

Interaction Design

Chapter 9 (June 11, 2014, 9am-12pm):
Simplicity and Graphical User Interface Design

Recap Day 7:

Overview

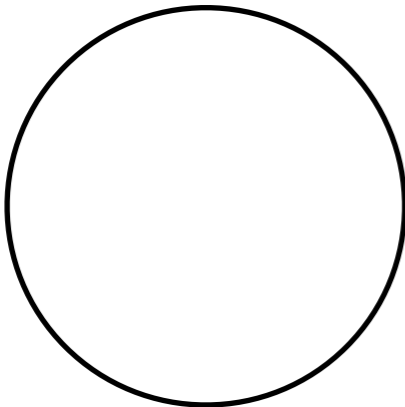
Tell a story
Make it tangible

DISCOVER
DEFINE

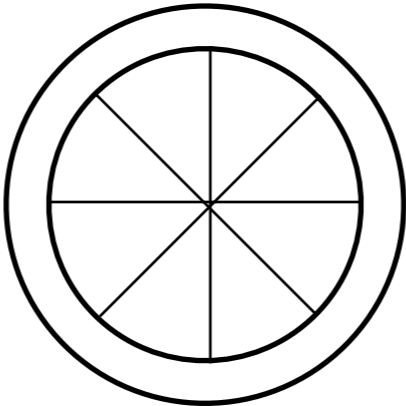
Prototype

DE

Fidelity v. Resolution



low resolution
low fidelity



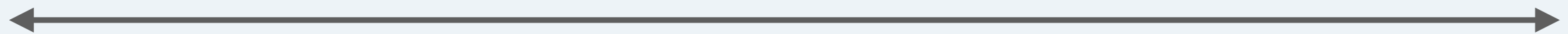
high resolution
low fidelity



high resolution
high fidelity

Low Fidelity

High Fidelity



Open Discussion

Sharp Opinions

Prompting Required

Self Explanatory

Quick and Dirty

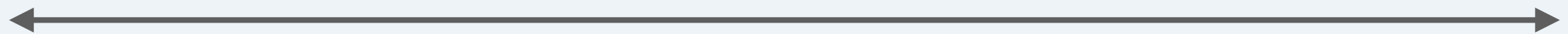
Deliberate and Refined

Early Validation

Concrete Ideas

Low Resolution

High Resolution



Less Details

More Details

Focus on core interactions

Focus on the whole

Quick and Dirty

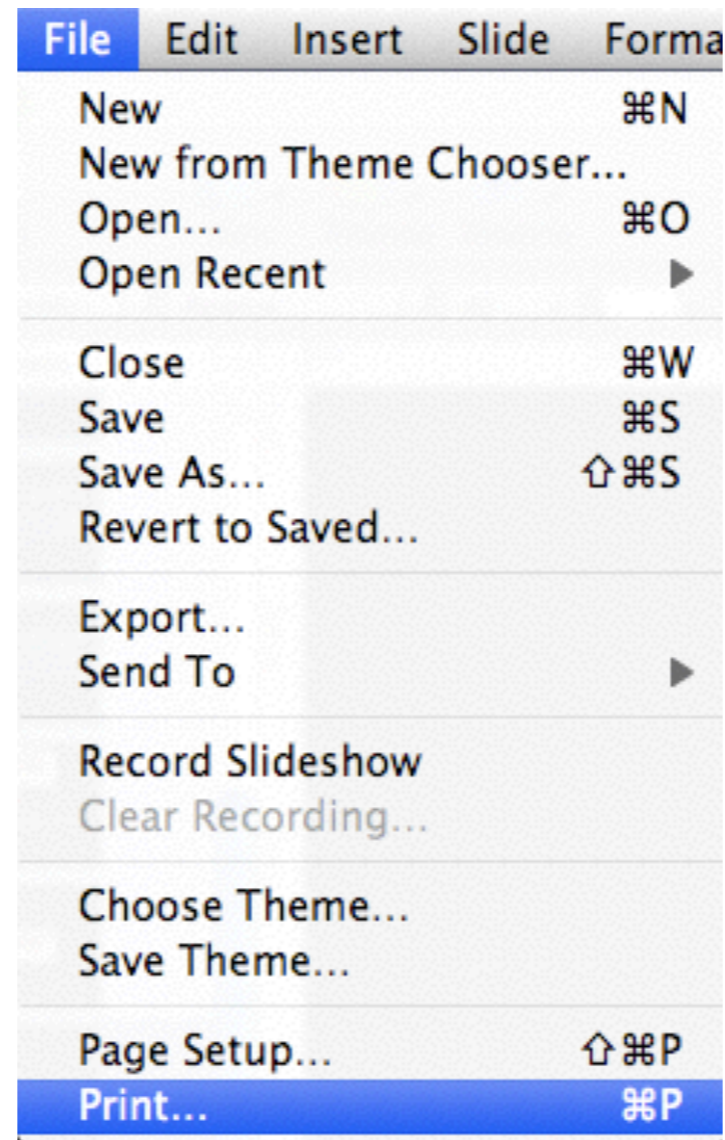
Deliberate and Refined

Early Validation

Concrete Ideas



80/20 rule



A principle for setting priorities: users will use 20% of the features of your product 80% of the time. Focus the majority of your design and development effort (80%) on the most important 20% of the product.

Interaction Design

Chapter 9 (June 11, 2014, 9am-12pm):
Simplicity and Graphical User Interface Design

Part One

"Great design is as much about prospecting in the past as it is about inventing the future."

Bill Buxton

Design and Simplicity

- Bauhaus: History and Directors
- Bauhaus: Structure and Products
- From Bauhaus to Braun



Bauhaus

http://www.portal-dessau.de/uploads/pics/Bauhaus_TM_2010_2.JPG



<http://www.flickr.com/photos/scoobyfoo/268308263/sizes/l/in/photostream/>

Key Dates:

founded 1919 in Weimar
closed down 1933 in Berlin

Key People - 3 Directors:

[1] Walter Gropius (1919-1928)

[2] Hannes Meyer (1928-1930)

[3] Ludwig Mies van der Rohe (1930-1933)

[1]



[2]



[3]



source: [7]

http://www.stylepark.com/db-images/cms/designer/img/miesvanderrohe_320_336-1.jpg

http://einestages.spiegel.de/hund-images/2009/03/30/59/3d98cebcb31abdbc318ed82e888903d6_image_document_large_featured_borderless.jpg

**Art and technology - a new entity.
Walter Gropius**



**The investigation of human needs should
be based on science - not formalism.
Hannes Meyer**



**God is in the details.
Ludwig Mies van der Rohe**



http://www.stylepark.com/db-images/cms/designer/img/miesvanderrohe_320_336-1.jpg

http://einestages.spiegel.de/hund-images/2009/03/30/59/3d98cebcb31abdbc318ed82e888903d6_image_document_large_featured_borderless.jpg

Design and Simplicity

- Bauhaus: History and Directors
- Bauhaus: Structure and Products
- From Bauhaus to Braun



Pre-Course



Prototyping Design

BAUHAUS

Hrsg.
Jeannine Fiedler
Peter Feierabend

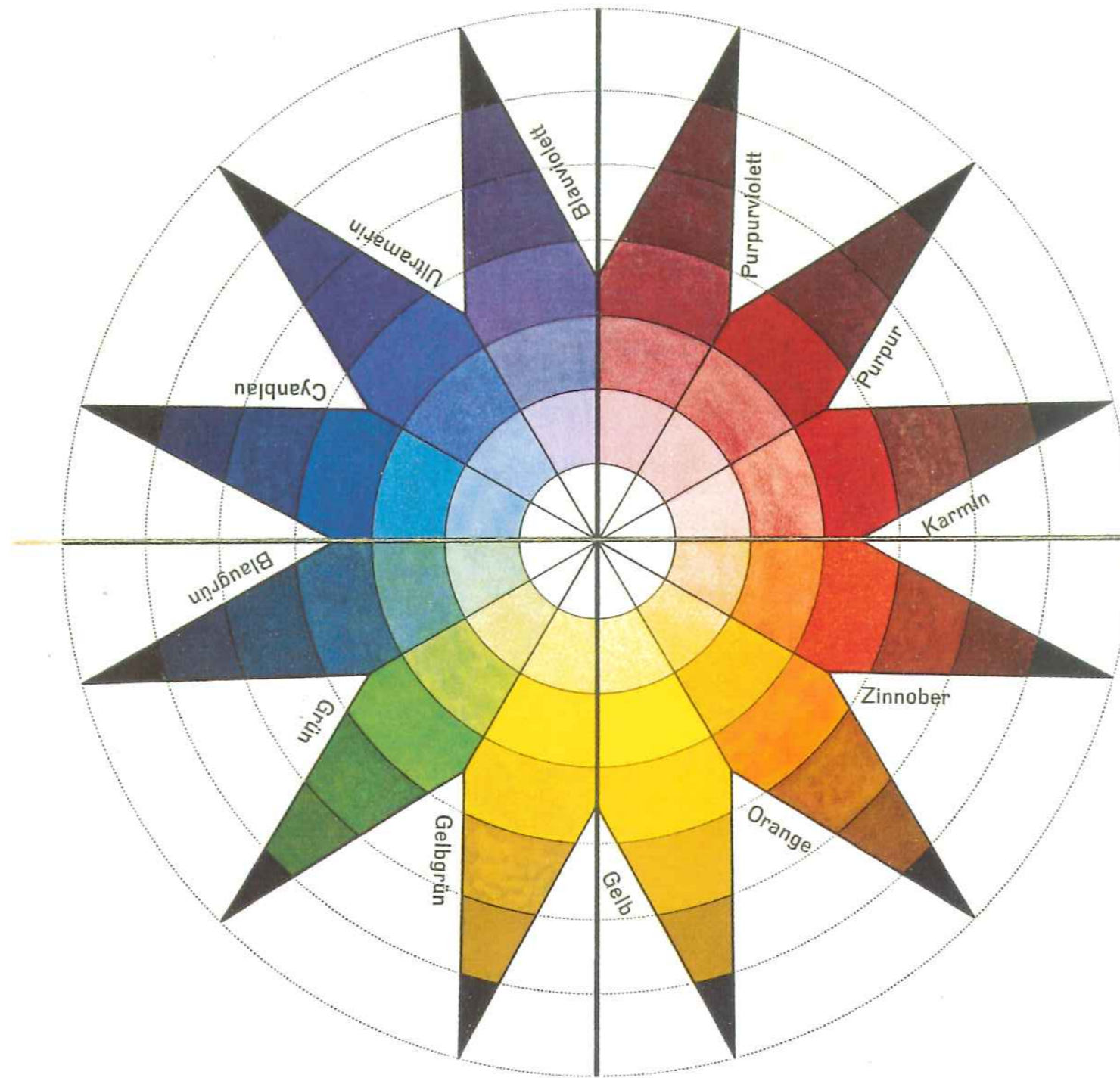


Basic Shapes

*h.f.*fullmann

www.kunstbuch-shop.de

source: [8]



Color Sphere

source: [7]



Marcel Breuer

http://www.boecker-buerogestaltung.de/images/designer/marcel_breuer.01.jpg

source: [8]



Chair B3 “Wassily”

http://upload.wikimedia.org/wikipedia/commons/1/19/Bauhaus_Chair_Breuer.png

source: [8]

