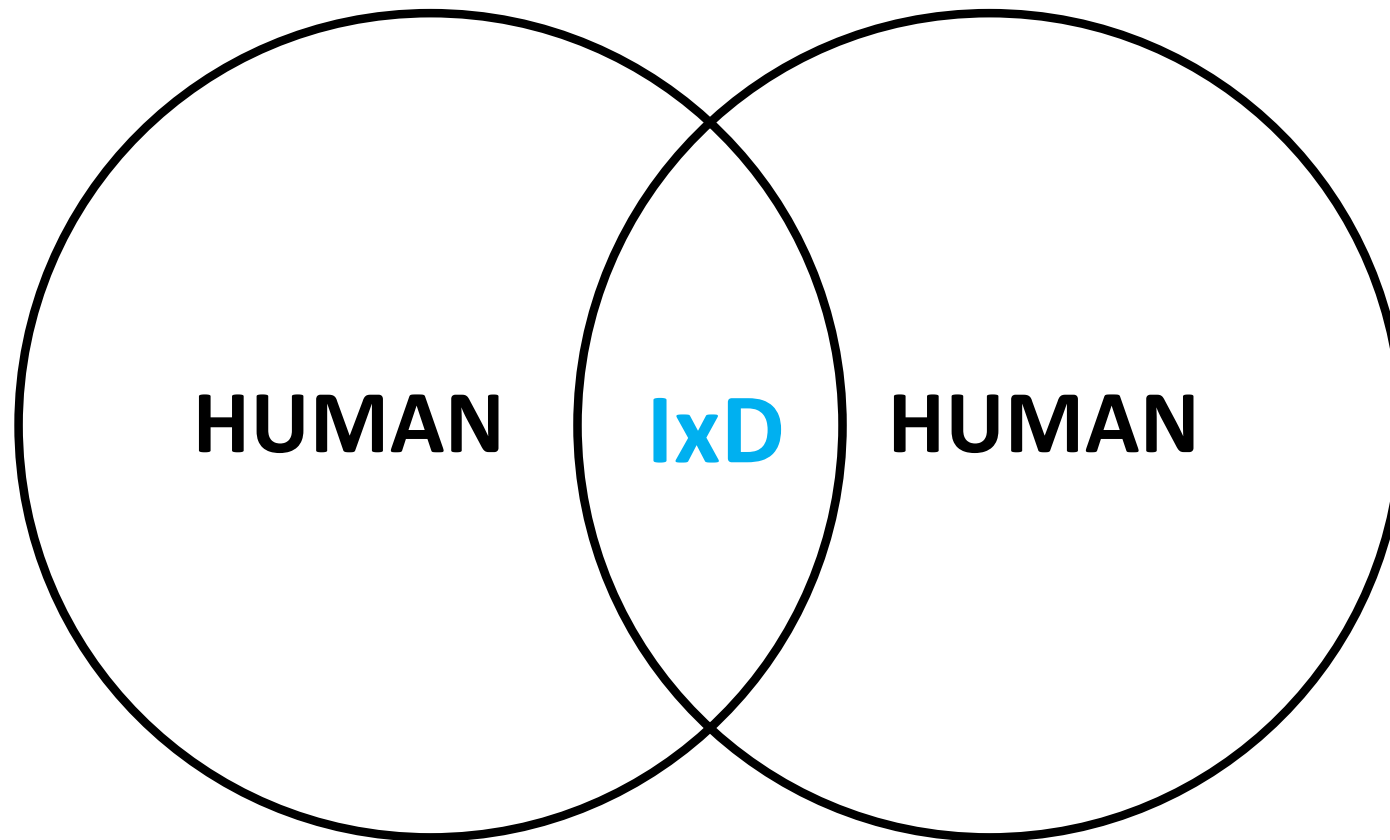

An introduction to
INTERACTION DESIGN

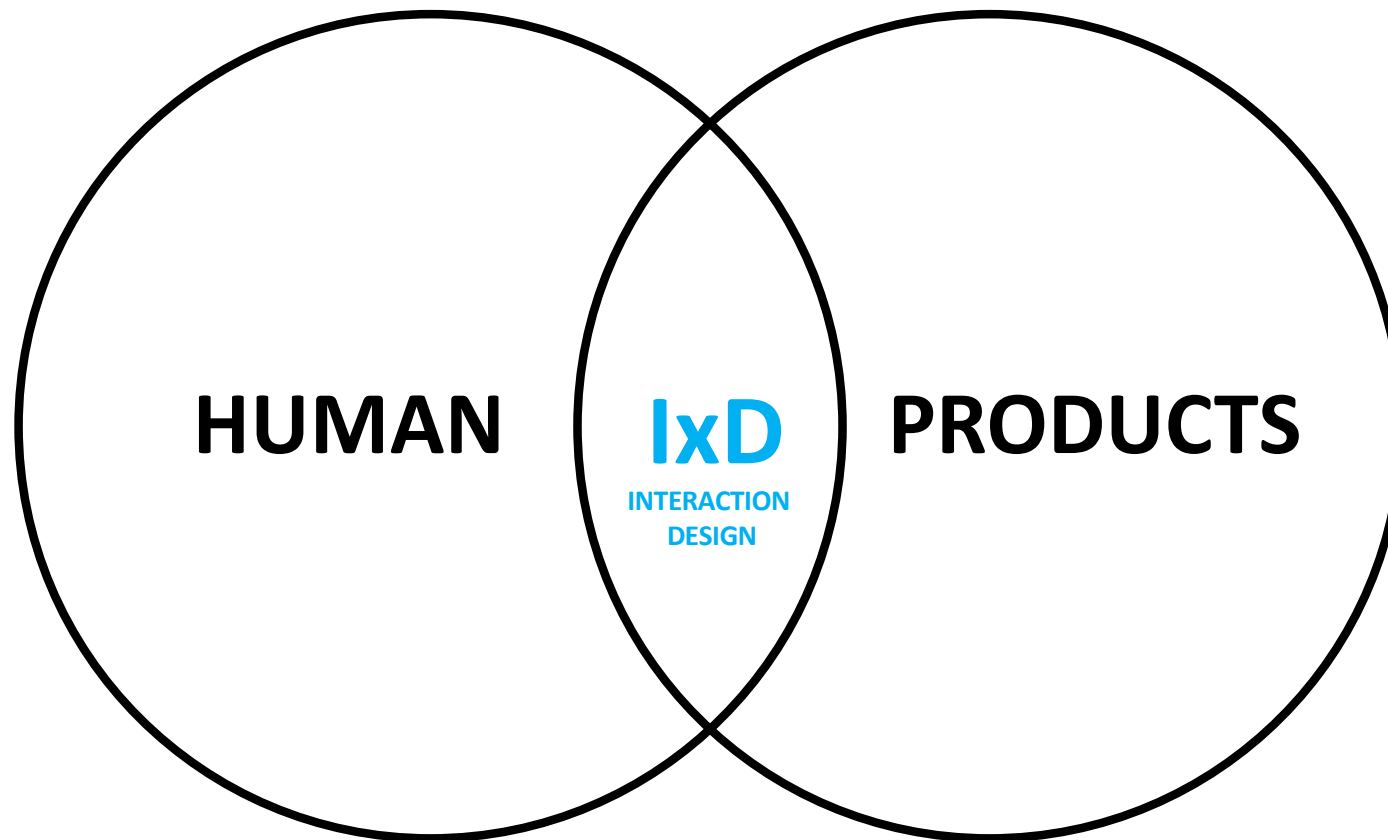
by Andreia Pinto de Sousa

Interaction | ɪntər'ækʃ(ə)n |

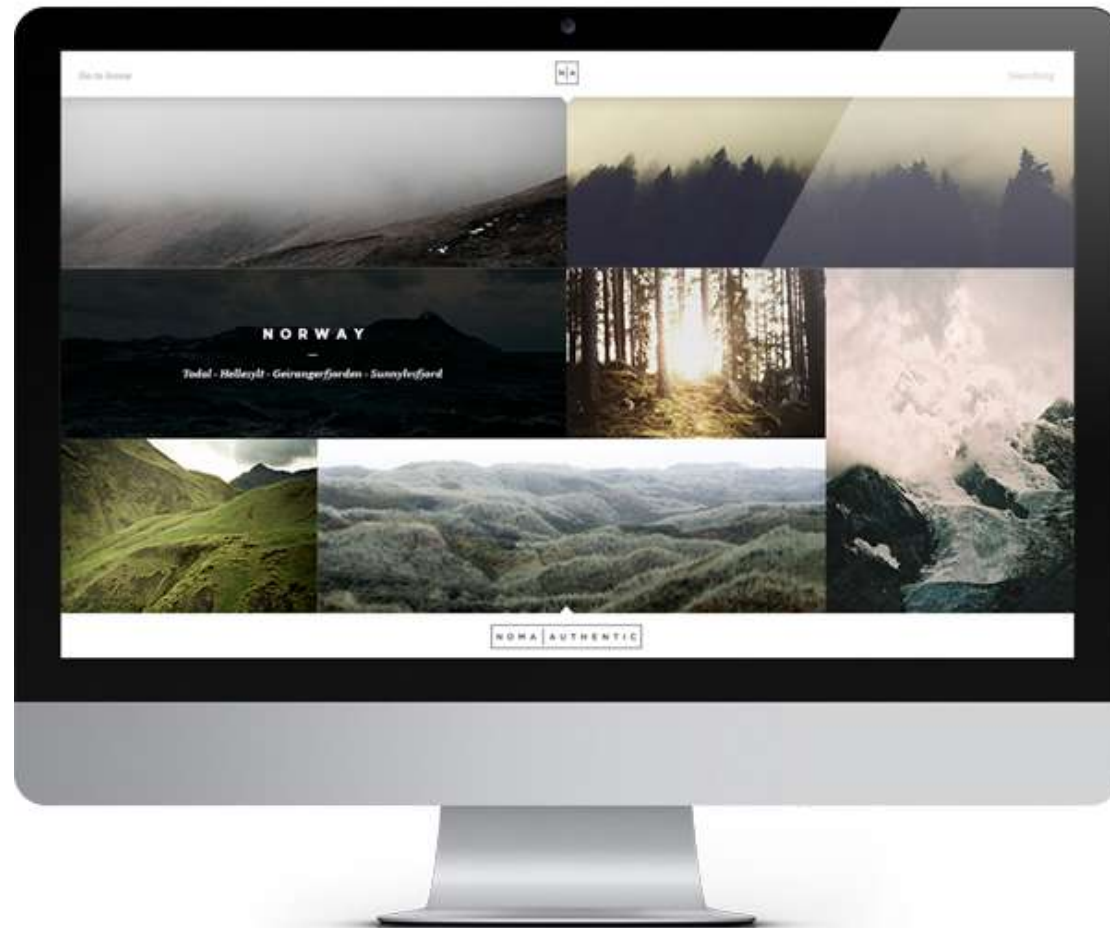
reciprocal action or influence:

