

# HolyJS

**JAVASCRIPT DEVICE  
DETECTION**

**DINO ESPOSITO**

**@despos**

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Mozilla/5.0 (compatible; MSIE 10.6; Windows NT 6.1; Trident/5.0; InfoPath.2; SLCC1; .NET CLR 3.0.4506.2152; .NET CLR 3.5.30729; .NET CLR 2.0.50727) 3gpp-gba UNTRUSTED/1.0

A browser's user agent string (UA) helps identifying which browser is being used, version, and on which operating system.

When feature detection APIs are not available, use the UA to customize behavior or content to specific browser versions.

# CHECKING USER AGENTS IS PROBLEMATIC

**Way too many cases**

**30K order of magnitude**

**Complex and sophisticated analysis required to do it well**

**Effort depends on expected results**

- Easy to start with low requirements
- Easy to grow to extremely detailed analysis

# WHAT DO YOU EXPECT?

Everything but desktop browsers?

Just rough checking iOS vs Android?

Specific capabilities?

Server-side feature detection

CHECKING USER AGENTS IS PROBLEMATIC

**LET'S GET SMART  
IGNORE DEVICES  
FOCUS ON FACTS**

# RESPONSIVE WEB DESIGN

## RESPONSIVE WEB DESIGN



Desktop, netbook, tablet & mobile phone

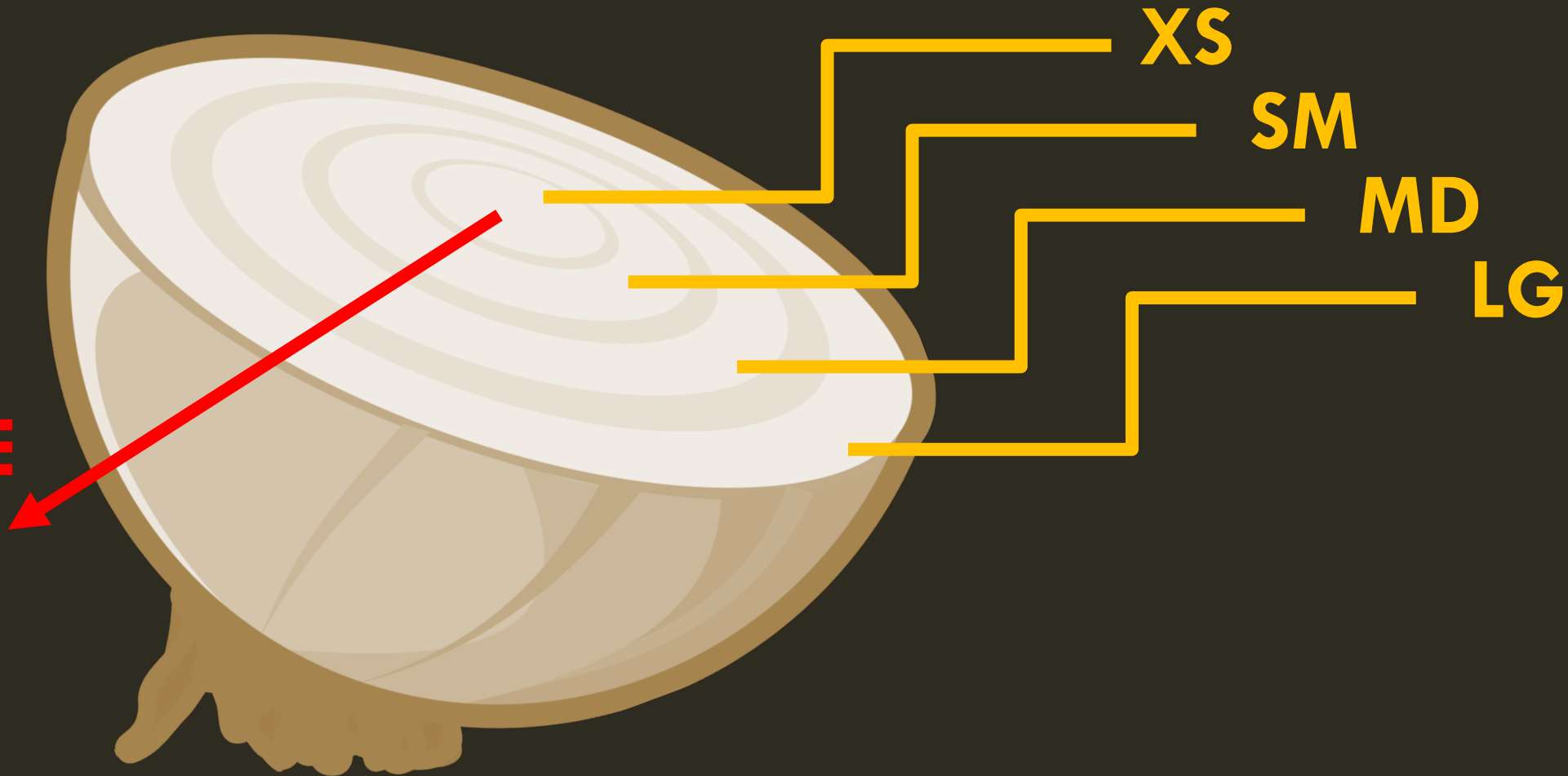
# CSS MEDIA QUERIES

## RESPONSIVE STYLING

```
<link rel="stylesheet"  
      type="text/css"  
      media="screen and (max-device-width: 480px)"  
      href="small.css">
```

```
<link rel="stylesheet"  
      type="text/css"  
      media="screen and (max-device-width: 960px)"  
      href="medium.css">
```

**MOBILE  
FIRST**







Maximiliano Firtman

@firt



Following

