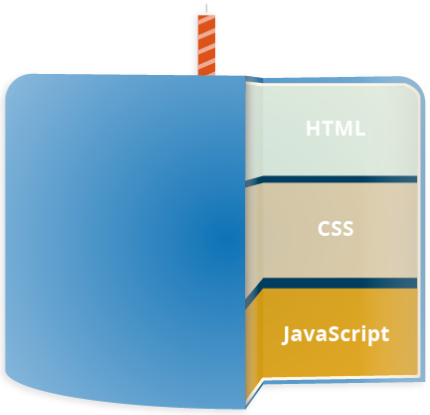
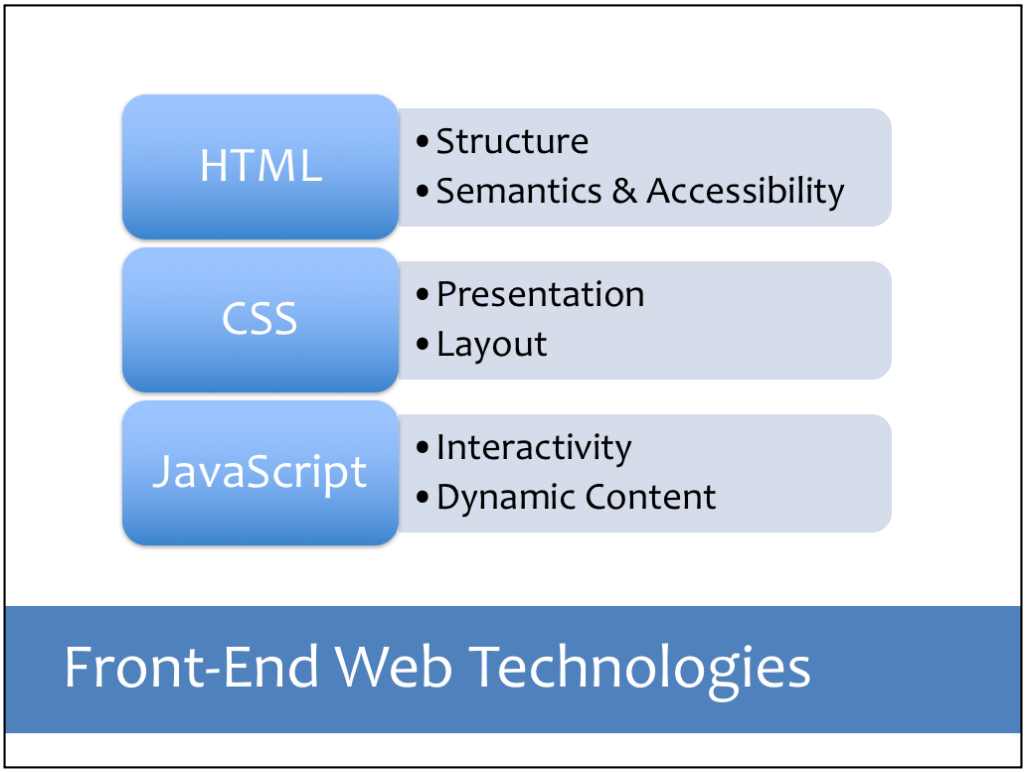
Javascript and the DOM

Adding Interactivity to Web Pages

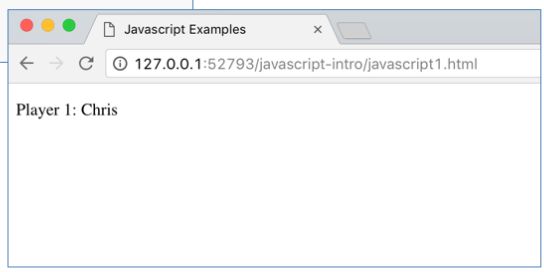


Web Front-End Technologies: Structure + Presentation + Interaction



This class is mostly about front-end web technology, although we will cover some basic server-side functionality at the end of the semester.

