

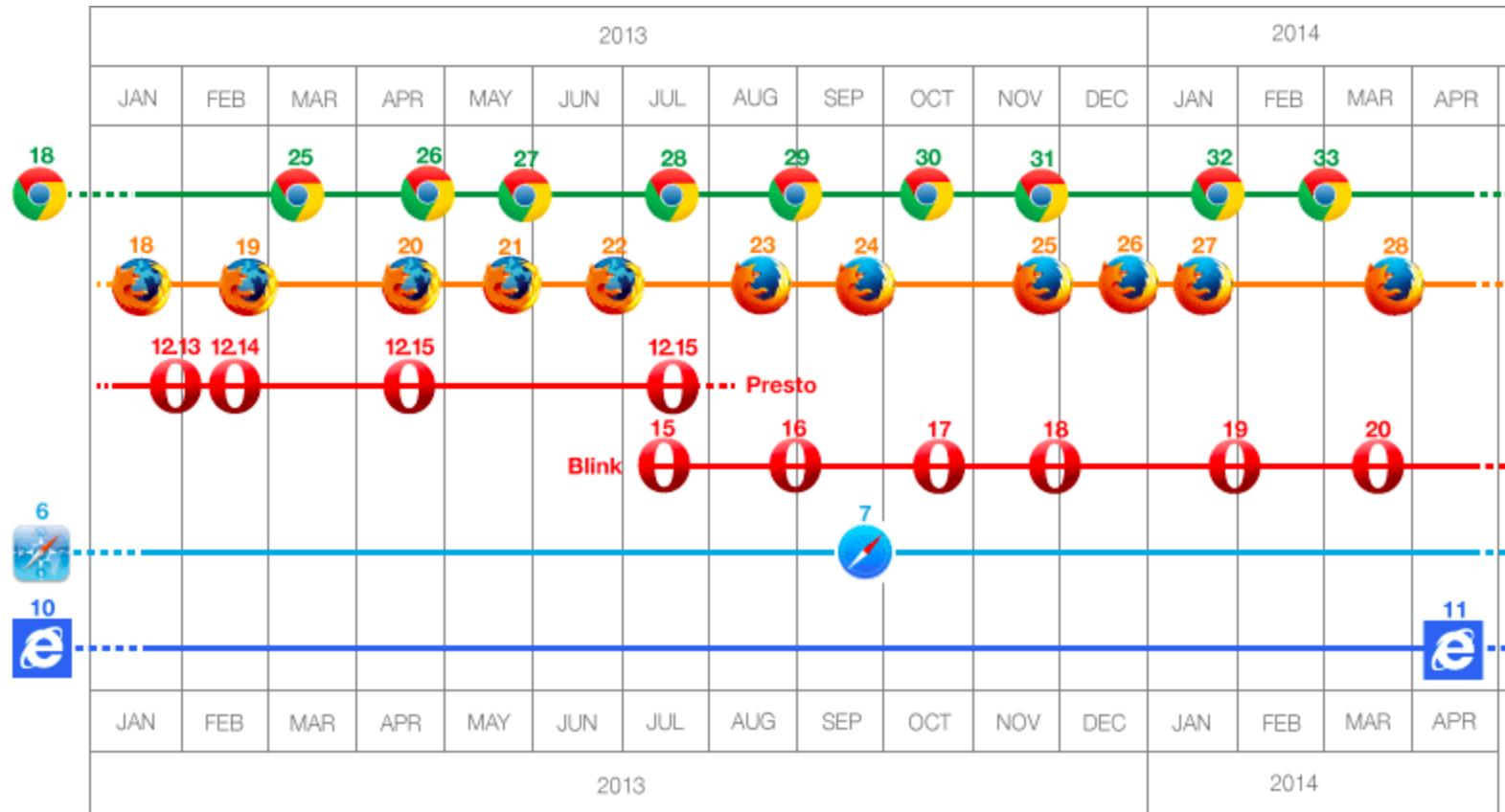
State of Mobile HTML5

Half full or half empty?

Tomomi Imura (@girlie_mac)

