Responsive Design

What is Responsive Web Design?

- It is designing your sites with multiple screen sizes/resolutions/settings in mind.

- Sites should “work” under any platform, any browser size, any orientation. The user should have the power.

Adapting to users and devices

- A small screen should NOT mean less content.
- People are doing more on their phones than ever before
  - videos, applications, coding, ….
- Never assume the user won’t need access to a functionality.

Step One: Fluid Measurements

- Have you hardcoded values?
  - Absolute – px, mm, cm, pt
  - Fluid
    - %, vw, vh
    - em (for font): 1em is current size, .75 is 75% of the current size
    - rem (for font): 1rem is current size of root element

Step Two: Media Queries

- Media queries are a process that allow the style to depend upon the media type
- CSS 2.1 used media types

<link rel="stylesheet”…href="style.css" media="screen" />

<link rel="stylesheet”…href="print.css" media="print" />

CSS3

- CSS3 increased the capabilities. Style can depend on many features
  - width, height, orientation, resolution, …
- Boolean operators can also be applied to increase power

The two query components

1. A media type
   - all, print, screen, speech
2. The actual query of a media feature and width
   - width, height, orientation, resolution, …

- screen and (min-width: 680px) and (resolution: 163dpi)

Step 3: Amend HTML to request size

- The meta viewport tag tells mobile browser's viewport how to behave.

<meta name = 'viewport' content='width=device-width, initial-scale=1'>

- DO NOT DISALLOW ZOOMING – it isn't accessible:

<meta name = 'viewport' content='width=device-width, initial-scale=1, maximum-scale = 1'>

Step 2: Fluid layout

- If you use breakpoints, some absolute measurements are not unusual
- percentages vs ems
  - ems are measurement of typography. 1em is width of one letter M in current typeface.
- paddings and margins affected by width, not height

Example One

- Fluid layout that is triggered by certain sizes.

```
body{
        background: yellow;
        margin: 2%
}
@media screen and (min-width: 680px){
        body{
                background: green;
                margin: 10%}
}
```

```
img {
        border: 2px solid black;
        width: 95%;
    }

@media screen and (min-width:700px){
      img{
              width: 45%; }
    }

@media screen and (min-width:1200px){
       width{
              width: 30%;}
     }
```

Ordering your rules

```
@media only screen and (min-width: 1024px) {
        body{ background: blue; }
}

@media only screen and (min-width: 780px) {
        body{ background: yellow; }
}

body{ background: green; }
```

- RD: Media Queries Part 2

Stop and Code:

- RD: Fluid Measurements and Media Queries
- Can you change the CSS for single column on small screen?

Media Queries for Accessibility

- Animation can be problematic for
  - People with cognitive concerns, vestibular disorders, epilepsy, and migraine and Scotopic sensitivity.

- New media queries can address this:

@media screen and (prefers-reduced-motion: reduce){}

  - Can also benefit users with low battery or low-end phones or computers.

- https://css-tricks.com/introduction-reduced-motion-media-query/

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