

Building a solid webapp is a challenge for all developers, but a plethora of tools have emerged recently to assist you. From starting boilerplates, to performance tuning and build tools, you'll get a full overview of the tooling ecosystem. In this session, you'll learn which mature and valuable open source projects can save you time as well as get answers to common questions in building a webapp.

---



About Paul Irish

[View full profile](#)

Paul does developer relations for Chrome. He also develops the feature detection library Modernizr and created HTML5 Boilerplate, HTML5 Please, and developer community initiatives like Move the Web Forward.



# Better Web App Development Through Tooling

Paul Irish  
Developer Advocate, Google



# Untitled - Notepad

File Edit Format View Help

```
<!DOCTYPE html PUBLIC "-//W3C/DTD XHTML 1.0 Transitional//EN">
```

# Handcraft



Craftsmanship is choosing tools well



## Save yourself the pain. Add some power.

- Remember team coordination before version control?
- Let's focus on development, not debugging.
- How much time have you lost to syntax typos?

See also [commitlogsfromlastnight.com](http://commitlogsfromlastnight.com)

# Adventures in JavaScript Development

Blog | Archives

APR 12TH, 2012 | COMMENTS

## A Baseline for Front-End Developers

We're seeing the emphasis shift from valuing trivia to valuing tools

When I started writing this, I thought about how I'd be successful, difficult, and even if I'd be. I think it's the result of people starting to take front-end dev seriously, maybe it's browser vendors mostly getting their shit together, or maybe it's front-end devs - again, myself included - coming to see some well-established light about the process of software development.

Members of the community - myself included - lacked traditional programming experience, HTML, CSS, and JavaScript - usually in the form of jQuery - were self-taught skills.

Whatever it is, I think we're seeing the emphasis shift from valuing trivia to valuing tools. There's a new set of baseline skills required in order to be successful as a front-end developer, and developers

### Recent Posts

A Baseline for Front-End Developers

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

Comments

- Rebecca Murphey  
Latest Tweets

Start to be feeling depressed at the state of humanity? Read tweets near you when you're at an airport.

Just realized I have a mental map of ATL. Time to run by for a bit.

In other news, did I just elbow the deathwing pilot sitting in front of me in the head? yes, yes I did.

working on a clarify to summarize all the great replies to my EL

TECH LIFE MY TOOLS MUST EVOLVE

## The Foamy Rules for Rabid Tools

The brother-in-law lives in the 'burbs and needed five trees removed. Not big trees — 10 to 15 feet tall, six-inch trunks. Not a problem.

I live in the 'burbs and needed five trees removed. Not big trees — 10 to 15 feet tall, six-inch trunks. Not a problem. There's nothing more to it. You just need a chainsaw. You need a chainsaw. In my case, I need three. There's nothing more to it. You just need a chainsaw. You need a chainsaw. In my case, I need three. There's nothing more to it. You just need a chainsaw.

As an engineer, there is a short list of tools that you must be rabid about. Rabid. Foaming at the mouth crazy.

POPULAR

To understand nerds, you simply need [The Handbook](#).

If you need people, remember that [Bored People Quit](#).

You have 10 seconds to make an [impressive resume](#).

Stop reading right now. Look at your [resume](#). [Stop reading right now. Look at your resume.](#)

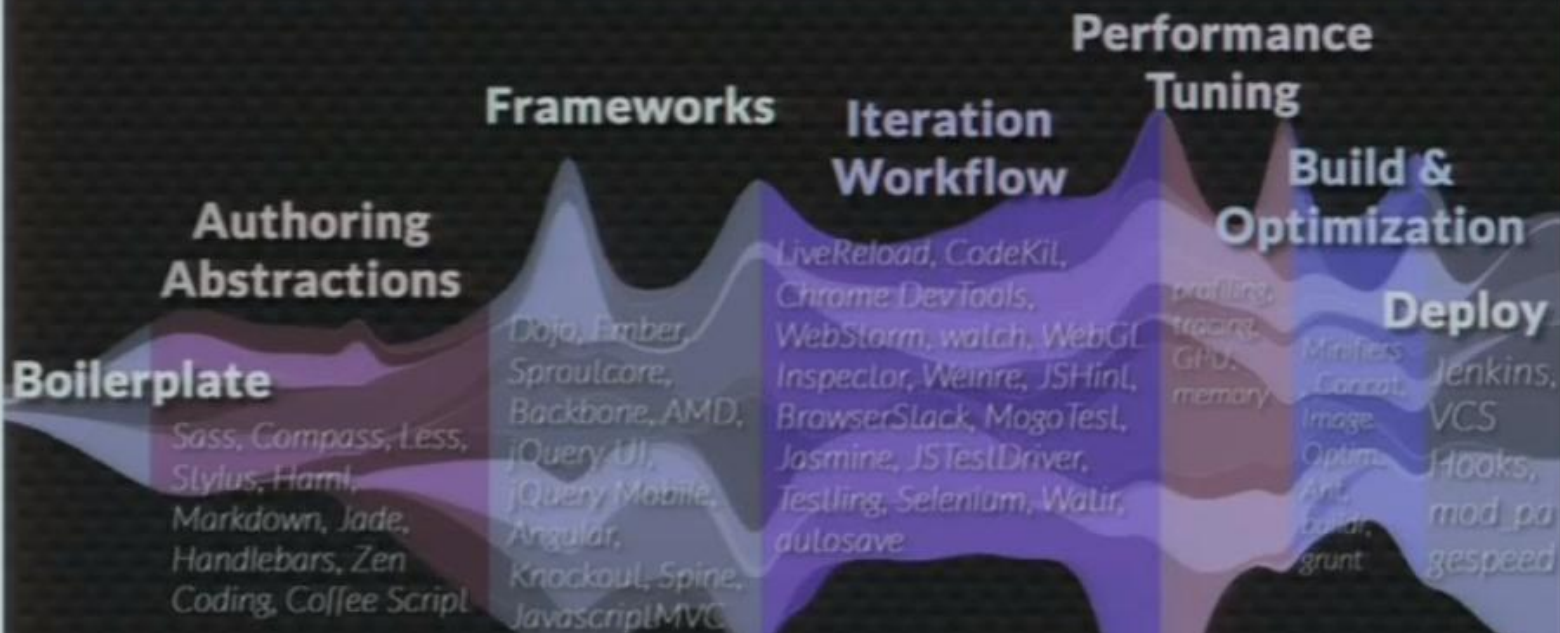
~ Michael Lopp, aka Rands





A lot of tools to choose from

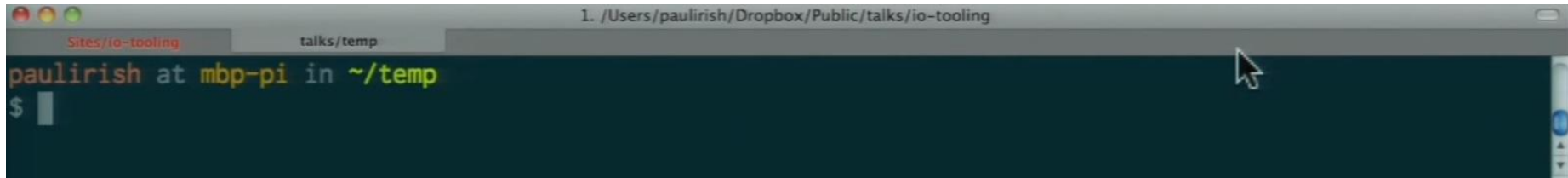
## Tooling in the Web App Development Lifecycle



The current workflow for webapp  
developers

# Your shell


- Make it sexy.
- Join the [dotfile community](#)
- My faves: **z** script, **server** alias

A screenshot of a macOS terminal window. The title bar shows the path "/Users/paulirish/Dropbox/Public/talks/io-tooling". The terminal has two tabs: "Sites/io-tooling" and "talks/temp". The prompt shows "paulirish at mbp-pi in ~/temp" followed by a "\$" and a cursor. A mouse cursor is visible on the right side of the terminal window.

```
1. /Users/paulirish/Dropbox/Public/talks/io-tooling  
Sites/io-tooling talks/temp  
paulirish at mbp-pi in ~/temp  
$
```

Better Web App Development x GitHub does dotfiles - dotfiles

dotfiles.github.com



Follow @octodots

# dotfiles.github.com

Tweet 478 guide +1 112 GitHub.

