Web Dev Day 3: CSS & JS

Website Development
UBC | Coding Pals

Quick Review

Element Selector

In CSS, you can select an entire type of elements to make changes on. For example, you can select the <p> element and change its attributes, which will cause all <p> elements in that webpage to be altered.

```
p {

        color: blue;

}
```

Note: the "*" selector targets all elements in the HTML document

Today, I learned about **HTML**

I <u>love</u> coding!

Today is a good day. I got a big fish and a small turtle.

<u>Link without _blank</u>

<u>Link with _blank</u>

Water is also called H_2O

Targeting Specific IDs and Classes

We can also target IDs and Classes to style

- This is why it is important to give HTML tags IDs and Classes

. and #

● Use a "." before the class name to target a class
● Use a "#" before the ID name to target an ID

It is also possible to assign one element to multiple classes.

Pseudo-class Selector

You can also select elements based on their current states.

This is achieved by the ":" operator. Some examples include :hover, :focus, :visited, :disable, :active.

The pseudo selector must come after a properly defined selector (example below targets <a> tag)

a:hover {

    Color: red;
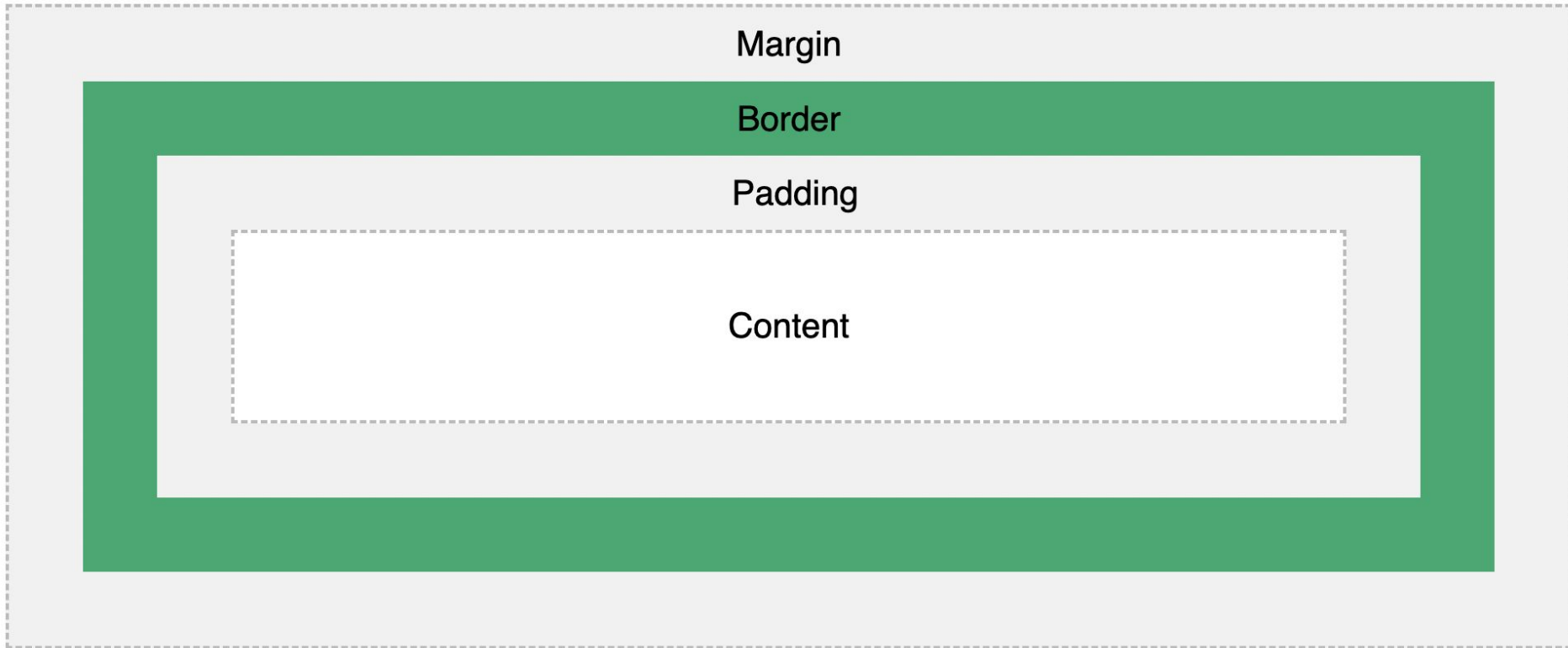
}

