

HTML5

Huh, what is it good for?

Remy Sharp
@rem

I wrote a book on it :)

it's more than

- HTML

- New HTML5
elements

- Buzzword

- Simple
doctype

JAVASCRIPT

- **Offline**

 - **App cache**

 - **WebStorage**

 - **WebSQL**

 - **IndexedDB**

- **Multimedia**

 - **Video & Audio**

● **X-domain
messaging**

● **CORS**

● **File API**

● **Drag & Drop**

● **History API**

● **Lots, lots
more.**

**Javascript
Script**

JavaScript

● **Canvas API**

● **Offline apps**

● **Web Sockets**

**When can I
use "HTML5"?**



Node utility to inline images, CSS and JavaScript for a web page - useful for mobile sites — [Read more](#)

click here to add a homepage

SSH

HTTP

Git Read-Only

git@github.com:remy/inliner.git



Read+Write access







reverting back to online jQuery. Closes #7



remy (author)

2 days ago

inliner /

name	age	message
 bin/	May 16, 2011	fixed up binary [remy]
 .gitignore	May 15, 2011	ignore file [remy]
 README.md	3 days ago	Updated docs [remy]
 inliner.js	2 days ago	reverting back to online jQuery. Closes #7 [remy]
 jquery.min.js	3 days ago	including local jQuery to allow for offline inline.
 package.json	2 days ago	reverting back to online jQuery. Closes #7 [remy]

What's happening?

- Timeline
- @Mentions
- Retweets
- Searches
- Lists

emmaboulton Emma Boulton
Getting flashbacks to 2007 and my old life at the BBC, as I write a report on online news consumption.
45 seconds ago

danwrong Dan Webb
Ha! Got two passes to a preview screening of Attack The Block in SF on wednesday night. Anyone want to join me?
3 minutes ago

emmaboulton Emma Boulton
Hungry people of the internet, I present to you, 5 min cup cake in a mug: howto.wired.com/wiki/Make_Cake... (via @aexmo)
6 minutes ago

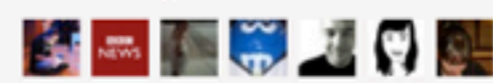
txsharp Tristan Sharp
Call me what you like, just make sure you don't forget dim as Ive just realised why every second home in Brighton has an "open house" banner
8 minutes ago

mollydotcom Molly E. Holzschlag

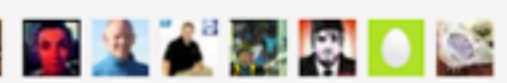
Your Tweets 14,206

1 hour ago: It appears to have stopped raining in Bergen. People look confused.

Following 98



Followers 14,075



Favorites 1,196

★ **gekitsu** @rem FYI when you're doing your demos you can edit the java script li...

Listed 1,687

Recently listed in: [jscript-gurus](#), [People-I-Retweet](#), [Nosailor](#), [developer](#), [web](#)

Trends

United Kingdom · [change](#)

- #baftas
- #whydosomegirls
- #20bandsilove
- Lauren Socha Abramovich
- Alex Kingston
- Robert Sheehan
- Jasminator Party
- Hiddink
- Nabi Muhammad SAW

Who to follow

Suggestions for you · [view all](#)

- Disney** · Follow
Disney ✓
Promoted
- emilytoop** · Follow
Emily Toop
- dhh** · Follow
DHH
- __DavidFlanagan** · Follow
David Flanagan

[Refresh suggestions](#)
[Browse interests](#) · [Find friends](#)



