Mastering*

Chrome Developer Tools

@jkup

jon.kuperman@gmail.com

*SUBJECT TO
CHANGE

History

In the beginning...

```
<!DOCTYPE html>
<!--[if IE 8]><html class="lt-ie10 ie8" lang="en" data-scribe-reduced-action-queue="true"><![endif]-->
<!--[if IE 9]><html class="lt-ie10 ie9" lang="en" data-scribe-reduced-action-queue="true"><![endif]-->
<!--[if gt IE 9]><!--><html lang="en" data-scribe-reduced-action-queue="true"><!--<![endif]-->
  <head>









    <meta charset="utf-8">

    <noscript><meta http-equiv="refresh" content="0; URL=https://mobile.twitter.com/i/nojs_router?path=%2F"></noscript>



  <script id="bouncer_terminate_iframe" nonce="2BVSDALH2Sw+JZL8osD4WA==">
    if (window.top != window) {
  window.top.postMessage({'bouncer': true, 'event': 'complete'}, '*');
}
  </script>
  <script id="resolve_inline_redirects" nonce="2BVSDALH2Sw+JZL8osD4WA==">
    (function(){function b(){var a=window.location.href.match(/#(.)(.*)$/);return a&&a[1]=="!"&&a[2].replace(/^\//,"")}function c(b)
{if(!b)return!1;b=decodeURI(b.replace(/^#|\/$/,"")).toLowerCase();return b.match(a)?b:!1}function d(a){var a=c(a);a&&window.location
.replace("/hashtag/"+a)}function e(){var
a=b();a&&window.location.replace("//"+window.location.host+"/"+a);window.location.hash!=""&&d(window.location.hash.substr(1).toLowerCase())}var a=/^[a-z0-
9_À-ÖØ-öø-ÿĀ-ƿǄ-ɏɐ-ʯʰ-˿Ͱ-ͽͿ-Ώΐ-ΡΣ-ϵϷ-ҁҊ-ԯԱ-Ֆՙ-՟ա-և։-׀א-תװ-״؀-ۿ‌-‍ۺ-ۿݐ-ݿހ-ॿঁ-ঃঅ-ঌএ-ঐও-নপ-রলশ-হ়-ৄেৈো-ৎৗড়-ঢ়য়-ৣ০-৻ਁ-ਃਅ-ਊ
ਏ-ਐਓ-ਨਪ-ਰਲ-ਲ਼ਵ-ਸ਼ਸ-ਹ਼ਾ-ੂੇ-ੈੋ-੍ੑਖ-ੜਫ਼੦-ੵઁ-ઃઅ-ઍએ-ઑઓ-નપ-રલ-ળવ-હ઼-ૅે-ૉો-્ૐૠ-ૣ૦-૱ଁ-ଃଅ-ଌଏ-ଐଓ-ନପ-ରଲ-ଳଵ-ହ଼-ୄେ-ୈୋ-୍ୖୗଡ଼-ଢ଼ୟ-ୣ୦-୷ஂ-ஃஅ-ஊ
எ-ஐஒ-கங-சஜஞ-டண-தந-பம-ஹா-ூெ-ைொ-்ௐௗ௦-௺ఀ-ఃఅ-ఌఎ-ఐఒ-నప-ళవ-హఽ-ౄె-ైొ-్ౕౖౘ-ౚౝ-ౣ౦-౯౸-౿ಀ-ಃಅ-ಌಎ-ಐಒ-ನಪ-ಳವ-ಹ಼-ೄೆ-ೈೊ-್ೕೖೝ-ೞೠ-ೣ೦-೯ೱ-ೳ
ഀ-ഃഅ-ഌഎ-ഐഒ-ഺഽ-ൄെ-ൈൊ-്ൗൠ-ൣ൦-൵ൺ-ൿඁ-ඃඅ-ඖක-නඳ-රලව-ෆ්ා-ුූෘ-ෟ෦-෯ෲ-෴ก-ฺเ-๎๐-๙ກ-ຂຄ-ຆ
ຈ-ຊຌ-ຣລ-ຽເ-ໄໆ-ໍ໐-໙ໜ-ໟༀ-ཇཉ-ཬཱ-ྗྙ-ྼ྾-྿က-ံး-ဿ၀-၉ၐ-ၙၜ-ၢၤ-ၭၰ-ၵႁ-ჅჇჍა-ჺ჻ቈ-ቍቐ-ቖቘቚ-ቝበ-ኈኊ-ኍነ-ኰኲ-ኵኸ-ኾዀዂ-ዅወ-ዖዘ-ጐጒ-ጕጘ-ፚ፝-፟ᎀ-ᎏᎠ-Ᏼᐁ-ᙬᙯ-ᙿᚁ-ᚚᚠ-ᛪᛮ-ᛸᜀ-ᜌᜎ-᜔ᜠ-᜴ᝀ-ᝓᝠ-ᝬᝮ-ᝰᝲ-ᝳក-ឳា-ៈៗៜ-ៜ᠋-᠍᠐-᠙ᠠ-ᡸᢀ-ᢪᢰ-ᣵᤀ-ᤞᤠ-ᤫᤰ-᤻᥆-ᥭᥰ-ᥴᦀ-ᦫᦰ-ᧉ᧐-᧚ᨀ-ᨛᨠ-ᩞ᩠-᩿᩼-᪉᪐-᪙ᪧ-᪭᪰-᫿ᬀ-ᭋ᭐-᭙᭫-᭳ᮀ-᯳ᰀ-ᰵ᱀-᱉ᱍ-ᱽᲀ-ᲈᳩ-ᳬᳮ-ᳳᳵ-᳷ᳺ-᳿ᴀ-ᶿ‌-‍‿-⁀⁔ⁱⁿₐ-ₜ⃐-⃥⃜-⃡⃰-℈ℊ-ℓℕ-ℝℤ-ⅉⅎ-↉①-⒛⓪-⓿❶-➓Ⰰ-ⳳⴀ-ⵧⵯ-⵿ⶀ-ⷖⷠ-⸮ⸯ々〆〇〡-〯〱-〵〸-〼ぁ-ゖ゙-゚ゝ-ゟ㆒-㆟㈠-㉇㉑-㉟㊀-㊉㊱-㊿㐀-䶵一-鿋ꀀ-ꒌ꓆-ꓽꔀ-ꘫꙀ-꙲꙼-꙽ꙿ-ꚝꚟ-ꛯꜗ-ꜟꜢ-ꞈꞋ-ꟊꟐ-ꟑꟓꟕ-ꟙꟲ-ꠧ꠬ꡀ-ꡳꢀ-꣄꣐-꣙꣠-ꣷ꣹-ꣽ꤀-꤭ꤰ-꥓ꥠ-ꥼꦀ-꧀ꧏ-꧙ꧠ-ꧾꨀ-ꨶꩀ-ꩍ꩐-꩙ꩠ-ꩶꩺ-ꫂꫛ-ꫝꫠ-ꫯꫲ-꫶ꬁ-ꬆꬉ-ꬎꬑ-ꬖꬠ-ꬦꬨ-ꬮꬰ-ꭚꭜ-ꭩꭰ-ꯪ꯬-꯭꯰-꯹가-힣ힰ-ퟆퟋ-ퟻ豈-舘並-龎ﬀ-ﬆﬓ-ﬗיִ-ﬨשׁ-זּטּ-לּמּנּ-סּפּ-ﮱﯓ-ﴽﵐ-ﶏﶒ-ﷇﷰ-﷽ﹰ-ﹴﹶ-ﻼ０-９Ａ-Ｚａ-ｚｦ-ﾾￂ-ￇￊ-ￏￒ-ￗￚ-ￜ]*[a-z_À-ÖØ-öø-ÿĀ-ƿǄ-ɏɐ-ʯʰ-˿Ͱ-ͽͿ-Ώΐ-ΡΣ-ϵϷ-ҁҊ-ԯԱ-Ֆՙ-՟ա-և։-׀א-תװ-״؀-ۿ‌-‍ۺ-ۿݐ-ݿހ-ॿঁ-ঃঅ-ঌএ-ঐও-নপ-রলশ-হ়-ৄেৈো-ৎৗড়-ঢ়য়-ৣ০-৻ਁ-ਃਅ-ਊ
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ຈ-ຊຌ-ຣລ-ຽເ-ໄໆ-ໍ໐-໙ໜ-ໟༀ-ཇཉ-ཬཱ-ྗྙ-ྼ྾-྿က-ံး-ဿ၀-၉ၐ-ၙၜ-ၢၤ-ၭၰ-ၵႁ-ჅჇჍა-ჺ჻ቈ-ቍቐ-ቖቘቚ-ቝበ-ኈኊ-ኍነ-ኰኲ-ኵኸ-ኾዀዂ-ዅወ-ዖዘ-ጐጒ-ጕጘ-ፚ፝-፟ᎀ-ᎏᎠ-Ᏼᐁ-ᙬᙯ-ᙿᚁ-ᚚᚠ-ᛪᛮ-ᛸᜀ-ᜌᜎ-᜔ᜠ-᜴ᝀ-ᝓᝠ-ᝬᝮ-ᝰᝲ-ᝳក-ឳា-ៈៗៜ-ៜ᠋-᠍᠐-᠙ᠠ-ᡸᢀ-ᢪᢰ-ᣵᤀ-ᤞᤠ-ᤫᤰ-᤻᥆-ᥭᥰ-ᥴᦀ-ᦫᦰ-ᧉ᧐-᧚ᨀ-ᨛᨠ-ᩞ᩠-᩿᩼-᪉᪐-᪙ᪧ-᪭᪰-᫿ᬀ-ᭋ᭐-᭙᭫-᭳ᮀ-᯳ᰀ-ᰵ᱀-᱉ᱍ-ᱽᲀ-ᲈᳩ-ᳬᳮ-ᳳᳵ-᳷ᳺ-᳿ᴀ-ᶿ‌-‍‿-⁀⁔ⁱⁿₐ-ₜ⃐-⃥⃜-⃡⃰-℈ℊ-ℓℕ-ℝℤ-ⅉⅎ-↉①-⒛⓪-⓿❶-➓Ⰰ-ⳳⴀ-ⵧⵯ-⵿ⶀ-ⷖⷠ-⸮ⸯ々〆〇〡-〯〱-〵〸-〼ぁ-ゖ゙-゚ゝ-ゟ㆒-㆟㈠-㉇㉑-㉟㊀-㊉㊱-㊿㐀-䶵一-鿋ꀀ-ꒌ꓆-ꓽꔀ-ꘫꙀ-꙲꙼-꙽ꙿ-ꚝꚟ-ꛯꜗ-ꜟꜢ-ꞈꞋ-ꟊꟐ-ꟑꟓꟕ-ꟙꟲ-ꠧ꠬ꡀ-ꡳꢀ-꣄꣐-꣙꣠-ꣷ꣹-ꣽ꤀-꤭ꤰ-꥓ꥠ-ꥼꦀ-꧀ꧏ-꧙ꧠ-ꧾꨀ-ꨶꩀ-ꩍ꩐-꩙ꩠ-ꩶꩺ-ꫂꫛ-ꫝꫠ-ꫯꫲ-꫶ꬁ-ꬆꬉ-ꬎꬑ-ꬖꬠ-ꬦꬨ-ꬮꬰ-ꭚꭜ-ꭩꭰ-ꯪ꯬-꯭꯰-꯹가-힣ힰ-ퟆퟋ-ퟻ豈-舘並-龎ﬀ-ﬆﬓ-ﬗיִ-ﬨשׁ-זּטּ-לּמּנּ-סּפּ-ﮱﯓ-ﴽﵐ-ﶏﶒ-ﷇﷰ-﷽ﹰ-ﹴﹶ-ﻼ０-９Ａ-Ｚａ-ｚｦ-ﾾￂ-ￇￊ-ￏￒ-ￗￚ-ￜ]+$/
;e();window.addEventListener?window.addEventListener("hashchange",e,!1):window.attachEvent&&window.attachEvent("onhashchange",e)})();
  </script>
  <script id="ttft_boot_data" nonce="2BVSDALH2Sw+JZL8osD4WA==">
    window.ttftData=
{"transaction_id":"592bf63b4cb3697f.35ca909535e126ae\u003c:592bf63b4cb3697f","server_request_start_time":1455433311234,"user_id":255634108,"is_ssl":true,"ren
dered_on_server":true,"is_tfe":true,"client":"macaw-swift","tfe_version":"tsa_a\/1.0.1\/20160203.1457.3ac347b","spdy_stream":"564455"};(function(){function
a(a,b){window.ttftData&&!window.ttftData[a]&&(window.ttftData[a]=b)}function d(){return c?Math.round(b.now()+b.timing.navigationStart):(new
Date).getTime()}var b=window.performance,c=b&&b.now;window.ttft||(window.ttft={});window.ttft.recordMilestone||
(window.ttft.recordMilestone=a);window.ttft.now||(window.ttft.now=d)})();
  </script>
  <script id="swift_action_queue" nonce="2BVSDALH2Sw+JZL8osD4WA==">
    (function(){function m(a){a||(a=window.event);if(!a)return!1;a.timestamp=(new Date).getTime();!a.target&&a.srcElement&&
```
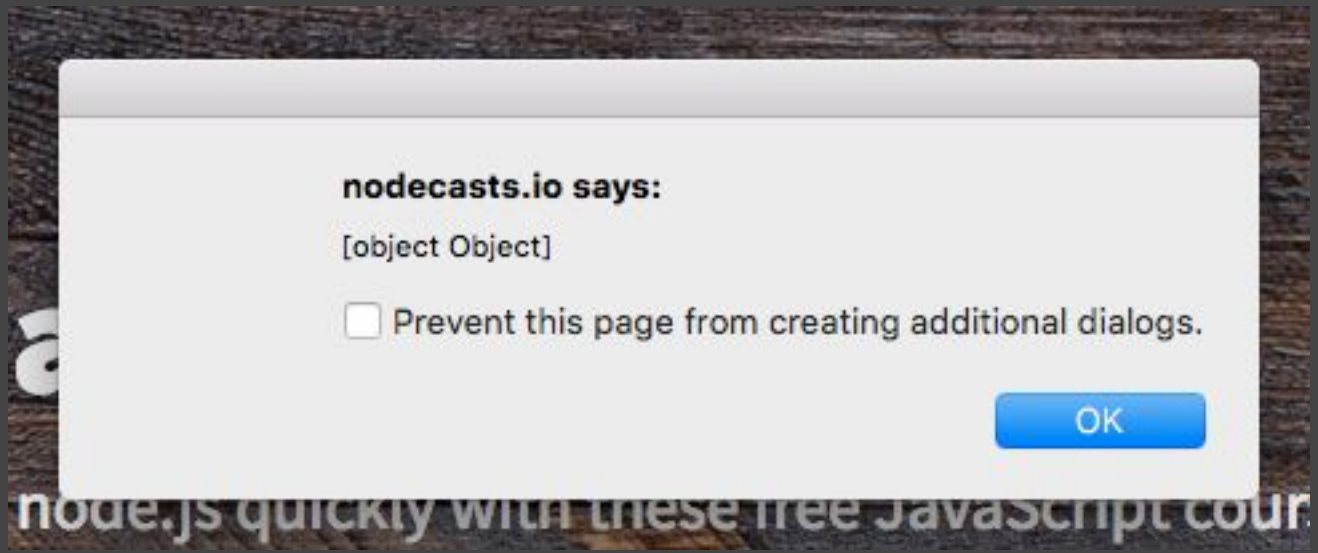
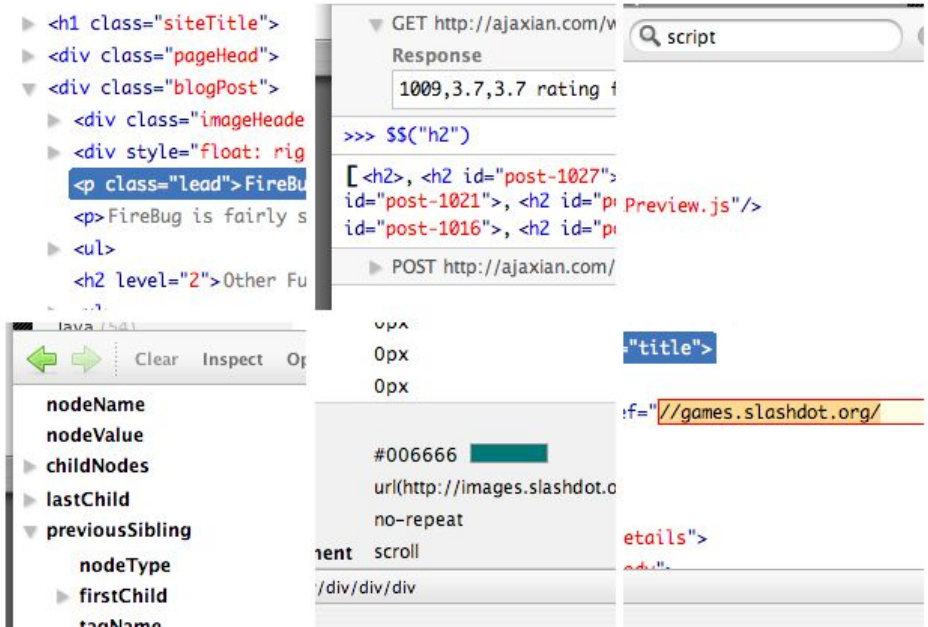


