

The plural of Chromium is Chromia

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<http://quirksmode.org>

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Mobilism, 27 March 2015

First of all

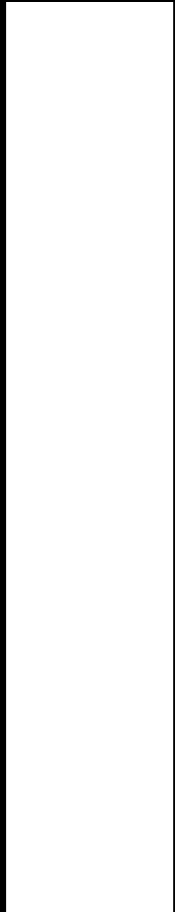
Chrome on
iOS is not
Chrome

Chrome on iOS

- Apple doesn't allow the installation of other rendering engines on iOS
- So Chrome on iOS uses Apple WebView
- although it does connect you to the Google cloud and services
- Therefore, testing on Chrome on iOS is worthless for learning something about Chrome



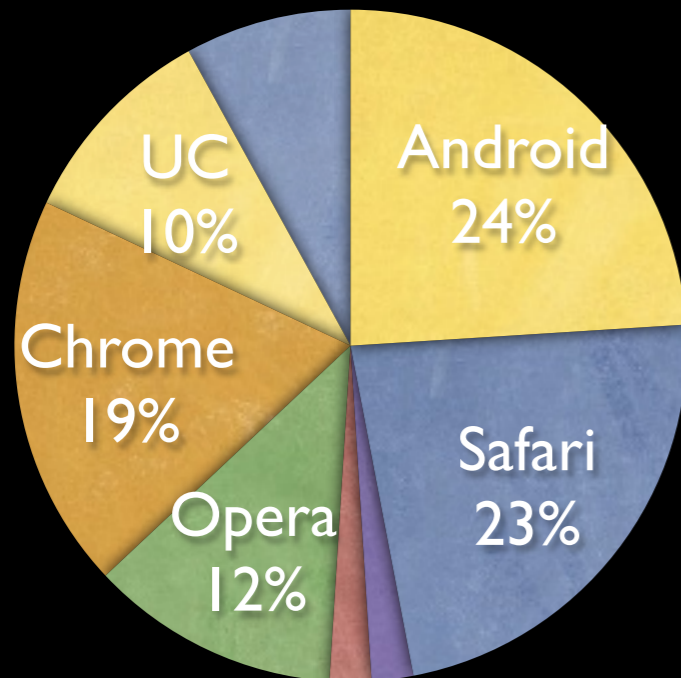
Browser
stats are fun



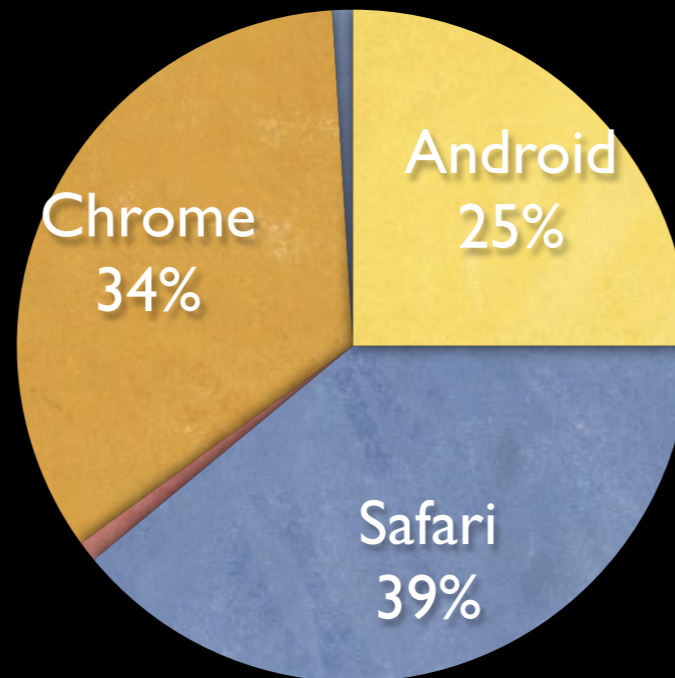
Browser
stats are ~~fun~~
complicated

Mobile browser shares 2014

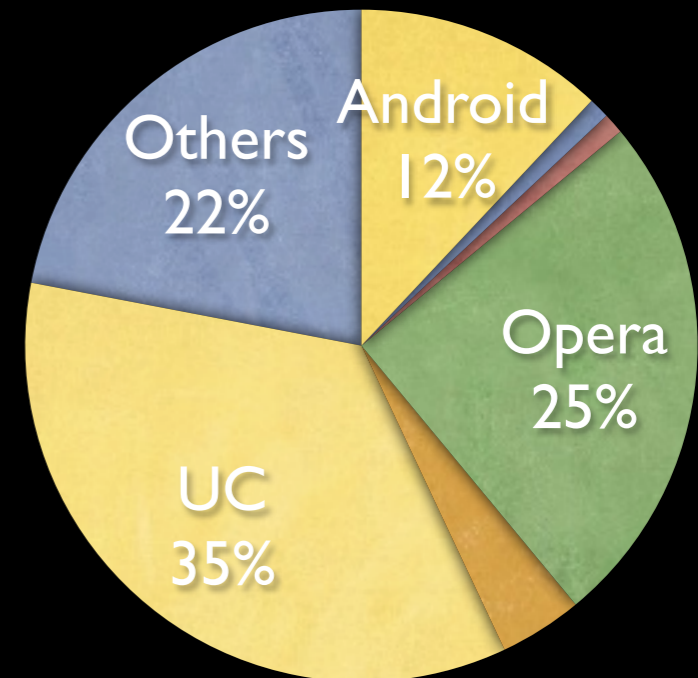
Global



Netherlands



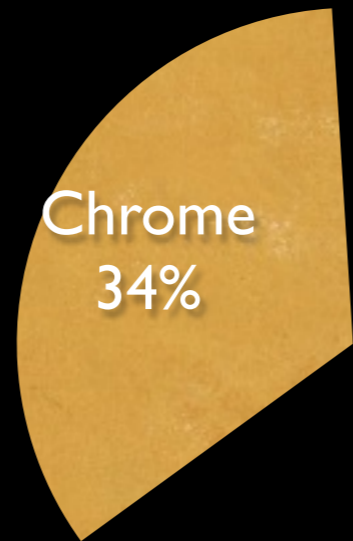
India



- Android
- Safari
- BlackBerry
- IE
- Opera
- Chrome
- UC
- Others

Mobile browser shares 2014

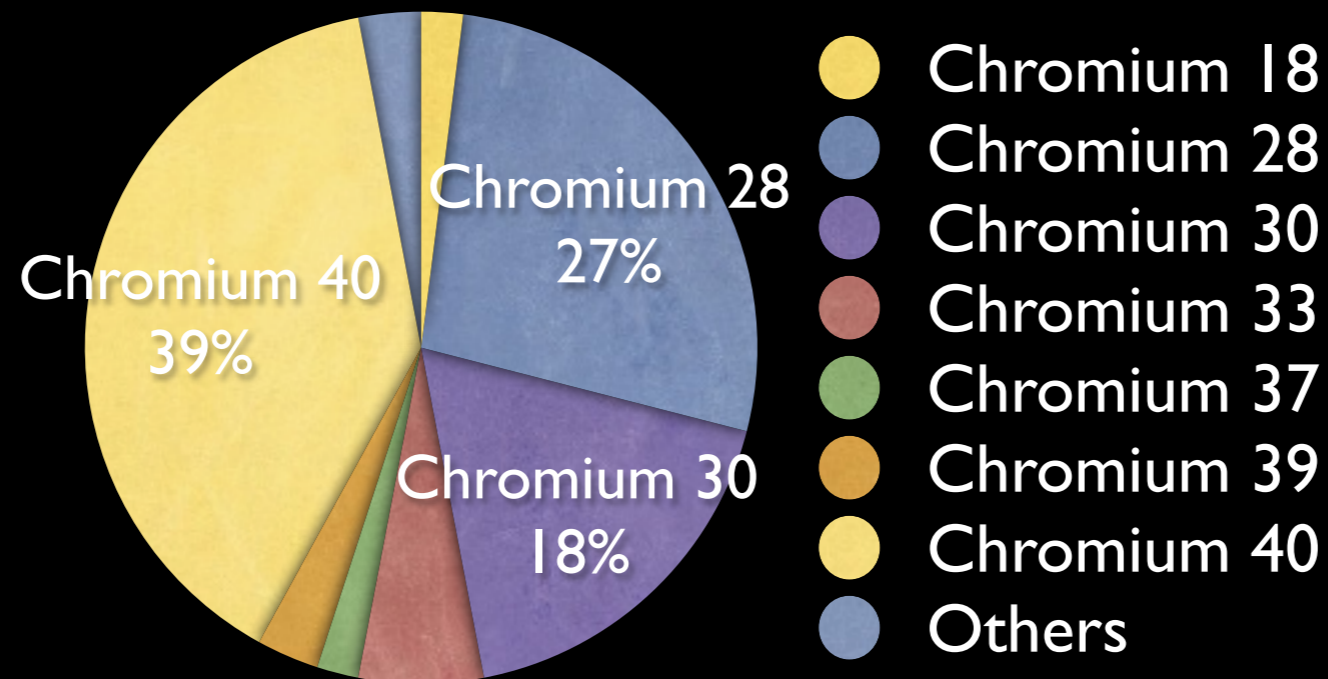
Netherlands



This is not only Google Chrome, though. There are a lot of Chromium-based browsers, or CHROMIA, around.

