

Visual Design

Visual Design Objectives

Gestalt Principles

Creating Organization and Structure

Typography

UI Visual Design Objectives

What are the goals of an effective interface?

1. Information communication

- enforce desired relationships (and avoid undesired relationships)
- make all valid actions discoverable and clear
- provide consistent, meaningful, timely feedback

2. Aesthetics

- well designed, complete, well ordered, professional, attractive

3. “Brand”

- recognizable as being part of your organization

UI Visual Design Problem

- You need to present elements of your interface to your users
- Those users need to know:
 - What can I do in this interface?
 - Where is _____ ?
 - How can I do _____ ?
 - What is related to what?
- Want to impose **as little thinking as possible** on your users
 - Let them concentrate on their task, not the interface.
 - Ideally, they should unconsciously see patterns and relationships that help them navigate the interface.

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Organization and Structure

- Structure doesn't usually occur naturally, it must be designed
- People will look for structure, even if none was intended
- Use Gestalt principles to create the desired organization and structure
 - Impose your structure on users, instead of making them figure it out (or worse, having them guess incorrectly)



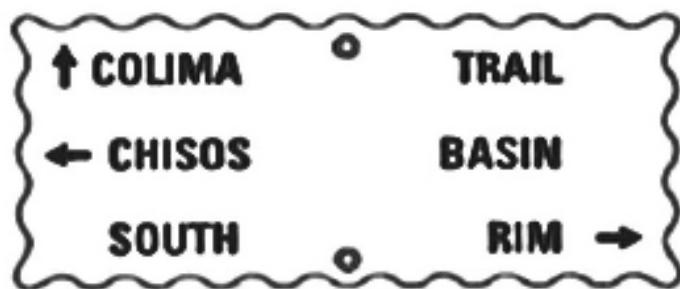
Gestalt Principles

- Theories of visual perception that describe how people tend to organize visual elements into groups or unified wholes, when certain principles are applied.
Proximity
- Clues about how the brain groups raw visual input.
Similarity
- By designing these principles, we can build structures that align with people's expectations – easier for them to work with.
Continuity
- **Closure**
- **Connectedness**

(pronunciation: <http://www.howjsay.com/index.php?word=gestalt>)

Proximity

- Individual elements are associated more strongly with nearby elements than with those further away



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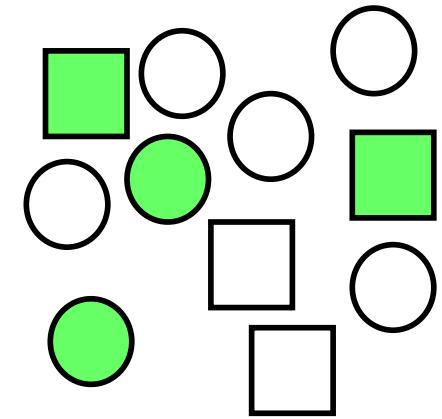
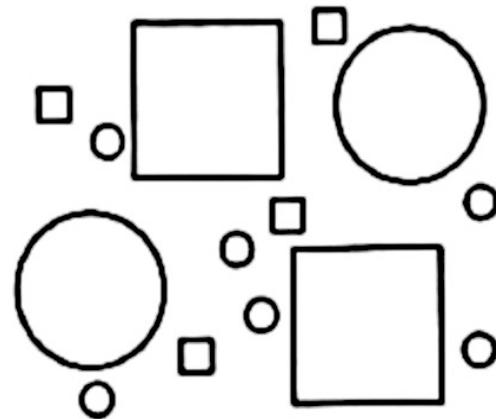
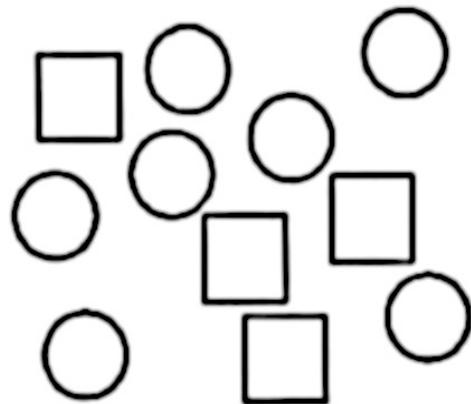
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Similarity

- Elements associated more strongly when they share basic visual characteristics, such as:
 - Shape, Size, Color, Texture, Orientation



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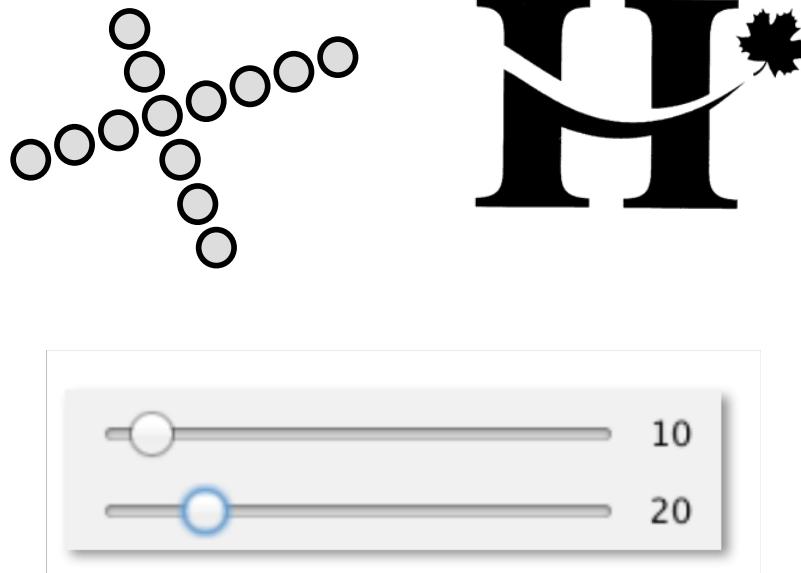


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Continuity

- Elements arranged in a straight line or a smooth curve are perceived as being more related
 - bias to continuous forms rather than disconnected segments



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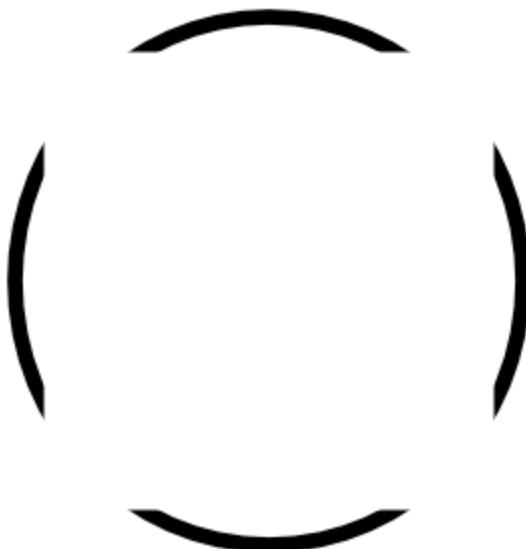


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Closure

- The visual system perceives a set of individual elements as a single, recognizable pattern, rather than individual elements.