nodecasts.io says:
[object Object]
Prevent this page from creating additional dialogs.
OK

Live DOM Viewer

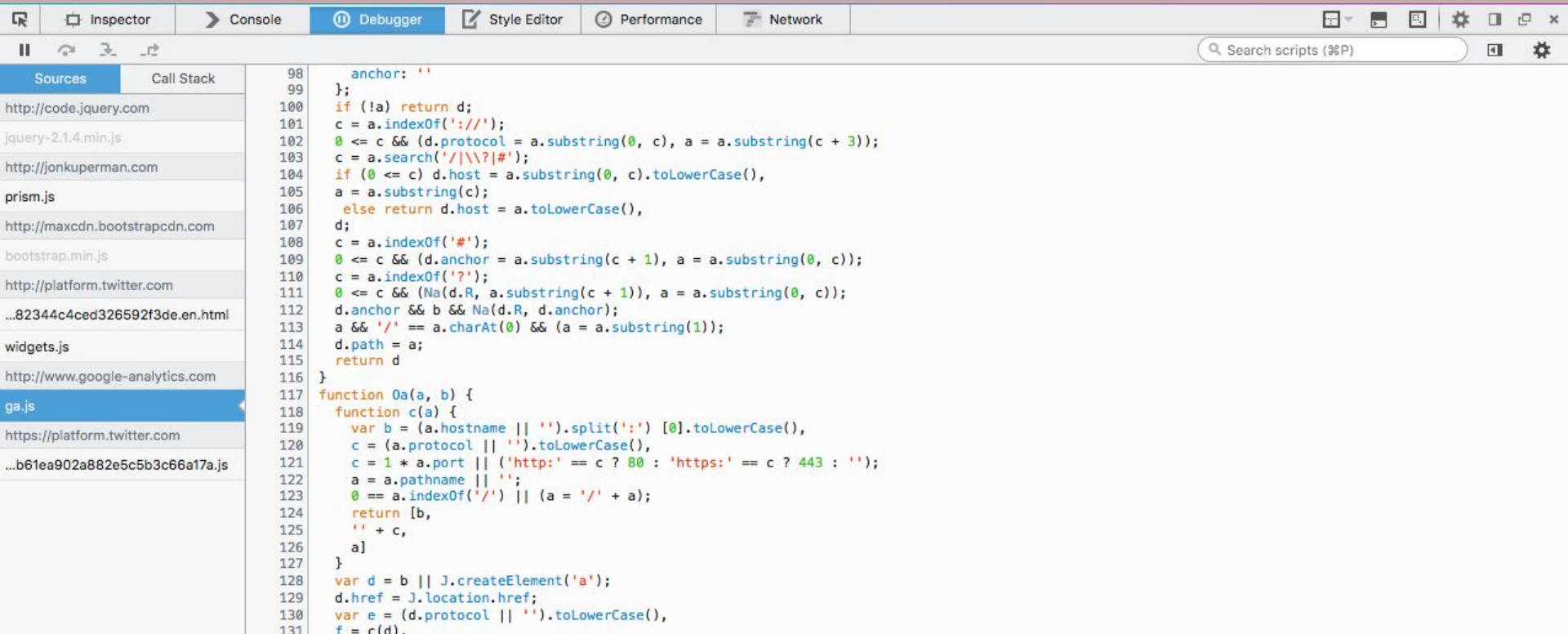
http://software.hixie.ch/utilities/js/live-dom-viewer/

