

Week 3 :

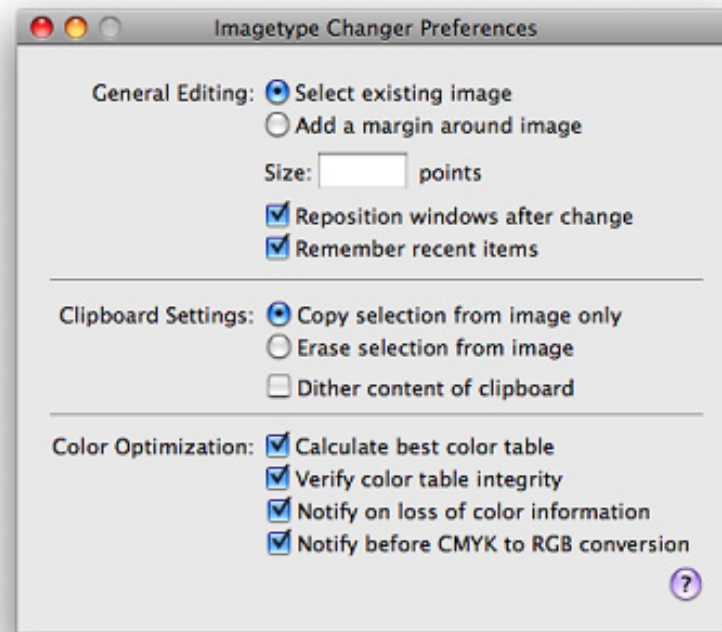
b. More on layouts

Anastasia.Bezerianos@Iri.fr

(part of this class is based on previous classes from Anastasia,
and of T. Tsandilas, S. Huot, M. Beaudouin-Lafon, N.Roussel, O.Chapuis)

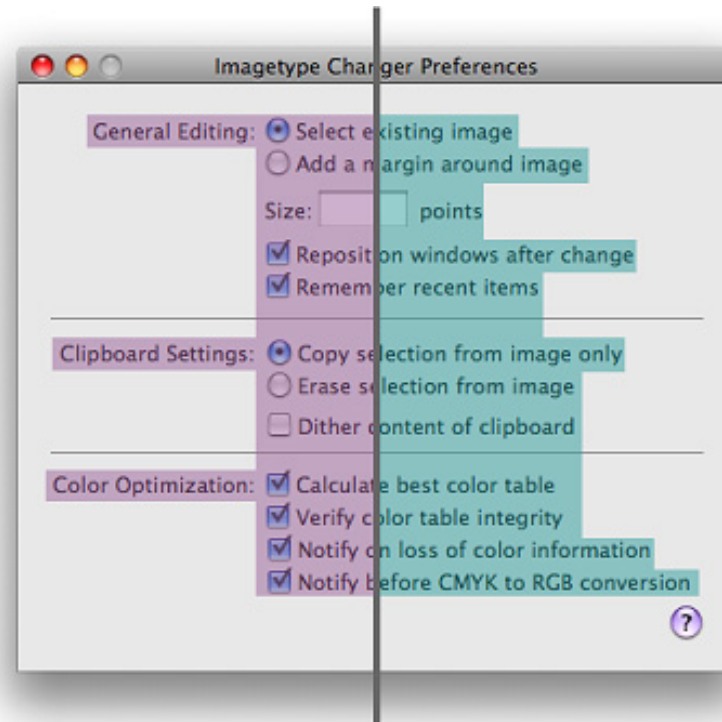
Aside, how to chose layout positions

placement guides (Mac OS X)



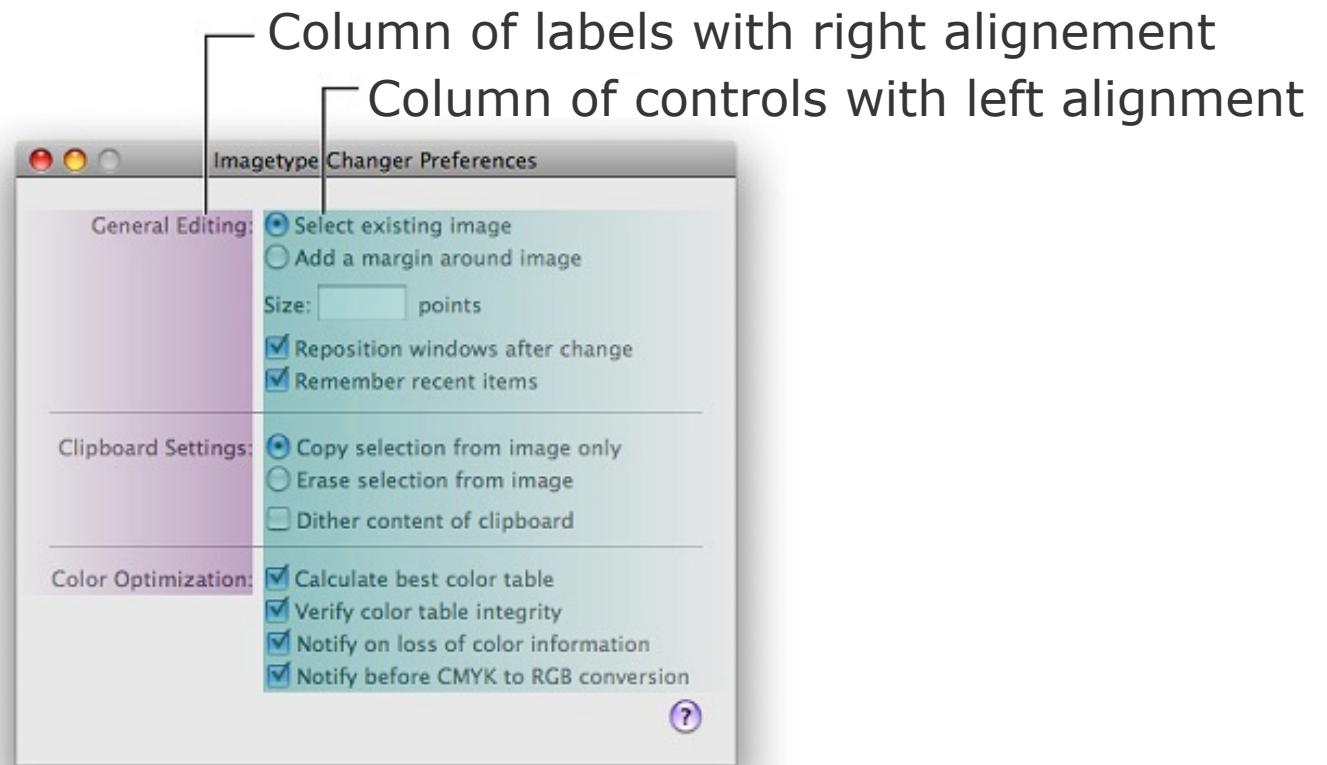
placement guides (Mac OS X)

Center balance : visual balance of a container's content between the left and right parts



placement guides (Mac OS X)

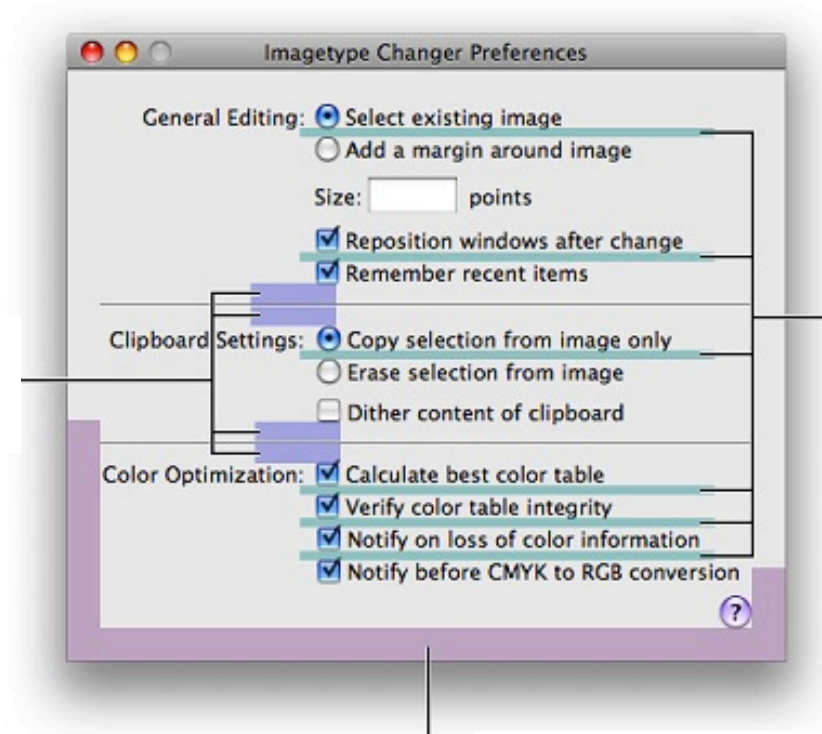
Alignement



placement guides (Mac OS X)