Tracked by Gauges. Hosted by Pages. Theme by orderedlist. ForktoCat logo by Cameron McEfee.

## GitHub ♥ ~/

Why would I want my dotfiles on GitHub?

- **Backup, restore, and sync** the prefs and settings for your toolbox. Your dotfiles might be the most important files on your machine.
- **Learn** from the community. Discover new tools for your toolbox and new tricks for the ones you already use.
- **Share** what you've learned with the rest of us.

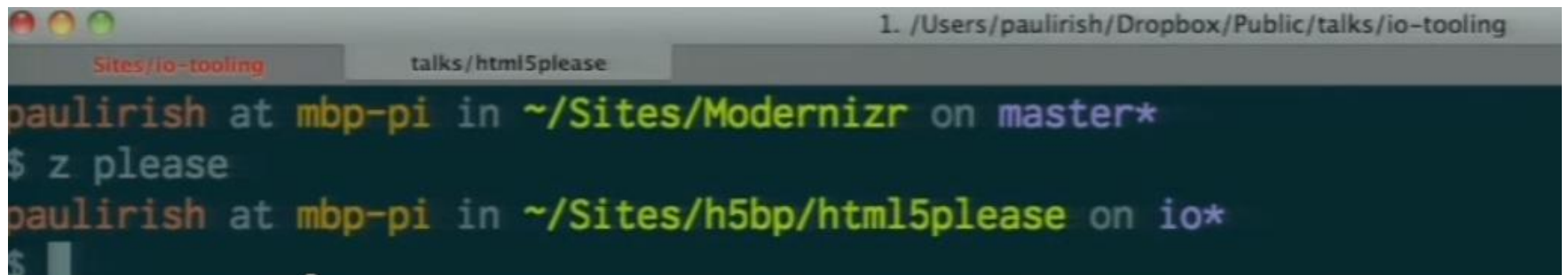
## Get started with a bootstrap

If you're just starting out, before you go symlinking everything in ~/\*, you may want to check out a few bootstrap projects that take the heavy lifting out of the process.

1. /Users/paulirish/Dropbox/Public/talks/io-tooling

Sites/io-tooling talks/temp

```
paulirish at mbp-pi in ~/temp
$
```



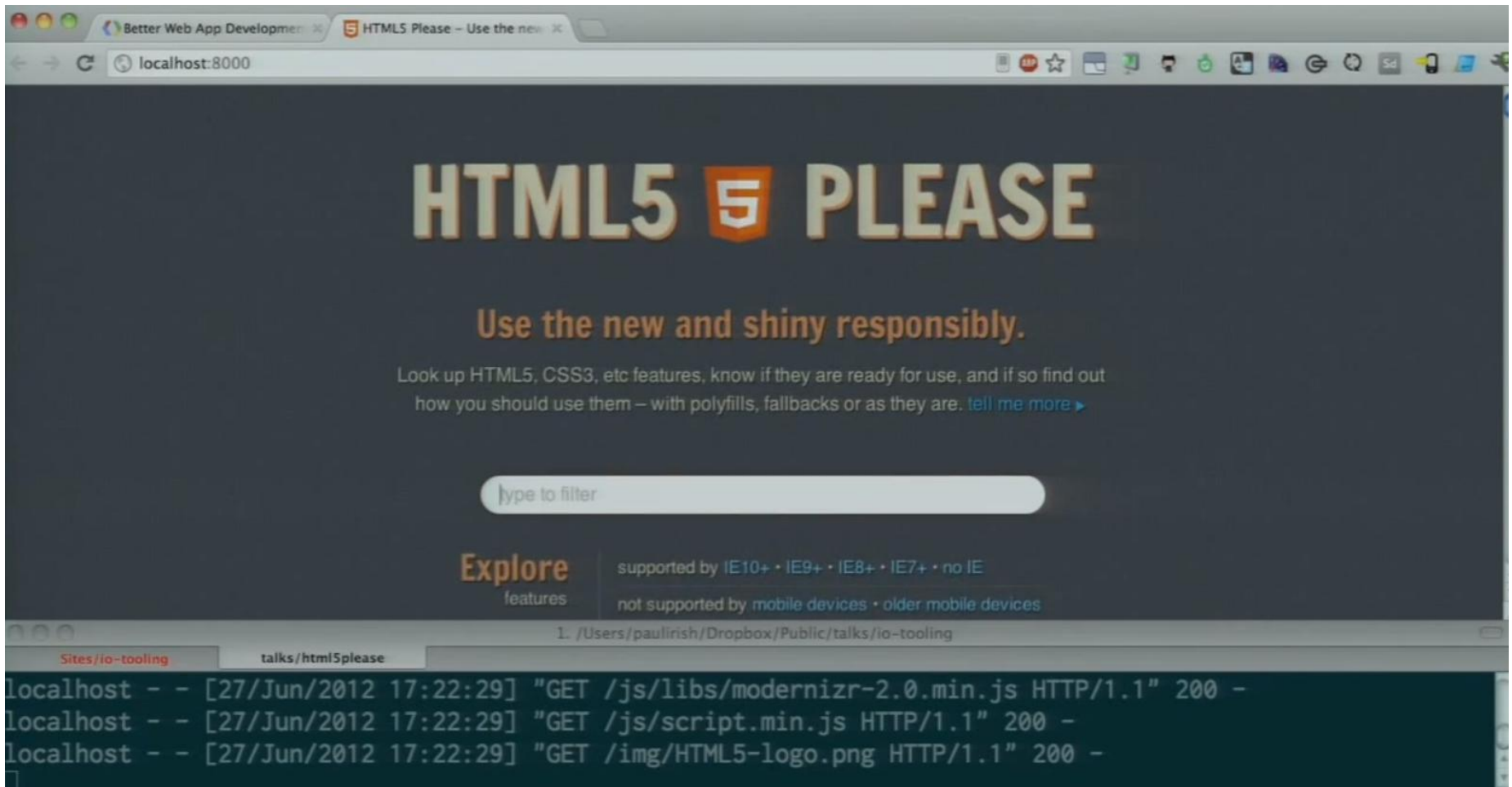
A screenshot of a macOS terminal window. The title bar at the top shows three window control buttons (red, yellow, green) on the left and a single tab labeled "1. /Users/paulirish/Dropbox/Public/talks/io-tooling" on the right. Below the title bar, there are two tabs: "Sites/io-tooling" in red text and "talks/html5please" in black text. The terminal content shows a user named "paulirish" at a machine named "mbp-pi". The initial prompt shows the user is in the directory "~/Sites/Modernizr" on a "master\*" branch. The user enters the command "\$ z please". The prompt then changes to show the user is now in the directory "~/Sites/h5bp/html5please" on an "io\*" branch. The prompt "\$" is followed by a cursor.

```
paulirish at mbp-pi in ~/Sites/Modernizr on master*  
$ z please  
paulirish at mbp-pi in ~/Sites/h5bp/html5please on io*  
$
```

## Shell augments

*# Start an HTTP server from a directory, optionally specifying the port*

```
function server() {  
    local port="${1:-8000}"  
    open "http://localhost:${port}/"  
    python SimpleHTTPServer "$port"  
}
```



# Your editor

- Learn it well, whatever it is
- A good editor is an onion application
- Keep peeling back layers to reveal more functionality
- More than any other tool, prioritize your familiarity with it





Better Web App Development x HTML5 Please – Use the new x

localhost...