18:27

3%



Safari



Calendar



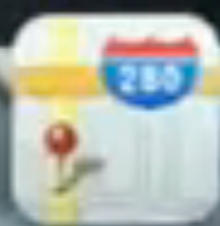
Clock



Compass



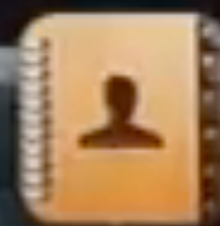
Weather



Maps



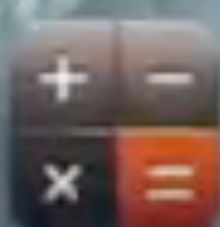
Notes



Contacts



Messages



Calculator



Voice Memos

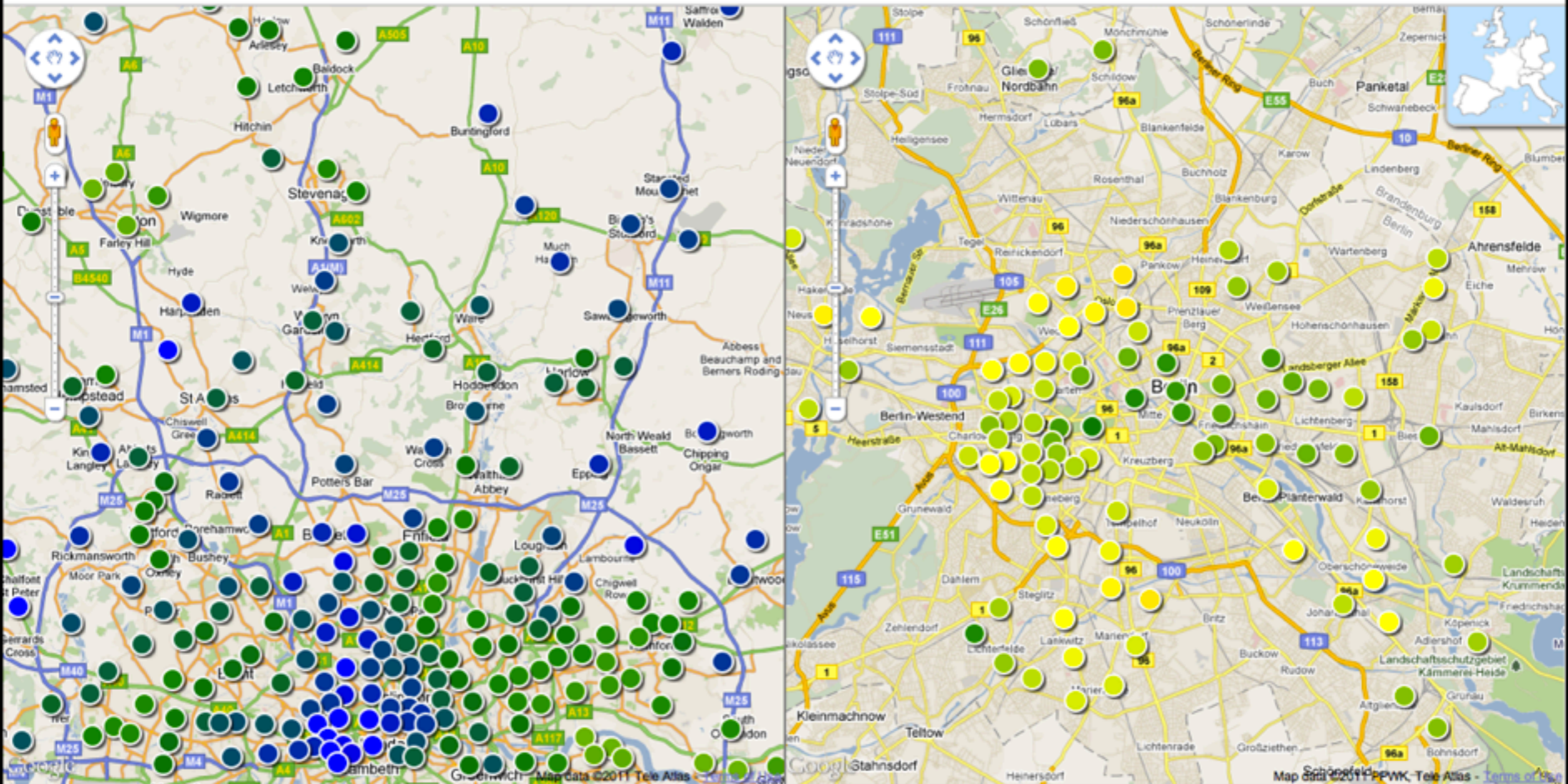


Settings

A Tale Of Two Cities

London vs. Berlin

Price: £10k - £4,888k
€11k - €5,605k



**Making it
work in
the "other"
browser**

Polyfills

will/might save you

A shim that mimics a future