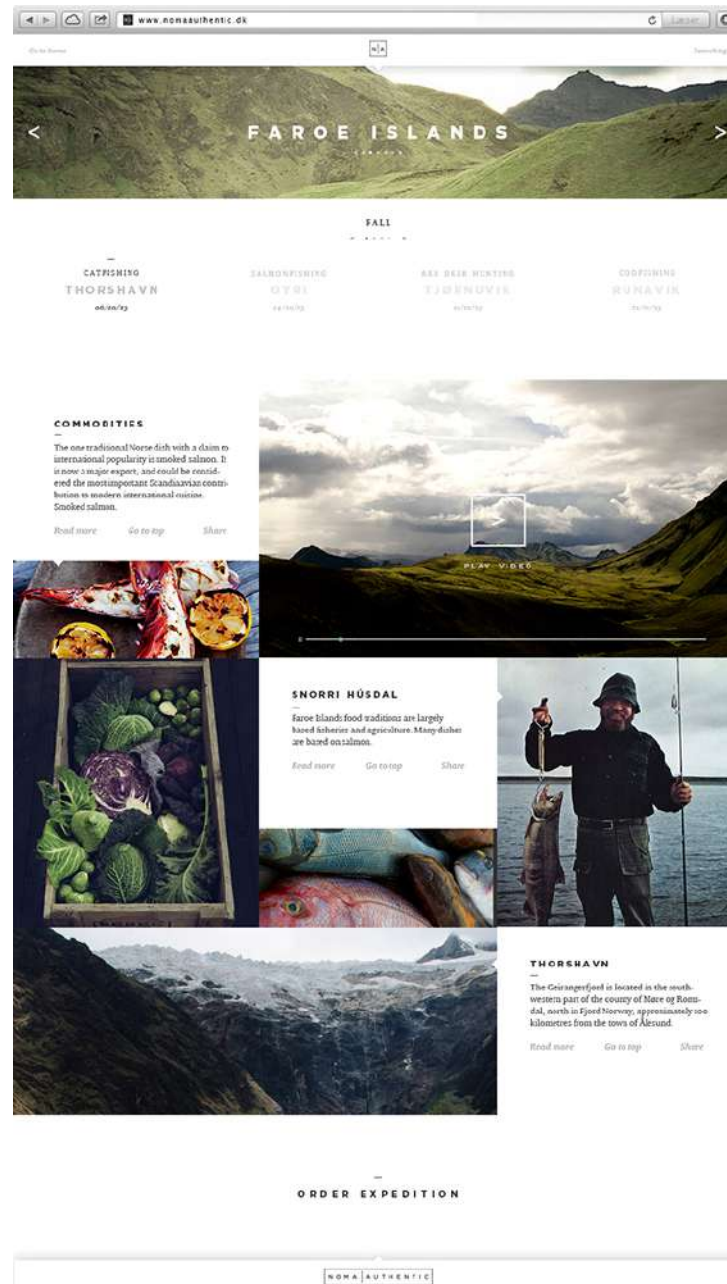
*ongoing **interaction between** the two languages.*

