

Interaction Design

Chapter 12 (July 11, 2012, 9am-12pm):
Graphical User Interface Design

Graphical User Interface Design

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

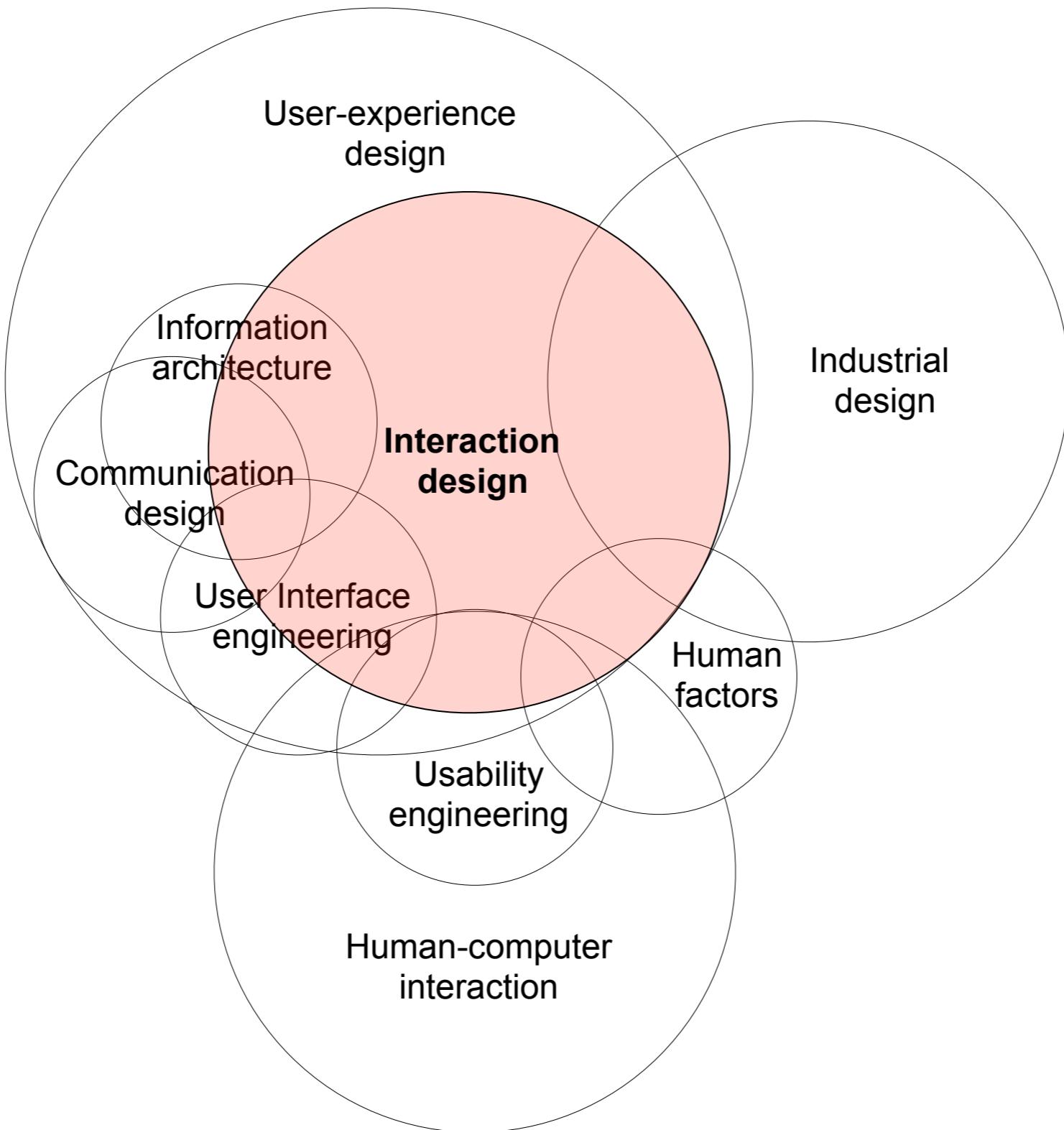


Graphical User Interface Design

INTERACTION DESIGN



photo credits © bill verplank



source: [4]

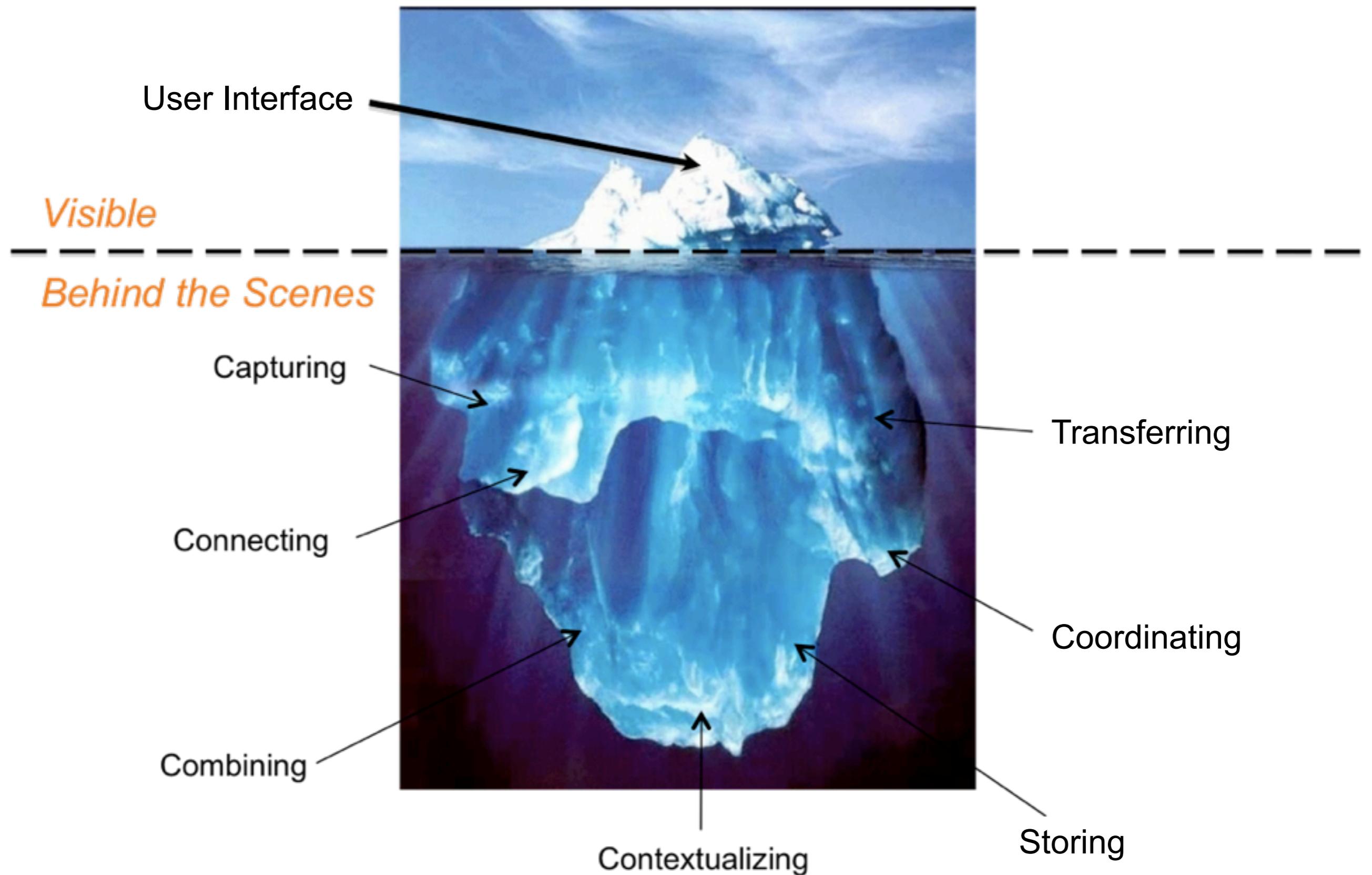
Like all forms of design, visual
design is about problem solving,
not about personal preference or
unsupported opinion.

