

JavaScript APIs

HTML5

Remy Sharp

@rem

standards.next

JavaScript APIs

HTML5 & friends!

Remy Sharp

@rem

standards.next

HTML5: 2022?

Bollocks.

APIs

- **Canvas**
- **Drag & Drop**
- **History**
- **Inline Editing**
- **Messaging**
- **Offline Apps**
- **Video & Audio**
- **Geolocation**
- **Local Storage**
- **Selectors**
- **Server Events**
- **Web Sockets**
- **Workers**

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- **Drag & Drop?**
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- **Workers**

A group of people is standing on a floor completely covered with crumpled white paper. The scene is dimly lit, with a warm, yellowish light source from the left. The people are seen from the waist down, wearing various casual clothing like jeans, leggings, and boots. The paper is scattered everywhere, creating a chaotic and overwhelming visual. The word "Documentation" is overlaid in large, bold, white letters at the bottom of the image.

Documentation

www.whatwg.org/html5/

dev.w3.org/html5/

<irc://irc.freenode.net/#whatwg>



First draft

#printing

Tests: 0

Demos: 0

Implementation status:



2009-06-05 Hixie

Latest Internet Explorer beta: passes all the available test cases for this feature [use the storage m](#)

The `showModalDialog(url,`
agent to run the following s

1. [Resolve url](#) relative to

If this fails, then throw

3. If the user agent is co
somehow disabled, th

Notes/Changes




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[storage m](#)

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Notes/Changes

HTML CAN NOT



DO THAT!!!1!!

