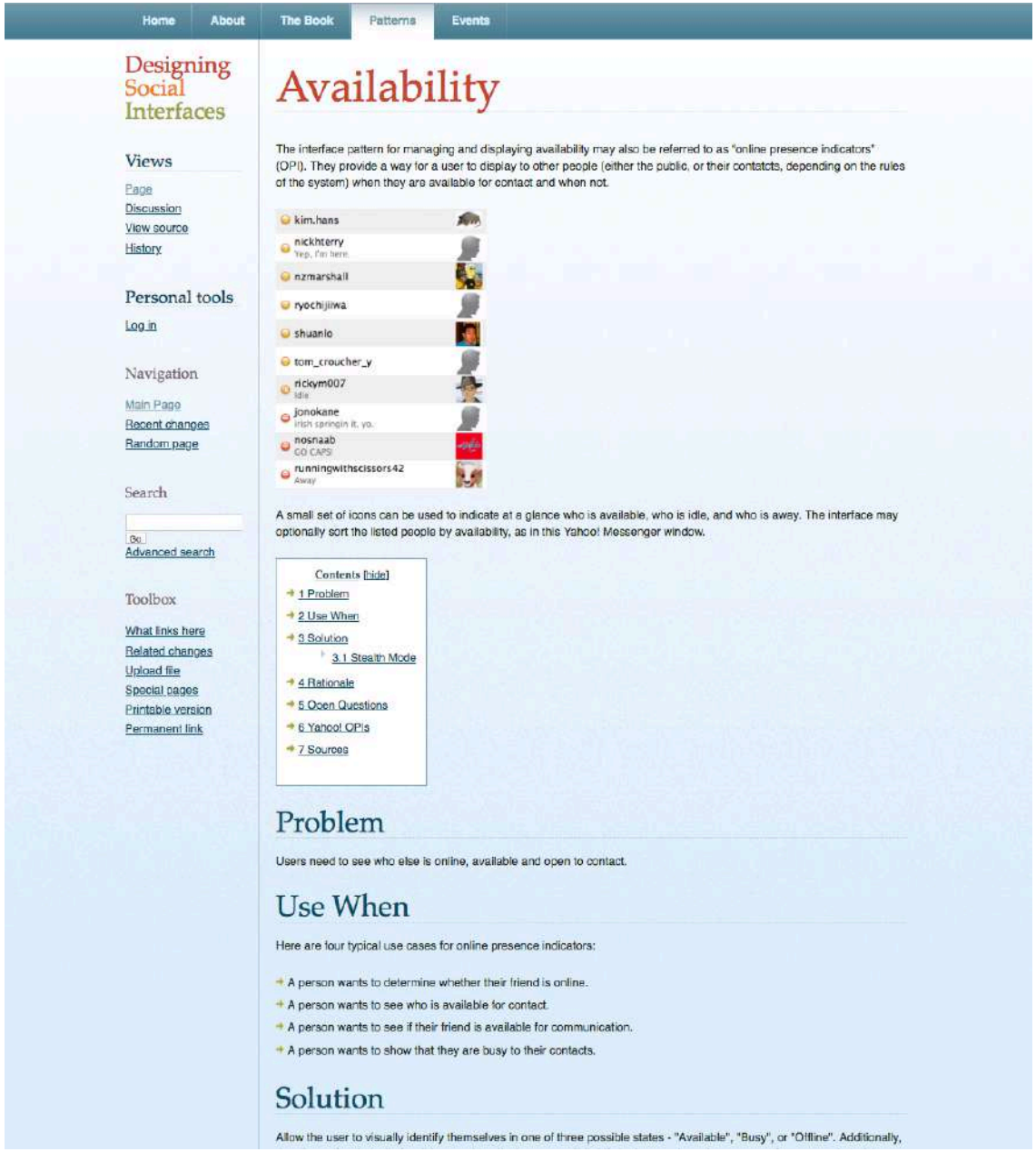
www.welie.com/patterns/index.php



http://www.welie.com/patterns/showPattern.php?patternID=accordion



http://designingsocialinterfaces.com/patterns.wiki/index.php?title=Main_Page



http://www.designingsocialinterfaces.com/patterns/Availability

So what do interaction designers do?

