Introduction to Coding for Journalists

INTRODUCTION TO WEB TECHNOLOGY

AUGUST 23, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

August 23, 2022

Welcome to the Class

Class Introductions

Syllabus Review

Software Installation

Introduction to Web Technology

WELCOME TO THE CLASS!

CLASS INTRODUCTIONS

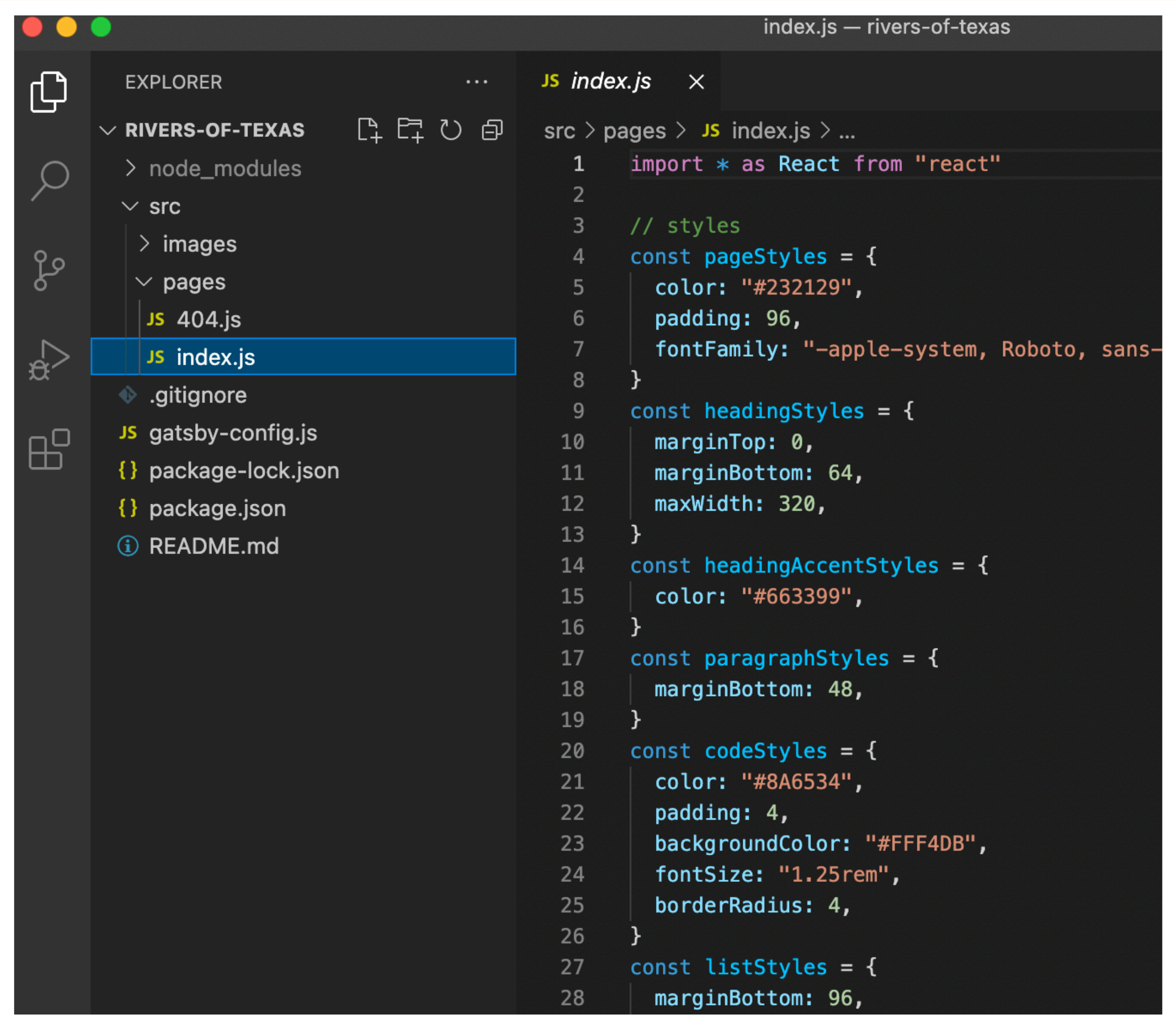
- Name
- Major(s)
- Year
- Why you took the class
- What you are hoping to learn in this class

SYLLABUS REVIEW

- Lessons
- Assignments
- Grading Policy
- Final Project
- Questions

SOFTWARE INSTALLS

- **Visual Studio Code**
  https://code.visualstudio.com/
- **GitHub Desktop**
  https://desktop.github.com/
- **Node.js**
  https://nodejs.org/en/



```
import * as React from "react"

// styles
const pageStyles = {
  color: "#232129",
  padding: 96,
  fontFamily: "-apple-system, Roboto, sans-
}
const headingStyles = {
  marginTop: 0,
  marginBottom: 64,
  maxWidth: 320,
}
const headingAccentStyles = {
  color: "#663399",
}
const paragraphStyles = {
  marginBottom: 48,
}
const codeStyles = {
  color: "#8A6534",
  padding: 4,
  backgroundColor: "#FFF4DB",
  fontSize: "1.25rem",
  borderRadius: 4,
}
const listStyles = {
  marginBottom: 96,
```

INTRO TO WEB TECHNOLOGY

HOW DOES THE WEB WORK?

- Let's take a look at what the web browser does when you ask for a page
- https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/How_the_Web_works
- MDN Web Docs (https://developer.mozilla.org/en-US/docs/Learn)
- A little dry, but very good information

SETTING UP ACCOUNTS

ONLINE ACCOUNTS

- GitHub - GitHub.com
- StackBlitz - StackBlitz.com - login with your GitHub account
- You can use the free tier of account access for both of these

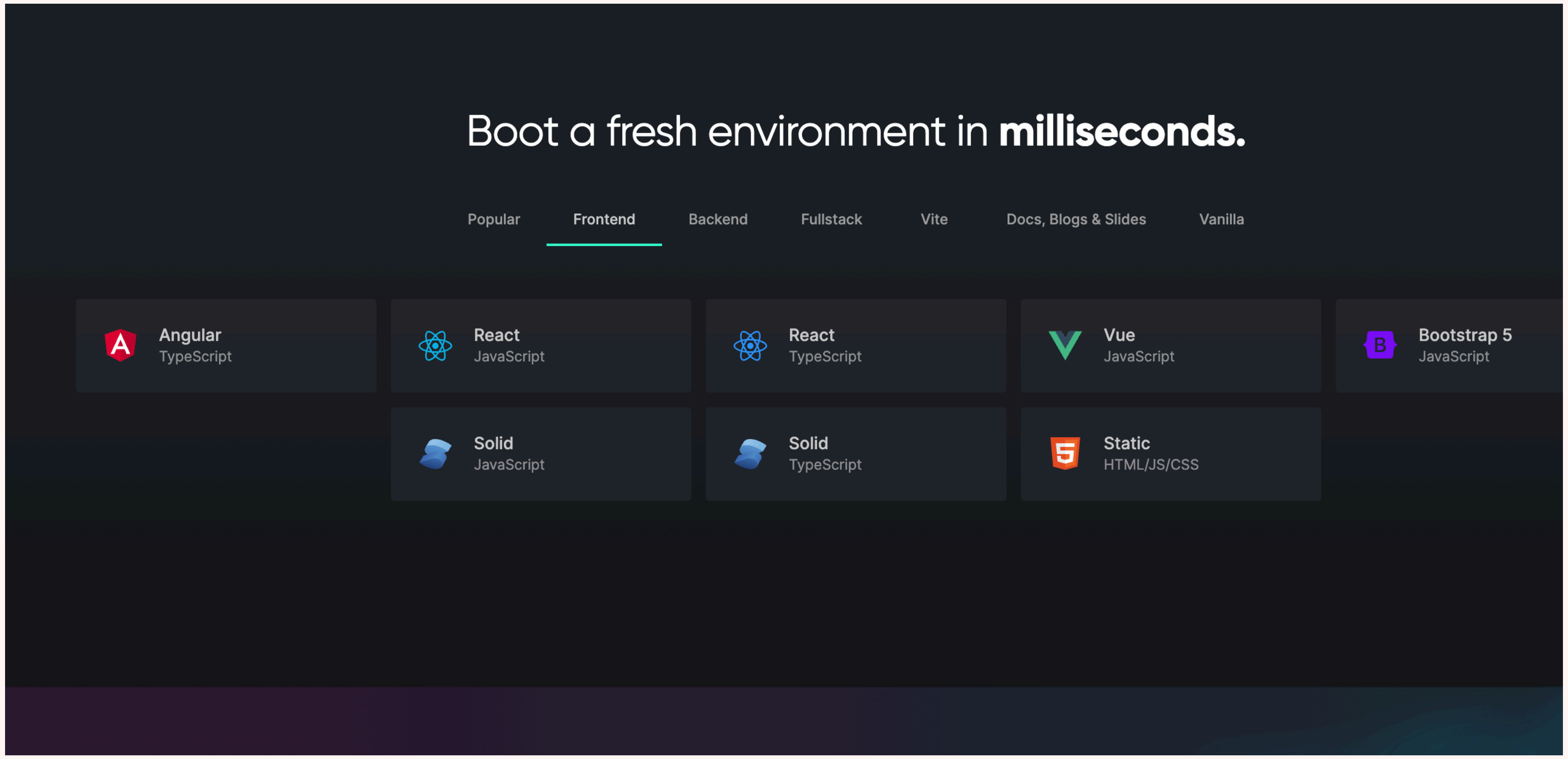
EXPLORING CLOUD DEVELOPMENT ENVIRONMENTS

DEVELOPMENT IN THE CLOUD

- We can use the lab computers, but they do get reset, and they aren't particularly portable
- You can use your own laptop, and I encourage that, but it also can be slow or run out of space
- Cloud Development environments like StackBlitz let you work on a project from anywhere
- Other choices include GitHub Codespaces, Amazon Cloud9, and others.

GETTING STARTED WITH STACKBLITZ

- **From StackBlitz.com, select Frontend, and then Static:**



Boot a fresh environment in **milliseconds.**

START FROM SCRATCH

- Clear out all the contents (the HTML) in index.html (the first file)
- We'll build a web page up from scratch using HTML

Introduction to Coding for Journalists

INTRODUCTION TO HTML

AUGUST 30, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

August 30, 2022

Course Questions

Introduction to HTML

Web Page Structure

HTML Elements

Learn HTML Exercise

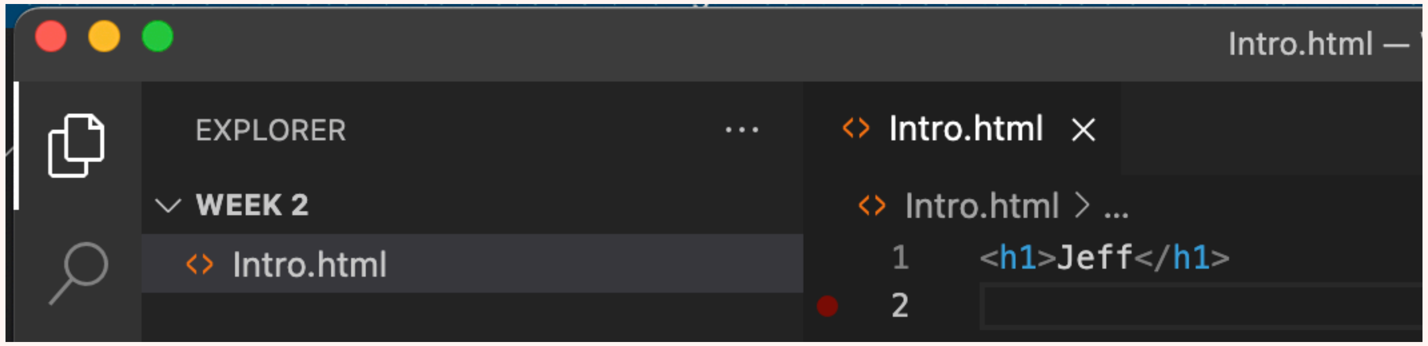
INTRODUCTION TO HTML

REALLY SHORT INTRO TO HTML

- Open up Visual Studio Code, or if you do not have that, try JSBin (https://jsbin.com/?html,output)
- Create a new file in Visual Studio Code, and name it Intro.html, and save it
- Put the following line into your file (Code will try and help you write it)

  ```
  <h1>Jeff</h1>
  ```
- Save your file, then open it from the folder it is in, and it will open in Chrome

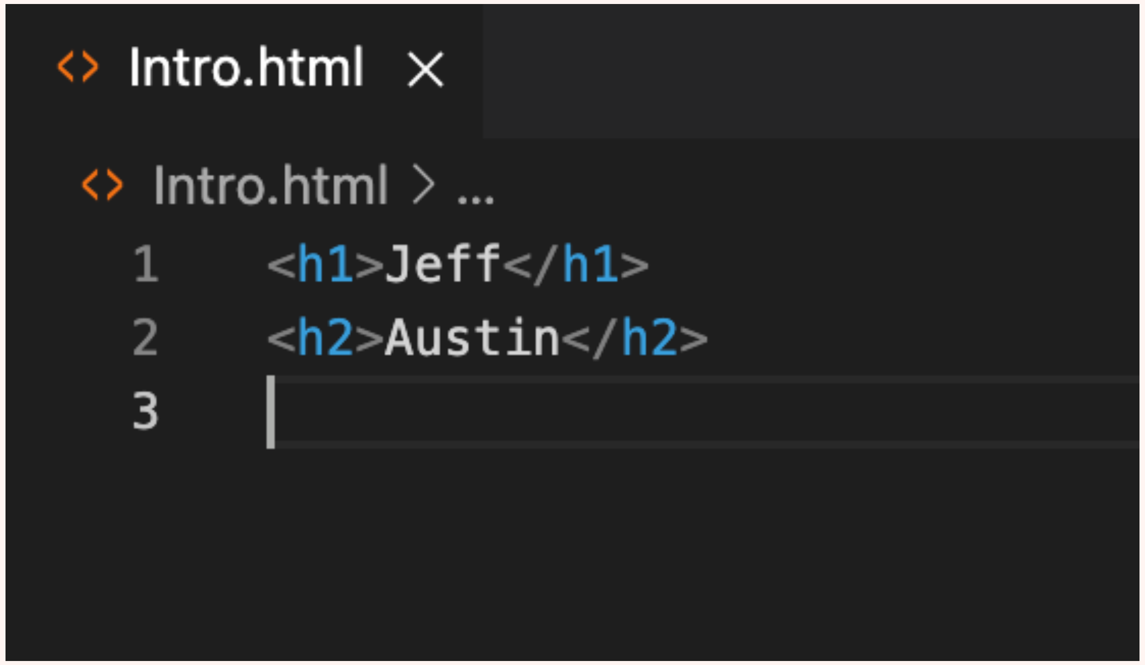
WHAT DID WE JUST DO?



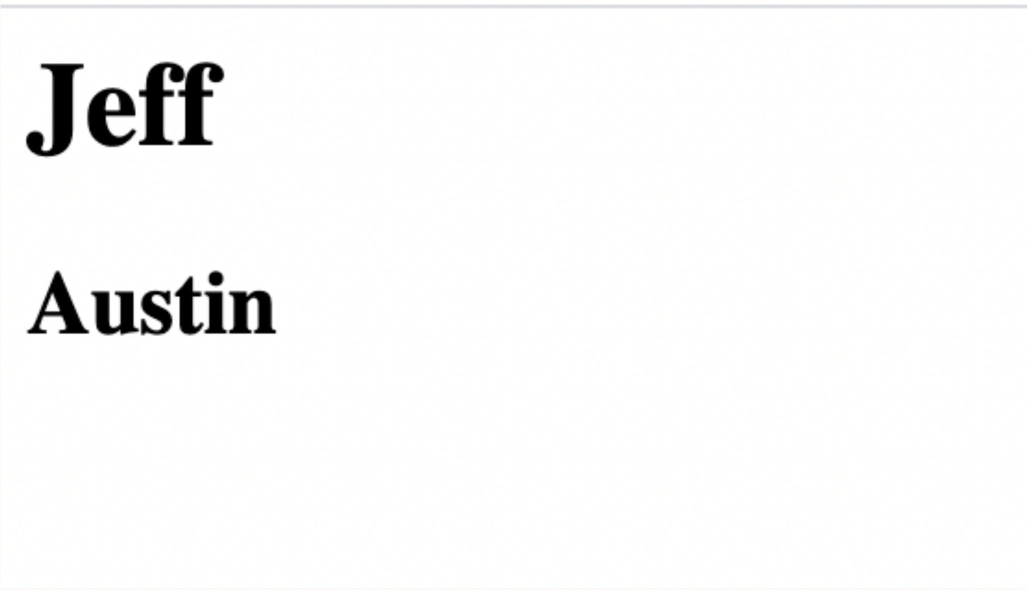
```
<h1>Jeff</h1>
```

- The `<h1>Jeff</h1>` is an HTML element.
- The h1 element is short for Heading 1, which is the most important heading. Other headings go from 2-6 (h2, h3, h4, h5, h6)
- Tags can be lower case, upper case, or mixed, but lower case is good practice
- Starting tag `<h1>`, content Jeff, and then an ending tag `</h1>`

LET'S TRY SOMETHING ELSE



```
<h1>Jeff</h1>
<h2>Austin</h2>

```

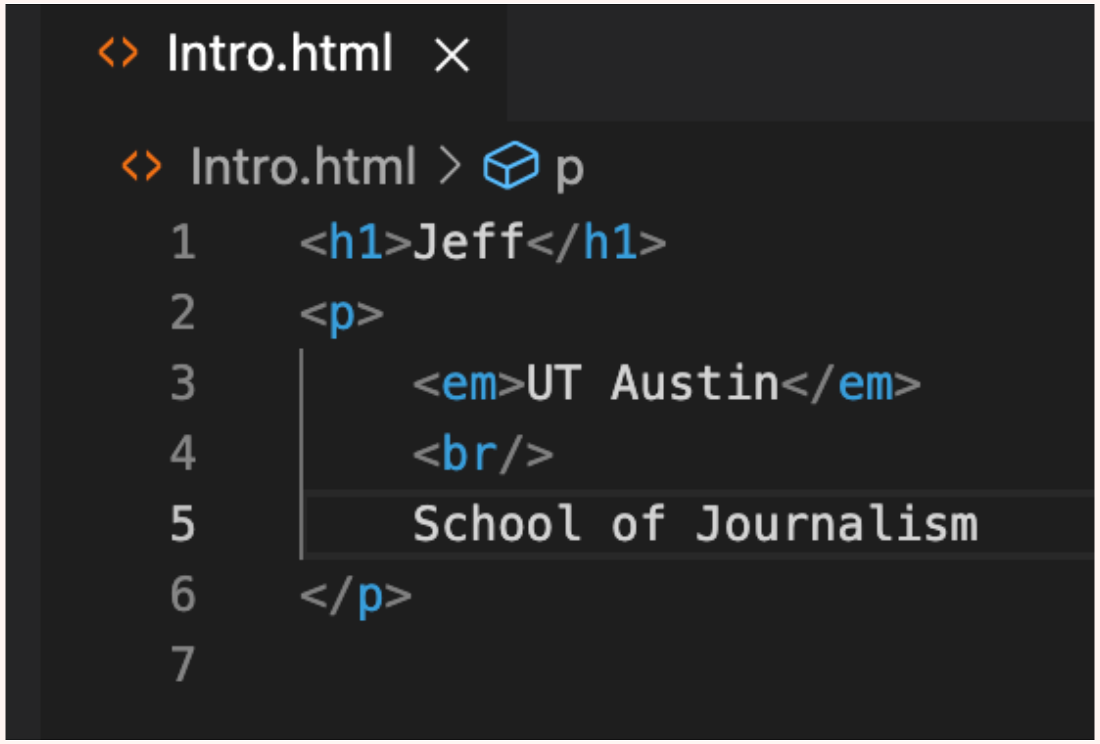


Jeff

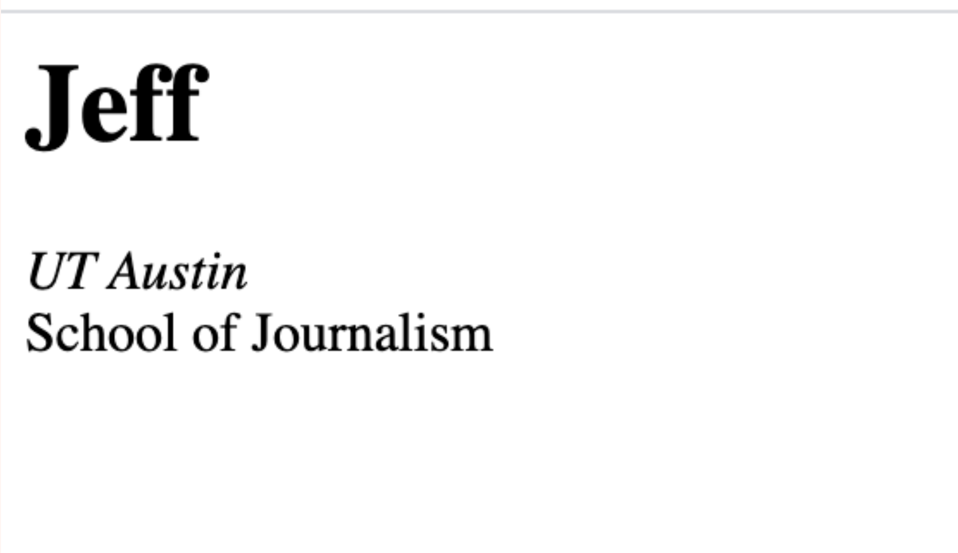
Austin

- What did I just add to this HTML?
- How does the web browser represent it differently?
- Why?
- In class - make the h2 element an h4 element - be sure to change both the starting and ending tags

NESTED HTML



```html
<h1>Jeff</h1>
<p>
    <em>UT Austin</em>
    <br/>
    School of Journalism
</p>
```

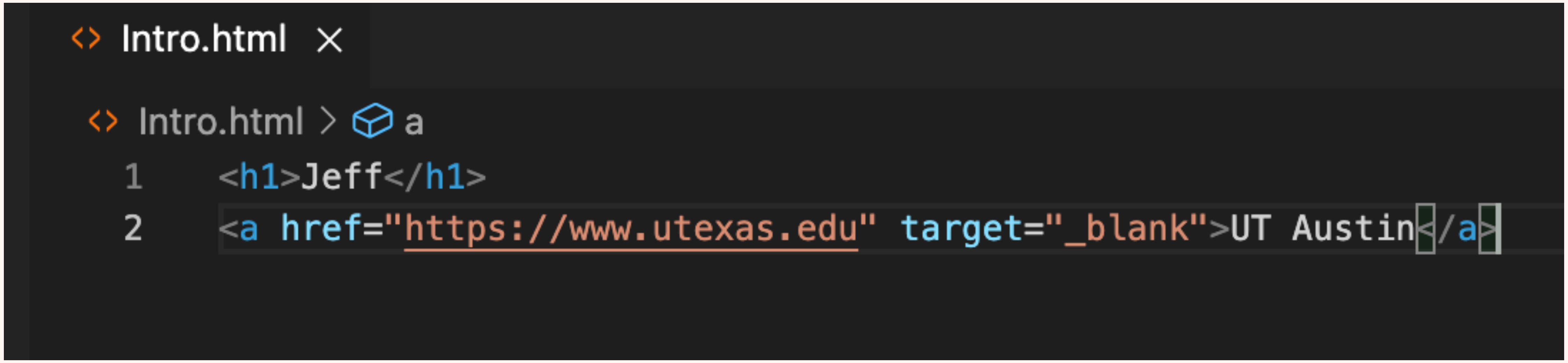


Jeff

UT Austin
School of Journalism

- We will add a few new HTML elements to the mix
- <p> - paragraph, <em> - emphasis, <br/> - line break
- The paragraph element has child HTML elements - what are they? It also has some content.

HTML ATTRIBUTES



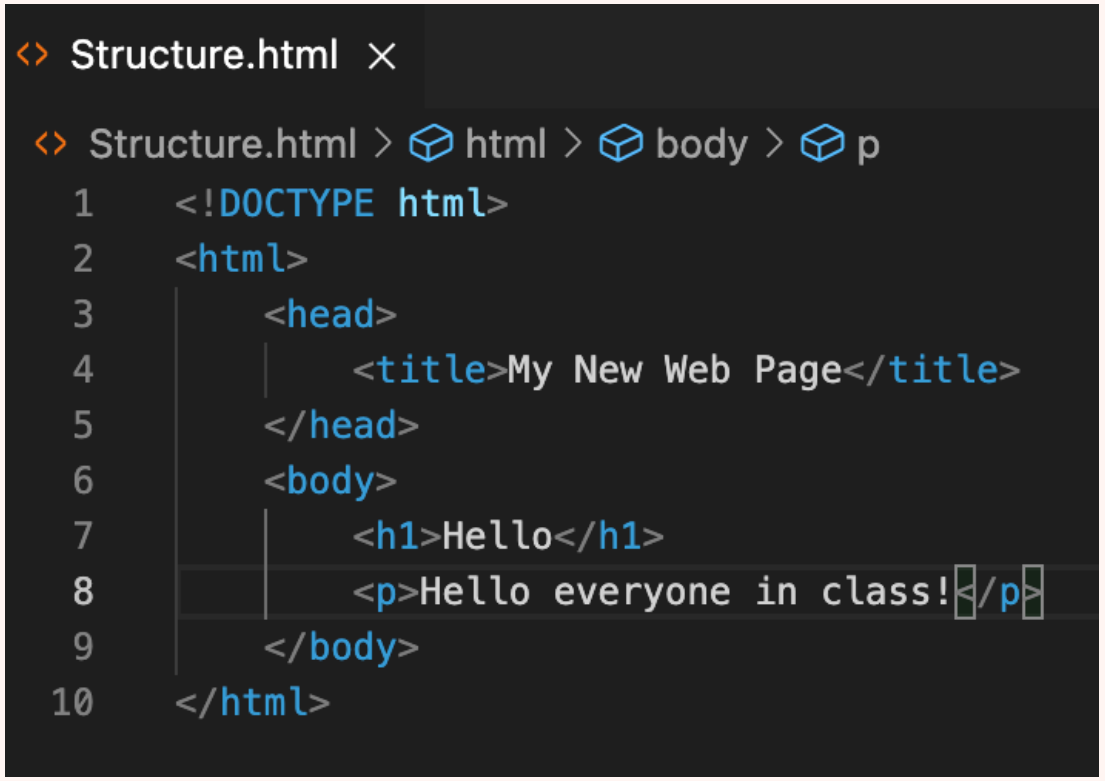
```html
<h1>Jeff</h1>
<a href="https://www.utexas.edu" target="_blank">UT Austin</a>
```

- The <a> tag is short for anchor, and when used in combination with the href attribute, creates an HTML link
- `href` - hypertext reference to a URL, `target` - opens the link in a browser tab, a new one if the value is `_blank`.
- What happens if we remove the `target` attribute from the link? Try it out.
- Change the URL for the link to your favorite web site

ANY QUESTIONS SO FAR?

