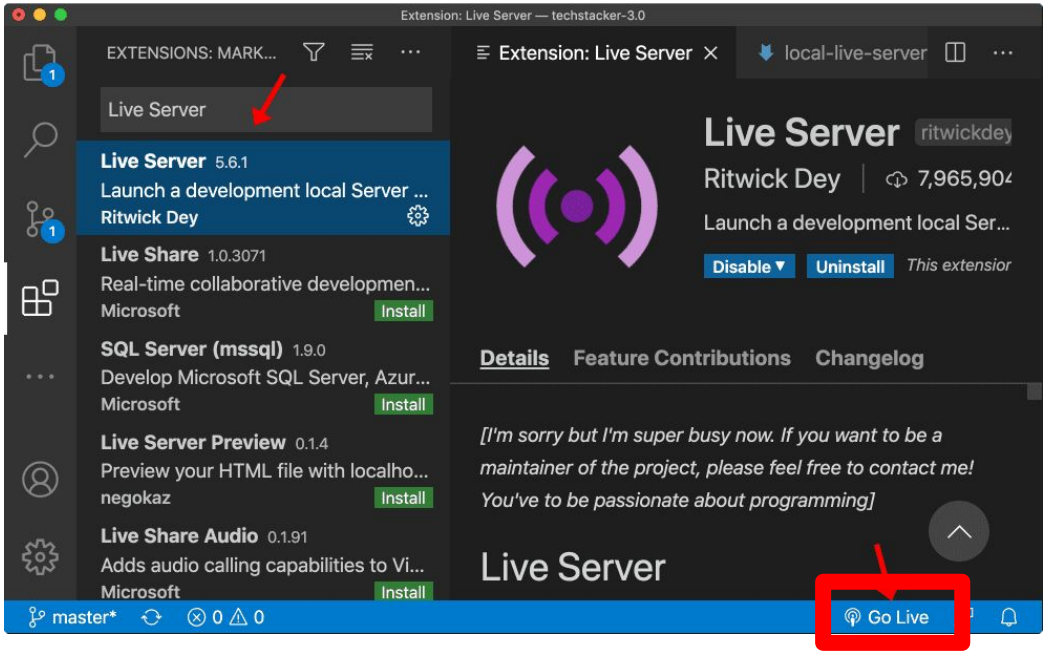
Setup



1. Download VS Code
2. Add the Live Server extension
3. Clone/copy all the files/code from here:

   https://github.com/zeligsonbrett/Web-Development-Workshop

Click here to open a live server which will display your html file that is open!!