1. Design Strategy

User goals (tasks)

Interactions needed to achieve user goals

2. Wireflows (wireframes + flowcharts) — **TASK TO PRATICAL CLASS #3**

3. Prototypes (User Interface Prototype)

Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation. Retrieved February 14, 2019, from https://www.interaction-design.org/literature/article/what-is-interaction-design

WIREFLOWS

Wireflows document interactions

https://www.nngroup.com/articles/wireflows/

WIREFLOWS

WIREFRAMES
are a common deliverable to show page-level layout ideas;

are a great way of showing layout, **but they don't describe interaction well**;

FLOWCHARTS
for documenting complex **workflows** and **user tasks (interactions)** with multiple steps or paths,

but typically leave out the context of the interactions and its impact over users.

https://www.nngroup.com/articles/wireflows/

WIREFLOWS

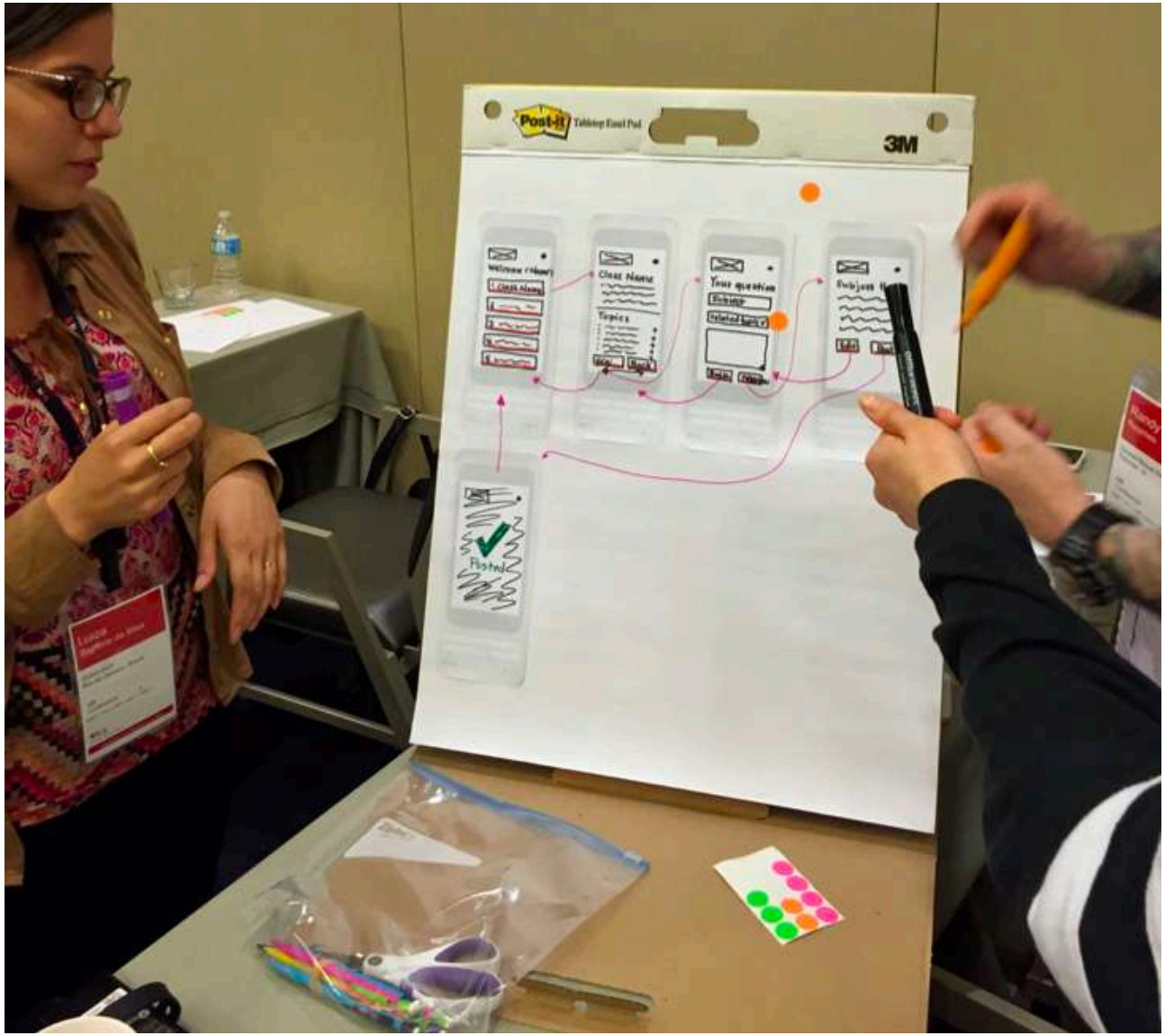
Each step in the flowchart is represented by a wireframe for a full mobile-screen design;

