HTML5 and CSS3:
New Markup & Styles for the Emerging Web

Jason Clark
Head of Digital Access & Web Services
Montana State University Libraries

twitter #hashtag

#cilhtml5

pinboard.in #tag

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

Terms: HTML, CSS, API

Does everybody know what these elements are?

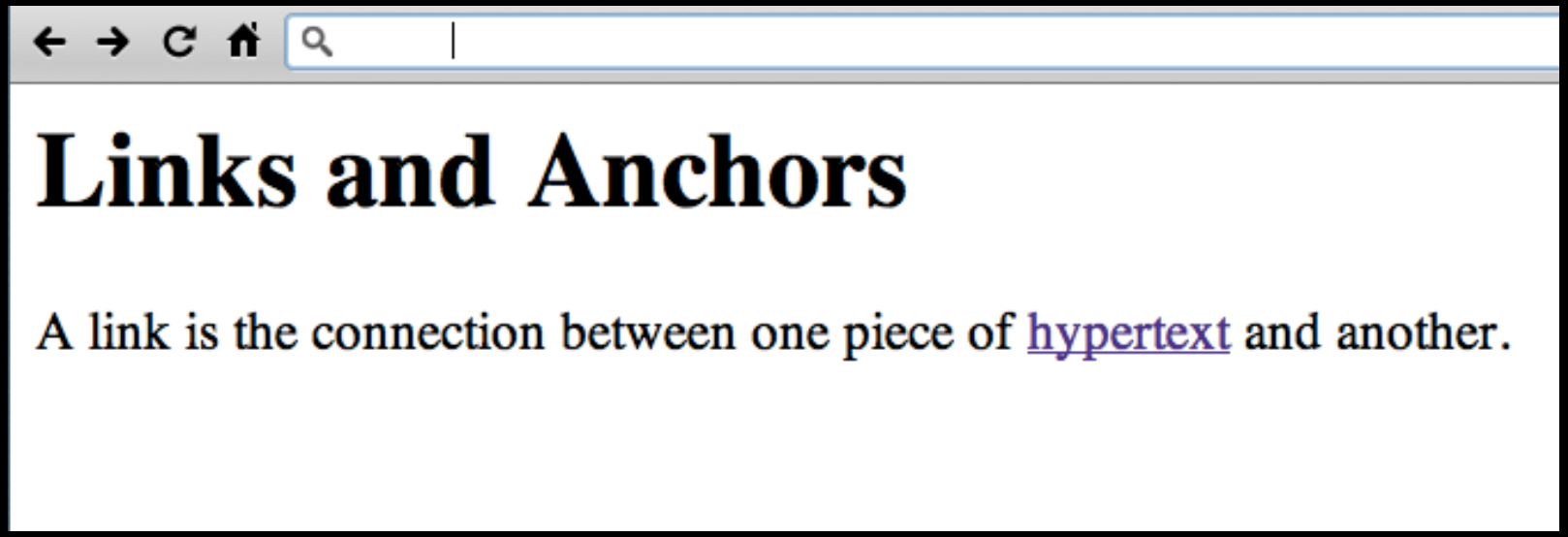
CSS
