Intro, Version Control, HTML5

CS147L Lecture 1
Mike Krieger

Hello!

- A little about me.

Hello!

- And a little bit about you?

By the end of today

- Know what this lab will & won't teach you
- Have checked out week 1's materials from SVN
- Make a basic, iPhone-friendly HTML5 document with a list and a video tag

Administrivia

- 1 unit, pass/fail
  - Course credit = at least 8 of 9 lectures
  - Honor code statement

What this class **is** about

- Practical skills, applied to weekly assignments
- HTML5, Javascript, CSS, and Python
- Emphasis on mobile
- Version control & Google Analytics

What this class **isn't** about

- Objective-C and Cocoa (take CS193p instead)
- Cross-platform Javascript development (IE issues, etc)

What can't you do with a webapp?

- Real-time accelerometer (but can detect rotation changes)
- Device APIs like e-mail, CoreData...

Some iPhone Webapps

(demo in iPhone simulator)

Should I take this class?

- "I've programmed a bit before, but haven't ever written a web application" (take whole class)
- "I've done web development, but not worked with rich web applications or mobile" (take whole class)
- "I'm experienced in Web and mobile development" (don't take for credit, come to lectures you're interested in)

Quarter Project

- No hand-in assignments
- Weekly, incremental project: a cs147 portfolio (you can show this off later)
- Weekly checkouts from Subversion

Quarter at a glance

2. CSS
3. CSS & Javascript
4. Javascript & jQuery, touch events
5. Video Prototyping
6. iPhone-specific features (location, etc)
7. Server-side
8. Server-side, part 2
9. Google Analytics & Experimentation
10. *Dead week* — no class, but I'll be here if you have Q's

Google Group

- http://groups.google.com/group/cs147-tech-2009
  - TAs will be on hand to answer questions
  - Help each other out as well
  - I'll address recurring Q's in lab

Version control

- Why version control?
- Free hosting options

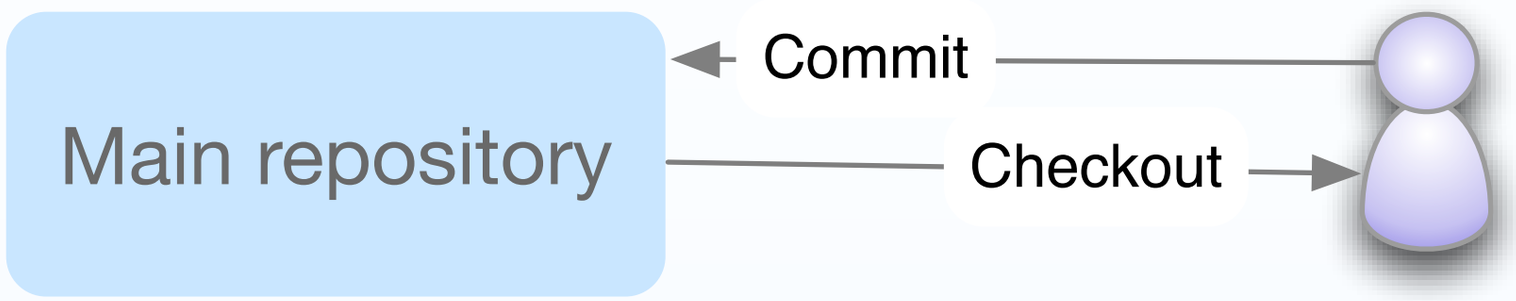
Thursday, September 24, 2009

useful real-world; you're guaranteed to need it in a job, and it'll get you up and running faster. Also, it'll help you collaborate with your team-mates and avoid losing / overwriting work

Get Subversion (SVN)

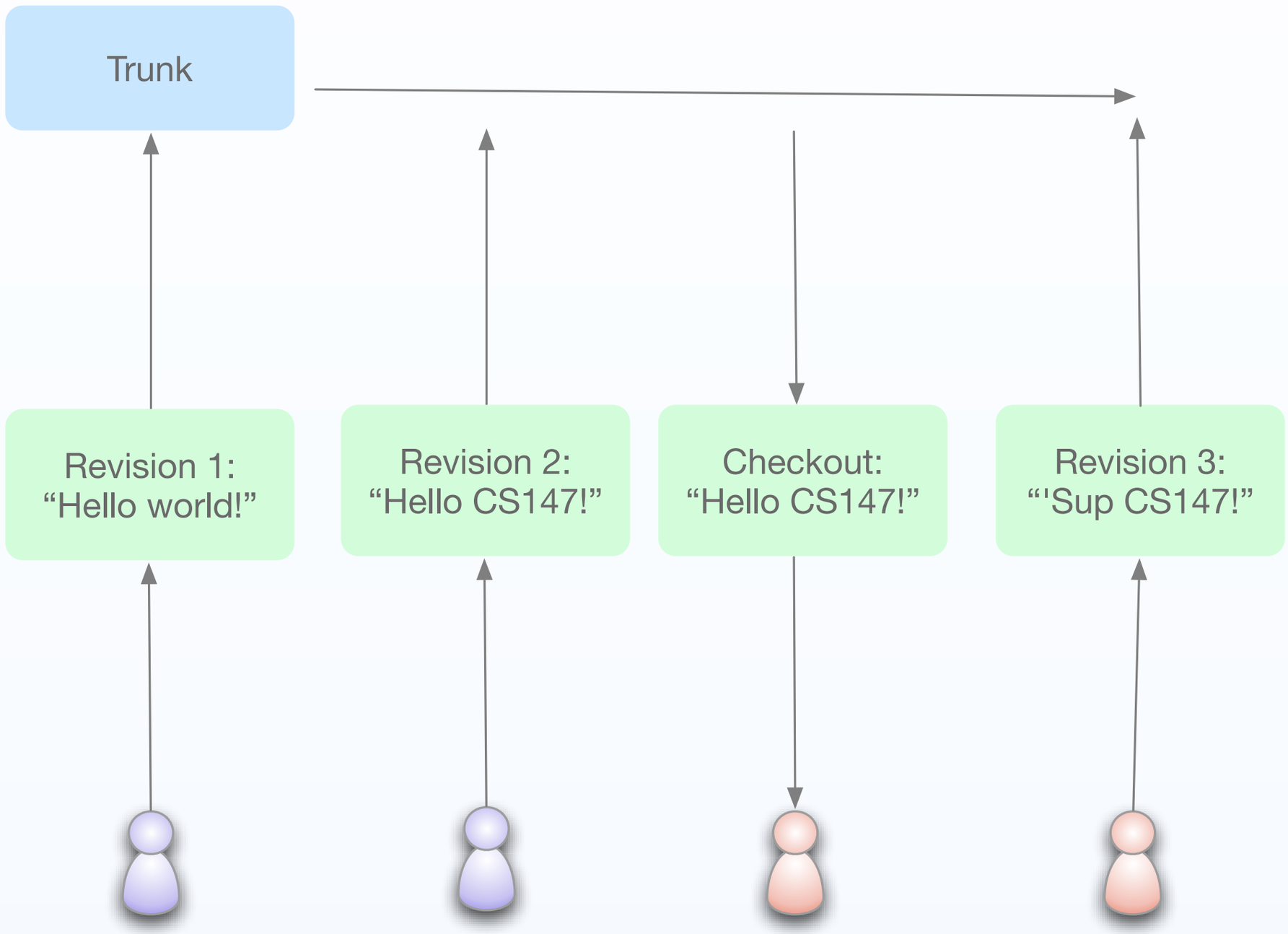
- Mac: you're done!
- Windows: http://subversion.tigris.org/getting.html
  - Explorer integration: http://tortoisesvn.tigris.org/
- Linux: you're (probably) already done

