Philly Tech Sistas

Intermediate HTML & CSS

Class 3

Responsive Design

An introduction

Web page, text and images adjust depending on screen size of browser (desktop, tablet, phone)

CSS Media Queries: Responsive Images

We can use **CSS media queries** to display different images (or adjust the width) depending on the window size:
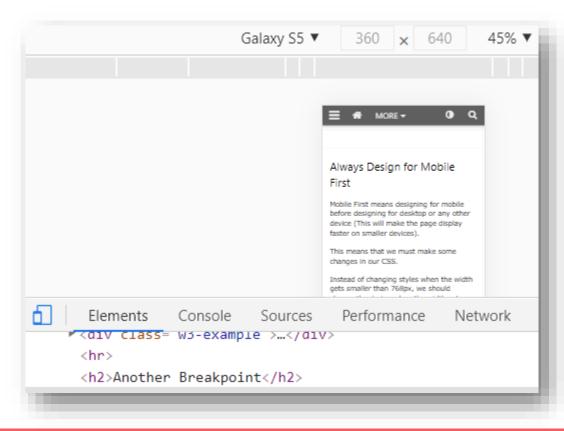
- If Window *greater than* 400px display the large logo
- If Window *less than* 400px display small logo

```css
img {
    content:'large_logo.jpg';
    width: 100%;
}

@media only screen and (min-width: 400px) {
    img {
        content:'small_logo.jpg'; //or width: 50%;
        //width: 50%;
    }
}
```

Testing Media Queries in the Browser

- Click inspect element
- Click the double monitor icon

Exercise: Responsive Media Queries

Create media queries using different images.
Based on the size of the window, you will see a different image.
Create a new page.
Add <p class=heart>This is how much I love mobile design</p> to the HTML
Add the below to the CSS
Try in different browser sizes

```css
p.heart {
    content:'https://image.freepik.com/free-vector/heart_53876-25531.jpg';
    width: 70%;
}

@media only screen and (min-width: 400px) {
    p.heart {
        content:'https://image.freepik.com/free-vector/illustration-medical-icon_53876-6166.jpg';
        width: 25%;
    }
}
```

Flexbox

Flex containers are helpful tools for creating websites that respond to changes in screen sizes.
In this section we'll cover:

1. Flexible Box Layout

CSS: The Box Model

All websites based on a 'box' design

- https://www.w3schools.com/css/css_boxmodel.asp
- https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Box_Model/Introduction_to_the_CSS_box_model

Responsive Design: Flexbox

Elements within a Flex container are automatically arranged on different size screens.

Requires a surrounding div (with a class or id) with the rule flex.

```
<div class="container">
    <img src="https://git.io/pts_img_5_sq.jpg">
    <img src="https://git.io/pts_img_12_sq.jpg">
    <img src="https://git.io/pts_img_14_sq.jpg">
</div>
```

```
.container {
  display: flex;
  flex-direction: row;
  background-color: #ff5050;
}

.flex-container > img {
  margin: 10px;
  max-width: 110px;
  max-height: 110px;
}
```

Flexbox

flex-direction: row;

flex-direction: row-reverse;


```
.container {
  display: flex;
  flex-direction: row;
}
```

Flexbox

Use the justify-content property to align the flex items as desired

```
.flex-container {
  display: flex;
  justify-content: center;
  background-color: #ff5050;
}
```

justify-content: center;

justify-content: space-around;

justify-content: space-between;

More Flexbox

- Display: inline-flex (displays images on same line, especially for smaller windows)
- Flex-Grow, Flex-Shrink - Allows items to grow & shrink
- Flex-Wrap, Indicates if items in a flex container should wrap or not

Exercise: Flexbox - Women in Tech (WIT)

Let's use flexbox and media queries to make a *Women in Tech* site responsive.
Do with instructor.

Preparation:
- Create a new project, womenintech.
- Upload an image from https://www.flickr.com/photos/wocintechchat/
- Create a blog post about your experience as a woman in tech

Step 1: Add a div with `class="wit-pic"` around your main image.

```
<article>
<div id="about-wit">
   <img src="https://live.staticflickr.com/1469/25392365893_0e8b7a9e13_k.jpg" />
   <img src=https://live.staticflickr.com/1609/25388715424_dd6721ace5_h.jpg />
</div>
<p>This is my experience</p>
</article>
```

Exercise: Flexbox- WIT

Add the below FLEX styles focused on the *about-wit* id to your CSS tab & then test!

