

Lab 1

Introduction to Web Development

Chaufournier & Wood
CSCI 2541

General Format and Expectations

- Hands on practical experience on the techniques described in lecture.
 - A mix of lecture, a mix of interactive exercises
- All in lab exercises are due 24 hours after lab.
- Queries and code submitted are expected to work. If it doesn't run its hard for us to give you credit.

Whats on deck for today?

HTML & CSS

HTML

Hypertext

Hypertext

A document containing links to other locations or content in a page

Markup Language

Markup Language

A human readable language system that uses tags to write and format the elements in a document.

**HTML =
Hypertext + Markup Language**

HTML

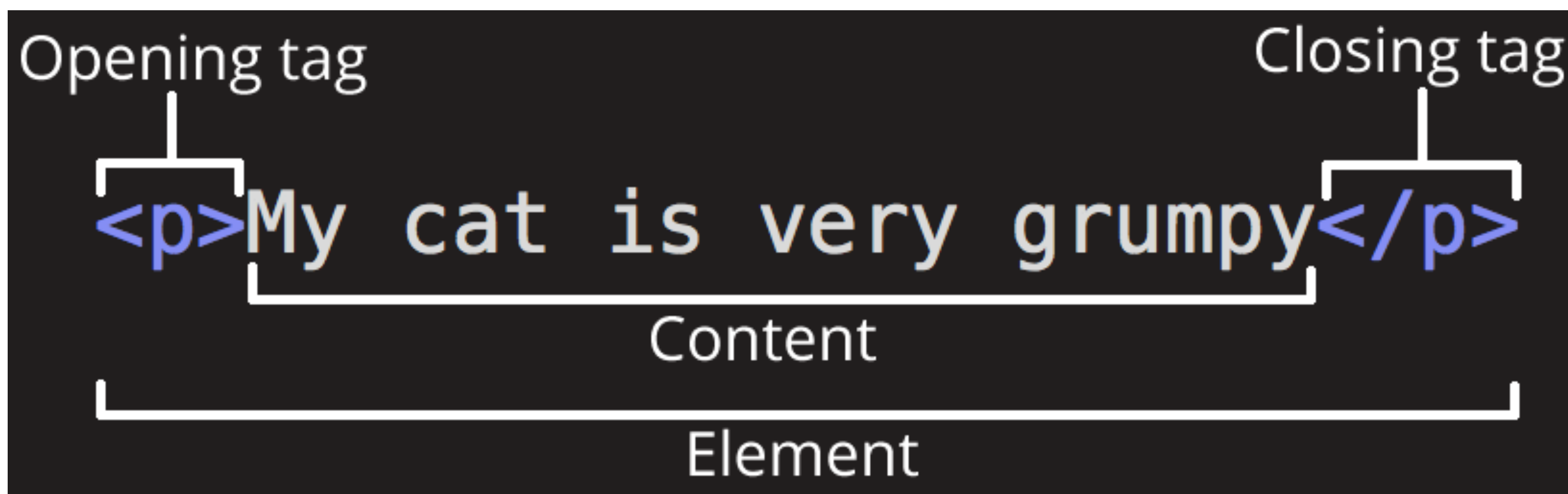
A language that uses tags and attributes to define the content (Links, Text, and images) of a webpage.

What does HTML actually do?

- Invented in 1989 as a way to create web pages for the internet.
- Uses HTML tags and attributes to define documents.
- Tags are used to create elements on a page and are signified by an opening tag `<>` and a closing tag `</>`.

`<p>Hello this is my paragraph </p>`

- Attributes are used to describe the characteristics of an HTML element in greater detail.
 - `<p align="center"> Hello this is my paragraph. </p>`



A basic html webpage

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

My First Heading

My first paragraph.

Formatting content

Most Common HTML Tags

- Page headings:

`<h1>`, `<h2>`, `<h3>`, `<h4>`, `<h5>`,`<h6>`

- Define a Paragraphs of text:

`<p> My paragraph text</p>`

- Force a line break

`
`

- Format Text for Bold, Italics, and Underline

`` `<i></i>` `<u></u>`

Lab activity 1

- Create a basic webpage introducing yourself.
- Your website should include:
 - Name.
 - Major and Year.
 - A description of yourself including your interests,
 - Why you're taking this course
 - How comfortable you are with HTML, CSS, Js, Python and sql. (Its ok if you know none of these, thats why you're here!)
 - One thing you're interested in learning from this course.

Lucas Chaufournier

B.S. Computer Science, 2015

I'm a senior software engineer at Capital One. I'm really into hiking and the outdoors when not surfing the keyboard. I'm teaching this course because I enjoy teaching and want to help prepare students to be great software engineers and be prepared for the working world. I have several years experience in full stack development and databases.

I look forward to learning about what areas students are interested in.

