

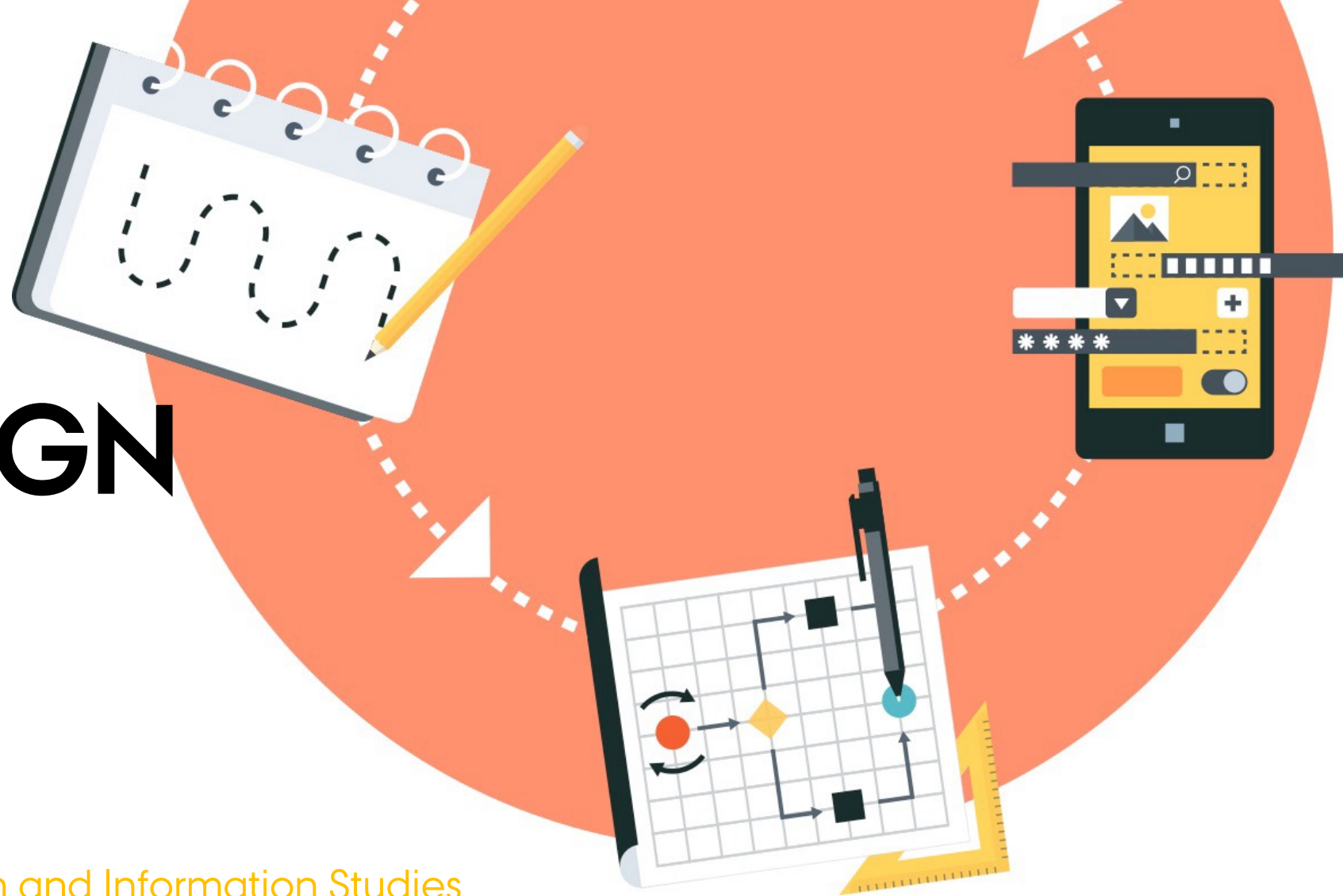
# GUI DESIGN

## ITPDP'26, L12

Dr. Minna Pakanen

Department of Digital Design and Information Studies

mpakanen@cc.au.dk





# CONTENTS

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- Visual perception
- Gestalt principles
- UI design guidelines
- Interaction patterns

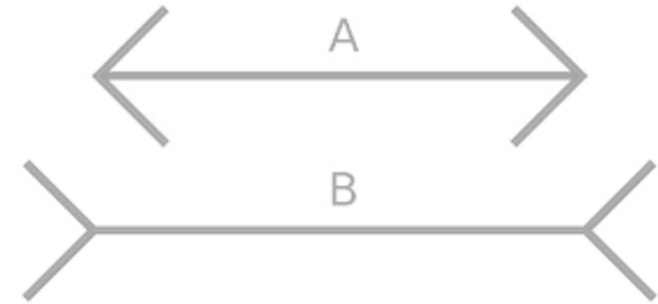
## Break

- UI design process
- Layout of GUIs
- Aesthetic styles
- Color on screen



# VISUAL PERCEPTION

Jeff Johnson (2013) Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design guidelines



# WE PERCEIVE WHAT WE EXPECT

---

Our expectations & perceptions—are biased by three factors:

- *The past:* our experience
- *The present:* the current context
- *The future:* our goals



# BIASED PERCEPTION



By our experience



Jeff Johnson (2013)

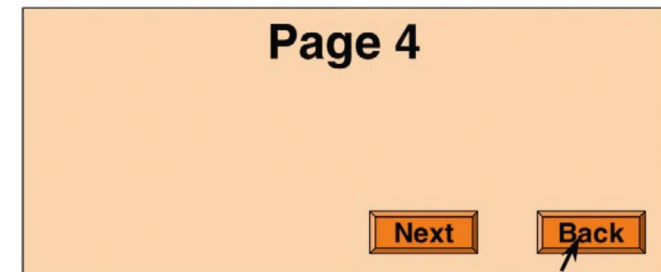
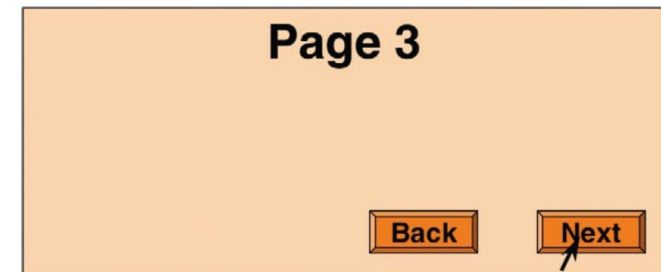
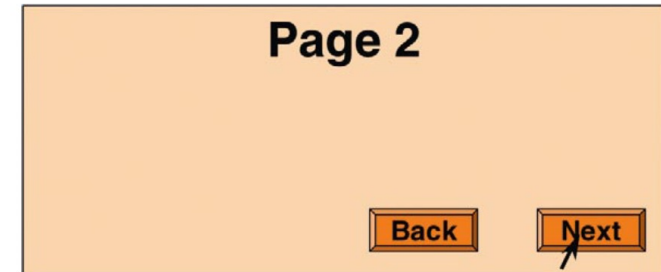
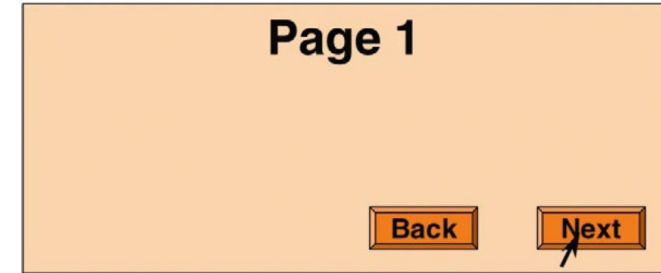
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# BIASED PERCEPTION

By our experience

## Design implication: Be consistent!

- Place information and controls in consistent locations
- Controls and data displays that serve the same function on different pages should be placed in the same position on each page, and have the same colour, text fonts, shading, and so on



Jeff Johnson (2013)

22<sup>ND</sup> APRIL 2026 | MINNA PAKANEN



# BIASED PERCEPTION

—  
By current context

THE CHT

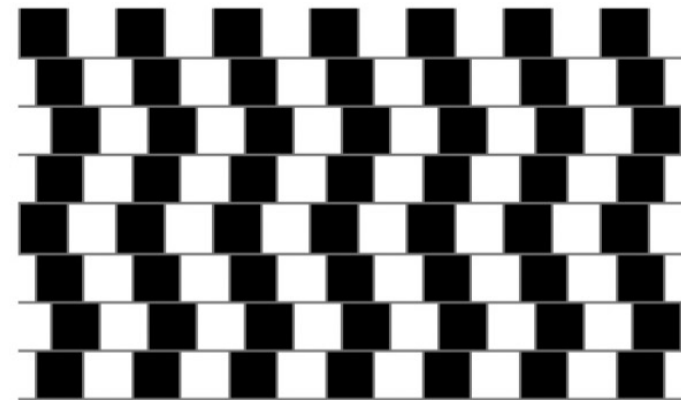
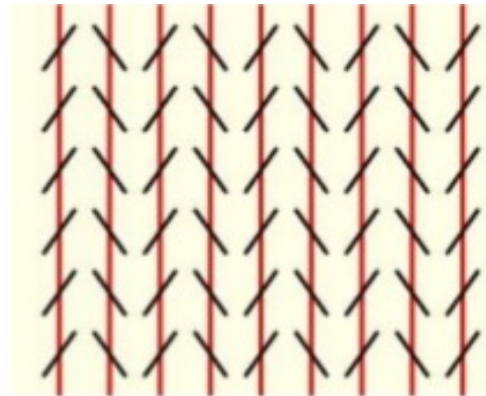
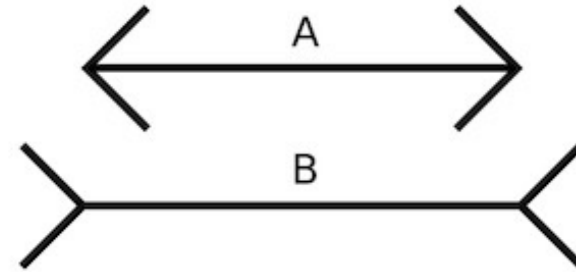
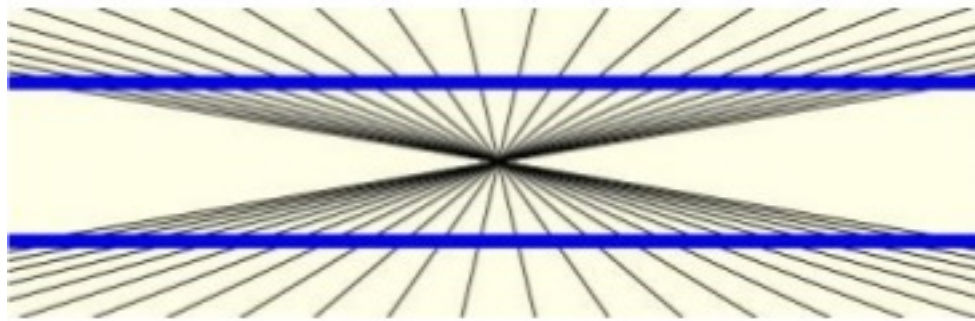


Jeff Johnson (2013)

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# BIASED PERCEPTION

By current context



Jeff Johnson (2013)



# BIASED PERCEPTION

—  
By our goals

Is there a screwdriver in the next picture?



# BIASED PERCEPTION

—  
By our goals



Jeff Johnson (2013)

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# BIASED PERCEPTION

—  
By our goals

Was there a screwdriver in the prior picture?



# BIASED PERCEPTION

—  
By our goals

Was there a tape roll in the picture?



# BIASED PERCEPTION

—  
By our goals



Jeff Johnson (2013)

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# DESIGN IMPLICATIONS

---

## Avoid ambiguity

- Test your design to verify that all users interpret the display in the same way
- Where ambiguity is unavoidable, either rely on standards or conventions to resolve it, or prime users to resolve the ambiguity in the intended way
  - For example, computer displays often shade buttons and text fields to make them look raised in relation to the background surface.



# DESIGN IMPLICATIONS

---

## Understand user goals!

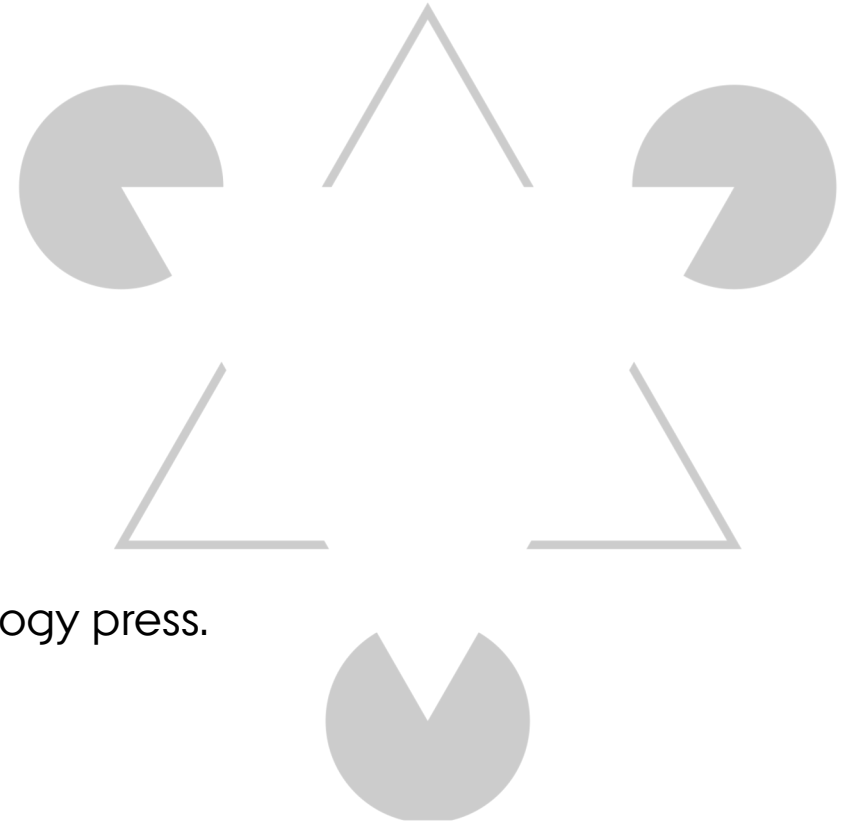
- Users come to a system with goals they want to achieve
- Goals may vary, and goals strongly influence what users perceive
- Ensure that at every point in an interaction, the information users need is available, prominent, and maps clearly to a possible user goal, so users will notice and use the information



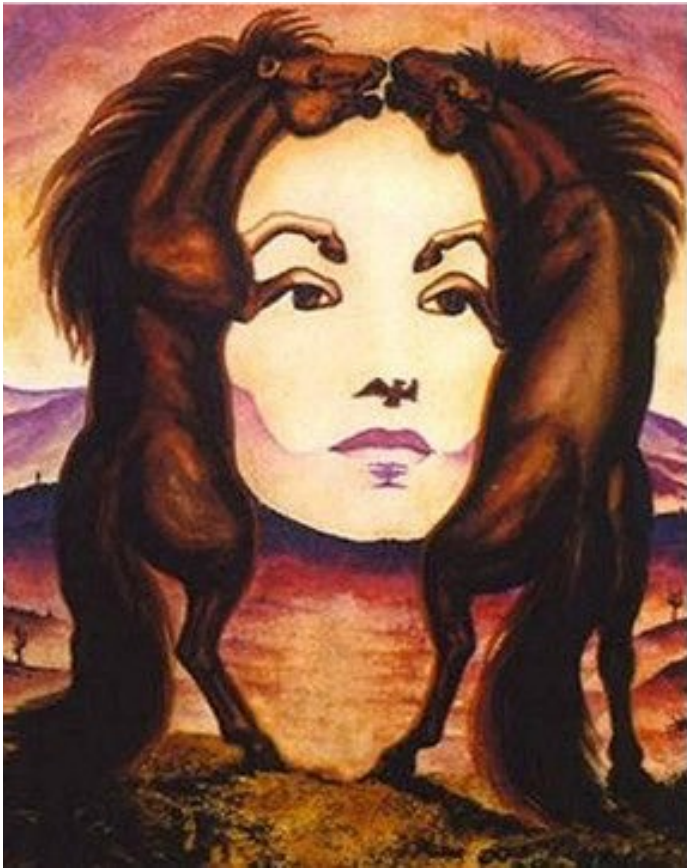
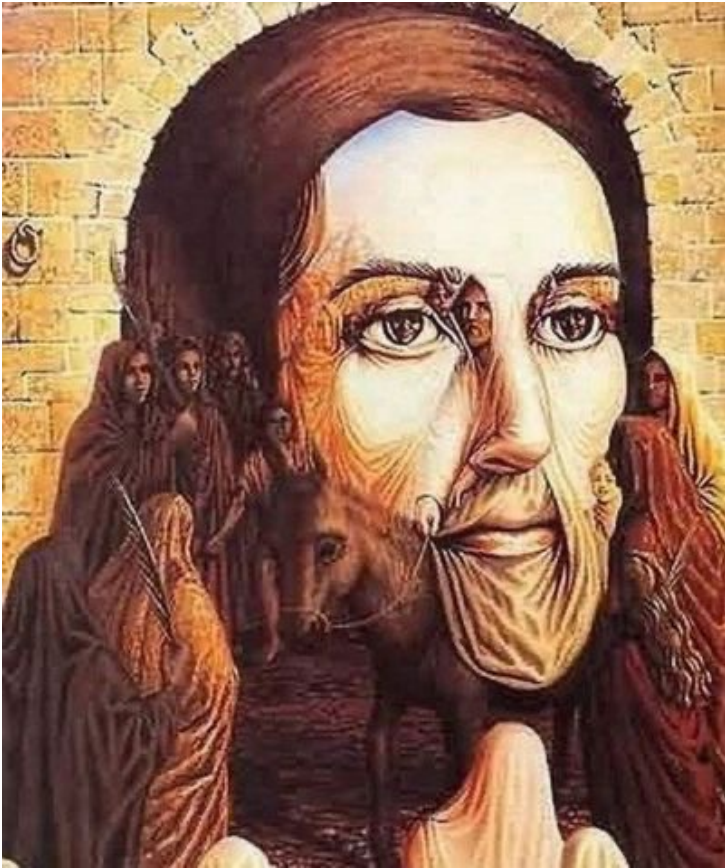
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# GESTALT PRINCIPLES

Gordon, I. E. (2004). *Theories of visual perception*. Psychology press.



# GESTALT



**“The whole of something is more important to our understanding than the individual parts.”**

# GESTALT PRINCIPLES

---

- Describe how the human eye perceives visual elements
- Aim to:
  - show how complex scenes can be reduced to more simple shapes
  - explain how the eyes perceive the shapes as a single, united form rather than the separate simpler elements involved.



# GESTALT PRINCIPLES

---

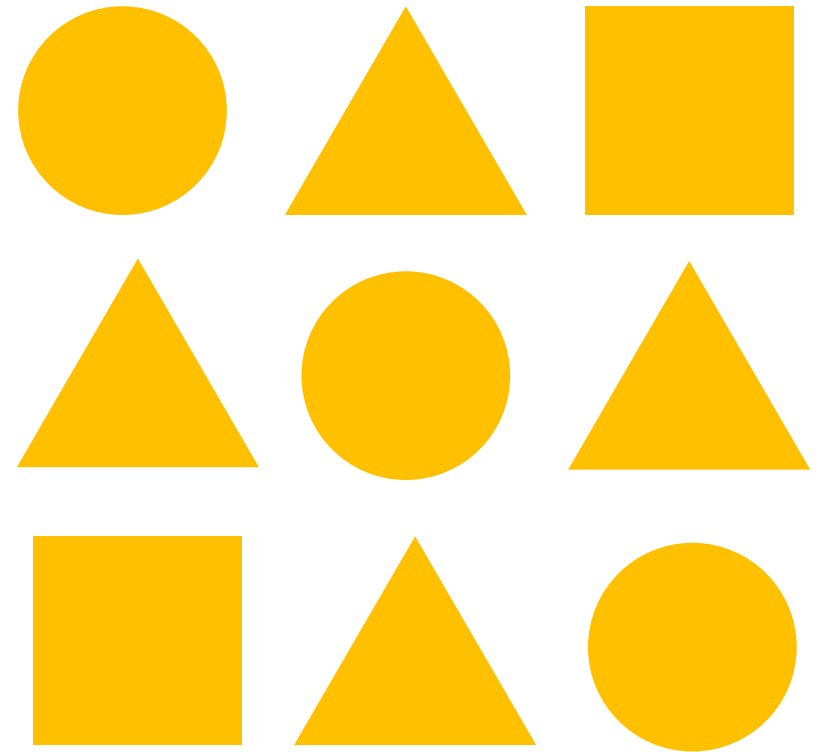
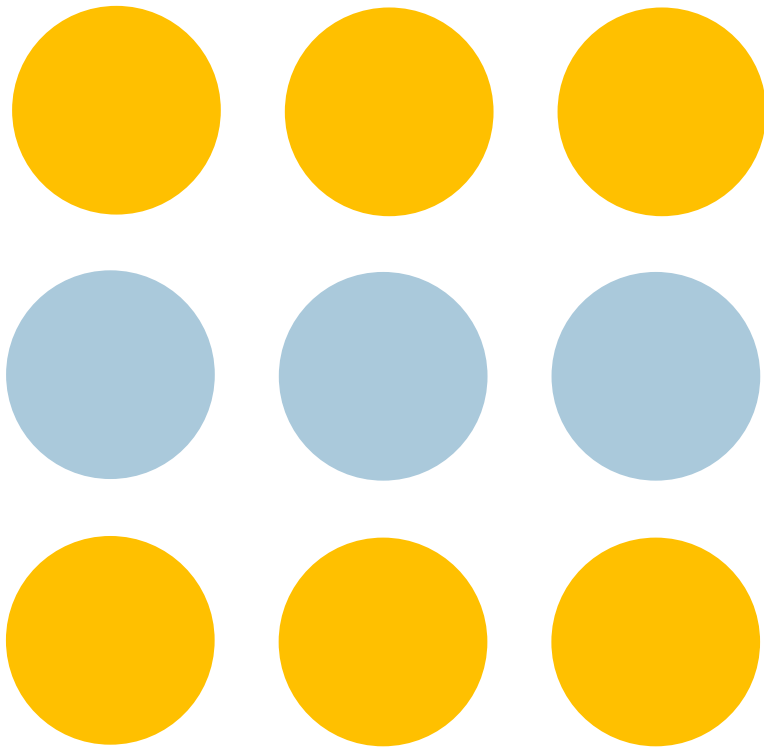
- 1) Similarity
- 2) Proximity
- 3) Common region
- 4) Closure
- 5) Continuation
- 6) Figure-ground
- 7) Focal point



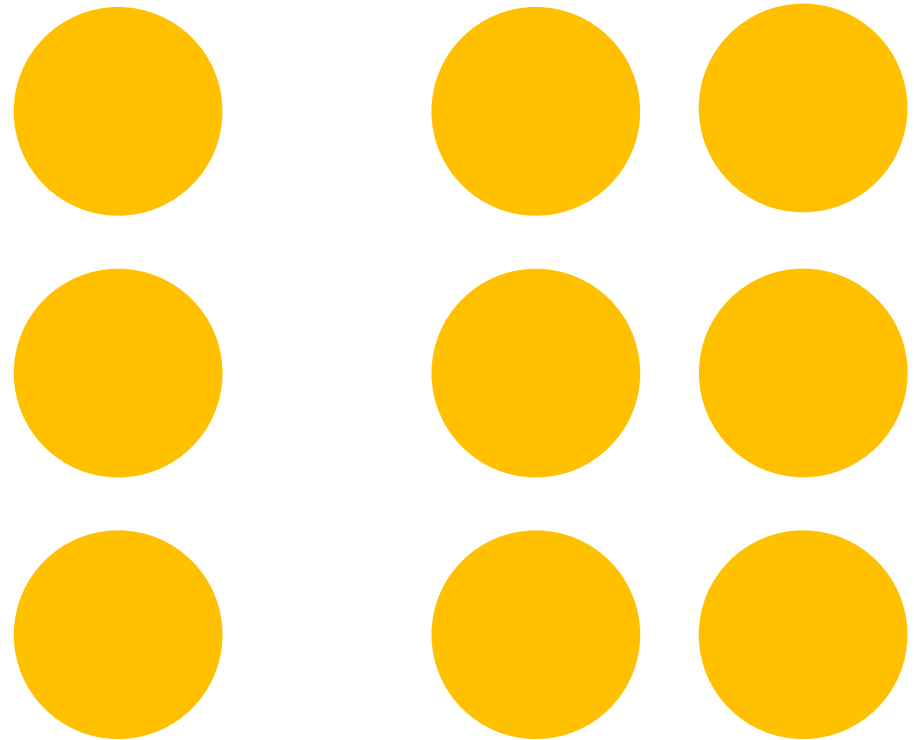
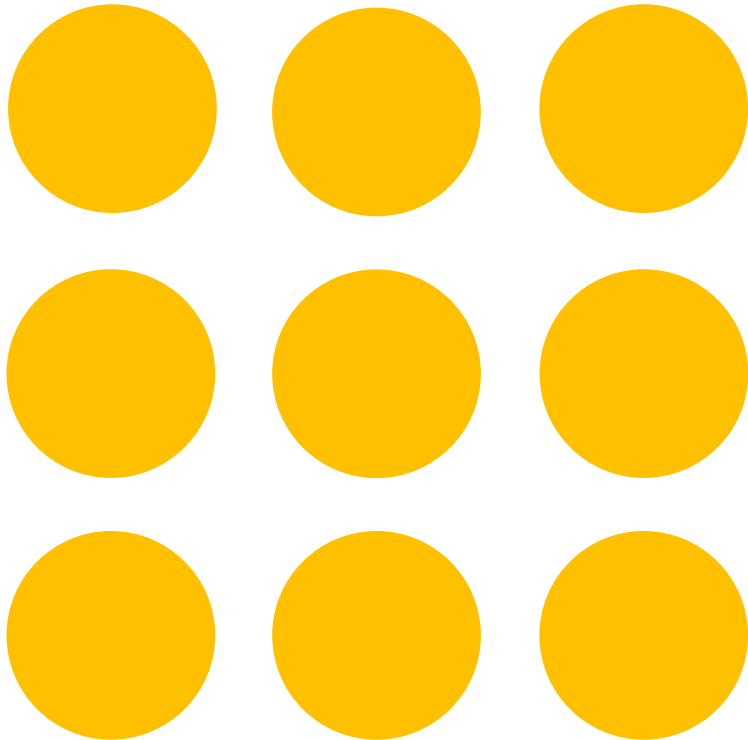
# 1) SIMILARITY

---

When things appear to be similar to each other we group them together. And we also tend to think they have the same function.




## 2) PROXIMITY




# EXAMPLE: PROXIMITY

When elements are close together, appear to be more related to each other than objects with more proximity to each other

- separate or build relationship using empty space between objects



The screenshot shows the footer of the Aarhus University website. It is divided into four main sections. The first section on the left contains the university's logo and contact information. The next three sections are 'OM OS', 'UDDANNELSER PÅ AU', and 'GENVEJE', each enclosed in a yellow border. The 'OM OS' section lists links for 'Profil', 'Institutter og fakulteter', 'Kontakt og kort', and 'Ledige stillinger'. The 'UDDANNELSER PÅ AU' section lists links for 'Bachelor', 'Kandidat', 'Ingeniør', 'Ph.d.', and 'Efter- og videreuddannelse'. The 'GENVEJE' section lists links for 'Bibliotek', 'Studieportal', 'Ph.d.-portal', 'Medarbejderportal', and 'Alumneportal'. At the bottom right, there is a copyright notice and a link to the privacy policy.