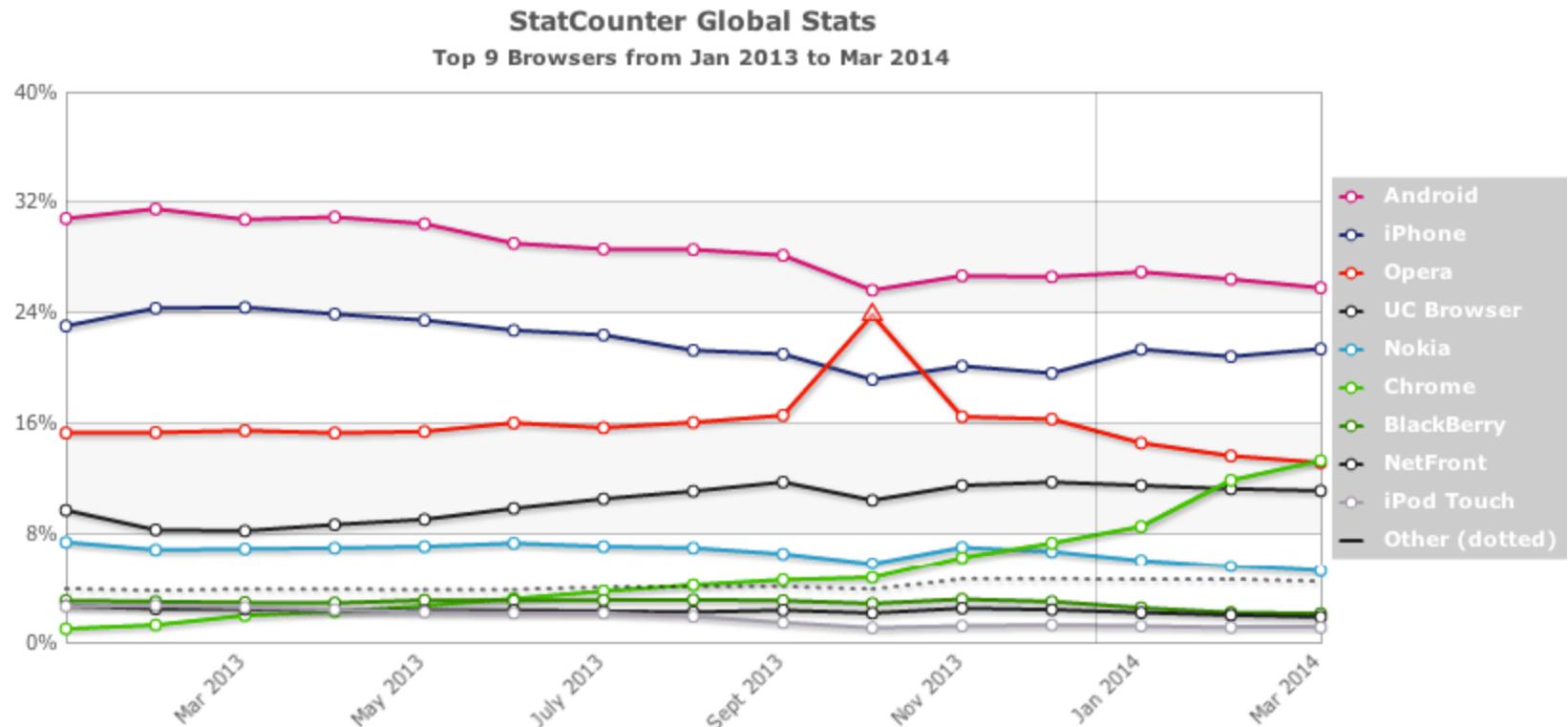


Mobile Browser Releases 2013 -

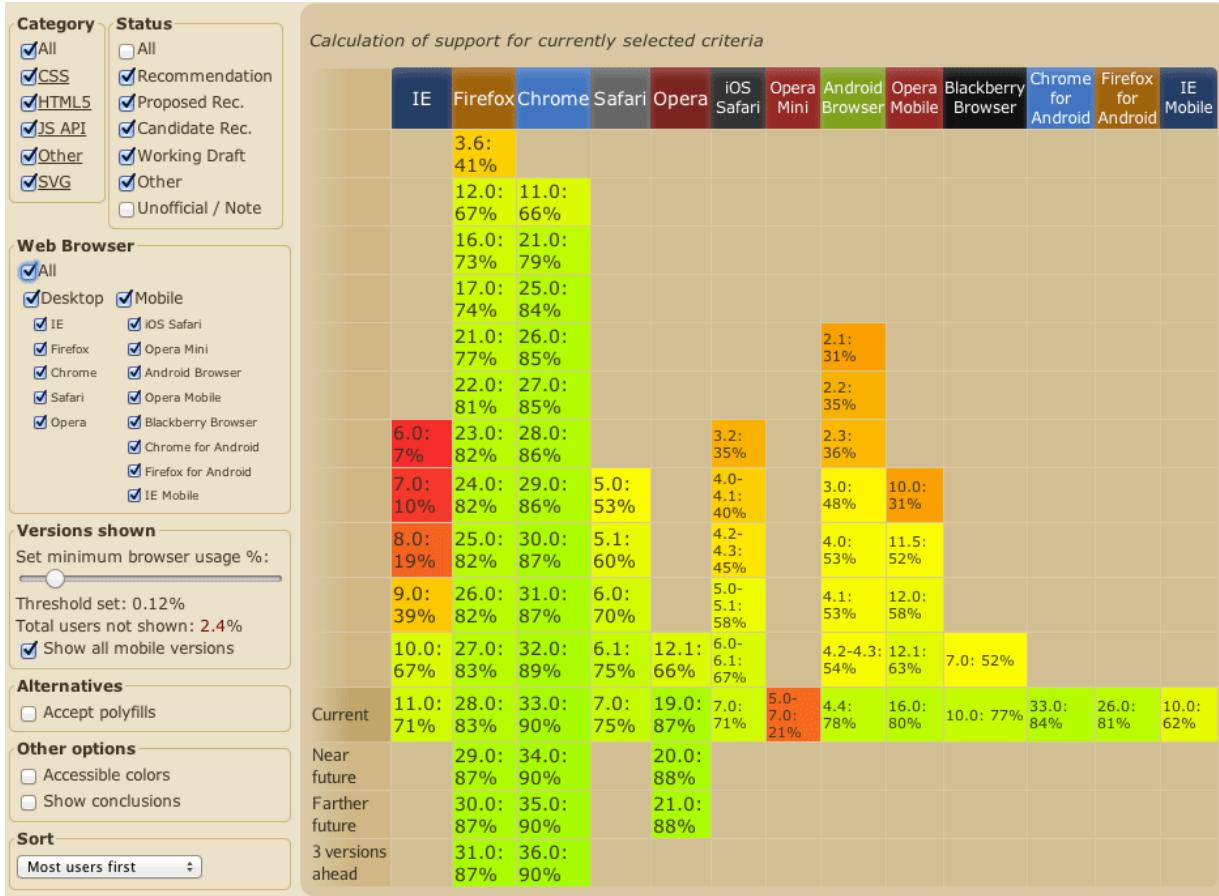




Mobile Browser Usage Stats

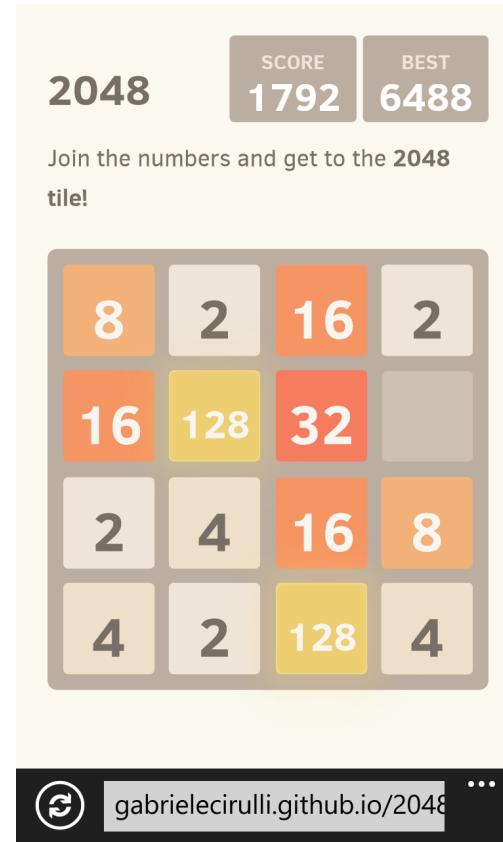
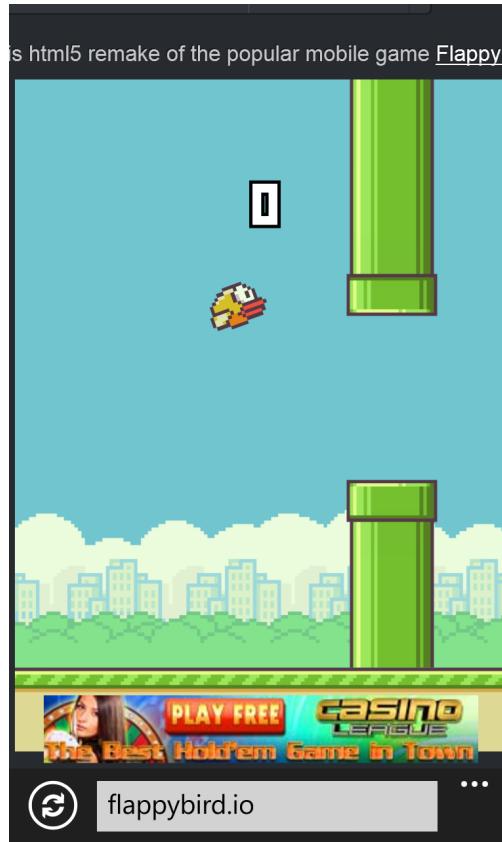


Feature Support Stats



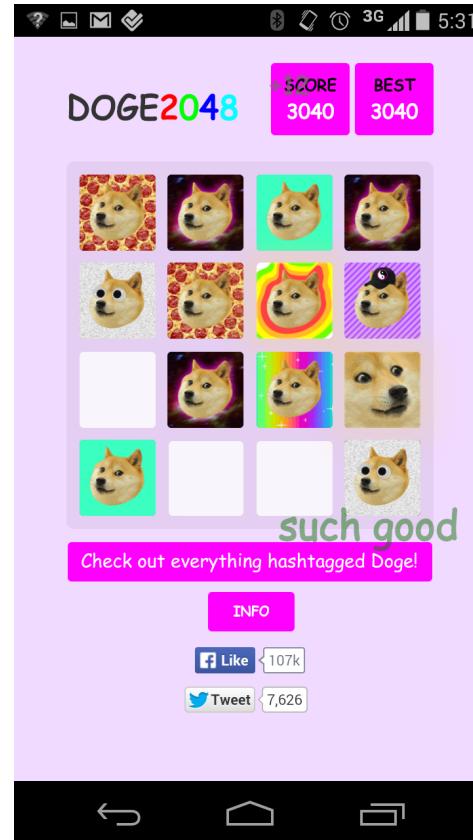
Disrupt App Store

Distributing outside of app stores



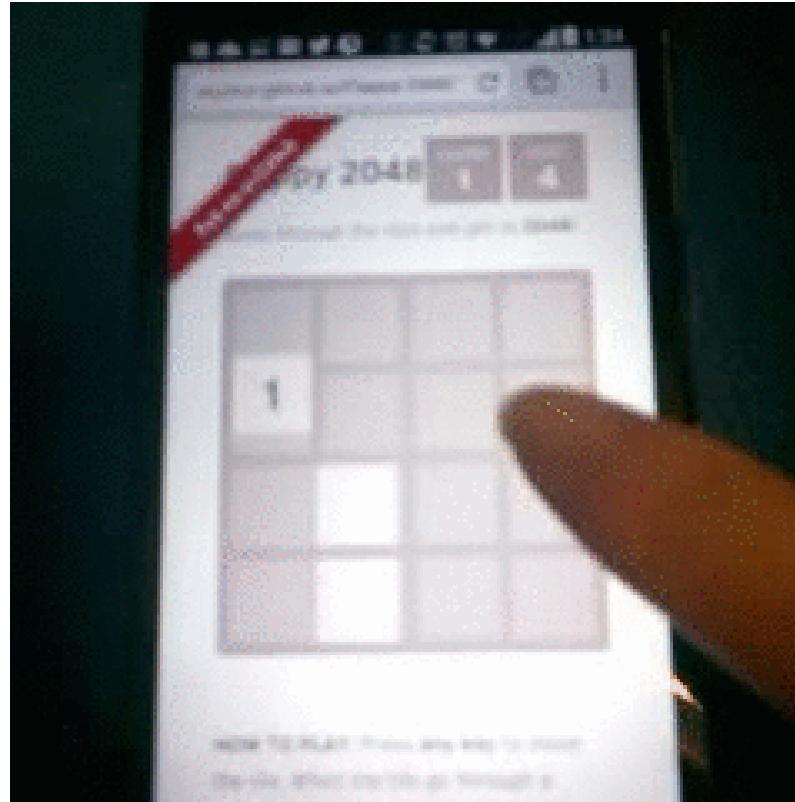
flappybird.io • [2048](http://2048.gabrielecirulli.github.io)

