CMPSC 104 – Document Engineering
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Overview

What is HTML?

- HTML (HyperText Markup Language) is the standard language used to structure and display content on the web. It organizes text, images, links, and other elements to create web pages.

Examples of JAMstack:

- Google Homepage: Simple, HTML-structured layout that loads quickly.
- BBC News: HTML structures news articles, making them accessible and readable on different devices.

Choosing a Text Editor

File Extension
- .html Extension: Save your HTML files with the .html extension to ensure they are recognized as HTML documents by browsers.

Basic Editors
- Notepad (Windows) and TextEdit (Mac). Basic, pre-installed text editors useful for simple HTML editing.

Specialized HTML Editors
- Some popular programs specially designed to write HTML, such as atom, sublime, brackets, webstorm.

index.html

```html
<html>
<head>
 <meta charset="UTF-8">
 <title>Document</title>
</head>
<body>
 <h1>Hello World</h1>
 <p>This is a paragraph explaining the content of the page.</p>
 <a href="https://github.com/allegheny-college-cmpsc-104-Fall-2024">Visit DocEng 104</a>
</body>
</html>
```

HTML Tags

- HTML tags are the building blocks of HTML, used to create and define elements on a web page.
- Most tags come in pairs: an opening tag `<tagname>` and a closing tag `</tagname>`.

Basic HTML Tags
- **<html>**: Wraps all HTML content on the page. The root of the document.
- **<head>**: Contains metadata, links to CSS, scripts, and the page title.
- **<title>**: Sets the title of the page, displayed in the browser tab.
- **<body>**: Holds all content displayed on the page, such as text, images, and links.

HTML Tags

Common Content Tags
- **<h1> to <h6>:** Headings for sections, from largest (<h1>) to smallest (<h6>).
- **<p>:** Paragraph tag, used for blocks of text.
- **<a>:** Anchor tag, used to create hyperlinks (Link Text).
- **<img>:** Image tag, displays images (<img src="image.jpg" alt="description">).

Creating an HTML File

```html
<!DOCTYPE html>
<html>
  <head>
    <title>CMPSC104 HTML Website</title>
  </head>
  <body>
    <p>Hello World!</p>
  </body>
</html>
```

Head Tag

```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <meta name="description" content="This is an awesome website">
    <title>CMPSC104 HTML Website</title>
  </head>
  <body>
    <p>Hello World!</p>
  </body>
</html>
```

Header

```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <meta name="description" content="This is an awesome website">
    <title>CMPSC104 HTML Website</title>
  </head>
  <body>
    <h1>HTML Website</h1>
  </body>
</html>
```

Header

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <meta name="description" content="This is an awesome website">
    <title>CMPSC104 HTML Website</title>
  </head>
  <body>
    <h2>HTML Website</h2>
  </body>
</html>
```

Paragraph Tags

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <p>This is my paragraph</p>
        <p>This is my paragraph #2</p>
    </body>
</html>
```

Bold Tags

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <p>This is my <b>paragraph</b></p>
        <p>This is my paragraph #2</p>
    </body>
</html>
```

Italic Tags

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <p>This is my <b>paragraph</b></p>
        <p>This is my <i>paragraph #2</i></p>
    </body>
</html>
```

Bold & Italic Tags

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <p>This is my <b>paragraph</b></p>
        <p>This is my <b><i>paragraph #2</i></b></p>
    </body>
</html>
```

Layout

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <p>This is my <b><i>paragraph #2</i></b></p>
        <h2>HTML Website</h2>
        <p>This is my <b>paragraph</b></p>
    </body>
</html>
```

Layout

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>


        <p>This is my <b><i>paragraph #2</i></b></p>
        <h2>HTML Website</h2>
        <p>This is my <b>paragraph</b></p>



    </body>
</html>
```

Break Tags

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <br/>
        <p>This is my <b><i>paragraph #2</i></b></p>
        <p>This is my <b>paragraph</b></p>
    </body>
</html>
```

Break Tags

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <br/><br/>
        <p>This is my <b><i>paragraph #2</i></b></p>
        <p>This is my <b>paragraph</b></p>
    </body>
</html>
```

Horizontal Rule Tag

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <hr/>
        <p>This is my <b><i>paragraph #2</i></b></p>
        <p>This is my <b>paragraph</b></p>
    </body>
</html>
```

Big & Small Tags

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <hr/>
        <p>This is my <b><i>paragraph #2</i></b></p>
        <p><big>This</big> is <small>my</small> <b>paragraph</b></p>
    </body>
</html>
```

Subscripts & Superscripts Tags

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <hr/>
        <p>This is my <b><i>paragraph #2</i></b></p>
        <p><big>This</big> is <small>my</small> <b>paragraph</b></p>
        <p>H<sub>20</sub></p>
        <p>10<sup>2</sup></p>
    </body>
</html>
```

Comments

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <hr/>
        <!-- html comments: TODO -->
    </body>
</html>
```

Comments

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <!-- Redoing this with error 4785
    <body>
        <h2>HTML Website</h2>
        <hr/>
    -->
    </body>
</html>
```

Style and Colors

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <hr/>
        <p style="color: blue;">Style and colors</p>
    </body>
</html>
```

Style and Colors

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h2>HTML Website</h2>
        <hr/>
        <p style="color: blue; background-color: red">Style and colors</p>
    </body>
</html>
```

Style and Colors

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body style="background-color:lightblue">
        <h2 style="color:green">HTML Website</h2>
        <hr/>
        <p style="color:blue; background-color: red">Style and colors</p>
    </body>
</html>
```

HTML Color Names

Links

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <a href="https://www.google.com"><h1>Google's Homepage</h1></a>
    </body>
</html>
```

Links – Open in a New Page

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <a href="https://www.google.com" target="_blank"><h1>Google's
Homepage</h1></a>
    </body>
</html>
```

Links

Add a Page2.html, dir1/Page3.html & image1.jpg in the working directory.

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <a href="page2.html"><h1>Page2</h1></a>
    </body>
</html>
```

Links

Add a Page2.html, dir1/Page3.html & image1.jpg in the working directory.

