Building Web Applications with HTML5, CSS3, and Javascript:

An Introduction to HTML5

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pinboard.in #tag

pinboard.in/u:jasonclark/t:lita-html5/

twitter #hashtag

#litahtml5

Overview

- Revolution or Evolution?
- New Features and Functions
- Demos
- Getting Started
- Questions

Hello, My Name is…

- Background, Position
- HTML, Programming experience?
- Experience with CSS3?
- What do you want to learn most?

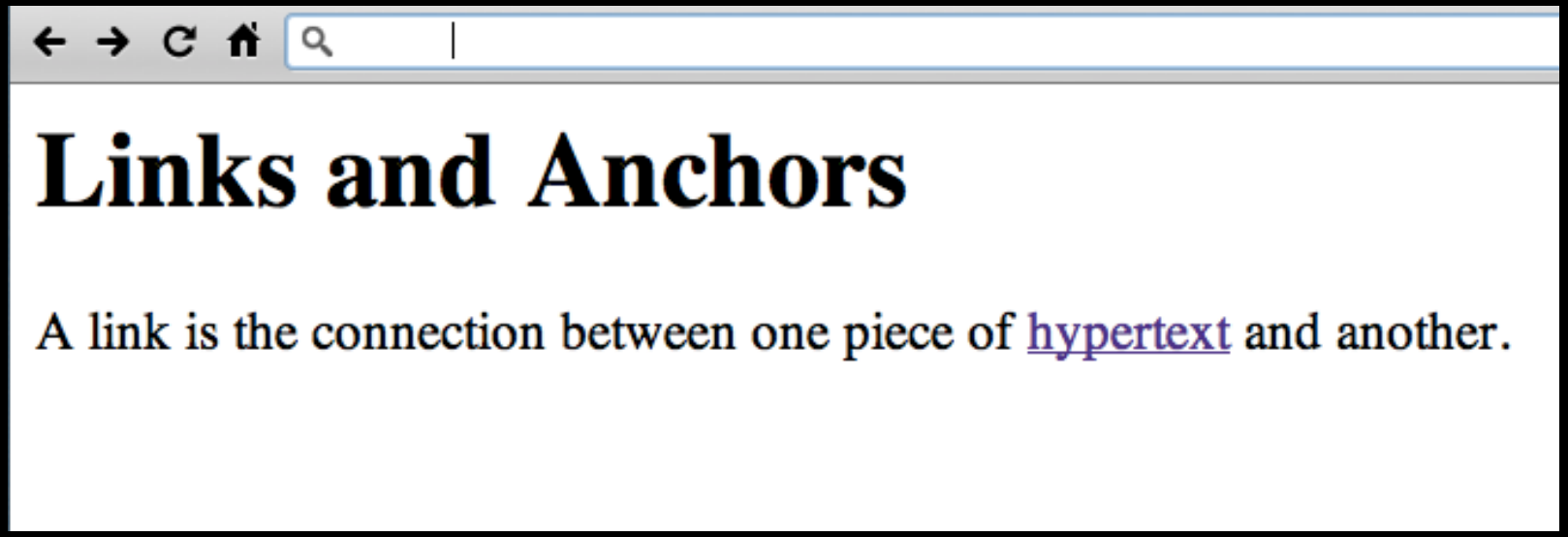
Terms: HTML, CSS, API

Does everybody know what these elements are?

CSS
- style rules for HTML documents

HTML
- markup tags that structure docs
- browsers read them and display according to rules

API (application programming interface)
- set of routines, protocols, and tools for building software applications




```
1 <title>Hypertext Links</title>
2 <h1>Links and Anchors</h1>
3 A link is the connection between one piece of
4 <a href=WhatIs.html>hypertext</a> and another.
```