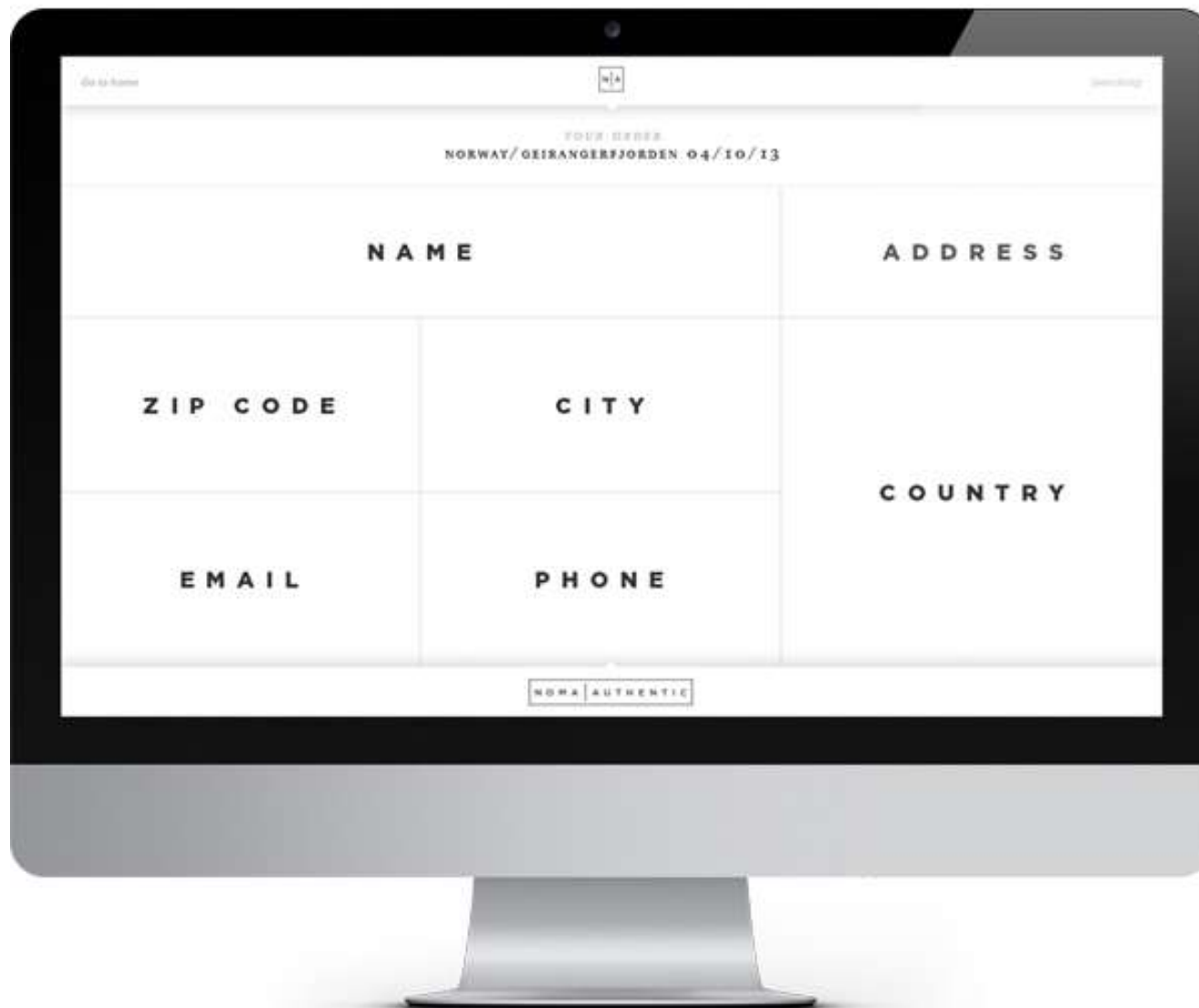


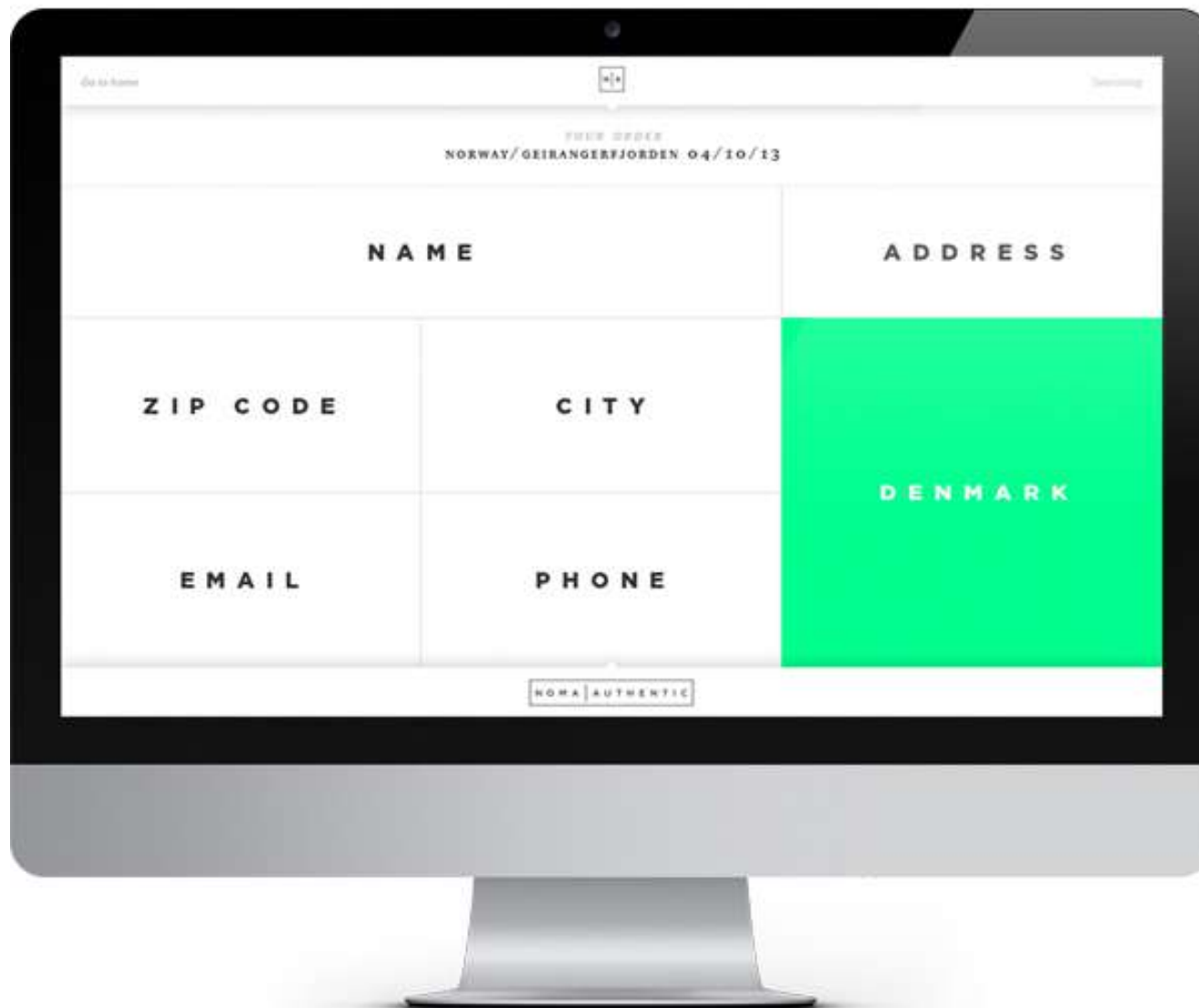


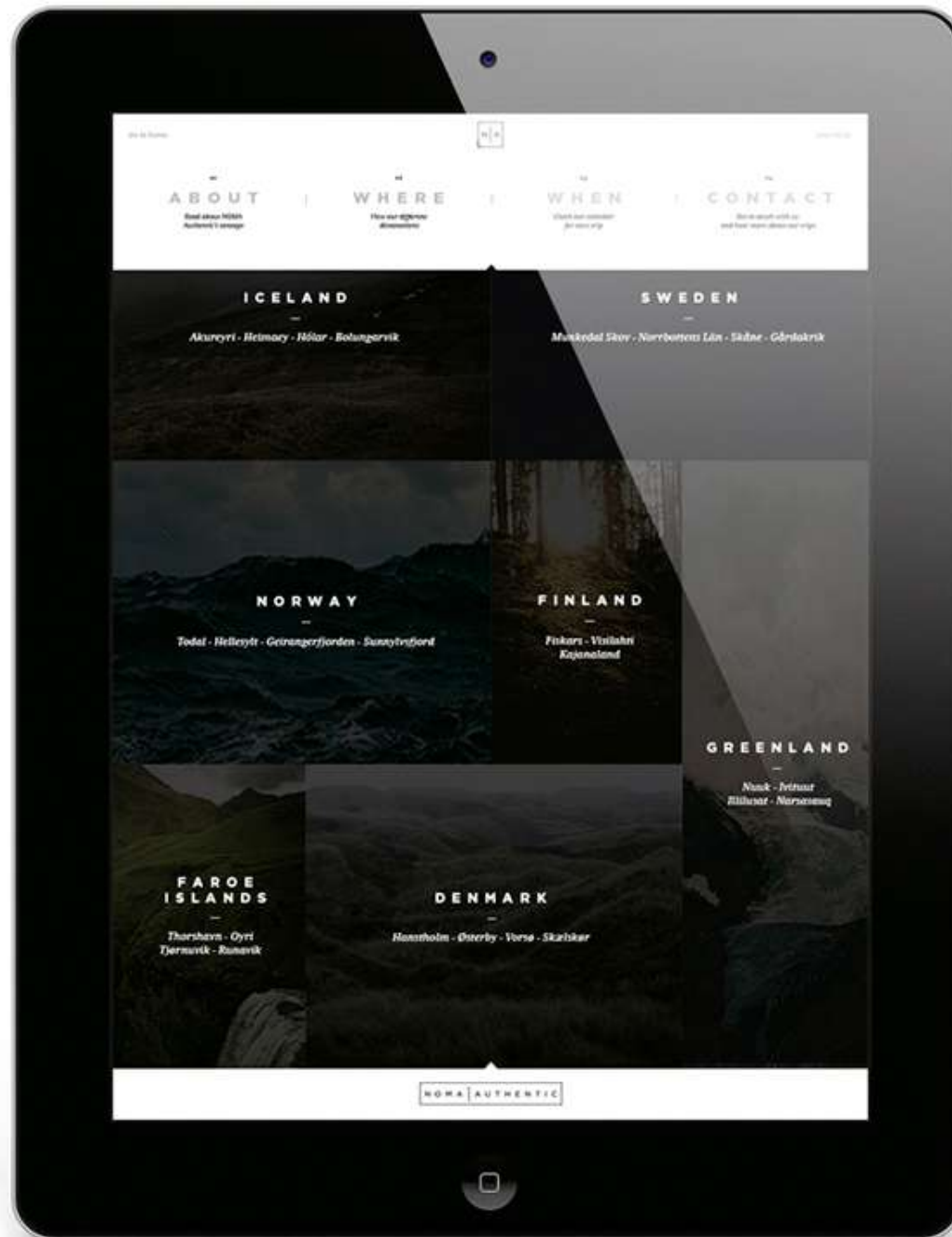
**The products we design,
must have a conversation
with their users**





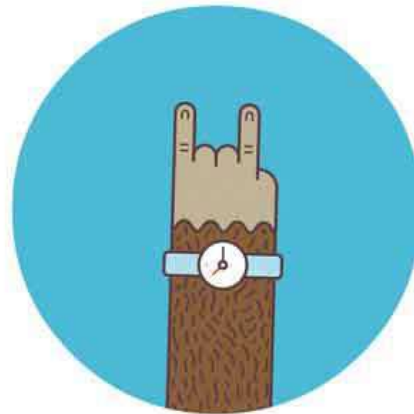












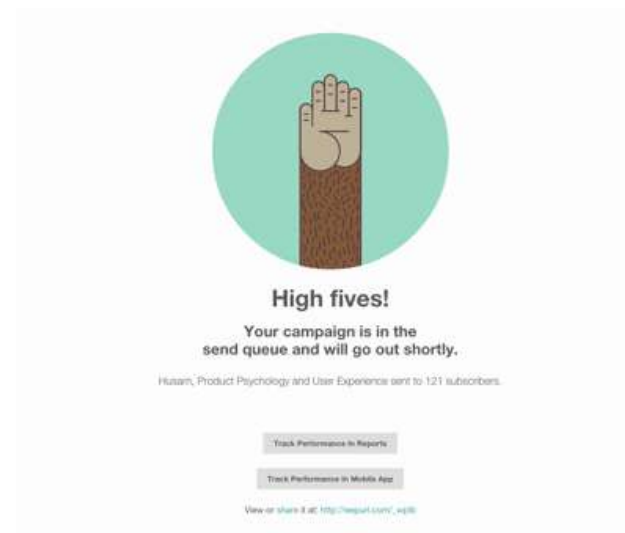
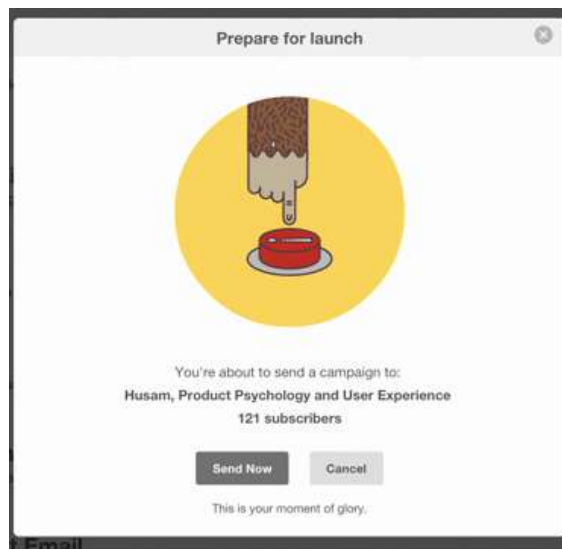
Rock on!

Your email has been scheduled.

Your campaign will be sent on [REDACTED]

Get The Mobile App To Track Reports

Make a paper buddy while you wait for your reports to come in.





Olly



“If we want users to like our software,
we should design it to behave like a
likeable person: respectful,
generous and helpful.”

Alan Cooper

Software Designer and Programmer



”

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?

”

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



INTERACTION DESIGN DIMENSIONS



5 DIMENSIONS OF INTERACTION DESIGN

[illegible]