Bob Baxley

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



source : [4]

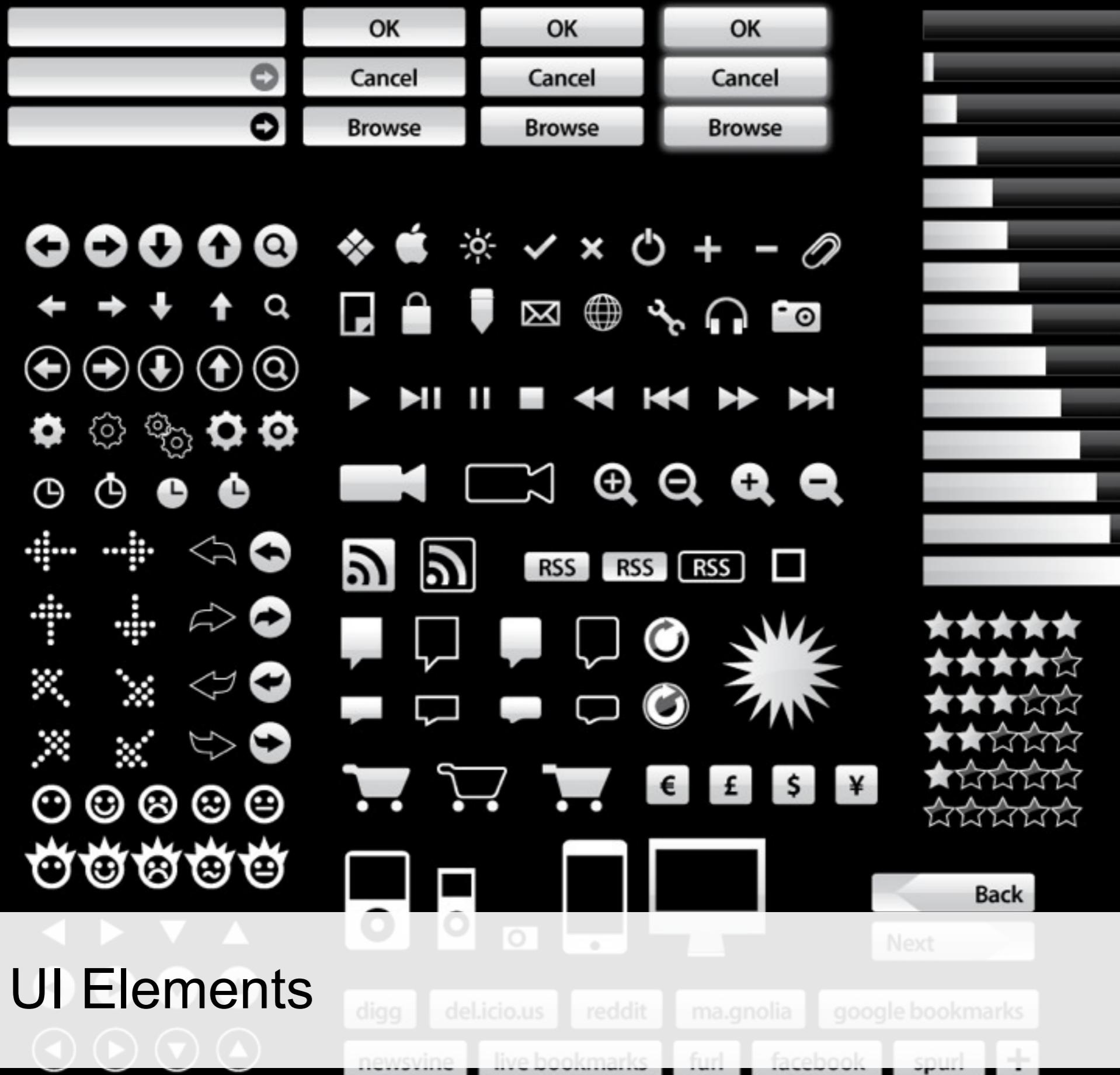


source : [4]



Tools

source : [4]



