

HTML5 and CSS3:

New Markup & Styles for the Emerging Web

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pinboard.in #tag

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

twitter #hashtag

#nlshtml5

Overview

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

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



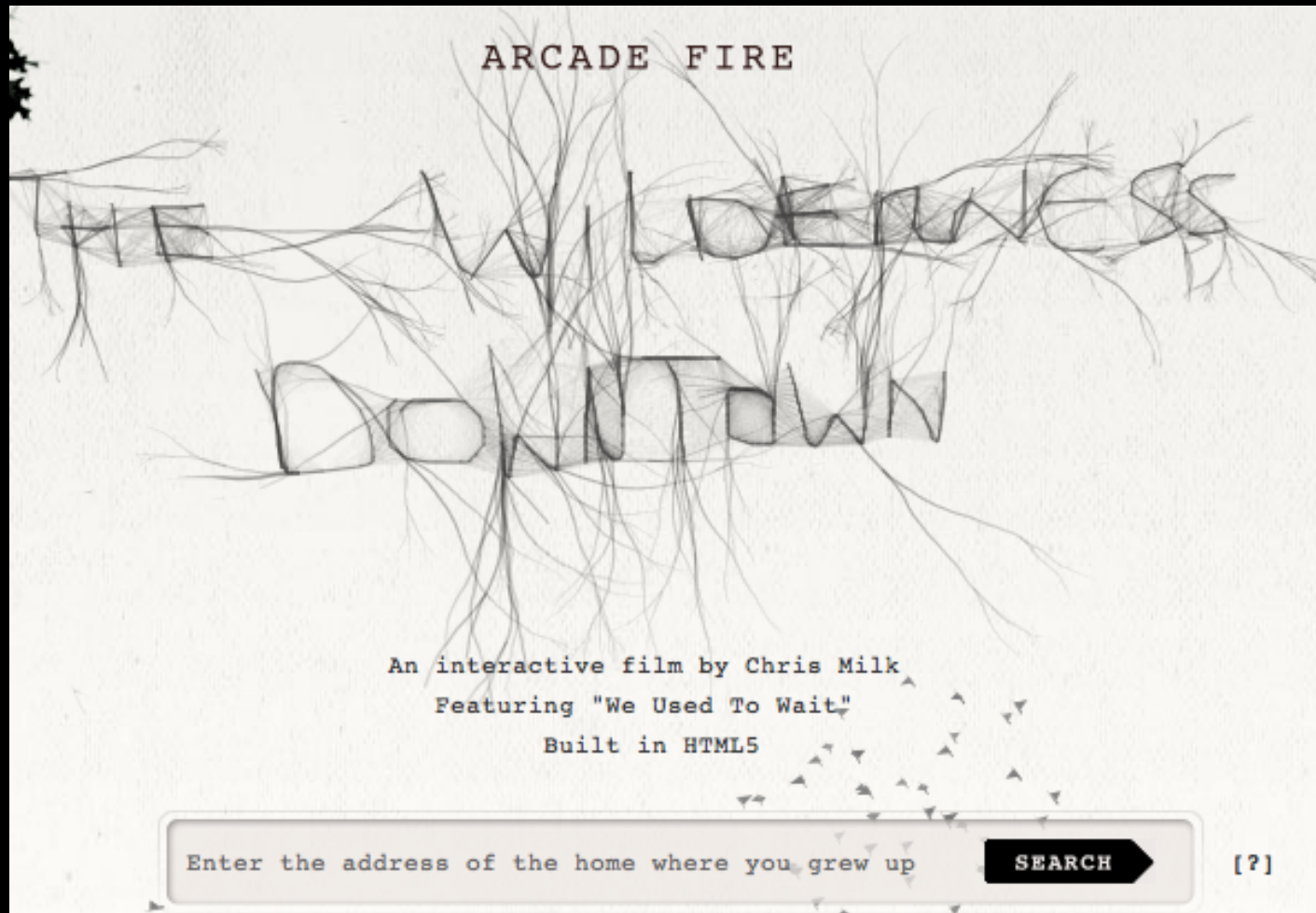
Links and Anchors

A link is the connection between one piece of hypertext and another.

```
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>

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
- New Javascript APIs
- Additions to CSS spec

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
- section
- article
- figure
- aside
- mark
- menu
- contenteditable attribute

Microdata

Markup for making HTML machine-readable

- itemscope
- itemtype
- itemprop

Microdata – Book Example