Design and Simplicity

- Bauhaus: History and Directors
- Bauhaus: Structure and Products
- From Bauhaus to Braun



http://www.impressionen.de/medias/sys_impressionen/8468670013361232.image.jpg



<http://remodelista.com/img/sub/oilcruet2.jpg>



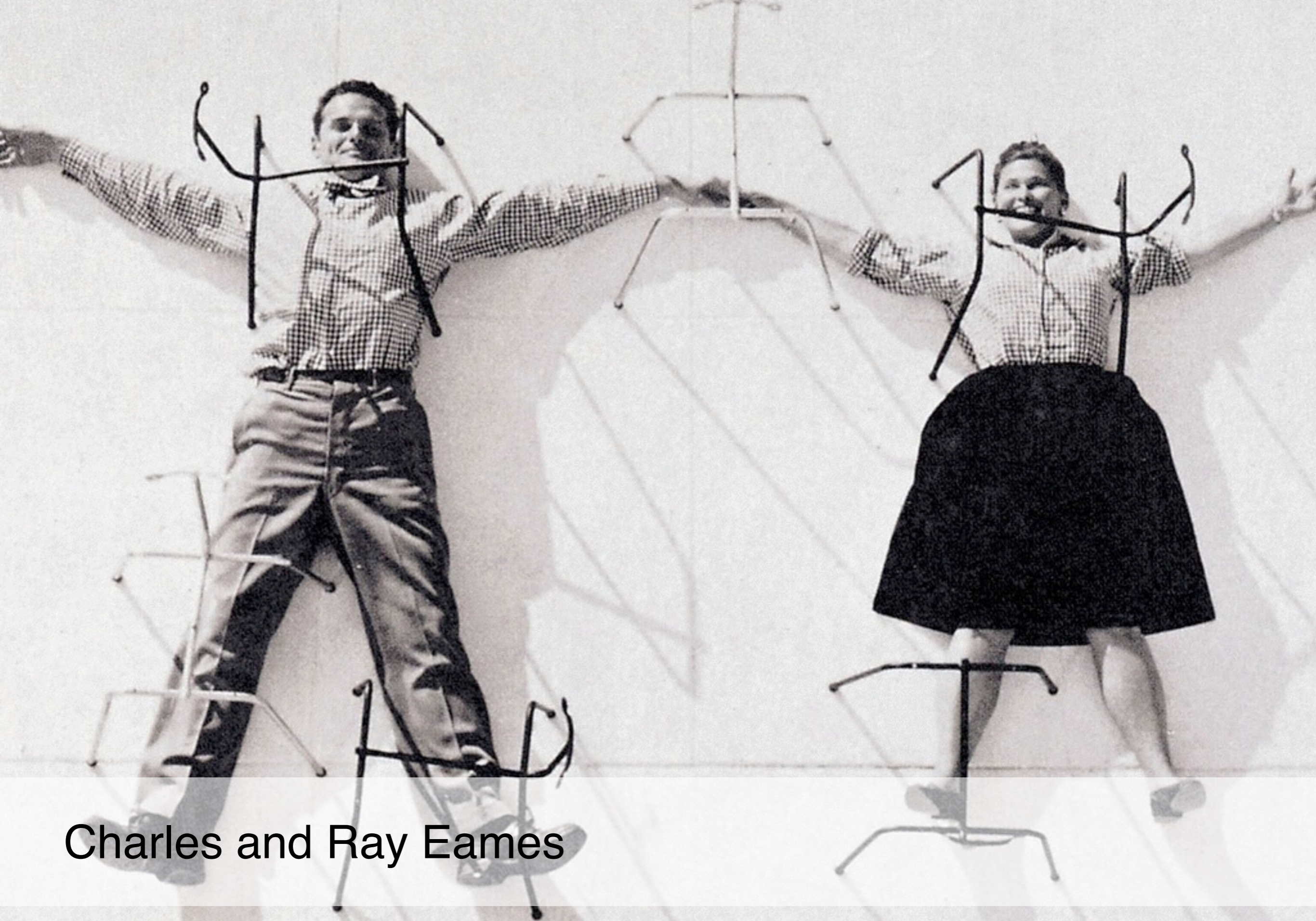
http://www.bauhaus-shop.de/templates/xt_bauhaus/img/categories/bauhaus_silberteekanne_pr.jpg

Requirements:

Type (variations of the original design)

Basic shape - few simple parts (industrial manufacturing)

Functionality (design for human needs)



Charles and Ray Eames

<http://luciotraficante.files.wordpress.com/2009/11/charles-ray-eames.jpg>

Ray & Charles Eames







Braun SK6

Braun Radio



iPod



iPhone Calculator



Braun Calculator

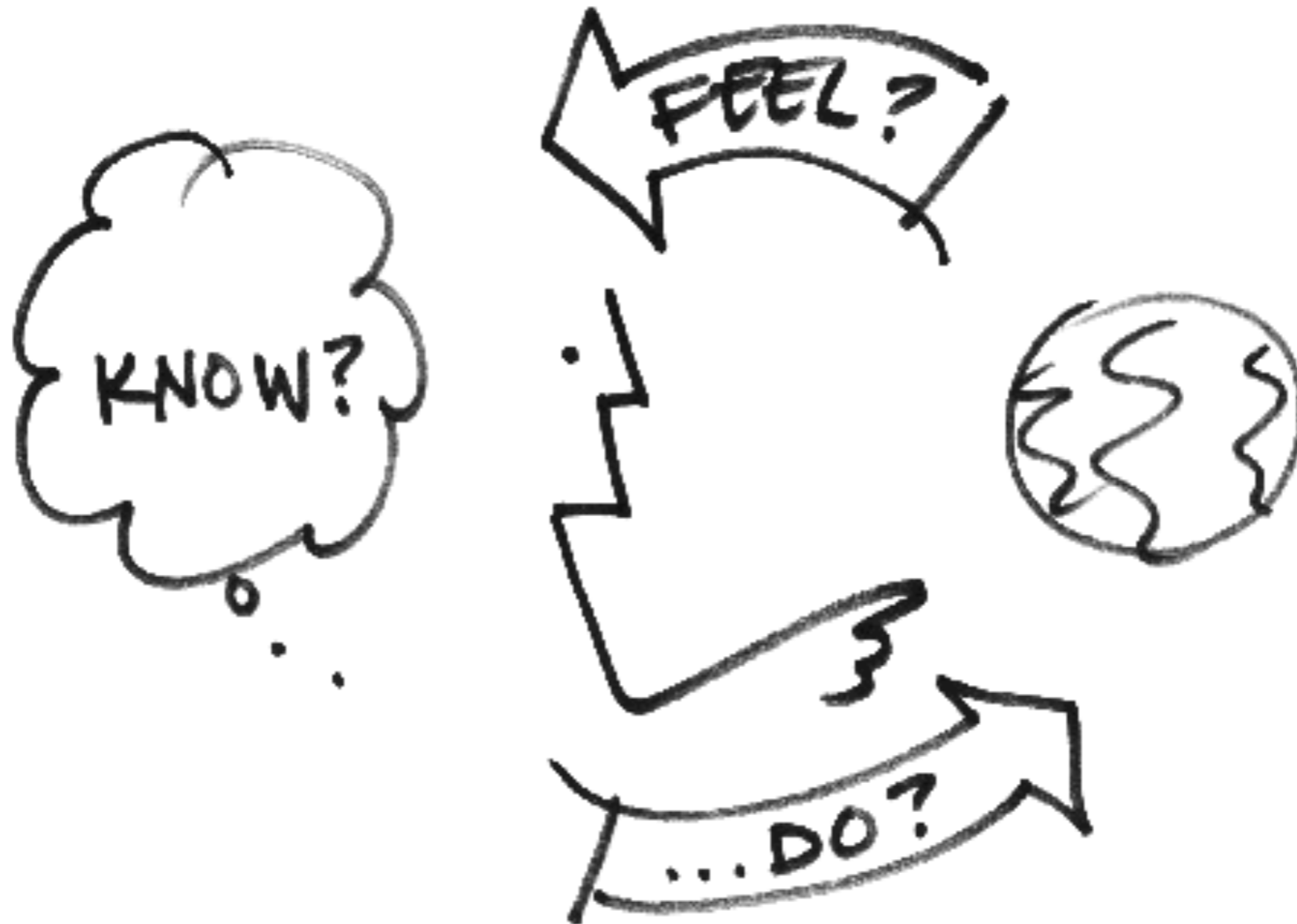


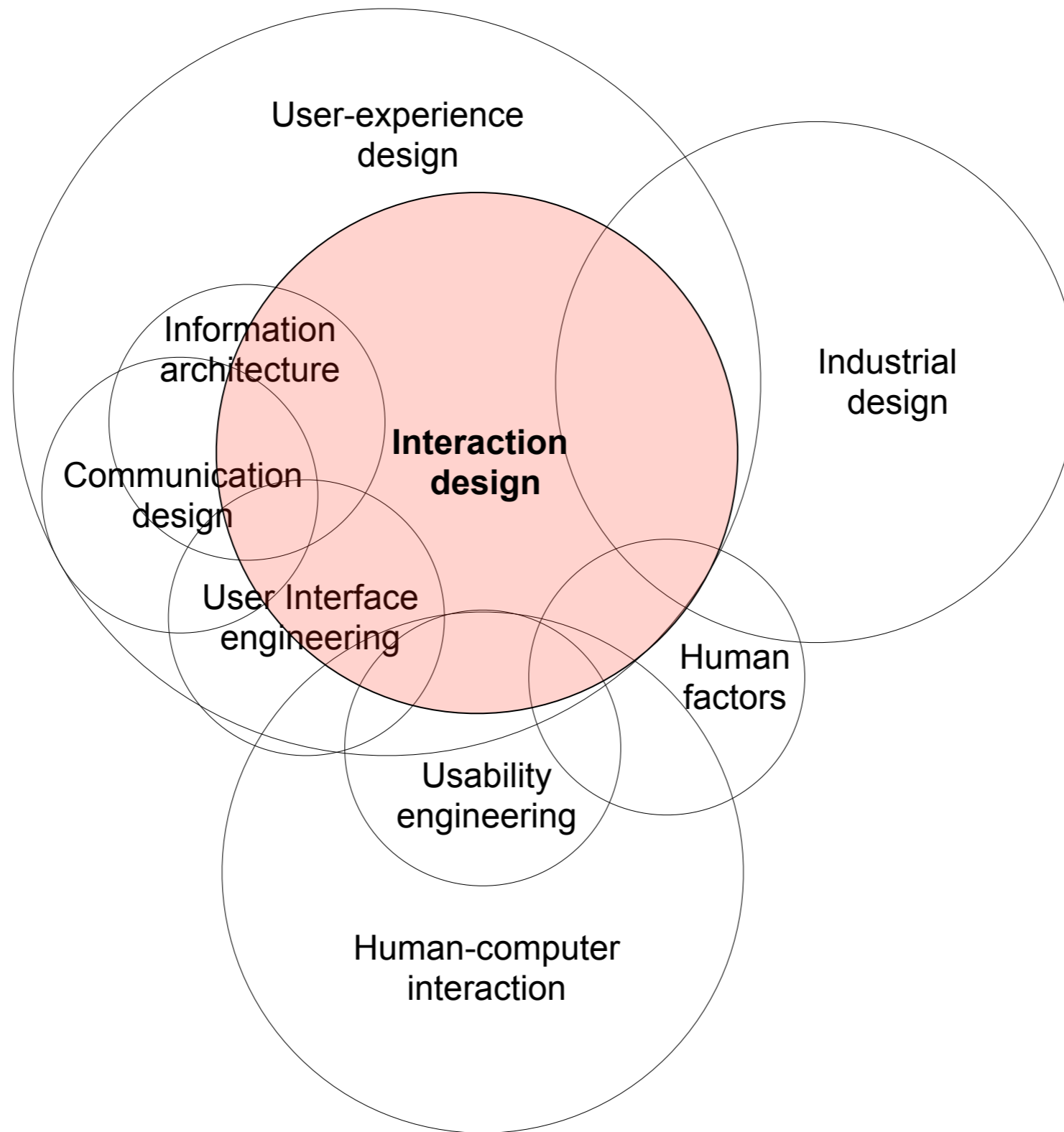
Part Two

Graphical User Interface Design

- Principles
- Layout, Typography, Color & Contrast
- Controls and Widgets
- Simplicity