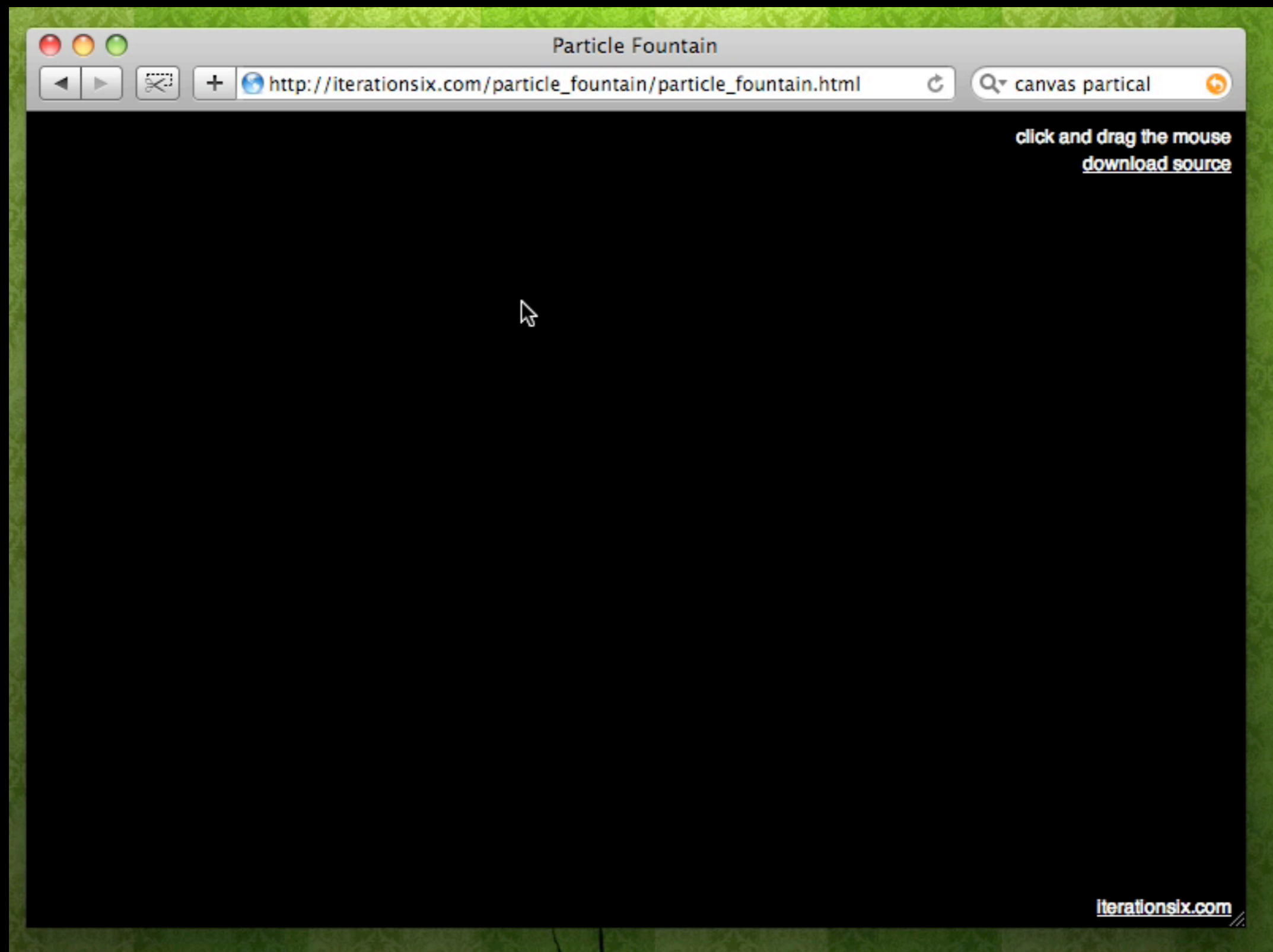
Canvas



Canvas


```
document.querySelector('canvas').getContext("2d")
```

<http://tr.im/pRkz>



```
document.querySelector('canvas').getContext("2d")
```

<http://tr.im/pRkz>

A dramatic silhouette of a dragon's head and neck, facing right, set against a dark, twilight sky. A bright, circular light source, likely the sun or moon, is visible in the upper right corner, creating a strong backlight effect. The dragon's features, including its scales, horns, and open mouth showing teeth, are clearly defined by the dark background. The text "Drag'n Drop" is overlaid in a white, bold, serif font at the bottom center.

Drag'n Drop



Drag'n Drop

Drag & Drop

- **draggable="true"**
- **events: dragstart, drop, etc**
- **event.transferData**

```
<div draggable="true">drag me</div>
<script>
document.querySelector( 'div' ).addEventListener(
  "dragstart",
  function (e) {
    e.dataTransfer.setData( "arbitrary", "data" );
    return true;
  },
  true);
</script>
```

```
<div draggable="true">drag me</div>
```

```
<script>
```

```
document.querySelector('div').addEventListener(
```

```
  "dragstart",
```

```
  function (e) {
```



```
    e.dataTransfer.setData("arbitrary", "data");
```

```
    return true;
```

```
  },
```

```
  true);
```

```
</script>
```

```
e1.addEventListener('dragover', function (e) {  
    e.preventDefault();  
}, true);
```

```
e1.addEventListener('drop', function (e) {  
    e.stopPropagation();  
    alert(e.dataTransfer.getData('arbitrary'));  
}, true);
```



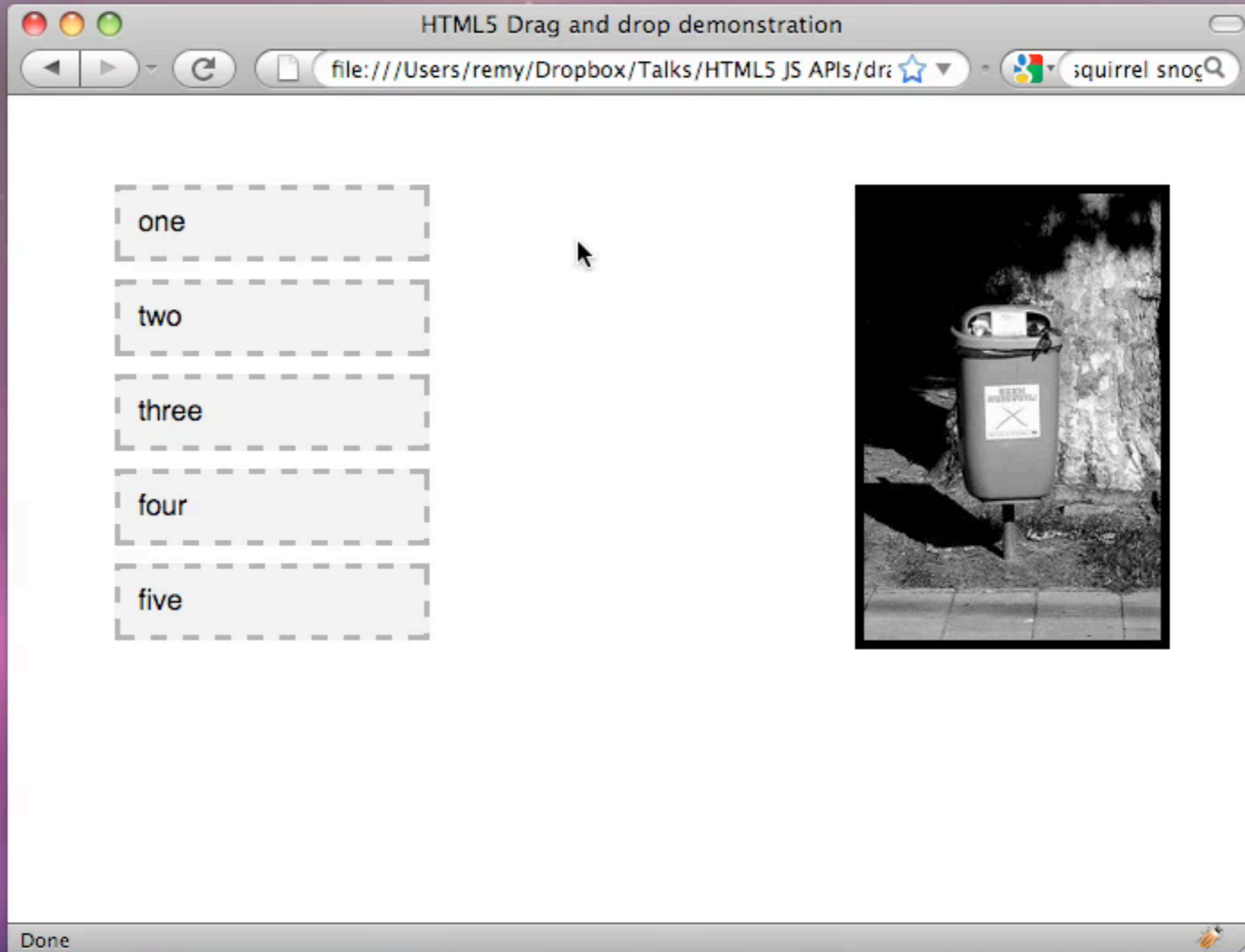
```
e1.addEventListener('dragover', function (e) {  
    e.preventDefault();  
}, true);
```

```
e1.addEventListener('drop', function (e) {  
    e.stopPropagation();  
    alert(e.dataTransfer.getData('arbitrary'));  
}, true);
```