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <title>Javascript Examples</title>
6  </head>
7  <body>
8     <p>Player 1: Chris</p>
9  </body>
10 </html>
```

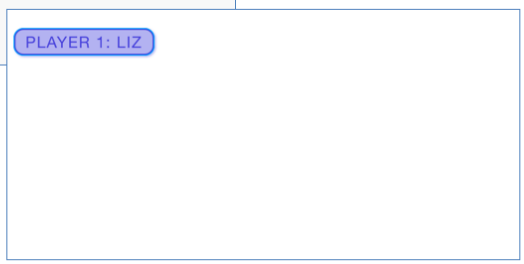


HTML (Structure)

```
<style type="text/css">
    p {
        font-family: 'helvetica neue', helvetica, sans-serif;
        letter-spacing: 1px;
        text-transform: uppercase;
        text-align: center;
        border: 2px solid rgba(0, 0, 200, 0.6);
        background: rgba(0, 0, 200, 0.3);
        color: rgba(0, 0, 200, 0.6);
        box-shadow: 1px 1px 2px rgba(0, 0, 200, 0.4);
        border-radius: 10px;
        padding: 3px 10px;
        display: inline-block;
        cursor: pointer;
    }
</style>
```

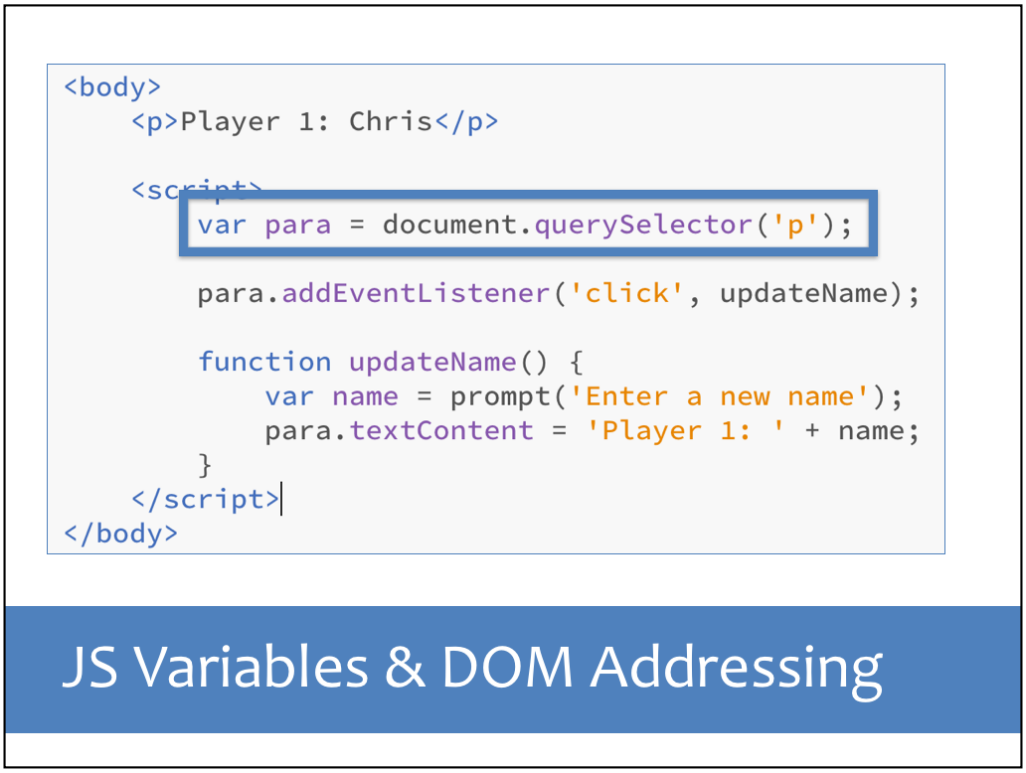
HTML + CSS (Presentation)

```
<body>
    <p>Player 1: Chris</p>

    <script>
        var para = document.querySelector('p');

        para.addEventListener('click', updateName);

        function updateName() {
            var name = prompt('Enter a new name');
            para.textContent = 'Player 1: ' + name;
        }
    </script>
</body>
```

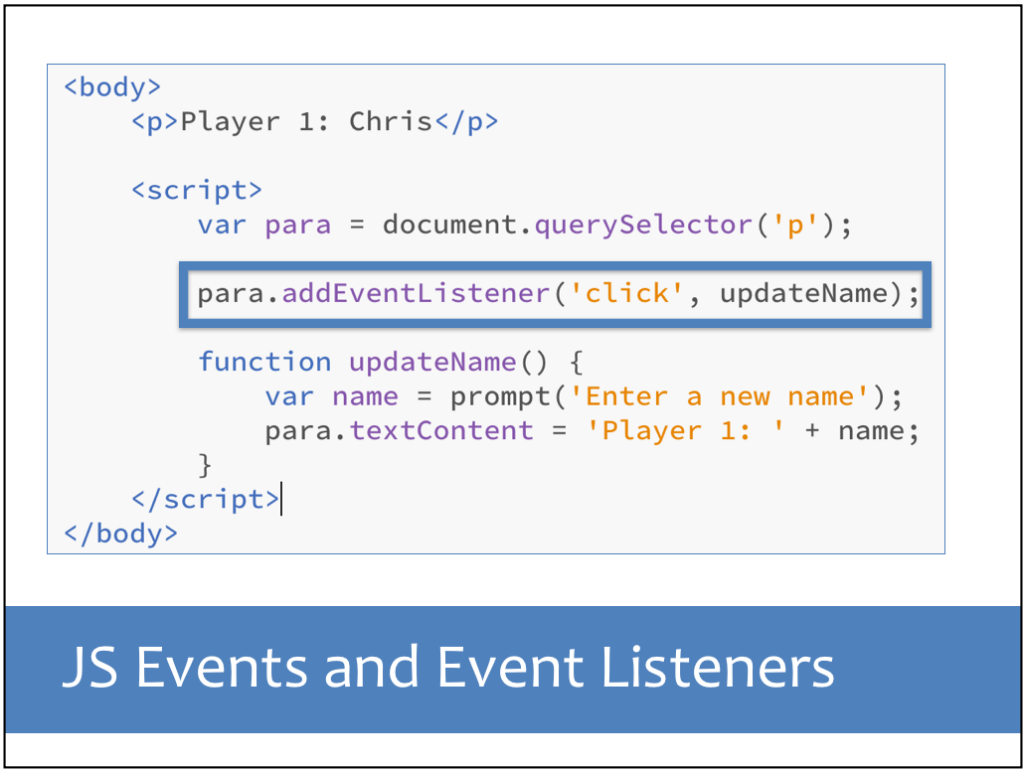


HTML + CSS + JS (Interaction)