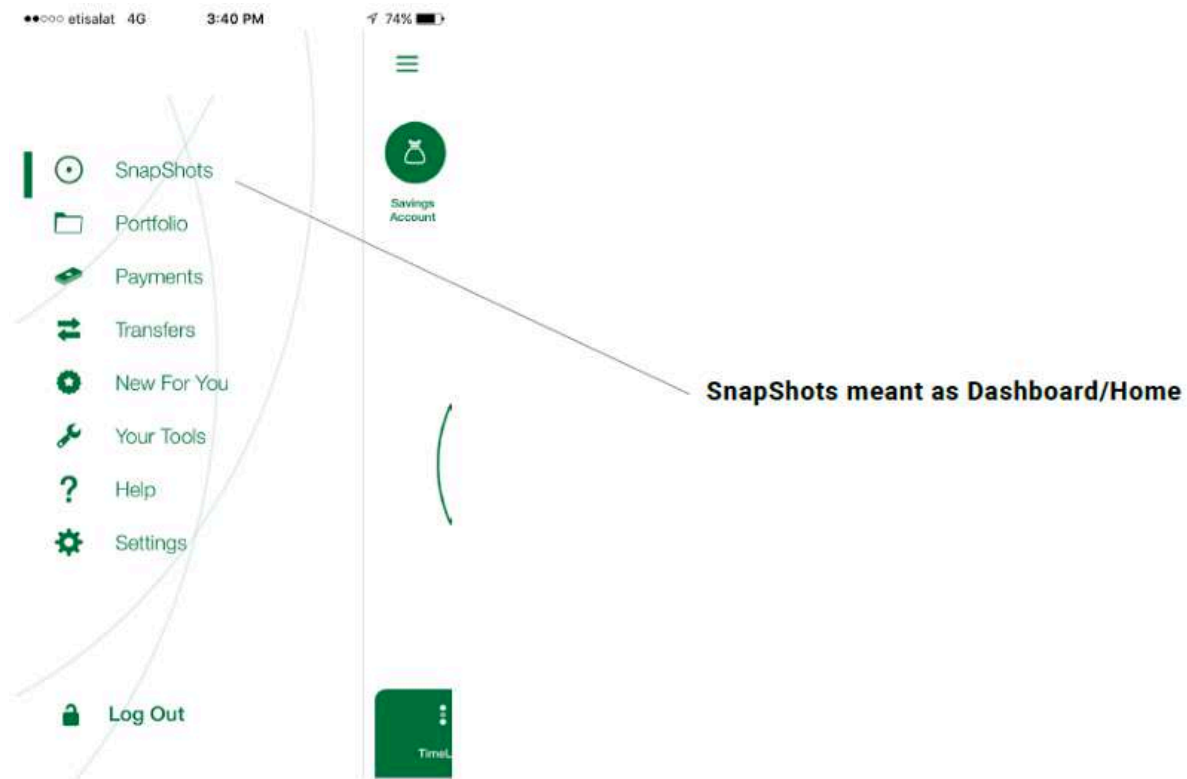
INTERACTION DESIGN
FOUNDATION

INTERACTION-DESIGN.ORG

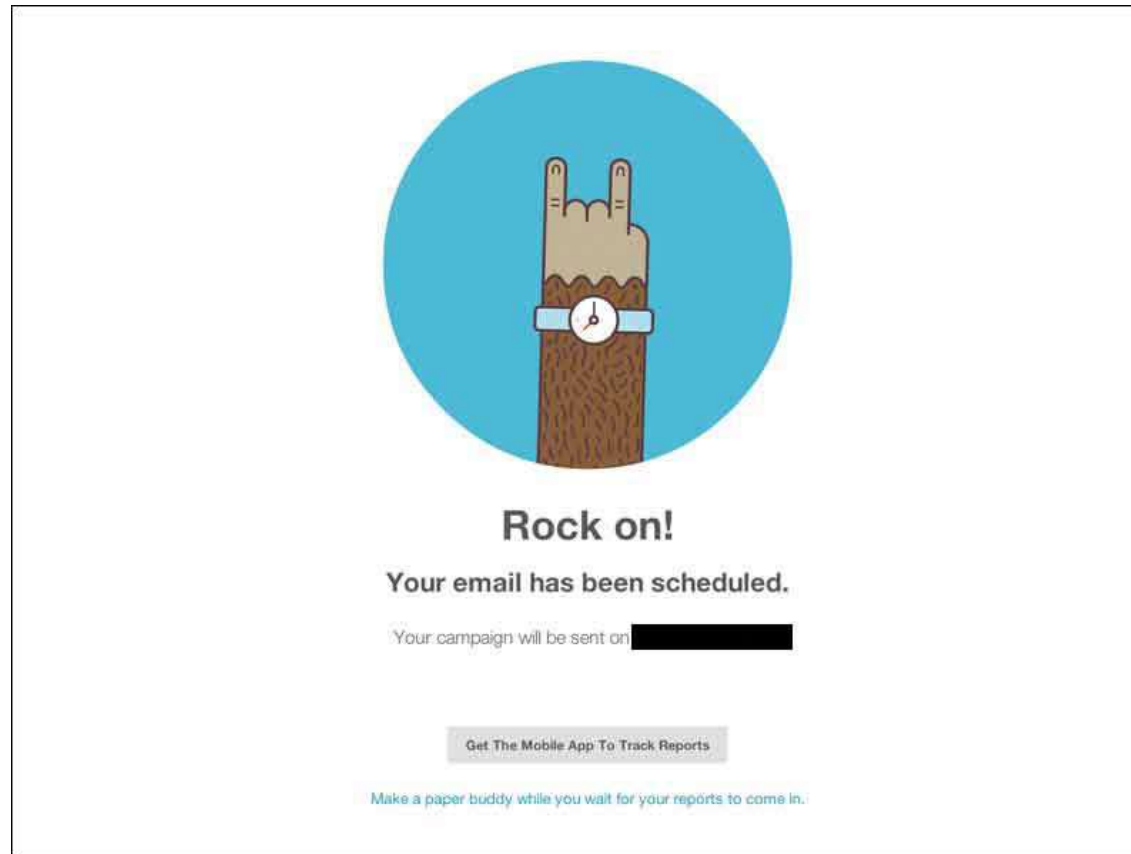
1D: Words

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

DON'T



DO



2D: Visual representations

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

DON'T

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.

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.