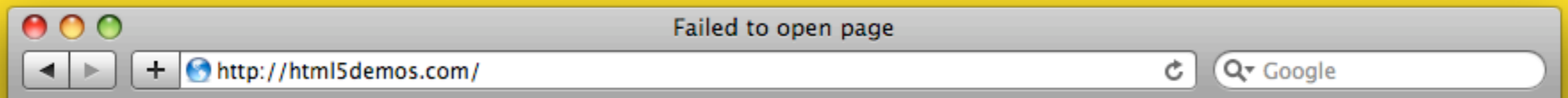
```
e1.addEventListener('dragover', function (e) {  
    e.preventDefault();  
}, true);
```

```
e1.addEventListener('drop', function (e) {  
    e.stopPropagation();  
    alert(e.dataTransfer.getData('arbitrary'));  
}, true);
```

<http://html5demos.com/drag>



<http://html5demos.com/drag>



You are not connected to the Internet.

Safari can't open the page "http://html5demos.com/" because your computer isn't connected to the Internet.



Network Diagnostics can help you solve network connection problems.

[Network Diagnostics...](#)

Offline Applications



Offline Applications

Offline Apps

- **Application cache**
- **Events: offline, online**
- **navigator.onLine property**

Enable

```
<html  
manifest="my.manifest"  
>
```


my.manifest

CACHE MANIFEST

images/shade.jpg

images/bin.jpg

Cache

- **First line: CACHE MANIFEST**
- **Requires `text/cache-manifest`**
- **Recommend using versioning**
- **`window.applicationCache`**

Cache

- **On load will hit my.manifest**

Cache

- **On load will hit my.manifest**
- **Change manifest: trigger reload**

Cache

- **On load will hit my.manifest**
- **Change manifest: trigger reload**
- **applicationCache.update() force**

Cache

- **On load will hit my.manifest**
- **Change manifest: trigger reload**
- **applicationCache.update() force**
- **Cache events**



01:29



HTML5 Demo: offline app

html5demos.com/offlin...

Google

Offline Application: using manifest

Status of cache:

IDLE (numeric value 1) -- The ApplicationCache object's cache host is associated with an application cache whose application cache group's update status is idle, and that application cache is the newest cache in its application cache group, and the application cache group is not marked as obsolete.

Update cache status

Update cache to latest

[HTML5 demo](#)



01:29



HTML5 Demo: offline app

html5demos.com/offlin...