INTERACTION DESIGN





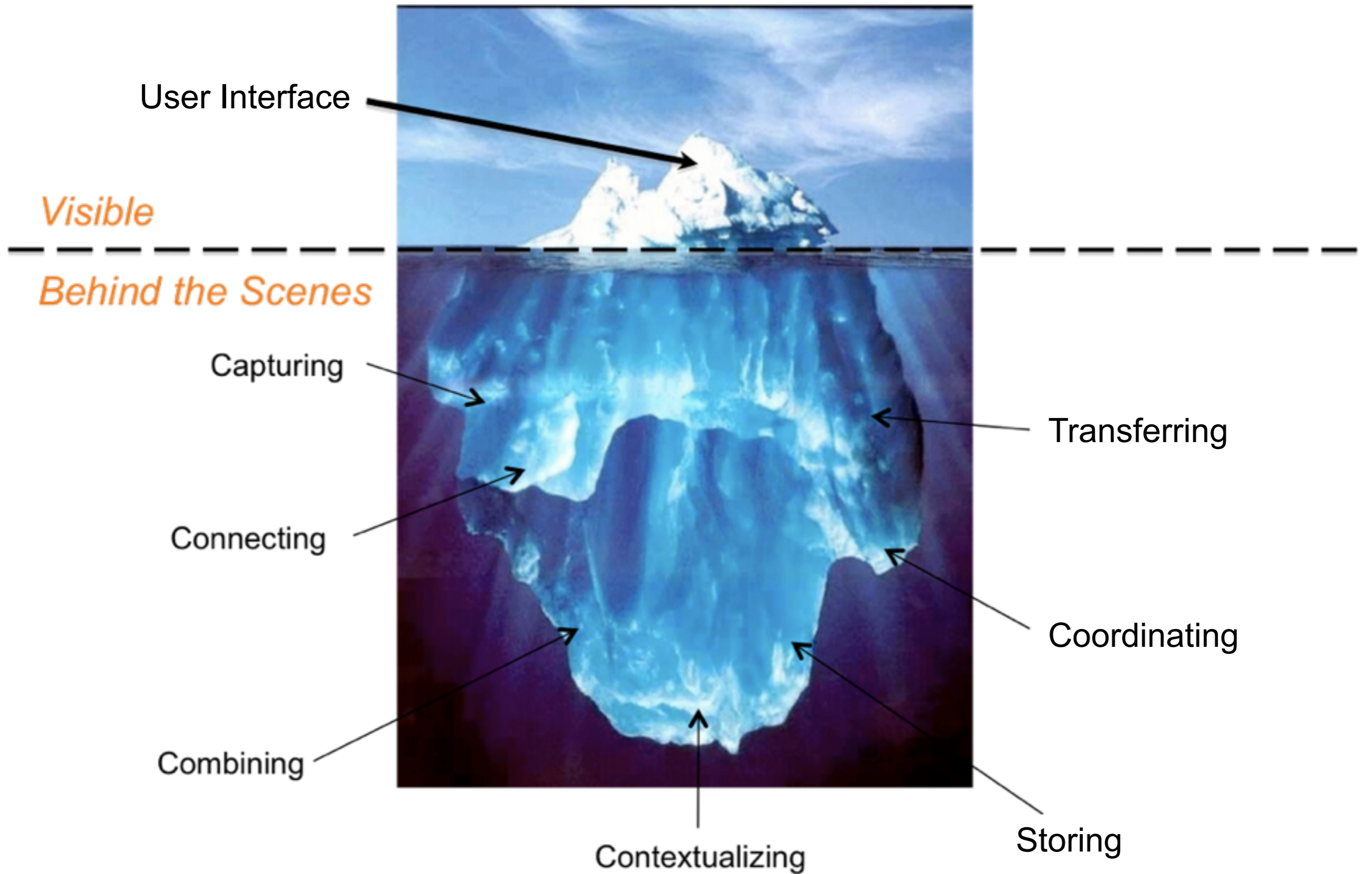
source: [4]

Like all forms of design, visual design is about problem solving, not about personal preference or unsupported opinion.

Bob Baxley

Interface design is only the experienced **representation** of the interaction, not the interaction design itself.





User Interface

Visible

Behind the Scenes

Capturing

Connecting

Combining

Contextualizing

Transferring

Coordinating

Storing

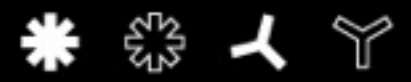


Tools

source : [4]



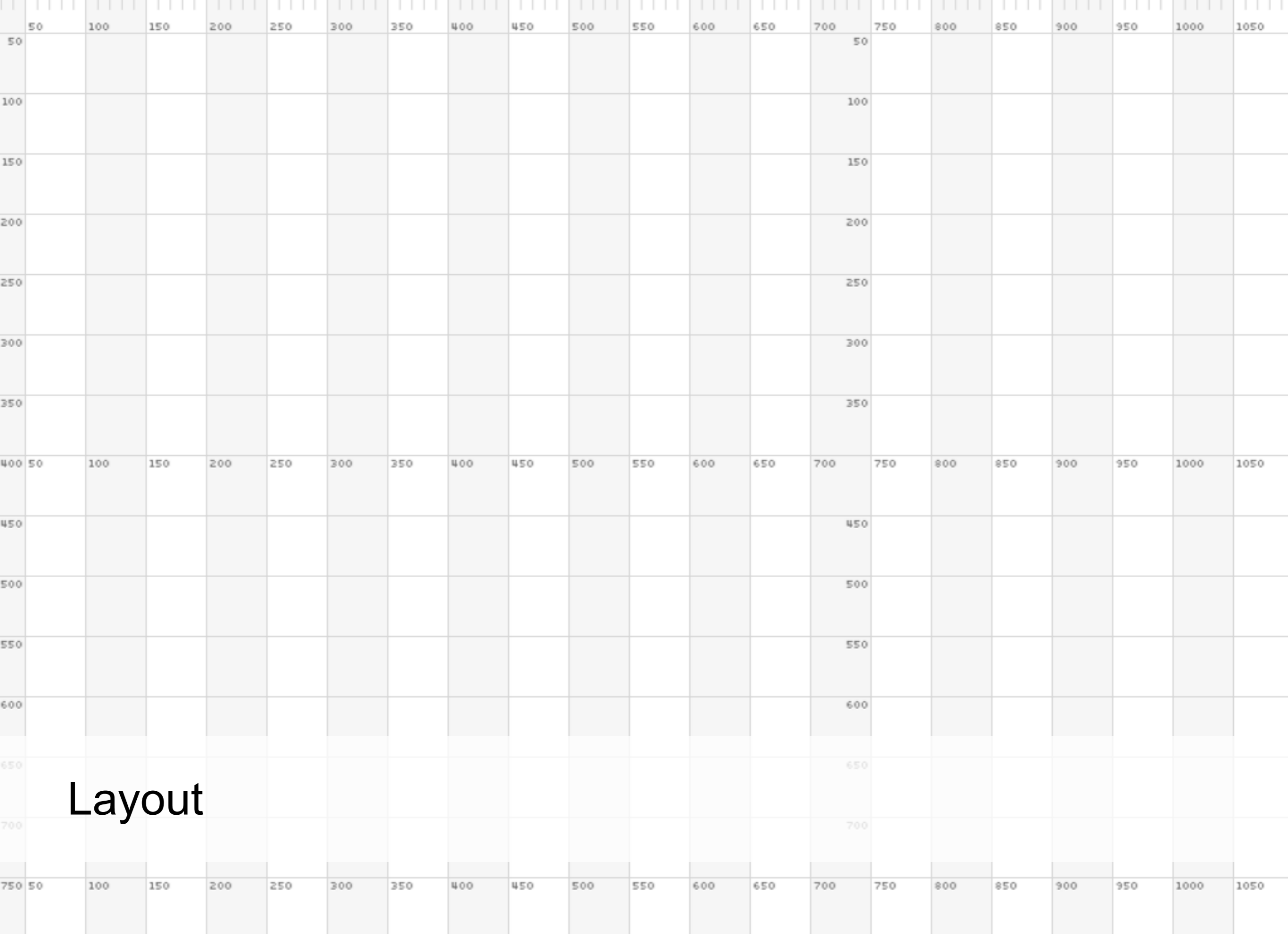
UI Elements



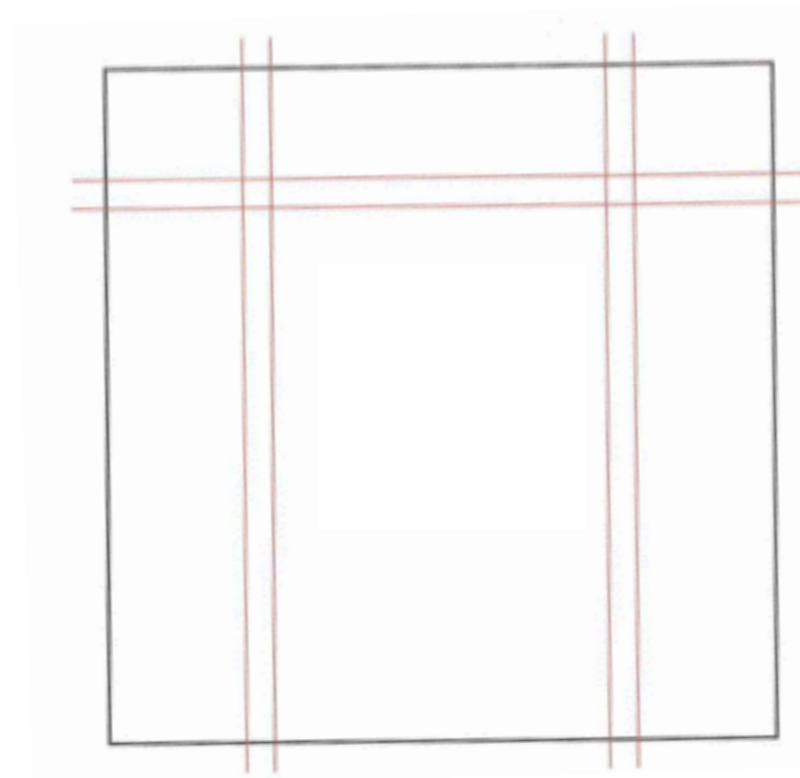
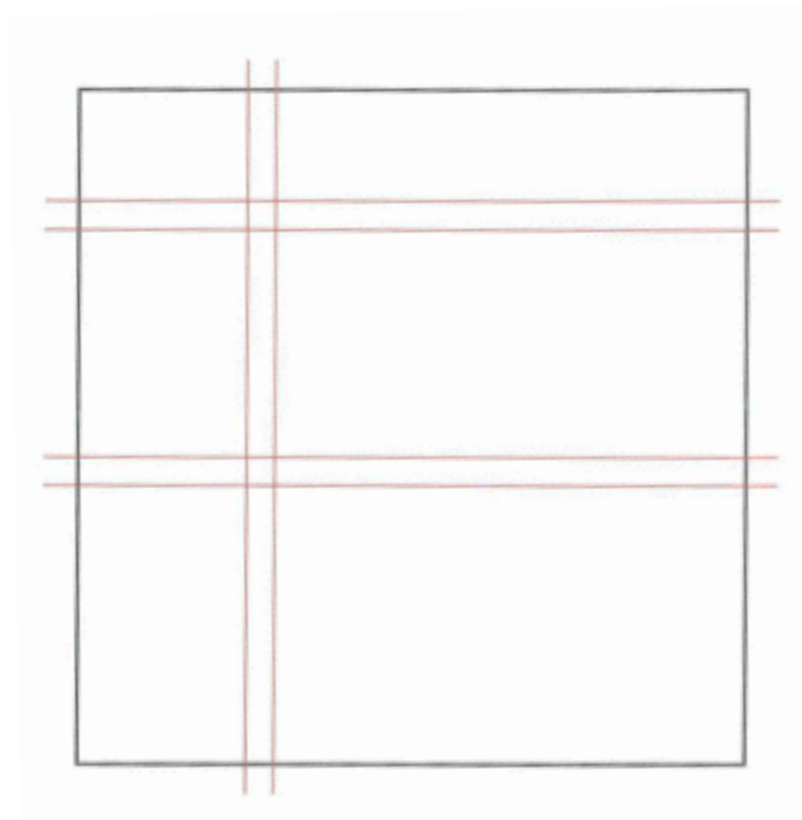
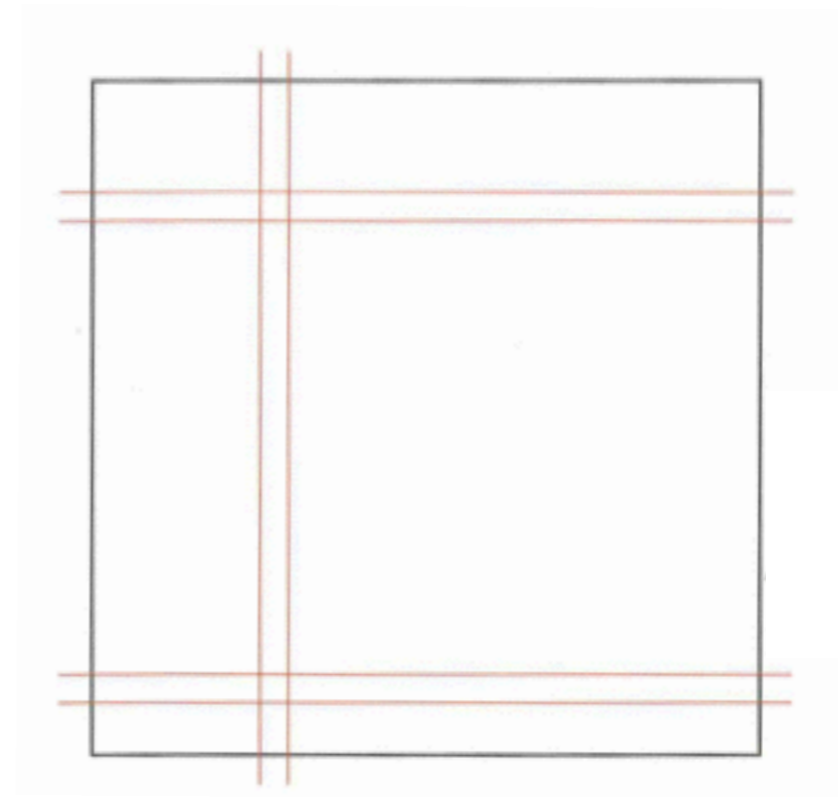
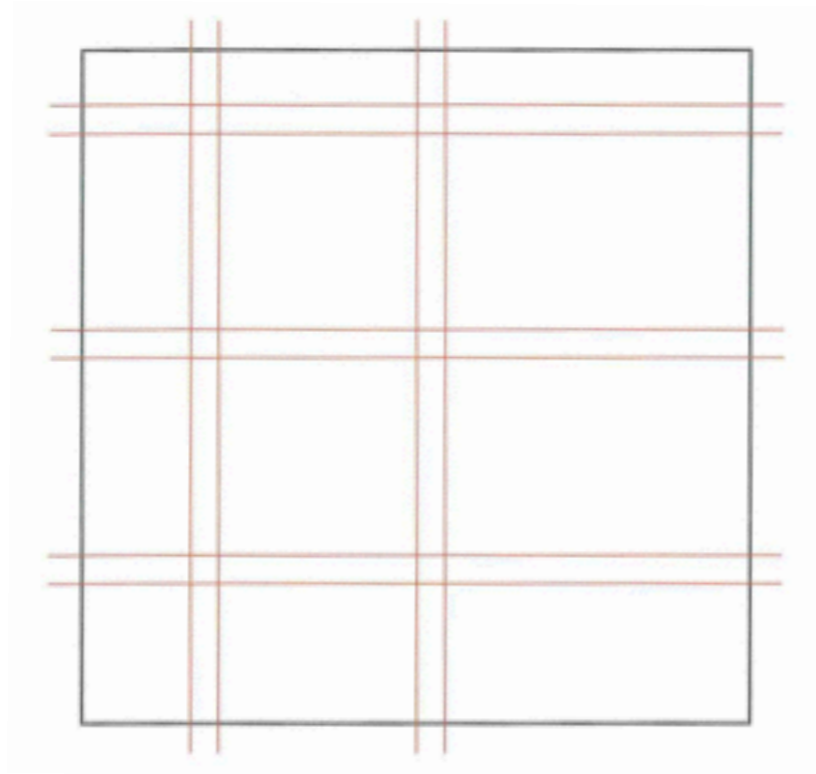
source : [4]