Your image should grow and shrink in size as you increase the window size.

And, your images should appear on one line!

```css
img {
width: 75%;
}
#about-wit {
    display: inline-flex;
}

#about-wit img {
flex-grow: 2;
flex-shrink: 1;
}
```

Exercise: Flexbox – WIT section

At the bottom of the CSS, add the following media query & re-test your site in mobile view!

```
@media screen and (max-width:500px) {
    #about-wit {
      display: flex;
      flex-direction: column;
      flex-wrap: wrap;
    }
    #about-wit p {
      width: 100%;
      margin-bottom: 5%;
    }
    #about-wit img {
      width: 50%;
    }
}
```

\<break /> !

CSS Frameworks

Bootstrap

CSS Frameworks are software frameworks that outsource much of the design effort and web standard enforcement.

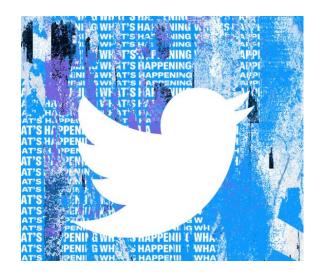Using CSS frameworks you can make complex websites quickly and easily.

CSS Frameworks

A few notable CSS frameworks are:

- [Bootstrap](#)
- [Grumby](#)
- [Foundation](#)
- [Materialize](#)
- [Pure](#)

The best known, and most used of the bunch, is Bootstrap. So let's take a look at that!

What is Bootstrap?

- Developed by Twitter
- Pre-packaged code that creates stylized site
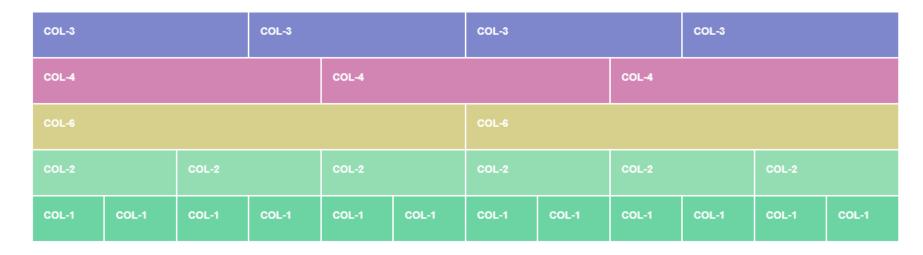- Built-In Responsive Design
- Built-In Styles you can use!

Examples

- Template with Bootstrap: https://bootstrapmade.com/demo/OnePage/
- Template without Bootstrap: https://www.free-css.com/assets/files/free-css-templates/preview/page1/modular-business/

Bootstrap Grid

Based on mentality that a website is split up into boxes
The idea you can have up to 12 boxes on a screen

How to include Bootstrap

Bootstrap is like a *huge* premade style sheet.

To include Bootstrap in a project, add a link to it **inside the head element.**

```
<head>
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/css/bootstrap.min.css">
  <link rel="stylesheet" href="css/style.css" type="text/css">
</head>
```

Using Bootstrap Styles

Accessing bootstrap styles is supposed to be easy,
Just add a bootstrap style to your class
(WITHOUT CREATING THE CORRESPONDING CSS!)

- **Text Formatting:**
  FieldType-Fieldformat
  text-lowercase
  text-uppercase

- **Column Formatting:**
  col-colwidth
  col-8

- **Responsive Column Formatting:**
  Col-targetScreenSize-ColumnWidth
  col-md-4
  col-sm-3

Example of Bootstrap Styles: P Tags

this paragraph has class: text-lowercase

THIS PARAGRAPH HAS CLASS: TEXT-UPPERCASE

This Paragraph Has Class: Text-Capitalize

This paragraph has class: text-muted

This paragraph has class: text-success

This paragraph has class: text-danger

This paragraph has class: small

```
<p class="text-lowercase">This paragraph has class: text-lowercase</p>
<p class="text-uppercase">This paragraph has class: text-uppercase</p>
<p class="text-capitalize">This paragraph has class: text-capitalize</p>
<p class="text-muted">This paragraph has class: text-muted</p>
<p class="text-success">This paragraph has class: text-success</p>
<p class="text-danger">This paragraph has class: text-danger</p>
<p class="small">This paragraph has class: small</p>
```

Example of using Bootstrap Styles: Images

```
<img src="https://git.io/pts_img_2_md.jpg" class="img-rounded"  />

<img src="https://git.io/pts_img_2_md.jpg" class="img-circle" />
```

Group Code Along: Bootstrap nav

Create a new project, bootstrap.

