Responsive Web Design

EXSM 3928: Module 7

Learning Outcomes

What is the purpose of this module?

- Practice **responsive web design** with **CSS media queries**
- Practice **mobile-first** web design using multiple **breakpoints**
- Demonstrate practical knowledge of **HTML**, and **CSS**
- Apply course topics to answer the question, **“to what extent should a designer learn to code?”**

Module Resources

Responsive design

Previous Overview: CSS layout Next

In the early days of web design, pages were built to target a particular screen size. If the user had a larger or smaller screen than the designer expected, results ranged from unwanted scrollbars to overly long line lengths, and poor use of space. As more diverse screen sizes became available, the concept of *responsive web design* (RWD) appeared, a set of practices that allows web pages to alter their layout and appearance to suit different screen widths, resolutions, etc. It is an idea that changed the way we design for a multi-device web, and in this article, we'll help you understand the main techniques you need to know to master it.

Prerequisites:	HTML basics (study Introduction to HTML), and an idea of how CSS works (study CSS first steps and CSS building blocks.)
Objective:	To understand the fundamental concepts and history of responsive design.

Breakpoints

View on GitHub

Breakpoints are customizable widths that determine how your responsive layout behaves across device or viewport sizes in Bootstrap.

Core concepts

- **Breakpoints are the building blocks of responsive design.** Use them to control when your layout can be adapted at a particular viewport or device size.
- **Use media queries to architect your CSS by breakpoint.** Media queries are a feature of CSS that allow you to conditionally apply styles based on a set of browser and operating system parameters. We most commonly use `min-width` in our media queries.
- **Mobile first, responsive design is the goal.** Bootstrap's CSS aims to apply the bare minimum of styles to make a layout work at the smallest breakpoint, and then layers on styles to adjust that design for larger

Media Queries

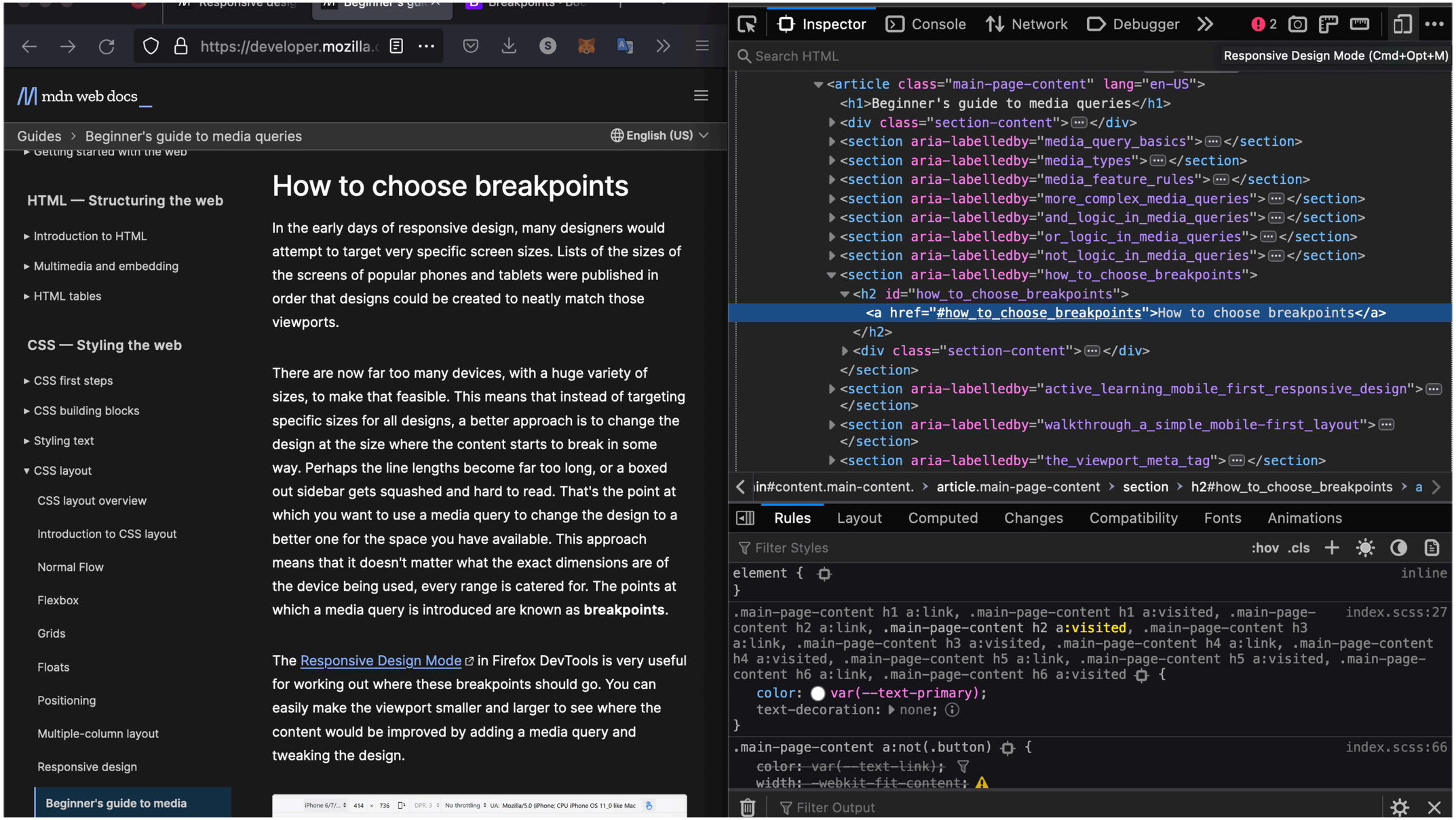
```
@media media-type and (media-feature-rule) {
  /* CSS rules go here */
}
```

