Midterm

Graded exams will be returned on Wednesday.

Due Soon

Interactive Prototype (due Apr 5)
Reinvent interface based on low-fidelity feedback
Create first working implementation
Can include Wizard of Oz parts where justified
Can include pre-built functionality but only if heavily justified

In class Presentations (Apr 5 & 7)
5 min presentation (short! be careful about timing)
Focus on showing prototype (live may not be best idea)
Feedback from class (you will need to provide feedback on each presentation on the wiki)

Presentation Schedule: 4/5

1. RRBG
2. World According to G
3. Group H
4. 100 Proof
5. Epileptic Eels
6. iGroup
7. The A-Team
Presentation Schedule 4/7

1. CoachClass
2. Metal Pony Z
3. Group F
4. Beta Bears
5. Group M
6. Group J for Now
7. Group K

iPod Touch Devices

One iPod Touch 2G per group

Check out device at end of class

Write a collateral check over $150 to UC Regents.

Provisioning & Certificates

First-time setup is a headache. Get started now so you have questions in section.

If you're developing in 200 Dai:
You will use Xcode 3.1.3, iPhone SDK 2.2
Do NOT upgrade to iPhone SDK 3.X

Your own machine:
You can use as above, or Xcode 3.1.4 / 3.2, iPhone SDK 3.1.3

I: Email Serial, UDID to CS160

XCode Organizer
2: Create a certificate


Obtaining Your Development Certificate

Xcode uses your development certificate to code-sign your application before it uploads it to your device for testing.

3. In the Certificate Information window:
   a. In the User Email Address field, enter your email address.
   b. In the Common Name field, enter your name.
   c. In the “Requested” group, select the “Automatically” option.
   d. Select “Let me specify key pair information.”
   e. Click Continue.
   f. Choose your desktop as the location for the CSR file.
   g. In the Key Pair Information pane, choose 2048 as the key size and RSA as the algorithm.

The Certificate Assistant saves a CSR file to your desktop.

This process creates a public/private key pair. The public key is stored in your development certificate. Your private key is stored in your keychain. You must ensure that you don’t lose your private key and that only you have access to it. Therefore, it’s a good idea to backup your private key. Backup your private key if you need to use more than one computer to develop iPhone applications. You should also save your CSR file before use. See “Managing Your Digital Identity” for more information.

Graphic & Product Design

Topics

1. Brief History of Graphic & Product Design
2. Simplicity and Elegance
3. Color
4. Gestalt Principles
5. Typography
6. Composition

Graphic Design is about Communication
Graphic Design is also about Interpretation

A Brief History of Graphic Design


Images from: E. Lupton, Thinking With Type, Princeton, 2004


Images from: L.R. Luce, G. Barbou, Essai d'une nouvelle typographie, 1771

Aldus Manutius, Hypnerotomachia Poliphili, 1499

Johannes Gutenberg, Gutenberg Bible 1450-55
19th Century: Advertising

Letterpress poster, 1875
James Rady, Poster for O'Brien's Circus, 1866.

Modern Design: Bauhaus

Modern Design: Bauhaus

Bauhaus

Herbert Bayer, Exhibition Poster, 1926
Joost Schmidt, Exhibition Poster, 1923
Jan Tschichold

Before: Tschichold, Leipzig Trade Fair, 1922
After: Tschichold, Elemental Typography, 1925

Grid-Based Design

Josef Müller-Brockmann
Exhibition Poster, 1980

Design Systems: Corporate Identity

Design Systems: Content-Driven Sites
Detour: The mid-1990s

David Carson, Ray Gun magazine, 1994

Product Design is about Form and Function

Philippe Starck, Juicer for Alessi

Oxo Angled Measuring Cup

Early Mass Production

Unknown, Mimeograph, 1918

It’s quicker and easier with a “Yankee” Chain Drill

Advertisement, Popular Mechanics, Oct 1913
Bauhaus Again

Le Corbusier
Grand Confort, 1928

Marcel Breuer
Wassily Chair, 1925

Streamlining

Pennsylvania Railroad S1, 1939 (Wikipedia)

Advertisements
Popular Mechanics, April 1906

Raymond Loewy, from: hyperakt.com
Streamlining gone too far…

Form Follows Function

It is the pervading law of all things organic and inorganic, Of all things physical and metaphysical, Of all things human and all things super-human, Of all true manifestations of the head, Of the heart, of the soul, That the life is recognizable in its expression, That form ever follows function. This is the law.