Google

Offline Application: using manifest

Status of cache:

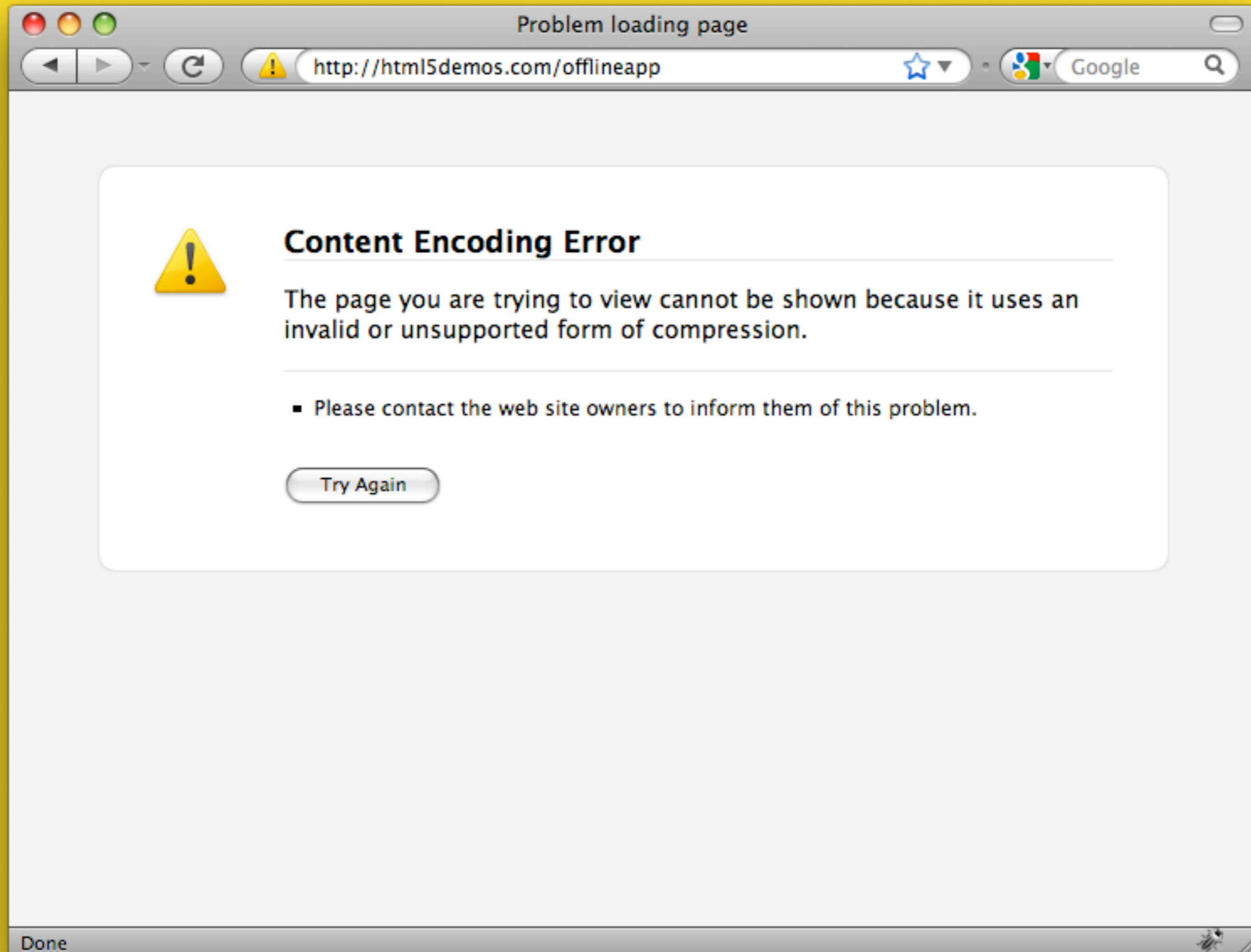
IDLE (numeric value 1) -- The ApplicationCache object's cache host is associated with an application cache whose application cache group's update status is idle, and that application cache is the newest cache in its application cache group, and the application cache group is not marked as obsolete.

Update cache status

Update cache to latest

[HTML5 demo](#)

