

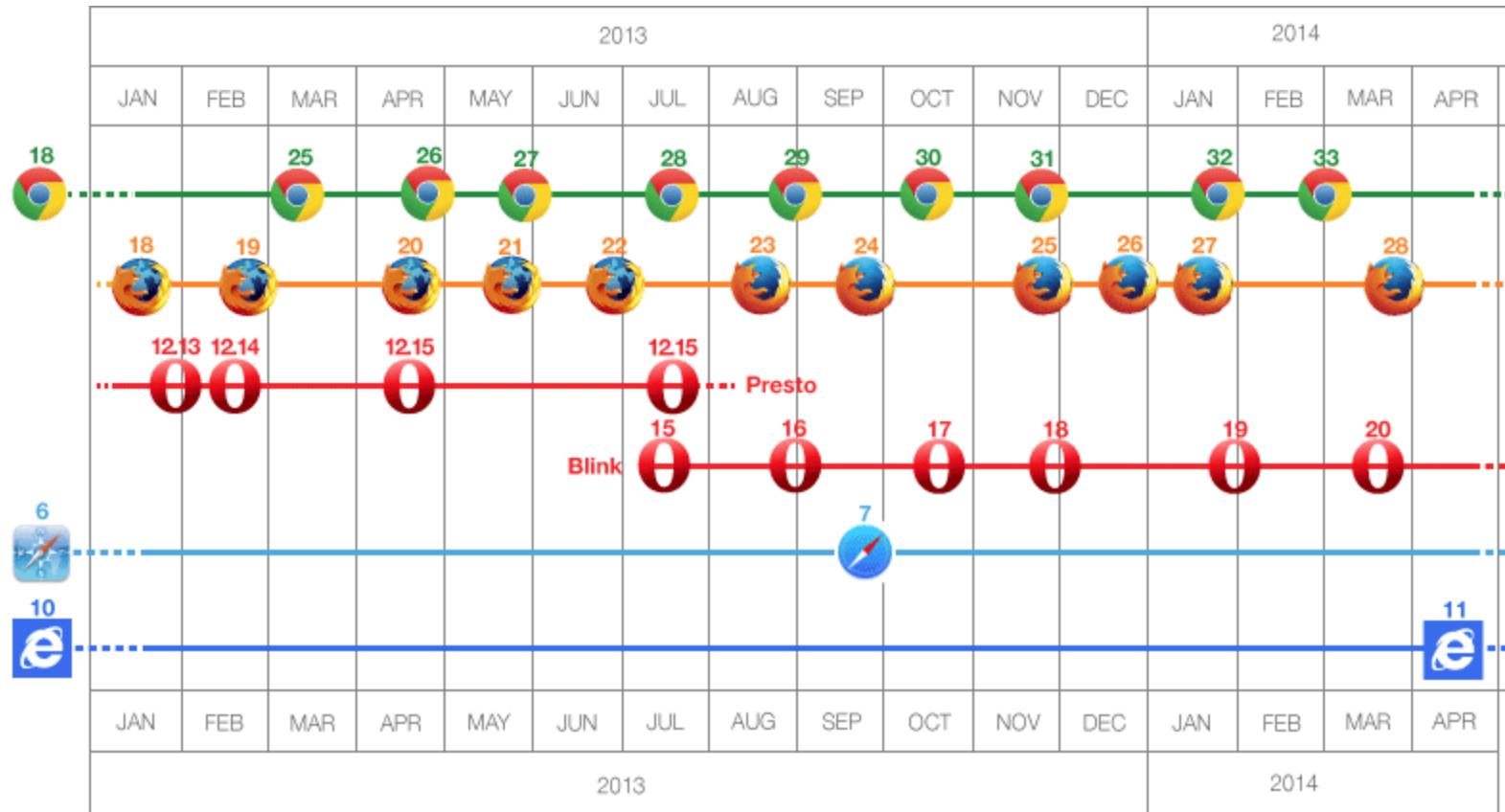
State of Mobile HTML5

Half full or half empty?

Tomomi Imura (@girlie_mac)