Add the script tags in bold to the head tag of your HTML page.

```
 <head>
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/css/bootstrap.mi
n.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"
></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/js/bootstrap.min.
js"></script>
<link rel="stylesheet" href="css/style.css" type="text/css">
</head>
```

Code Along (in groups): Bootstrap nav

In the body tag, paste the below Navbar section

```html
<nav class="navbar navbar-default">
  <div class="container-fluid">
    <div class="navbar-header">
      <button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#myNavbar">
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
      </button>
    </div>
    <div class="collapse navbar-collapse" id="myNavbar">
        <!-- … this is a comment: see next page for what should go here -->
    </div>
  </div>
</nav>
```

Code Along: Bootstrap nav

Replace the comment in the previous code with…

```html
<ul class="nav navbar-nav">
   <li><a href="#about-me">About Me</a></li>
   <li><a href="#projects">Projects</a></li>
   <li><a href="#skills">Skills</a></li>
  <li class="dropdown">
    <a class="dropdown-toggle" data-toggle="dropdown" href="#">Blog
      <span class="caret"></span>
    </a>
    <ul class="dropdown-menu">
      <li><a href="#">Post 3</a></li>
      <li><a href="#">Post 2</a></li>
      <li><a href="#">Post 1</a></li>
    </ul>
  </li>
</ul>
```

Code Along: Bootstrap nav

Paste the nav related CSS below to style.css

```css
nav.navbar {
    margin-bottom: 50px;
}

nav ul li a {
    color: #0F2417;
    display: block;
    font-family: 'Source Sans Pro', sans-serif;
    font-size: 16px;
    font-weight: bold;
    padding: 14px 16px;
    text-align: center;
    text-decoration: none;
    text-transform: uppercase;
}
```
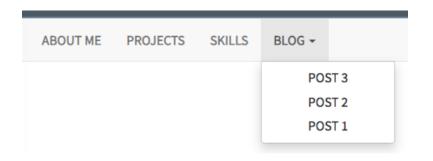
Code Along: Bootstrap nav

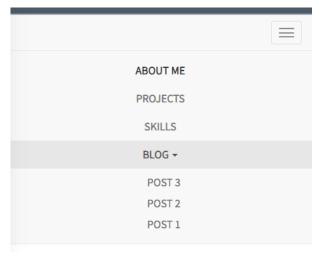Paste below header and caption styles inside CSS.

```
header {
    color: #fff;
    background: #4e5a65;
    border-bottom: 2px solid #708090;
    padding: 20px;
    text-align: center;
}
```

```
caption {
    font-family: 'Fredoka One',
cursive;
    font-size: 16px;
    margin-top: 20px;
    margin-bottom: 5px;
    text-align: left;
    color: #333;
}
```

Code Along: Bootstrap nav

Behold your responsive nav

More About Stylesheets

Now that we've added Bootstrap, have some of your custom styles disappeared?

If two CSS rules are applied to the same element, the one with higher specificity wins. Bootstrap's CSS selector might have taken precedence over your CSS.

If you think bootstrap is overwhelming your HTML, then give the element a class or id and then style that.

Specificity Hierarchy

Category	Example	Specificity
!important	color: blue !important;	n/a (Highest)
Inline styles	style="color: blue;"	1000
IDs	#whatever	100
Classes, attributes, pseudo-classes	.class, [attribute], :active, :focus, etc	10
Elements, pseudo-elements	pre, :before, :after, :first-line, etc	1

Can I Do This?

YES! You Can!!! You don't have to be a programmer to do Tech!