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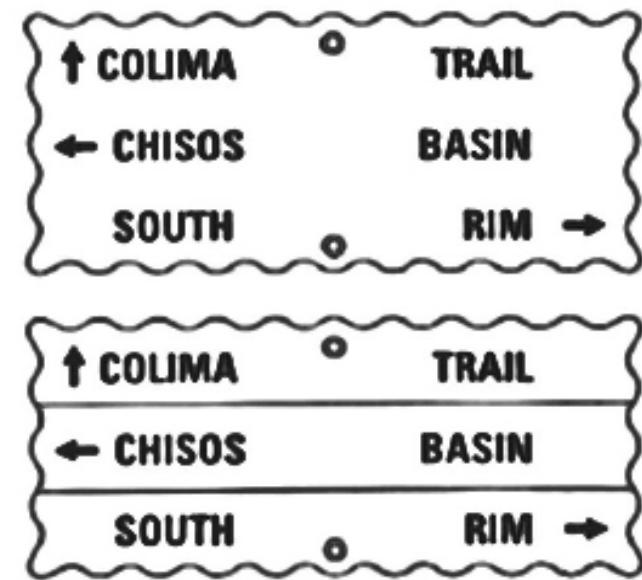
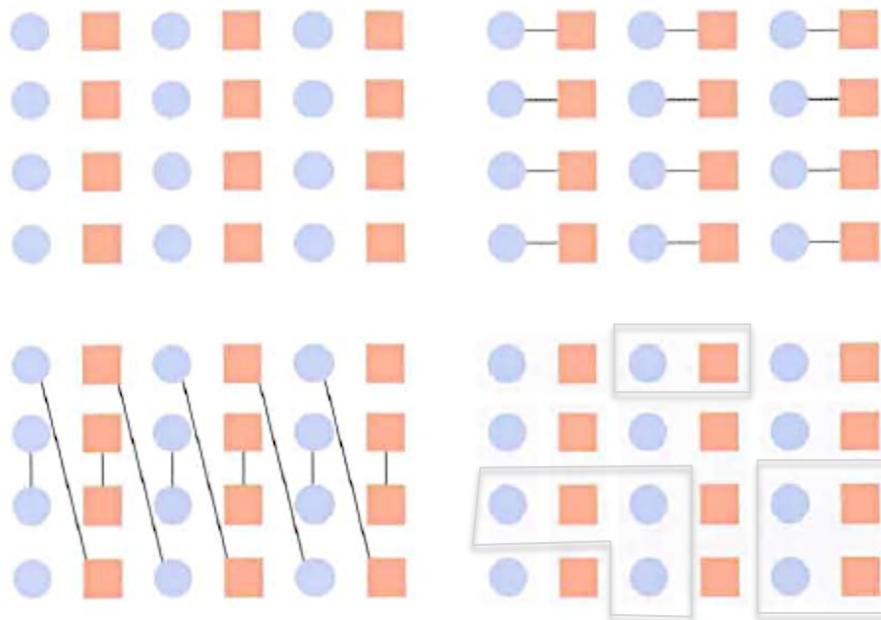


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Connectedness

- Elements connected to one another by uniform visual properties are perceived to be more related than elements that are not connected
- Two typical strategies:
 - connecting lines
 - connecting regions



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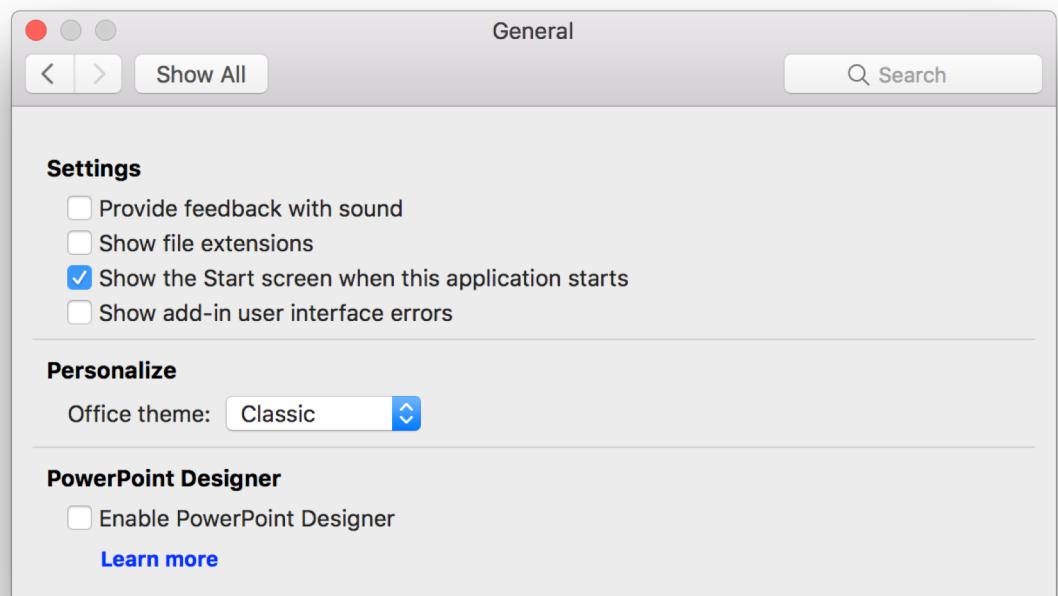
Creating Organization and Structure