```
<dl itemscope
    itemtype="http://vocab.example.net/book"
    itemid="urn:isbn:0226500667"
<dt>Title</dt>
<dd itemprop="title">A River Runs Through It
    and Other Stories</dd>
<dt>Author</dt>
<dd itemprop="author">Norman Maclean</dd>
<dt>Publication date</dt>
<dd itemprop="pubdate">October 1, 2001</dd>
</dl>
```

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>
```

Forms <form>

- field types - email, date
- 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>

Javascript APIs

Desktop programming for the web

Minification + Optimization

- Removing unnecessary characters and spacing from code to reduce size, and optimizing the code to improve load times

Minify

<http://www.minifyjavascript.com/>

Optimize

<http://www.jslint.com/>

Selector APIs

- Find elements by matching against a group of selectors (tags or attributes in DOM).

```
querySelector()  
querySelectorAll()
```

```
var matchList =  
    document.querySelectorAll  
    ('li.old, li.new');
```

Geolocation

- w3c API
- accurate
- supported in Firefox 3.6, Safari 4

```
navigator.geolocation.getCurrentPosition();
```

File API, Drag & Drop API

- Uploading of files
- Drag & drop API in combination with a draggable attribute

History API

- Preserve the state of the page
- Enabling back button in client-side scripts

Fullscreen API

- Remove browser chrome
- “Turn off the lights”

```
function launchFullScreen(element) {  
    if(element.requestFullScreen) {  
        element.requestFullScreen();  
    }  
}
```

```
<button onclick="launchFullscreen  
    (document.documentElement);">Go  
Fullscreen</button>
```

Storage APIs

- Keep files
- Store keys/values
- Local databases

sessionStorage

- mega COOKIE
- Stores key/value pairs while page is open

localStorage

- mega COOKIE
- Stores key/value pairs that persist after page and browser are closed



Failed to open page



 <http://www.apple.com/startpage/>



 Google



You are not connected to the Internet.

Safari can't open the page "<http://www.apple.com/startpage/>" because your computer isn't connected to the Internet.

Network Diagnostics can help you solve network connection problems.

[Network Diagnostics...](#)

Offline Storage – Cache Manifest

- Work without a connection
 1. Create cache manifest file
 2. Set server to allow for manifest file type
 3. Link to manifest file in HTML <head>

CACHE MANIFEST

#store the files below

index.html

styles.css

images/logo.png

Scripts/global.js

Offline Storage - IndexedDB

My browser can haz database!

- Simple key/value store within browser
- Up to 5 MB of data storage
 - W3C discontinued Web SQL Database spec

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,
  menu, nav, section {display:block;}
</style>
</head>
<body>
<!-- ready to roll with HTML5 now -->
</body>
</html>
```

Evolution into CSS3

Rethinking web displays and styles

Vendor Prefixes

- Add support for emerging parts of CSS spec

Android: -webkit-

Chrome: -webkit-

Firefox: -moz-

Internet Explorer: -ms-

iOS: -webkit-

Opera: -o-

Safari: -webkit-

Box Sizing

- Set how the browser calculates the width of an element to include (or not include) padding, borders, and margins

```
div.doc {  
    width: 200px;  
    padding: 0 30px;  
    -webkit-box-sizing: border-box;  
    -moz-box-sizing: border-box;  
    box-sizing: border-box;  
}
```

Rounded Elements

- border-radius declaration
- smooth out your interfaces
- button effects