http://www.w3.org/History/19921103-hypertext/hypertext/WWW/Link.html

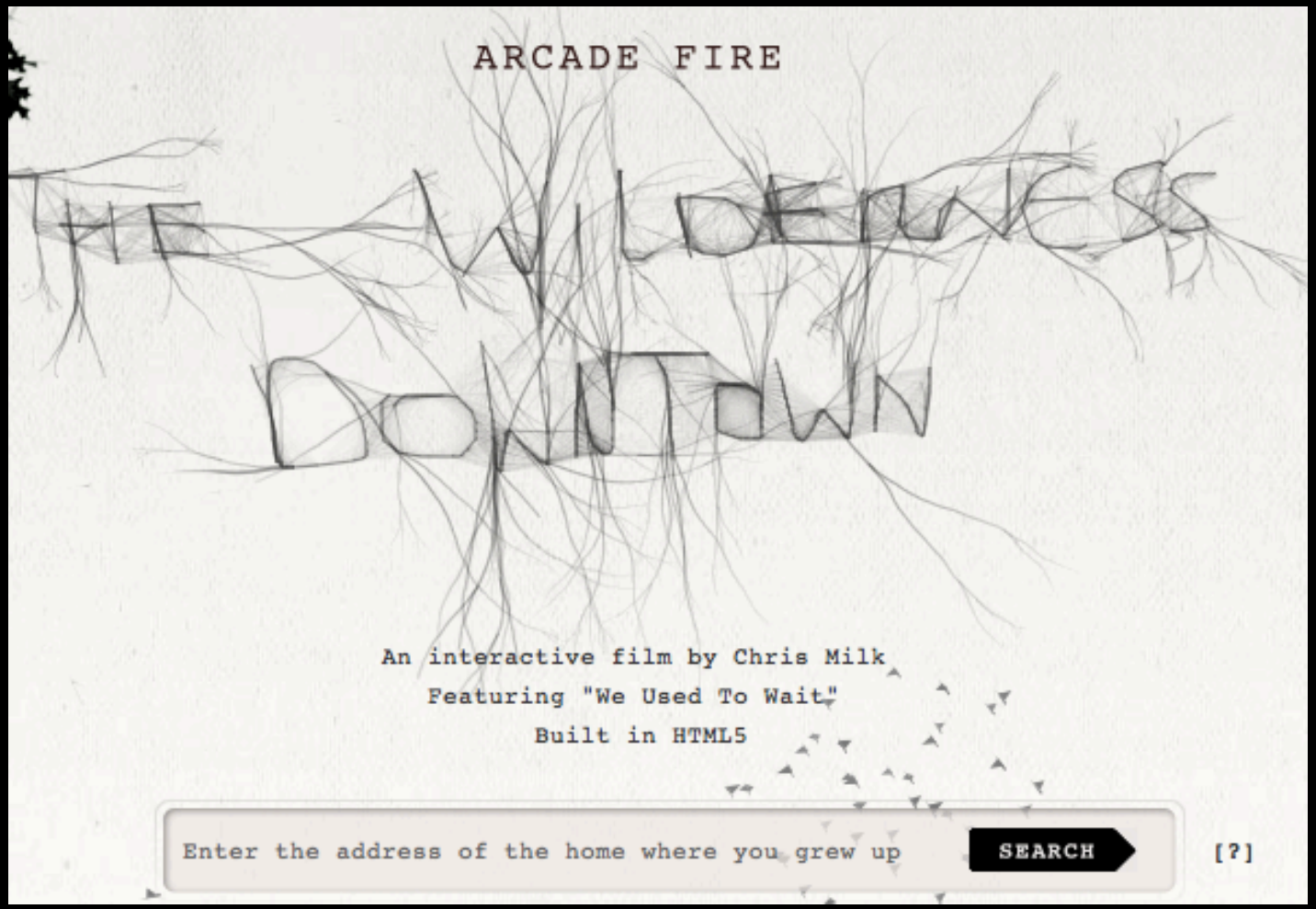
HTML5 spec from WHATWG

“The World Wide Web's markup language has always been HTML. HTML was primarily designed as a language for semantically describing scientific documents, although its general design and adaptations over the years has enabled it to be used to describe a number of other types of documents.

The main area that has not been adequately addressed by HTML is a vague subject referred to as Web Applications. This specification attempts to rectify this, while at the same time updating the HTML specifications to address issues raised in the past few years.”

www.whatwg.org/specs/web-apps/2005-09-01/#introduction

Chrome Experiments



Arcade Fire - The Wilderness Downtown
http://www.chromeexperiments.com/arcadefire/

HTML5 Working Examples

HTML5 Mobile Feed Widget
www.lib.montana.edu/~jason/files/html5-mobile-feed/

BookMeUp
www.lib.montana.edu/beta/bookme/

- Learn more by viewing source

OR

- Downloading from jasonclark.info or github.com/jasonclark

HTML5 as "umbrella" Term

- Changes to HTML spec
- Additions to CSS spec
- New Javascript APIs

Evolution into HTML5

Reacting to how the web is used

A Minimal HTML5 Document

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>title</title>
  <link rel="stylesheet"
  href="style.css">
  <script src="script.js"></script>
</head>
<body>
  <!-- page content -->
</body>
</html>
```

Semantic & Functional Markup

- header
- footer
- nav
- main
- section
- article
- aside
- figure
- figcaption
- details
- mark
- menu
- datalist
- contenteditable attribute
- data-* attributes

Microdata – RDFa Lite

RDFa markup for machine-readable HTML

- vocab
- typeof
- property

Microdata RDFa Lite - Book

