

Fast Mobile UIs

You're an Edge Case



Fast Mobile UIs

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Who am I, right?

Horia Dragomir

UI Developer @ wooga

HTML5 Social Games



Mobile UI != Desktop UI



Mobile UI is Harder

- Awesome standard support
- No IE6
- Super hardware



Forget What You Knew



Learn by Doing



Learn by Solving Problems



We Used to Have No Debugging



Thank you, Adobe and
Opera!



Thank you, Apple!

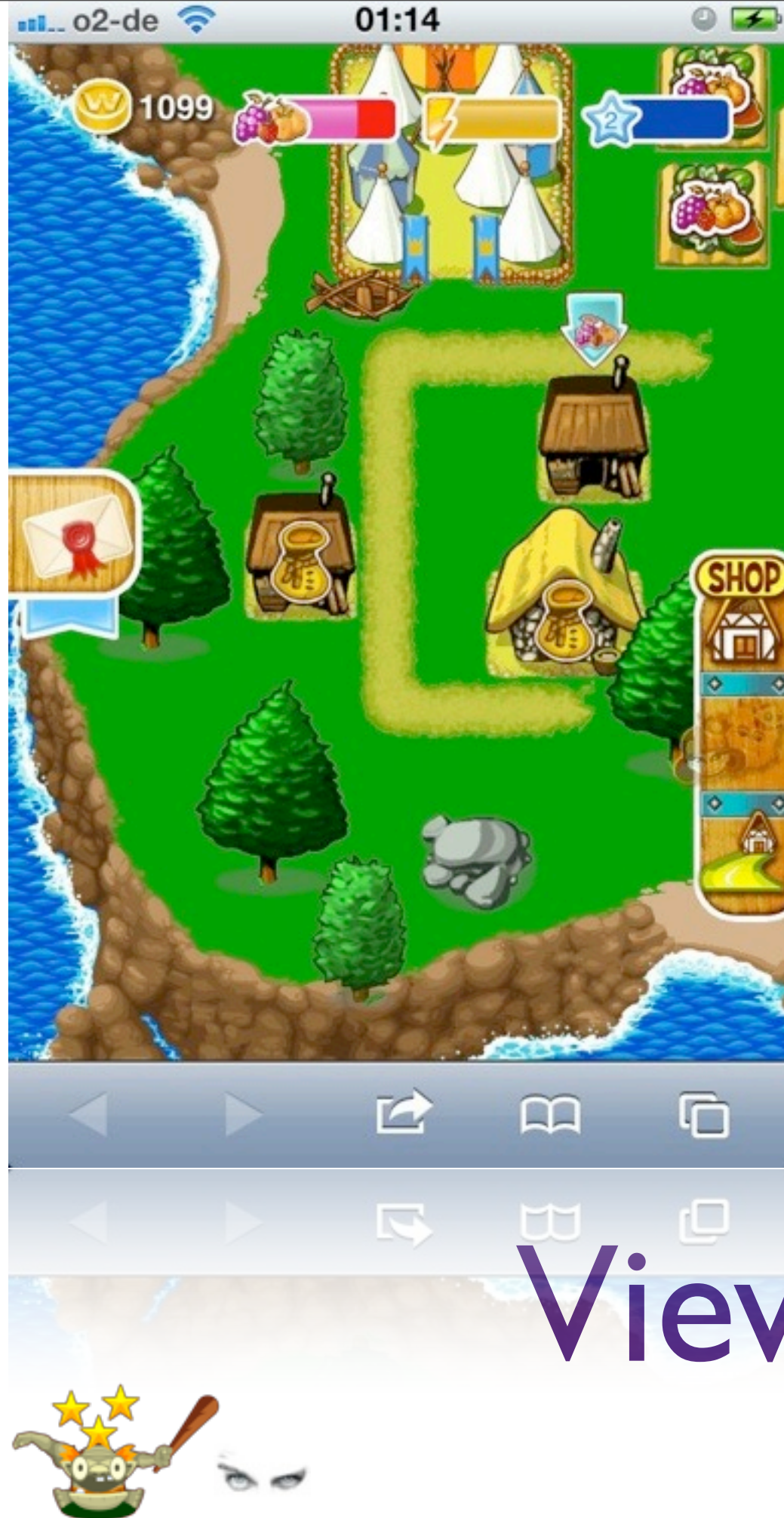
```
[NSClassFromString(@"WebView")  
_enableRemoteInspector];
```



Thank you, Google!

