CSCI-3403: Cyber Security
Spring 2020

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University of Colorado Boulder

Week 2
> HTML Intro
> Code walkthrough
> Developer Tools

If you're not motivated enough!

Assignment 2 Extra Credit

Note: You should only be writing HTML, and maybe a little CSS in this assignment. If you're using anything else, you're doing it wrong!

During the course of the semester, we're going to make a discussion forum. A very basic discussion forum. Students will be able to view the forum, and if they log in, then they can make a post on the site. You should build a site that does this.

You have a lot of freedom to make the site whatever you want. You can make a discussion board for dental hygiene, or a forum for you favorite game. Take some pride in it! The only technical specifications are that it should include: a login form, a table, divs as necessary, and appropriate uses of ids and classes.

Web Development

Frontend development (Client side)

- Part that users interact with
- **Learn HTML** to structure a website, **CSS** to style a website, **JavaScript** to add interactivity to a website
- Frontend Frameworks and libraries


Backend development (Server side)

- The back end of a website consists of a server, an application, and a database, that makes a front end possible
- Backend Languages

HTML Introduction

- HTML is not a programming language, it is a markup language

- HTML consists of a series of elements, which you use to enclose, or wrap, different parts of the content to make it appear a certain way, or act a certain way.

- The enclosing tags can
  - Make a word or image hyperlink to somewhere else
  - Italicize words
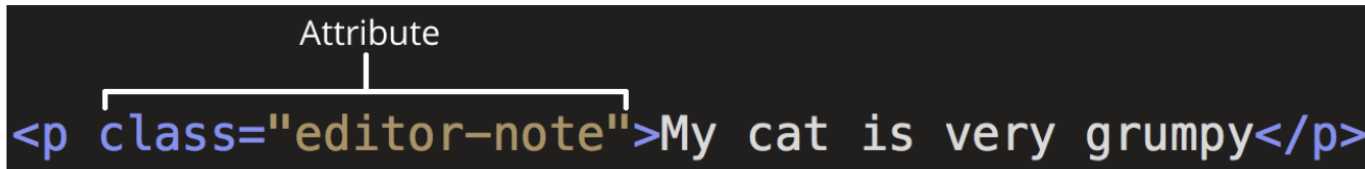 - Make the font bigger or smaller

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Anatomy of an HTML element
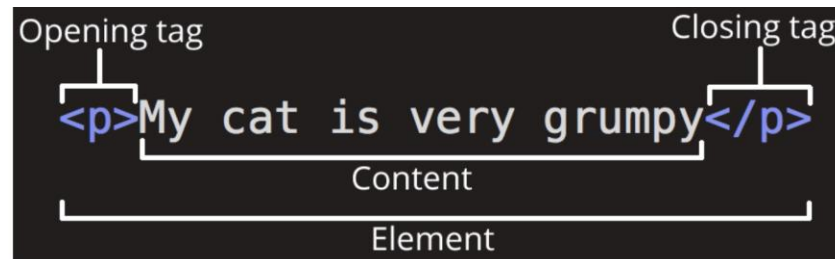
- **Opening tag**: This consists of the name of the element (in this case, p), wrapped in opening and closing **angle brackets**. This states where the element begins or starts to take effect — in this case where the paragraph begins.

- **Closing tag**: This is the same as the opening tag, except that it includes a *forward slash* before the element name. This states where the element ends — in this case where the paragraph ends. Failing to add a closing tag is one of the standard beginner errors and can lead to strange results.

- **Content**: This is the content of the element, which in this case, is just text.

- **Element**: The opening tag, the closing tag and the content together comprise the element.

Anatomy of an HTML element

- Elements can also have attributes that look like the following:

- Attributes contain extra information about the element that you don't want to appear in the actual content. Here, class is the attribute *name* and editor-note is the attribute *value*. An attribute should always have the following:
  - A space between it and the element name (or the previous attribute, if the element already has one or more attributes).
  - The attribute name followed by an equal sign.
  - The attribute value wrapped by opening and closing quotation marks.

Anatomy of an HTML document

```
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <meta charset="utf-8">
5       <title>My test page</title>
6     </head>
7     <body>
8       <img src="images/firefox-icon.png" alt="My test image">
9     </body>
10  </html>
```

- `<!DOCTYPE html>`
  - Basically needed to ensure your document behaves correctly

- `<html></html>`
  - This element wraps all the content on the entire page and is sometimes known as the root element.