WEB PAGE STRUCTURE

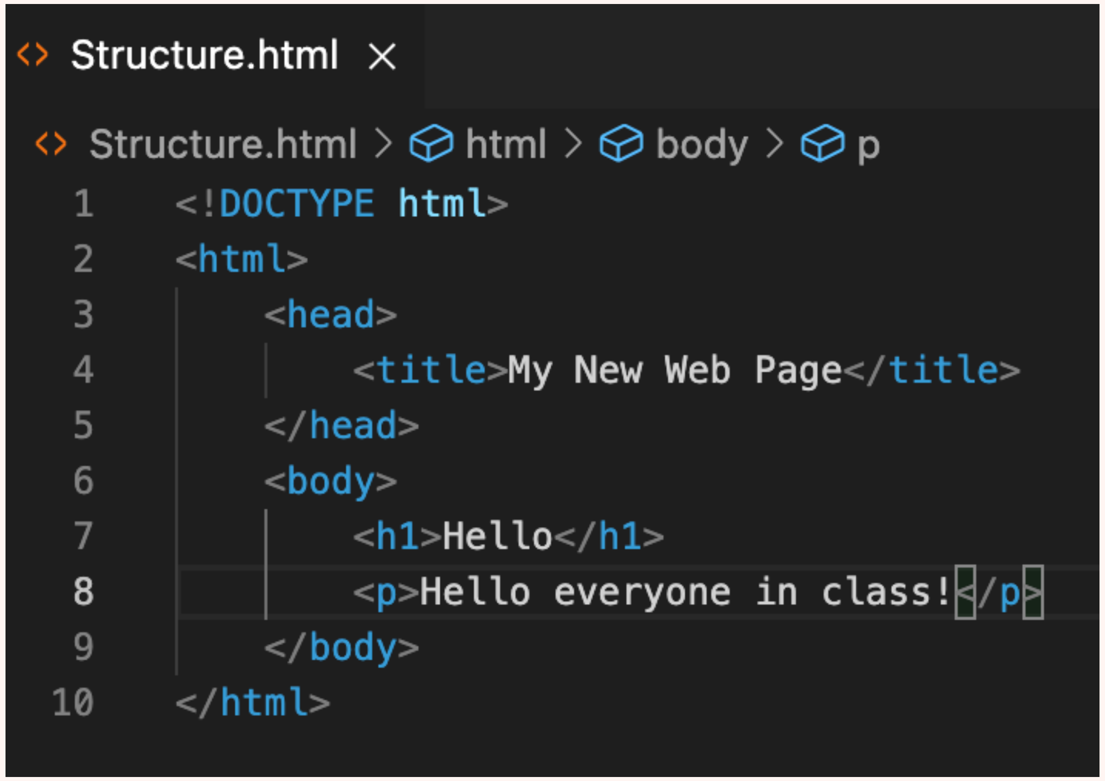
WEB PAGE STRUCTURE



```
<!DOCTYPE html>
<html>
    <head>
        <title>My New Web Page</title>
    </head>
    <body>
        <h1>Hello</h1>
        <p>Hello everyone in class!</p>
    </body>
</html>
```

- Go ahead and put this into a new file named Structure.html, and load that in the web browser
- Standardized HTML Web Page Structure
- Even if you don’t include things like an <html> tag, the web browser implicitly creates one behind the scenes
- The document type will always be HTML, you may find old tutorials that pre-date HTML 5 that have other things

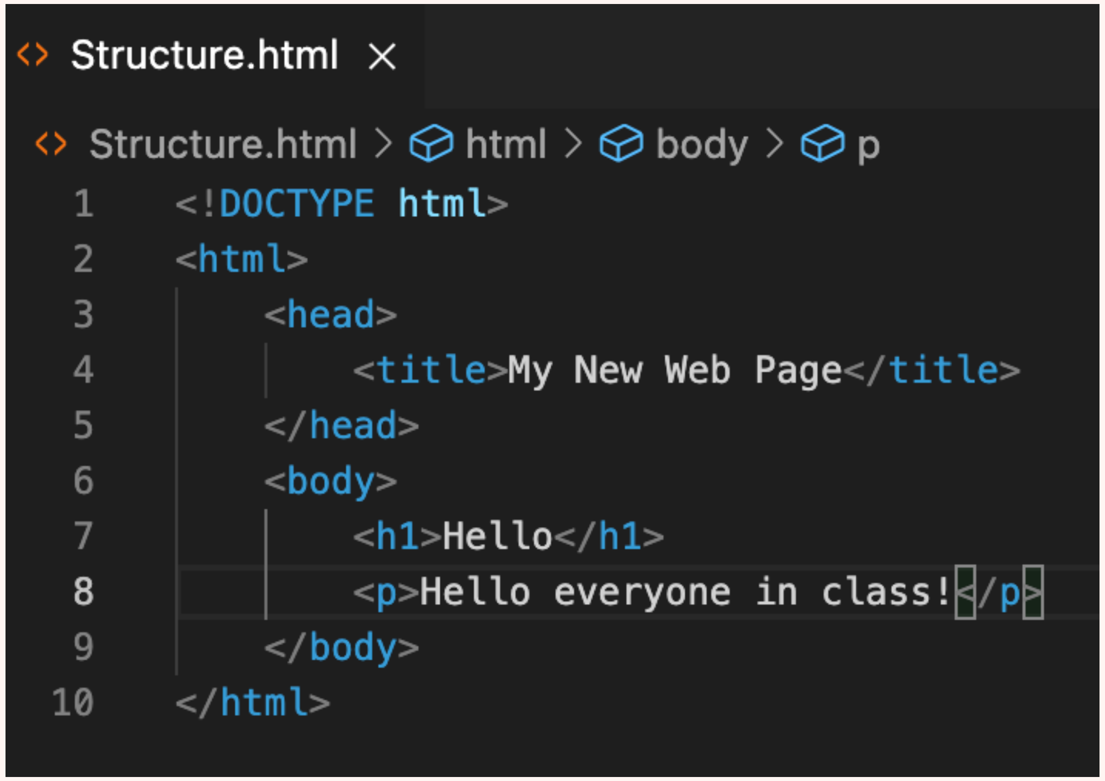
THE <HEAD> ELEMENT



```
<!DOCTYPE html>
<html>
    <head>
        <title>My New Web Page</title>
    </head>
    <body>
        <h1>Hello</h1>
        <p>Hello everyone in class!</p>
    </body>
</html>
```

- The <head> element contains metadata about your HTML page
- The title is the most common HTML element
- Other things that would go in here would be links to CSS Stylesheets or Javascript, the favico icon, and SEO information
- https://developer.mozilla.org/en-US/docs/Learn/HTML/Introduction_to_HTML/The_head_metadata_in_HTML

THE <BODY> ELEMENT



```
<!DOCTYPE html>
<html>
    <head>
        <title>My New Web Page</title>
    </head>
    <body>
        <h1>Hello</h1>
        <p>Hello everyone in class!</p>
    </body>
</html>
```

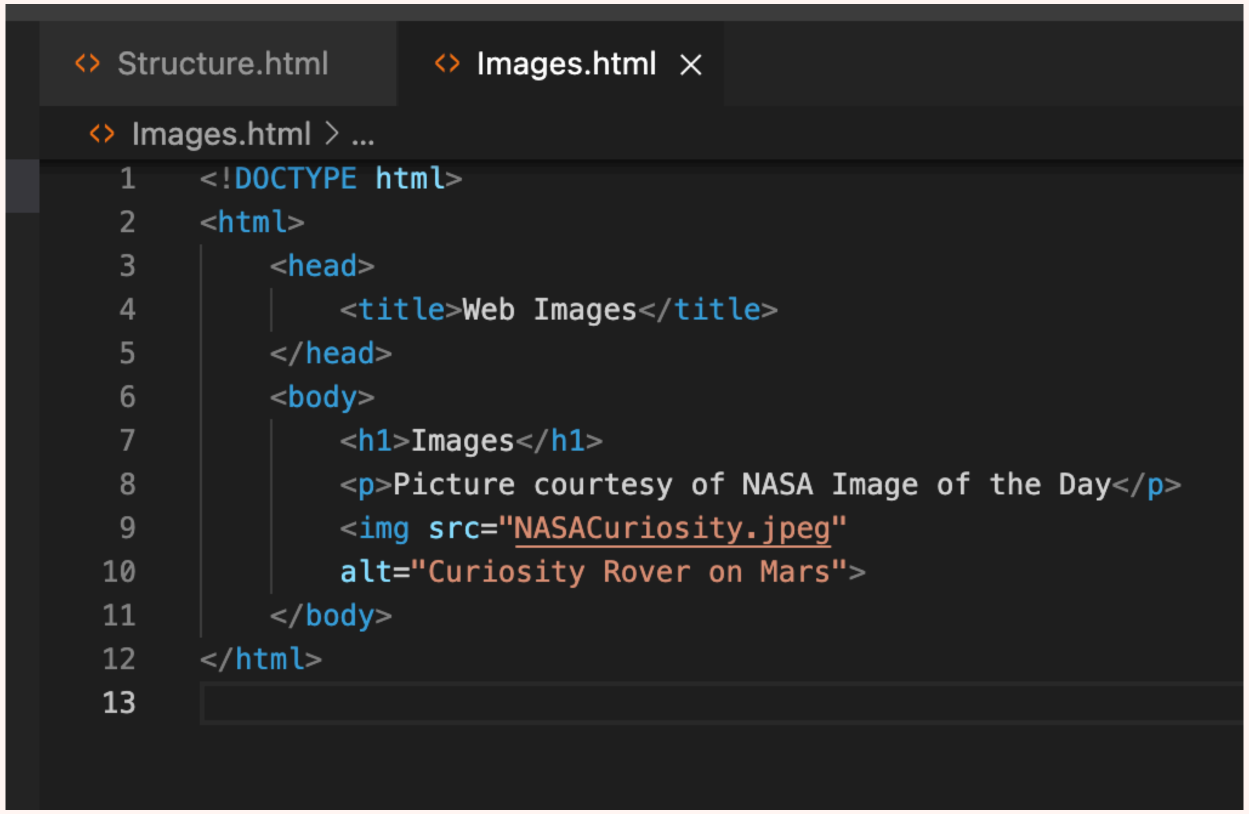
- **The <body> element contains the content you want the user to read (or hear)**
- **This element always goes after the <head> element, but inside the <html> element**
- **There are many HTML elements you could put into an HTML body, and we will cover some of them now.**

EXERCISE

CREATE YOUR OWN HTML PAGE WITH HEAD, BODY, AND TITLE

HTML ELEMENTS

WEB IMAGES



```
<!DOCTYPE html>
<html>
    <head>
        <title>Web Images</title>
    </head>
    <body>
        <h1>Images</h1>
        <p>Picture courtesy of NASA Image of the Day</p>
        <img src="NASACuriosity.jpeg"
        alt="Curiosity Rover on Mars">
    </body>
</html>
```

- The <img> element uses its src attribute to point to either a relative or an absolute URL for an image
- You can size an image in HTML with the width and height attributes, but it is generally preferable to do this in CSS instead.

URL TYPES

Absolute URLs

Starts with http:// or https://
Contains a scheme, server name, and path.

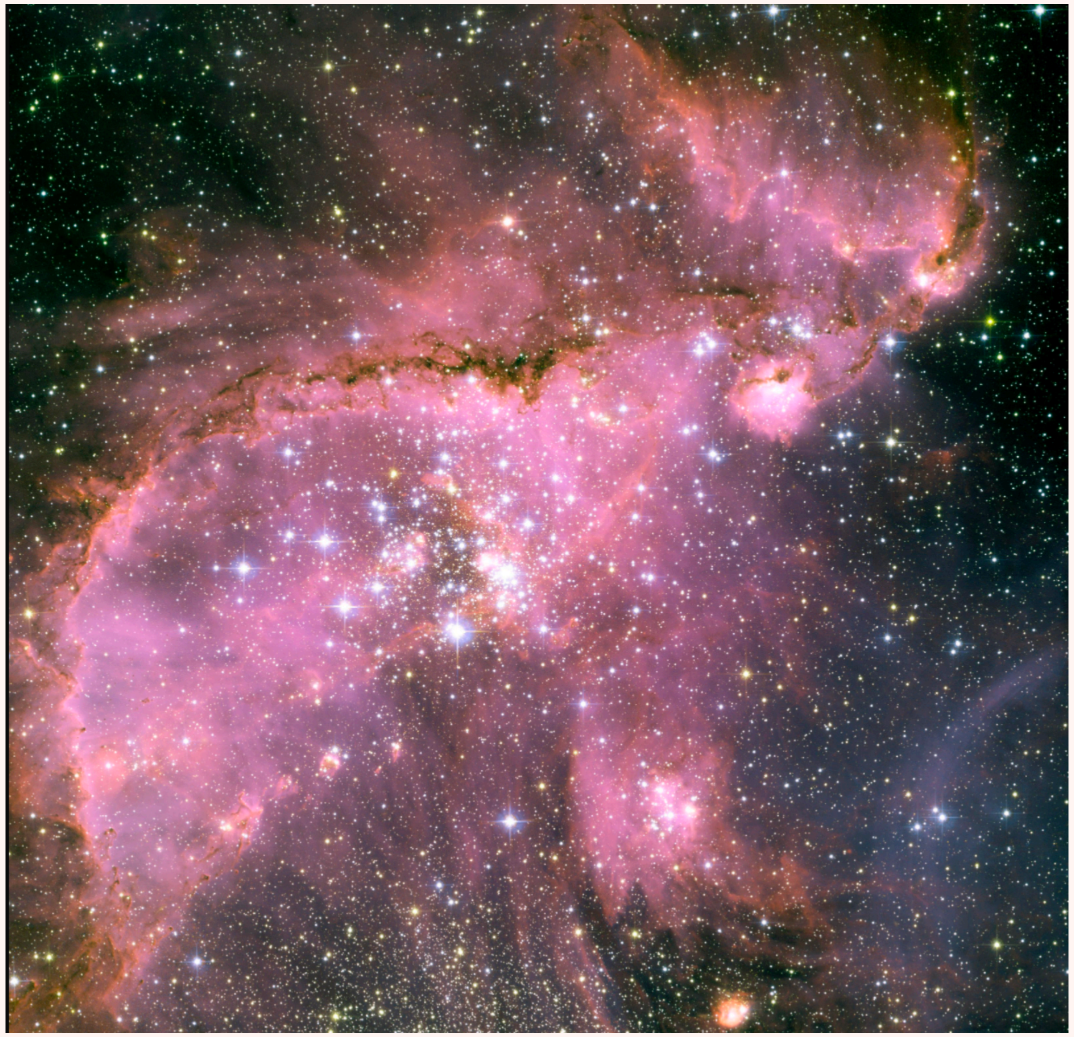
https://www.utexas.edu
https://www.nasa.gov/image-feature/curiosity-celebrates-another-year-on-mars

Relative URLS

Doesn’t start with http:// or https://
Doesn’t contain a colon or a server name.
Could start with / or not

/users/login
/images/doggy.png
articles/1234

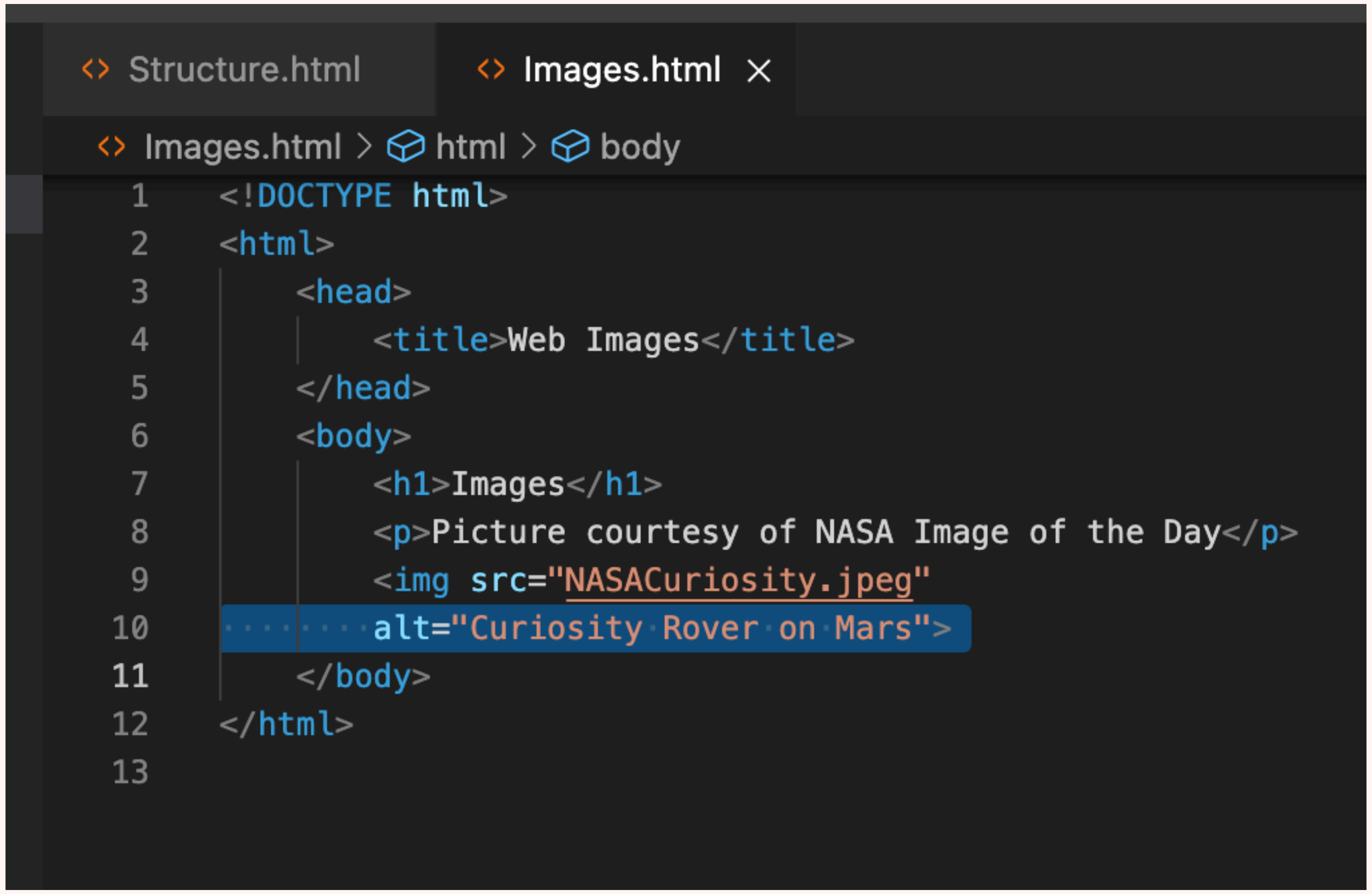
NASA IMAGES



NASA Image of the Day

https://www.nasa.gov/multimedia/imagegallery/iotd.html

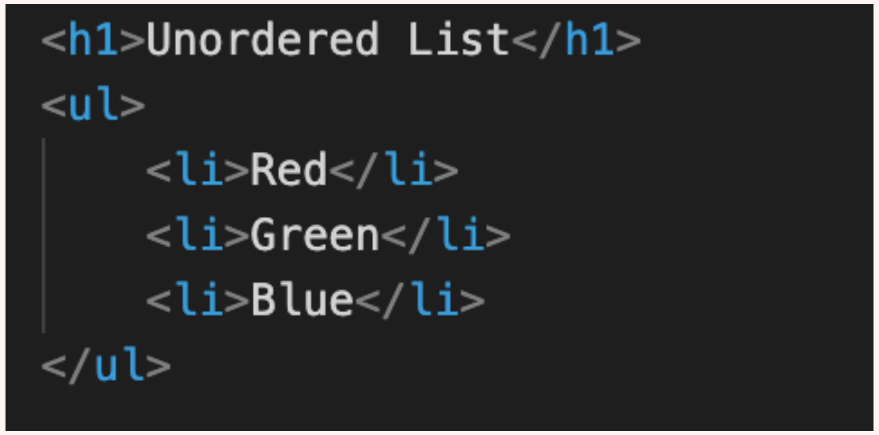
MAKING IMAGES ACCESSIBLE



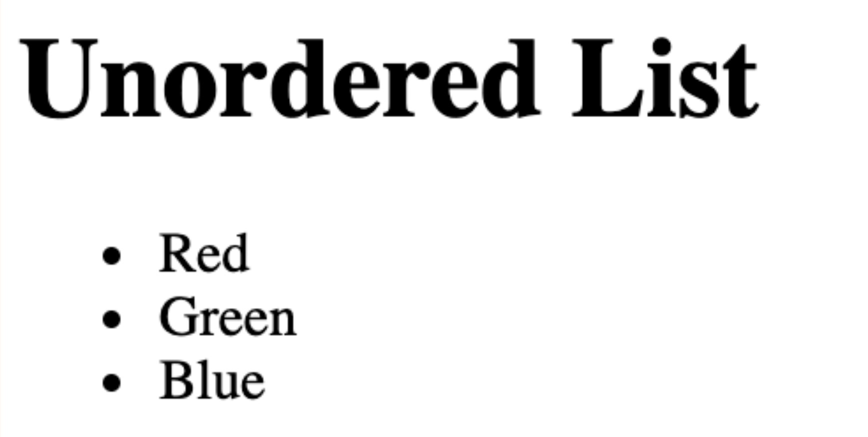
```
<!DOCTYPE html>
<html>
    <head>
        <title>Web Images</title>
    </head>
    <body>
        <h1>Images</h1>
        <p>Picture courtesy of NASA Image of the Day</p>
        <img src="NASACuriosity.jpeg"
        alt="Curiosity Rover on Mars">
    </body>
</html>

```

- **The alt attribute should describe the image**
- **Easy to forget this step, but it is useful for screen readers**
- **Whole class on accessibility where we discuss issues like this**

UNORDERED LISTS



```
<h1>Unordered List</h1>
<ul>
    <li>Red</li>
    <li>Green</li>
    <li>Blue</li>
</ul>
```

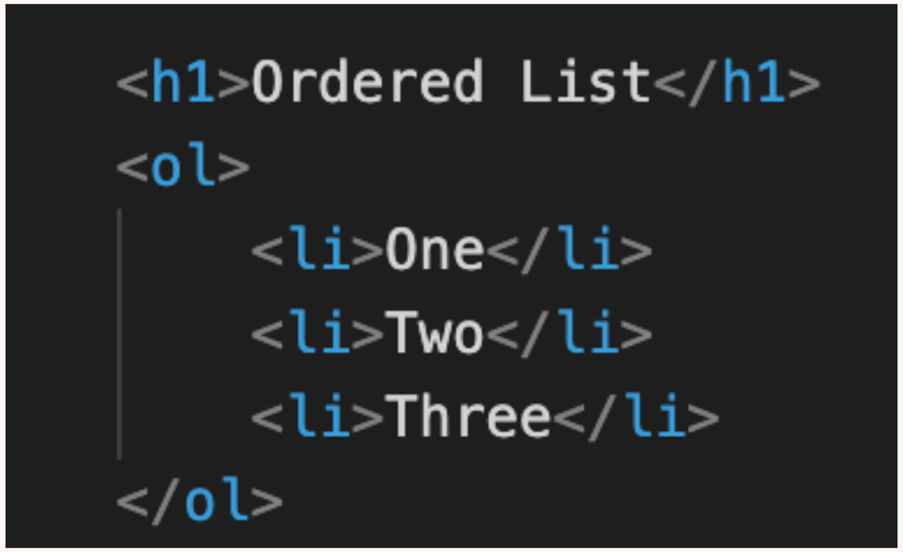


Unordered List

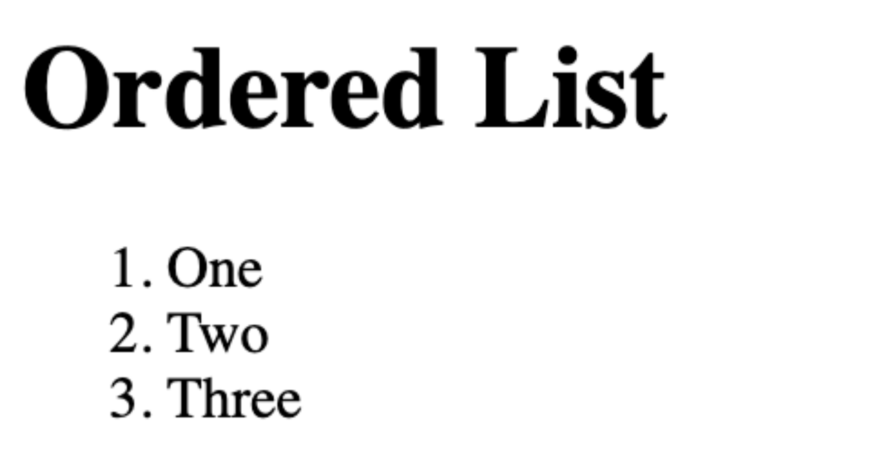
- Red
- Green
- Blue

- The <ul> element creates an unordered list
- The unordered list contains <li> elements, with one for each row of content
- This ends up being useful for more than just bullet lists, as we will see when we get into CSS and responsive design

ORDERED LISTS



```
<h1>Ordered List</h1>
<ol>
    <li>One</li>
    <li>Two</li>
    <li>Three</li>
</ol>
```

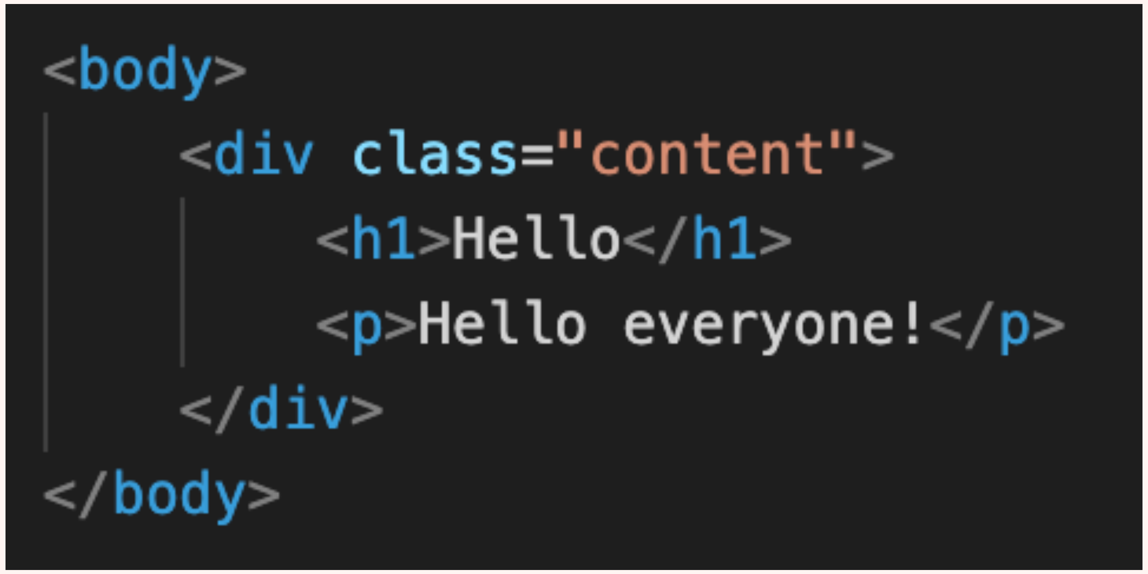


Ordered List

1. One
2. Two
3. Three

- The <ol> element creates an ordered list, where the bullet points are numbers
- The ordered list contains <li> elements, with one for each row of content

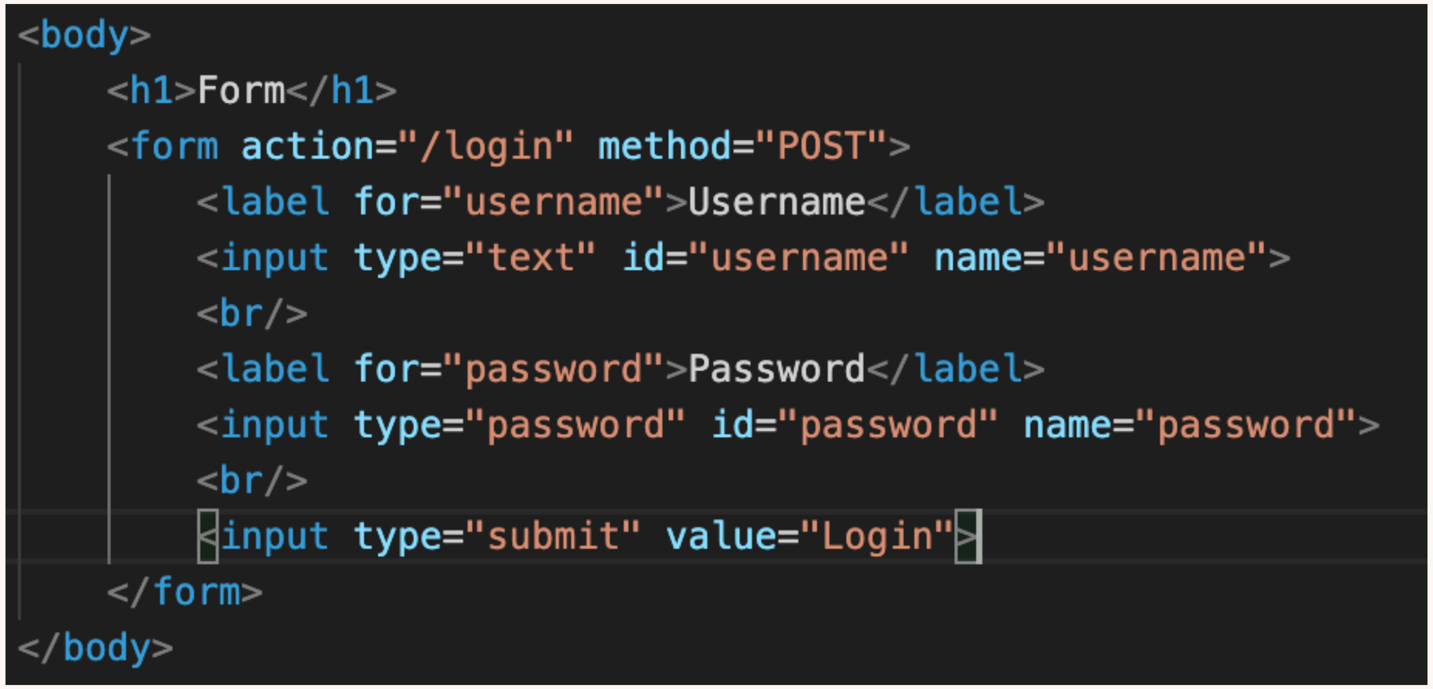
THE <DIV> TAG



```
<body>
    <div class="content">
        <h1>Hello</h1>
        <p>Hello everyone!</p>
    </div>
</body>
```

- The <div> element is a container for other HTML elements
- We will use this more when we learn CSS next week
- You can see here that there is an attribute named class on the <div> tag.
- We can use that class to style this element with CSS