How traditional version control works



In

How version control works



Checkout our code

```
svn checkout http://cs147lab.googlecode.com/svn/trunk/
```

Your own code

- Will help set up a group repository later in the quarter.

Questions?

Web Development Intro

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What makes WebDev hard?

- Cross-platform issues make browser-specific hacks common
- Javascript is weakly-typed, so bugs can sometimes be hard to track down
- No single language to keep things together; Javascript talking to a variety of back-end systems

What makes Web Dev fun?

- Instant gratification!
- Huge reach for web apps
- and we're lucky...iPhone web apps can make a lot of assumptions

The 4 components

HTML

content

hello world

CSS

style

div { font-weight: bold}

Javascript

action

$('div').click(function...

Server-side

communication

onRequest: return {"hello":"world"}

Today: HTML5

- I'll assume...
  - you've had at least a little bit of experience with basic HTML & tags

A (brief) history of HTML

- Hypertext is an old idea
- Gopher v HTML, ca 1991
- Today: 3 main rendering engines

(Vannevar Bush)

Presto, WebKit, Gecko

HTML Structure

- An enclosing **<html>** tag
- A **<head>**er section
  - External Javascript & CSS, metadata
- A **<body>**
  - your content goes here

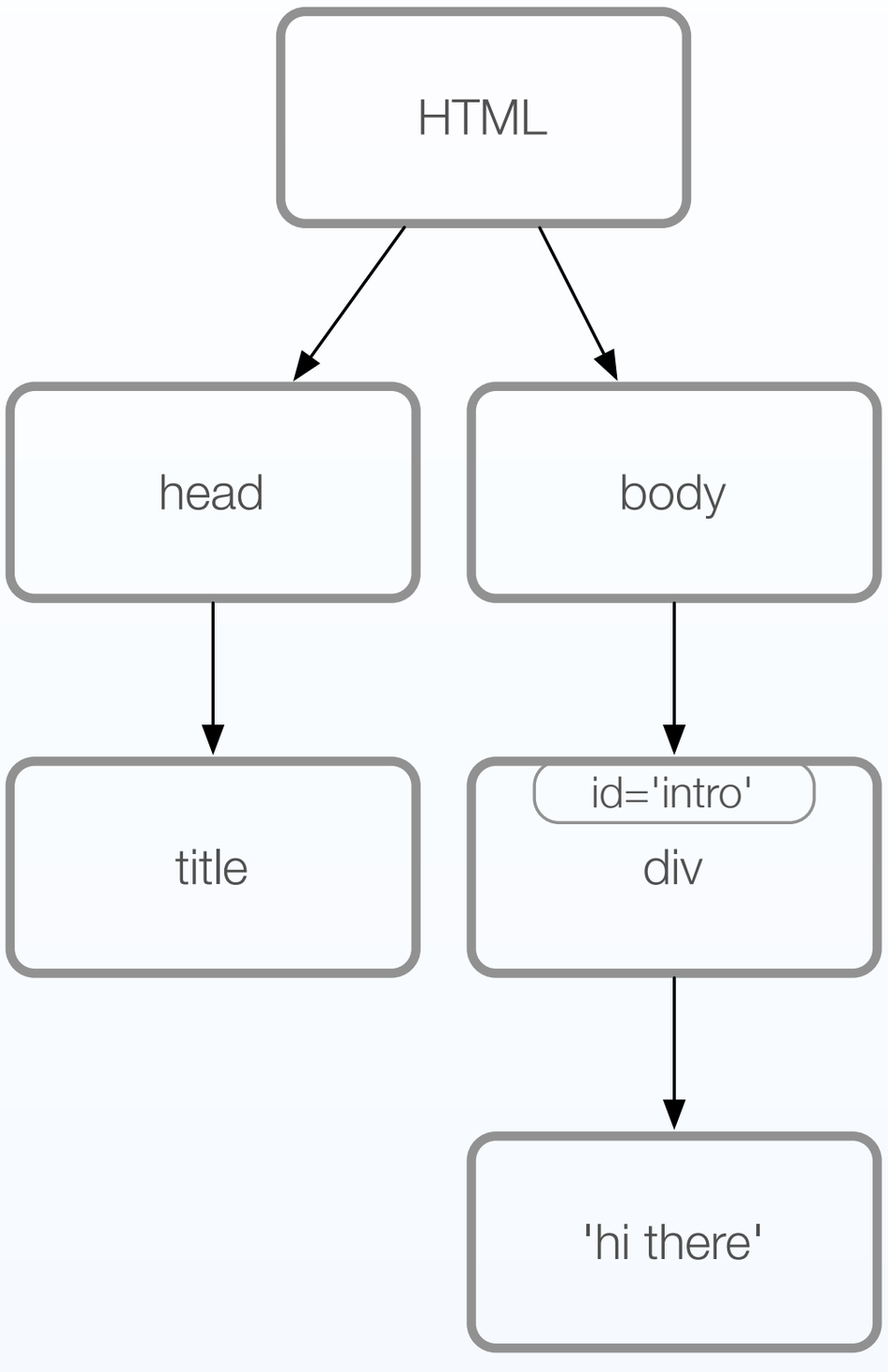
In the background…

- Browser **parses** your written HTML tags
- Builds a **Document Object Model** (DOM) representation
- Displays the **rendered DOM** to the user
- Waits for **user interaction**

The **DOM**

- Cross-browser standard
- How HTML ends up as a bunch of **nodes**

A sample DOM tree




```
document.getElementById('intro')

document.body.firstChild;
```

```
<html>
    <head>
        <title>My first page</title>
    </head>
    <body>
        <div id=‘intro’>hi there</div>
    </body>
</html>
```

What goes in the head?