I don't expect you to know Javascript in this class. I do expect you to know basic programming concepts and terms, like variables, objects, expressions, arrays, and functions. I'm going to do a quick overview of concepts and terms, but you're going to need to do the short tutorials I've assigned for Thursday in order to really understand these.



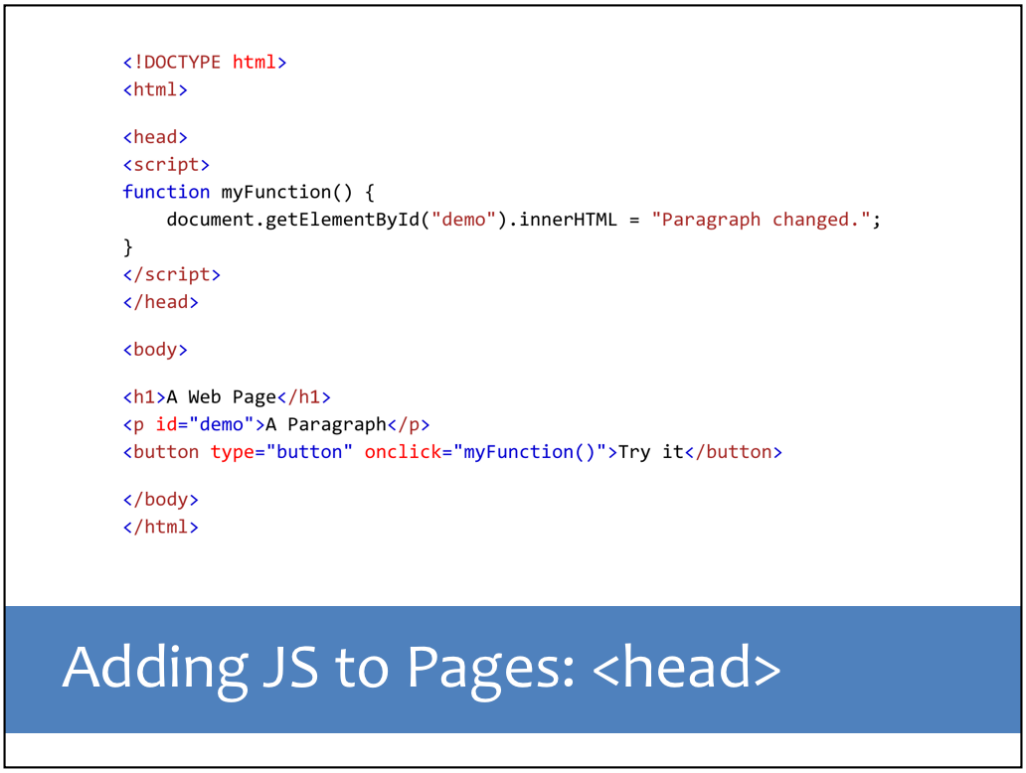
Defining a variable by selecting a component of the document. (We'll be talking more about those components, which are part of the Document Object Model



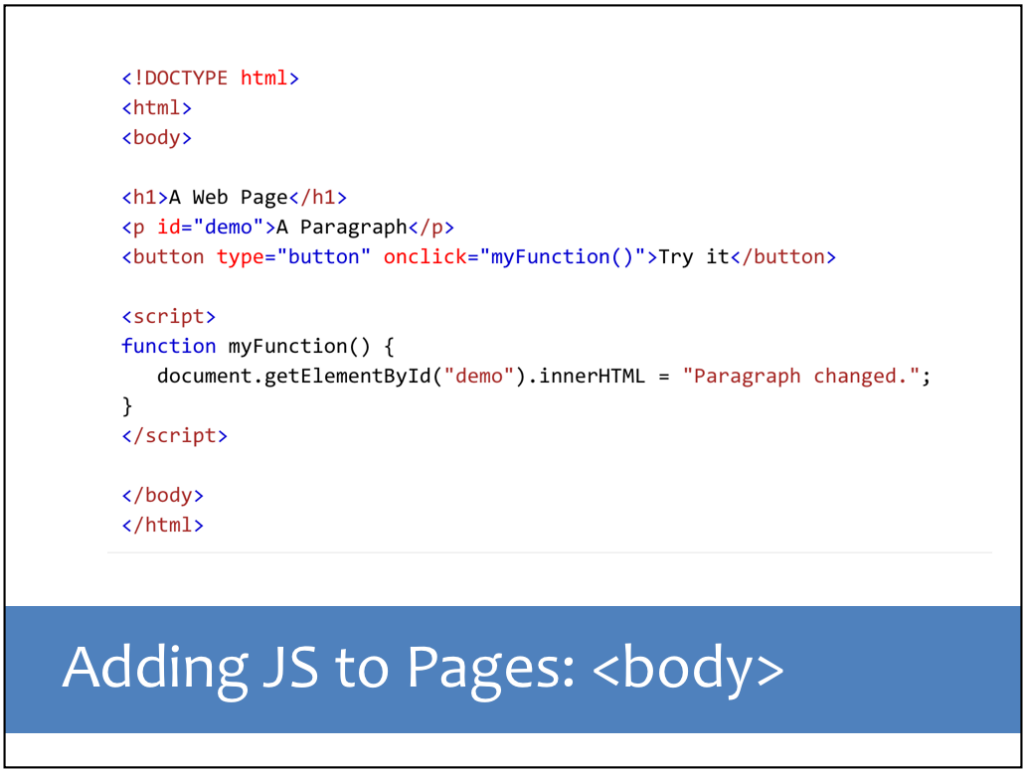
Defining a method for the document to "listen" for user input and act on it.