Chromia shares

Netherlands

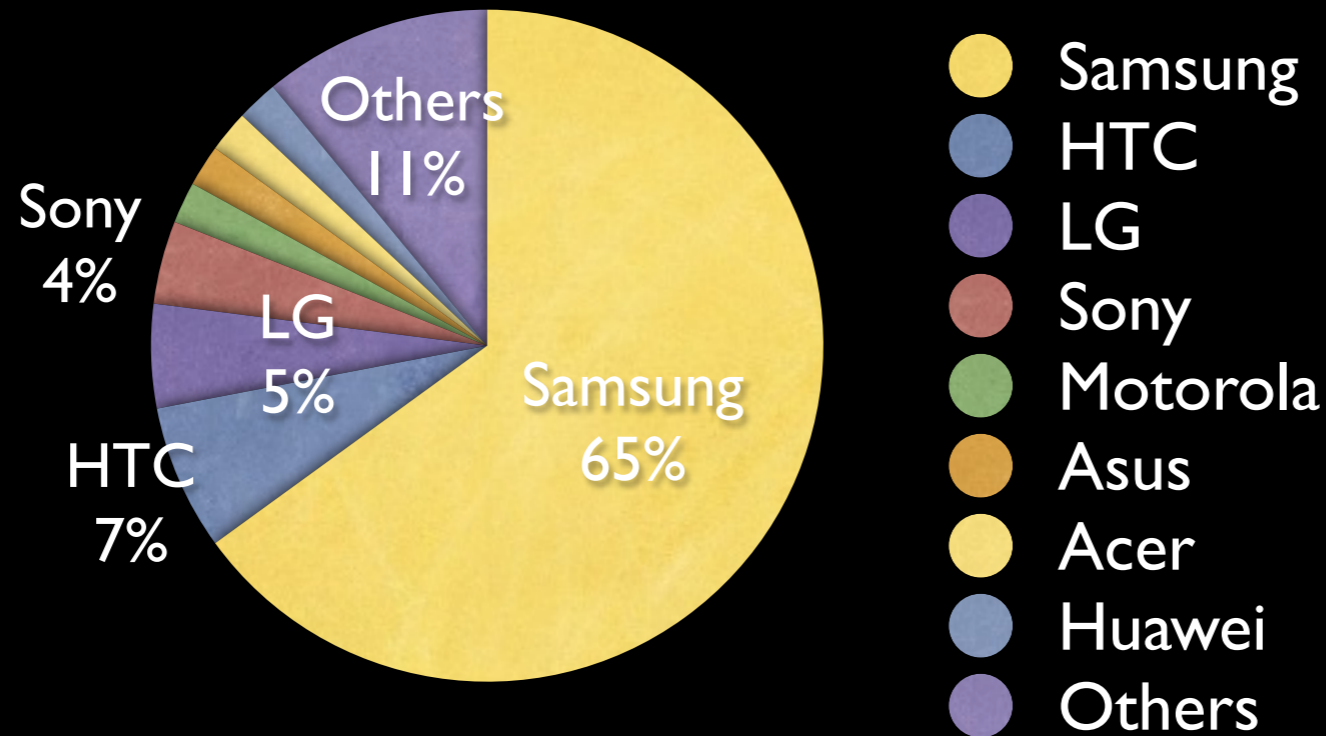


Source: about 46K Chromium-impressions from a Dutch ad network; 31st Jan 2015

See also: http://www.quirksmode.org/blog/archives/2015/02/counting_chromi.html

Device vendor shares

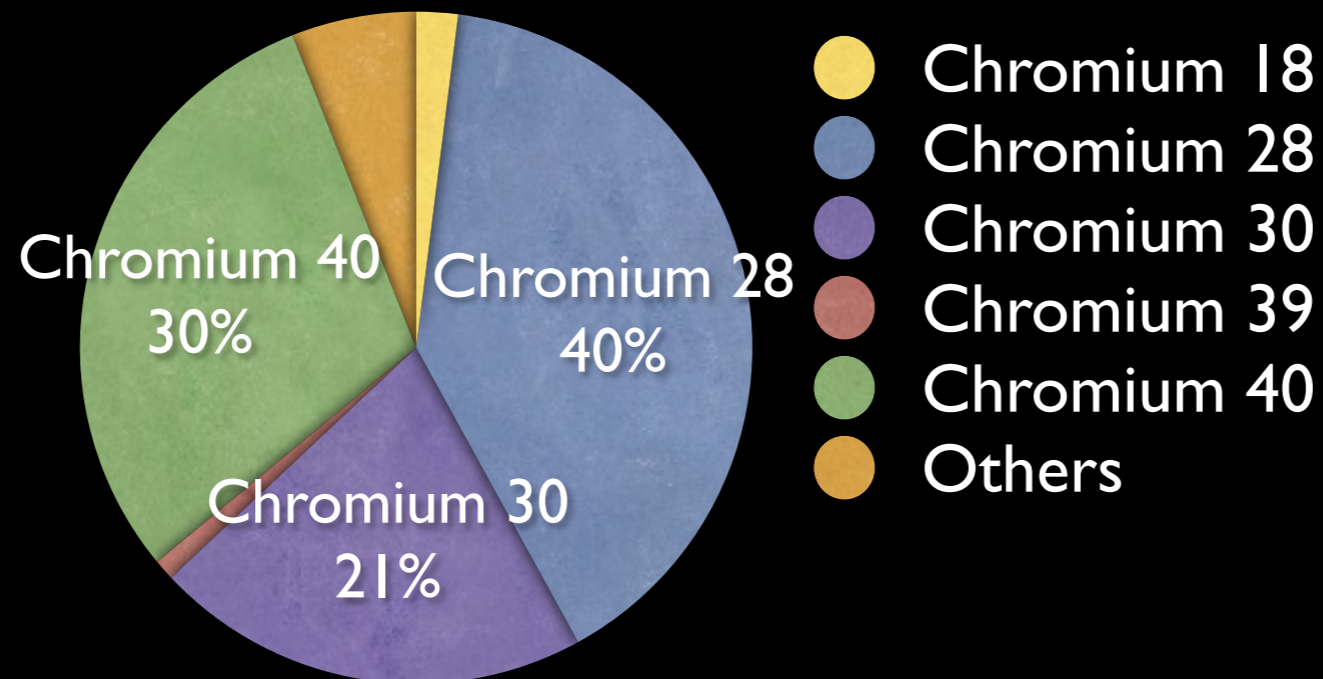
Netherlands



Source: about 46K Chromium-impressions from a Dutch ad network; 31st Jan 2015

Samsung only

Netherlands



Source: about 46K Chromium-impressions from a Dutch ad network; 31st Jan 2015

Complicated stuff

- Mobile Chromia have a desktop view, where they change their UA string and every browser detect will see them as desktop Chrome. This cannot be helped.
- If you're not logged in to Google Play you don't get any Chrome updates. Unclear how many people do so, but it's more than a few percent - particularly in China.
- Still, the main reason is that device vendors use older Chromia as their default browsers.

Samsung

- Samsung started with Chromium 18, on the Galaxy S4.
- Meanwhile it offers Chromium 28.
- Chromium 30 is the WebView.
- The Chromium 40 is Google Chrome; apparently 30% of Samsung users prefer it to the Samsung browser.

2

The thing
with
Android

Android's purpose

Android's purpose is spreading the use of Google services across the mobile web.

Therefore it made (and still makes) economic sense to offer Android for free.

Back in 2009 this offer fell on fertile ground. Device vendors needed an answer to the iPhone, and Android was a readily available one. And free is cheaper than not free.

Android's purpose

Samsung, HTC, Sony, LG, Motorola, and many others jumped on the Android bandwagon.