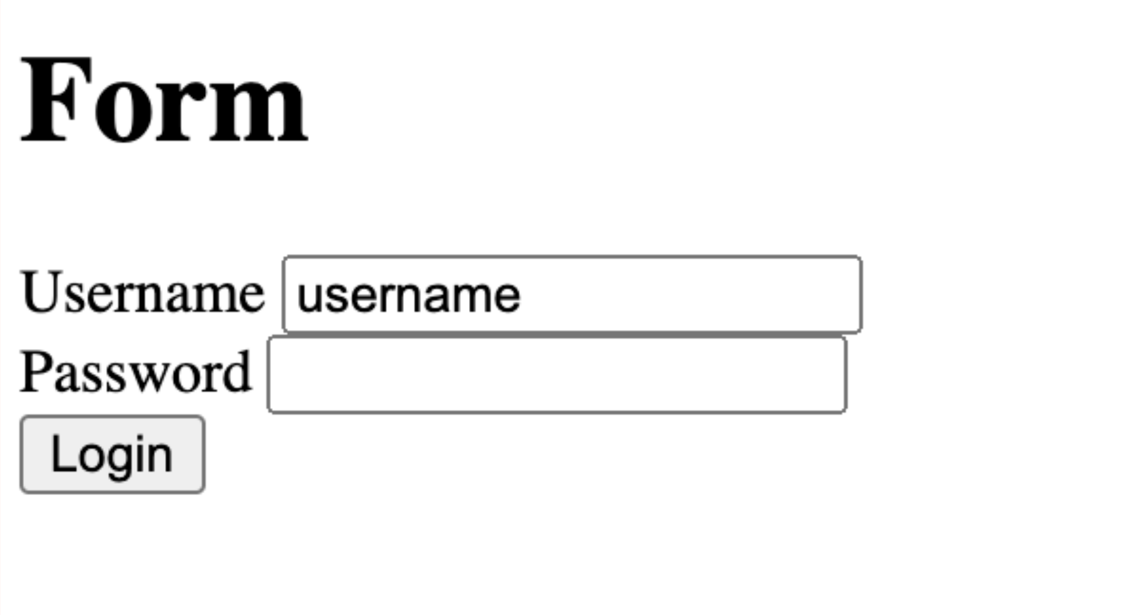
HTML FORMS



```
<body>
    <h1>Form</h1>
    <form action="/login" method="POST">
        <label for="username">Username</label>
        <input type="text" id="username" name="username">
        <br/>
        <label for="password">Password</label>
        <input type="password" id="password" name="password">
        <br/>
        <input type="submit" value="Login">
    </form>
</body>
```

- **HTML Forms contain <form>, <input>, <label>, and other HTML elements you could use for styling**
- **These forms look complicated, but they follow a pattern**
- **The action would point to a server that does something with the form data**

FORM TEXT INPUTS



Form

Username username

Password

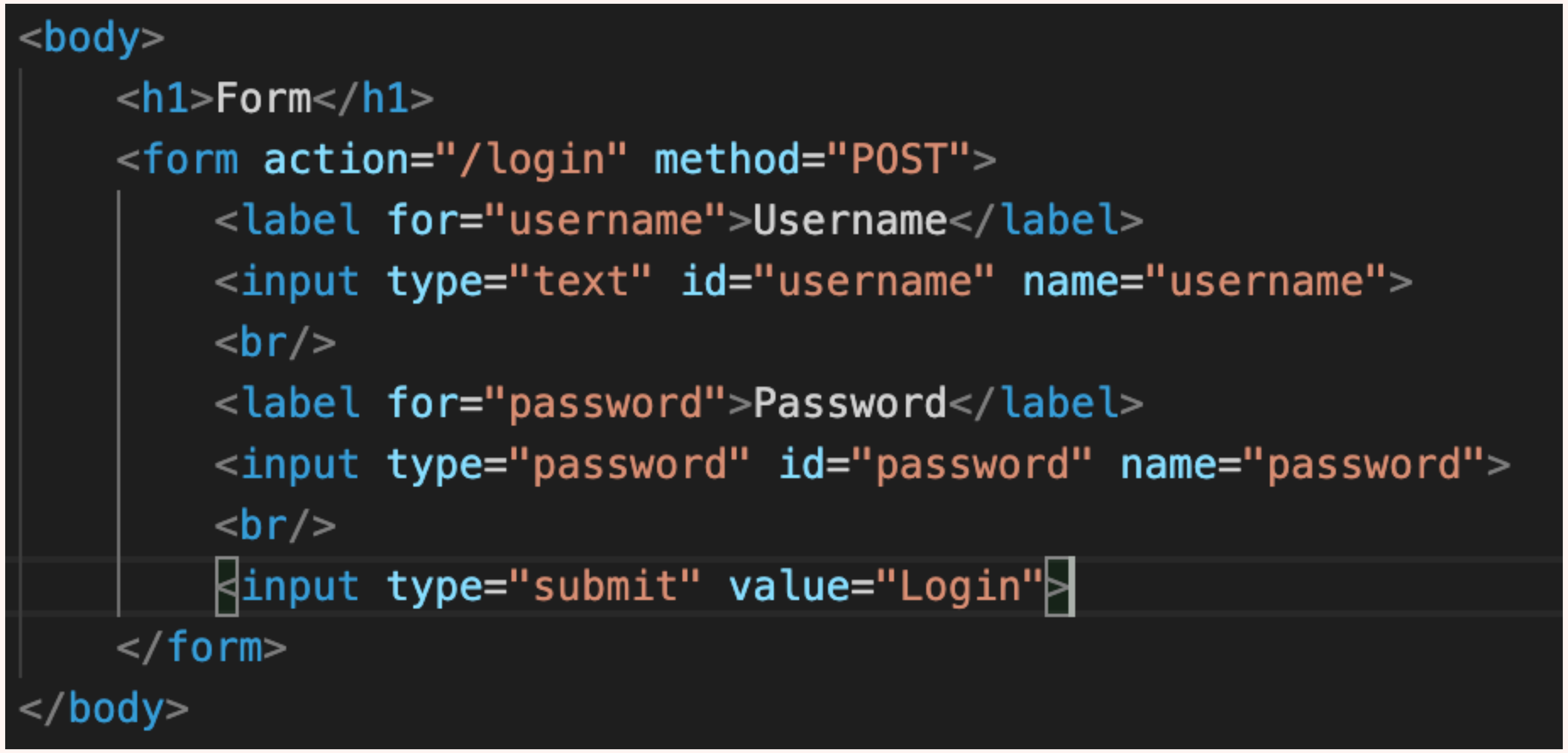
- The <input> element has many different types. One of these types is text, and another is password
- There are many different attributes you can set on these to control them, including placeholder, size, and required.
- For reference, see MDN: https://developer.mozilla.org/en-US/docs/Web/HTML/Element/input

FORM LABELS

- For accessibility and description, the form requires labels for each input
- The labels and inputs are linked via the input id and the label for attributes.
- For reference, see MDN: https://developer.mozilla.org/en-US/docs/Web/HTML/Element/label

```
<label for="username">Username</label>

<input type="text" id="username" name="username">
```

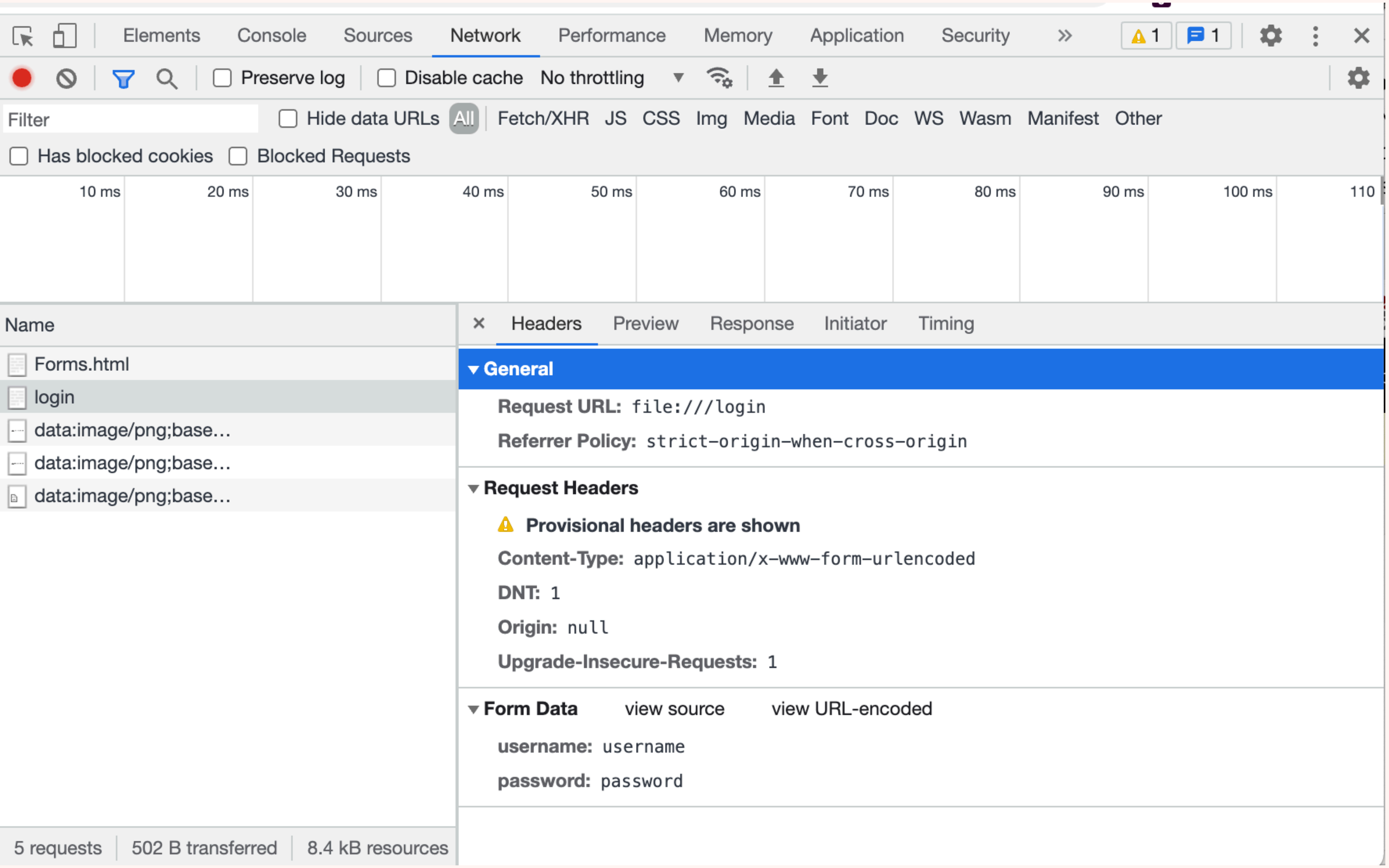
FORM SUBMIT BUTTONS



```html
<body>
    <h1>Form</h1>
    <form action="/login" method="POST">
        <label for="username">Username</label>
        <input type="text" id="username" name="username">
        <br/>
        <label for="password">Password</label>
        <input type="password" id="password" name="password">
        <br/>
        <input type="submit" value="Login">
    </form>
</body>
```

- The <input> element with the type="submit" attribute becomes a button that you can use to send the form to a server
- We won't build a server as part of this assignment, but we can see what it would do if you had one by opening Developer Tools and viewing Network traffic

FORM SUBMIT IN DEVELOPER TOOLS



Forms.html
login
data:image/png;base…
data:image/png;base…
data:image/png;base…

5 requests | 502 B transferred | 8.4 kB resources

▾ General

Request URL: `file:///login`

Referrer Policy: `strict-origin-when-cross-origin`

▾ Request Headers

⚠ **Provisional headers are shown**

Content-Type: `application/x-www-form-urlencoded`

DNT: `1`

Origin: `null`

Upgrade-Insecure-Requests: `1`

▾ Form Data view source view URL-encoded

username: `username`

password: `password`

INDIVIDUAL HTML EXERCISE

FREE CODE CAMP

- Part of their Responsive Web Design curriculum
- Similar to what we will do in this class in terms of scope
- Just the first project, Learn HTML by Building a Cat Photo App
- https://www.freecodecamp.org/learn/2022/responsive-web-design
- Need to create a free account

Introduction to Coding for Journalists

INTRODUCTION TO CSS

SEPTEMBER 6, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

September 6, 2022

HTML Review

HTML Homework Discussion

Introduction to CSS

CSS Selectors

Styling an HTML File with CSS

Learn CSS Exercise

HTML REVIEW

HTML REVIEW

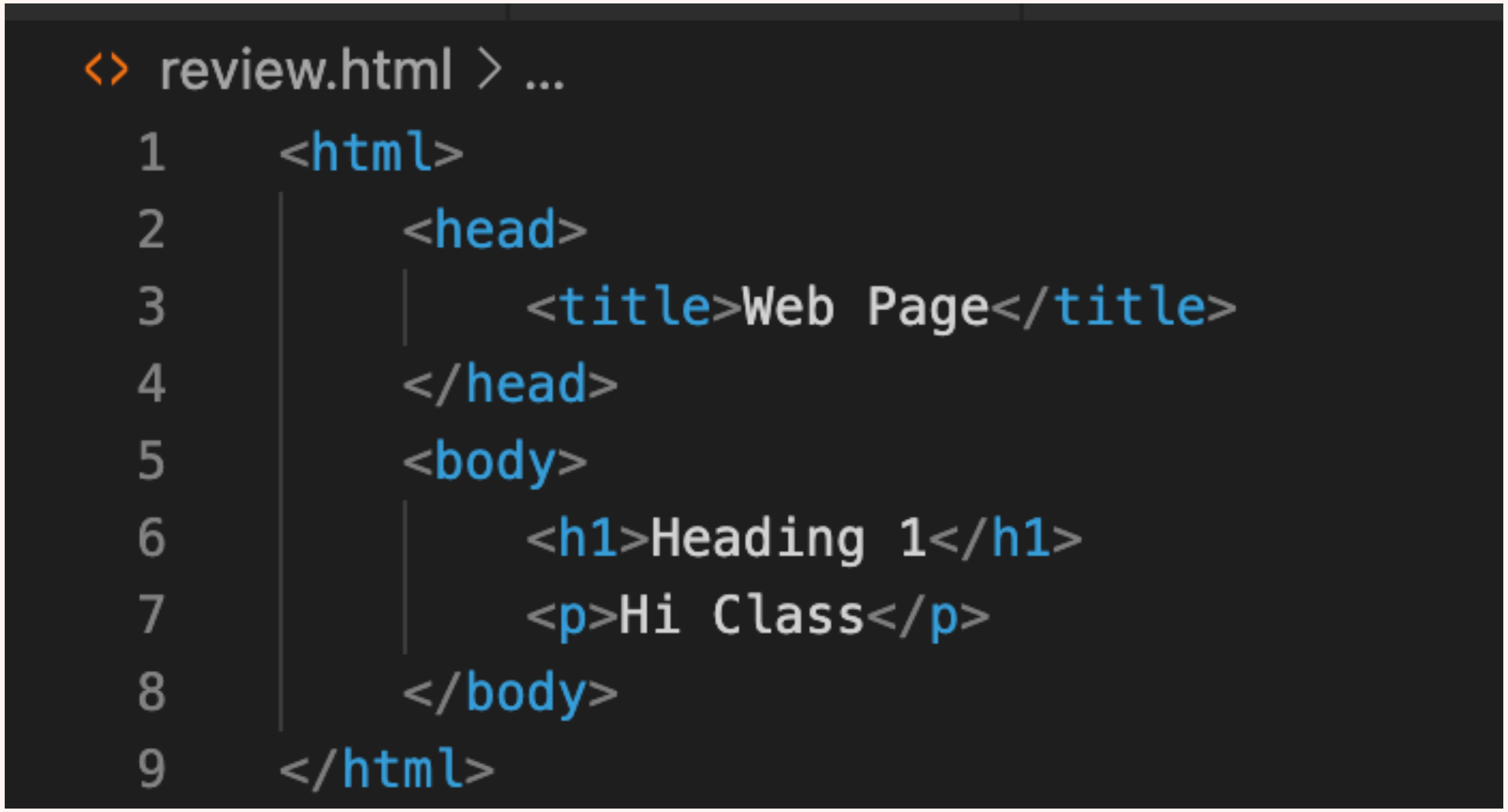
- HTML Elements usually consist of opening and closing tags, along with some content

  ```
  <p>Hi Class!</p>
  ```

- HTML Elements can also be singular

  ```
  <img src="puppy.png"/>
  ```

WEB PAGE STRUCTURE



```html
<html>
    <head>
        <title>Web Page</title>
    </head>
    <body>
        <h1>Heading 1</h1>
        <p>Hi Class</p>
    </body>
</html>
```

- **<html>, <head>, <title>, <body> elements, all typically required**

HTML ASSIGNMENT DISCUSSION

INTRODUCTION TO CSS

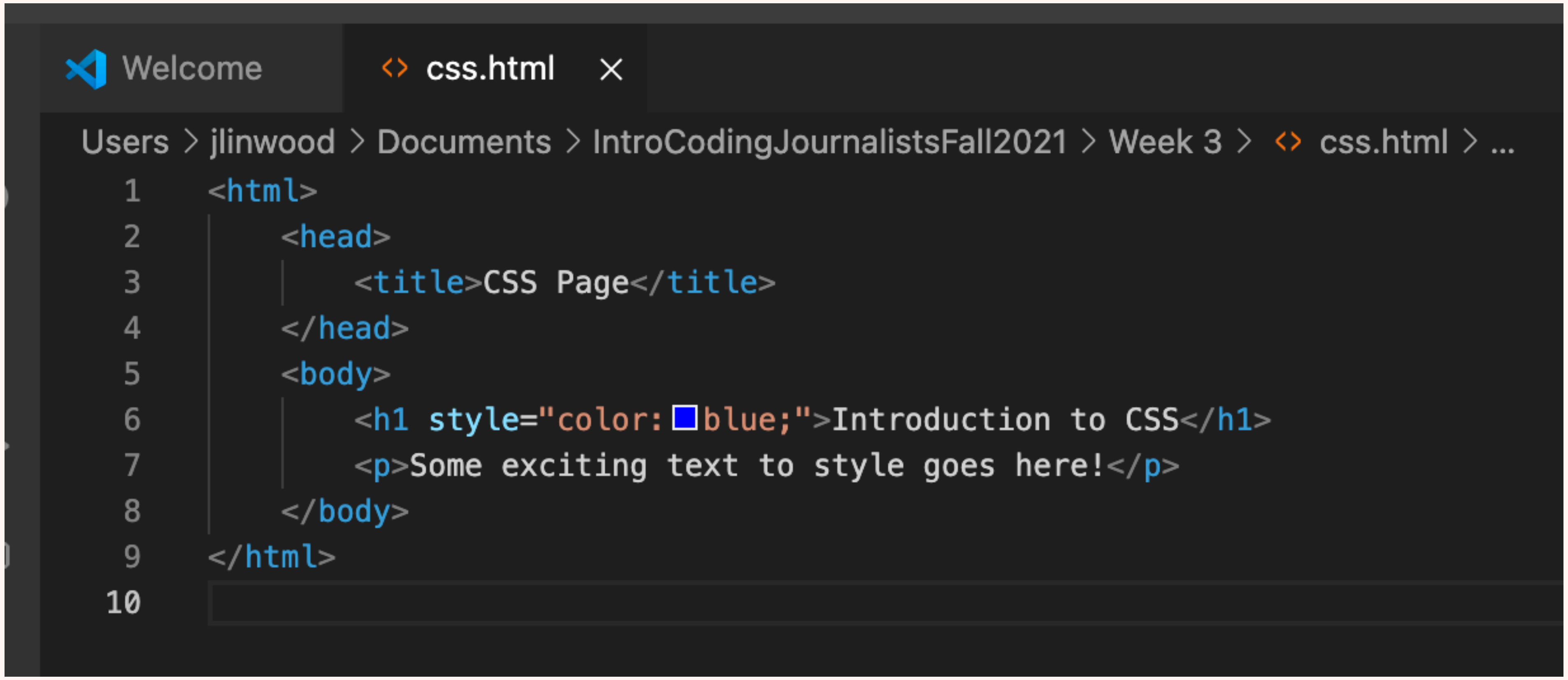
WHAT IS CSS?

- CSS is the abbreviation for Cascading Style Sheets
- It’s how you go from the plain boring HTML we did in class last week to a modern looking web site
- It can be a little complicated

WHAT CAN CSS DO?

- We can use CSS to change colors, fonts, and spacing for individual HTML elements
- Use CSS to layout HTML elements on a web page - for instance, vertical or horizontal alignment
- For your web pages, you can use a CSS library that someone else has created to help with styling

INLINE CSS


Welcome
css.html
Users > jlinwood > Documents > IntroCodingJournalistsFall2021 > Week 3 > css.html > ...

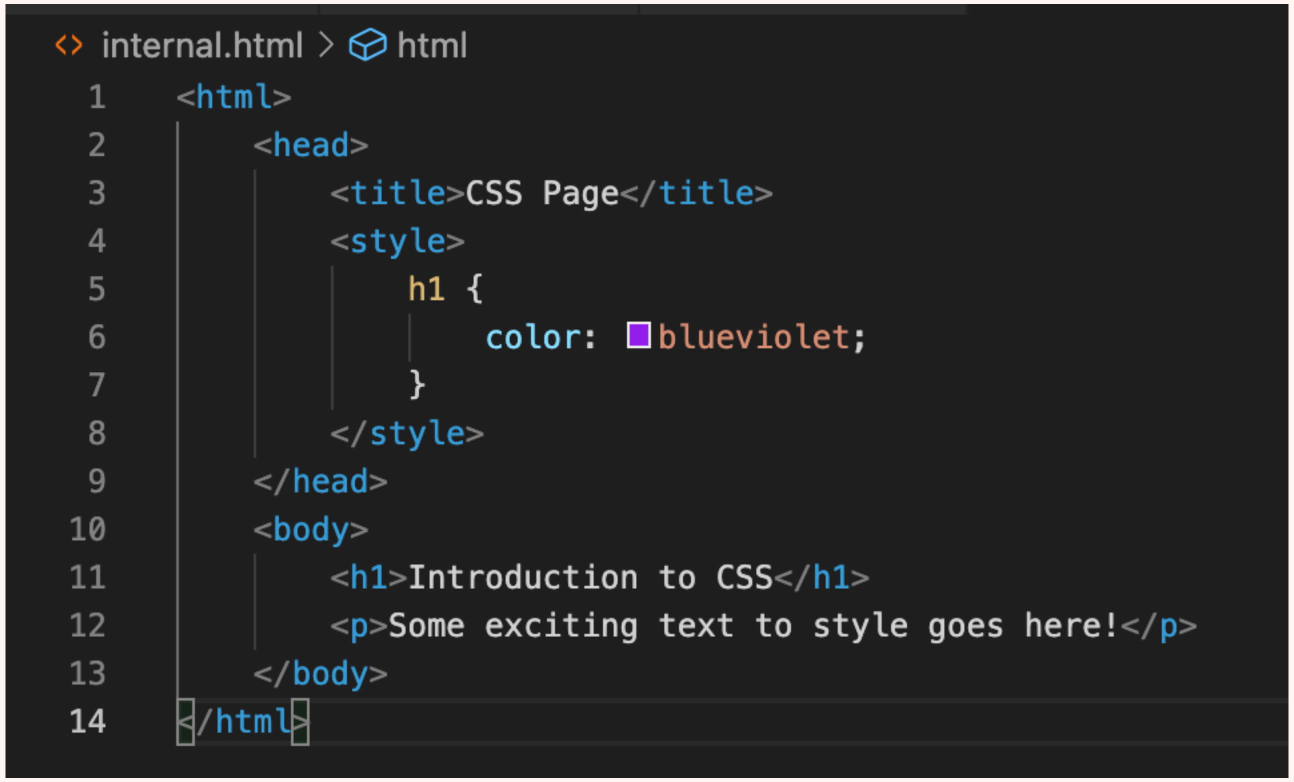
```html
<html>
    <head>
        <title>CSS Page</title>
    </head>
    <body>
        <h1 style="color:blue;">Introduction to CSS</h1>
        <p>Some exciting text to style goes here!</p>
    </body>
</html>
```

- **The style attribute can be added to any HTML tag**
- **The value of the attribute is one or more CSS properties**
- **What is a CSS property?**

CSS PROPERTIES

- Common CSS Properties Reference - https://developer.mozilla.org/en-US/docs/Web/CSS/Reference#index
- There are other properties out there, but we can stick with the basics for now

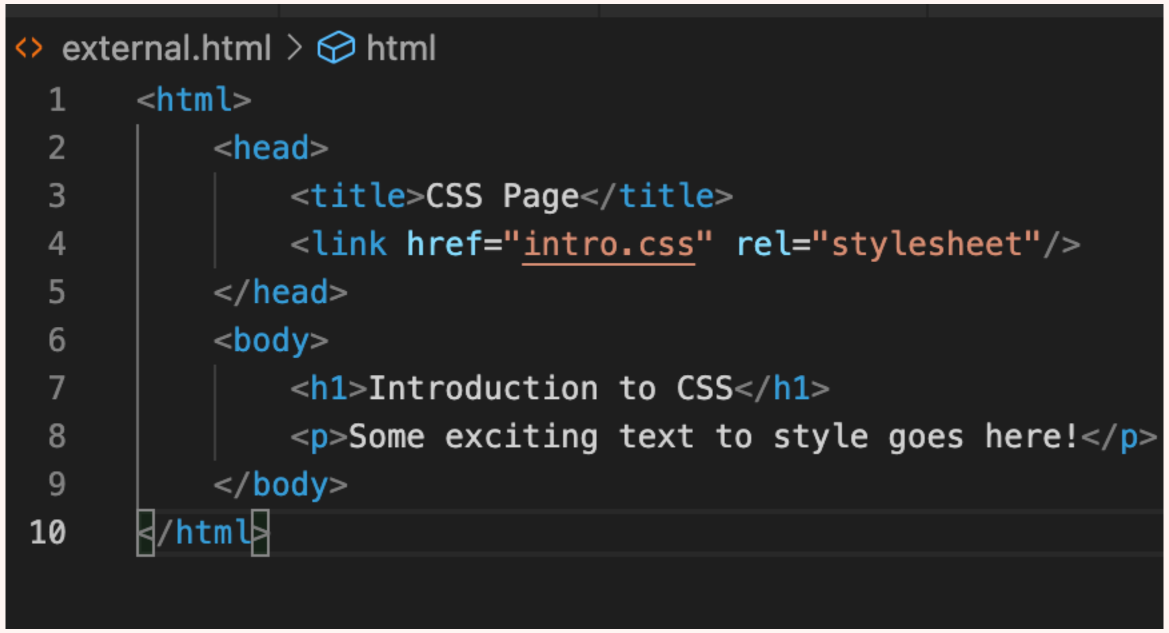
INTERNAL CSS



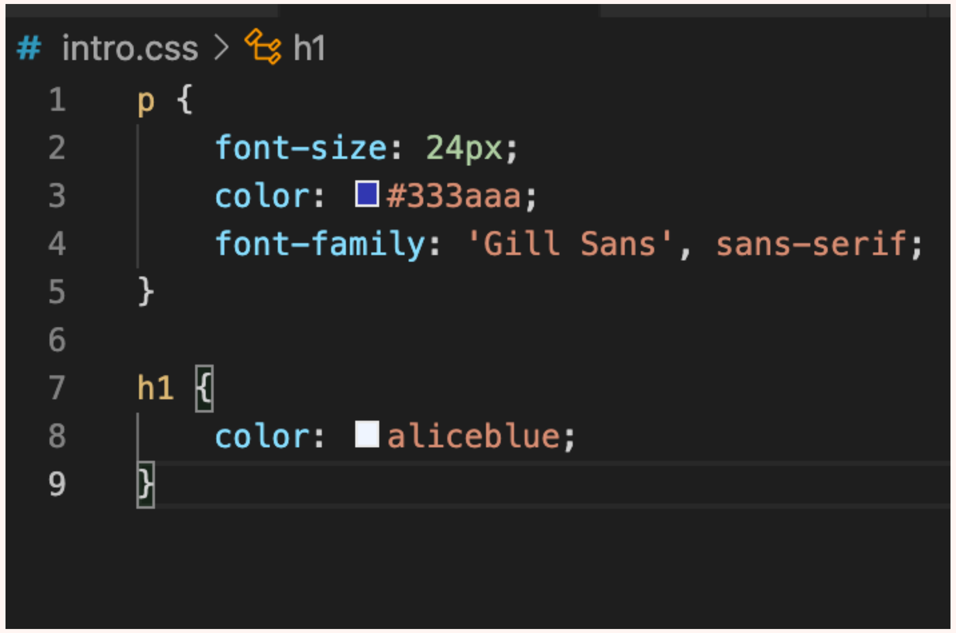
```html
<html>
    <head>
        <title>CSS Page</title>
        <style>
            h1 {
                color: blueviolet;
            }
        </style>
    </head>
    <body>
        <h1>Introduction to CSS</h1>
        <p>Some exciting text to style goes here!</p>
    </body>
</html>
```

- **The <style> element goes into the <head> element**
- **The value of the attribute is one or more CSS properties**
- **What is a CSS property?**

EXTERNAL CSS



```html
<html>
    <head>
        <title>CSS Page</title>
        <link href="intro.css" rel="stylesheet"/>
    </head>
    <body>
        <h1>Introduction to CSS</h1>
        <p>Some exciting text to style goes here!</p>
    </body>
</html>
```



```css
p {
    font-size: 24px;
    color: #333aaa;
    font-family: 'Gill Sans', sans-serif;
}

h1 {
    color: aliceblue;
}
```