Front-end Web Development Workshop

Brett Zeligson

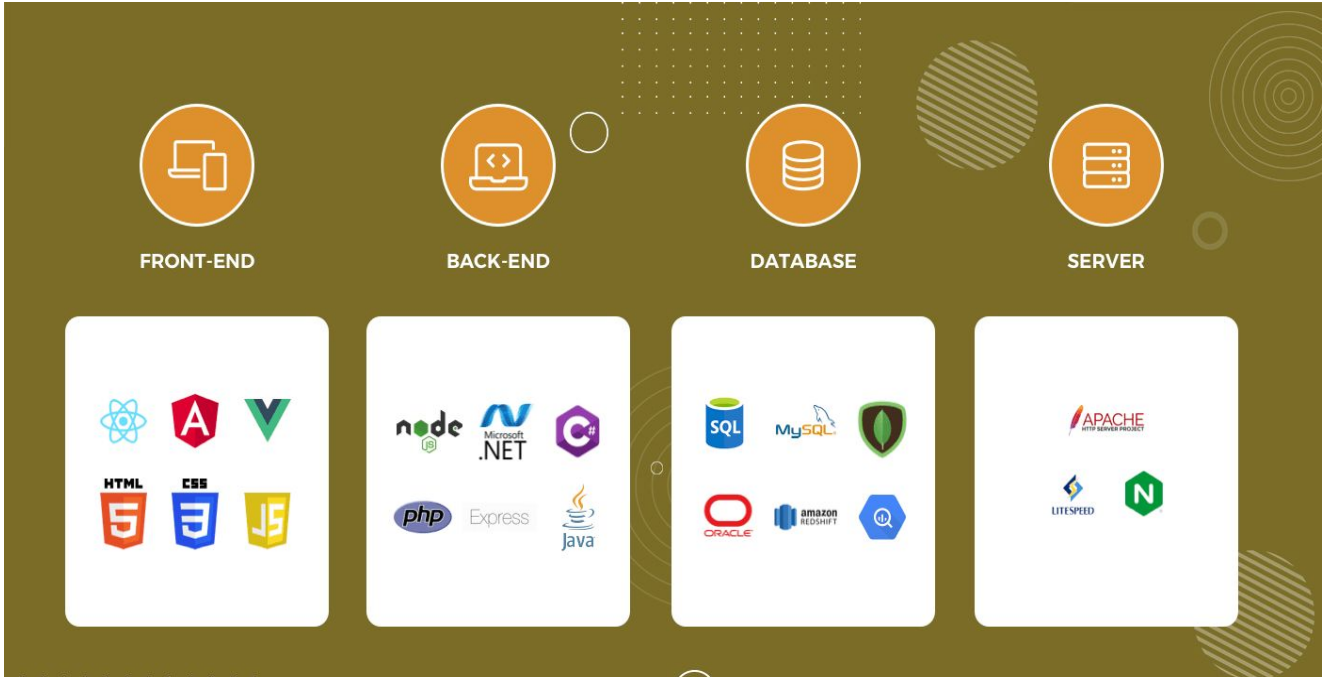
Topics we'll be Covering Today

- What is front-end web development?
- Front-end vs. backend web development
- HTML
- CSS
- JavaScript

What is Front-end Web Development

- Front-end web development is the development of the **graphical user interface** of a website, through the use of **HTML, CSS, and JavaScript**, so that users can view and interact with that website.
- Aka the stuff the user sees

Front-end vs. Backend WebDev



HTML

What is HTML?

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Title goes here</title>
  </head>
  <body>