UI Elements

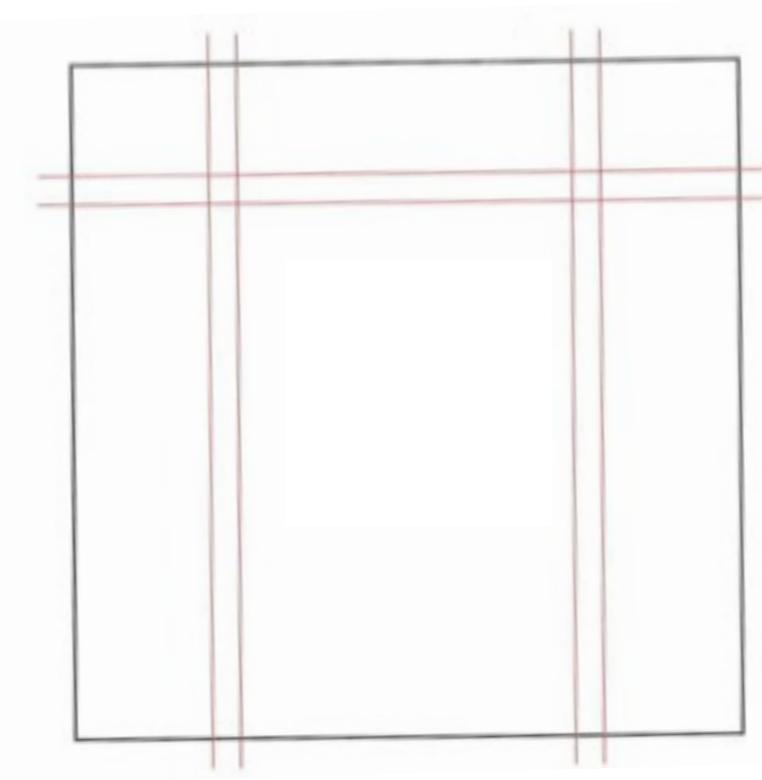
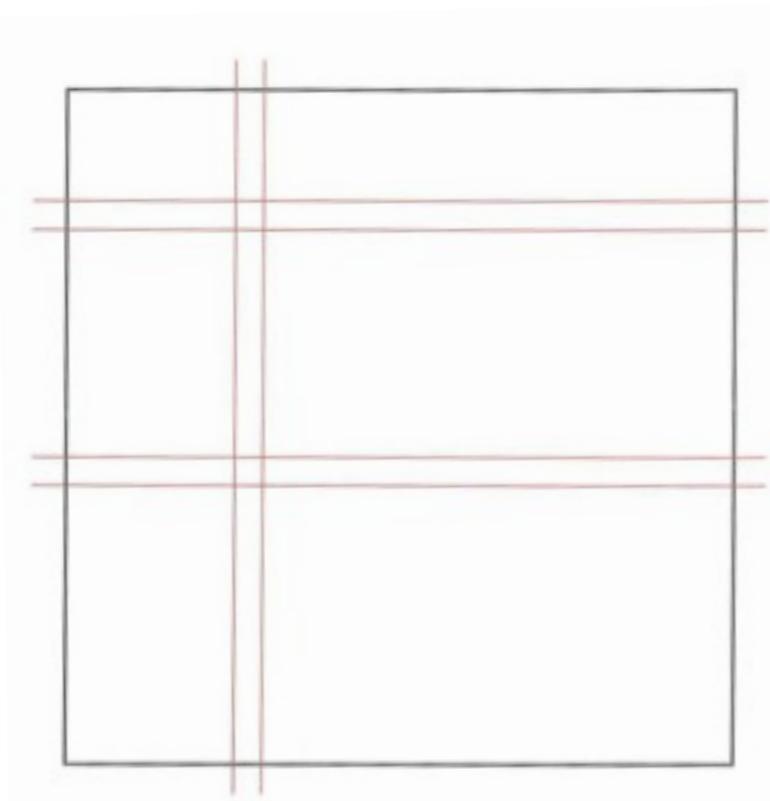
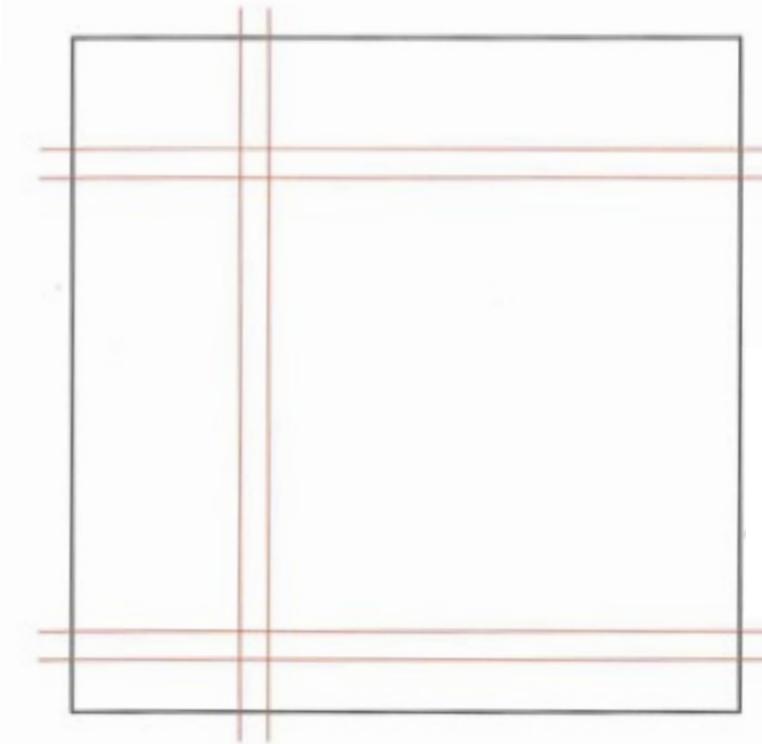
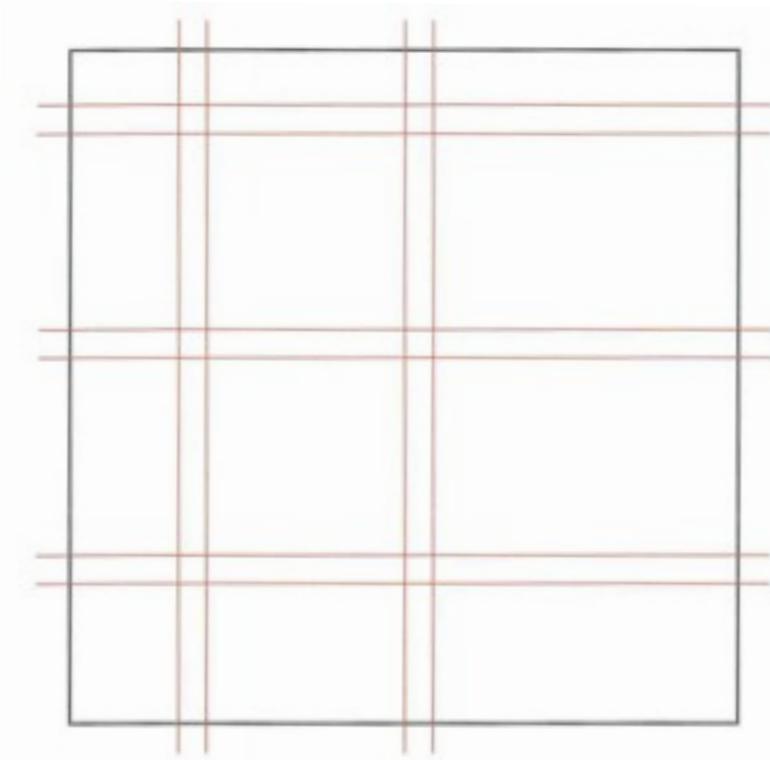
source : [4]

Graphical User Interface Design

- Principles
- Layout, Typography, Color & Contrast
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- Simplicity

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Layout



source : [4]

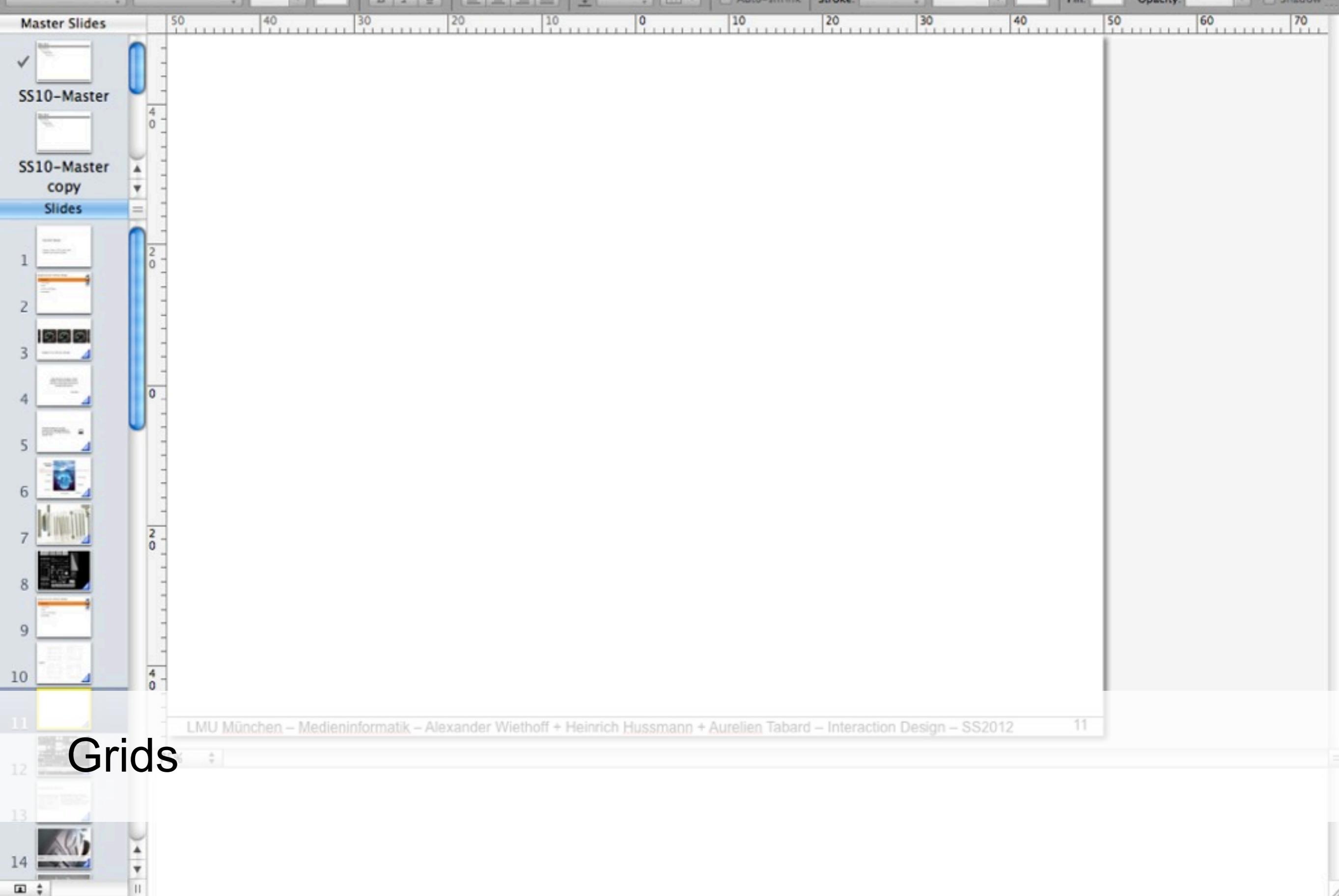
Master Slides

- ✓ SS10-Master
- SS10-Master copy
- Slides

1 2 3 4 5 6 7 8 9 10 11 12 13 14

LMU München – Medieninformatik – Alexander Wiethoff + Heinrich Hussmann + Aurelien Tabard – Interaction Design – SS2012 11