Thy Chrome Robot is amazing!





Viewport

Viewport

- It's actually hard to use the full screen
- Use a custom hack



Viewport

- Viewporter tries to solve this problem, but fails
- Your webapp will run in far too many environments to create profiles for



Speed



iOS versus Android

Android is usually half as fast*



iOS versus Android

Android is usually half as fast

<http://daringfireball.net/linked/2012/03/05/ios-android-html5-benchmarks>



Loading Speed

- Show first, load later
- Loading JS can freeze the UI
- Lazy-loading?



HTTP Hates You

Roundtrips are expensive
Try pipelining



applicationCache is a lie

- Loads in one gulp
- Loads in order
- the UI will hate this
- Use it with care



Golf Everything!

l40byt.es



Golf?

- Make you application smaller and smaller and keep it as small as you can



Be Awesome!



Be Awesome?



Who's Awesome?



You're Awesome

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ICANHASCHEEZBURGER.COM 🍕 🍔 🌮

YOU'RE AWESOME

You Don't Need jQuery!

- I <3 jQuery, but not on mobile.



HTML5 is Awesome!



USE IT!



.querySelectorAll()

- [].map.call
- super fast!



.querySelectorAll()

```
[].map.call(node.querySelectorAll('a .super'),  
function (child) {  
    //awesome stuff here  
});
```



.querySelectorAll()

<http://snook.ca/archives/javascript/going-simple-with-javascript>



getElementsByClassName

- blazing fast!



getElementById



Use Event Bubbling!



Use Event Bubbling!

instead of adding `EventListeners` to every node, just add one to their parent.

It's what the cool kids are doing!



XMLHttpRequest rocks the boat

- `req.overrideMimeType('text/plain; charset=x-user-defined');`



req.responseCode < 400



req.responseCode < 400

An AJAX request to an asset already stored in applicationCache will *sometimes* yield a responseCode of 0



pushState for navigation



requestAnimationFrame



requestAnimationFrame

- ```
function(a,b){while(a--&&!
(b=this["oR0msR0mozR0webkitR0r".split(0
)[a]+"equestAnimationFrame]));return b||
function(a){setTimeout(a,15)}}(5)
```
- <https://gist.github.com/997619>



# Redraws Hate You



# CSS is your friend



# Animations are hard

- Think of the poor CPU
- Use transitions!
- Use CSS3 transforms



Also, cheat and add dummy transforms just  
to get things HW accelerated



# Android hates multiple transforms

You will end up having simplified animations for Android. That's OK.



Also, turn off Hardware Acceleration for  
Android 2.x

Thank you, Ben Green!





# node[data-mode="super"]

- classes are cool for binary switches, though



# Tread with care

- CSS3 does not always follow live DOM events



# Tread with care

- CSS3 does not always follow live DOM events
- See this for an example:  
<http://jsbin.com/orolov/12/edit#html,live>



Small hacks go a long way



# onclick is broken

for a good reason



# Roll your own “onclick”

- use touchstart, touchmove and touchend
- enable longtouch listener



```
document.addEventListener('touchend', function () {}, false);
```

This enables the :active selector and increases the perceived responsiveness of your app



# Perceived Responsiveness

Delay JS heavy execution to allow the UI to respond fast.





# Perceived Responsiveness

[http://alexmaccauw.co.uk/posts/async\\_ui](http://alexmaccauw.co.uk/posts/async_ui)



5878



4736

Energy: 30/30

98/112



 5401



4736

Energy: 30/30

97/112





**Create New Contact**

**Add to Existing Contact**

**Cancel**

1x

1x

# format-detection telephone=no

This will not always work, so you will need to insert dummy `<span>`s here and there



pointer-events: none;  
user-select: none;  
user-drag: none;



name=viewport content="initial-scale=0.5"

- Use CSS3 transforms to scale things back to size
- Or just use bigger graphics



# Use optimized images

- pngnq
- spritopia
- Android has `navigator.connection`





Android was broken,  
though



# You should be an edge case

this means you're doing something special



# You should be an edge case

this means you're doing something special

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@wooga



<http://speakerdeck.com/u/hdragomir/p/fast-mobile-uis>

<http://www.slideshare.net/wooga>

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