WEEK 5 | PROGRAMMING
CSS Review and Wrap-up

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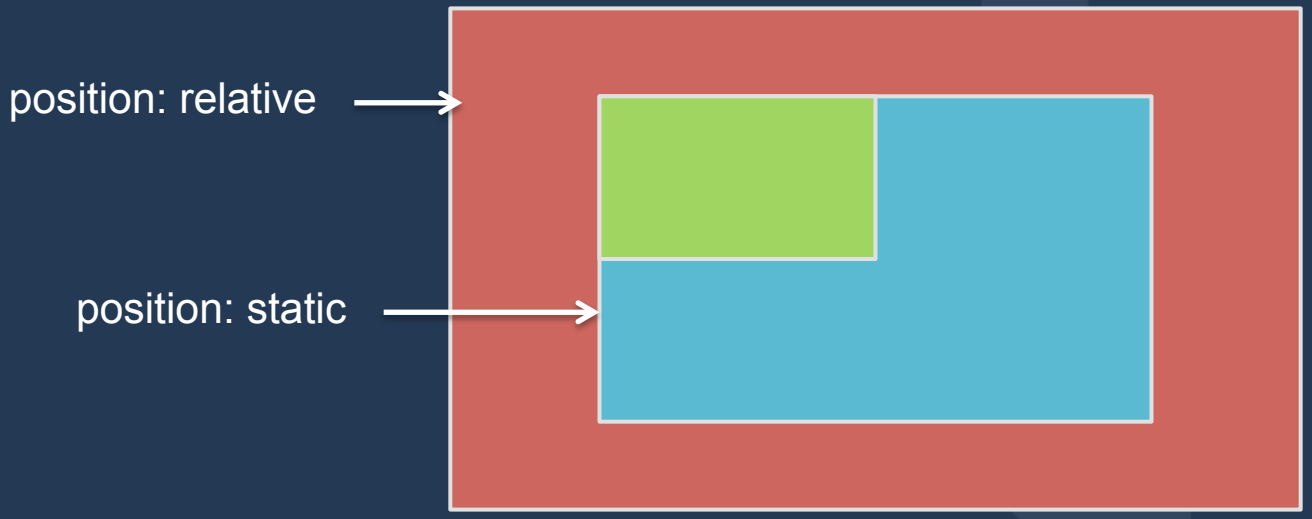
{ } Web Design DeCal

DESIGN MEETS PROGRAMMING

Review

- We learned about 3 types of positioning.
- How would you offset the **green box** *10px* from the top & right of the blue box?



Review

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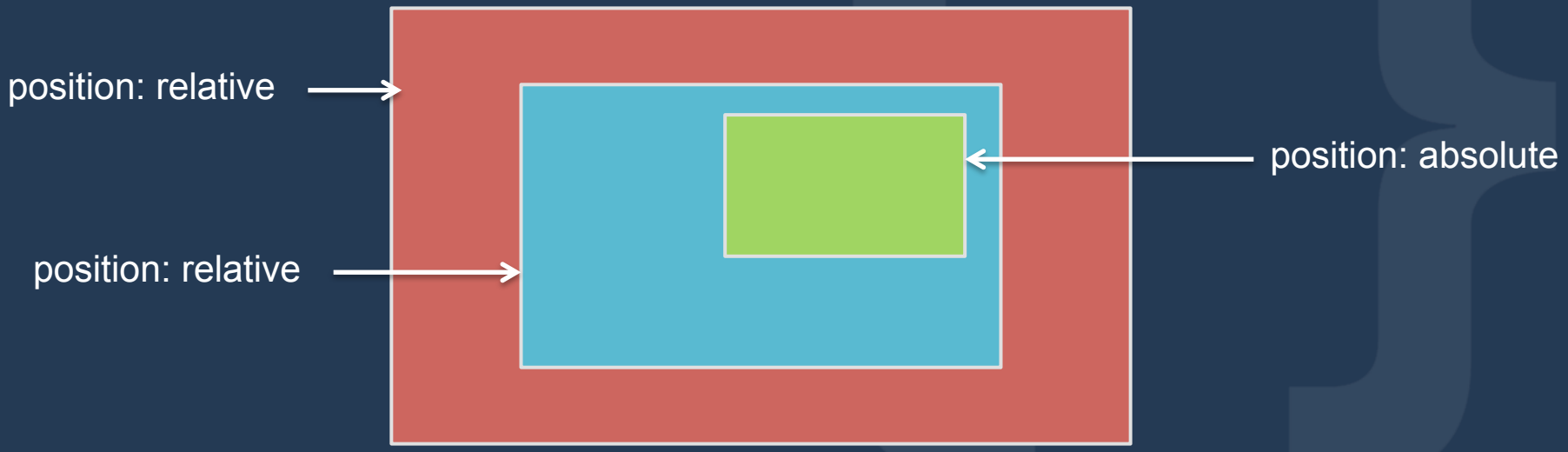


