

Web Applications Intro

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Agenda

- The Web Architecture
- Hello HTML
- Hello CSS
- Hello JavaScript

How It All Started

- While working at CERN in the 90s, Berners-Lee develops WWW
- 1991 First web site
- 1994 Berners-Lee founded the W3C

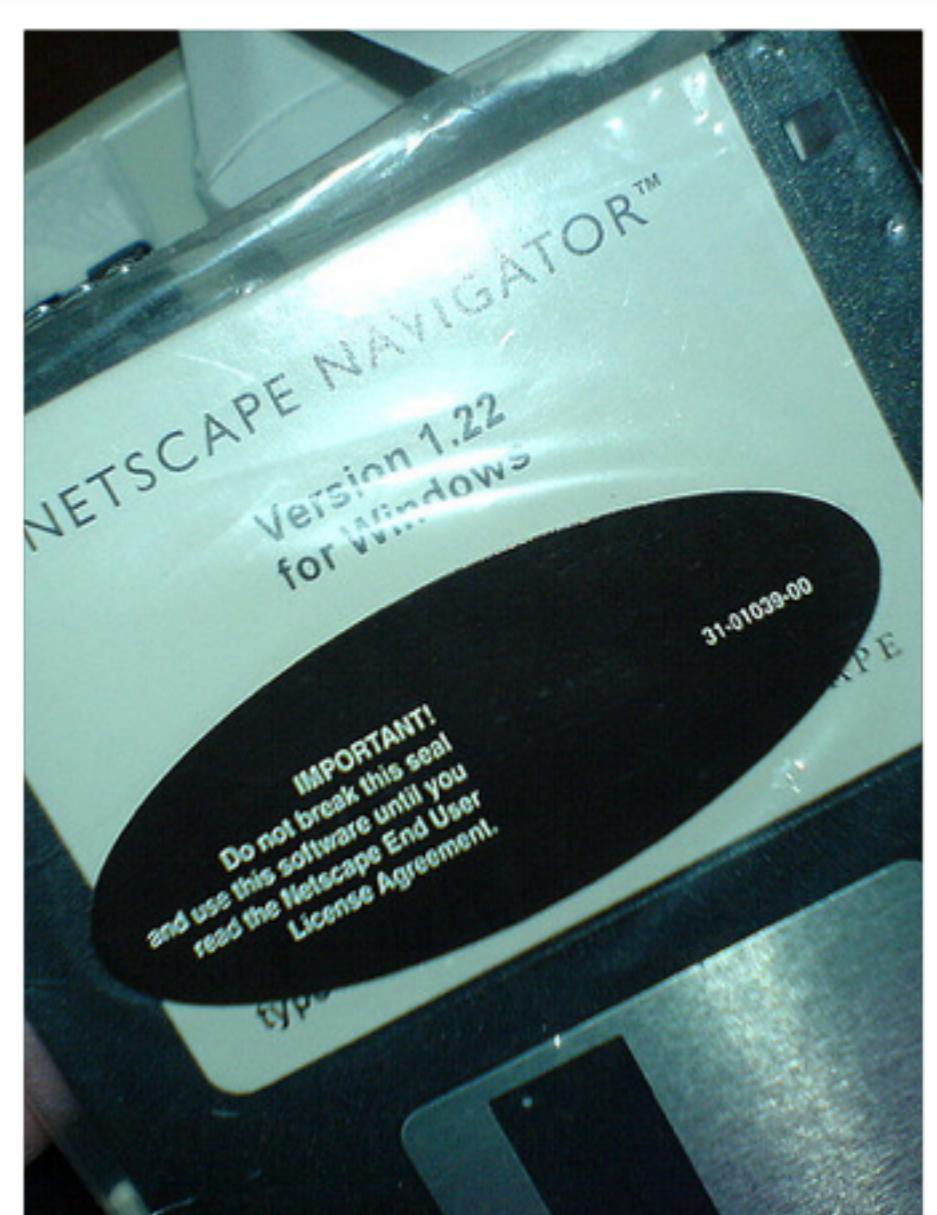


1991 HTML 1

- Described in a document called “HTML Tags”
- Included 20 elements
- Influenced by SGML