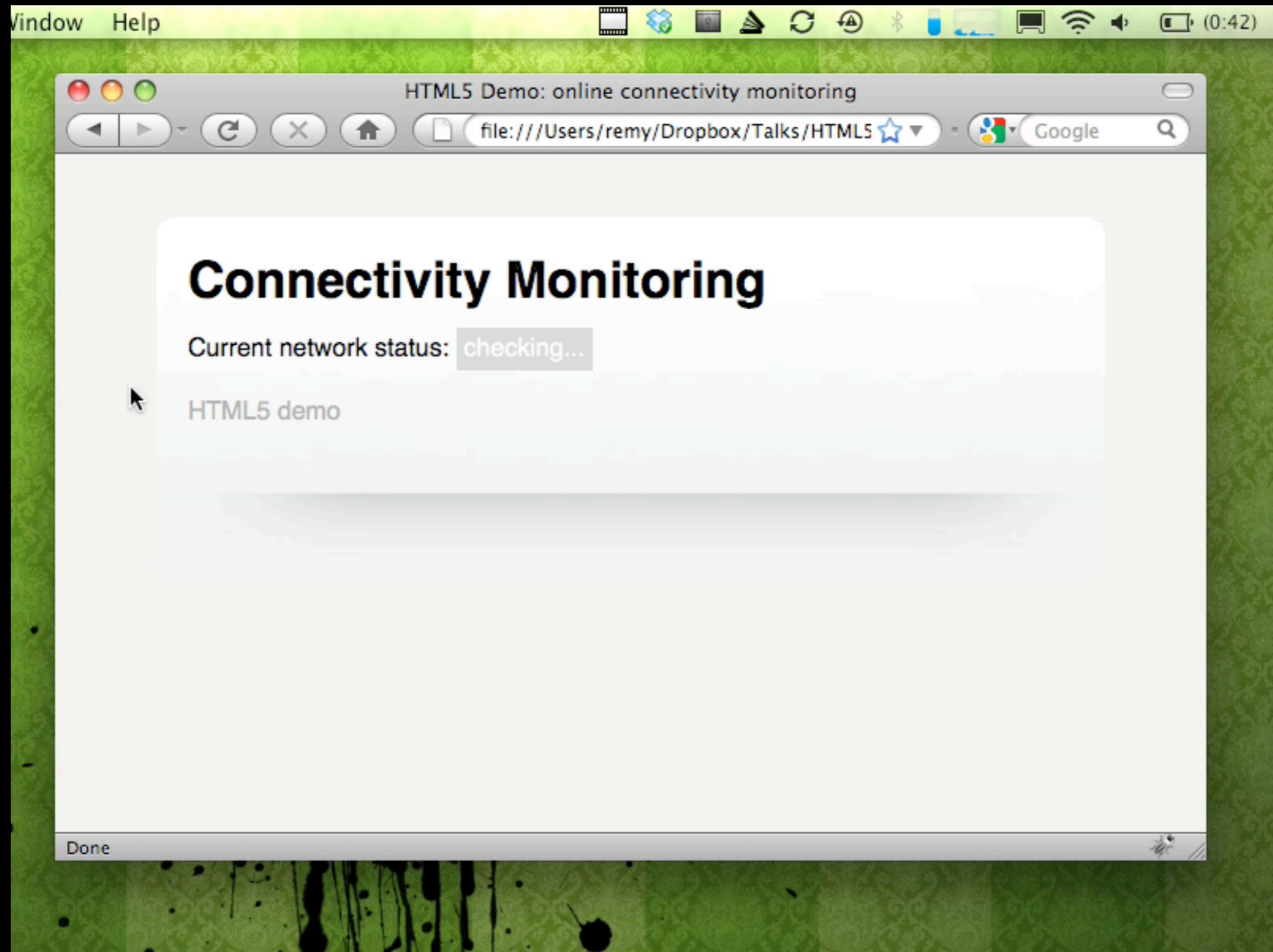
Firefox



```
window.addEventListener(  
  'offline', // online too  
  online, // function  
  true  
);
```

```
function online() {  
    if (navigator.onLine == false) {  
        // gone offline  
    } else {  
        // else we're online  
    }  
}
```