Review CSS Positioning

Today's Outline

1. CSS Pseudo Classes
2. HTML5
3. CSS3
4. Browser Compatibility
5. CSS Specificity
6. Extras

Goal Today:

Learn the latest trends &
wrap up HTML & CSS

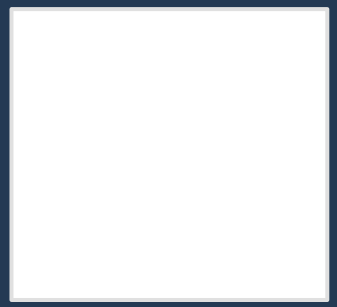
CSS pseudo-classes

CSS pseudo-classes

- Adds effects to your selectors
- Syntax:
  - *.selector:pseudo-class { …css styles … }*
  - *Ex: a:visited { … }, #box1:hover { … }*
- Common pseudo-classes:
  - *:visited* = Links you've visited
  - *:active* = Links when you click on them (happens in milliseconds)
  - *:hover* = When mouse is over element
  - *:focus* = When typing in the current <input> tag (we go over <input> tags later on)
- Remember *:hover*! Most likely you will use this the most ;)

CSS pseudo-classes

:hover



CSS pseudo-classes

:active (happens briefly)

Click this Link

Click this Link

:visited

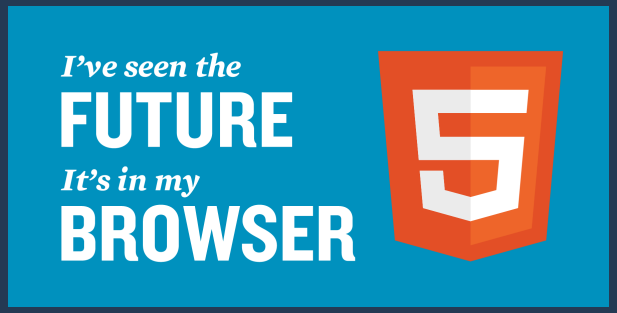
Click this Link

CSS pseudo-classes

:focus

HTML5

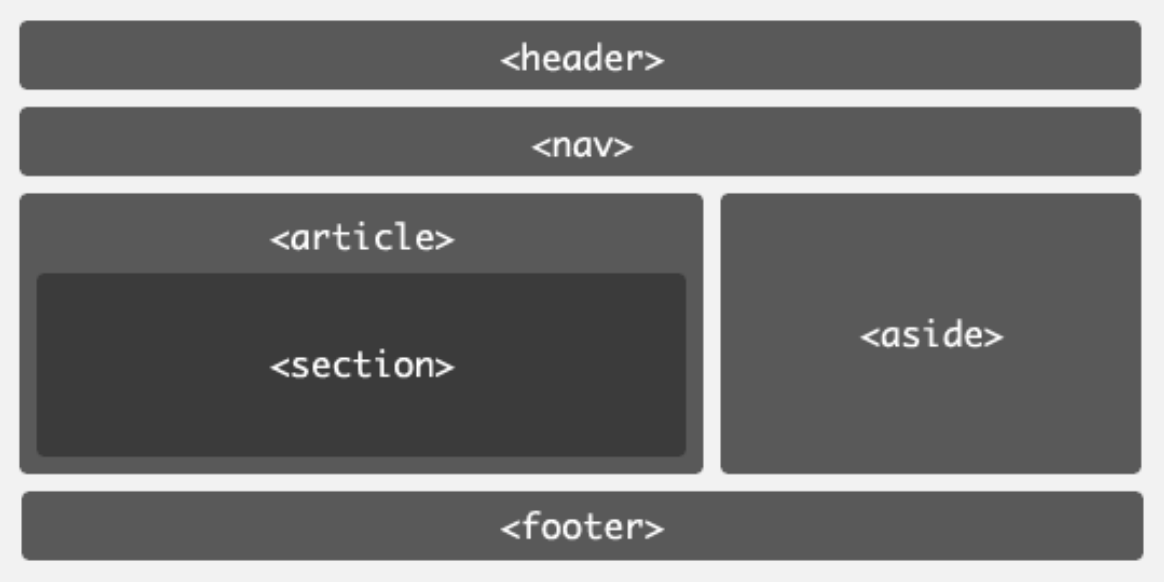
HTML5



- Allows use of CSS3
- New semantic tags: *<header>, <footer>, etc.*
- Multimedia tags:
  - *<video>*
  - *<audio>*
- Can now draw graphics with:
  - *<canvas>*
- Combined with JS, you can also do:
  - *Drag and Drop*
  - *Geolocation*

Semantic Tags

- **Semantic Tags**
  - Just tags, but with meaning
  - Easier to distinguish structure of a site



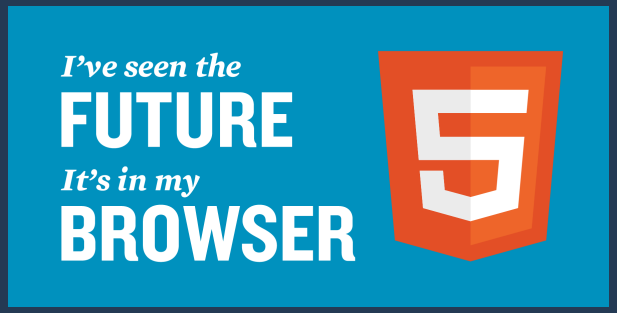
<video>

- Great way to showcase videos you uploaded or video files on the web (non-Youtube videos)
- Syntax:
  - *<video width="640" height="480" controls>*
    <source src="clip.mp4" type="video/mp4">
    Browser does not support this
    </video>
- 2 lines inside <video>: Source tag & text, in case browser does not support HTML5 <video> (Chrome, Firefox, Opera, Safari, and IE9+ supports)

<video>

- Syntax:
  - *<video width="640" height="480" controls>*
    <source src="clip.mp4" type="video/mp4">
    Browser does not support this
    </video>
- You can add *attributes* to <video> tag
  - *controls* = Shows play, pause, etc. buttons
  - *autoplay*
  - *loop*
  - *muted*

HTML5



- Other HTML5 tags require Javascript
- For now, know semantic tags + <video>
- With Javascript:
  - *Grab Geolocation*
  - *Draw Graphics on a Canvas*
  - *Do more with <video> and <audio>*