Forking (in Doge style)



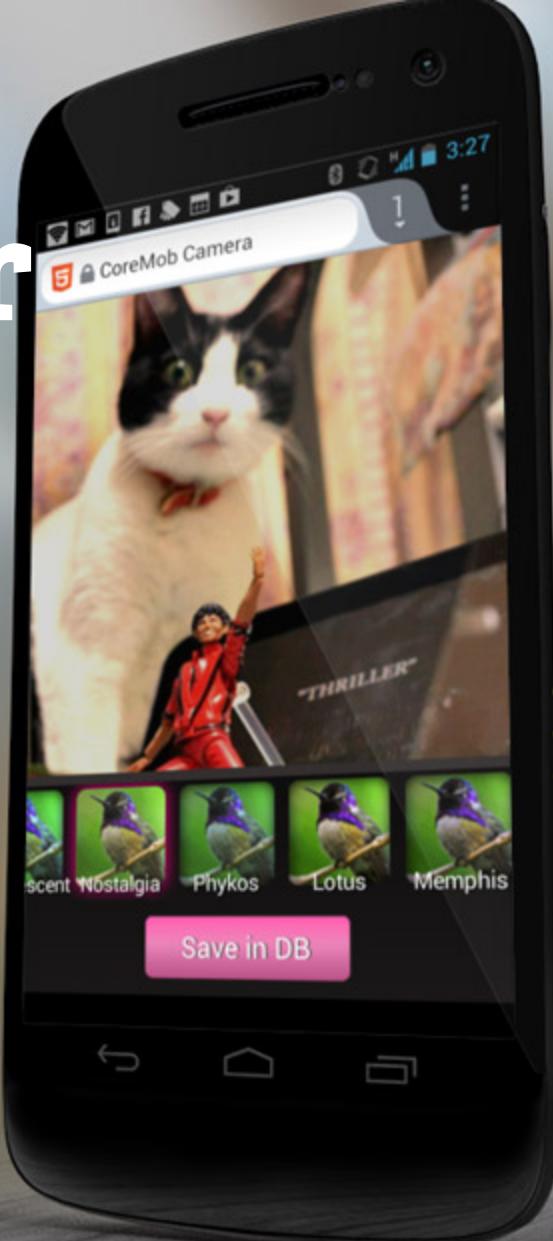
[Flappy Doge](#) • [Doge2048](#)

and Flappy 2048



[Flappy 2048](#)

Last Year



"Coremob Camera"

Core Mobile Web Platform CG

Goal:

To accelerate the adoption of the Mobile Web as a compelling platform for the development of modern mobile Web applications



Web and Mobile Interest Group (Sept 2013 ~)

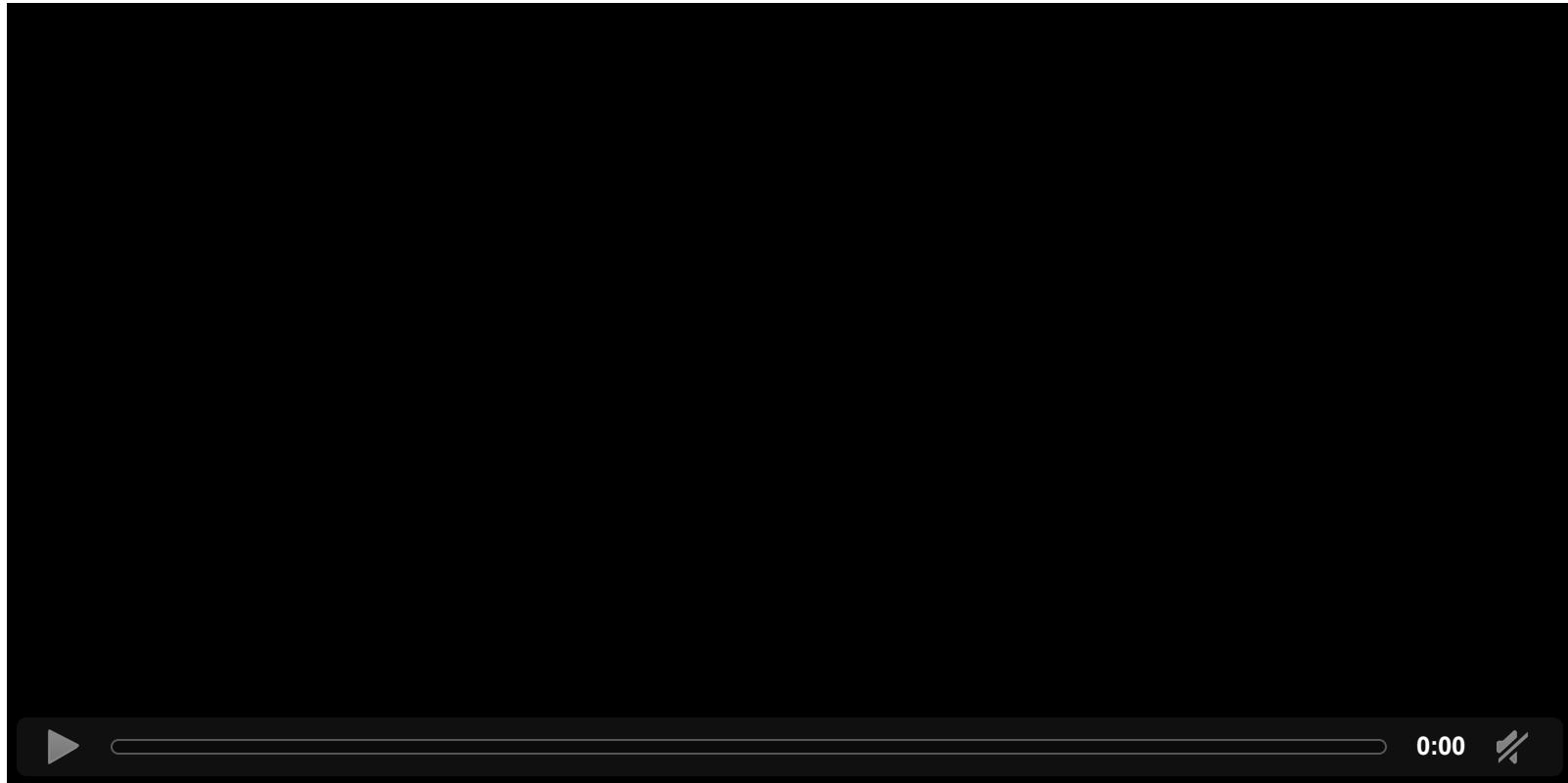
Mission:

To accelerate the development of Web technology so that it becomes a compelling platform for mobile applications and the obvious choice for cross platform development.