# HTML5 PLEASE

Use the new and shiny responsibly.

Look up HTML5, CSS3, etc features, know if they are ready for use, and if so find out how you should use them – with polyfills, fallbacks or as they are... [see me more](#) ▶

type to filter

## Explore features

supported by IE10+ • IE9+ • IE8+ • IE7+ • no IE





not supported by mobile devices • older mobile devices

requiring prefixes • polyfill • fallback

that you should use • use with caution • avoid

that are css • html • api • js

all features

css	animations	caution 
html	<audio>	use 
css	background-image options	use 
css	border-image	use 

script.js — html5please

untitled x script.js x

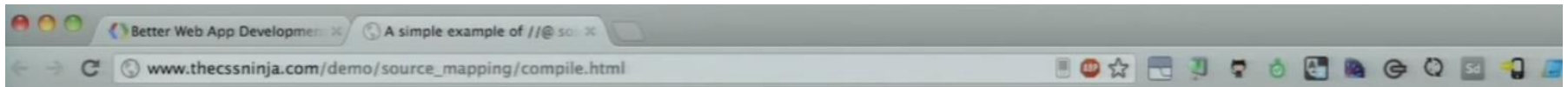
```
1  /* Author: Divya Manian, Paul Irish, et al */
2
3  /*global window, navigator, document, importScripts
4
5  // el.innerText / el.textContent helper
6  var text;
7  if (document.body.innerText) {
8      text = function (el, v) { return v ? el.innerHTML : el.innerText; }
9  } else if (document.body.textContent) {
10     text = function (el, v) { return v ? el.textContent : el.innerText; }
11 }
12
13 // el.addEventListener / el.attachEvent helper
14 var addEvent;
15 if (window.attachEvent) {
16     addEvent = function (el, ev, cb) { el.attachEvent('on' + ev, cb); }
17 } else if (window.addEventListener) {
18     addEvent = function (el, ev, cb, capture) { el.addEventListener(ev, cb, capture); }
19 }
20
21 // gtiX augments. so a search is matching .gti
22 // need to match .gtie7 and .gtie6 too
23 var ies = ['gtie6', 'gtie7', 'gtie8', 'gtie9',
24
25
26 var search = document.getElementById('livesearch');
27 searchresults = document.querySelectorAll('
--
```

# Realtime feedback

- live linting
- live recompilation
- live reload

## In-browser Devtools

- sourceURL
- Source maps
- Navigating scripts



## Name those evals

Using `//@sourceURL` we can name eval's. This demo uses the client side Coffee Script compiler and will name the compiled code so it appears with a friendly name in your dev tools. Using the "Name your code" field you can give the eval'd code a any name.

Check your scripts panel and you'll notice that the compiled CoffeeScript will have a name.

```
square = (x) -> x * x
cube   = (x) -> square(x) * x

window.cube = cube
```

Name your code:

# Name those evals

Using `//@ sourceMappingURL` we can name eval's. This demo uses the client side Coffee Script compiler and will name the compiled code so it appears with a friendly name in your dev tools. Using the "Name your code" field you can give the eval'd code a name.

Check your scripts panel and you'll notice that the compiled CoffeeScript will have a name.

```
square = (x) -> x * x
cube   = (x) -> square(x) * x

window.cube = cube
```

```
<!DOCTYPE html>
<html>
  <head>_</head>
  <body>
    <h1>Name those evals</h1>
    <p>_</p>
    <p>_</p>
    <textarea id="code">square = (x) -> x * x
      cube   = (x) -> square(x) * x

      alert cube(5)</textarea>
    <label>Name your code:</label>
    <input type="text" placeholder="Coffeeeeeeeee!" id=
      "evalName">
    <button id="compile">Compile</button>
    <script>_</script>
    <!-- Google analytics -->
    <script type="text/javascript">_</script>
    <script src="http://www.google-analytics.com/ga.js"
      type="text/javascript"></script>
    <script type="text/javascript">_</script>
  </body>
  <link rel="stylesheet" type="text/css" href="data:text/
  css,">
</html>
```

Computed Style ☐ Show inherited

Styles ☐ + ☐ ☐ ☐

element.style {

}

Matched CSS Rules

body { [compile.html:7](#)

width: 80%;

max-width: 960px;

margin: 0 auto;

}

body { [user agent stylesheet](#)

display: block;

margin: 8px;

}

Metrics

Properties

DOM Breakpoints

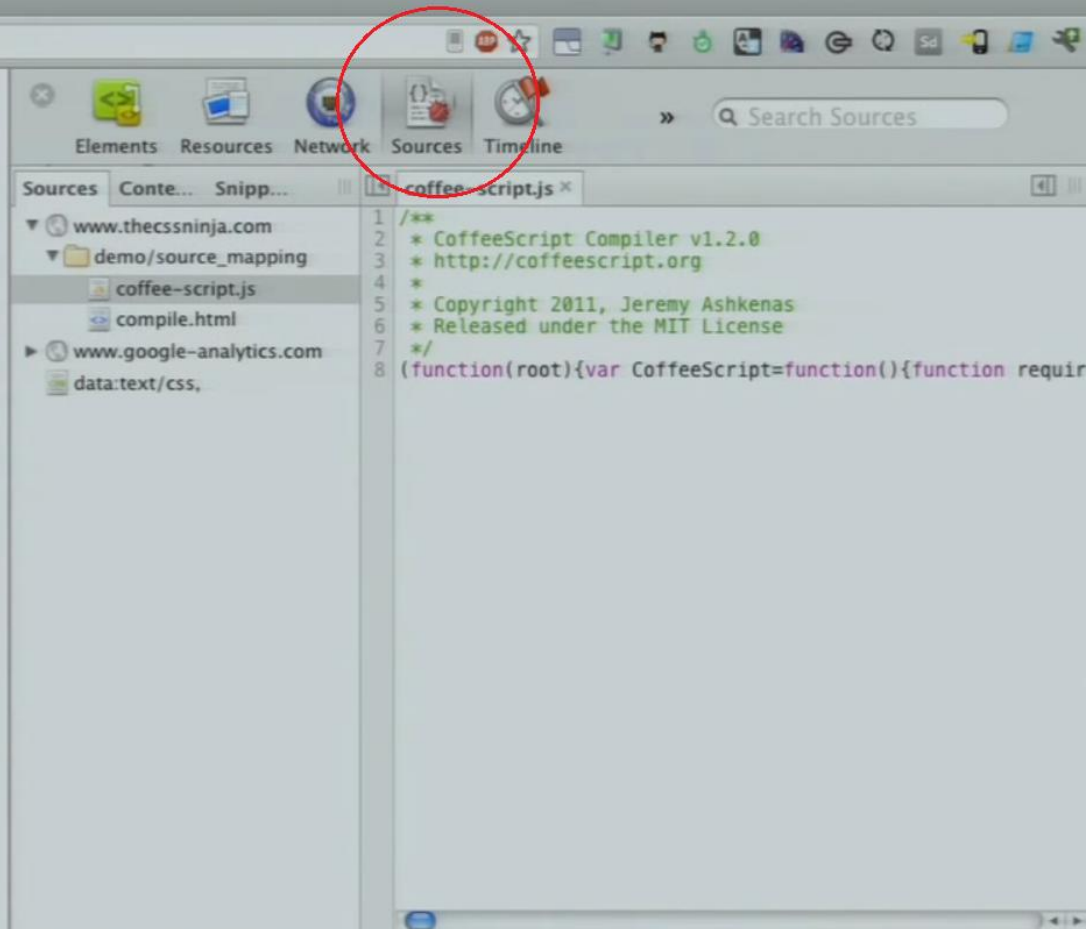
Event Listeners ☐

## Name those evals

Using `//@ sourceURL` we can name eval's. This demo uses the client side Coffee Script compiler and will name the compiled code so it appears with a friendly name in your dev tools. Using the "Name your code" field you can give the eval'd code a any name.