CSS3

CSS3

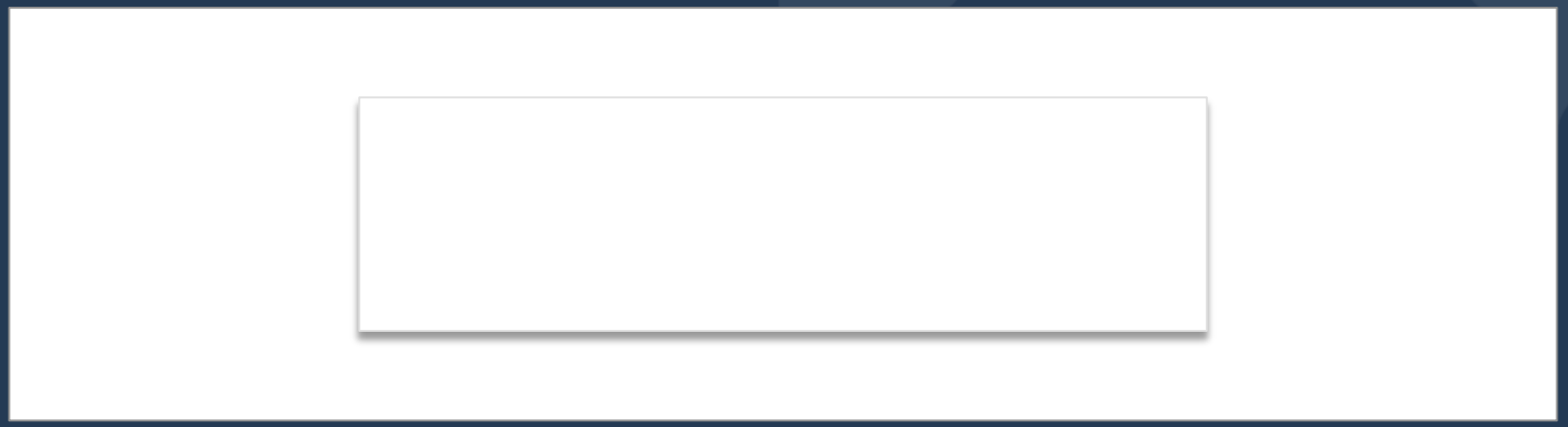
- Latest CSS version
- Border-radius & shadows
- Opacity
- Animations & 2D/3D transformations
- Gradients, text effects, etc.

border-radius

- You can now *round* your 90 degree corners
- Syntax:
  - *border-radius: 10px;*
- You can also use percentages (up to 50%)
  - *border-radius: 50%;*
  - If your element is a square, this turns it into a **circle**. Why?

box-shadow

- Add shadow to your elements
- Syntax (parentheses optional):
  - *box-shadow: h v (blur) (spread) (color) (inset)*
  - *E.g.: 0 5px 5px #aaa;*
- Great for subtle effects and modals (e.g. Facebook Photo Viewer)



Opacity

- Allows transparency of elements
- Syntax (parentheses optional):
  - *opacity: 0.5;*
  - Values from 0 (invisible) to 1 (fully visible)
- **Important!**
  - Not the same as *display:none*
  - *display: none* hides the element (takes no space on page)
  - *opacity: 0* simply makes the element invisible (but still takes up space on the page)

Transitions

- Move, scale, and change the color of elements (and lots more!)
- Essentially changing from state 1 to state 2
- Syntax:
  - *transition: 0.2s;*
  - Time is usually very short (<1s)

```
#box {
        width: 100px;
        height: 100px;
        background-color: red;
        transition: 0.2s;
}
```

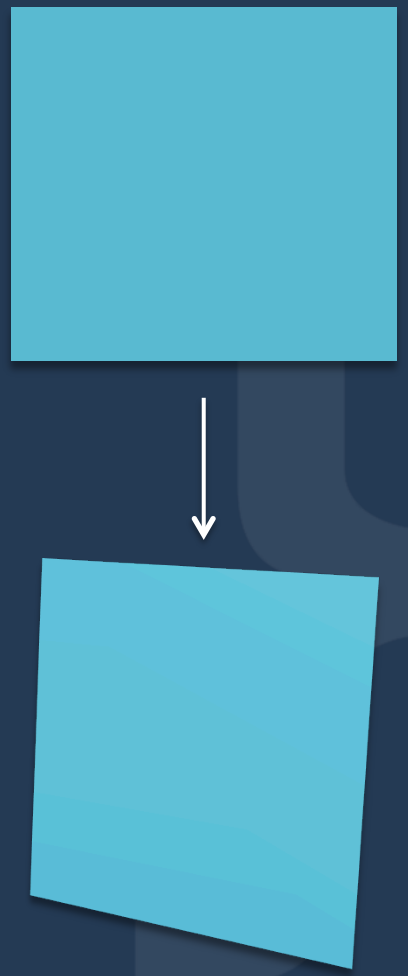
```
#box:hover {
        width: 200px;
        height: 200px;
        background-color: blue;
}
```

2D Transformations

- Translate, scale, rotate, skew
- Translate:
  - *transform: translate(xvalue, yvalue);*
  - *E.g. transform: translate(10px, 80px);*
- Rotate:
  - *transform: rotate(45deg);*
- Scale:
  - *transform: scale(xtimes, ytimes);*
  - *E.g. transform: scale(2, 4);*
- Skew:
  - *transform: skew(xdeg, ydeg);*
  - *E.g. transform: skew(10deg, 40deg);*