- Indeed's Fastest Tech Jobs:
- Technical Director
- Architect
- Consultant
- Tech Support
- Helpdesk
- Developer

https://www.indeed.com/career-advice/finding-a-job/rising-tech-jobs-and-skills

Homework

Exercise: Responsive Media Queries

- We can use **CSS media queries** to hide elements depending on the window size.
- Create a new project. Add 3 images to the HTML. Add the CSS below to the CSS tab.
- Then try adjusting the width of the page to very small and very wide, watch the image shrink or disappear.

```css
@media screen and (max-width: 300px) {
  img {
    display: none;
  }
}
@media screen and (max-width: 600px) {
  img {
    width: 25%;
  }
}
@media screen and (max-width: 800px) {
  img {
    width: 50%;
  }
}
```

Exercise: Flexbox - Profile

Next, let's use flexbox and media queries to make your *Profile* responsive.

Go to your profile project.

Add "flex-container" to the outermost div or main tag.
If you don't have one div or Main tag surrounding the content
inside the body tag, then add one.

```
<div class="flex-container">
<div id="myprofile">
 <h1>Projects</h1>
  <div class="project">
          …
    </div>
  </div>
</div>
```

Exercise: Flexbox – Profile

Add the below CSS to your styles page (after what you already have) & then test!

```css
.flex-container {
    display: flex;
}
```

```css
@media screen and (max-width:768px) {
    ...
    .flex-container {
        display: flex;
        flex-direction: column;
    }
    article, section {
        width: 70%;
        margin-right: 15%;
        margin-left: 15%;
    }
     img {
        width: 100%;
    }
}
```

Web Accessibility

Websites should be usable by everyone. We need to make conscious effort to remove barriers to interaction and access.
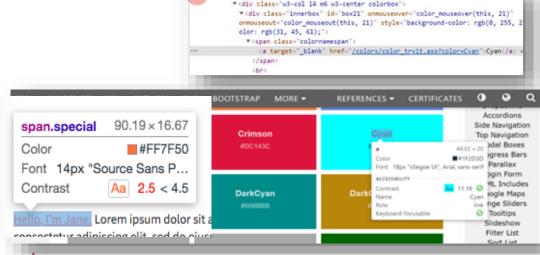
Specifically, we need to be mindful of our visitors':

- Vision
- Hearing
- Motor skills
- Cognitive abilities
- Medical conditions (such as epilepsy)

- https://www.webdevelopmentgroup.com/2017/09/508-compliance-making-websites-accessible-for-people-with-disabilities/
- https://www.section508.gov/manage/laws-and-policies

Exercise: Web Accessibility
Test color contrast in Browser

1. Go to https://www.w3schools.com/cssref/css_colors.asp

2. Click the select icon (the arrow)

3. Hover over the different boxes

4. You will see if they're accessible and have contrast

Get inspired by high contrast color schemes.

Bonus Learning

- **Walk through Flexbox** Froggy Exercises: https://flexboxfroggy.com/

- Update your profile page with the drop down menu we created in class

- Review A Complete Guide to **Flexbox**: https://css-tricks.com/snippets/css/a-guide-to-flexbox/

Learn More

Learn More

CSS Transitions: https://css-tricks.com/almanac/properties/t/transition/

- CSS Transitions are used to allow elements to change value over a specific duration to animate the property changes instead of having them change immediately.
- To see the transition property at work: https://codepen.io/impressivewebs/pen/zqpEg

CSS Animations: https://css-tricks.com/almanac/properties/a/animation/

- Here's some inspiration for what you can do with CSS animations:
    - https://codepen.io/jcoulterdesign/pen/BrdPaw
    - https://codepen.io/astrixsz/pen/RRxyKz
    - https://codepen.io/miocene/pen/jLzmJq

Learn More

- CSS Variables: https://developer.mozilla.org/en-US/docs/Web/CSS/Using_CSS_custom_properties

- See how variables can be used: https://codepen.io/danwilson/pen/oBrOGW

Learn More

A Complete Guide to **Flexbox**: https://css-tricks.com/snippets/css/a-guide-to-flexbox/

- Offers clear visuals and instructions for each flexbox property

Flexbox Froggy: https://flexboxfroggy.com/

- A fun game that helps you learn flexbox

CSS Grid: https://css-tricks.com/snippets/css/complete-guide-grid/

- CSS Grid is a responsive layout system based on rows and columns.

Free Resources to Continue Learning

Codecademy: https://www.codecademy.com/

- Offers a variety of courses for front end, back end, and more
- Has a free version, pro subscription, and paid 8-10 week specialized courses

Freecodecamp: https://www.freecodecamp.org/

- Offers curriculums for a variety of paths with certificates upon completion
- Completely free