Color, Typography, Gestalt

No screens

Prof. Lydia Chilton
COMS 4170
4 February 2019

Say your name
Homework 2 Review

HTML, CSS, Information Hierarchy
CSS selectors

All `<div>` elements get this style

At most one `<div>` elements get this style

Some `<div>` elements get this style
Elements get their most specific CSS style

```html
<body>
  <div>
    color: blue;
  </div>

  #home_div{
    color: red;
  }

  .highlight_div{
    color: green;
  }

  .highlight_div2{
    color: grey;
  }

  <div id="home_div"> DIV 1 </div><br>
  <div id="home_div"> DIV 2 </div><br>
  <div class="highlight_div"> DIV 3 </div><br>
  <div id="home_div" class="highlight_div"> DIV 4 </div><br>
  <div class="highlight_div highlight_div2"> DIV 5 </div><br>
  <div class="highlight_div2 highlight_div"> DIV 6 </div><br>
</body>
```
Elements get their most specific CSS style

Selects elements with BOTH classes

This is something else (selects descendants)
Users can’t focus on everything at once. They have a spotlight of attention.

A visual hierarchy of information allows designers to guide users’ attention.
You are cordially invited to Robert and Alexandra’s delectable after dinner party. Wine and nibbles will be served. When: February 20th, 2018 at 9:30pm. Where: the pad. If you need directions, ping us. Kindly let us know if you will be attending by February 1st.

You are cordially invited to Robert and Alexandra’s delectable after dinner party.

Wine and nibbles will be served.

When: February 20th, 2019 at 9:30pm. Where: the pad. If you need directions, ping us.

Kindly let us know if you will be attending by February 1st.
Step 2. In each chunk, decide what’s important to emphasize.

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Wine and nibbles will be served.

When: February 20th, 2019 at 9:30pm.
Where: the pad. If you need dir, ping us.

Kindly let us know if you will be attending by February 1st.
Step 3. Consolidate into 3 groups.

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**Robert and Alexandra’s delectable after dinner party.**
Wine and nibbles will be served.

When: **February 20th, 2019 at 9:30pm.**
Where: **the pad.** If you need directions, ping us.

Kindly let us know if you will be attending by **February 1st.**
Problem 4: Creating Information Hierarchy

100% COTTON.
MADE IN CHINA.
RFC# 910911-040

COLD WASH MACHINE.
DO NOT BLEACH.
WASH INSIDE OUT.
SEPARATE FROM DARKS.

DO NOT TUMBLEDRY OR DRY CLEAN.
LINE DRY IN SHADE.
WARM IRON ON REVERSE.

Yay! Good job!
Problem 4: Fixable answers

Good: There are three groups.

Problem: There’s too much in group 2. It’s all emphasized

Fix: Break up group 2
Problem 4: Fixable answers

**Good:** There are three groups. Nice-sized concepts

**Problem:** There’s no focus within the group. Only one heuristic is being used

**Fix:** Be selective on what to prioritize
Problem 4: Fixable answers

**Cold wash machine**
Do **NOT** dry clean
Do **NOT** bleach
Wash dark separately
Wash inside out

Do **NOT** tumble dry
Line dry in shade
Warm iron on reverse

100% Cotton
Made in China
RFC# 910911-040

**What the concept?**

**Washing instructions**

**What the concept?**

**Drying instructions**

**What the concept?**

**Manufacturing instructions**

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What the concept?
**Drying instructions**

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What the concept?
**Manufacturing instructions**
Visual Information hierarchy guides users’ attention
Color, Typography, Gestalt

No screens

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Say your name
The human brain is always interpreting meaning, even if it’s not there.

Use color, type, and gestalt carefully.
Color
In addition to signaling importance, colors have meaning.
Where is color used? What does it mean?
Where is color used? What does it mean?
What are your associations with these colors?

<table>
<thead>
<tr>
<th>Culture</th>
<th>Red</th>
<th>Blue</th>
<th>Green</th>
<th>Yellow</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>Danger</td>
<td>Masculinity</td>
<td>Safety</td>
<td>Cowardice</td>
<td>Purity</td>
</tr>
</tbody>
</table>
And the associations in France?