Wireflows document interations;

https://www.nngroup.com/articles/wireflows/

WIREFLOWS

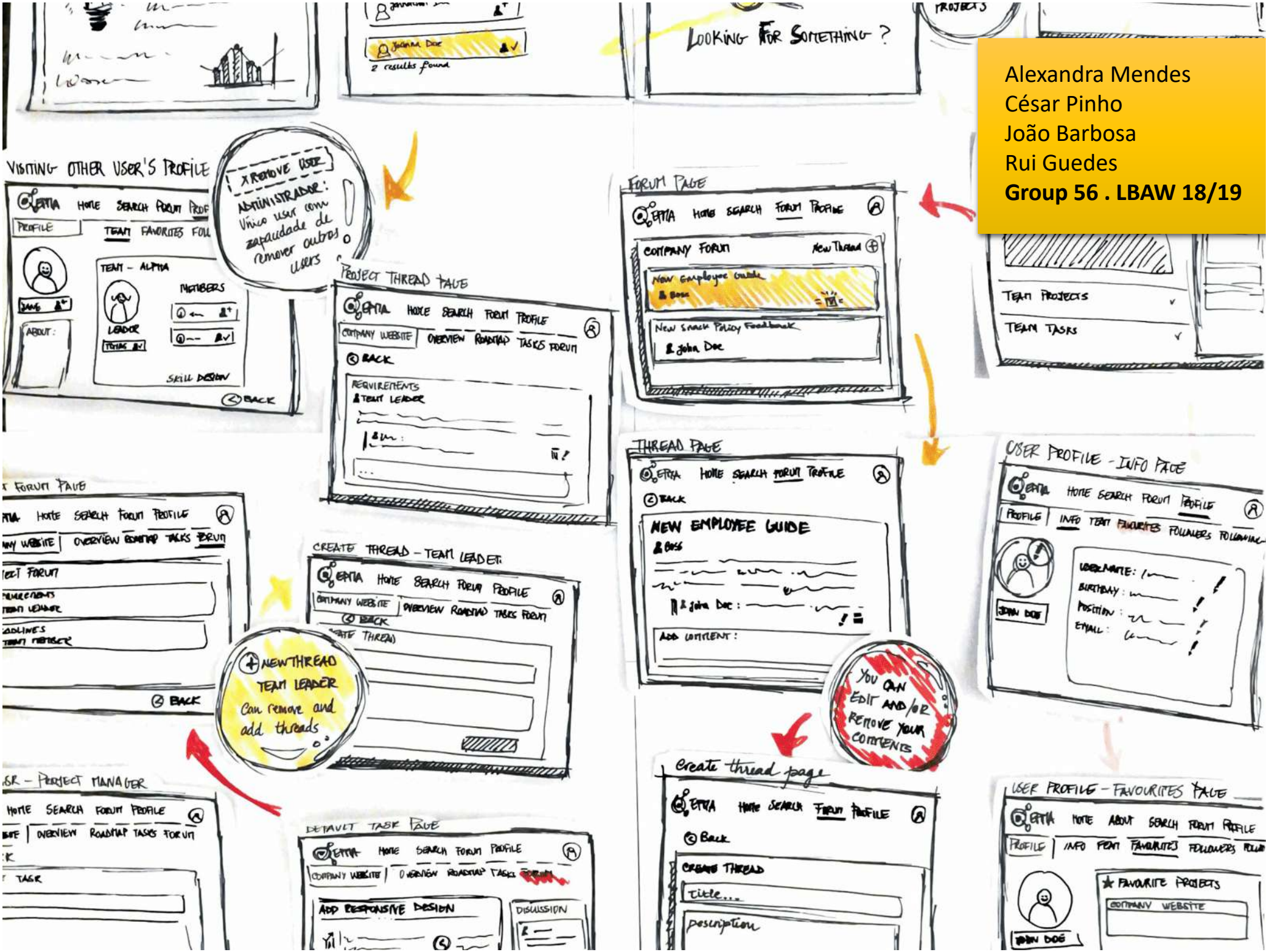
A tool for collaboration

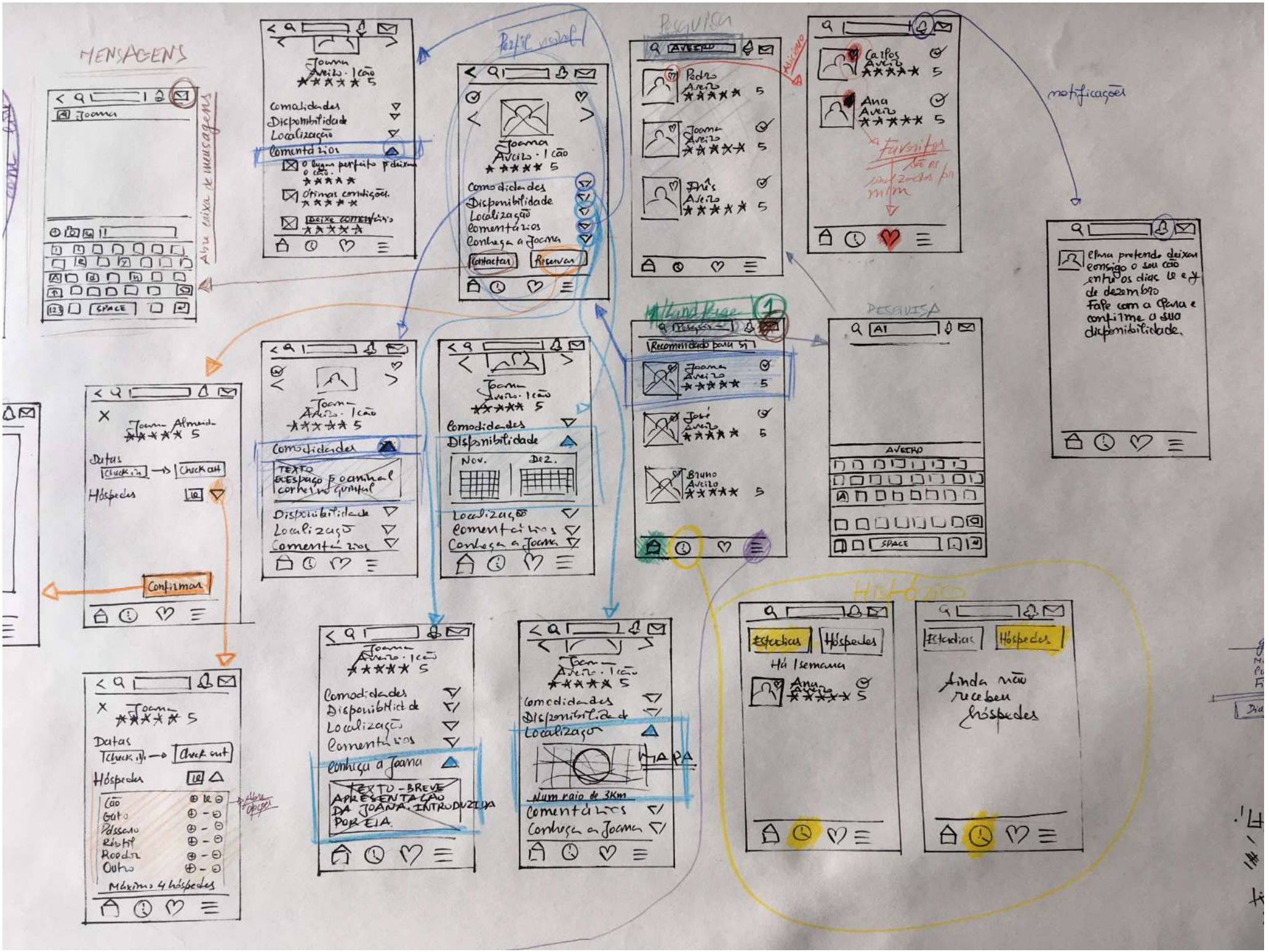