"Closing the gap with native"

Project Goals

- 1. Showcase the capabilities of the Web platform**
- 2. Educate Web developers**
- 3. Help improve browsers**



Watch the demo video at: <http://sdrv.ms/UF55gM>

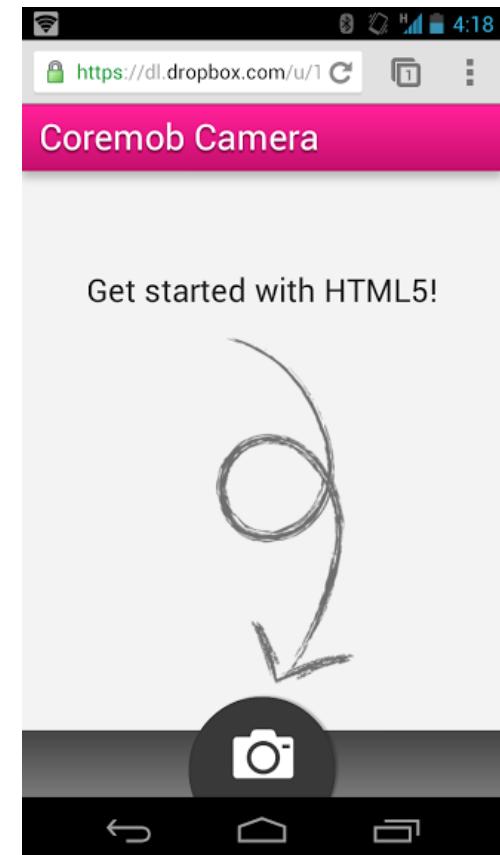
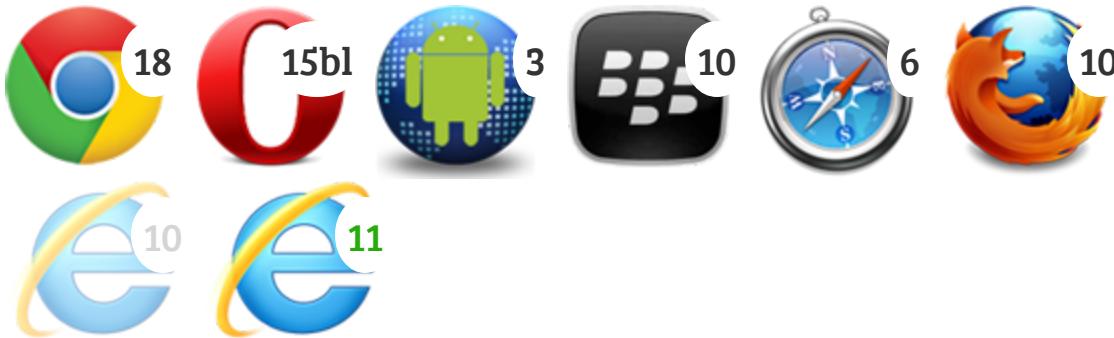
HTML5 APIs

1. Take a picture via **HTML Media Capture**
2. Use **FileReader()** to return the picture as a object
3. **drawImage()** to draw the image object in **canvas**
4. **getImageData()** to get an **ImageData** object containing a copy of the pixel data, then alter the pixels
5. Store the **blob** locally with **IndexedDB**
6. Upload the final photo with **XHR2/CORS**

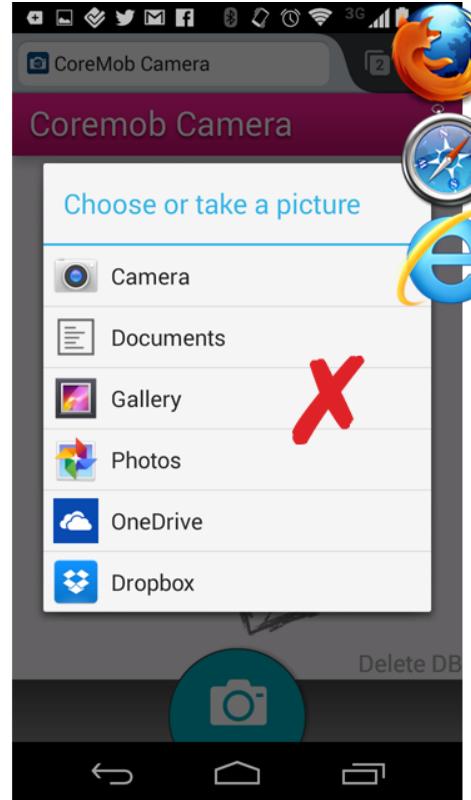
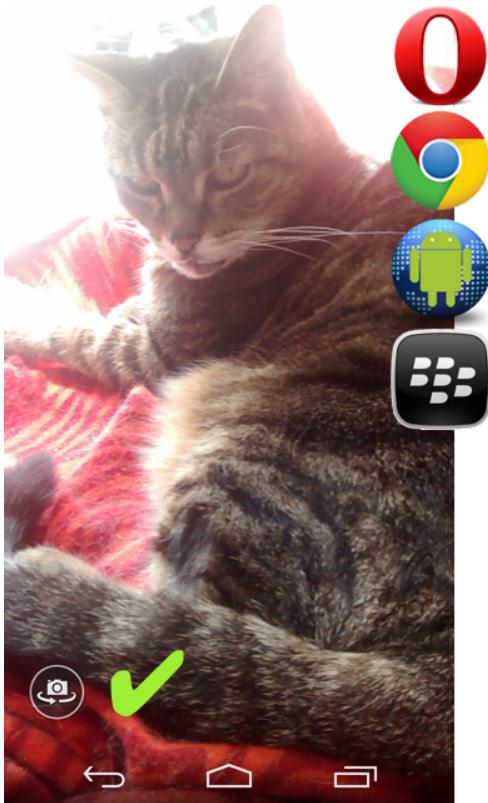
HTML Media Capture

Taking a photo with using a native camera

```
<input type="file" accept="image/*">
```



<input type="file" accept="image/*" capture>



File API

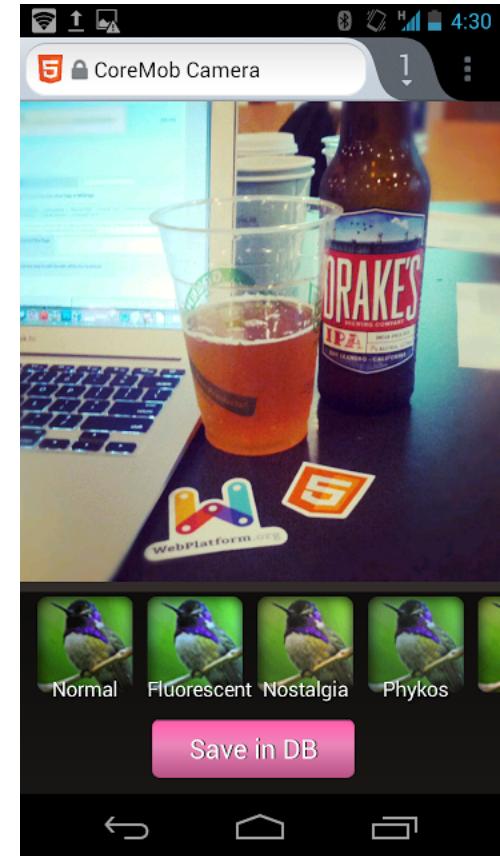
Camera returns the photo as a `file` object

```
var input = document.querySelector('input[type=file]');
camera.addEventListener('change', function() {
    var localFile = input.files[0];
    var reader = new FileReader();
    reader.readAsDataURL(localFile);
    reader.onload = function(e){
        preview.src = e.target.result;
    }
}, false);
```

Canvas

Applying filters to the photo

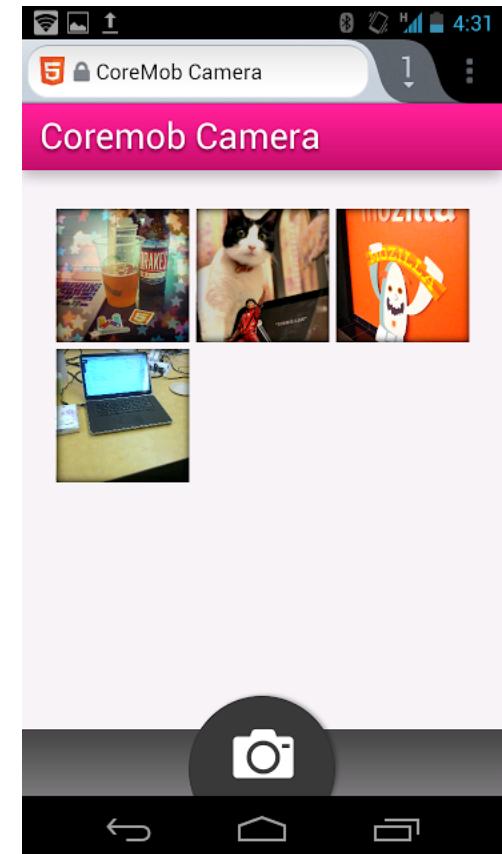
```
var c = document.createElement('canvas');
var ctx = this.c.getContext('2d');
ctx.drawImage(imgObj, 0, 0);
var imgData = ctx.getImageData(x, y, w, h);
//...Pixel manipulation ...
ctx.putImageData(imgData, 0, 0);
```



IndexedDB

Storing the photos locally

```
if(window.indexedDB) {  
    var req = indexedDB.open('coremobCamera');  
    req.onsuccess = function(e) {  
        // async  
    }  
}
```



Polyfill or not?