API providing a fallback to
older browsers

<http://goo.gl/0Z9eI>

oh, and learn JavaScript





Game Wars

Han Solo of HTML5

Canvas

SVG



- **It's not one is better than the other, they do different things**
- **select canvas when it makes sense**
- **Don't assume interactive means canvas**
- **check out raphaeljs.com**

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title>Canvas</title>
</head>
<body>
  <canvas></canvas>
</body>
</html>
```

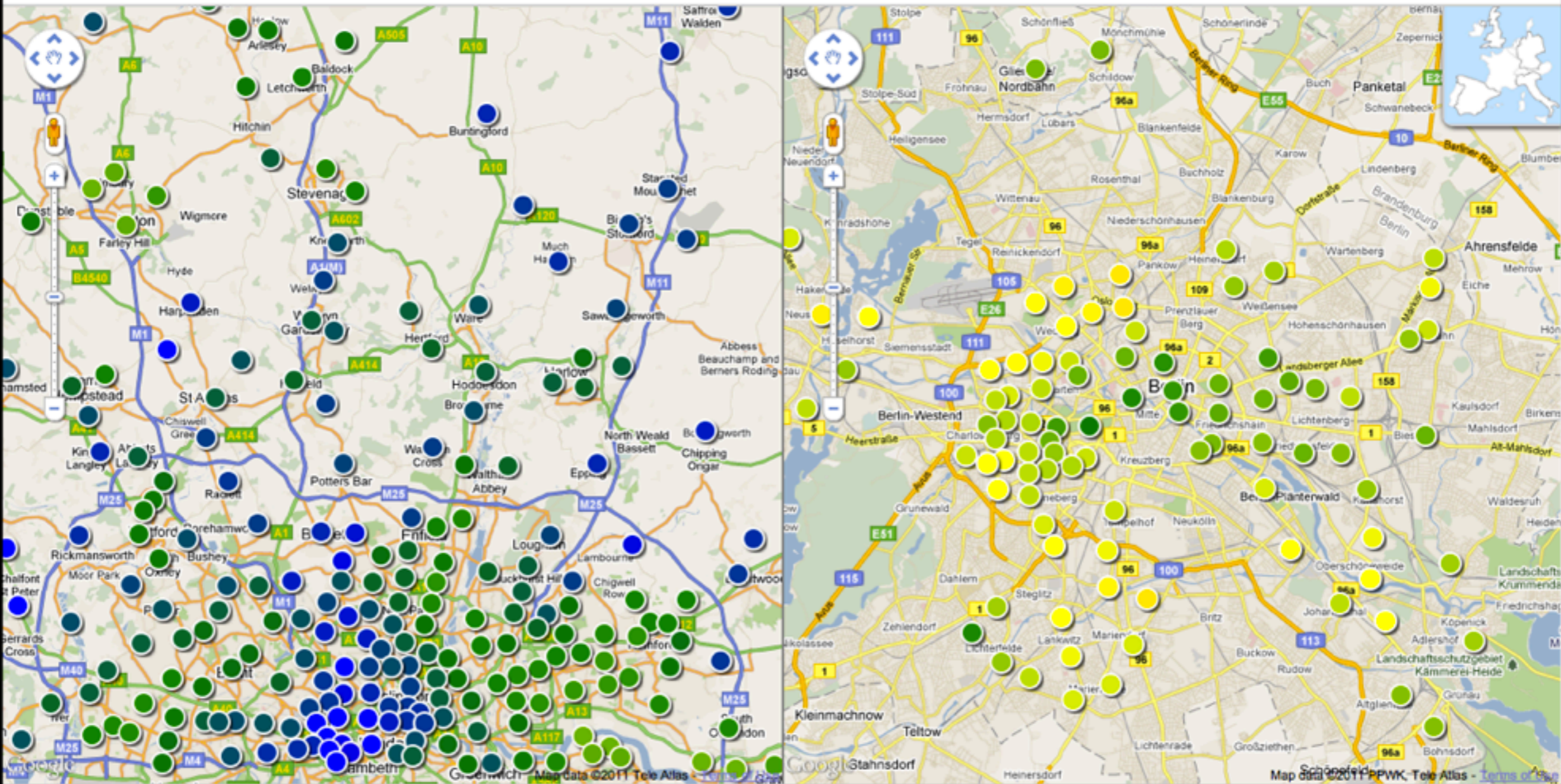
2D API