Spacing

Same space before
and after separator

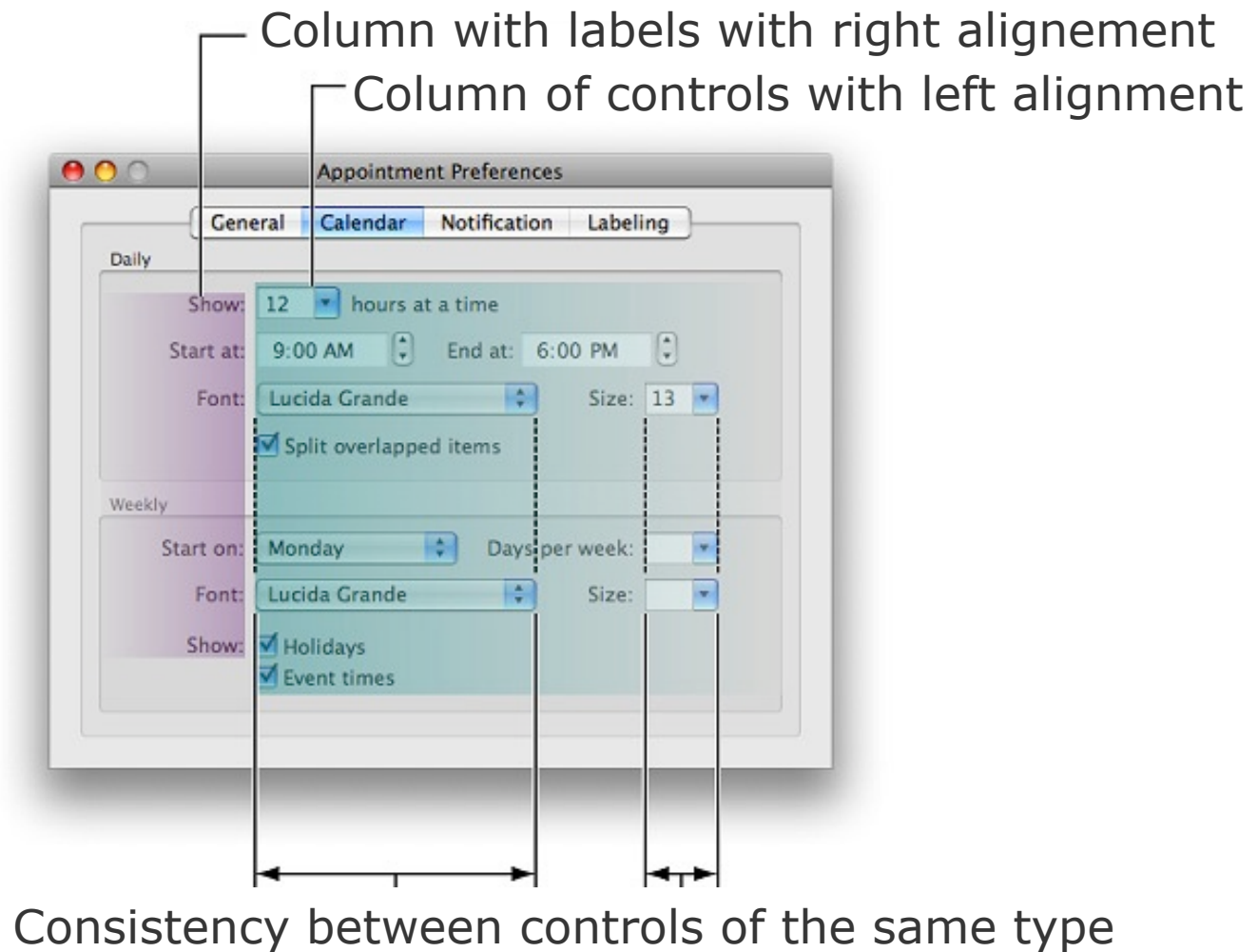


Same space between
controls

Same space on every side

placement guides (Mac OS X)

Alignement and consistency



placement guides (Mac OS X)

tips for aligning nodes in JavaFX

https://docs.oracle.com/javase/8/javafx/layout-tutorial/size_align.htm#JFXLY133

CRAP

contrast, repetition, alignment, proximity

Major sources: Designing Visual Interfaces, Mullet & Sano, Prentice Hall / Robin Williams Non-Designers Design Book, Peachpit Press

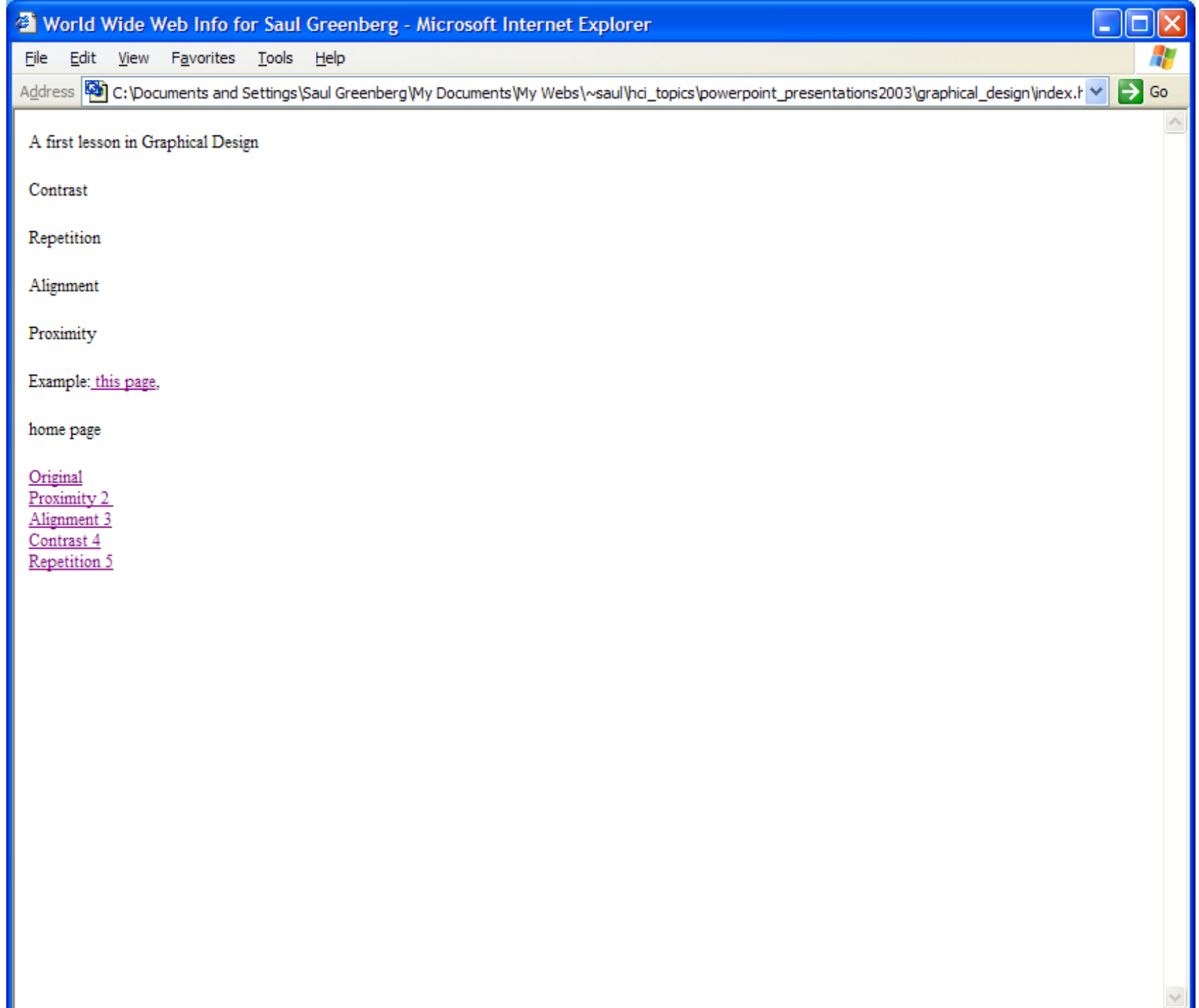
Slide deck by Saul Greenberg. Permission is granted to use this for non-commercial purposes as long as general credit to Saul Greenberg is clearly maintained.
Warning: some material in this deck is used from other sources without permission. Credit to the original source is given if it is known.

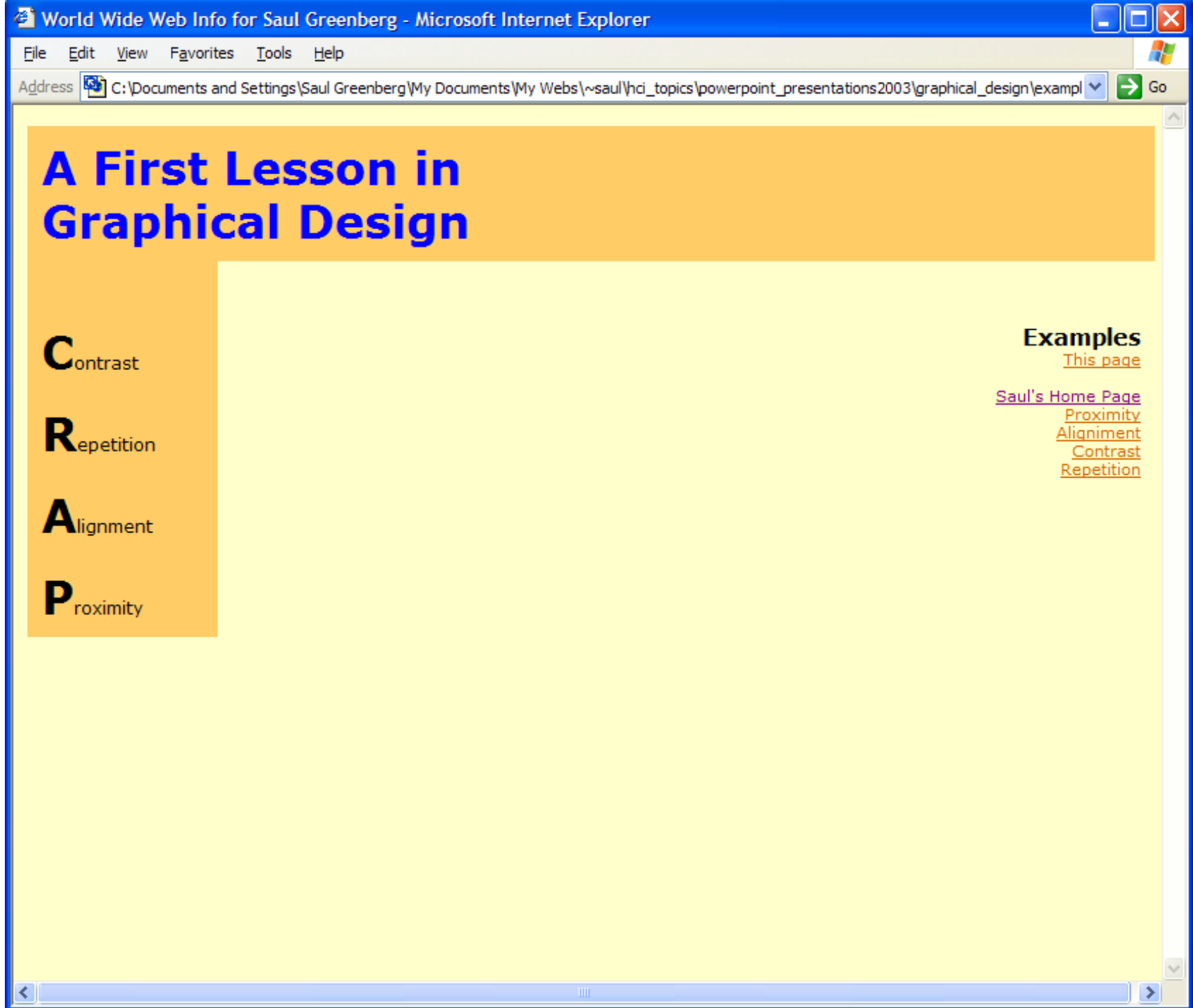
Good Design Is As Easy as 1-2-3

- 1. Learn the principles.**
They're simpler than you might think.
- 2. Recognize when you're not using them.**
Put it into words -- name the problem.
- 3. Apply the principles.**
You'll be amazed.