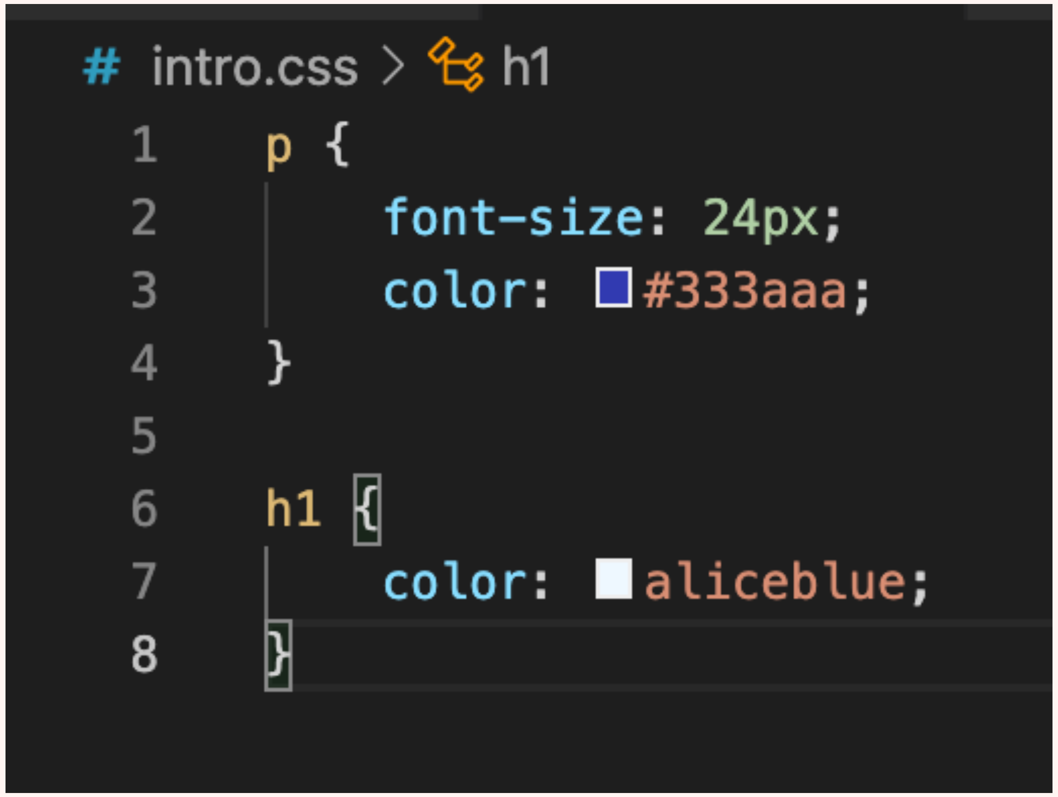
- **Create two files - external.html and intro.css - in the same folder**
- **The `<link>` element belongs in the `<head>` element**
- **Please use this approach for all assignments and projects in this class, unless you are doing a tutorial that requires a separate way**
- **Lets us reuse CSS styles across multiple web pages**

CSS SPECIFITY

- Inline CSS will override CSS from internal or external stylesheets
- https://developer.mozilla.org/en-US/docs/Web/CSS/Specificity
- That link also discusses what happens when you specify id selectors, class selectors, and type or element selectors

COLORS, FONTS, AND MORE

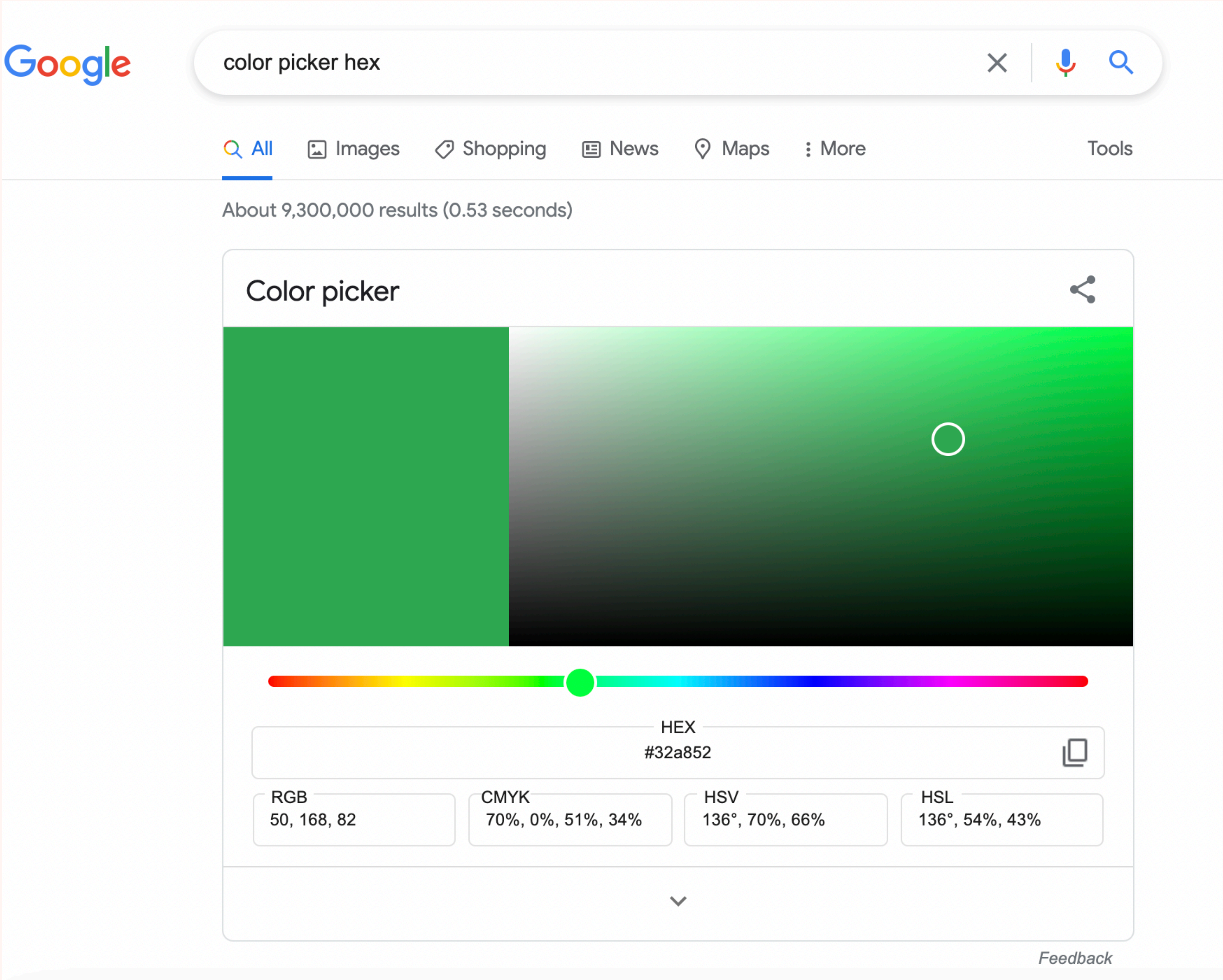
USING DIFFERENT COLORS



```css
p {
    font-size: 24px;
    color: #333aaa;
}

h1 {
    color: aliceblue;
}
```

- Some colors are defined by the W3C: https://www.w3.org/wiki/CSS/Properties/color/keywords
- You can also use hex colors: #131415

PICKING COLORS



color picker hex

About 9,300,000 results (0.53 seconds)

Color picker

HEX
#32a852

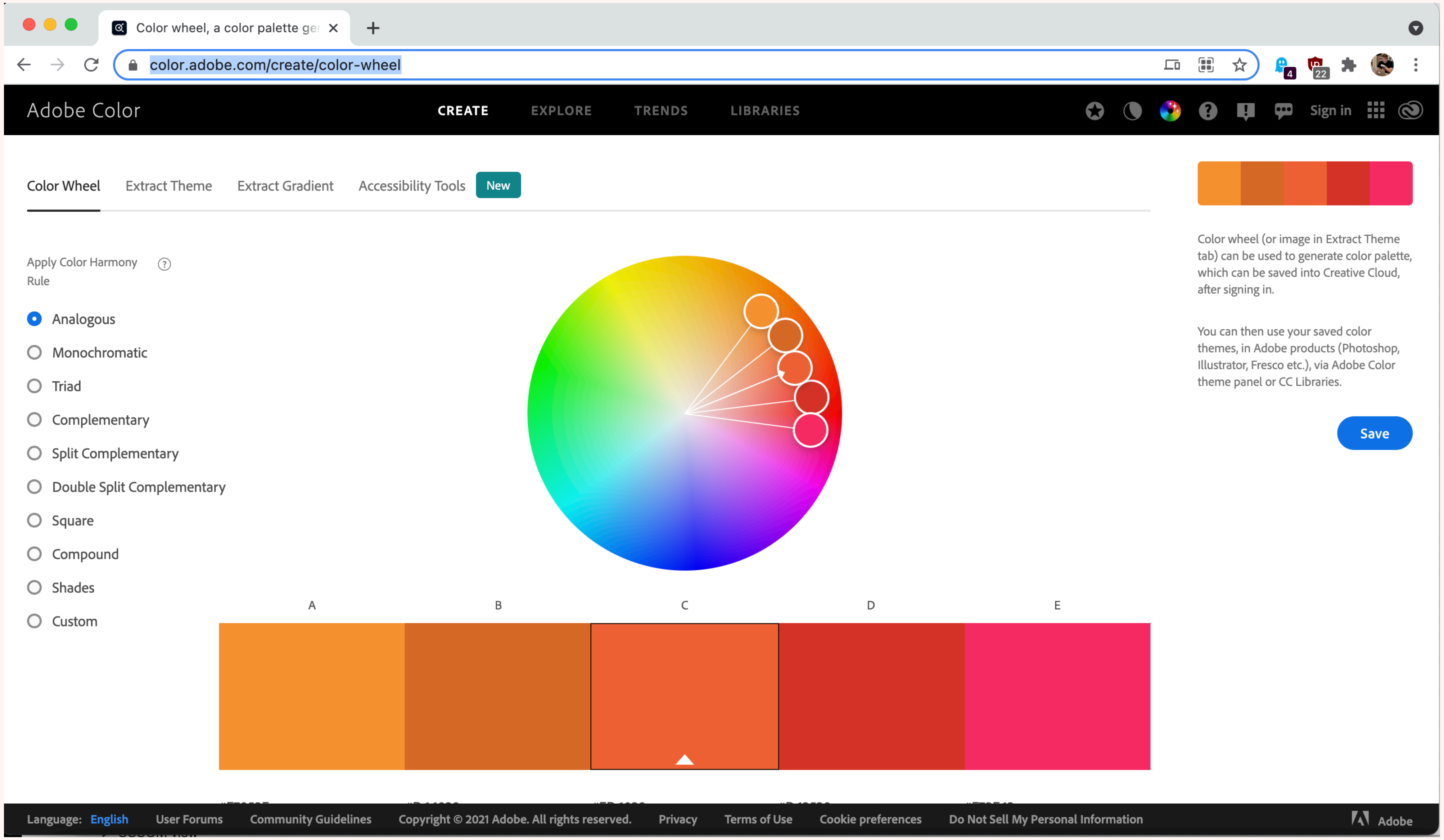
RGB
50, 168, 82

CMYK
70%, 0%, 51%, 34%

HSV
136°, 70%, 66%

HSL
136°, 54%, 43%

ADOBE COLOR



Color wheel, a color palette ge

color.adobe.com/create/color-wheel

Adobe Color

CREATE EXPLORE TRENDS LIBRARIES Sign in

Color Wheel | Extract Theme | Extract Gradient | Accessibility Tools | New

Apply Color Harmony Rule

- ● Analogous
- ○ Monochromatic
- ○ Triad
- ○ Complementary
- ○ Split Complementary
- ○ Double Split Complementary
- ○ Square
- ○ Compound
- ○ Shades
- ○ Custom

Color wheel (or image in Extract Theme tab) can be used to generate color palette, which can be saved into Creative Cloud, after signing in.

You can then use your saved color themes, in Adobe products (Photoshop, Illustrator, Fresco etc.), via Adobe Color theme panel or CC Libraries.

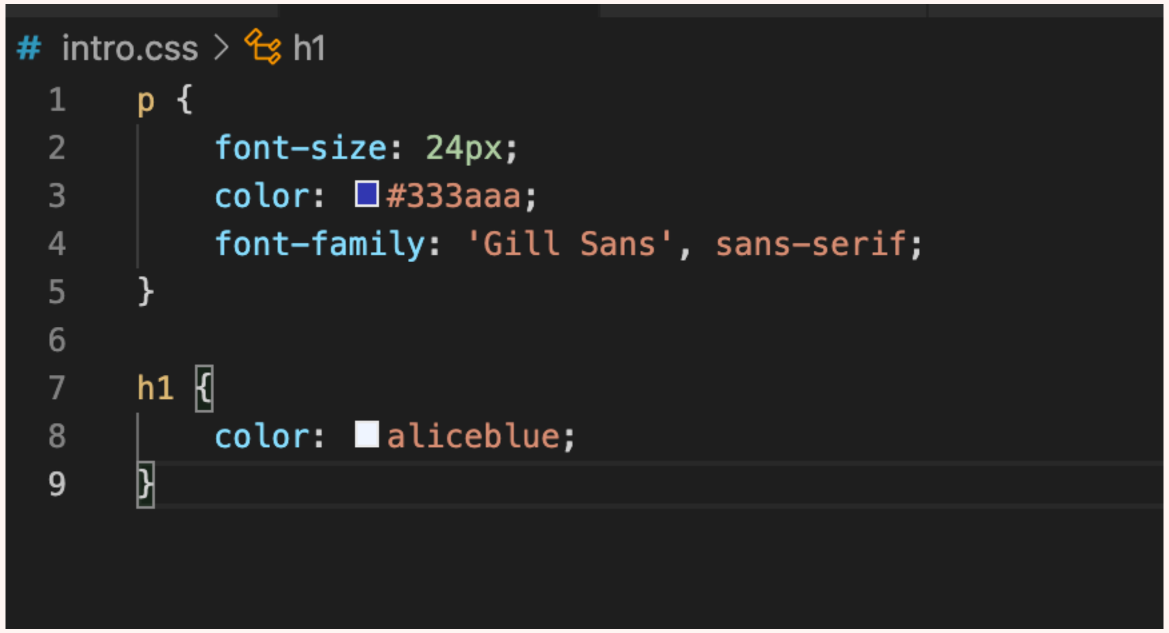
Save

Language: English | User Forums | Community Guidelines | Copyright © 2021 Adobe. All rights reserved. | Privacy | Terms of Use | Cookie preferences | Do Not Sell My Personal Information | Adobe

https://color.adobe.com/create/color-wheel

TAKE SOME TIME TO EXPERIMENT WITH COLORS ON A BASIC WEB PAGE

USING FONT FAMILIES



```css
p {
    font-size: 24px;
    color: #333aaa;
    font-family: 'Gill Sans', sans-serif;
}

h1 {
    color: aliceblue;
}
```

- **The font-family property has a very nice autocomplete in Visual Studio Code**

USING GOOGLE FONTS

- You aren't limited to just the fonts built into the web browser or a desktop computer
- Google Fonts are open source and free to use
- Let's try their Getting Started example

https://developers.google.com/fonts/docs/getting_started

CSS SELECTORS

ELEMENT SELECTORS

- Element selectors (or type selectors) are what we have been using all along - things like h1 or p

CLASS SELECTORS

- **Class selectors - add a class attribute to the HTML file**

```
<p class="class-name">Hi class</p>
```

- **And then reference the class in the CSS with:**

```
.class-name {
  color: blue;
}
```

ID SELECTORS

- Add a unique id attribute to an HTML element

```
<h1 id="bookTitle">My Book</h1>
```

- Can't reuse these id attributes within an HTML page

- Style it in CSS with

```
#bookTitle {
  color: red;
}
```

STYLING AN HTML FILE WITH CSS

IN CLASS WITH ME

FOLLOWING THE TYPESETTING A HOME PAGE EXAMPLE

https://developer.mozilla.org/en-US/docs/Learn/CSS/Styling_text/Typesetting_a_homepage

INDIVIDUAL CSS EXERCISE

FREE CODE CAMP

- You can continue with the HTML Exercises (Learn HTML by Building a Cat Photo App)
- https://www.freecodecamp.org/learn/2022/responsive-web-design/
- Or move on to the CSS Exercises (Learn Basic CSS, Learn CSS Colors)
- https://www.freecodecamp.org/learn/2022/responsive-web-design/learn-basic-css-by-building-a-cafe-menu/step-1
- https://www.freecodecamp.org/learn/2022/responsive-web-design/learn-css-colors-by-building-a-set-of-colored-markers/step-1

Introduction to Coding for Journalists

INTERMEDIATE CSS

SEPTEMBER 13, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

September 13, 2022

CSS Review

CSS Selectors Review

Styling an HTML File with CSS

CSS Box Model

Building out the Box Model Example Page

At your own pace CSS Exercise

HTML ASSIGNMENT QUESTIONS?

CSS REVIEW

CSS REVIEW

- External CSS files get included with the `<link>` tag

```
<link href="intro.css" rel="stylesheet"/>
```

- Each stylesheet can have selectors that set CSS properties that the web browser uses to display the web content

```
h1 {

   color: #E36744;

   font-size: 48px;

  font-family: 'Gill Sans';

}
```

CSS SELECTORS

ELEMENT SELECTORS

- Element selectors (or type selectors) are what we have been using all along - things like h1 or p

CLASS SELECTORS

- Class selectors - add a class attribute to the HTML element

```
<p class="class-name">Hi class</p>
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ID SELECTORS

- Add a unique id attribute to an HTML element

```
<h1 id="bookTitle">My Book</h1>
```

- Can't reuse these id attributes within an HTML page

- Style it in CSS with

```
#bookTitle {
  color: red;
}
```

STYLING AN HTML FILE WITH CSS

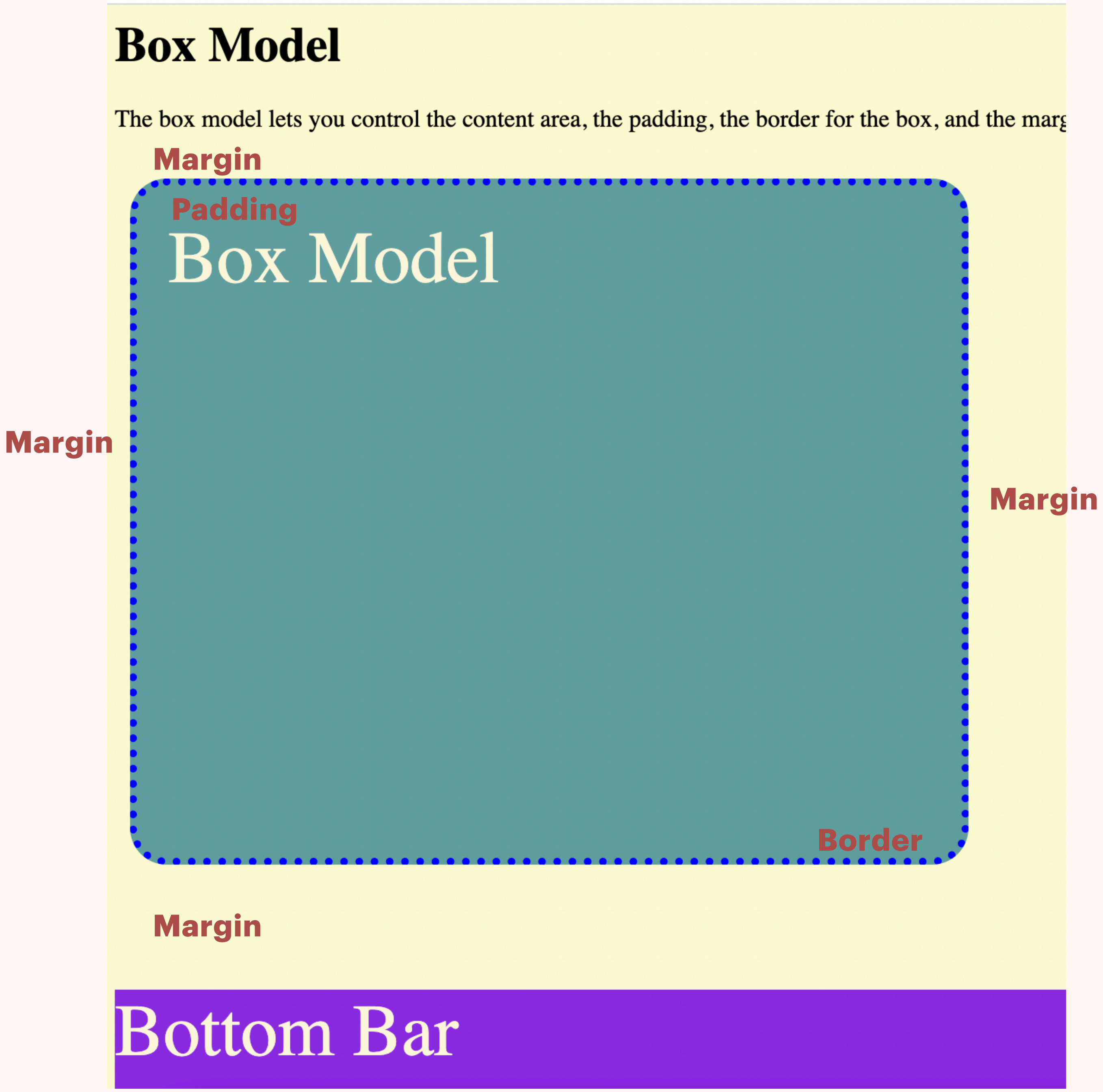
INDIVIDUAL OR WITH A FRIEND IN CLASS EXERCISE

https://developer.mozilla.org/en-US/docs/Learn/CSS/Styling_text/Typesetting_a_homepage

- **Where it mentions font-face - use Google Fonts to find two fonts (body and heading) - don't download fonts**
- **For the links - reference this guide from MDN: https://developer.mozilla.org/en-US/docs/Learn/CSS/Styling_text/Styling_links**
- **Don't be afraid to try Googling some of the things they ask you to do if you don't understand it at first glance - you aren't going to break anything**

CSS BOX MODEL

CSS BOX MODEL



Box Model

The box model lets you control the content area, the padding, the border for the box, and the marg

Box Model

Bottom Bar

- **Content Area**
  Width and Height
- **Padding**
  Between border and contents
  Internal to box
- **Border**
  Used for separation
- **Margin**
  Gutter space between HTML Elements

MDN DISCUSSION OF BOX MODEL

https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Box_Model/Introduction_to_the_CSS_box_model

CONTENT AREA

- width property, height property
- Can be specified in pixels or percentage
  width: 100%;
  width: 800px;
  height: 60%;
- The special auto value keeps the aspect ratio for an image, so it isn't stretched. You can also use it for other HTML elements
  width: 50%;
  height: auto;

MARGINS AND PADDING

- Similar, but not the same
- Margins affects how the HTML element gets placed next to other HTML elements
- Padding changes how the content in the HTML element gets placed relative to the edges of the HTML element

SPECIFYING MARGINS

- Three different ways of setting margins in CSS
- Simplest is to set a consistent margin for all four sides
  margin: 20px;
- More complex is to set one property for each side you want to change
  margin-right: 0px;
  margin-top: 20px;
- Most compact is to use one property and specify four values for margin (top, right, bottom, left):
  margin: 20px 0px 10px 0px;

SPECIFYING PADDING

- Just like margins, there are three different ways of setting padding in CSS

- Set one padding value for all sides
  padding: 5%;

- Set individual values for each side's padding
  padding-left: 5px;
  padding-bottom: 10px;

- Can also specify all four sides individually (top, right, bottom, left):
  padding: 20px 0px 10px 0px;

BORDER

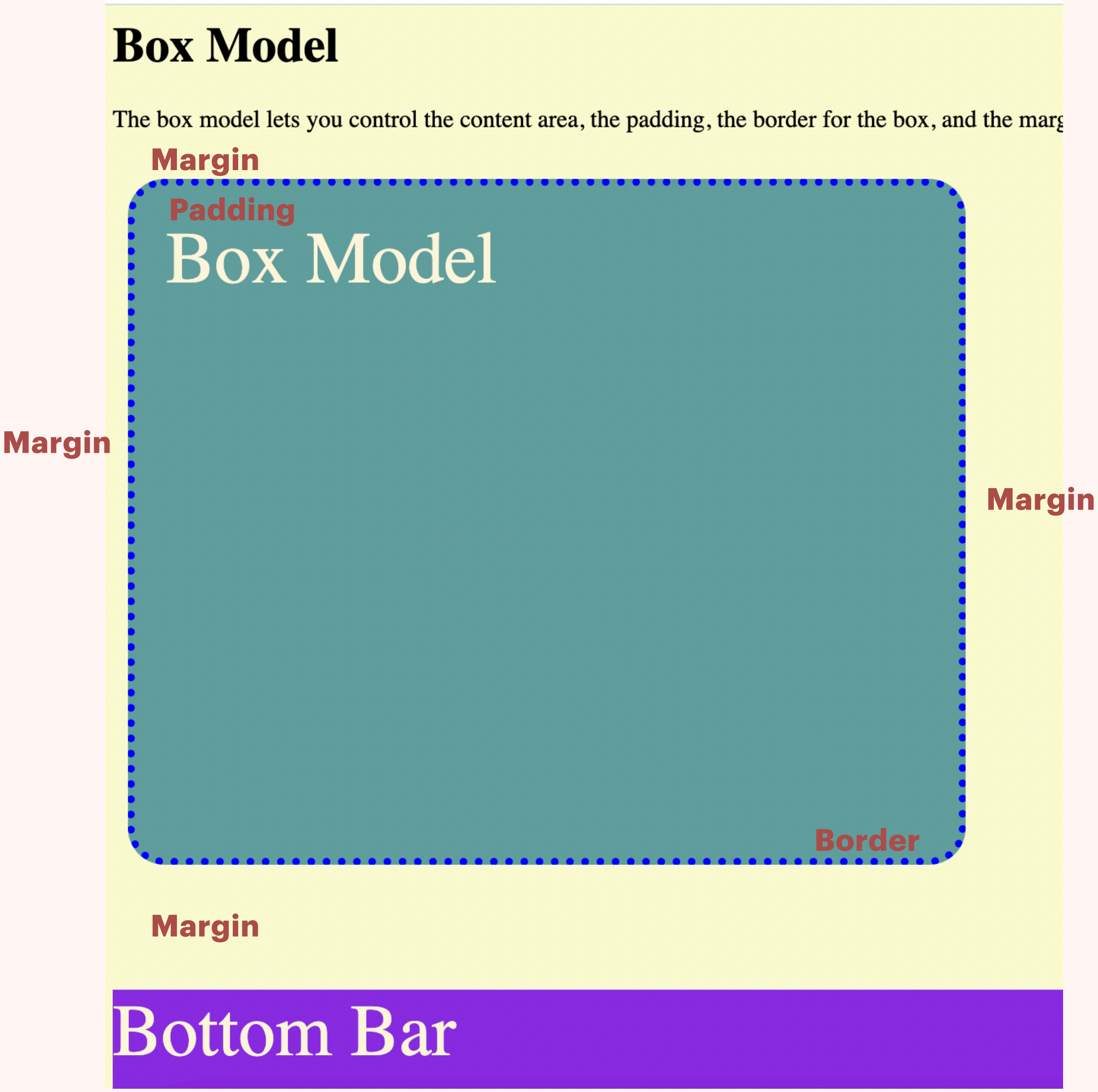
MDN Guide to Borders

https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Backgrounds_and_borders#borders

Try out the interactive editor

LET'S BUILD THE CSS BOX MODEL PAGE

CSS BOX MODEL EXAMPLE



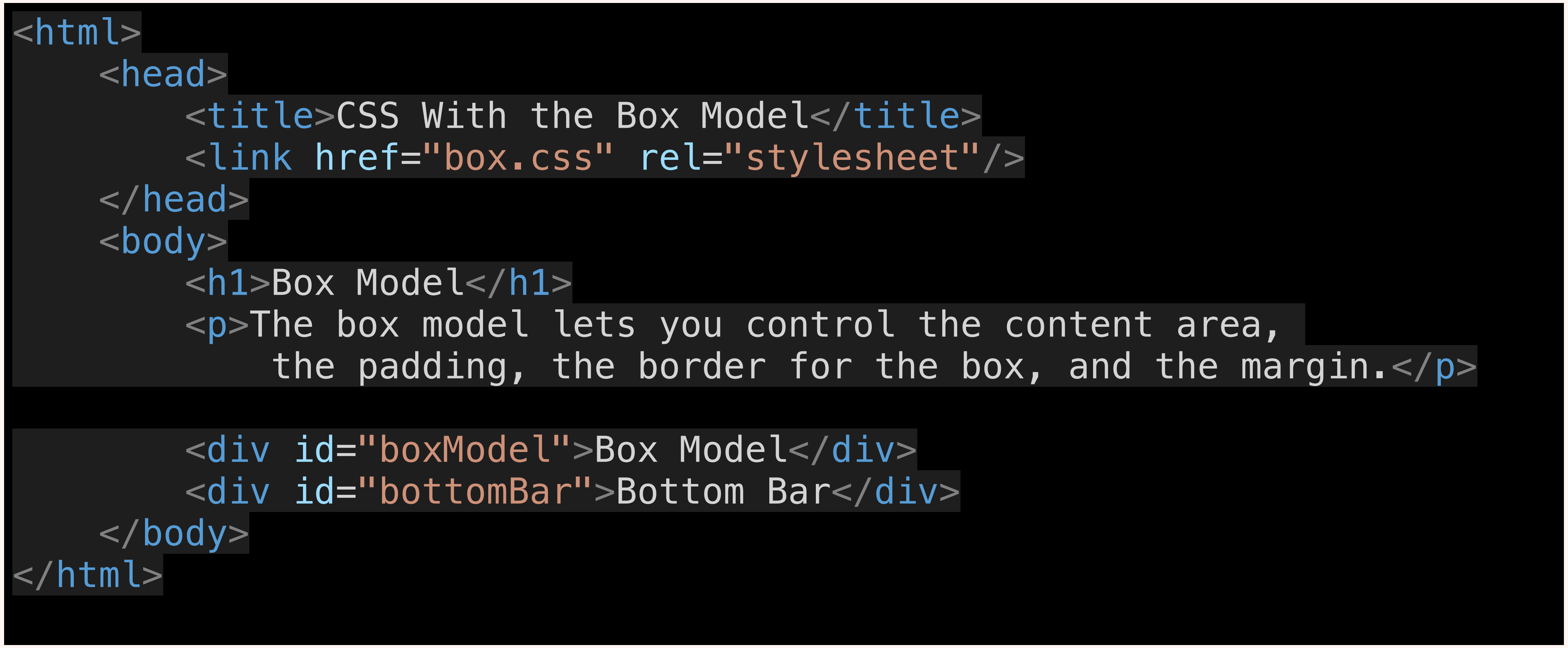
Box Model

The box model lets you control the content area, the padding, the border for the box, and the marg

Box Model

Bottom Bar

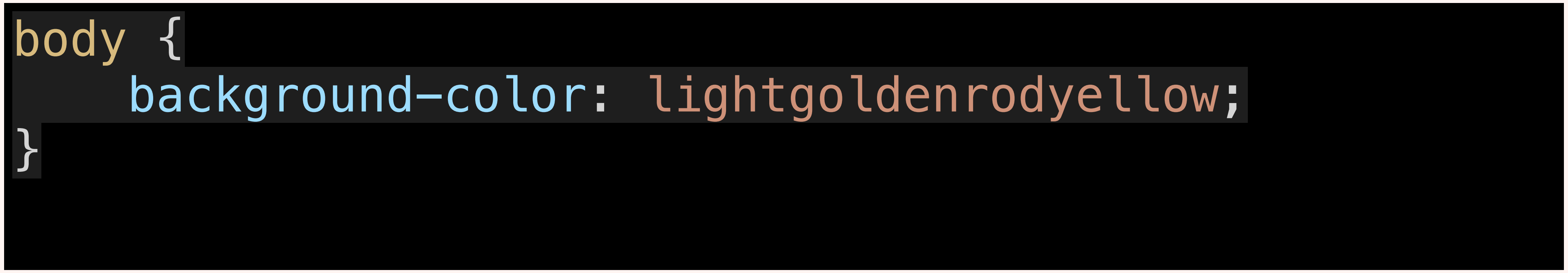
BOX MODEL HTML



