

Welcome

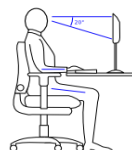
Web Authoring (Level 3) : CSS Responsive Web Design

Simon Meaker – UIS Training Services

service-desk@uis.cam.ac.uk

1

Health and Safety



2

Course Information

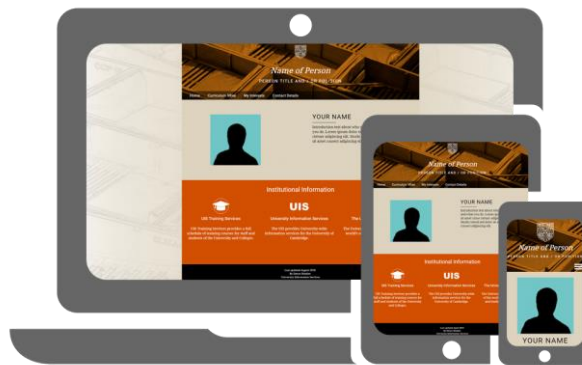
- Please sign the attendance sheet
- Please fill in the online feedback at the end of the course (shortcut on the Desktop)
<http://feedback.training.cam.ac.uk/uis>
- Let us know if you need assistance; please ask questions
- Related Courses:
www.w3schools.com
www.htmldog.com
www.linkedin.com/learning

Course Information

Objectives

- To redesign our website using CSS Media Queries to make it accessible on multiple devices
- To understand the media query syntax

From PC to mobile



Responsive web design is an approach to web design that allows web pages to render well on a variety of devices and screen sizes.

Why the change?

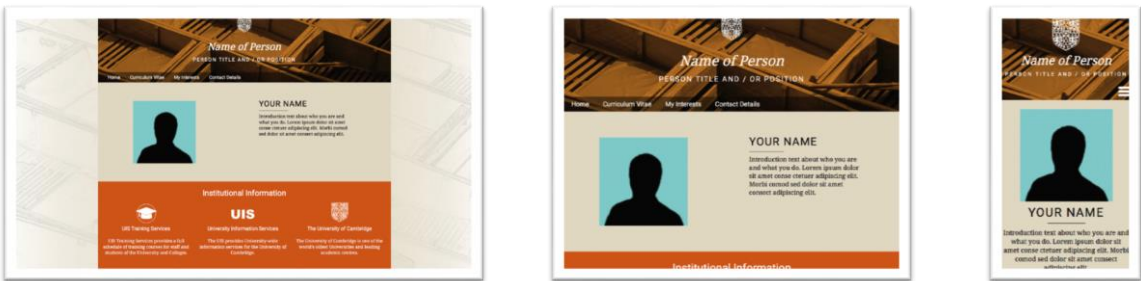
We can no longer control where our content is being displayed

- Different Browsers
- Different OS
- Different Devices



Media Queries

Media Queries allow you to define ‘breakpoints’ and introduce completely different styles for different browser screen sizes



Media Queries

Exploring a Responsive Designed Site



<http://www.responsivewebdesign.co.uk/>

The Big Picture

HTML

Just the code

No Pictures
No Graphics

CSS

Media Queries

Pictures
Graphics

Fluid layouts

JavaScript

Device Functionality

Resource
Loading

What is a Media Query?

A Media query is a CSS technique introduced in CSS3

Media Query

Uses the `@media` rule to include a block of CSS properties only if a certain condition is true. They allow you to write styles that respond to different screen sizes.

Breakpoints

A breakpoint is the moment a layout changes from one layout to another. We can add a breakpoint where certain parts of the design will behave differently on each side of the breakpoint. Usually triggered by the width of the screen.

Media Query CSS Syntax

```
@media not|only mediatype and (mediafeature and|or|not mediafeature) {  
    CSS-Code;  
}
```

The **not** keyword reverts the meaning of an entire media query

The **only** keyword prevents older browsers that do not support media queries from applying the specified styles. **It has no effect on modern browsers and is no longer needed**

Mediatype is the type of media you are targeting, i.e **all**, **print**, **screen** or **speech**

Media Query CSS Syntax

```
@media not|only mediatype and (mediafeature and|or|not mediafeature) {  
    CSS-Code;  
}
```

The **and** keyword combines a media feature with a media type or other media features

A **mediafeature** could be **min-width** or **max-width**

See https://www.w3schools.com/cssref/css3_pr_mediaquery.asp for full list

Media Query CSS Syntax

```
@media not|only mediatype and (mediafeature and|or|not mediafeature) {  
    CSS-Code;  
}
```

```
@media screen and (max-width: 320px) { css code goes here }
```

Meaning a style will be applied up to and below 320px

```
@media screen and (min-width: 1200px) {css code goes here }
```

Meaning a style will be applied above a screen width of 1200px

Media Query CSS Example

At the very top of our CSS document we specified the default page size would be 1200px wide

```
#page {max-width: 1200px;
```

Using a media query we can insert a background image if the screen size expands above 1200px

```
@media screen and (min-width:1201px){  
  
body { background-image: url(../images/background.jpg);  
      background-repeat: no-repeat;  
      background-position: center top;  
      background-size: 100% 100%;}  
}
```

Where to start

Target specific device screen sizes or the website?