Check your scripts panel and you'll notice that the compiled CoffeeScript will have a name.

```
square = (x) -> x * x
cube   = (x) -> square(x) * x
window.cube = cube
```



## Name those evals

Using `//@ sourceMappingURL` we can name eval's. This demo uses the client side Coffee Script compiler and will name the compiled code so it appears with a friendly name in your dev tools. Using the "Name your code" field you can give the eval'd code a any name.

Check your scripts panel and you'll notice that the compiled CoffeeScript will have a name.

```
square = (x) -> x * x
cube = (x) -> square(x) * x

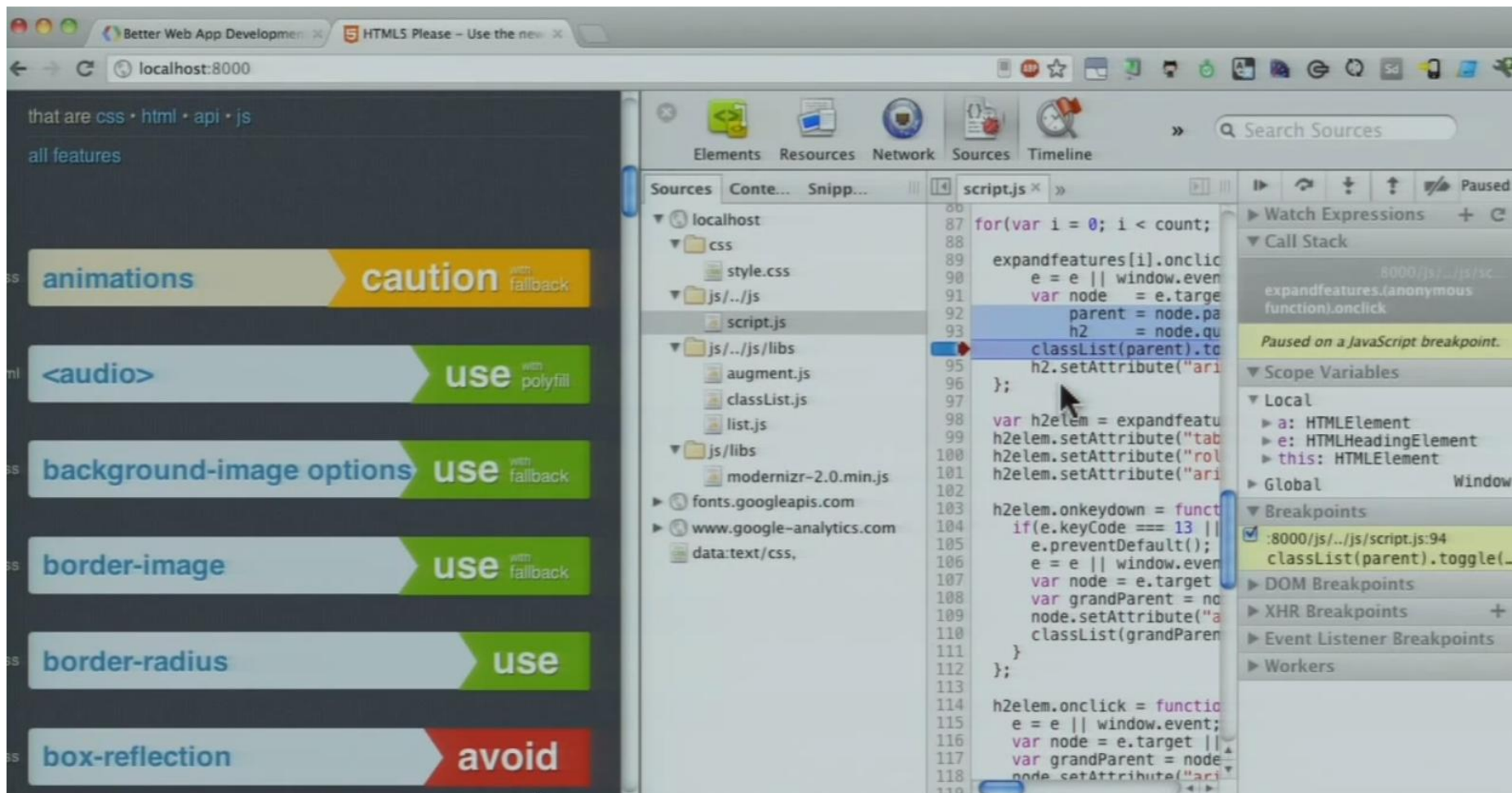
window.cube = cube
```

The screenshot shows a web browser at `www.thecssninja.com/demo/source_mapping/compile.html` and the Chrome DevTools interface. The browser's address bar shows the URL. The page content displays the title "Name those evals" and a paragraph explaining the use of `//@ sourceMappingURL` for naming eval'd code. Below the text is a code block containing CoffeeScript code: `square = (x) -> x * x`, `cube = (x) -> square(x) * x`, and `window.cube = cube`.

The Chrome DevTools interface is open to the "Sources" panel. The "Sources" list on the left shows the file structure: `www.thecssninja.com` > `demo/source_mapping` > `coffee-script.js` > `compile.html`. The main editor displays the JavaScript code generated from the CoffeeScript, with line numbers 1 through 15. The code includes function definitions for `square` and `cube`, and a `//@ sourceMappingURL=googleio.js` comment at the end. The right-hand panels show the "Call Stack" with entries for `square` and `cube`, and the "Scope Variables" panel.

At the bottom of the DevTools console, a red error message is visible: `Port error: Could not establish connection. Receiving end does not exist.` Below this, the console shows the execution of `cube(5)` resulting in `125`.







that are `css` • `html` • `api` • `js`  
all features

animations

caution

CSS Animations are still in flux. The Working Group has [decided to provide](#) a universal animation spec that would work across CSS, SVG and HTML. For now, either use animations only to provide non-essential aesthetic enhancements or use feature detection to provide an alternative experience for browsers that do not support this feature.

[View browser share %](#) [Edit this info](#)

<audio>

use

background-image options

use

HTM5 Please – Use the new

localhost:8000

Elements Resources Network Sources Timeline

localhost

css

style.css

js/.../js

script.js

js/.../js/libs

augment.js

classList.js

list.js

js/libs

modernizr-2.0.min.js

fonts.googleapis.com

www.google-analytics.com

data:text/css,

script.js

1 /\* Author: Divya Manian, P

2

3 /\*global window, navigator

4

5 // el.innerHTML / el.text

6 var text;

7 if (document.body.innerHTML

8 text = function (el, v)

9 } else if (document.body.t

10 text = function (el, v)

11 }

12

13 // el.addEventListener / e

14 var addEvent;

15 if (window.attachEvent) {

16 addEvent = function (el,

17 } else if (window.addEvent

18 addEvent = function (el,

19 }

20

21 // gtieX augments. so a se

22 // need to match .gtie7 an

23 var ies = ['gtie6', 'gtie7

24

25

26 var search = document.