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Box Model (Padding, Border, Margin)
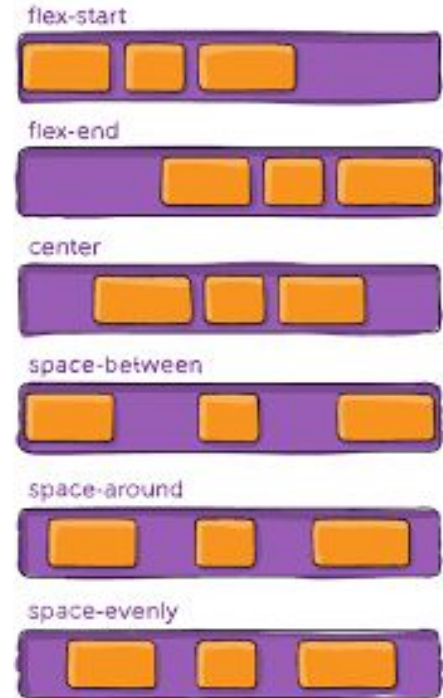
Margin

Border

Padding

Content

Display

Display lets us manipulate the positioning and placement of elements

We can change inline elements to block and block elements to inline

By using "display: flex" we can change spacing with the "justify-content" property as shown below in the following ways:

I. **inline/ block/ inline-block** = How items are positioned in relative to other elements
II. **flex-start** = Default value. Items are positioned at the beginning of the container
III. **flex-end** = Items are positioned at the end of the container
IV. **center** = Items are positioned in the center of the container
V. **space-between** = Items will have space between them
VI. **space-around** = Items will have space before, between, and after them
VII. **space-evenly** = Items will have equal space around them

flex-start

flex-end

center

space-between

space-around

space-evenly

```
p {
    display: flex;
    justify-content: center;
}
```
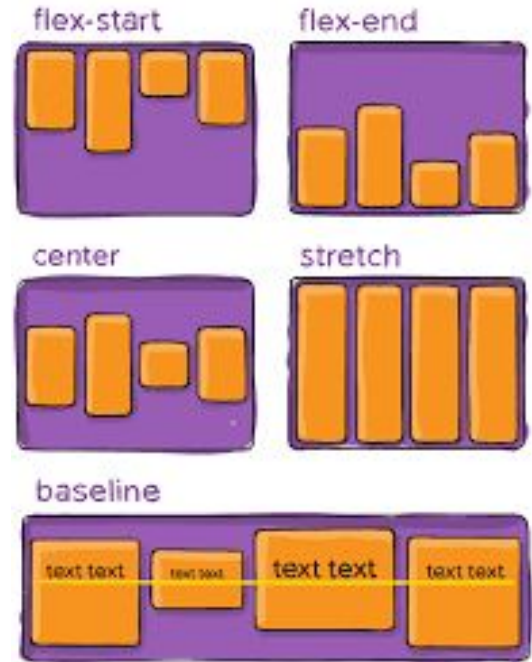
Align Items

Another useful attribute with flex displays is called align-items
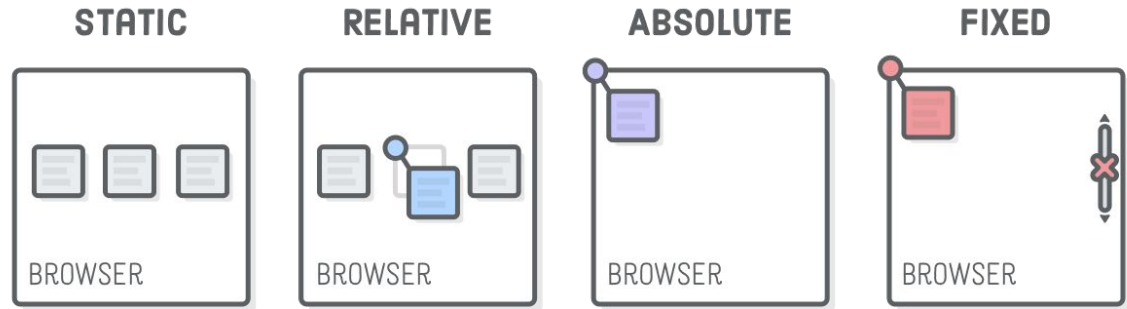
For all the elements in your div they need to be aligned