  </body>
</html>
```

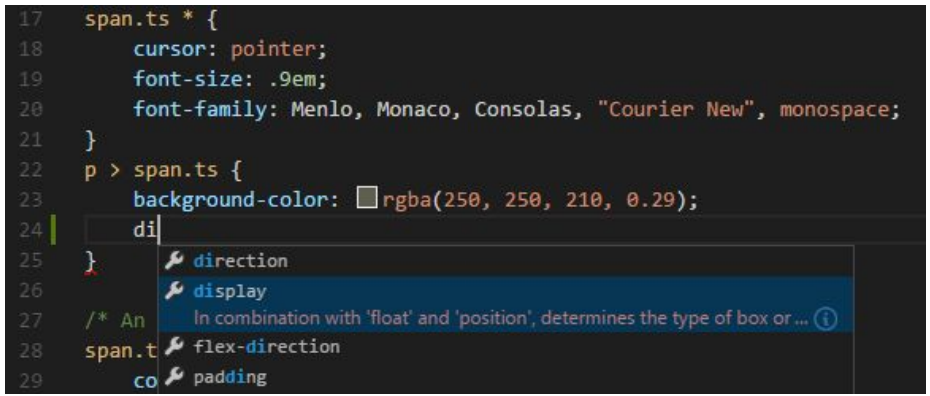
- **Hypertext Markup Language (HTML)** is the standard markup language for creating web pages and web applications.
- Web browsers receive HTML documents from a web server or from local storage and **render the documents into multimedia web pages**. HTML describes the structure of a web page semantically

Tags

Tag	Description
<html> ... </html>	Declares the Web page to be written in HTML
<head> ... </head>	Delimits the page's head
<title> ... </title>	Defines the title (not displayed on the page)
<body> ... </body>	Delimits the page's body
<h *n*> ... </h*n*>	Delimits a level *n* heading
...	Set ... in boldface
...	Set ... in italics
...	Center ... on the page horizontally
...	Brackets an unordered (bulleted) list
...	Brackets a numbered list
...	Brackets an item in an ordered or numbered list
 	Forces a line break here
<p>	Starts a paragraph
<hr>	Inserts a horizontal rule
<img src="...">	Displays an image here
 ... 	Defines a hyperlink

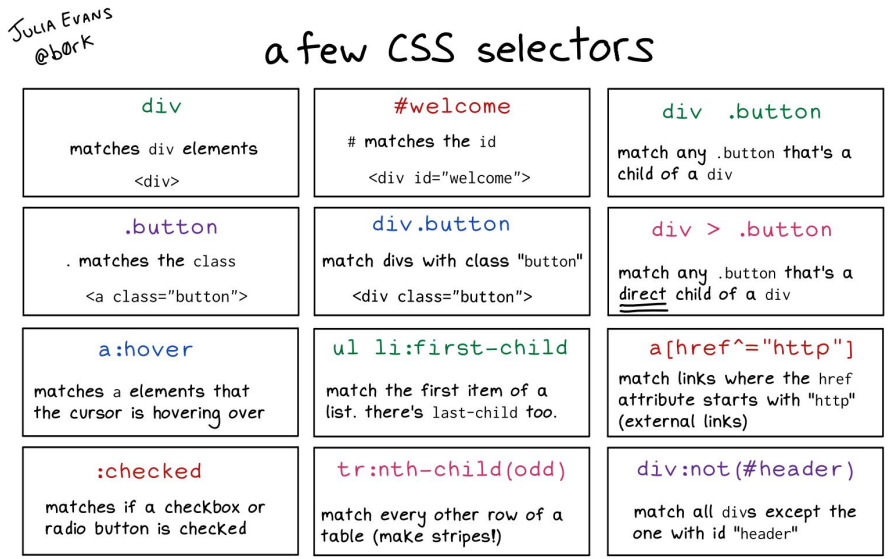
CSS

What is CSS?

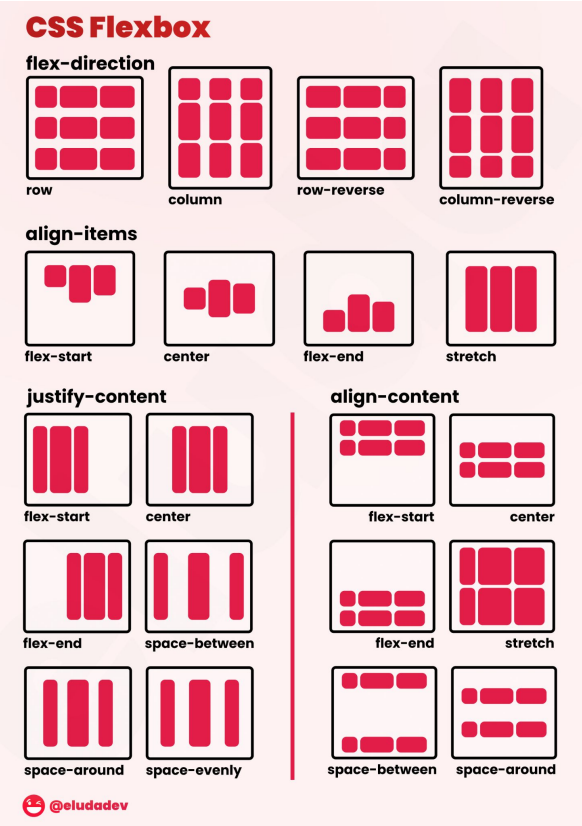


- **Cascading Style Sheets (CSS)** is a style sheet language used for describing the presentation of a document written in a markup language like HTML.
- CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts.
- Why is it cascading?

CSS Selectors



- **CSS Selectors** are patterns of elements and other terms that tell the browser **which HTML elements should be selected to have the CSS property values** inside the rule applied to them
- A more robust selectors list (scroll down): AdamMarsden/css-cheat-sheet: CSS Cheat Sheet - A reference for CSS goodness. (github.com)



Flexbox

- **Flexbox** is a CSS web layout model that allows responsive elements with a container to be automatically arranged depending on viewport size.
    - Basically helps with making elements in your website responsive to viewport changes.

CSS Cheat Sheet

brought to you by pxleyes.com

Selectors

div	all DIV tags
div, span	all DIV tags and all SPAN tags
div span	all SPAN tags inside DIVs
#content	element with ID "content"
.box	all elements with CLASS "box"
ul#box	UL tag with ID "box"
span.box	all SPAN tags with CLASS "box"
*	all elements
#box *	all elements inside #box
a:link, a:active, a:visited	links in normal state, in clicked state, and in visited state
a:hover	link with mouse over it
div > span	all SPANs one-level deep in a DIV

Box Model

Positioning

position	places elements on screen, e.g. absolute, fixed, relative
float	stacks elements horizontally in a particular direction, e.g. left