- **<script>**: in-line or external Javascript
- **<link>** and **<style>**: CSS
- **<title>**: page title, shown by browser
- **<meta>**: metadata, not shown to user

What goes in the body?

- ** **: a section of your page
- ****: a piece of styled text
- **<table>**, **<tr>**, **<td>**: tables
- **<form>**, **<input>**: form elements
- **<ul>**, **<ol>**, **<li>**: list elements
- **<a>**: clickable links

Tables or s?

- Some would argue: http://giveupandusetables.com
  - Tables faster to get off the ground
  - s more accessible
  - iPhone, probably easier to it

http://giveupandusetables.com

(X)HTML

- Most websites today are HTML 4.01 or XHTML
- XHTML = strict(er) HTML
  - every tag needs to be closed
  - attributes need to be quoted
  - self-closing tags (**
**)

HTML5

- Proposed standard
- New APIs: drag & drop, inter-document communication, localStorage (SQL on device)
- New elements: <canvas>, <audio>, <video>, <nav>, <footer>, etc.
- iPhone supports many of these

Deconstruction

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Language Tools

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div

mikekrieger@gmail.com | iGoogle | Settings ▼ | Sign out

a

Advanced Search
Language Tools

form

Google Search | I'm Feeling Lucky

Advertising Programs - Business Solutions - About Google

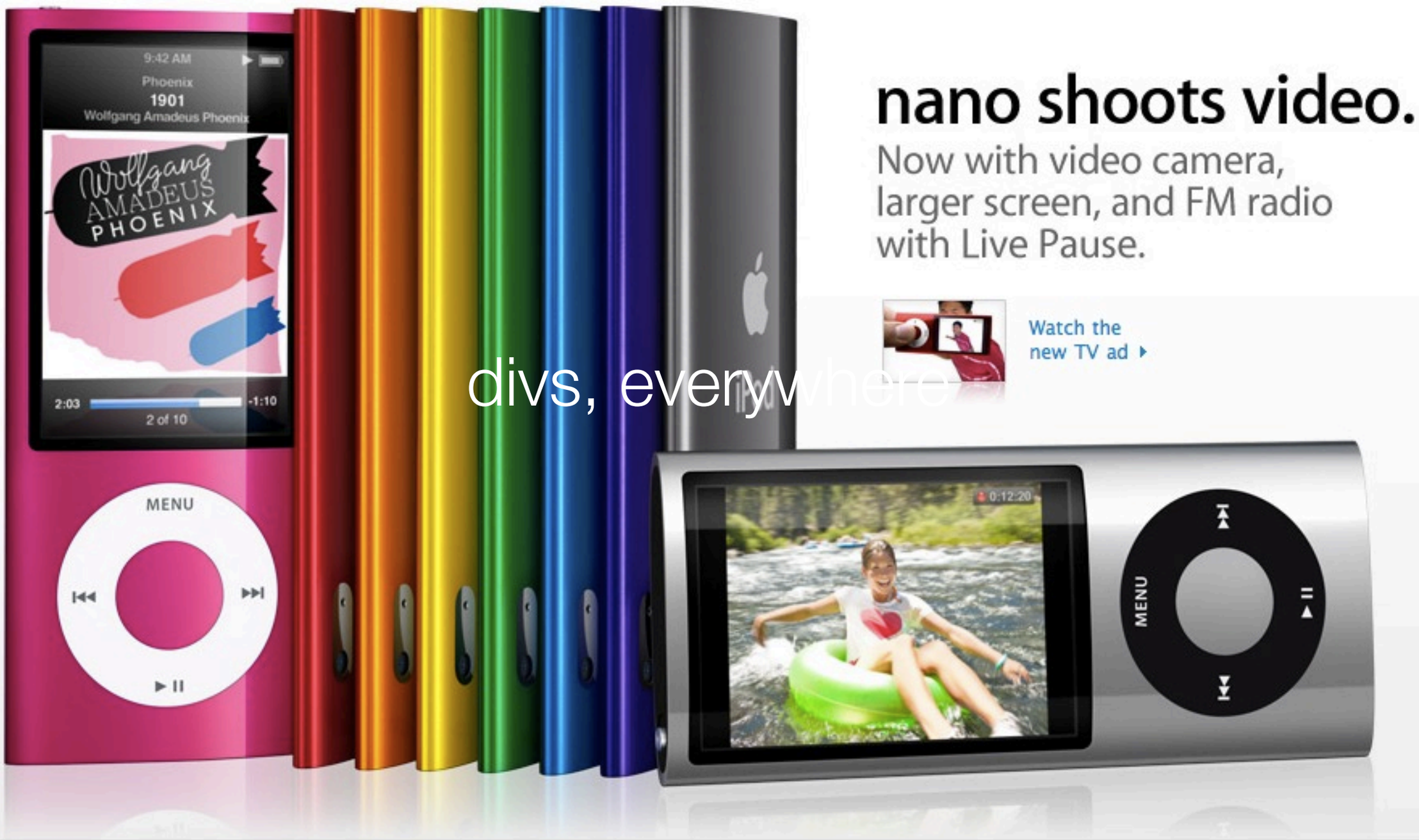
font

©2009 - Privacy

center

body

Store | Mac | iPod + iTunes | iPhone | Downloads | Support | Search



nano shoots video.

Now with video camera, larger screen, and FM radio with Live Pause.