 AARHUS UNIVERSITET

Nordre Ringgade 1  
8000 Aarhus

Email: [au@au.dk](mailto:au@au.dk)  
Tlf: 8715 0000

CVR-nr: 31119103  
EAN-numre: [www.au.dk/eannumre](http://www.au.dk/eannumre)

**OM OS**

- › Profil
- › Institutter og fakulteter
- › Kontakt og kort
- › Ledige stillinger

**UDDANNELSER PÅ AU**

- › Bachelor
- › Kandidat
- › Ingeniør
- › Ph.d.
- › Efter- og videreuddannelse

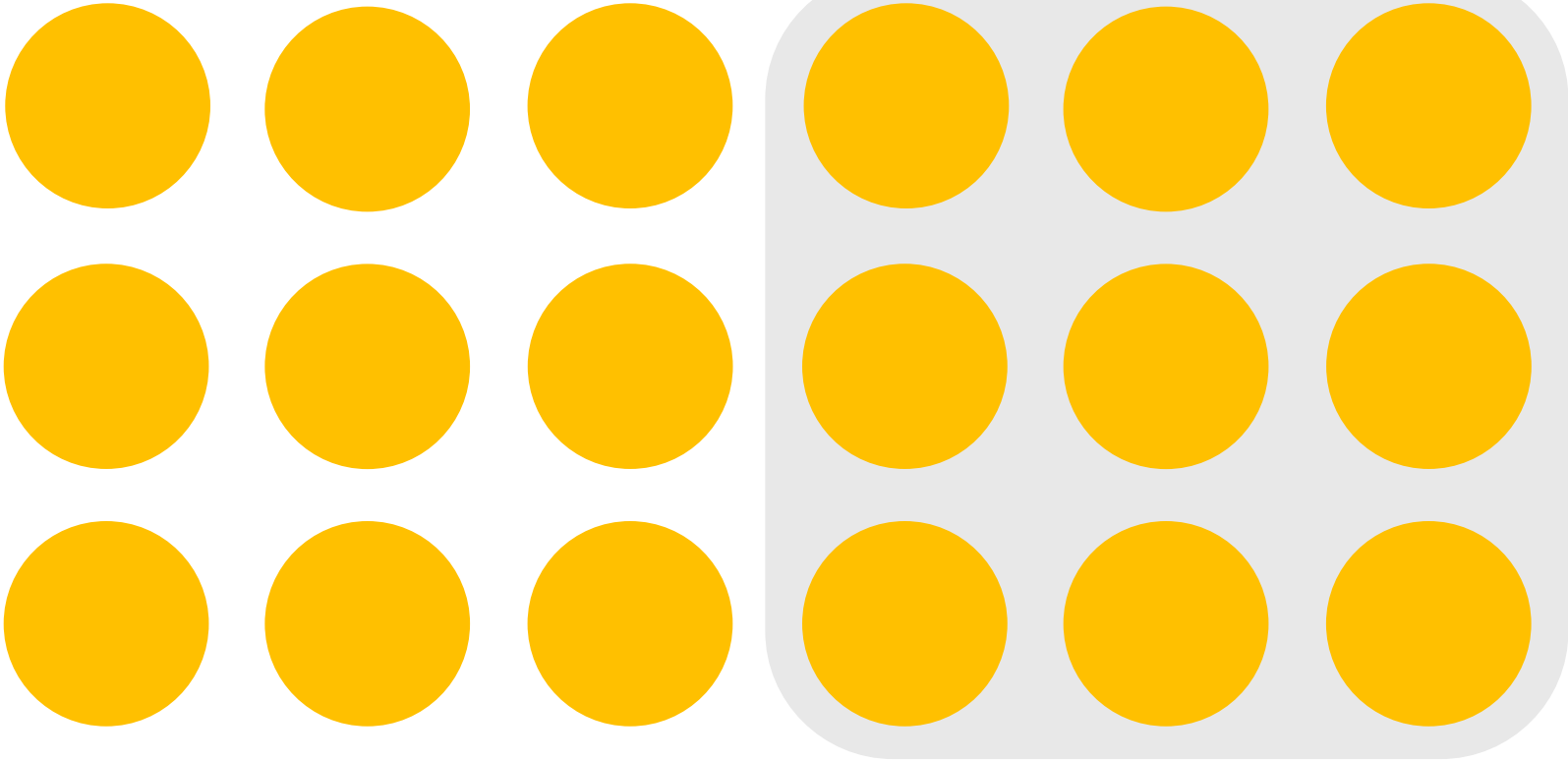
**GENVEJE**

- › Bibliotek
- › Studieportal
- › Ph.d.-portal
- › Medarbejderportal
- › Alumneportal

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Privatlivspolitik



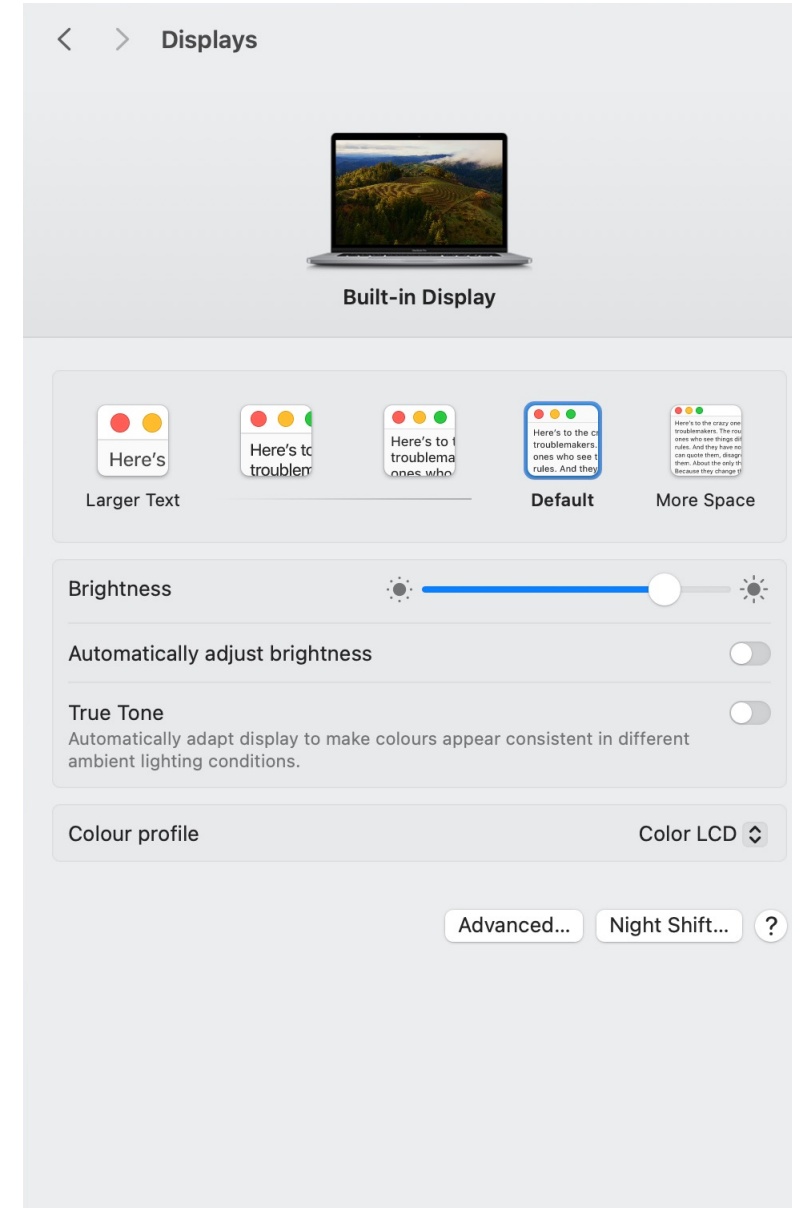
# 3) COMMON REGION



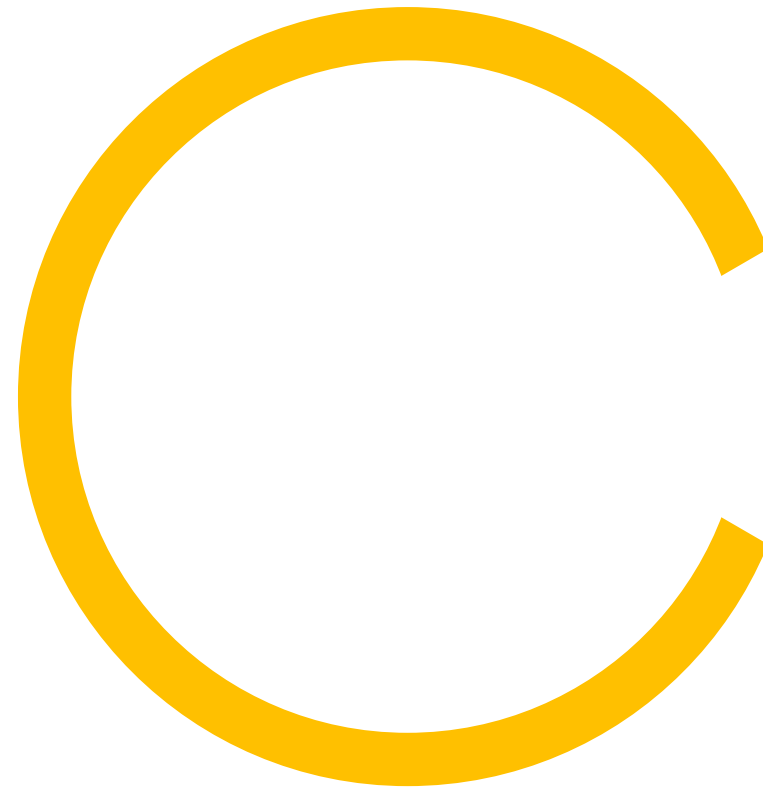
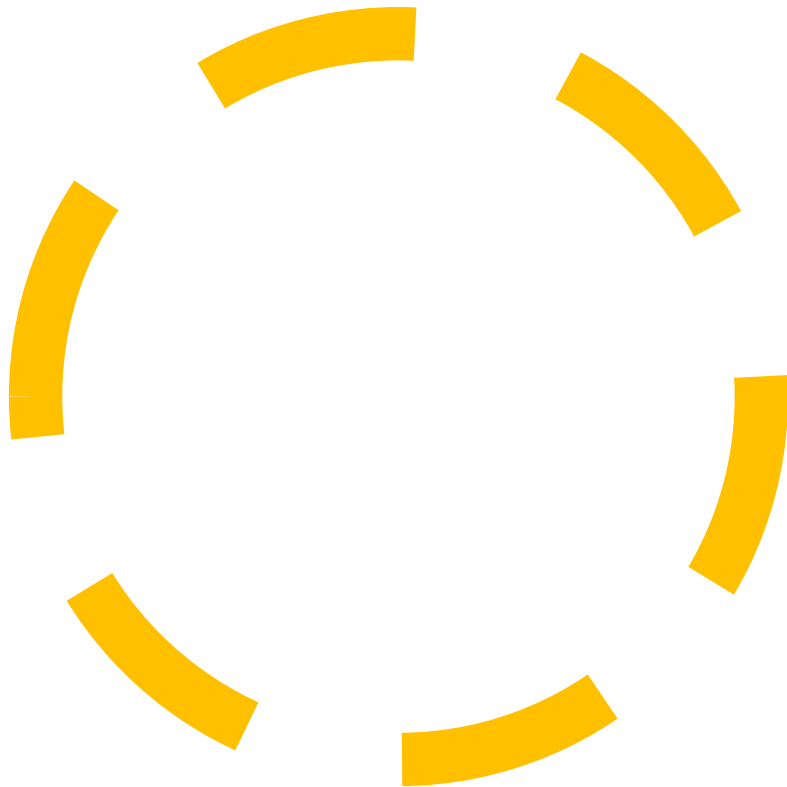
# EXAMPLE: COMMON REGION

The principle of common region is highly related to proximity. It states that **when objects are located within the same closed region, we perceive them as being grouped together.**

Adding borders or other visible barriers is a great way to create a perceived separation between groups of objects—even if they have the same proximity, shape, color, etc.



# 4) CLOSURE



# EXAMPLE: CLOSURE



[gizmodo.com](http://gizmodo.com)



[www.worldwildlife.org](http://www.worldwildlife.org)



[https://commons.wikimedia.org/wiki/File:NBC\\_logo.svg](https://commons.wikimedia.org/wiki/File:NBC_logo.svg)



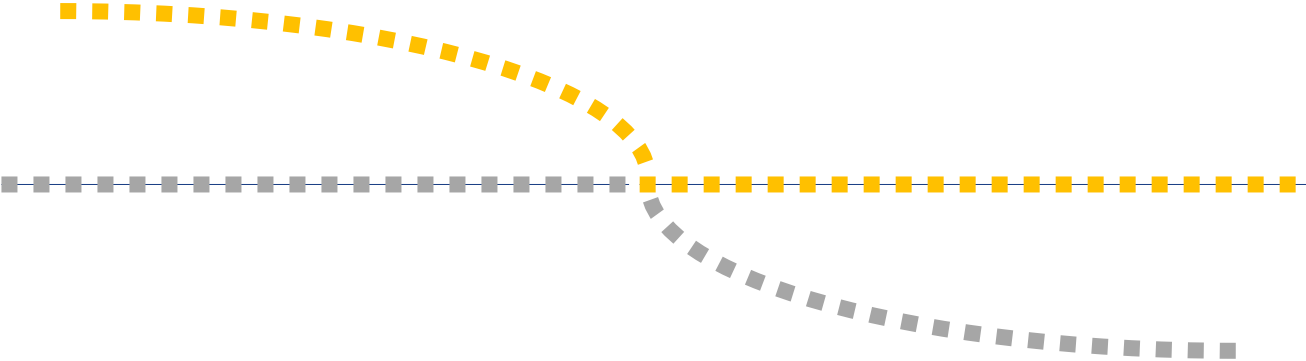
<https://www.fairtrade.net>



<https://www.designspiration.com/save/24403246050558/>



# 5) CONTINUATION



# EXAMPLE: CONTINUATION



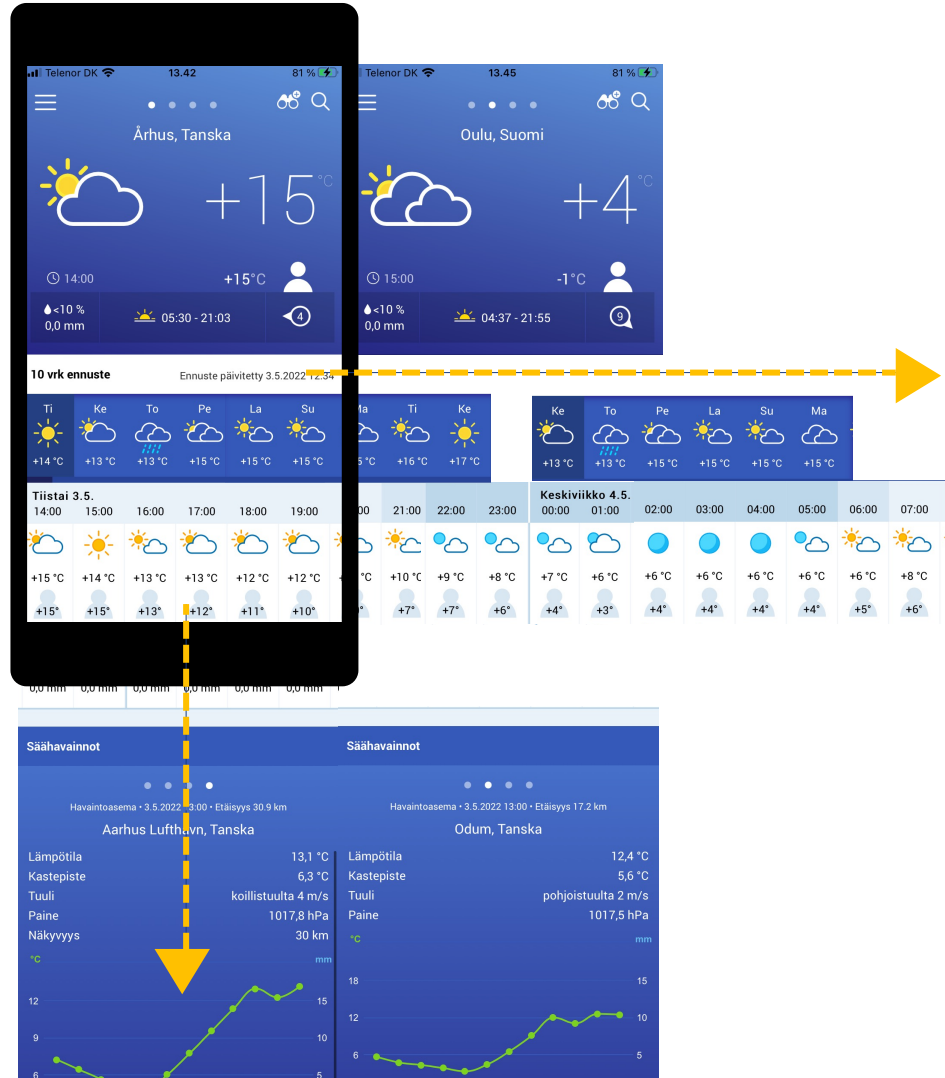
<https://juliankay.com/development/principles-and-actions-for-metro-app/>



[https://en.wikipedia.org/wiki/The\\_Dark\\_Side\\_of\\_the\\_Moon#/media/File:Dark\\_Side\\_of\\_the\\_Moon.png](https://en.wikipedia.org/wiki/The_Dark_Side_of_the_Moon#/media/File:Dark_Side_of_the_Moon.png)



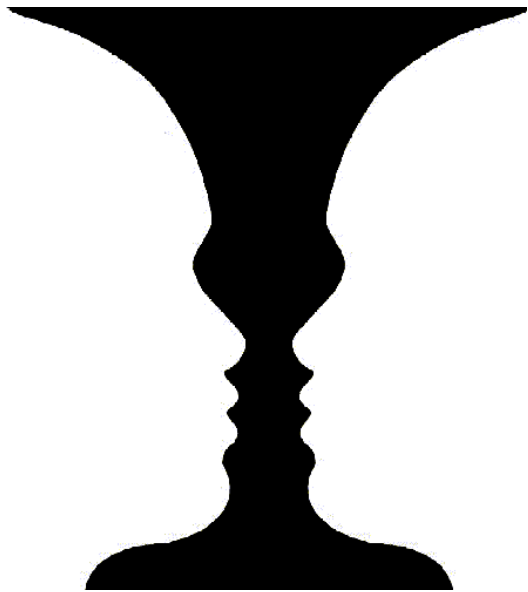
# EXAMPLE: CONTINUATION



# 6) FIGURE-GROUND

---

People perceive objects as either being in the foreground (figures) or the background (grounds)



# EXAMPLE: FIGURE-GROUND



# EXAMPLE: FIGURE-GROUND



SYNDICATES

STARTUPS

FUNDS

STARTUP JOBS

RECRUITING

MORE ▾

SEARCH

Join Log In

# AngelList

Where the world meets startups

Find a Startup Job ▶

Post a Job ▶

Raise Money Online ▶

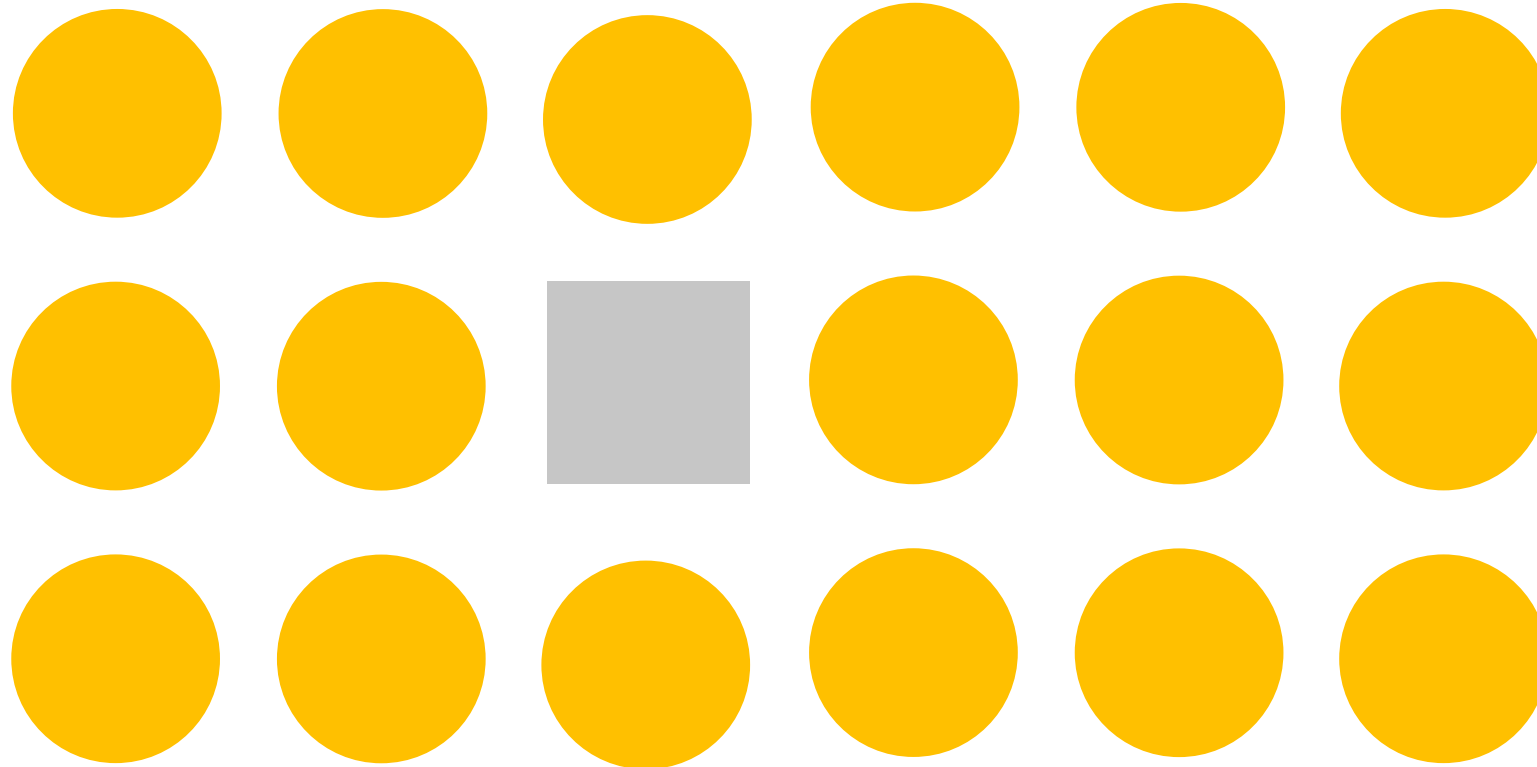
Invest in Startups ▶



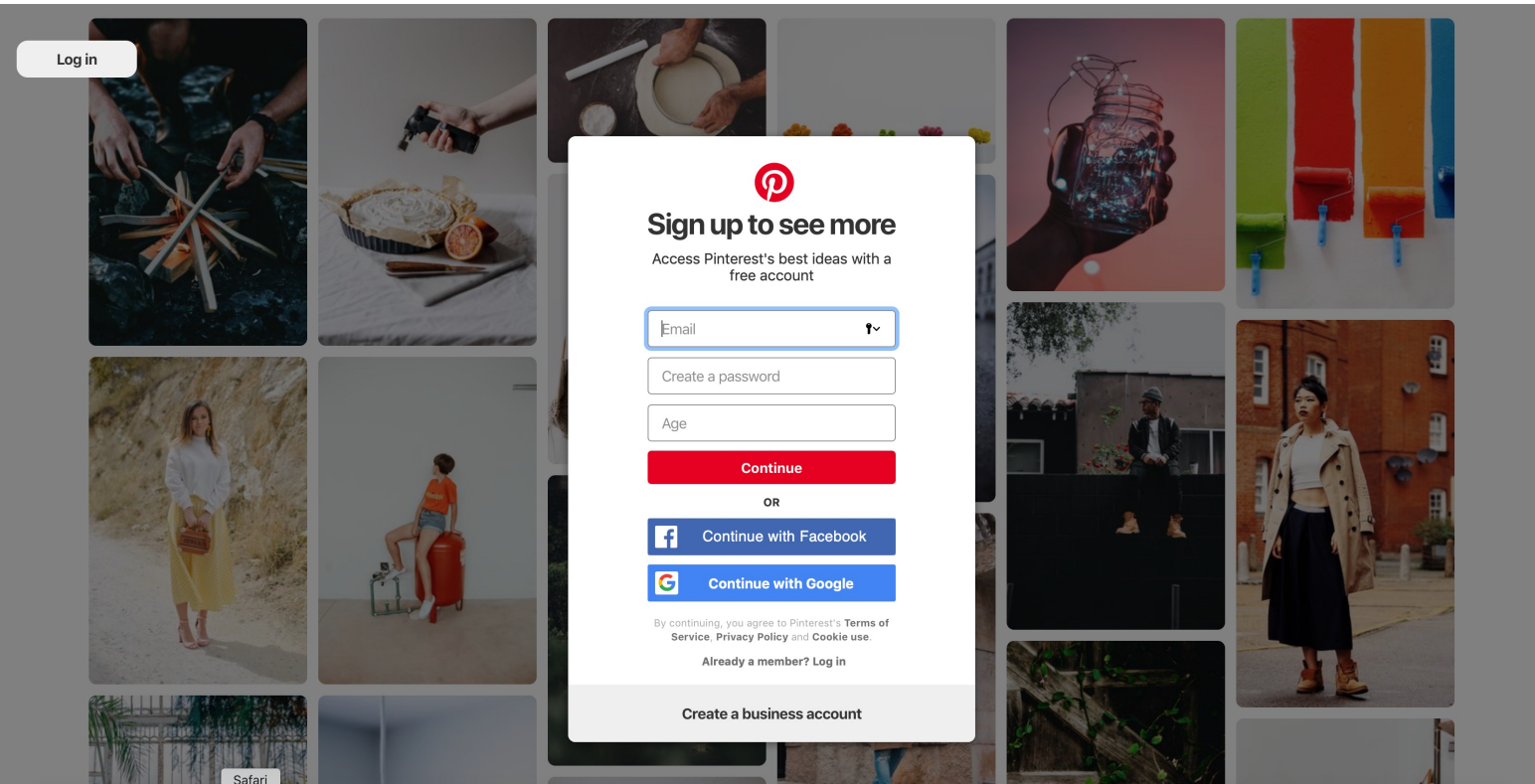
<https://www.usertesting.com/blog/gestalt-principles>

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# 7) FOCAL POINT



# EXAMPLE: FOCAL POINT



<https://www.instagram.com>



<https://dribbble.com/shots/10003996-focal-point-logotype/attachments/2021673?mode=media>



---

# UI DESIGN GUIDELINES

Jeff Johnson (2013) Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design guidelines.

W3C Web Accessibility Initiative WAI (n.d.) Accessibility guidelines.

<https://www.w3.org/WAI/fundamentals/accessibility-principles/#standards>



# CHALLENGES WITH UI DESIGN GUIDELINES

---

Following guidelines is not as straightforward as following cooking recipes

- › Design rules often describe goals rather than actions
- › Very general to make them broadly applicable
- › Open to interpretation
- › Design rules often contradict, i.e., they suggest different designs



# UI DESIGN GUIDELINES

## Conflicts & tradeoffs

Bright screen	&	Long battery life
Lightweight	&	Sturdy
Multifunctional	&	Easy to learn
Powerful	&	Simple
High resolution	&	Fast loading
WYSIWYG	&	Usable by blind people



# 2 BEST KNOWN UI DESIGN GUIDELINES

---

## Shneiderman (1987); Shneiderman and Plaisant (2009)

- Strive for consistency
- Cater to universal usability
- Offer informative feedback
- Design task flows to yield closure
- Prevent errors
- Permit easy reversal of actions
- Make users feel they are in control
- Minimize short-term memory load

## Nielsen and Molich (1990)

- Consistency and standards
- Visibility of system status
- Match between system and real world
- User control and freedom
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use
- Aesthetic and minimalist design
- Help to recognize, diagnose, and recover from errors
- Provide online documentation and help



# OTHER UI DESIGN GUIDELINES

STONE ET AL. (2005)

---

- › **Visibility:** First step to goal should be clear
- › **Affordance:** Control suggests how to use it
- › **Feedback:** Should be clear what happened or is happening
- › **Simplicity:** As simple as possible and task-focused
- › **Structure:** Content organized sensibly
- › **Consistency:** Similarity for predictability
- › **Tolerance:** Prevent errors, help recovery
- › **Accessibility:** Usable by all intended users, despite handicap, access device, or environmental conditions



# ACCESSIBILITY GUIDELINES

## W3C WEB ACCESSIBILITY INITIATIVE WAI

### > Focus on

- **Perceivable information and user interface**

- Text alternatives for non-text content
- Captions and other alternatives for multimedia
- Content can be presented in different ways
- Content is easier to see and hear

- **Operable user interface and navigation**

- Functionality is available from a keyboard
- Users have enough time to read and use the content
- Content does not cause seizures and physical reactions
- Users can easily navigate, find content, and determine where they are
- Users can use different input modalities beyond keyboard

- **Understandable information and user interface**

- Text is readable and understandable
- Content appears and operates in predictable ways
- Users are helped to avoid and correct mistakes

- **Robust content and reliable interpretation**

- Content is compatible with current and future user tools

<https://www.w3.org/WAI/fundamentals/accessibility-principles/#standards>



# OTHER UI DESIGN GUIDELINES

JOHNSON (2007)

---

## › Focus on the users and their tasks, not on the technology

- Consider function first (conceptual model), presentation later
- Conform to the users' view of the task
- Design for the common case
- Don't complicate the users' task
- Facilitate learning: consistency!
- Deliver information, not just data
- Design for responsiveness

Johnson, J. (2007). GUI bloopers 2.0: Common user interface design don'ts and dos





# INTERACTION PATTERNS

Jenifer Tidwell (2010) Designing Interfaces: Patterns for Effective Interaction Design



# 12 INTERACTION PATTERNS

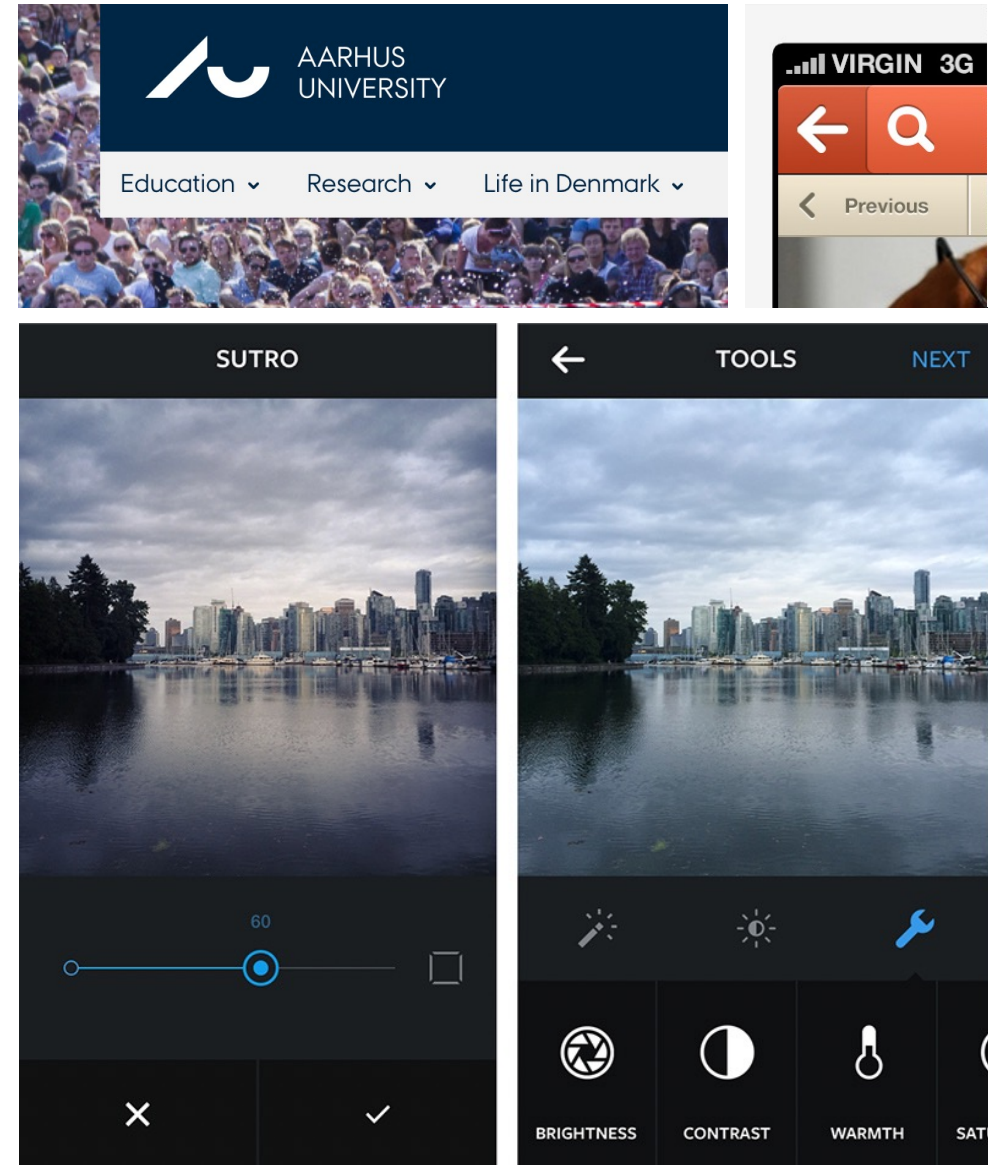
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1. Safe exploration
2. Instant gratification
3. Satisficing
4. Changes in midstream
5. Deferred choices
6. Incremental construction
7. Habituation
8. Spatial memory
9. Prospective memory
10. Streamlined repetition
11. Keyboard only
12. Other people's advice