<http://html5demos.com/offline>



<http://html5demos.com/offline>



navigator.onLine



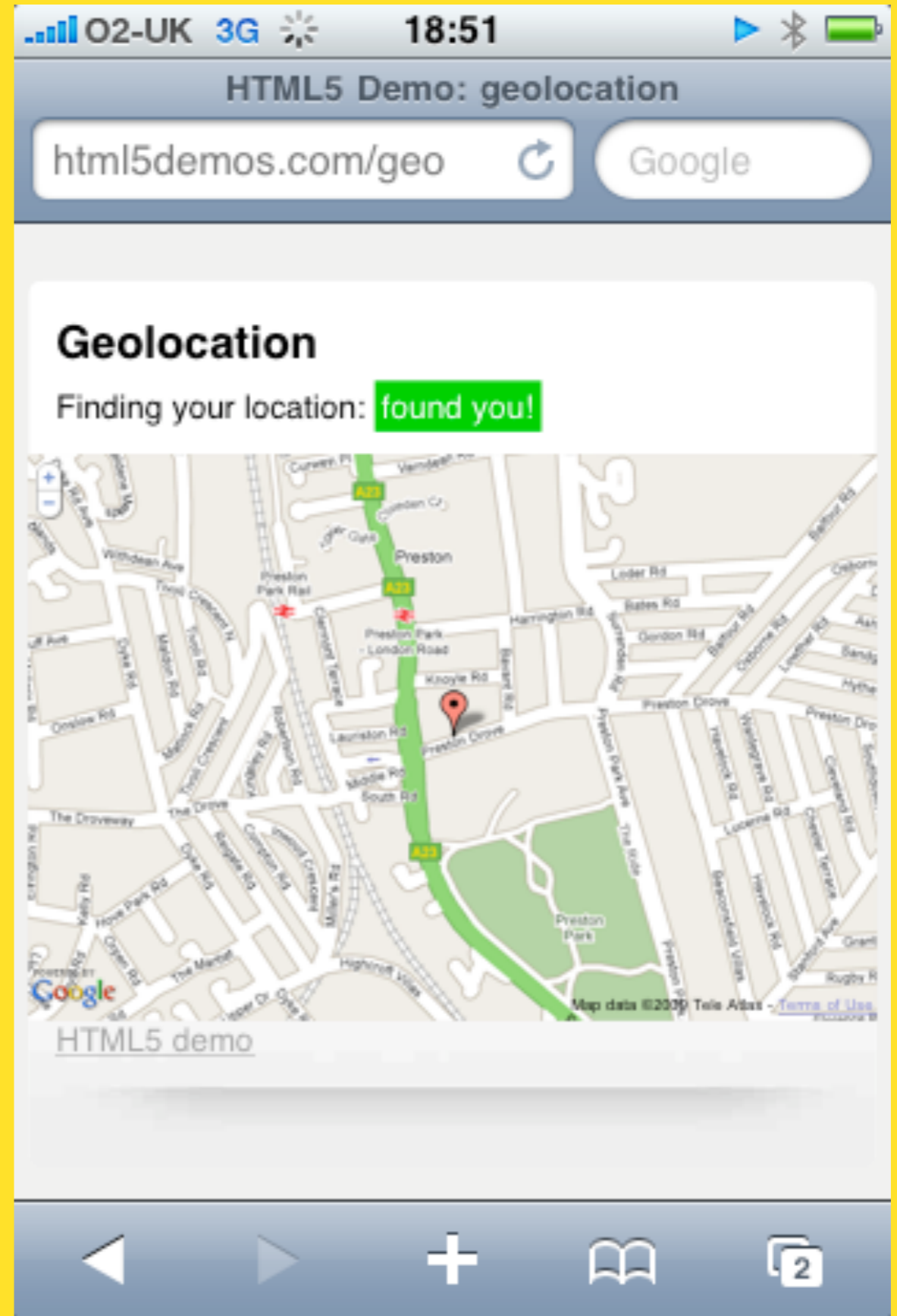
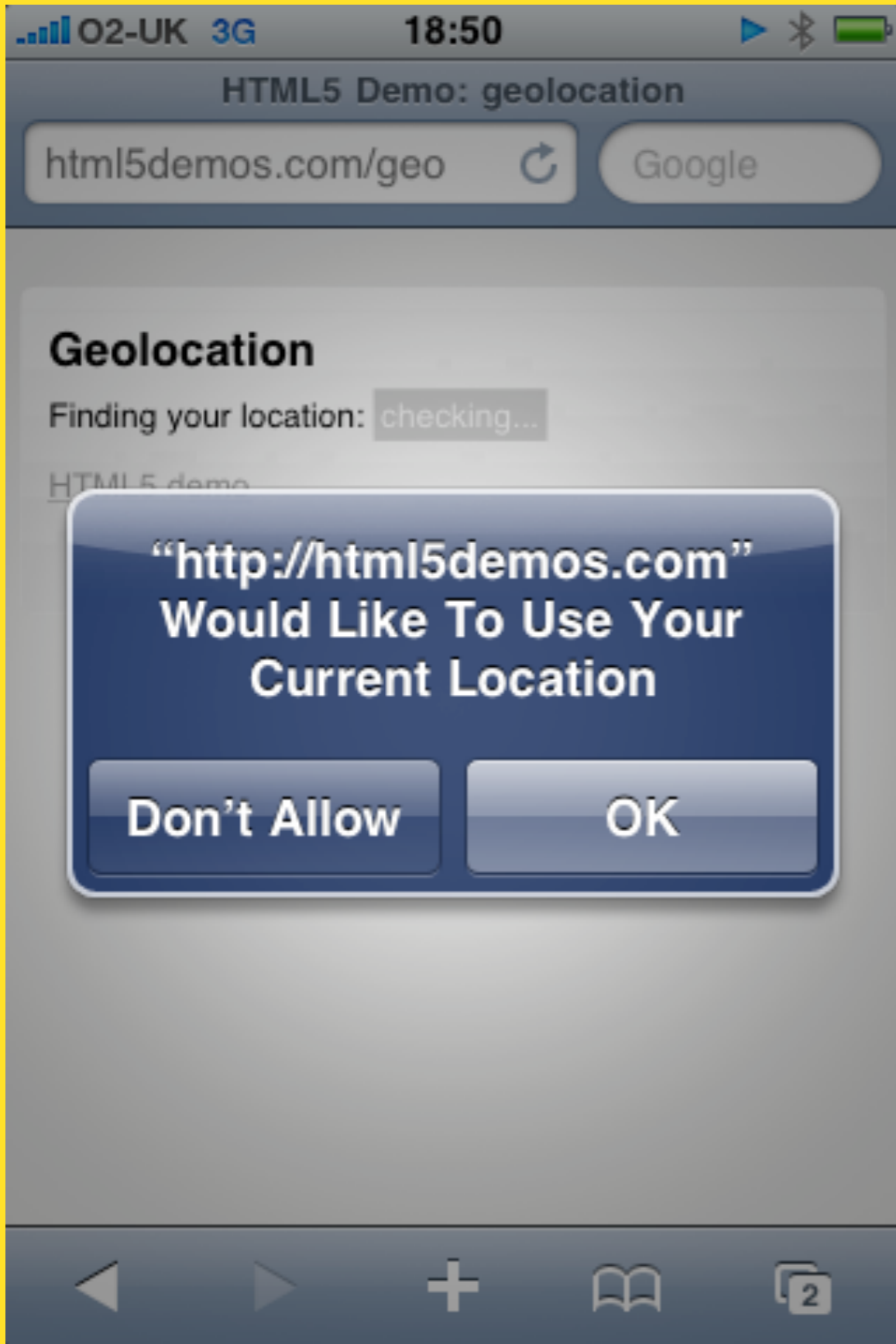
Geolocation