Graphical User Interface Design

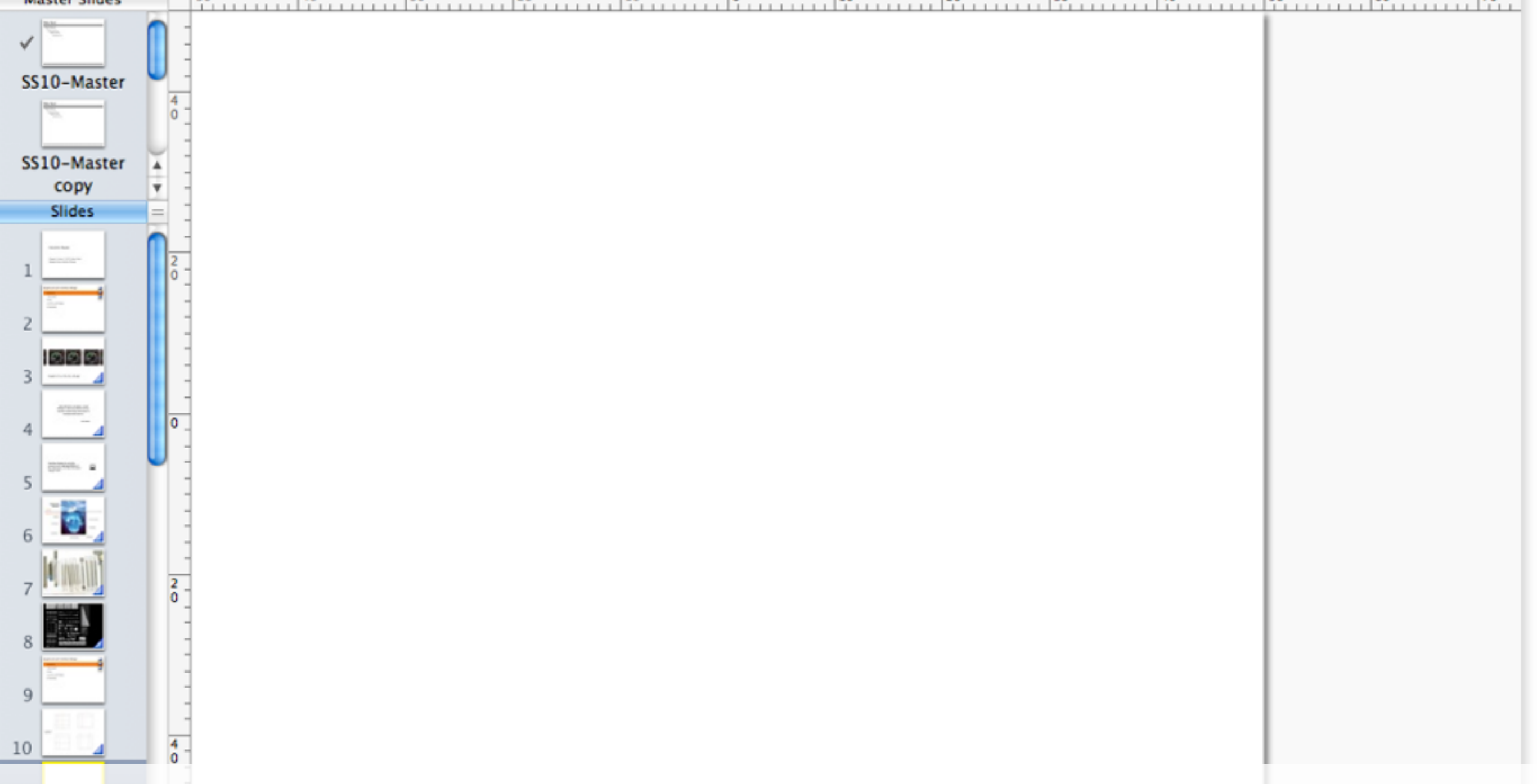
- Principles
- Layout, Typography, Color & Contrast
- Controls and Widgets
- Simplicity



Layout



source : [4]



Grids



Welcome to Wikipedia,
the free encyclopedia that anyone can edit.
3,994,652 articles in English

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Today's featured article



The **Cross of Gold speech** was delivered by William Jennings Bryan, a former congressman from Nebraska, at the Democratic National Convention in Chicago on July 9, 1896. In the address, Bryan supported bimetallism or "free silver", which he believed would bring the nation prosperity. He decried the gold standard, concluding the speech, "you shall not crucify mankind upon a cross of gold". Bryan's address helped catapult him to the Democratic Party's presidential nomination; it is considered one of the greatest political speeches in American history. For twenty years, Americans had been bitterly divided over the nation's monetary standard. Many Americans believed bimetallism (making both gold and silver legal tender) was necessary to the nation's economic health. Bryan's speech, delivered at the close of the debate on the party platform, electrified the convention and is generally credited with getting him the nomination for president. However, he lost the general election to William McKinley and the United States formally adopted the gold standard in 1900. [\(more...\)](#)

Recently featured: *Dendrocollybia* – *Killer7* – *Calgary Stampede*

[Archive](#) – [By email](#) – [More featured articles...](#)

Did you know...

From Wikipedia's newest content:

- ... that during the **Antinomian Controversy**, Anne Hutchinson (*pictured*) withstood two separate trials without counsel before being banished from Massachusetts?
- ... that **Argentine nationalism** sees José de San Martín, Juan Manuel de Rosas and Juan Perón as a line of historical continuity?
- ... that one of the most popular Polish cabarets, **Pod Egidą**, performing since 1967, has faced persecution from the communist authorities in the People's Republic of Poland?
- ... that 2012 College World Series Most Outstanding Player Robert Refsnyder was born in South Korea and adopted by a California couple when he was three months old?
- ... that the print identity of UK music newspaper *The Stool Pigeon* is modelled on Victorian tabloids?
- ... that 2012 Australian Olympic canoeist Hannah Davis won a bronze medal in the sport at the 2008 Summer Olympics?
- ... that the starfish *Anasterias rupicola* feeds on the limpet *Nacella macquariensis*, sometimes hunting it in groups?



In the news

- At least 141 people are killed in a **flash flood** in the Krasnodar Krai region of Russia.
- The Shard** (*pictured*) in London is inaugurated as the tallest building in Europe, with a height of 310 metres (1,020 ft).
- In association football, the **Copa Libertadores** concludes with Corinthians defeating Boca Juniors in **the Finals**.
- CERN announces the discovery of a new particle with properties consistent with the **Higgs boson** after experiments at the **Large Hadron Collider**.
- GlaxoSmithKline** pleads guilty to criminal charges of health care fraud and is fined a record US\$3 billion.
- In association football, **UEFA Euro 2012** concludes with Spain defeating Italy in **the final** to win a second consecutive European Football Championship.



[Wikinews](#) – [Recent deaths](#) – [More current events...](#)

On this day...

July 9: Independence Day in **Argentina** (1816) and **South Sudan** (2011)

- 455 – Roman military commander **Avitus** was proclaimed Emperor of the Western Roman Empire.
- 869 – **An earthquake and subsequent tsunami** struck the area around Sendai, Japan, leaving sand deposits up to 2.5 miles (4 km) inland.
- 1850 – Following **Zachary Taylor's** death, **Millard Fillmore** (*pictured*) became **President of the United States**, the last member of the **Whig Party** to hold that office.
- 1962 – In a seminal moment for pop art, **Andy Warhol's** *Campbell's Soup Cans* exhibition opened at the Ferus Gallery in Los Angeles.
- 2008 – Under the belief that Israel and the United States were planning to attack its nuclear programme, Iran conducted the **Great Prophet III** missile test and war games exercise.



More anniversaries: [July 8](#) – [July 9](#) – [July 10](#)

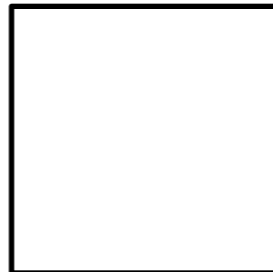
[Archive](#) – [By email](#) – [List of historical anniversaries](#)

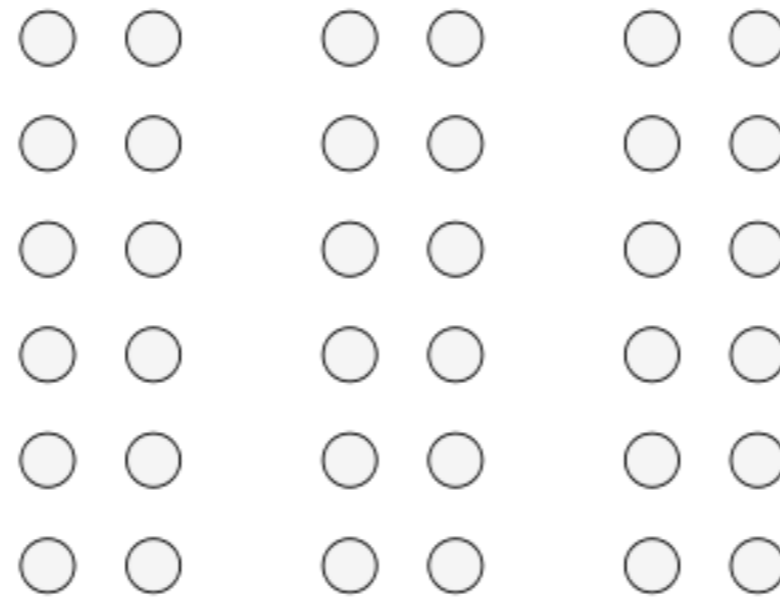
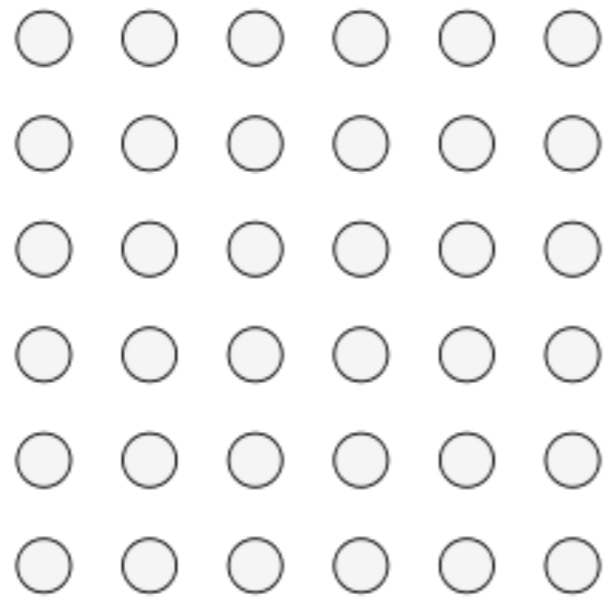
Grids