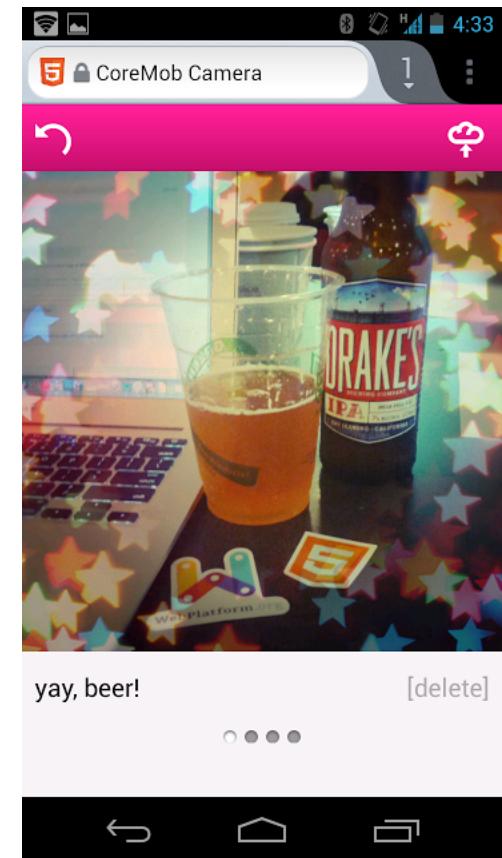
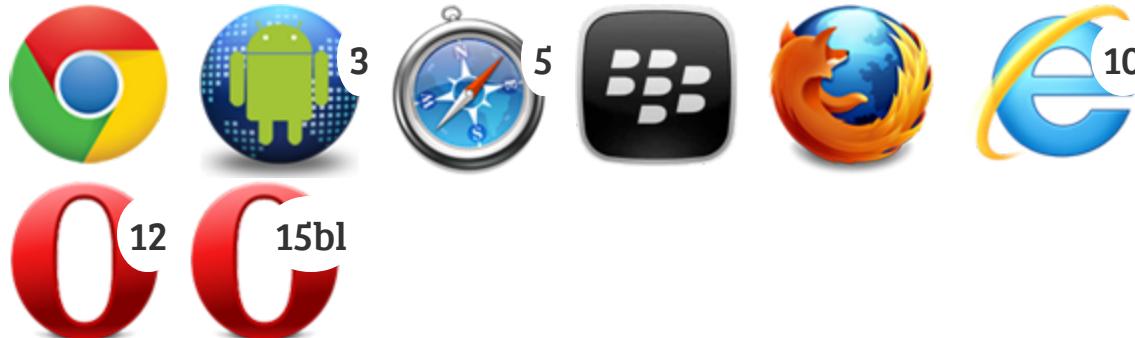
| | Indexed DB | Web SQL |
|---------------|------------|---------|
| Chrome 37 | Yes | Yes |
| Opera 22 | Yes | Yes |
| Blackberry 10 | Yes | Yes |
| Firefox 26 | Yes | No |
| IE 11 | Yes | No |
| Android 4.4 | Yes | Yes |
| Safari 7 | No | Yes |



XMLHttpRequest Level 2

Sending a photo

```
var formData = new FormData();
formData.append('photo', blob);
```



XMLHttpRequest Level 2

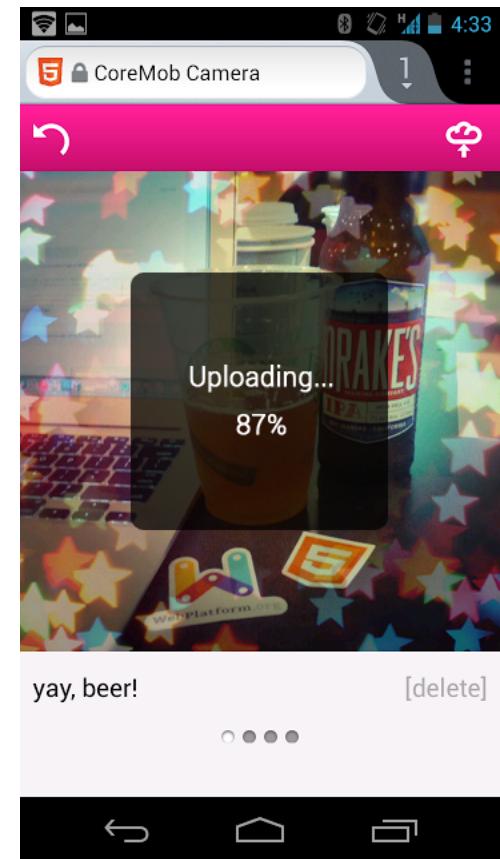
Sending a photo

```
var xhr = new XMLHttpRequest();
xhr.open('POST', '/gallery');
xhr.upload.addEventListener('progress', handleProgress, false);
xhr.addEventListener('load', handleFinish, false);
xhr.addEventListener('error', handleError, false);
xhr.addEventListener('abort', handleAbort, false);
xhr.send(formData);
```

XMLHttpRequest Level 2

Sending a photo

```
function handleProgress(e) {  
    if (e.lengthComputable) {  
        el.textContent =  
            (e.loaded / e.total * 100) >>> 0 + '%';  
    }  
}
```



CORS: Cross Origin Resource Sharing

```
Access-Control-Allow-Origin: http://some-domain.org
```

```
//Apache .htaccess
<IfModule mod_headers.c>
    Header set Access-Control-Allow-Origin "*"
</IfModule>
```

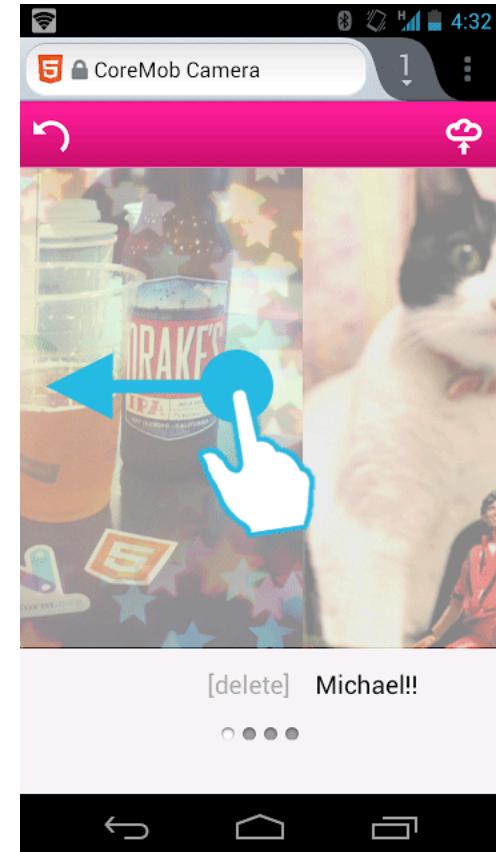


Touch Events v.1

Photo Gallery Carousel

```
el.addEventListener('touchstart',  
                  startHandler, false);  
el.addEventListener('touchmove' ...);  
el.addEventListener('touchend' ...);
```

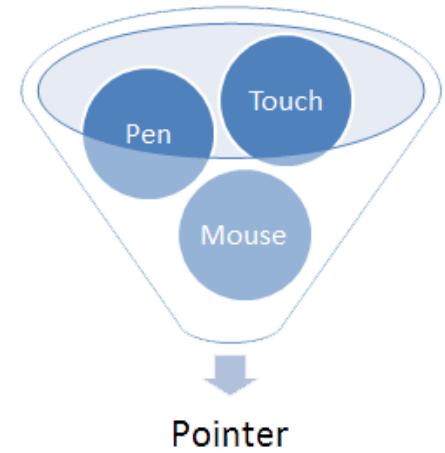
You probably want to include mouse events too
(`mousedown` , `mousemove` , and `mouseup`).