Creating a function

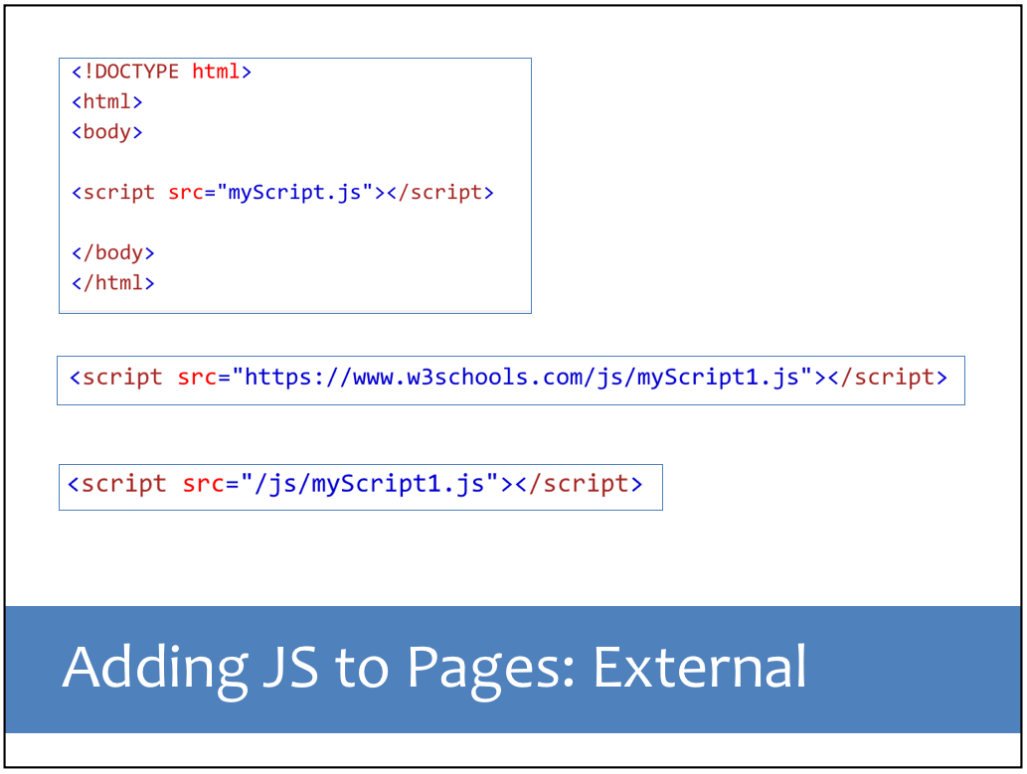
Defining a variable by concatenating variables and strings.



Javascript can be placed in a variety places in the document. Sometims you'll find it in the head…



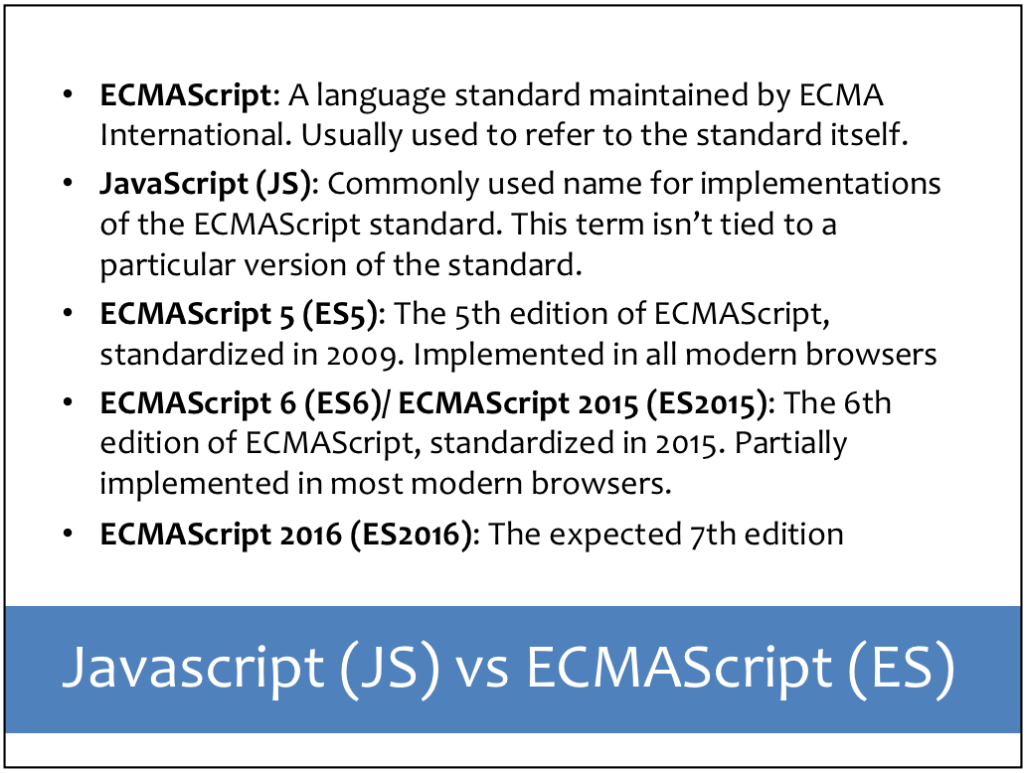
Sometimes you'll find it in the body—typically at the end of the body, so that it loads after all of the document elements have loaded.