Good design is as easy as ...

- 1** **Learn the principles.**
They're simpler than you might think.
- 2** **Recognize when you're not using them.**
Put it into words — name the problem.
- 3** **Apply the principles.**
You'll be amazed.





CRAP

- **C**ontrast
- **R**epetition
- **A**lignment
- **P**roximity

CRAP

● Contrast

make different things different
brings out dominant elements
mutes lesser elements
creates dynamism

● Repetition

● Alignment

● Proximity

1

2

3

4

5



Good Design Is As Easy
as 1-2-3

1. Learn the principles.
They're simpler than you might think.
2. Recognize when you're not using them.
Put it into words -- name the problem.
3. Apply the principles.
You'll be amazed.

CRAP

● Contrast

● Repetition

repeat design throughout the interface

consistency

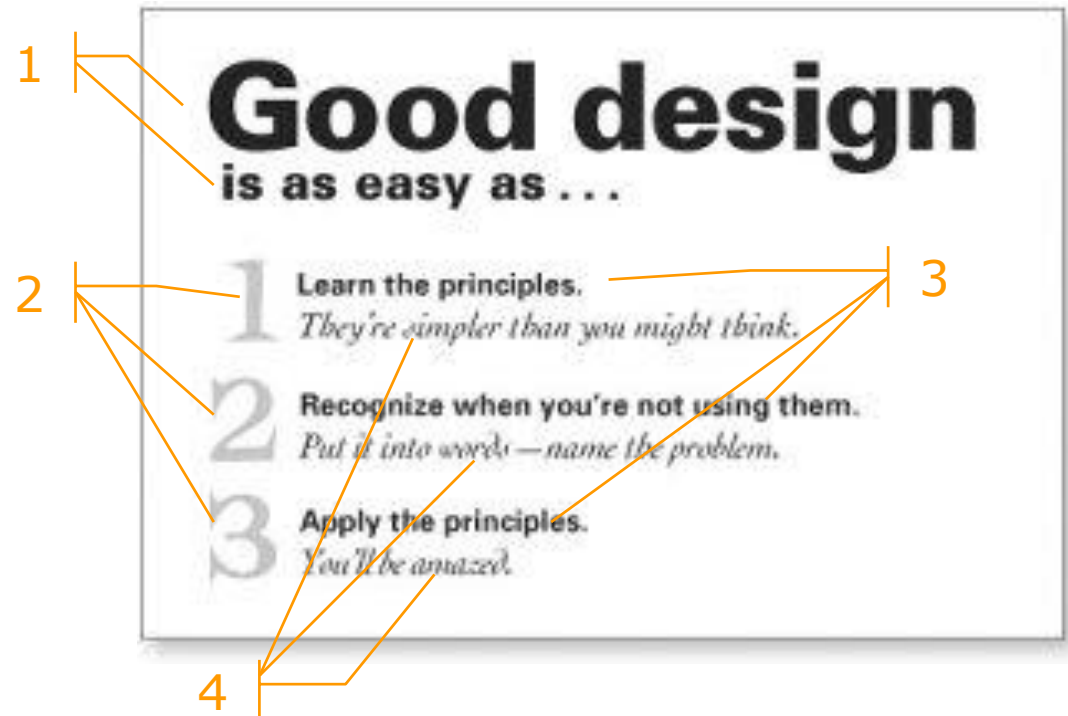
creates unity

● Alignment

● Proximity

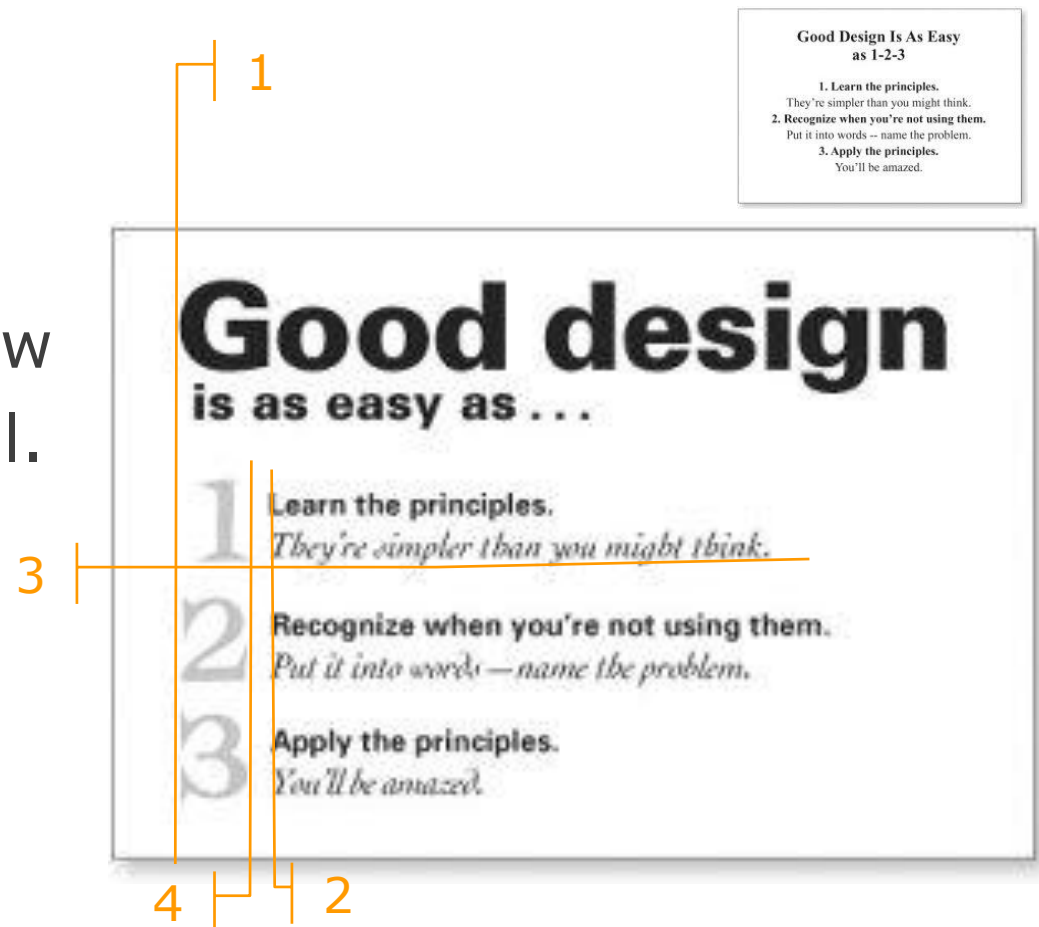
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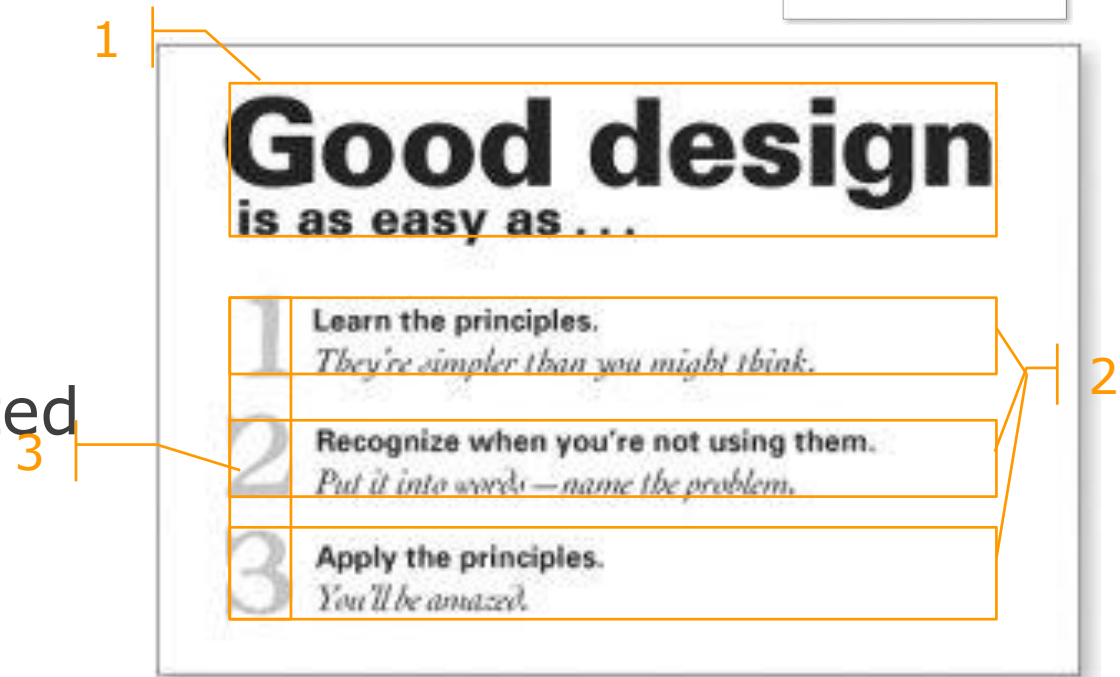
CRAP

- Contrast
- Repetition
- Alignment
 - creates a visual flow
 - visually connects el.
- Proximity



CRAP

- Contrast
- Repetition
- Alignment
- Proximity
groups related
separates unrelated



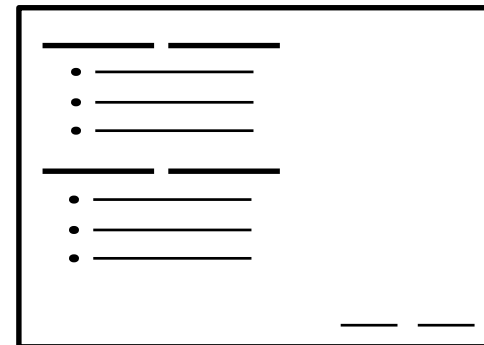
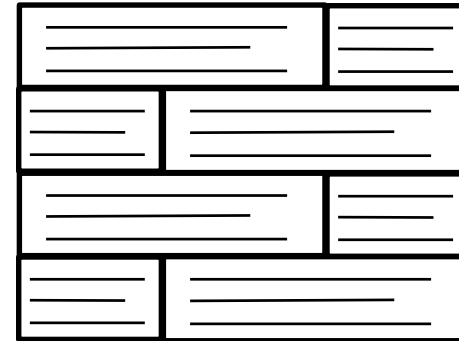
Where does your eye go?