Pointer Events

For *any* input devices: touch, mouse, pen...

```
if (typeof window.PointerEvent != 'undefined') {  
    el.addEventListener('pointerdown',  
                      startHandler, false);  
    el.addEventListener('pointermove', ...);  
    el.addEventListener('pointerup', ...);  
}
```



Touch vs. Pointer Events

| | Touch | Pointer |
|---------------|-------|---------------------|
| Chrome 37 | Yes | No (Will implement) |
| Opera 22 | Yes | No (Will implement) |
| Blackberry 10 | Yes | No |
| Firefox 26 | Yes | No |
| IE 10 | No | Yes |
| Safari 7 | Yes | No |
| Android 4.4 | Yes | No |



github.com/coremob/camera



Hardware Access



Device APIs

- GPS
- Camera & Video
- Microphone
- Audio HW
- Vibration HW
- Battery
- NFC

Device APIs - Sensors

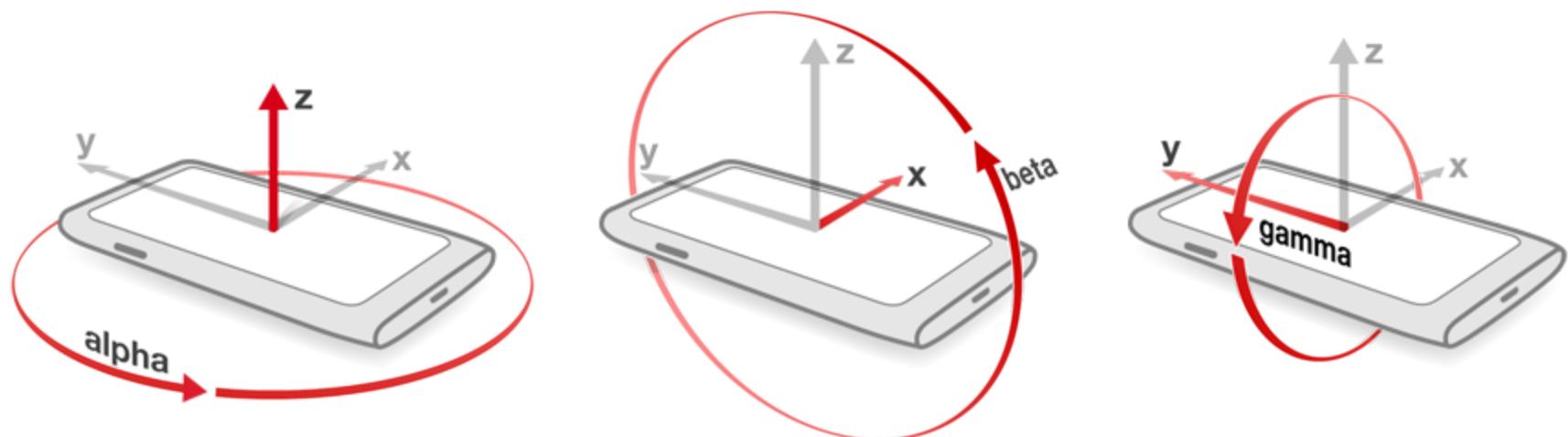
- Accelerometer
- Magnetometer
- Gyrometer
- Light
- Proximity
- Barometer (Pressure)

Geolocation

```
if (navigator.geolocation) {  
    navigator.geolocation.getCurrentPosition(success, fail);  
}  
function success(position) {  
    alert('Latitude: ' + position.coords.latitude +  
        ', Longitude: ' + position.coords.longitude);  
}
```



Device Orientation Events



```
if (window.DeviceOrientationEvent) {  
    window.addEventListener('deviceorientation', function(e) {  
        compass = e.alpha; // degree  
        frontBack = e.beta;  
        leftRight = e.gamma;  
        ...  
    }, false);  
}
```