```
<html>
    <head>
        <title>CSS With the Box Model</title>
        <link href="box.css" rel="stylesheet"/>
    </head>
    <body>
        <h1>Box Model</h1>
        <p>The box model lets you control the content area, 
            the padding, the border for the box, and the margin.</p>

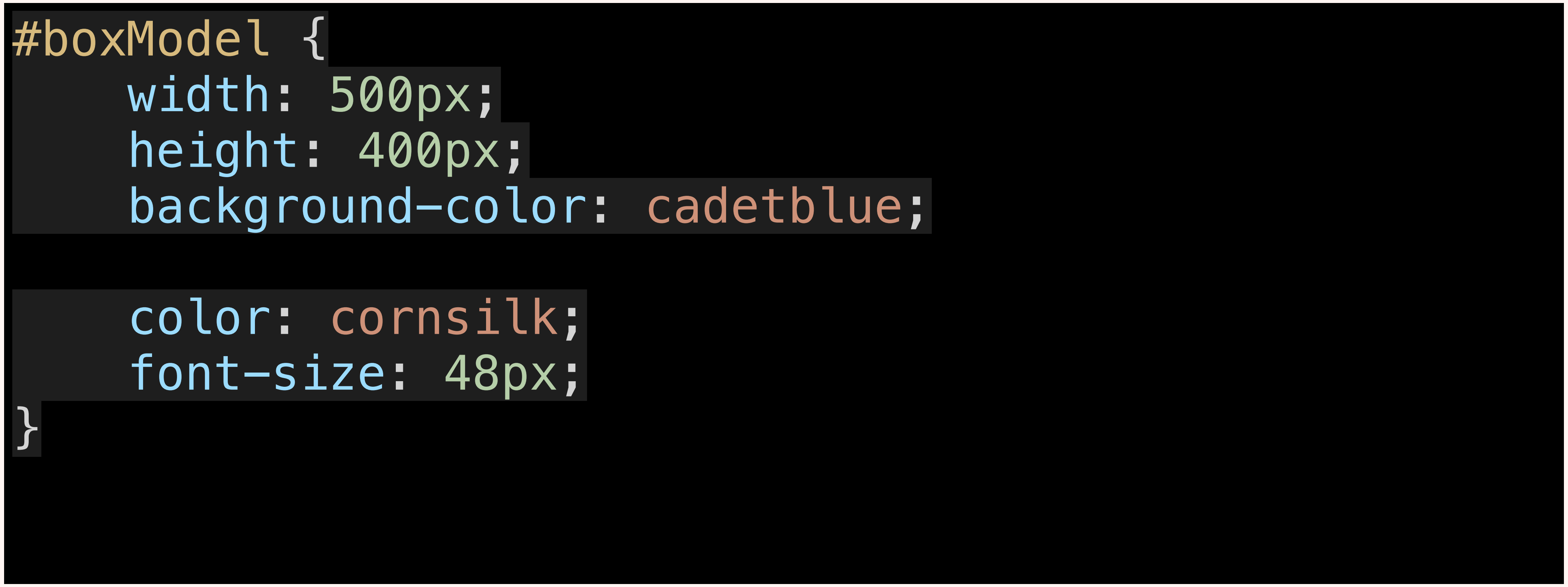
        <div id="boxModel">Box Model</div>
        <div id="bottomBar">Bottom Bar</div>
    </body>
</html>
```

BOX MODEL CSS PART 1



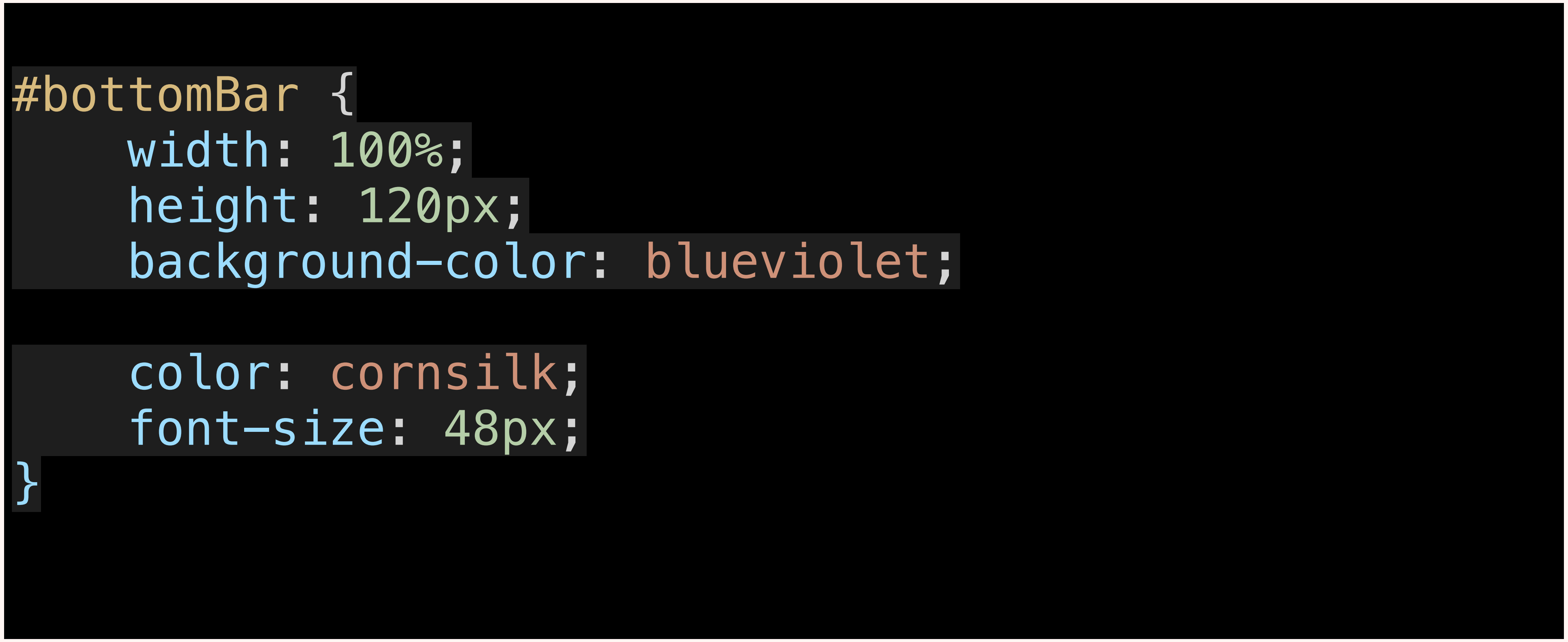
```css
body {
    background-color: lightgoldenrodyellow;
}
```

BOX MODEL CSS CONTENT



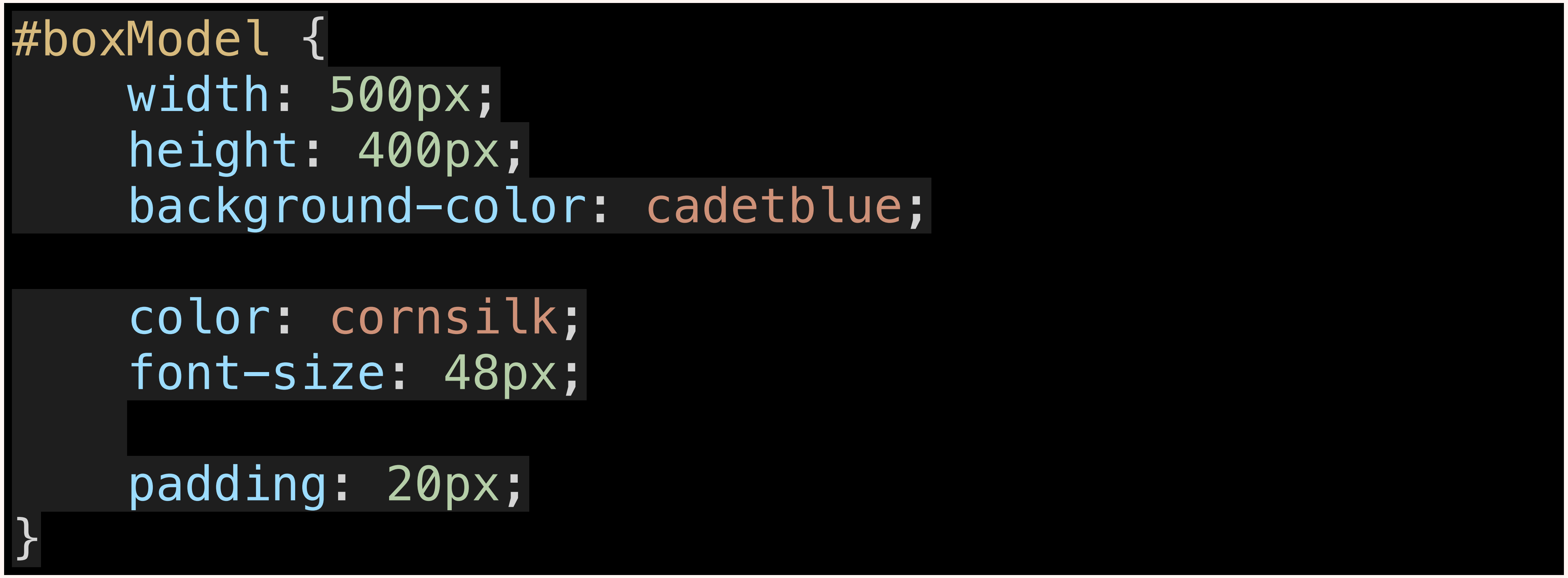
```
#boxModel {
    width: 500px;
    height: 400px;
    background-color: cadetblue;

    color: cornsilk;
    font-size: 48px;
}
```

BOTTOM BAR CSS CONTENT



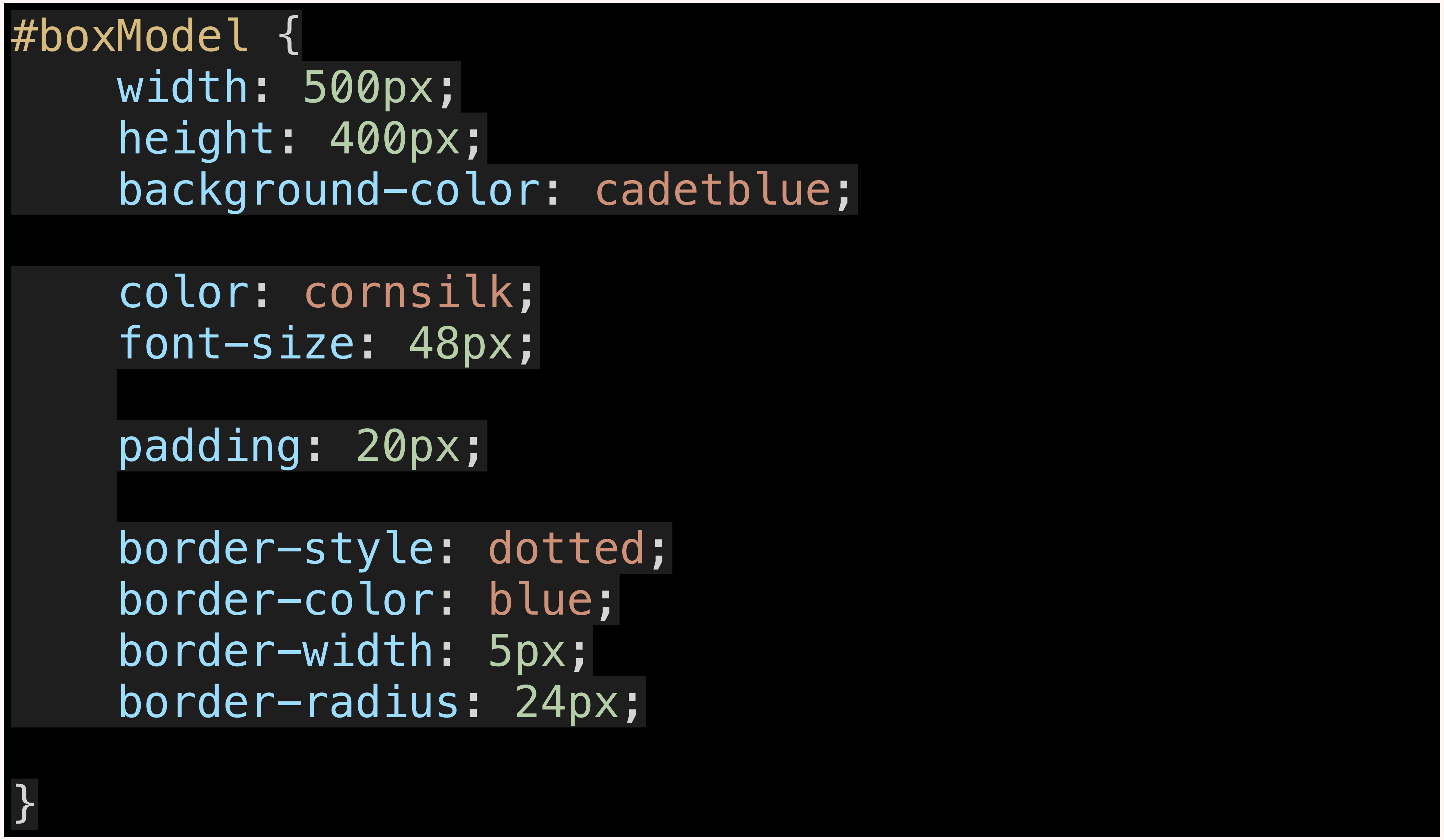
```css
#bottomBar {
    width: 100%;
    height: 120px;
    background-color: blueviolet;

    color: cornsilk;
    font-size: 48px;
}
```

BOX MODEL CSS PADDING



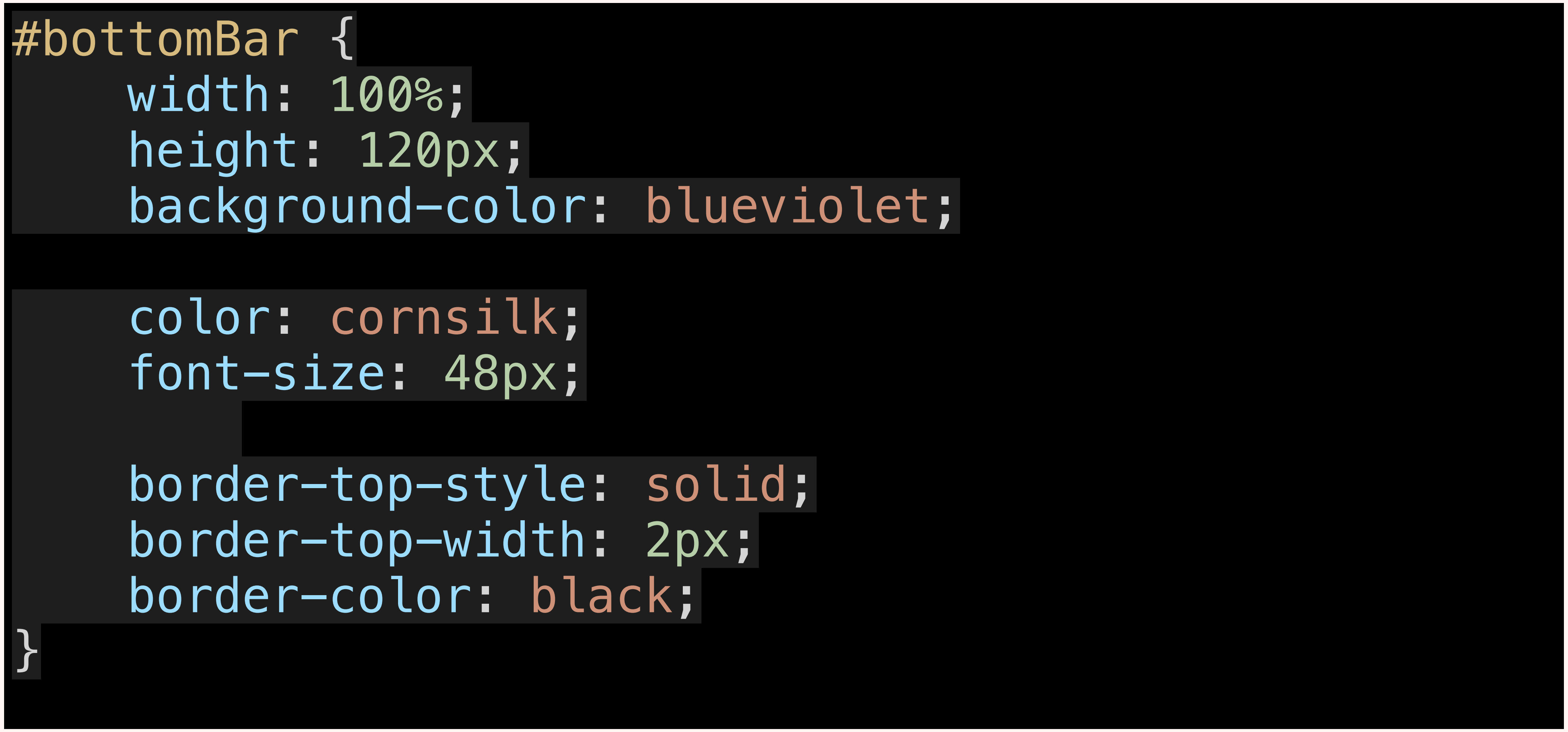
```
#boxModel {
    width: 500px;
    height: 400px;
    background-color: cadetblue;

    color: cornsilk;
    font-size: 48px;

    padding: 20px;
}
```

BOX MODEL CSS BORDER



```css
#boxModel {
    width: 500px;
    height: 400px;
    background-color: cadetblue;

    color: cornsilk;
    font-size: 48px;

    padding: 20px;

    border-style: dotted;
    border-color: blue;
    border-width: 5px;
    border-radius: 24px;

}
```

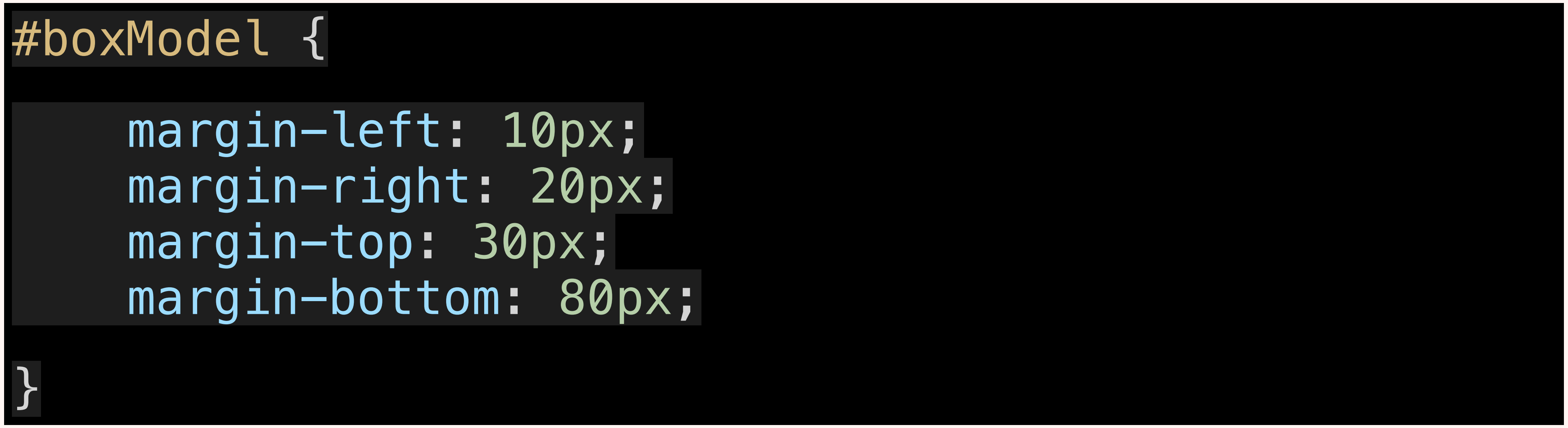
BOTTOM BAR CSS BORDER



```css
#bottomBar {
    width: 100%;
    height: 120px;
    background-color: blueviolet;

    color: cornsilk;
    font-size: 48px;

    border-top-style: solid;
    border-top-width: 2px;
    border-color: black;
}
```

BOX MODEL CSS MARGIN

Previous CSS properties in boxModel removed for clarity in this slide but you would add these four properties to your existing properties



```
#boxModel {

    margin-left: 10px;
    margin-right: 20px;
    margin-top: 30px;
    margin-bottom: 80px;

}
```

ON YOUR OWN

CHANGE THE BOX MODEL PAGE SO IT ALSO HAS AN IMAGE

SET A BORDER, A WIDTH, AND SOME MARGIN AND PADDING ON THE IMAGE USING AN ID SELECTOR

SECOND HALF OF CLASS

INDIVIDUAL EXERCISES

- You can finish up the Free Code Camp CSS exercises

  https://www.freecodecamp.org/learn/2022/responsive-web-design/learn-basic-css-by-building-a-cafe-menu/step-1

  https://www.freecodecamp.org/learn/2022/responsive-web-design/learn-css-colors-by-building-a-set-of-colored-markers/step-1

- Or work on the CSS Assignment that is due on the 25th
- Optionally, if you are done with all of that, you can do the Code Academy CSS Exercises

Introduction to Coding for Journalists

RESPONSIVE DESIGN AND INTRO TO BOOTSTRAP

SEPTEMBER 20, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

September 20, 2022

Thoughts on the HTML Assignment

CSS Assignment

What is Responsive Design?

CSS Media Queries

Getting Started with Bootstrap

Individual Exercises

CSS ASSIGNMENT

WHAT IS RESPONSIVE DESIGN?

HOW THINGS USED TO WORK

- In the olden times, before the very first iPhone (2007), there were two different web worlds
- Mobile Web
- Desktop Web
- They weren't the same
- Back then, mobile Web Browsers were weird! Look up WAP and WML

IPHONE 2007

- Everything changed with the iPhone in 2007. Now desktop web was on the iPhone
- They didn't even exactly know what to really call it (Internet Communicator)
- Watch the first three minutes: https://www.youtube.com/watch?v=x7qPAY9JqE4

RESPONSIVE DESIGN

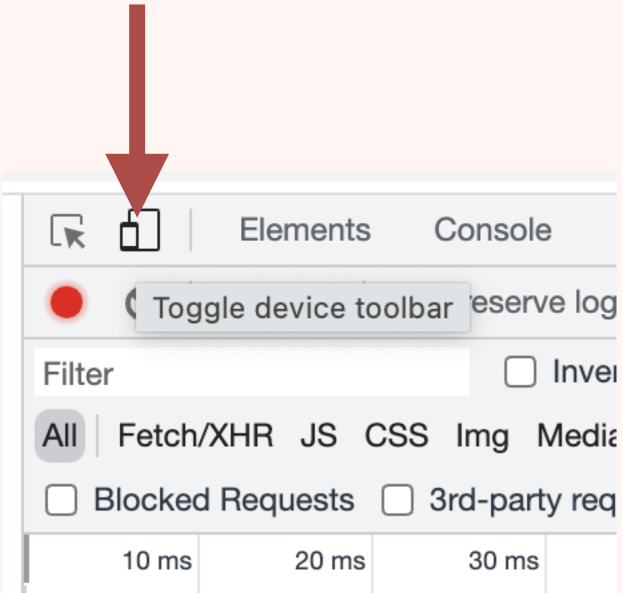
- Your web page layout adapts to the way the user is viewing the web page
- The same HTML elements on the page on desktop, tablet, or mobile
- Generally uses a grid to layout the web page
    - For instance, the grid could have 12 columns, and on desktop, the sidebar would take 4 columns, and the main area would take 8
    - On mobile, the main area might take 12 columns, and the sidebar could be hidden
- In depth discussion on MDN (https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Responsive_Design)

LET'S TRY IT OURSELVES

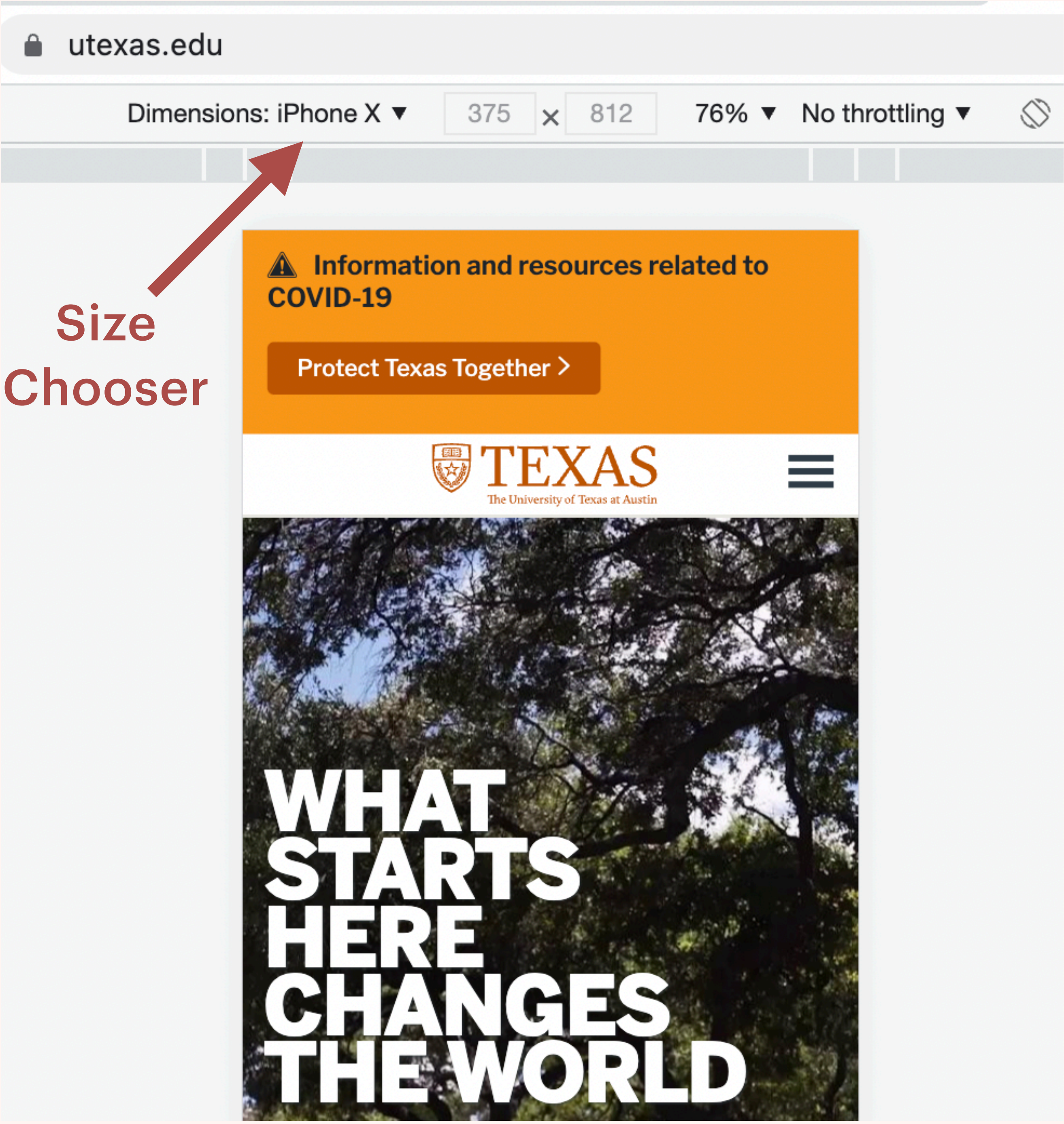
TRY YOUR HTML ASSIGNMENT

- Let's try to see what your HTML assignment project looks like on a mobile phone or tablet
- You don't have to upload it somewhere, but you can if you want to!
- Chrome has responsive developer tools built in, and so does Firefox

Responsive Design Tools



TESTING RESPONSIVE DESIGNS


utexas.edu
Dimensions: iPhone X ▼
375 × 812
76% ▼
No throttling ▼
Size Chooser
Information and resources related to COVID-19
Protect Texas Together >
TEXAS
The University of Texas at Austin
WHAT STARTS HERE CHANGES THE WORLD

- Try loading up a page like https://www.utexas.edu/ in a size from a mobile phone
- Now try your web page from the HTML assignment
- How does it look?

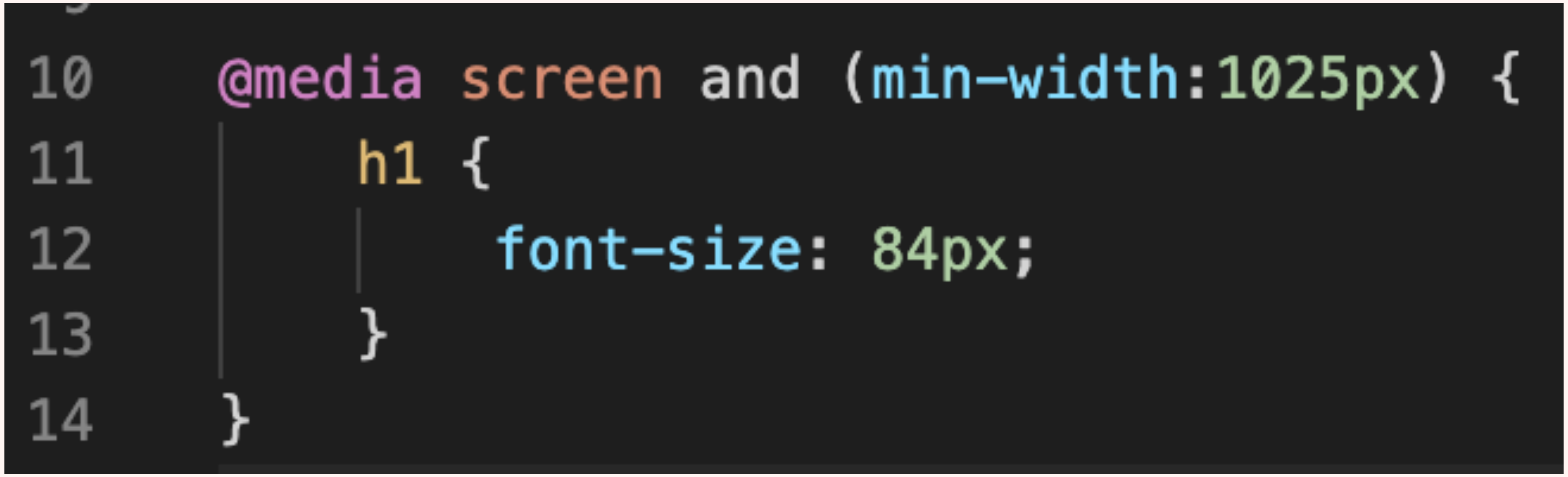
RESPONSIVE DESIGN ARTICLE

RESPONSIVE DESIGN ARTICLE

- Responsive Design, by Ethan Marcotte, 2010
- https://alistapart.com/article/responsive-web-design/
- Let's go read it, and then discuss it
- It's definitely ok not to understand parts or all of it!

MEDIA QUERIES

WHAT ARE MEDIA QUERIES?