Watch the new TV ad ▸

divs, everywhere

Hot News Headlines | Apple's New iPod nano "another winner"

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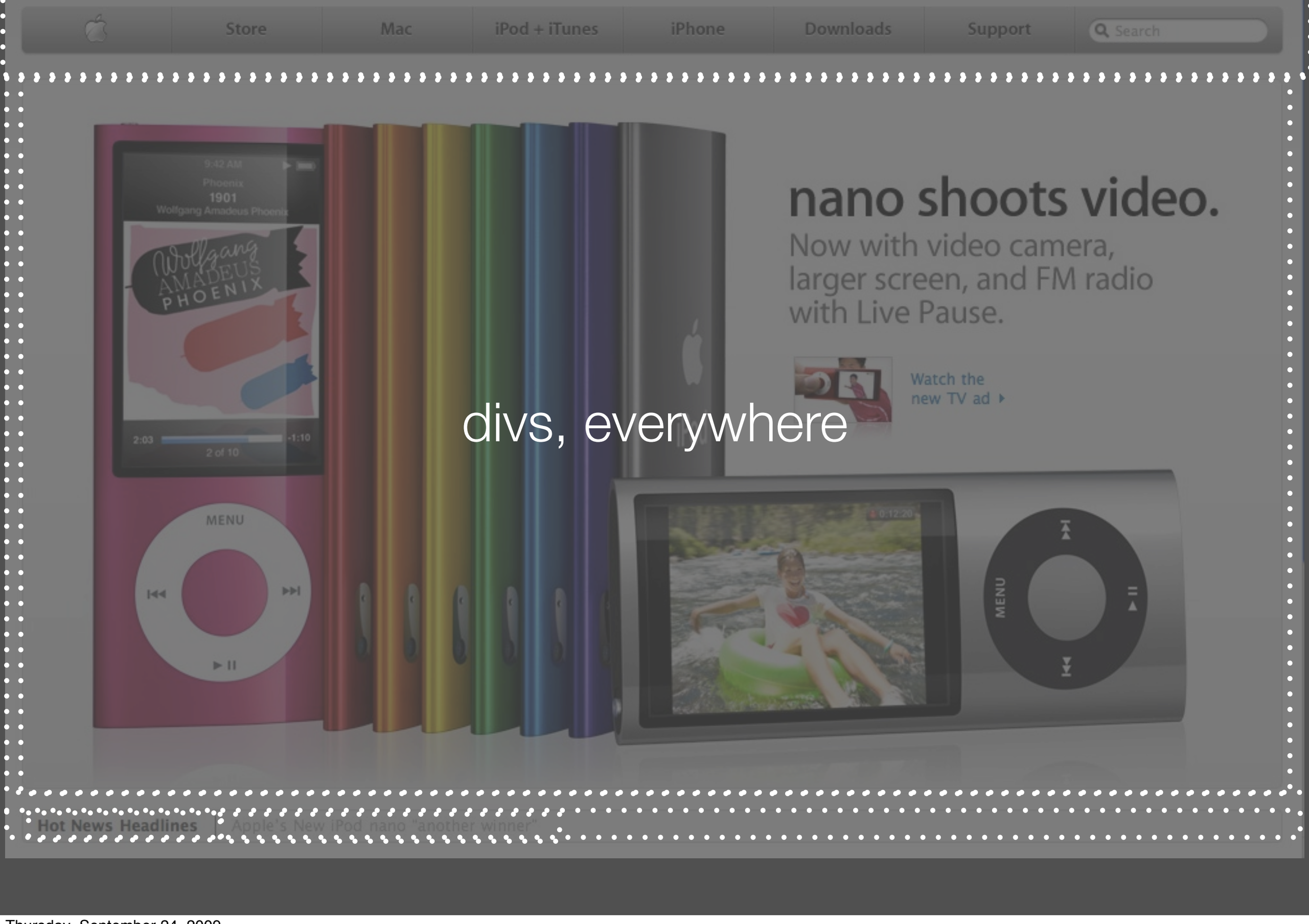