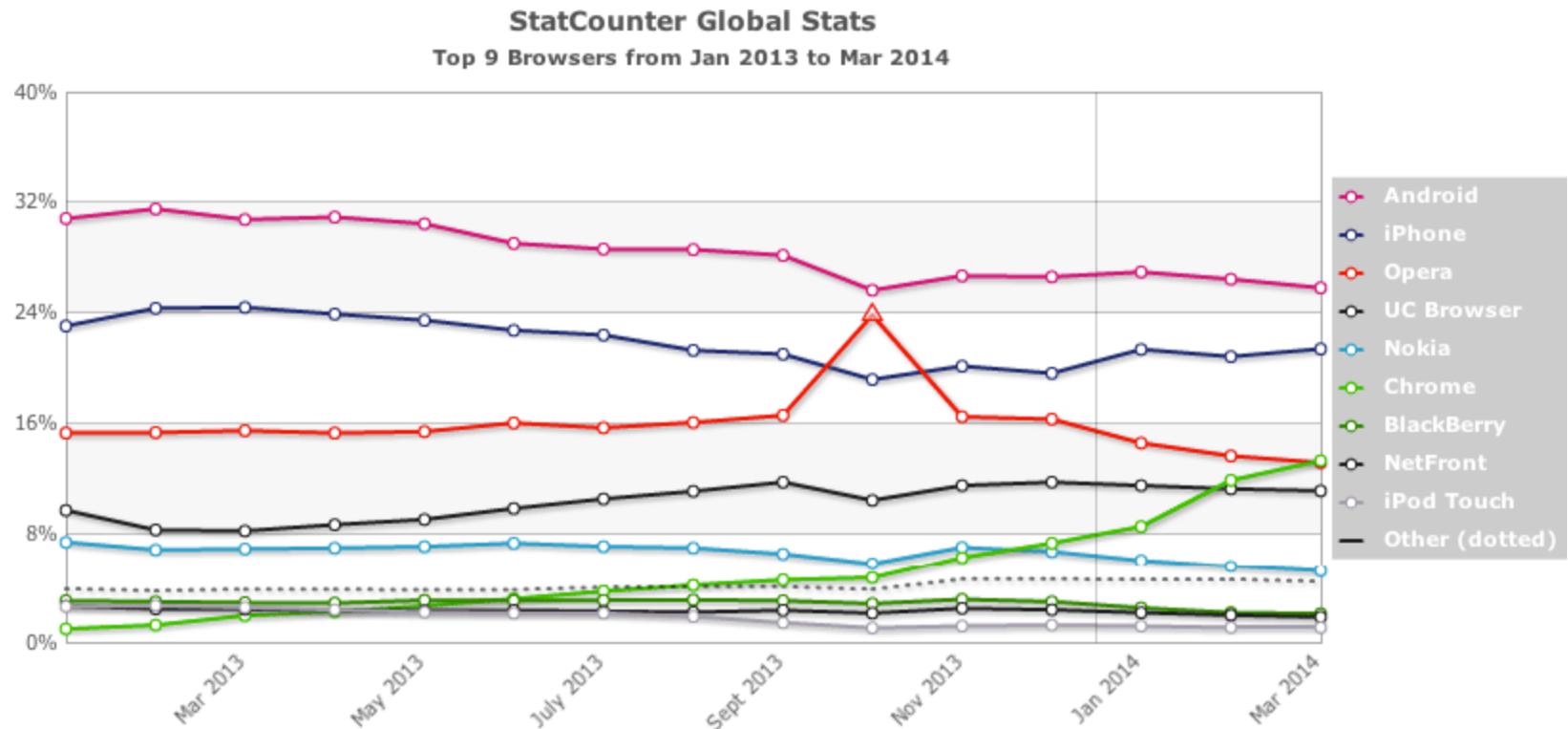


Mobile Browser Releases 2013 -

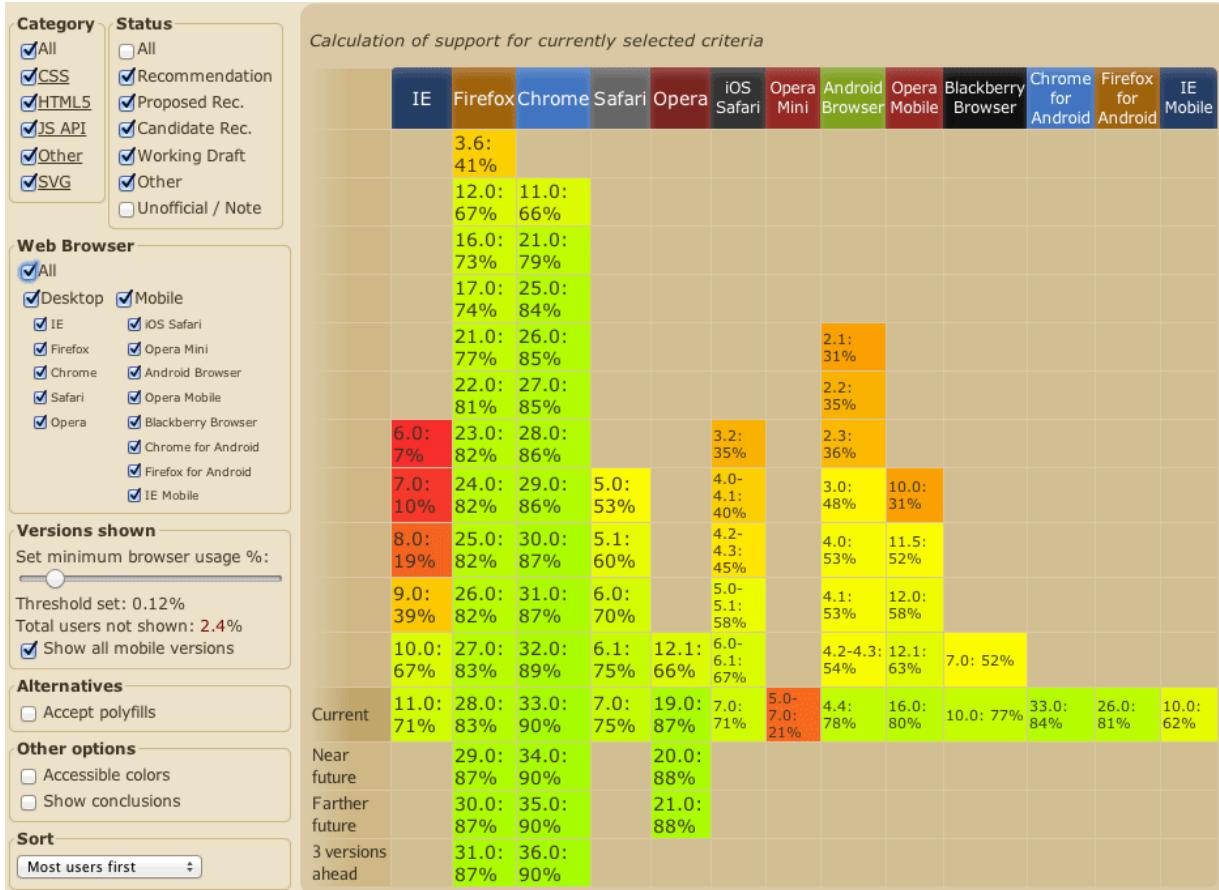




Mobile Browser Usage Stats

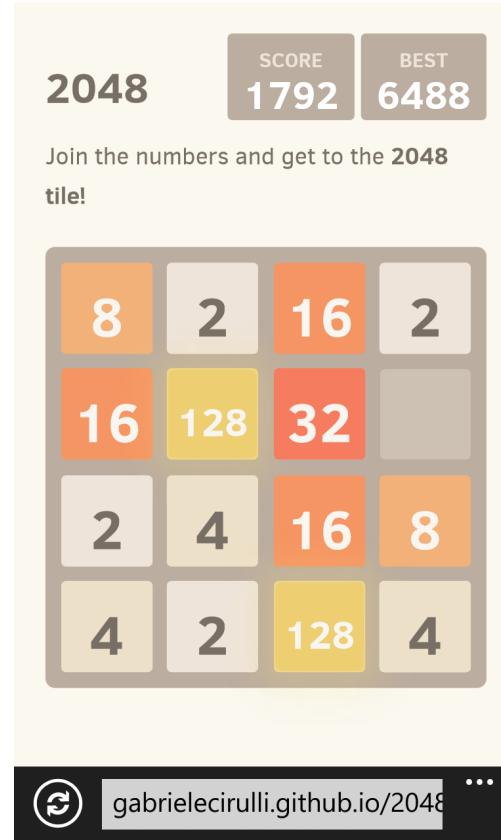
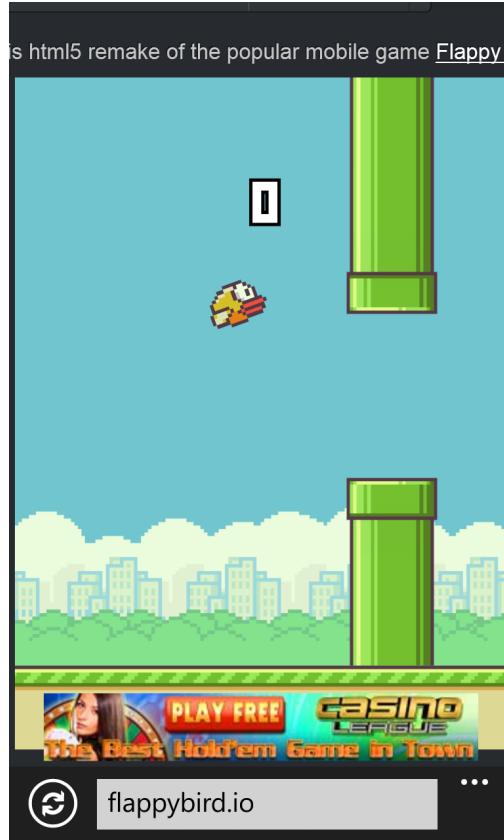