```
ctx = canvas.getContext('2d')
```


A Tale Of Two Cities

London vs. Berlin

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€11k - €5,605k



● **Gradients**

● **Pixel manipulation**

● **Paths**

● **Shadows**

● **Export to data url**

● **State saving**

Gradients

```
var rainbow = ctx.createLinearGradient(0, 0, w, h),  
    colours = {  
      0: 'red',  
      0.167: 'orange',  
      0.333: 'yellow',  
      // etc  
    };
```

```
for (var key in colours) {  
  rainbow.addColorStop(key, colours[key]);  
}
```

```
ctx.fillStyle = rainbow;  
ctx.fillRect(0, 0, w, h);
```


Pixel Pushing

```
var pixels = ctx.getImageData(0, 0, w, h),  
    len = pixels.data.length;  
  
for (var i = 0; i < len; i += 4) {  
    var rgb = 'rgb(' + // ←  
    [  
        pixels.data[i], // red  
        pixels.data[i+1], // green  
        pixels.data[i+2] // blue  
    ].join(',') + ')';  
}
```

Paths

```
var pinsize = 26,  
    pinedge = pinsize * 0.1,  
    centre = pinsize/2,  
    radius = centre - pinedge,  
    circle = Math.PI * 2;
```

```
pinctx.beginPath();
```

```
pinctx.arc(centre, centre, // ←  
           radius, 0, circle, true);
```

```
pinctx.closePath();
```

```
pinctx.fill();
```

Tip

Math.PI == 180°

Tip

$$\text{Math.PI} * 2 == 360^\circ$$



**d * Math.PI / 180
== radian**

shadows

```
pinctx.shadowBlur = 2;  
pinctx.shadowOffsetX = 2;  
pinctx.shadowOffsetY = 2;  
pinctx.shadowColor = 'rgba(0,0,0,.7)';
```

Export