3D Transformations

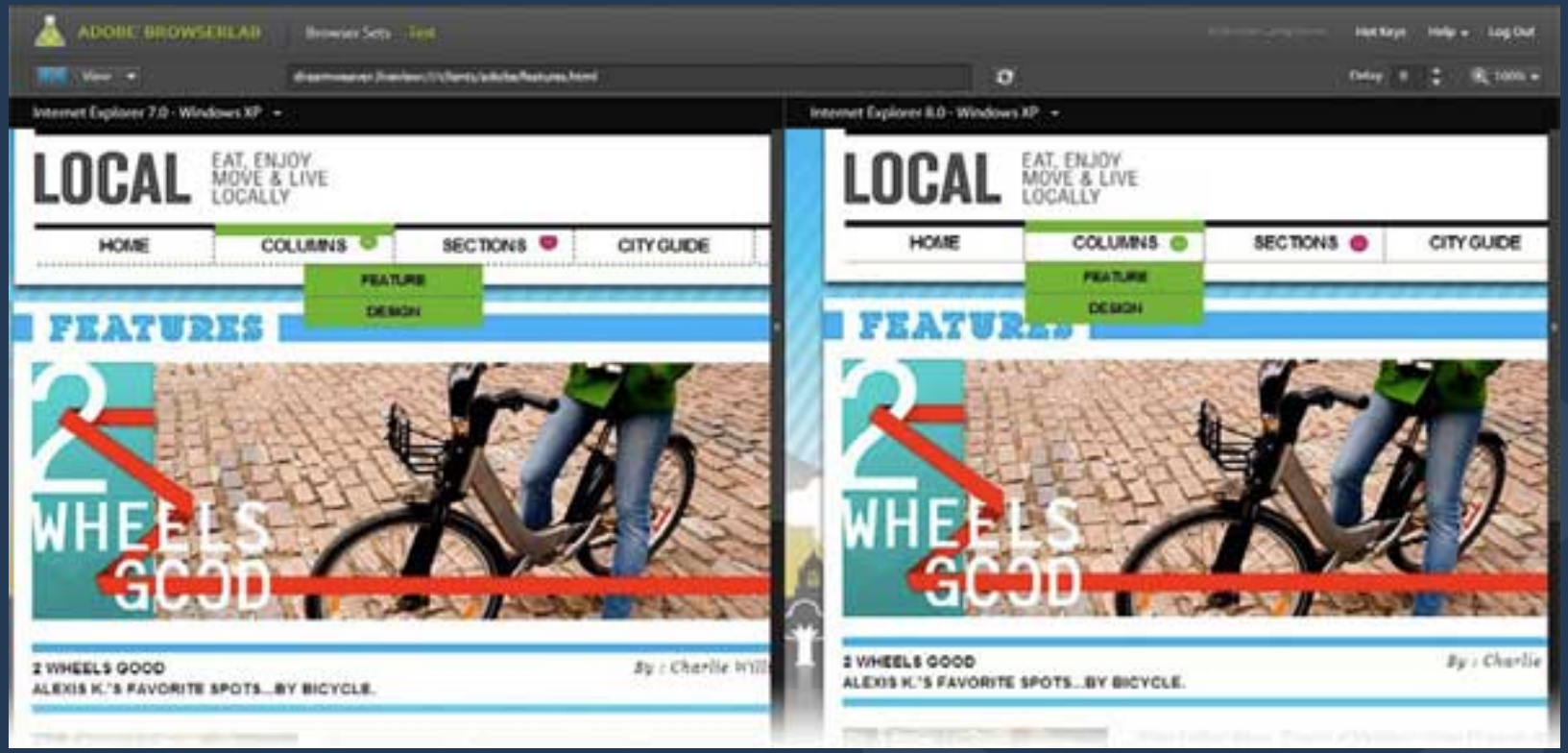
- Translate, scale, rotate… but wicked!
- Like 2D transforms… but with “3d”
  - Takes 3 args:
    - *transform: translate3d(x,y,z);*
    - *transform: rotate3d(x,y,z, deg);*
    - *transform: scale3d(x,y,z);*
  - Examples (3 args & 1 arg for specific):
    - *transform: rotateY(45deg);*
    - *transform: scaleZ(2);*
    - *transform: scale3d(1,1,2);*
    - *transform: rotate3d(0, 1, 0, 60deg);*