27 searchresults = docume

28 searchurl = document.g

29 currentActiveHash,

30 lastActiveHash;

31

32 [].map.call(searchresults,

33

Search Sources

Watch Expressions +

Call Stack

Not Paused

Scope Variables

Not Paused

Breakpoints

No Breakpoints

DOM Breakpoints

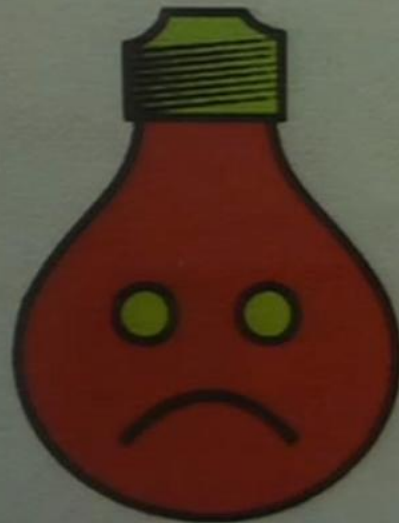
XHR Breakpoints +

Event Listener Breakpoints

Workers

# Testing

**Debugging  
sucks.**



**Testing rocks.**

**The**

# Testing

**Execute tests in a variety of settings:**

- In [the browser](#)
- In a headless browser on-demand via cmd line: `grunt qunit`

Travis CI - Distributed build

travis-ci.org/#1/Modernizr/Modernizr

travis

HomeStatsBlogDocs

Sign in with GitHub

Recent

jsx/JSX

#129

Duration: 1 min 11 sec, Finished: -

mattbomski/cardinality-mongo-persistence

#1

Duration: 17 sec, Finished: 3 minutes ago

sekati/actionserver

#13

Duration: 21 sec, Finished: 6 minutes ago

makrio/makrio

#327

Duration: 11 min 27 sec, Finished: 2 minutes ago

dtsato/agile\_brazil

#53

Duration: 2 min 14 sec, Finished: 6 minutes ago

dalehenrich/filetree

#71

Duration: 1 min 53 sec, Finished: 7 minutes ago

Modernizr/Modernizr

6212 518

Feature detect HTML5 and CSS3 features, with handy css and javascript hooks so you can progressively enhance to your heart's content.

Current

Build History

Pull Requests

Branch Summary

Build

Finished

Duration

Message

Config

108

2 days ago

31 sec

Merge branch 'grunt' of https://github.com/sindresorhus/Modernizr into sindresorhus-grunt

modernizr.js  
Node.js: 0.7

Commit

Compare

Author

Committer

a16c9f7 (master)

928edb7a7738...a16c9f769ba1

Ryan Seddon

Ryan Seddon

\* 'grunt' of https://github.com/sindresorhus/Modernizr:  
Close GH-1: Match Modernizr's current style as close as possible.  
Forgot to remove the old build script  
Add grunt

Conflicts:  
modernizr.js

Using worker: nodejs1.worker.travis-ci.org:travis-nodejs-2

Sponsors

Workers

Queue: Common

Queue: PHP, Perl and Python

See all of our amazing sponsors -->

jvm-otp1.worker.travis-ci.org  
nodejs1.worker.travis-ci.org  
ppp1.worker.travis-ci.org  
ppp2.worker.travis-ci.org  
ppp3.worker.travis-ci.org  
rails1.worker.travis-ci.org  
ruby1.worker.travis-ci.org  
ruby2.worker.travis-ci.org  
ruby3.worker.travis-ci.org  
ruby4.worker.travis-ci.org  
spree.worker.travis-ci.org

There are no jobs

ceeram/cakephp #444.7  
ceeram/cakephp #444.8  
ceeram/cakephp #444.9  
palex-fpt/composer #42.1  
palex-fpt/composer #42.2

Fork me on GitHub

# Testing

Execute tests in a variety of settings:

- In [the browser](#)
- In a headless browser on-demand via cmd line: `grunt qunit`
- In a headless browser [post-push](#)
- In multiple browsers *in the cloud* via cmd line:

```
bunyip -f test/index.html -b ios
```

## Build system

Resolve your dependency chain.  
`concatenate.compile`. Flatten your  
CSS `@imports`. Remove debugging  
statement. Compress images.  
Precompile templates. Run tests in  
a variety of environments. Revs asset  
paths for caching. Affirm code quality.



# Client-side error tracking

{errorception}

Errors

Graphs

Settings

Project: mothereffinganimatedgif ▼

Logged in as: paul.irish@gmail.com ▼

Sort by: Recency | Frequency ↓

## Errors today

You have consumed 0 (0.00%) errors of your rate limit for today of 100 errors/day.

You are currently on the free trial. [Upgrade your plan now »](#)

## Filter your errors

► By type

► By date

► By browser

## Showing all errors

### Unable to get value of the property "addEventListener": object is null or ...

23 occurrences this week

On line 61 of <http://mothereffinganimatedgif.com/assets/js/cache.update.js> on 1 page.

Seen in Internet Explorer 9. Last seen 11 hours ago. Occurred 23 times so far. Occurred before page load.

### Expected identifier, string or number

19 occurrences this week

In an inline script on <http://mothereffinganimatedgif.com/>

Seen in 2 different versions of Internet Explorer. Last seen 19 hours ago. Occurred 19 times so far. Occurred before page load.

### Uncaught TypeError: Cannot call method "html" of undefined

6 occurrences this week

On line 208 of <http://mothereffinganimatedgif.com/assets/js/ui.js> on 1 page.

Seen in Chrome 19. Last seen 2 hours ago. Occurred 6 times so far. Occurred after page load.

### Uncaught TypeError: Cannot call method "get" of undefined

5 occurrences this week

On line 41 of <http://mothereffinganimatedgif.com/assets/js/models.js> on 1 page.

Seen in Chrome 19. Last seen 8 hours ago. Occurred 5 times so far. Occurred after page load.

### Uncaught TypeError: Cannot read property "src" of undefined

3 occurrences this week

On line 38 of <http://mothereffinganimatedgif.com/assets/js/models.js> on 1 page.

Seen in Chrome 19. Last seen 13 hours ago. Occurred 3 times so far. Occurred after page load.

### Unable to get value of the property "addEventListener": object is null or ...

3 occurrences this week

On line 61 of <http://www.doagif.com/assets/js/cache.update.js> on 1 page.

Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 3 times so far. Occurred before page load.

Disparate tools without smooth integration?



# Introducing Yeoman



**Yeoman is an open source set of frameworks and tools to accelerate building compelling webapps.**

- Authoring abstractions, linting, testing, build tools
- Seamless integration of successful open source projects
- Smooth developer ergonomics



# Included in Yeoman

- Compass. Sass. Coffeescript.
- AMD Module support. RequireJS. ES6 Module experiment.
- Twitter Bootstrap. Stripped HTML5 Boilerplate. Modernizr.
- Jasmine. PhantomJS.
- OptiPNG. jpegtran.



## Yeoman Demo

1. `curl -L get.yeoman.io | sh`
2. Let's start a project
3. HTML5 Boilerplate, Bootstrap for free
4. Seamless Sass, Compass, Coffeescript - all automatic and live
5. Writing JavaScript. ES6.
6. Integration with requirejs and r.js
7. Build process incl best in class image optimization.