Geolocation



Not always accurate!



```
navigator  
  .geolocation  
  .getCurrentPosition(  
    success,  
    err  
  );
```

▼ coords	undefined latitude=51.500152 longitude=-0.126236
CONTENT_NODE	64
DOM_OBJECT	8
EAGER_CLASSINFO	32
MAIN_THREAD_ONLY	4
PLUGIN_OBJECT	16
RESERVED	2147483648
SINGLETON	1
THREADSAFE	2
accuracy	140000
altitude	0
altitudeAccuracy	0
classDescription	"wifi geo position coords object"
classID	null
contractID	" "
flags	8
heading	0
implementationLanguage	2
latitude	51.500152
longitude	-0.126236
speed	0

▼ coords	undefined latitude=51.500152 longitude=-0.126236
CONTENT_NODE	64
DOM_OBJECT	8
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accuracy	140000
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classDescription	"wifi geo position coords object"
classID	null
contractID	""
flags	8
heading	0
implementationLanguage	2
latitude	51.500152
longitude	-0.126236
speed	0



Messaging



Messaging

Messaging

- **Communicate across domains**
- **Across window object**
- **With Workers**
- **String transfer only**

. postMessage (str)



. onMessage (event)

event . data == str

Cross Domain

document

.getElementById("iframe")

.contentWindow

.postMessage("my message");

The Catcher

```
window.addEventListener(  
  "message",  
  function(e) {  
    if (e.origin !== "http://example.com") {  
      return;  
    }  
  
    alert(e.origin + " said: " + e.data);  
  },  
  false  
);
```



Web Workers



Web Workers

- **Threads**

- **Threads**

- **Native or via Gears**

- **Threads**
- **Native or via Gears**
- **Sandboxed**

- **Threads**
- **Native or via Gears**
- **Sandboxed**
- **Debugging?**

- **importScripts**

- **postMessage**

- **onmessage**

- **onconnect**

Without

The image shows a Safari browser window titled "HTML5 Demo: canvas". The address bar contains the file path: `file:///Users/remy/Dropbox/Talks/HTML5%20JS%20AP`. The page content includes:

Canvas

Canvas is running whilst an infinite loop in a worker

Counter status: 109005500 100 iterations

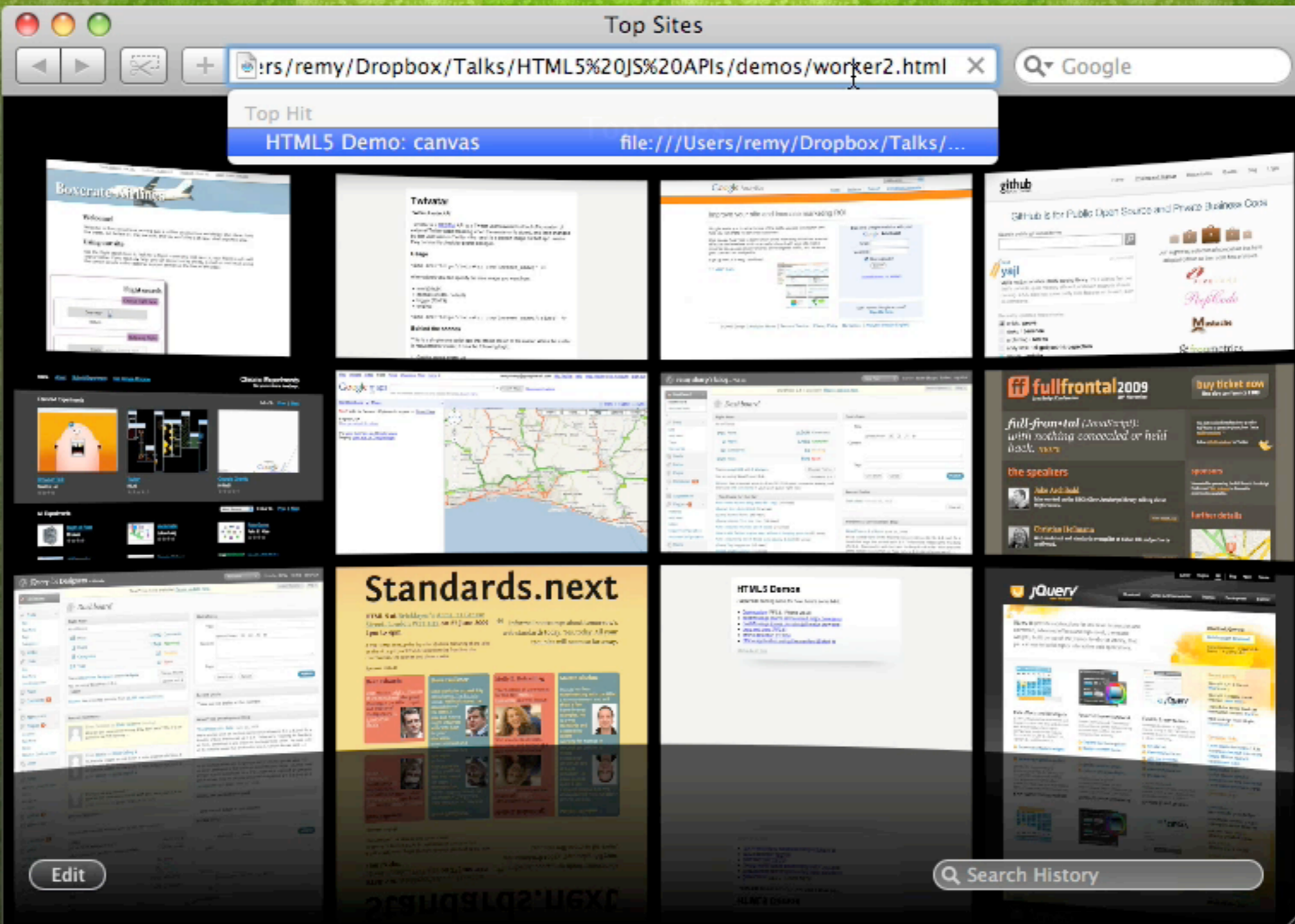
Below the text is a circular progress indicator and the text [HTML5 demo](#).

A "Slow Script" warning dialog box is displayed in the foreground, featuring a compass icon and the following text:

Slow Script

Safari is no longer responding because of a script on the webpage "HTML5 Demo: canvas" (`file:///Users/remy/Dropbox/Talks/HTML5%20JS%20APIs/demos/non-worker.html`). Do you want to stop running the script, or let it continue?

At the bottom of the dialog are two buttons: "Stop" and "Continue".



<http://html5demos.com/worker>



Storage



Storage

1. sessionStorage

1. sessionStorage

2. localStorage

- 1. sessionStorage**
- 2. localStorage**
- 3. database storage**

Storage

```
sessionStorage.setItem(key, value)
```

```
sessionStorage.getItem(key)
```

Storage

`localStorage.setItem(key, value)`

`localStorage.getItem(key)`

And more!



**Remy
Sharp**

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html5demos.com

remysharp.com

full-frontal.org