<table>
<thead>
<tr>
<th>Culture</th>
<th>Red</th>
<th>Blue</th>
<th>Green</th>
<th>Yellow</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>Danger</td>
<td>Masculinity</td>
<td>Safety</td>
<td>Cowardice</td>
<td>Purity</td>
</tr>
<tr>
<td>France</td>
<td>Aristocracy</td>
<td>Freedom</td>
<td>Criminality</td>
<td>Temporary</td>
<td>Neutrality</td>
</tr>
</tbody>
</table>
Do you see any contradictions?

<table>
<thead>
<tr>
<th>Culture</th>
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<th>Blue</th>
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<td>France</td>
<td>Aristocracy</td>
<td>Freedom Peace</td>
<td>Criminality</td>
<td>Temporary</td>
<td>Neutrality</td>
</tr>
<tr>
<td>Egypt</td>
<td>Death</td>
<td>Virtue</td>
<td>Fertility</td>
<td>Happiness</td>
<td>Joy</td>
</tr>
<tr>
<td></td>
<td>Faith</td>
<td>Truth</td>
<td>Strength</td>
<td>Prosperity</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>Life</td>
<td>Creativity</td>
<td>Prosperity</td>
<td>Success</td>
<td>Death</td>
</tr>
<tr>
<td></td>
<td>Creativity</td>
<td>Fertility</td>
<td>Fertility</td>
<td></td>
<td>Purity</td>
</tr>
<tr>
<td>Japan</td>
<td>Anger</td>
<td>Villainy</td>
<td>Future</td>
<td>Grace</td>
<td>Death</td>
</tr>
<tr>
<td></td>
<td>Danger</td>
<td></td>
<td>Youth</td>
<td>Nobility</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heavens</td>
<td>Ming Dynasty</td>
<td>Birth</td>
<td>Death</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clouds</td>
<td>Heavens</td>
<td>Wealth</td>
<td>Purity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Clouds</td>
<td>Power</td>
<td></td>
</tr>
</tbody>
</table>

24
What cultural associations do these colors have?
What cultural associations do these colors have?
Are color meanings arbitrary?

Color meanings are not absolute.

But at any time and place, they may mean something you don’t intend.
Color Representation
There are three perceptual dimensions of color: HSV – Hue, Saturation, Value (Brightness)
There are many ways to represent Color:

- Hue, Saturation, Value
- Red, Green, Blue
- Cyan, Magenta, Yellow (Black)
- Luminosity, a, b
The web uses represents color in **RGB**

If you have have
Red: 0, Green: 0, Blue: 0
What color will you get?

If you have have
Red: 100%
Green: 100%
Blue: 100%
What color will you get?
Ways to specify a color in HTML

```
.blue_text{
    color: blue;
}

.blue_text{
    color: rgb(0,0, 255);
}

.blue_text{
    color: #0000FF;
}

.blue_transparent_text{
    color: rgba(0,0, 255, 0.5);
}
```
Choosing color combinations

Color Schemes

- **Complementary colors**: hues opposite the color wheel. Complementary colors are more intense, and "vibrate" when placed next to each other as they compete for your attention.

- **Split complementary colors**: one of the complementary colors is split off into a pair of neighboring hues.

- **Analogous colors**: colors that neighbor one another on the color wheel. These hues appear to "push" at each other, creating an optical illusion where each zone appears larger when it has your attention.

- **Triad colors**: hues equidistant on the color wheel.
If you are not a color expert, let an expert pick for you

Use color last.
Typography
Gill Sans, designed by Eric Gill and released by the Monotype Corporation in 1928
Six Typographic terms
Point size

Gill Sans  Calibri
Leading
Six x-height

Typefaces with high x-height:
easier to read at small point size

Typefaces with low x-height:
harder to read at small point size

Gill Sans
Lucida Bright
Baskerville

high x-height
Low x-height

Lucida Bright: 1993, Charles Bigelow & Kris Holmes
Baskerville, 1757, John Baskerville
Six Typographic Terms

ascenders
descenders
Six Typographic Terms

light  regular  bold

weight
Weights and Styles

Roboto Thin & *Thin Oblique*
Roboto Light & *Light Oblique*
Roboto Regular & *Oblique*
Roboto Medium & *Medium Oblique*
Roboto Bold & *Bold Oblique*
**Roboto Black & Black Oblique**
Roboto Condensed Light & *Condensed Light Oblique*
Roboto Condensed & *Condensed Oblique*
Roboto Condensed Bold & *Condensed Bold Oblique*
Serifs

Serif (pronounced “sair iff,” not “suh reef”)
Serifs – there’s more!