Sites/io-tooling

talks/ioapp

```
$ yeoman
```

```
yeoman v0.0.1
```

```
Usage: yeoman [command] [task [task ...]]
```

```
Available commands supported by yeoman:
```

```
  init Initialize and scaffold a new project
```

```
  build Build an optimized version of your app, ready to deploy
```

```
  server Launch a preview server which will begin watching for changes
```

```
  test Run a Jasmine test harness in a headless Phantom.js
```

```
  install Install a package from the clientside package registry
```

```
  uninstall Uninstall the package
```

```
  update Update a package to the latest version
```

```
  list List the packages currently installed
```

```
  search Query the registry for matching package names
```

```
  lookup Look up info on a particular package
```

```
paulirish at mbp-pi in ~/temp
```

```
$ md ioapp
```

```
paulirish at mbp-pi in ~/temp/ioapp
```

```
$ yeoman init
```

```
$ yeoman init
Running "init:yeoman" (init) task
```

```

  _ _ _ _ _
  |o| | |   Welcome to Yeoman,
  | | | |   ladies and gentlemen!
 / \Y/ \ o
|| : ||
o/ --- \
 _\ / _
```

This task will create one or more files in the current directory, based on the environment and the answers to a few questions. Note that answering "?" to any question will show question-specific help and answering "none" to most questions will leave its value blank.

Please answer the following:

[?] Project name (ioapp) █

question will show question-specific help and answering "none" to most questions will leave its value blank.

Please answer the following:

- [?] Project name (ioapp)
- [?] Description (The best project ever.)
- [?] Version (0.1.0)
- [?] Project git repository (git://github.com/paulirish/ioapp.git)
- [?] Project homepage (https://github.com/paulirish/ioapp)
- [?] Licenses (MIT)
- [?] Author name (Paul Irish)
- [?] Author url (none)
- [?] Do you need to make any changes to the above before continuing? (y/N)

Great! I'll save this configuration to your package.json file!

Please answer the following:

- [?] Would you like to include Twitter Bootstrap (Compass version)? (Y/n)
- [?] Do you need to make any changes to the above before continuing? (y/N)



```
1. /Users/paulirish/Dropbox/Public/talks/io-tooling

Sites/io-tooling  talks/ioapp

[?] Project homepage (https://github.com/paulirish/ioapp)
[?] Licenses (MIT)
[?] Author name (Paul Irish)
[?] Author url (none)
[?] Do you need to make any changes to the above before continuing? (y/N)

Great! I'll save this configuration to your package.json file!

Please answer the following:
[?] Would you like to include Twitter Bootstrap (Compass version)? (Y/n)
[?] Do you need to make any changes to the above before continuing? (y/N)

Please answer the following:
[?] Would you like to include RequireJS (for AMD support)? (Y/n)
[?] Do you need to make any changes to the above before continuing? (y/N)

Please answer the following:
[?] Would you like to include experimental support for ECMAScript 6 Modules? (Y/n)
[?] Do you need to make any changes to the above before continuing? (y/N)
```

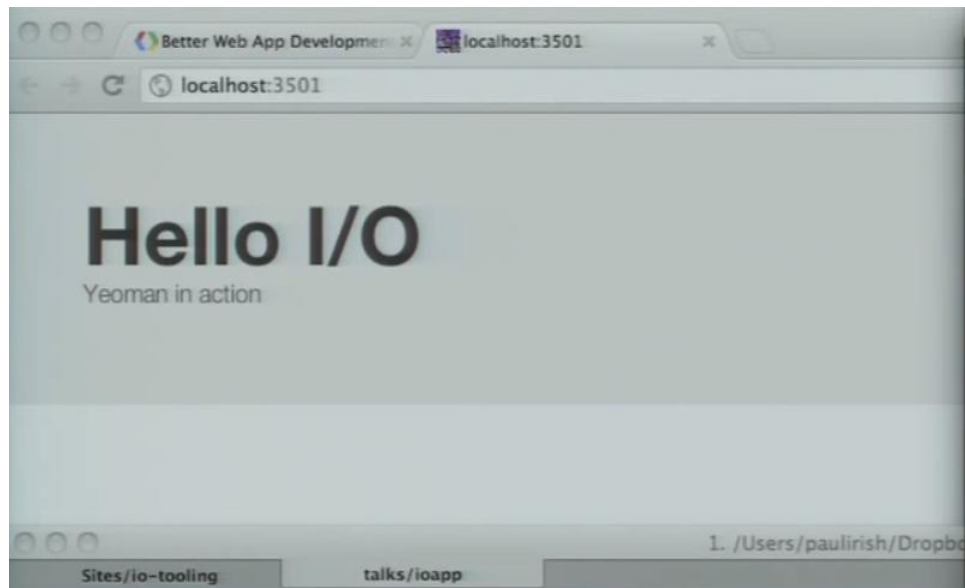
Sites/io-tooling

talks/ioapp

```
paulirish at mbp-pi in ~/temp/ioapp
$ subl .
paulirish at mbp-pi in ~/temp/ioapp
$
```

index.html

```
6 <head>
7   <meta charset="utf-8">
8   <meta http-equiv="X-UA-Compatible" content="
  IE=edge,chrome=1">
9   <title></title>
10  <meta name="description" content="">
11  <meta name="viewport" content="width=device-width">
12  <link rel="stylesheet" href="css/main.css">
13  <script src="js/vendor/modernizr-2.5.3.min.js"></
    script>
14 </head>
15 <body>
16
17  <!--[if lt IE 7]><p class="chromeFrame">Your browser
    is <em>ancient!</em> <a href="http://browsehappy.
    com/">Upgrade to a different browser</a> or <a
    href="http://www.google.
    com/chromeFrame/?redirect=true">install Google
    Chrome Frame</a> to experience this app.</p><![endif]
    -->
18
19
20
21
22
23
24
25
26  <script src="//ajax.googleapis.com/ajax/libs/jquery/1
    .7.2/jquery.min.js"></script>
27  <script src="js/main.js"></script>
28
29
30  <script>
```