- Media types
  - all
  - print
  - screen

Complex Media Queries (“and”, “or”)

```
@media screen and (min-width: 600px) and (orientation: landscape) {
  body {
    color: blue;
  }
}
```

```
@media screen and (min-width: 600px), screen and (orientation: landscape) {
  body {
    color: blue;
  }
}
```


https://developer.mozilla.
mdn web docs
Guides › Beginner's guide to media queries
English (US)
HTML — Structuring the web
Introduction to HTML
Multimedia and embedding
HTML tables
CSS — Styling the web
CSS first steps
CSS building blocks
Styling text
CSS layout
CSS layout overview
Introduction to CSS layout
Normal Flow
Flexbox
Grids
Floats
Positioning
Multiple-column layout
Responsive design
Beginner's guide to media
How to choose breakpoints
In the early days of responsive design, many designers would attempt to target very specific screen sizes. Lists of the sizes of the screens of popular phones and tablets were published in order that designs could be created to neatly match those viewports.
There are now far too many devices, with a huge variety of sizes, to make that feasible. This means that instead of targeting specific sizes for all designs, a better approach is to change the design at the size where the content starts to break in some way. Perhaps the line lengths become far too long, or a boxed out sidebar gets squashed and hard to read. That's the point at which you want to use a media query to change the design to a better one for the space you have available. This approach means that it doesn't matter what the exact dimensions are of the device being used, every range is catered for. The points at which a media query is introduced are known as breakpoints.
The Responsive Design Mode in Firefox DevTools is very useful for working out where these breakpoints should go. You can easily make the viewport smaller and larger to see where the content would be improved by adding a media query and tweaking the design.
Inspector
Console
Network
Debugger
Search HTML
Responsive Design Mode (Cmd+Opt+M)
<article class="main-page-content" lang="en-US">
<h1>Beginner's guide to media queries</h1>
<section aria-labelledby="how_to_choose_breakpoints">
<h2 id="how_to_choose_breakpoints">
How to choose breakpoints
article.main-page-content
section
h2#how_to_choose_breakpoints
Rules
Layout
Computed
Changes
Compatibility
Fonts
Animations
Filter Styles
:hov .cls
element { inline
.main-page-content h1 a:link, .main-page-content h1 a:visited, .main-page-content h2 a:link, .main-page-content h2 a:visited, .main-page-content h3 a:link, .main-page-content h3 a:visited, .main-page-content h4 a:link, .main-page-content h4 a:visited, .main-page-content h5 a:link, .main-page-content h5 a:visited, .main-page-content h6 a:link, .main-page-content h6 a:visited { index.scss:27
color: var(--text-primary);
text-decoration: none;
.main-page-content a:not(.button) { index.scss:66
color: var(--text-link);
width: -webkit-fit-content;
Filter Output

Module 7 Demonstration

Module Discussion

Why are breakpoints used? How many should a website have? What should a designer hand off to a developer?

Module 7 Prompt

Module 7 Assignment

- See eClass for details