FIREBUG 0.3 PREVIEW

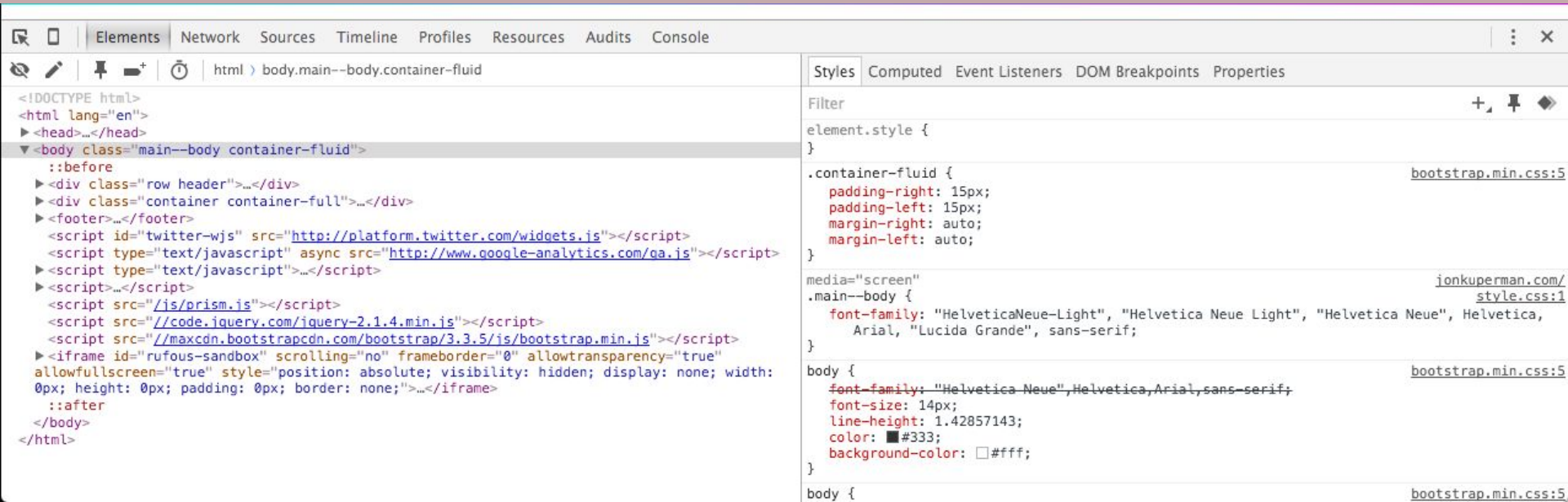
Words and bytes coming soon... For now, pictures.



Firefox


Inspector
Console
Debugger
Style Editor
Performance
Network
Search scripts (⌘P)
Sources
Call Stack
http://code.jquery.com
jquery-2.1.4.min.js
http://jonkuperman.com
prism.js
http://maxcdn.bootstrapcdn.com
bootstrap.min.js
http://platform.twitter.com
...82344c4ced326592f3de.en.html
widgets.js
http://www.google-analytics.com
ga.js
https://platform.twitter.com
...b61ea902a882e5c5b3c66a17a.js
anchor: ''
};
if (!a) return d;
c = a.indexOf('://');
0 <= c && (d.protocol = a.substring(0, c), a = a.substring(c + 3));
c = a.search('/|\\?|#');
if (0 <= c) d.host = a.substring(0, c).toLowerCase(),
a = a.substring(c);
else return d.host = a.toLowerCase(),
d;
c = a.indexOf('#');
0 <= c && (d.anchor = a.substring(c + 1), a = a.substring(0, c));
c = a.indexOf('?');
0 <= c && (Na(d.R, a.substring(c + 1)), a = a.substring(0, c));
d.anchor && b && Na(d.R, d.anchor);
a && '/' == a.charAt(0) && (a = a.substring(1));
d.path = a;
return d
}
function Oa(a, b) {
function c(a) {
var b = (a.hostname || '').split(':') [0].toLowerCase(),
c = (a.protocol || '').toLowerCase(),
c = 1 * a.port || ('http:' == c ? 80 : 'https:' == c ? 443 : '');
a = a.pathname || '';
0 == a.indexOf('/') || (a = '/' + a);
return [b,
'' + c,
a]
}
var d = b || J.createElement('a');
d.href = J.location.href;
var e = (d.protocol || '').toLowerCase(),

Chrome


Elements
Network
Sources
Timeline
Profiles
Resources
Audits
Console
html › body.main--body.container-fluid
<!DOCTYPE html>
<html lang="en">
▶ <head>…</head>
▼ <body class="main--body container-fluid">
::before
▶ …
▶ …
▶ <footer>…</footer>
<script id="twitter-wjs" src="http://platform.twitter.com/widgets.js"></script>
<script type="text/javascript" async src="http://www.google-analytics.com/ga.js"></script>
▶ <script type="text/javascript">…</script>
▶ <script>…</script>
<script src="/js/prism.js"></script>
<script src="//code.jquery.com/jquery-2.1.4.min.js"></script>
<script src="//maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js"></script>
▶ <iframe id="rufous-sandbox" scrolling="no" frameborder="0" allowtransparency="true" allowfullscreen="true" style="position: absolute; visibility: hidden; display: none; width: 0px; height: 0px; padding: 0px; border: none;">…</iframe>
::after
</body>
</html>
Styles
Computed
Event Listeners
DOM Breakpoints
Properties
Filter
element.style {
}
.container-fluid {
bootstrap.min.css:5
padding-right: 15px;
padding-left: 15px;
margin-right: auto;
margin-left: auto;
}
media="screen"
jonkuperman.com/
.main--body {
style.css:1
font-family: "HelveticaNeue-Light", "Helvetica Neue Light", "Helvetica Neue", Helvetica, Arial, "Lucida Grande", sans-serif;
}
body {
bootstrap.min.css:5
font-family: "Helvetica Neue",Helvetica,Arial,sans-serif;
font-size: 14px;
line-height: 1.42857143;
color: #333;
background-color: #fff;
}
body {
bootstrap.min.css:5

Outside of Chrome

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Pull requests Issues Gist

node-inspector / **node-inspector**

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Code Issues 113 Pull requests 15 Wiki Pulse Graphs

Node.js debugger based on Blink Developer Tools

582 commits **2** branches **50** releases **52** contributors

Branch: **master** New pull request

New file Find file HTTPS https://github.com/node-i

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3y3 Added frontend ping — Latest commit `bd73370` 2 days ago

bin	Support listening on unix socket	7 days ago
docs	Fixed misspelled word "Visit" in docs	2 years ago
front-end-node	fix ws url	2 days ago
front-end	Fix css issue with debugger window cut off #699	6 months ago
lib	Added frontend ping	2 days ago
test	Remove registerDebuggerEventHandlers	2 days ago
tools	Update release.sh	5 months ago
.gitattributes	Fix release logic	a year ago
.gitignore	Plugins: merging InspectorJson	7 months ago
.jshintignore	Plugins: merging InspectorJson	7 months ago
.jshintrc	Use jshint instead of gjslint	2 years ago

Add v8_inspector support #6792

Open **ofrobots** wants to merge 3 commits into `nodejs:master` from `ofrobots:v8-inspector`

Conversation 161 Commits 3 Files changed 271 +19,995 −0

ofrobots commented 10 days ago

For background see: #2546 (comment)

This PR brings in v8_inspector support to Node.js (currently behind a compile time flag.) This means Node.js can now be debugged and profiled via the Chrome Debugging Protocol, which enables inspection via Chrome DevTools and other tools & IDEs. So far, v8_inspector includes support for the following protocol domains: Debugger, Profiler, Runtime, HeapProfiler

In the Chrome DevTools client, the following is now available:

Labels

ctc-agenda

debugger

doc

semver-minor

Milestone

No milestone

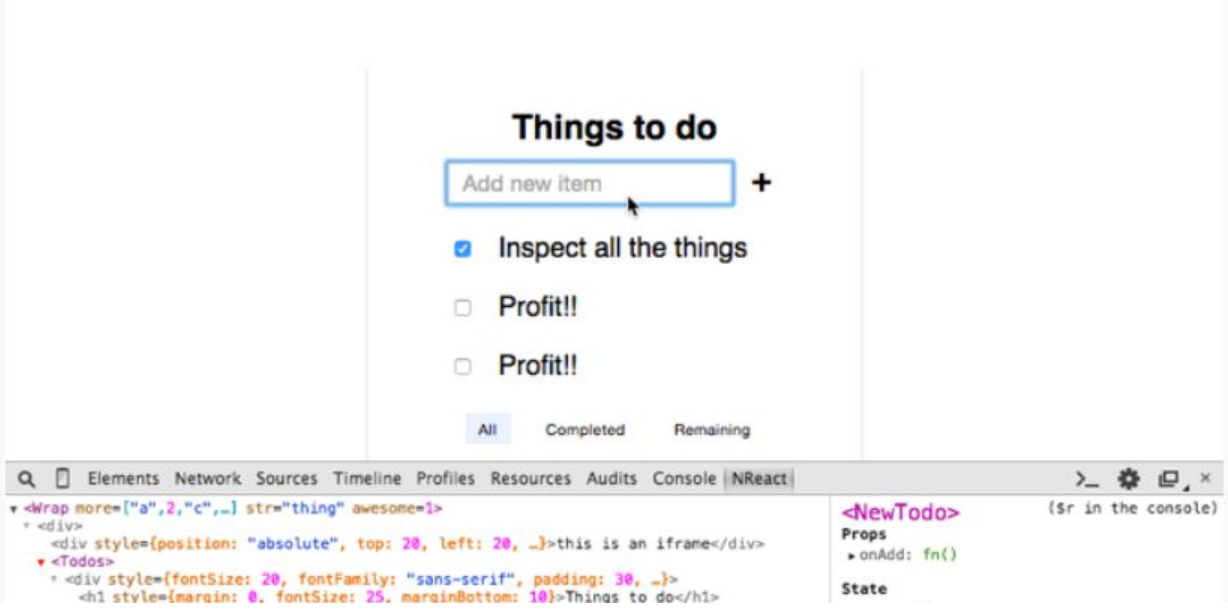
RECENT POSTS

Discontinuing IE 8 Support in React DOM
(A => B) !=> (B => A)
React v0.14.4
React Components, Elements, and Instances
isMounted is an Antipattern
React.js Conf 2016 Diversity Scholarship
React v0.14.3
React v0.14.2
React v0.14.1
Reactiflux is moving to Discord
All posts ...

New React Developer Tools

September 2, 2015 by Ben Alpert

A month ago, we posted a beta of the new React developer tools. Today, we're releasing the first stable version of the new devtools. We're calling it version 0.14, but it's a full rewrite so we think of it more like a 2.0 release.



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gaearon / redux-devtools

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Code Issues 16 Pull requests 9 Wiki Pulse Graphs

DevTools for Redux with hot reloading, action replay, and customizable UI http://youtube.com/watch?v=xsSnOQynTHs

384 commits 1 branch 28 releases 54 contributors

Branch: master New pull request Create new file Upload files Find file Clone or download

rajeshaz09 committed with zalmoxisus Examples: fixed HMR of components issue (#303) Latest commit 619a18b 17 days ago

docs	Add information about instrumentation options	21 days ago
examples	Examples: fixed HMR of components issue (#303)	17 days ago
src	Move instrumentation to `redux-devtools-instrument` (#281)	3 months ago
test	Move instrumentation to `redux-devtools-instrument` (#281)	3 months ago
.babelrc	Use es2015-loose and react babel presets	8 months ago
.eslintignore	Add project skeleton (no DevTools yet)	a year ago

chrome web store

jon.kuperman@gmail.com

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Free
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Works with

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★★★★☆ & up

Ember Inspector

offered by www.emberjs.com

★★★★★ (264) | Developer Tools | 73,065 users

+ ADD TO CHROME

OVERVIEW | REVIEWS | RELATED

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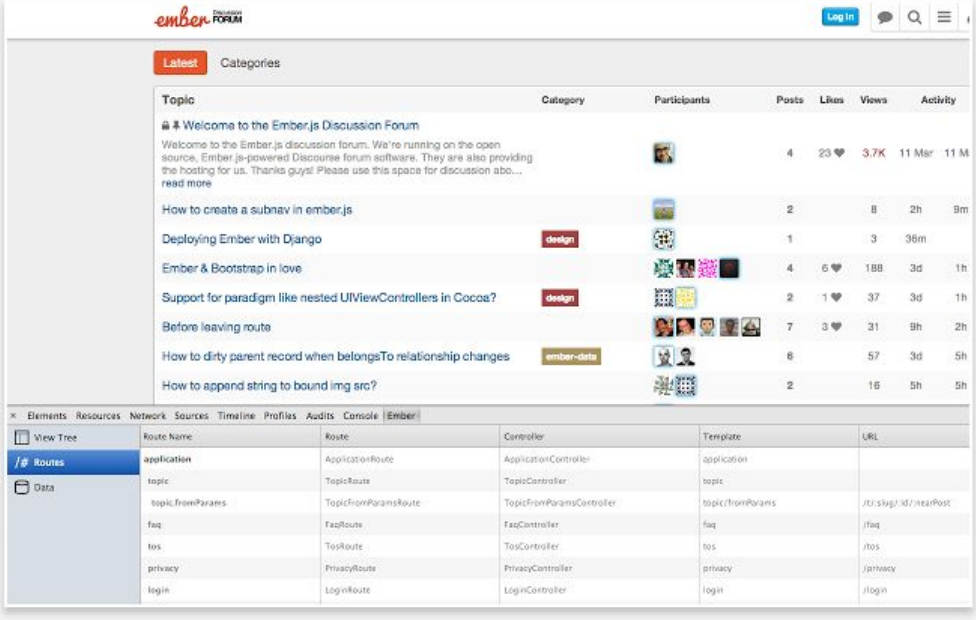


Compatible with your device

Tool for debugging Ember applications.

The Ember Inspector is a plug-in for the Chrome developer tools that makes understanding and debugging your Ember.js application a snap.

After installing this extension, you'll be able to easily:

- View all of the routes defined in your application.
- Reference Ember's naming conventions for your URLs, including what to name your

Website
Report Abuse

Version: 1.9.5
Updated: February 3, 2016
Size: 751KiB
Language: English

View all

Movies

FREE

What Can DevTools Do?

- Create Files
- Write Code
- Persist Changes to Disk
- Step Through Debug
- Audit Pages
- Emulate Devices

- Simulate Network Conditions
- Find and Fix Memory Leaks
- Profile Your Code
- Analyze JavaScript performance
- Spot page jank

Resources

https://developers.google.com/web/tools/chrome-devtools/

node
JS
®

This repository Search Pull requests Issues Gist

jkup / **mastering-chrome-devtools**

Unwatch 2 Unstar 6 Fork 4

Code Issues 0 Pull requests 0 Wiki Pulse Graphs Settings

Website for teaching Chrome DevTools — Edit

42 commits **1** branch **0** releases **1** contributor

Branch: **master** New pull request Create new file Upload files Find file Clone or download

jkup fixed profiling page Latest commit a6339e8 20 minutes ago

public	fixed profiling page	20 minutes ago
views	fixed profiling page	20 minutes ago
.gitignore	Initial commit	3 months ago
LICENSE	Initial commit	3 months ago
README.md	updated readme and linkified home page	a day ago
package.json	refactor views	3 days ago
server.js	added basic service worker	6 hours ago

rejected.us:1337

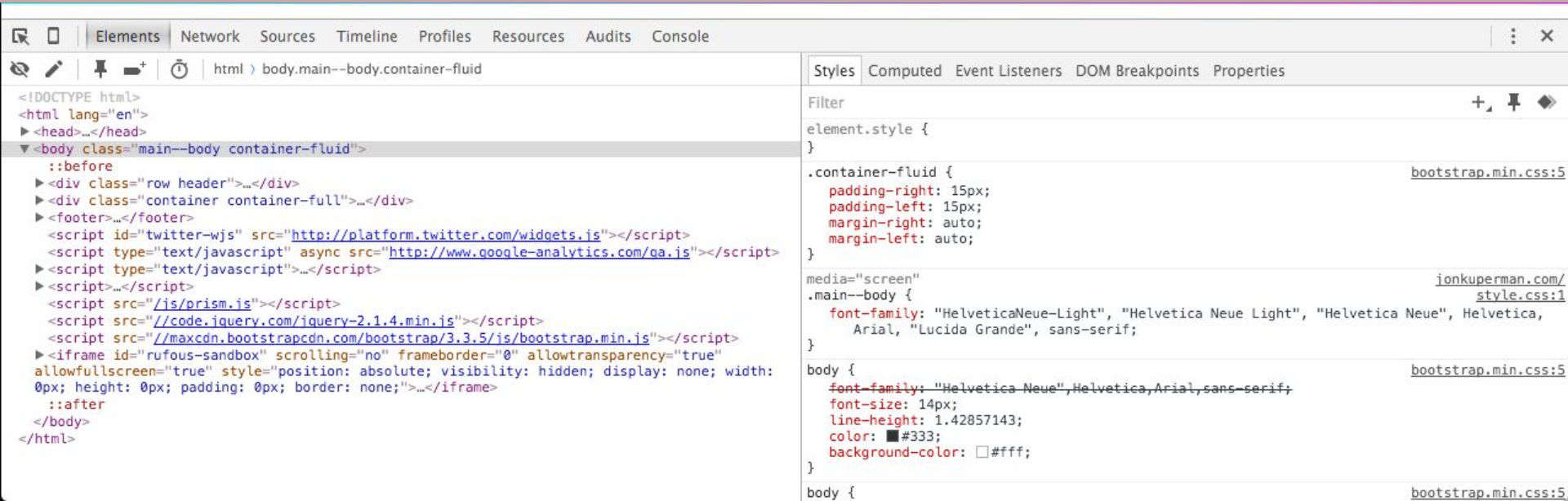
A quick walk through the panels

Device

Emulation

Editing

Elements


Elements
Network
Sources
Timeline
Profiles
Resources
Audits
Console
html › body.main--body.container-fluid
<!DOCTYPE html>
<html lang="en">
▶ <head>…</head>
▼ <body class="main--body container-fluid">
::before
▶ …
▶ …
▶ <footer>…</footer>
<script id="twitter-wjs" src="http://platform.twitter.com/widgets.js"></script>
<script type="text/javascript" async src="http://www.google-analytics.com/ga.js"></script>
▶ <script type="text/javascript">…</script>
▶ <script>…</script>
<script src="/js/prism.js"></script>
<script src="//code.jquery.com/jquery-2.1.4.min.js"></script>
<script src="//maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js"></script>
▶ <iframe id="rufous-sandbox" scrolling="no" frameborder="0" allowtransparency="true" allowfullscreen="true" style="position: absolute; visibility: hidden; display: none; width: 0px; height: 0px; padding: 0px; border: none;">…</iframe>
::after
</body>
</html>
Styles
Computed
Event Listeners
DOM Breakpoints
Properties
Filter
element.style {
}
.container-fluid {
padding-right: 15px;
padding-left: 15px;
margin-right: auto;
margin-left: auto;
}
bootstrap.min.css:5
media="screen"
.main--body {
font-family: "HelveticaNeue-Light", "Helvetica Neue Light", "Helvetica Neue", Helvetica, Arial, "Lucida Grande", sans-serif;
}
jonkuperman.com/style.css:1
body {
font-family: "Helvetica Neue",Helvetica,Arial,sans-serif;
font-size: 14px;
line-height: 1.42857143;
color: #333;
background-color: #fff;
}
bootstrap.min.css:5
body {
bootstrap.min.css:5

Scroll into view

Hide & Show

Elements

Simulating State

Computed Styles

Break on...