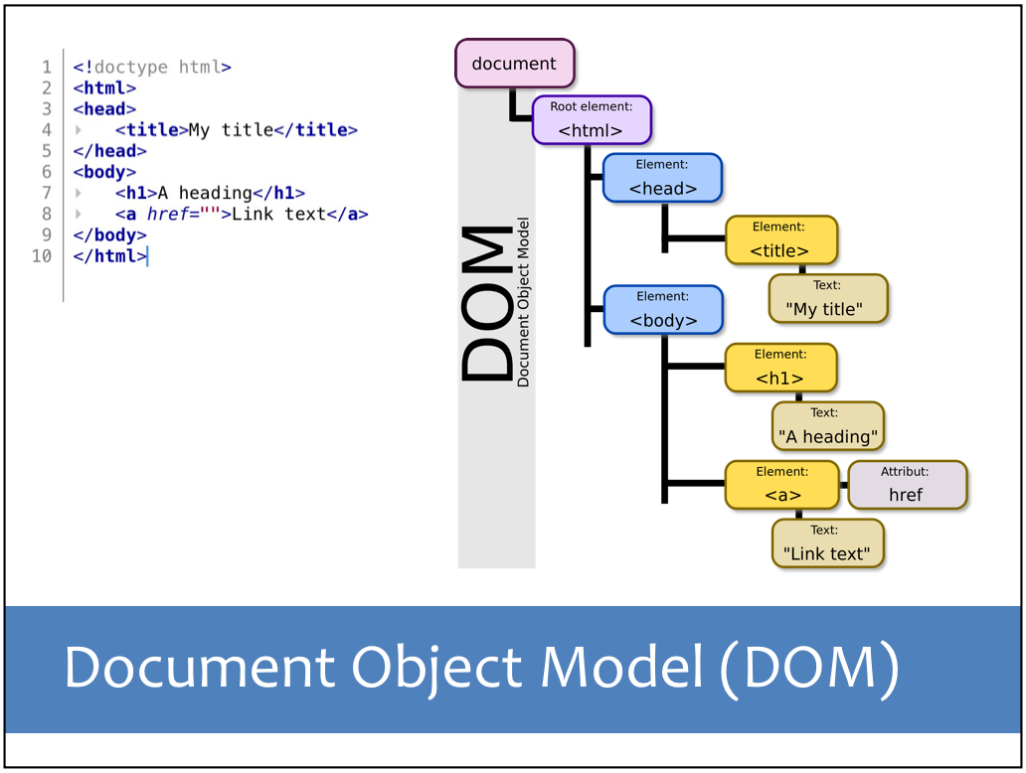
Like CSS, it can be embedded in the page, or linked to externally.

Calling the functionality can happen when the document loads, or based on user actions.