Grids





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

- Arts
- History
- Society
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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](#)

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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 Egida](#), 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](#)

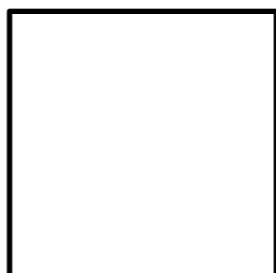
Grids



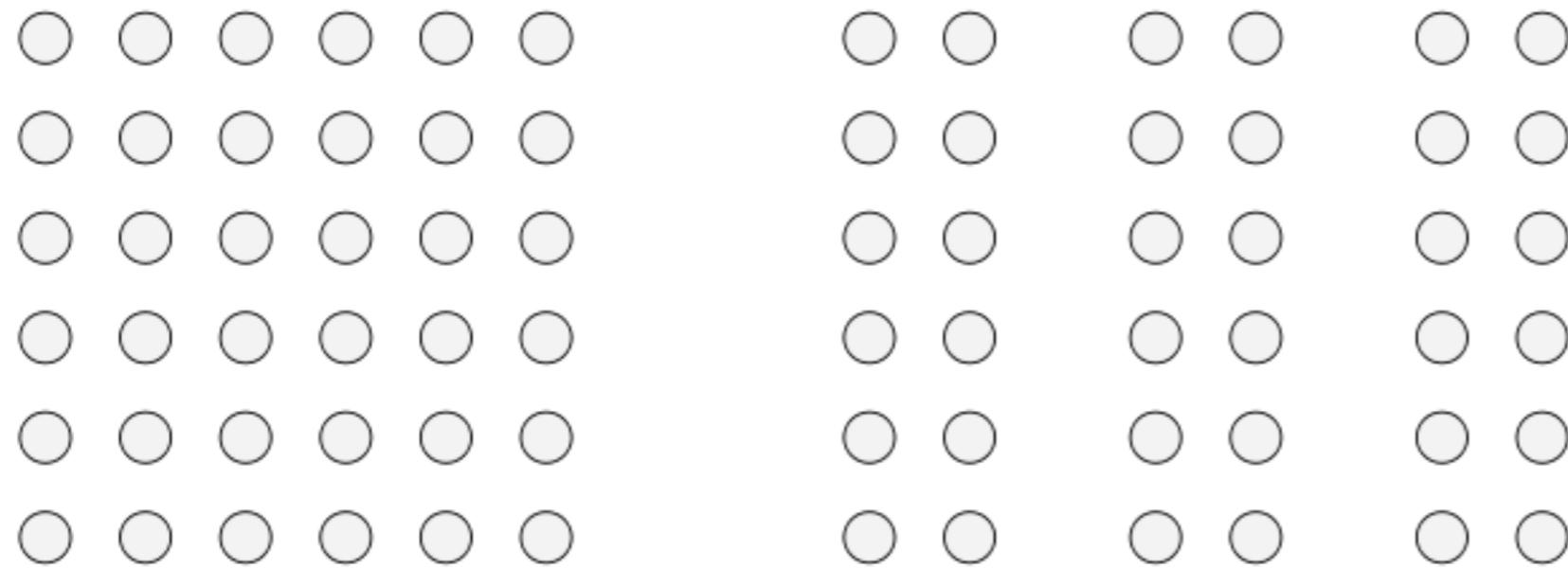
Visual Clutter

Clutter creates visual noise and makes an application hard to use

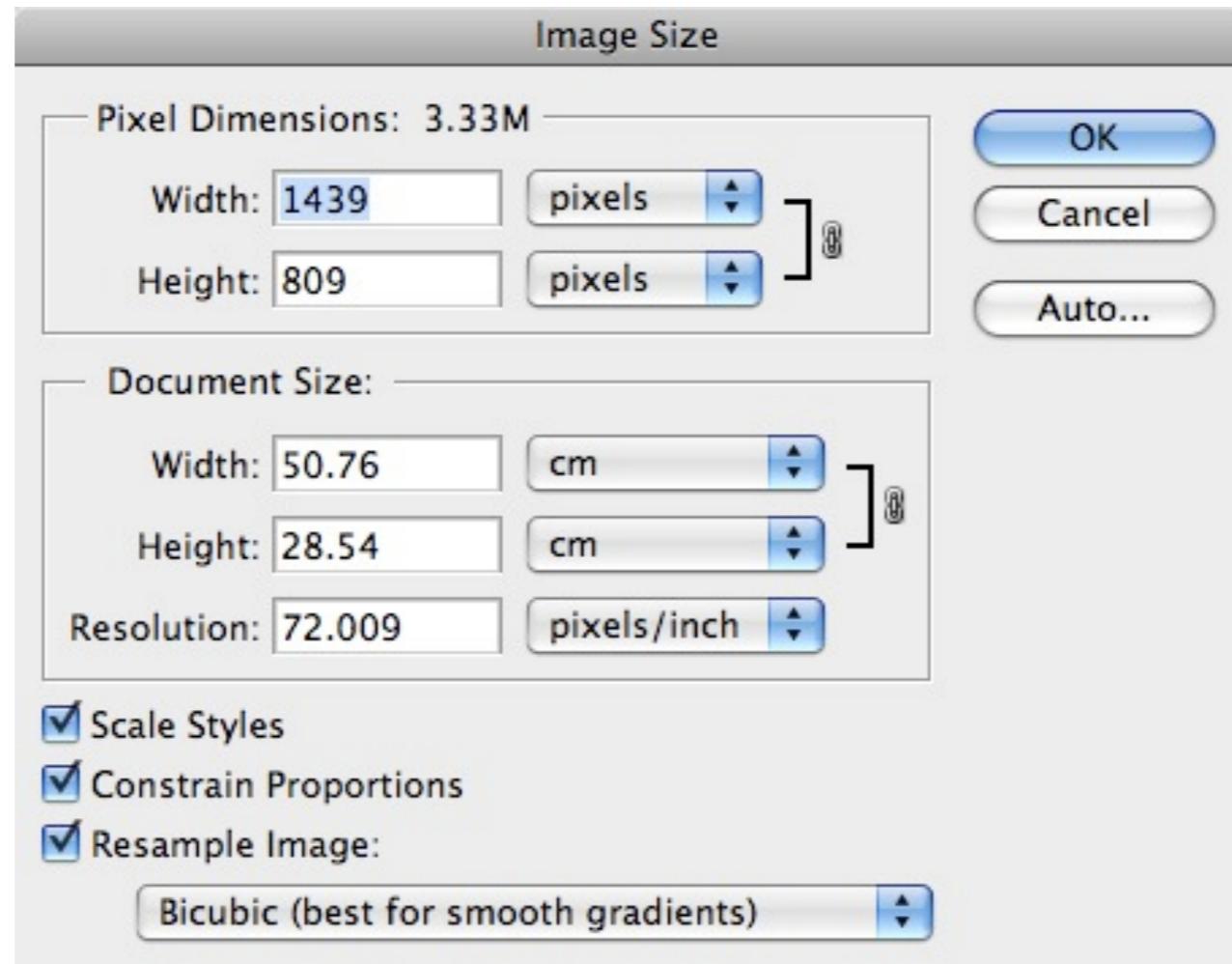
source : [4]



source : [4]