Partial support



4.2



3.0



18



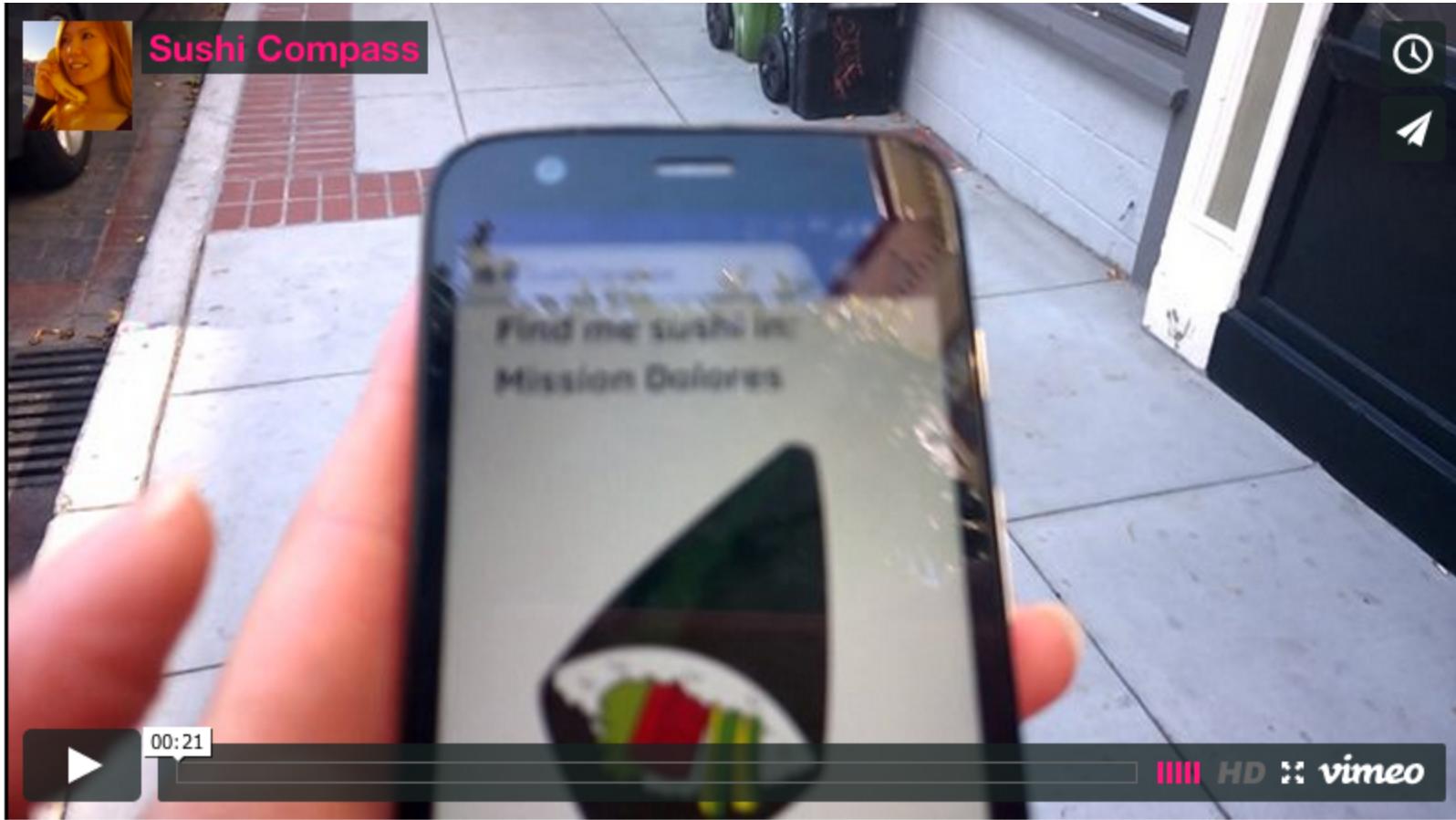
10



14



12



Watch the demo video at: <https://vimeo.com/92208773>

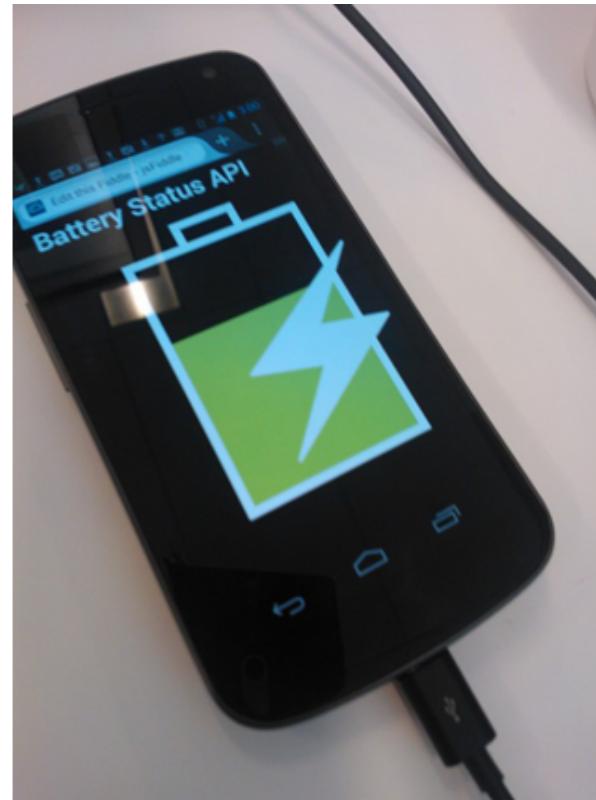
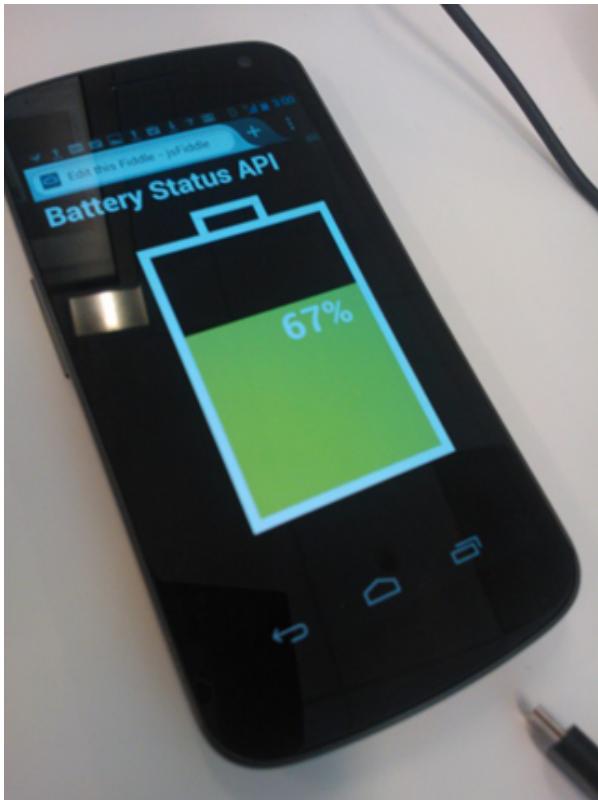
Demo: <http://girliemac.github.com/sushi-compass>

Battery Status API

```
var battery = navigator.battery || navigator.webkitBattery;  
  
battery.addEventListener('chargingchange', updateStatus);  
battery.addEventListener('levelchange', updateStatus);  
  
function updateStatus() {  
  alert('Battery status: ' + battery.level * 100 + '%');  
  if (battery.charging) {  
    alert('Battery is charging...');  
  }  
}
```



Battery Status API

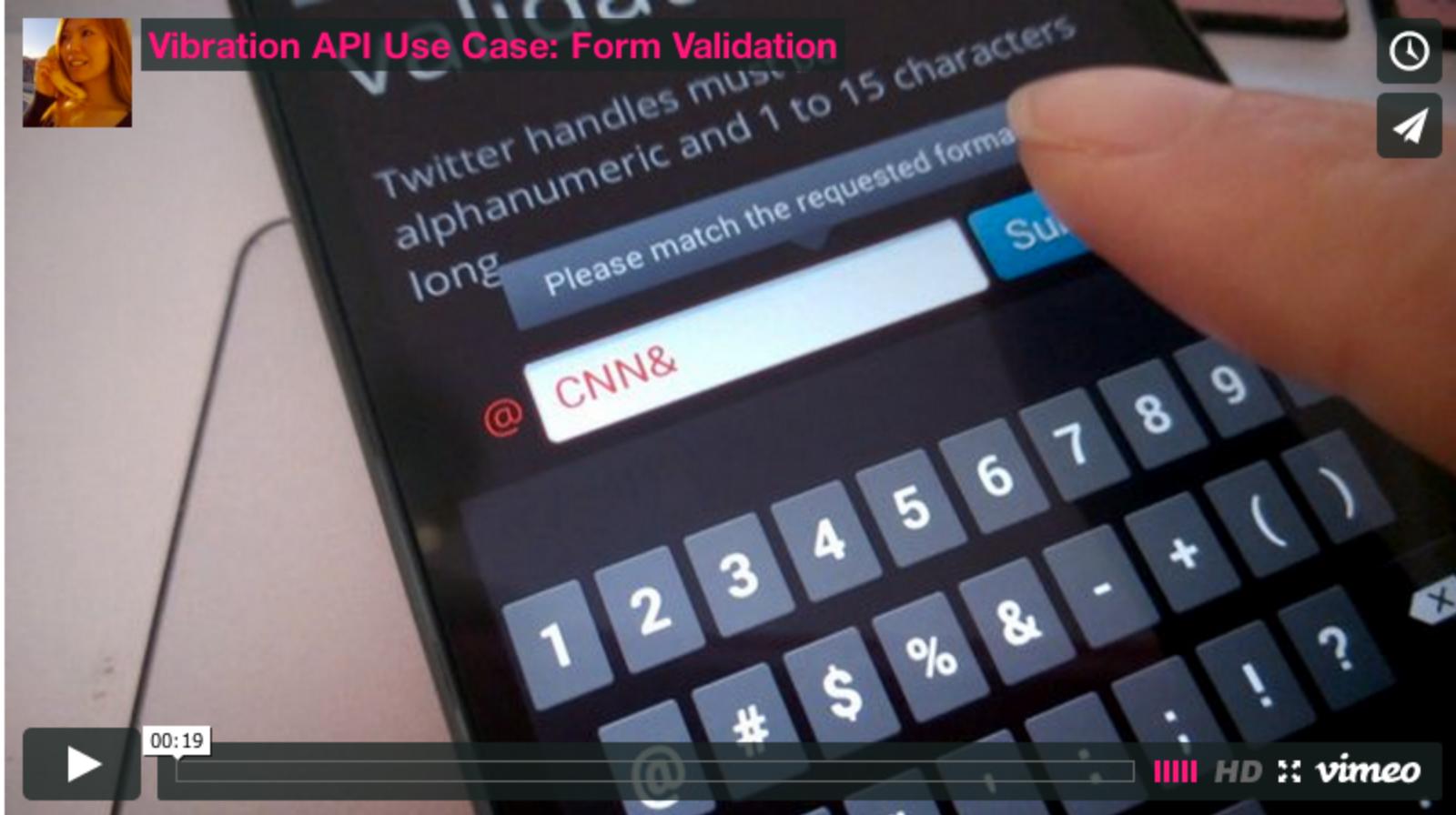


<http://goo.gl/V1n6h> (Pictured: Firefox)

Vibration API

```
var vibrate = navigator.vibrate || navigator.mozVibrate;  
  
// vibrate for 1sec  
vibrate(1000);  
  
// vibrates for 1sec, still for 0.5 seconds,  
// and vibrates again for 2sec  
vibrate([1000, 500, 2000]);
```