We can define design principles that help us leverage these gestalt principles

- Grouping
- Hierarchy
- Relationship
- Balance
- Simplicity
- Clarity

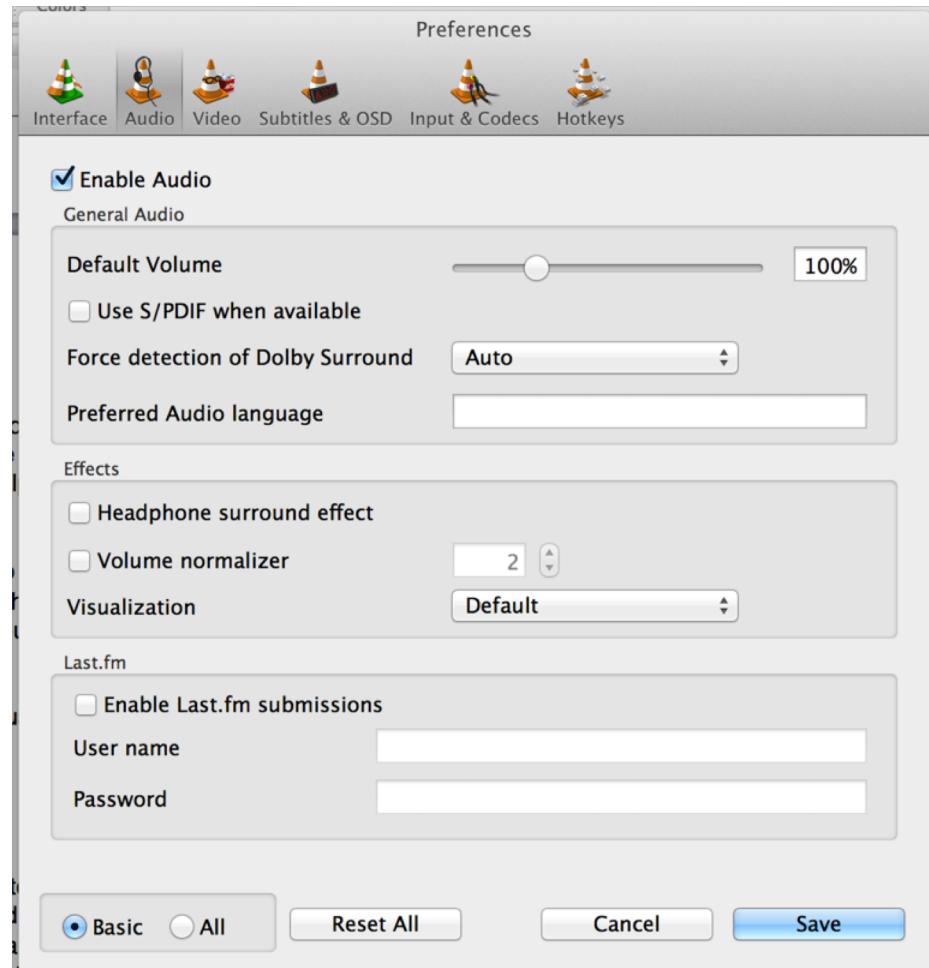
Grouping

- Group elements into higher order units
 - e.g. Newspapers have paragraphs, columns, sections, pages
- Use the Gestalt principles to create groups
- Reserve powerful techniques such as colour and connectedness for explicitly telling the user something



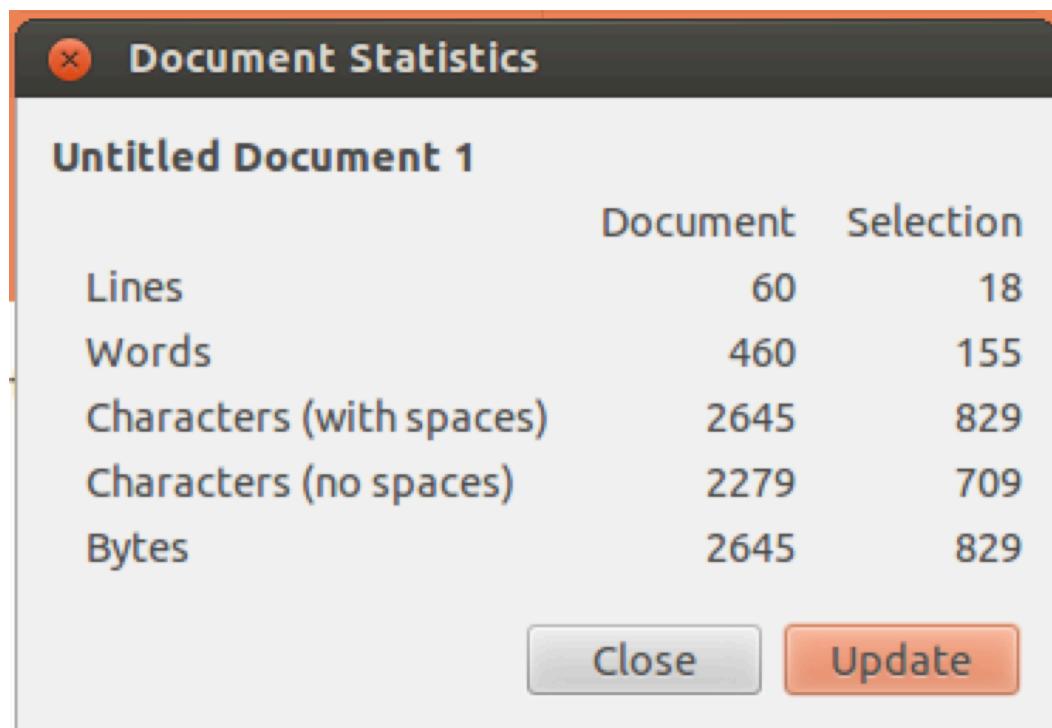
Hierarchy

- a visual hierarchy guides and allows information scanning
- create the hierarchy to support intended reading sequence
- Useful techniques for creating hierarchy:
 - Size, Position, Spacing, White space, Colour



Relationship

- Establish relationships between elements by using position, size, value (colour, shape, etc.)
- Use position, size, value (colour, shape, etc.)
- Alignment and similarity effective for creating relationships