```
-moz-border-radius: 10px 5px;  
-webkit-border-top-left-radius: 10px;  
-webkit-border-top-right-radius: 5px;  
-webkit-border-bottom-right-radius: 10px;  
-webkit-border-bottom-left-radius: 5px;  
border-radius: 10px 5px;
```

Gradients/Opacity

- no more background images
- transparency

Selectors

- Target specific elements or markup in a series

`div[attr] and a[href$=pdf]`

Attribute selector (starts with, ends with, contains)

`ul > li`

Immediate descendant (child) selector

`td:last-child {border-right:0 none;}`

`li:nth-child(n+6) {color: grey;}`

Transitions

- Animation behavior
 - Scaling, fading, easing, etc.

```
body {  
  -o-transition:all .2s linear;  
  -moz-transition:all .2s linear;  
  -webkit-transition:all .2s linear;  
  transition:all .2s linear;  
}
```

Columns and Grids

- Layout and page structure
- Goodbye, float?

```
ul#content {  
  -webkit-column-count: 3;  
  -webkit-column-rule: 1px solid #eee;  
  -webkit-column-gap: 1em;  
  -moz-column-count: 3;  
  -moz-column-rule: 1px solid #eee;  
  -moz-column-gap: 1em;  
  column-count: 3;  
  column-rule: 1px solid #eee;  
  column-gap: 1em;  
  display: block;  
}
```



We landed on the moon and we left stuff there. A lot of it.

5 9 2 3 7

things left so far.



1 BIG DOUGHNUT



1 LAWNMOWER



1 ASTRO CAT



1 RECLINER



1 MAGIC GNOME

LATEST THING NEWS

New things discovered this week

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure **dolor in reprehenderit** in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat

TOP CATEGORIES

Furniture	185 items	
Fashion	4,729 items	
Pets	4 items	

CSS3 example - <http://css3exp.com/moon/>

Media Queries

- switch stylesheets based on width and height of viewport
- same content, new view depending on device

```
@media screen and (max-device-width:480px) {... mobile styles here... }
```

Media Queries in Action

```
<link rel="stylesheet"  
  type="text/css" media="screen  
  and (max-device-width:480px) and  
  (resolution: 163dpi)"  
  href="shetland.css" />
```

Responsive Web Design, Ethan Marcotte

<http://www.alistapart.com/articles/responsive-web-design>

@Font-Face

- bring in fonts
- use any licensed TrueType (.ttf) or OpenType (.otf) font
- independent of machine it's being rendered on...

Demos & Examples

It's your call....

[My Account](#) [Log Out](#)

DCL eReader [Return To Catalog](#)

Pride and Prejudice by Jane Austen

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PRIDE AND PREJUDICE

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Hide TOC

Chapter 1

It is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife.

However little known the feelings or views of such a man may be on his first entering a neighbourhood, this truth is so well fixed in the minds of the surrounding families, that he is considered the rightful property of some one or other of their daughters.

"My dear Mr. Bennet," said his lady to him one day, "have you heard that Netherfield Park is let at last?"

Mr. Bennet replied that he had not.

"But it is," returned she; "for Mrs. Long has just been here, and she told me all about it."

Mr. Bennet made no answer.

"Do you not want to know who has taken it?" cried his wife impatiently.

"You want to tell me, and I have no objection to hearing it."

This was invitation enough.

"Why, my dear, you must know, Mrs. Long says that Netherfield is taken by a young man of large fortune from the north of England; that he came down on Monday in a chaise and four to see the

Hide Controls

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://remysharp.com/2009/01/07/html5-enabling-script/>

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

Questions?

twitter.com/jaclark

www.lib.montana.edu/~jason/talks.php

Episode IV

A NEW HOPE

It is a period of civil war.
Rebel spaceships, striking
from a hidden base, have won
their first victory against
the evil Galactic Empire.

During the battle, Rebel
forces managed to steal secret
plans to the Empire's