

# CS 2340 Objects and Design

## JavaScript in Web Applications

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# Outline

- Quick revisit on HTML
- Embedding JavaScript onto HTML
- JavaScript Libraries

# HTML, CSS, and JavaScript

- Remember that website coding homework from CS1301?
- Most websites nowadays use HTML, CSS, and JavaScript.

# My First Website

```
<html>
  <head>
    <title>My First Website!</title>
    <meta name="author" content="Susanna Dong et al" />
  </head>

  <body>
    <h1>Hello there!</h1>
    <p>My website is more awesome than yours.</p>
    
    <p><a link="kittens.png">Click here</a> to see kittens. :D</p>
  </body>
</html>
```

- HTML is made with "tags" - a beginning tag and an ending tag.
- An HTML document has a "head" and a "body".
  - <head> - The behind-the-scenes magic of the webpage.
  - <body> - The physical contents of the webpage.

# HTML Elements in <head>

```
<head>
  <title>Yellow Jacket Fencing @ Georgia Tech</title>
  <meta http-equiv="Content-Type" content="text/html;
  charset=iso-8859-1" />
  <meta name="author" content="Susanna Dong et al" />
  <meta name="description" content="Educational piece for CS2340" />

  <link rel="stylesheet" type="text/css" link="yjf.css" />
  <script type="text/javascript" src="jquery.min.js"></script>
</head>
```

## What does <head> do?

- Name your webpage
- Provide metadata
- Contains inline scripts
- Specify the location of stylesheets and scripts

# HTML Elements in <body>

The physical elements of a webpage.

```
<h1>Hello there!</h1>           <!-- A header element. -->
<p>My website is awesome.</p>    <!-- A paragraph element. -->
<a link="cat.png">Click here</a>  <!-- A link element. -->


<!-- An image element. -->
```

All elements (that I'm aware of) can have additional attributes.

# The <div> Tag

"The <div> tag defines a division or a section in an HTML document. The <div> tag is used to group block-elements to format them with CSS. ... Tip: The <div> element is very often used together with CSS, to layout a web page." - [W3Schools Div Tags](#)

```
<div>This is text inside of a div.</div>

<div style="position:relative; color:#FFFFFF;
background-color:#E0AA0F; border-color:#000000; width:60%;
height:10%; text-align:center; font-family:Calibri;">
    White and gold never gets old.
</div>
```

I want to customize my <div> elements, but look at all this code!

# HTML Element IDs and Classes

You can name your HTML elements!

```
<div id="header"></div>
<div id="container">
  <div class="blob"> ... </div>
  <div class="blob"> ... </div>
  .....
</div>
```

- `id` is useful if *only one* element exists in a given webpage.
- `class` is useful if *multiple* elements exist in a given webpage.
- Why is this useful?
  - General practice of naming your elements.
  - In CSS, you can specify how certain elements *look*.
  - In JavaScript, you can specify how certain elements *behave*.
- [Div-Example.html](#)



# Embedding JavaScript onto HTML

```
<body>
  <script>
    function rage() {
      var raging = document.getElementById("rageText");
      raging.style.color = "#FF0000";
    }
  </script>

  <p id="rageText">Click me for me to rage!</p>
  <button type="button" onclick="rage()">Rage Button</button>
</body>
```

JavaScript can be embedded within `<head>` or `<body>`.

[JavaScript-Example.html](#)

# Referring to JavaScript in HTML

```
<body>
  <script src="js/puntastic.js" type="text/javascript">
    randomPun();
  </script>
  <!-- Where randomPun() prints a random pun on the webpage. -->
</body>
```

JS code can also be referred from external files.

# An analogy

You want to develop your awesome website!

- Coding element behaviors can be difficult and tedious.
- Analogous to `javax.swing` or JavaFX.

# JavaScript Libraries

```
<head>
  ....
  <script type="text/javascript" src="jquery.min.js"></script>
  <!--
  src="//ajax.googleapis.com/ajax/libs/jquery/1.11.1/jquery.min.js"
  -->
</head>
```

- There are JavaScript libraries that does the hard work for you!
- Import them into your HTML document.
- Use an API - don't be concerned about the behind-the-scenes.
- `min` = minified = reduced file size = faster loading
- [JavaScript-Game.html with jQuery.](#)
- [Bootstrap-Stuff.html](#)

# Summary

- Defining element names are useful for customizing the look and behavior of elements.
- Separation of concerns, reusability of code, etc. \*cough\*