# 1. SAFE EXPLORATION

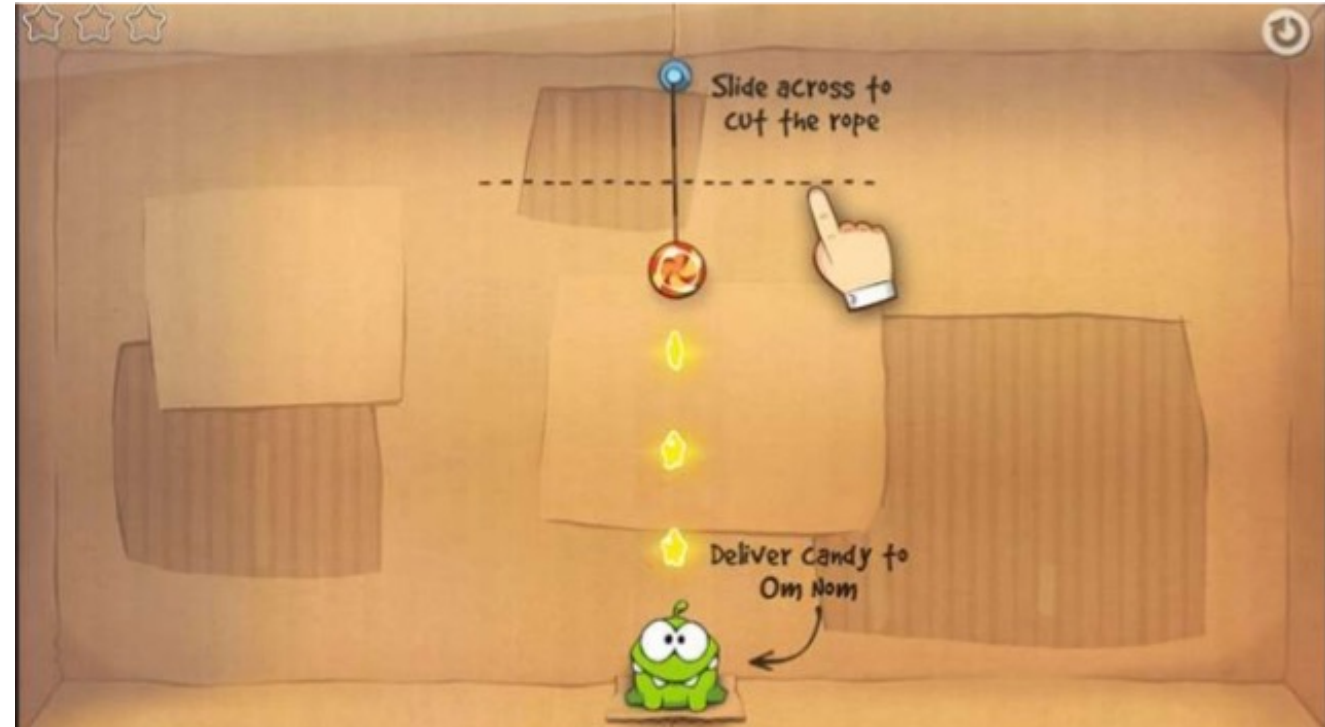
*"let me explore without getting lost or in trouble"*



# 2. INSTANT GRATIFICATION

---

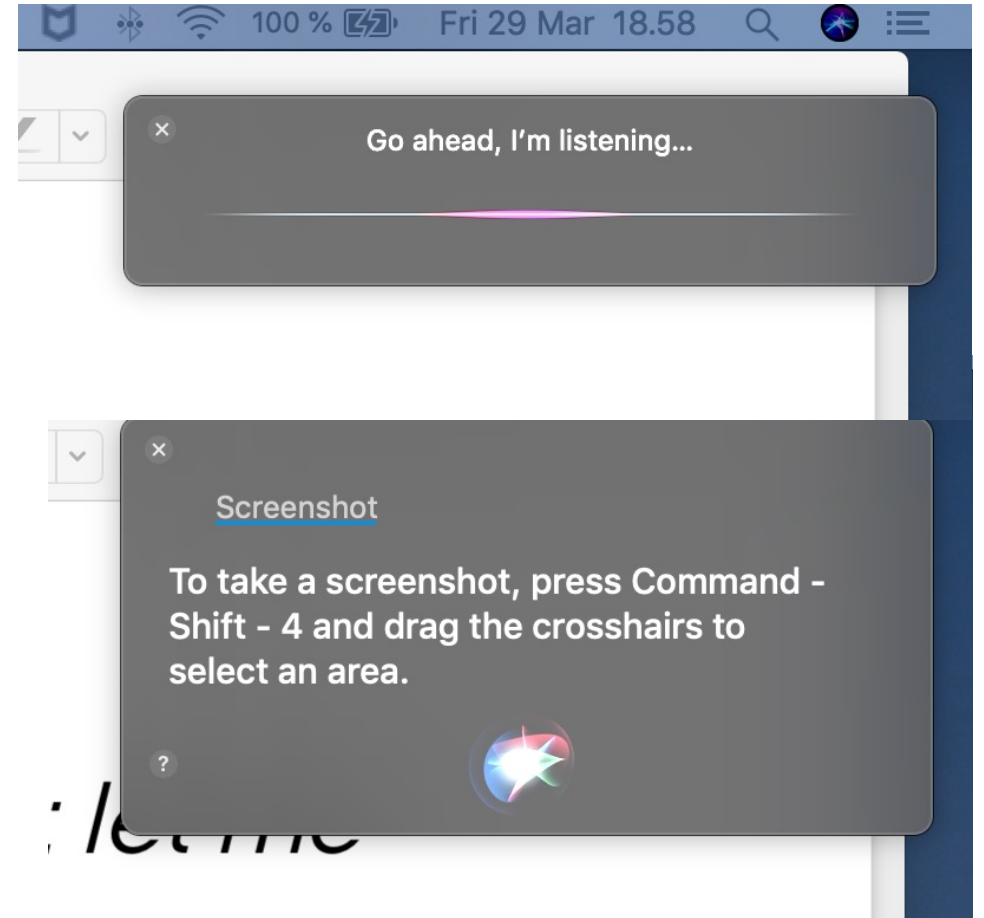
*"I wan't to accomplish something NOW, not later"*



# 2. INSTANT GRATIFICATION

---

*"I want to accomplish something NOW, not later"*



# 3. SATISFICING (SATISFYING + SUFFICE)

*"this is good enough, I don't want to spend time learning it better"*

airbnb

Finland | Mar 17 - 24, 2025 (±7) | Add guests

Airbnb your home

Your search | National parks | Arctic | Beach | Countryside | Skiing | Cabins | Rooms | Lakefront | Amazing views | Ski-in/out | Tiny homes | Farms | Vineyards | Beachfront | Amazing

Over 1,000 places

**Guest favorite**

**Chalet in Kittilä** ★ 4.9 (60)  
Winter Wonderland - near skiing & amenities  
6 beds  
Mar 17 - 24  
3,919 kr DKK night · 27,428 kr DKK total

**Guest favorite**

**Cabin in Rovaniemi** ★ 4.95 (63)  
Ollero Eco Lodge (inc. a glass igloo)  
4 beds  
Mar 17 - 24  
5,447 kr DKK 4,977 kr DKK night · 34,836 kr DKK total

**Superhost**

**Treehouse in Utsjoki** ★ 5.0 (15)  
Hillagamma, the unique beauty in the...  
3 beds  
Mar 12 - 17  
2,156 kr DKK night · 10,780 kr DKK total

Map showing prices for various locations in Finland:

- 2,156 kr DKK
- 806 kr DKK
- 1,358 kr DKK
- 3,561 kr DKK
- 3,919 kr DKK
- 1,295 kr DKK
- 4,977 kr DKK
- 2,634 kr DKK
- 948 kr DKK
- 1,073 kr DKK



# 3. SATISFICING (SATISFYING + SUFFICE)

---

This means several things that interaction designers should consider:

- Use “calls to action” in the interface: **give the user directions** what to do first, type here or drag things here, and tap the button to begin...
- Make **labels short, plainly worded**, and quick to read (includes menu buttons)
- **Use the layout** of the interface **to communicate the meaning**
- Make it easy to move around the interface, the **back button!**
- **Avoid visual complexity**, as novice users look for the first thing that might work



# 4. CHANGES IN MIDSTREAM

---

*"I changed my mind  
about what I was doing"*



# 5. DEFERRED CHOICES

*"I don't want to answer that now, let me finish later"*

The screenshot shows the Facebook 'Find Your Friends' interface. At the top, there's a blue navigation bar with the Facebook logo and a user profile 'Svend'. Below this, a progress indicator shows 'Step 1 Find your friends' and 'Step 2 Add Profile Pic'. The main content area is titled 'Are your friends a...' and includes a modal dialog box titled 'Find Your Friends'. The dialog box contains the text: 'People who complete this step usually find up to 20 friends, and Facebook is a lot more fun with friends. Are you sure you want to skip this step?' and two buttons: 'Skip' and 'Find Friends'. Below the dialog, there's a section for 'Outlook.com' with a 'Your Email' input field and a 'Find Friends' button. Further down, there are sections for 'Yahoo!', 'Skype', and 'Other Email Service', each with a 'Find Friends' button. At the bottom right, there's a 'Skip this step' link. A lightbulb icon at the bottom left of the screenshot indicates a tip: 'Facebook stores your contact list for you so that we can help you reach more people and connect friends. Learn more.'



# 6. INCREMENTAL CONSTRUCTION

*“let me change this.  
No that doesn’t look right;  
let me change it again.  
That looks better”*

The screenshot shows a Microsoft Word document titled "User Preferences on Virtual Avatar Design of the Other User in AR and VR Based Telexistence System". The document content includes an abstract, author keywords, ACM classification keywords, and an introduction. A context menu is open over a highlighted sentence in the introduction: "Therefore, different kinds of collaborative telexistence systems with virtual current document is proposed in prior research (e.g., [1, 6, 2]).". The menu options include Cut, Copy, Paste, Reply To Comment, Delete Comment, Resolve Comment, Update Field, Toggle Field Codes, Font..., Paragraph..., New Comment, and Services. The status bar at the bottom indicates "Page 1 of 14", "24 of 7879 words", "English (United States)", and "147%".

**ABSTRACT**  
Telexistence enables remotely located users to connect and communicate through technology. Developments in both augmented and virtual reality technologies allow for new possibilities in visualizing users in telexistence systems. In this paper, instead of studying self-presentation, we investigate how physically remotely located users want to see others visualized as virtual avatars in a) mobile augmented reality and b) head mounted display virtual reality while conducting a collaborative task remotely. We describe the systematic design of 36 virtual avatar examples for both use cases, and present a survey with 43 respondents. We report participants' preferences regarding virtual avatar appearance and show that a photorealistic full body human avatar is preferred for presenting users in both augmented reality and virtual reality due its human like representation and affordances for interaction. However, in augmented reality, a hologram full body avatar was popular as it gives realistic representation of a person without being confused with a real person. We propose design suggestions for virtual avatar design for telexistence systems.

**Author Keywords**  
User interface design; user experience design; anticipated user experience, virtual avatar; telexistence system; virtual reality; augmented reality.

**ACM Classification Keywords**  
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**INTRODUCTION**  
Telexistence was introduced in the 1980s by Tachi [45] and was defined to mean: "the general technology that allows a human being to experience a real-time sensation of being in a place other than his/her actual location and to interact with the remote environment, which maybe real, virtual or a combination of both". Telexistence allows physically remotely located people to work, travel, shop, and spend time together [15, 35, 44], as users can exist remotely either in a virtual environment (VE) or a real space through a virtual environment. Telexistence is often connected with telepresence [28], which is a very similar concept, but with a narrower scope as it does not include telexistence in virtual environments or in a real environment through a virtual environment. Therefore, many earlier telepresence videobased telepresence systems allows people to take part in workspace related remote collaborative tasks [Rea et al. 2014], attend conferences [Neustaeder et al. 2016] and be part of family life [Inkpen et al. 2013] in cases of accessibility challenges. While the first telexistence systems, such as [44], were operated through remote robots equipped with different types of sensors and displays, the recent technological development of virtual reality (VR) and augmented reality (AR) gear [43] has enabled telexistence easily modified to fit different use cases and users. Therefore, different kinds of collaborative telexistence systems with virtual current document is proposed in prior research (e.g., [1, 6, 2]).

Prior studies have visualized as virtual avatars [1, 6, 29, 14, 22, 25, 36] lack in systematic design studies [9, 12, 17, 22], of the studies are quite on how people want rather than on how to users. In addition, recent both head mounted VR allow for graphically even photorealistic virtual systems, enabled through avatars created via platforms [47]. Prior research has creation, but have not systematically investigated avatar designs, such as how much avatar body should be shown and what kind on visual avatar representation of other user is preferred in AR and VR based telexistence system. This paper aims to address these open research questions.

Next in this paper, we introduce the prior work on avatars and their designs. Then, we explain the implemented telexistence system and thorough systematic design of comparable virtual avatar examples. We report on the results of a survey with 43 respondents to identify what kind of

**Microsoft Office User Deleted:** systems utilizing virtual avatars instead of robots [1, 14, 30]. Compared to robots, virtual avatars are cheap, scalable, can operate from almost anywhere on earth and on any terrain given their virtual nature, and their visual appearance can be

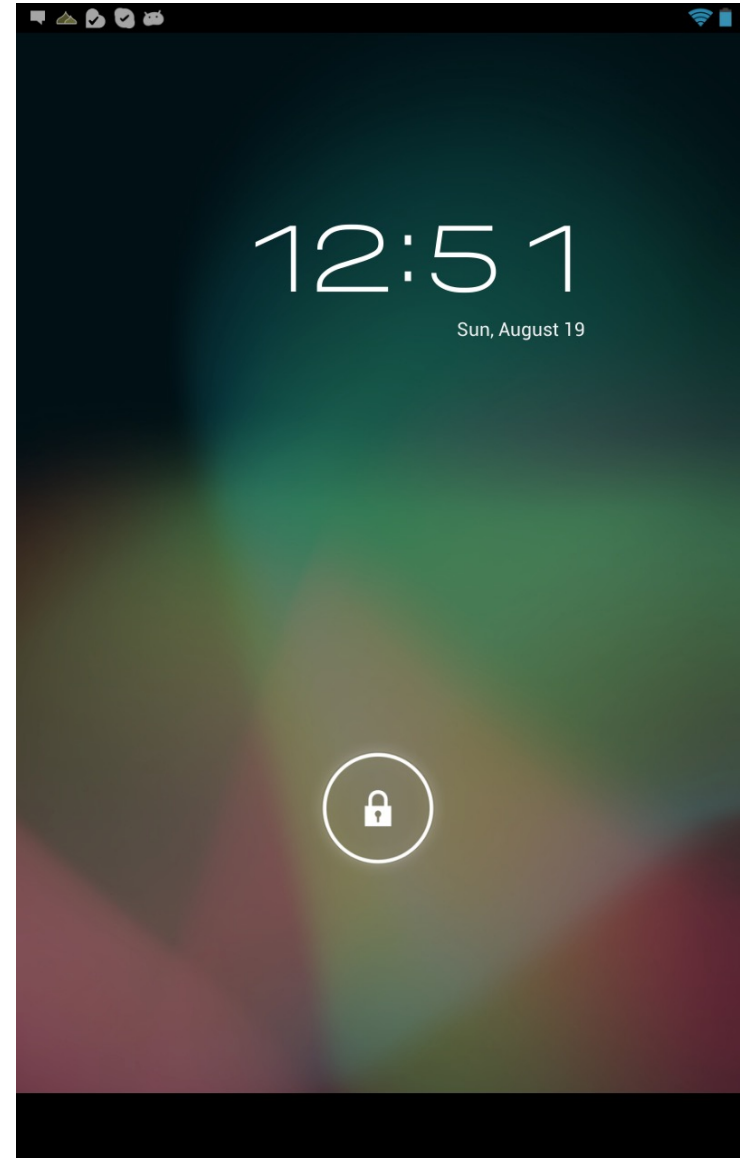


# 7. HABITUATION

---

*"that gesture works everywhere else,  
why doesn't it work here?"*

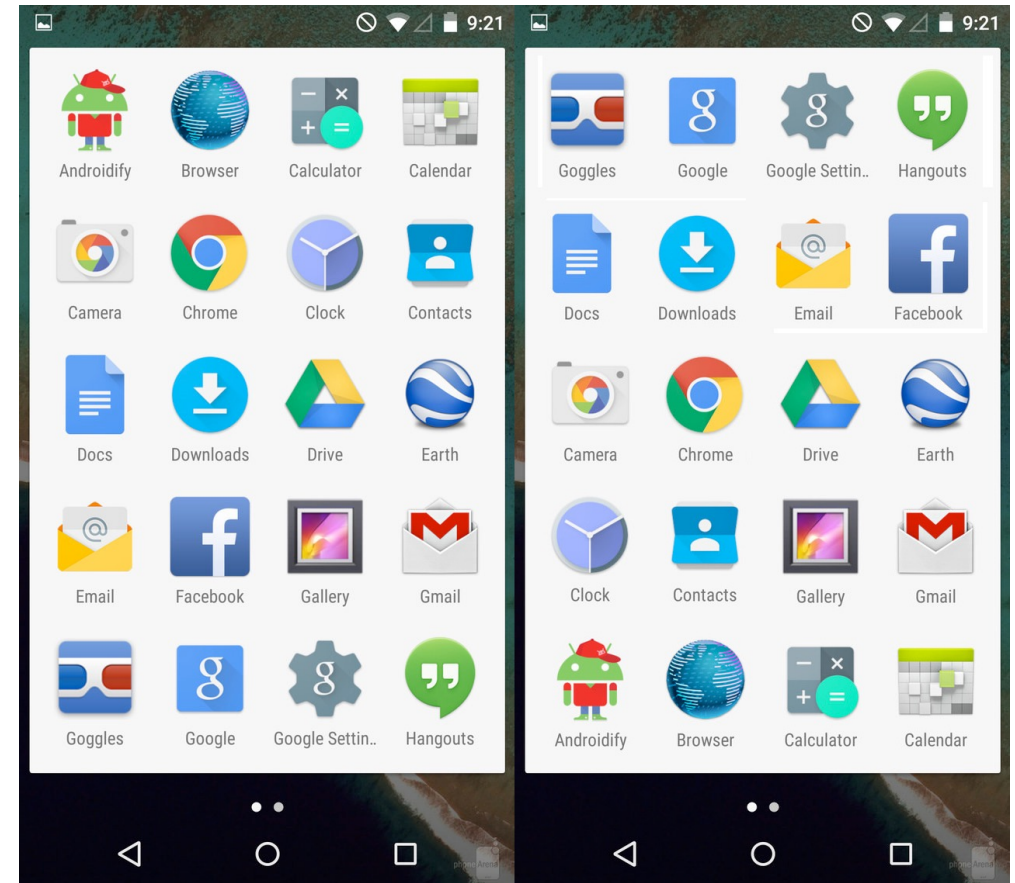
**Ctrl+C, Ctrl+V, Ctrl+X, Ctrl+S, Ctrl+A, Ctrl+Z**



# 8. SPATIAL MEMORY

---

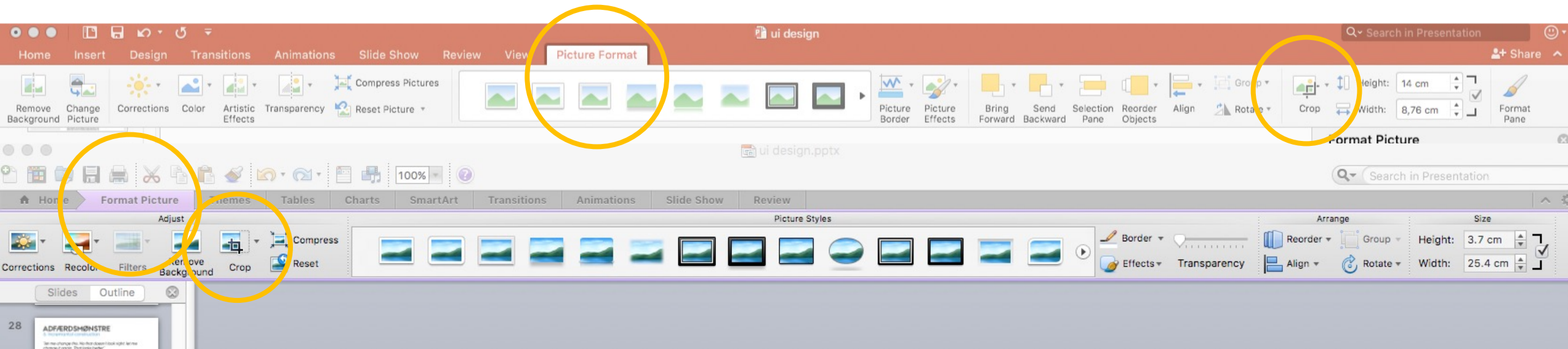
*"I swear that button was here a minute ago. Where did it go?"*



# 8. SPATIAL MEMORY

---

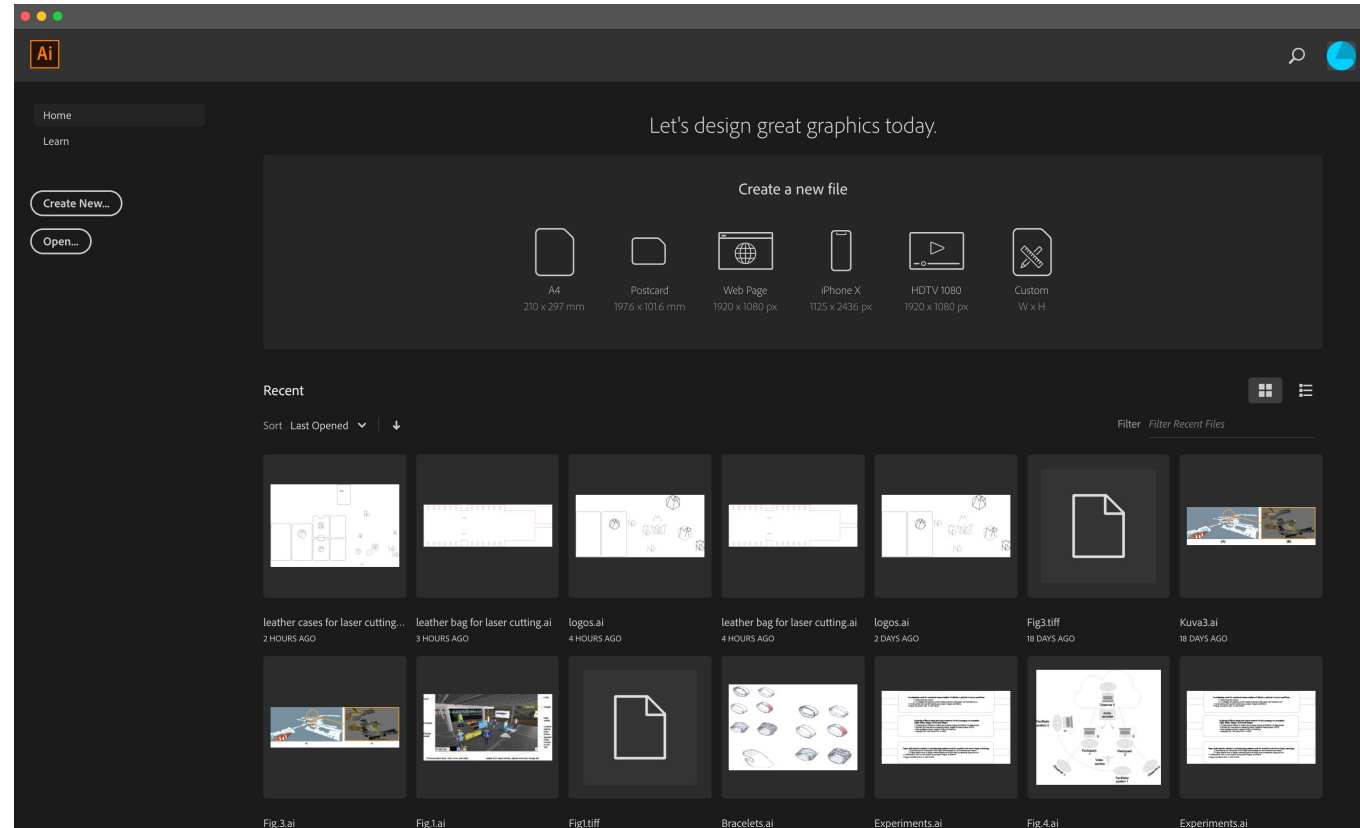
*"I swear that button was here a minute ago. Where did it go?"*



# 9. PROSPECTIVE MEMORY

---

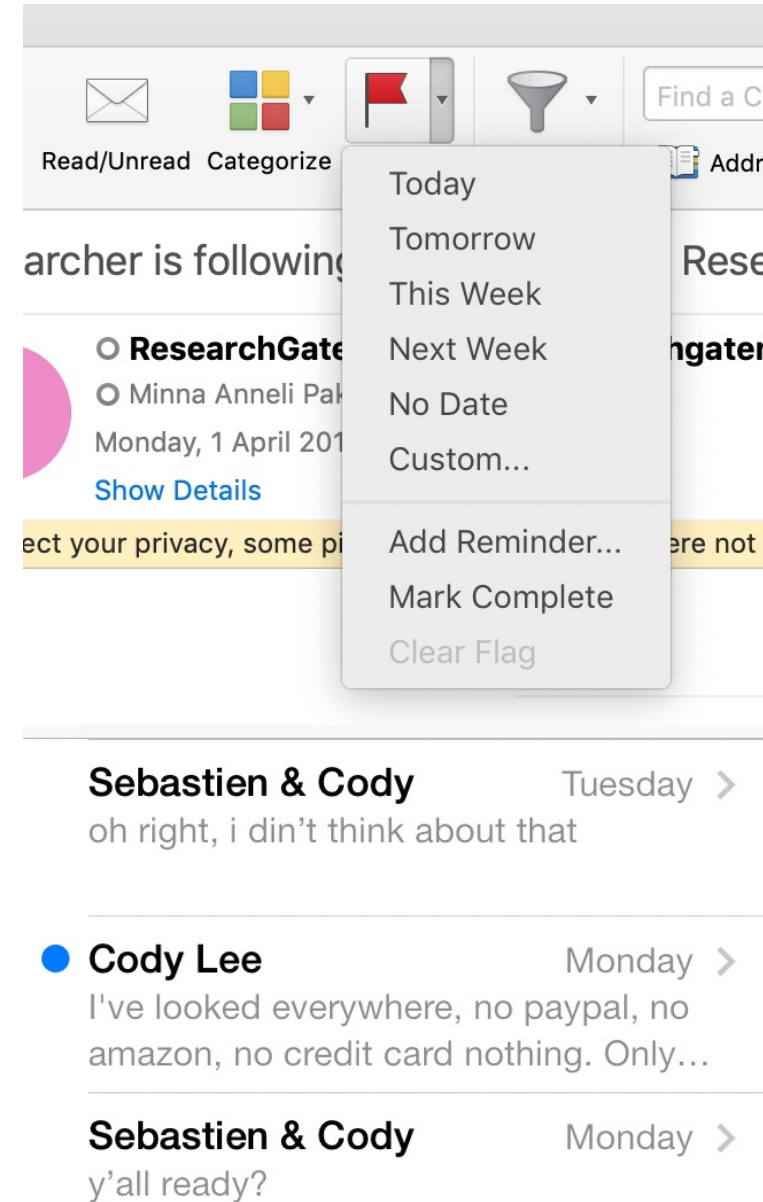
*"I am putting this here to remind myself to deal with this later"*



# 9. PROSPECTIVE MEMORY

---

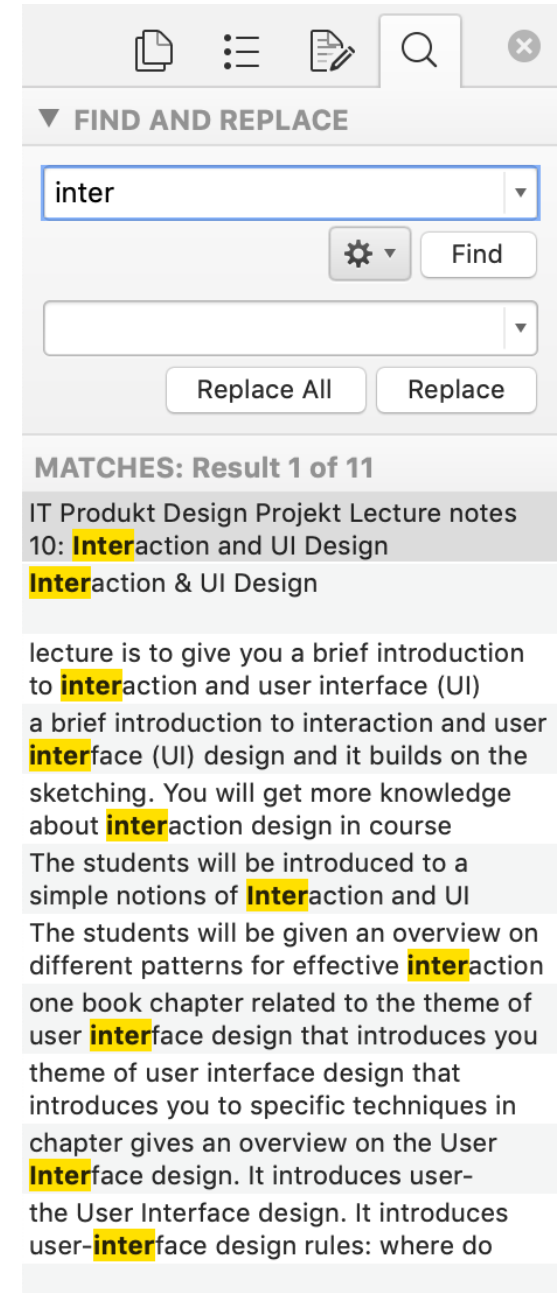
*"I am putting this here to remind myself to deal with this later"*



# 10. STREAMLINED REPETITION

---

*"I have to repeat this how many times?"*



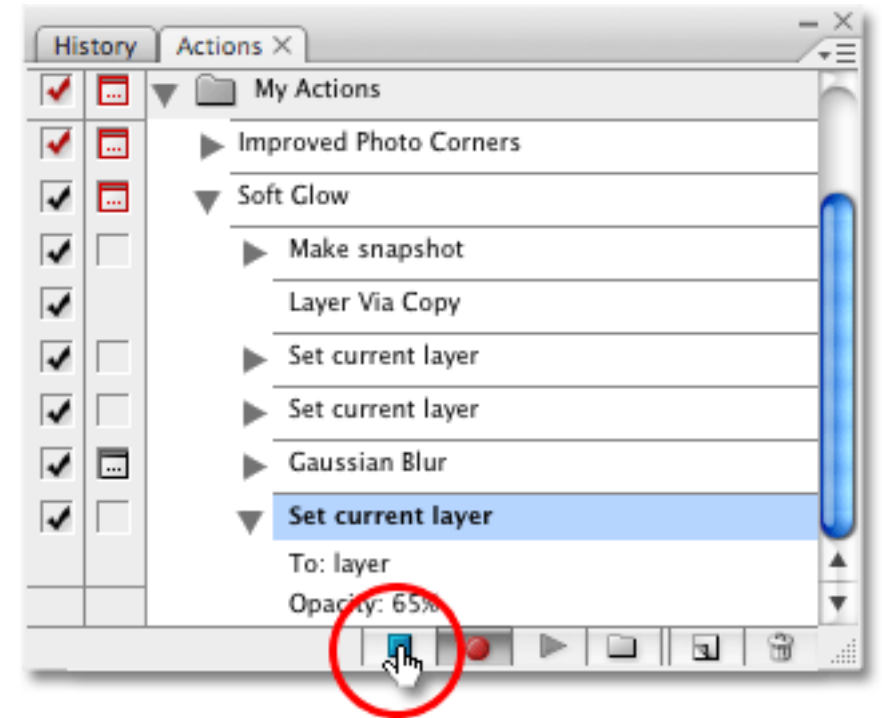
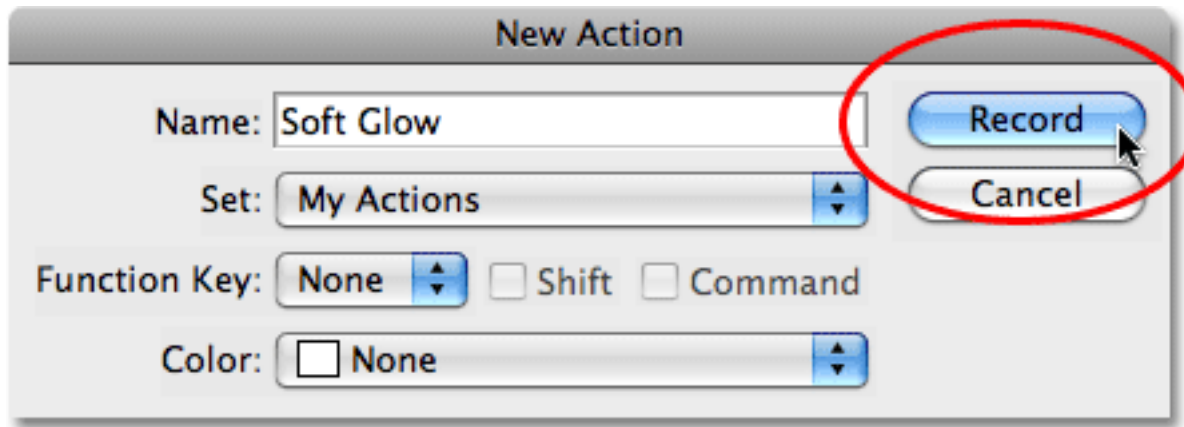
The screenshot shows a search interface with a search bar containing the text "inter". Below the search bar are buttons for "Find", "Replace All", and "Replace". The results section is titled "MATCHES: Result 1 of 11" and displays a list of text snippets where the word "inter" is highlighted in yellow. The snippets are:

- IT Produkt Design Projekt Lecture notes 10: **inter**action and UI Design
- inter**action & UI Design
- lecture is to give you a brief introduction to **inter**action and user interface (UI)
- a brief introduction to interaction and user **inter**face (UI) design and it builds on the sketching. You will get more knowledge about **inter**action design in course
- The students will be introduced to a simple notions of **inter**action and UI
- The students will be given an overview on different patterns for effective **inter**action
- one book chapter related to the theme of user **inter**face design that introduces you
- theme of user interface design that introduces you to specific techniques in
- chapter gives an overview on the User **inter**face design. It introduces user-
- the User Interface design. It introduces user-
- user-**inter**face design rules: where do



# 10. STREAMLINED REPETITION

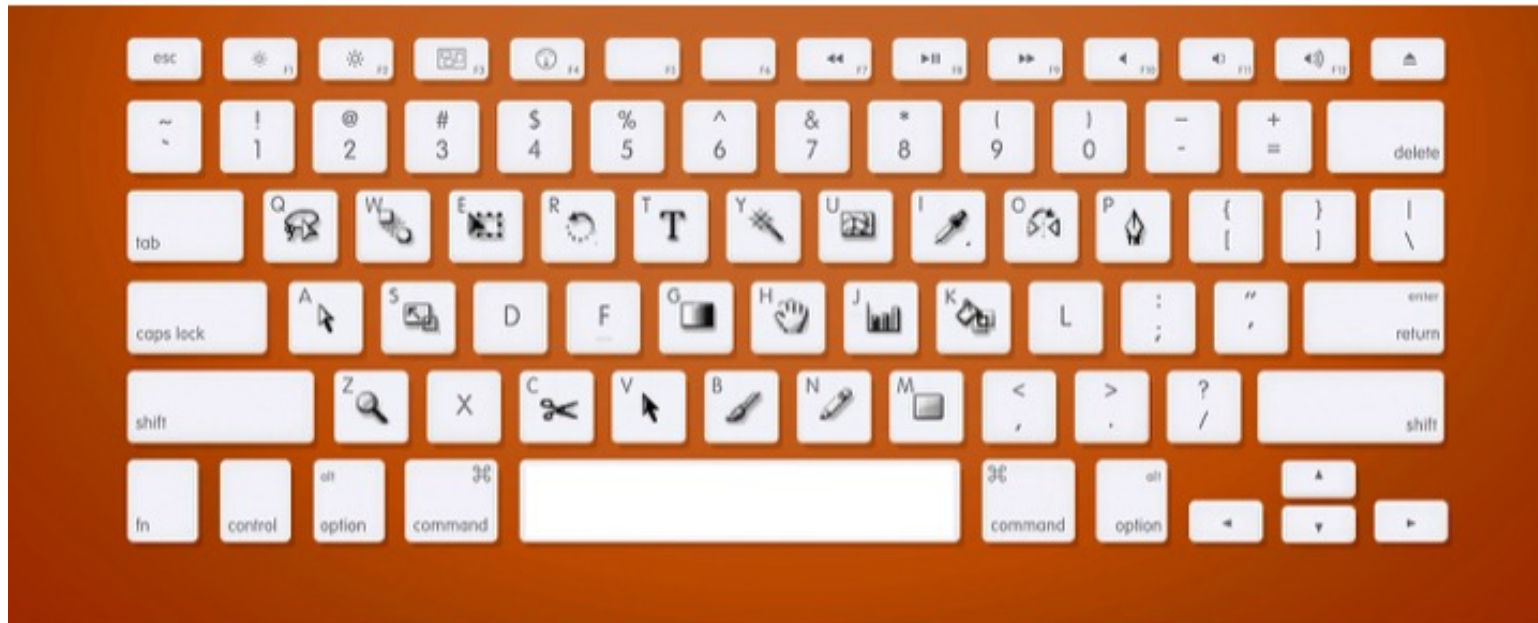
*"I have to repeat this how many times?"*



# 11. KEYBOARD ONLY

---

*"Please don't make me use a mouse"*



# 12. OTHER PEOPLE'S ADVICE

*“What did everyone else say about this”*

**GLO Hotel Art**  
★★★★ Hotel  
Helsinki, 1.0 miles to Uspenskin katedraali  
8.3 Very good (7961 reviews)  
Extremely clean · Excellent building

Booking.com £121  
Hotels.com £118  
TravelUp £121  
More deals from £118

~~£223~~ -47%  
Trip.com  
**£118**  
Expedia  
2 nights for £235  
Free breakfast  
View Deal

Overview Photos Reviews Deals

### Rating overview

**8.3**  
trivago Rating Index<sup>®</sup> based on 7961 reviews from:  
Expedia(8.4/10), Hotels.com(8.4/10), Hotelsclick.com(8.6/10), Catch it!(7.4/10), Zoover(8.0/10), Other Sources(8.2/10)

Location	Excellent (8.5 / 10)
Rooms	Very good (8.0 / 10)
Service	Excellent (8.5 / 10)
Cleanliness	Excellent (8.8 / 10)
Value for money	Good (7.8 / 10)

+ Show more

### Recent guest reviews

Guest rating: All reviews (19)  
Languages: English (19)

Show reviews that mention: Breakfast Cleanliness Comfort Location Rooms Staff

Showing 19: All reviews, English [Reset all filters](#)

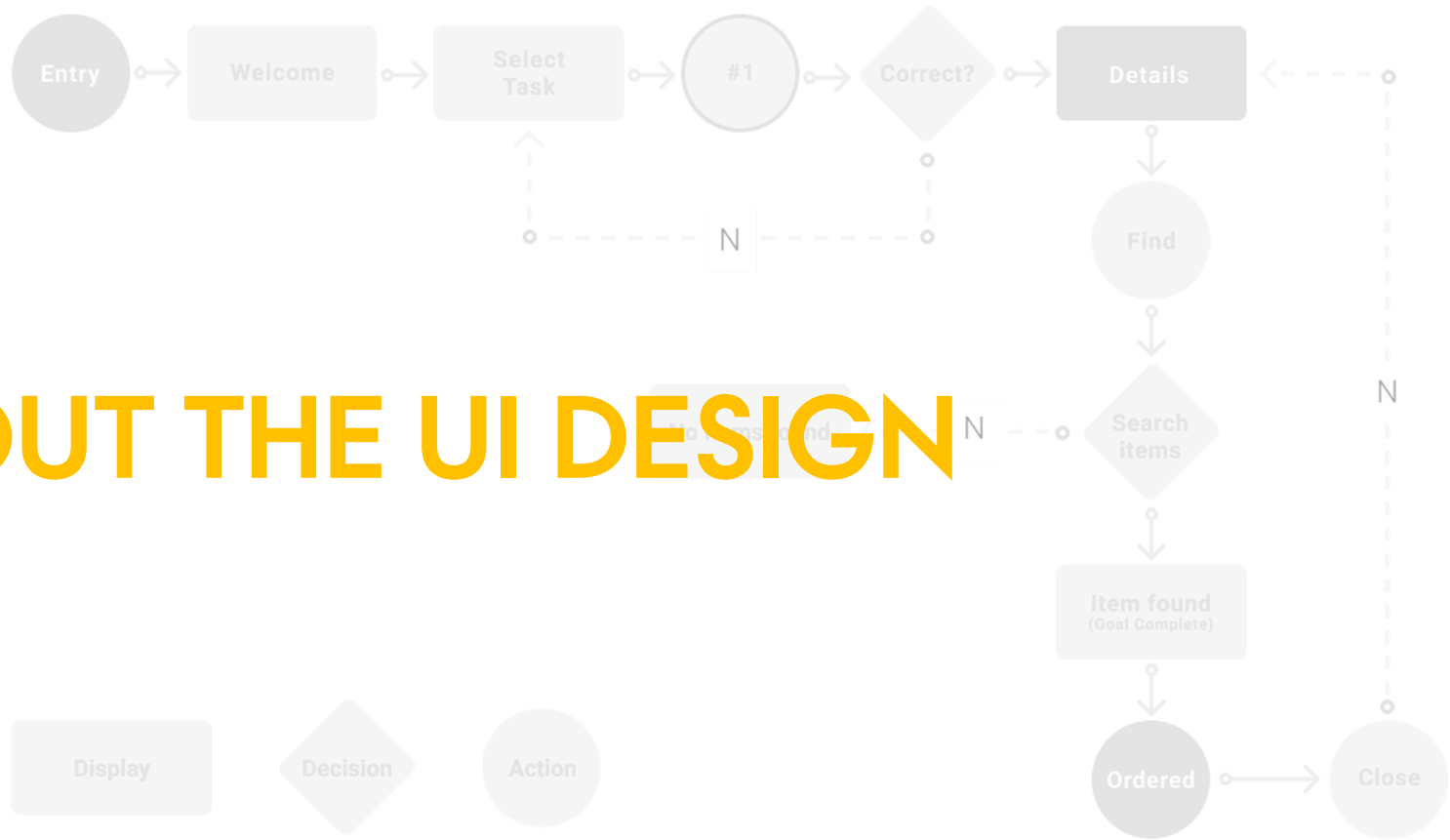
**10**  
Traveller  
Date of review: 19 March 2019  
Date of stay: March 2019  
Verified review from

A really well kept and centrally located property with very friendly staff. I was in Helsinki for a day and was able to walk to many sites from the hotel.

**10**  
Traveller  
Date of review: 17 March 2019  
Date of stay: March 2019  
Verified review from

Room was a little small. We had a big room before.





# A LITTLE ABOUT THE UI DESIGN PROCESS...



# UI DESIGN PROCESS

---

1. Strategy
2. Scope
3. Structure
4. Skeleton
5. Surface



# 1. STRATEGY

---

- › What is the problem you are trying to solve?
- › What are your user needs?
- › How is problem best solved?



<https://shft.run>



## 2. SCOPE

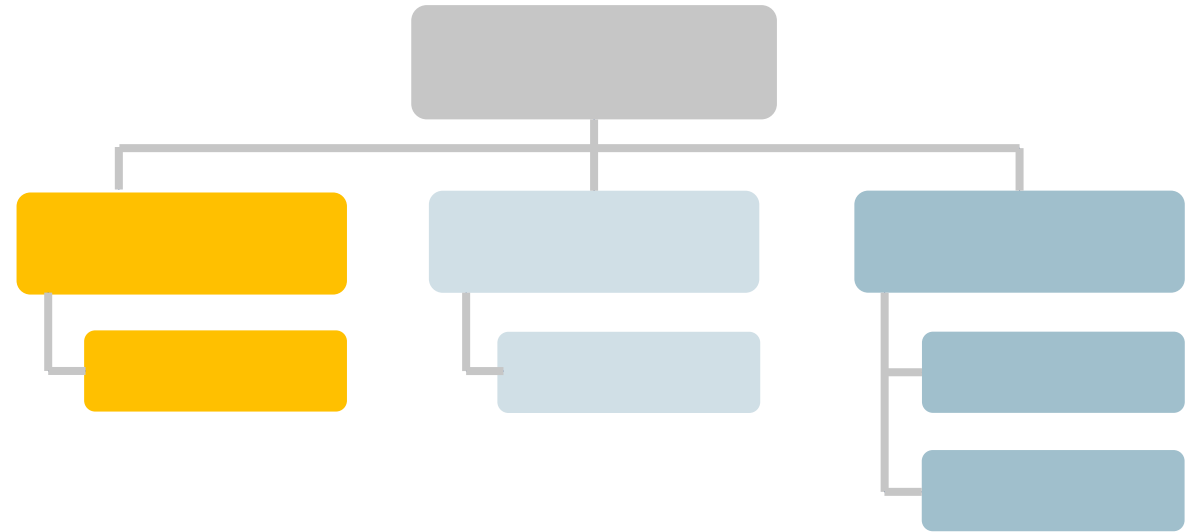
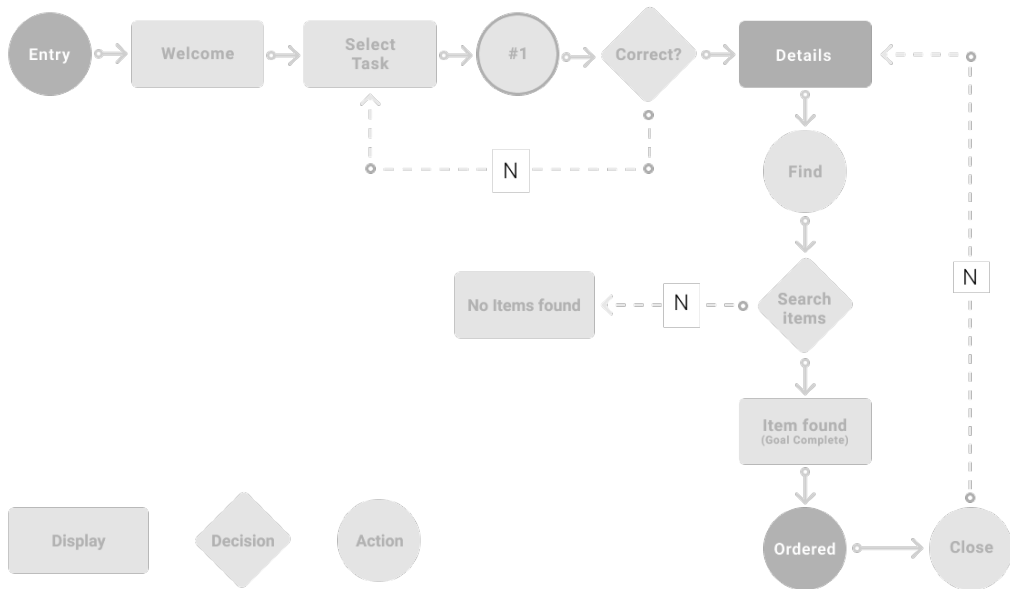
---

- › Specification: what should it do? And in what way?
- › Prioritised features: the most important elements (and why)?



# 3. STRUCTURE

- > **User flow**: what are the most logical steps for your users to take, to gratify their needs
- > **Information architecture**: how to structure your system



# 4. SKELETON

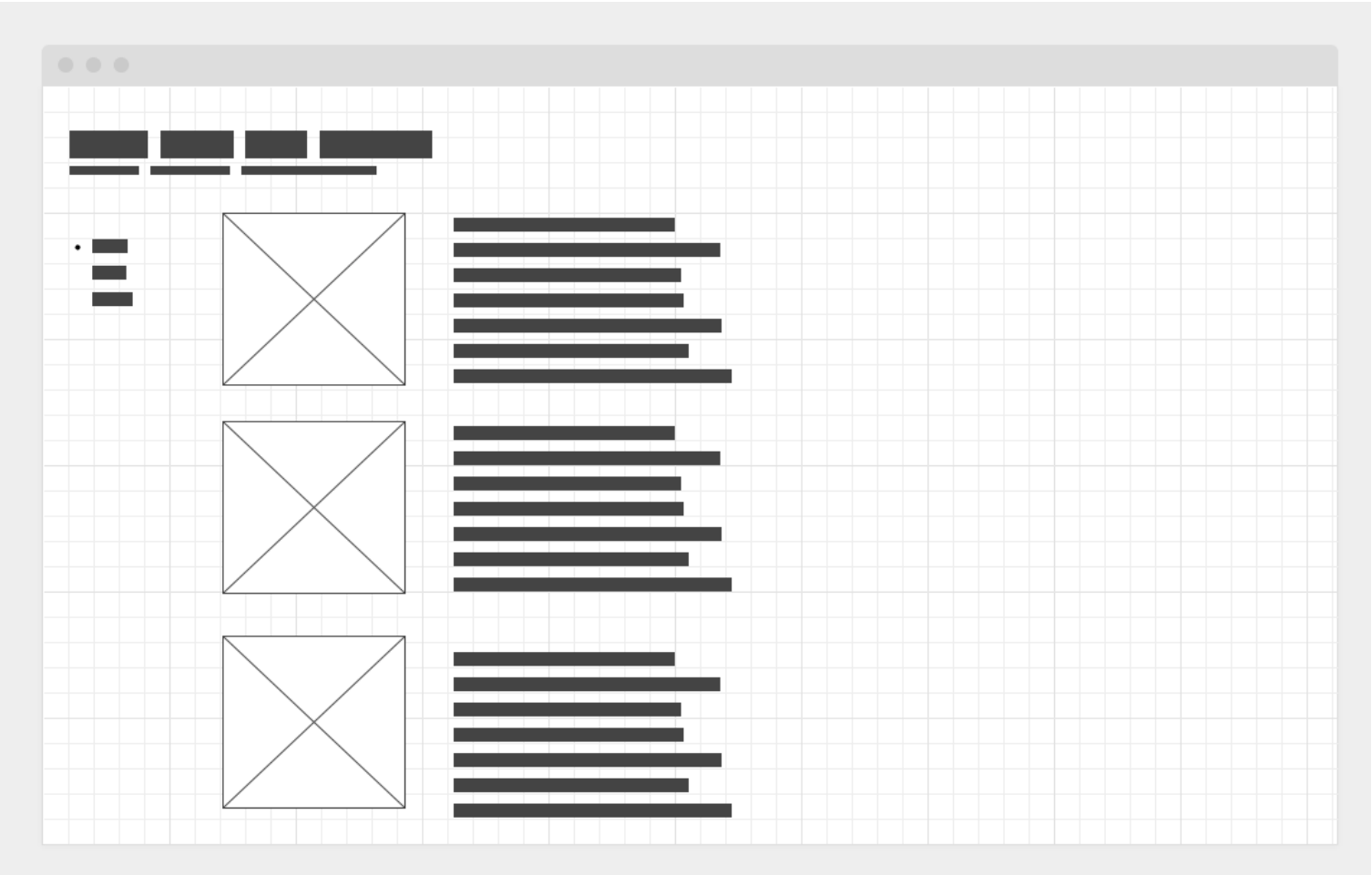
On the structure:

- › Placing elements in relation to one another
- › Presentation of the information -> facilitates understanding



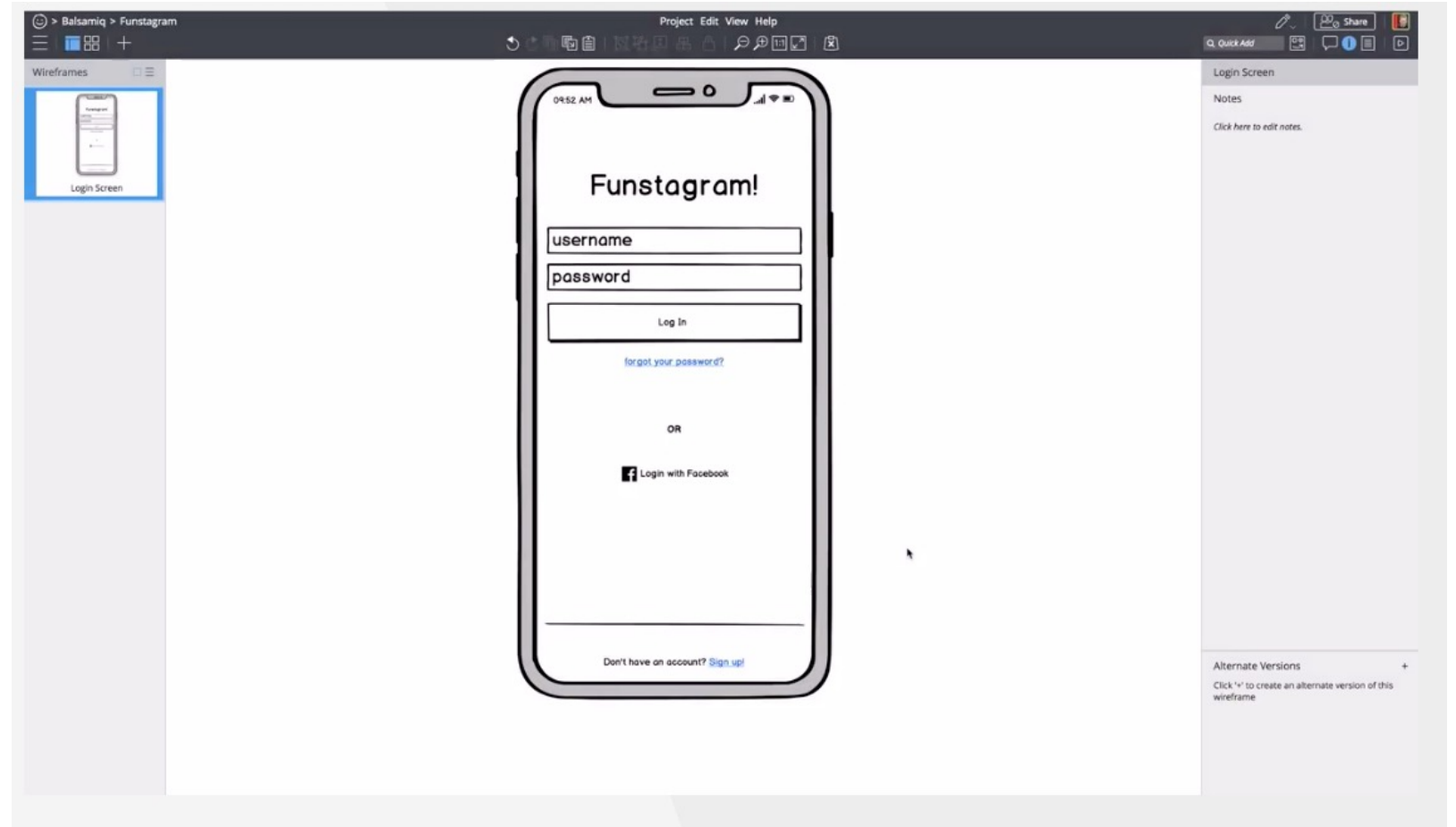
# WIREFRAMING TOOLS

—  
Wireframe.cc



# WIREFRAMING TOOLS

**Balsamic**



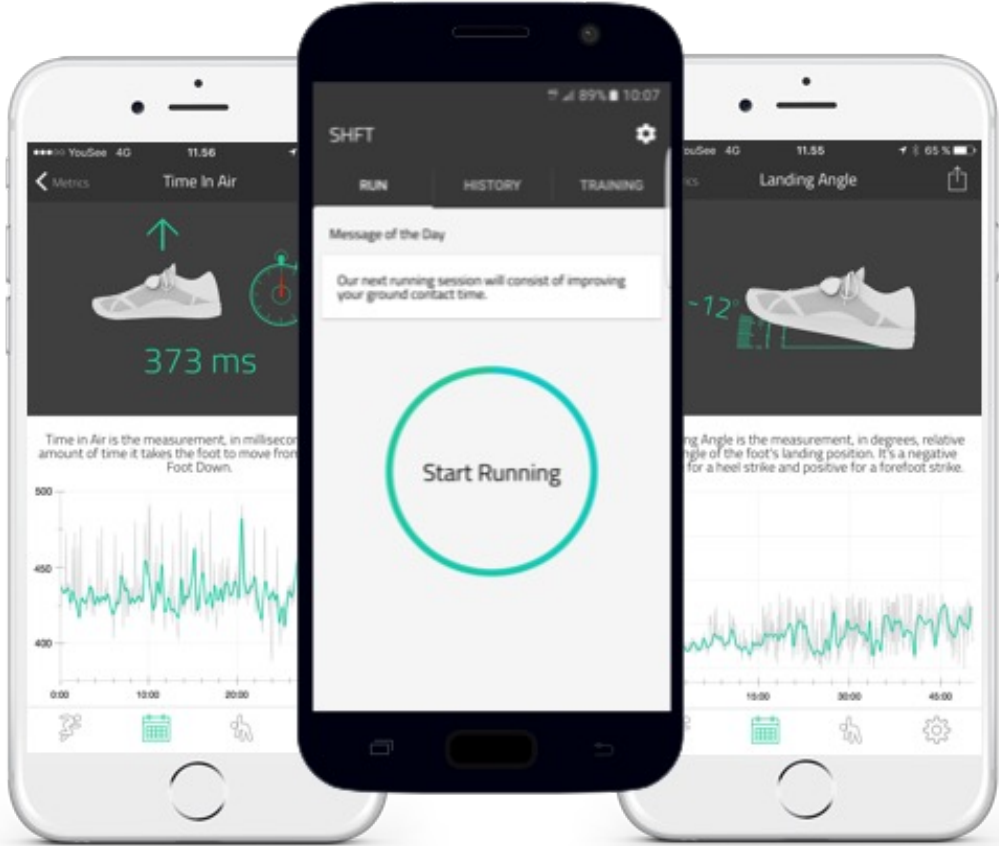
# 5. SURFACE

---

- › What should the interface look like?
- › How can the visual support the desired interaction?
- › How can it best communicate the brand, product, value, and functionality in one cohesive image?
- › What is the sensory experience desired?



# SURFACE



<https://shft.run>

# LAYOUT OF GUIs

## To avoid the common mistakes ...

- Uxplanet

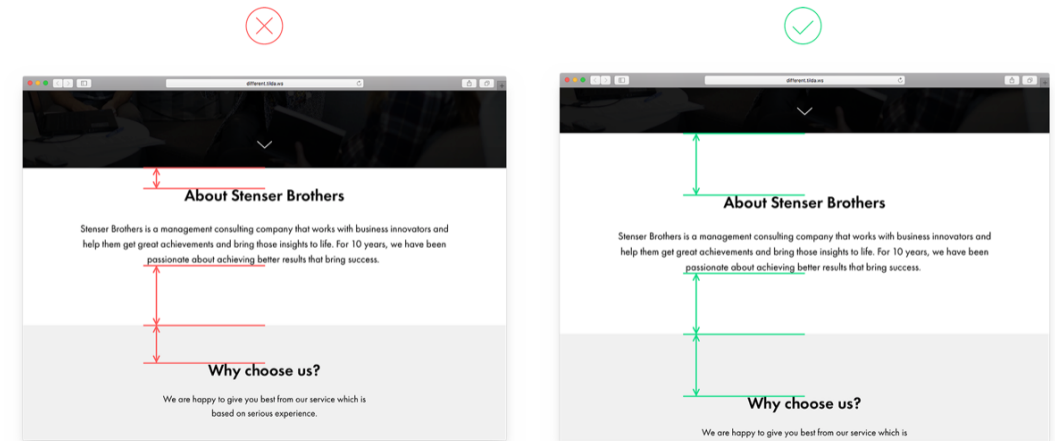
<https://uxplanet.org/common-webpage-design-mistakes-59eed9831k>

- Material design

<https://material.io/design/>

## 2. Uneven spaces between items on a webpage

Same-size spaces should be set around logical blocks. Otherwise your page will look messy, and users may not give equal consideration to each section.



### DON'T

Spaces of various widths look uneven and create an impression that company information is linked to the header although every block is equally important.

### DO

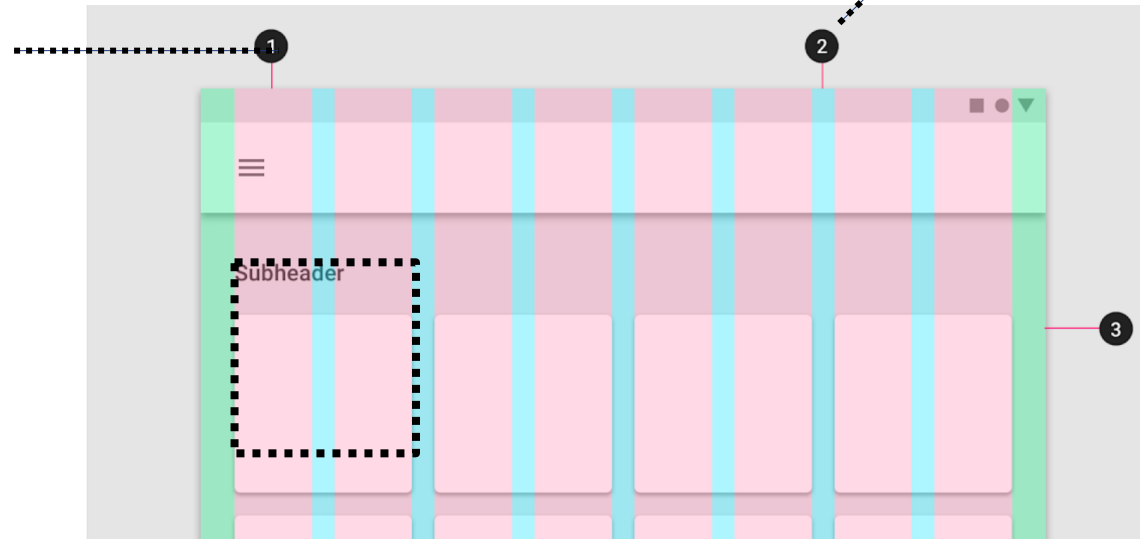
Same-size spaces around headings and the body copy help perceive the logical blocks as carrying equally important information.