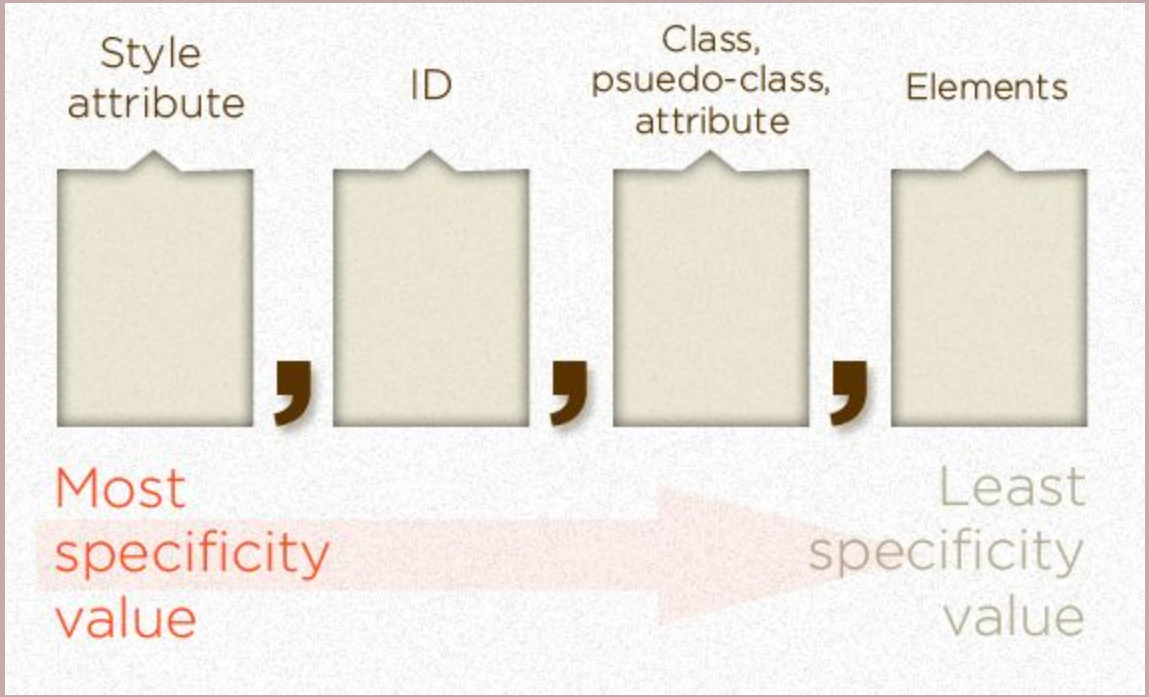
Event Listeners

Color Formats

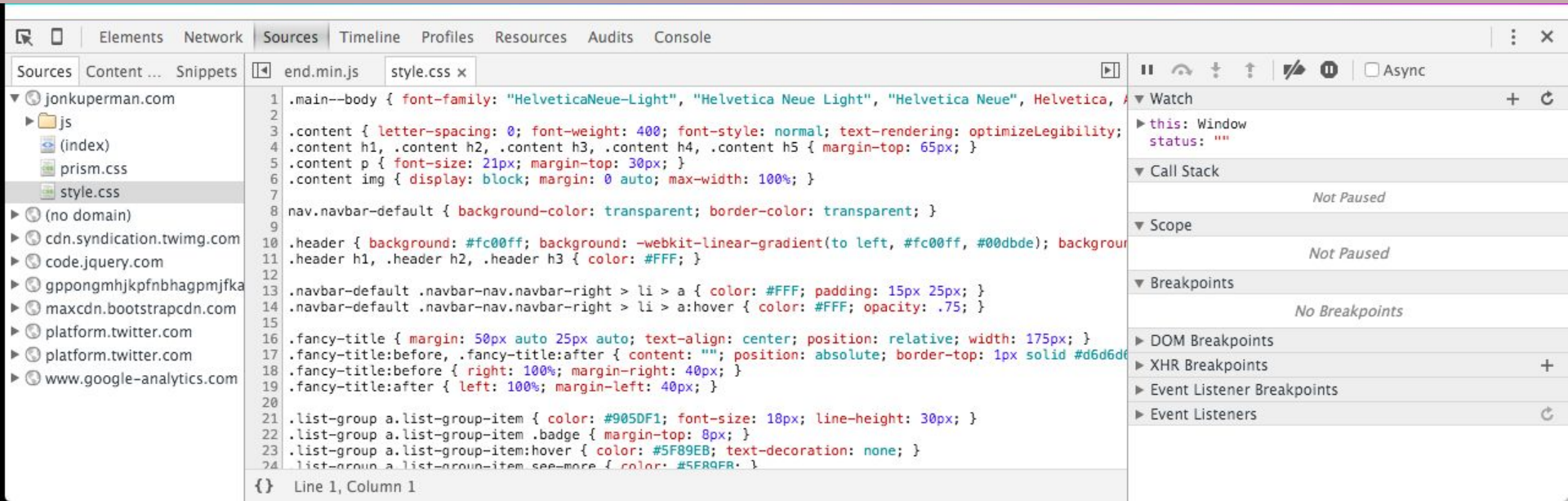
Drag & Drop

CSS Specificity

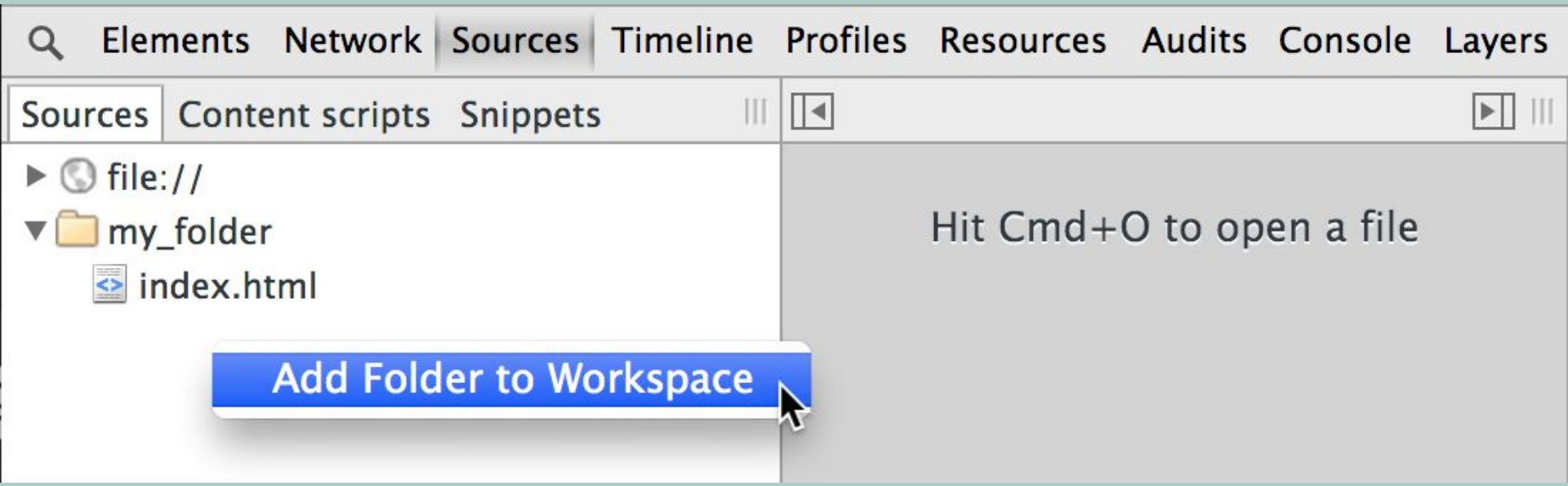
Adding Elements & Classes


Style attribute
ID
Class, psuedo-class, attribute
Elements
,
,
,
Most specificity value
Least specificity value

