




CSCI 3308 Software Dev Methodologies and Tools

Lab -3
January 29, 2025



Announcement

LAB 1

- Lab 1 has been graded and the grades will be published shortly.
- Please check your attendance on canvas on a weekly basis
- In case you are planning to miss a recitation, submit the **Lab absence request** form.
- Please read the submission guidelines

HTML , CSS & Javascript



HTML

(Structural)



HTML + CSS

+ **BOOTSTRAP** (adds
responsiveness)
(Presentation Layer)



HTML + CSS + JavaScript

(Behavioral)



HTML

Hyper Text Markup Language



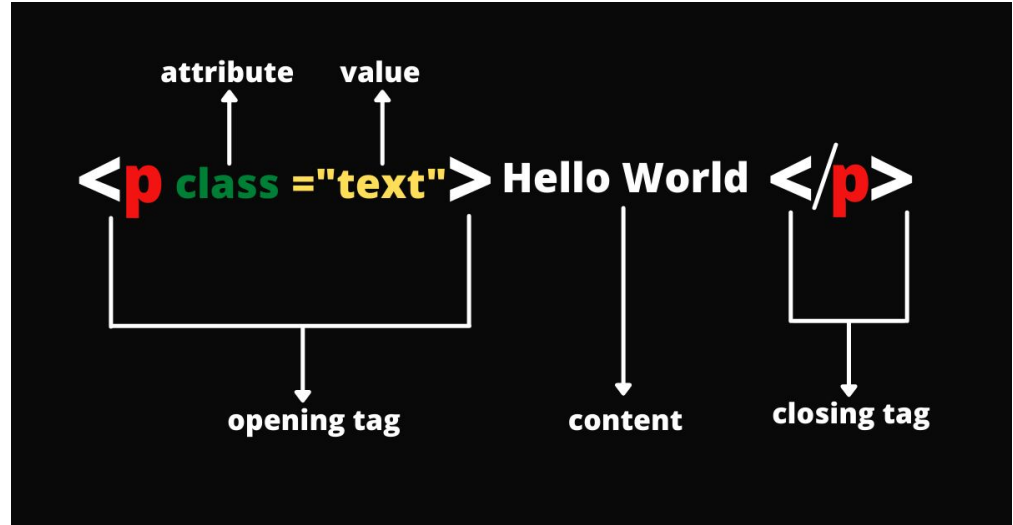
HTML

- Defines the **structure** and content of our webpages.
- This markup tells a web browser how to display text, images, and other forms of multimedia on a webpage.

```
<> index.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3      <head>
4          <!--Header stuff goes here ( this is a comment )-->
5          <title>Page Title</title>
6      </head>
7      <body>
8          <!-- The body of the webpage goes here -->
9          <h1>My First Heading</h1>
10         <p>My First Paragraph</p>
11     </body>
12 </html>
```

HTML Tags, HTML Elements, HTML Attributes

- HTML elements: element consists of the opening tag, the content, and a closing tag.
- HTML attributes: used to adjust the behavior or display of an HTML element.



HTML Images

```
<!DOCTYPE html>
<html>
<body>
  <h2>HTML Image</h2>
  
</body>
</html>
```