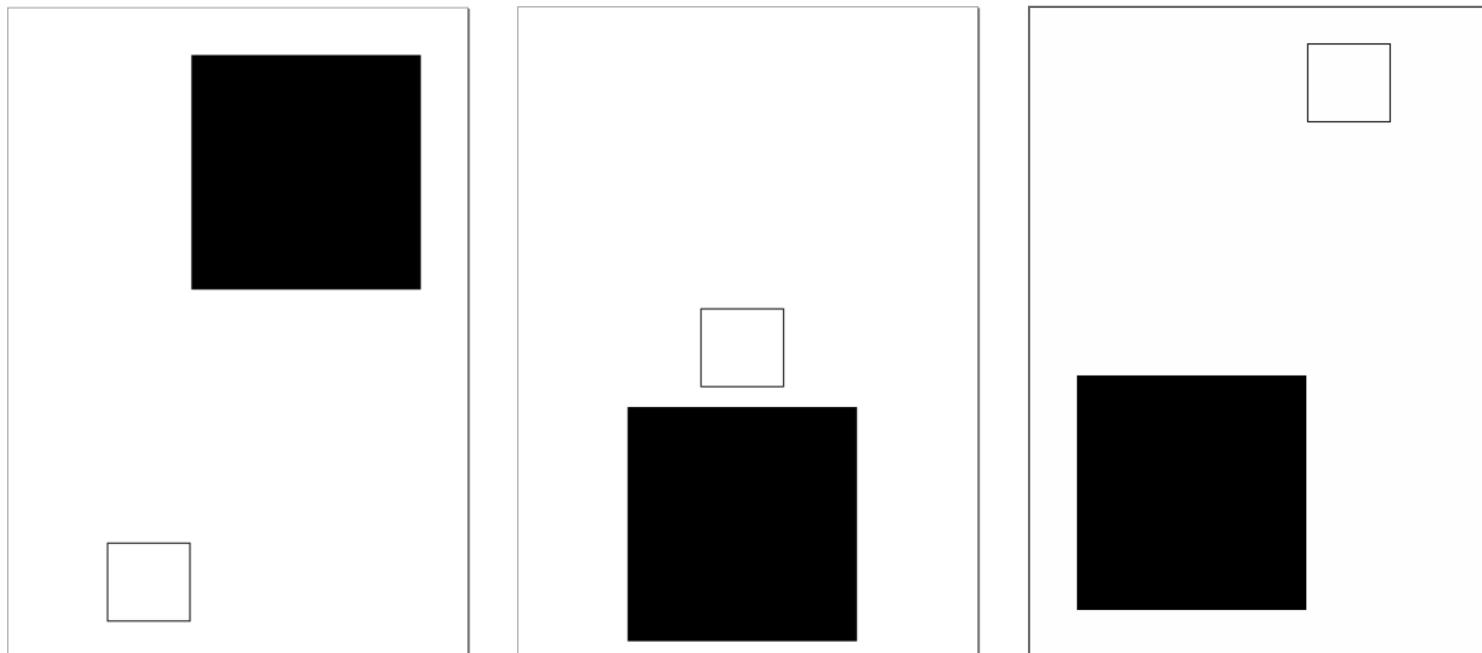


The screenshot shows a modal dialog box titled "Document Statistics" with a dark header bar and a light gray body. The title bar includes a close button (an orange circle with a white 'X'). The main content area is titled "Untitled Document 1". It contains a table comparing "Document" and "Selection" statistics across five categories: Lines, Words, Characters (with spaces), Characters (no spaces), and Bytes. The table has two columns of data. At the bottom are two buttons: "Close" (gray) and "Update" (orange).

	Document	Selection
Lines	60	18
Words	460	155
Characters (with spaces)	2645	829
Characters (no spaces)	2279	709
Bytes	2645	829

Balance

- Try to create a stable composition by balancing elements (similar to physical balance)
- Stability achieved by manipulating properties such:
 - Position, Size, Hue, Form
- Symmetric layouts naturally achieve balance



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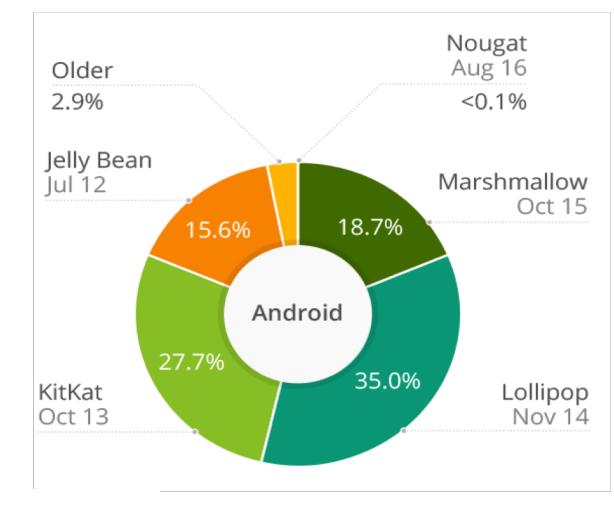
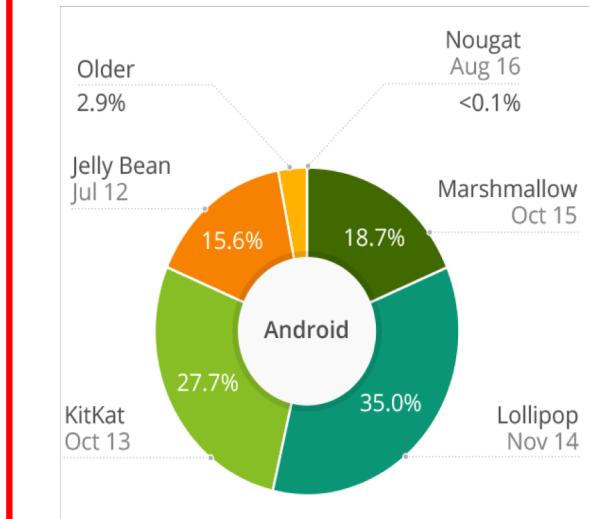
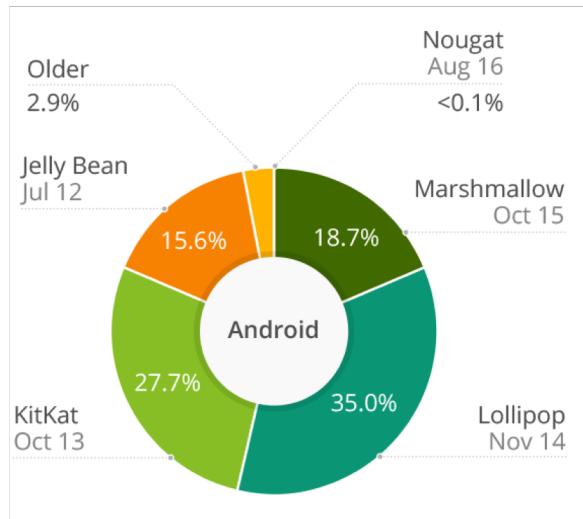
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Balance