```
@media screen and (min-width:1025px) {
    h1 {
        font-size: 84px;
    }
}
```

- Apply CSS rules when certain conditions are met
- Use @media to declare them, and they can contain any CSS style
- We are going to concern ourselves with the width of the web browser (screen)
  min-width and max-width

LET'S TRY ONE OUT

```
<html>
    <head>
        <title>Media Queries</title>
        <link href="mediaquery.css" rel="stylesheet"/>
    </head>
    <body>
        <h1>Media Queries</h1>
        <p>Some very interesting things about media queries!</p>
    </body>
</html>
```

mediaquery.html

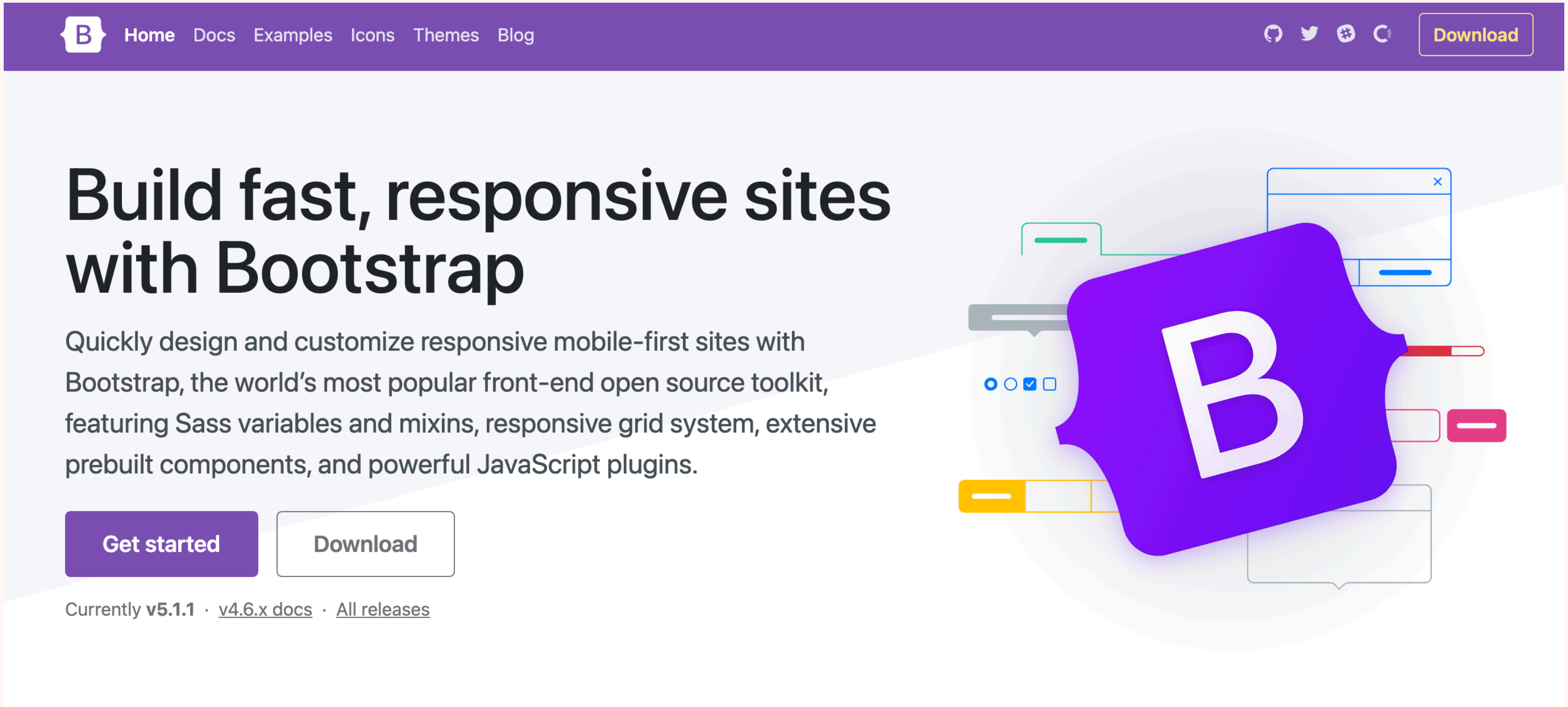
THE CSS FILE

```
@media screen and (max-width:1024px) {
    h1 {
        font-size: 42px;
    }
    p {
        display: none;
    }
}

@media screen and (min-width:1025px) {
    h1 {
        font-size: 84px;
    }
}
```

mediaquery.css

BOOTSTRAP FRAMEWORK

WHAT IS BOOTSTRAP?



Build fast, responsive sites with Bootstrap

Quickly design and customize responsive mobile-first sites with Bootstrap, the world's most popular front-end open source toolkit, featuring Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful JavaScript plugins.

Currently **v5.1.1** · v4.6.x docs · All releases

https://getbootstrap.com/

GETTING STARTED

- We're going to get started with Bootstrap by setting up our own page, based on the Starter HTML template on this page: https://getbootstrap.com/docs/5.2/getting-started/introduction/
- We have not talked about Javascript yet and the `<script>` tag
- The `<script>` tag lets us bring in Javascript files that provide new functionality to our web page
- Javascript will actually be the second half of this course
- In this particular case, the code is written for us

OPEN SOURCE CODE

- Bootstrap is the first third party code we will use in our project, but it won't be the last
- Bootstrap is open source
- What does that mean?
- Bootstrap uses the MIT License

TOUR OF BOOTSTRAP COMPONENTS

- Bootstrap has lots of things built in
- Next week, we will talk more about the Bootstrap Grid, and how to use some of the components in your application
- If or when you do the Code Academy Bootstrap class, they will cover quite a few of these

SECOND HALF OF CLASS

INDIVIDUAL EXERCISES

- You can work on the CSS Assignment that is due on the 25th
- Or try the Bootstrap lessons on Free Code Camp https://www.freecodecamp.org/learn/front-end-development-libraries/#bootstrap
- You can also finish up the HTML5 or CSS exercises from Free Code Camp: https://www.freecodecamp.org/learn/2022/responsive-web-design
- Codecademy also has a class: https://www.codecademy.com/learn/make-a-website/modules/make-a-website-bootstrap-u
-

Introduction to Coding for Journalists

ACCESSIBILITY AND BOOTSTRAP

SEPTEMBER 27, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

September 27, 2022

CSS Assignment Discussion

Intro to Accessibility

Accessibility Checking with Lighthouse

Bootstrap Grid Model

Bootstrap Forms

CSS ASSIGNMENT

INTRO TO ACCESSIBILITY

WHAT IS ACCESSIBILITY?

- The art and science of making your web sites available to everyone
- Original web focus was on screen readers and limited power web browsers - providing alt tags for images
- The scope has broadened to recognize all kinds of different abilities
- I would like everyone to think a little broadly about what accessibility and universal design might mean

W3C AND ACCESSIBILITY

- https://www.w3.org/WAI/fundamentals/accessibility-intro/
- Video Introduction (4:07): https://www.w3.org/WAI/videos/standards-and-benefits/
- The detailed guidelines - as text, and then as an expandable reference
- https://www.w3.org/TR/WCAG21/
- https://www.w3.org/WAI/WCAG21/quickref/

ACCESSIBILITY DISCUSSION

- What does Accessibility mean to you?
- I'd like you all to take some time to learn more about the topic, for the next 15 minutes or so
- Choose a resource from the following list, or find your own, and be prepared to talk a little about it
- Then let's have a discussion as a group

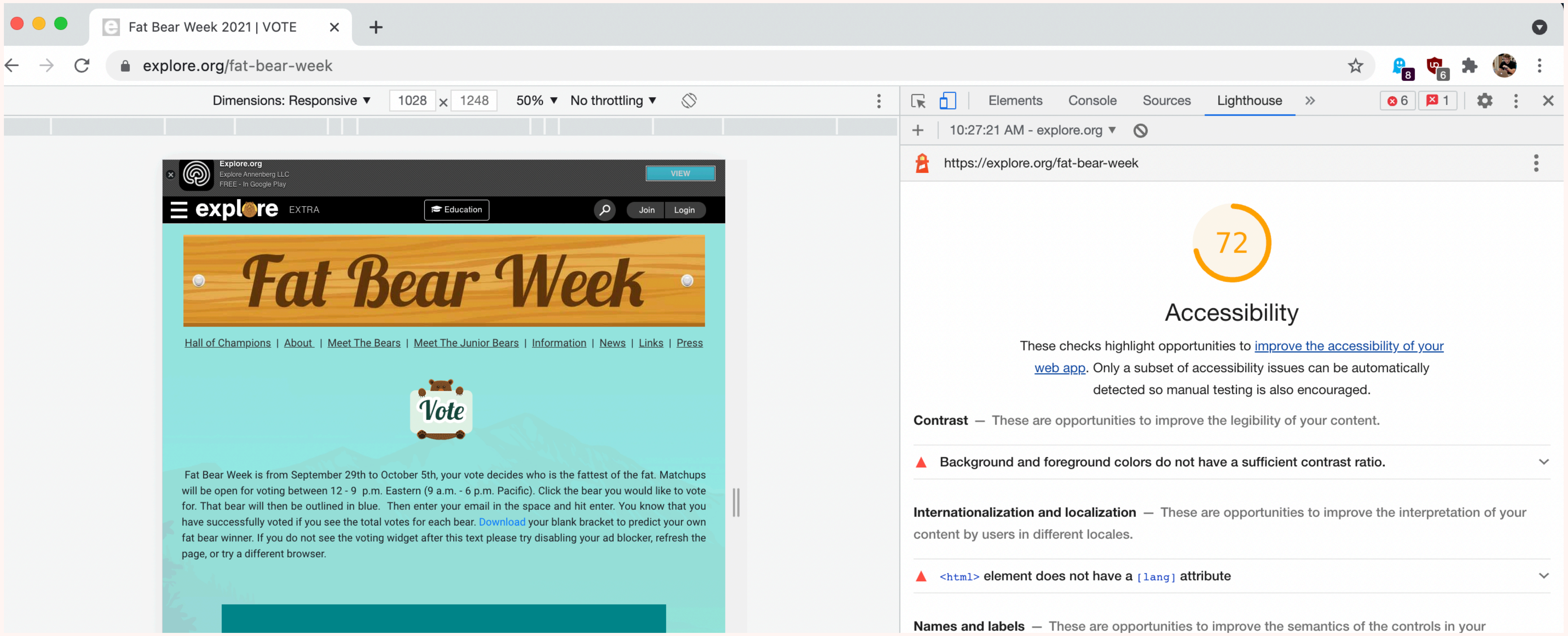
ACCESSIBILITY RESOURCES

Not just Web and HTML resources

- https://www.microsoft.com/en-us/accessibility
- https://developer.mozilla.org/en-US/docs/Web/Accessibility
- https://www.apple.com/accessibility/
- https://www.google.com/accessibility/

ACCESSIBILITY TESTING

ACCESSIBILITY TESTING


Fat Bear Week 2021 | VOTE
explore.org/fat-bear-week
Dimensions: Responsive ▼
1028
1248
50% ▼
No throttling ▼
Explore.org
Explore Annenberg LLC
FREE - In Google Play
VIEW
explore
EXTRA
Education
Join
Login
Fat Bear Week
Hall of Champions | About | Meet The Bears | Meet The Junior Bears | Information | News | Links | Press
Vote
Elements
Console
Sources
Lighthouse
6
1
10:27:21 AM - explore.org ▼
https://explore.org/fat-bear-week
72

Fat Bear Week is from September 29th to October 5th, your vote decides who is the fattest of the fat. Matchups will be open for voting between 12 - 9 p.m. Eastern (9 a.m. - 6 p.m. Pacific). Click the bear you would like to vote for. That bear will then be outlined in blue. Then enter your email in the space and hit enter. You know that you have successfully voted if you see the total votes for each bear. Download your blank bracket to predict your own fat bear winner. If you do not see the voting widget after this text please try disabling your ad blocker, refresh the page, or try a different browser.

Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

Contrast — These are opportunities to improve the legibility of your content.

▲ Background and foreground colors do not have a sufficient contrast ratio.

Internationalization and localization — These are opportunities to improve the interpretation of your content by users in different locales.

▲ `<html>` element does not have a `[lang]` attribute

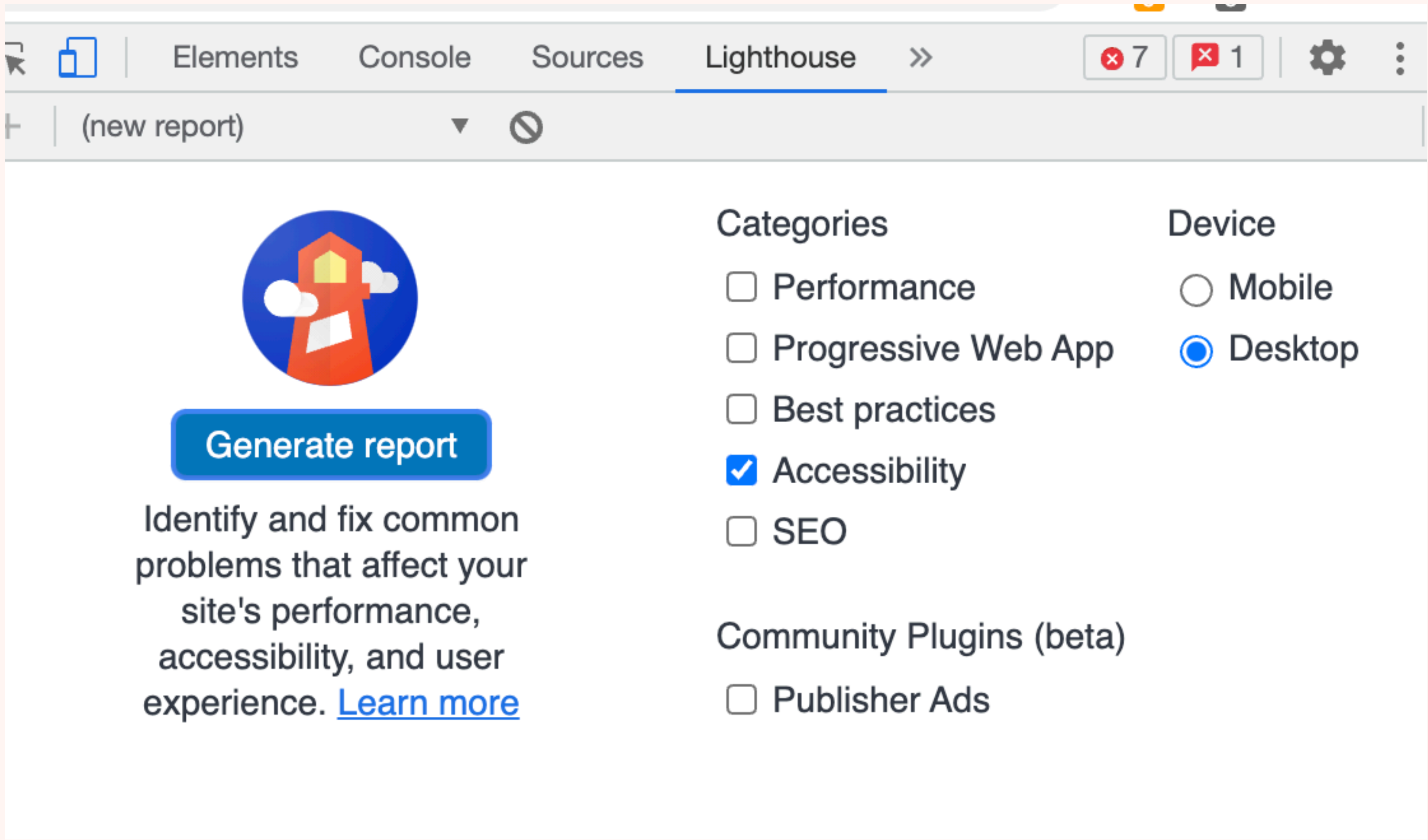
Names and labels — These are opportunities to improve the semantics of the controls in your

- **Several different tools out there for automated accessibility testing**
- **We will use Lighthouse, which is built into Chrome Developer Tools**
- **Take the results into consideration, not as hard and fast rules**

GOOGLE LIGHTHOUSE

- Here is a guide to using Lighthouse
- https://developers.google.com/web/tools/lighthouse
- We can just use it in Chrome, we don't need the other ways of using it

USE LIGHTHOUSE YOURSELF



Identify and fix common problems that affect your site's performance, accessibility, and user experience. Learn more

Categories

- ☐ Performance
- ☐ Progressive Web App
- ☐ Best practices
- ☑ Accessibility
- ☐ SEO

Device

- ○ Mobile
- ● Desktop

Community Plugins (beta)

- ☐ Publisher Ads

- **In Chrome Developer Tools, one of the last tabs (Could be hidden in >> menu)**
- **Only leave the Accessibility Checkbox checked**
- **Try yourself on a web page for Mobile, then Desktop (Generate Report)**

RESULTS FROM TESTING

- After trying a few web sites, let's discuss what the tools have found
- What do you understand from the results? What isn't clear?

BOOTSTRAP GRID

BOOTSTRAP REVIEW

- Let's go over Bootstrap again in class
- And then let's get the starter web template up on our screens

- https://getbootstrap.com/docs/5.1/getting-started/introduction/

BOOTSTRAP GRID

- We are going to go through the Bootstrap Grid documentation in class together
- https://getbootstrap.com/docs/5.1/layout/grid/
- Use the Starter Template web page from last week https://getbootstrap.com/docs/5.1/getting-started/introduction/

BOOTSTRAP FORMS

BOOTSTRAP FORMS

- https://getbootstrap.com/docs/5.1/forms/overview/
- Let's go through this together and try some of the forms

SECOND HALF OF CLASS

INDIVIDUAL EXERCISES

- Please work on the Accessibility and Bootstrap Assignment that is due on the 9th
- There are only four questions in the Free Code Camp Responsive Design lesson: https://www.freecodecamp.org/learn/responsive-web-design/#responsive-web-design-principles
  - Then do the Free Code Camp Accessibility exercises:
    `
- Or try the Bootstrap lessons on Free Code Camp https://www.freecodecamp.org/learn/front-end-development-libraries/#bootstrap

Introduction to Coding for Journalists

SOURCE CONTROL WITH GIT AND GITHUB

OCTOBER 4, 2022

Jeff Linwood

UT-AUSTIN

TODAY’S CLASS

October 4, 2022

Accessibility and Responsive Design Assignment

Review of Accessibility Checking with Lighthouse

Review of Bootstrap Grid Model

Intro to Git

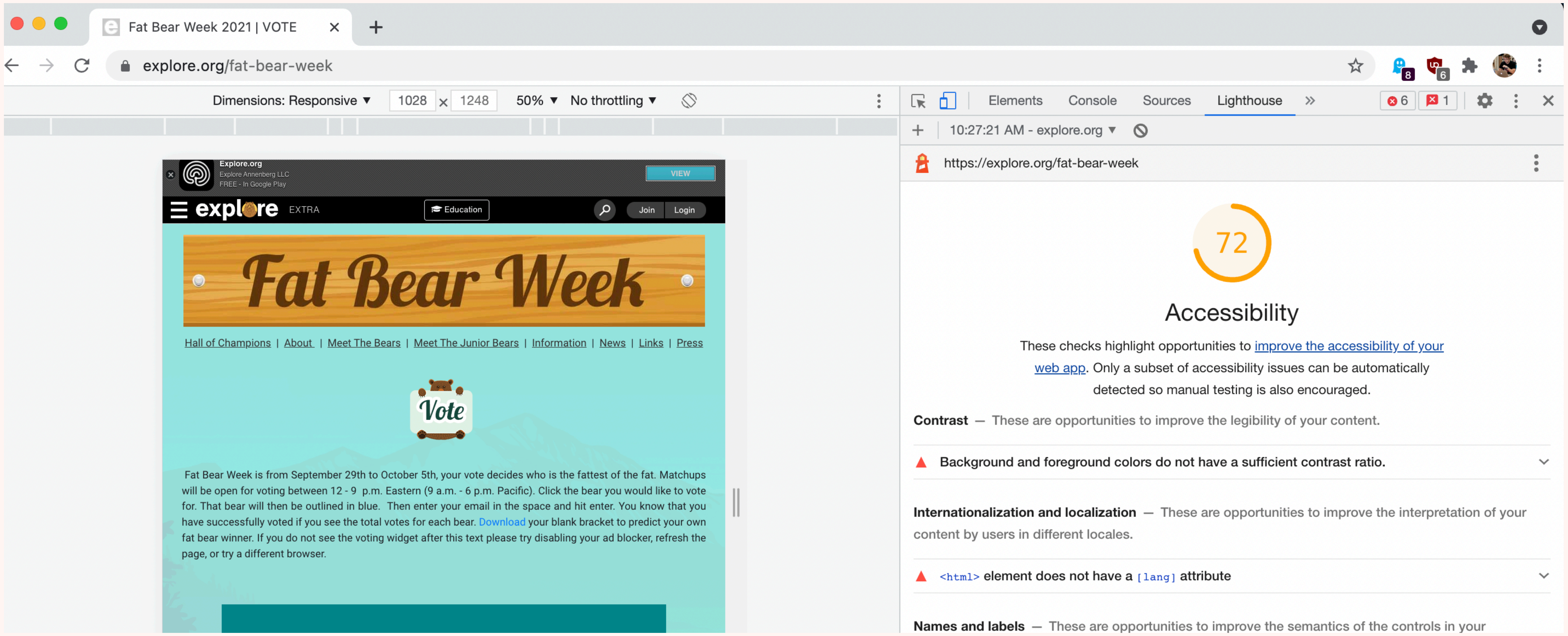
Intro to GitHub

Using GitHub Pages to Publish a Web Page

ACCESSIBILITY AND RESPONSIVE DESIGN ASSIGNMENT

REVIEW OF ACCESSIBILITY TESTING

USING LIGHTHOUSE FOR AN AUDIT



Fat Bear Week is from September 29th to October 5th, your vote decides who is the fattest of the fat. Matchups will be open for voting between 12 - 9 p.m. Eastern (9 a.m. - 6 p.m. Pacific). Click the bear you would like to vote for. That bear will then be outlined in blue. Then enter your email in the space and hit enter. You know that you have successfully voted if you see the total votes for each bear. Download your blank bracket to predict your own fat bear winner. If you do not see the voting widget after this text please try disabling your ad blocker, refresh the page, or try a different browser.

https://explore.org/fat-bear-week

72

Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

Contrast — These are opportunities to improve the legibility of your content.

▲ Background and foreground colors do not have a sufficient contrast ratio.

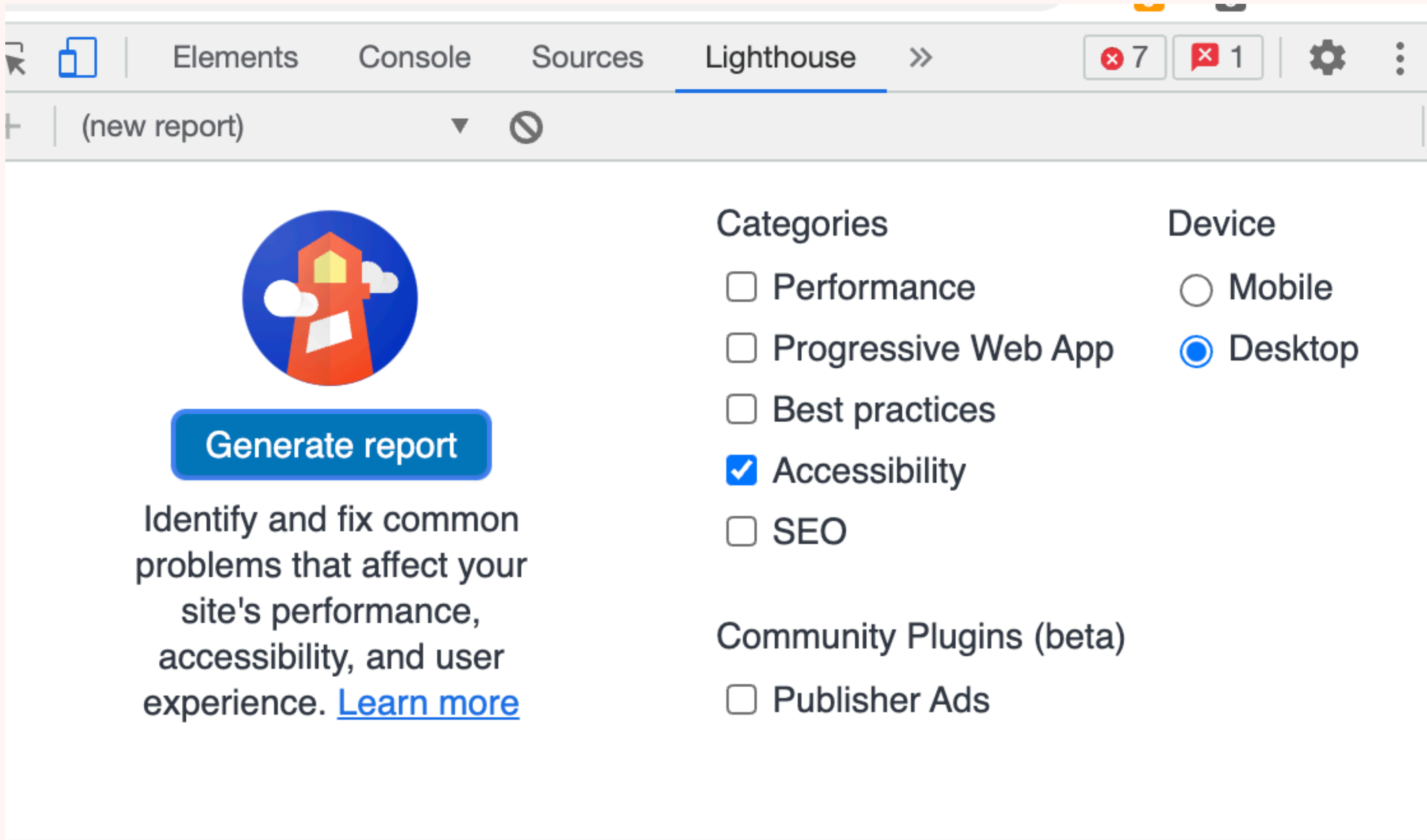
Internationalization and localization — These are opportunities to improve the interpretation of your content by users in different locales.

▲ `<html>` element does not have a `[lang]` attribute

Names and labels — These are opportunities to improve the semantics of the controls in your

- We will use Lighthouse, which is built into Chrome Developer Tools
- https://developers.google.com/web/tools/lighthouse
- Take the results into consideration, not as hard and fast rules

WHERE TO FIND LIGHTHOUSE



Identify and fix common problems that affect your site's performance, accessibility, and user experience. Learn more

Categories

- ☐ Performance
- ☐ Progressive Web App
- ☐ Best practices
- ☑ Accessibility
- ☐ SEO

Device

- ○ Mobile
- ● Desktop

Community Plugins (beta)

- ☐ Publisher Ads

- **In Chrome Developer Tools, one of the last tabs (Could be hidden in >> menu)**
- **Only leave the Accessibility Checkbox checked**
- **Try yourself on a web page for Mobile, then Desktop (Generate Report)**

REVIEW OF BOOTSTRAP GRID

REVIEW OF BOOTSTRAP GRID

- Container
- Row
- Columns
- 12 Column Grid
- Example tutorial https://www.tutorialrepublic.com/twitter-bootstrap-tutorial/bootstrap-grid-system.php

INTRO TO SOURCE CONTROL

WHAT IS SOURCE CONTROL?

- **How many of you have shared projects with group members where you worked on a file or files outside Google Docs?**
- **How do you keep things in sync?**
- **How would we do it if we were all working on the same set of HTML pages?**

WHAT IS GIT?

- Git is one kind of version control or source control
- It is the most popular
- Many people use GitHub to host their git repositories (what are those?) but Bitbucket and GitLab are also options
- Use Git from the command line, from desktop apps, or from Visual Studio Code

INTRO TO GITHUB

- Let's all sign up for GitHub if you have not already, so that we can get started
- https://github.com/
- https://docs.github.com/en
- https://docs.github.com/en/get-started/quickstart/hello-world

GIT BASICS

- Git Repository - where your source code (like your HTML pages) is stored
- Git Command Line vs Git Desktop
- Working Directory, Staging Area, Local Repository, Remote Repository
- https://towardsdatascience.com/getting-started-with-git-and-github-6fcd0f2d4ac6
- https://product.hubspot.com/blog/git-and-github-tutorial-for-beginners

GITHUB PAGES

- Publish your own web pages using GitHub Pages
- https://pages.github.com/
- Follow the guide on this page, and we will publish our first HTML web site to the web
- Download GitHub Desktop
- https://desktop.github.com/

INDIVIDUAL WORK

INDIVIDUAL EXERCISES

- Please work on the Accessibility and Responsive Design Assignment that is due on the 9th
- Or go through the Git Guides from GitHub and experiment with GitHub Pages
- Free Code Camp Git Lesson (Video) https://www.freecodecamp.org/news/git-and-github-crash-course/
- More information (from MDN) https://developer.mozilla.org/en-US/docs/Learn/Tools_and_testing/GitHub
- Next week, we will start programming with Javascript

Introduction to Coding for Journalists

BEGINNING JAVASCRIPT

OCTOBER 11, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

October 11, 2022

Introduction to Programming

Introduction to JavaScript

Basics of JavaScript

Individual Work

INTRO TO PROGRAMMING

INTRO TO PROGRAMMING

- Really, it's all about telling the computer what you want it to do
- Everything is both extremely flexible, and extremely inflexible at the same time
- There is not a lot of nuance
- We've written computer programs that can automatically find faces in video, blur everything else around them, and do it live, but the programming environments we use get flummoxed by a missing parenthesis

GETTING FRUSTRATED

- There will be times when you write your programs, and it will feel magical because everything clicked and it worked
- Other times, you will get frustrated, and need to step away from the computer for a bit
- Both of those are absolutely ok. This is different from other course work you might have done in college

INTRO TO JAVASCRIPT

WHAT IS JAVASCRIPT

- JavaScript is one of many programming languages, but it is the primary one used in web technology, especially on the web browser side (the front end)
- Sometimes lumped in with HTML and CSS, but it works differently
- Understanding JavaScript takes you from creating web pages to becoming a web programmer

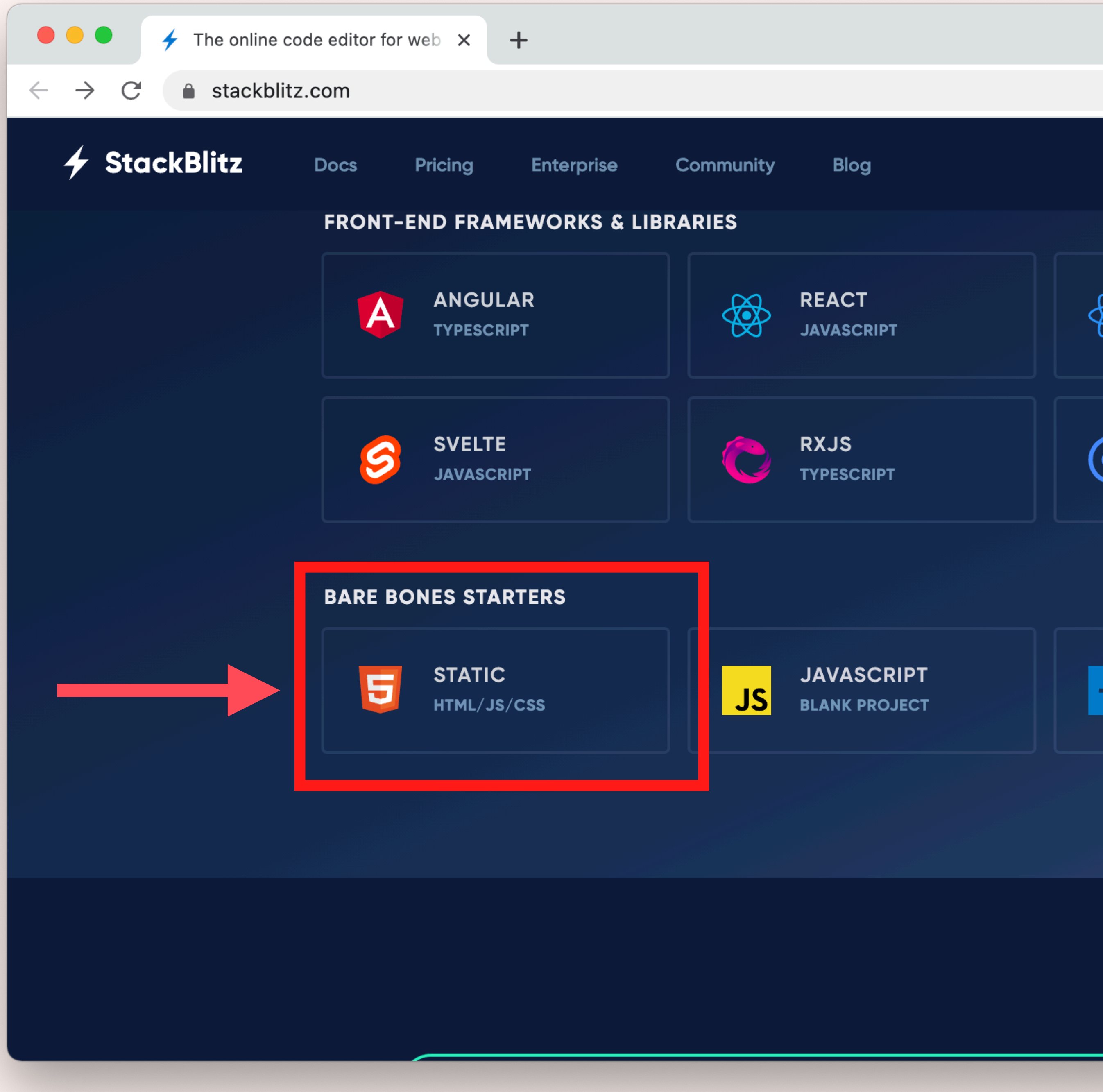
WHERE TO RUN JAVASCRIPT?

- We can run some JavaScript directly in the web browser
- So we could open up Visual Studio Code, and edit there, and then reload the web browser
- We can look in the Developer Console to see messages
- Or we can use an Integrated Development Environment (IDE)

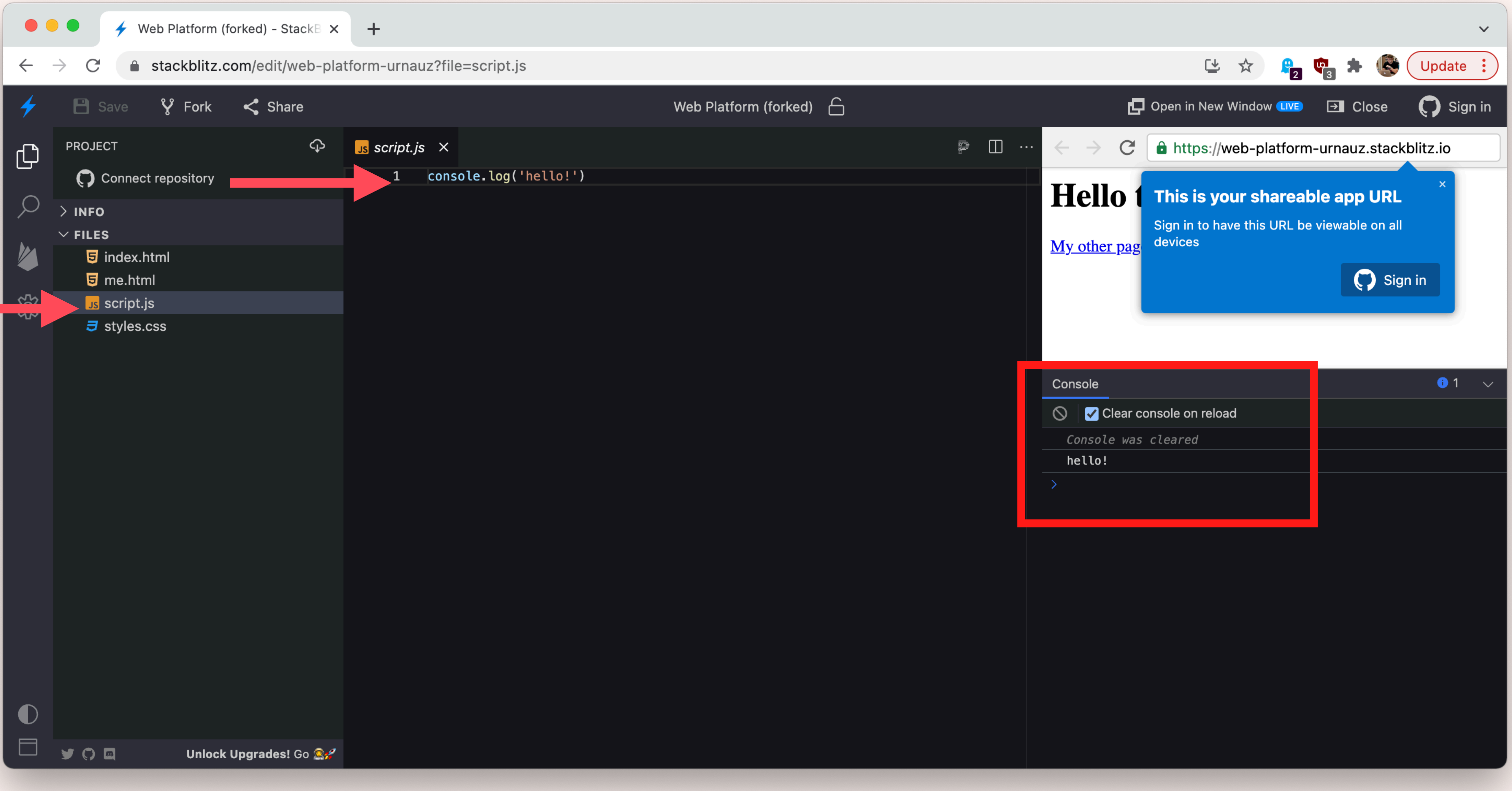
STACKBLITZ

- A free one is StackBlitz (https://www.stackblitz.com/)
- Use the Bare Bones Static HTML/JS/CSS Template

You can create a login and save your work if you want, using your GitHub account.



EXPLORING STACKBLITZ