HTML Image



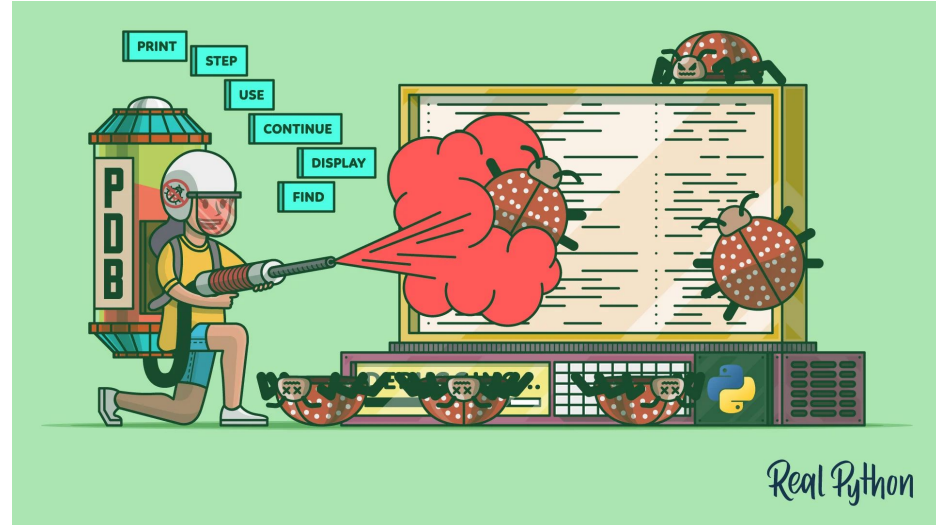
HTML Hyperlinks

```
<!DOCTYPE html>
<html>
<body>
  <h1>HTML Links</h1>
  <p>
    <a href="https://www.w3schools.com/">Visit W3Schools.com!</a>
  </p>
</body>
</html>
```

HTML Links

[Visit W3Schools.com!](https://www.w3schools.com/)

How to open and debug a HTML file in your web browser?



Always use VSCode/Notepad++
to edit your HTML file



CSS

Cascading Style Sheet



CSS

Define **styles** for your web pages, including the design, layout and variations in display for different devices and screen sizes.

Tip: The word cascading means that a style applied to a parent element will also apply to all children elements within the parent.

HTML Without CSS

```
<!DOCTYPE html>
<html>
<body>

<h2>A basic HTML table</h2>

<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
</table>

</body>
</html>
```

A basic HTML table

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Centro comercial Moctezuma	Francisco Chang	Mexico

HTML With CSS

```
<!DOCTYPE html>
<html>
<style>
table, th, td {
  border:1px solid black;
}
</style>
<body>

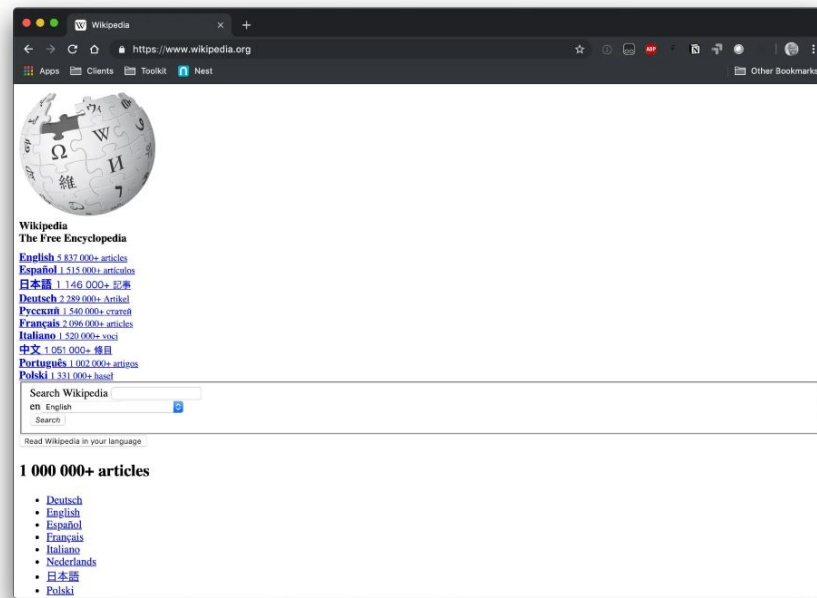
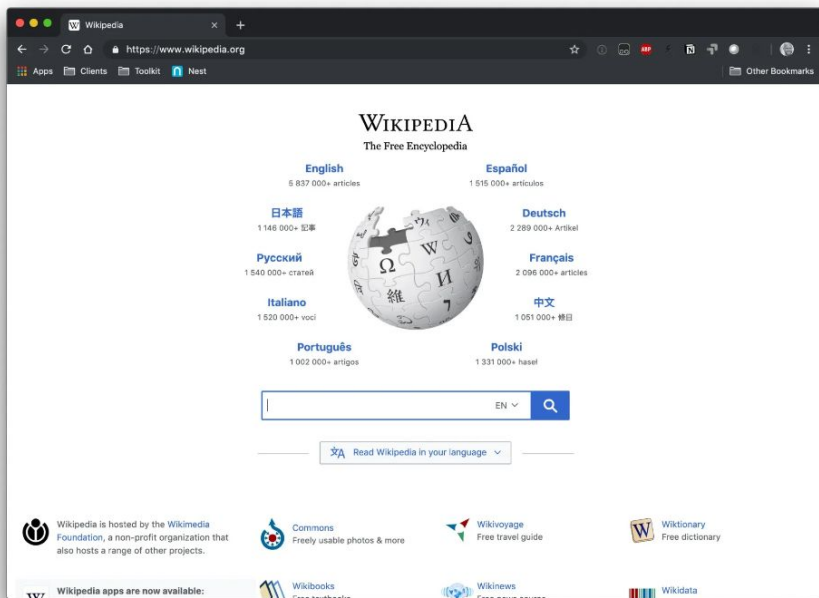
<h2>A basic HTML table</h2>

<table style="width:100%">
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
</table>

</body>
</html>
```