Links

- Define an external link:

```
<a href="www.google.com">Google </a>
```

- Define a link to a page on the same domain:

```
<a href="dogs.html">Click here for dogs </a>
```

- Define a link within the page:

```
<a href="#Bio"> Click for my Bio </a>
```

Collecting User Input

HTML Forms

```
<!DOCTYPE html> <html>
<head>
<title>Form Example</title> </head>
<body>
<form>
First name:<br>
<input type="text" name="firstname"><br>
Last name:<br>
<input type="text" name="lastname"><br>
<input type="submit" name="submit">
</form> </body> </html>
```

First name:

Last name:

Submit

**But wait, how do we make it look
good?**

CSS: Cascading Style Sheets

CSS: Cascading Style Sheets

- CSS is the language of design.
- It's what controls the color, textures, and layout of a web page
- Use it to control how elements are displayed on a page both in location and in how they look.

Returning to HTML

Modify html to add support for css.

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

My First Heading

My first paragraph.

Returning to HTML

Modify html to add support for css.

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
<link rel="stylesheet" type="text/css" href="styles.css" >
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

Styling an html page

styles.css

```
body{
  background-color: grey;
  font-size: large;
  color: red;
}

p{
  background-color: lightgrey;
  font-size: medium;
  color: blue;
  padding: 20pt;
}
```

```
selector{
  property: prop-value; ← Declaration
}
```


Styling an html page

styles.css

```
body{
  background-color: grey;
  font-size: large;
  color: red;
}

p{
  background-color: lightgrey;
  font-size: medium;
  color: blue;
  padding: 20pt;
}
```

My First Heading

My first paragraph.

Classes vs ID's

- You can specify CSS styling based on tags, classes, and ids.
- Add an id to a tag if you want to be able to style that specific element only:
 - `<p id="style_only_this_one"> </p>`
- Add a class to a tag if you want to style multiple elements on a page:
 - `<p class="style_all_paragraphs"></p>`

Classes vs ID's

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- Add a class to a tag if you want to style multiple elements on a page:
 - `<p class="style_all_paragraphs"></p>`

Use id's to style a specific element that appears only once and classes to style elements that appear repeatedly.

Styling Classes and Id's

styles.css

```
p{  
  background-color: lightgrey;  
  font-size: medium;  
  color: blue;  
  padding: 20pt;  
}
```

```
#style_only_this_one{  
  background-color: lightgrey;  
  font-size: medium;  
  color: blue;  
  padding: 20pt;  
}
```

```
.style_all_paragraphs{  
  background-color: lightgrey;  
  font-size: medium;  
  color: blue;  
  padding: 20pt;  
}
```

CSS Inheritance

- CSS is called cascading because of inheritance.
- When multiple rules conflict with each other, styles cascade downwards thus applying only the last rule.

```
h1{  
  color: red;  
}
```

```
h1{  
  color: blue;  
}
```

**What color will h1 elements
be on the page?**

CSS Inheritance

- CSS is called cascading because of inheritance.
- When multiple rules conflict with each other, styles cascade downwards thus applying only the last rule.

```
h1{  
  color: red;  
}  
  
h1{  
  color: blue;  
}
```

Because of inheritance only the last rule is applied. The heading is blue.

CSS Specificity

- CSS rules with more specific selectors override CSS rules with less specific selectors regardless of order.
- The rules of specificity are as follows:
 - The least specific is an element tag: `<p>`
 - Using a class will override an element tag style: `.myHeader`
 - Using an id will override both a class and an element tag style: `#myTitle`

Lab Activity 2

In groups of 2

- Use a combination of HTML and CSS to replicate this simple form
 - Your styles don't have to match mine 100% but you must have a styled form that looks good.
- Create an index page that links to both partners Activity 1 page and the alien abduction form.
- You should use a multiplayer repl.it space and submit it through this form: <http://bit.ly/DB21-2>

https://GoodInsignificantCables

- [Partner 1](#)
- [Partner 2](#)
- [Alien Abduction Form](#)

https://GoodInsignificantCables.thelimeburner.repl.co

Aliens Abducted Me - Report an Abduction!

Share your story of alien abduction:

First Name:

Last Name:

What is your email address?

When did it happen?


How long were you gone? Days

How many did you see?

Describe them:

What did they do to you?

Have you seen my dog Fang? Yes No



Anything else you want to add?

Submit

Resources on HTML and CSS

- - HTML
 - <https://www.w3schools.com/html/default.asp>
 - [https://developer.mozilla.org/en-US/docs/Learn/HTML/Introduction to HTML/Getting started](https://developer.mozilla.org/en-US/docs/Learn/HTML/Introduction_to_HTML/Getting_started)
- - CSS
 - [https://developer.mozilla.org/en-US/docs/Learn/CSS/First steps/How CSS works](https://developer.mozilla.org/en-US/docs/Learn/CSS/First_steps/How_CSS_works)
 - <https://www.w3schools.com/css/default.asp>