```
<dl vocab=“http://schema.org” typeof=“Book”>
<dt>Title</dt>
<dd property="title">A River Runs Through It
  and Other Stories</dd>
<dt>Author</dt>
<dd property="author">Norman Maclean</dd>
<dt>Publication date</dt>
<dd property="pubdate">October 1, 2001</dd>
<dt>ID</dt>
<dd property="isbn">0226500667</dd>
</dl>
```

Microdata 1.0

Markup for machine-readable HTML

- itemscope
- itemtype
- itemprop

Microdata 1.0 - Book

```
<dl itemscope itemtype="http://schema.org/
  Book">
<dt>Title</dt>
<dd itemprop="name">A River Runs Through It
  and Other Stories</dd>
<dt>Author</dt>
<dd itemprop="author">Norman Maclean</dd>
<dt>Publication date</dt>
<dd itemprop="datePublished">October 1,
  2001</dd>
<dt>ID</dt>
<dd itemprop="isbn">0226500667</dd>
</dl>
```

Link Relations

Explain why you're pointing to another page.
"I'm pointing to this other page because..."

```
<link rel="stylesheet" href="template.css"/>
```

```
rel=alternate
rel=archives
rel=author
rel=external
rel=icon
rel=license
rel=prefetch
rel=search
rel=sidebar
rel=tag
...
```

Native Video and Audio

- simple markup
- no plugin
- limited vid formats: .ogv, .mp4, webm

```
<video width="320" height="240 controls="controls">
  <source src="film.mp4" type="video/mp4" />
  Your browser doesn’t support the video tag.
</video>
```

Canvas

Draw into HTML elements via scripting (usually JavaScript)

draw graphs, make photo compositions, create animations or even do real-time video processing

```
<canvas id="canvas"></canvas>
```

Details

Widget functionality to obtain additional information or controls

- Create collapsible navigation menus, FAQ widgets, basic toggle functions, etc.

```
<details>
 <summary>Question [toggle +/-]</summary>
 <p>Answer to Question…</p>
</details>
```

Forms <form>

- <input> field types - email, date, search
- validation
- regular expressions
- still need to watch for security/hacks

<form> Markup

```
<input type="email" required>
<input type="date">
<input type="url">
<input type="email" required autofocus>
```

data-* Attributes

Store custom data private to the page or application, for which there are no more appropriate attributes or elements

- store anything which can be string encoded

```
<ul id="table-of-contents">
  <li data-chapter="1" data-pages="6
  pages">Make Things</li>
  <li data-chapter="2" data-pages="9
  pages">Do Stuff</li>
</ul>
```

Data URIs

Embed small files inline in documents

