

# CSS

LBSC 690: Jordan Boyd-Graber

October 8, 2012



## COLLEGE OF INFORMATION STUDIES

Adapted

from Dwight VanTuyl's slides

# Goals

- What browsers are out there (so you know what to test on)
- Main point: CSS gives you tools to change what your pages look like
- Phishing: using these powers for evil
- Hands on experimentation

# Outline

1 Assignment 1

2 Ecosystem of Browsers

3 Phishing

4 CSS

## Question 1ab

$$\begin{array}{cccc} 2^{15} & 2^{14} & 2^{13} & 2^{12} \\ 2^{11} & 2^{10} & 2^9 & 2^8 \\ 2^7 & 2^6 & 2^5 & 2^4 \\ 2^3 & 2^2 & 2^1 & 2^0 \end{array}$$

What's she doing?

Each square corresponds to a power of two - they add up to the decimal number of the board.

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What's she doing?

Each square corresponds to a power of two - they add up to the decimal number of the board.

$$2^{14} + 2^4 + 2^0 = 16384 + 16 + 1 = 16401$$

## Question 1c

The difference of 3077 and 2053 is 1024, which is  $2^{10}$ . This corresponds to the second row, second column.

## Question 2a

$$\frac{1\text{TB}}{1}$$

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$$\frac{1\text{TB}}{1} \cdot \frac{2^{10}\text{MB}}{1\text{GB}}$$

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$$\frac{1\text{TB}}{1} \cdot \frac{2^{10}\text{MB}}{1\text{GB}} \cdot \frac{2^{10}\text{GB}}{1\text{TB}}$$

## Question 2a

$$\frac{1\text{TB}}{1} \cdot \frac{2^{10}\text{MB}}{1\text{GB}} \cdot \frac{2^{10}\text{GB}}{1\text{TB}} = .2^{20}\text{MB}$$

## Question 2a

$$\frac{1\text{TB}}{1} \cdot \frac{2^{10}\text{MB}}{1\text{GB}} \cdot \frac{2^{10}\text{GB}}{1\text{TB}} = .2^{20}\text{MB} = 1,048,576\text{MB} \quad (1)$$

## Question 2a

$$\frac{1\text{TB}}{1} \cdot \frac{2^{10}\text{MB}}{1\text{GB}} \cdot \frac{2^{10}\text{GB}}{1\text{TB}} = .2^{20}\text{MB} = 1,048,576\text{MB} \quad (1)$$

- Hard drive was: 1TB Serial ATA (7200RPM) w/DataBurst Cache, 9ms read time
- Fine to use  $2^{10}$  or  $10^3$  (but make sure you say which you're using).
- If you use  $10^3$  or make other approximations, don't keep around too many significant digits
  - ▶  $0.001231129817 \rightarrow 0.0012$
  - ▶  $123,119,817 \rightarrow 120 \cdot 10^6$
- Make sure units cancel

## Question 2b

$$\frac{1000 \cdot 10^3 \text{MB}}{1}$$

## Question 2b

$$\frac{1000 \cdot 10^3 \text{MB}}{1} \cdot \frac{1 \text{min}}{1 \text{MB}}$$

## Question 2b

$$\frac{1000 \cdot 10^3 \text{MB}}{1} \cdot \frac{1 \text{min}}{1 \text{MB}} \frac{1 \text{day}}{60 \cdot 24 \text{min}} = \frac{1000000}{1440} \text{day}$$

## Question 2b

$$\frac{1000 \cdot 10^3 \text{MB}}{1} \cdot \frac{1 \text{min}}{1 \text{MB}} \frac{1 \text{day}}{60 \cdot 24 \text{min}} = \frac{1000000}{1440} \text{day} = 694 \text{day} \quad (2)$$

- Three minutes per song was a red herring
- Don't forget units
- Conversion factors

## Question 2c

$$\frac{1000\text{GB}}{1}$$

## Question 2c

$$\frac{1000\text{GB}}{1} \cdot \frac{1\text{DVD}}{4.7\text{GB}}$$

## Question 2c

$$\frac{1000\text{GB}}{1} \cdot \frac{1\text{DVD}}{4.7\text{GB}} \leq 213\text{DVD} \quad (3)$$

There is no such thing as a half of a DVD (well, there is, but it's useless).

## Question 3b

How many bytes per record?

125 bytes

$$\frac{125\text{B} \cdot 3 \cdot 10^8}{1}$$

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How many bytes per record?