```
pinctx.canvas.toDataURL('image/png')
```

```
data:image/png;base64,...
```

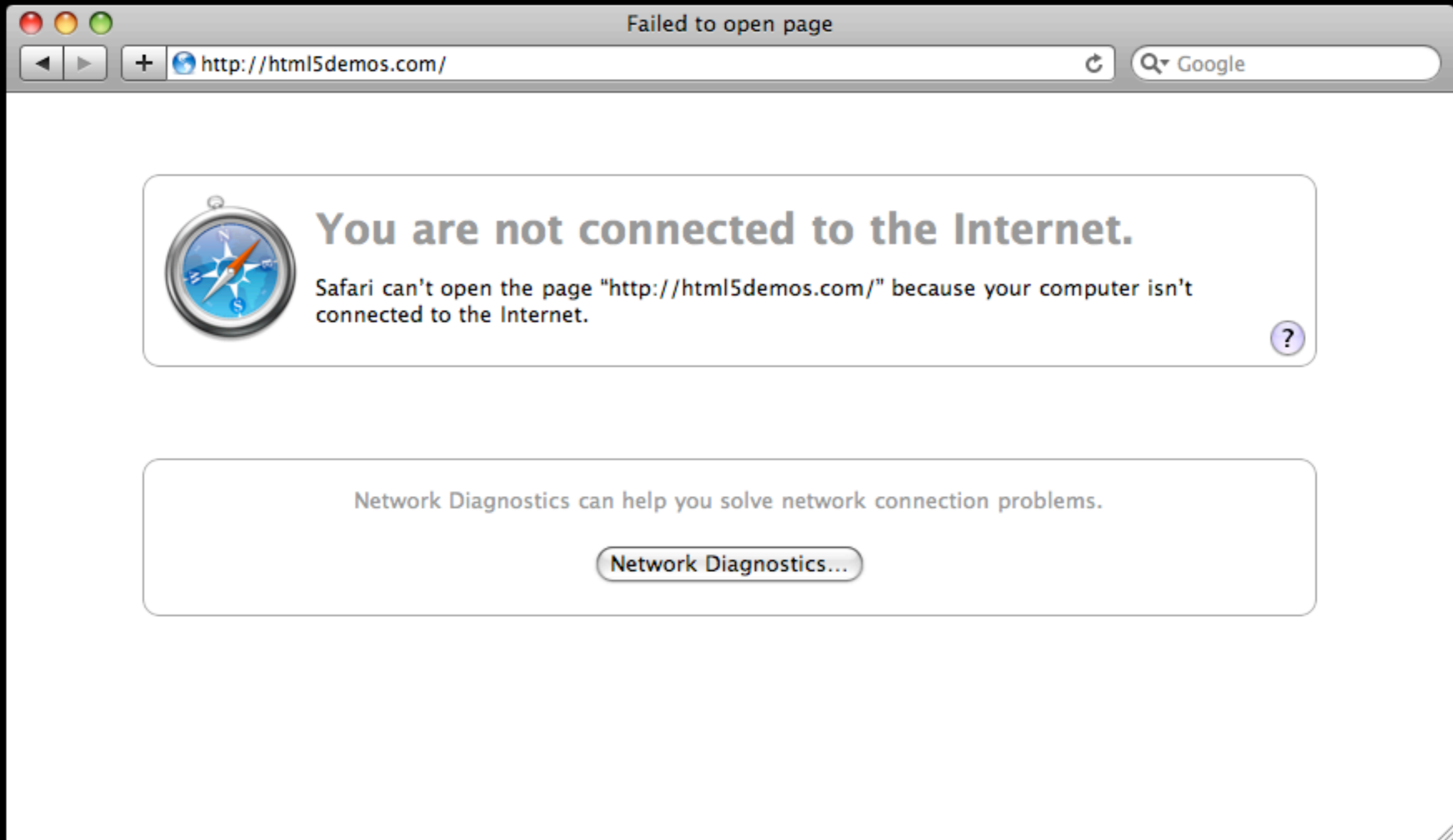



context . canvas

**All context contain back-
reference to it's canvas**

state saving

```
pinctx.fillStyle = '#fff';  
pinctx.save();  
pinctx.fillStyle = '#f00';  
// do something  
pinctx.restore();  
// now fillStyle is #fff
```



offline Applications

Using a Manifest

```
<!DOCTYPE html>  
<html manifest="my.appcache">  
  <body>  
    <!-- my page -->  
  </body>  
</html>
```

my.appcache

CACHE MANIFEST

app.html

css/style.css

js/app.js

#version 13

The Manifest

1. **serve as text/manifest, by adding to mime.types:**

text/cache-manifest appcache

Firefox caching

```
<IfModule mod_expires.c>
```

```
ExpiresActive on
```

```
ExpiresByType text/cache-manifest
```

```
↪ "access plus 0 seconds"
```

```
</IfModule>
```

The Manifest

2. First line must be:

CACHE MANIFEST

The Manifest

3. Including page is implicitly included in the cache.

The Manifest

**4. Two further namespaces:
NETWORK & FALLBACK**

CACHE MANIFEST

CACHE:

app.js

app.css

index.html

NETWORK:

http://*

https://*

FALLBACK:

/ offline.html

What to cache

CACHE MANIFEST

```
CACHE:  
app.js  
app.css  
index.html
```

NETWORK:

```
http://*
```

```
https://*
```

FALLBACK:

```
/ offline.html
```

**App cache
requires all
resources are
accounted for.**

CACHE MANIFEST

CACHE:

app.js

app.css

index.html

NETWORK:

http://*

https://*

FALLBACK:

/ offline.html

Requests for files not found in the cache, are directed to offline.html (when offline).

CACHE MANIFEST

CACHE:

app.js

app.css

index.html

NETWORK:

http://*

https://*

FALLBACK:

/ offline.html

CACHE MANIFEST

CACHE:

app.js

app.css

index.html

NETWORK:

http://*

https://*

FALLBACK:

/ offline.html

The Manifest

5. Include some versioning to cache bust your manifest

version 16

The Process

Browser: request

Server: serve all

**Browser: I have a
manifest, cache
assets**

**Server: serve
manifest assets**

**Browser:
application cache
updated**

Browser: reload

**Browser: serve
locally**

**Browser: only
request manifest file**

**Server: 304 Not
Modified**

When your app updates

```
applicationCache.onUpdateReady = function () {  
  if (confirm("New version ready. Refresh?")) {  
    // reload  
    window.location = window.location;  
  }  
};
```


Tip

Do offline last

Web sockets

Two way real-time comms



In a nutshell

- **Persistent connection**
- **Tiny chunks of data exchanged**
- **Bi-directional & no origin rules**

Some Uses

- **chat / "hello world"**
- **streaming data like stock share prices**
- **Multi-player game state**
- **Google Wave** remember? :)

Native or polyfilled

IE6 ✓ : ' (

<http://github.com/gimite/web-socket-js/>

The screenshot shows a web browser window displaying the GitHub repository page for `gimite/web-socket-js`. The browser's address bar shows the URL `http://github.com/gimite/web-socket-js/`. The page header includes the GitHub logo and the user `remy` with a notification badge for 39 items. Navigation links for `Dashboard`, `Inbox` (5), `Account Settings`, and `Log Out` are visible. A search bar and navigation links for `Explore GitHub`, `Gist`, `Blog`, and `Help` are also present.

The repository page for `gimite/web-socket-js` is shown, with the current branch set to `master`. The page includes navigation tabs for `Source`, `Commits`, `Network` (17), `Issues` (0), `Downloads` (0), `Wiki` (1), and `Graphs`. A description of the repository is provided: "HTML5 Web Socket implementation powered by Flash — [Read more](#)".

Below the description, there is a section for `HTTP` and `Git Read-Only` access, with the URL `http://github.com/gimite/web-socket-js.git`. A note indicates that this URL has `Read-Only` access.

A `Merging.` section is visible, showing a commit by `gimite` (author) on `May 15, 2010`. The commit details are as follows:

commit	e5c19418fd4e70f28d36
tree	d5fb35fe2bd72b8cc9f8
parent	3d40bf70fb8b79da656a
parent	cf78327047756c039088

Below the merging section, the repository name `web-socket-js` is displayed. A table lists the files in the repository:

name	age	message	history
<code>.gitignore</code>	August 10, 2009	Initial version. Checked only with Chrome. [gimite]	
<code>FABridge.js</code>	August 10, 2009	Initial version. Checked only with Chrome. [gimite]	
<code>README.txt</code>	January 24, 2010	Referring to latest spec. [gimite]	
<code>#16</code>	May 15, 2010	Making Flash implementation...	

new WebSocket(url)

<http://dev.w3.org/html5/websockets/>

ws://node.remysharp.com:8000

<http://github.com/miksago/node-websocket-server>

onopen

onmessage

onclose

onerror

```
var data = JSON.parse(event.data);
```

. send

```
var url = 'ws://node.remysharp.com:8000',  
    conn = new WebSocket(url);
```

```
conn.onopen = function () {  
    conn.send('hello world');  
};
```

```
conn.onmessage = function (event) {  
    console.log(event.data);  
};
```



```
var url = 'ws://node.remysharp.com:8000',  
    conn = new WebSocket(url);
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    conn.send('hello world');  
};  
  
conn.onmessage = function (event) {  
    console.log(event.data);  
};
```

Let's play

questions?

@rem

remy@leftlogic.com