- style rules for HTML documents

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

Overview

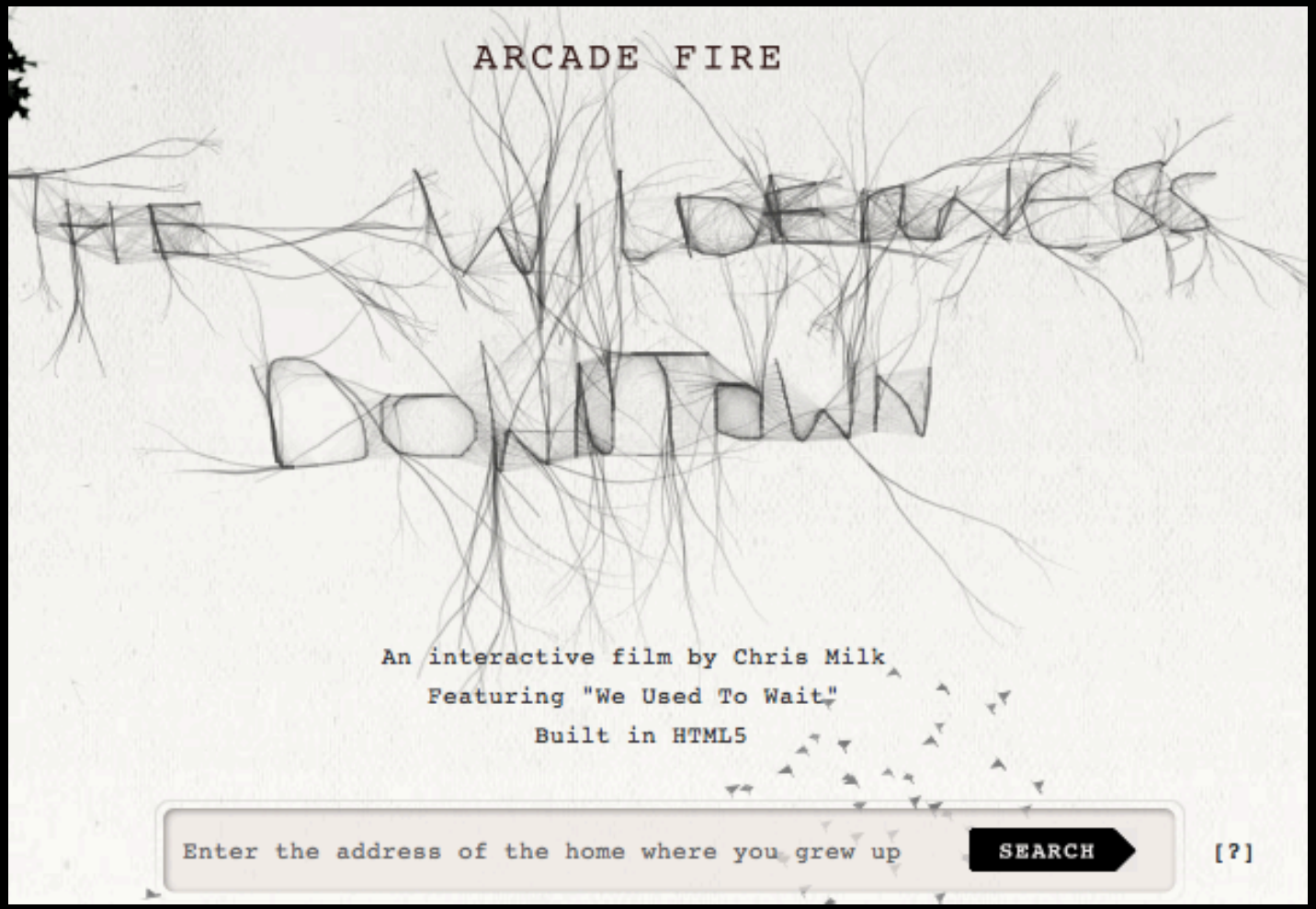
- Revolution or Evolution?
- New Features and Functions
- Demos
- Getting Started
- Questions




```
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/~jason/files/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