In fact - all device vendors did so, except for Apple, Nokia, and BlackBerry.

Nokia and BlackBerry thought they could weather the storm on their own. They were wrong.

Android's purpose

But...



Android's purpose

But...

If all phones would run exactly the same software, why would consumers care if they buy a Samsung, an HTC, a Sony, or an LG?

Few people get excited about the latest CPU with millions of megafuffs.

Android's purpose

Therefore Google allowed Android differentiation.

All vendors could create their own interface layer, and change stuff in default apps, including the browser.

Samsung TouchWiz, HTC Sense, MotoBlur, and all the rest were born.

Android's purpose

Google had to allow Android differentiation in order to get device vendors to adopt it.

Differentiation is the positive slant on fragmentation.

Device vendors love differentiation.

Developers, and also Google itself, dislike fragmentation.

Android's purpose

So Google was forced to allow differentiation, but at the same time it wants to keep the platform unified.

Yes, there's a huge amount of tension here.

Read Android news through the lens of this tension. It'll tell you who supports the new thing, and who opposes it.

3

Android
default
browsers

Android WebKit

- Originally the Android default browser was Android WebKit
- Each device vendor modified it slightly
- So we've got HTC Android WebKit, and Samsung Android WebKit, and LG Android WebKit, and ... well, you get the idea.

Change of browsers

- Google wants Chrome to become the default browser on Android.
- It ceased development of Android WebKit after Android 4.3
- Device vendors can continue to use it, or can switch to Chrome.
- OR ...
- they can build their own. Chromium is free to download, after all.

Chromia

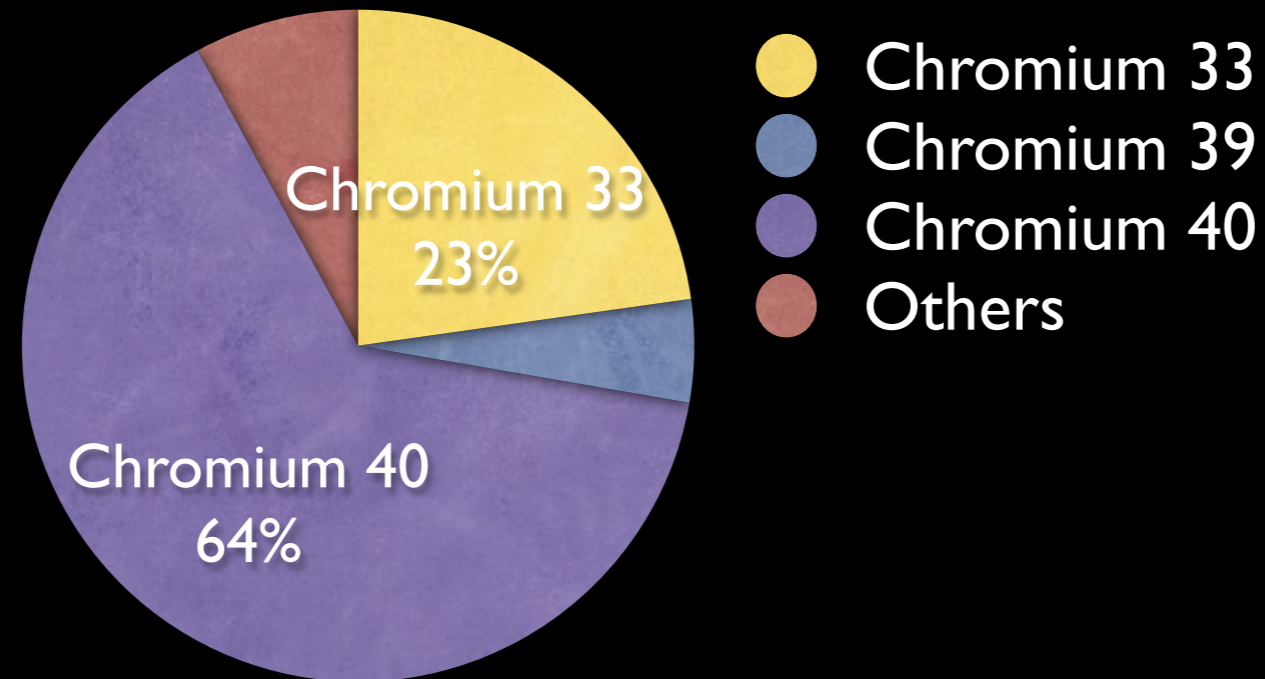
- Now the Android default browser is Chrome
- Each device vendor can either use Google Chrome, or download and adjust its own
- So we've got HTC Chromium, and Samsung Chromium, and LG Chromium, and ... well, you get the idea.

