



CSCI-3403: Cyber Security

Spring 2020

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University of Colorado Boulder

Welcome!

Abigail Fernandes

- MS in CS (since 2018)
- Focus on Deep Learning, Machine Learning, Robotics, Web Development
- Work Experience
 - Software Engineer, Vistaprint, Web Development (2016 – 2018)
 - Software Engineer Intern, Uber, Computer Vision (2019)
- Teaching Experience
 - Fall 2018: TA Cyber Security
 - Spring 2019: GCA Machine Learning
 - Fall 2020: TA Operating Systems



Welcome!

- Email: Abigail.fernandes@Colorado.edu
- Recitation Website: <https://abigailfernandes.github.io/CSCI3403/>
- Office Hours:
 - Tuesday: 12:45 PM – 1:45 PM (ECAE 131)
- Available other times as needed, send me an email to schedule



Week 2

- > HTML Intro
- > Code walkthrough
- > Developer Tools



If you're not motivated enough!

[REDACTED]

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 your 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.



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Web Development



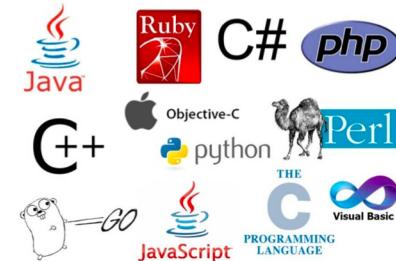
Frontend development (Client side)

- 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



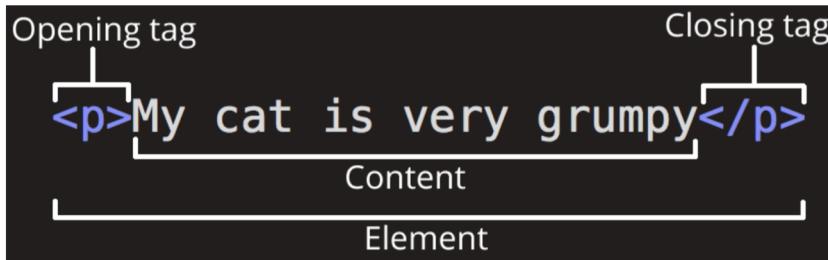
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HTML Introduction

- 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



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:



```
<p class="editor-note">My cat is very grumpy</p>
```

The diagram shows a dark grey rectangular box containing the HTML code. A bracket with the word "Attribute" above it points to the "class" keyword in the first line of the code.

- 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     
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     
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.



Week 2

- > HTML Intro
- > Code walkthrough
- > Developer Tools



<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.



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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



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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



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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

```
<body>


| 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         |


<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

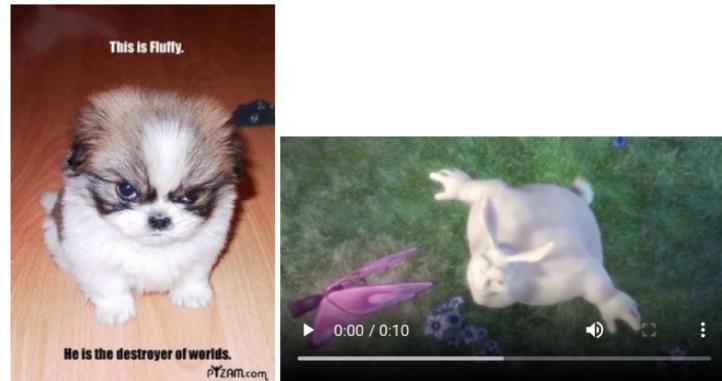


Media

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    
13    <video src="https://www.w3schools.com/html/mov_bbb.mp4"
14      width="400" controls/>
15    <script src="script.js"></script>
16  </body>
17 </html>
```

Result



TO DO

Image



Video



Forms

Code

```
10 <form>
11   Email: <br>
12   <input type="email" placeholder="Enter email" id="email"
13     required>
14   <br>
15   <br>
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
36
37
38   <button type="submit">Submit</button>
39
40 </form>
```

Result

Email:

Mascot you support:

Gender:

Male
 Female
 Other
 Sko Buffs!