A basic HTML table

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Centro comercial Moctezuma	Francisco Chang	Mexico





How do we integrate the two ???



Combining HTML with CSS

CSS can be added to HTML documents in the following ways:

1. Internal

- a. **Inline** - by using the style attribute inside HTML elements
- b. **Page-Level** - by using a `<style>` element in the `<head>` section

2. External - by using a `<link>` element to link to an external CSS file

Inline CSS

```
<p style="color: blue;">This is a paragraph.</p>
```

Internal CSS

```
<head>  
  <style type = text/css>  
    body {background-color: blue;}  
    p { color: yellow;}  
  </style>  
</head>
```

External CSS

```
<head>  
  <link rel="stylesheet" type="text/css" href="style.css">  
</head>
```

Page Level CSS

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: orange;
}
h1 {
  color: blue;
}
p {
  color: red;
  border: 4px solid black;
}
</style>
</head>
<body>

<h1>This is a blue heading</h1>
<p>This is a red paragraph.</p>
<p style="color: yellow">I dont want to be red, make me yellow</p>

</body>
</html>
```

Page Level CSS

Inline CSS

This is a blue heading

This is a red paragraph.

I dont want to be red, make me yellow

External CSS

Add the styles to a separate file **.css** file (here, `styles.css`) and link it in your `html` file.

```
body {  
  background-color: powderblue;  
}  
  
h1 {  
  color: blue;  
}  
  
p {  
  color: red;  
}
```

`styles.css`

```
<!DOCTYPE html>  
<html>  
  <head>  
    <link rel="stylesheet" href="styles.css">  
  </head>  
  <body>  
  
    <h1>This is a heading</h1>  
    <p>This is a paragraph.</p>  
  
  </body>  
</html>
```

`index.html`

This is a heading

This is a paragraph.

href: path relative to the current web page.

CSS Selectors

We can use *selectors* to apply CSS to:

- Any type of element
- Any element with a given class
- Any element with a given ID

The diagram illustrates the components of a CSS rule. The selector `.my-css-rule` is highlighted in a light blue box and labeled "Selector" with a downward arrow. The opening curly brace `{` is part of the selector's syntax. The first declaration `background: red;` is on the next line. The second declaration `color: beige;` is highlighted in a light green box and labeled "Declaration" with a rightward arrow. Within this declaration, `color:` is highlighted in a light blue box and labeled "Property" with an upward arrow, and `beige;` is highlighted in a light purple box and labeled "Value" with an upward arrow. The third declaration `font-size: 1.2rem;` is on the next line. The closing curly brace `}` is on the final line.