3D: Physical objects or space

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

DO



RETRIEVED FROM:<http://wizeditor.com/google-assistant-hits-1-billion-devices/>

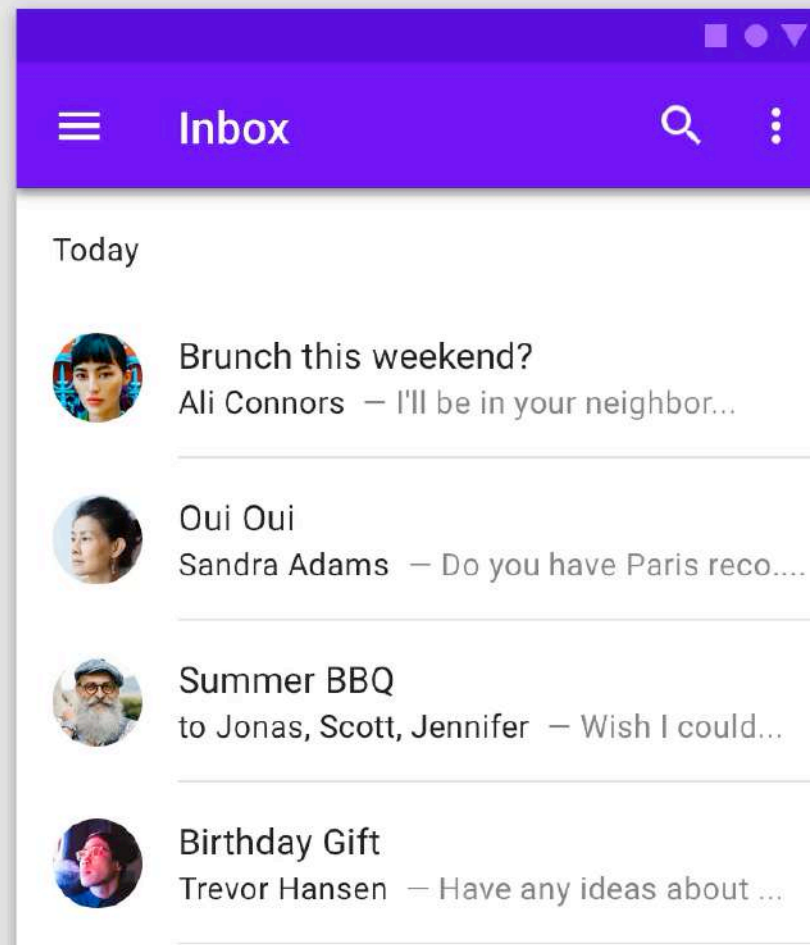
4D: Time

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





Submit

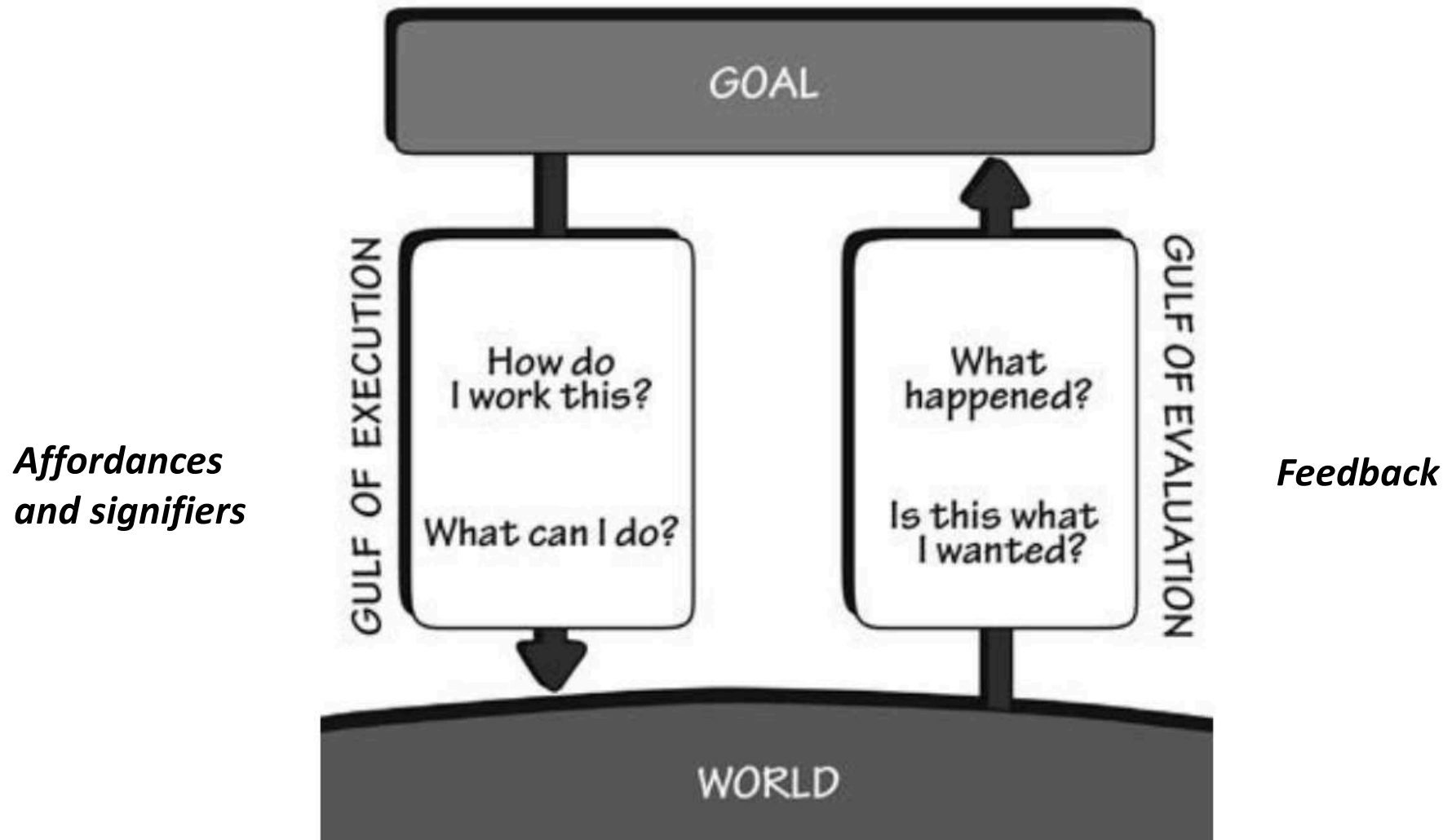


5D: Behaviour

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

HOW DO WE INTERACT

by Donald Norman



The Gulfs of Execution and Evaluation

FUNDAMENTAL PRINCIPLES OF INTERACTION

by Donald Norman

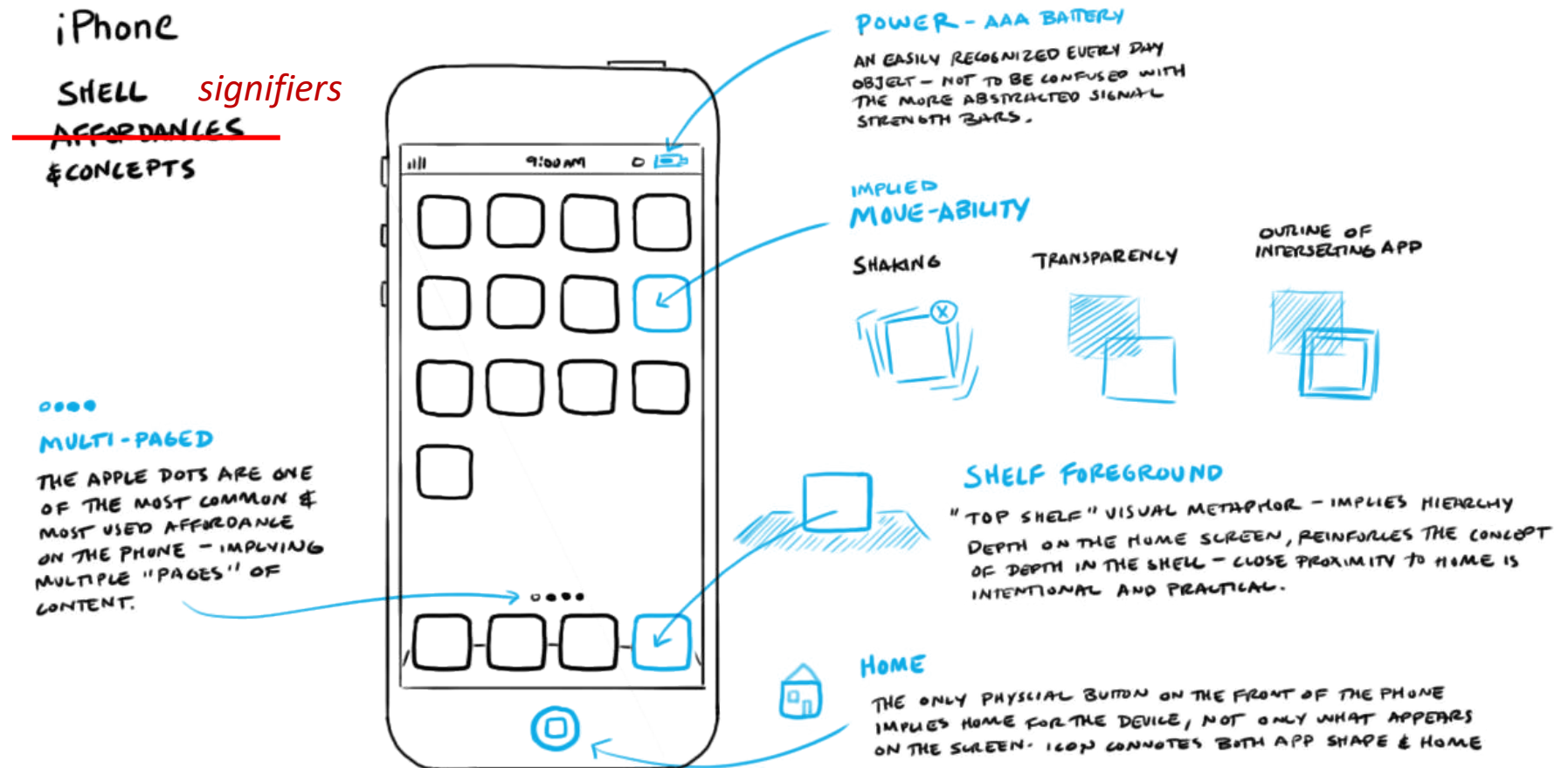
”

Discoverability results from appropriate application of five fundamental psychological concepts: affordances, signifiers, constraints, mappings, and feedback.

AFFORDANCE



SIGNIFIERS

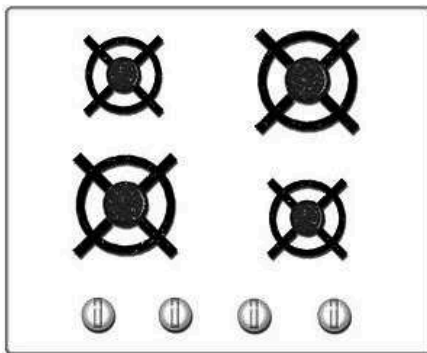


CONSISTENCY

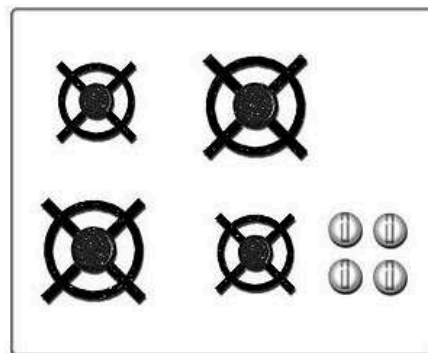


MAPPING

Poor mapping

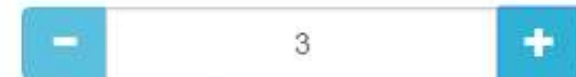


Good mapping



Min: -10


Max: 40



It's responsive too!

FEEDBACK

Submit

Your password must have:


- ✓ 8 or more characters
- ✓ Upper & lowercase letters
- ✓ At least one number

Strength: strong



Avoid passwords that are easy to guess or used with other websites.

CONSTRAINTS



CollectionColorWidthFabricPattern

SIGN INREGISTER

Cart 1

Search

Checkout

BILLING ADDRESS

Pending

SHIPPING ADDRESS

Pending

SHIPPING METHOD

Pending

PAYMENT METHOD

Pending

1Checkout Method

Sign In

Email *

Password *

SIGN INForgot password?

Create An Account

Register and checkout together

Guest Checkout

Checkout without registering

CONTINUE

2Billing Address

3Shipping Address

4Shipping Method

5Payment Method

6Order Review

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

CONSTRAINTS

A.



B.



”

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

CONCEPTUAL MODEL



In early 2016 Fiat Chrysler automobiles recall over 1 million vehicles

121 accidents
30 injuries



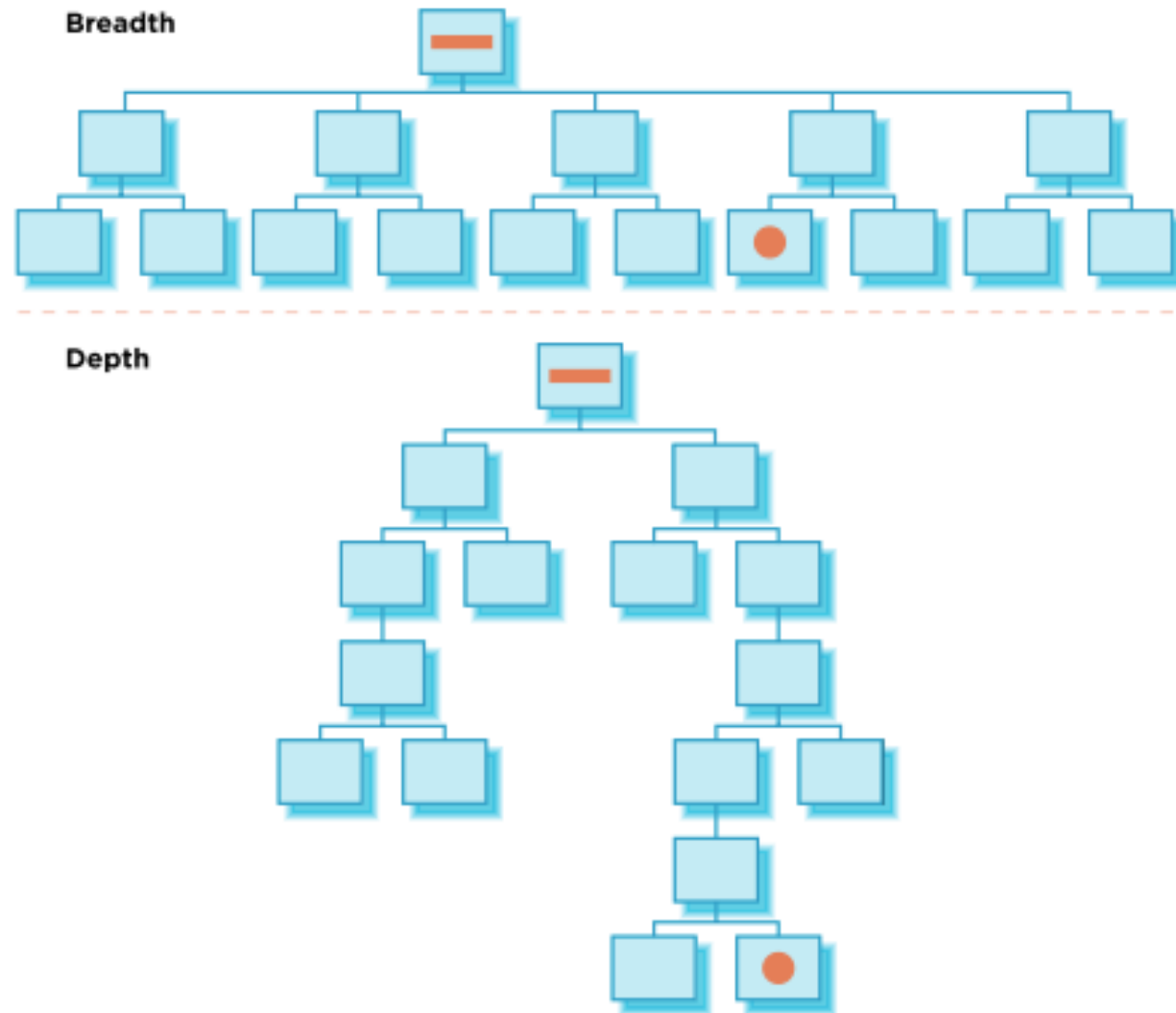
”

Follow user's mental models

QUALITIES OF SUCCESSFUL NAVIGATION

by James Kalback

BALANCE



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;

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.

