introduction to mobile-first responsive design & modern HTML5

COMP 126: Practical Web Design & Development for Everyone

what is responsive design?

practice progressive enhancement

1. first, design the simplest, most accessible version of your web app to be functional at the smallest possible viewport size, for all types of users regardless of impairment/ability, and on older or more basic browsers
2. next, add features gradually as appropriate for larger viewport sizes, landscape orientation, and more sophisticated/modern browsers

a responsive design requires:

- the **appropriate meta information** for the browser
- a **fluid layout** that **automatically resizes/realigns** to be usable and look good on any (reasonable) viewport (browser/device) size or orientation
- images, video, media, & styling that **automatically scale** to be usable and look good on any (reasonable) viewport size or orientation
- a way to change the things that still look weird at some sizes & orientations regardless of your fluid/scalable styling: in this case, that means **media queries**

in short:

- viewport meta
- fluid layout
- scalable media
- media queries (usually)

the viewport <meta> tag

Add this to your <head> (not <header>) element:

```
1 <meta name="viewport"
2       content="width=device-width,initial-scale=1.0"/>
```

Translation:

"Please check the width of the viewport before rendering this page in the browser and scale/display the page's contents according to that width."

flexible layout

https://codepen.io/tkjn/embed/gORzWov?default-tab=html%2Cresult

scalable media

https://codepen.io/tkjn/embed/KKqRXWb?default-tab=html%2Cresult

(mobile-first) media queries

https://codepen.io/tkjn/embed/QvQjbx?default-tab=html%2Cresult

let's make this layout responsive

https://codepen.io/tkjn/project/editor/ZGQENV

HTML5: getting it right

the responsive basics

```
 1 <!DOCTYPE html>
 2 <html lang="en">
 3   <head>
 4     <meta charset="utf-8"/>
 5     <title>proper HTML5</title>
 6     <meta name="viewport"
 7       content="width=device-width,initial-scale=1.0"/>
 8     <link rel="stylesheet" href="css/styles.css">
 9     </head>
10     <body>
11       everything you want to appear in the browser
12     </body>
13 </html>
```

structural/semantic elements

```
<main>once per page, primary unique content</main>
<section>for grouping elements with headers--
to organize, not to style (use divs for styling)
</section>
<nav>navigational links with li's or a's</nav>
<article>self-contained textual content
</article>
<aside>tangential content--doesn't have to
  be a sidebar</aside>
<header>page header, but not necessarily
  only page header</header>
<footer>page footer, but not necessarily
  only page footer</footer>

<div>generic container; when nothing else
  suits</div>
<figure></figure><figcaption>for image
  with caption</figcaption>
```

validating your code

online

- for HTML: https://validator.w3.org/
- for CSS: http://jigsaw.w3.org/css-validator/
- for JS: https://codebeautify.org/jsvalidate

VSCode extensions

- for HTML: W3C Web Validator
- for CSS: stylelint
- for JS: ESLint

general accessibility checklist

1. Got a <title> element?
2. Got your <alt> tags on your <img> elements?
3. Is there at least one <h1> element?
4. Are your header (<h1>, <h2>, etc) elements in order/hierarchical?
5. Is your text/background contrast ratio sufficient for readability? Check it here: https://webaim.org/resources/contrastchecker/
6. Is your text 14-16px or larger?
7. If users increase the default font size of their browsers, do your layout and fonts scale to fit?
8. Have you added :focus states to match all your :hover states?
9. Is moving or blinking content optional and user-controlled?

(There's more we'll get to later, but those are the basics.)