TODO

Email address:

Password:

Year:

Gender:

Male
 Female
 Other
 Remember me



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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Why you should take this course seriously

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Google	150000
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Image



Video



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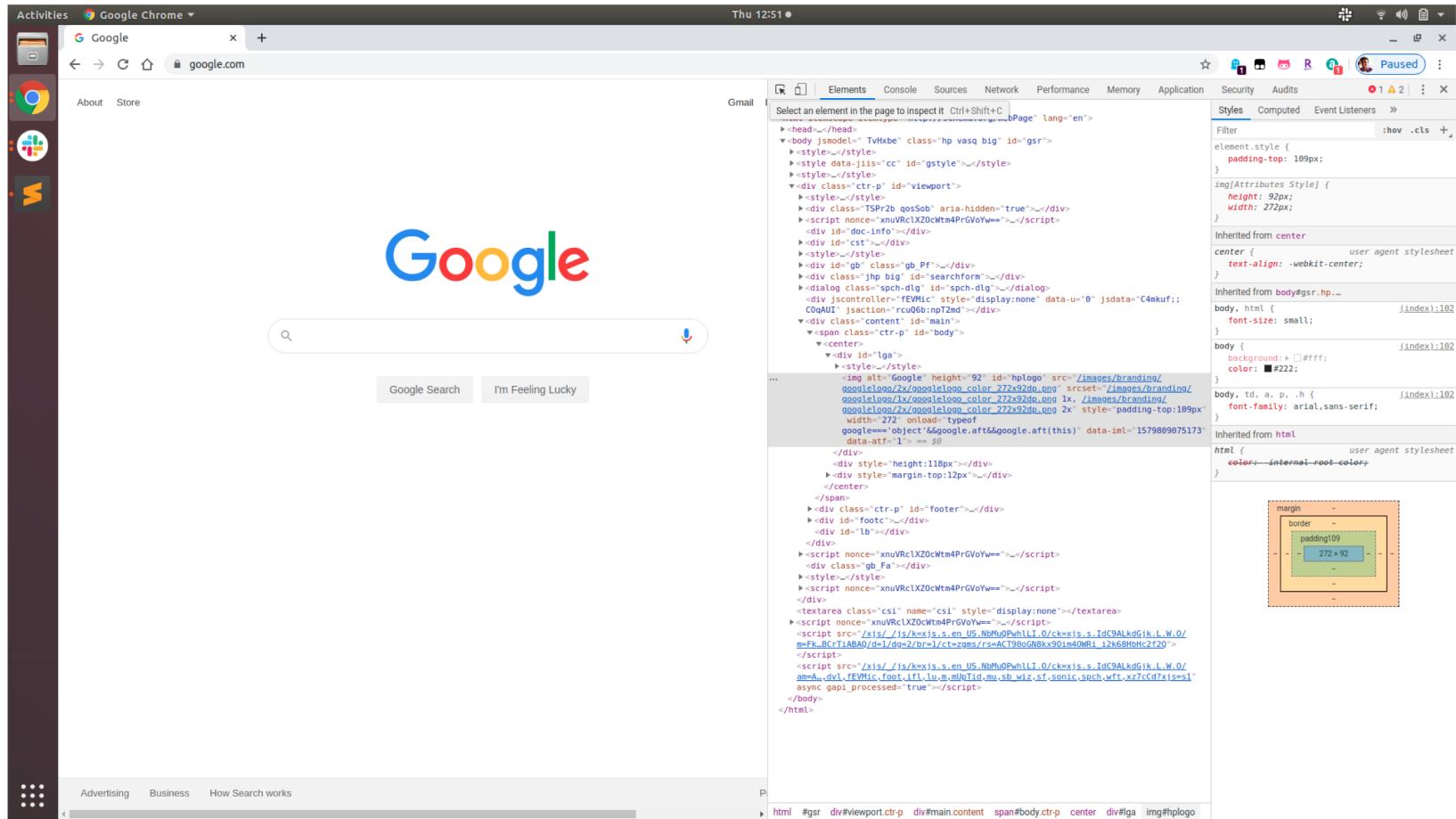
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Developer Tools



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