Demo

Browser Compatibility

Browser Compatibility



Browser Compatibility

- CSS3 led to browsers rendering websites *differently*
- **Cross-Browser Compatibility** – Web Developers' **worst nightmare**
- The Big 5 Browsers:
  - Google Chrome
  - Mozilla Firefox
  - Apple's Safari
  - Opera
  - Internet Explorer

Browser Compatibility

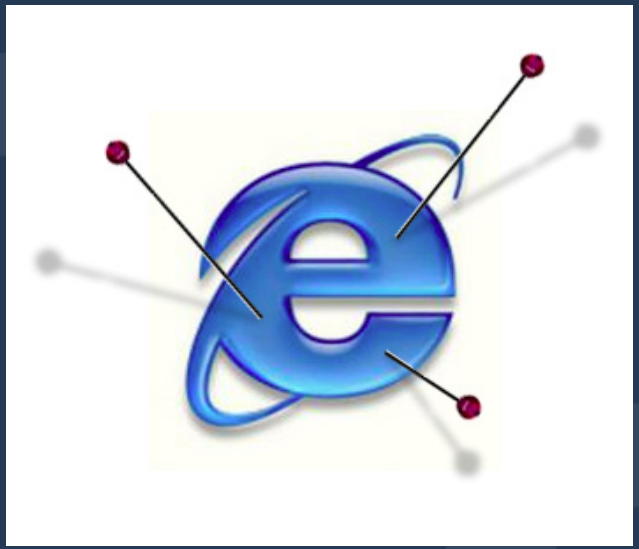
- Some browsers use their own CSS styles
- **Vendor Prefixes**
  - Add them to the beginning of CSS3 styles (border-radius, transitions, transform, etc.)
  - Chrome, Safari, and Opera (recently converted from *-o-*)
    - *-webkit-*
    - *Ex: -webkit-border-radius, -webkit-transition*
  - Firefox
    - *-moz-*
    - *Ex: -moz-box-shadow*

Browser Compatibility

- Usually when using CSS3 styles (except opacity), use a **trio of three** CSS3 styles
  - *Ex:*
    - *-webkit-border-radius: 3px;*
      -moz-border-radius: 3px;
      border-radius: 3px;
- Now, what about **Internet Explorer?**

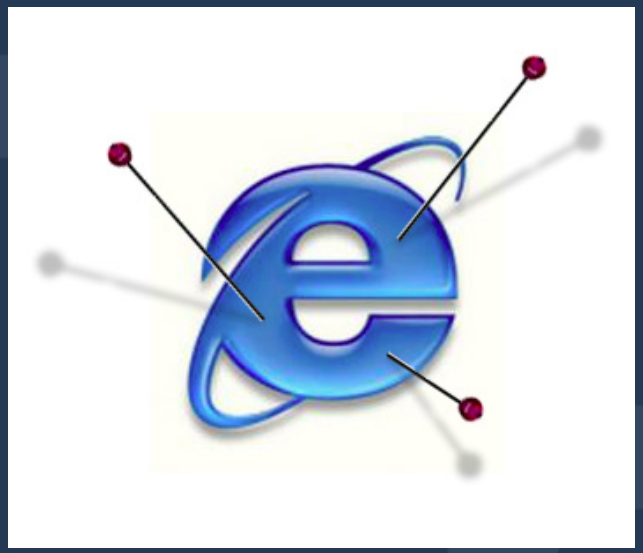
Browser Compatibility

- Internet Explorer is **dreadful**
- Each version is different from another
- *IE6*
  - No CSS3 Support
  - No top, left, right, bottom for position: absolute
- *IE8*
  - **First** use of display: inline-block
- *IE9*
  - **First** full support of CSS3
  - Uses –ms- vendor prefix
- *IE10 (most stable current release)*
  - For most part, no longer need –ms- prefix