- Diagonal stress
- Serif (pronounced “sair iff,” not “suh reef”)
- Serifs on lowercase letters are slanted
- Moderate thick/thin transition in the strokes

Oldstyle Goudy
Sans serifs
The Serif Hypothesis

Serif fonts are faster to read. The little hooks indicate where your eyes should move next.

There is no evidence to support this. Any differences in reading speed are dwarfed by individual differences, or familiarity.
Who follows the Serif Hypothesis?

LONDON — The stage filled with women in Princess Diana masks, smashing VHS cassettes with hammers. A dancer wove her way through a bar, muttering about kittens. A figure wrapped in a filthy comforter emerged from a tent, crawling among clubbers dressed in fetish gear.

BUDAPEST, Hungary — An hour’s drive from the capital, across the flat and frozen Hungarian plain, the small town of Halásztelek is noisy with construction work as builders put the finishing touches on new single-story houses. They look like a 1950s American suburb that was dropped in the middle of Central Europe, but their humble appearance belies great ambition.
Mixing fonts: Concordant fonts

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).

Mixing fonts of the same font-family is great.
Mixing fonts: Contrasting fonts

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Mixing San Serif and Serif is ok. (But edgier)
Mixing fonts: Conflicting fonts

Mixing multi San Serif or Serif fonts is bad. It doesn’t look intentional.
Users have connotations for fonts
What connotation does this font have?

Your font should not detract from your message.
Eight Gestalt Principles
gestalt

an organized whole that is perceived as more than the sum of its parts.
Gestalt Principle #1: Proximity

Dots appear as **columns**

Dots appear as **rows**
Gestalt Principle #1: Proximity

Dots appear as two groups

X is in group a.
Gestalt Principle #2: Similarity

[Images of dot and cross arrangements]
How is similarity used to convey meaning?

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 purée and greens

Apple and raspberry pecan crisp with vanilla ice cream

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Gestalt Principle #2: Similarity

How many **green circles** are there?
Gestalt Principle #2: Similarity
Gestalt Principle #2:
Similarity

How many **green circles** are there?

2

Colors are easy to scan for
Gestalt Principle #2: Similarity

How many rectangles are there?
Gestalt Principle #2: Similarity
Gestalt Principle #2: Similarity

How many rectangles are there?

3

Shapes are hard to scan for
How many **triangles** are there?
Gestalt Principle #2:

Similarity
Gestalt Principle #2: Similarity

How many triangles are there?

3

Size is easy to scan for
What properties are easy to scan for similarity?

Color and Size scans better than shape
Gestalt Principle #3: Enclosure
Gestalt Principle #3: Enclosure
Gestalt Principle #4: Symmetry

Proximity indicates 4 groups

Symmetry indicates 3 groups
Gestalt Principle #4:

Symmetry
Gestalt Principle #5: 

Closure
Gestalt Principle #6: Continuity

a

b

c
Gestalt Principle #6: Continuity
Gestalt Principle #7:

Connection

\[\text{Diagram:} \quad a, b, c, d\]

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Gestalt Principle #8:

Figure and Ground
8 Gestalt Principles
2 Gestalt Principles I actually use
I use **proximity** and **color/contrast similarity**

---

**Tuesday, November 4 — Election Day**

**AN AMERICAN MENU**

$75

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---
Quiz: 8 Gestalt Principles
Quiz: what property is being used here?

Closed

Our minds fill in missing details
Quiz: what property is being used here?

**Continuity**
Our minds perceive lines and curves as continuing on their trajectory
Quiz: what property is being used here?

Similarity of Color
It is easy to scan for color
Quiz: what property is being used here?

Figure and ground
Summary
The human brain is always interpreting meaning, even if it’s not there.

Use color, type, and gestalt carefully
Color Meaning and Representation

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Not detract from it.

Baskerville

The Literary Magazine for Gifted Kids & Their Families

Status of Standard Model Higgs searches in ATLAS

Using the full datasets recorded in 2011 at √s = 7 TeV and 2012 at √s=8 TeV up to 10.7 fb⁻¹

Fabiola Gianotti (CERN), representing the ATLAS Collaboration
8 Gestalt Principles