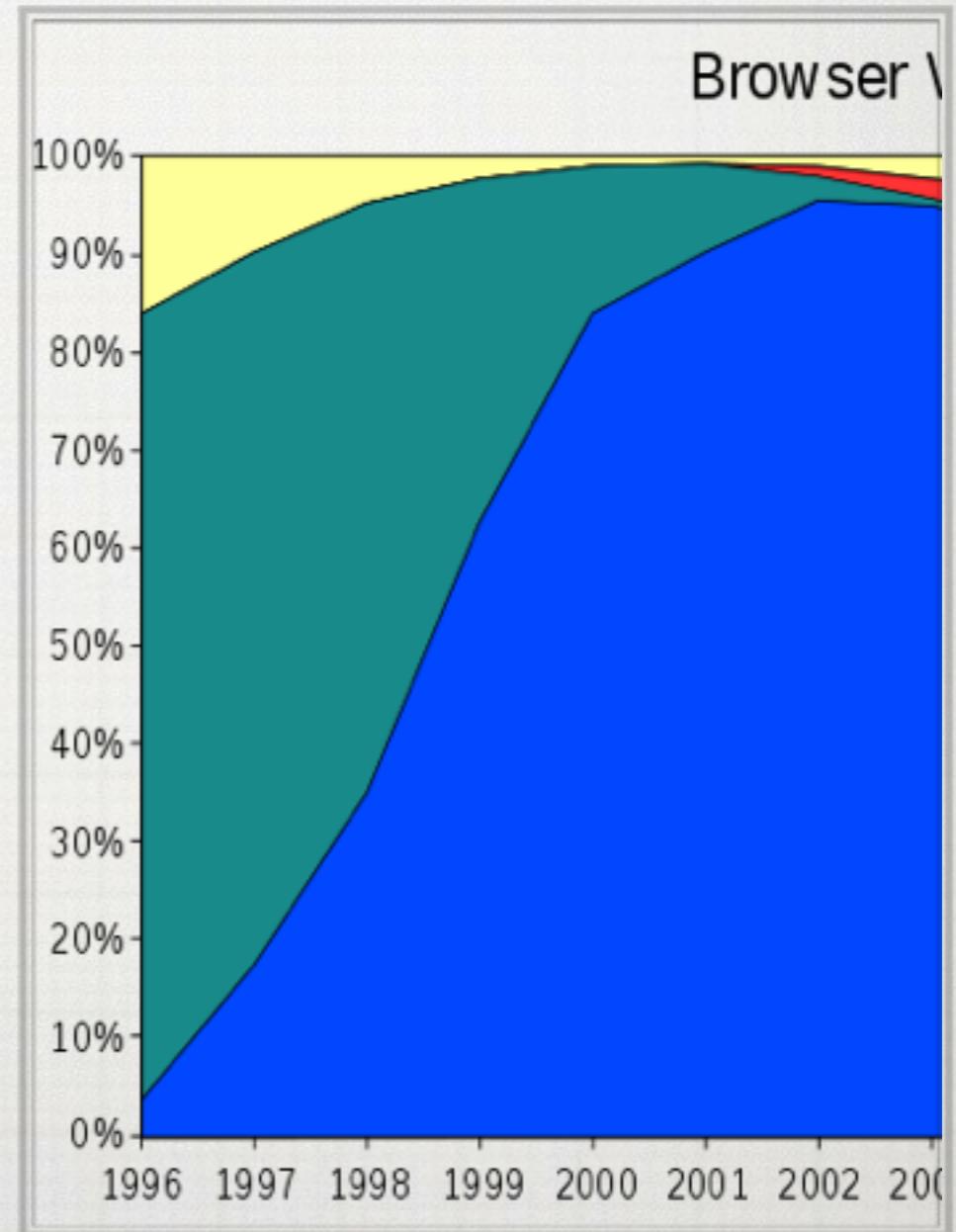
1995 HTML2

- One year after Netscape was founded
- Forms
- Tables
- Image Maps



1997 HTML3.2

- Standardizing browser wars
- Dropping Netscape's blink and MS marquee
- On the right:
Blue - IE
Light green - Netscape