Chromia

- Nexus, Motorola: Google Chrome 40
(Lenovo Motorola will switch, though)
- Samsung Chromium 28
- HTC Chromium 33
- LG Chromium 30 (or 34)
- Xiaomi Chromium 34 or 35
- Cyanogen Chromium 33
- Sony ... is complicated

Sony only

Netherlands



Source: about 46K Chromium-impressions from a Dutch ad network; 31st Jan 2015

Sony

- The data shows Sony has a thing going on with Chromium 33
- However, several sources told me it uses Google Chrome (39/40) as the default browser, and is thus the only Android vendor that is not building its own.
- The Chromium 33 is likely the WebView.

WebViews

- A `WebView` is an embedded browser that native apps can use - for instance a Twitter app that shows links in its own interface.
- Android 4.3 and lower: `AndroidWebKit`
- Android 4.4: `Chromium 30`
- Android 4.4.3: `Chromium 33`
- Android 5: `Chromium 37` (and updatable as app)

Google Services

- The situation is clearly not complicated enough.
- Google Services. A package of crucial Google apps such as Maps, YouTube, Play ... and Chrome.
- Device vendors may opt in to or out of the entire package. No picking and choosing!
- Opting in requires them to install Google Chrome on their devices
- but *not* to make it the default browser

Google Services

- Thus the Samsung Galaxy S4 and up has two browsers pre-installed:
- Samsung Chrome 28, which is under the “Internet” icon on the home screen
- Google Chrome 40 (and counting), which can be found in the Apps menu

Google Services

- Thus the HTC M8 has two browsers pre-installed:
- HTC Chromium 33, which is under the “Internet” icon on the home screen
- Google Chrome 40 (and counting), which can be found in the Apps menu

Google Services

- Some vendors opted out of Google Services
- Amazon (competitor of Google on service level)
- the Chinese vendors such as Xiaomi, Huawei, ZTE, etc. (China has its own services)
- These devices must create their own default browser (based, if they wish, on Chromium)
- and they do NOT have Google Chrome pre-installed.

Future:

Moar Chromia!

Other browsers

- Opera, Firefox, UC
- Are not being used as defaults outside of China. Apparently, device vendors want Chromium, and not something else. (Maybe Google is helping them make this decision?)
- Firefox is dead on mobile
- Opera is doing OK with Opera Mini, but not with its full browser
- UC is doing fine, but only in China or with their Mini proxy browser.

4 What's the
difference?

cksMode.org is the prime
vser compatibility inform
internet. It is maintained
Koch, [mobile platform s](#)
terdam, the Netherlands

cksMode.org is the home
[vser Compatibility Table](#)
ll find hype-free assessm
or browsers' CSS and Jav
abilities, as well as their a
W3C standards.

also increasingly the hor

Most browsers do this

QuirksMode.org is the prime source for browser compatibility information on the Internet. It is maintained by Peter-Paul Koch, [mobile platform strategist](#) in Amsterdam, the Netherlands.

QuirksMode.org is the home of the [Browser Compatibility Tables](#), where you'll find hype-

HTC default browsers do this

Differences

- HTC did this in order to distinguish itself from its competitors
- It hopes consumers will notice the feature and buy an HTC next time they buy a phone.

Differences

`<input type="datetime">`

- Yes: HTC, LG, Samsung
- No: Google, Opera, Xiaomi, Cyanogen

Differences

```
border-radius: 3px;
```

- Did not work on Samsung Chromium 18.
- But this does:

```
border-top-left-radius: 3px;
```

```
border-top-right-radius: 3px;
```

```
border-bottom-left-radius: 3px;
```

```
border-bottom-right-radius: 3px;
```

Differences

```
border-radius: 3px;
```

- Reason: performance hit, which makes sense
- But they forgot to remove the longhand form

