

CSS3:

Using **media queries** to improve the web site experience

November 19, 2011

indieconf

Zoe Mickley Gillenwater | @zomigi

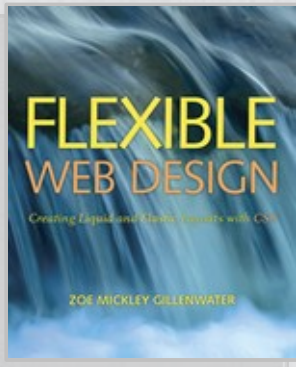
What I do

Books



*Stunning CSS3:
A Project-based Guide to
the Latest in CSS*

www.stunningcss3.com



*Flexible Web Design:
Creating Liquid and Elastic
Layouts with CSS*

www.flexiblewebbook.com

Web

Accessibility
specialist on
AT&T's design
standards team

Visual designer

CSS developer
and consultant

My 7 web-enabled devices

- 3 laptops (plus 2 external monitors)
- Android smartphone
- iPod Touch
- Google TV
- Wii

*how can our sites
accommodate all this*
DIVERSITY
?

Introducing media queries

- **Awesome new part of CSS3**
- **Simple way to feed different CSS based on characteristics of user's device**
- **Not:**
 - for feeding styles based on browser
 - just for feeding styles based on viewport size

Media query syntax: internal

```
body {  
    background: gray;  
}  
  
@media screen and (max-width:500px) {  
    body {  
        background: blue;  
    }  
}
```

English translation:

Make the background gray. But up to a maximum width of 500 pixels, make the background blue.

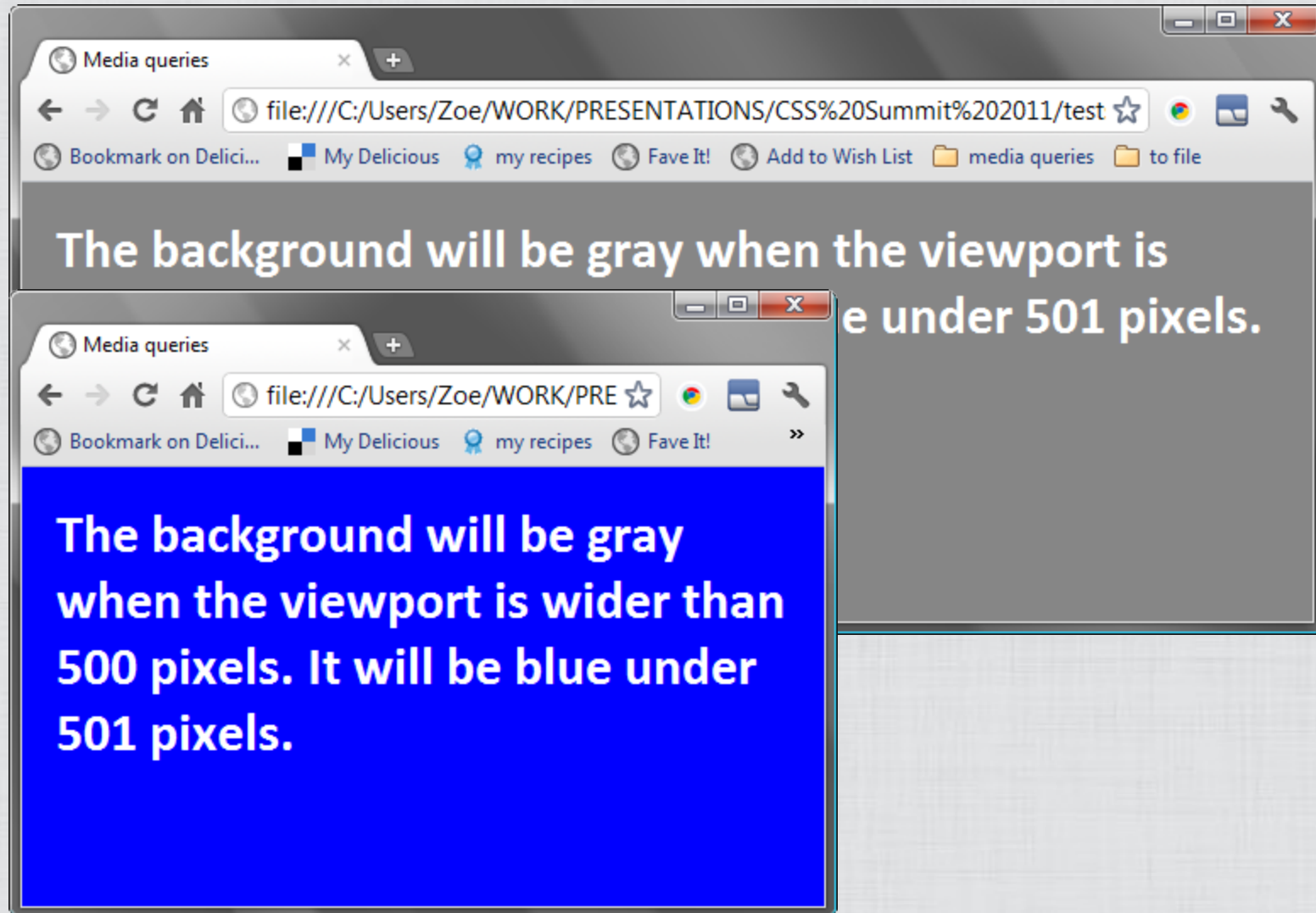
Media query syntax: internal

```
body {  
    background: blue;  
}  
  
@media screen and (min-width:501px) {  
    body {  
        background: gray;  
    }  
}
```

English translation:

Make the background blue. But at and past the minimum width of 501 pixels, make the background gray.