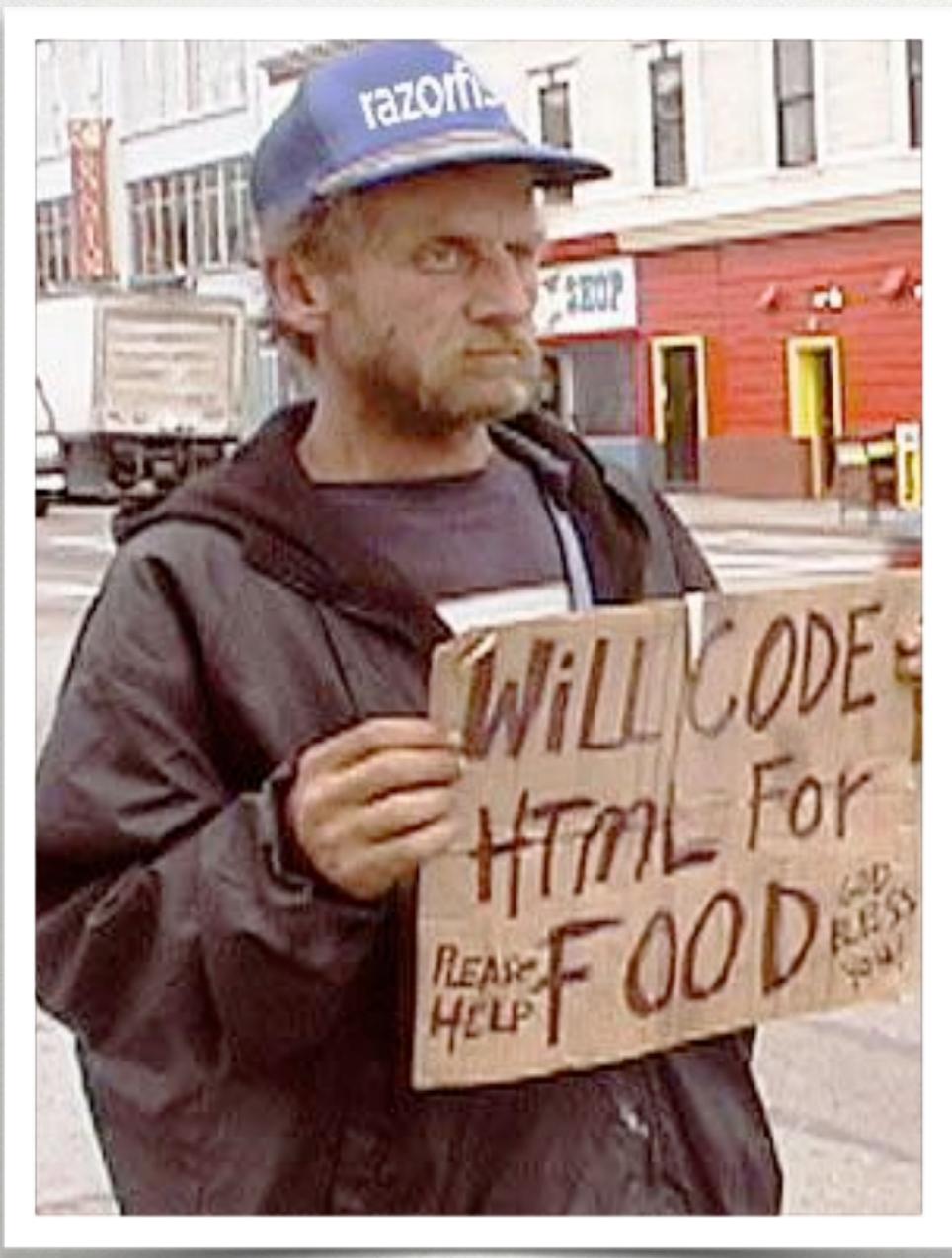


1999 HTML4

- Browser war was over.
MS won
- Many new elements,
including iframe, label,
legend, object
- Deprecated: applet,
center, font, menu,
strike