- aside
- mark
- 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

Geolocation

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

File API, Drag & Drop API

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

History API

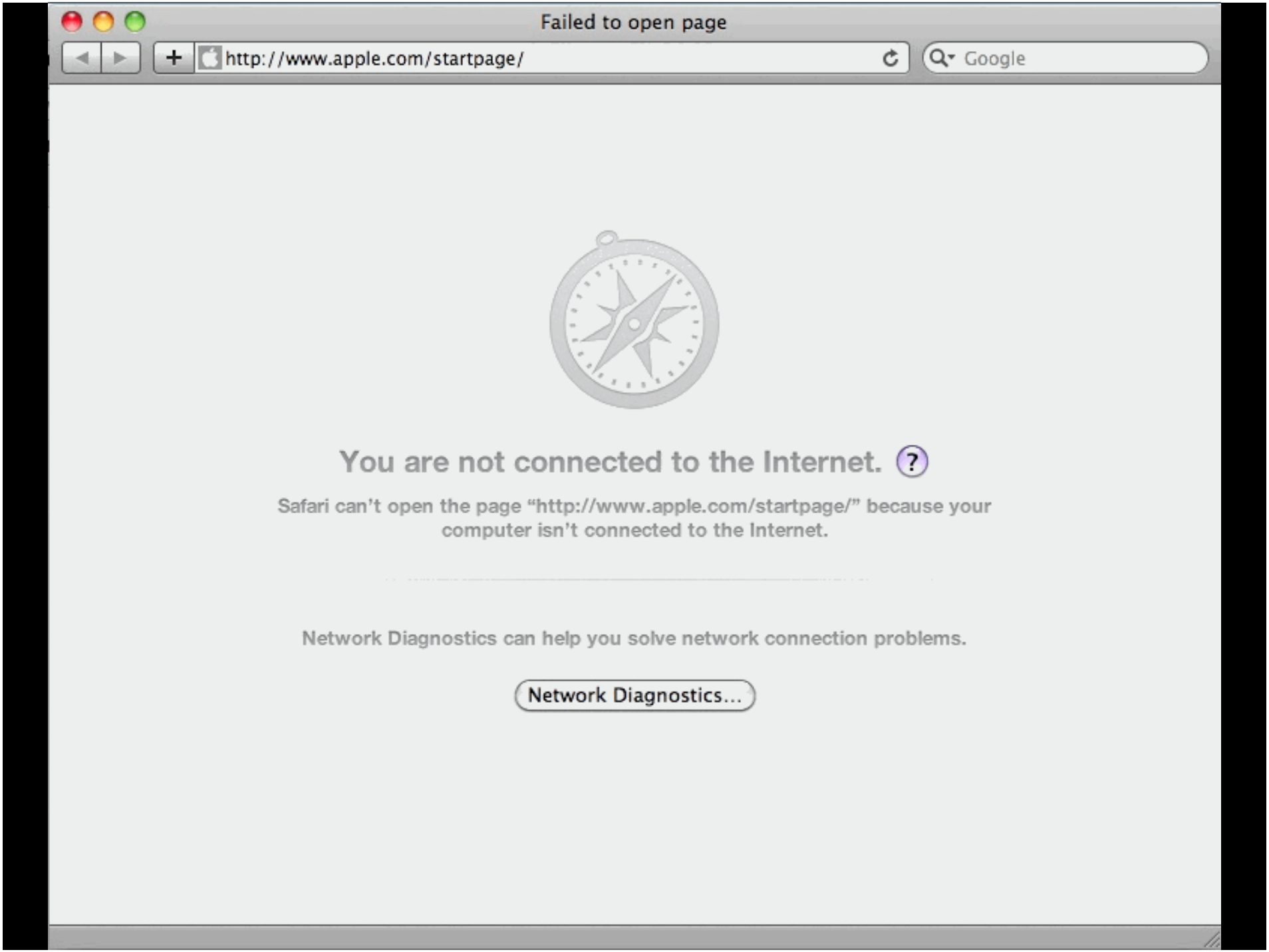
- Preserve the state of the page
- Enabling back button in client-side scripts