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.

source : [2]



Primary Action / Secondary Action

source : [2]

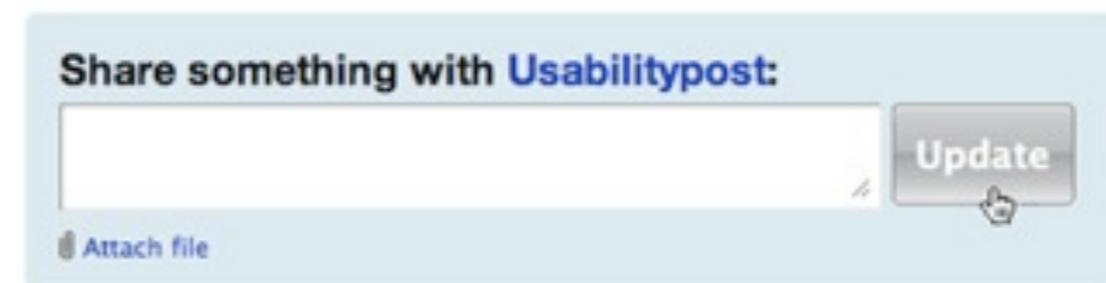


All form actions are not equal, and therefore the visual presentation of actions should match their importance to make it easier to complete a form.
Visual distinction helps users make “good” choices.

source : [2]



Example: "Web Design, Filling the Blanks"



Yammer

source : [2]



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.

source : [2]

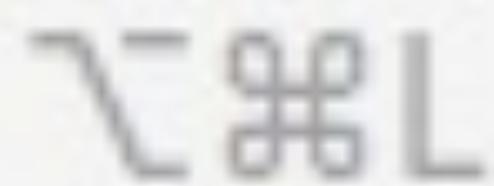
Flip Horizontally

Flip Vertically

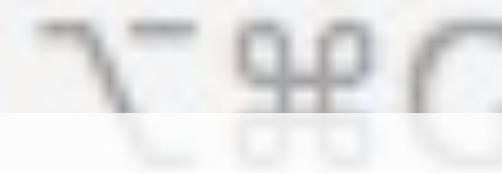
Lock



Unlock



Group



Visual Constraint



ingroup

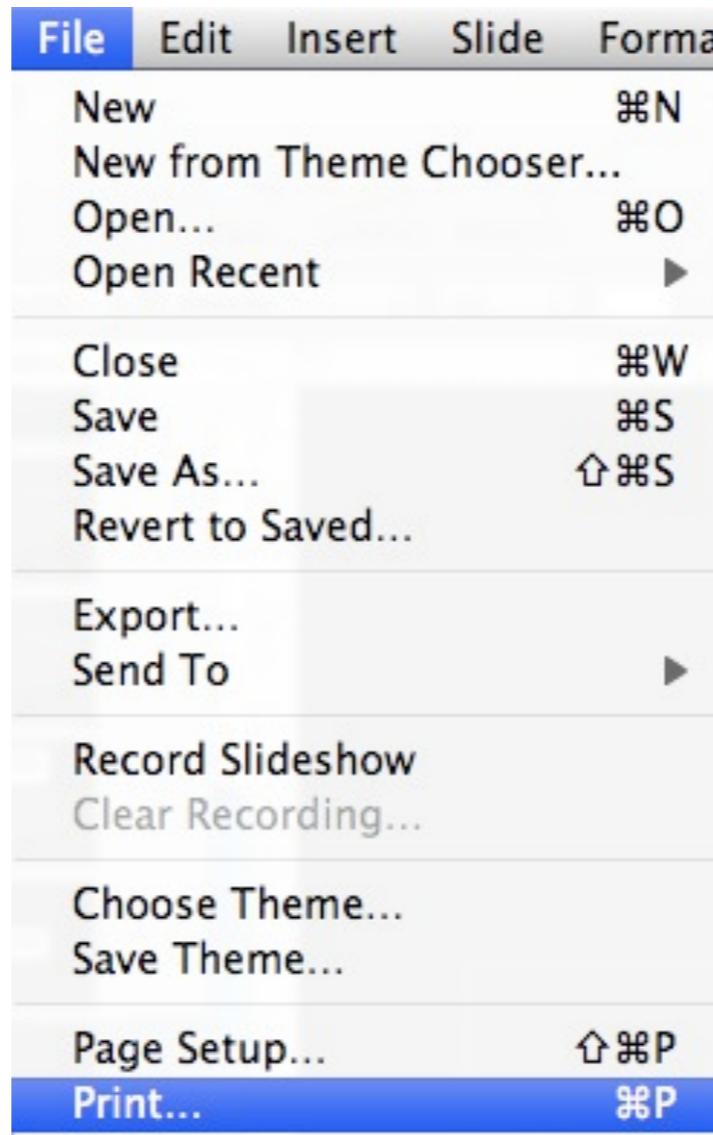
source : [2]