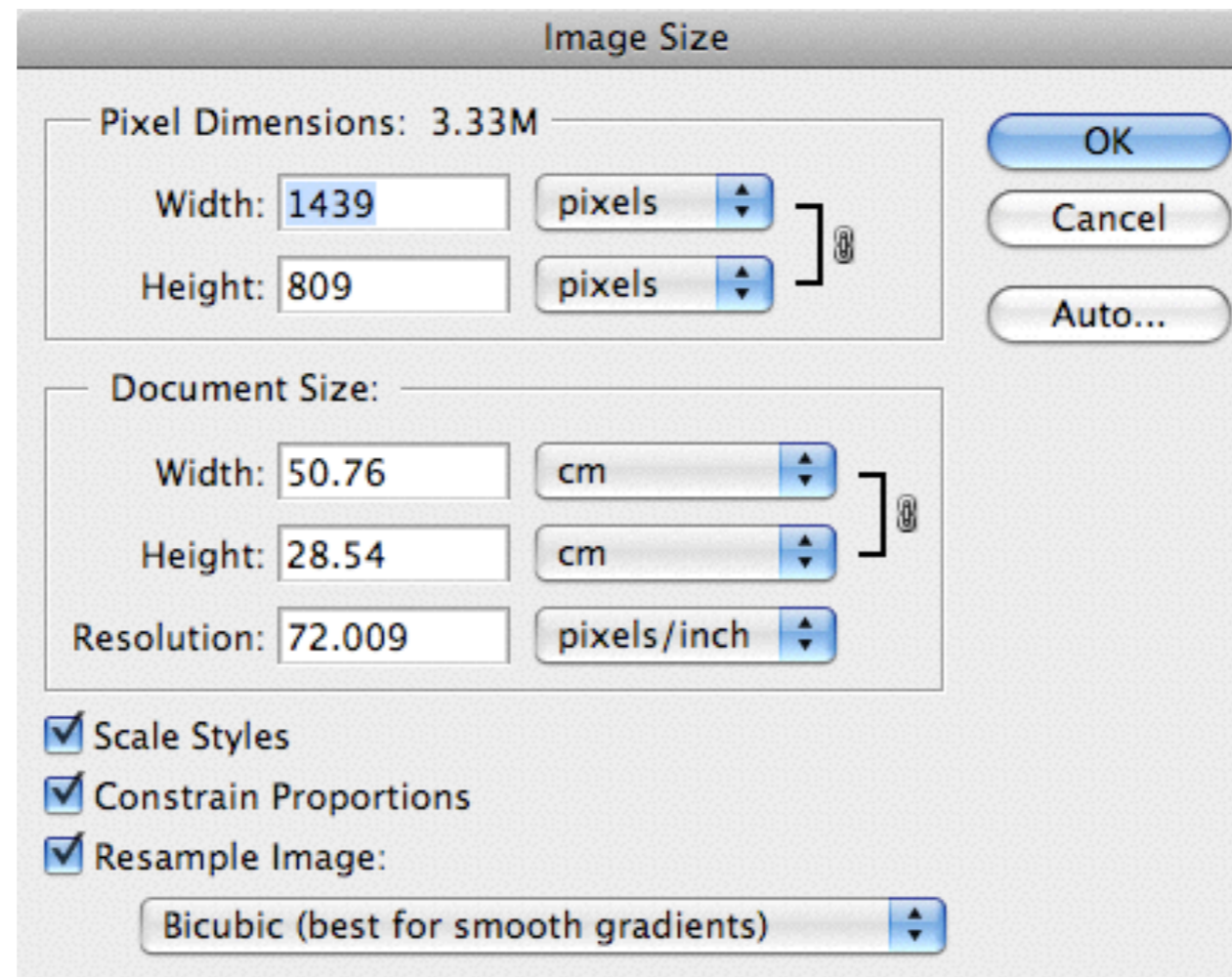
Visual Clutter

Clutter creates visual noise and
makes an application hard to use





Proximity & Grouping



By grouping similar elements together, the designer helps the user deal with a complex information display by reducing it to a manageable number of units.



Primary Action / Secondary Action



All form actions are not equal, and therefore the visual presentation of actions should match their importance to make it easier to complete a form.

Visual distinction helps users make “good” choices.



Example: "Web Design, Filling the Blanks"



Yammer





Constraint

source : [2]

Constraints are closely related to real affordances: For example, it is not possible to move the cursor outside the screen: this is a physical constraint.

Locking the mouse button when clicking is not desired would be a physical constraint. Restricting the cursor to exist only in screen locations where its position is meaningful is a physical constraint.

Flip Horizontally
Flip Vertically

Lock 
Unlock 

Group 
Ungroup 

Visual Constraint

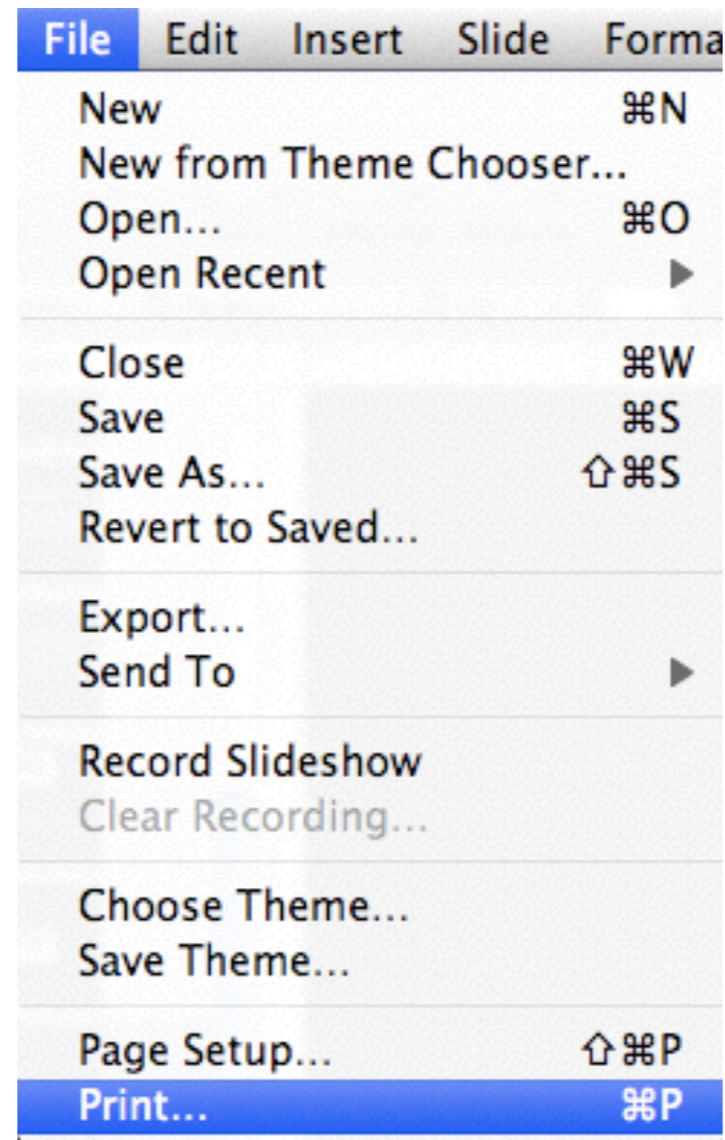
source : [2]

Scalability of Interfaces / Flexibility



80/20 rule

source : [1]



A principle for setting priorities: users will use 20% of the features of your product 80% of the time. Focus the majority of your design and development effort (80%) on the most important 20% of the product.

URL:

Hosts
 Span All
 Allow List ->

Reject List ->

Accept/Reject
 Accept: Reject:
 htm(l) gif
 jpg txt
 zip exe
 doc All
Custom list:

Special
Retries:
Additional Parameters:

 Act like a browser
 Convert links
 Ignore robots.txt

Running Options
 Go 2 background
 No info
 All info
 Some info
 Append to logfile
 Overwrite Logfile
Logfile:

Retrieval Options
 No clobber
 Timestamping
 Continue file download
Quota (kB):
 Spider (check for files)
 No directories
 Force directories
 Save to custom dir:

 Clear Server Cache
 Recursive Retrieval
Depth:
 Download "as-is"
 Mirror site
 add HTML suffix
 Only go deeper

Overcrowded Widget

Users are overwhelmed by options, limitless flexibility

Only show me what I need to see

Implement one easy to discover and easy to learn core pattern for common actions across the platform.

Adjust to users' preferences.

Make less common actions harder to reach.



Aesthetic-Usability Effect

source : [1]



Aesthetic-Usability Effect

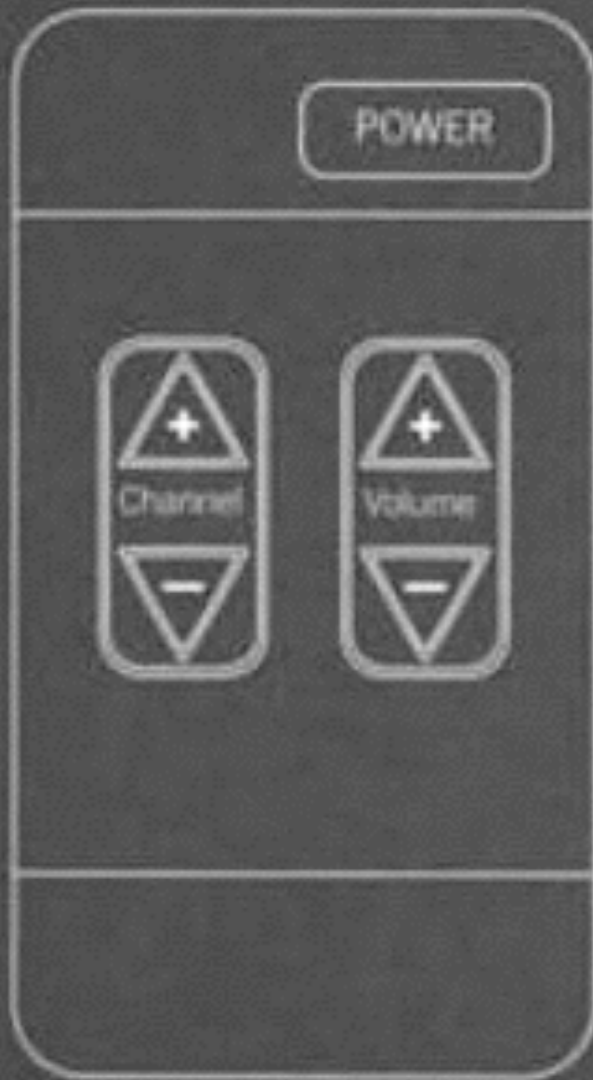
Aesthetic designs are perceived as easier to use than less-aesthetic designs.

Aesthetic designs look easier to use and have a higher probability of being used, whether or not they actually are easier to use.

source : [1]

The flexibility-usability tradeoff is exemplified in the well known maxim “jack of all trades, master of none”.

Flexible designs can perform more functions than specialised designs, but they perform the functions less efficiently.