# RESPONSIVE LAYOUT

## Columns, gutters, and margins

1. Columns:  
where the content  
is placed



2. Gutters:  
Spaces between  
columns

3. Margins:  
Space between  
content and left  
and right edges of  
the screen

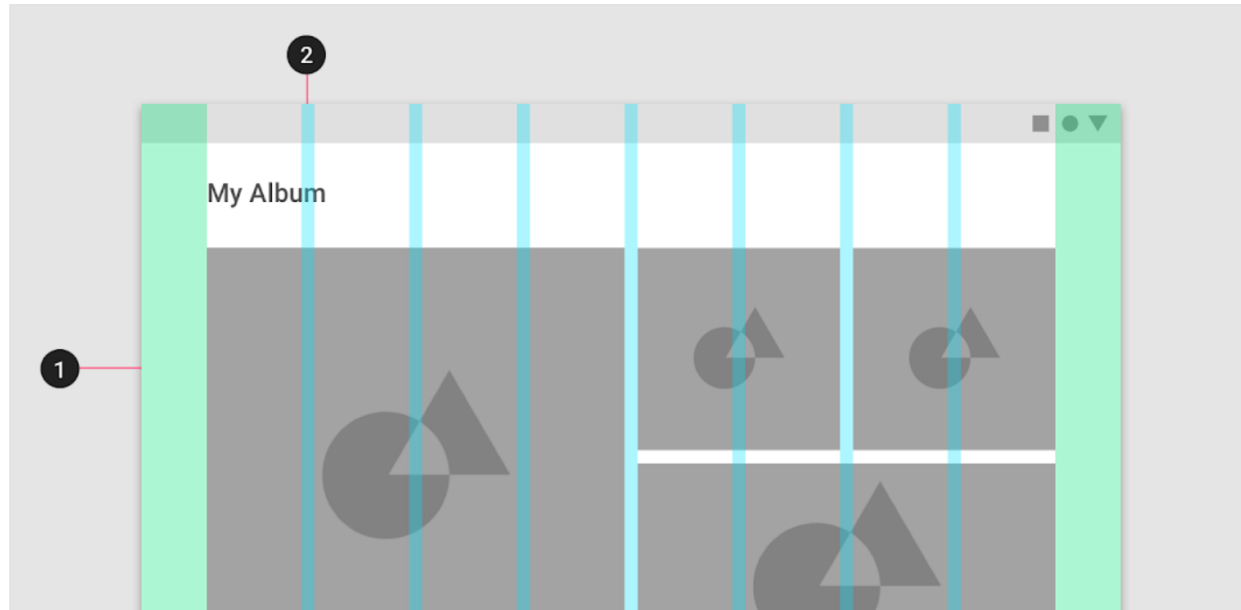
<https://material.io/design/layout/responsive-layout-grid.html#columns-gutters-and-margins>



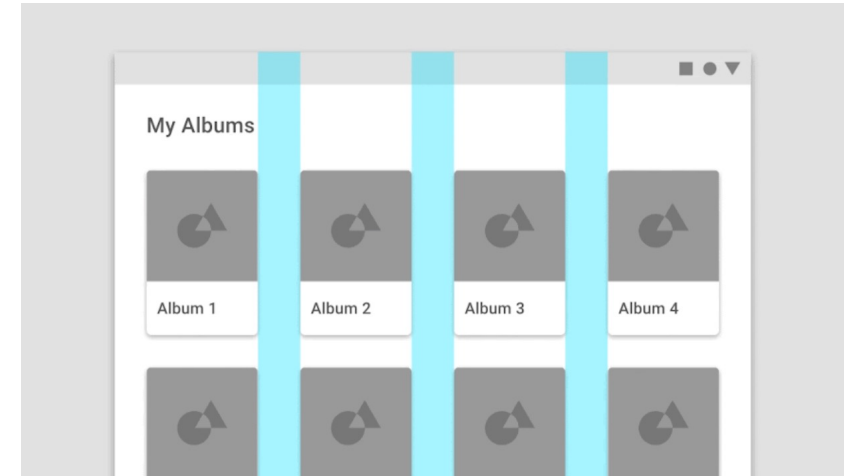
# RESPONSIVE LAYOUT

## Gutters and margins

Gutter & margins width can be different from each other



Larger gutter



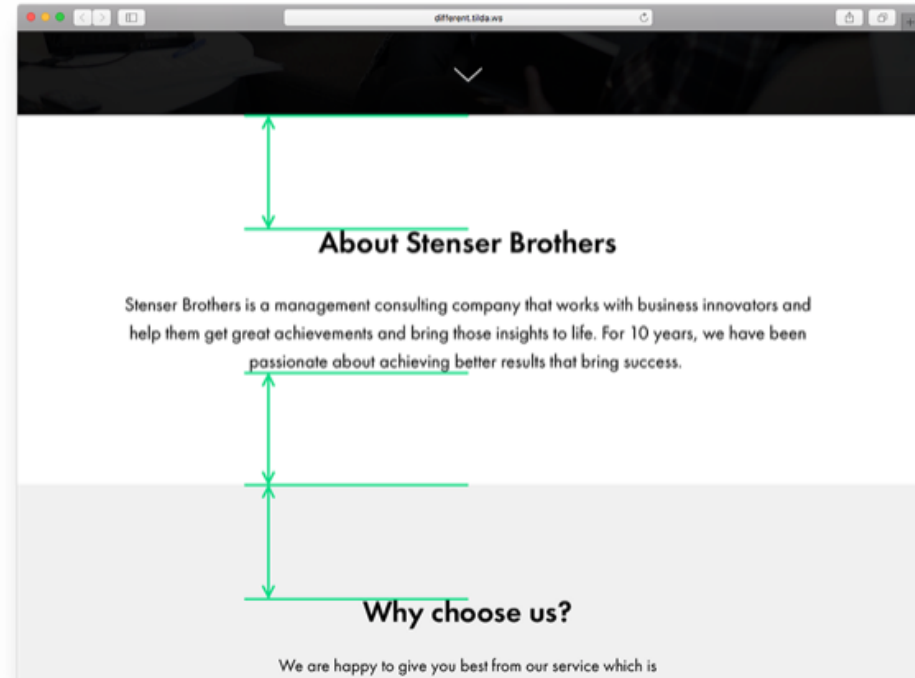
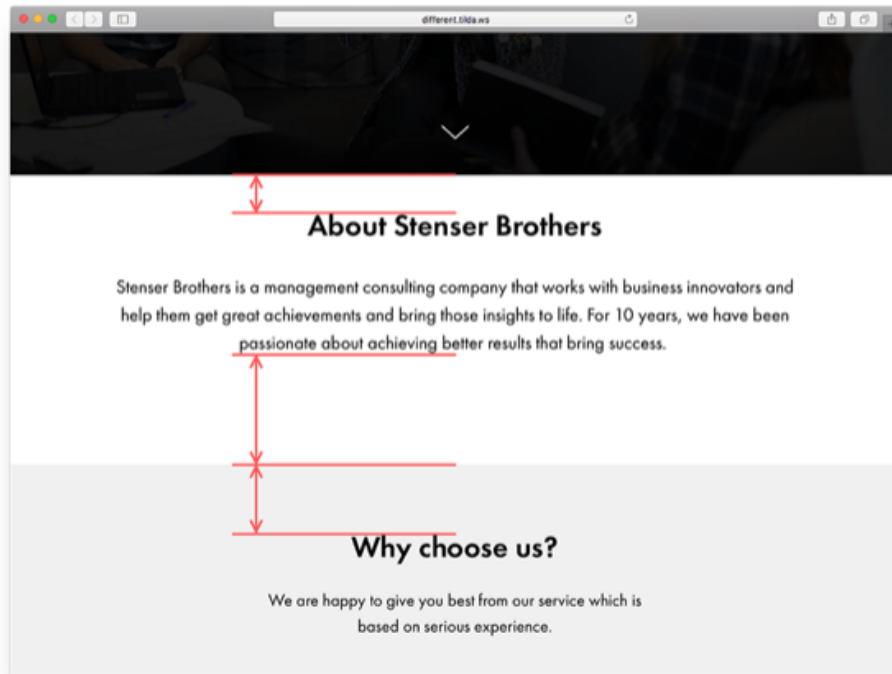
Gutter and margins for horizontal scroll



<https://material.io/design/layout/responsive-layout-grid.html#columns-gutters-and-margins>



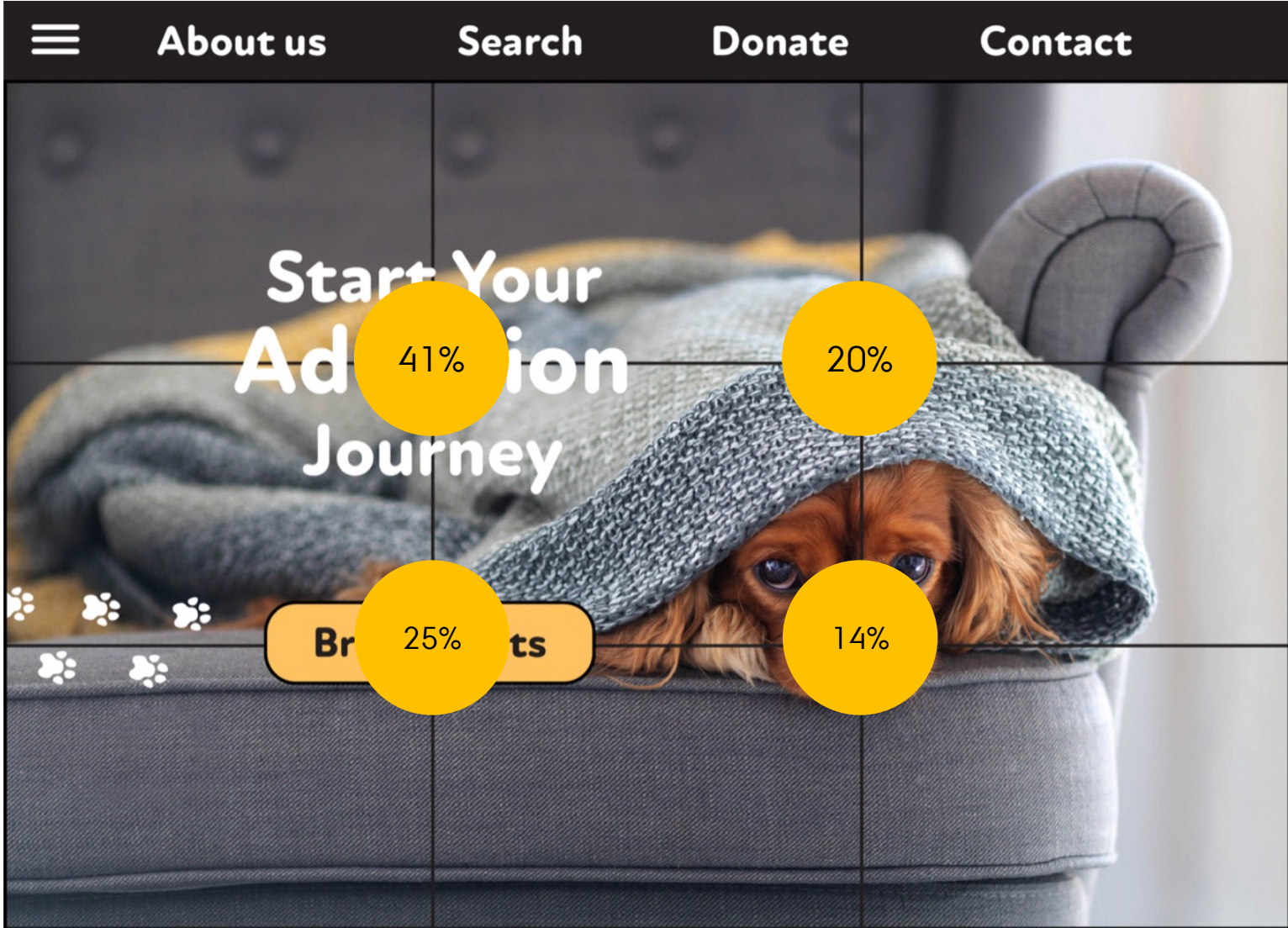
# EVEN SPACING



<https://material.io/design/layout/responsive-layout-grid.html#columns-gutters-and-margins>

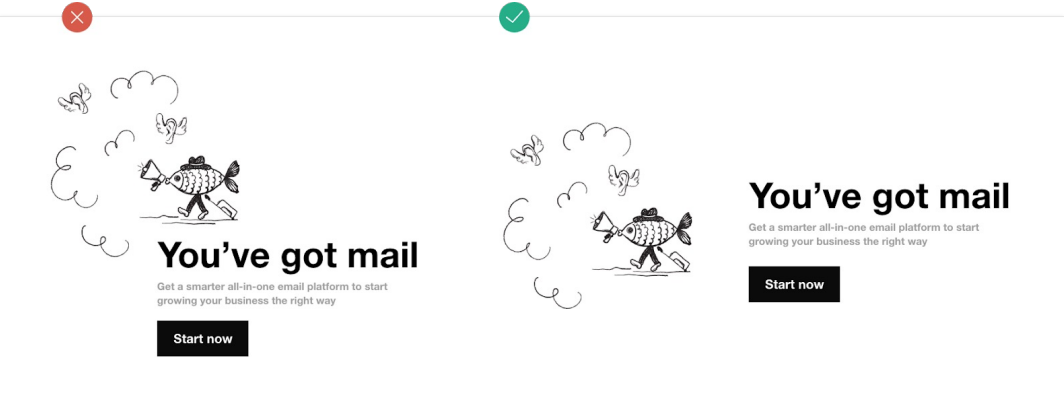


# RULE OF THIRDS



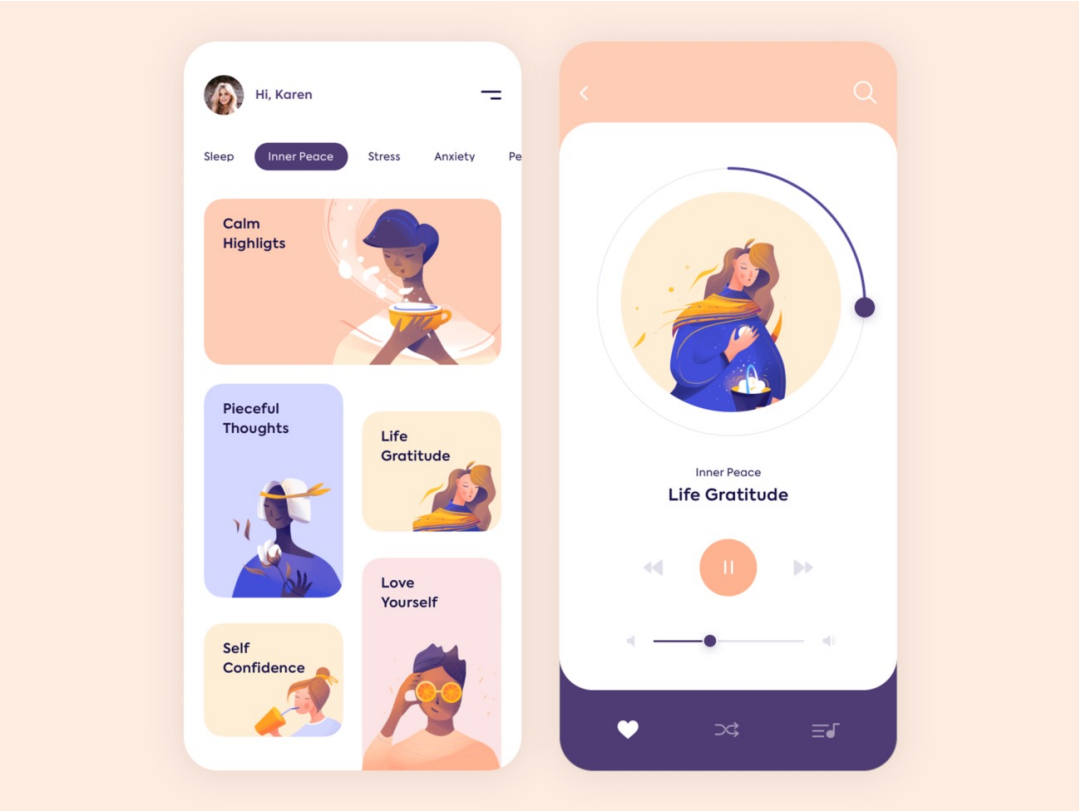
# WHITE SPACE

## Negative space



<https://medium.muz.li/the-effective-utilization-of-white-space-in-ui-design-c944009b2540>

<https://www.w3.org/WAI/tips/designing/>



<https://designwoop.com/minimalist-app-design>

# ORGANIZE AND PRIORITIZE THE CONTENTS

**Size:** The more important a headline is, the larger its font size should be

**Prominence:** The more important the headline or content, the higher up the page it should be

**Content Relationships:** Group similar content types by displaying the content in a similar visual style, or in a clearly defined area.



Mortgage Summary	
<b>\$1,840.59</b>	<b>\$662,611.22</b>
Monthly Payment	Total of 360 Payments
<b>\$318,861.22</b>	<b>Sep, 2037</b>
Total Interest Paid	Pay-off Date
<b>\$93,750.00</b>	<b>\$0.00</b>
Total Tax Paid	Total PMI Paid



Mortgage Summary	
Monthly Payment	<b>\$ 1,840.59</b>
Number of Payments	<b>360</b>
Total of Payments	<b>\$ 662,611.22</b>
Interest Total	<b>\$ 318,861.22</b>
Tax Total	<b>\$ 93,750.00</b>
PMI Total	<b>\$ 0.00</b>
Pay-off Date	<b>Sep 2037</b>

The dashboard features a sidebar menu with icons for OVERVIEW, ACCOUNTS, BILLS, and BUDGET. The main content area is divided into three sections: Accounts, Alerts, and a summary card. The Accounts section shows a total balance of \$12,132.49 and a list of accounts with their balances. The Alerts section contains three notifications about budget usage and ATM fees. The summary card displays the total balance.

Accounts	
<b>\$12,132.49</b>	
Checking	\$ 2,215.13
Home Savings	\$ 8,676.88
Car Savings	\$ 987.48
Vacation	\$ 253.00
Clothes	\$ 64.56
Food Funds	\$ 18.66

Alerts	
Heads up, you've used up 90% of your Shopping budget for this month.	
You've spent \$120 on ? Restaurants this week	
You've spent \$24 in ATM fees this month	
Your checking account is 4% higher than this time last month	

(Jeff Johnson, 2013)

# ORGANIZE THE CONTENTS PROPERLY

---

## Locate important things in predictable locations:

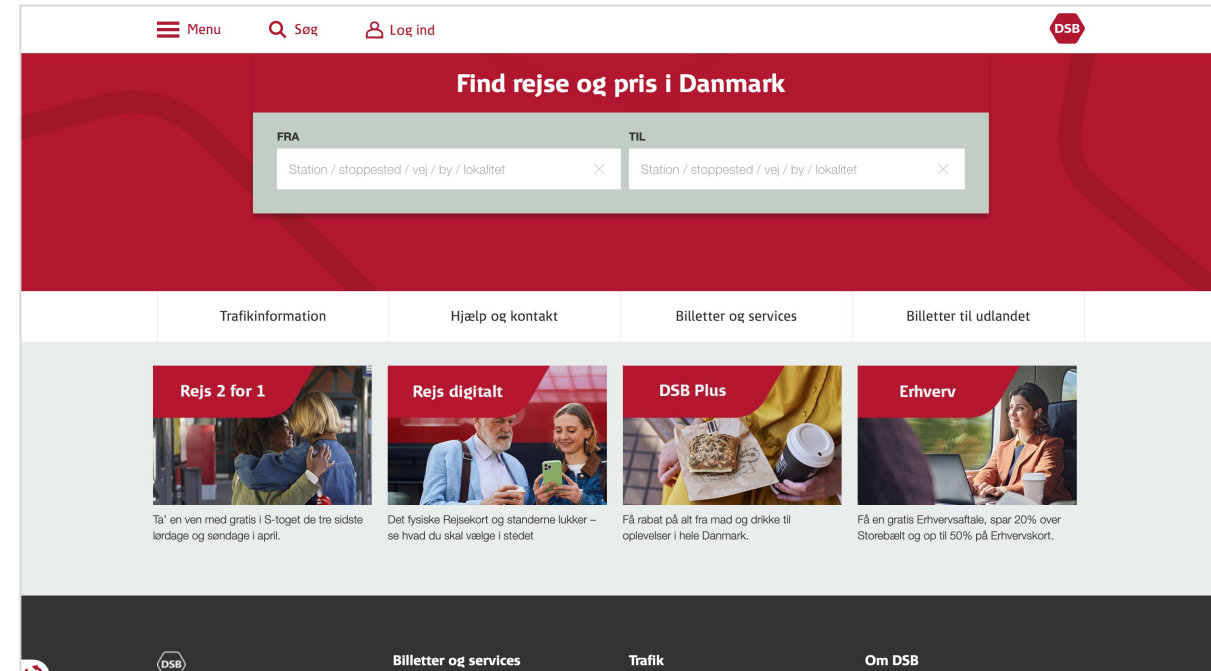
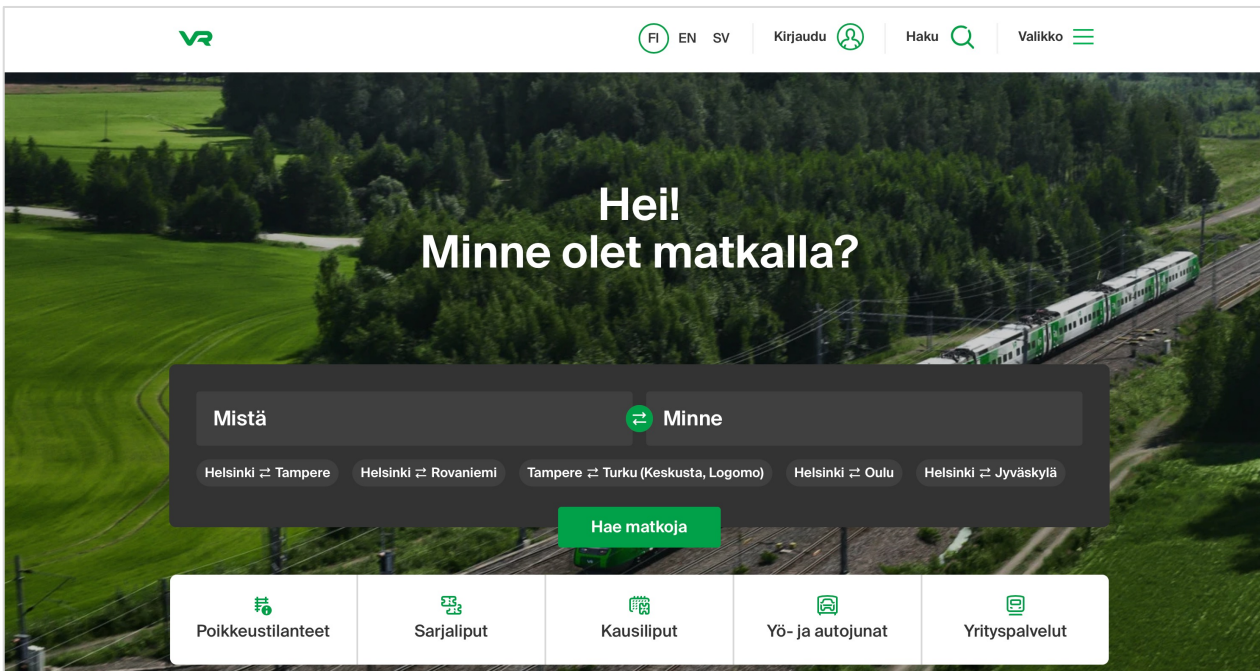
- Display the company name and logo prominently **in the top left corner** of the homepage
  - Remember to enable users using logo as going back to landing page
- **The most important content should be above the fold** (i.e. the area of the page visible without scrolling, the landing site), and **lead users down the page when there is more content to see.**
- **Primary navigation in a highly noticeable place**
  - Menu, language selection, search fields should be in the header area
  - The most crucial tasks should be visually prominent on the page
- Describe actions in a way that resonates with your target audience's goals. What are they hoping to achieve on your homepage?
  - Links should be named descriptively

**Keep it simple and make sure your design scales to different GUIs (mobile, tablet and computer)**



# ORGANIZE THE CONTENTS PROPERLY

Examples: [vr.fi](https://vr.fi) and [dsb.dk](https://dsb.dk)



- Where are the logo, menu, language selection, search field, and the most important contents for the user's task completion?
- What is in the header, main area, and footer?
- Is the most priority content prominently presented?
- How is the navigation designed, does it work well both in mobile and computer?



# TYPOGRAPHY

Note that print and screen need different kind of typography!



# TYPOGRAPHY ON SCREEN

---

- Avoid hard to read and decorative fonts
- Consider font size
- Avoid text on noisy background
- Avoid long sections of bold, italic, or uppercase text.
- Avoid centered text in text blocks
  - Left-aligned text for large sections, as this gives readers a consistent starting point for each line of text.
  - Centered, right-aligned, or justified text can be used for headings or short sections.



Jeff Johnson (2013)



# ACCESSIBILITY OF SCREEN FONTS

› Focus on size, spacing, contrast, font

## Web Content Accessibility Guidelines for Fonts

The diagram shows three key factors for font accessibility: Spacing, Contrast, and Size. Spacing is represented by four stacked 'Spacing' words with a bracket on the left. Contrast is shown as the word 'Contrast' in a lighter font. Size is shown as the word 'Size' with a vertical double-headed arrow above it and a horizontal double-headed arrow below it. To the right is a square icon with a black mountain range silhouette and the text 'Text with Graphics' inside.

## 10 Typefaces Commonly Used for Accessibility

Arial	Museo
Arvo	Rockwell
Calibri	<b>Tahoma</b>
Century Gothic	Times New Roman
Helvetica	<b>Verdana</b>

<https://www.audioeye.com/ultimate-guide-to-accessible-web-design/>



# MINIMIZE THE NEED FOR READING

**Jeep**

## FIND A DEALER

It's easy to locate a dealer. 1. Click and hold box number 1 to select your search by Zip Code, City, Dealership Name or State. 2. Enter the Zip Code, City, or Dealership Name in the box marked number 2. 3. If searching by State only, select the state from the pull-down menu in box number 3. **\*\*If choosing to search by city or state, type the city in box 2 then select a state in the box marked number 3 to make your search complete.** 4. Once finished, simply click the "Search" button.

Search by:

1

2 Enter Zip Code, City, or Dealership name:

Select a State:

3

4

If you are a member of the U.S. Military, an executive, or a diplomat living outside the U.S., [click here](#) for special options.

2002



**Jeep**

## FIND A DEALER

It's easy to locate a Jeep Dealer near you.

- Select Zipcode, City or Dealership Name  
*(If you choose to search by city, you will be prompted to provide the state.)*
- Provide the Zip Code, City or Dealership Name
- Click on Search

Search by:

1

2 Enter Zip Code, City, or Dealership name:

3

2003



2007

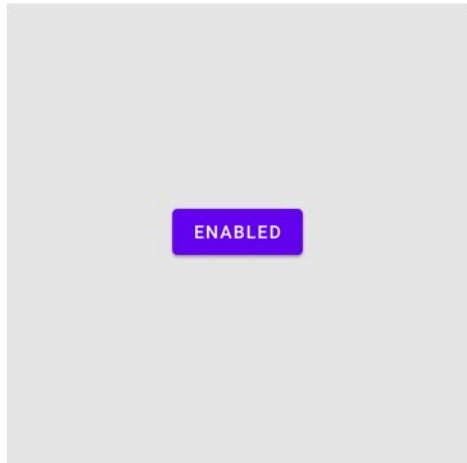
**FIND A DEALER** ▾



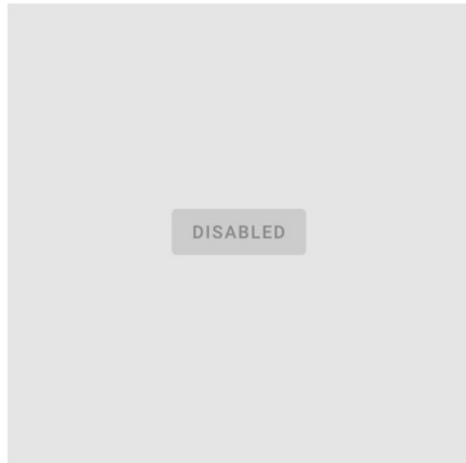
Jeff Johnson (2013)

# STATES OF AN INTERACTIVE ELEMENT

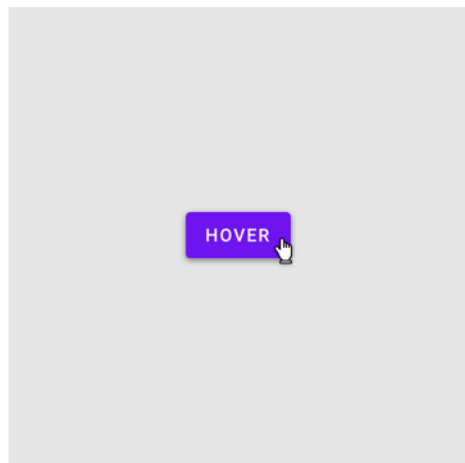
Distinct, additive & consistent visual representations



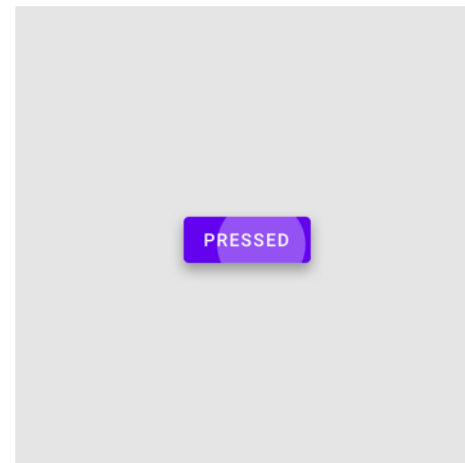
**Enabled**  
An enabled state communicates an interactive component or element.



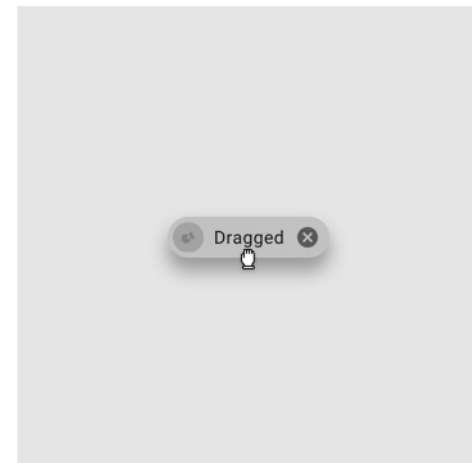
**Disabled**  
A disabled state communicates a noninteractive component or element.



**Hover**  
A hover state communicates when a user has placed a cursor above an interactive element.



**Pressed**  
A pressed state communicates a user tap.



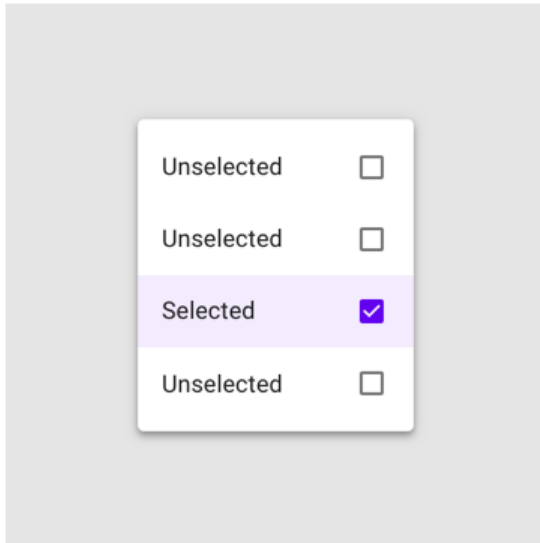
**Dragged**  
A dragged state communicates when a user presses and moves an element.