Feature Support Stats



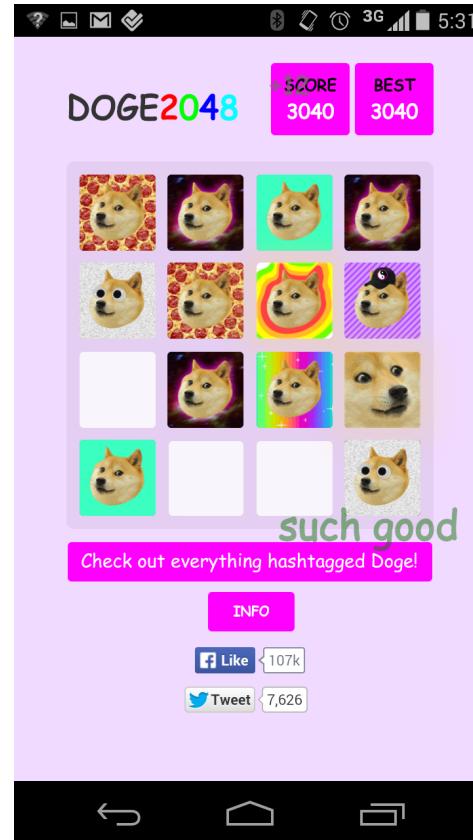
Disrupt App Store

Distributing outside of app stores



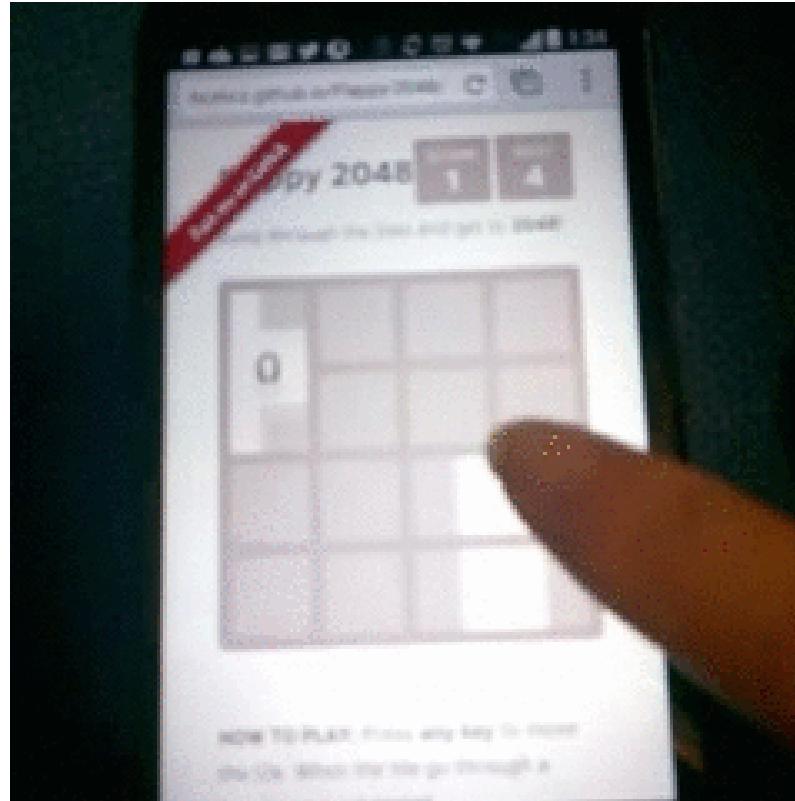
flappybird.io • [2048](http://2048.gabrielecirulli.it)

Forking (in Doge style)



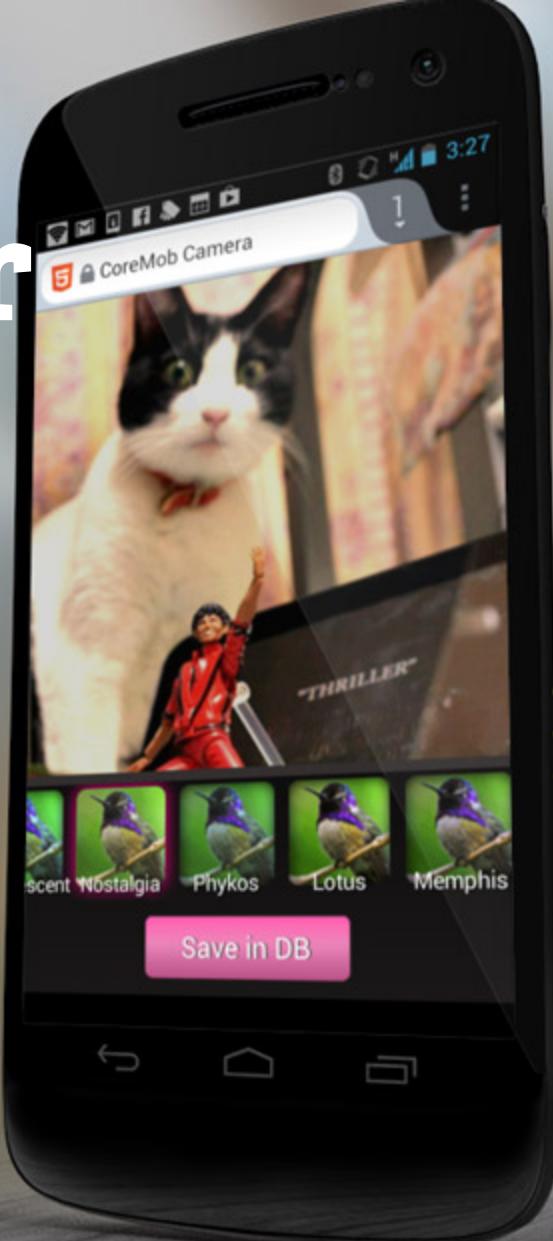
[Flappy Doge](#) • [Doge2048](#)

and Flappy 2048



[Flappy 2048](#)