- CRAP combines to give you cues of how to read the graphic



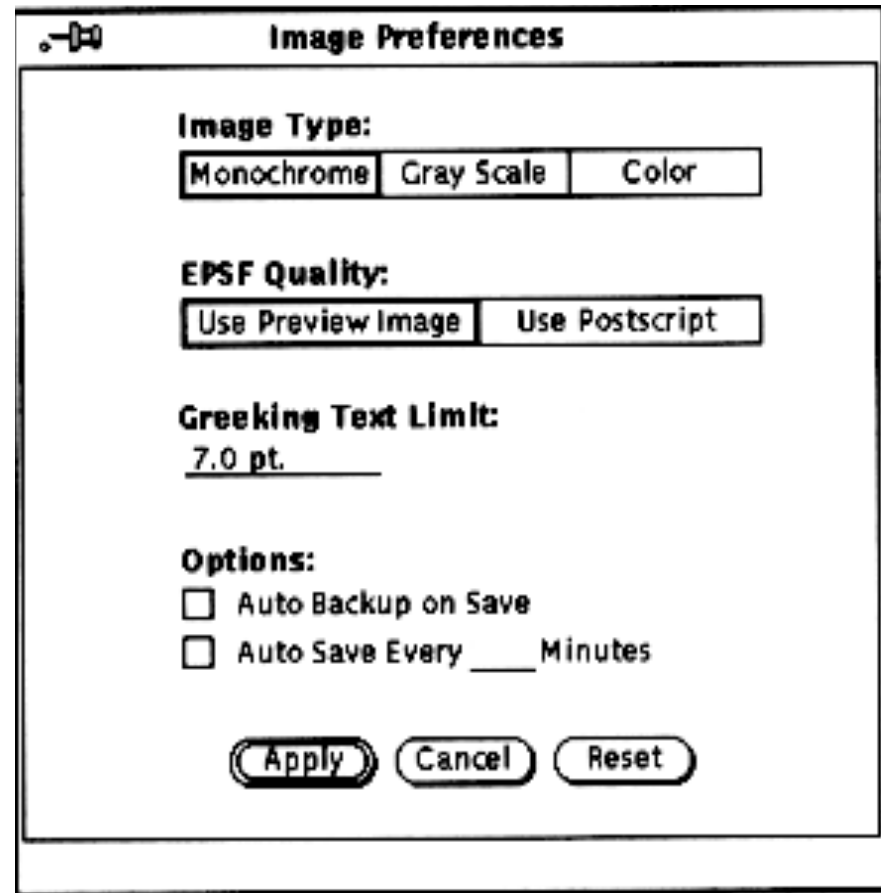
Where does your eye go?

- Boxes do not create a strong structure
 - CRAP fixes it



Where does your eye go?

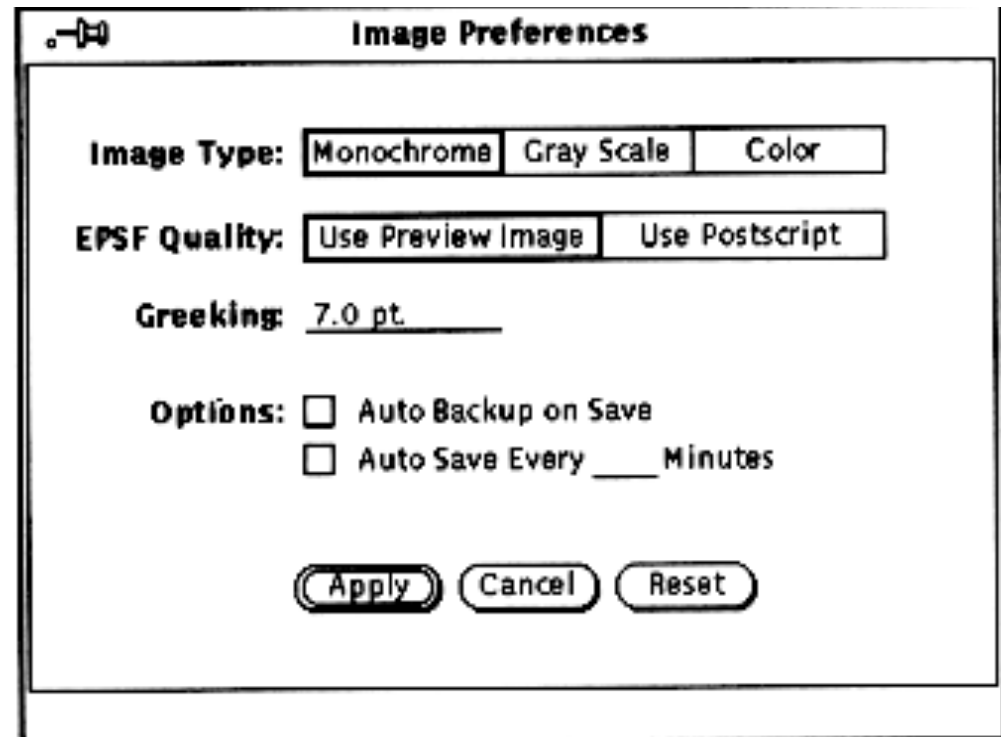
- Some contrast and weak proximity
 - ambiguous structure
 - interleaved items



X

Where does your eye go?

- Strong proximity (left/right split)
 - unambiguous



✓

Where does your eye go?

- the strength of proximity
 - alignment
 - white (negative) space
 - explicit structure a poor replacement

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

Mmmm:

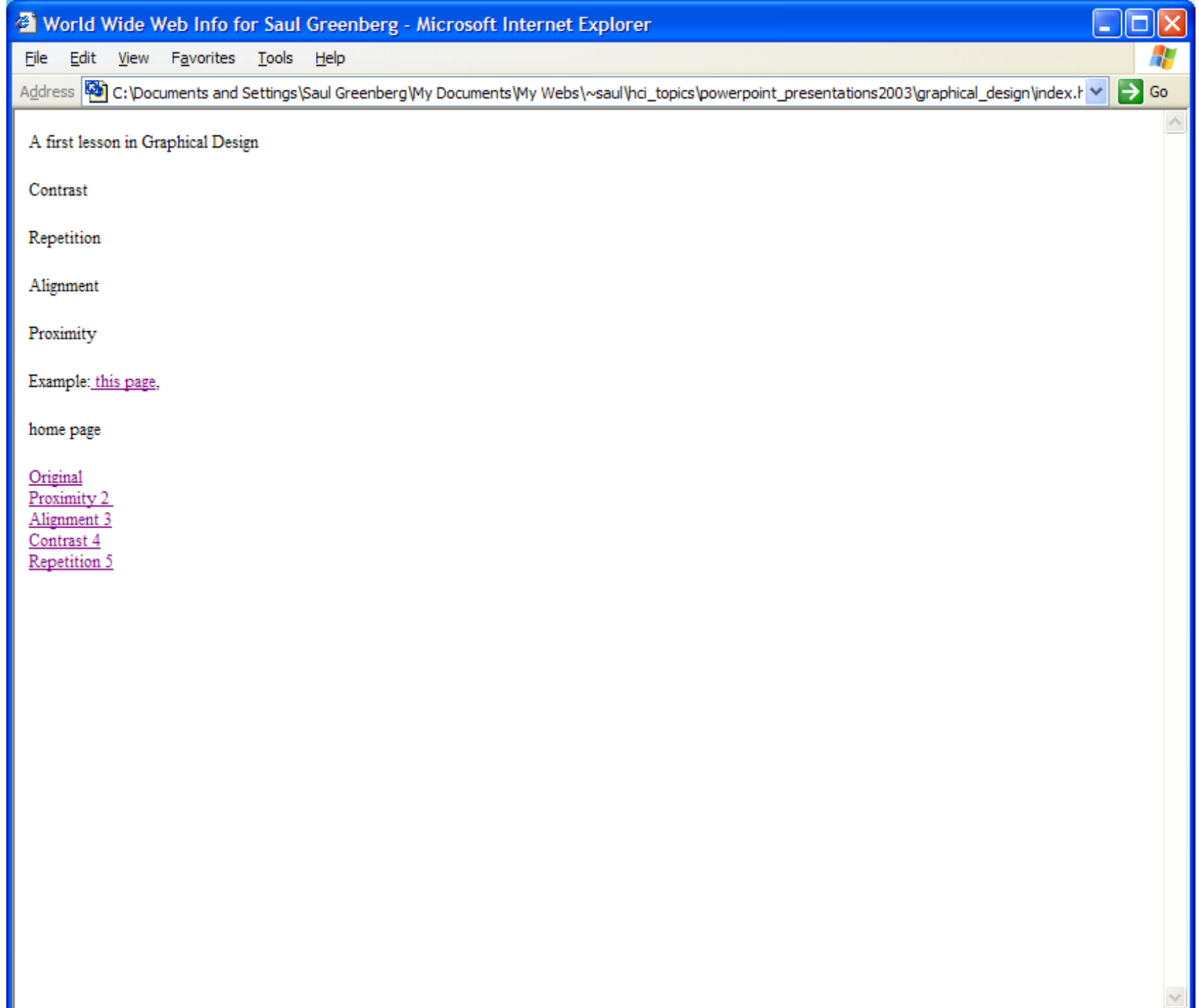
Mmmm:

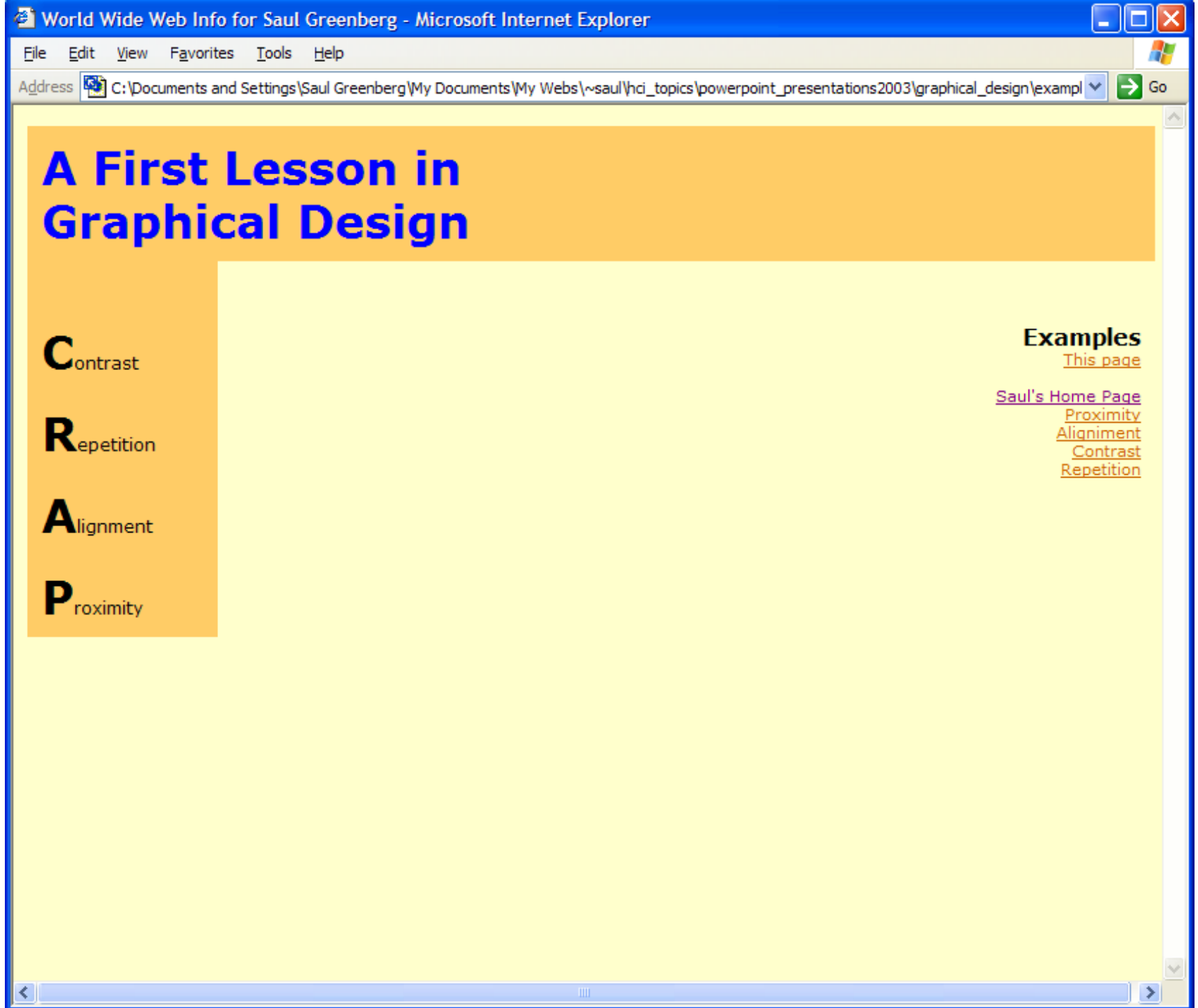
Mmmm:

Mmmm:

Mmmm:


Mmmm:






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The University of Calgary

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Research

[GroupLab project](#) describes research by my group

[Publications](#) by our group; most available in HTML, PDF, and postscript

[Project snapshots](#) describes select projects done in Grouplab

[Grouplab software repository](#)

[Grouplab people](#)

Graduate Students

I have a few openings for MSc and PhD students who are interested in Human Computer Interaction and / or Computer Supported Cooperative Work. [Some research and project ideas honors and graduate students](#)



Courses offered this year

[CPSC 481](#): Foundations and Principles of Human Computer Interaction

Original

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[GroupLab project](#) describes research by my group
[Publications](#) by our group; most available in HTML, PDF, and postscript
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Courses offered this year


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[CPSC 581](#): Human Computer Interaction II: Interaction Design
[CPSC 601.13](#): Computer Supported Cooperative Work

Proximity

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[CPSC 601.13](#): Computer Supported Cooperative Work

Previous Years: [CPSC 681](#): Research Methodologies in Human Computer Interaction
[CPSC 699](#): Research Methodology for Computer Science (old!)
[CPSC 601.48](#): Special Topics: Heuristic Evaluation

Alignment

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Graduate Students

Courses offered this year

Previous Years

Administration

Research Ideas. I have a few openings for MSc and PhD students who are interested in Human Computer Interaction and / or Computer Supported Cooperative Work.

CPSC 481: Foundations and Principles of Human Computer Interaction

CPSC 581: Human Computer Interaction II: Interaction Design

CPSC 601.13: Computer Supported Cooperative Work

CPSC 681: Research Methodologies in Human Computer Interaction

CPSC 699: Research Methodology for Computer Science (old!)

CPSC 601.48: Special Topics: Heuristic Evaluation

CPSC 601.56: Advanced Topics in HCI: Media Spaces and Casual Interaction

SENG 609.05: Graphical User Interfaces: Design and Usability

SENG 609.06: Special Topics in Human Computer Interaction

Ego alert: My entry on U Calgary's 'Great Teachers' Web Site


Ethics Committee for research with human subjects; I am the chair


Contrast

Last updated: March 20, 1867

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Graduate Students **Research Ideas** I have a few openings for MSc and PhD students who are interested in Human Computer Interaction and / or Computer Supported Cooperative Work.

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Administration **Ethics Committee** for research with human subjects

Repetition

Last updated: March 20, 1997

CRAP examples

- Examples of CRAP (in websites) using
 - images
 - color
 - fonts

Examples & some discussion from
<http://www.myinkblog.com/2009/03/21/4-principles-of-good-design-for-websites/>

CRAP: Contrast

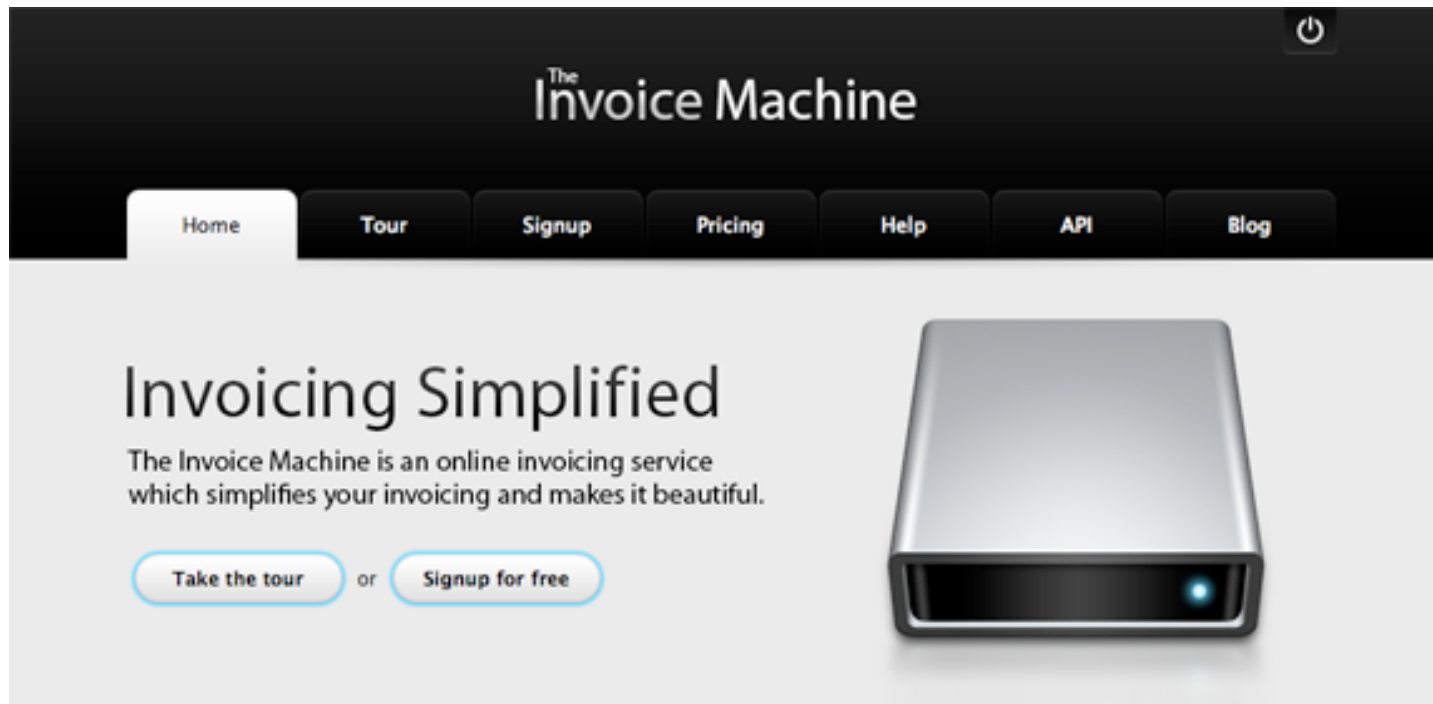
- Contrast
 - Without a focal point, the viewer is generally lost
 - Helps guide the user's experience
 - You can achieve contrast with
 - images,
 - colors,
 - and fonts