- `<head></head>`
  - This element acts as a container for all the stuff you want to include on the HTML page that *isn't* the content you are showing to your page's viewers.
  - This includes things like CSS to style your content, character set declarations and more.

Anatomy of an HTML document

```
 1   <!DOCTYPE html>
 2   <html>
 3     <head>
 4       <meta charset="utf-8">
 5       <title>My test page</title>
 6     </head>
 7     <body>
 8       <img src="images/firefox-icon.png" alt="My test image">
 9     </body>
10   </html>
```

- `<meta charset="utf-8">`
  - Sets the character set your document should use to UTF-8, that can handle any textual content

- `<title></title>`
  - This sets the title of your page, which is the title that appears in the browser tab the page is loaded in

- `<body></body>`
  - This contains *all* the content that you want to show to web users when they visit your page, text, images, videos, games.

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Week 2

> HTML Intro

> **Code walkthrough**

> Developer Tools

Links

Code

```
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <meta charset="utf-8">
5       <meta name="viewport" content="width=device-width">
6       <title>repl.it</title>
7       <link href="style.css" rel="stylesheet" type="text/css" />
8     </head>
9     <body>
10      <a href="https://www.google.co.in" target="_blank">Search here</a>
11    </body>
12  </html>
```

Result

https://StarryAmazingWearable--five-nine.repl.co

Search here

TO DO

HTML Intro ✕

- Basics
- Form

Text

Code

```
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <meta charset="utf-8">
5       <meta name="viewport" content="width=device-width">
6       <title>repl.it</title>
7       <link href="style.css" rel="stylesheet" type="text/css" />
8     </head>
9     <body>
10      <h1> Episode IX </h1>
11      <h2> The Rise of the Skywalker </h2>
12      <h3> The dead speak! The galaxy has </h3>
13      <h4> heard a mysterious broadcast, a </h4>
14      <h5> threat of REVENGE in the sinister </h5>
15      <h6> voice of the late EMPEROR PALPATINE.</h6>
16
17      <p>
18          No <em>star wars</em> fans in here?
19          <br>
20          Such a <strong>shame</strong>
21      </p>
22      <script src="script.js"></script>
23    </body>
24  </html>
```

Result

Episode IX

The Rise of the Skywalker

The dead speak! The galaxy has

heard a mysterious broadcast, a

threat of REVENGE in the sinister

voice of the late EMPEROR PALPATINE.

No *star wars* fans in here?
Such a **shame**

TODO

HTML Tutorial

List

Code

```
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <meta charset="utf-8">
5       <meta name="viewport" content="width=device-width">
6       <title>repl.it</title>
7       <link href="style.css" rel="stylesheet" type="text/css" />
8     </head>
9     <body>
10      <h4> Your TAs
11      <ul>
12        <li>Aditi Prakash</li>
13        <li>Abhinav Gupta</li>
14        <li>Abigail Fernandes</li>
15        <li>Biljith Thadichi</li>
16        <li>Insoo Lee</li>
17      </ul>
18
19      <h4> Top Browsers </h4>
20      <ol>
21        <li>Chrome</li>
22        <li>Firefox</li>
23        <li>Internet Explorer?</li>
24      <script src="script.js"></script>
25    </body>
26  </html>
```

Result

Your TAs

- **Aditi Prakash**
- **Abhinav Gupta**
- **Abigail Fernandes**
- **Biljith Thadichi**
- **Insoo Lee**

Top Browsers

1. Chrome
2. Firefox
3. Internet Explorer?

TO DO

Newly acquired skills

- HTML
- CSS
- JavaScript

Web Frameworks

1. Angular
2. Vue.js
3. React

Table

Code

```html
<body>
  <table border="1">
    <thead>
      <tr>
        <th> name </th>
        <th> email </th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <td>Matt Niemiec</td>
        <td>matthew.niemiec@colorado.edu</td>
      </tr>
      <td>Aditi Prakash</td>
      <td>aditi.prakash@colorado.edu</td>
    </tr>
      <td>Abhinav Gupta</td>
      <td>abhinav.n.gupta@colorado.edu</td>
    <tr>
    </tr>
      <td>Abigail Fernandes</td>
      <td>abigail.fernandes@colorado.edu</td>
    <tr>
    </tr>
      <td>Biljith Thadichi</td>
      <td>biljith.thadichi@colorado.edu</td>
    <tr>
    </tr>
      <td>Insoo Lee</td>
      <td>insoo.lee@colorado.edu</td>
    <tr>
    </tbody>
  </table>
  <script src="script.js"></script>
</body>
```