Fonts

Courier
CourierBold
CourierBoldOblique
Helvetica
HelveticaBold
HelveticaBoldOblique
HelveticaOblique
TimesBold
TimesBoldItalic
TimesItalic
TimesRoman

- two general groups: serif & sans serif
- sans serif can be scanned quickly
- avoid very heavy or light typefaces for UIs
- avoid combining too similar typefaces
- stick with standards first

A B C D E F

A B C D E F

Roboto

THIN

SUNGLASSES

BLACK SMALL CAPS

Self-driving robot ice cream truck

ITALIC

Fudgesicles only 25¢

BOLD

ICE CREAM

BOLD CONDENSED

Marshmallows & almonds

MEDIUM

#9876543210

LIGHT

Music around the block

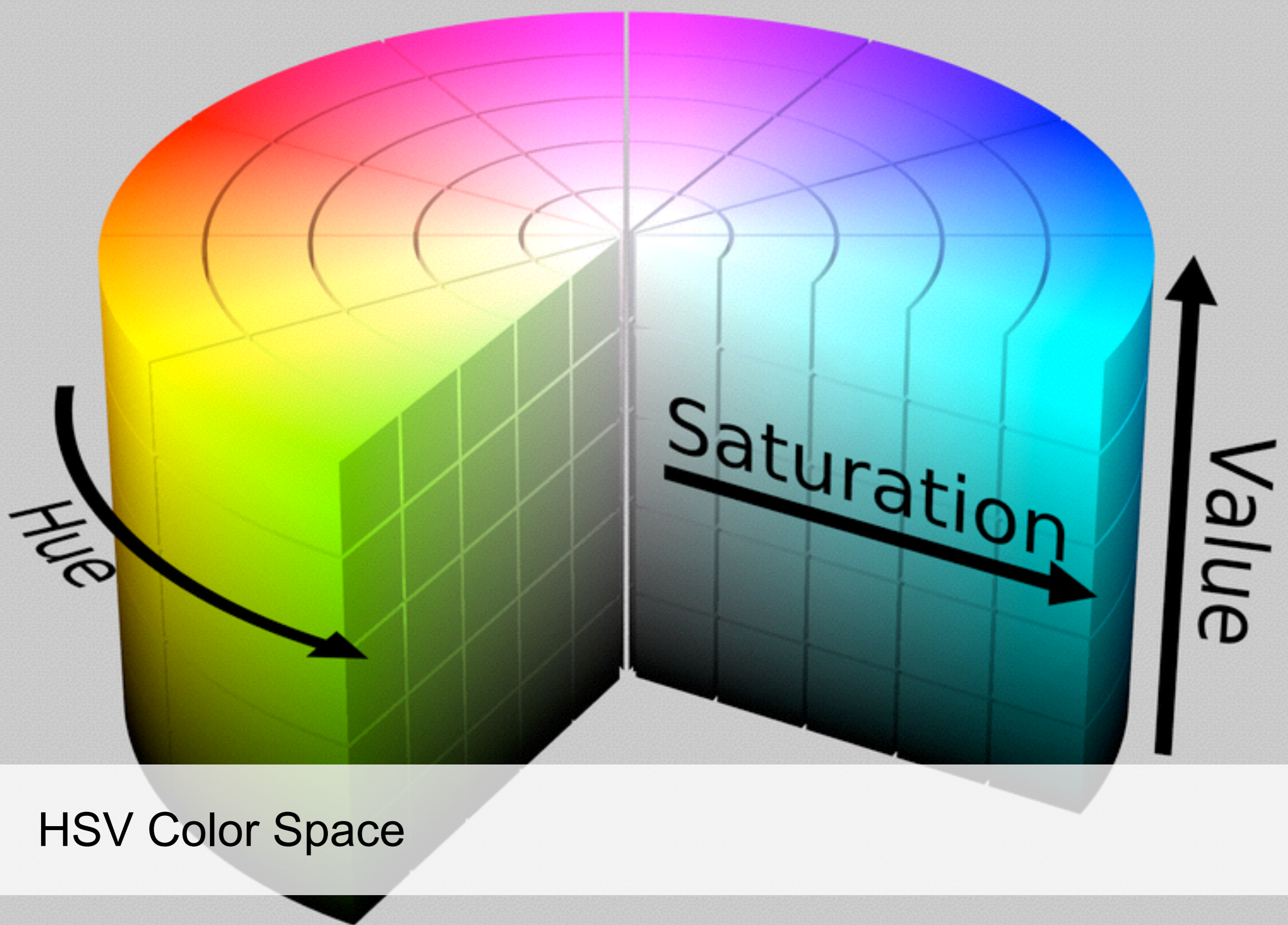
BOLD ITALIC

Summer heat rising up from the sidewalk

REGULAR

source : [5]

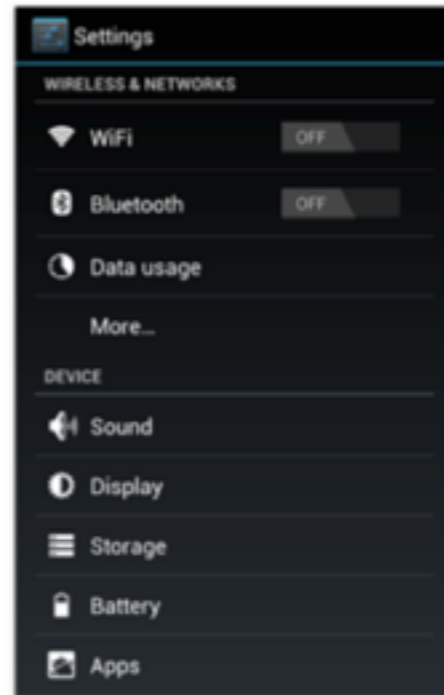
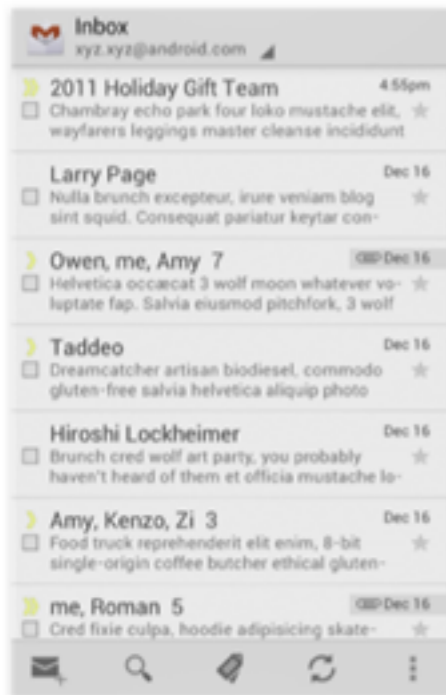
Color



- three main properties: hue, saturation (or intensity) and value (or brightness)
- hue refers to the color itself (the particular color within the optical (visible) spectrum of light), saturation refers to the brightness, value refers to the amount of black in a color

- color can provide cues for use
- color can establish a relationship
- color can indicate importance
- consider human factors such as color blindness and cultural differences

Colors



source : [5]

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LINKS View/Add FREE Classifieds/View/Add

Welcome to the hosanna1.com Portal Page
Home of AAA World Wide Web Design
& Hosanna Afghan Hounds


Welcome to
www.hosanna1.com
PORTAL Page HOME OF
The Most Beautiful Pages On The WWW
Hosanna Afghan Hounds
& AAA World Wide Web Design

3A Home Business Resources and Education
Background ~ MY RESUME ~ ASP
NEW! The Most Beautiful MUSIC On The WWW!
hosanna1.com JUKEBOX!!!

AN AMERICAN who LOVES
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EMERGENCY - HELP SAVE OUR PETS!
CA Smoking Ban Costs them 100 Billion\$
Smoker's Health & Rights hosanna1.com Weblog

JOHN & LYNDA FARLEY EDMONTON, KENTUCKY
[CLICK HERE TO EMAIL US](#)



Hoopla Sculpture
EMAIL ARTIST AT: kvalimaki@aol.com

Questionable Website

USE REFRESH BUTTON - We Update OFTEN FULL SCREEN SETTING
ARCHIVES | AFGHAN HOUNDS: | [Gwich'in](#) | [Hosanna+PUPPIES!](#)
| [Mahadi](#) | [Polo](#) ~ BIS National Specialty 2003
travel-hound | Other DOG Breeds: [Cyrano Hounds](#) (whippets/greyhounds)
| [Play Kennel](#) (KEES/PYRS) KEESHOND PUPPIES HERE NOW!
[SKY Shelties](#) | [ART/CobraOriginals](#) Afghan, dog breeds, horses
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SOME SAY TIMES ARE CHANGING,
[Hosanna Afghans HISTORY Page CLICK HERE](#)

From the Mouths of Babes
~~~~~  
My daughter said, 'I wonder...'  
~~~~~  
I had NEVER thought of
that, so I did a Bible Search...

NEVER FORGET!



LOST AFGHAN HOUNDS
[Joy - in Indiana](#)
[CLICK HERE](#)

[PRECIOUS is still lost](#)

We have BEAUTIFUL PUPPIES available SOON, whelped JUNE 17, 2010, with AKC Champion sire & dam!

We also have some BEAUTIFUL Champion sired young male and female Afghan Hounds AVAILABLE NOW. If you have room in your heart to love one of these 'most beautiful dogs in the world, please check out [THIS PAGE](#)

COME SEE THE MOST BEAUTIFUL ART CAR IN THE WORLD, AWARD WINNING PARADE CAR, AND OUR HOSANNA AFGHAN HOUNDS DOG SHOW





Inter



Show All

Language For

Region: Custom

Dates

Saturday, 5 January 2008

5 January 2008

5 Jan 2008

Contrast

source : [2]

Effective design creates no more contrast than necessary.

This allows the viewer to easily identify the elements in question as a strongly defined subset of the available information.



Show All

Language For

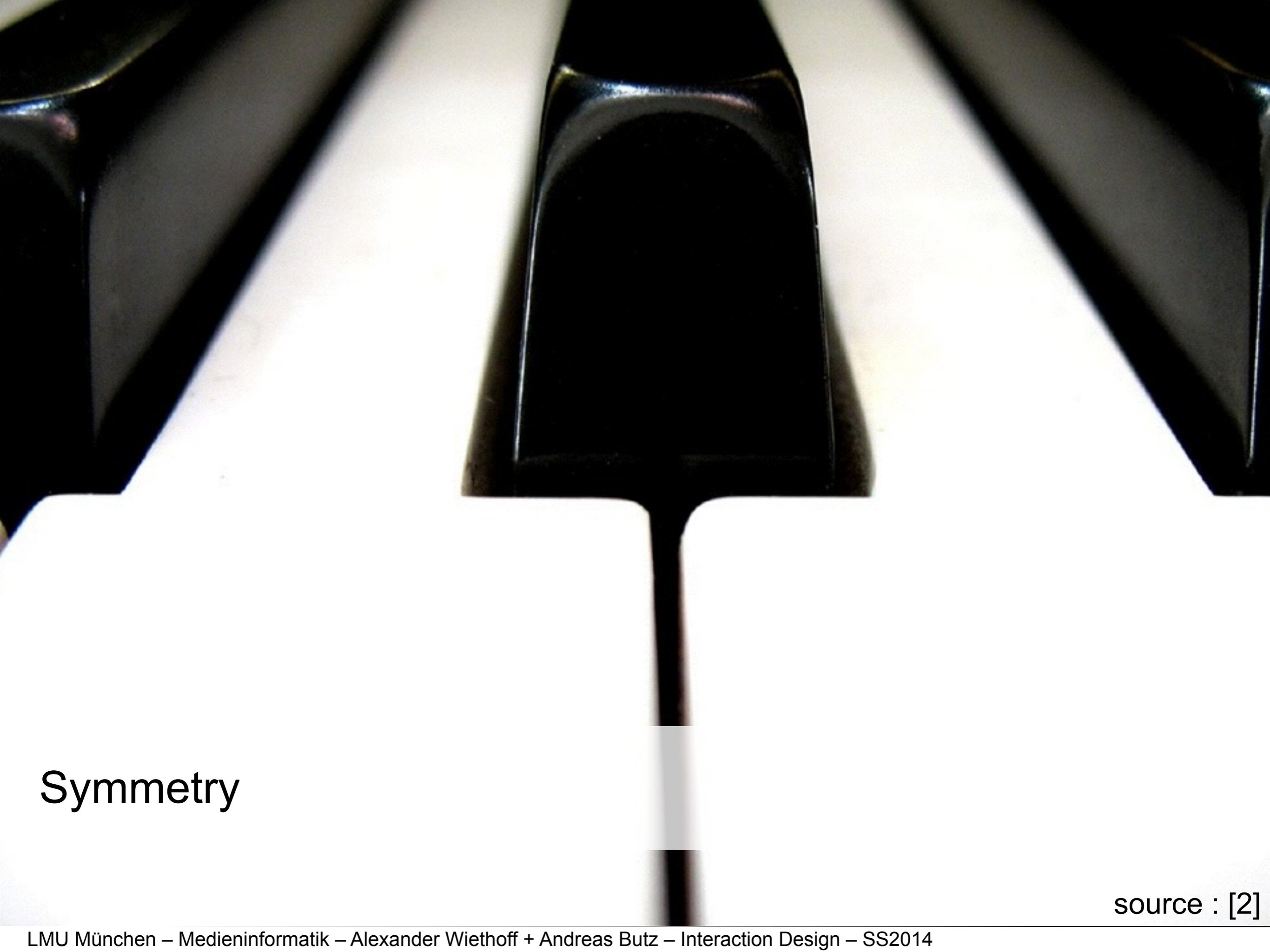
Region: Custom

Dates

Saturday, 5 January 2008

5 January 2008

5 Jan 2008



Symmetry

source : [2]



Symmetry ensures balance and clear organisation, if sometimes at the expense of visual interest. While this may be a drawback for a poster or retail packaging, it is perfectly appropriate for a user interface.