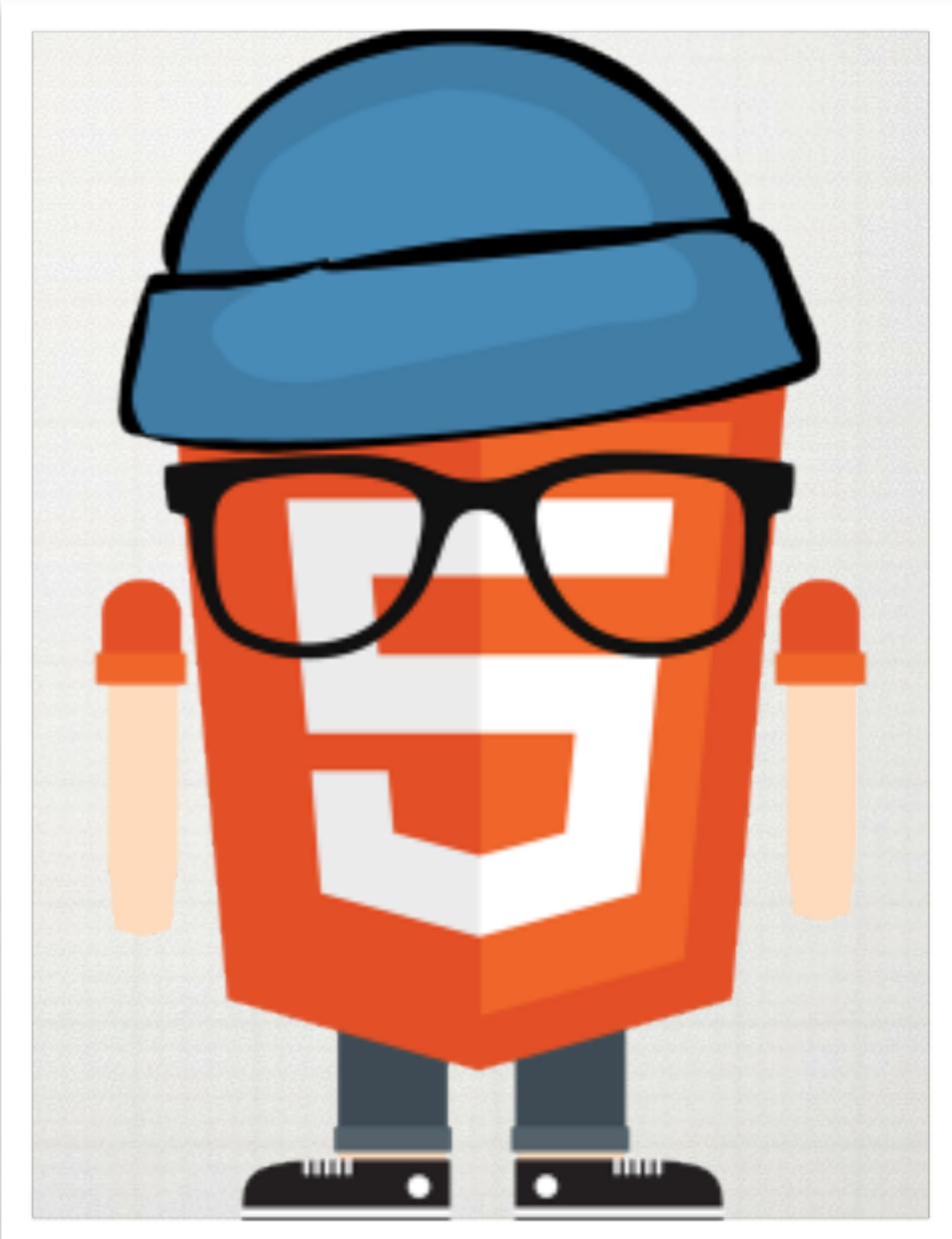
After The Browser Wars



- W3C abandons HTML
- Moves on to XML

HTML Today

- 2004 - Apple, Mozilla & Opera founded WHATWG
- 2009 - Spec named HTML5



HTML5: Device Support

THIS IS THE WEB.



HTML5: Plugin-Free

- Web Storage
- Geolocation
- Web SQL
- Device Orientation
- Application Cache
- Forms
- Web Workers
- Audio & Video
- Web Sockets
- Canvas
- Desktop Notifications
- Web GL
- Drag & Drop
- History API
- File System API
- And More...

Web Architecture

The Web Architecture

Client Side



Server Side

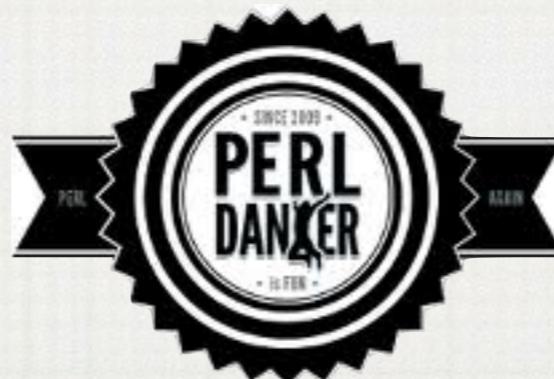


GET data

Here It Is

Server Side

- Server side creates the data and returns it to the client
- All server-side languages return the same result: HTML
- There are many languages...