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, dialog, 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

Rounded Elements

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

Gradients/Opacity

- no more background images
- transparency

Transitions

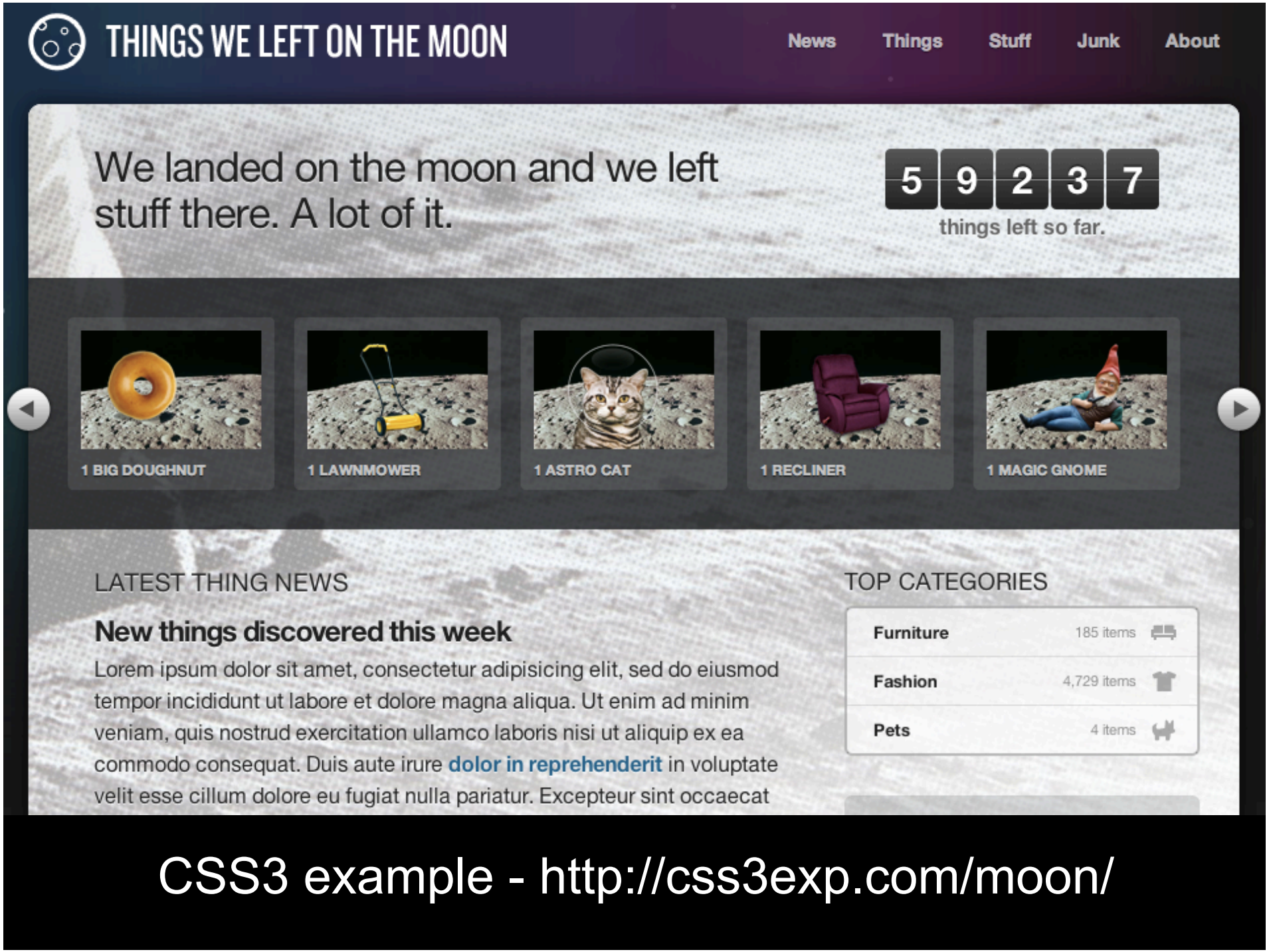
- Animation behavior
  - Scaling, fading, easing, etc.