Options:

I.   flex-start = Align everything to the top
II. flex-end = Align everything to the bottom
III. center = Align everything in the center
IV. stretch = Stretches everything to top & bottom
V.   baseline = Align texts to be on the same level

Position

- Static
- Relative
  - top, bottom, left, right
- Absolute
- Fixed
- Sticky
- Z-index

Absolute vs. Fixed vs. Sticky

STATIC

BROWSER

RELATIVE

BROWSER

ABSOLUTE

BROWSER

FIXED

BROWSER

Specificity (Overriding)

Hierarchy:

1. Inline styles - Example: <h1 style="color: pink;">
2. IDs - Example: #navbar
3. Classes, pseudo-classes, attribute selectors - Example: .test, :hover, [href]
4. Elements and pseudo-elements - Example: h1, :before

!important

Combinators

- descendant selector (space)
- child selector (>)
- adjacent sibling selector (+)
- general sibling selector (~)

div p	Selects all \<p> elements inside \<div> elements
div > p	Selects all \<p> elements where the parent is a \<div> element
div + p	Selects the first \<p> element that are placed immediately after \<div> elements
p ~ ul	Selects every \ element that are preceded by a \<p> element

Multiple Selector

With a comma, we can select multiple selectors and have them all have the same attributes specified in the code block.

Only use multiple selector when you are sure that you want the elements to be absolutely the same, or else it will take a long time to implement specific changes.

```css
h2, h3 {
    font-family: 'Arial';
    font-size: large;
    font-weight: bold;
}
```

```css
td, li, p {
    font-family: 'Times New Roman';
    font-size: medium;
    font-weight: normal;
}
```

Attribute Selector

Use [] after an element selector to target a specific attribute of that element

```css
a[href="https://apple.com"]{
    color: red;
}
```

CSS Battle
Try Problems 1 and 2!

Break

JavaScript

What is JavaScript?

Adds functionality to our websites

Can now be used to make:

- Mobile apps
- Web apps
- Games
- And more!

(not actually related to the programming language Java)

History of JS

JavaScript versions timeline

ECMAScript (ES1) — ES3 — Node.js — ES5.1 — Vue.js — ES7 — ES2018

1995 — 1998 — 2000-2008 — 2010 — 2013 — 2015 — 2017

1997 — 1999 — 2009 — 2011 — 2014 — 2016 — 2018

JavaScript Invention — ECMAScript2 (ES2) — ES5, Node — AngularJS — React.JS — ES6 — ES8
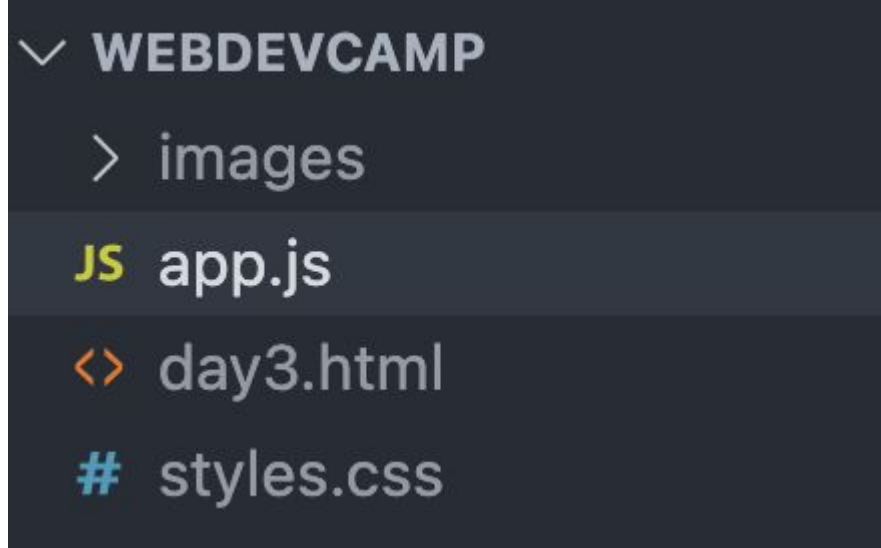
Making a JavaScript File