Scalability of Interfaces / Flexibility



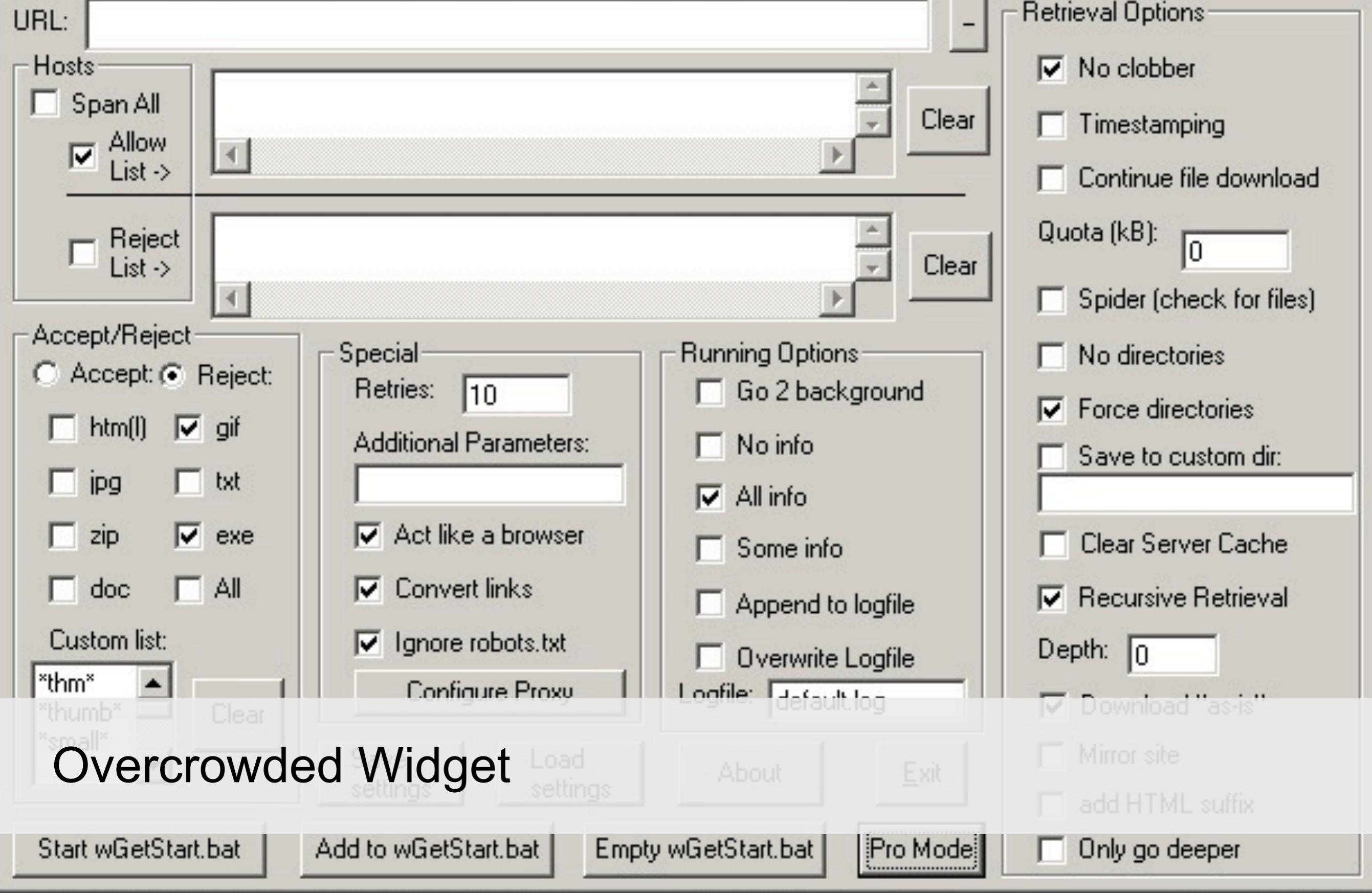
80/20 rule

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.

source : [1]



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.

source : [5]



Aesthetic-Usability Effect

source : [1]

http://www.swissknifeshop.com/media/catalog/product/cache/1/image/5e06319eda06f020e43594a9c230972d/v/m/vm_53831--91_sol_front_ax1000.jpg



Aesthetic-Usability Effect

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

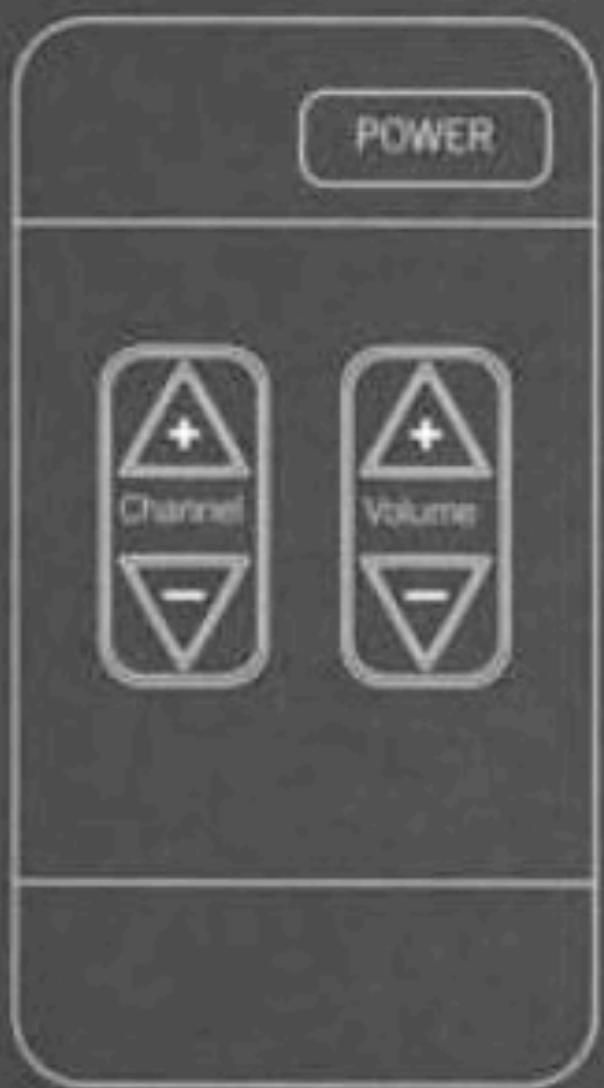
Aesthetic designs look easier to use and have a higher probability of being used, whether or not they actually are easier to use.

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 specialized designs, but they perform the functions less efficiently.

source : [1]





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**

source : [4]

A B C D E F

A B C D E F

Roboto

THIN

SUNGLASSES

BLACK SMALL CAPS

ITALIC

Self-driving robot ice cream truck

BOLD

Fudgesicles only 25¢

ICE CREAM

BOLD CONDENSED

MEDIUM

Marshmallows & almonds

LIGHT

#9876543210

BOLD ITALIC

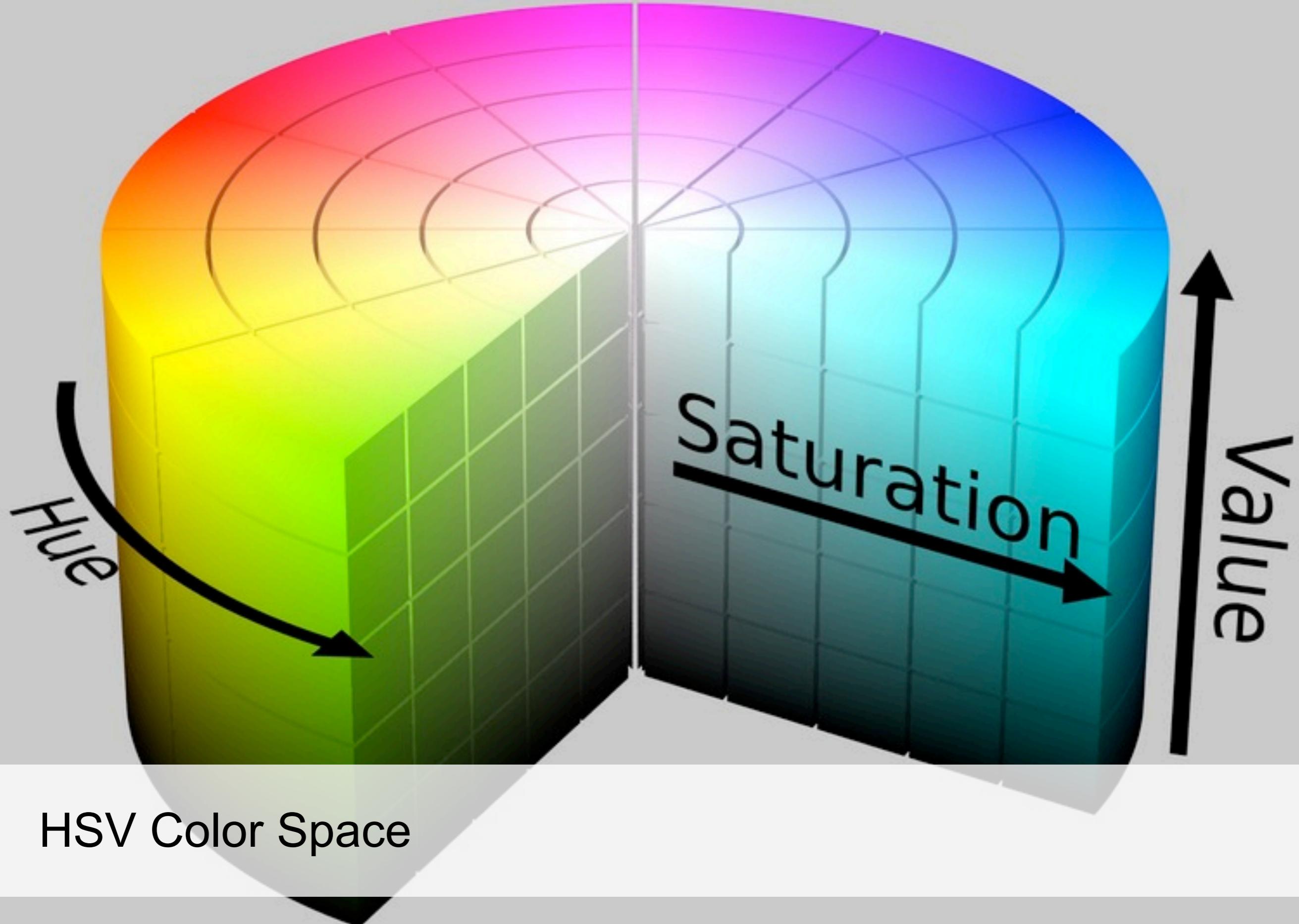
Music around the block

REGULAR

Summer heat rising up from the sidewalk

source : [5]