divs, everywhere

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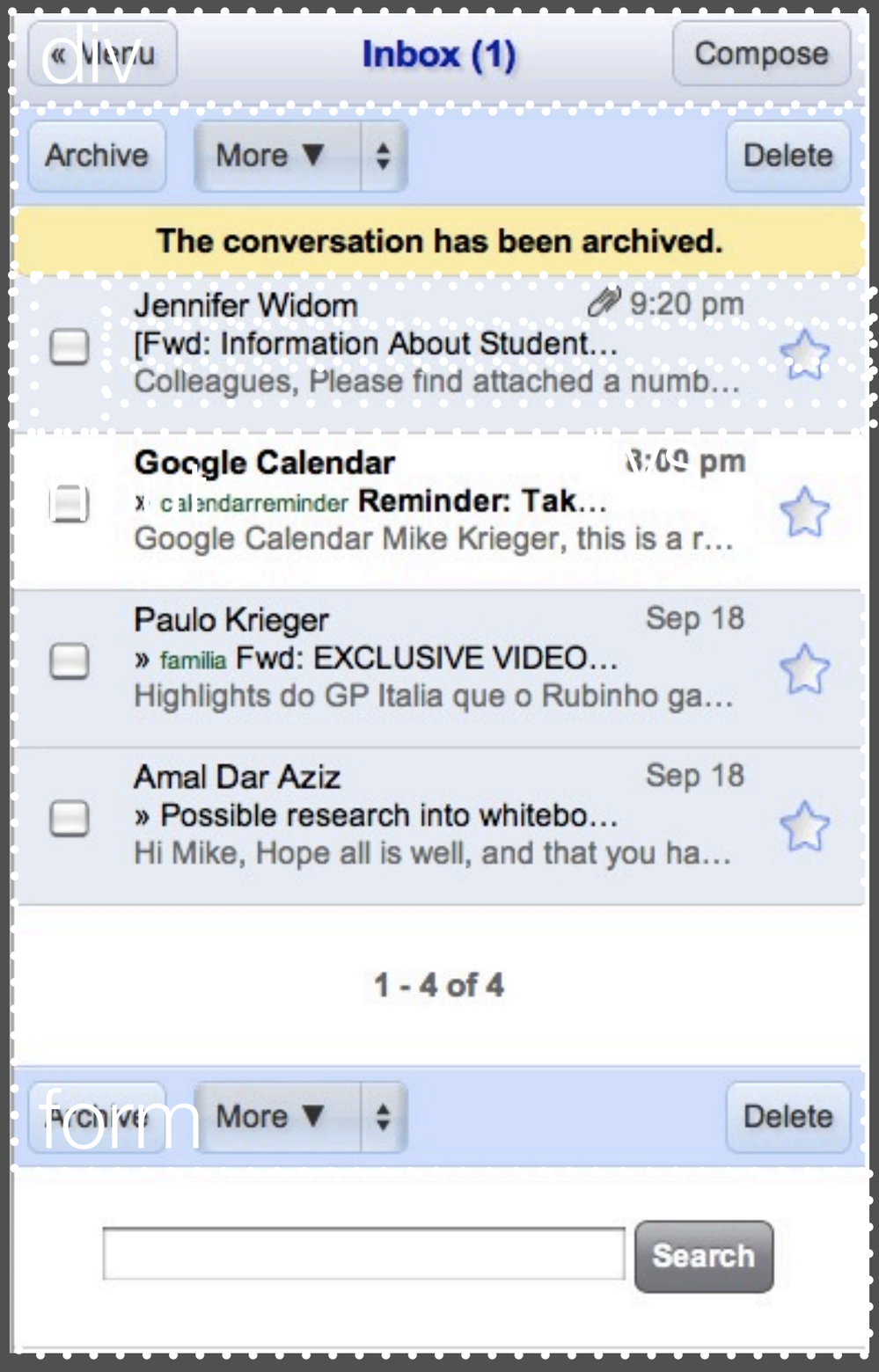
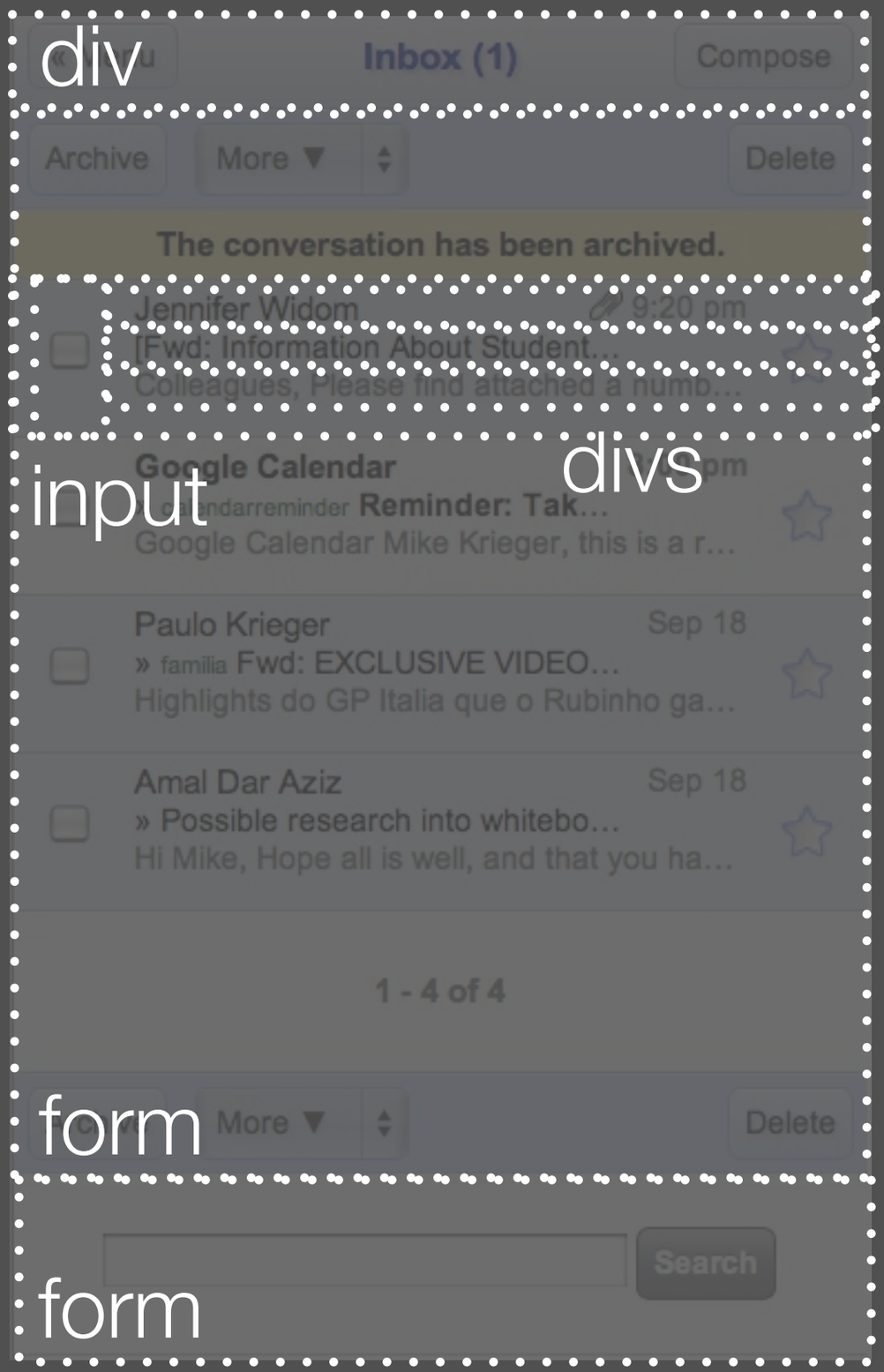


Gmail for iPhone



Gmail for iPhone

SnowStack

Click here to open the Snow Stack live demo.

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demo in browser: Click here to open the Snow Stack live demo.

SnowStack

Click here to open the Snow Stack live demo.