Client Side

- Client side takes the data and renders it on screen
- Provides a UX around the data
- Can send data back to the server
- Browsers: IE, Chrome, Firefox, Safari



The Data

- Data is in a format called HTML (Hyper Text Markup Language)
- Invented by Tim Berners-Lee



The Data

- A browser renders HTML document on screen
- HTML is a tag-based language

```
<html>
<body>
  <h1>Hello World</h1>
  <p>All your base are belong
     to us</p>
</body>
</html>
```

Available Tags

- Tags (or markup) define the role of their content
- Headers:
h1, h2, h3, h4, h5, h6
- Block Sections: div
- Inline Sections: span

Demo

Inline vs. Block

Container (Block)

One Two Three (inline)

Adding Links

- Use <a> tag to create a link
- <a> is an inline element
- Example:

```
<a href="http://www.google.com">Go To Google</a>
```

Adding Images

- Use tag to create an image
- is an inline-block element: It flows in text, but has height and width like a block
- alt attribute tells google what's in the photo
- Example:

```

```

Adding Text

- Use <p> tag to wrap text paragraphs
- <p> is a block-level element
- Adds a newline

Clickable Images

- Wrap in `` in an `<a>` tag to get an image that is also a link
- Demo: images, links and text paragraphs

Lists

- HTML has two types of lists: ordered lists marked `` and unordered lists marked ``
- Inside a list block, use `` to denote items
- ``, `` and `` are all block elements

Lab

- Create an HTML document for your resume
- Use correct headers
- Add an image



Pages With Style

Introducing CSS

Cascading Style Sheets

- Apply styling rules to elements
- Choose an element with a selector
- Specify rules using properties

Let's Start With The Basics

- Select all h1 elements
- Write text in red

```
h1 {  
  color: red;  
}
```

Let's Start With The Basics

- More CSS styling properties:
 - background-color, color
 - font-weight, font-size, font-family, font-style, text-decoration
 - text-align, line-height
 - outline

Let's Start With The Basics

- Use #id to find a specific HTML element

```
<h2 id="main">Red</h2>
```

HTML

```
h2#main {  
  color: red;  
}
```

css

Let's Start With The Basics

- Use .class to find a set of HTML elements

```
<h2 class="uppercase">Red</h2>
```

HTML

```
h2.uppercase {  
    text-transform: uppercase;  
}
```

CSS

Block Level Properties

- Only block (or inline-block) elements have size
- width and height are only applicable to block elements