top, left, right, bottom	specifies the offsets used in absolute, fixed, and relative positions, e.g. top:10px;left:10px
display	sets how the element is placed in the doc flow, e.g. block, inline, none
z-index	sets the stacking order of elements, e.g. z-index of 1 is below z-index of 2
overflow	sets what happens to content outside of container, e.g. auto, hidden

Text

font-family	font used, e.g. Helvetica, Arial
font-size	text size, e.g. 60px, 3em
color	text color, e.g. #000, #abcdef
font-weight	how bold the text is, e.g. bold
font-style	what style the text is, e.g. italic
text-decoration	sets a variety of effects on text, e.g. underline, overline, none
text-align	how text is aligned, e.g. center
line-height	spacing between lines, e.g. 2em
letter-spacing	spacing between letters, e.g. 5px
text-indent	indent of the first line, e.g. 2em
text-transform	applies formatting to text, e.g. upper-case, lowercase, capitalize
vertical-align	align relative to baseline, e.g. text-top

Borders and Lists

border	sets border style for all borders, in the format: border: (solid, dashed, dotted, double) (width) (color), e.g. border: solid 1px #000
border-top	sets border style for a specific
border-bottom	border (same property syntax used
border-left	for padding and margin, e.g.
border-right	margin-left)
list-style-type	sets style of bullets, e.g. square
list-style-position	sets how text wraps when bulleted, e.g. outside, inside
list-style-image	sets an image for a bullet, e.g. list-style-image:url(bullet.png)

Everything Else

background	sets background of an element, in the format: background: (color) (image) (repeat) (position), e.g. background: #000 url(bg.png) repeat-x top left
cursor	sets shape of cursor, e.g. pointer
outline	a border drawn around an element that doesn't affect the box model
border-collapse	sets how borders within tables behave, e.g. collapse
clear	sets on what side a new line starts in relation to nearby floated elements, e.g. left, right, both

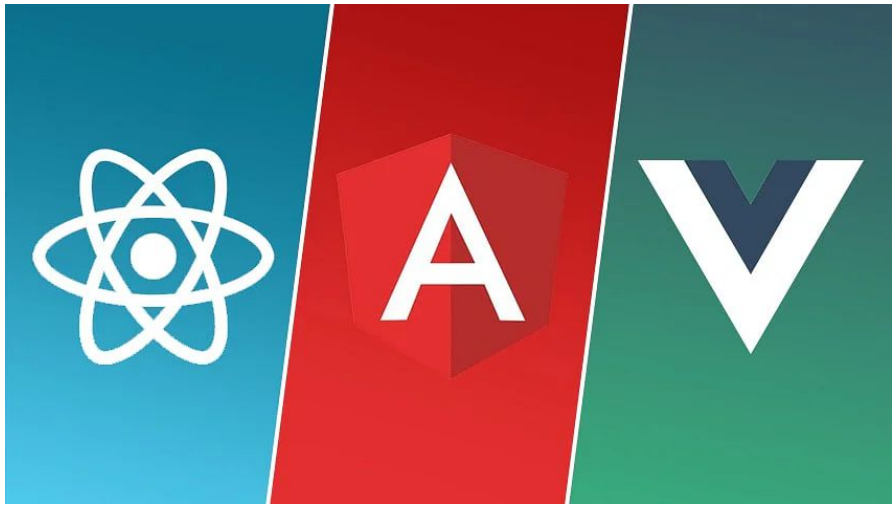
Always write <!doctype html> in your files!

JavaScript

What is JavaScript?

- **JavaScript (JS)** is a programming language used in both front and backend web development to add functionality to otherwise static pages.

What are React, Angular, and Vue?



- JavaScript libraries for building **dynamic user interfaces**.
- **React.js**: Enables you to put HTML/CSS into components that you design.
  - Basically it allows you to create custom HTML tags that you can use to modularize and simplify your code.
- Each of these libraries are well-documented so there are resources to learn them.

Questions?

Thank you!

Additional Questions: **zeligson@princeton.edu**