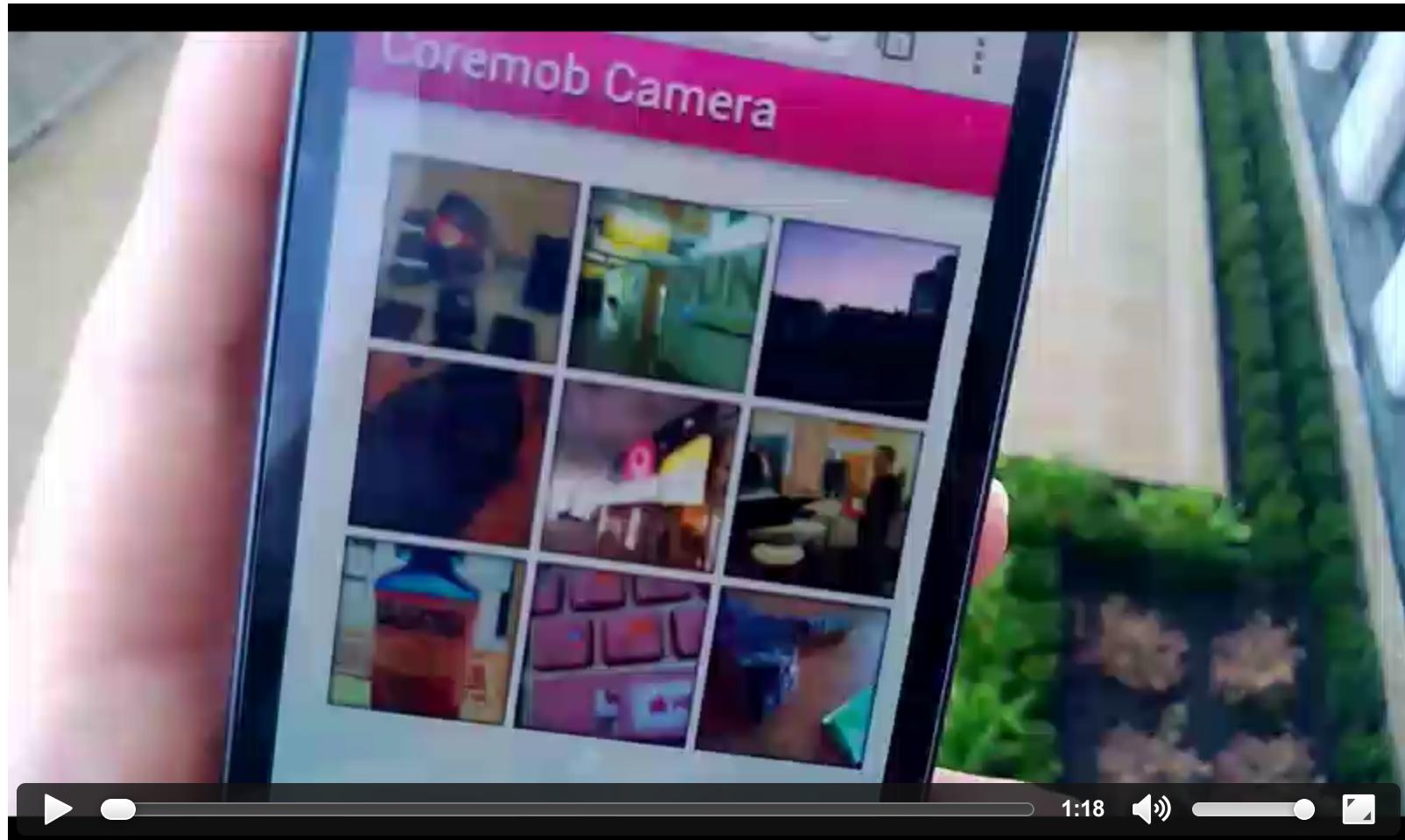
Last Year



"Coremob Camera"

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>

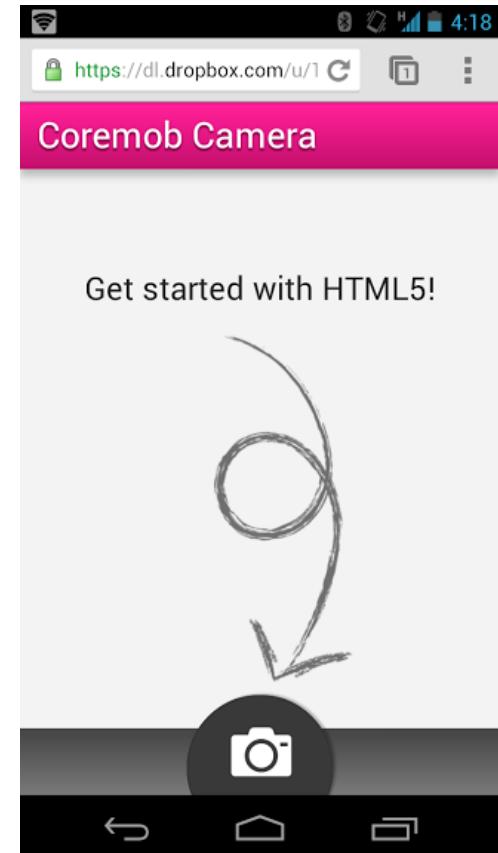
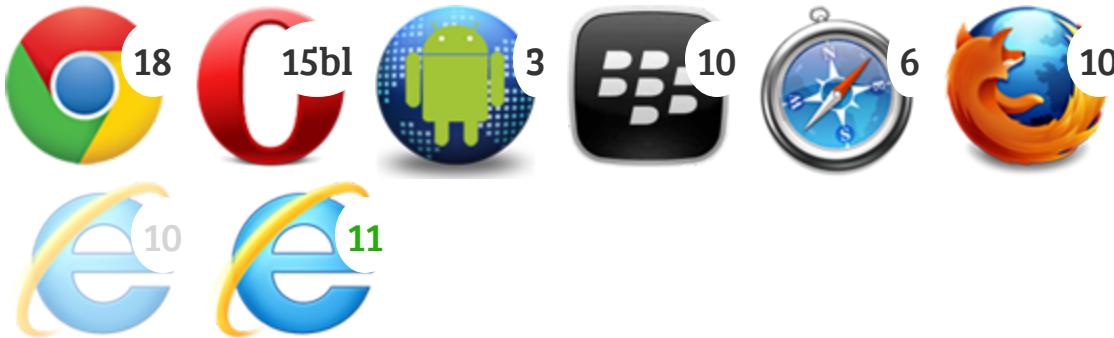
HTML5 APIs

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**

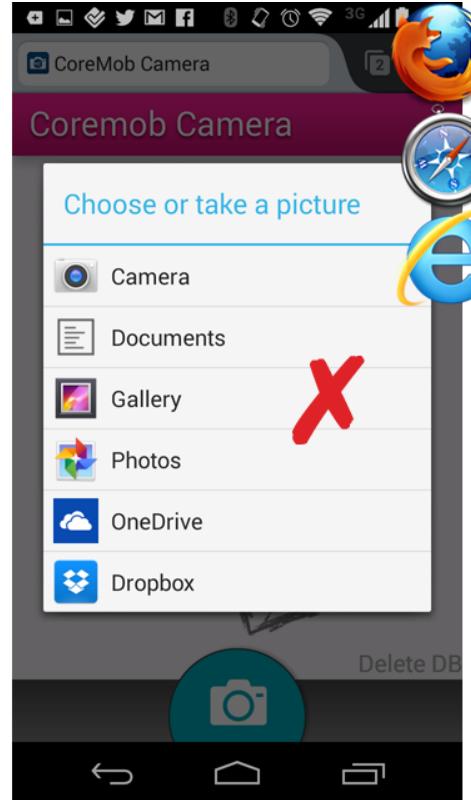
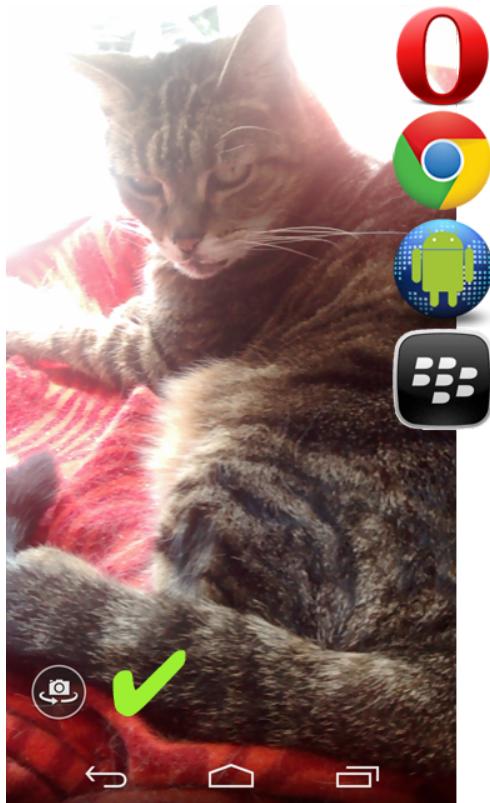
HTML Media Capture