Colors



HSV Color Space

- 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

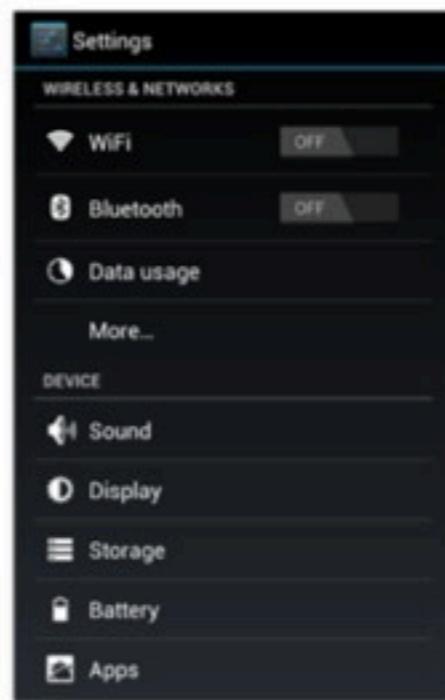
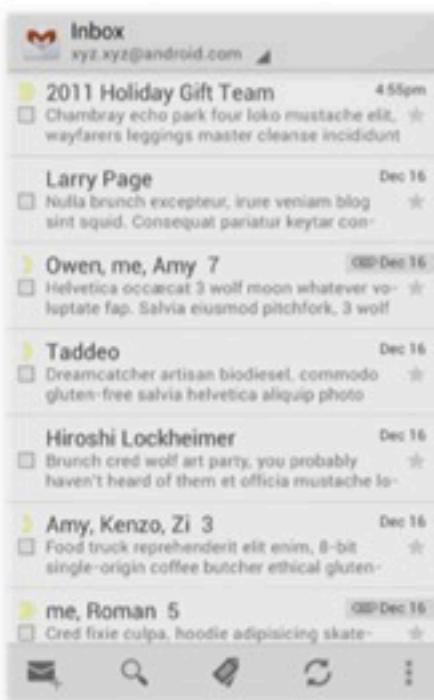
- color can establish a relationship

- color can indicate importance

- consider human factors such as color blindness and cultural differences

source : [4]

Colors



source : [5]



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.

source : [2]



Show All

Language

For

Region: Custom

Dates

Saturday, 5 January 2008

5 January 2008

5 Jan 2008

source : [2]



Symmetry

source : [2]



Symmetry ensures balance and clear organization, 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.

source : [2]

UI Kits





Browse Palettes :: COLOURlovers

www.colourlovers.com/palettes/most-favorites/all-time/meta

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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 Women

3 LOVES 0 COMMENTS 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 3

colorschemedesigner.com

YouTube W SZ A TAG Other

Color Scheme Designer

2002-2010 © Petr Stanicek • Version 3.51 • NEWS

Undo Redo Random Colorblind Color space Export Help

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mono complement triad tetrad analog accented analog

Scheme ID: 0011Tw0w0w0w0

Hue: 0° opposite

Warm

cold

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

RGB: FF0000

Hues Adjust Scheme Color List Preview Light page example Dark page example Show sample text

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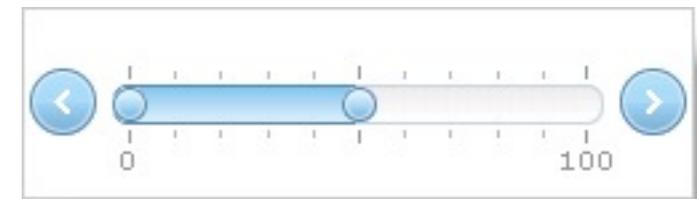
Switch



Button



Dial



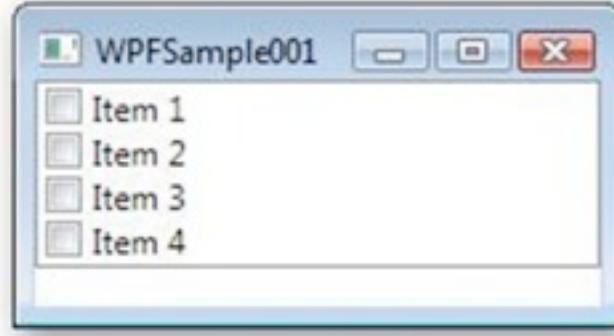
Slider

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

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/718295/Universal-Geraeteknopf-mit-Skala-A-x-B-x-C-mm-23-x-37-x-233-Aluminium-eloxiert-Aluminium-eloxiert-Achs-Durchmesser/?ref=search>

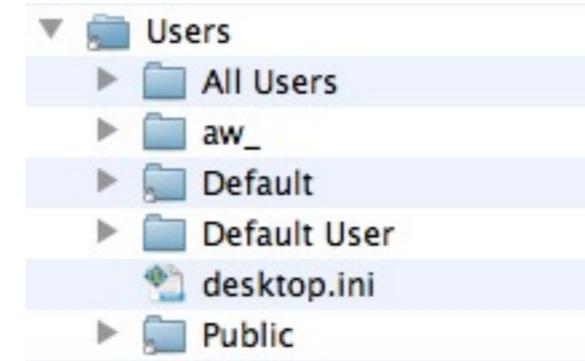
http://help.infragistics.com/Help/NetAdvantage/ASPNET/2011.2/CLR4.0/html/images/Web_New_WebSlider_Control.png