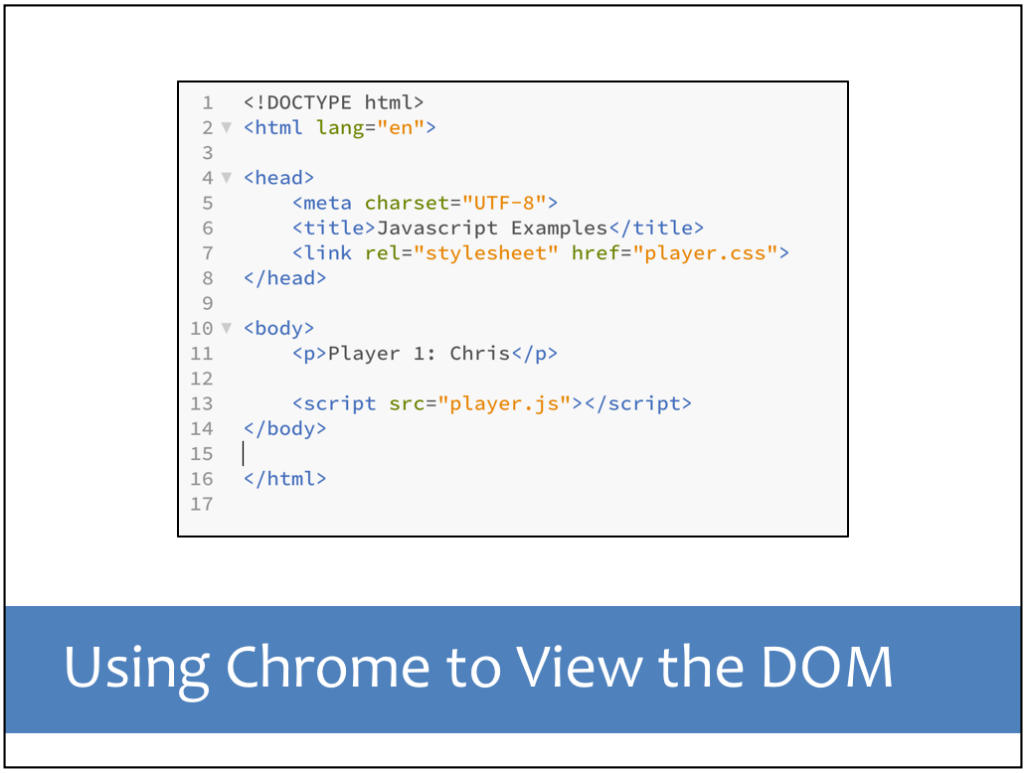
For Thursday, you'll do this portion of the W3C's Javascript tutorial—from "JS HOME" to "JS Objects." You should already be familiar with the basic concepts of variables, objects, operators, and objects from your introductory programming class(es). This will show how they work in Javascript.



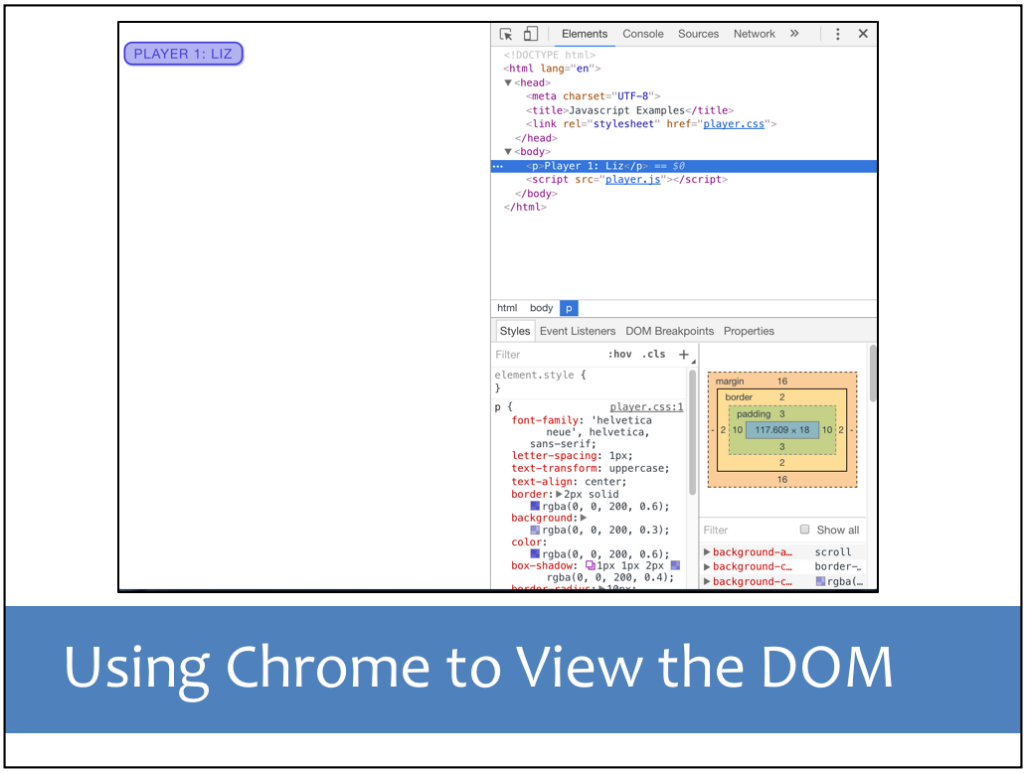
You will see the terms ES5 and ES6 used a lot in job descriptions and in discussions of Javascript coding. It's important to understand the relationship between JS and ES.