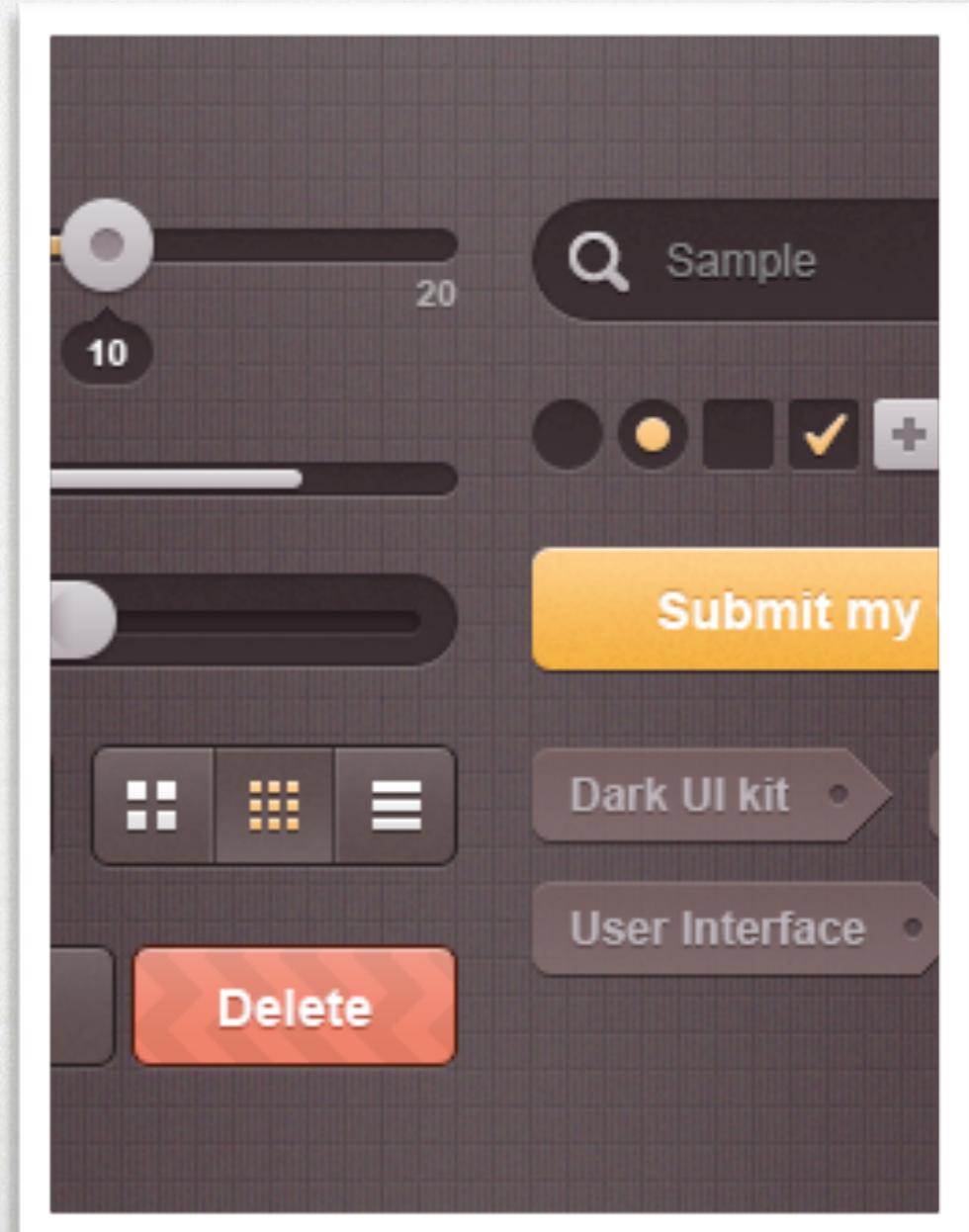
Lab

- Using the docs:
[https://
developer.mozilla.org/
en-US/docs/CSS](https://developer.mozilla.org/en-US/docs/CSS)
- Style this HTML:
[http://pastebin.com/
Wm2s8EnH](http://pastebin.com/Wm2s8EnH)
- Selectors:
[http://
flukeout.github.io/](http://flukeout.github.io/)