125 bytes

$$\frac{125\text{B} \cdot 3 \cdot 10^8}{1} \cdot \frac{1\text{GB}}{10^9\text{B}}$$

## Question 3b

How many bytes per record?

125 bytes

$$\frac{125\text{B} \cdot 3 \cdot 10^8}{1} \cdot \frac{1\text{GB}}{10^9\text{B}} = 37.5 \frac{10^9}{10^9} \text{GB}$$

## Question 3b

How many bytes per record?

125 bytes

$$\frac{125\text{B} \cdot 3 \cdot 10^8}{1} \cdot \frac{1\text{GB}}{10^9\text{B}} = 37.5 \frac{10^9}{10^9} \text{GB} = 37.5\text{GB} \quad (4)$$

- Write big numbers in scientific notation (million =  $10^6$ )
- Careful with math

## Question 3c-d

$$\frac{37.5\text{GB}}{1000\text{GB}} \approx 3.8\% \quad (5)$$

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- 4GB DDR3 SDRAM - 3 DIMMs, 50ns read time

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- 4GB DDR3 SDRAM - 3 DIMMs, 50ns read time
- RAM amounts are usually given as cumulative (no penalty if you assume otherwise)
- Make sure answers are reasonable (if it doesn't fit in RAM, it won't fit in HD)

## Question 3e-f

### Hard drive

$$\frac{3 \cdot 10^8 \text{reads}}{1} \cdot \frac{9 \cdot 10^{-3} \text{s}}{\text{read}} = 27 \cdot 10^5 \text{s} \quad (7)$$

$$\frac{2.7 \cdot 10^6 \text{s}}{1} \cdot \frac{1 \text{day}}{60 \cdot 60 \cdot 24 \text{s}} = 31.25 \text{day} \quad (8)$$

### RAM

$$\frac{3 \cdot 10^8 \text{reads}}{1} \cdot \frac{50 \cdot 10^{-9} \text{s}}{\text{read}} = 150 \cdot 10^{-1} \text{s} = 15 \text{s} \quad (9)$$

- Bonus points for looking up access time for 7200 RPM HD
- SI prefixes

## Question 3e-f

### Hard drive

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## Question 4

$$\frac{200\text{GB}}{10\text{min}}$$

## Question 4

$$\frac{200\text{GB}}{10\text{min}} \cdot \frac{10^3\text{MB}}{\text{GB}}$$

## Question 4

$$\frac{200\text{GB}}{10\text{min}} \cdot \frac{10^3\text{MB}}{\text{GB}} \cdot \frac{8\text{bit}}{\text{B}}$$

## Question 4

$$\frac{200\text{GB}}{10\text{min}} \cdot \frac{10^3\text{MB}}{\text{GB}} \cdot \frac{8\text{bit}}{\text{B}} \cdot \frac{1\text{min}}{60\text{s}} \approx 2600 \frac{\text{megabit}}{\text{s}} \quad (10)$$

- This was to stress concept that moving data *anywhere* gives you a transfer rate
- What about latency?
- Mail and bike are often faster than the Internet
- Home network speeds (100s of Mbs) are much faster than Internet (10s of Mbs if you're lucky)
  - ▶ Sneakernet
  - ▶ Never underestimate the bandwidth of a station wagon full of tapes hurtling down the highway. — Tanenbaum, Andrew S.
- Remember, bits  $\neq$  byte

# Metadiscussion

- Reasonableness
- Units
- When converting, only multiply by things that are equal to 1
- Scientific notation

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# Browser Engines

- Controls how you get from HTML file to what's displayed on screen
- Hardest part to get right
- The interface (buttons, bookmarks, etc.) is more flexible (parallel with HTML / CSS)
- Because the underlying engine is the same, you don't need to test every browser
- Images from [webdesignerdepot](#)