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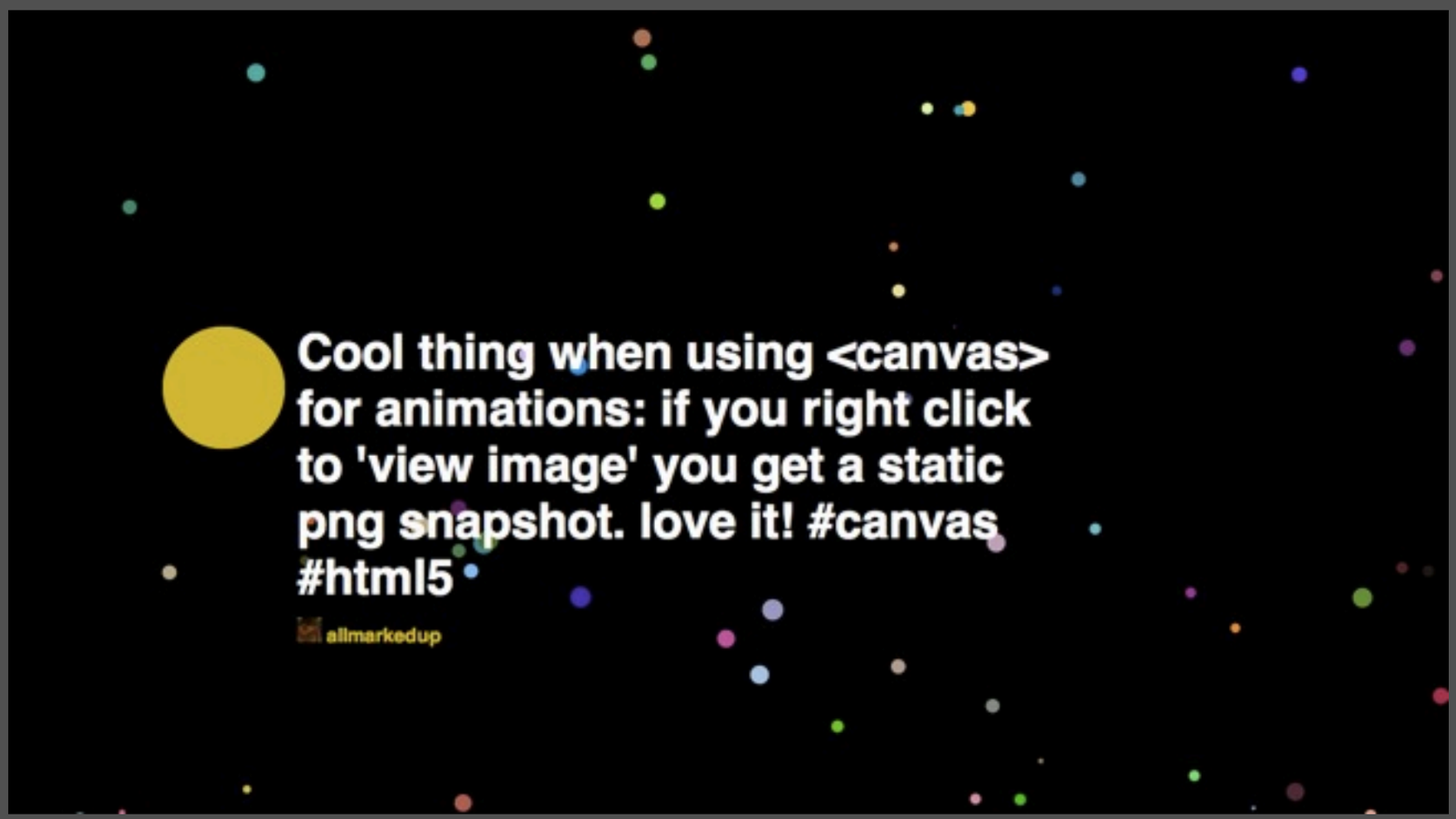
demo in browser: Click here to open the Snow Stack live demo.



Canvas & Audio Experiment

http://9elements.com/io/projects/html5/canvas/

Cool thing when using <canvas> for animations: if you right click to 'view image' you get a static png snapshot. love it! #canvas #html5

allmarkedup

<canvas>

audio

Canvas & Audio Experiment

http://9elements.com/io/projects/html5/canvas/

iPhone-specific HTML

resource:

http://developer.apple.com/safari/library/codinghowtos/Mobile/UserExperience/index.html

Setting device width

- In your header:

```
<meta name="viewport"
content="width=device-
width" />
```

Disabling zooming

- In your header:

```
<meta name="viewport"
content="width=device-width,
user-scalable=no" />
```

Detect rotation

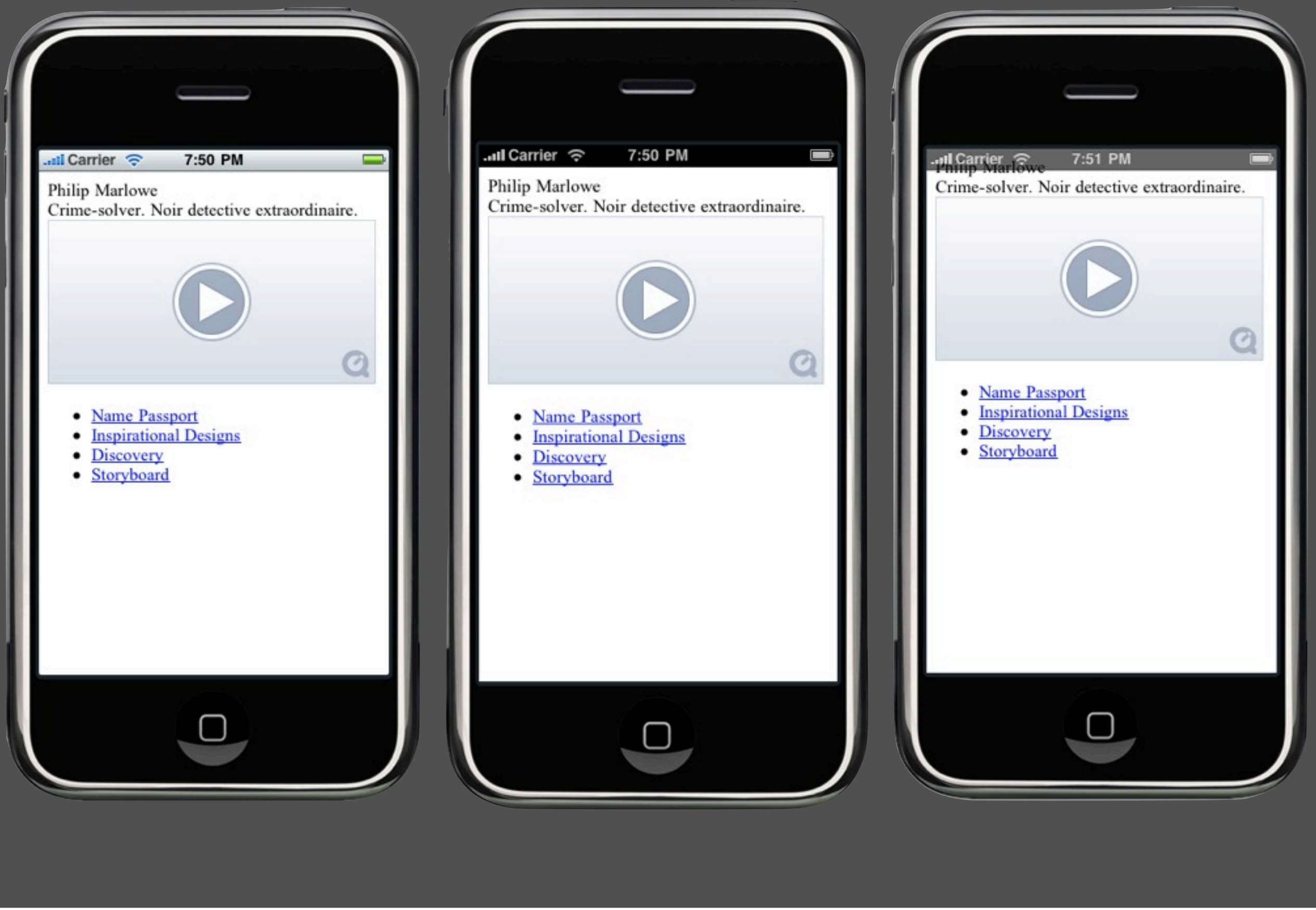
- In your body tag:

```
<body
onorientationchange='doSometh
ing()'>
```