CRAP: Contrast

- Contrast with images
 - It's often very effective to showcase a large illustration next to smaller elements

CRAP: Contrast


with images



<http://invoicemachine.com/home>

CRAP: Contrast

with images



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<http://www.instabox.com/>

CRAP: Contrast

- Contrast with color
 - Color can create effective contrast
 - Different color in
 - headers and text
 - within the colors of an image or illustration

CRAP: Contrast

with color



<http://fatburgr.com/>

CRAP: Contrast

with color



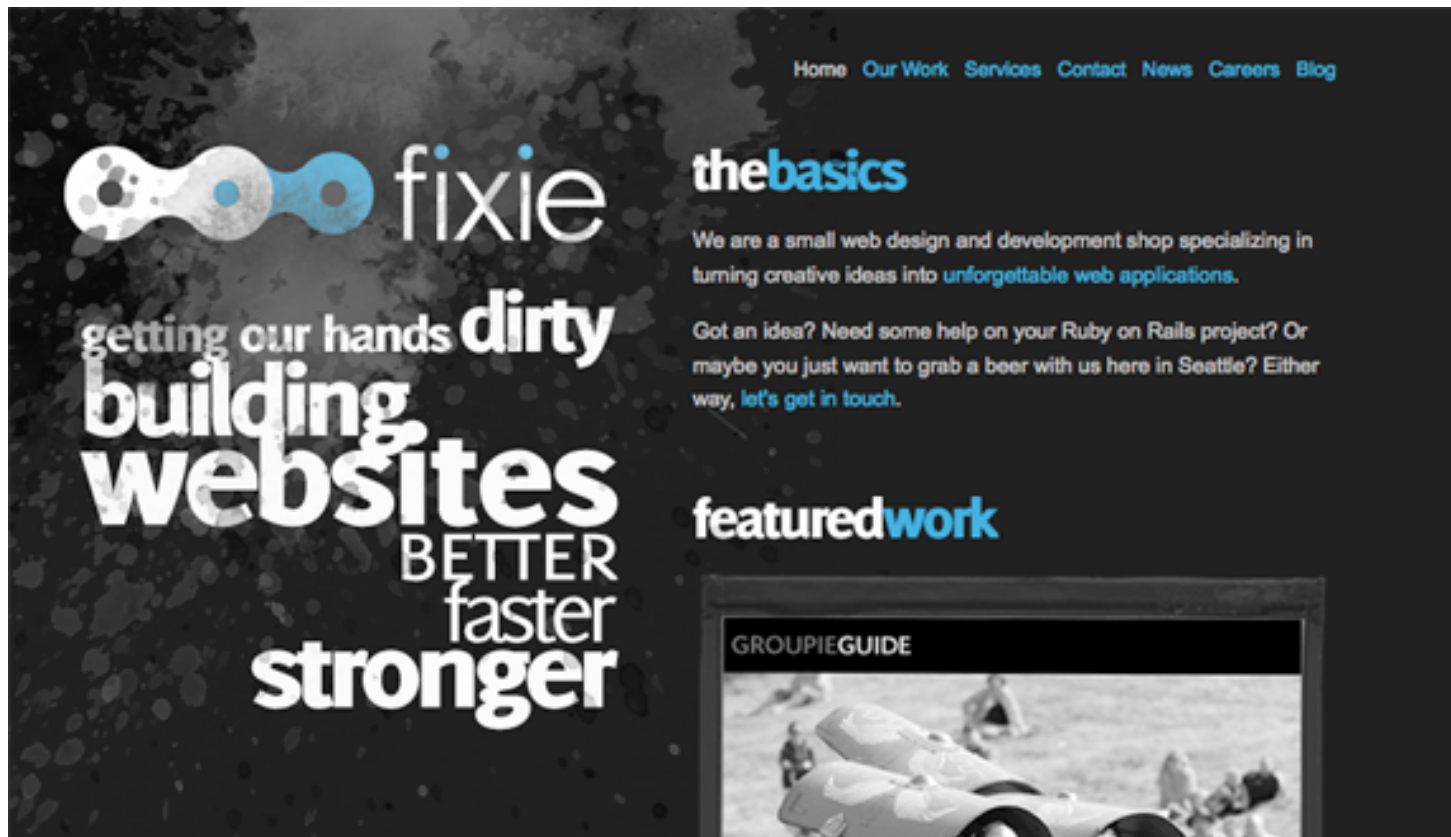
<http://ilovetypography.com/>

CRAP: Contrast

- Contrast with fonts
- IF you are using fonts for contrast
 - Avoid using very similar font faces and sizes. Similar fonts can create confusion and blur the design
 - You can make the font sizes very different, or mix the lightest version of the font in combination with the boldest
 - Or use two very different fonts, e.g. sans-serif and hand-written font

CRAP: Contrast

with fonts



<http://fixieconsulting.com/>

CRAP: Repetition

- Repetition
 - Repetition in print is more common than in web, however it can be equally effective
 - Repeating design elements create a consistent look
 - Repetition across your application (or web pages) with css (possible in Java FX), but also inside a window/page
 - You can repeat elements in header and footer

CRAP: Repetition



<http://www.1024media.com/>

CRAP: Repetition



Clearleft presents

Silverback

Spontaneous, unobtrusive usability testing software for designers and developers.

- 🍌 Capture screen activity
- 🍌 Video the participant's reactions
- 🍌 Record the participant's voice
- 🍌 Add chapter markers on the fly
- 🍌 Control recording with the remote
- 🍌 Export to Quicktime

Download
FREE FOR 30 DAYS

<http://silverbackapp.com/>

CRAP: Alignment

- Alignment
 - Can make designs looking amateur to professional
 - Easier for users to search and look for information
 - Try designing your windows/pages using a grid