CONSISTENCY AND INCONSISTENCY

Consistency is a perceived quality;

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

Consistency \neq Uniformity!

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?

EFFICIENCY

The path to information should be efficient;

To improve efficiency:

- Duplicate access points

- Create shortcuts

- Create escape hatches

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.

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**.

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.

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.

INTERACTION ELEMENTS

INPUT

- ☐ Checkboxes are independent
- ☒ So they can come in groups
- ☐ Or stand alone

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

- ☐ Radio buttons
- ☐ Come in groups
- ☐ And are used to make
- ☒ Mutually exclusive selections
- ☐ Burma-Shave

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

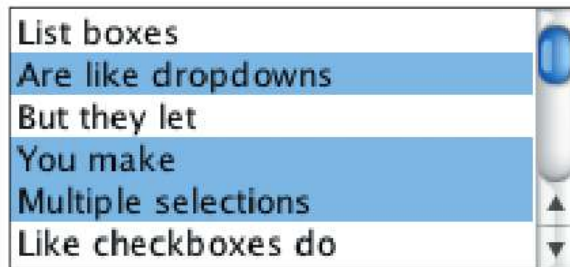
Text input fields let you input text

Text fields – allow users to enter text.

INPUT

Dropdown lists work like radio buttons

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.

Buttons perform actions

Action buttons – can have different actions upon touch.

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.

NAVIGATION

The image displays three different search field designs:

- Top:** A search field with the placeholder text "Search My Great Site" and a "Search" button.
- Middle:** A search field containing the text "Usabil|". To its right is a magnifying glass icon and a "Search" button. Below the input field is a dropdown menu with the following items: "Usability" (highlighted in blue), "D8UX usability", "Mobile Usability", and "Needs Usability Review".
- Bottom:** A search field containing the text "Usability". To its right is a clear button (represented by an 'x' icon) and a "Search" button.

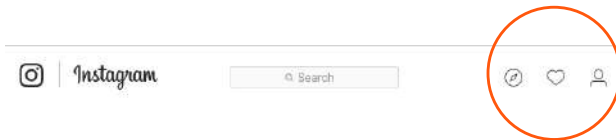
Search field – allows users to enter a keyword or phrase (query) and submit it to search the index with the intention of getting back the most relevant results.

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

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.

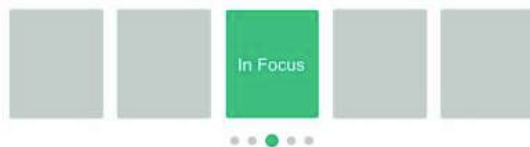


Image carousel – allows users to browse through a set of items and make a selection of one. Typically, the images are hyperlinked.

NAVIGATION



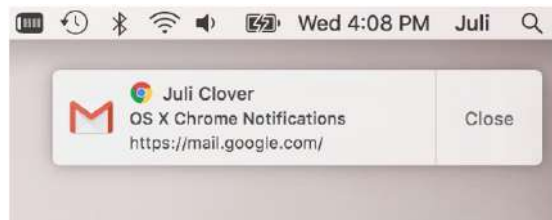
Home » Team » Designers » Sinjin Smythe

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

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.

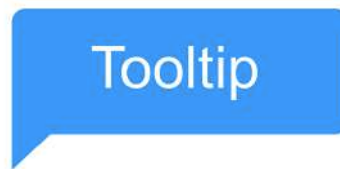
OUTPUT



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.

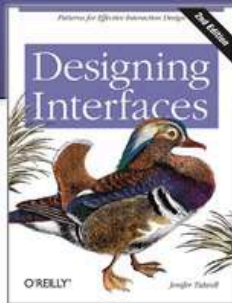
DESIGN PATTERNS

”

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**.

Excerpts from



2nd Edition

Patterns

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

Home

About the book

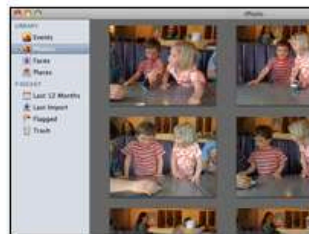
What's new in the second edition

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

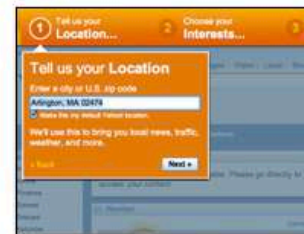
Buy from Amazon



Picture Manager



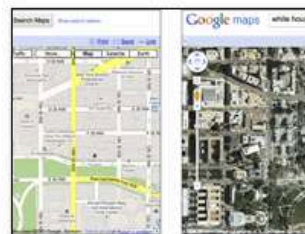
News Stream



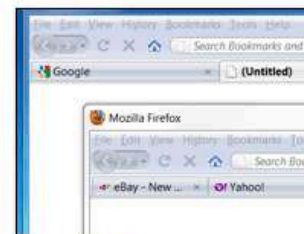
Wizard



Settings Editor



Alternative Views



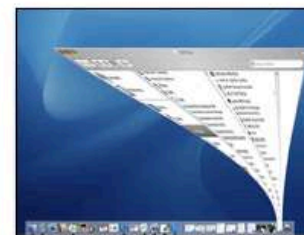
Many Workspaces



Fat Menus



Sitemap Footer



Animated Transition

Excerpts from



Home

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Infinite List

Password Strength Meter

Liquid Layout

Deep Background

Buy from Amazon

2nd Edition

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.

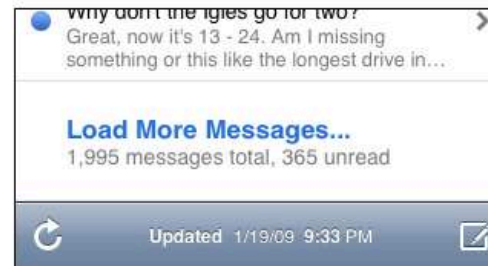
Each subsequent loading of a new chunk of items is also fast, and it's under user control— the user decides when (and whether) she needs to load more items.

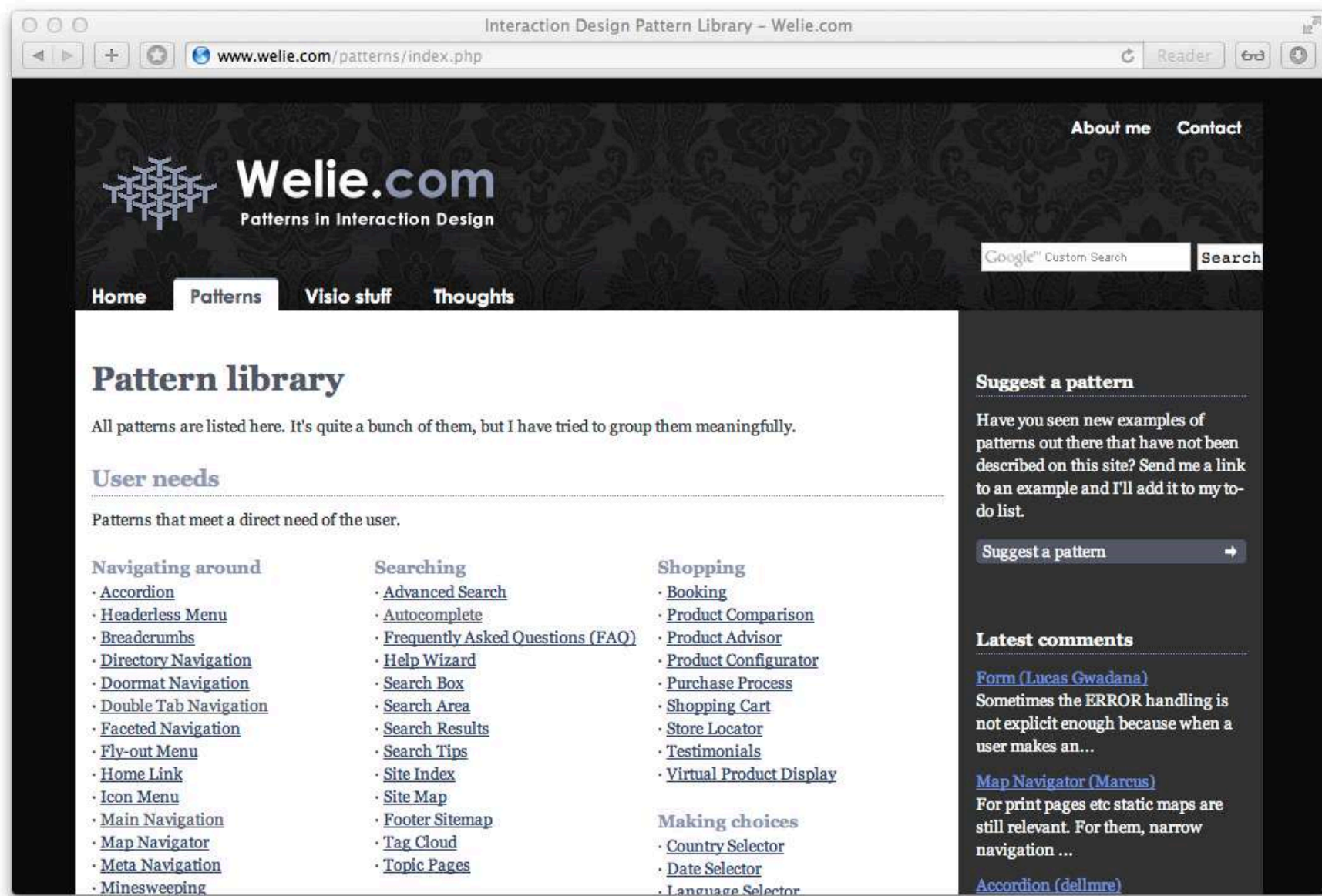
Since the new items are just appended to the current page, the user never has to context- shift by going to a new page to see new items, as she would with paginated search results.