Tools Of The Trade

- Development Tools
- DOM Libraries
- UI Libraries



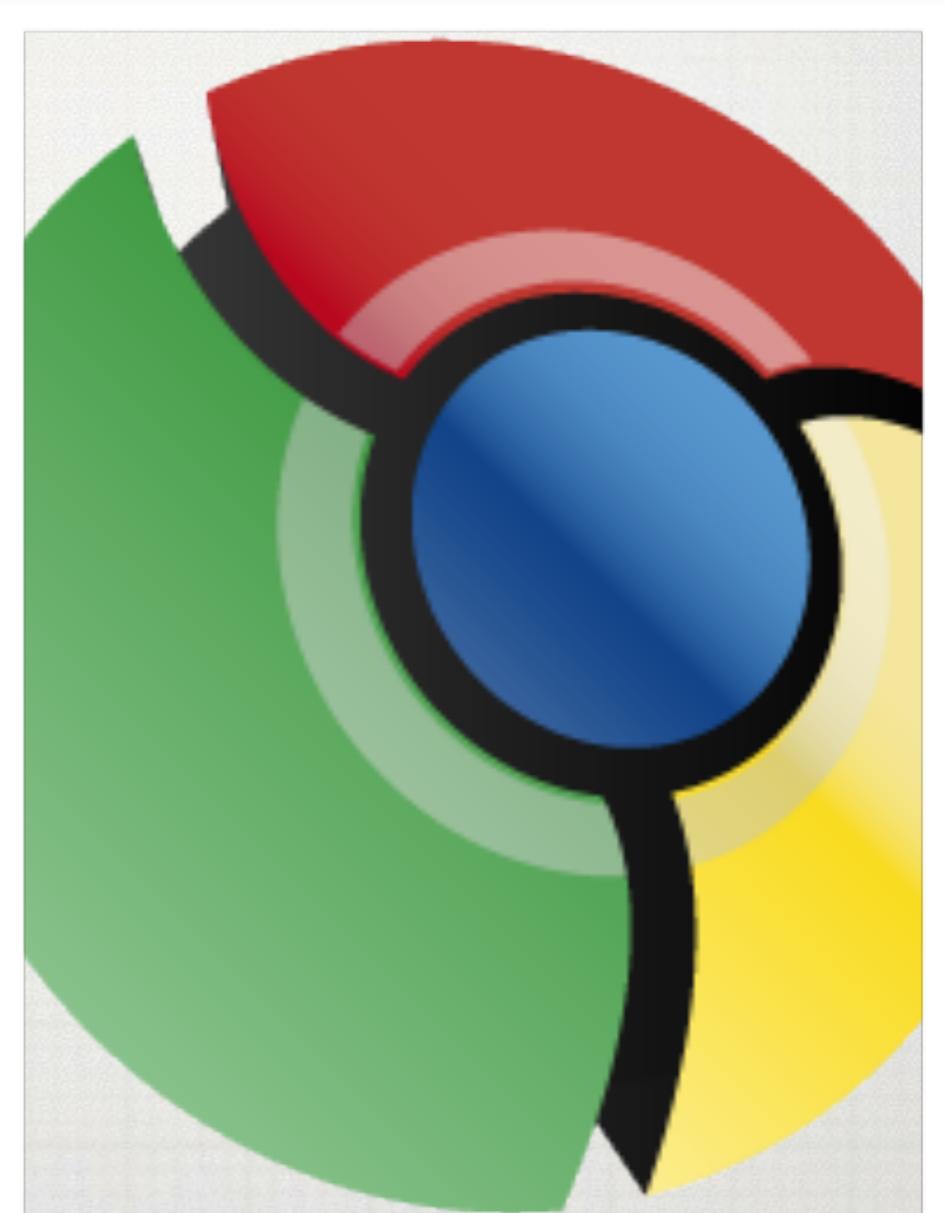
Development Tools

- WebStorm IDE
- LiveEdit
- Extract inline CSS
- Customize Templates



Development Tools

- Chrome Developer Tools
- Edit HTML and CSS on any page
- See Network Activity
- Set cache and user agent
- Consider Canary



Development Tools

- BrowserStack maintain a VM for every browser
- Test and see how your app/site works