```
console.log('hello!')
```

```
Console was cleared
hello!
```

This is your shareable app URL

Sign in to have this URL be viewable on all devices

☑ Clear console on reload

MDN LEARN JAVASCRIPT

- Let's go through the Learning Javascript part of the Mozilla Developer Network together
- https://developer.mozilla.org/en-US/docs/Learn/JavaScript/First_steps
- This way you can refer back to it later

BASICS OF JAVASCRIPT

SOME JAVASCRIPT BASICS

- Variables
- If Then
- Looping
- Console.log
- Functions
- String manipulation

INDIVIDUAL WORK

INDIVIDUAL EXERCISES

- Basic Javascript on Free Code Camp
  https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/#basic-javascript
- Code Academy Lessons on Javascript (Free)
  https://www.codecademy.com/learn/introduction-to-javascript
- MDN Written Tutorial
  https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/JavaScript_basics
- https://learnprogramming.online/

Introduction to Coding for Journalists

JAVASCRIPT FOR THE WEB

OCTOBER 18, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

October 18, 2022

JavaScript Assignment

Programming with Javascript

Working with the Document Object Model

Individual Work

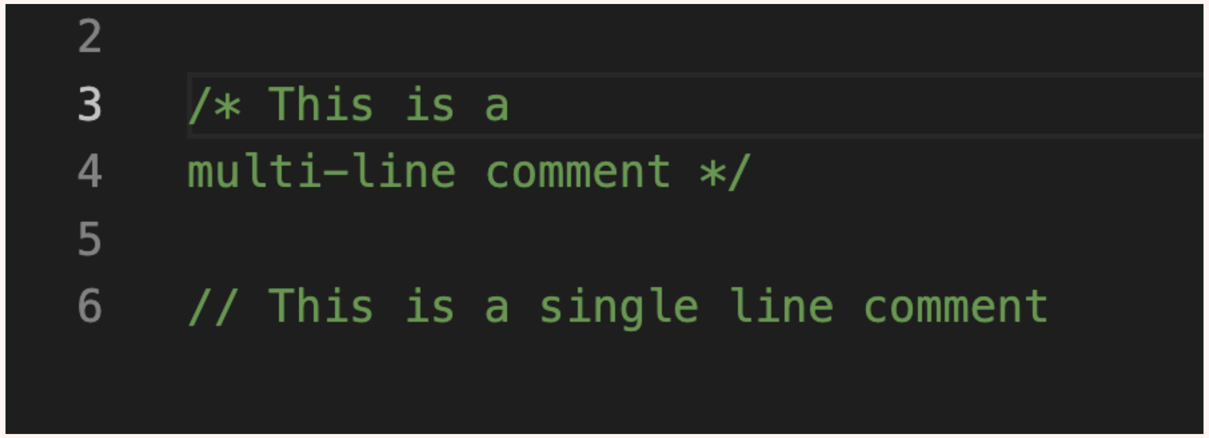
JAVASCRIPT ASSIGNMENT

PROGRAMMING IN JAVASCRIPT

COMMENTS

- **Single Line**
  // This is a single line comment

- **Multi Line**
  /* This is a multi
  line comment */



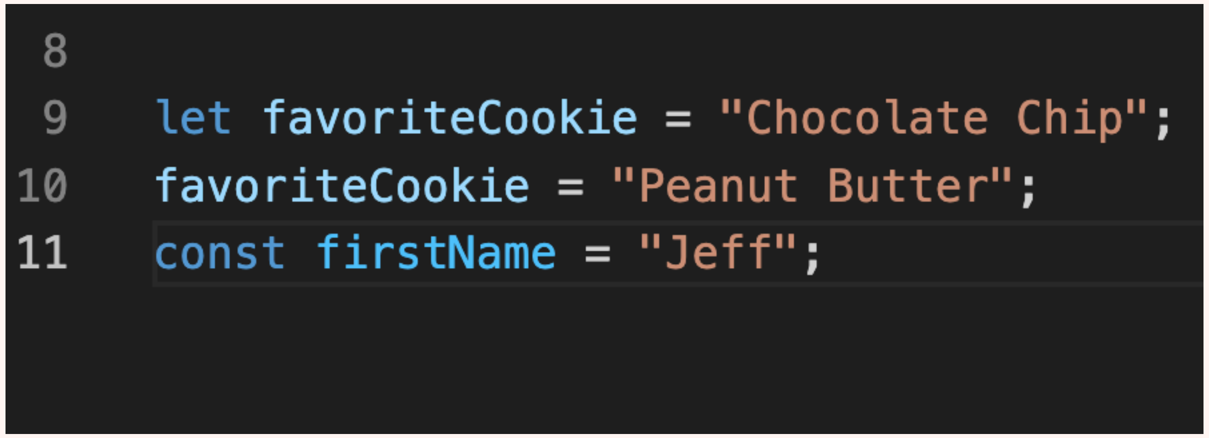
```

/* This is a
multi-line comment */

// This is a single line comment
```

VARIABLES AND CONSTANTS

- var - older and replaced, but you may still see it
  var myNumber = 10;

- let - used for things that can be modified
  let favoriteCookie = "Chocolate Chip";

- const - used for things that can not be modified - constants
  const firstName = "Jeff";

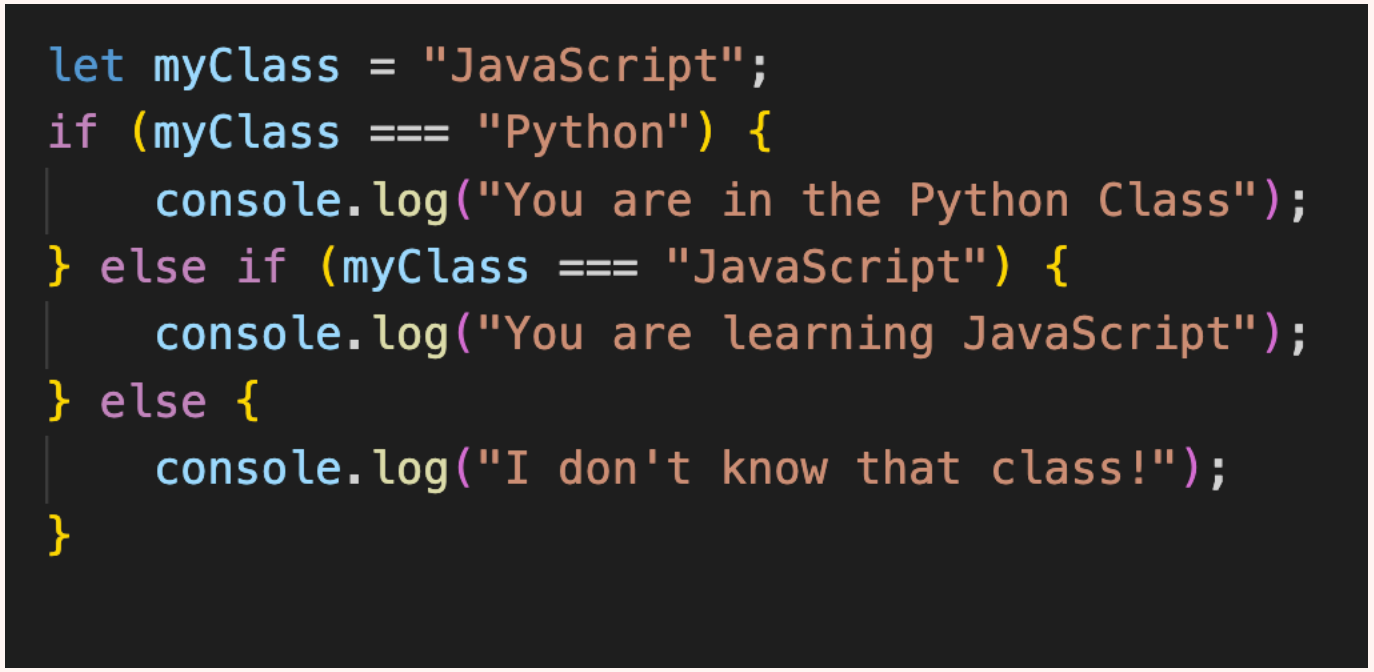


```

let favoriteCookie = "Chocolate Chip";
favoriteCookie = "Peanut Butter";
const firstName = "Jeff";
```

IF ELSE STATEMENT

- The if else statement lets us compare things.
- Everything that is compared needs to be reduced down to one of two values - true or false
- In JavaScript, we can compare two different things using the === operator to see if they are equals
- We can also compare things if they are greater than, less than, less than or equal to, greater than or equal to or a number of other things
- Last, JavaScript also has the idea that some things are inherently true and others are inherently false. This is referred to as truthy or falsy

IF ELSE EXAMPLE

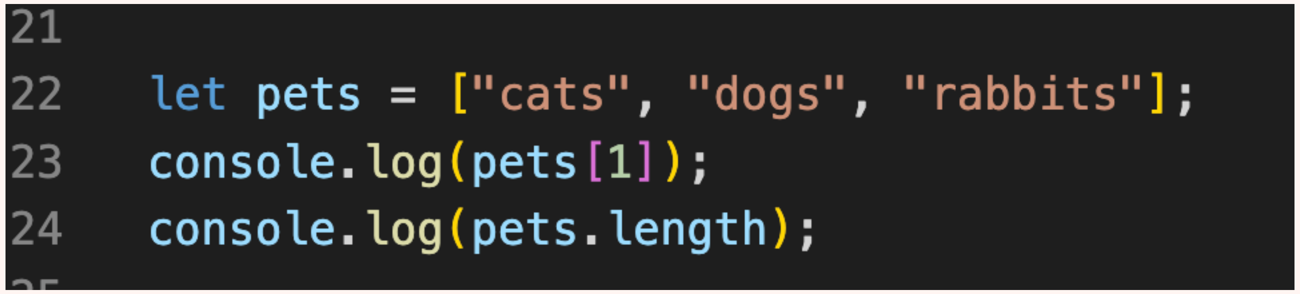


```
let myClass = "JavaScript";
if (myClass === "Python") {
    console.log("You are in the Python Class");
} else if (myClass === "JavaScript") {
    console.log("You are learning JavaScript");
} else {
    console.log("I don't know that class!");
}
```

ARRAYS

- Arrays are lists of things
- They have a definitive length - which is the number of things in the array
- For instance, we could have an array of popular pets
  let pets = ["cats", "dogs", "rabbits"];
- Arrays use what is called zero indexing. That means we can look at the individual items in an array by their order in the array, but the very first thing is at 0 index.
  console.log(pets[0]);

ARRAYS EXAMPLE



```
let pets = ["cats", "dogs", "rabbits"];
console.log(pets[1]);
console.log(pets.length);
```

FUNCTIONS

- JavaScript Functions

```
function multiply(value1, value2) {
 return value1 * value2;
}
var result = multiply(3, 4);
result = uppercase("Austin");
```

- What are the different pieces of this function?
- What is the difference between `return` and `console.log`?
- Why are braces important?
- What are arguments?

FUNCTIONS (CONT.)

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Functions

OBJECTS

- JavaScript Objects

