CS 160: Lecture 13

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Administrivia

- Hifi projects due this Friday, but presentations are due next week.

- Two speakers per presentation. Target presentation time: 8 minutes.
Design is...

About function:
* Good designs support user tasks

About form:
* Good designs should be a pleasure to use
Design is...

- About communication, not just about the medium
- It's not abstract expressionism:
History

- Russian Constructivism between the wars
Bauhaus

3 Principles that shaped modern design:
* Form follows function
Bauhaus

3 Principles that shaped modern design:
* Economy of form (limited shape vocabulary)
Bauhaus

3 Principles that shaped modern design:
* Integrity of materials
UI Design Principles

- Simplicity
- Scale, Contrast, Proportion
- Organization and Visual Structure
- Grid-based Design
Simplicity

1. Simple designs are usually the most effective

2. “Form ever follows function”
   - Sullivan
Simplicity

Enter your search terms...

Google Search  Im Feeling Lucky

...or browse web pages by category.

NEW Use Google to search in other languages (BETA)

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Simplicity - Unity

One path to simplicity is through unifying themes:
* Forms, colors, components with like qualities
Simplicity - Refinement

Key to Lines
- Metropolitan
- Circle
- District
- Hammersmith & City
- Central
- Bakerloo
- Jubilee
- Northern
- Victoria
- Piccadilly
- District
- Metropolitan
- Circle
- Bakerloo
- Jubilee
- Hammersmith & City
- Northern
- Victoria

Key to symbols
- Stations on Metropolitan Line
- Stations on Circle Line
- Stations on District Line
- Stations on Hammersmith & City Line
- Stations on Central Line
- Stations on Bakerloo Line
- Stations on Jubilee Line
- Stations on Victoria Line

3/11/2004
Simplicity - Fitness

- Match the design to the capabilities of the technology and the user

Why not use Roman fonts?
Sans-serif fonts fit the medium
Be careful of slant
Simplicity - Common mistakes

- Clutter and noise

3/11/2004
Simplicity - Common mistakes

- Interference between competing elements
Simplicity - Common mistakes

- Using explicit structure as a crutch
Simplicity - Common mistakes

Belaboring the obvious
Simplicity - Common mistakes

- Overly literal translation
Simplicity - Common mistakes

Excessive Detail
Simplicity - Common mistakes

- Gratuitous dimensionality
Break
Module and Program

A systematic approach to the design of many artifacts:
- web pages on a site
- documentation pages
- devices in a family

Programs describe how to build designs from modules.
Grid-based Design

142: These typographic grids for book design subdivide the page uniformly into one to six columns. Grids for GUI design have important differences, but the goal of providing systematic structure is the same. From Basic Typography: Design with Letters, by Ruedi Rüegg, ABC-Verlag, Zurch, 1987.
The canonical grid

176: This canonical grid supports two-, three-, four-, and six-column layouts in any graphical user interface (the 1/6 and 5/6 divisions are implicit). The gray bars reflect the widths of components spanning (from top to bottom) 6, 3, 1.5, and 1 column-units, respectively, on the basic 6-column grid. The grid can be used with any vertical module, depending on the widget set and type size.
143: Each of the grids in Figure 142 leaves a distinct imprint on the resulting layout. When the same grid is used throughout a book—or any application—this imprint becomes a unifying element for the entire work. From *Basic Typography: Design with Letters*, by Ruedi Rüegg, ADC-Verlag, Zurich, 1987.
Grid-based Design
Focus: the design should highlight one or a small number of modular elements
Principles - Flexibility

Flexibility: The program should allow variation from a theme
**Principles - Consistency**

Consistent application: The program should maximize consistency in size, position, texture...
Common mistakes

- Arbitrary component positions
- Arbitrary component dimensions
- Random window sizes and layouts
- Unrelated icon sizes and imagery
- Inconsistent control presentations
- Inconsistent visual language
Techniques

- Reinforcing structure through repetition: Repeat design elements across the program

- Stylesheets can help

[Diagram of page structure]

[Example of stylesheets]

<table>
<thead>
<tr>
<th>Technique</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bold subheads</td>
<td>▶️ Bold</td>
</tr>
<tr>
<td>Font size = 2</td>
<td>▶️ Small</td>
</tr>
<tr>
<td>Body text size = 3</td>
<td>▶️ Medium</td>
</tr>
<tr>
<td>HSPACE = 8 for first line indents</td>
<td>▶️ 8px indentation</td>
</tr>
<tr>
<td>VSPACE = 4 for inter-paragraph spacing</td>
<td>▶️ 4px spacing</td>
</tr>
</tbody>
</table>
Techniques

- Establish modular units
Techniques - Canonical grid

- The canonical grid (see notes)
- An six-column basic grid with column separators and label templates
- Can be implemented with HTML tables
Canonical Grid

- Determine any size restrictions
- Define horizontal and vertical modules
- Develop a rough sketch of sizes, positions, orientations
- Use the canonical grid to adjust sizes and positions of control elements
- For dynamic layouts, figure out the minimum workable size.
Canonical Grid

177: This two-column layout is based on the canonical grid (in our first three examples, the grid is not used for the labels in the left-hand column). To visualize this grid, ignore all but the middle three lines of Figure 178. The Name, Type, Vendor, and Note fields span both of the columns that remain, while the items in the Mode setting, Progress indicator, and Scope options span one column each.
Canonical Grid

180: In this example, the full six-column grid is used to lay out the left-most label column as well as five columns of controls. Note the presence of controls spanning one, two, three, and five columns. Note too that elements of different widths can be placed in the same row without problems.
Places to go

- MetaDesign: www.metadesign.com
- IDEO: www.ideo.com
- Frog Design: www.frogdesign.com
- Swim studio www.swimstudio.com
- Cooper Interaction Design www.cooper.com
- Aaron Marcus and Associates www.amanda.com
- Icarian www.icarian.com