Result

name	email
Matt Niemiec	matthew.niemiec@colorado.edu
Aditi Prakash	aditi.prakash@colorado.edu
Abhinav Gupta	abhinav.n.gupta@colorado.edu
Abigail Fernandes	abigail.fernandes@colorado.edu
Biljith Thadichi	biljith.thadichi@colorado.edu
Insoo Lee	insoo.lee@colorado.edu

TO DO

Company	Average Salary	Free Food
Google	150000 $	Yes
Facebook	170000 $	Yes
McDonald's	20000 $	Yes, if fries count

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Media

Code

```
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <meta charset="utf-8">
5       <meta name="viewport" content="width=device-width">
6       <title>repl.it</title>
7       <link href="style.css" rel="stylesheet" type="text/css" />
8     </head>
9     <body>
10      <img
        src="https://i.pinimg.com/236x/05/51/a2/0551a2f02273074edc2d702c48d
        54e73--shihtzu-pomeranians.jpg">
11      <video src="https://www.w3schools.com/html/mov_bbb.mp4"
        width="400" controls/>
12      <script src="script.js"></script>
13    </body>
14  </html>
```
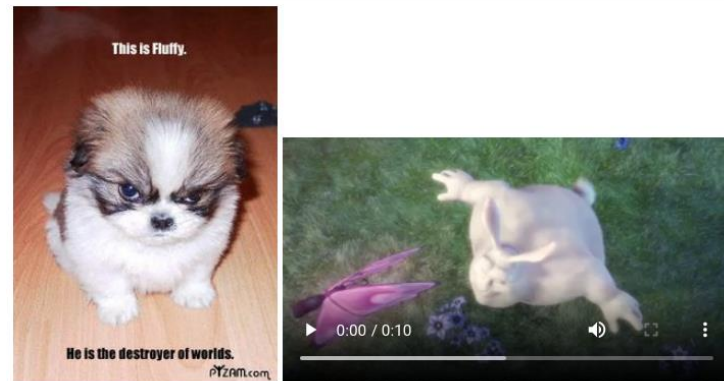
Result

TO DO

Image

Video

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<div>-ide and conquer

Code

```
1    <!DOCTYPE html>
2    <html>
3      <head>
4        <meta charset="utf-8">
5        <meta name="viewport" content="width=device-width">
6        <title>repl.it</title>
7        <link href="style.css" rel="stylesheet" type="text/css" />
8      </head>
9      <body>
10       <p>This is some text.</p>
11
12       <div style="background-color:lightblue">
13         <h3>This is a heading in a div element</h3>
14         <p>This is some text in a div element.</p>
15       </div>
16
17       <p>This is some text.</p>
18       <script src="script.js"></script>
19     </body>
20   </html>
```

Result

This is some text.

This is a heading in a div element

This is some text in a div element.

This is some text.

Forms

Code

```
10    <form>
11      Email: <br>
12      <input type="email" placeholder="Enter email" id="email"
        required>
13      <br>
14      <br>
15
16      Mascot you support: <br>
17      <select name="mascot" id="mascot">
18          <option value="chip">Chip</option>
19          <option value="triton">King Triton</option>
20          <option value="bevo">Bevo</option>
21          <option value="dan">Handsome Dan</option>
22      </select>
23      <br>
24      <br>
25
26      Gender: <br>
27      <input type="radio" name="gender" value="male" checked> Male<br>
28      <input type="radio" name="gender" value="female"> Female<br>
29      <input type="radio" name="gender" value="other"> Other
30      <br>
31      <br>
32
33      <input type="checkbox"> Sko Buffs!
34
35      <br>
36      <br>
37
38      <button type="submit">Submit</button>
39
40    </form>
```

Result

Email:
[Enter email]

Mascot you support:
[Chip ▼]

Gender:
◉ Male
○ Female
○ Other

☐ Sko Buffs!