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

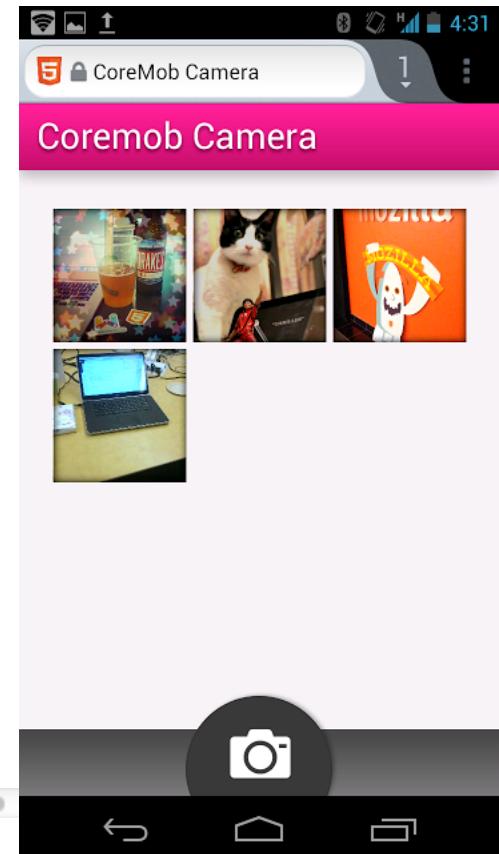
```
var c = document.createElement('canvas');
var ctx = this.c.getContext('2d');
ctx.drawImage(imgObj, 0, 0);
var imgData = ctx.getImageData(x, y, w, h);
//...Pixel manipulation ...
ctx.putImageData(imgData, 0, 0);
```



IndexedDB

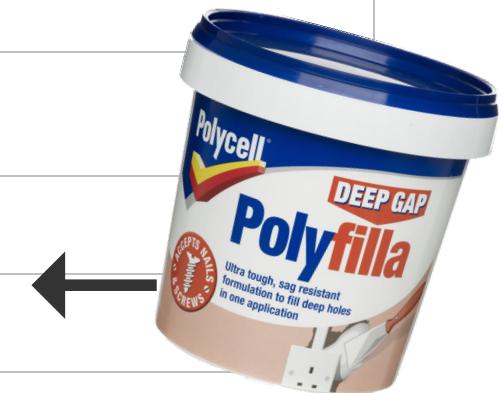
Storing the photos locally

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



Polyfill or not?

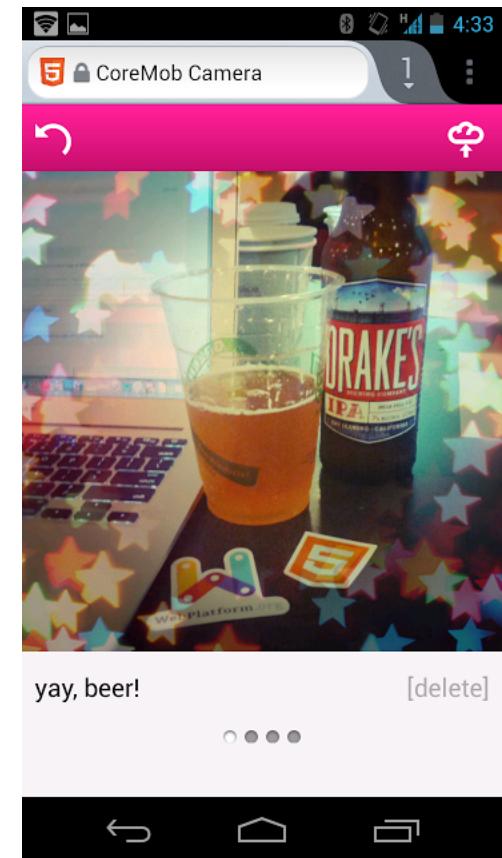
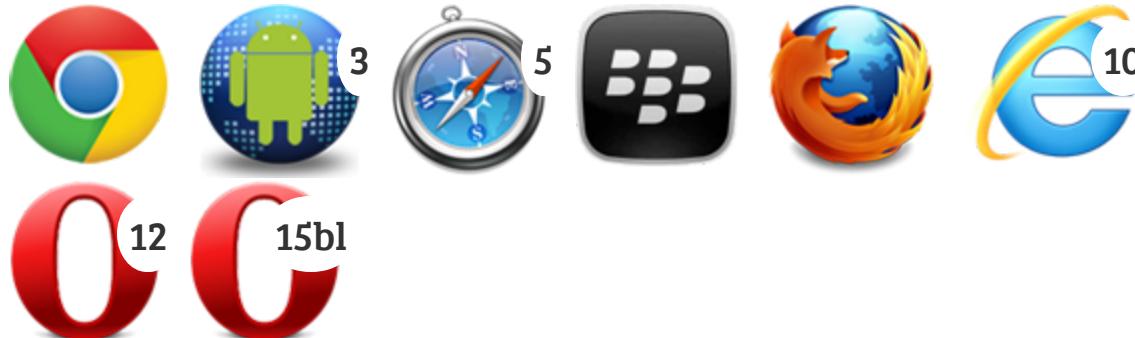
	Indexed DB	Web SQL
Chrome 37	Yes	Yes
Opera 22	Yes	Yes
Blackberry 10	Yes	Yes
Firefox 26	Yes	No
IE 11	Yes	No
Android 4.4	Yes	Yes
Safari 7	No	Yes



XMLHttpRequest Level 2

Sending a photo

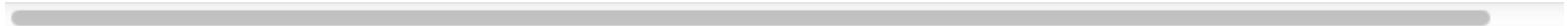
```
var formData = new FormData();
formData.append('photo', blob);
```



XMLHttpRequest Level 2

Sending a photo

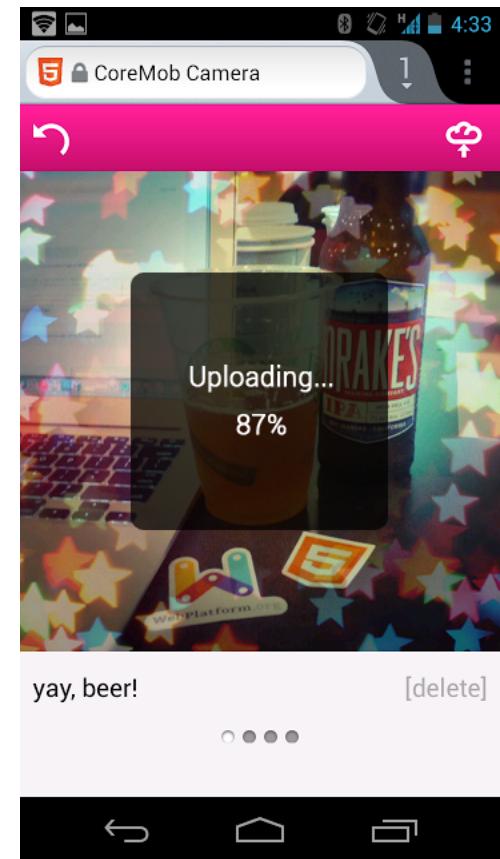
```
var xhr = new XMLHttpRequest();
xhr.open('POST', '/gallery');
xhr.upload.addEventListener('progress', handleProgress, false);
xhr.addEventListener('load', handleFinish, false);
xhr.addEventListener('error', handleError, false);
xhr.addEventListener('abort', handleAbort, false);
xhr.send(formData);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



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>
```