Checkbox



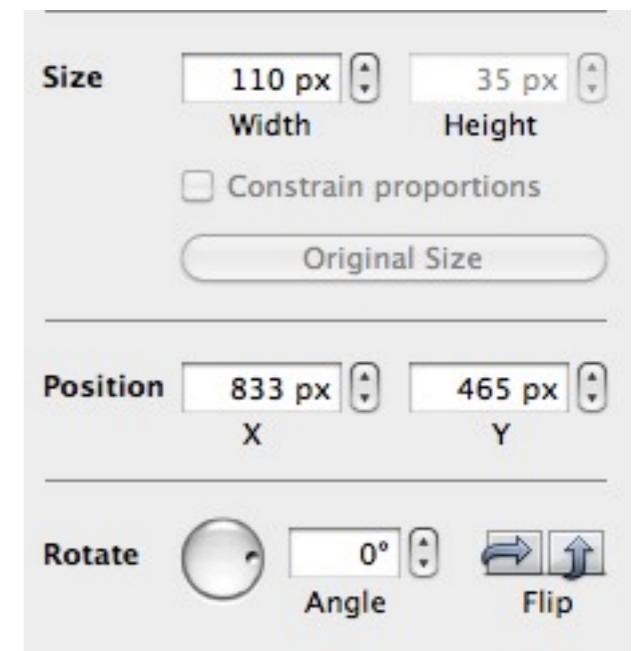
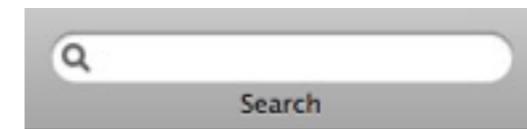
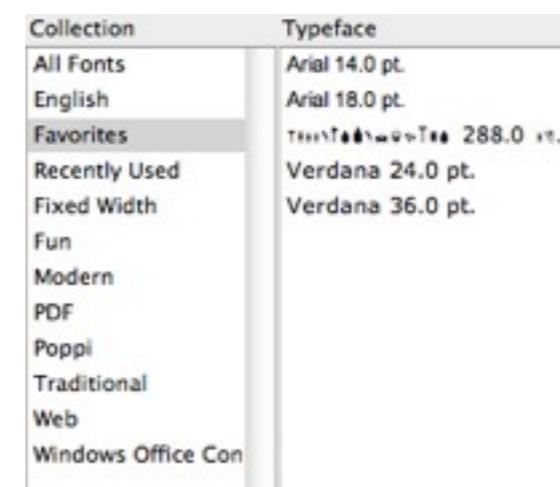
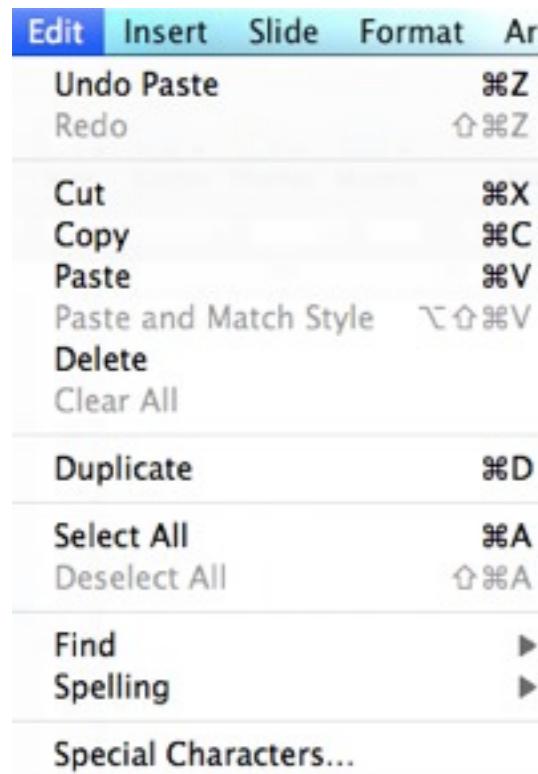
Radio Button



Twist



Scrollbar



Drop-down
menu

Multiple Selection
List

Text Box

Spin Box

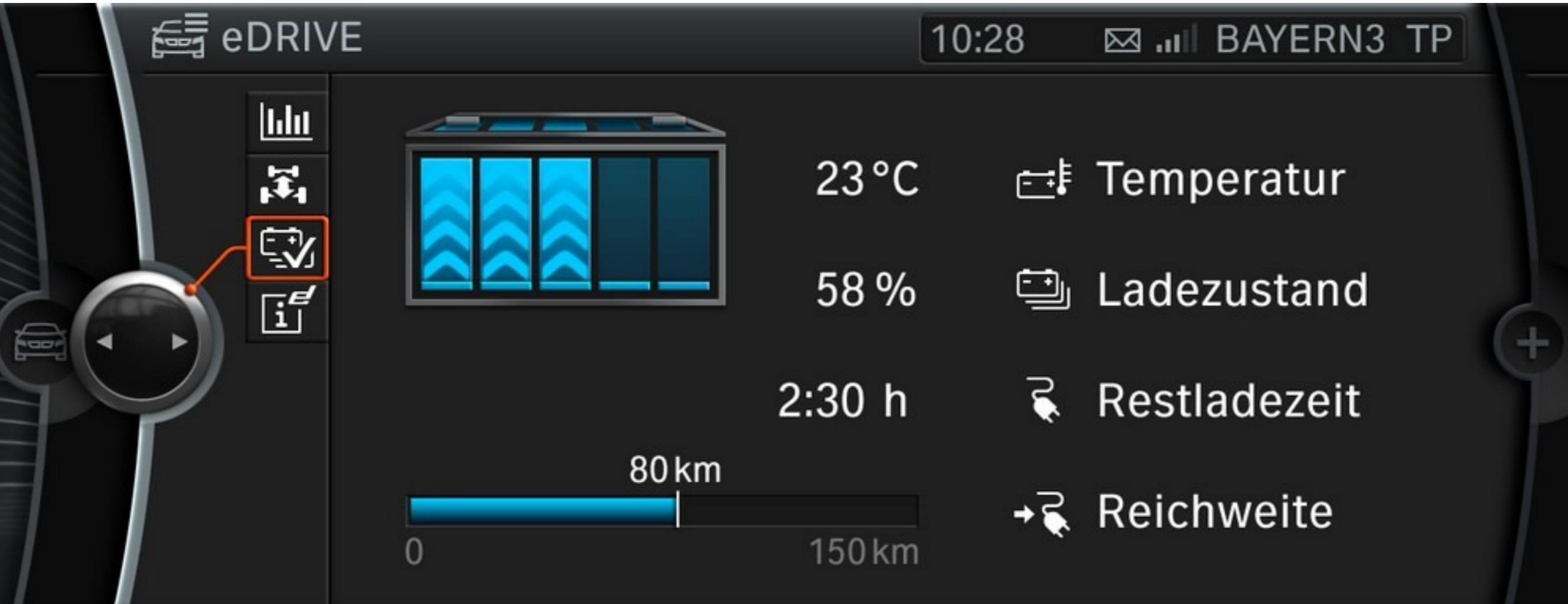


Controls



Controls

source : [4]



Mapping of Representation and Control

Graphical User Interface Design

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



Simplicity

source : [2]



Approachability

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

source : [2]



Recognizability

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

source : [2]



Immediacy

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

source : [2]



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

source : [2]

References (Books):

- [1] Lidwell, W., Holden, K. and Butler, J. Universal Principles of Design, Revised and Updated: 125 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decision, Second ed. *Rockport, 2010.*
- [2] Mullet K. and D. Sano, Designing Visual Interfaces: Communication Oriented Techniques, 1st ed. *Prentice Hall, 1994.*
- [3] Moggridge, B. Designing Interactions, *MIT Press, 2006.*
- [4] Saffer, D. Designing for Interaction, *New Riders 2009.*

- [5] Ouilhet, H. The soul of the new machine A story about Android design, *UX LMU Talks 2011-12.*

Breakoutsession No. 9

Recap Part I

Klausur

- **Termin:** Mittwoch, 01.08.2012, 10-12 Uhr
- **Frist zur Anmeldung:** Mittwoch, 25.07.2012
- **Ort:** Theresienstraße 41, Raum C 123
- closed book, also keine Hilfsmittel zugelassen
- **Abmeldefrist:** 29.07.2012



Problem

Studenten melden sich zu Klausuren an und

- erscheinen nicht (Verwaltungsaufwand)
- erscheinen zunehmend unvorbereitet (Korrekturaufwand)

Mögliche Lösung

- **Bitte mindestens eine Woche vor Klausurtermin abmelden!**
- **Bitte Korrektur nur bei Aussicht auf Erfolg in Anspruch nehmen!**

Notlösung

(wenn genannte Lösung im SoSe 2012 nicht funktioniert)

- Alle angemeldeten Klausuren werden im Transcript of Records vermerkt

Sketch Books

- 5% Bonus possible for the Sketchbooks
- Please hand in the books next week after breakout session
- we will look through them quickly
- you can pick them up Thursday 4 p.m. at Amalienstraße 17
5th floor (when the Tutorial takes place)

Task for Today

- Every group gets a card with an important topic of IxD
- Prepare the topic for a 3-5 min presentation
- Presentation should contain:
 - Explanation of the topic/concept
 - **Why is it important for IxD? What are the conclusions for the Interaction Designer?**
 - Demonstrative example
 - Send material to sebastian.loehmann@ifi.lmu.de or bring it to us in other form
 - Presentations start at 11 a.m.