[Submit]

TODO

Email address: [Enter email]
Password: [Enter password]
Year: [Freshman ↕]
Gender:
○ Male
○ Female
○ Other
☐ Remember me
[Submit]

HTML Tutorial

We're just helping you secure a fancy web dev job. Thank me later! Link to the moodle course is here

Newly acquired skills

- HTML
- CSS
- JavaScript

Web Frameworks

1. Angular
2. Vue.js
3. React

Why you should take this course seriously

Company	Average Salary	Free Food
Google	150000 $	Yes
Facebook	170000 $	Yes
McDonald's	20000 $	Yes, if fries count

Image

Video

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Developer Tools

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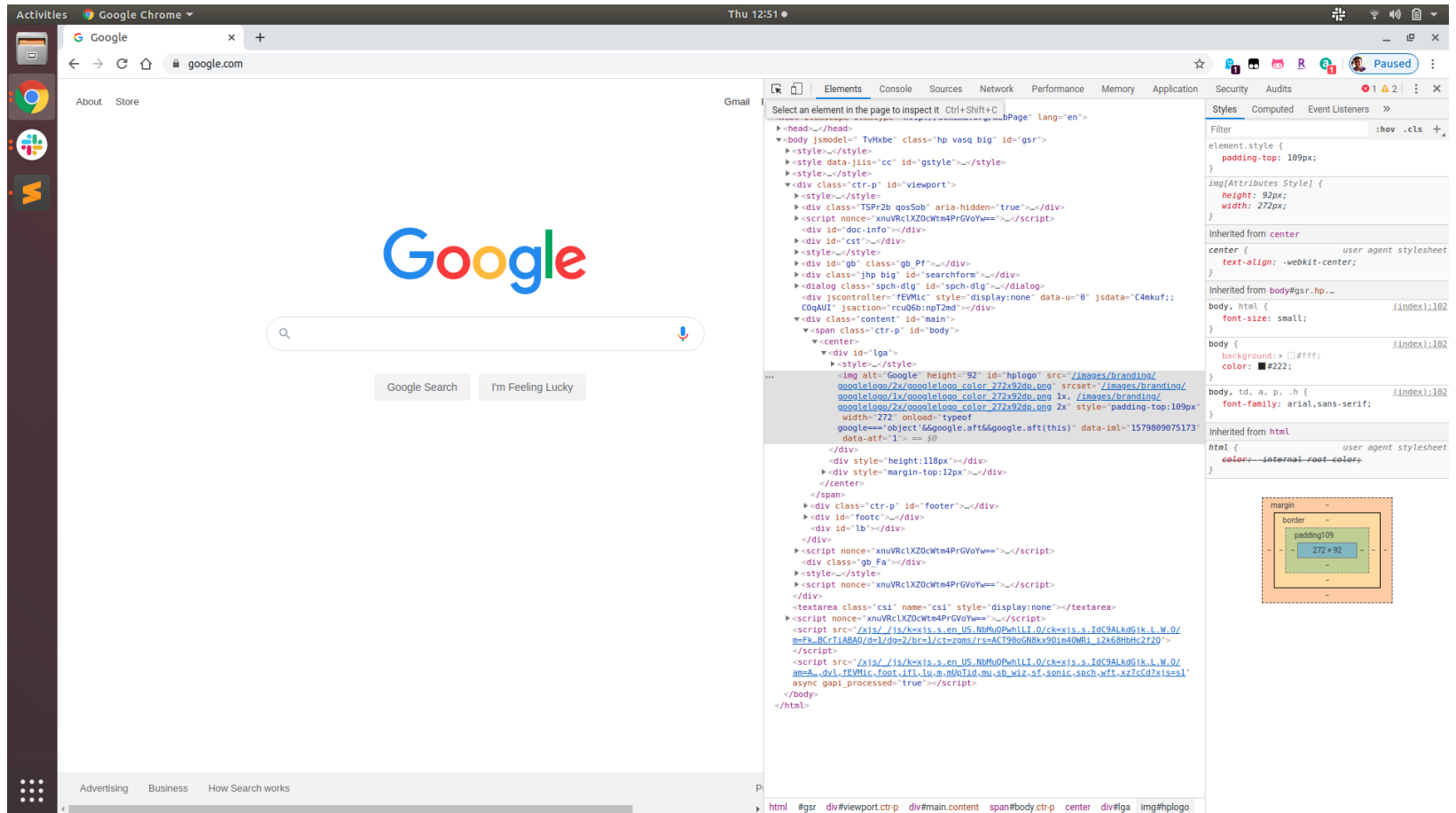
Useful links

- Basics
  - HTML: https://developer.mozilla.org/en-US/docs/Web/HTML
  - CSS: https://developer.mozilla.org/en-US/docs/Web/css
  - JavaScript: https://developer.mozilla.org/en-US/docs/Web/javascript
  - HTML & CSS Tutorial: https://learn.shayhowe.com/
  - Bootstrap Tutorial: https://www.w3schools.com/bootstrap4/

- Web Frameworks:
  - Angular, React, Vue.js

- Backend development
  - Node.js, GoLang, Python, Java

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