How it looks



Media query syntax: external

Extend the existing media part of the `link` element or `@import` rule:

```
<link href="narrow.css" rel="stylesheet"  
media="only screen and (max-width:500px)">
```

```
@import url(narrow.css) only screen and  
(max-width:500px);
```

Internal media queries

Pros:

- No extra HTTP request(s)
- Not out of sight and forgotten

Cons:

- Extra kb in file size for everyone to download
- Have to use JavaScript to make it work with old IE

External media queries

Pros:

- Smaller file size for non-supporting browsers
- Easier to keep organized if CSS extensive
- Can feed to old IE using conditional comments

Cons:

- Extra HTTP requests
- Out of sight so could be forgotten when updating

you now know media query syntax

YAY

!

but that's not where the
CHALLENGES
are

Designing for different widths

- Create wireframe comps for placement of major layout areas
- Design details in browser if possible
- Focus on content
- Harder to retrofit existing design

Structuring HTML for reorder

- Build HTML so layout pieces can be rearranged visually as wanted
- This is why retrofitting so difficult

Organizing media queries for maximum efficiency and reach

- Internal or external?
- Overlap or stack?
- Which media features to test against?
- Where to make breaking points?
- Which dimension as starting point?
- Workarounds for non-supporting browsers?

Starting/default width



— *or* —
(*or something*)
(*in between*)



Starting with desktop styles

Pros:

- No extra work to make majority width appear correctly on IE 6-8
- Easiest way to retrofit existing site

Cons:

- Mobile devices may have to download unneeded desktop assets
- Requires separate style sheets or JavaScript to make mobile design appear in IE Mobile and older mobile browsers

Starting with mobile styles

Pros:

- Prevents mobile devices from downloading unneeded desktop assets
- Older, non-media-query-supporting mobile browsers still get the mobile styles without any extra work

Cons:

- Desktop devices may have to download unneeded mobile assets
- Requires separate style sheets or JavaScript to make majority desktop design appear in IE 6-8

Our starting point

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ullamcorper pharetra. Vestibulum erat wisi, condimentum sed, commodo vitae, ornare sit amet, wisi. Aenean fermentum, elit eget tincidunt condimentum, eros ipsum rutrum orci, sagittis tempus lacus enim ac dui. Donec non enim in turpis pulvinar facilisis. Ut felis.

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About this Page

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Credits

WEB FONTS:
Nadia Serif from [Kernest](#)
ILLUSTRATIONS:
Yummy by [Icon Eden](#)

Very wide: awkward



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Wide-screen media query

```
/*all the other styles up here*/  
  
@media screen and (min-width: 1200px) {  
    /*styles for larger screens in here*/  
}
```

Add third column

```
@media screen and (min-width: 1200px) {  
    #nav-main {  
        position: fixed;  
        top: 136px;  
        width: 13%;  
        margin: 0;  
    }  
    #content-main {  
        width: 58%;  
        margin-left: 18%;  
    }  
    #content-secondary { width: 20%; }  
}
```

Style nav as vertical menu

```
@media screen and (min-width: 1200px) {  
    ...  
    #nav-main li {  
        float: none;  
        margin: 0;  
    }  
    #nav-main a {  
        -moz-border-radius: 0;  
        -webkit-border-radius: 0;  
        border-radius: 0;  
    }  
}
```


Wide-screen design



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Small-screen media query

```
/*all the other styles up here*/  
  
@media screen and (max-width: 760px) {  
    /*styles for smaller screens in here*/  
}
```


Remove columns from text

```
@media screen and (max-width: 760px) {  
  h1 + p {  
    -moz-column-count: 1;  
    -o-column-count: 1;  
    -webkit-column-count: 1;  
    column-count: 1;  
  }  
}
```

Stack feature boxes

```
@media screen and (max-width: 760px) {  
  ...  
  .feature {  
    float: none;  
    width: auto;  
    margin: 0 0 1.6em 0;  
    padding: 0 0 0 140px;  
    background-position: top left;  
  }  
}
```

Narrow- screen design




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Donec eu libero sit amet quam egestas

pause for
CAVEATS
&
CLARIFICATIONS

Some sites would be better served with a **separate site** for mobile devices **instead** of using media queries.

Even if a separate mobile site would be best, using media queries is a **good first step** if a separate site isn't currently feasible.

“The choice is not between using media queries and creating a dedicated mobile site; the choice is between using media queries and doing nothing at all.”