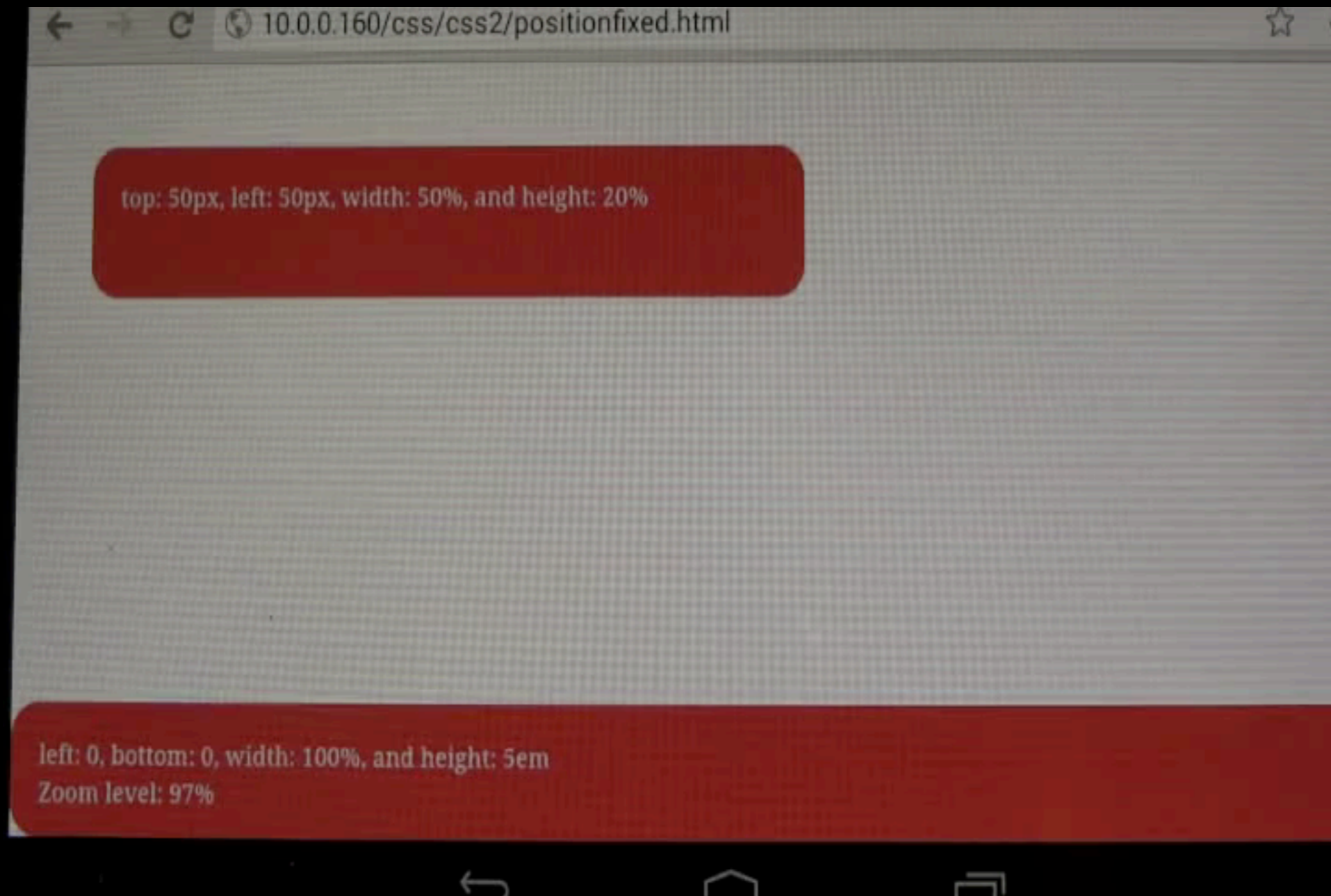
Differences

Default of CSS left: 0 or auto?

- 0: Samsung
- auto: all the others
- This is clearly a Chromium version thing. The default was changed between 28 and 30.