According to <http://screensiz.es/>

There are 35 different screen sizes from i-Phone 5 at 320px wide to Apple iMac 27-inch (Retina 5K Display) at 5120px wide

Do you really want to target them all?

Best to make breakpoints when your web design requires it and then test it on different devices.

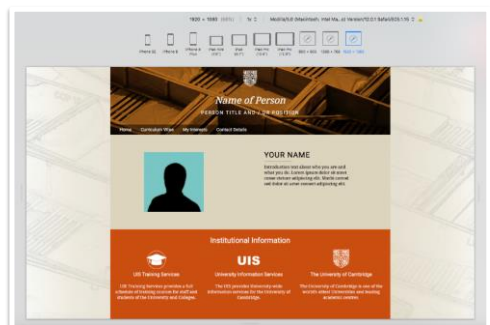
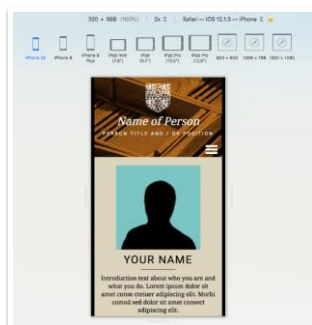


Testing

Test it on different devices



Safari
Developer Tools
“ResponsiveDesignMode”



New Ideas - Mobile First. A new way of thinking

“Mobile first”, as the name suggests, means that we start the product design from the mobile end which has more restrictions, then expand its features to create a tablet or desktop version.

Mobile internet usage surpassed desktop usage in 2016



Other options to think about - Fluid Web Design with W3.CSS

Responsive Grid

W3.CSS supports a 12 column responsive fluid grid.

Resize the page to see the effect!

1	2	3	4	5	6	7	8	9	10	11	12
This part will occupy 12 columns on a small screen, 4 on a medium screen, and 3 on a large screen.			This part will occupy 12 columns on a small screen, 8 on a medium screen, and 9 on a large screen.								

Example

```
<div class="w3-row">
  <div class="w3-col m4">
    <p>12 columns on a small screen, 4 on a medium screen, and 3 on a large screen.</p>
  </div>
  <div class="w3-col m8">
    <p>12 columns on a small screen, 8 on a medium screen, and 9 on a large screen.</p>
  </div>
</div>
```

https://www.w3schools.com/w3css/w3css_grid.asp

Other options to think about - Fluid Web Design with BOOTSTRAP

Bootstrap 4 Grid System

Bootstrap's grid system is built with flexbox and allows up to 12 columns across the page.

If you do not want to use all 12 columns individually, you can group the columns together to create wider columns:

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4				span 4				span 4			
span 4				span 8							
span 6						span 6					
span 12											

The grid system is responsive, and the columns will re-arrange automatically depending on the screen size.

Make sure that the sum adds up to 12 or fewer (it is not required that you use all 12 available columns).

Grid Classes

The Bootstrap 4 grid system has five classes:

- `.col-1`: (extra small devices - screen width less than 576px)
- `.col-sm`: (small devices - screen width equal to or greater than 576px)
- `.col-md`: (medium devices - screen width equal to or greater than 768px)
- `.col-lg`: (large devices - screen width equal to or greater than 992px)
- `.col-xl`: (xlarge devices - screen width equal to or greater than 1200px)

https://www.w3schools.com/bootstrap4/bootstrap_grid_basic.asp

https://www.w3schools.com/bootstrap4/bootstrap_grid_large.asp

Personal webpages

- University Information Services provides a facility called DS-Web which can be used to host your personal website or webpages. Full details are available on:

<http://www.cam.ac.uk/cs/desktop-services/ds-web/>

- To publish your own pages simply copy your HTML files and associated content to the *public_html* folder in your DS-Files file space.
- To view the web-page navigate to the link below replacing CRSid with your own

<http://people.ds.cam.ac.uk/CRSid/>

Over to you...

The rest of this session will be dedicated to a self-paced practical which will involve styling the website created in the first CSS course and through the use of media queries making the website responsive.

All instructions are provided in the practical course notes but should you get stuck, find something unclear or have any question about the practical just ask.

Where do you go next? Learn JavaScript:

<https://www.w3schools.com/js/default.asp>

<http://www.htmldog.com/guides/javascript/>