DOM Libraries

- jQuery
- YUI
- ExtJS Core



UI Libraries

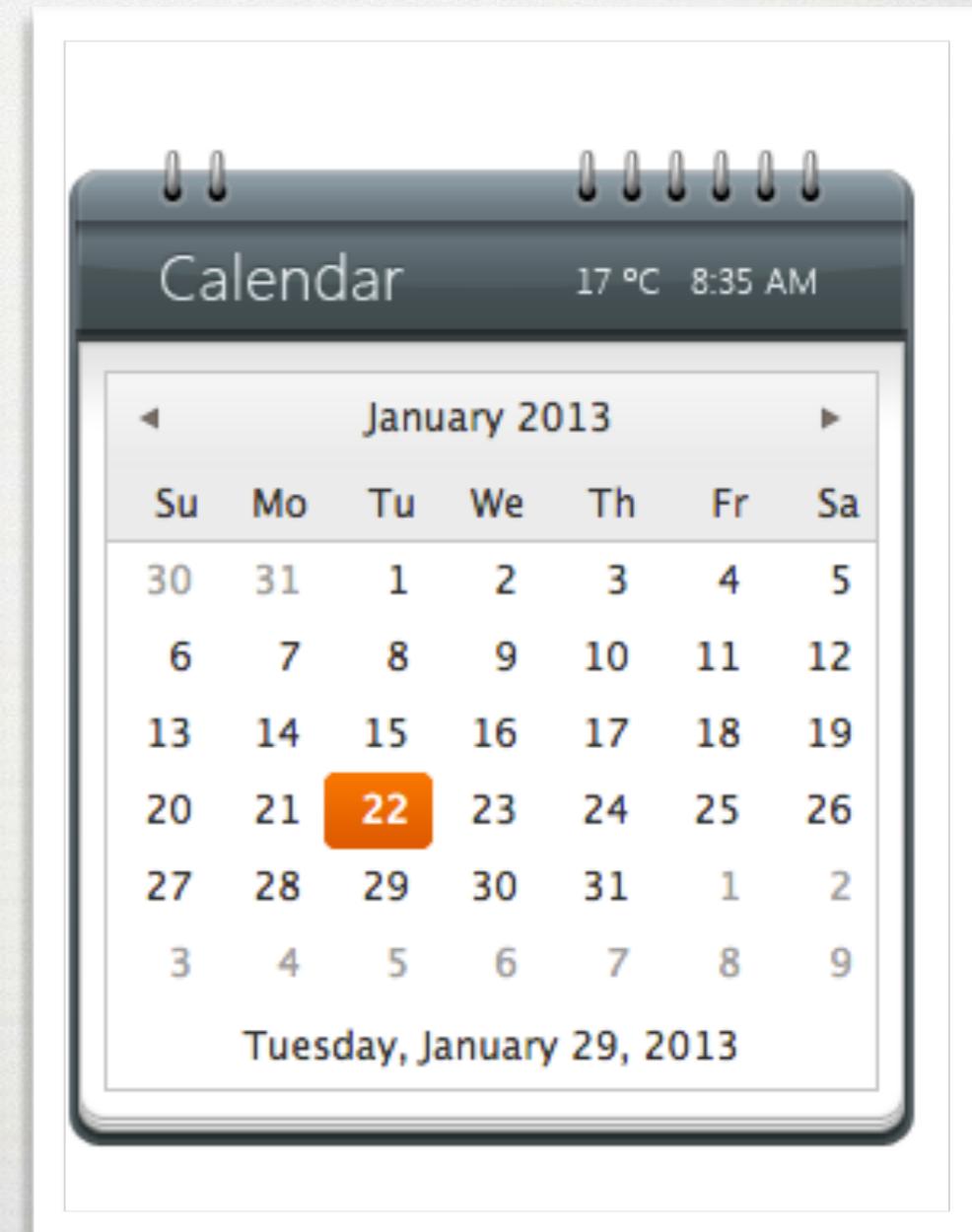
- jQuery UI
- Kendo UI
- YUI
- ExtJS





Demo: Kendo UI

- Create widgets from DOM elements
- <http://demos.kendoui.com/web/calendar/index.html>





Demo: YUI

- Widgets are created from DOM elements
- Library is loaded async and on-demand
- <http://yuilibrary.com/yui/docs/calendar/calendar-simple.html>

| January 2013 | | | | | |
|--------------|----|----|----|----|----|
| Mo | Tu | We | Th | Fr | Sa |
| 31 | 1 | 2 | 3 | 4 | |
| 7 | 8 | 9 | 10 | 11 | |
| 14 | 15 | 16 | 17 | 18 | |
| 21 | 22 | 23 | 24 | 25 | |
| 28 | 29 | 30 | 31 | 1 | |
| 4 | 5 | 6 | 7 | 8 | |



Demo: jQuery UI

- A collection of jQuery UI Plugins
- Use DOM elements to create widgets
- Can integrate with other jQuery Plugins
- <http://jqueryui.com-datepicker/#inline>





Demo: ExtJS

- A UI Comprehensive framework
- Build everything in JavaScript
- Ext way or the high way
- [http://cdn.sencha.io/
ext-4.1.1a-gpl/
examples/calendar/
index.html](http://cdn.sencha.io/ext-4.1.1a-gpl/examples/calendar/index.html)

The screenshot shows a calendar interface for the period December 30, 2012 - February 2, 2013. The main view is for January 2013. A sidebar on the left displays the month and day selection, with 'January 2013' selected. A 'Today' button is visible at the bottom of the sidebar. The calendar grid shows days from 31 to 9. An event 'An old event' is shown for January 29. A long event '10:00am Vacation' spans from January 30 to January 31. Another long event 'A long one...' spans from January 31 to February 1. On February 1, there are two more events: 'Jenny's final exams' and '1:00pm Board meeting'.

Choosing Framework

- Use DOM library for maximum control
- Use UI library for flexibility AND comfort
- Use UI framework for maximum comfort

Thank You

- Photos From:
 - <http://www.flickr.com/photos/pedrosimoes7/5158386021/>
 - <http://123rf.com>