- Never change the **aspect ratio** of an image, illustration, or type



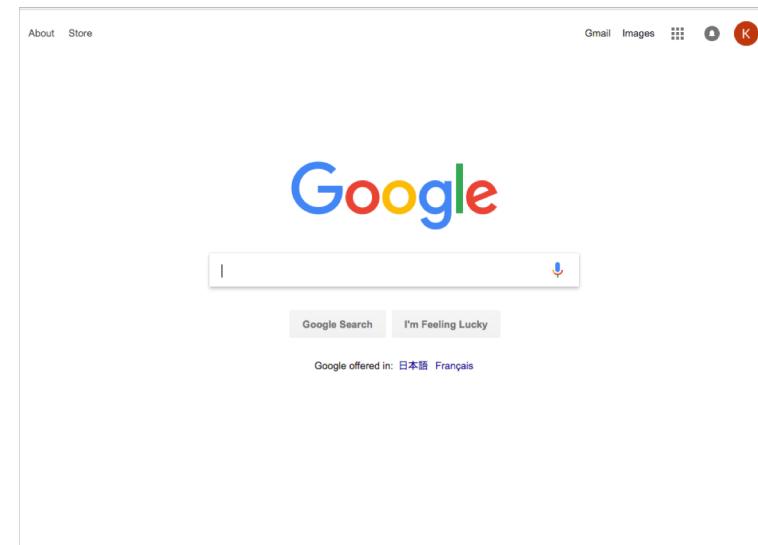
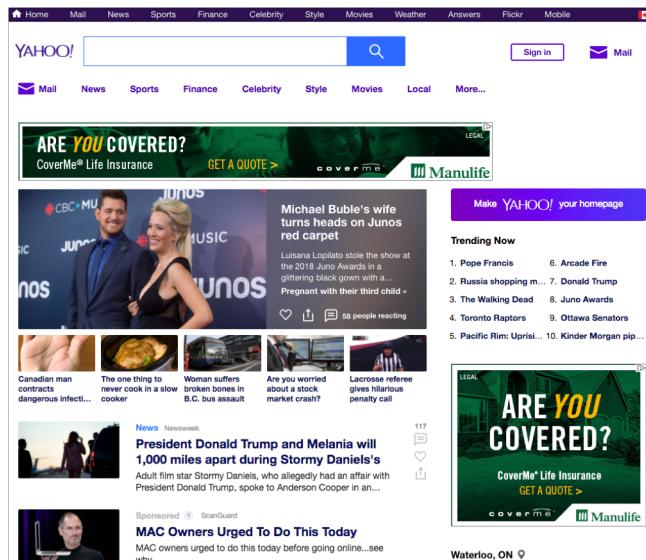
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don't do this

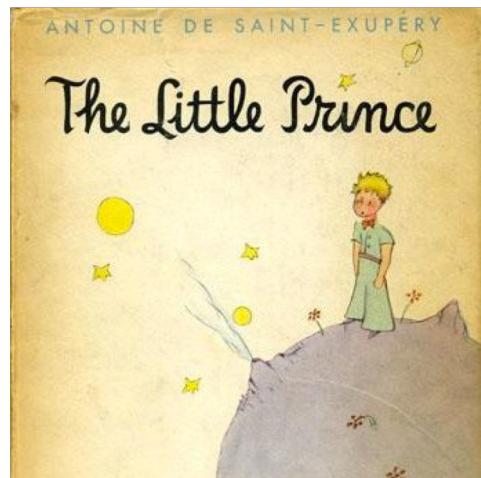
Simplicity

- Present the minimum amount of information to achieve maximum effect
- Functions are **quickly recognized and understood**
 - Less information means less time to process
 - Can more quickly produce correct mental models
- Simplicity also aids recall
 - Less to remember, easier to recall