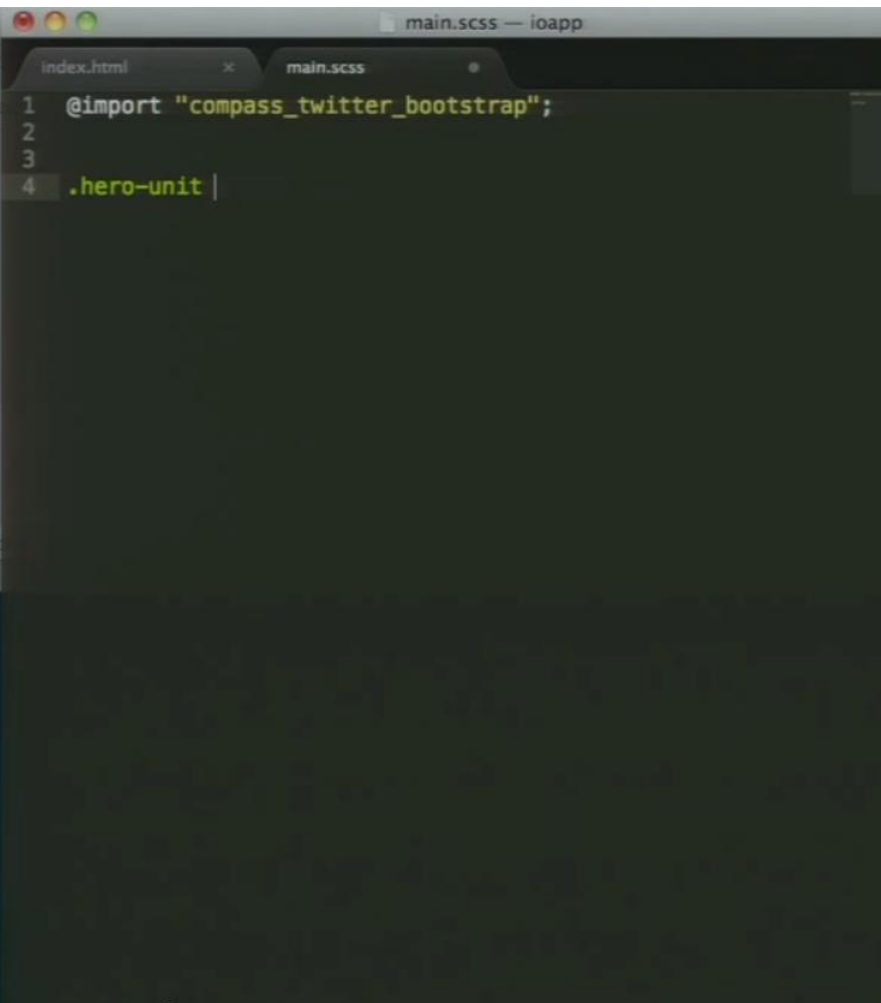


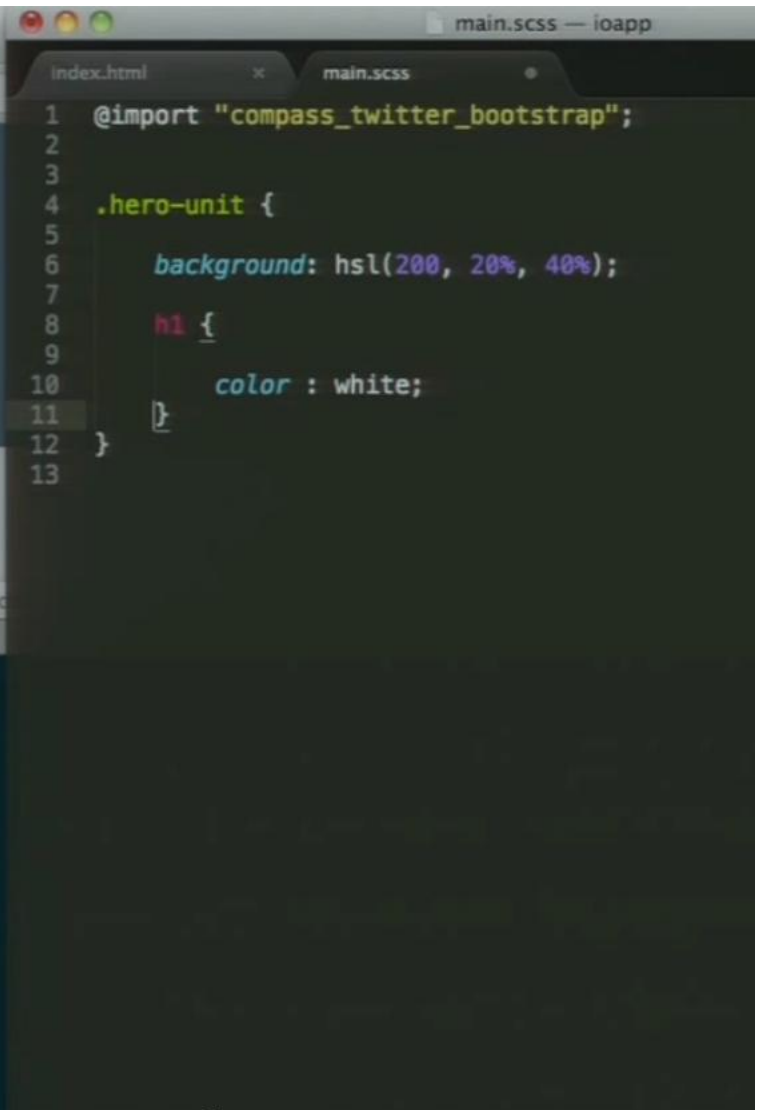
```
Running "watch" task
Waiting...OK
>> File "css/sass/main.scss" changed.

Running "shell:compass" (shell) task

Running "reload" task

Running "watch" task
```





Running "watch" task  
Waiting...OK  
>> File "css/sass/main.scss" changed.  
Running "shell:compass" (shell) task  
Running "reload" task  
Running "watch" task

Better Web App Development

Todos

localhost:3501

# Yeoman Todos

What needs to be done?

Welcome! Create a todo or double-click to edit an existing one

0 left

ElementsResourcesNetwork

require.jsmain.jsjs/coffee/TaskApp.coffee

```
1 /** vim: et:ts=4:sw=4:sts=4
2  * @license RequireJS 2.0.2 Copyright (c) 2010-2012, The Dojo Found
3  * Available via the MIT or new BSD license.
4  * see: http://github.com/jrburke/requirejs for details
5  */
6 /*jslint regexp: true, nomen: true */
7 /*global window, navigator, document, importScripts, jQuery, setTim
8
9 var requirejs, require, define;
10 (function (global) {
11     'use strict';
12
13     var version = '2.0.2',
14         commentRegExp = /(\/\*([\s\S]*?)\*/|(\/\?[\s\S]*?\?\/))/mg,
15         cjsRequireRegExp = /require\s*\(\s*["']([^"'\s]+)['"]\s*\)/,
16         jsSuffixRegExp = /\.js$/,
17         currDirRegExp = /^\.\s*\./,
18         ostring = Object.prototype.toString,
19         ap = Array.prototype,
20         apsp = ap.splice,
21         isBrowser = !!(typeof window !== 'undefined' && navigator &&
22             isWebWorker = !isBrowser && typeof importScripts !== 'undef
23             //PS3 indicates loaded and complete, but need to wait for c
24             //specifically. Sequence is 'loading', 'loaded', execution,
25             // then 'complete'. The UA check is unfortunate, but not su
26             //to feature test w/o causing perf issues.
27             readyRegExp = isBrowser && navigator.platform === 'PLAYSTAT
28                 /^complete$/ : /^(complete|loaded)$/),
29         defContextName = '_',
30         //Oh the tragedy, detecting opera. See the usage of isOpera
31         isOpera = typeof opera !== 'undefined' && opera.toString()
```

## Modules elevator pitch

- Small files feel good, man
- Using module dependencies lets you define dependencies once not twice

# AMD Modules

- Asynchronous, dependency resolution, no more globals
- Rich plugin ecosystem, build optimization

JS

```
define(['views/todoView'], function(todoView){  
  
    return {  
  
        // ...  
  
        render: function(todoView){  
            // ...  
        }  
    }  
});
```