<https://material.io/design/interaction/states.html#usage>

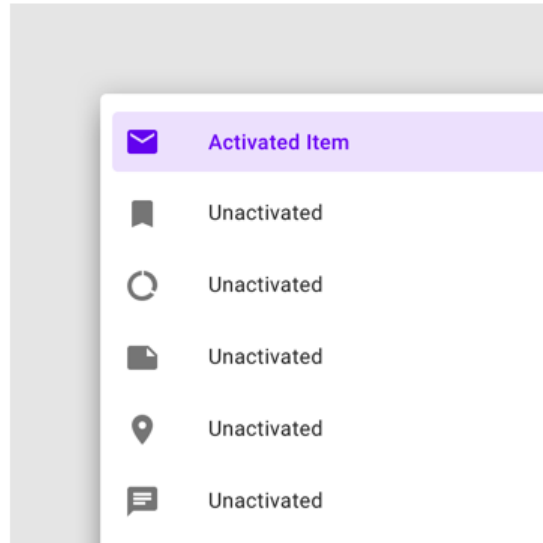


# STATES OF AN INTERACTIVE ELEMENT

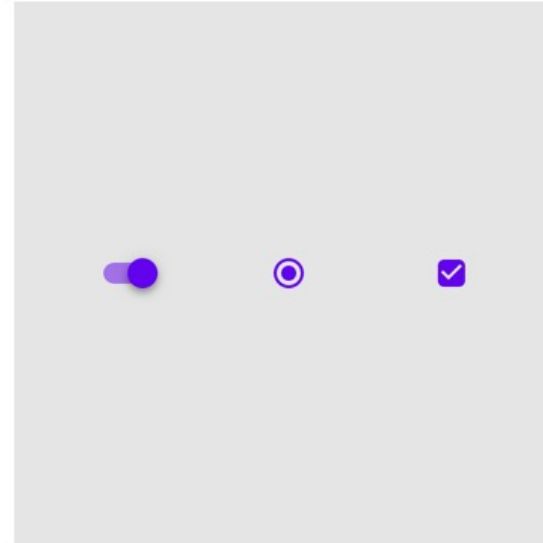
Distinct, additive & consistent visual representations



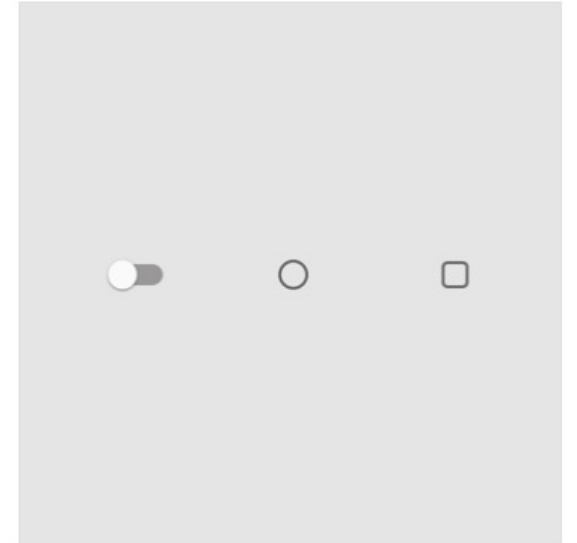
**Selected**  
A selected state communicates a user choice.



**Activated**  
An activated state communicates a highlighted destination, whether initiated by the user or by default.



**On**  
An on state communicates a toggle between two options.



**Off**  
An off state communicates a toggle between two options.

<https://material.io/design/interaction/states.html#usage>



# ERROR MESSAGES

## Put it in where users are looking

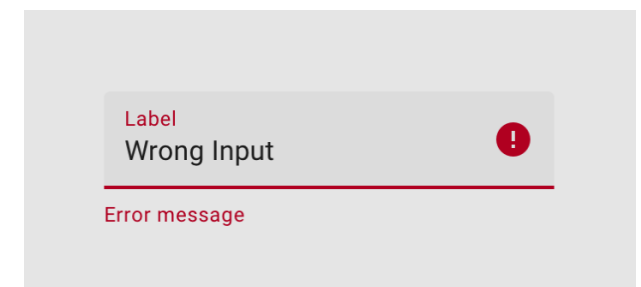
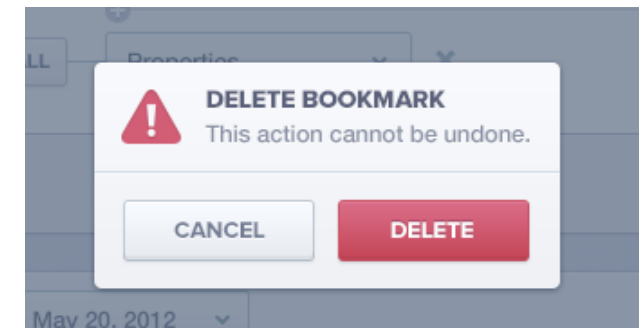
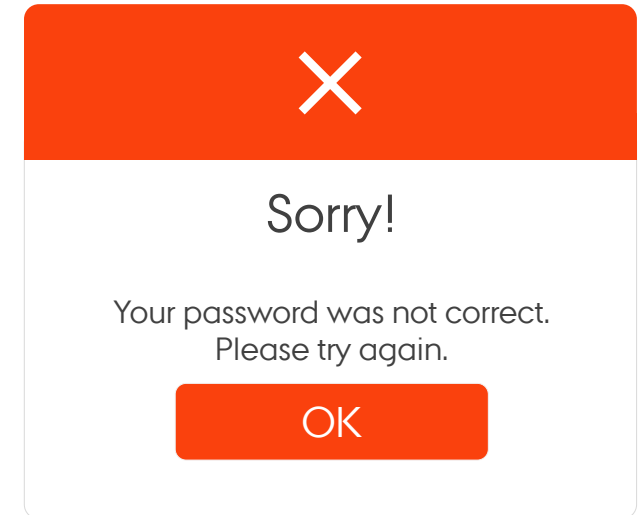
- People focus in predictable places when interacting with graphical user interfaces

## Mark the error

- indicate clearly what is wrong

## Reserve red for errors

- Using red for any other information on a computer display invites misinterpretation
- Use another color for errors or mark them with an error symbol if designing for cultures where red is positive color (Chinese)



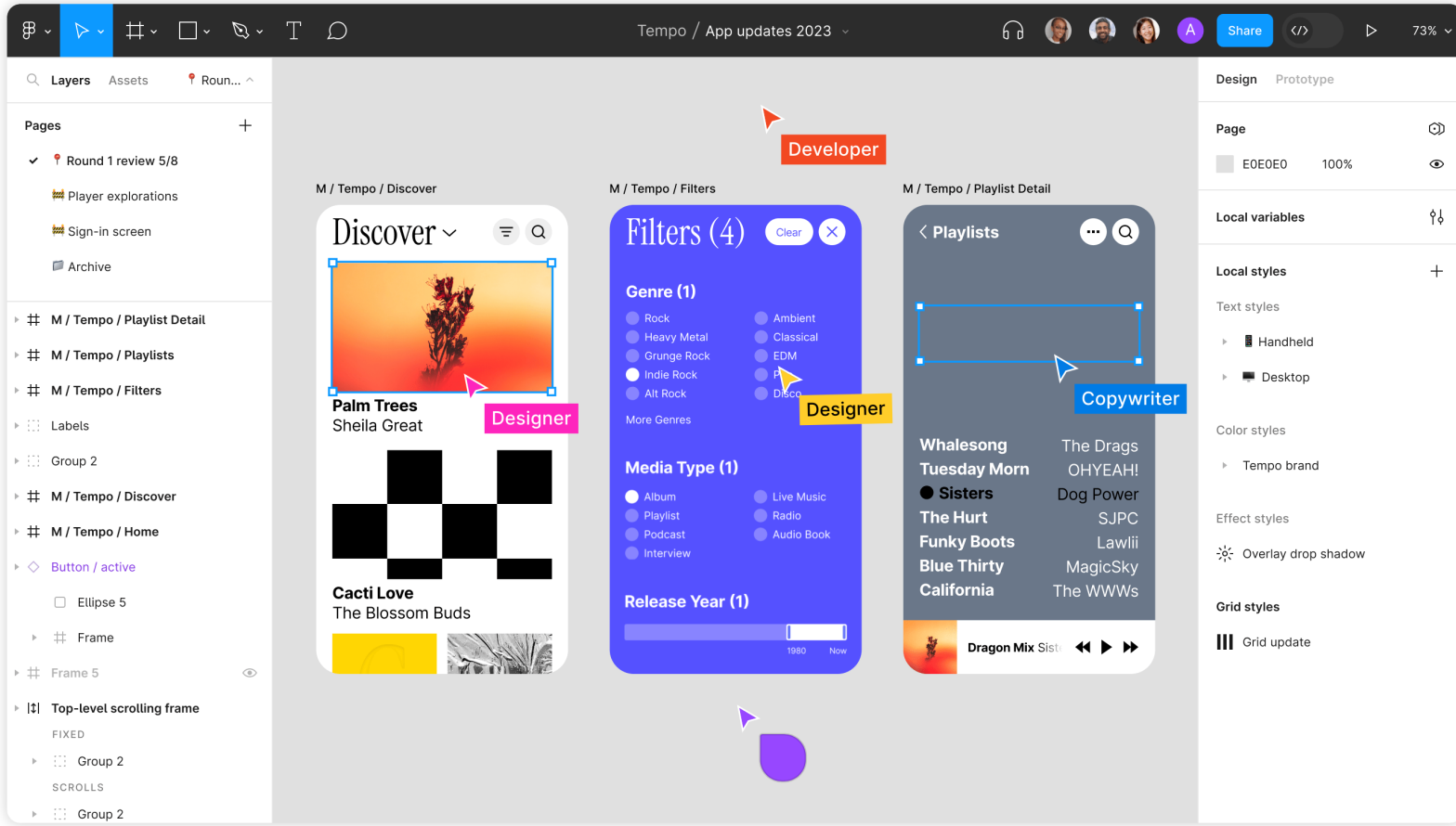
Jeff Johnson (2013)

22<sup>ND</sup> APRIL 2026 | MINNA PAKANEN



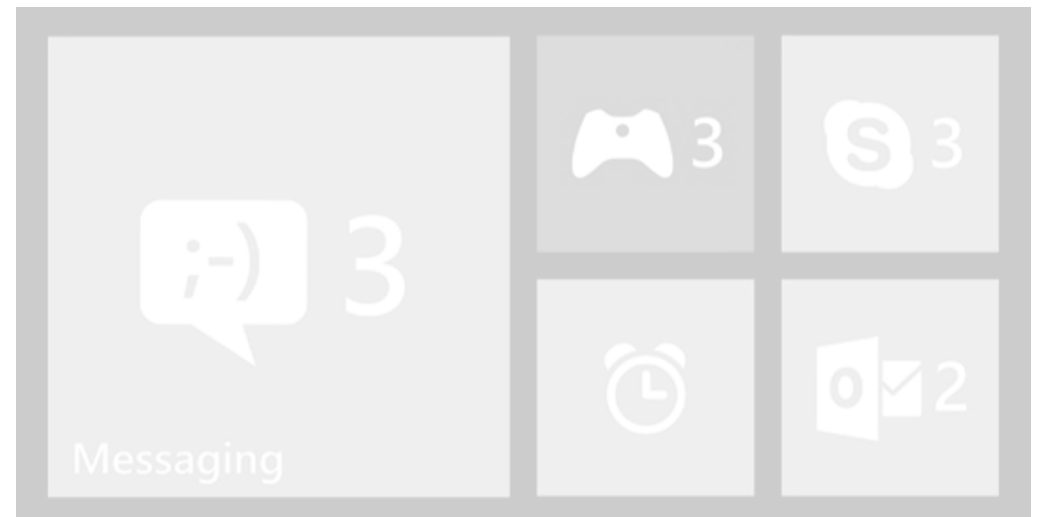
# GUI DESIGN & PROTOTYPING

Figma

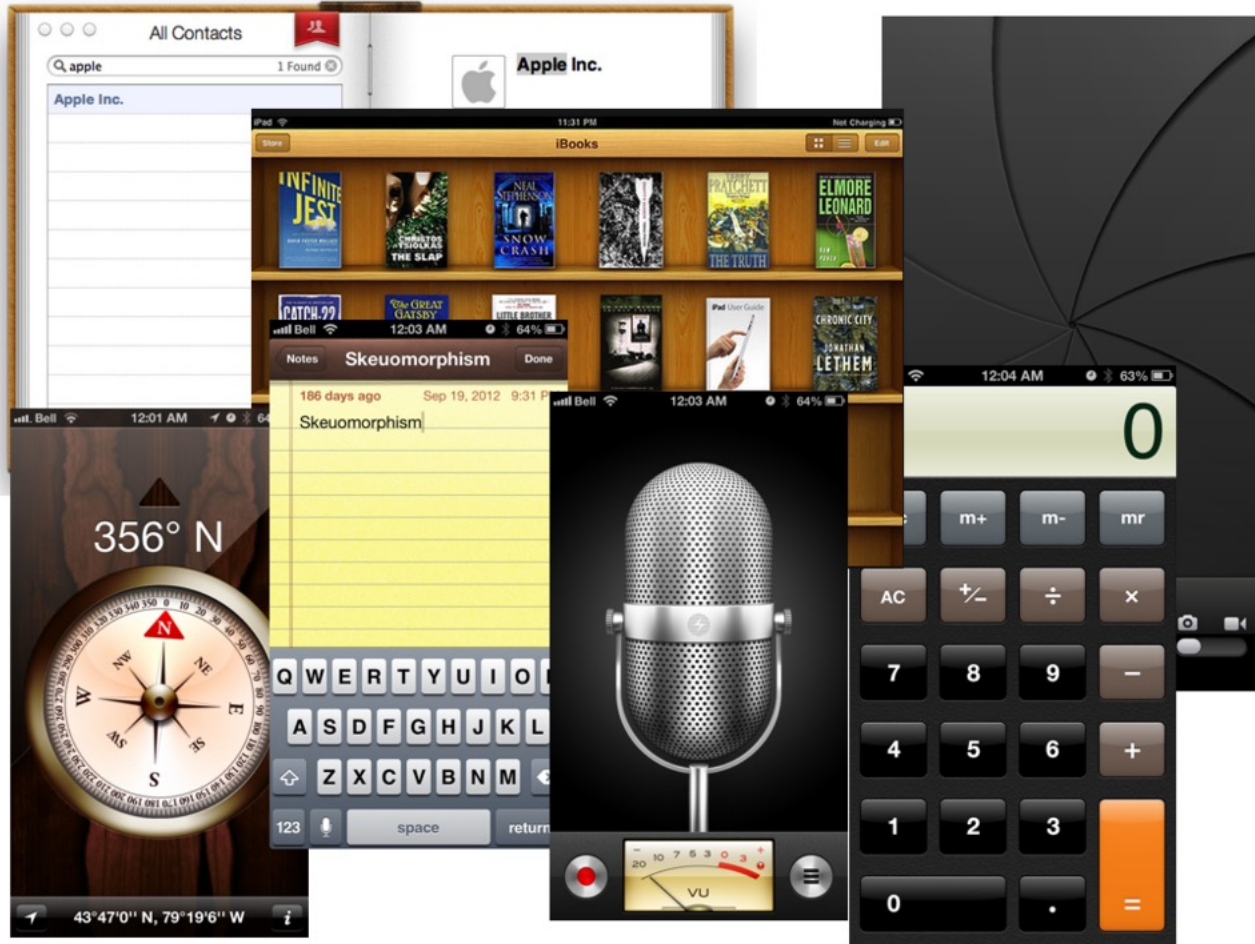


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# AESTHETIC STYLES



# SKEUOMORPHISM



<http://www.originalgreen.org/blog/2013/skeuomorphism---how-steve.html>



# SKEUOMORPHISM

---

## Benefits

Skeuomorphism may be used in many different ways to help familiarise users to a new product and technology

- For example, if an object casts a shadow, our brains automatically visualise that as a 3D shape that has volume



# SKEUOMORPHISM

## Challenges

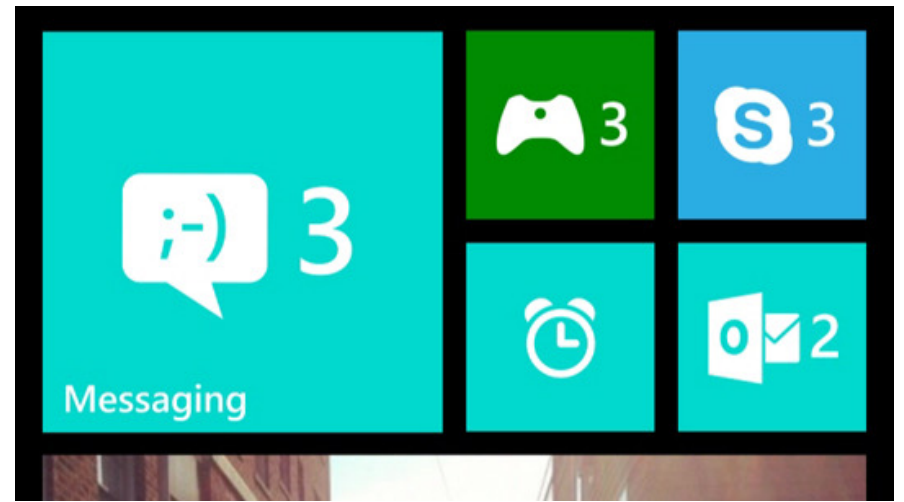
- The problem is when borrowing features from the original design, you often also bring its limitations with it, even when these limitations have no reason to exist anymore
- There is also the problem of getting skeuomorphism wrong: making something look like a physical object but not work like it



<http://www.originalgreen.org/blog/2013/skeuomorphism---how-steve.html>



# FLAT



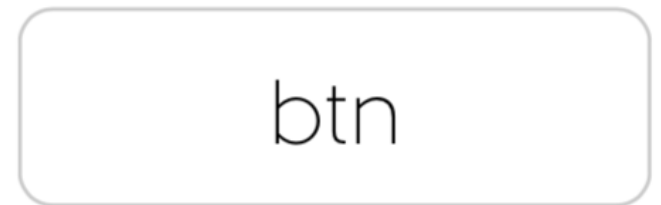
<https://mspoweruser.com/developers-31-days-of-windows-phone-metro-design-from-microsoft-ux-designer/>



# FLAT

## Challenges

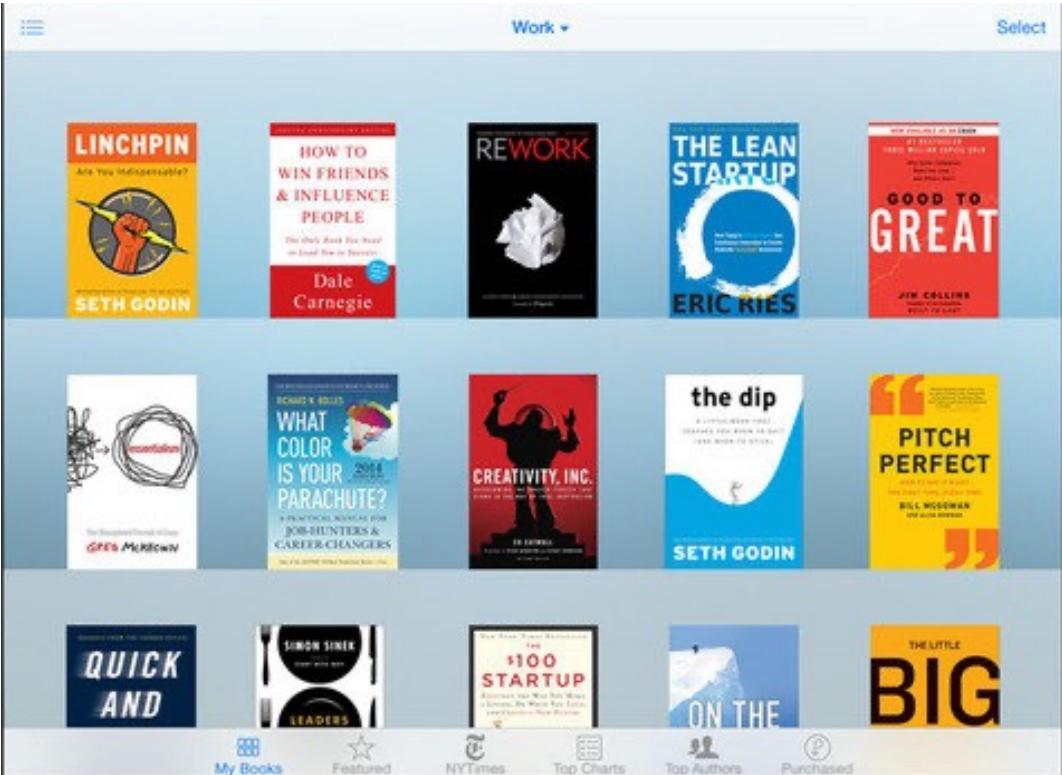
- Taking the approach too far to minimalism can have serious consequences on usability because when all the affordances of the design are removed it is harder for the user to know how to interact with the interface



# FROM SKEUOMORPHISM TO FLAT DESIGN



skeuomorphic



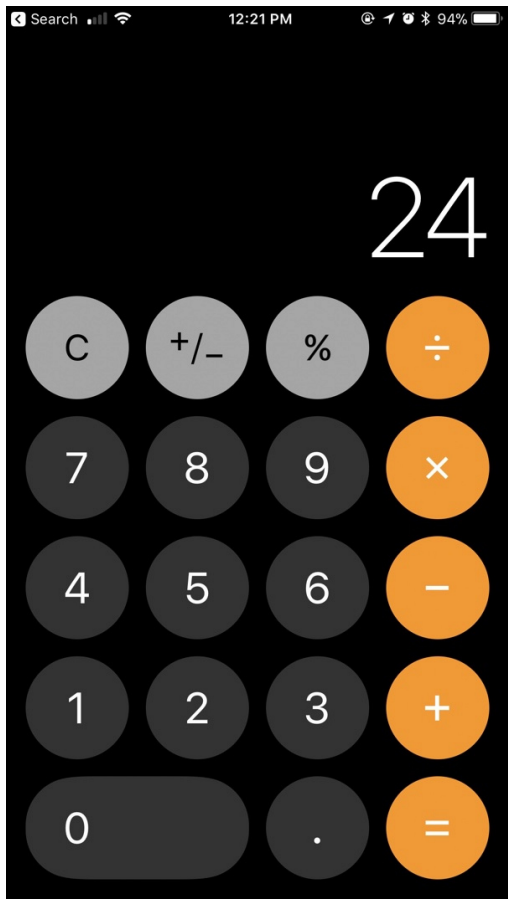
flat



# FROM SKEUOMORPHISM TO FLAT DESIGN



skeuomorphic



flat



# WHAT IS NEXT?

---



Skeuomorphism



Flat Design

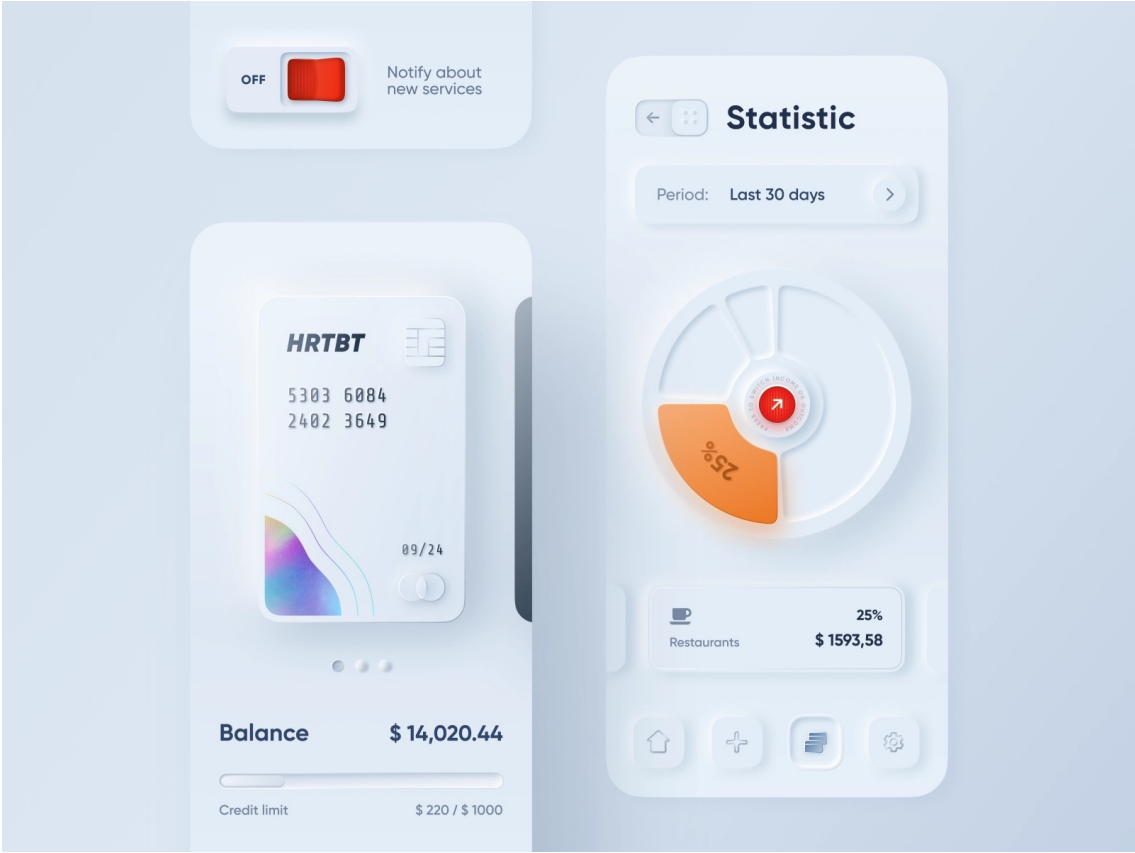


?

<https://smithhousedesign.com/new-logo-instagram-marks-beginning-end-flat-design/>



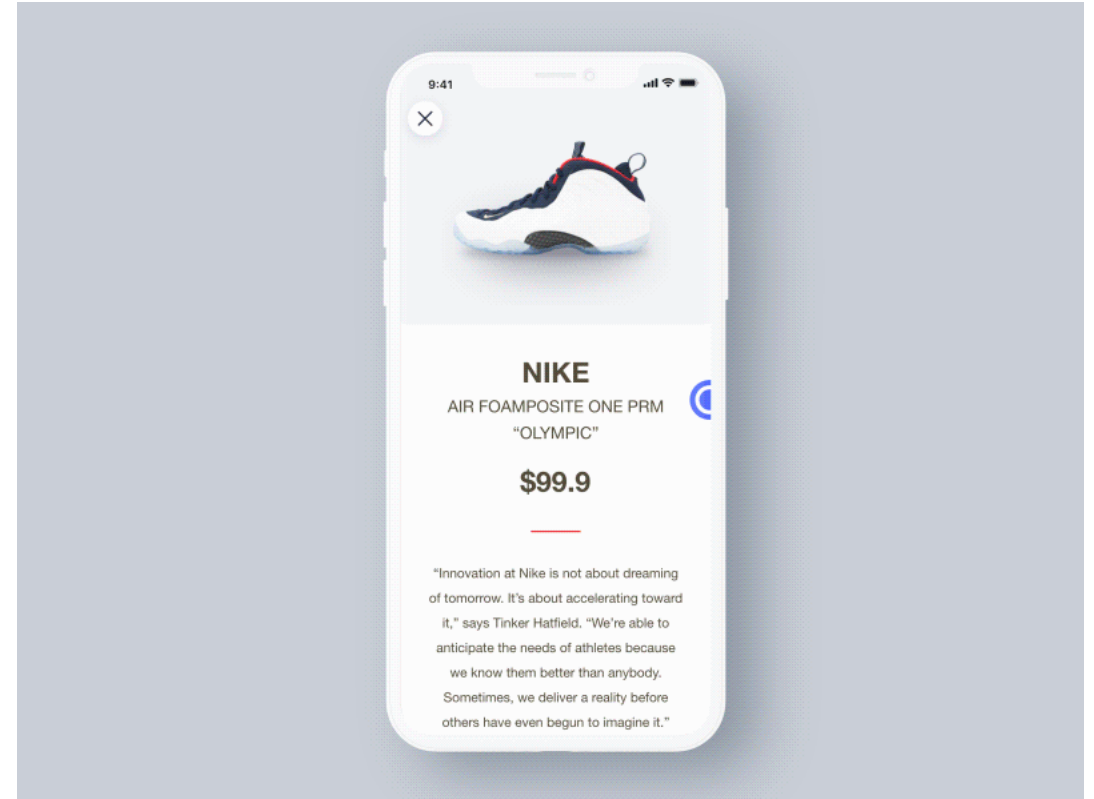
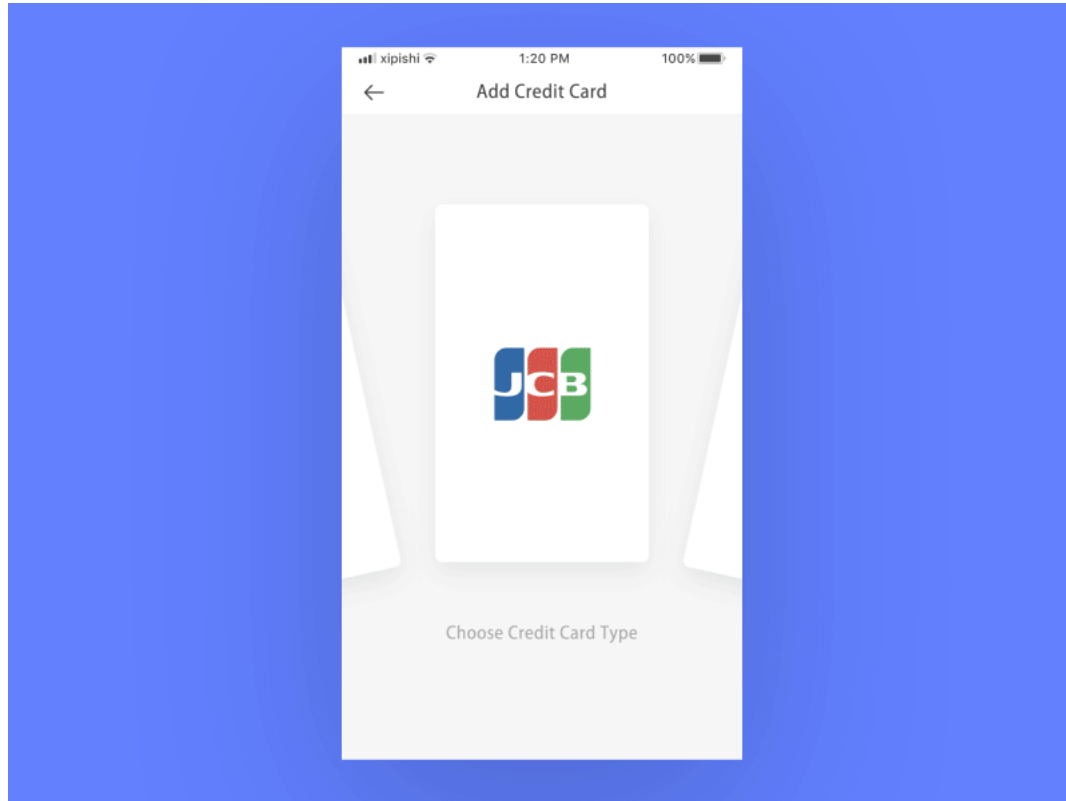
# NEUOMORPHISM