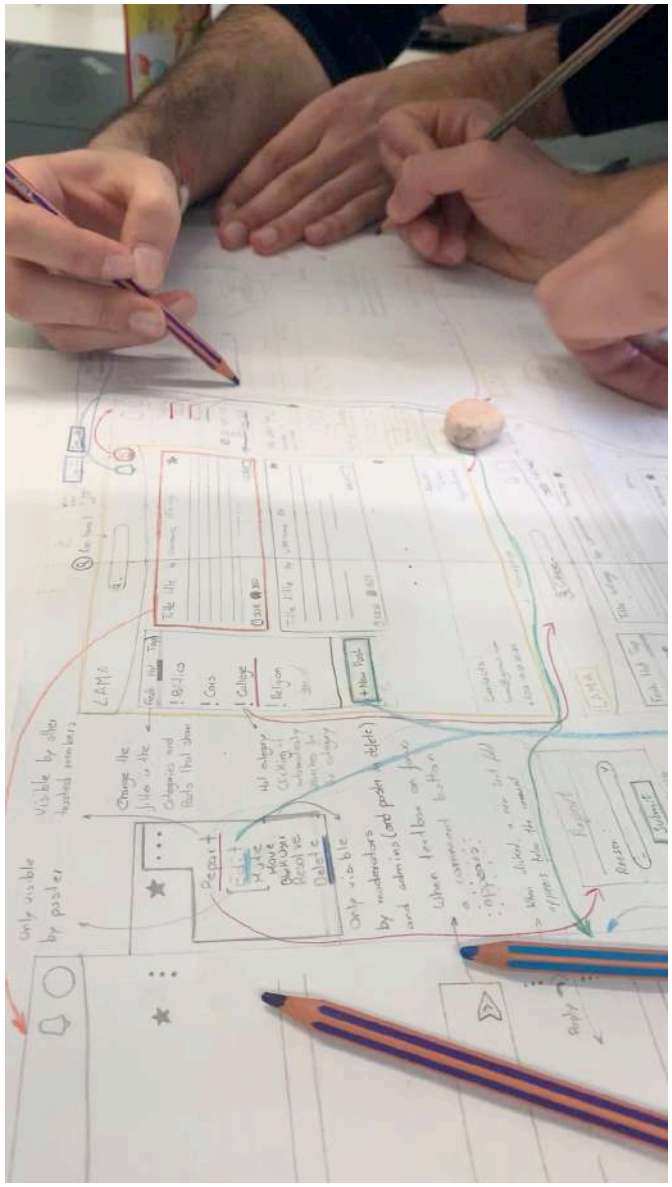
https://www.nngroup.com/articles/wireflows/