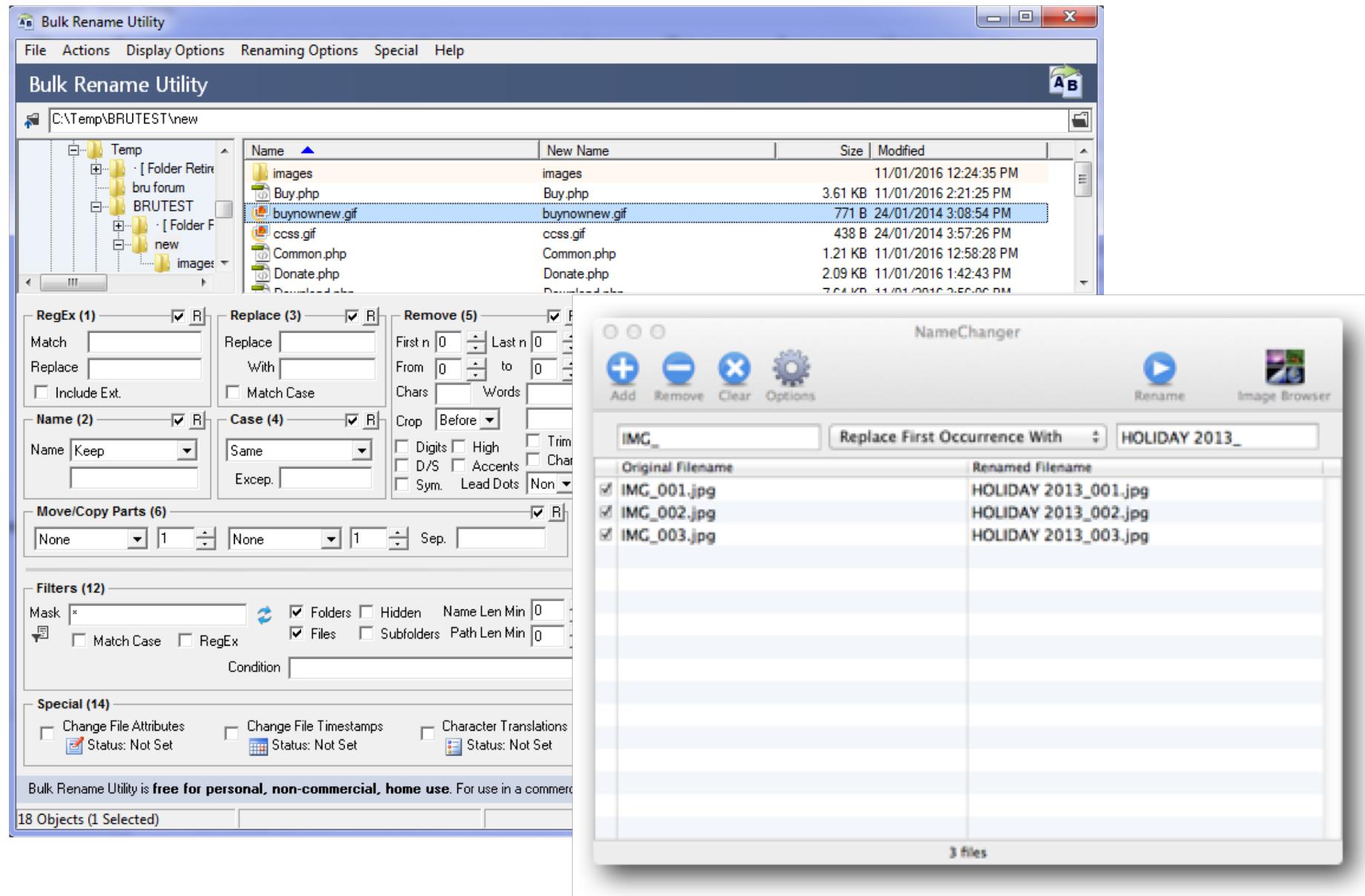


In anything at all, perfection is finally attained not when there is no longer anything to add, but when there is no longer anything to take away.

-- Antoine de Saint Exupery



What are the Essential Features?



How to achieve simplicity?

- Reduce, reduce, reduce
- Reduce some more
- Reduce until it hurts

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Clarity: Typography

- The practice of arranging written subject matter.
- Difference between “Typeface” and “Font”

The quick brown fox

The quick brown fox

The quick brown fox

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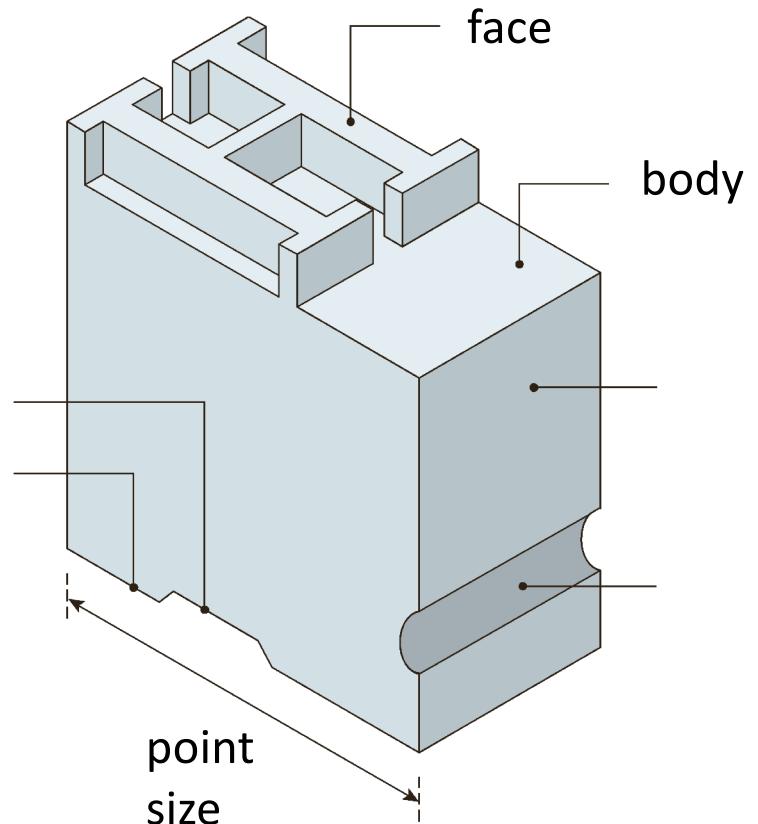
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Type Styles and Anatomy

- Style (Sans-Serif, Serif, Display, etc)

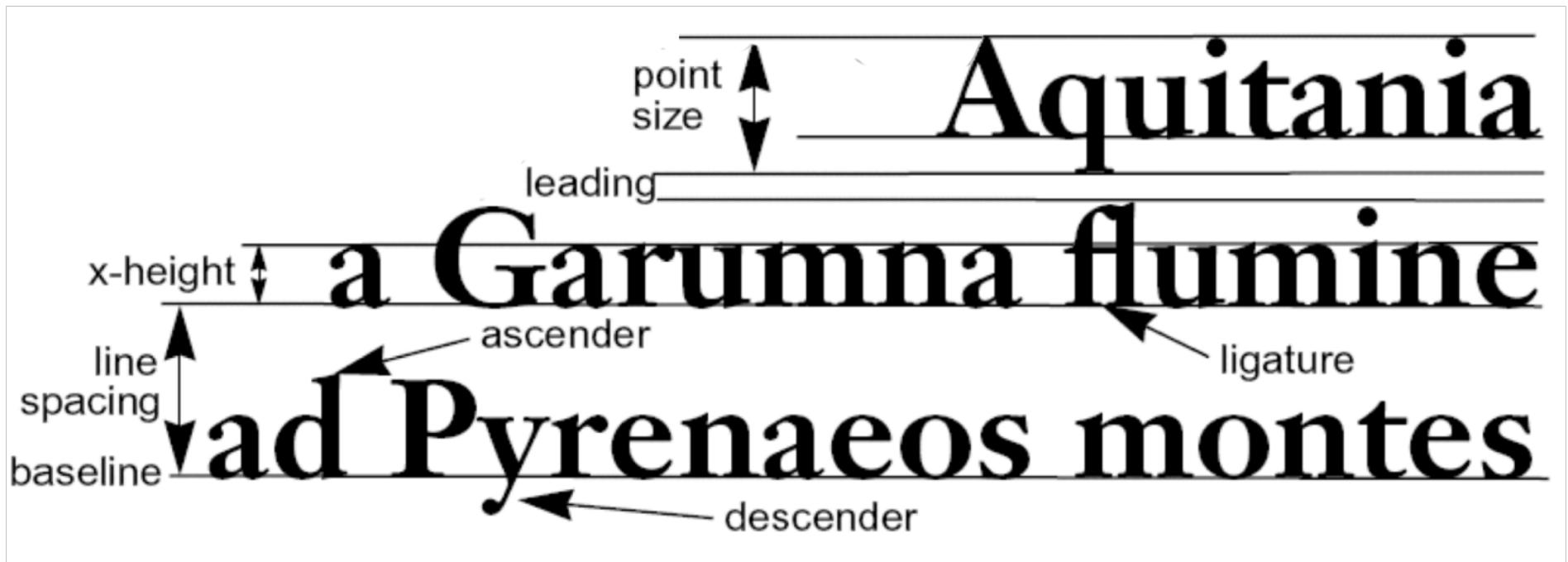
A A A

- Weight (e.g. bold)
- Emphasis (e.g. italic)
- Point: $0.351\text{mm} = 1/72"$ (mostly)
 - original Mac was 72 DPI