UI Kits







Explore Over a Million Color Palettes

Search

You'll find over 1,666,068 user-created color palettes to inspire your ideas. Get the [latest palettes RSS feed](#) or use our [color palette maker](#) to create and share your favorite color combinations.

NEW MOST LOVED MOST VIEWS MOST COMMENTS MOST FAVORITES

Browse Palettes

DAY WEEK MONTH ALL

Giant Goldfish by manekineko



508 COMMENTS 3005 FAVORITES 232796 VIEWS 3510 LOVES

Thought Provoking by Miss_Anthropy



285 COMMENTS 1938 FAVORITES 139170 VIEWS 2738 LOVES

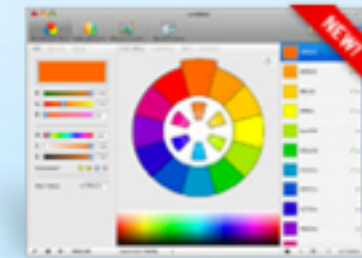
Terra? by GlueStudio



442 COMMENTS 1567 FAVORITES 89562 VIEWS 1463 LOVES

ColorSchemer Studio 2

COLOURlovers



RECENT PALETTE COMMENTS



huege

POSTED 2 MINUTES AGO

Lovely pattern Dawn! After a few minutes of looking at it, I realized she had a cigarette :) American Women wrote:

Smoking Lady



by American Womer

3

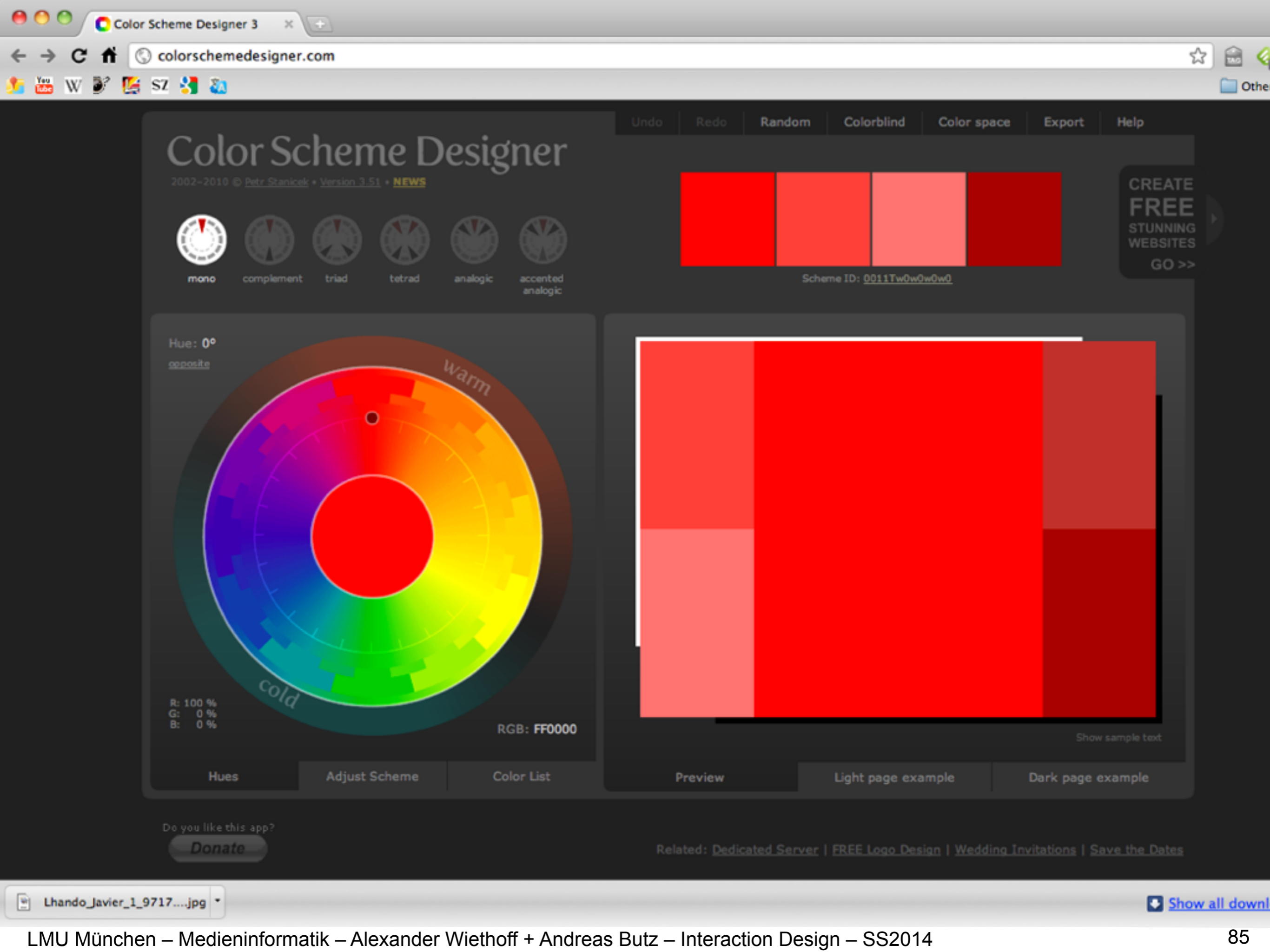
0

Rank #137256

COLOURlovers.com

huege wrote:

I love it! I don't know why, but to me this looks like the palette should on a package of cigarettes. I don't even smoke, but I love the palette so much that I think it's making me want to start smoking?!?!?



Color Scheme Designer

2002-2010 © Petr Stanicek • Version 3.51 • [NEWS](#)

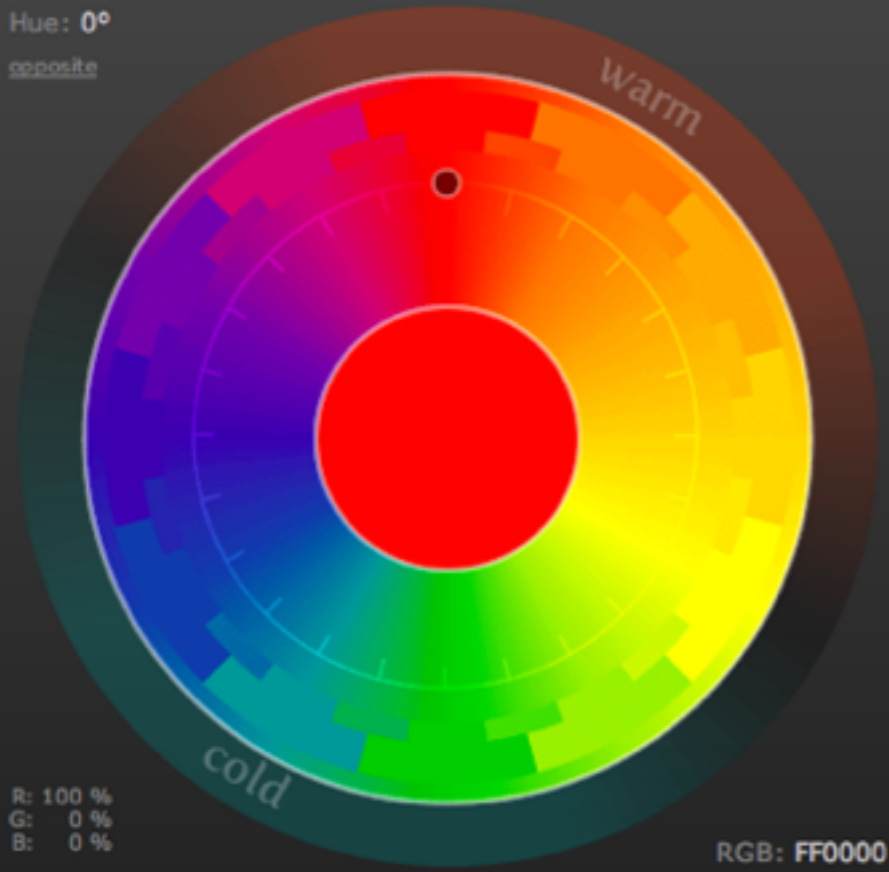
- mono
- complement
- triad
- tetrad
- analogic
- accented analogic



Scheme ID: [0011Tw0w0w0w0](#)

CREATE
FREE
STUNNING
WEBSITES
GO >>

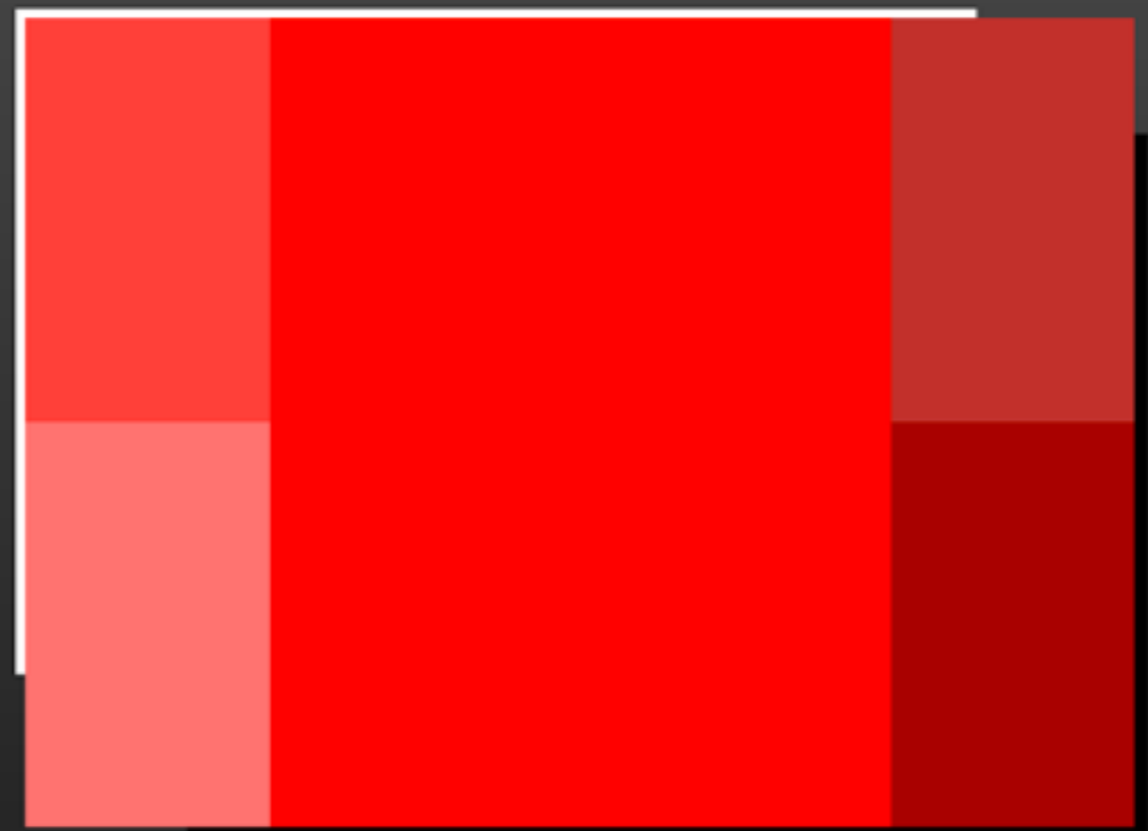
Hue: 0°
[opposite](#)