- Louis Sullivan

Henry Dreyfuss: Human Factors

Dreyfuss: Model 500 phone
Excess of Form Follows Function

Centre Georges Pompidou, Paris
All infrastructure (ducts, vents, stairs) on outside of building

Simplicity and Elegance
Steal Good Design Ideas

“Good artists borrow (from other artists), but great artists steal!” - Pablo Picasso

Compelling visual design takes practice and experience – a natural part of which is study and critique of other’s work

Simplicity

Simple, minimalist, designs are often most effective

Elegance

Reduction: Only include essential elements
Regularization: Use one set of shapes, colors, forms etc.
Leverage: Use elements in multiple roles
scrollbar allows scrolling and indicates position in document

Benefit: Approachability

Visual elements rapidly understood - invite further exploration
Benefit: Recognizability
Less visual clutter makes it easier to recognize what is there.

Benefit: Immediacy
Eye is immediately drawn to important visual elements. Details that remain are more prominent.

Unity
One path to simplicity & elegance is through unifying themes:
Forms, colors, components with like qualities.

Refinement
Draw viewers' attention to essential information. Straighten subway lines to emphasize sequence of stops.
From Literal to Abstract

Mistakes: Clutter & Noise

Mistakes: Interference

Shortcuts interfere with menu labels in (a) not in (b).
Different shapes cause confusion in alignment tools

Mistakes: Too Much Structure

Bounding boxes in (a) add unnecessary structural information
Simpler structure in (b) using space rather than lines is better
Mistakes: Belaboring the Obvious

Mistakes: Gratuitous use of 3D

Mistakes: Excessive Embellishment

Minimalists hate it, but sometimes users like embellishment
Color Spaces

- **RGB**
  - Additive
  - Electronic Media
- **CMY**
  - Subtractive
  - Printed Media

Parameters of color space driven by technology

Technology-Centered Colors

Nice RGB Hex codes, “evenly” distributed
But, lime green and hot pink?

Perceptual Organization

- **Lightness**
- **Colorfulness**
- **Hue**

Parameters of color space driven by perception

Munsell Color Space

- Perceptually uniform book of painted chips

Hue  Chroma vs. Value
Tips for Picking Colors

- Use a limited palette (e.g., 6 colors in Java look and feel)
- Don’t rely on fully saturated colors
- Ensure good color contrast for text

Let Someone Else Pick For You

ColorBrewer.org
Gestalt Principles

- figure/ground
- proximity
- similarity
- symmetry
- connectedness
- continuity
- closure
- common fate
- transparency

Figure/Ground

Principle of surroundedness

Principle of relative size

Ambiguous

Unambiguous

http://www.aber.ac.uk/media/Modules/MC10220/vispor06.html
Proximity

Dots that are near one another are grouped
Dots that are concentrated are grouped

[from Ware 00]

Proximity

Tuesday, November 4
Election Day
An American Menu $75
Caesar salad with anchovies, egg, and Parmesan cheese
Clam chowder with Maine lobster and pancetta
Grilled chicken with house-made barbeque sauce with potato puree and greens
Apple and raspberry pecan crisp with vanilla ice cream

Similarity

Rows dominate due to similarity [from Ware 04]
Similarity

Connectedness

Continuity

Symmetry
Closure

We see a circle behind a rectangle, not a broken circle [from Ware 04]

Illusory contours [from Durand 02]