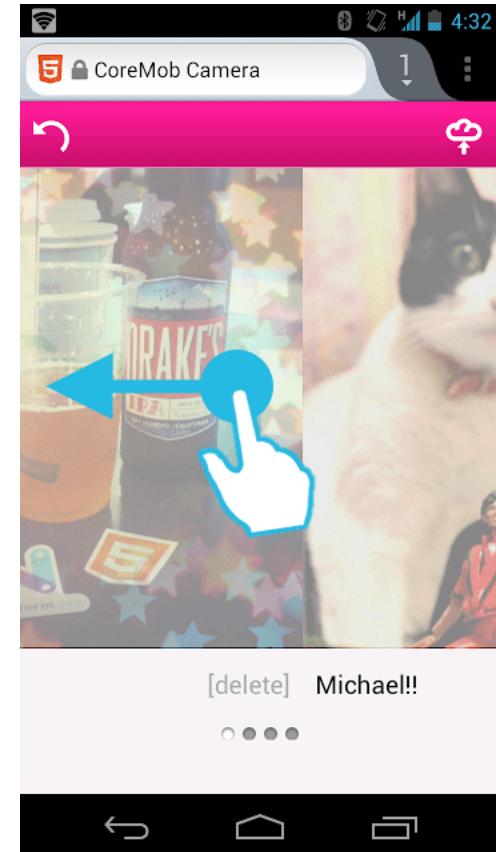


Touch Events v.1

Photo Gallery Carousel

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

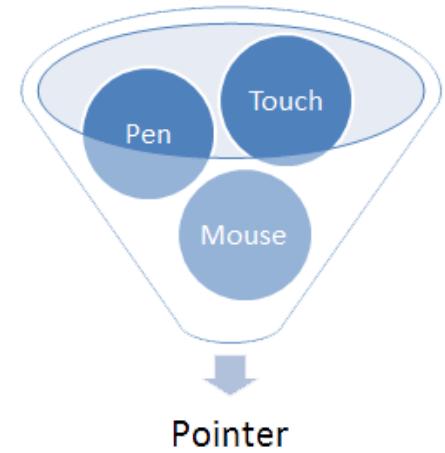
You probably want to include mouse events too
(`mousedown` , `mousemove` , and `mouseup`).



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

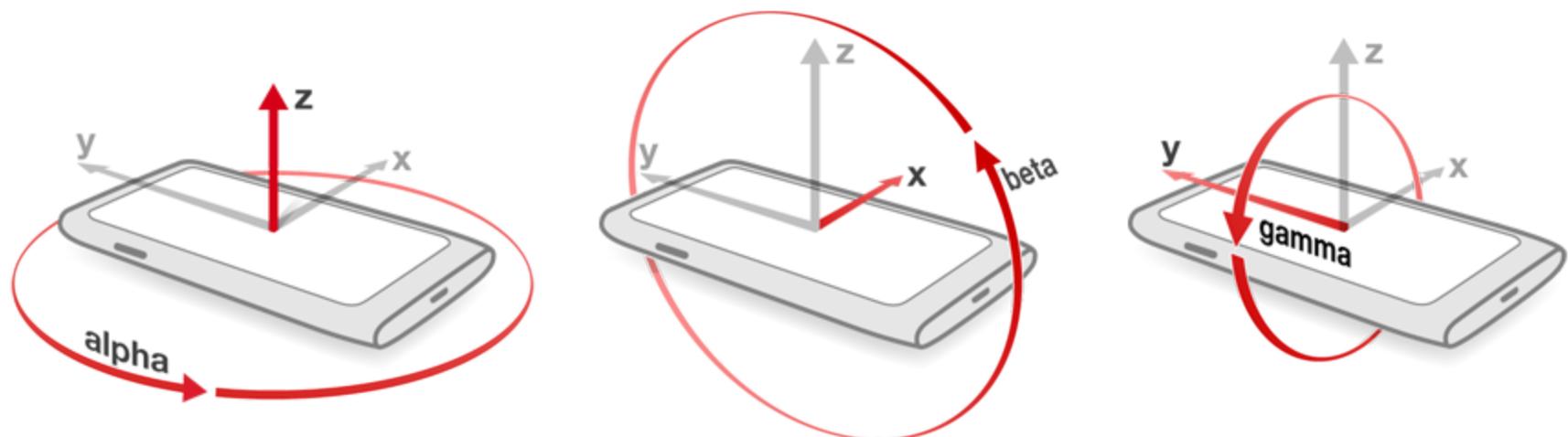
- Accelerometer
- Magnetometer
- Gyrometer
- Light
- Proximity
- Barometer (Pressure)