R: 100 %
G: 0 %
B: 0 %

RGB: FF0000

- Hues
- Adjust Scheme
- Color List



Show sample text

- Preview
- Light page example
- Dark page example

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Lhando_Javier_1_9717....jpg

Show all download

Graphical User Interface Design

- Principles
- Layout, Typography, Color & Contrast
- Controls and Widgets
- Simplicity



Switch

<http://fbeleec.en.made-in-china.com/product/QeZnlxqKZikC/China-Switch.html>



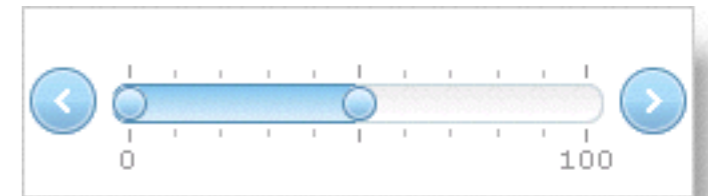
Button

[http://www.conrad.de/ce/de/product/701855/Vandalismusgeschuetzter-Taster-16-mm-mit-Ringbeleuchtung-48-VDC-2-A-GQ16F-10EJB12V-Loetpins-48-VDC-2-A/SHOP_AREA_17386&promotionareaSearchDetail=005](http://www.conrad.de/ce/de/product/701855/Vandalismusgeschuetzter-Taster-16-mm-mit-Ringbeleuchtung-48-VDC-2-A-GQ16F-10EJB12V-Loetpins-48-VDC-2-A/)



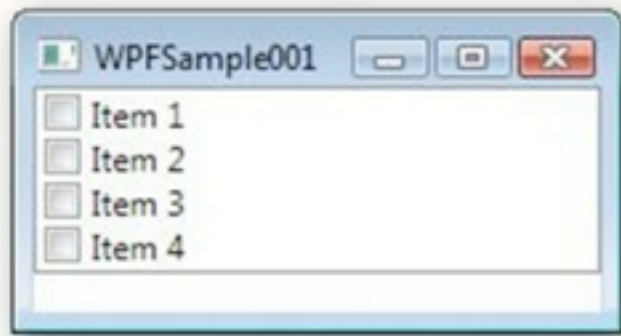
Dial

<http://www.conrad.de/ce/de/product/718295/Universal-Geraetknopf-mit-Skala-A-x-B-x-C-mm-23-x-37-x-233-Aluminium-eloxiert-Aluminium-eloxiert-Achs-Durchmesser/?ref=search>



Slider

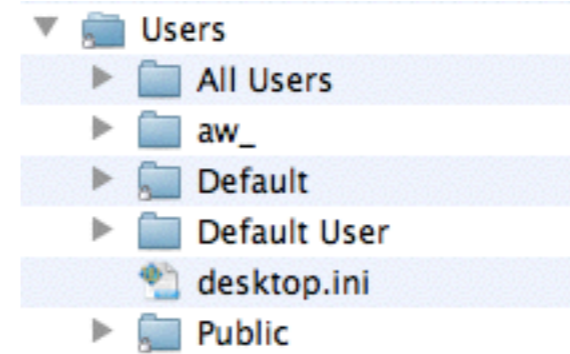
http://help.infragistics.com/Help/NetAdvantage/ASPNET/2011.2/CLR4.0/html/images/Web_New_WebSlider_Control.png



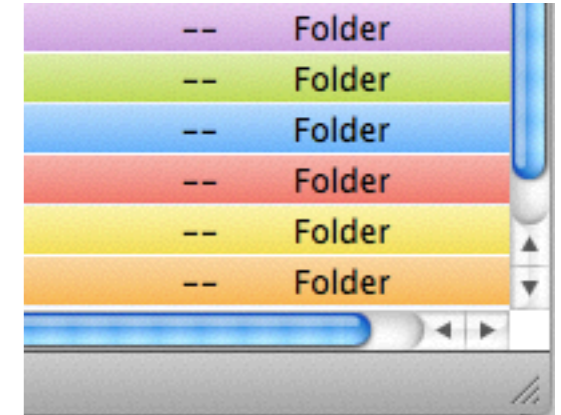
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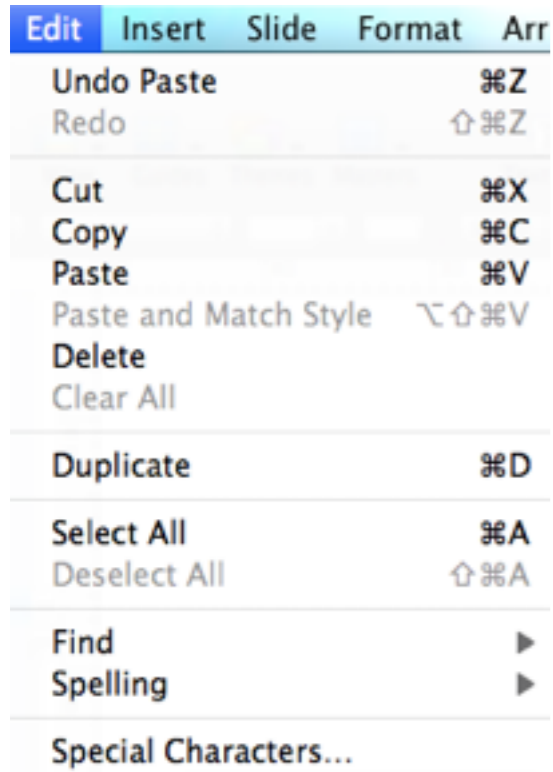
Radio Button



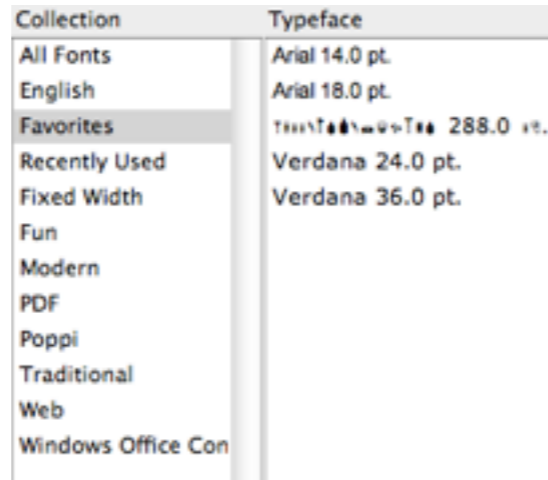
Twist



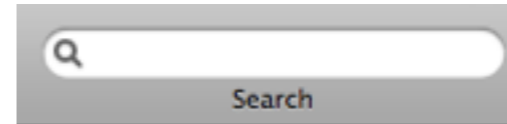
Scroll Bar



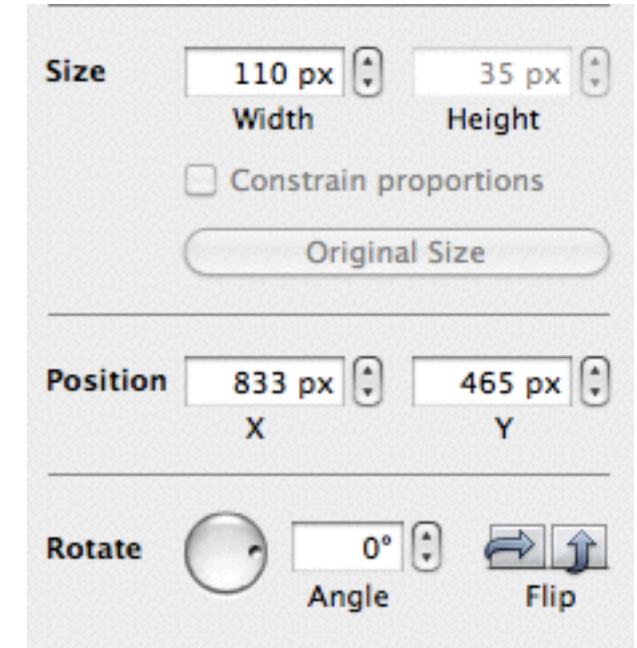
Drop-down menu



Multiple Selection List



Text Box



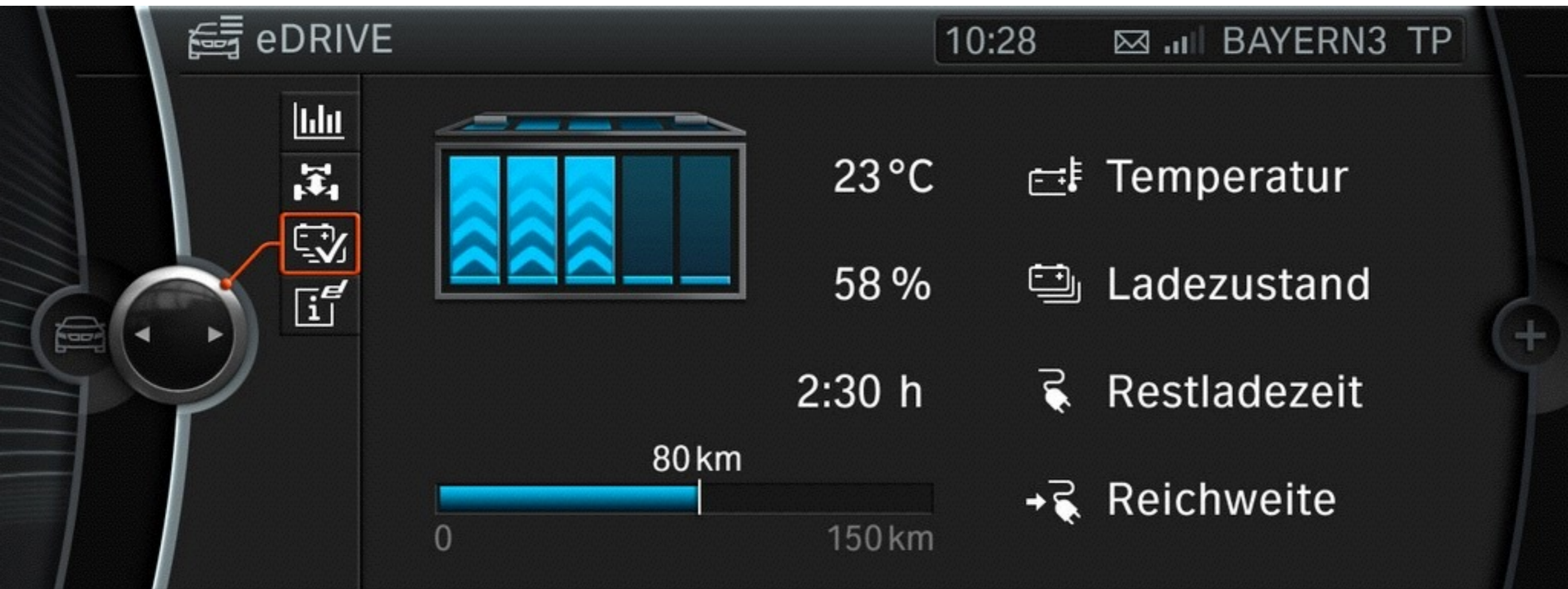
Spin Box



Controls



Controls



Mapping of Representation and Control

Graphical User Interface Design

- Principles
- Layout, Typography, Color & Contrast
- Controls and Widgets
- Simplicity



Simplicity



Approachability

Simple designs can be rapidly apprehended and understood well enough to support immediate use or invite further exploration.



Recognisability

Simple designs can be recognised more easily than their more elaborate counterparts. Because they present less visual information to the viewer, they are more easily assimilated, understood and remembered.



Immediacy

Simple designs have a greater impact than complex designs, precisely because they can be immediately recognised and understood with a minimum of conscious effort.



Usability

Improving the approachability and memorability of a product necessarily enhances usability as well. Simple designs that eliminate unnecessary variation or detail make the variation that remains more prominent and informative.

source : [2]

Reduction through successive refinement is the only path to simplicity

References (Books):

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- [2] Mullet K. and D. Sano, Designing Visual Interfaces: Communication Oriented Techniques, 1st ed. *Prentice Hall, 1994.*
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- [5] Ouilhet, H. The soul of the new machine: A story about Android design, *UX LMU Talks 2011-12.*
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- [8] Fiedler, J. & Feierabend, P. Bauhaus, *Könemann in der Tandem Verlags-GmbH 2005.*