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <a href="page2.html"><h1>Page2</h1></a>
        <a href="dir1/page3.html"><h1>Page3</h1></a>
    </body>
</html>
```

Links

Add a Page2.html, dir1/Page3.html & image1.jpg in the working directory.

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <a href="page2.html"><h1>Page2</h1></a>
        <a href="dir1/page3.html"><h1>Page3</h1></a>
        <a href="image1.jpg"><h1>Image1</h1></a>
    </body>
</html>
```

Images - Online Resource

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <img
src="https://upload.wikimedia.org/wikipedia/commons/c/c3/Eastern_grey_ka
ngaroo_dec07_02.jpg" alt="Kangaroo" />
    </body>
</html>
```

Images – Own Machine

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <img width="500" height="400" src="image1.jpg" alt="Train
Station" />
    </body>
</html>
```

Images – Own Machine

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
      <a href="https://upload.wikimedia.org/wikipedia/commons/c/c3/Eastern_grey_kangaroo_dec07_02.jpg">
        <img width="500" height="400" src="image1.jpg" alt="Train Station" />
      </a>
    </body>
</html>
```

Videos & Youtube iFrames

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <video src="video1.mp4" controls></video>
    </body>
</html>
```

Videos & Youtube iFrames

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <video src="video1.mp4" controls width="300"></video>
    </body>
</html>
```

Videos & Youtube iFrames

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <video src="video1.mp4" poster="image1.jpg" controls width="300"></video>
    </body>
</html>
```

Videos & Youtube iFrames

[YouTube Video](#)

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <iframe width="560" height="315"
src="https://www.youtube.com/embed/x_WxMcHDWW4?si=HPHrnDqy_1OuyftO" title="YouTube
video player" frameborder="0" allow="accelerometer; autoplay; clipboard-write;
encrypted-media; gyroscope; picture-in-picture; web-share" referrerpolicy="strict-
origin-when-cross-origin" allowfullscreen></iframe>
    </body>
</html>
```

Unordered Lists

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <ul>
            <li>Apples</li>
            <li>Oranges</li>
            <li>Bananas</li>
        </ul>
    </body>
</html>
```

Ordered Lists

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <ol>
            <li>Apples</li>
            <li>Oranges</li>
            <li>Bananas</li>
        </ol>
    </body>
</html>
```

ALLEGHENY COLLEGE

Ordered Lists

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <ol type="a">
            <li>Apples</li>
            <li>Oranges</li>
                <ol>
                    <li>item1</li>
                </ol>
            <li>Bananas</li>
        </ol>
    </body>
</html>
```

ALLEGHENY COLLEGE

Tables

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description"
content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <table>
            <tr>
                <td>one</td>
                <td>two</td>
                <td>three</td>
            </tr>
            <tr>
                <td>four</td>
                <td>five</td>
                <td>six</td>
            </tr>
        </table>
    </body>
</html>
```

Tables

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome
website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <table>
            <caption><h3>List of Numbers</h3></caption>
            <tr>
                <th>num1</th>
                <th>num2</th>
                <th>num3</th>
            </tr>
            <tr>
                <td>one</td>
                <td>two</td>
                <td>three</td>
            </tr>
        </table>
    </body>
</html>
```

Tables

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <table>
            <caption><h3>List of Numbers</h3></caption>
            <tr>
                <th>num1</th>
                <th>num2</th>
                <th>num3</th>
            </tr>
            <tr>
                <td colspan="2">one</td>
                <td>two</td>
                <td>three</td>
            </tr>
        </table>
    </body>
</html>
```

Divs & Spans

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <h1><span style="background-color: yellow">Welcome to Doc Engineering</span></h1>
        <h1><div style="background-color: tomato">This is a div title</div></h1>
    </body>
</html>
```

Input

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <input type="text" value="Enter Your Username"/>
        <br/>
        <input type="password" />
    </body>
</html>
```

Input

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <input type="text" value="Enter Your Username"/>
        <br/>
        <input type="password"/>
        <br/>
        <textarea rows="10" cols="30">
            Enter a paragraph
        </textarea>
    </body>
</html>
```

Input

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome
website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <input type="date" />
        <input type="email" />
        <input type="range" />
        <input type="file" />
        <input type="submit" />
        <input type="checkbox" />
        <input type="checkbox" />
        <input name="button" type="radio" />
        <input name="button" type="radio" />
    </body>
</html>
```

[HTML input tag (w3schools.com)](w3schools.com)

Formatting with Tags

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="description" content="This is an awesome website">
        <title>CMPSC104 HTML Website</title>
    </head>
    <body>
        <header>
            <nav></nav>
        </header>
        <main>
            <article>
                <section>
                    <h1></h1>
                </section>
            </article>
        </main>
        <footer>
        </footer>
    </body>
</html>
```

Header, Main and Footer

HTML-Games

- Game Hub (https://github.com/upovibe/Game-Hub/tree/main)
- Html-games (https://github.com/16Yongjin/html-games)

Reference and Resources

- HTML W3School (https://www.w3schools.com/html/html_intro.asp)
- [MDN Web Docs: HTML](https://developer.mozilla.org/en-US/docs/Web/HTML)