# ES6 Modules

- Proposal to offer a native solution for modules
- Flexible syntax

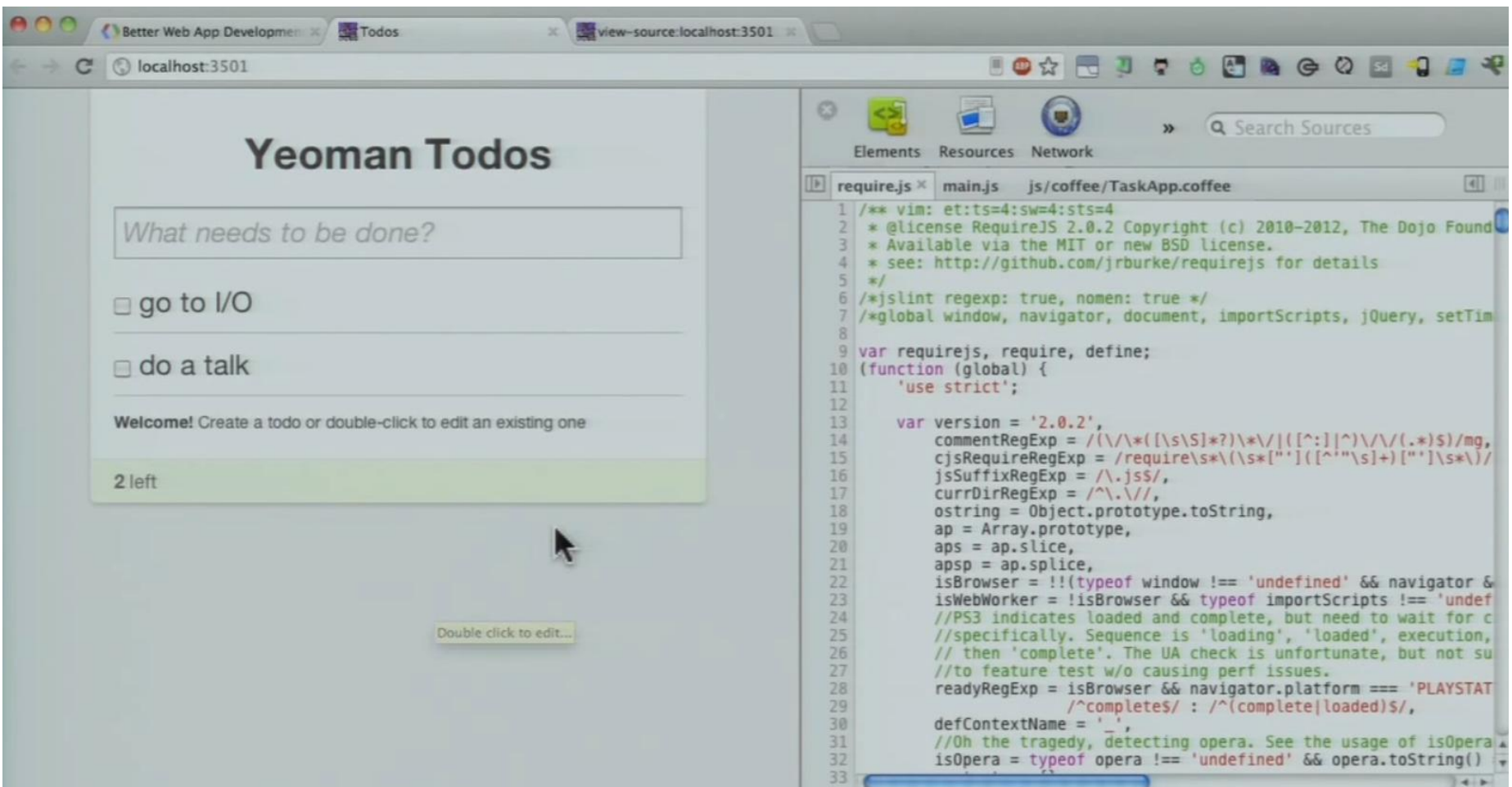
JS

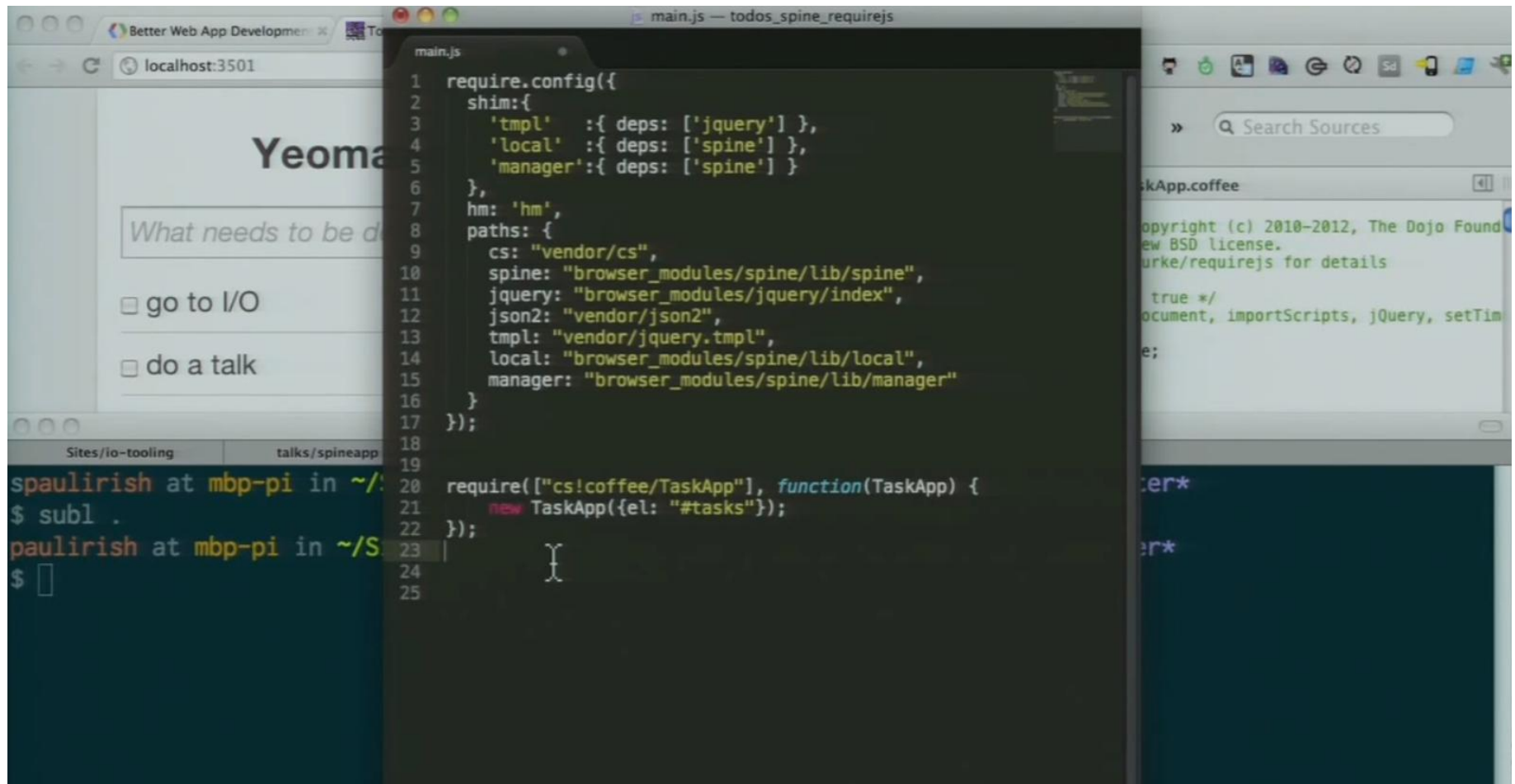
```
module todoView at "views/todoView";
```

```
{  
  // ...  
}
```

```
export function render(todoView){
```

```
  // ...  
}
```





# Continuous improvement

## Yeoman Insight

- A chance to improve the tool based on real world use
- Anonymous metrics reported to Google Analytics
- Project community can view and improve the tool accordingly

## How do you update your dependent libraries?

1. someone tells you they are out of date
2. open site
3. find download
4. download to ~/Downloads
5. move to app folder
6. wire in with script tags, etc

## Why do we need package management?

- Clientside dependencies are a chore
- Common code duplicated
- Library fragmentation and disjoint communities

## Yeoman: In Summary

- Scaffold new projects in a snap
- Watch, Recompile, Live Refresh
- Yo comprendo Sass, Coffeescript, AMD & ES6 Modules
- Run all your JavaScript files against JSHint
- Run unit tests in headless WebKit via PhantomJS
- Robust build script: filename revisions, image optimization, more
- Compile AMD modules automatically via r.js





# Yeoman Developer Preview

- Visit [yeoman.io](http://yeoman.io)



YEOMAN

Why, hello! I'm Yeoman - a **robust** and opinionated client-side **stack**, comprised of tools and frameworks that can help developers quickly **build** beautiful web applications.

Follow +Yeoman on



+1

Follow @yeoman

1 followers

Tweet

0

MAY I INTEREST YOU IN A PREVIEW?



## In Summary...

- Tools are your friends
- They increase your productivity
- We think Yeoman makes it easier to leverage smart tooling choices