Sources


Elements
Network
Sources
Timeline
Profiles
Resources
Audits
Console
Sources
Content ...
Snippets
jonkuperman.com
js
(index)
prism.css
style.css
(no domain)
cdn.syndication.twimg.com
code.jquery.com
gppongmhjkpfnbhagpmjfka
maxcdn.bootstrapcdn.com
platform.twitter.com
platform.twitter.com
www.google-analytics.com
end.min.js
style.css
.main--body { font-family: "HelveticaNeue-Light", "Helvetica Neue Light", "Helvetica Neue", Helvetica,
.content { letter-spacing: 0; font-weight: 400; font-style: normal; text-rendering: optimizeLegibility;
.content h1, .content h2, .content h3, .content h4, .content h5 { margin-top: 65px; }
.content p { font-size: 21px; margin-top: 30px; }
.content img { display: block; margin: 0 auto; max-width: 100%; }
nav.navbar-default { background-color: transparent; border-color: transparent; }
.header { background: #fc00ff; background: -webkit-linear-gradient(to left, #fc00ff, #00dbde); backgrou
.header h1, .header h2, .header h3 { color: #FFF; }
.navbar-default .navbar-nav.navbar-right > li > a { color: #FFF; padding: 15px 25px; }
.navbar-default .navbar-nav.navbar-right > li > a:hover { color: #FFF; opacity: .75; }
.fancy-title { margin: 50px auto 25px auto; text-align: center; position: relative; width: 175px; }
.fancy-title:before, .fancy-title:after { content: ""; position: absolute; border-top: 1px solid #d6d6d
.fancy-title:before { right: 100%; margin-right: 40px; }
.fancy-title:after { left: 100%; margin-left: 40px; }
.list-group a.list-group-item { color: #905DF1; font-size: 18px; line-height: 30px; }
.list-group a.list-group-item .badge { margin-top: 8px; }
.list-group a.list-group-item:hover { color: #5F89EB; text-decoration: none; }
Line 1, Column 1
Async
Watch
this: Window
status: ""
Call Stack
Not Paused
Scope
Not Paused
Breakpoints
No Breakpoints
DOM Breakpoints
XHR Breakpoints
Event Listener Breakpoints
Event Listeners

Workspaces

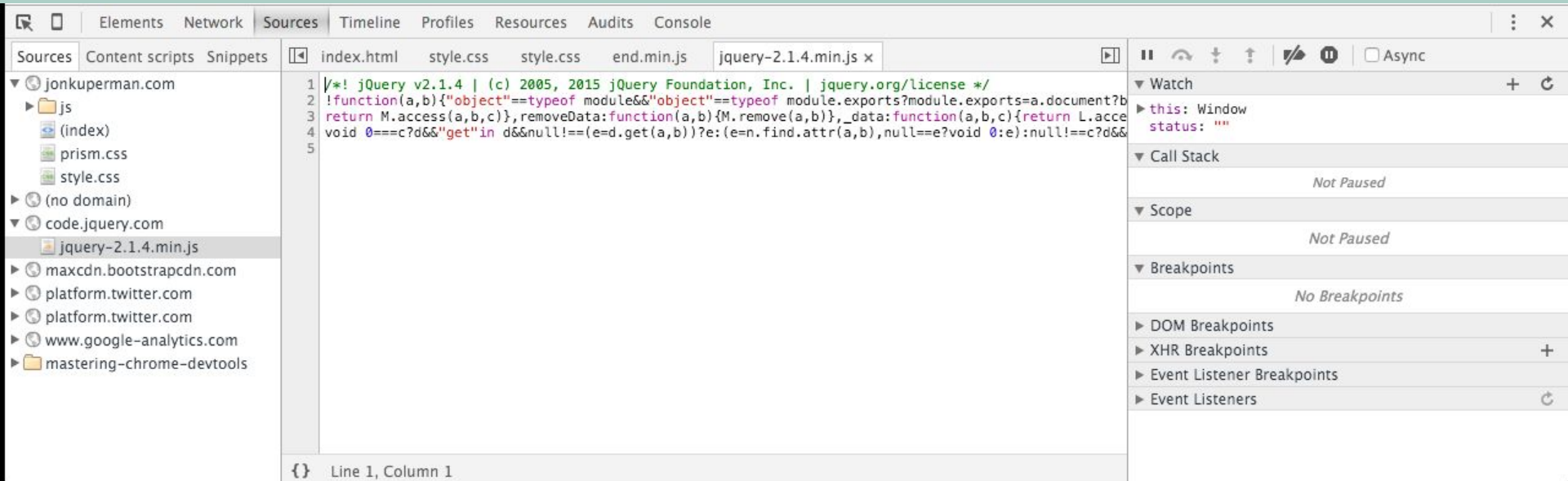

Elements
Network
Sources
Timeline
Profiles
Resources
Audits
Console
Layers
Sources
Content scripts
Snippets
file://
my_folder
index.html
Add Folder to Workspace
Hit Cmd+O to open a file

Limitations

As powerful as Workspaces are, there are some limitations you should be aware of.

- Only style changes in the Elements panel are persisted; changes to the DOM are not persisted.
- Only styles defined in an external CSS file can be saved. Changes to `element.style` or to inline styles are not persisted. (If you have inline styles, they can be changed on the Sources panel.)
- Style changes in the Elements panel are persisted immediately without an explicit save – `Ctrl` + `S` or `Cmd` + `S` (Mac) – if you have the CSS resource mapped to a local file.
- If you are mapping files from a remote server instead of a local server, when you refresh the page, Chrome reloads the page from the remote server. Your changes still persist to disk and are reapplied if you continue editing in Workspaces.
- You must use the full path to a mapped file in the browser. Even your index files must include .html in the URL, in order to see the staged version.

Pretty Print

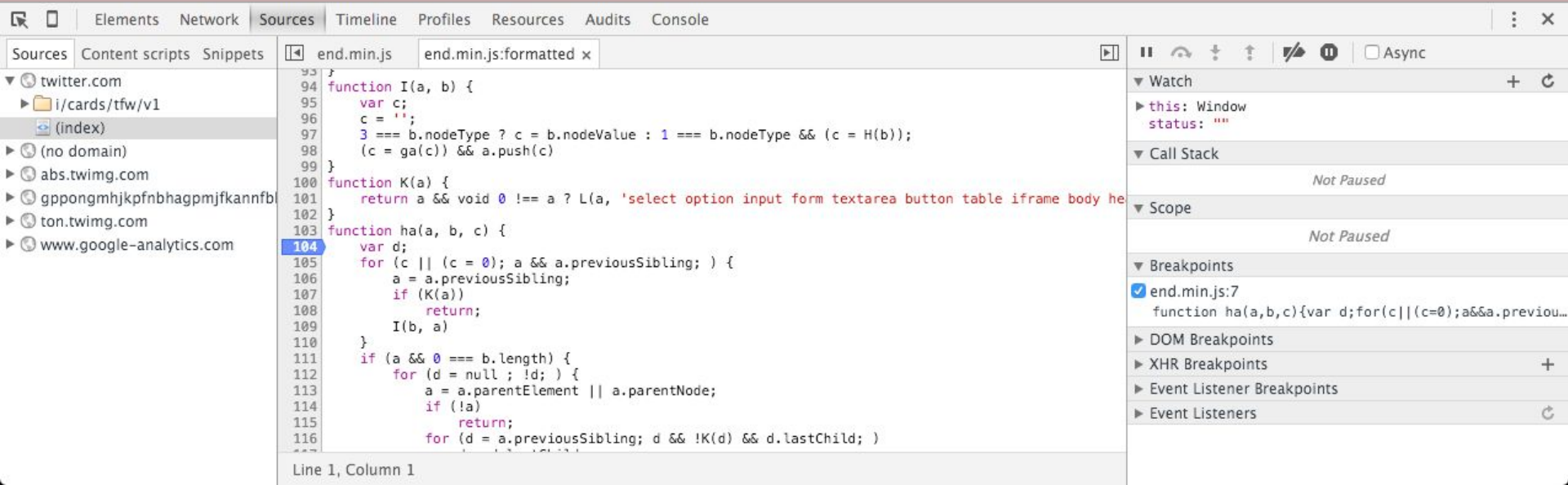


https://github.com/jkup/mastering-chrome-devtools

rejected.us:1337

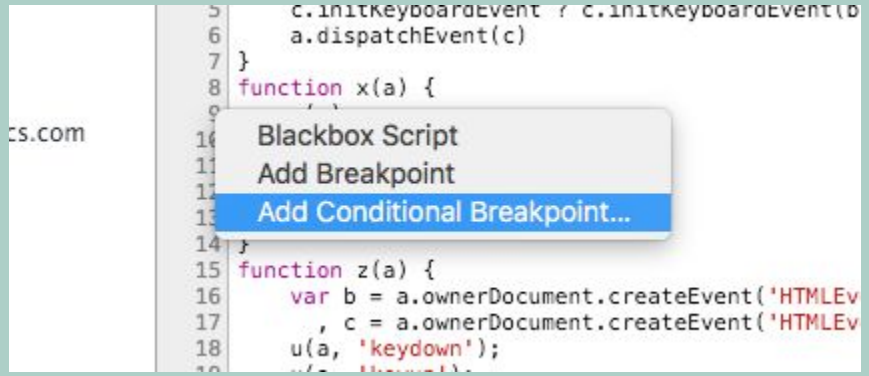
Debugging

Step Through Debugging



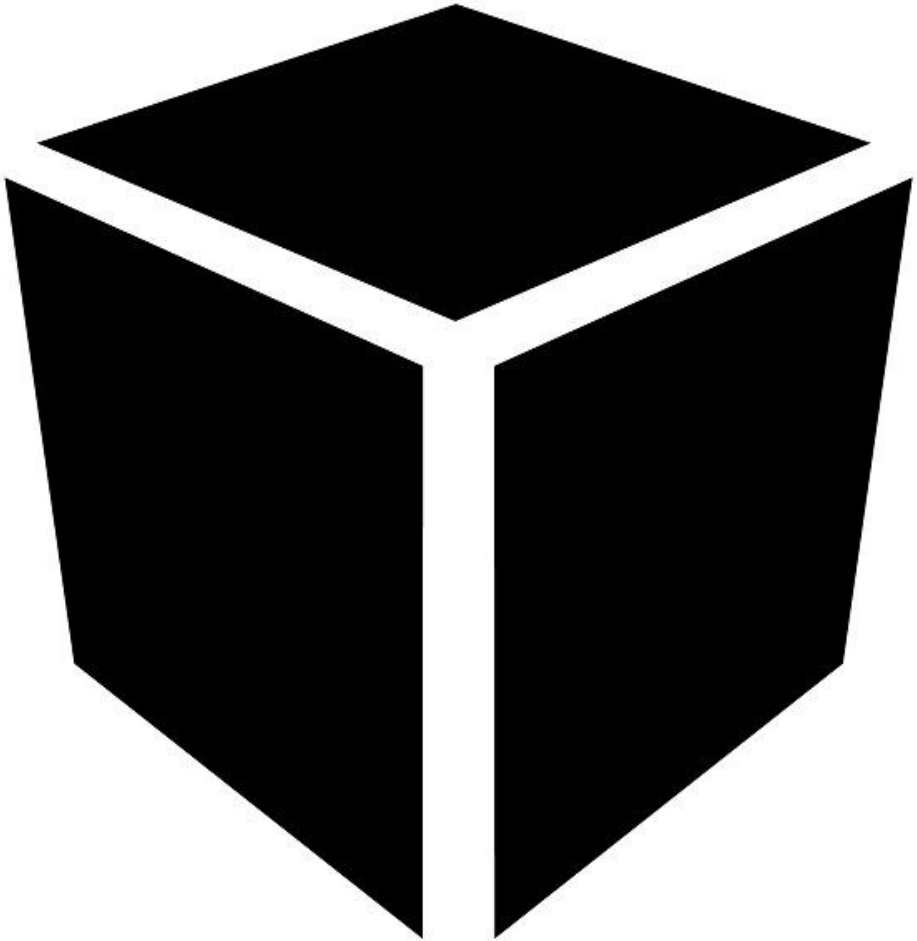
Breakpoints

Conditional Breakpoints



XHR Breakpoints

Blackboxing



Scripts

Demo Time!