Change status bar

- In your body tag:

```
<meta name="apple-mobile-web-
app-status-bar-style"
content="grey|black|black
translucent" />
```


Carrier
7:50 PM
Philip Marlowe
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard
Carrier
7:50 PM
Philip Marlowe
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard
Carrier
7:51 PM
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard

Making your app full-screen

- In your header:

```
<meta name="apple-mobile-web-app-capable" content="yes" />
```

Home screen icon

- In your header:

```
<link rel="apple-touch-icon"
href="my-icon-name.png"/>
```

Video and Audio

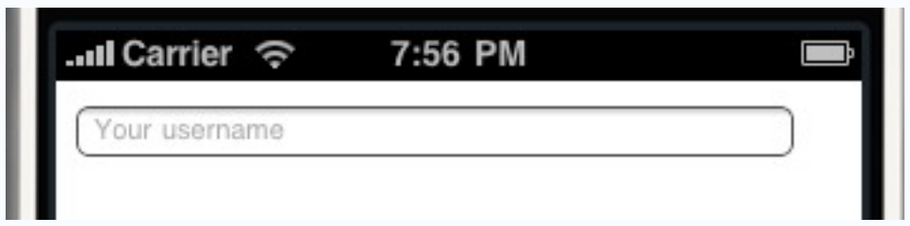
- In your body element:

```
<video width="640" height="360"
src="video.mp4" autobuffer>

<audio src="song.m4a">
```

Form field with pre-filled values

```
<input type='text'
placeholder='Your username' />
```



Search boxes

```
<input type='search' />
```

attributes:

results: number of results

autosave: id for autosaving searches

incremental: search as you type?

onsearch: search event handler

Detecting touch events

```
<div ontouchstart='doSomething
()' />
```

(we'll do more of this in the Javascript events)

Portfolio: Part 1

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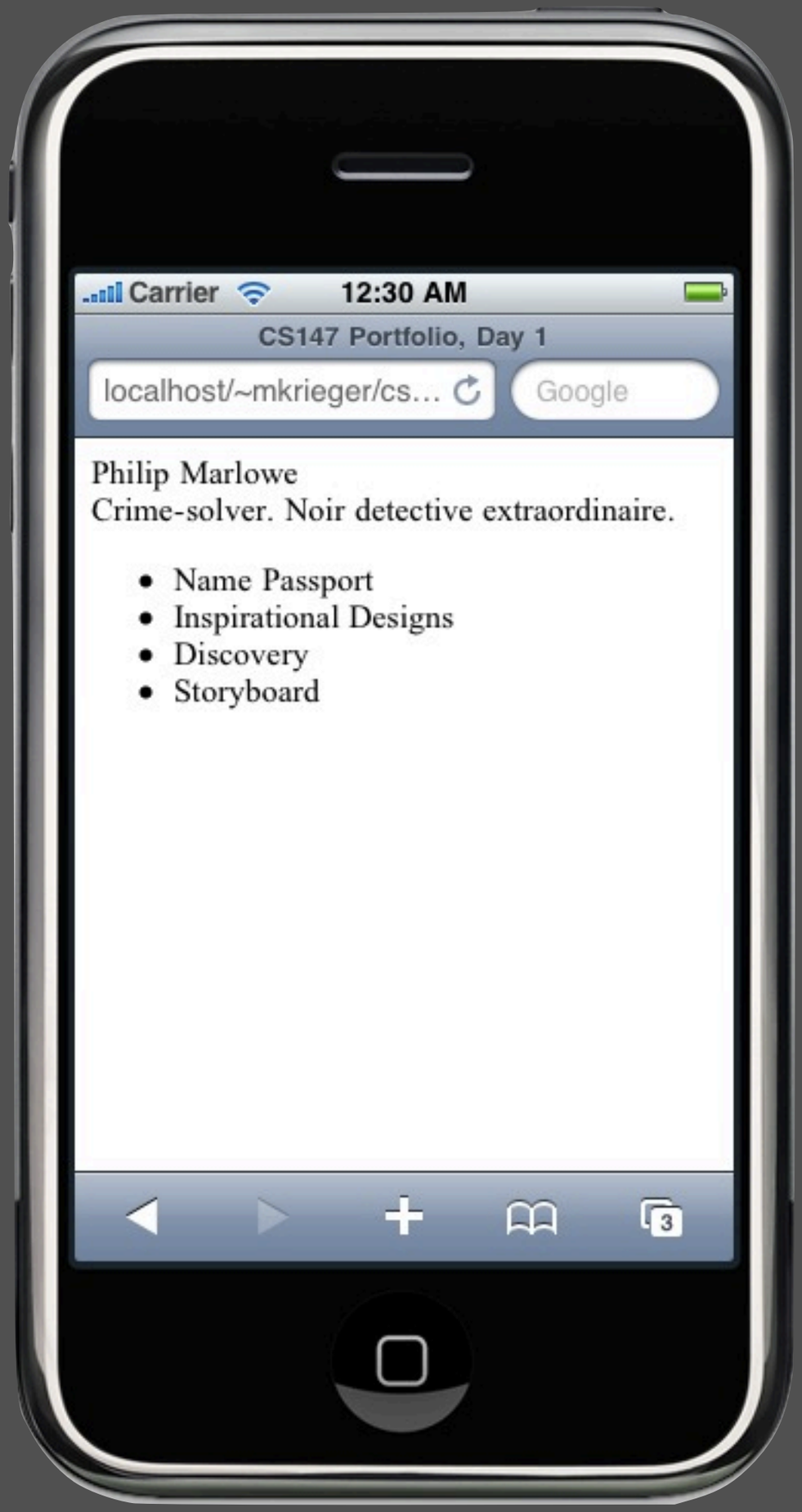
```
<!DOCTYPE html>

<html>

    <head>

        <title>CS147 Portfolio</title>

    </head>

    <body>

        <div id='fullname'>Philip <span id='last-name'>Marlowe</span></div>

        <div id='bio'>Crime-solver. Noir detective extraordinaire.</div>

        <ul id='assignments'>

            <li>Name Passport</li>

            ...

        </ul>

    </body>

</html>
```