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







Navigating around

- [Accordion](#)
- [Headerless Menu](#)
- [Breadcrumbs](#)
- [Directory Navigation](#)
- [Doormat Navigation](#)
- [Double Tab Navigation](#)
- [Faceted Navigation](#)
- [Fly-out Menu](#)
- [Home Link](#)
- [Icon Menu](#)
- [Main Navigation](#)
- [Map Navigator](#)
- [Meta Navigation](#)
- [Minesweeping](#)
- [Panning Navigator](#)
- [Overlay Menu](#)
- [Repeated Menu](#)
- [Retractable Menu](#)
- [Scrolling Menu](#)
- [Shortcut Box](#)
- [Split Navigation](#)
- [Teaser Menu](#)
- [To-the-top Link](#)
- [Trail Menu](#)
- [Navigation Tree](#)

[< Pattern index](#)

Accordion

Problem

The user needs to find an item in the main navigation

Solution

Stack panels vertically or horizontally and open up one panel at the time while collapsing the other panels

1. Accordion

2. AutoSize

It also supports three AutoSize modes so it can fit in a variety of layouts.

- **None** - The Accordion grows/shrinks without restriction. This can cause other elements on your page to move up and down with it.
- **Limit** - The Accordion never grows larger than the value specified by its Height property. This will cause the content to scroll if it is too large to be displayed.
- **Fill** - The Accordion always stays the exact same size as its Height property. This will cause the content to be expanded or shrunk if it isn't the right size.

3. Control or Extender

4. What is ASP.NET AJAX?

From [ASP net](#)

Use when

Accordions are often used as part of [Main Navigation](#) or subnavigation. If used for navigation it

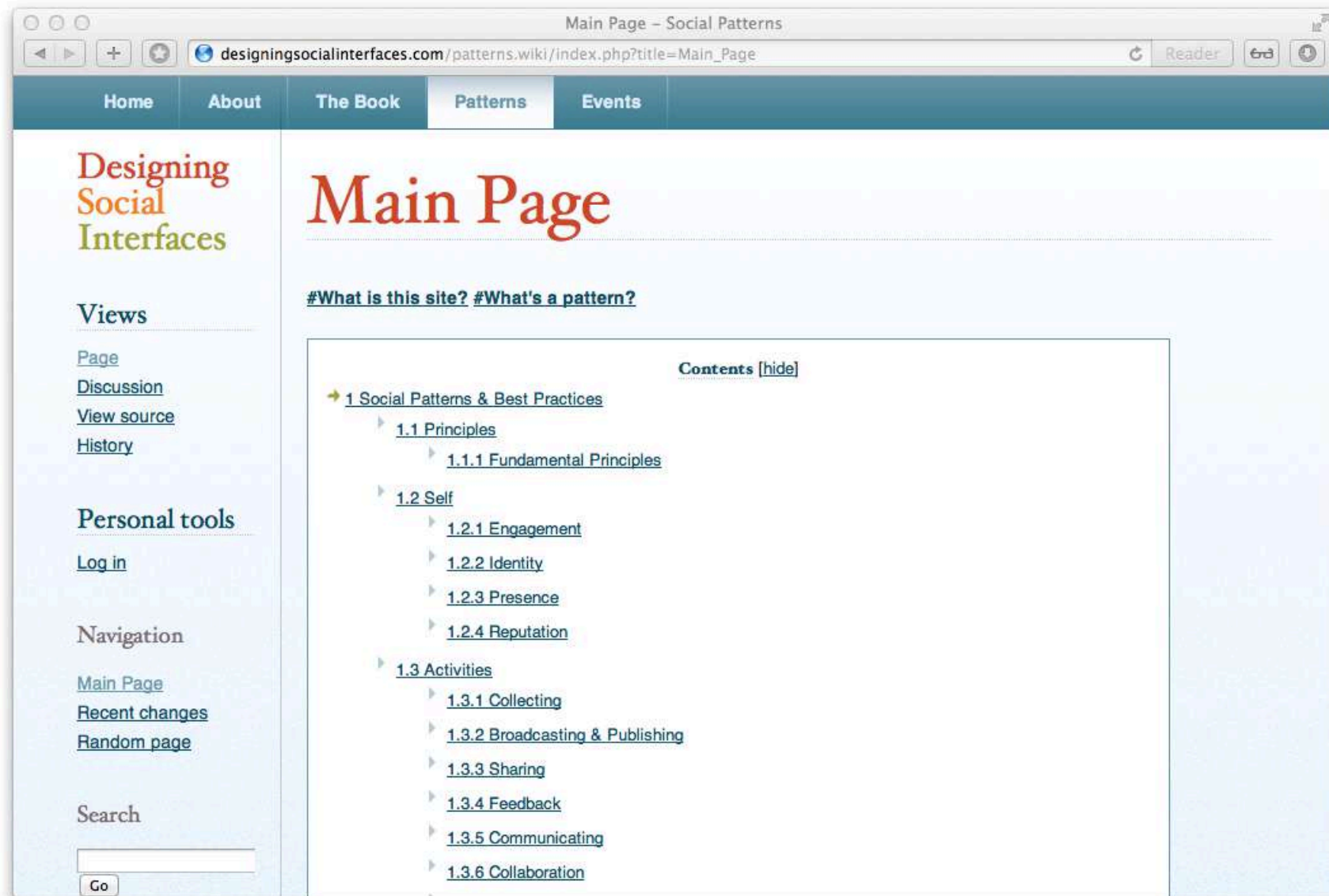
Also known as

[Closable Panels](#)
[Collapsible Panels](#)

Code examples

[DHTML Accordion Menu 2.0](#)
[ASP.NET: Accordion Sample](#)
[Spry: Accordion Sample](#)

PLML



[Home](#)
[About](#)
[The Book](#)
[Patterns](#)
[Events](#)

Designing Social Interfaces

Views

[Page](#)
[Discussion](#)
[View source](#)
[History](#)

Personal tools

[Log in](#)

Navigation

[Main Page](#)
[Recent changes](#)
[Random page](#)

Search
















[Advanced search](#)

Toolbox

[What links here](#)
[Related changes](#)
[Upload file](#)
[Special pages](#)
[Printable version](#)
[Permanent link](#)

Availability

The interface pattern for managing and displaying availability may also be referred to as "online presence indicators" (OPI). They provide a way for a user to display to other people (either the public, or their contacts, depending on the rules of the system) when they are available for contact and when not.

kim.hans	
nickherry	
Yep, I'm here.	
nzmarsall	
ryochijiwa	
shuanlo	
tom_croucher_v	
riciym007	
Idle	
Jonokane	
Irish springin it, yo.	
nosnaab	
GO CAPS	
runningwithscissors42	
Away	

A small set of icons can be used to indicate at a glance who is available, who is idle, and who is away. The interface may optionally sort the listed people by availability, as in this Yahoo! Messenger window.

Contents [\[hide\]](#)

[→ 1 Problem](#)
[→ 2 Use When](#)
[→ 3 Solution](#)
[→ 3.1 Stealth Mode](#)
[→ 4 Rationale](#)
[→ 5 Open Questions](#)
[→ 6 Yahoo! OPIs](#)
[→ 7 Sources](#)

Problem

Users need to see who else is online, available and open to contact.

Use When

Here are four typical use cases for online presence indicators:

- A person wants to determine whether their friend is online.
- A person wants to see who is available for contact.
- A person wants to see if their friend is available for communication.
- A person wants to show that they are busy to their contacts.

Solution

Allow the user to visually identify themselves in one of three possible states - "Available", "Busy", or "Offline". Additionally,

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)

WIREFLOWS

Wireflows document interactions

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.

WIREFLOWS

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

Wireflows document interactions;