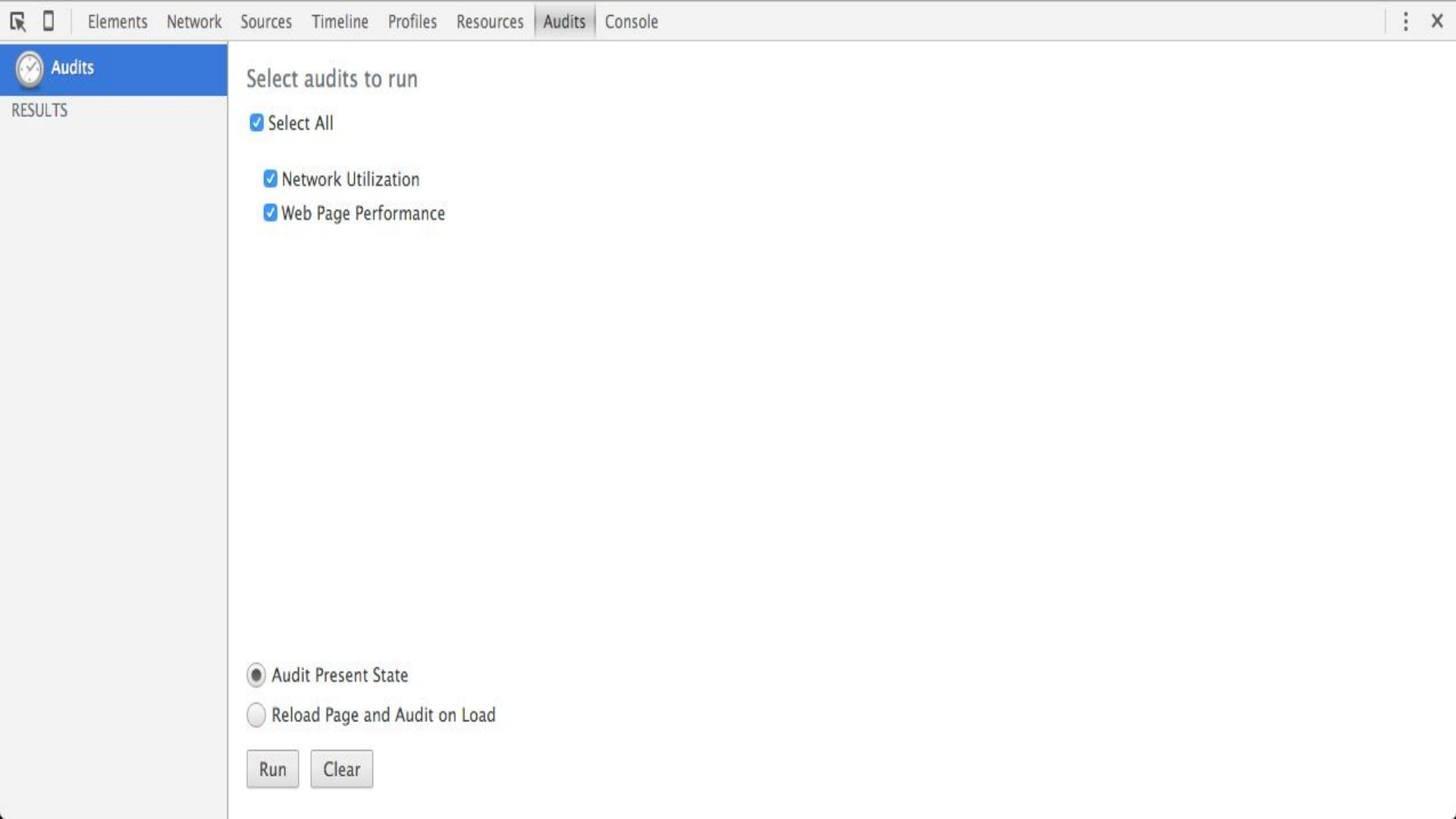
Challenge Time!

Profiling

How important is load time?

- Google.com: **+500 ms** (speed decrease) -> **-20% traffic loss**
- Yahoo.com: **+400 ms** (speed decrease) -> **-5-9% full-page traffic loss** (visitor left before the page finished loading)
- Amazon.com: **+100 ms** (speed decrease) -> **-1% sales loss**

Audit


Elements
Network
Sources
Timeline
Profiles
Resources
Audits
Console
Audits
RESULTS
Select audits to run
Select All
Network Utilization
Web Page Performance
Audit Present State
Reload Page and Audit on Load
Run
Clear

Google Developers

Products > PageSpeed Insights

PageSpeed Insights G+1

Make your web pages fast on all devices.

Enter a web page URL ANALYZE

Web Performance

Learn more about web performance tools at Google, including browser extensions and APIs for Insights, PageSpeed Service, and our optimization libraries.

Give Feedback

Have comments or questions about PageSpeed Insights? Send feedback or discuss on our mailing list.

About PageSpeed Insights

PageSpeed Insights analyzes the content of a web page, then generates suggestions to make that page faster. Learn more.

Common Audit Problems

1. Combine external CSS and JS
2. Enable gzip compression (Apache, Node, WordPress)
3. Compress images (https://imageoptim.com/)
4. Leverage Browser Caching
5. Put CSS in document head
6. Unused CSS rules (Old CSS that can be pruned)

Network

Terminology

Queuing

If a request is queued it indicated that:

- The request was postponed by the rendering engine because it's considered lower priority than critical resources (such as scripts/styles). This often happens with images.
- The request was put on hold to wait for an unavailable TCP socket that's about to free up.
- The request was put on hold because the browser only allows six TCP connections per origin on HTTP 1.
- Time spent making disk cache entries (typically very quick.)

Stalled/Blocking

Time the request spent waiting before it could be sent. It can be waiting for any of the reasons described for Queueing. Additionally, this time is inclusive of any time spent in proxy negotiation.

Proxy Negotiation

Time spent negotiating with a proxy server connection.

DNS Lookup

Time spent performing the DNS lookup. Every new domain on a page requires a full roundtrip to do the DNS lookup.

Initial Connection / Connecting

Time it took to establish a connection, including TCP handshakes/retries and negotiating a SSL.

SSL

Time spent completing a SSL handshake.

Request Sent / Sending

Time spent issuing the network request. Typically a fraction of a millisecond.

Waiting (TTFB)

Time spent waiting for the initial response, also known as the Time To First Byte. This time captures the latency of a round trip to the server in addition to the time spent waiting for the server to deliver the response.

Content Download / Downloading

Time spent receiving the response data.

Common Problems

Queued or Stalled

This indicates that too many resources are being retrieved from a single client. On HTTP 1.0/1.1 connections, Chrome enforces a maximum of six TCP connections per host.

Slow Time to First Byte

1. Bad network conditions between client and server, or
2. A slowly responding server application

Network

Simulation

Timeline

North-South Road
WESTFOLD EMNET

CPU Throttling

Challenge Time!