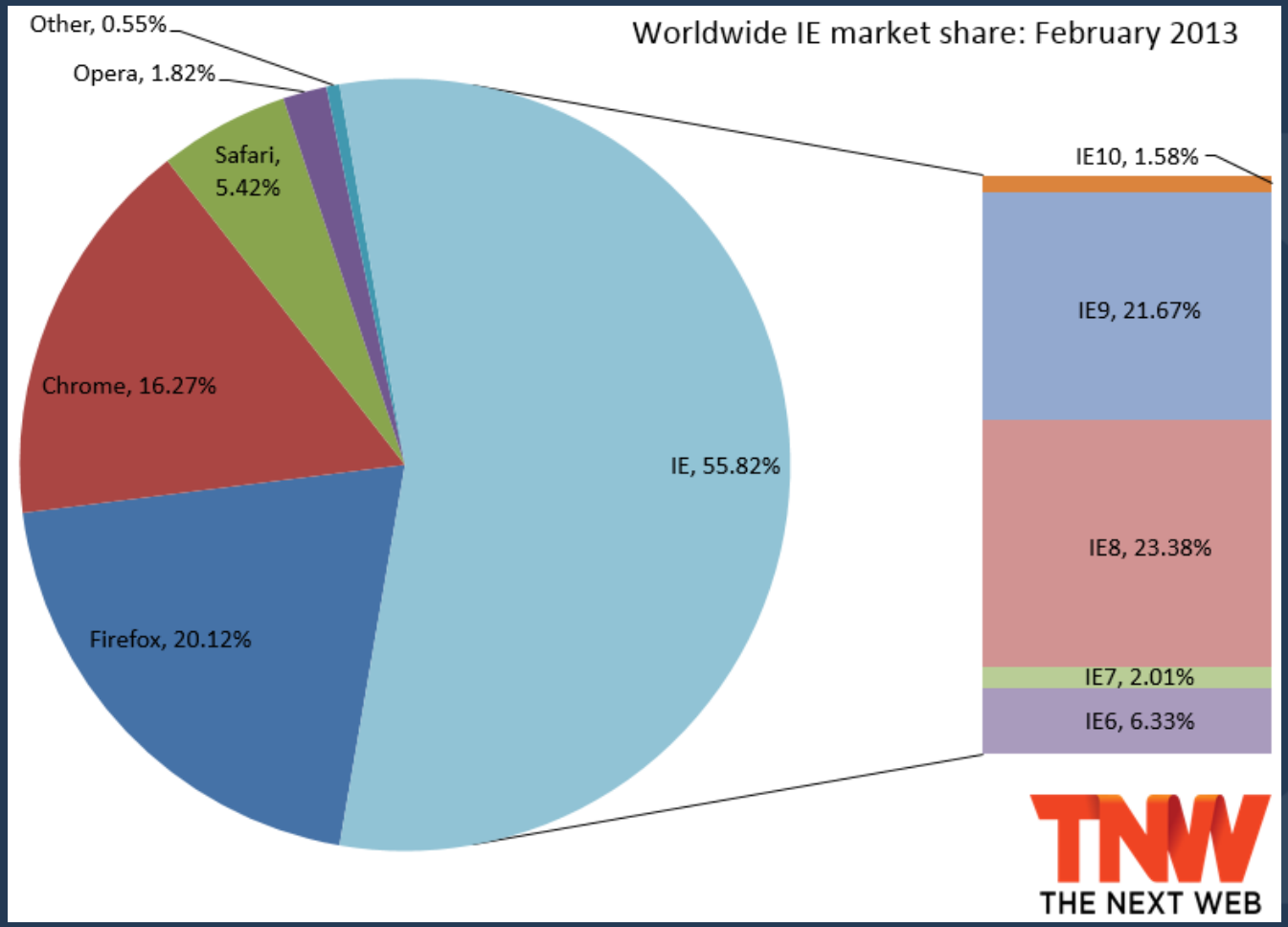


Browser Compatibility

- Support IE with separate styles
- Syntax:
  - *<!-- [if lt IE9]>*
    <link rel=…. href="iestyles.css">
    <![endif]>
  - Add after normal <link> tag
- Extra
  - lt = less than
  - gt = greater than
  - lte = less than