Carrier
12:27 AM
CS147 Portfolio, Day 1
localhost/~mkrieger/cs…
Google
Philip Marlowe
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard
3

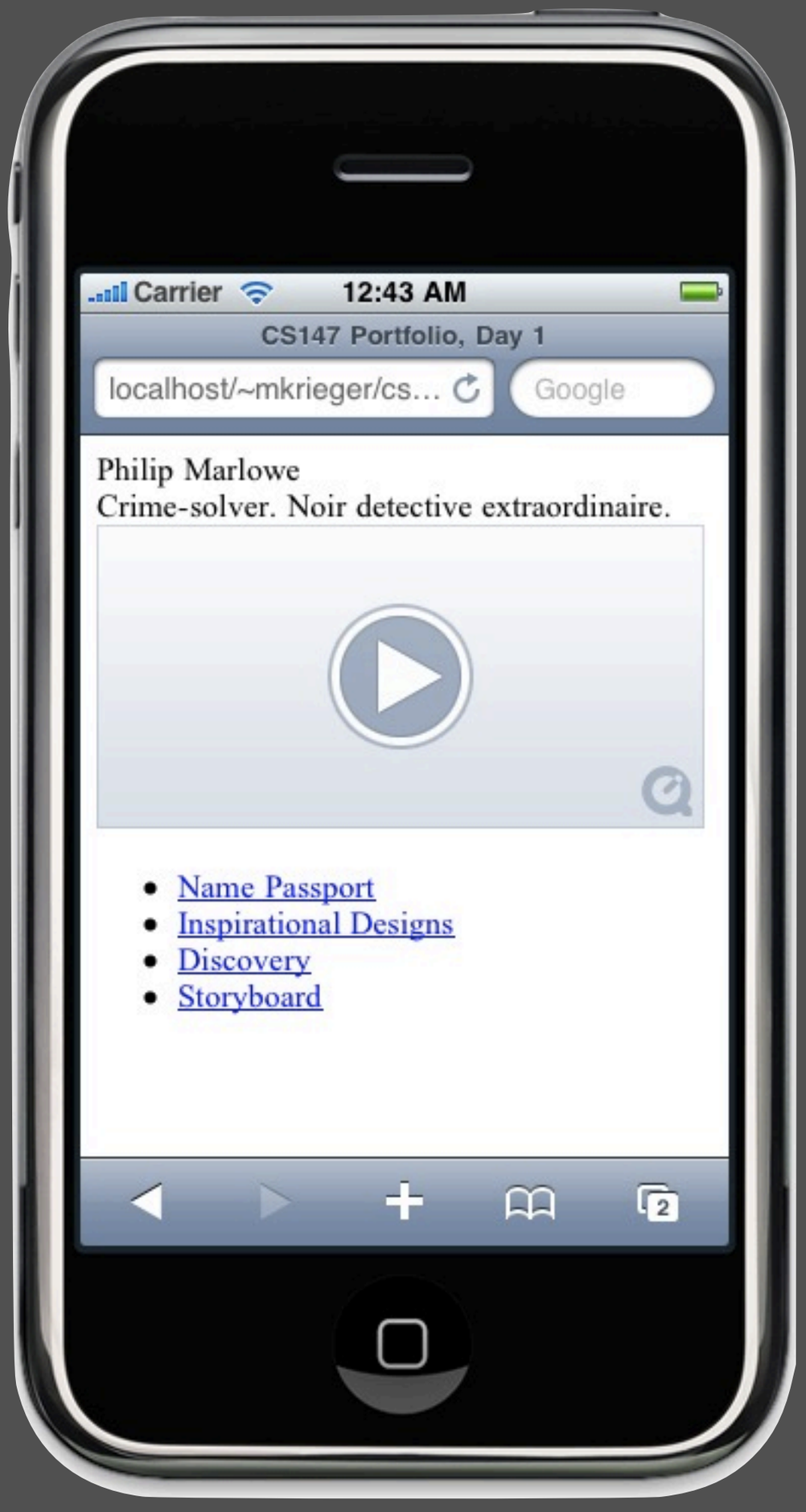
```
<!DOCTYPE html>

<html>

    <head>

        <title>CS147 Portfolio, Day 1</title>

        <meta name=”viewport” content=”width=device-width, user-scalable=no” />

    </head>

    <body>

        <div id='fullname'>Philip <span id='last-name'>Marlowe</span></div>

        <div id='bio'>Crime-solver. Noir detective extraordinaire.</div>

        <ul id='assignments'>

            <li>Name Passport</li>

            ...

        </ul>

    </body>

</html>
```


Carrier
12:30 AM
CS147 Portfolio, Day 1
localhost/~mkrieger/cs…
Google
Philip Marlowe
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard
3

```
<!DOCTYPE html>

<html>

    <head>

        <title>CS147 Portfolio, Day 1</title>

        <meta name="viewport" content="width=device-width, user-scalable=no" />

    </head>

    <body>

        <div id='fullname'>Philip <span id='last-name'>Marlowe</span></div>

        <div id='bio'>Crime-solver. Noir detective extraordinaire.</div>

        <ul id='assignments'>

            <li><a href="name-passport.html">Name Passport</a></li>

            <li><a href="inspirational-designs.html">Inspirational Designs</a></
li>

        .....
```

Carrier
12:39 AM
CS147 Portfolio, Day 1
localhost/~mkrieger/cs...
Google
Philip Marlowe
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard
2

```
<!DOCTYPE html>
<html>
    <head>
        <title>CS147 Portfolio, Day 1</title>
        <meta name="viewport" content="width=device-width, user-scalable=no" />
    </head>
    <body>
        <div id='fullname'>Philip <span id='last-name'>Marlowe</span></div>
        <div id='bio'>Crime-solver. Noir detective extraordinaire.</div>
        <video src='marlowe.mp4'></video>
        <ul id='assignments'>
        .....
```


Carrier
12:43 AM
CS147 Portfolio, Day 1
localhost/~mkrieger/cs…
Google
Philip Marlowe
Crime-solver. Noir detective extraordinaire.
Name Passport
Inspirational Designs
Discovery
Storyboard

By the end of today

- ✓ Know what this lab will & won't teach you
- ✓ Have checked out week 1's materials from SVN
- ✓ Make a basic, iPhone-friendly HTML5 document with a list and a video tag

Next week

- CSS: how to quickly go from basic, boring text and s to a rich-looking layout

Questions?