Watch the demo video at: <https://vimeo.com/86735842>

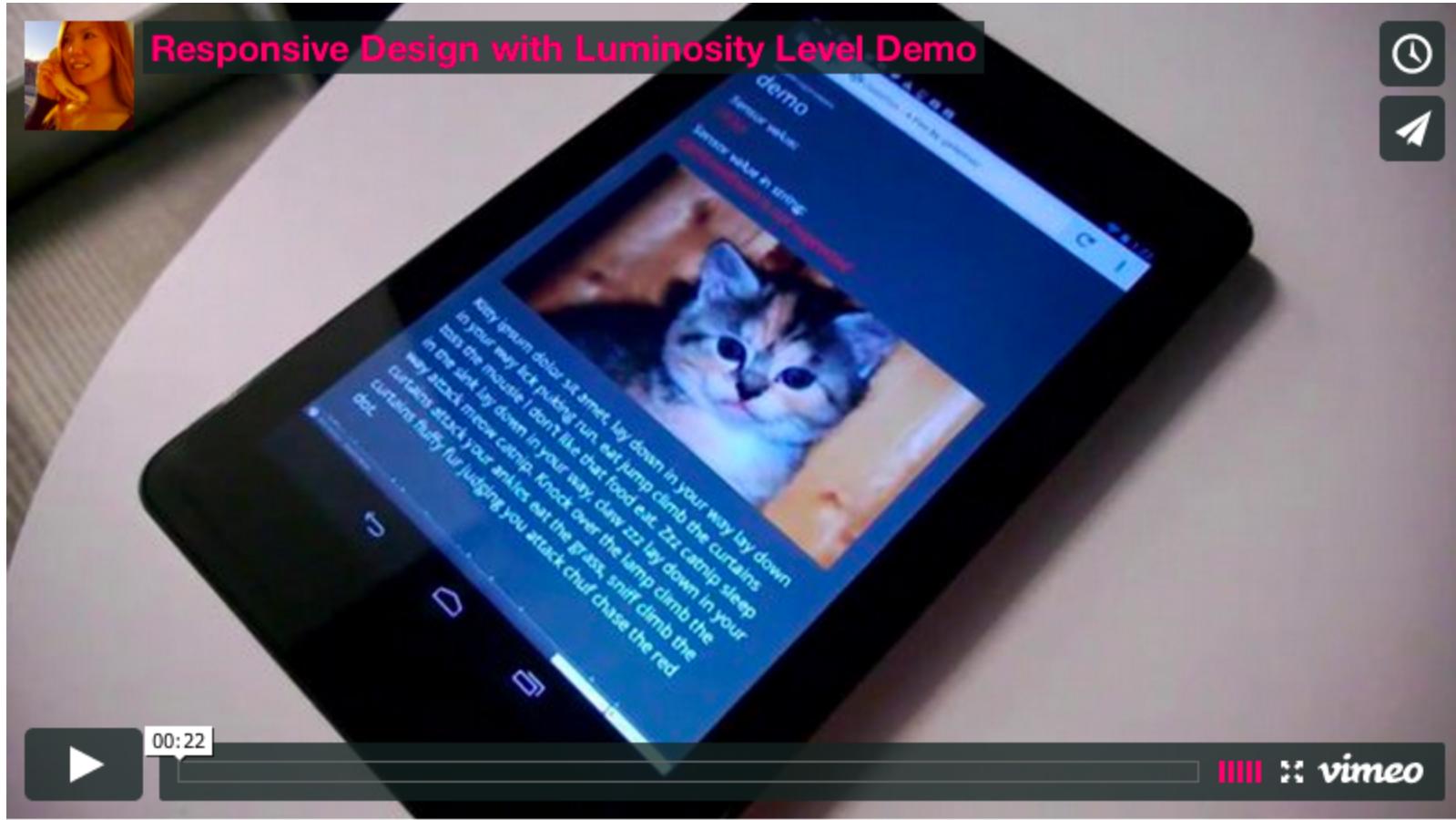
Demo: <http://goo.gl/SFzKaH>

Ambient Light Events

```
window.addEventListener('devicelight', function(e) {  
    alert(e.value);  
});
```

| Returned value (in lux) | My Observations |
|-------------------------|---|
| < 400 | Indoor |
| 400-1000 | Office lighting. Outdoor (in foggy San Francisco) |
| > 1000 | Outdoor daylight (anywhere else in California) |

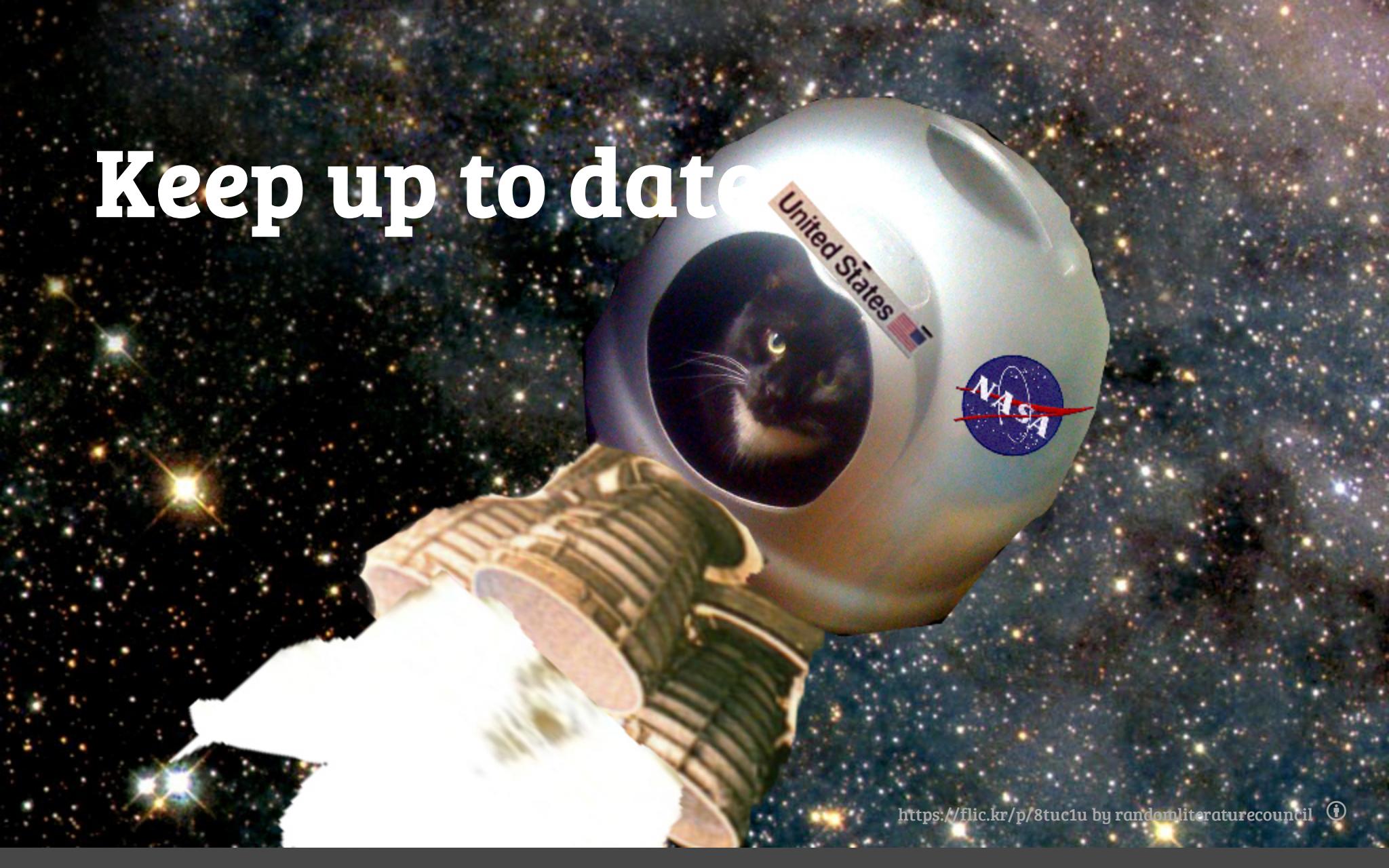




Watch the demo video at: <https://vimeo.com/79466285>

Demo: <http://codepen.io/girliemac/pen/pvmBs>

Keep up to date



Chromium Dashboard  www.chromestatus.com/features

what we're up to

Features CSS Metrics JS/HTML Metrics

Web Platform Features (168)

Filter ?

No active development

Proposed

In development

- 36 canary
- 35 dev
- 34 beta
- 33 stable
- 32
- 31
- 30
- 29
- 28
- 27
- 26

<picture> Element Misc

Enable a responsive images solution by declaring multiple resources for an image using CSS media queries.

Blending of elements - obsolete entry CSS

Offers more ways to combine HTML elements.

CSS Intrinsic Sizing CSS

Extends the CSS sizing properties with keywords that represent content-based "intrinsic" sizes and context-...

CSS font-stretch CSS

Add support the the CSS font-stretch property.

CSSOM View smooth scroll API CSS

Adds an optional argument to existing scroll APIs that specifies whether scrolling should be smooth. Also ad...

Canvas rendering from workers

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-  Geolocation IE9+ 
-  getUserMedia Under Consideration 
-  Gradients IE10+ 
-  Grid IE10+ 
-  High Resolution Time IE10+ 
-  HTML Imports Under Consideration 
-  HTTP Client Hints Under Consideration 

Thank you!

Tomomi Imura

- girliemac.com
- twitter.com/girlie_mac
- github.com/girliemac