Timing

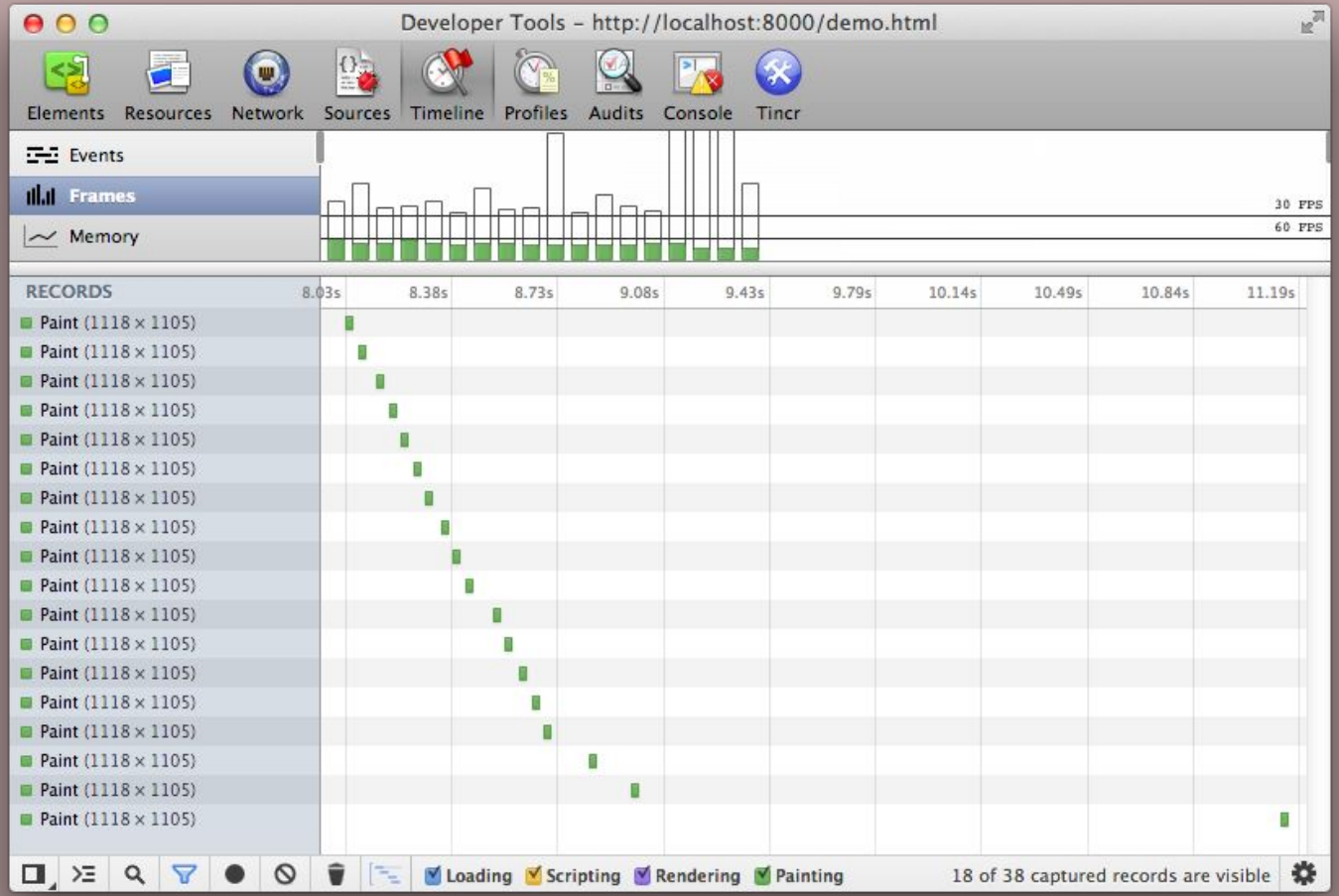
```
1     0.1 ms  function doSomeWork() {
2               createSomeNodes()
3               readSomeHeights()
4     0.3 ms    writeSomeHeights()
5     0.1 ms    countSoHigh()
6             }
7
8             function createSomeNodes() {
9               for (var i = 0; i < 10; i++) {
10                var div = document.createElement('div')
11                div.classList = 'list-group-item'
12    0.1 ms      var divContent = document.createTextNode(i)
13                div.appendChild(divContent)
14                var list = document.querySelector('#timing')
15                list.appendChild(div)
16              }
```

{} Line 23, Column 24

Demo Time!

Page Jank

Jank is any stuttering, juddering or just plain halting that users see when a site or app isn't keeping up with the refresh rate.


Developer Tools - http://localhost:8000/demo.html
Elements
Resources
Network
Sources
Timeline
Profiles
Audits
Console
Tincr
Events
Frames
Memory
30 FPS
60 FPS
RECORDS
8.03s
8.38s
8.73s
9.08s
9.43s
9.79s
10.14s
10.49s
10.84s
11.19s
Paint (1118 × 1105)
Loading
Scripting
Rendering
Painting
18 of 38 captured records are visible

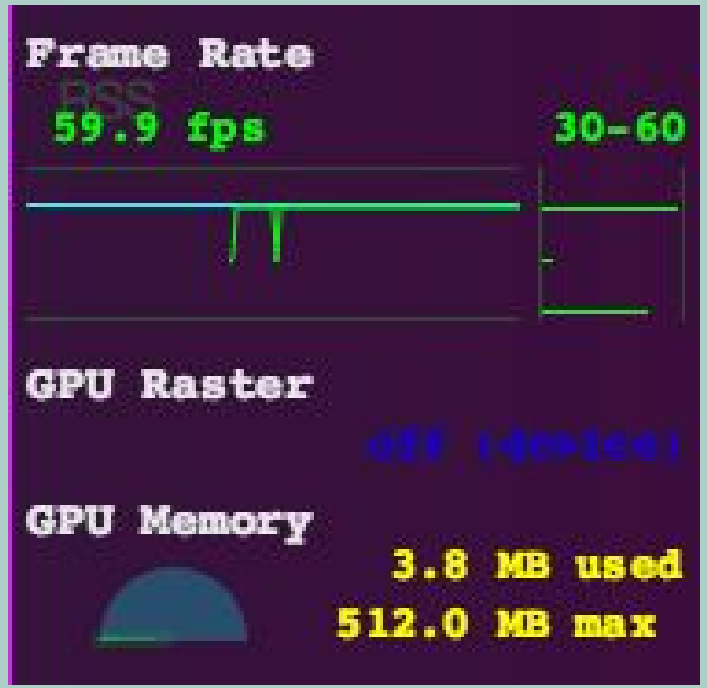
60

Frames Per Second

Most devices today refresh their screens 60 times a second. The browser needs to match the device's refresh rate and put up 1 new picture, or frame, for each of those screen refreshes.

Each of those frames has a budget of just over 16ms (1 second / 60 = 16.66ms). In reality, however, the browser has housekeeping work to do, so all of your work needs to be completed inside 10ms.

Timeline (again)


Frame Rate
59.9 fps
30-60
GPU Raster
GPU Memory
3.8 MB used
512.0 MB max

```
// Read
var h1 = element1.clientHeight;

// Write (invalidates layout)
element1.style.height = (h1 * 2) + 'px';

// Read (triggers layout)
var h2 = element2.clientHeight;

// Write (invalidates layout)
element2.style.height = (h2 * 2) + 'px';

// Read (triggers layout)
var h3 = element3.clientHeight;

// Write (invalidates layout)
element3.style.height = (h3 * 2) + 'px';
```

`Window.requestAnimationFrame()`

This repository Search

Pull requests Issues Gist

wilsonpage / fastdom

Watch 119 Unstar 3,302 Fork 128

Code Issues 2 Pull requests 1 Wiki Pulse Graphs

Eliminates layout thrashing by batching DOM measurement and mutation tasks

246 commits **9** branches **22** releases **15** contributors

Branch: **master** New pull request Create new file Upload files Find file Clone or download

wilsonpage Merge pull request #83 from wilsonpage/81-fastdom-promised-ctx ··· Latest commit `bbdc191` 23 days ago

examples	V1	5 months ago
extensions	Fixed incorrect context in fastdom-promised (closes #81)	23 days ago
src	V1	5 months ago
test	Fixed incorrect context in fastdom-promised (closes #81)	23 days ago
.gitignore	V1	5 months ago
.jshintignore	V1	5 months ago
		5 months ago

https://github.com

Show Paint Rectangles

koalastothemax.com

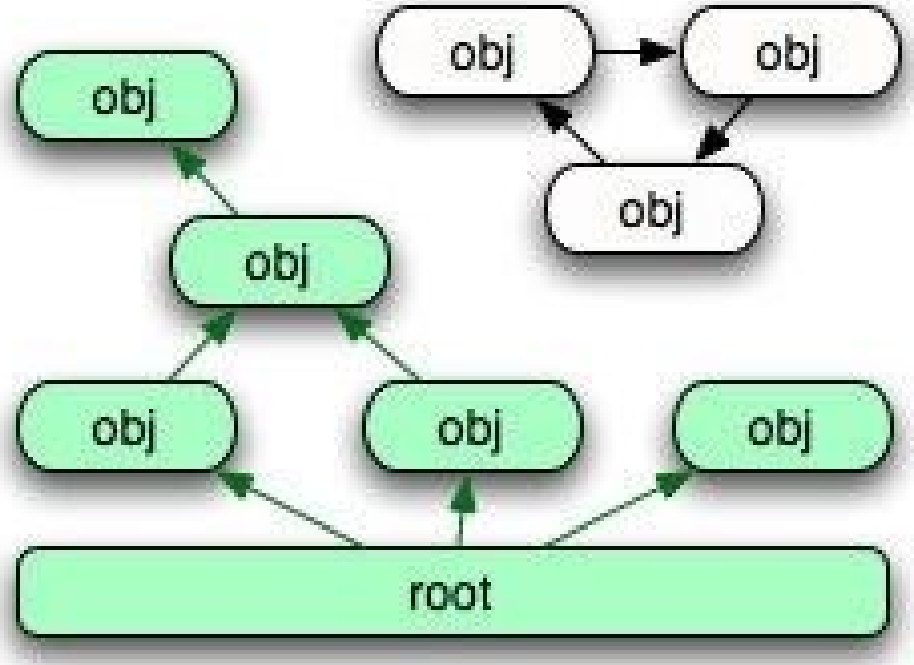
will-change

will-change?

Challenge Time!

Memory Leaks

Garbage Collection


obj
obj
obj
obj
obj
obj
obj
obj
root

Common JavaScript Memory Leaks

The Accidental Global

```
1
2    function foo() {
3        bar = "this is probably not what you meant";
4    }
```

The Forgotten Interval

```
1
2   var bigData = getData();
3   setInterval(function() {
4     document.body.innerHTML = JSON.stringify(bigData));
5   }, 1000);
```

The DOM and not the DOM

```
1
2   var button = document.getElementById('button');
3   // Then later..
4   function removeButton() {
5     document.body.removeChild(document.getElementById('button'));
6   }
```

Challenge Time!

Experiments!

Where do we go
from here?

@ChromeDevTools
@firefoxdevtools
@EdgeDevTools
@paul_irish
@addyosmani
http://jankfree.org/
https://developers.google.com/web/tools/chrome-devtools/

Browser Rendering Optimization ■■■ Advanced

This course will demystify the browser's rendering pipeline and make it easy for you to build high performance web apps.

BUILT BY **Google**

Thanks!

@jkup

jon.kuperman@gmail.com