CRAP: Alignment



<http://www.blackestate.co.nz/>

CRAP: Alignment

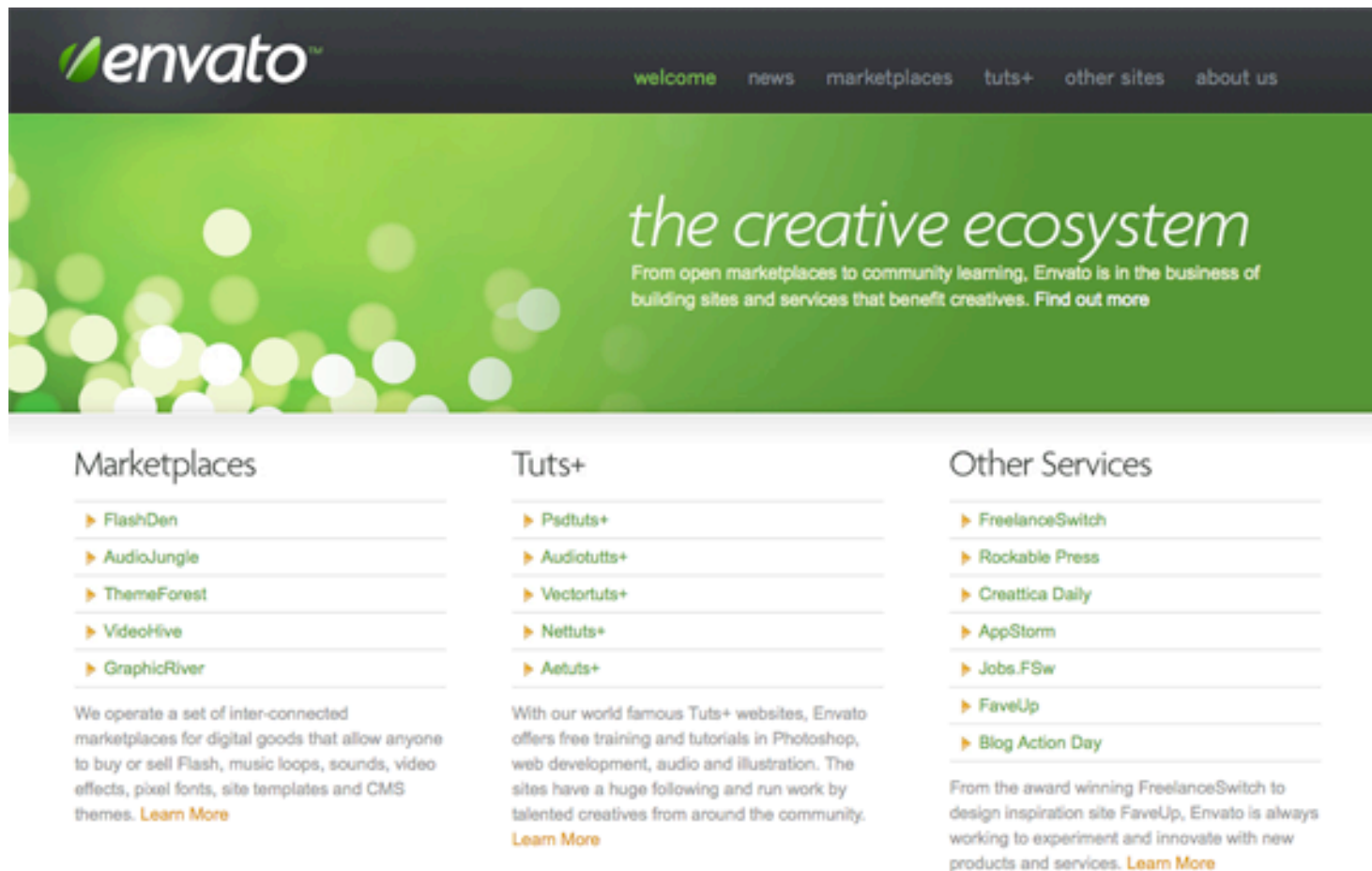


<http://www.alistapart.com/>

CRAP: Proximity

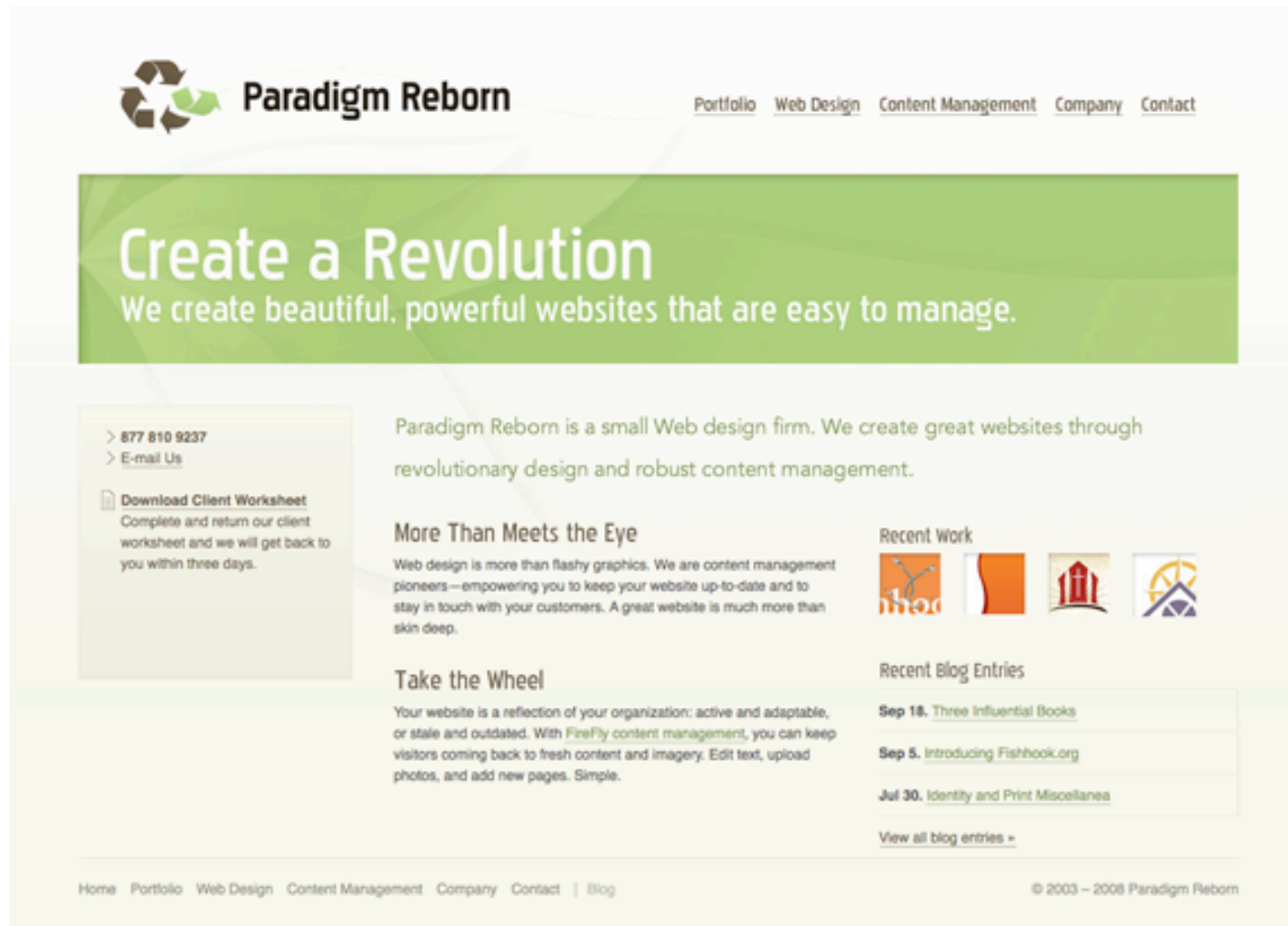
- Proximity
 - Like elements together, separating ones that aren't
 - Important to use header tags and proper spacing

CRAP: Proximity



<http://envato.com/>

CRAP: Proximity



<http://www.createarevolution.com/>

some color theory

Color Selections

- How to choose color combinations
 - decide your goal for the color selection
 - look at the color wheel
 - look at your content

HTML Colors

Most browsers and programming languages define colors by “#rrggbb”

Color numbers are given as percentages of **red**, **green**, and **blue** in hexadecimal format (0 . . . FF) => (0 . . . 255)

White	#FFFFFF	
Red	#FF0000	
Green	#00FF00	
Blue	#0000FF	
Magenta	#FF00FF	
Cyan	#00FFFF	
Yellow	#FFFF00	
Black	#000000	

decimal	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
hex	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

hex	convert	decimal
15	$1 \cdot 16 + 5$	21
A4	$10 \cdot 16 + 4$	164

by Jerry Post

Color (in software)

Hue: actual color

Saturation: The degree of purity of a hue (relation to gray)

Brightness / Value: White (or black) mixed with color



Color Systems

- We have 2 color systems

subtractive (print,paint), combined black, e.g. CMYK

additive (computer), combined white, e.g. RGB



Subtractive



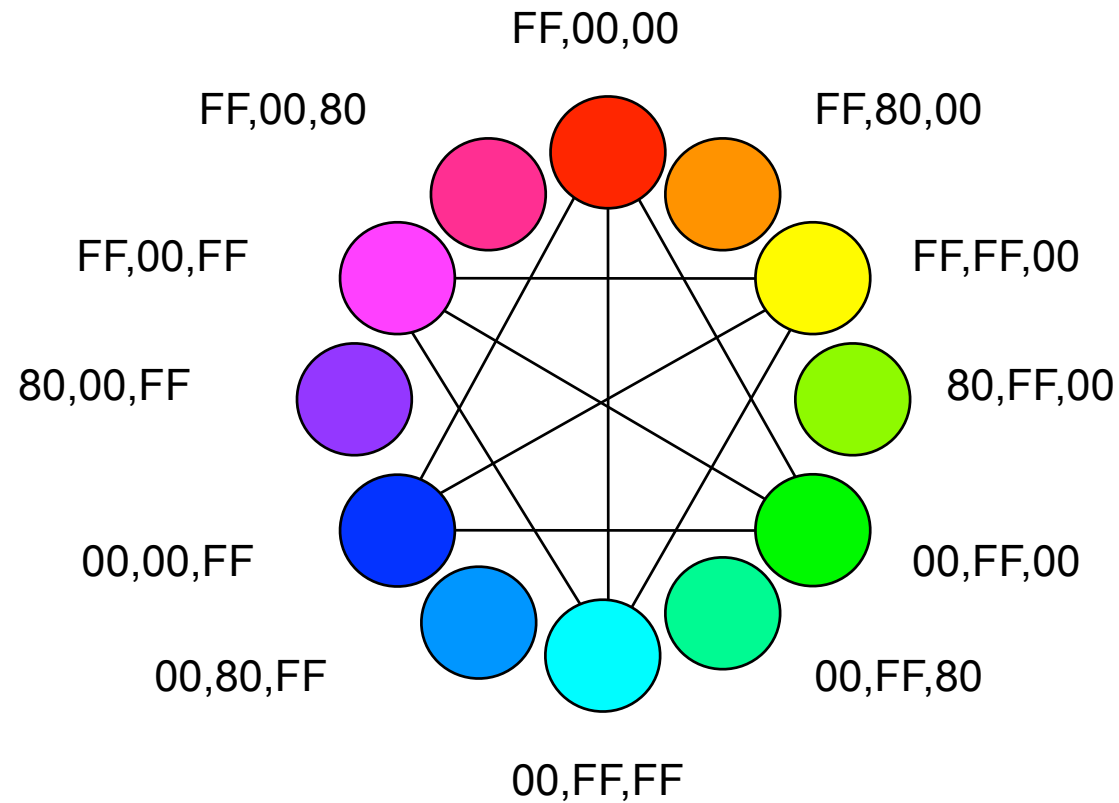
Additive

Color Theory: Color Wheel

- visual representation of colors according to their chromatic relationship



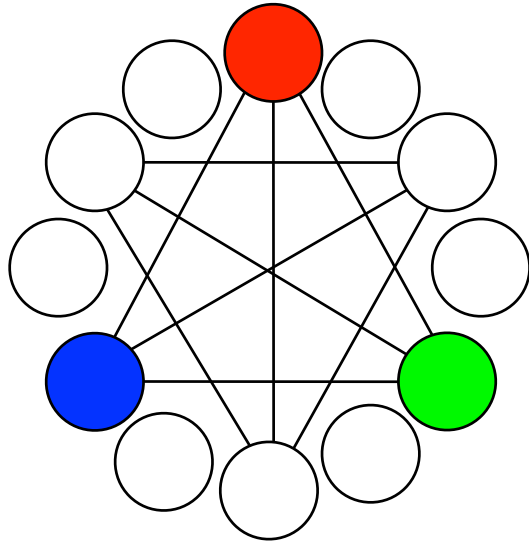
Color Wheel



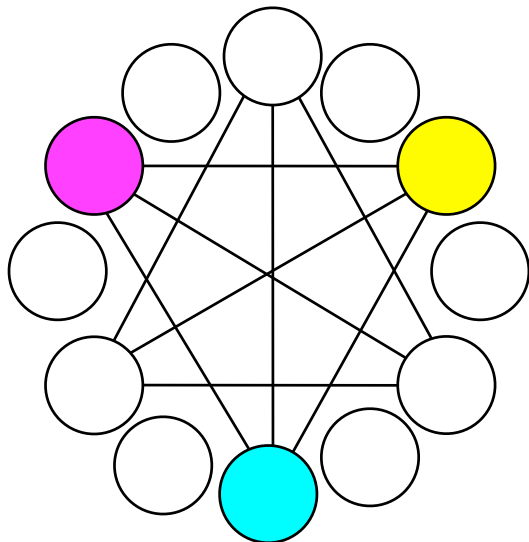
<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnhess/html/hess08142000.asp>