Create a new file in your largest directory and name it "app.js"

Your directory should look something like this:

Make sure that your main HTML file and the app.js file are on the same "level"

What is NodeJS?

JavaScript is built for web browsers to run, not for your computers to run

Node JS allows us to run JavaScript on our computers without needing to use a web browser to do it

- Helpful for testing specific code if you want to look at it without opening up your website or if you are using JavaScript for purposes other than making a website

Installing NodeJS

Step 1: Head to https://nodejs.org/en/

Step 2: Click the green button on the LEFT to install the recommended version of Node JS

Step 3: Run through the remaining steps of installation after opening the file that was just downloaded

Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine.

Download for macOS (x64)

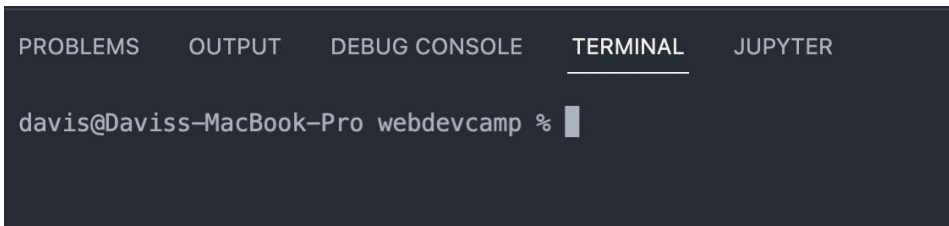| 16.16.0 LTS	18.7.0 Current
Recommended For Most Users	Latest Features

Other Downloads | Changelog | API Docs   Other Downloads | Changelog | API Docs

Or have a look at the Long Term Support (LTS) schedule

Using NodeJS

Step 1: Open a terminal session with either:

-   Control + Shift + ` on Windows
-   Command + Shift + ` on Mac

Step 2: Type "node app.js" to run the file named app.js with node

Step 3: Hit enter and the file should run (nothing should happen since we have nothing in the file right now)

Linking our JavaScript to HTML

2 ways to link our JS and HTML

1. Write the JS directly in the HTML file

    <script>console.log("hi");</script>

2. Link the JS to the HTML with src

    <script src="app.js"></script>

JS Programming

JavaScript Syntax

- SOMEWHAT similar to CSS
- Curly bracket language
- Needs semicolons after each line except after curly brackets

Variables

What is a variable?

- A variable is a way for us to store a value, which can also be changed or modified later

Three ways to define variables:

- Var (not preferred)
- Let
- Const

Data Types

A data type refers to what kind of data is being stored in a variable

Examples of data types:

- Number
- String
- Boolean (true/false)
- Null

Variables are *dynamically typed* in JavaScript, meaning that they can change from one data type to another after being defined (unless const)

If-Else Statements

If-else statements come in handy when you need to run conditional logic

- Checking equality (==) vs. strict equality (===)

Syntax example:

```javascript
let x = 5;

if (x === 5){
    console.log("x is 5!")
}else if (x > 5){
    console.log("x is greater than 5!")
}else{ // to hit this condition, x must be < 5
    console.log("x is less than 5!")
}
```

Project Work Time

Project Guidelines

Have at least 2 pages (a home page and about me page) with some anchor tag that will take you from your home page to the about me page

Have a list/table to provide some information about yourself on the about me page and use images/videos, text, and other things you wish to highlight some information about your hobbies, interests, and background!