WIREFLOWS

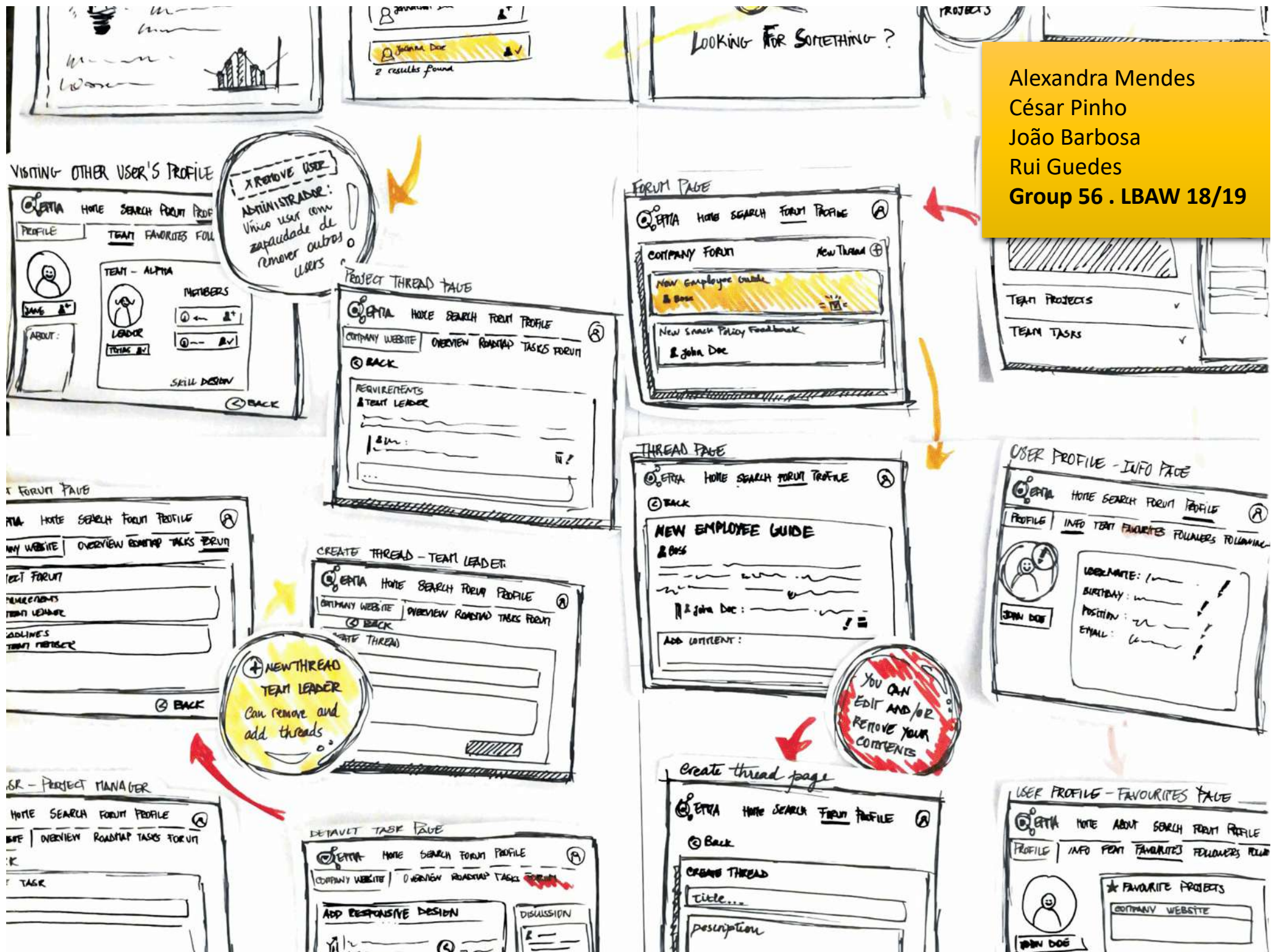
A tool for
collaboration



TASK TO PRACTICAL CLASS #3

Wireflows

Alexandra Mendes
César Pinho
João Barbosa
Rui Guedes
Group 56 . LBAW 18/19



[illegible]

Compartilhadas	▼
Disponibilidades	▼
Localizações	▼
Comentários	▲




☒ 0 Bateria perfeita pra dormir
 0 Cão.
 ★★★★★

☒ Otimiza comitigação.
 ★★★★★



☒ Insira comentários
 ★★★★★

▲ ○ ♥ ≡

The screenshot shows a mobile application interface. At the top, there are navigation icons: a back arrow, a search bar with a magnifying glass, and an envelope icon. Below these are three icons: a checkmark, a heart, and a right-pointing chevron. The main content area features a placeholder image of a dog, the name 'Joanna', and the text 'Avuls - 1 cão' followed by five stars and the number '5'. Below this, there are five circular icons with arrows pointing in different directions. At the bottom, there are two buttons: 'Contactar' and 'Reservar'. The interface is overlaid with a blue circular pattern and a red heart.

9		AVES	✉
	Pedro Aveiro ★★★★★	5	
	Joana Aveiro ★★★★★	5	✓
	Di's Aveiro ★★★★★	5	✓




9 [] 4 []


	Carlos Avelar *****	✓	5
	Ana Avelar *****	✓	5





no favoritos
no es
una zoea pa
mim

⬇

⌂ ⌚ ❤️ ≡

9   

 Ela prefere deixar
conigo o seu cão
entre os dias 16 e 17
de dezembro
Faça com a pena e
confirme a sua
disponibilidade.

X

Journal - Ahmed-
***** 5

Buttons

Check in → Check out

Hospedes

16 ▽

Confirmation

Ⓐ ⓘ ♡ ≡



 Team - Adria - Icaõ
 ★★ ★★ ★★ 5




Comendadores 

TEXTO
 Bresspago 5 oominal
 corneio guntal

Disponibilidade ▽
 Localização ▽
 Comentário 201 ▽



$\langle 9 \rangle$   
 \langle  \rangle
 Team
 1000 1000
 ***** 5
 Comodidade 
 Disponibilidade 
 Nov.  Dez. 
 Localização 
 Comentários 
 Entrega a Team 
   

9. Prospects - 1		⚠	🔒
Recommended party 51			
	Jana Aveiro	★★★★★	5
	José Aveiro	★★★★★	5
	Bruno Aveiro	★★★★★	5

The diagram illustrates a Turing Machine (TM) with the following components:

- Control Unit:** A box at the top labeled "DECODING" with a "Q" (state) and a "↓" (write) symbol, and an "X" (erase) symbol.
- Tape:** A horizontal strip below the control unit, labeled "AHEAD" on the left. It contains a sequence of cells, each represented by a square box. The first cell contains the letter "A". The rest of the tape is empty.
- Input/Output:** A box at the bottom labeled "SPACE" with a "Q" (state) and a "↓" (write) symbol, and an "X" (erase) symbol.

< 9 ☒ ☐

X ^{Team}
*****S



Datos
Check in → Check out


Hóspedes

	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Caio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pissaro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ribitt	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Rodner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Outro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





Máximo 4 hóspedes

☐ ☒ ☐ ☐

< 9  
 Joana
 Av. Rio - 1005
 ★★★★★ S

Comodidades	✓
Disponibilidade	✓
Localizações	▽
Comentários	✓
conheça a Joana	

TEXTO - BREVE
 APRESENTAÇÃO
 DA JOANA. INTRODUZ
 POR EIA.

< a [] >

< | >

Bom

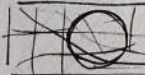
Aver. 1.6m

***** 5

Comodidades ✓

Disponibilidade ✓

Localizador ▲









Num raio de 3Km





Comentários ✓

Conheça o Joazeiro ✓

A ☹ ♥ ≡

9   

Especies	Hospedes
 	Ana  ***** 5

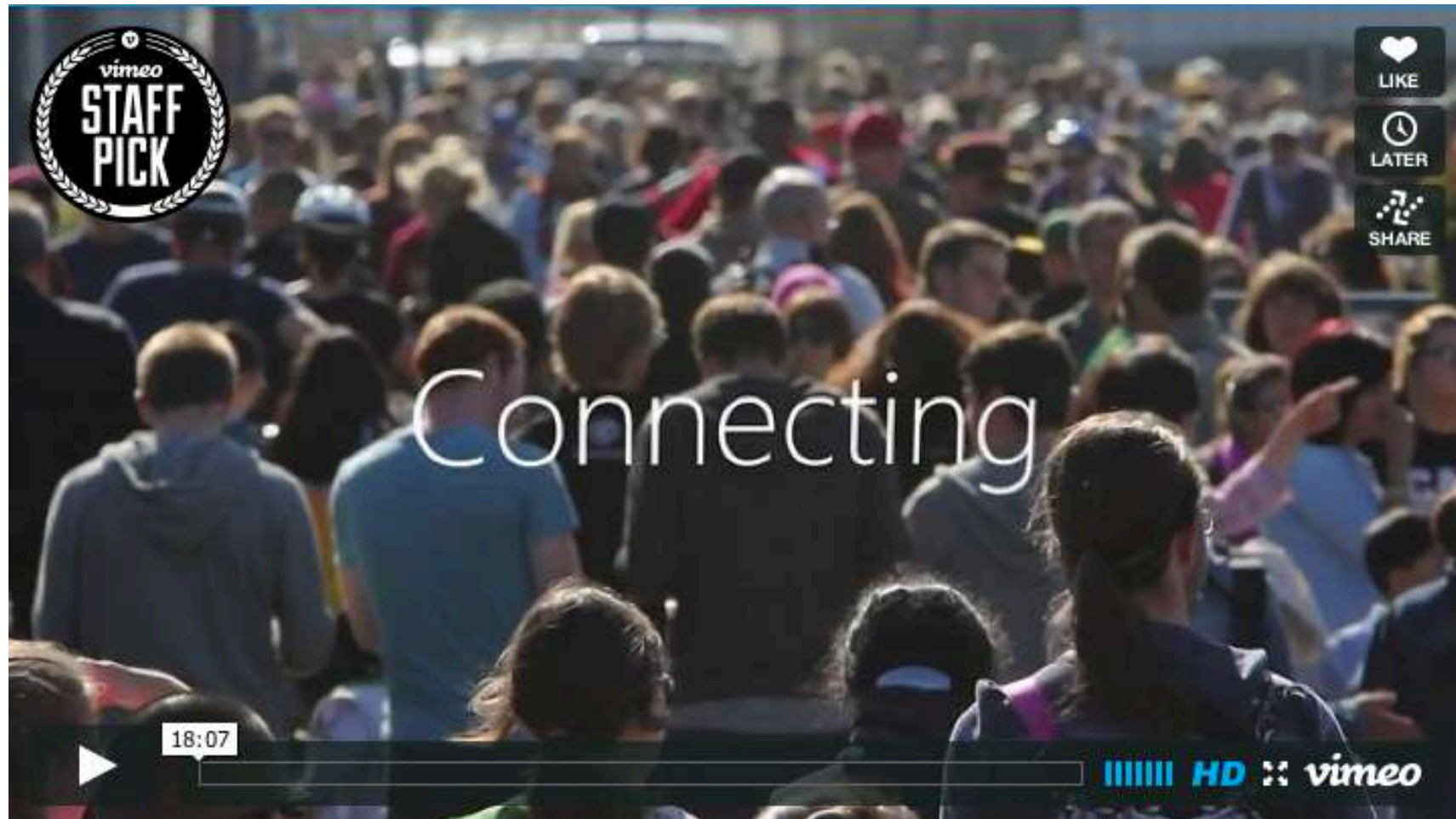
   

9

Estatísticas Hospedades

Ainda não
recebem
Hospedades

RECOMMENDATION



RECOMMENDATION



How the inventor of Mario designs a game

<https://www.youtube.com/watch?v=K-NBcPOYUQI>

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