```
var austin = {
  name: 'Austin',
  population: 1000000,
  latitude: 30.25,
  longitude: -97.75,
  state: 'TX',
  isCapitol: true
}
```

- What would I get if I ran `console.log(austin.name);` ?
- Could I set the population of Austin to something else? What would that look like?

OBJECTS (CONT.)

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Working_with_Objects

FOR AND FOR IN

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/for
- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/for...in

WORKING WITH THE DOCUMENT OBJECT MODEL

WHAT IS THE DOM?

- Document Object Model (DOM)
- Query Selectors - similar to CSS
- document
- document.querySelector()
- Elements, HTML Elements, Nodes
- https://developer.mozilla.org/en-US/docs/Web/API/HTMLElement
- https://www.freecodecamp.org/news/html-dom-methods/

INDIVIDUAL WORK

JAVASCRIPT

- JavaScript Assignment - Due October 30 (Changed from October 23)
- Basic Javascript on Free Code Camp https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/#basic-javascript
- Code Academy Lessons on Javascript (Free) https://www.codecademy.com/learn/introduction-to-javascript
- https://learnprogramming.online/

Introduction to Coding for Journalists

JAVASCRIPT FOR THE WEB

OCTOBER 18, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

October 18, 2022

JavaScript Assignment

JavaScript Review

Working with the DOM in JavaScript

Individual Work

JAVASCRIPT ASSIGNMENT

JAVASCRIPT REVIEW

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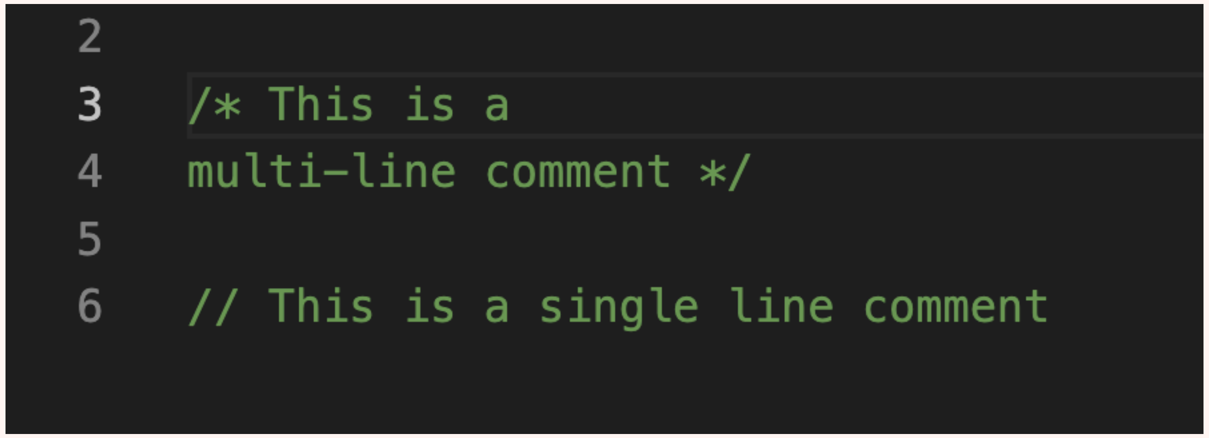

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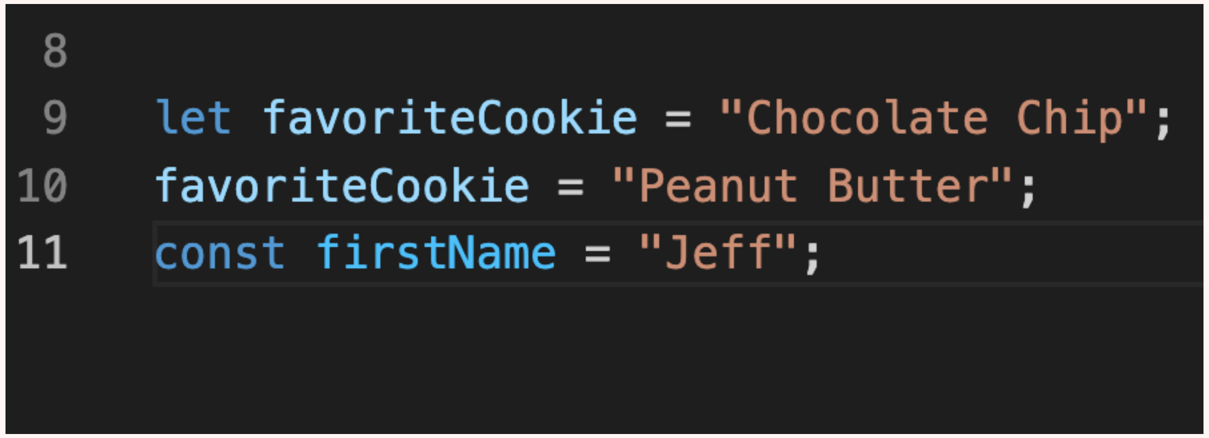

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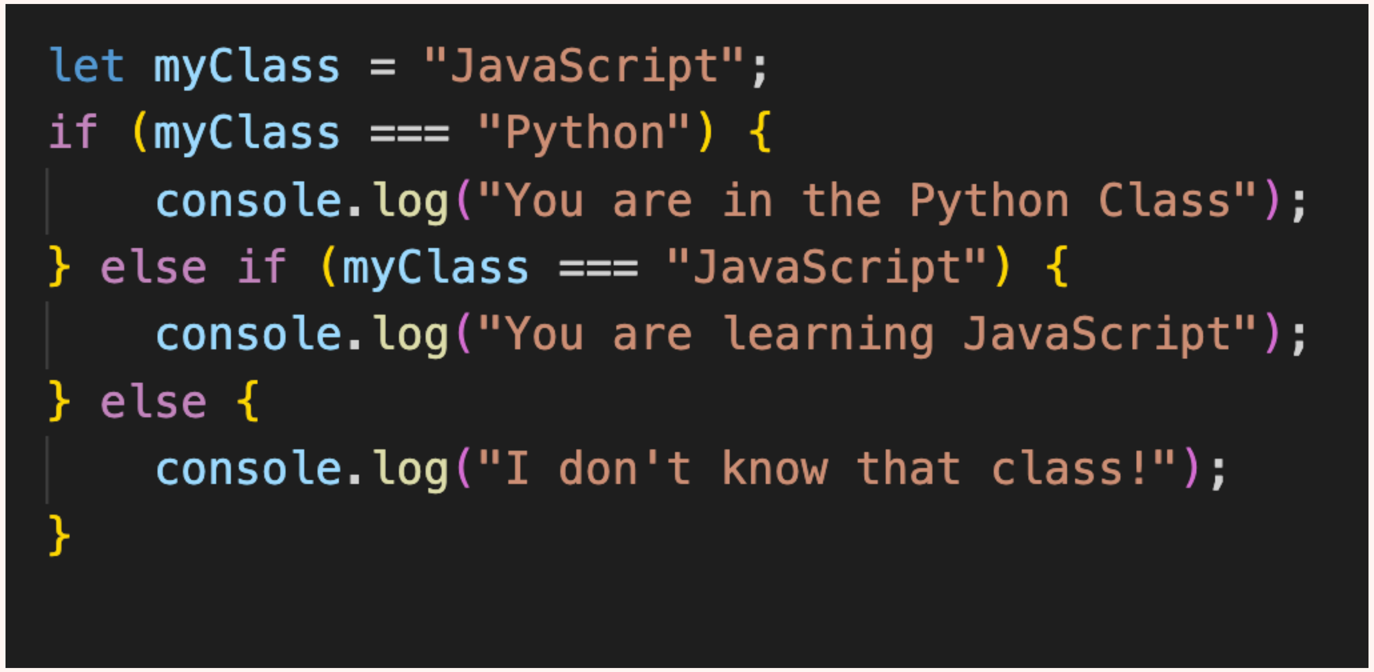

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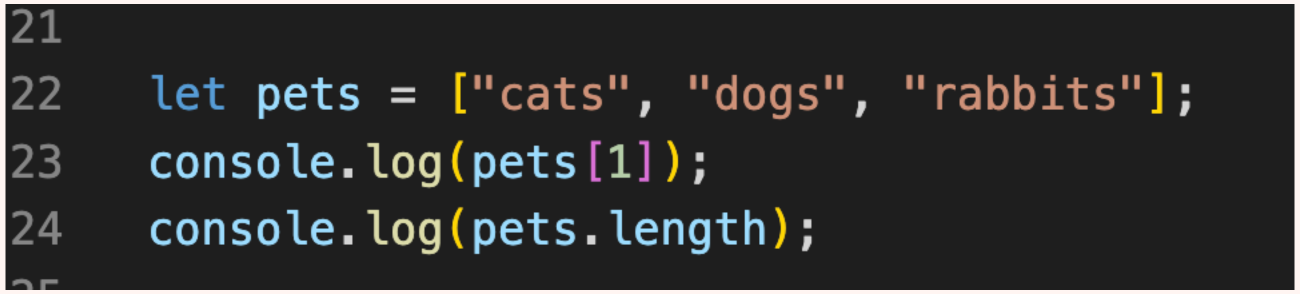
ARRAYS EXAMPLE



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console.log(pets.length);
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FUNCTIONS

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Functions

OBJECTS

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Working_with_Objects

FOR AND FOR IN

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WORKING WITH THE DOM

WHAT IS THE DOM?

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- Query Selectors - similar to CSS
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- document.querySelector()
- Elements, HTML Elements, Nodes
- https://developer.mozilla.org/en-US/docs/Web/API/HTMLElement
- https://www.freecodecamp.org/news/html-dom-methods/

MDN MANIPULATING DOCUMENTS

- Let's go through the Maniupulating Documents section of the Mozilla Developer Network together
- https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Client-side_web_APIs/Manipulating_documents

INDIVIDUAL WORK

JAVASCRIPT OR BALSAMIQ

- **JavaScript Assignment - Due Monday November 1**
- **Basic Javascript on Free Code Camp**
  https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/#basic-javascript
- **Code Academy Lessons on Javascript (Free)**
  https://www.codecademy.com/learn/introduction-to-javascript
- **https://learnprogramming.online/**
- **https://balsamiq.com/learn/**

Introduction to Coding for Journalists

JAVASCRIPT WEB TECHNOLOGY

OCTOBER 25 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

October 25, 2022

UX And Intermediate Javascript Assignment

User Experience

Prototyping with Figma

Set up for Final Project

Individual Work

USER EXPERIENCE

WHAT IS USER EXPERIENCE?

- User Experience (UX)
- Understanding Users
- Could be Creators, Readers, or another audience type
- Personas
- Not just your existing audience, but also a potential audience
- https://www.usability.gov/what-and-why/user-experience.html

WHY IS UX IMPORTANT?

- You can create the best thing in the world, but if it isn't usable, it won't be useful
- Or you could create something very usable, but then make poor decisions to render it unusable (for instance, pop up autoplaying video ads)
- Ultimately, you create some web experience for your audience

WHO DOES UX?

- User Experience jobs are out there, also consider Product Designer
- You will need a portfolio to show off and talk about. Ideally some real world examples
- Would recommend pursuing an online class such as Google's UX Certificate on Coursera https://grow.google/certificates/ux-design/#?modal_active=none
- Or a master's degree from UT (https://www.ischool.utexas.edu/) or similar

PROTOTYPING AND WIREFRAMES

PROTOTYPES, WIREFRAMES, MOCKUPS

- High Fidelity - Visually looks like the finished product
    - Figma
    - Sketch
    - Photoshop
- Low Fidelity - Unfinished, pen and pencil or plain line drawings
    - Pen and Paper
    - Figma

WHY ONE OR THE OTHER?

- Why do you think we might use paper prototypes instead of a finished design?

LEARNING WIREFRAMING

- https://www.figma.com/blog/how-to-wireframe/

- https://www.usability.gov/how-to-and-tools/methods/prototyping.html

- https://balsamiq.com/learn/articles/how-to-start-a-wireframe/

PAPER PROTOTYPING EXERCISE

HALLOWEEN EXERCISE

- Let's try and build out a trick or treat locations web site
- Imagine you are building a web site for Halloween night so that people can find the best Halloween decorations, or maybe the best treats for kids with allergies - like toys
- Who are some of the personas for this web site?
- What actions might they take?
- What screens would you need?
- Draw some of those screens on paper
- Let's trade with another student and discuss

SETUP FOR THE ICJ RIG/FINAL PROJECT

ICJ RIG

- https://github.com/jefflinwood/icj-project-rig
- Forked from the UTData one

- https://github.com/utdata/icj-setting-up/
- Setup Instructions
- Use Node Installer instead of NVM - https://nodejs.org/en/

EXPLORING THE ICJ RIG

- Let's go through the ICJ Rig Code and see what is there and how it works
- Questions?

INDIVIDUAL WORK

JAVASCRIPT

- https://learnprogramming.online/
- Debugging! Very Important Skill https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/#debugging
- Ask me for something specific you want to learn!
- Basic Javascript on Free Code Camp https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/#basic-javascript
- Code Academy Lessons on Javascript (Free) https://www.codecademy.com/learn/introduction-to-javascript

Introduction to Coding for Journalists

STATIC WEB SITES + THE ICJ RIG

NOVEMBER 1, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

November 1, 2022

UX + Intermediate JS Assignment

Static Site Generator Discussion

Functions, Objects, Arrays

Debugging Exercise

Individual Work

STATIC SITE GENERATION

STATIC SITE GENERATION

- No one really maintains sets of .html files any more by hand
- That was outdated pretty quickly
- Three approaches to replace it
  - Content Management Systems - Wordpress, Drupal, Ghost, Wagtail, etc.
  - Static Site Generation - Hugo, Jekyll, Gatsby, etc.
  - Hosted - Wix, Weebly, SquareSpace, etc

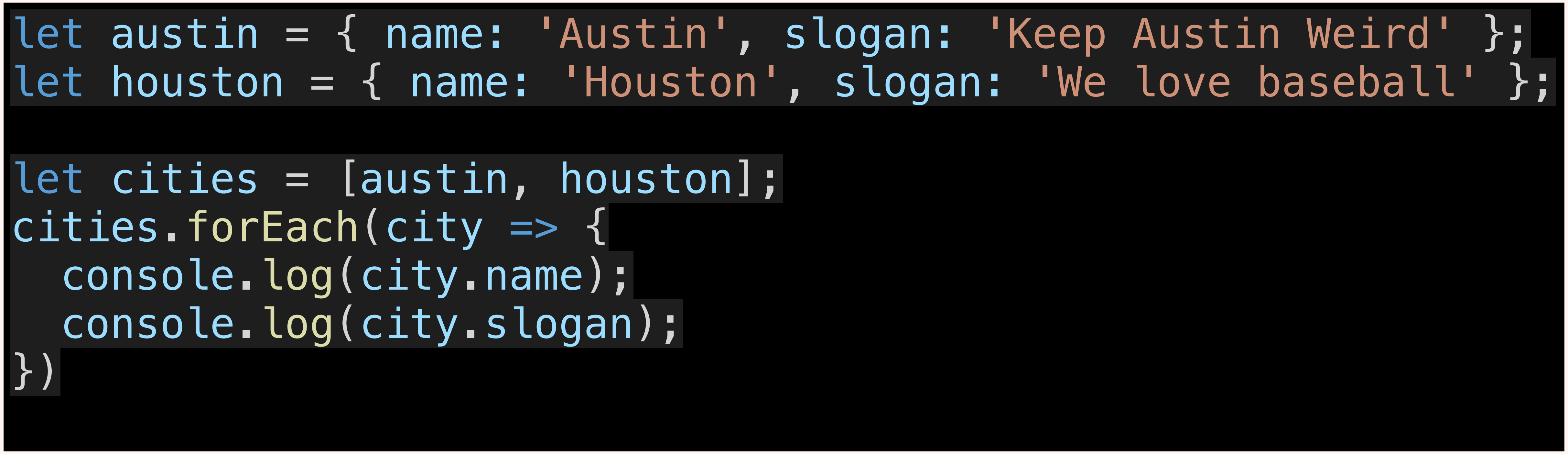
DOCUSAURUS

- Let's try a static site generator I'm familiar with
- Docusaurus - https://docusaurus.io/
- We can spin up a site from a web browser
- https://docusaurus.io/docs/playground
- Let's also try running it locally on our own computers
- npx create-docusaurus@latest class-site classic

FOR EACH LOOP IN JS

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/forEach
- We are going through a list and doing something with each of the entries

FOR EACH EXAMPLE



```
let austin = { name: 'Austin', slogan: 'Keep Austin Weird' };
let houston = { name: 'Houston', slogan: 'We love baseball' };

let cities = [austin, houston];
cities.forEach(city => {
  console.log(city.name);
  console.log(city.slogan);
})
```

WHAT IF WE MADE HTML PAGES?

- Static Site Generators will go through a data source
- They will typically create a page and an an index page for each entry in the data

FUNCTIONS, OBJECTS, ARRAYS

FUNCTIONS

- JavaScript Functions

```
function multiply(value1, value2) {
 return value1  * value2;
}
var result = multiply(3, 4);
result = uppercase("Austin");
```

- What are the different pieces of this function?
- What is the difference between `return` and `console.log`?
- Why are braces important?
- What are arguments?

OBJECTS

- JavaScript Objects

```
var austin = {
  name: 'Austin',
  population: 1000000,
  latitude: 30.25,
  longitude: -97.75,
  state: 'TX',
  isCapitol: true
}
```

- What would I get if I ran `console.log(austin.name);` ?
- Could I set the population of Austin to something else? What would that look like?

ARRAYS

- JavaScript Arrays

```
var cities = ['Austin', 'Dallas', 'Houston'];
```

- What would I get if I ran `console.log(cities[1]);` ?

JSON

JSON

- JavaScript Object Notation (JSON)
- Very common data format
- What do we mean by data?
- Data Storage
- Passing Data between different Services
- It's JavaScript Array and Object format

WORKING WITH JSON

- https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/JSON
- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/JSON

IN CLASS DEBUGGING EXERCISE

DEBUGGING EXERCISE

- First, complete the lessons here at Free Code Camp: https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/#debugging
- Then try the buggy piece of JavaScript code at: https://gist.github.com/jefflinwood/d7f0aa2a9ad08817e021cbc9174d212b
- Please create a new JavaScript Blank Project in StackBlitz, and copy the contents of that code into the index.js file in StackBlitz. It will not work.
- There are six errors (at least) in the JS file for you to find and fix. Please fix all six of them, and put in comments (//) next to each explaining why you made the change.

INDIVIDUAL WORK

INDIVIDUAL WORK

- Intermediate JS Assignment - UX and Prototyping, and Developing an Action Plan

Introduction to Coding for Journalists

DATA MODELING + FINAL PROJECT

NOVEMBER 8, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

November 8, 2022

Final Project Discussion

Final Project Plan Assignment

Setup for the ICJ Rig

Data Modeling

Individual Work

FINAL PROJECT

SETUP FOR THE ICJ RIG

ICJ RIG

- https://github.com/jefflinwood/icj-project-rig
- Forked from the UTData one

- https://github.com/utdata/icj-setting-up/
- Setup Instructions
- Use Node Installer instead of NVM - https://nodejs.org/en/

JSON FOR BEGINNERS

https://www.freecodecamp.org/news/what-is-json-a-json-file-example/

DATA MODELING

DATA MODELING

- What happens we have to start describing real things to a computer?
- We need to start to be able to express ourselves in a language that the computer understands, such as JSON.
- We will turn the web pages that we built in the first part of the class into data objects

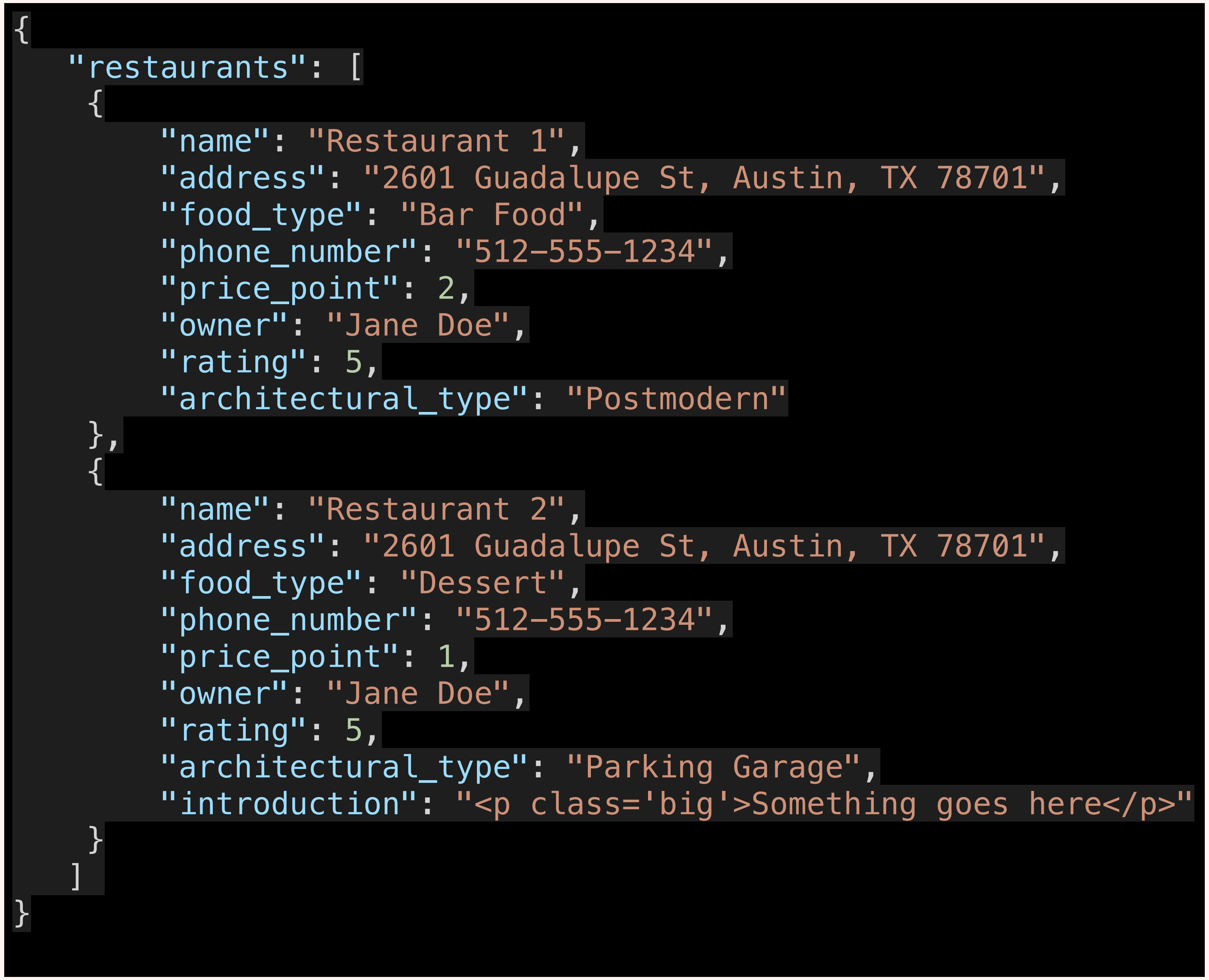
DESIGNING THE STRUCTURE

- One of the first things we will need to decide is the structure of the data
- We should probably figure out which parts of our data set can share a common structure
- We are only going to be looking at the two web pages we built, so they should share one common structure
- Let's work on a hypothetical example, and say that we are designing a data structure that would hold information about restaurants near UT.

RESTAURANT DATA STRUCTURE

- Let's collect information about restaurants in a spreadsheet
- What columns would we need for each of the rows?
- For each of those different columns (also known as properties or attributes), we might have a different type of data - JavaScript has different types, like number, string, date, boolean, object, array

CLASS EXAMPLE



```
{
   "restaurants": [
    {
        "name": "Restaurant 1",
        "address": "2601 Guadalupe St, Austin, TX 78701",
        "food_type": "Bar Food",
        "phone_number": "512-555-1234",
        "price_point": 2,
        "owner": "Jane Doe",
        "rating": 5,
        "architectural_type": "Postmodern"
    },
    {
        "name": "Restaurant 2",
        "address": "2601 Guadalupe St, Austin, TX 78701",
        "food_type": "Dessert",
        "phone_number": "512-555-1234",
        "price_point": 1,
        "owner": "Jane Doe",
        "rating": 5,
        "architectural_type": "Parking Garage",
        "introduction": "<p class='big'>Something goes here</p>"
    }
   ]
}
```

IN CLASS EXERCISE

- Come up with an Object representation for each of the two detail pages in your HTML/CSS/Responsive Design assignment. Keep this JS file handy for later.
- Example would be that I might have a Home Page with two detail pages, one for Houston and one for Dallas.
- So I would come up with two objects, one for Houston, and one for Dallas
- Include all of the things that might go into the page, like the text, or the image name
- Model this in Excel or another spreadsheet first, then in JSON format
- Put those objects into a JavaScript array named content

INDIVIDUAL WORK

INDIVIDUAL WORK

- Final Project Plan
- Final Project
- Make sure everything is set up for the final project

Introduction to Coding for Journalists

NUNJUCKS + FINAL PROJECT

NOVEMBER 15, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

November 15, 2022

Final Project Discussion

Final Project Plan Assignment

Nunjucks Template Language

Setup for the ICJ Rig

Data Modeling

Individual Work

FINAL PROJECT

NUNJUCKS

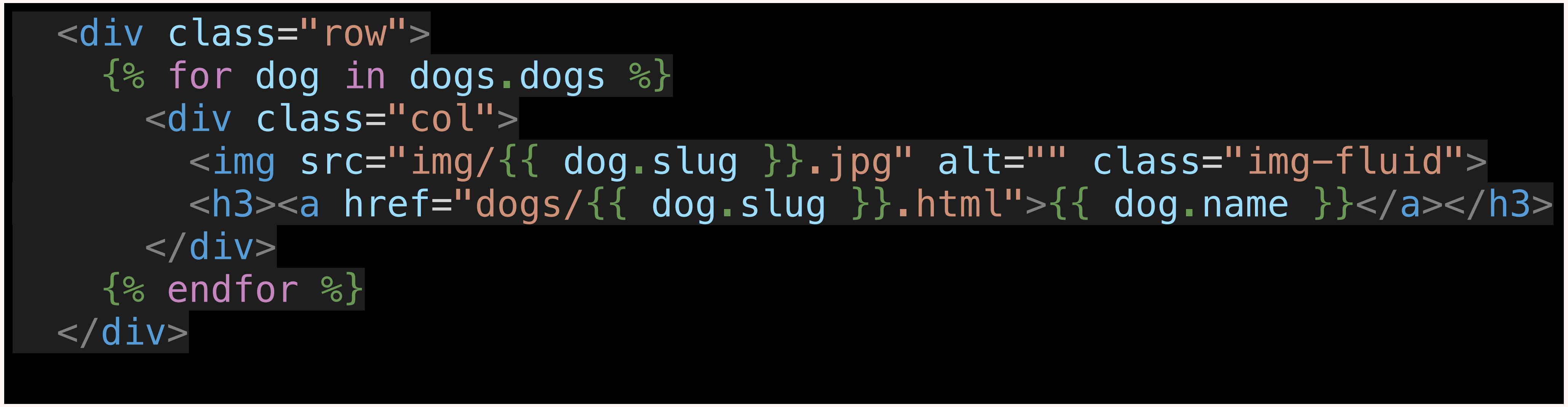
WHAT IS NUNJUCKS?

- Template Language for JavaScript
- A fourth language for all of you to learn
- Not JavaScript
- https://mozilla.github.io/nunjucks/
- Based on a language called jinja2 for Python templates

NUNJUCKS TAGS

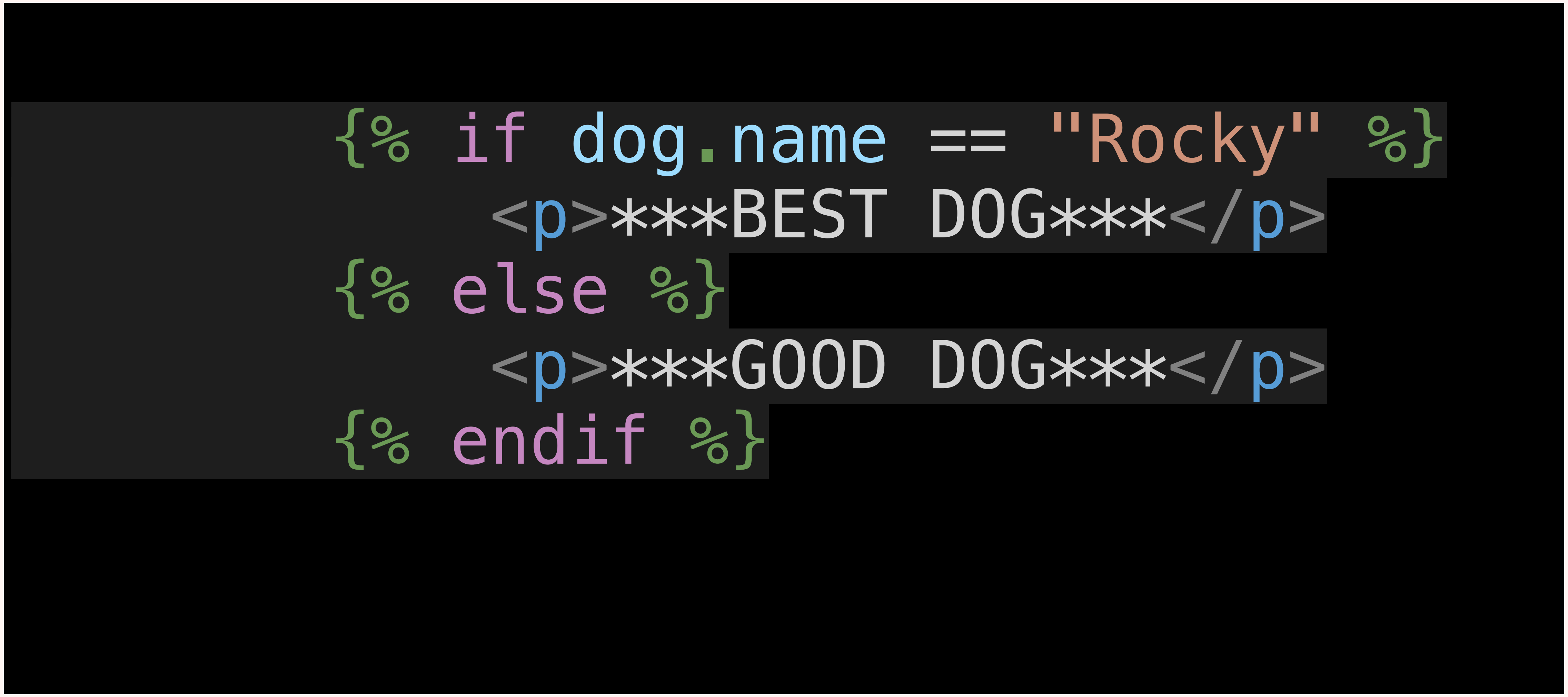
- https://mozilla.github.io/nunjucks/templating.html#tags
- If Tag
- For Tag
- What do you think of using Nunjucks instead of JavaScript?

THE FOR TAG



```
  <div class="row">
    {% for dog in dogs.dogs %}
      <div class="col">
        <img src="img/{{ dog.slug }}.jpg" alt="" class="img-fluid">
        <h3><a href="dogs/{{ dog.slug }}.html">{{ dog.name }}</a></h3>
      </div>
    {% endfor %}
  </div>
```

THE IF TAG



```
        {% if dog.name == "Rocky" %}
            <p>***BEST DOG***</p>
        {% else %}
            <p>***GOOD DOG***</p>
        {% endif %}
```

BAKING WITH THE RIG

UNDERSTANDING BAKING

- Run **gulp dev** from the Terminal in VS Code. Hold down Control and press the letter C to stop **gulp dev**
- What is the ICJ rig currently doing with it?
- Start with **project.config.json**, and look at the **to_bake** section
- Let's take a look at **index.njk**
- Up at the top, we need to edit **nav.njk** if we are going to change the nav bar.
- And then take a look at **bake-book.njk**

WORKING WITH IMAGES

- Images go into the src/img directory

- Resize them down to something like 800 x 600 first, or gulp images will fail.
- If the image is too large, the error will be something like:

```
    [17:46:19] 'images' errored after 923 ms
[17:46:19] Error: write callback called multiple times
  at DestroyableTransform.afterTransform (/Users/jlinwood/Projects/ut/icj-project-rig/node_modules/
readable-stream/lib/_stream_transform.js:84:31)
  at EventEmitter.<anonymous> (/Users/jlinwood/Projects/ut/icj-project-rig/node_modules/gulp-cache/lib/
index.js:451:7)
  at EventEmitter.emit (node:events:527:28)
  at EventEmitter.emit (node:domain:475:12)
  at DestroyableTransform.onError (/Users/jlinwood/Projects/ut/icj-project-rig/node_modules/gulp-cache/lib/
index.js:288:15)
  at Object.onceWrapper (node:events:642:26)
  at DestroyableTransform.emit (node:events:527:28)
  at DestroyableTransform.emit (node:domain:475:12)
  at /Users/jlinwood/Projects/ut/icj-project-rig/node_modules/through2-concurrent/through2-
concurrent.js:41:14
  at file:///Users/jlinwood/Projects/ut/icj-project-rig/node_modules/gulp-imagemin/index.js:97:5
```

INDIVIDUAL WORK

INDIVIDUAL WORK

- **Final Project Work!**

Introduction to Coding for Journalists

FINAL PROJECT

NOVEMBER 29, 2022

Jeff Linwood

UT-AUSTIN

TODAY'S CLASS

November 29, 2022

Class Overview

Final Project Q&A

Final Project Open Work

CLASS OVERVIEW

CLASS OVERVIEW

- Started with no coding needed
- HTML
- Visual Studio Code
- Chrome Web Developer Tools
- CSS
- Git, GitHub, and GitHub Pages

CLASS OVERVIEW

- Accessibility
- Prototyping and UX
- Javascript
- Project Planning
- Static web site generation with the ICJ Project Rig
- What comes next?

FINAL PROJECT

FINAL PROJECT DISCUSSION

- Any questions?
- I think everyone should probably be focusing on design for their projects
- Also publishing to GitHub Pages - you will need to use the Settings in your GitHub repository (on the web, not the Desktop app) to use the main/docs directory
- https://docs.github.com/en/pages/getting-started-with-github-pages/configuring-a-publishing-source-for-your-github-pages-site

INDIVIDUAL WORK

- Final Project Work!