# Engines

## Desktop

Trident

Gecko

Webkit

Presto

KHTML

Prince

Cobra

Tasman

Mozilla

Lynx

## Mobile

Trident

Gecko

Webkit

Presto

Lumi

Mango

Fugu

NetFront

OpenWave

JB5

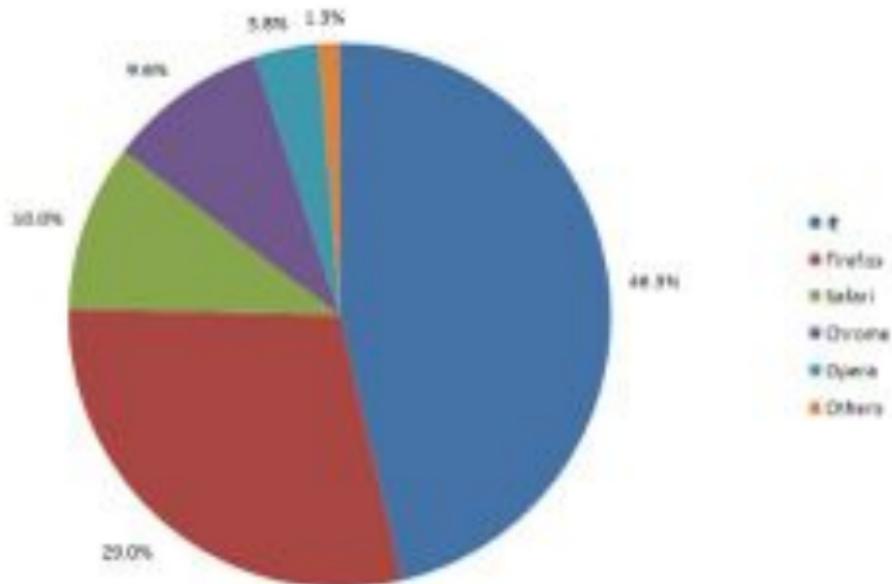
WAP-WML

# Engines

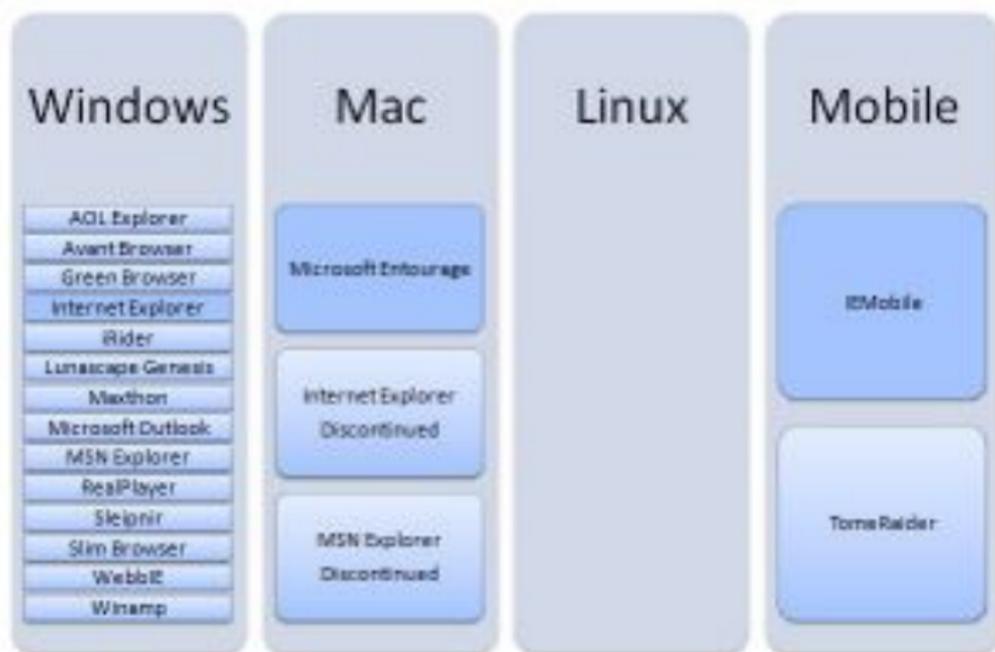
- Gecko - Apple
- Trident - Microsoft
- Webkit - Mozilla (formerly Netscape)
- Presto - Opera
- Lynx - GNU (text based)