```
.my-css-rule {  
  background: red;  
  color: beige;  
  font-size: 1.2rem;  
}
```

Selectors in CSS

Element Selector

```
h2 {  
  color: #c70039 ;  
}
```

Universal Selector

```
* {  
  color: #c70039 ;  
}
```

ID Selector

```
#content {  
  color: #6E4253;  
  font-size: 15px;  
}
```

Class Selector

```
.main {  
  margin-top: 10px  
  margin-bottom: 10px  
}
```

CSS Element Selector

```
<!DOCTYPE html>
<html>
<style>
div {
  background-color: pink;
  margin: 10px;
  width: 40%;
  height: 200px;
}
</style>
<body>
<div>
  <h1>A Blue Heading</h1>
  <p>A red paragraph.</p>
</div>
</body>
</html>
```

A Blue Heading

A red paragraph.

CSS #id Selector

```
<!DOCTYPE html>
<html>
<style>
#para1 {
    color: red;
}
#heading {
    color: blue;
    text-align: right;
}
</style>
<body>
<div>
    <h1 id='heading'>A Heading</h1>
    <p id='para1'>A red paragraph.</p>
</div>
</body>
</html>
```

A red paragraph.

A Heading

CSS .class Selector

```
<!DOCTYPE html>
<html>
<style>
.header {
  background-color: orange;
  width: 60%;
}
</style>
<body>
<div class="header">
  <p> This is a paragraph under div with 'header' class </p>
  <h2> This is a heading under div with 'header' class </h2>
</div>
<div class="header">
  <b> This is a bold text under div with 'header' class </b>
  <h3> This is a heading H3 under div with 'header' class </h3>
  <h2> This is a heading H2 under div with 'header' class </h2>
  <h1> This is a heading H1 under div with 'header' class </h1>
</div>
</body>
</html>
```

This is a paragraph under div with 'header' class

This is a heading under div with 'header' class

This is a bold text under div with 'header' class

This is a heading H3 under div with 'header' class

This is a heading H2 under div with 'header' class

**This is a heading H1 under div with
'header' class**

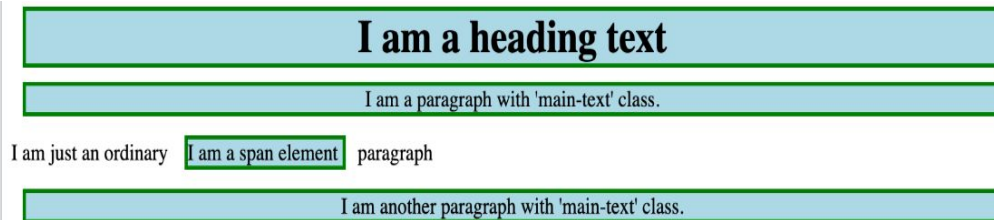
Can I Combine All the Selectors ?

```
<!DOCTYPE html>
<html>
<head>
<style>
  p.main-text, #heading-text, span {
    background-color: lightblue;
    margin: 10px;
    text-align: center;
    border: 3px solid green;
  }
</style>
</head>
<body>
<h1 id='heading-text'>I am a heading text </h1>
<p class="main-text">
I am a paragraph with 'main-text' class.
</p>

<!-- element with no styles -->
<p>I am just an ordinary <span> I am a span element </span> paragraph </p>

<p class="main-text">
I am another paragraph with 'main-text' class.
</p>

</body>
</html>
```



CSS Frameworks



Lets Figure out how to use Bootstrap !!!

Lab Overview

Part A

You are required to develop 3 pages for your Personal Website using HTM, CSS & Bootstrap 5.3 (any css framework you like)

- Home page
- Hobbies page
- Projects Page

Part B

- Resume page using an external library (list provided)

Directory Structure

```
|--Lab_Website
  |--views
    |--hobbies.html
    |--home.html
    |--projects.html
    |--resume.html
  |--resources optional
    |--img
      |--favicon.ico
      |--img1.jpg
      |--img2.jpg
      |--img3.jpg
      |--img4.svg
    |--css
      |--style.css <optional>
```

Q & A

Let's Get Started

- **No VSCODE live server**
- **No Absolute path**
- **Only the github icon needs to work, the other links can link to homepage**