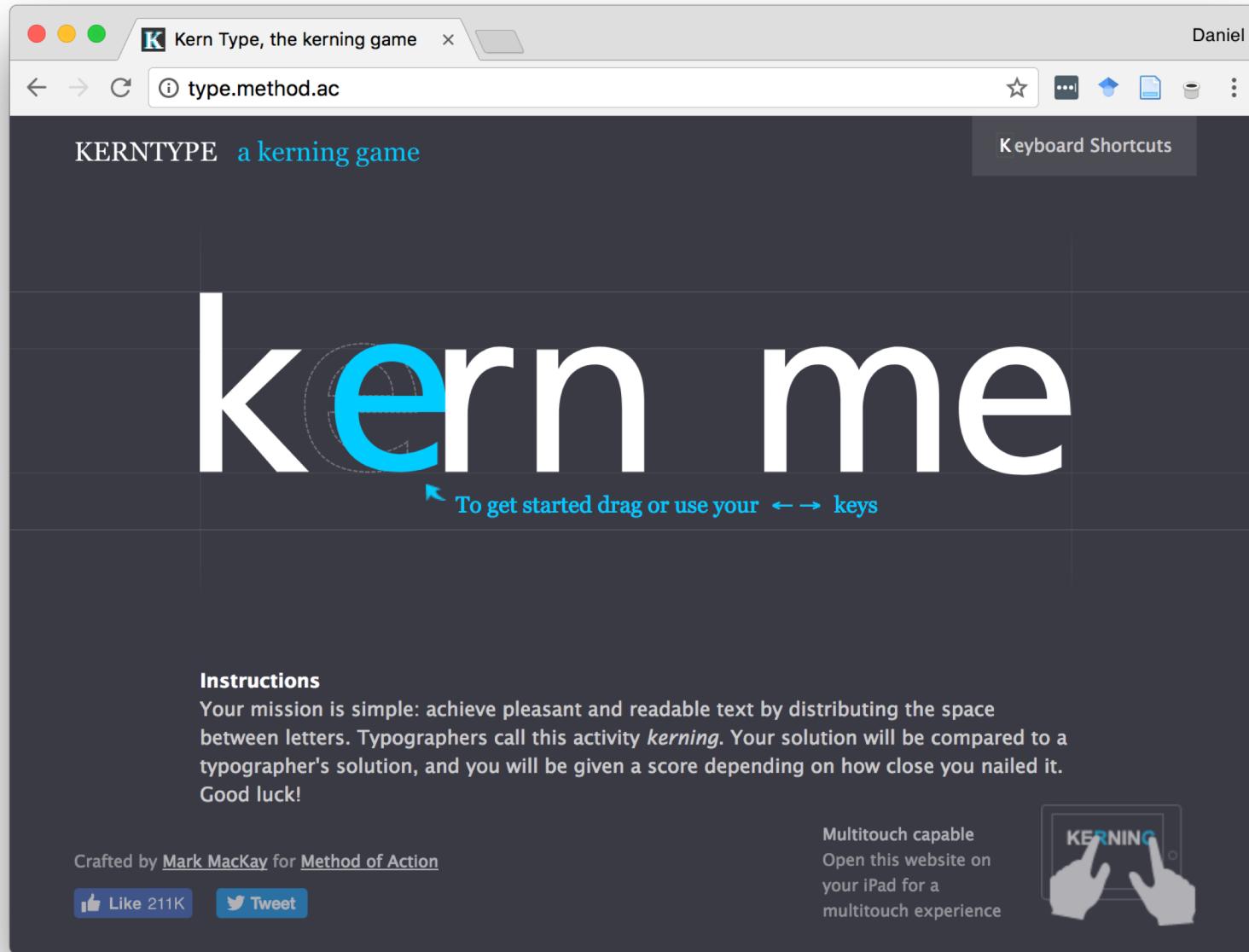
http://en.wikipedia.org/wiki/Image:Metal_type.svg