# Market Share

Browser market share Apr. 2011



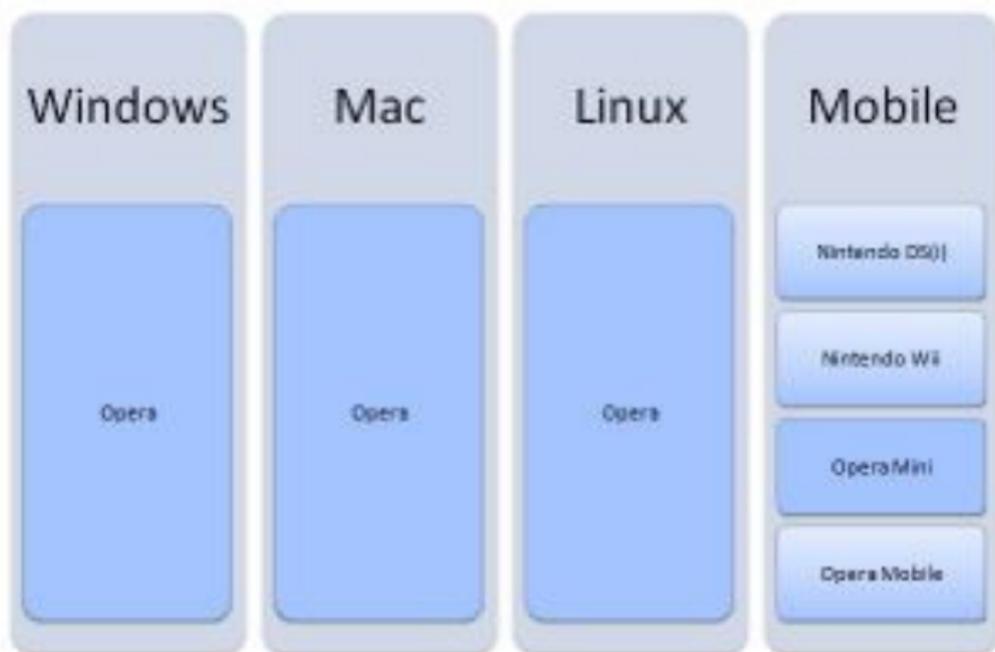
# Trident







# Presto



# Getting it right

- Develop in one browser
- When you have a draft, try it in other browsers
- Also try in different versions (particularly for IE)
- Test for compliance with CSS / XHTML

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# What is phishing

- 1 Definition: “fishing” for personal information using a **phony** website
- 2 Multiple vectors of attack
- 3 Multiple endgames

**Confirm your Bank of America credit/debit card details**

This page is the beginning of the procedure for confirming your bank customer details.

Please complete all the fields in the form below.

All fields must be filled in.

When you have finished entering the details, click on the "Confirm" button below the form to finish the confirmation procedure.

An asterisk (\*) indicates a required field.

\* Type of banking:  
 personal  
 small business  
 corporate & institutional

\* Select your state:

\* Your ATM or Credit Card Number:

\* Expiration date MM/YYYY:  /

\* Your ATM or Credit Card PIN:

**Secure Area**

Bank of America, N.A. Member FDIC. Equal Housing Lender.  
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# Phishing Vectors

- 1 Send you an e-mail claiming to be from a site, give you a link
- 2 Asks you explicitly for information claiming to be from a site
- 3 Impersonate a site on the internet
  - ▶ Poisoned DNS (e.g. at an internet cafe) - man in the middle
  - ▶ Have a confederate site (e.g. web commerce site)

# Phishing Endgames

- 1 Install software
- 2 Watch your interactions with a trusted site (man in the middle)
- 3 Get your login
  - 1 Throw up phony page
  - 2 When you get it wrong, redirect to legit site
  - 3 Assuming you sometimes make mistakes, you might never notice

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# What is CSS?

- **Cascading:** Multiple styles can overlap
- **Style:** CSS controls the presentation
- **Sheet:** CSS files are typically separate from the HTML file

# Why CSS?

- Richer appearance
- Reduce workload
- Consistent style across pages
- Reduce download size

# Why not use CSS?

- Very old browsers don't support it (rare, and there are many other, bigger problems with older browsers)
- Makes it harder to create offline versions of pages (but most browsers offer to save all associated files)
- For layout, tables are arguably better
- Makes phishing easier

- Download from [bit.ly/pkNRkO](http://bit.ly/pkNRkO)
- We'll make this pretty through this class
- If you look at the code, it's very simple

- [Apakas](#)
- [Bears](#)
- [Cats](#)
- [Dogs](#)
- [Elephants](#)
- [Ferrets](#)

Tierpark  
Am Tierpark 125  
10319 Berlin  
Tel. +49 (0) 30 515310

## CSS Test

### Subtitle

Sed ut perspiciatis unde omnis iste natus error sit voluptatem architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit doloribus, sed quia consequuntur magnam dolores eos qui ratione voluptatem sequi nesciunt. Neque porro qui sunt dolores amet, tempora incidunt ut labore et dolore magnam aliquam quaerant ut nihil ea qui voluptas sit. Quis autem vel eum iure esse molestiae consequat, ut voluptas nulla pariatur?