```
<img width="16" height="16" alt="star"
  src="
  yDZu6QdvCchPGolfO0o/XBs/fNwfjZ0frl3/zy7////
  wAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
  AAAAAAAAAAAAAACH5BAkAABAALAAAAAAQABAAAAVVICSOZGl
  CQAosJ6mu7fiyZeKqNKToQGDsM8hBADgUXoGAiqhSvp5QAnQK
  GIgUhwFUYLCVDFCrKUE1lBavAViFIDlTImbKC5Gm2hB0SlBCB
  MQiB0UjIQA7" />
```

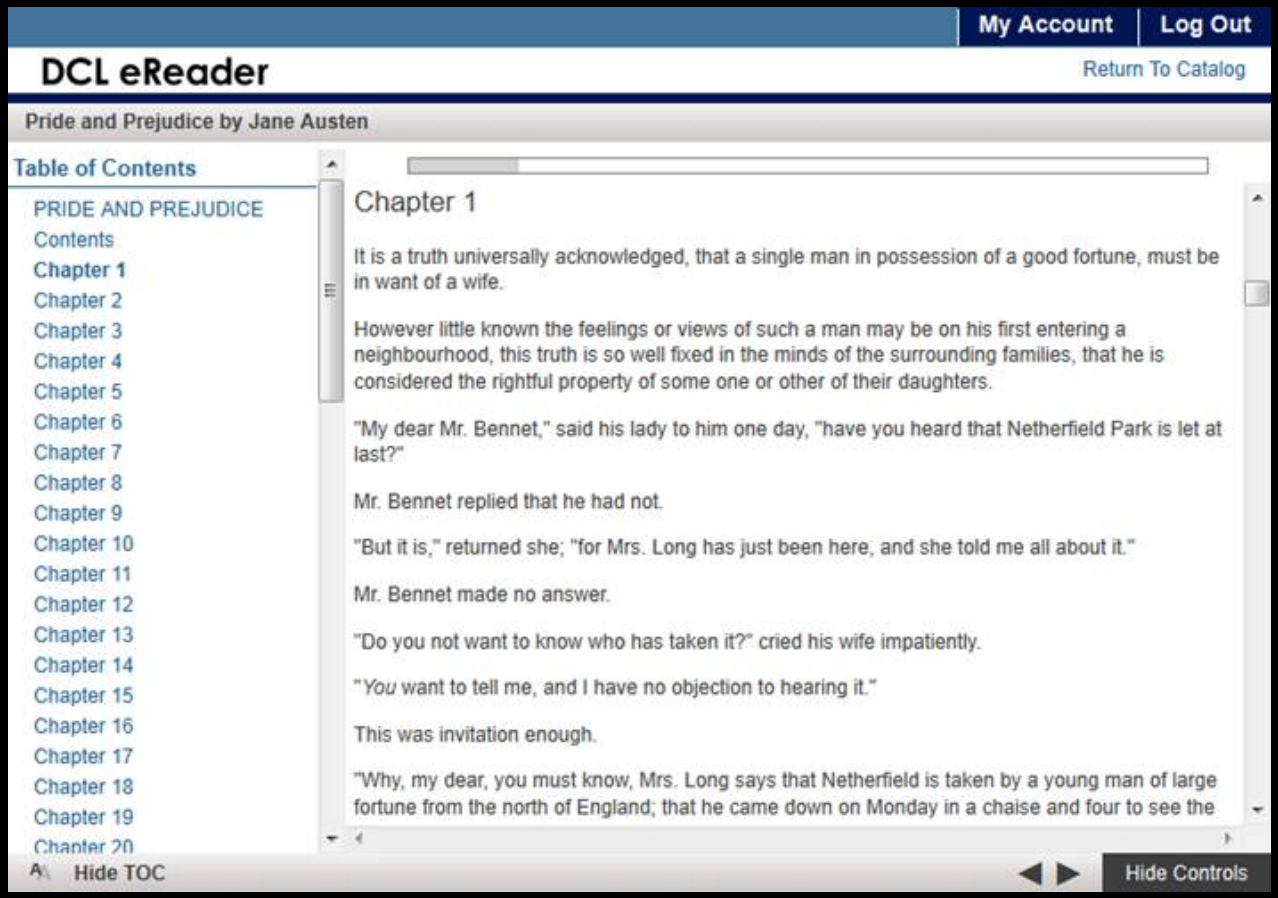
data:[<mime type>][;charset=<charset>]
[;base64],<encoded data>

HTML5 right now? IE?

```
<!DOCTYPE html>
<html lang="en”>
<head>
<meta charset="utf-8" />
<title>HTML5 right now</title>
<!--[if IE]>
<script src="http://html5shiv.googlecode.com/svn/
  trunk/html5.js"></script>
<![endif]-->
<style>
article, aside, figure, footer, header, hgroup, main,
  menu, nav, section {display:block;}
</style>
</head>
<body>
<!-- ready to roll with HTML5 now -->
</body>
</html>
```

Demos & Examples

It's your call....



catalog.douglascountylibraries.org/EcontentRecord/19339/Viewer?item=3439864

Demos

- YouTube HTML5 demo
  - http://www.youtube.com/html5
- 24 ways CSS3 demo
  - http://24ways.org/
- HTML5 Demos
  - http://html5demos.com/
- Other possible examples:
  - geolocation
  - localStorage

What Type of Support?

- see "When can I use…"
  - http://a.deveria.com/caniuse/
- Mobile browsers leading the way

- Modernizr
  - http://www.modernizr.com/
- HTML5 enabling script
  - http://html5shim.googlecode.com/svn/trunk/html5.js

Resources

- HTML5 Tag Reference (W3Schools)
  - w3schools.com/html5/html5_reference.asp
- Cross Browser Support Tables
  - www.findmebyip.com/litmus/
- HTML5 Doctor
  - html5doctor.com/
- CSS3 Previews (CSS3.info)
  - www.css3.info/preview/
- HTML5 & CSS3 Cheat Sheets
  - webresourcesdepot.com/html-5-and-css3-cheat-sheets-collection/

Resources (cont.)

- HTML5 Boilerplate
  - http://html5boilerplate.com/
- HTML5rocks
  - html5rocks.com
- HTML5 Please
  - html5please.com/#use

Assignment 1

- Using HTML5 Class Template
  - http://www.lib.montana.edu/~jason/files/html5-mobile-feed/template.html

1. Add header, nav, main, 3 section(s), aside, footer
2. Create <nav> with 3 anchor links corresponding to 3 section(s) using ids as anchor links
3. Add content (dummy text) into remaining tags
4. Add RDFa Lite microdata to page

Questions?

twitter.com/jaclark
www.lib.montana.edu/~jason/talks.php

http://www.gesteves.com/experiments/starwars.html