Browser Compatibility



CSS Specificity

CSS Specificity

- Determines which CSS rule is applied (based on precedence)
- If 2 selectors apply to the same element, 1 has higher precedence
- IDs (#) more precedence over Classes (.)
  - * *
  - *#box1 { … style is used over .box … }*
- Use spaces to signify parent-child relationship
  - * *
    * *
  - *.panel .title { … style is used over just .title … }*

CSS Specificity

```
<div id="panel1" class="panel">
    <div class="title"></div>
    <div class="body">
        <div class="author">
        </div>
    </div>
</div>
```

Precedence:

#panel1 > .panel

.panel .title > .title

#panel .title > .panel .title

#panel .body .author > .author

div.panel > .panel

Extras

Extras

- Shorthands
  - *margin: 0 auto;*
    - *= margin: 0 auto 0 auto;*
    - *= margin-top: 0, margin-left: auto, … etc…*
  - *background-color: #ff8800;*
    - *= background-color: #f80;*
- Comments
  - *CSS*
    - */* Multi-line comment */*
    - *// Single line comment*
  - *HTML*
    - *<!-- This is a multi-line comment in HTML -->*

Extras

- Combinations
  - *#box1, #box2 { color: red; height: 80px; }*
    - = *#box1 { color: red; height: 80px; }*
      #box2 { color: red; height: 80px; }

Summary

- CSS pseudo-classes
- HTML5
  - Semantic Tags & Video
- CSS3
  - Border-radius & Box-shadow
  - Transitions & Transformations
- Browser-Compatibility
  - Important for CSS3
  - Always use 3 CSS3 prefixes: -webkit-, -moz-, (regular)
- CSS Specificity

All lecture material, handouts, and homework can be found at:
http://www.thewebdesignworkshop.co

Bonus Slides

CSS Specificity

- Surprisingly, you can think of CSS specificity as a calculator
- This calculator weighs 4 categories with different point values:
  - *Inline Styles – 1000*
    - *E.g. *
  - *IDs – 100*
    - *E.g. #box, #title*
  - *Classes, attributes, pseudo-classes – 10*
    - *E.g. .panel, :hover, :focus*
  - *Elements & pseudo-elements – 1*
    - *E.g. img, h1, :after, :before, :first-line*

CSS Specificity

- Examples:
  - *body #container .panel .title:hover*
    - *1 + 100 + 10 + 10 + 10 = 131*
  - *p a.mysite*
    - *1 + 1 + 10 = 12*
- Also note, that you can also attach class selectors to generic elements
  - *E.g. a.mysite*
  - This means “select the <a> element with the class *mysite*”

CSS3 Gradients

- Gradients are easy to do with CSS3
- Syntax:
  - *background: linear-gradient(red, blue);*
  - Simply add a color 1 and a color 2, and CSS will generate the transition from 1 to 2
- *background: linear-gradient(left, red, blue);*
  - Add an optional direction if you like as the first argument
  - Starts from left, and goes right
- *background: linear-gradient(top left, red, blue);*
  - Combine two directions (starts at top left)
- *background: linear-gradient(#f00, #0f0, #00f);*
  - Multiple color stops
  - Also can use HEX colors or RGB

HTML Structure

- Now that we are wrapping up HTML, you can hone in on “good structure” of a web page
- Consider looking into **Bootstrap** or **Foundation** just to see how they structure their elements, or the **960 Grid** system

CSS Structure

- Same for CSS, it's time to hone in on your CSS structure!
- For the *body* selector, always add **margin: 0** and **padding: 0**
  - This prevents the browser from using a default margin/padding for <body>
  - Allows your site to look the same across all browsers
- Keep your CSS clean, avoid repetitive code chunks
  - *E.g. h1, h2 { … same styles…} vs h1 {…} and h2 {…}*
- Test your CSS across browsers (eventually we will cover mobile)
- Use *@font-face* to use custom fonts, but always have fall-backs
- Keep *@font-face*, *body*, and important tags/dependencies at the top of your CSS file
- Consider using **LessCSS** (lesscss.org) if you know coding
  - Allows use of variables (e.g. repetitive colors now 1 variable)