I'm sure downloading 132Mb is faster than a mobile-optimized web content, right?

The screenshot shows an app page with a blue banner that reads "In is faster on ou" and "ow. looper & Co-D". To the right is a dark blue sidebar with tabs for "Details", "Reviews", and "Related". The "Details" tab is active, showing the following information:

| Information    |  |
|----------------|--|
| Seller         | LinkedIn Corporation   |
| Category       | Social Networking  |
| Updated        | Jun 1, 2016  |
| Version        | 9.0.21   |
| Size           | 132 MB   |
| Rating         | Rated 4+   |
| Family Sharing | Yes  |
| Compatibility  | Requires iOS 8.0 or later. Compatible with iPhone, iPad, and iPod touch.   |
| Languages      | English, Arabic, Czech, Danish, Dutch, French, German, Indonesian, Italian, Japanese, Korean, Malay, Norwegian Bokmål, Polish, Portuguese, Romanian, Russian, Simplified Chinese, Spanish, Swedish, Thai, Traditional Chinese, Turkish |

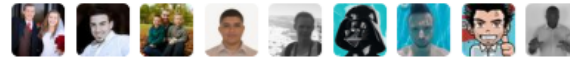
At the bottom of the sidebar is a link for "In-App Purchases" with a right-pointing arrow.

RETWEETS

71

LIKES

71



6:01 PM - 3 Jun 2016



# CONS

RWD is just about styling

Even though it's called mobile-first, it ultimately implements just ONE vision—the largest possible

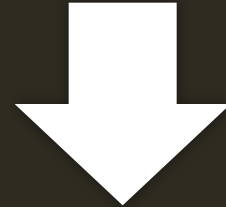
It's about adapting the largest content to all screens

It's about the screen width

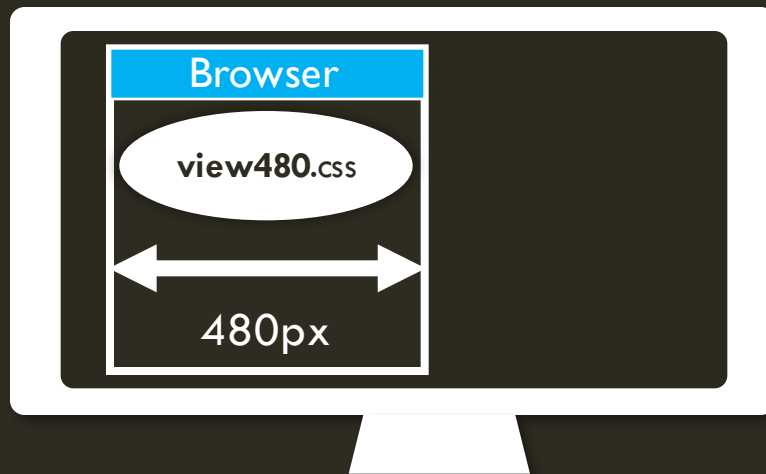
**CHROME window resized to  
480px under powerful wifi is  
treated the same as a mid-  
quality smartphone  
connected over slow 3G.**