<https://dribbble.com/shots/7994421-Skeuomorph-Mobile-Banking>



# NEUOMORPHISM



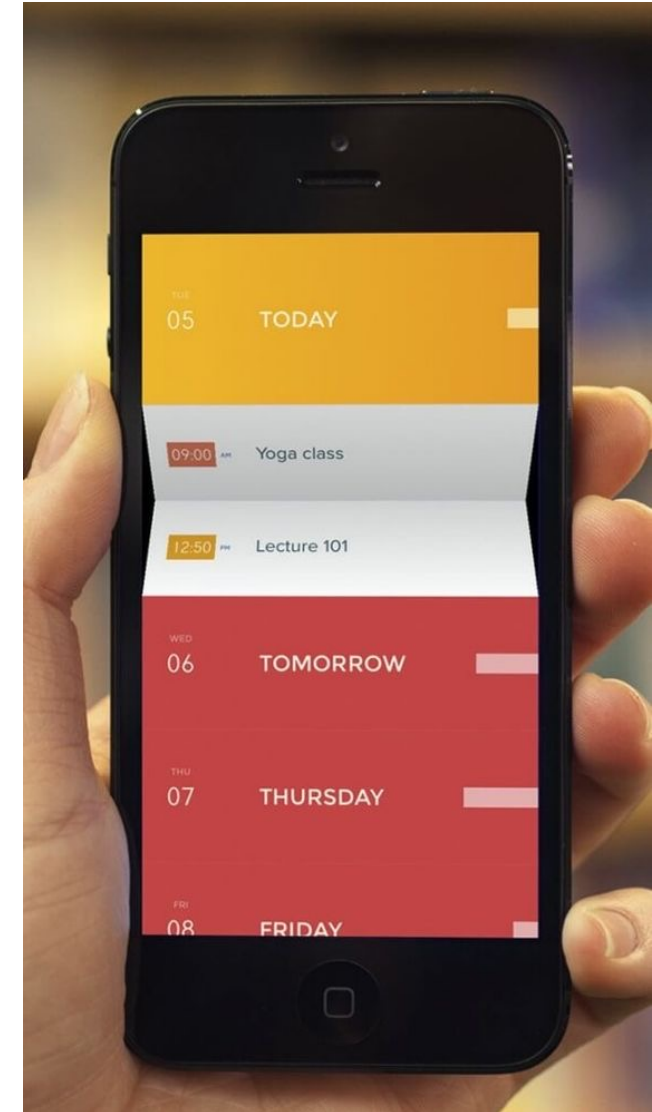
<https://envato.com/blog/skeuomorphism-is-back/>



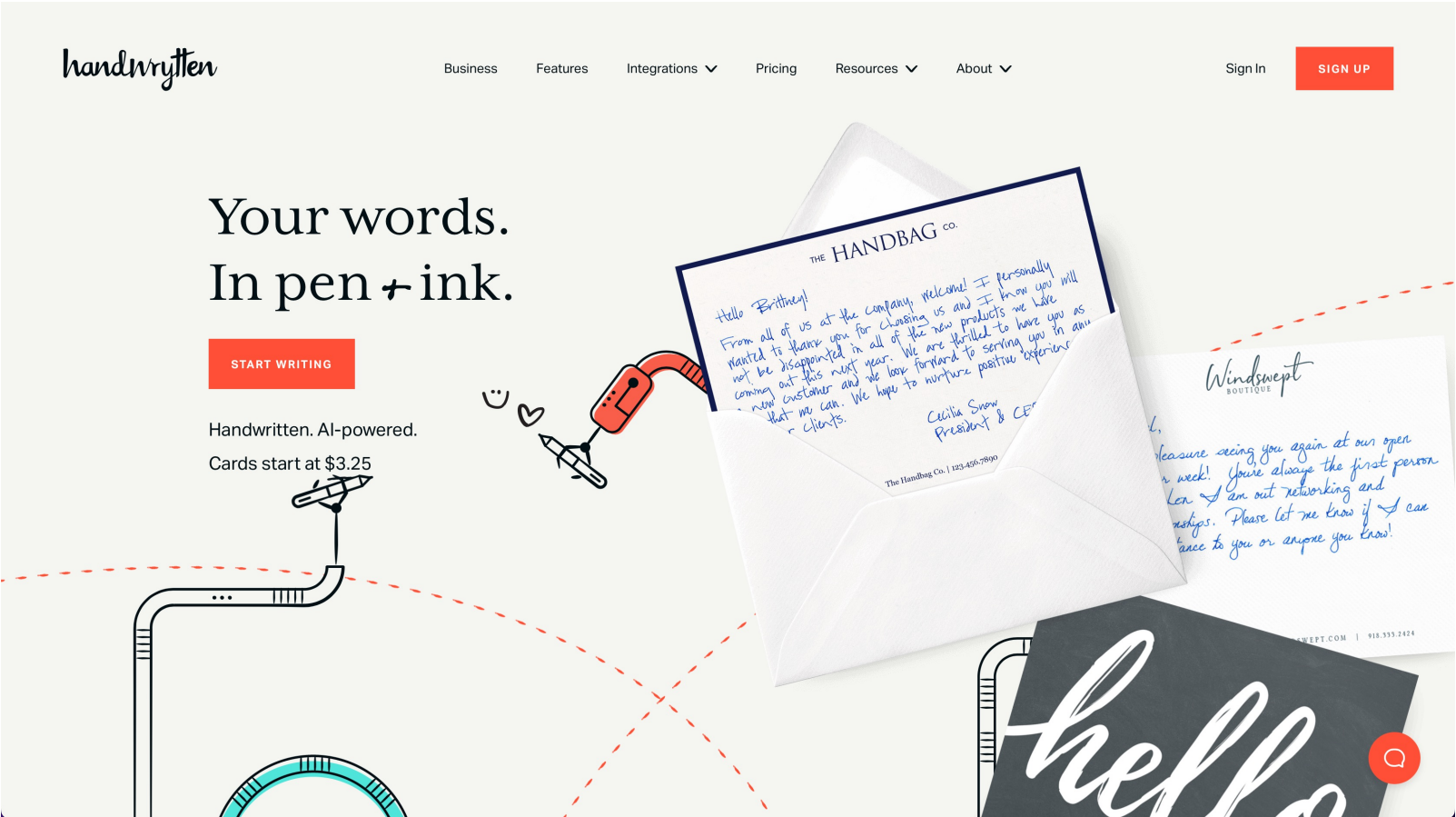
# STYLE: WHICH PATH TO CHOOSE?

Good designers design for context, picking the best option for the specific case

- Take all the good things from flat design and skeuomorphism/realism and apply them in a way that is still usable. (e.g. Skeuominimalistic or neumorphism)
- Consider implications when using realism
- Simplification should not affect usability, and maximize skeuomorphic affordances to the point where it does not affect the simple beauty of minimalism



# ANIMATION ON WEBPAGES



<https://www.handwritten.com>



# ANIMATION EASTER EGGS



The screenshot shows a Google search for the word "cat". The search bar contains "cat" and the results show approximately 5.91 billion results in 0.41 seconds. The search filters include All, Images, Videos, Shopping, News, and More. The search results list several entries:

- Wikipedia**: <https://en.wikipedia.org/wiki/Cat>. **Cat**. The cat (*Felis catus*) is a domestic species of small carnivorous mammal. ... It is the only domesticated species in the family Felidae and is commonly referred to ... Kingdom: [Animalia](#) Genus: [Felis](#) [Feral cat](#) · [Farm cat](#) · [Domestication of the cat](#) · [Cat communication](#)
- www.cat.com**: <https://www.cat.com>. **Cat.com Global Selector: Language & Region | Cat | Caterpillar**. Select your region and language for [www.cat.com](https://www.cat.com) to view the most relevant products and services in your area of the world.
- Encyclopedia Britannica**: <https://www.britannica.com/animal/cat>. **Cat | Breeds & Facts**. **cat**, (*Felis catus*), also called house **cat** or domestic **cat**, domesticated member of the family Felidae, order Carnivora, and the smallest member of that ...
- National Geographic**: <https://www.nationalgeographic.com/mammals/facts>. **Domestic cat**. One of the most unusual-looking **cats** is the Sphynx, a mostly hairless cat known for being robust and intelligent. Like their big **cat** cousins, house **cats**. Unlock ...

On the right side of the search results, there is a knowledge panel for "Cat" (Animal). It includes a grid of images of various cats and a "More images" link. The panel text reads: "The cat is a domestic species of small carnivorous mammal. It is the only domesticated species in the family Felidae and is commonly referred to as the domestic cat or house cat to distinguish it from the wild members of the family. [Wikipedia](#)". Below this, it lists: **Lifespan**: 12 – 18 years (Domesticated), **Scientific name**: *Felis catus*, **Mass**: 4 – 5 kg (Adult, Domestic), **Family**: Felidae, **Order**: Carnivora, and **Phylum**: Chordata.





# COLOR IN GUI

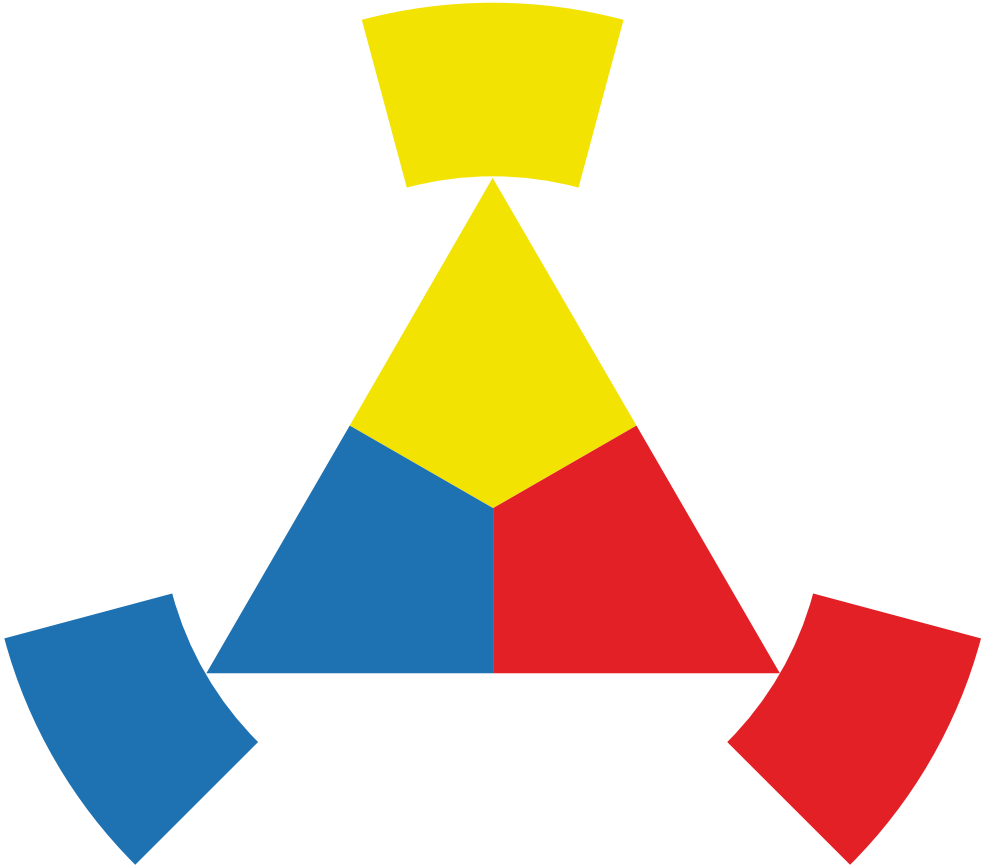
How to use colours in GUI design



# COLOR



Primary  
colors



Johannes Itten, 1961  
[https://www.wikiwand.com/en/Johannes\\_Ippen](https://www.wikiwand.com/en/Johannes_Ippen)



# COLOR



Secondary  
colors



Johannes Itten, 1961  
[https://www.wikiwand.com/en/Johannes\\_Ippen](https://www.wikiwand.com/en/Johannes_Ippen)



# COLOR



# Full color wheel



Johannes Itten, 1961  
[https://www.wikiwand.com/en/Johannes\\_Itten](https://www.wikiwand.com/en/Johannes_Itten)

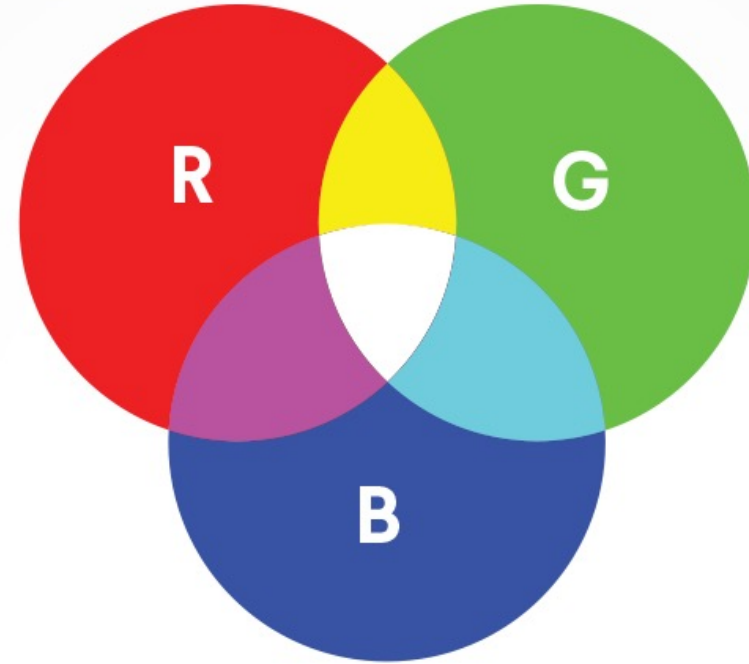


# COLOR SPACE

## RGB

For any kind of screen:

- computers, smartphones, tablets, TVs, cameras, etc.
- For digital images and elements
- Web & app design
  - Icons
  - Buttons
  - Graphics
- File formats: JPG, PNG, GIF
- Web: HEX#(RRGGBB)



Red



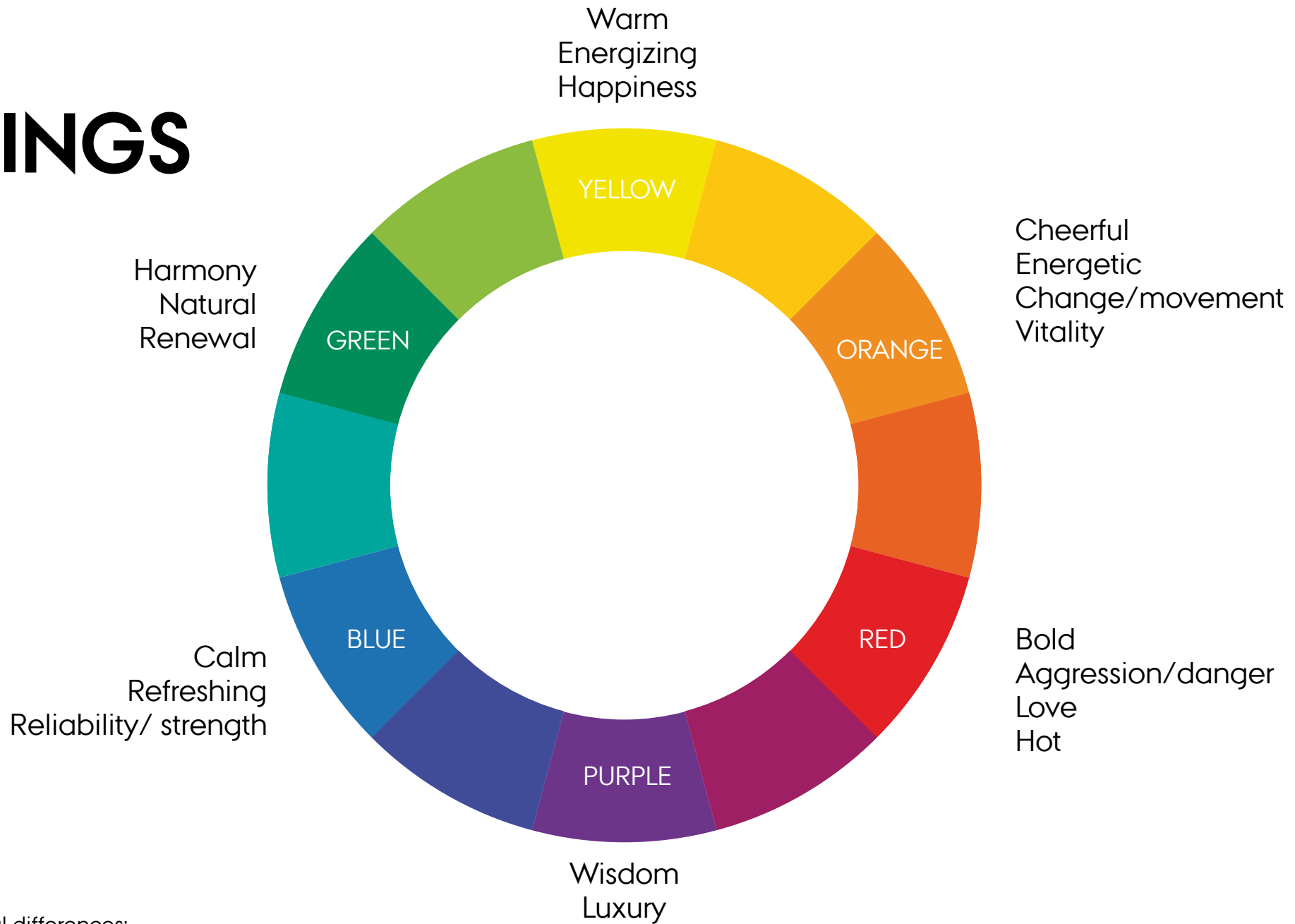
Green



Blue

# MEANINGS

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Note the cultural differences:

<https://www.smashingmagazine.com/2010/01/color-theory-for-designers-part-1-the-meaning-of-color/>

# COLOR HARMONY



Monochromatic



Analogous



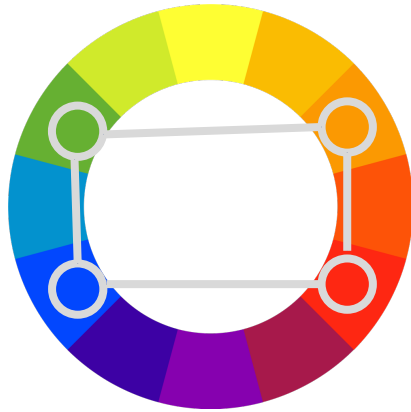
Complimentary



Split-complimentary



Triadic



Rectangle



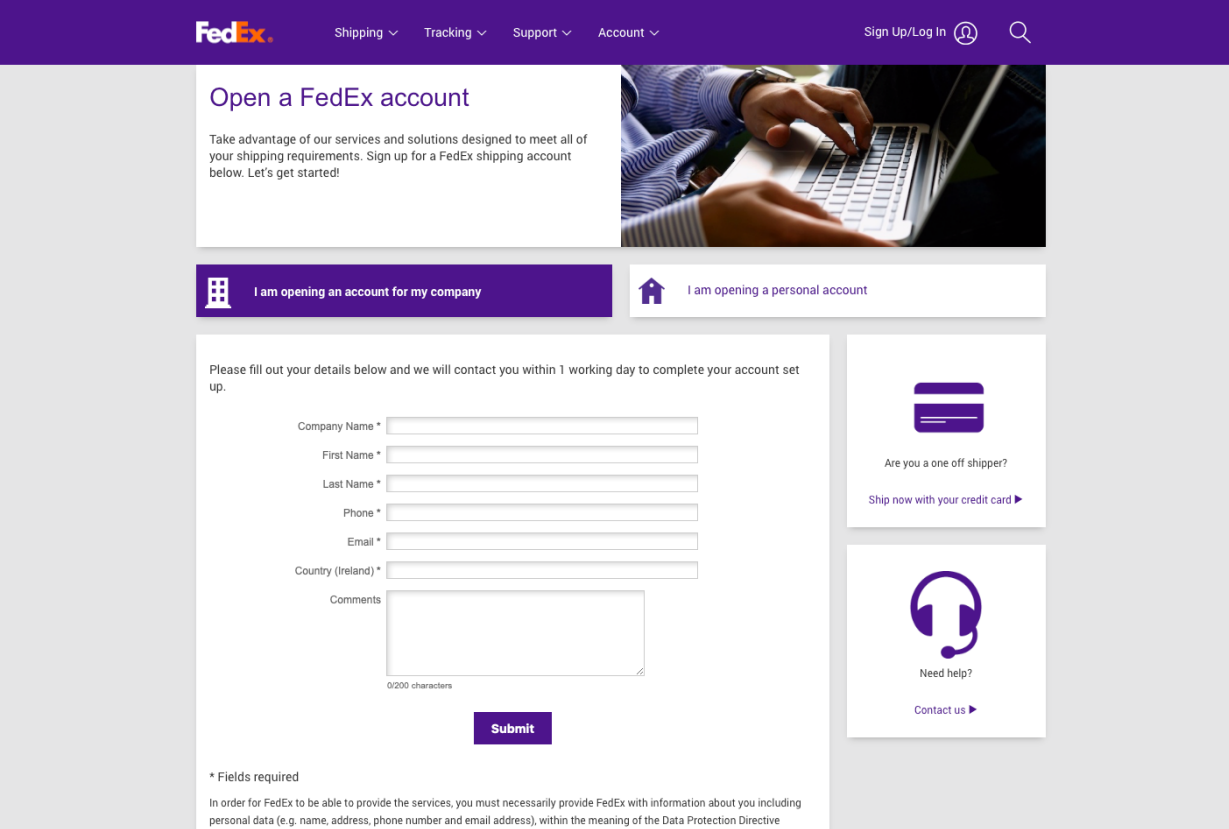
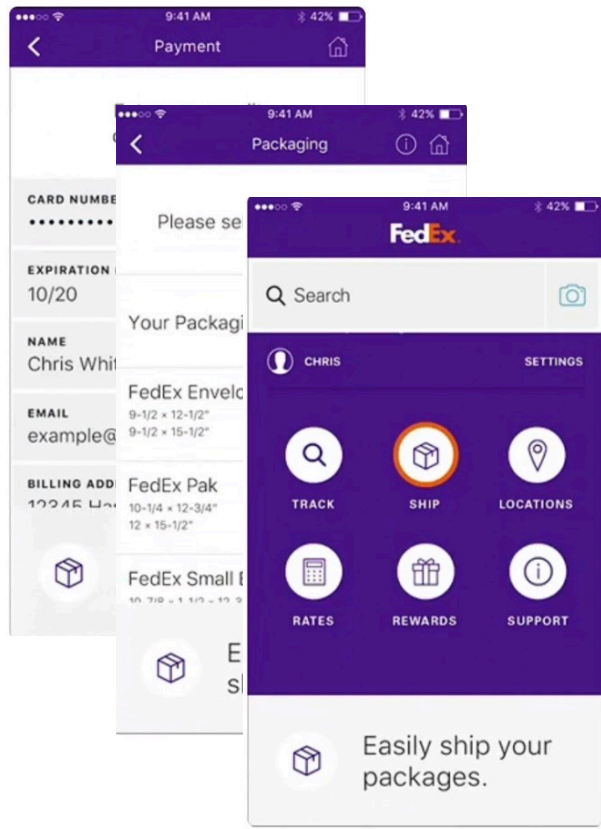
Square



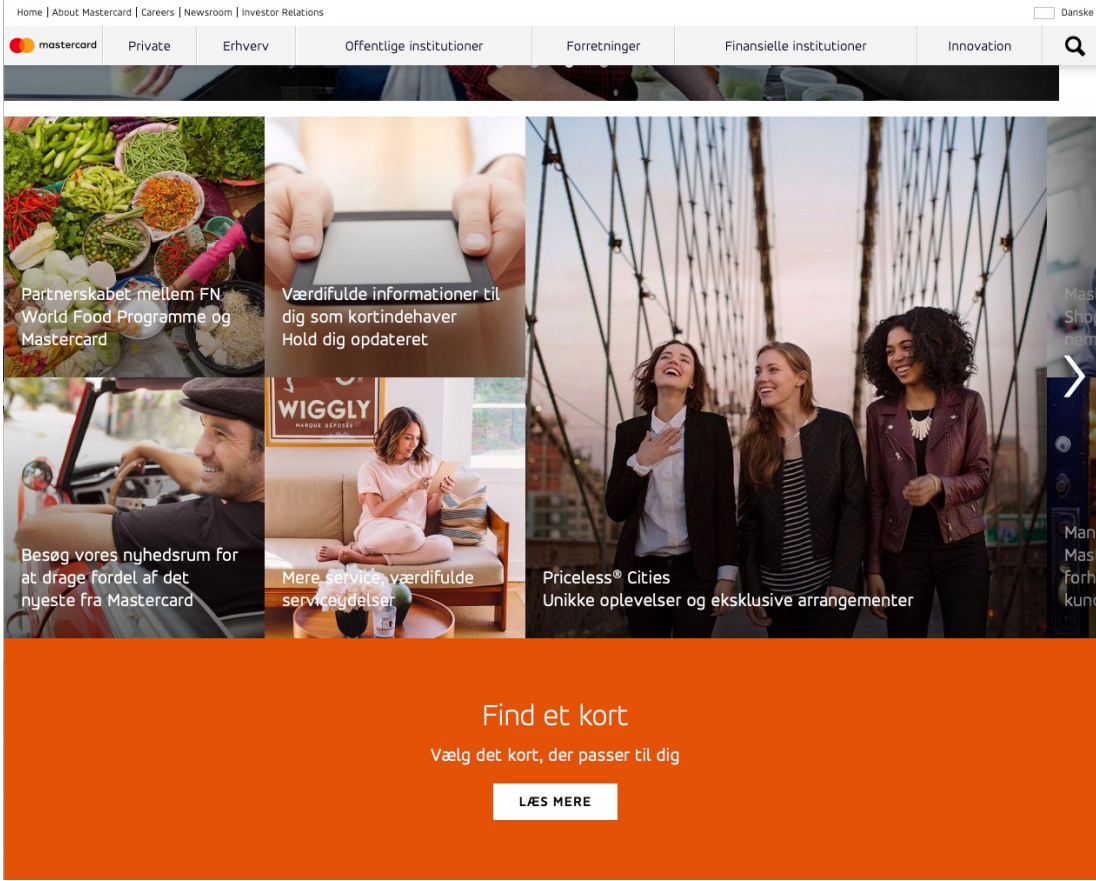
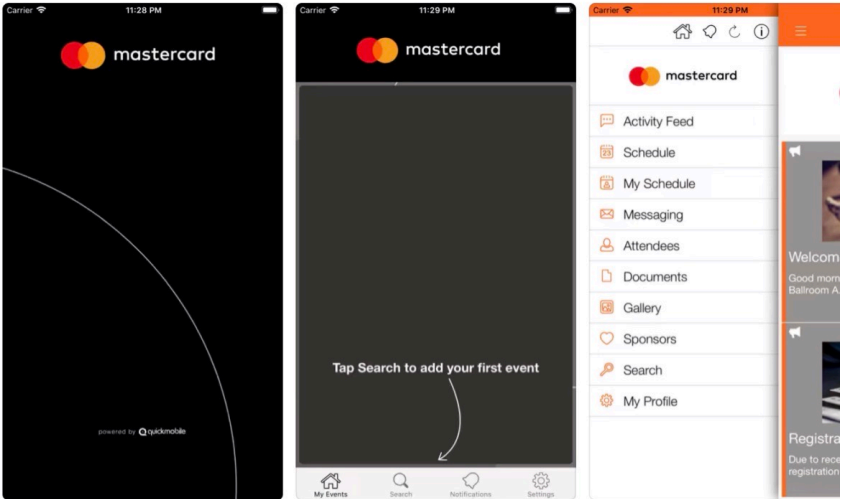
# COLOR HARMONY: COMPLIMENTARY



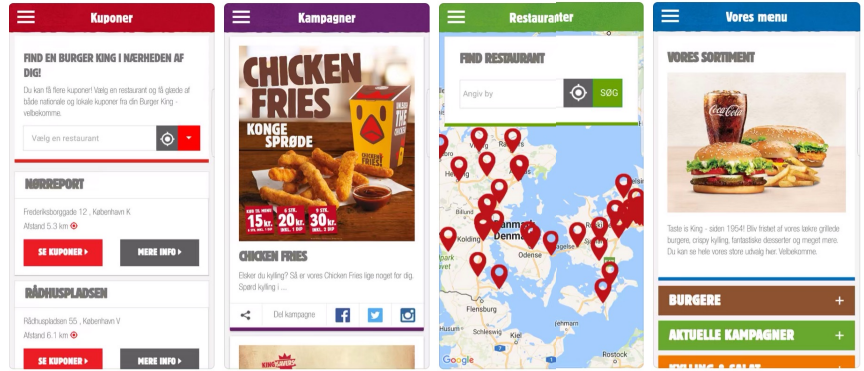
FedEx



# COLOR HARMONY: ANALOGOUS

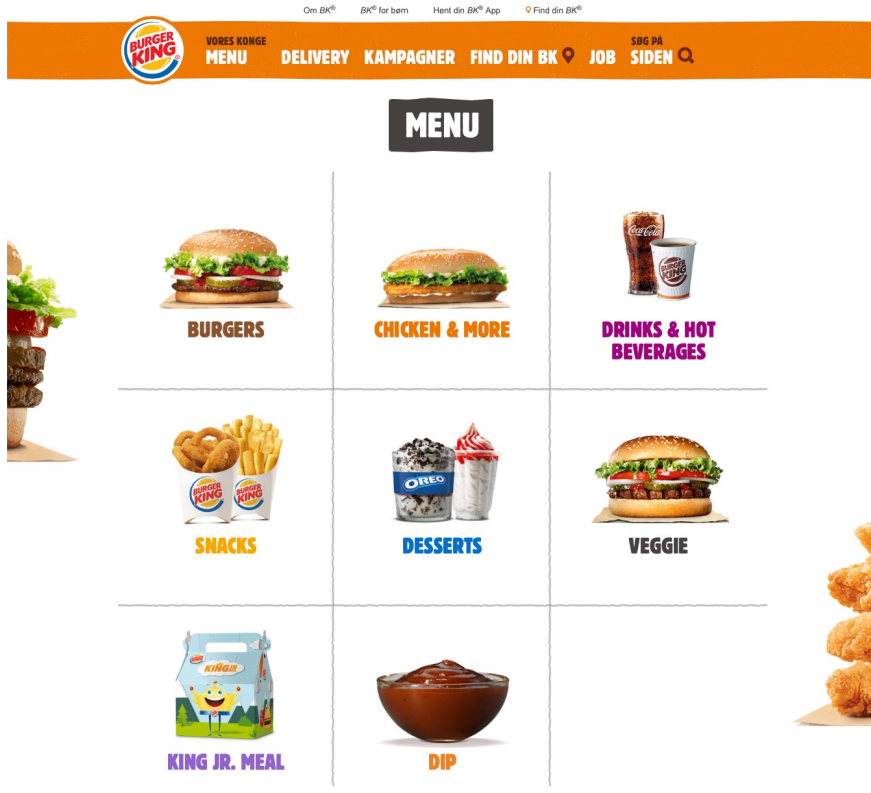


# COLOR HARMONY: TRIADIC



Offers iPad App

Velkommen til den officielle Burger King® app for — officielle Burger King® app for — officielle Burger King® app for — King® app for



# COLOR HARMONY: TRIADIC



We want to hear about what you're building

Let's chat

Av. del Libertador 1000, B1539  
Vicentia López,  
Buenos Aires, Argentina  
info@indicius.com

© Indicius 2020

We have a lot to say

Articles about human-centered design by members of the Indi team.

Yet another story about teams and work culture during pandemic times

How we Used a Remote

Designers, we need to

**ROI**

**Branding. Together.**

Create a visual identity for your company, and an overall brand experience between you and your customers.