Common Fate

Dots moving together are grouped

Common Fate

http://coe.sdsu.edu/gse/articles/visualperc1/start.htm

Typography

Principles (from R. Bringhurst)

1. Typography exists to honor content.

2. Read the text before designing it.

3. Choose a typeface that matches the character of the text.
Type Categories: Oldstyle (Humanist)

Oldstyle

Goudy  Palatino  Times
Baskerville  Garamond

Source: R. Williams
The Non-Designer's Design Book

Type Categories: Modern

Modern

Bodoni  Times Bold
Fenice, Ultra  Walbaum

Source: R. Williams
The Non-Designer's Design Book

Type Categories: Slab Serif

Slab serif

Clarendon  Memphis Extra Bold
New Century Schoolbook

Source: R. Williams
The Non-Designer's Design Book

Type Categories: Sans Serif

Sans serif

Antique Olive  Formata
Gill Sans  Franklin Gothic
Folio  Syntax

Source: R. Williams
The Non-Designer's Design Book
Combining Type: Concordant

Typography

From Wikipedia, the free encyclopedia

Typography is the art and technique of arranging type, type design, and modifying type glyphs. Type glyphs are created and modified using a variety of illustration techniques. The arrangement of type involves the selection of typefaces, point size, line length, leading (line spacing), adjusting the spaces between groups of letters (tracking) and adjusting the space between pairs of letters (kerning).

Adobe Caslon Semibold
48 pt
Adobe Caslon Smallcaps, 14 pt
Adobe Caslon Regular, 12 pt

Combining Type: Contrasting

Typography

From Wikipedia, the free encyclopedia

Typography is the art and technique of arranging type, type design, and modifying type glyphs. Type glyphs are created and modified using a variety of illustration techniques. The arrangement of type involves the selection of typefaces, point size, line length, leading (line spacing), adjusting the spaces between groups of letters (tracking) and adjusting the space between pairs of letters (kerning).

Gill Sans Light
48 pt
Gill Sans Light, 16 pt
UC Berkeley OldStyle, 12 pt

Combining Type: Conflicting

Typography

From Wikipedia, the free encyclopedia

Typography is the art and technique of arranging type, type design, and modifying type glyphs. Type glyphs are created and modified using a variety of illustration techniques. The arrangement of type involves the selection of typefaces, point size, line length, leading (line spacing), adjusting the spaces between groups of letters (tracking) and adjusting the space between pairs of letters (kerning).

Arial
36 pt
Futura Medium, 14 pt
Myriad Regular, 12 pt

Composition
Principles

1. Contrast (don’t be a wimp)
2. Repetition
3. Alignment

Back to the Bauhaus…

Grid Systems
Web Page Layout

Grids can shape layout without over constraining it
- Grid is not always obvious from page layout
- Produces good repetition of size and shape

Alignment

Every item on a screen has a relationship to the other items. Elements that are almost collinear should be aligned.

Left, right and both-justified alignments create strong boundaries around a piece of text.

It's best to stick with one kind of justification within a page.
Common Mistakes

- Arbitrary component positions and dimensions
- Random window sizes and layouts
- Unrelated icon sizes and imagery
- Poor alignment

Techniques

Reinforce structure through repetition
- Repeat design elements across the layout
- Stylesheets can help

Techniques

Canonical Grid
- Six-column grid with column separators and label templates
- Covers most common grid-based layouts
- Can be implemented with HTML tables

Summary

- Design is about communication, form and function
- Simplicity and elegance are keys to good design
- Minimalism constrains you and reduces chances of bad design
- Use a small palette of colors
- Let others pick them for you (colorbrewer.org)
- Human vision is organized by Gestalt Principles
- Be aware of these principles as you design the visual look
- Avoid common layout mistakes by using grid-based design
Next Time

Visual Information Design
Information Visualization. Readings in Information Visualization.
Chap 1. Card, Mackinlay, Schneiderman.