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

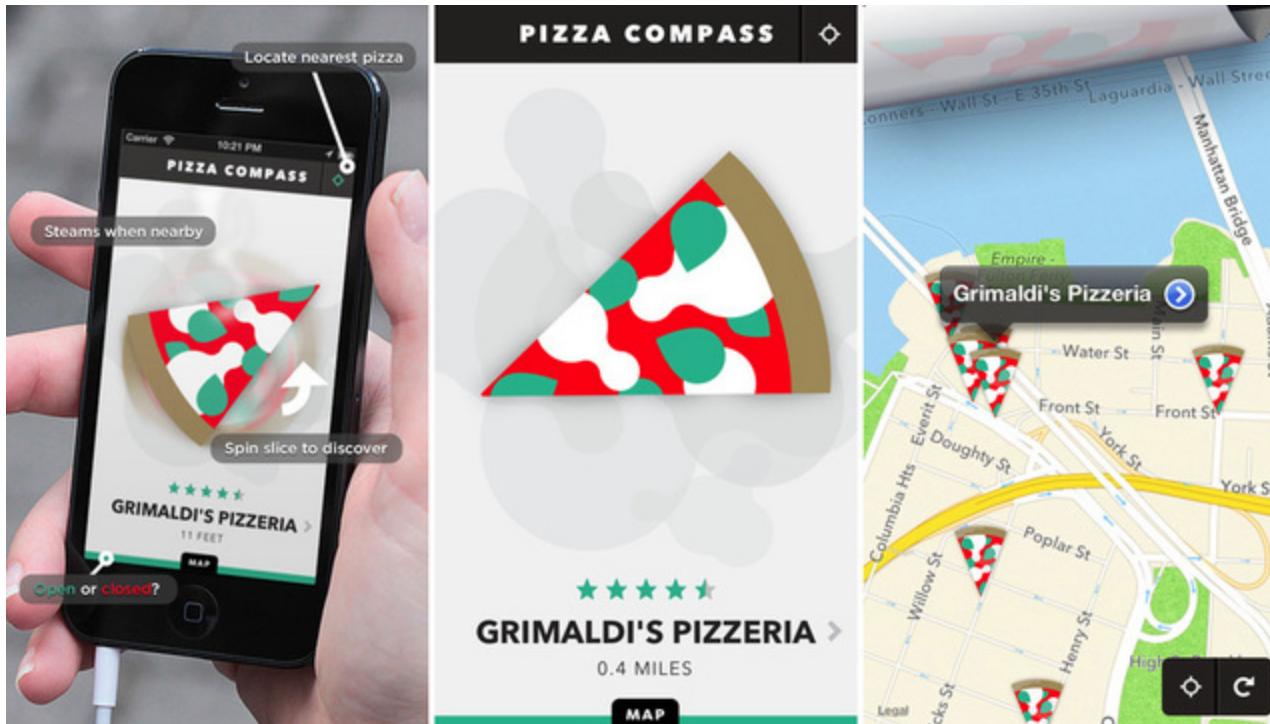


14



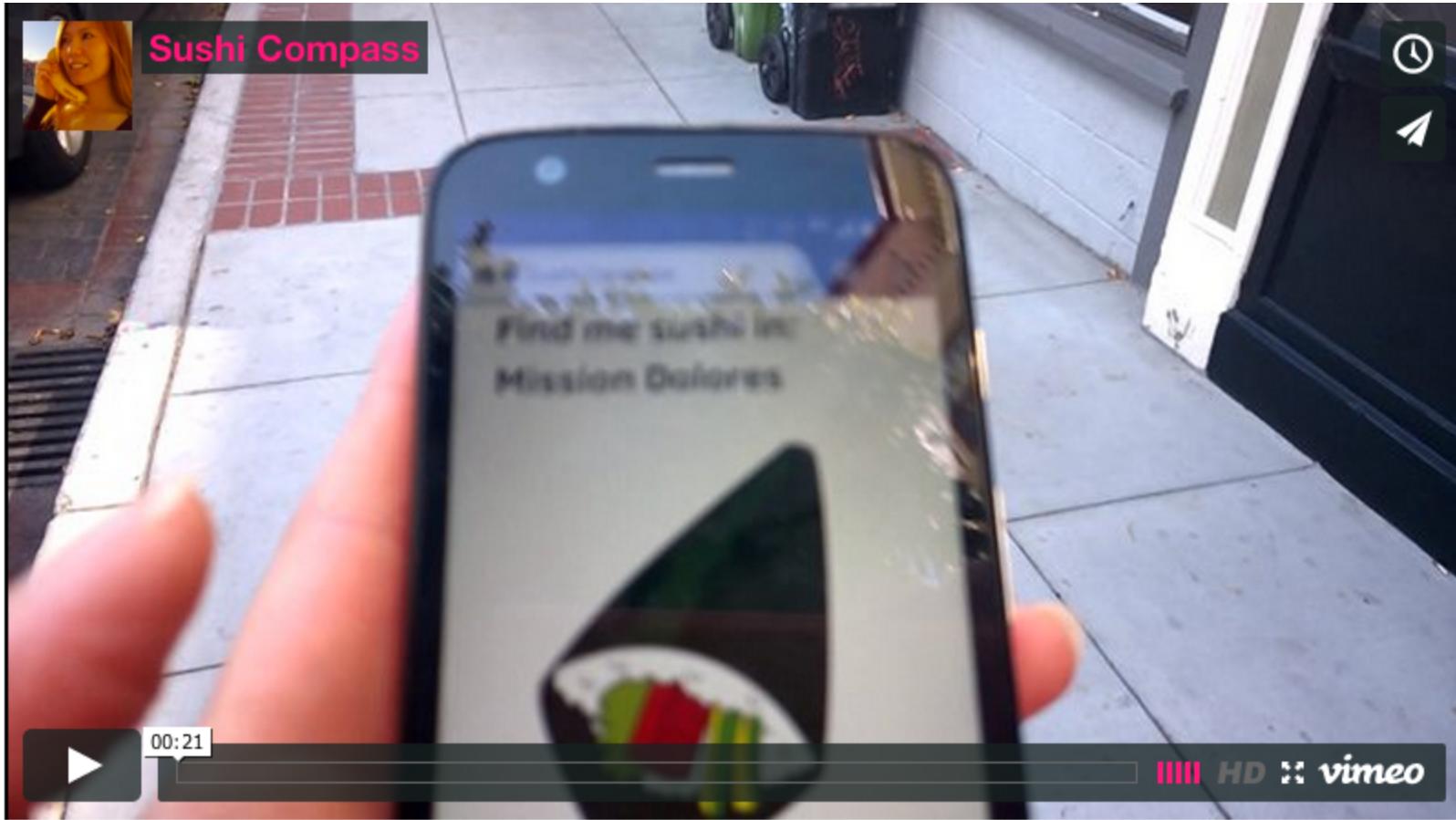
12

User Cases



Can we re-create this iOS app in HTML5?

<http://pizza-compass.com/>



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

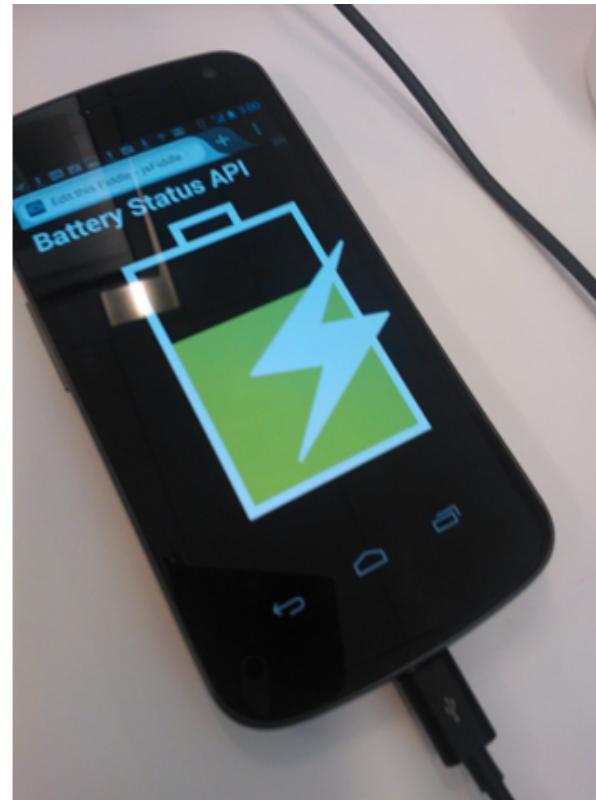
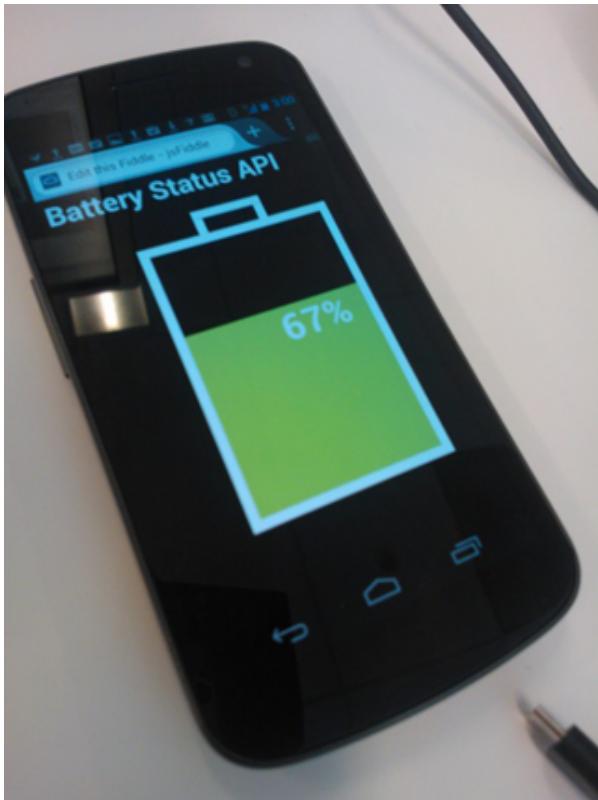
Demo: <http://girliemac.github.com/sushi-compass>