This is the document object model—the DOM. It's an application programming interface to a web page.

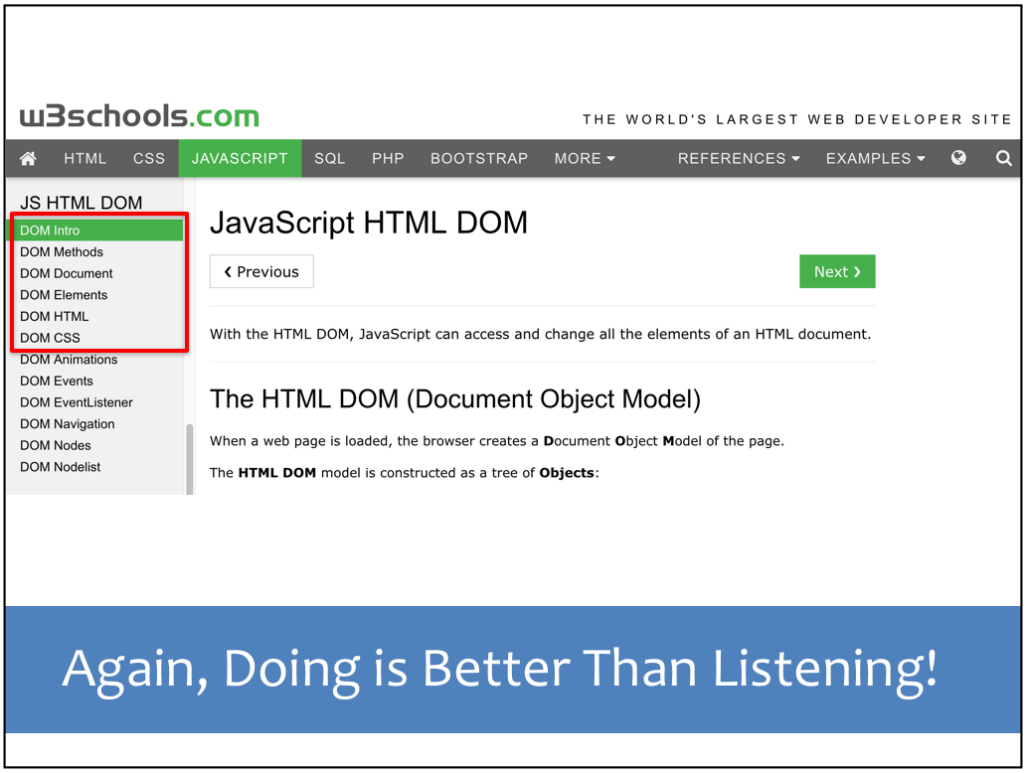


Here's the source of the player button example I used before. (Bring it up in an HTML editor and/or browser, show function again, view source.)



If we use Chrome's developer tools to view the DOM of the page, it looks a lot like your source HTML, but there are two differences:

1) If you left out required tags that the browser needs for laying out the page, they'll be added in here.
2) Any changes to your original HTML resulting from scripts will show up here



Do the first six pages of the DOM tutorial on W3Schools—DOM Intro through DOM CSS. Finish before Thursday's class!

- Roles & Responsibilities
  - Discuss roles & responsibilities as a group today
  - Today's in-class exercise: Update the document in Githup repo with *your own* responsibilities
- Structure Document
  - Content inventory and content diagram
  - Due Thursday (you'll have feedback by Saturday)

Group Project Time