Discover our services & processes

indicius

Work Services About Contact

Designing for a more human-centered world.  
**Together.**

<https://indicius.com>



# DISTINGUISHING COLORS

by saturation and brightness as well as hue

- Avoid subtle color differences
- Make sure the contrast between colors is high



Paleness of the color >



Patch size <



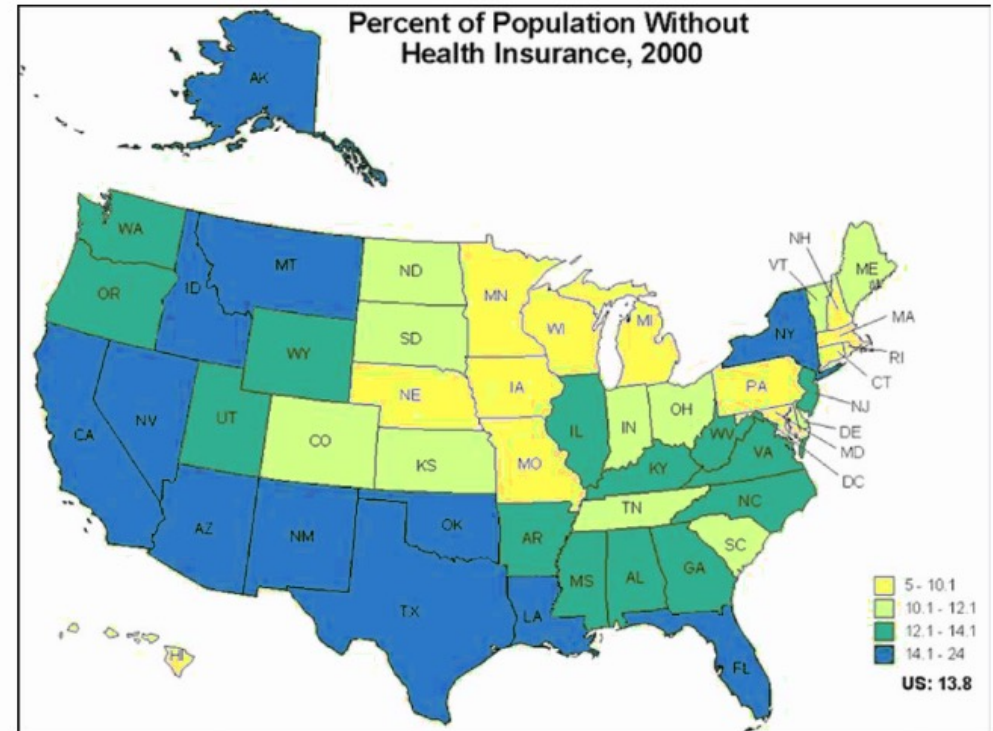
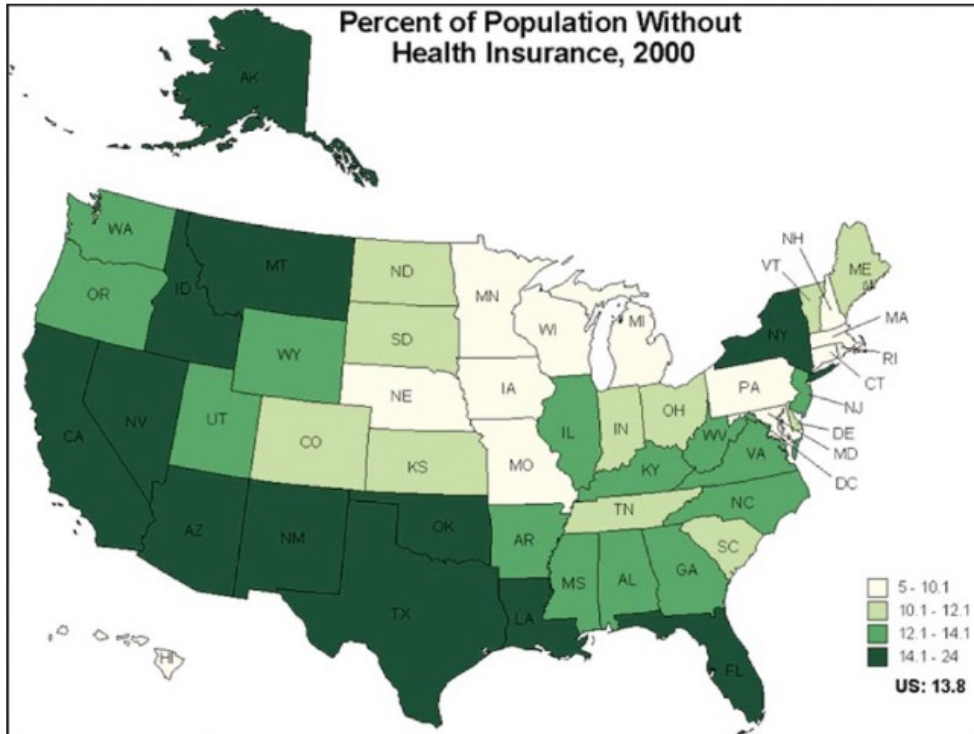
Separation >



Jeff Johnson (2013)

22<sup>ND</sup> APRIL 2026 | MINNA PAKANEN

# DISTINGUISHING COLORS



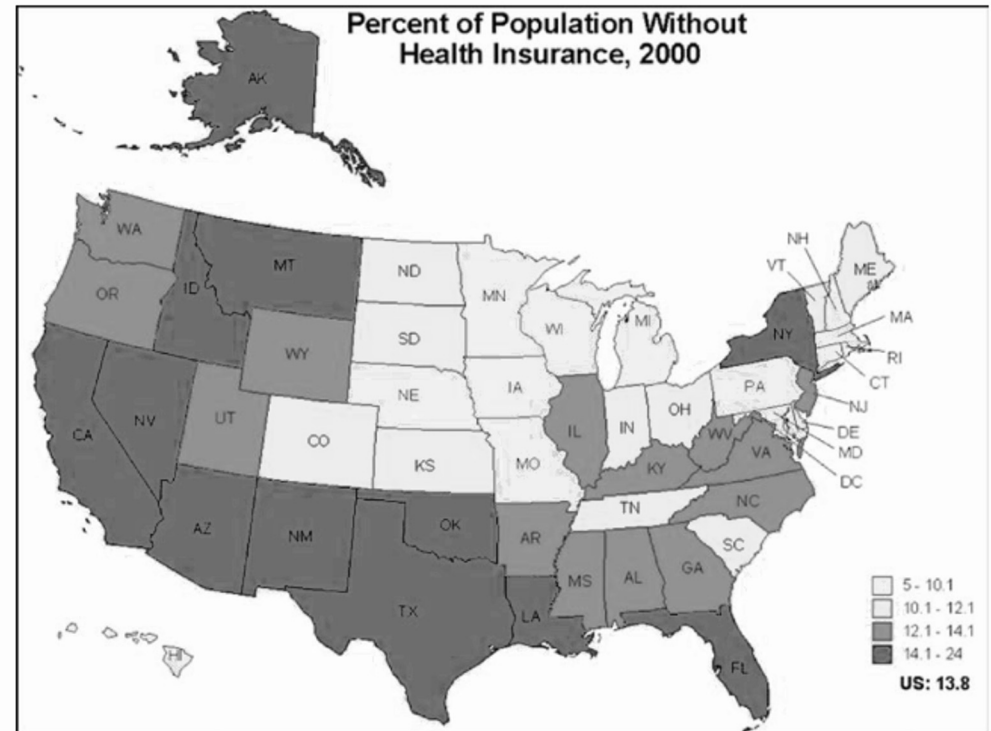
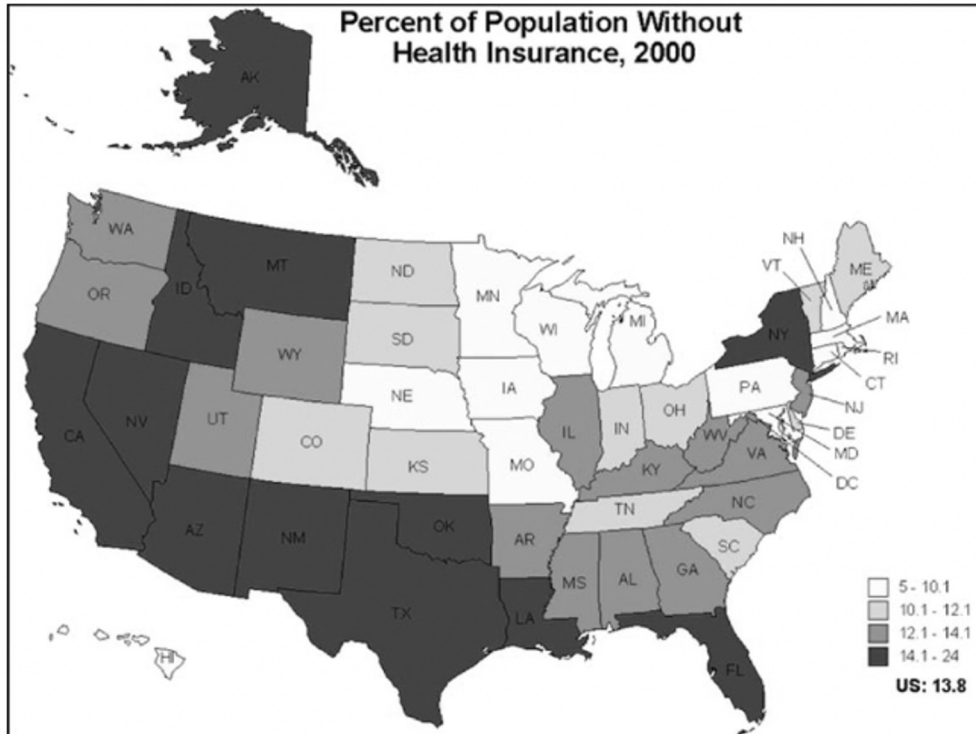
Jeff Johnson (2013)

22<sup>ND</sup> APRIL 2026 | MINNA PAKANEN

<https://colorbrewer2.org>



# DISTINGUISHING COLORS

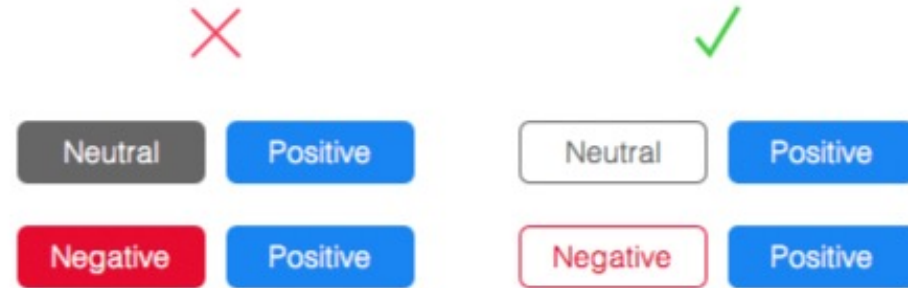


Jeff Johnson (2013)



# DISTINGUISHING COLORS

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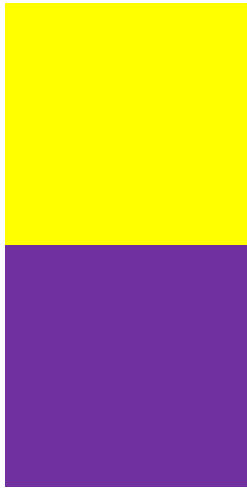
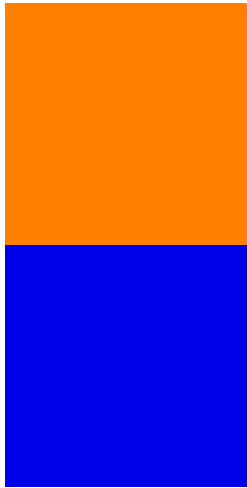
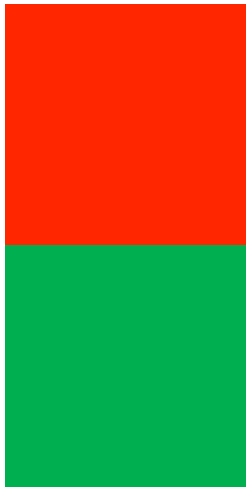
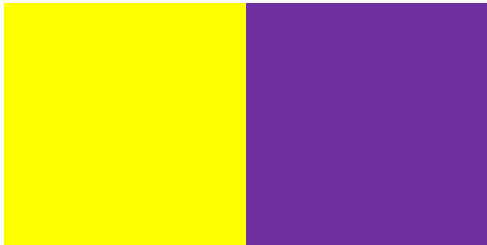
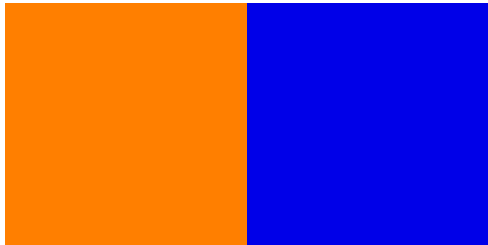
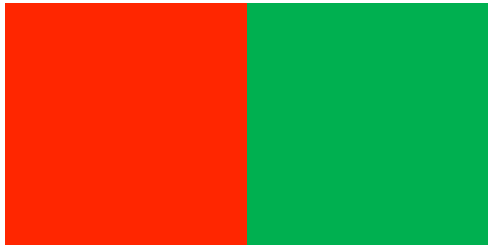


Both buttons have similar contrast.  
They compete for user attention.

Positive action has much higher  
contrast. User sees a clear action.



# SEPARATE STRONG OPPONENT COLORS



Jeff Johnson (2013)

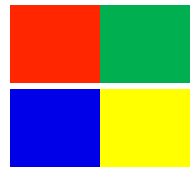


# ACCESSIBLE COLORS

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Avoid color pairs that color-blind people cannot distinguish

- Red – green
- Blue - yellow



Microsoft

- Accessible colors: <https://color.adobe.com/create/color-accessibility>
- Check images to see how people with various color vision deficiencies would see them: <https://www.color-blindness.com/coblis-color-blindness-simulator/>
- Find predefined suitable themes for infographics from: <https://colorbrewer2.org>

Jeff Johnson (2013)



# DESIGNING WITH COLOURS

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## The basic rules

- Remember that **colors evoke feelings and moods** (e.g., red = love, passion, strength, and aggression), note also cultural differences
- Try to **match the color to the** overall tone and feel of the **brand or product**
- **One color** only might work, some brands are recognizable by their distinct color (e.g., McDonalds, Ferrari)
- Consider using **color harmony**:
  - Colors near to each other on the color wheel (e.g. for a “warm” palette: red, orange, and yellow hues or a cold palette...)
  - Complementary colors (e.g., other sides of the color wheel)
- **Don't use** colors that are so bright that they are hurting eyes (**chock colors**)
- Remember **color blind users!**



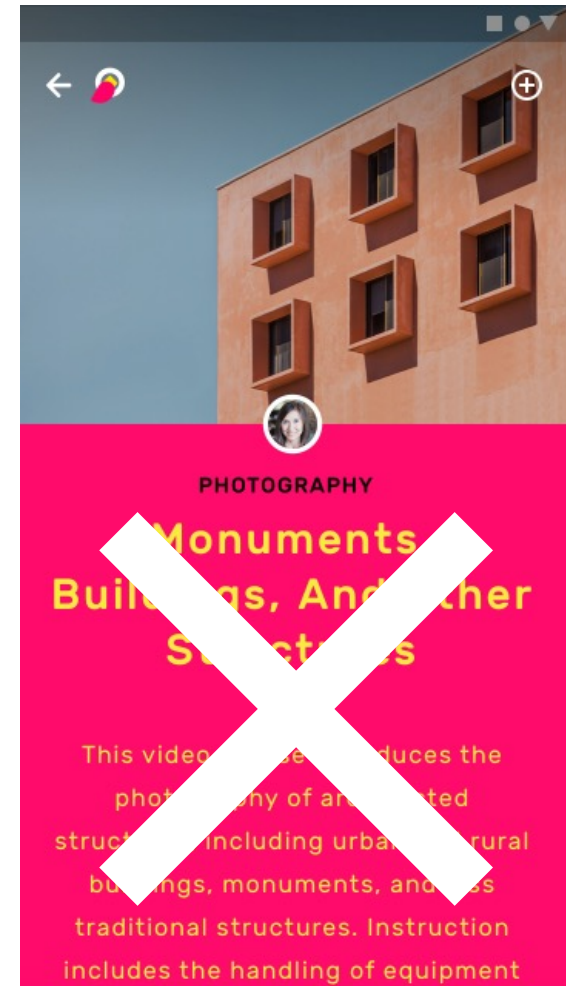
# TEXT COLOR

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## Text on colored backgrounds

- Black text on light backgrounds
- White text on dark backgrounds
- Color backgrounds or typography change the rules regarding text opacity and different states of the text
- Avoid long color text on color backgrounds!

<https://material.io/design/>

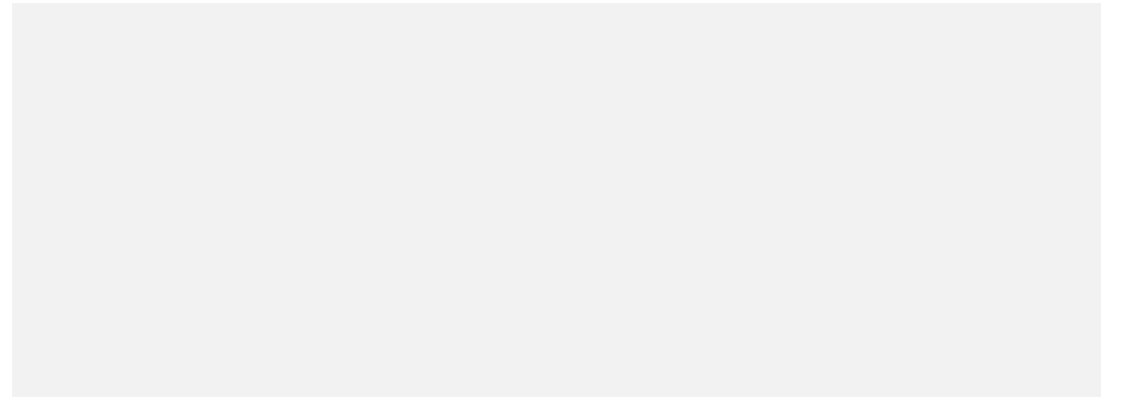


# DESIGNING WITH COLORS

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## GUIs

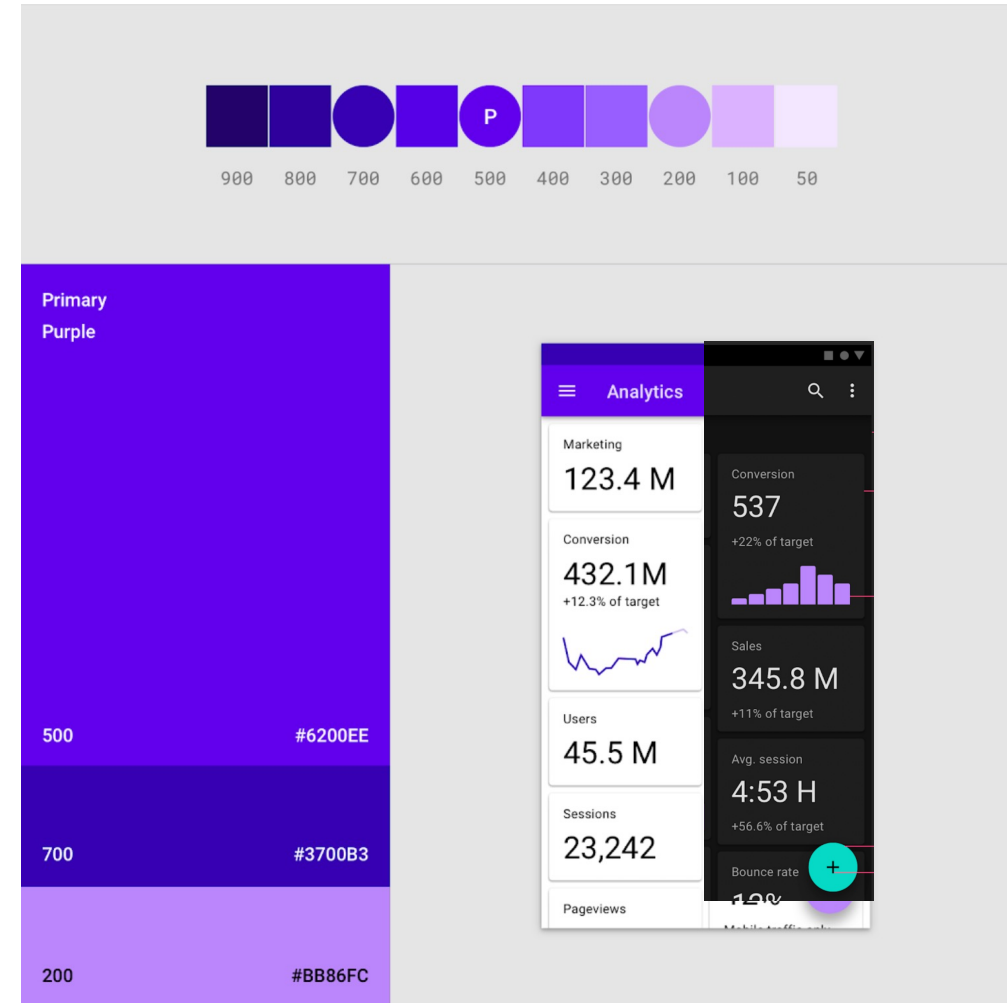
- Start with neutrals
  - Grey tones, white, black
- Add 1-3 colors that fits with the brand
  - Use colors wisely!
- Remember the white space!



# DESIGNING WITH COLORS

## GUIs

- <https://m2.material.io/design/color/the-color-system.html#color-theme-creation>



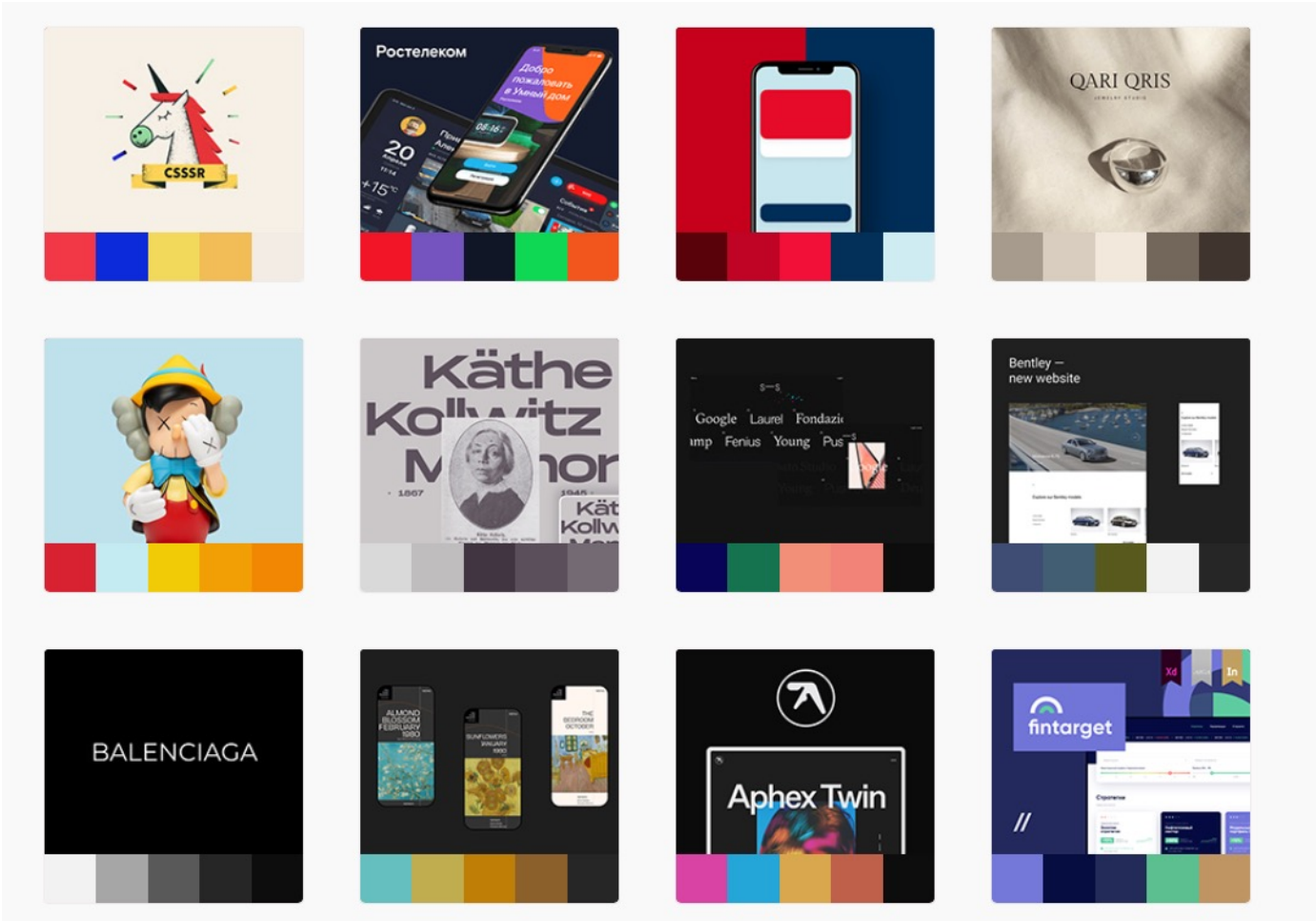
# ADOBE COLOR

The screenshot shows the Adobe Color website interface. At the top, there is a navigation bar with the text "Adobe Color" on the left and "CREATE EXPLORE TRENDS MY THEMES" on the right. Below the navigation bar, the main content area is titled "Color Wheel" and "Extract from an Image". On the left side, there is a section for "Apply Color Harmony Rule" with several options: Analogous (selected), Monochromatic, Triad, Complementary, Compound, Shades, and Custom. In the center, there is a large color wheel with a small cluster of five color swatches selected. Below the wheel, there is a horizontal bar showing five color swatches: #FFAFA3, #E89599, #FFB0DB, #E695E8, and #E3A3FF. At the bottom, there is a section for "Color Mode" set to "RGB" with a dropdown arrow. Below this, there are three rows of color swatches with their corresponding RGB values: Row 1: 255, 232, 255, 230, 227; Row 2: 175, 149, 176, 149, 163; Row 3: 163, 153, 219, 232, 255.



<https://color.adobe.com/>

# ADOBE COLOR

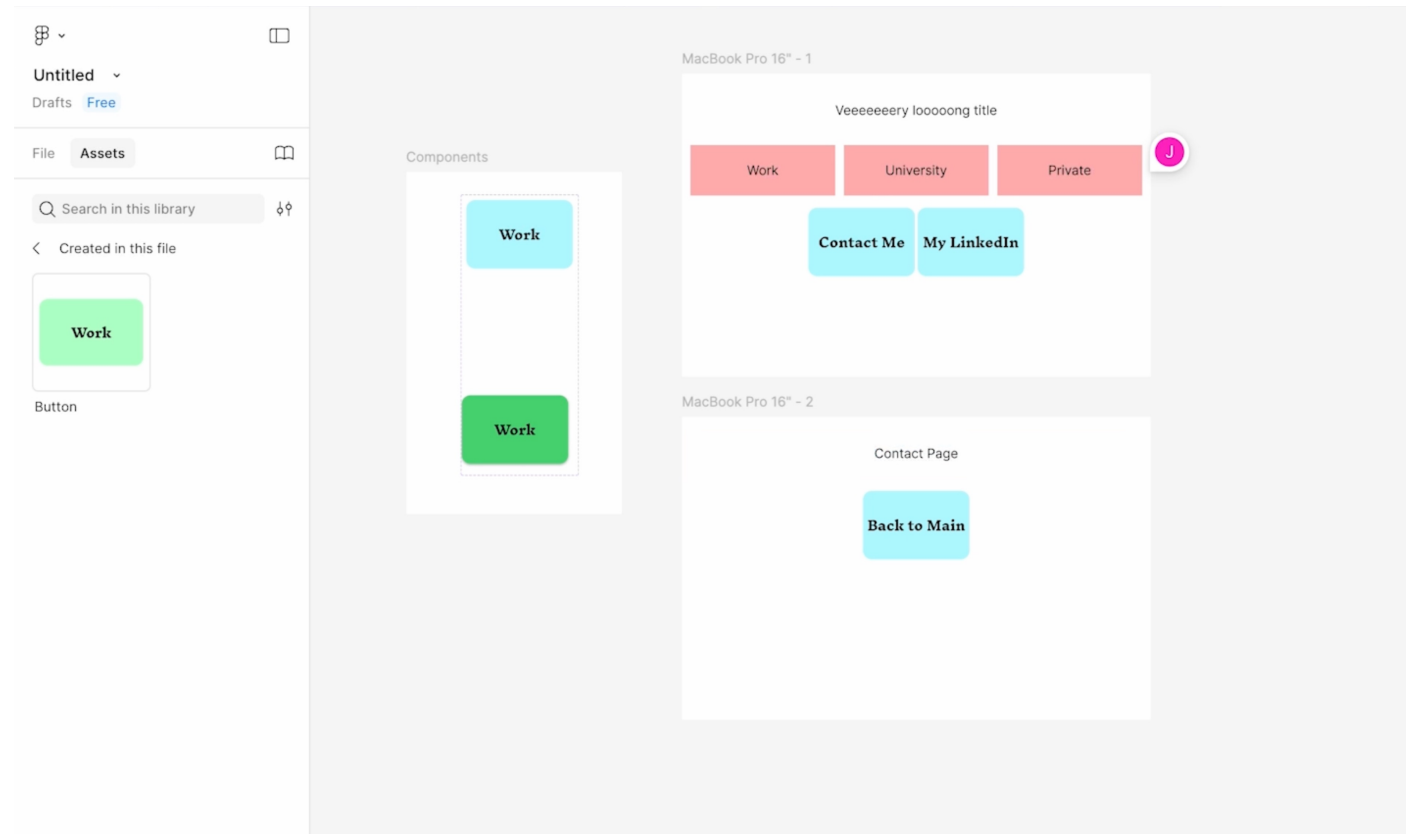


# FIGMA TUTORIAL

## MONDAY 27<sup>TH</sup> APRIL (12:00-15:00)

<https://www.figma.com>

- Maja will visit to teach you Figma prototyping with Julia
- Before Monday:
  - Watch Julia's Figma Intro (in Bs today afternoon)
  - Make a Figma account and try it to get familiar with the basic functions!



<https://brightspace.au.dk/d2l/le/lessons/202542/topics/2569575>



# BACKGROUND LITERATURE

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- › Löwgren & Stolterman (2007) Thoughtful Interaction Design
- › Jeff Johnson (2013) Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design guidelines
- › Johnson, J. (2007). GUI bloopers 2.0: Common user interface design don'ts and dos
- › Jenifer Tidwell (2010) Designing Interfaces: Patterns for Effective Interaction Design
- › <https://www.usertesting.com/blog/gestalt-principles/>
- › <https://medium.com/hh-design/crash-course-ui-design-25d13ff60962>
- › <https://webdesign.tutsplus.com/articles/a-beginners-guide-to-wireframing--webdesign-7399>
- › <https://www.interaction-design.org/literature/article/laws-of-proximity-uniform-connectedness-and-continuation-gestalt-principles-2>
- › <https://www.nngroup.com/articles/homepage-design-principles/>



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Thank you for today!

Questions?