# RWD CORE ISSUE

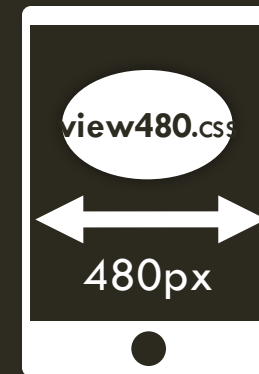
Same amount of content



Powerful laptop, wifi



Smartphone, 3G



# CSS AND YOU

## WHAT CSS CAN DO

- Show/hide elements
- Position elements
- Cut / Reflow content
- **float** CSS attribute

## WHAT CSS CAN'T DO

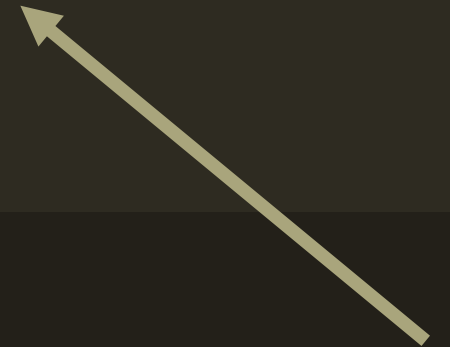
- Change layouts
- Change logic / use-case
- Serve different markup
- Recognize OS

# RWD ADDITIONAL ISSUES

**Images**

**Use-cases**

## Pixel density for high resolution displays



```
<picture alt="">  
  <source media="(min-width: 992px)" srcset="large-1.jpg 1x, large-2.jpg 2x">  
  <source media="(min-width: 640px)" srcset="med-1.jpg 1x, med-2.jpg 2x">  
  <source srcset="small-1.jpg 1x, small-2.jpg 2x">  
    
</picture>
```



**Choose a thumbnail**



# ImageEngine<sup>Lite</sup>

Automatic image optimizer  
Conceptually similar to a CDN  
Free up to 5GB of monthly traffic

<http://web.wurfl.io/#image-engine>

```

```

## Plenty of options

Width / Height

Percentage of screen

Stretch/Crop/

Coordinates

Inline

Supports Client Hints today

Browsers sending details about expectations

<http://github.com/igrigorik/http-client-hints>

```
<meta http-equiv="Accept-CH"  
      content="DPR, Viewport-Width, Width">
```

Images can make up to  
**70%** of the total weight  
of an average web page

## SPECIFIC USE-CASES

- Server-side detection
- Client-side detection

**In both cases, it's about parsing the user agent string.**



Server-side  
API

**WURFL.js**

Web server  
module

```
<script type="text/javascript"  
  src="//wurfl.io/wurfl.js"></script>
```



complete\_device\_name

Friendly name of device

form\_factor

Type of device

is\_mobile

False for desktop

```
window.addEventListener('DOMContentLoaded', function () {  
    var formFactor = WURFL.form_factor;  
    $("#factor").html(formFactor);  
    $("#name").html(WURFL.complete_device_name);  
    $("#mobile").html(WURFL.is_mobile  
        ? "Not a desktop browser"  
        : "Desktop browser");  
});
```

<http://www.expoware.org/wjs.htm>



# WURFL.JS SCENARIOS

- Fine-tune the user experience beyond what CSS allows to do
- Change UI on a per-OS basis
- Load components (logic) based on the type of the device
- Redirect to specific mobile site(s) transparently
- Select the ideal advertising network (some are better for mobile)
- Improve knowledge of users putting information into GA



# SUMMARY

- Better if you know the device
- Better if you rely on a strong framework for device detection and image processing
- RWD is a nice shortcut for quick solutions
- Seriously flawed for more advanced scenarios
- RWD dismissed by those who really need to make their app/site usable across devices
- WURFL.JS is used by Google and Facebook

Q & A