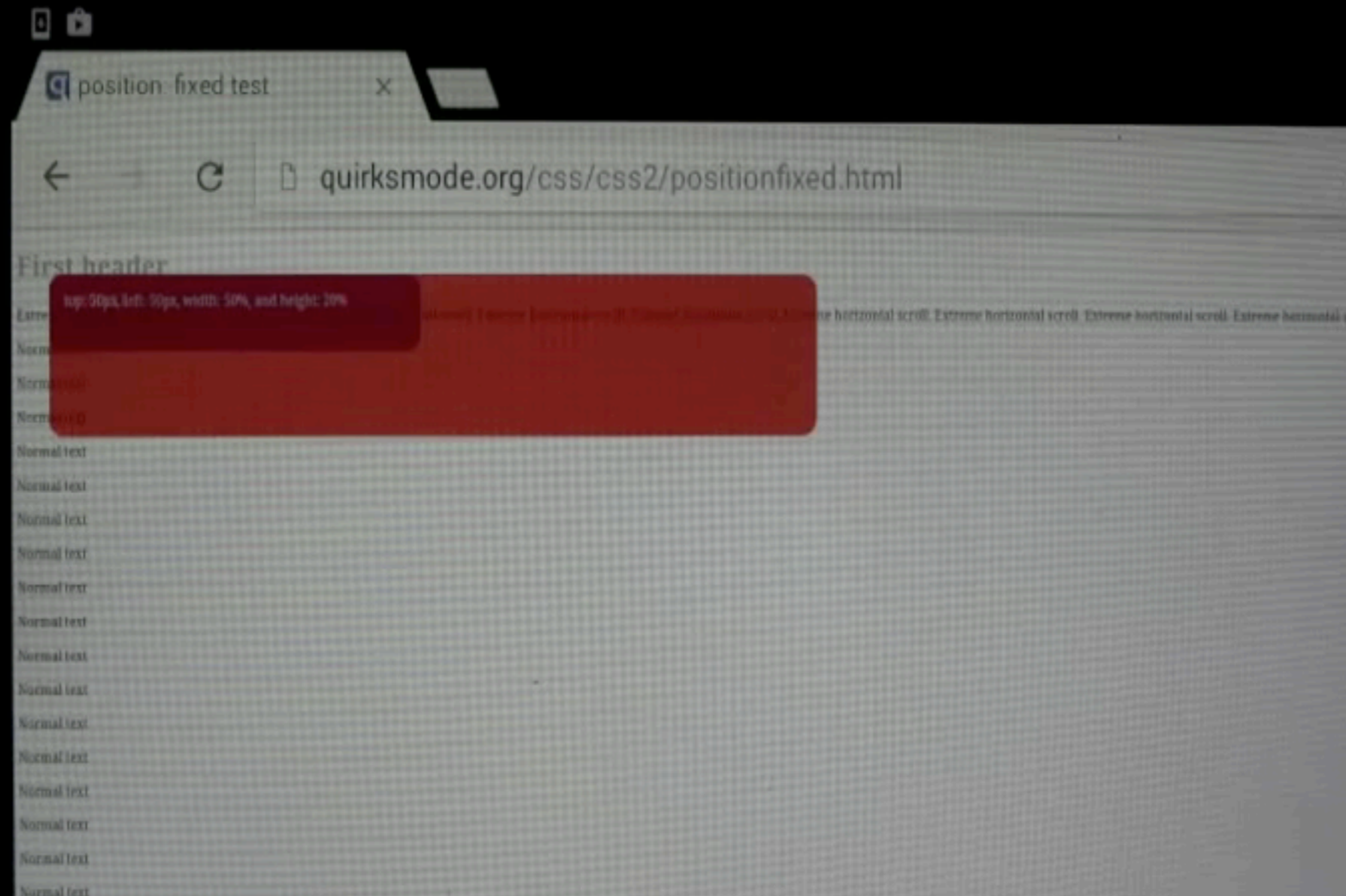
position: fixed

Chromium 18-39



position: fixed

Chromium 40+



5

How to
deal with it

Test each new
Android phone
carefully

Identifying browsers

- Android WebKit's UA string does not have "Chrome" in it.
- Chrome's UA string usually has "Chrome" in it.
- ... but that doesn't necessarily mean it's *Google Chrome*. It might be another Chrome entirely. Check the version number!
- ... and Xiaomi Chromium doesn't give a clue it's Chrome ...

Identifying browsers

- If you're uncertain, check if the browser supports the pointer media query
- <http://quirksmode.org/css/mediaqueries/features.html>
- All Chromia support it, no Android WebKit supports it

Test lab

- High-end Samsung (S5 or better)
- Mid-range Samsung
- HTC
- LG
- Don't bother with a Nexus; few end users use them, and testing on it might lull you into a false sense of security

6

More

information



The Mobile Web Handbook

by me

Published by
Smashing Magazine

For sale online

and you can win one
during the
conference

Thank you

I'll put these slides online

Questions?

Peter-Paul Koch

<http://quirksmode.org>

<http://twitter.com/ppk>

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