by Jerry Post

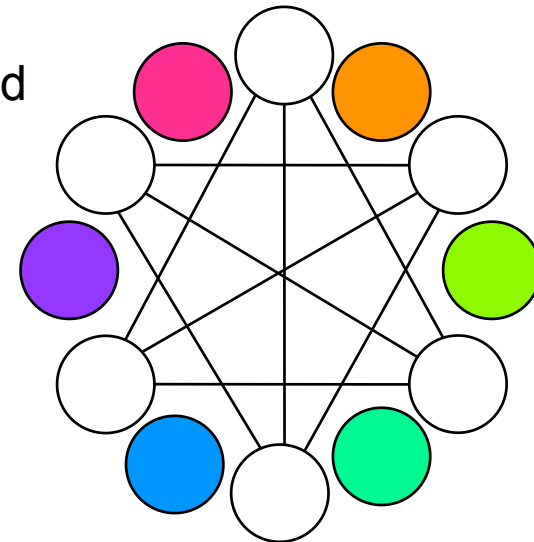
Color Groups



Primary additive colors:
Basic colors, cannot be created
red, green, blue



Secondary additive colors:
By mixing primary ones
cyan, magenta, yellow

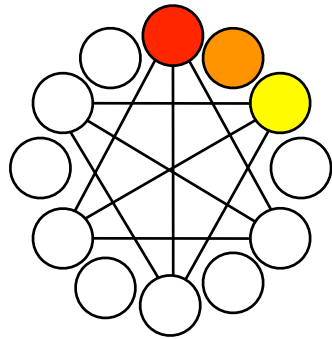


Tertiary additive colors:
middle of primary and secondary

by Jerry Post

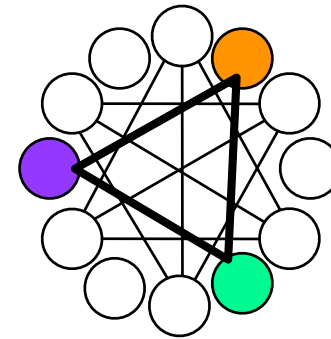
Color Groups

Analogous colors



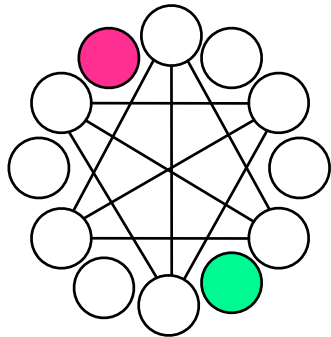
Adjacent colors
are harmonious

Triad colors



Equidistant colors
create tension.

Complementary colors

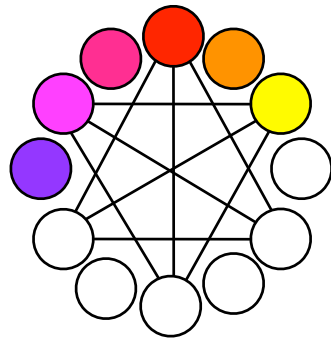


Opposite colors
are used for
contrast—text and
background.

by Jerry Post

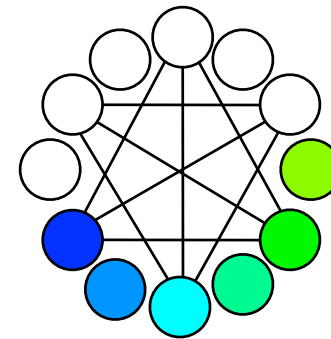
Color Groups

Warm (active) colors



Add warmth and appear to move toward the viewer

Cool (passive) colors



More reserved, and appear to recede into the screen

by Jerry Post

Color Groups



Monochromatic



Analogous



Complementary



<http://www.allwebdesignresources.com/>
<http://www.worqx.com/color/>

Color Groups



Split-Complementary



Triad



Double-Complementary

<http://www.worqx.com/color/>

Color and Contrast

- More contrast, more visible

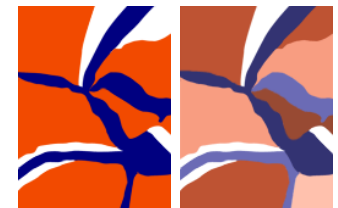
Yellow text on a white background

blue text on a black background

- “Simultaneous contrast”, eye-strain

such as red text on a blue background

- Full saturation high contrast

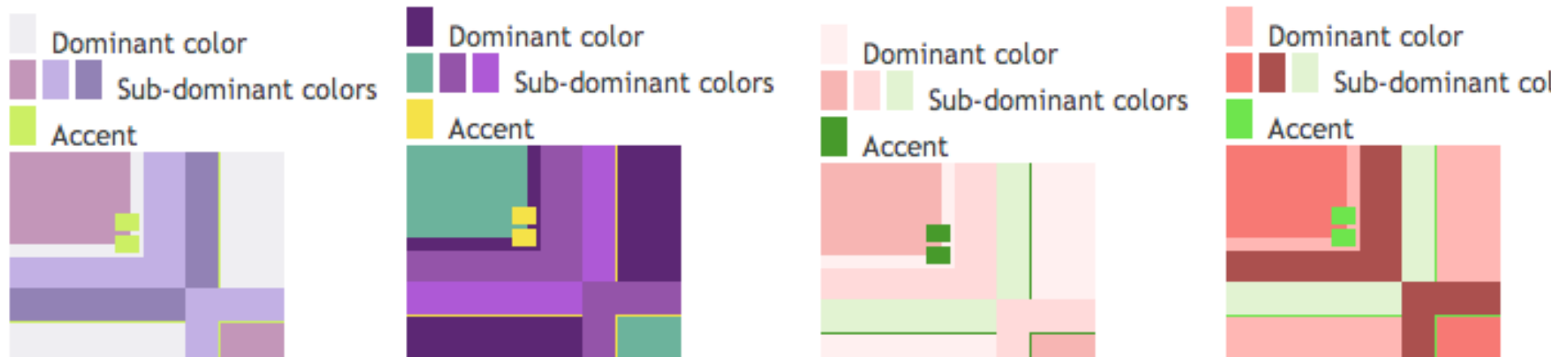


<http://www.worqx.com/color/>

Proportion and Intensity

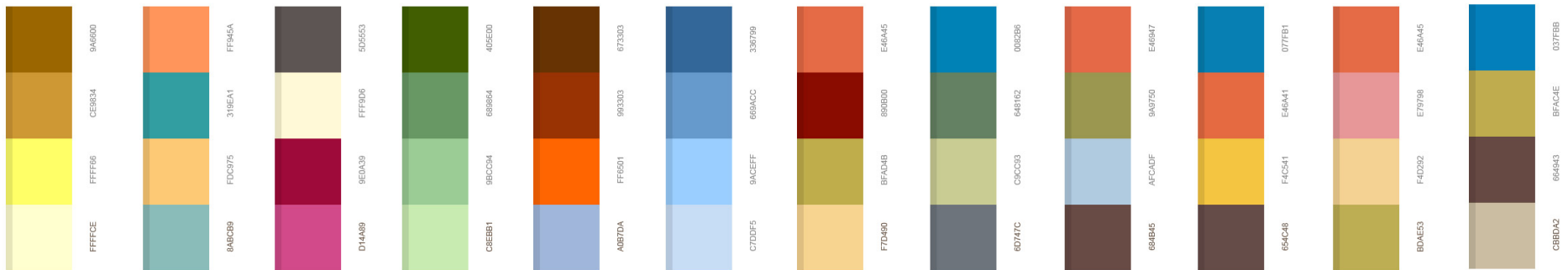
- Our eyes perceive a visual mix, depending on proportions
- Color of largest proportional area: dominant color (ground)
- Smaller areas are subdominant colors
- Accent colors have small relative area, but offer a contrast.

Placing small areas of light on a dark, or vice versa



Color palettes

- many many many color pallet generators online ...



Color and perception

- bright colors will dominate attention
- if two colors appear similar, will be perceived as a group
- similar perceived brightness (poor contrast) or simultaneous contrast (pure colors) also interfere with each other

<http://mkweb.bcgsc.ca/brewer/>

Color and perception

- Brewer palettes selected for perceptual properties (created by Cynthia Brewer for cartography).
- Types of Brewer palettes : qualitative, sequential, diverging

<http://mkweb.bcgsc.ca/brewer/>



Color Groups

- **Theory + examples** (note some tutorials not on additive but on subtractive)

<http://www.worqx.com/color/>

<http://designfestival.com/color-theory-101-2/>

[http://www.writedesignonline.com/resources/design/rules/
color.html](http://www.writedesignonline.com/resources/design/rules/color.html)

<http://mkweb.bcgsc.ca/brewer/>

a bit on fonts

font families

- font types
 - serif (tails at top and bottom)
 - sans-serif (no tails)
 - script & decorative



AaBbCc Sans-serif font

AaBbCc Serif font

AaBbCc Serif font
(serifs in red)

font families

- font psychology: font type and size plays a big role in readability and message
 - serif faster to read
 - disfluent fonts affect understanding
 - bigger easier to read
 - script and decorative convey emotion

font families

- Arial clean and easy to read, safe
- Times New Roman traditional, professional
- Helvetica clean
- Verdana close to human writing
- Palatino old feel
- **Comic Sans** informal and playful

B||B|C U&L <http://www.onextrapixel.com/2011/12/13/the-psychology-of-fonts/> <http://blog.templatemonster.com/2012/05/16/font-psychology/>

font families

- Some (older) work on psychology of fonts

<http://psychology.wichita.edu/surl/usabilitynews/81/PersonalityofFonts.asp>

- Known font families overviews

<http://typedia.com/learn/only/typeface-classifications/>

- And guides for combining fonts

<http://www.smashingmagazine.com/2010/11/04/best-practices-of-combining-typefaces/>

B||B|C U&D

font combinations

- Avoiding mix fonts of the same type, variant or style at the same level of your hierarchy
- Use contrast, when fonts look similar, even at different levels, they confuse
- Bold fonts are hard to make look good



<http://blog.templatemonster.com/2012/05/16/font-psychology/> [http://](http://blog.templatemonster.com/2012/04/24/40-free-fonts-big-bold-headlines/)

blog.templatemonster.com/2012/04/24/40-free-fonts-big-bold-headlines/

typography

- **Line Spacing:** convenient reading 30-60% size of font
- **Line Length:** too long may not read to the end. Too short eyes jump back/forth. Try 45 to 65 char per line (7-10 words)
- **White Spaces:** space between distinct groups of information
- **Vertical Rhythm:** show readers how to scan the page
- **Vertical Hierarchy:** make important things in the rhythm pop-out (e.g. titles) to help scanning