# Making HTML play nice with CSS

- Link from a each page to (one or more) stylesheet(s)
- Order only matters if there are conflicts
- Should be in the “head”

```
<link href="style1.css" rel="stylesheet"  
      type="text/css" media="screen" />
```

- “div” tag creates a box around content
- You can give names to elements
- We’ll see what this can do in a second
- Creates logical division of page

```
<div id="footer">  
  Page by <a href="mailto:jl">  
</div>
```

# Span

- “span” itself does nothing
- It allows a group of HTML to be modified by CSS
- However, it’s meaningless semantically, so use it sparingly

```
<span id="button">
  <ul>
    <li><a href="a.html">Alpacas</a>
    <li><a href="b.html">Bears</a>
    <li><a href="c.html">Cats</a>
    <li><a href="d.html">Dogs</a>
    <li><a href="e.html">Elephants
    <li><a href="f.html">Ferrets</a>
  </ul>
</span>
```

# Class

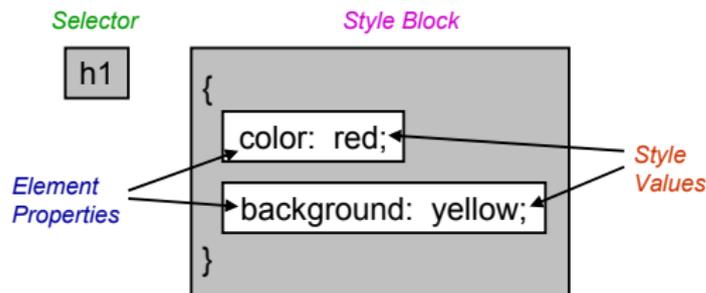
- “class” identifies what kind of an element it is
- It allows a **a single tag** to be modified by CSS
- Unlike “id” it can (and should) be used more than once

```
<p class="question"> Why did t  
<p class="answer"> To get to t  
<p class="question"> What kind  
<p class="answer">A monkey</a>
```

# HTML / CSS Recap

- **div** blocks of many HTML tags
- **id** for unique, single HTML tags
- **class** for repeated, single HTML tags

# What does CSS look like?



- The **Selector** selects elements on the HTML page.
- The associated **Style Block** applies its **Style Values** to the selected Elements Properties

# Selector

- Select elements to apply a declared style.
- Selector types:
  - ▶ Element Selectors: selects all elements of a specific HTML type (body, h1, p, etc.)
  - ▶ Class Selectors: selects all elements that belong to a given class.
    - ★ **CSS**: selectors that start with a period
    - ★ **HTML**: set the *class* attribute to the selector
  - ▶ ID Selectors: selects a single element that's been given a unique id.
    - ★ **CSS**: selectors that begin with #
    - ★ **HTML**: set the *id* attribute to the selector
  - ▶ Pseudo Selectors: combines a selector with a user activated state  
:hover, :link, :visited

# Color and decoration

```
/*  
 * Links should normally not be underlined unless  
 * hovered over  
 */  
  
a {  
  color: #ff6666;  
  text-decoration: none;  
}  
  
a: hover {  
  text-decoration: underline;  
}
```

- Alpacas
- Bears
- Cats
- Dogs
- Elephants
- Ferrets

# Background and paragraphs

```
/*
 * By default, have black sans serif text on a gray
 * background.
 */

body {
  background-color: #e1ddd9;
  font-size: 12px;
  font-family: Verdana, Arial, Sans-Serif;
  color: #000000;
  margin: 0;
}

/*
 * Paragraphs should have a little more
 * spacing and indentation
 */
p {
  margin: 0px;
  padding: 5px 20px 5px 20px;
  text-indent: 10px;
  text-align: justify;
}
```

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## CSS Test

### Subtitle

Sed ut perspiciatis unde omnis iste natu  
veritatis et quasi architecto beatae vitae  
consequuntur magni dolores eos qui ratic

- Changing font face
  - ▶ Generic family: Serif, Sans-Serif, Monospace
  - ▶ Font family: “Times New Roman,” “Arial,” or “Courier”
  - ▶ Can specify multiple - it will keep trying until it finds one
- Changing font size
  - ▶ 1em is equal to “m” in current font size (default is 16 pixels)
  - ▶ Can also use “pt”, but discouraged
  - ▶ Can also use percent

- text-indent: indents first line of a paragraph according to size
- text-align: right; or left; or center; or justify;
- text-decoration: none; or underline;
- text-transform: Capitalize;
- Line-height: added vertical space to each line of text according to size

# Background

- background-image: url(../location/of/image.jpg)
- background-repeat: tile image in background
- background-position: vertical (top, center, bottom, or size) horizontal (left, center, right, or size)
- background-attachment: (scroll or fixed)

# Boxing, margins, and transformation

```
/*  
 * Create a footer that gives contrast  
 */  
  
#footer {  
  font-size: 13px;  
  font-weight: bold;  
  text-transform: uppercase;  
  text-align: right;  
  background-color: #90897a;  
  padding: 5px 15px;  
  margin: 0px;  
}
```

## Jokes

Why did the chicken cross the road?