–Jeremy Keith
<http://adactio.com/journal/1696/>

If you do use them, they're not the only tool you can use—you can **add scripting as well** to further customize the content, functionality, etc.

Media queries are only meant to solve the problem of mobile's **small viewports**, not all the other things that can make mobile browsing different (such as context, bandwidth, etc.).

*“It's making sure your layout doesn't look crap
on diff. sized screens.”*

–Mark Boulton

<http://twitter.com/#!/markboulton/status/50237480368214016>

back to
CSS

Mobile media query

```
/*all the other styles up here*/
```

```
@media screen and (max-width: 550px) {  
    /*styles for tiny screens in here*/  
}
```

Non-overlapping mobile media queries

```
@media screen and (min-width: 551px) and  
(max-width: 760px) {  
    /*styles for small screens in here*/  
}  
  
@media screen and (max-width: 550px) {  
    /*styles for tiny screens in here*/  
}
```

Media features for mobile

`min-width`

`max-width`

`device-width`

`min-device-width`

`max-device-width`

`orientation`

`min-device-pixel-ratio`

`-webkit-min-device-pixel-ratio`

`min--moz-device-pixel-ratio`

`-o-min-device-pixel-ratio`

Changing to single column

```
@media screen and (max-width: 550px) {  
    #content-main, #content-secondary,  
    #about, #credits {  
        float: none;  
        width: 100%;  
    }  
}
```


Changing feature images

```
@media screen and (max-width: 550px) {  
    ...  
    .feature { padding-left: 70px; }  
    #feature-candy {  
        background-image: url(icon_candy_64.png);  
    }  
    #feature-pastry {  
        background-image: url(icon_pastry_64.png);  
    }  
    #feature-dessert {  
        background-image: url(icon_dessert_64.png);  
    }  
}
```

Mobile design



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Viewport meta tag

Forces mobile devices to scale viewport to actual device width

```
<meta name="viewport"  
      content="width=device-width, maximum-scale=1.0">
```


View it live

<http://stunningcss3.com/code/bakery/>



Dealing with IE 6, 7, and 8

- Conditional comments
- JavaScript

Conditional comments

- Split styles into separate sheets and feed applicable sheet to IE based on whether it's IE on desktop or mobile
- Approach varies based on which set of styles are your default

Conditional comment when desktop styles are default

Feed mobile IE media query sheet:

```
<link rel="stylesheet" href="global.css" media="all">
```

```
<link rel="stylesheet" href="mobile.css" media="all  
and (max-width: 700px)">
```

```
<!--[if IEMobile 7]>
```

```
<link rel="stylesheet" href="mobile.css" media="all">
```

```
<![endif]-->
```

Source: <http://blogs.msdn.com/b/iemobile/archive/2010/12/08/targeting-mobile-optimized-css-at-windows-phone-7.aspx>

Conditional comment when mobile styles are default

Feed older IE media query sheet, hide from mobile IE:

```
<link rel="stylesheet" href="global.css" media="all">
```

```
<link rel="stylesheet" href="desktop.css" media="all  
and (min-width: 700px)">
```

```
<!--[if (lt IE 9)&(!IEMobile 7)]>
```

```
<link rel="stylesheet" href="desktop.css" media="all">
```

```
<![endif]-->
```

Source: <http://adactio.com/journal/4494/>

Pre-fab JavaScript for non-supporting browsers

- Simply add one of these scripts:
 - Respond:
<https://github.com/scottjehl/Respond>
 - css3-mediaqueries.js:
<http://code.google.com/p/css3-mediaqueries-js/>
- Avoid extra HTTP request for non-IE browsers using conditional comments:

```
<!--[if (lt IE 9)&(!IEMobile 7)]>  
<script src="respond.min.js"></script>  
<![endif]-->
```

WHAT ELSE

can media queries do?

Swapping images on high-res displays

```
@media  
screen and (moz--min-device-pixel-ratio : 1.5),  
screen and (-o-min-device-pixel-ratio : 3/2),  
screen and (-webkit-min-device-pixel-ratio : 1.5),  
screen and (min-device-pixel-ratio : 1.5) {  
  
}
```

Swapping images on high-res displays

```
@media ... screen and (min-device-pixel-ratio : 1.5) {  
  .feature {  
    -moz-background-size: 64px 64px;  
    -webkit-background-size: 64px 64px;  
    background-size: 64px 64px;  
  }  
  #feature-candy {  
    background-image: url(icon_candy_128.png); }  
  #feature-pastry {  
    background-image: url(icon_pastry_128.png); }  
  #feature-dessert {  
    background-image: url(icon_dessert_128.png); }  
}
```

Examples of sites using media queries

- Gallery: <http://mediaqueri.es/>
- My own bookmarks:
 - <https://gimmebar.com/loves/zomigi/tag/mediaqueries>
 - www.delicious.com/pixelsurge/nicedesign+mediaqueries
 - www.delicious.com/pixelsurge/nicedesign+liquid

Learn more

Download slides and get links at
<http://zomigi.com/blog/media-queries-presentation>

Questions?

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