TASK TO PRACTICAL CLASS #3

Wireflows


Alexandra Mendes
César Pinho
João Barbosa
Rui Guedes
Group 56 . LBAW 18/19
VISITING OTHER USER'S PROFILE
REMOVE USER
ADMINISTRADOR: Único user com capacidade de remover outros users
PROJECT THREAD PAGE
FORUM PAGE
COMPANY FORUM
New Thread
New Employee Guide & Boss
New Snack Policy Feedback
& John Doe
TEAM PROJECTS
TEAM TASKS
THREAD PAGE
NEW EMPLOYEE GUIDE
& Boss
& John Doe :
ADD CONTENT :
USER PROFILE - INFO PAGE
USERNAME:
BIRTHDAY :
POSITION :
EMAIL :
JOHN DOE
CREATE THREAD - TEAM LEADER
NEW THREAD TEAM LEADER Can remove and add threads
YOU CAN EDIT AND/OR REMOVE YOUR CONTENTS
Create thread page
CREATE THREAD
title...
description
DEFAULT TASK PAGE
ADD RESPONSIVE DESIGN
DISCUSSION
USER PROFILE - FAVOURITES PAGE
FAVOURITE PROJECTS
COMPANY WEBSITE
JOHN DOE


MENSAGENS
Joana
Abre caixa de mensagens
SPACE
Joana Aveiro · 1 cão
Comodidades
Disponibilidade
Localização
Comentários
O lugar perfeito p deixar o cão.
Ótimas condições.
Deixe comentário
Perfil visível
Joana Aveiro · 1 cão
Comodidades
Disponibilidade
Localização
Comentários
Conheça a Joana
Contactar
Reservar
Pesquisa
AVEIRO
Pedro Aveiro
Joana Aveiro
Três Aveiro
Carlos Aveiro
Ana Aveiro
Favoritos
são os sinalizados por mim
notificações
Clara pretende deixar consigo o seu cão entre os dias 10 e 7 de dezembro
Fale com a Clara e confirme a sua disponibilidade.
Joana Almeida
Datas
Check in
Check out
Hóspedes
Confirmar
Joana Aveiro · 1 cão
Comodidades
TEXTO
Espaço p o animal
Comodidades
Disponibilidade
Nov.
Dez.
Localização
Comentários
Conheça a Joana
Recomendado para si
Joana Aveiro
José Aveiro
Bruno Aveiro
PESQUISA
AVEIRO
SPACE
Joana Aveiro · 1 cão
Comodidades
Disponibilidade
Localização
Comentários
Conheça a Joana
TEXTO - BREVE APRESENTAÇÃO DA JOANA. INTRODUZIDA POR EIA.
Joana Aveiro · 1 cão
Comodidades
Disponibilidade
Localização
MAPA
Num raio de 3Km
Comentários
Conheça a Joana
Joana
Datas
Check in
Check out
Hóspedes
Cão
Gato
Pássaro
Réptil
Roedor
Outro
Máximo 4 hóspedes
Abre opções
Histórico
Estadias
Hóspedes
Há 1 semana
Ana Aveiro
Estadias
Hóspedes
Ainda não recebeu hóspedes



Create
Only visible by poster
Visible by other trusted members
LAMA
Change the filter in the categories and Posts that show
Report
Edit
Mute
Move
Block User
Resolve
Delete
Only visible by moderators and admins (and poster in delete)
When textbox on focus
comment button

RECOMMENDATION

https://vimeo.com/52861634

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Maxim Grozny. (2018). Mental models in UX Design in examples – UX Collective. Retrieved February 17, 2019, from https://uxdesign.cc/mental-models-in-ux-design-in-examples-f75b083cd487

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Teo Siang. (2018). What is Interaction Design? | Interaction Design Foundation. Retrieved February 14, 2019, from https://www.interaction-design.org/literature/article/what-is-interaction-design

Tidwell, J. (2006). *Designing Interfaces - Patterns for Effective Interaction Design*. *O'Reilly Media, Inc .*

Dix, A., Finlay, J., Abowd, G. D., & Beale, R. (2004). *Human–Computer Interaction* (Third Edit). Pearson.

BAD DESIGN EXAMPLES

https://www.reddit.com/r/softwaregore/

https://darkpatterns.org/

TO WHATCH

Don Norman Presents at Técnico Lisboa: People-Centered Design: Why it Matters? :
https://www.youtube.com/watch?v=kgRjZYhDf5U

Connecting: https://vimeo.com/52861634