To get to the other side.

What kind of key opens a banana?

A monkey

PAGE BY JORDAN BOYD-GRABER

# Margin vs. padding



# Arranging content on the page

```
/*
 * Create two columns on either side of
 * the main body of the page. They will
 * not occupy the full height (unless the
 * content is very skimpy). Thus if they
 * have background, they should be the
 * same as body.
 */

#left, #right {
  /*
   * background-color: red;
   */
  position: absolute;
  margin: 0px;
  padding-top: 40px;
  color: #564b47;
  width: 100px;
}

#left {
  left: 0px;
}

#right {
  right: 0px;
}
```

## CSS Test

### Subtitle

- Bears

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est qui dolorem ipsum quia dolor et amet consectetur adipisci

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# Arranging content on the page

```
/*
 * Set the content to have decent
 * padding and margins and a white
 * background. The bottom padding
 * is important for the footer not
 * encroaching on the left navigation.
 */

#content, #picture {
  margin: 0px 115px 0px 110px;
  border-left: 2px solid #564b47;
  border-right: 2px solid #564b47;
  background-color: #ffffff;
}

#content {
  padding-bottom: 35px;
}

#picture {
  padding-bottom: 0px;
}
```



# Aligning text

```
h1, h2, h3, h4, h5 {  
  padding-top: 5px;  
  padding-left: 15px;  
  padding-right: 5px;  
  padding-bottom: 1px;  
  text-transform: uppercase;  
  color: #564b47;  
  background-color: transparent;  
}
```

```
h3, h4, h5 {  
  text-align: center;  
}
```

```
#header {  
  text-transform: uppercase;  
  text-align: right;  
  color: #564b47;  
  background-color: #90897a;  
}
```

nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla pariatur?

## JOKES

Why did the chicken cross the road?

```
p.question {  
  font-weight: bold;  
}  
p.answer {  
  font-size: 90%;  
}
```

## JOKES

**Why did the chicken cross the road?**

To get to the other side.

**What kind of key opens a banana?**

A monkey

# Fancy display

```
/*
 * Changes the font and sets the width
 */

#button {
  width: 190px;
  padding: 0;
  font-family: 'Trebuchet MS', 'Lucida Grande',
  Verdana, Lucida, Geneva, Helvetica, Arial,
  sans-serif;
}

/*
 * Makes the links appear as a block and gives
 * them a border, removes underlining of links.
 */
#button li a {
  display: block;
  padding: 5px 5px 5px 0.5em;
  border-left: 10px solid #ff0000;
  border-right: 10px solid #ff4444;
  background-color: #cc9999;
  color: #ffffff;
  text-decoration: none;
}
```



# Changing lists

```
/*
 * Changes the color of the link on a hover
 */
#button li a:hover {
  border-left: 10px solid #ff1111;
  border-right: 10px solid #ff5555;
  background-color: #ccaaaa;
  color: #ffffff;
}

/*
 * Removes padding from left
 * hand side and hides bullets
 */
#button ul {
  list-style: none;
  padding: 0em;
}

/*
 * Adds a border to the bottom of the buttons
 */
#button li {
  border-bottom: 1px solid #90bade;
}
```



# Display controls what the element looks like

- “block” has line break before and after
- “table” can make it appear like a table
- “none” can make it disappear

# Recap

- The Browser ecosystem
- Style for evil
- Style for good

# This Week's Discussion

## Readable CSS

Take a look at this snippet of HTML from the NY Times (below). What's going on? Why? Take a look at the style sheet:

<http://graphics8.nytimes.com/css/0.1/screen/common/global.css>

Do you have any questions? What do you think of it?

```
<link rel="stylesheet" type="text/css" href="styles.css">
  <!--[if IE]>
    <style type="text/css">
      @import url(ie.css);
    </style>
  <![endif]-->
  <!--[if IE 6]>
    <style type="text/css">
      @import url(ie6.css);
    </style>
  <![endif]-->
```

## This Week's Discussion