Terminology



kerning



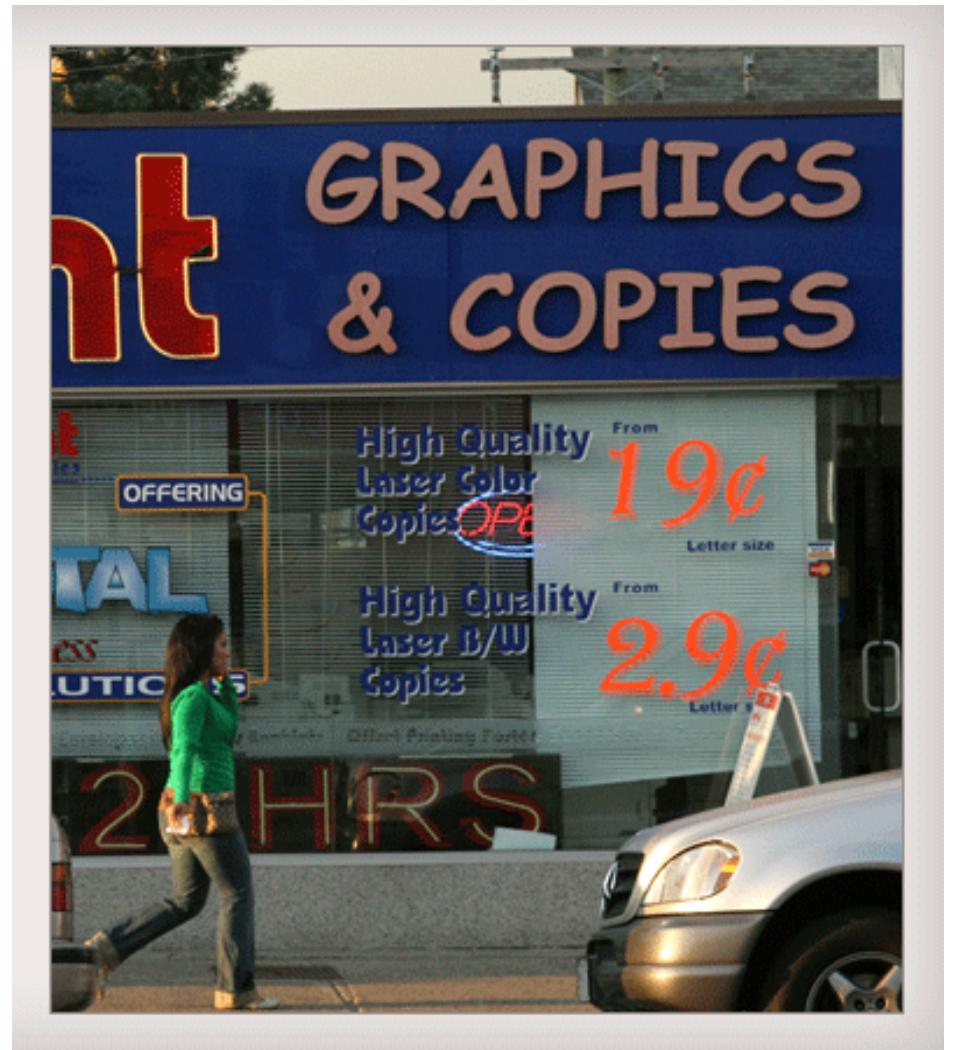


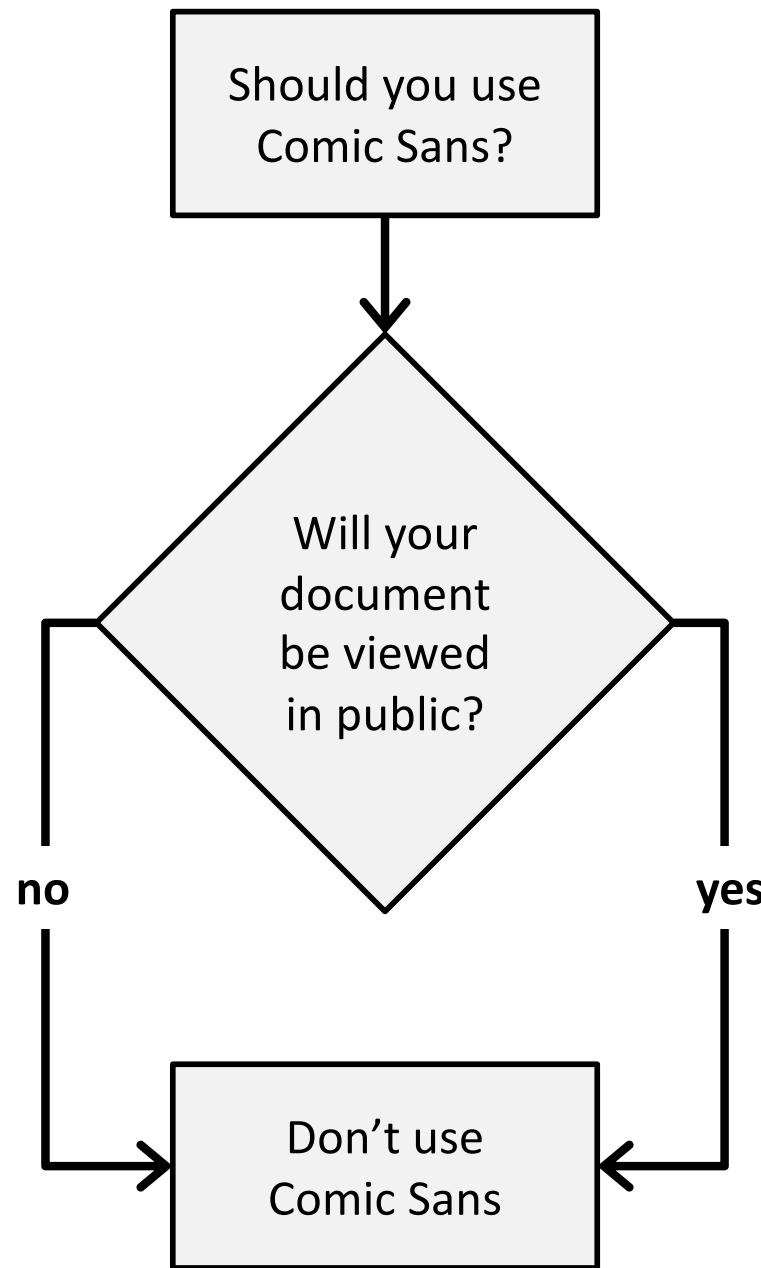
Kerning Game

- <http://type.method.ac/>

Rules of Thumb

- Avoid using display typefaces like comic sans
- Don't use many typefaces
- Avoid underlining (use bold and italics for emphasis)
- Avoid fully justified text

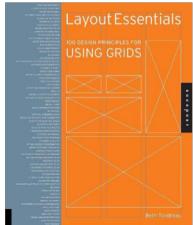




Summary

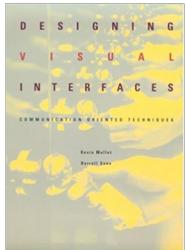
- Strive for simplicity
- Gestalt principles hint at how brain reacts to visual stimulus
- Use principles to structure a visual design by:
 - Grouping visual information into higher units
 - Creating a hierarchy to guide the user's viewing
 - Establishing relationships between elements
 - Creating a sense of balance

Recommended Books



Beth Tondreau, *Layout Essentials: 100 Design Principles for Using Grids* (2011)

- more print layout than interfaces, but excellent description of core layout and typography concepts



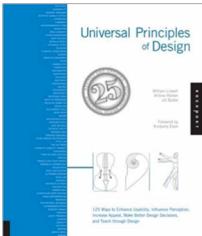
Kevin Mullet and Darrell Sano, *Designing Visual Interfaces: Communication Oriented Techniques* (1994)

- dated examples but concepts hold true; out of print, used copies can be cheap



Robert Bringhurst, *The Elements of Typographic Style* (2004)

- classic text on typography



William Lidwell, Kritina Holden, and Jill Butler, *Universal Principles of Design* (2010)

- high level overview of visual design concepts