Battery Status API

```
var battery = navigator.battery || navigator.mozBattery;  
  
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

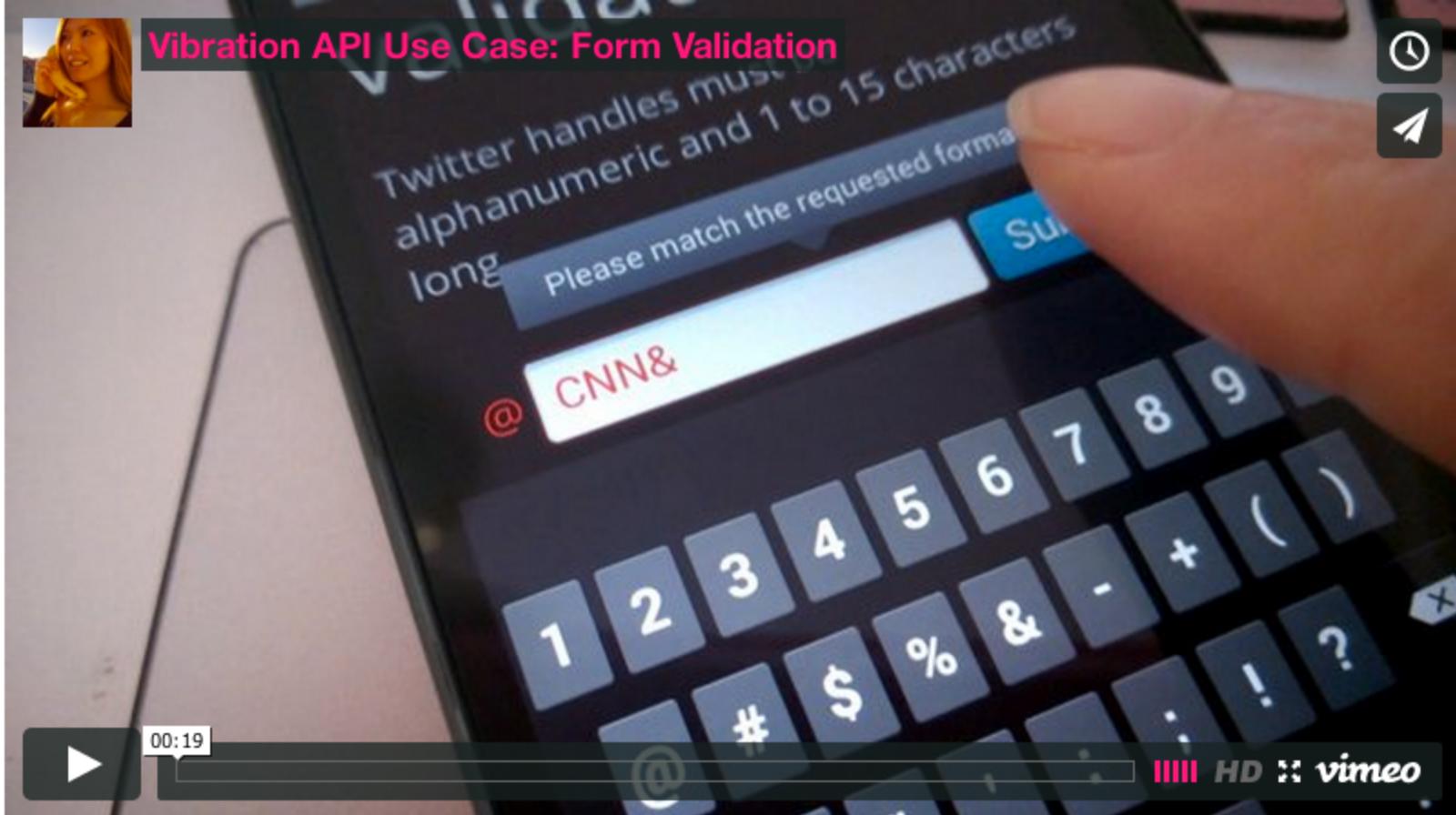


<http://goo.gl/V1n6h> (Pictured: Firefox)

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>

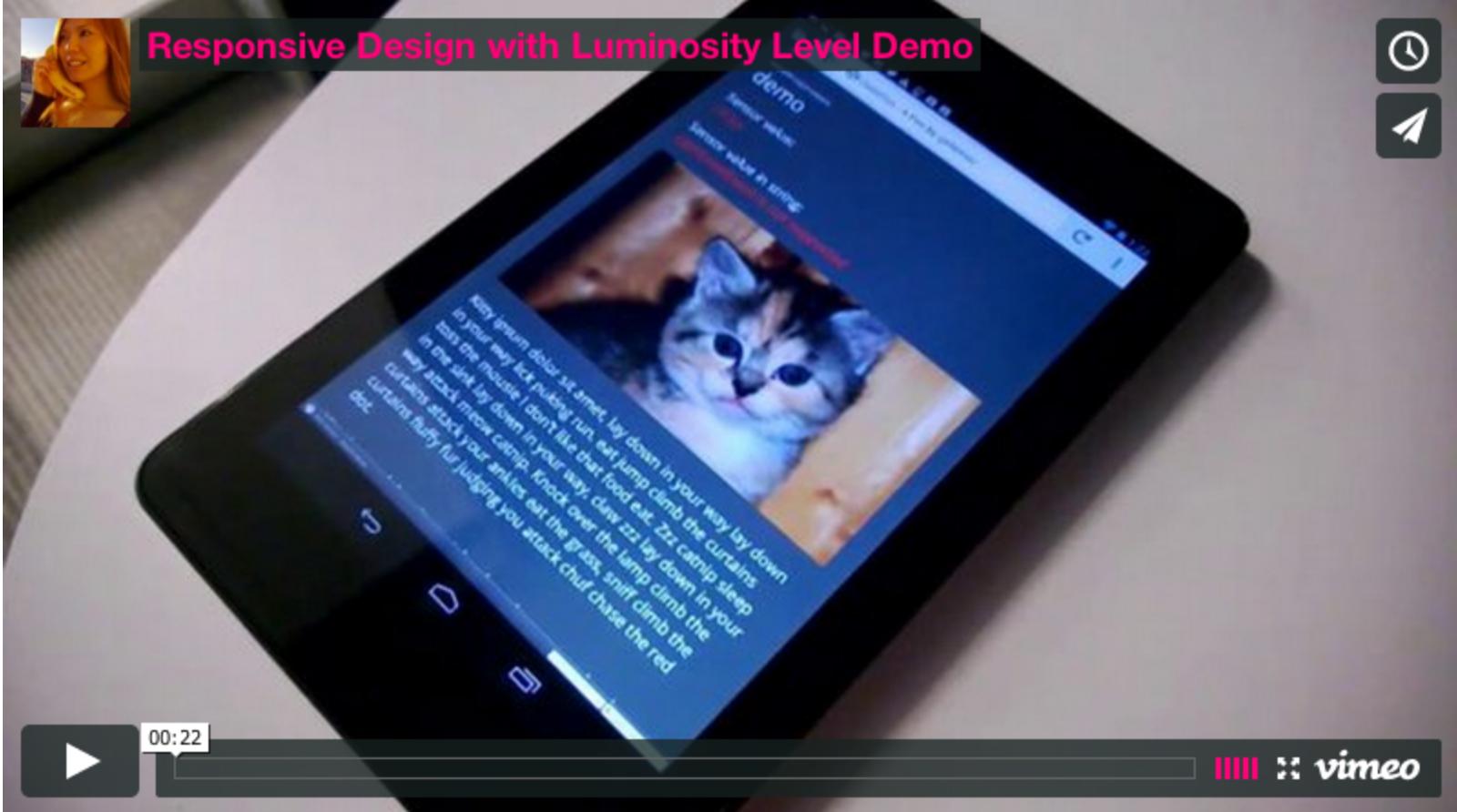
Demo: <http://goo.gl/SFzKaH>

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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Köszönöm!

Tomomi Imura

- girliemac.com
- twitter.com/girlie_mac
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