```
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;
}
```



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

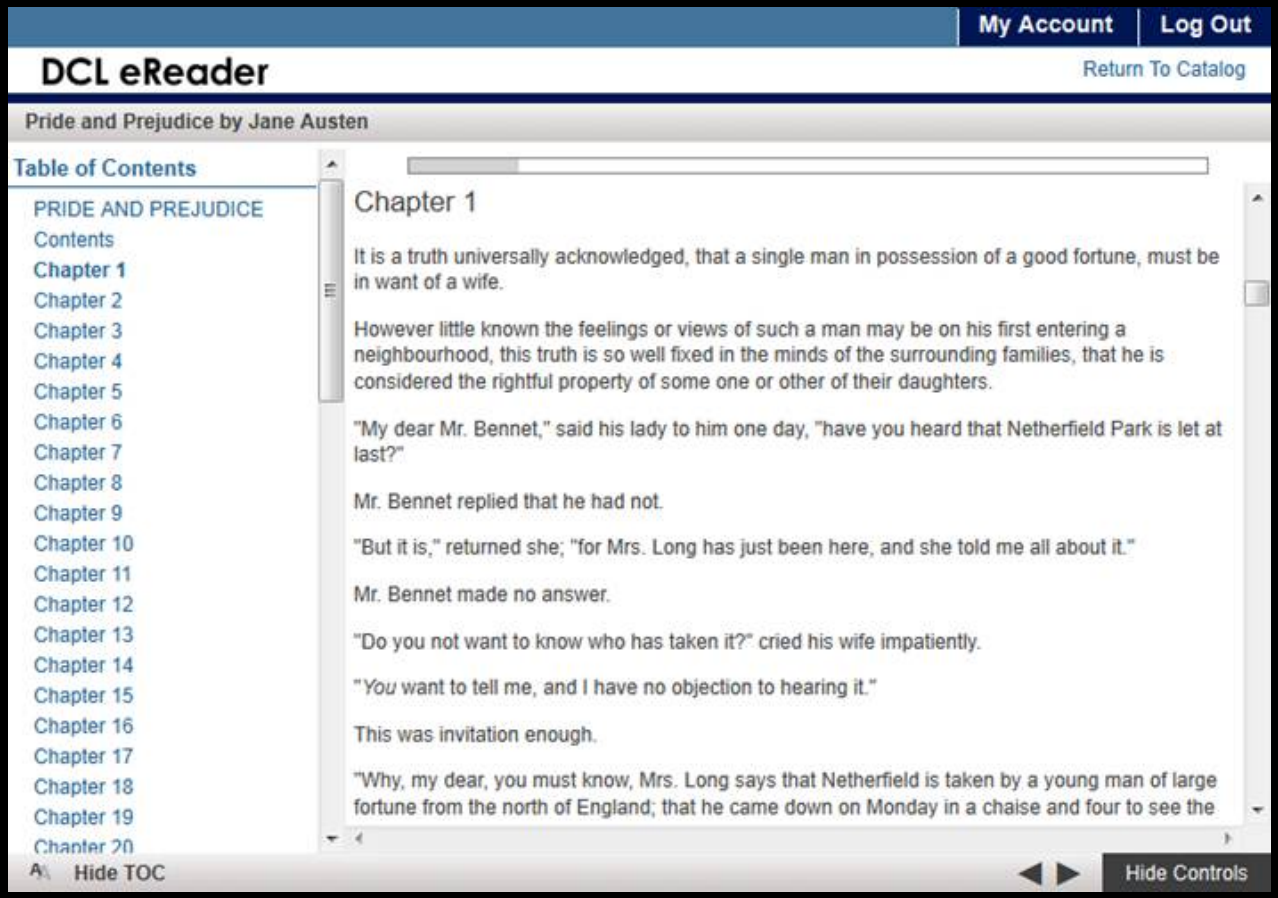
- bring in fonts
- use any licensed TrueType (.ttf) or OpenType (.otf) font
- independent of machine it's being rendered on...

Demos & Examples

It's your call....

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://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

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