Welcome to this CoGrammar session:

Hypertext Markup Language (HTML)

The session will start shortly...

Questions? Drop them in the chat.
We'll have dedicated moderators
answering questions.

Software Engineering Session Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: Questions

Software Engineering Session Housekeeping cont.

- For all **non-academic questions**, please submit a query: www.hyperiondev.com/support
- Report a **safeguarding** incident: www.hyperiondev.com/safeguardreporting
- We would love your **feedback** on lectures: Feedback on Lectures

Skills Bootcamp
8-Week Progression Overview

✓ Criterion 3: Course Progress

- ***Completion:*** All mandatory tasks, including Build Your Brand and resubmissions by study period end
- *Interview Invitation:* Within 4 weeks post-course
- *Guided Learning Hours:* Minimum of 112 hours by support end date (10.5 hours average, each week)

✓ Criterion 4: Demonstrating Employability

- *Final Job or Apprenticeship Outcome:* Document within 12 weeks post-graduation
- *Relevance:* Progression to employment or related opportunity

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Learning Outcomes

- Understand the basic structure and purpose of HTML.
- Describe the importance of HTML in web development.
- Create simple HTML documents using appropriate tags.
- Differentiate between HTML tags and attributes.
- Identify the role of HTML in separating content from presentation.

Polls

- *Refer to the polls section to vote for you option.*

1. What is the primary purpose of HTML?
    a. Styling web pages
    b. Adding interactivity to web pages
    c. Structuring web content
    d. Managing server-side operations

Polls

- *Refer to the polls section to vote for you option.*

2. Which of the following is an HTML tag?
    a. class
    b. style
    c.
    d. id

Polls

- *Refer to the polls section to vote for you option.*

3. What is the significance of separating content from presentation in HTML?
    a. Improves website performance
    b. Facilitates collaboration among developers
    c. Enhances search engine optimisation (SEO)
    d. Ensures accessibility and device compatibility

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HyperText Markup Language (HTML)

May 2024

Introduction

- HTML stands for HyperText Markup Language.
- It is a language that we use to create files that tell the browser how to lay out or structure text, images, tables, “content” etc. on a web page.
- Its primary role in web development is to define the structure and content of a webpage by using a system of tags and attributes.
- HTML does not include the style of the content (e.g. font, colour, size, etc.), which is done using CSS (Cascading Style Sheets).

HTML Tags

- Tags are the fundamental building blocks that indicate to the browser what sort of structure the content is contained in.
- A tag is a specific syntax enclosed within angle brackets ("<" and ">") that denotes the beginning and end of an HTML element.
- Tags typically come in pairs: The opening tag indicates the start of an element, and the closing tag that includes a forward slash, marks the end of that element.
- For example: A paragraph element will have the opening tag and the closing tag

Basic Tags: <html>

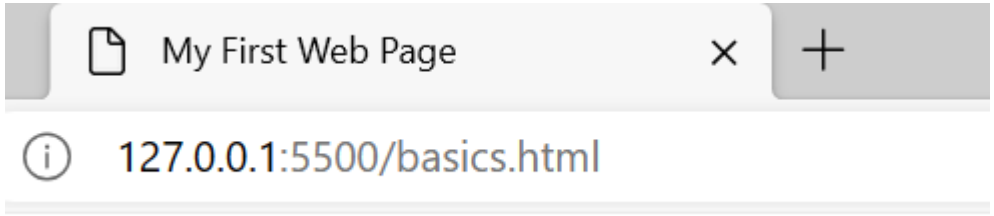
- The **<html>** tag serves as the root element of an HTML document, enclosing all other elements.
- It indicates the beginning and end of the HTML document and defines the document type.

Basic Tags: <head>

- The **<head>** tag contains metadata about the HTML document.
- The metadata includes information such as the document's title, character set, links to external stylesheets or scripts, and other elements that are not displayed directly on the webpage.

Basic Tags: <title>

- The **<title>** tag specifies the title of the HTML document, which is displayed in the browser's title bar or tab.
- It provides a concise description of the webpage's content and is important for search engine optimisation (SEO) and user experience.



Basic Tags: <body>

- The **<body>** tag encloses the main content of the HTML document that is visible to users when they view the webpage in a browser.
- It includes elements such as text, images, links, headings, paragraphs, lists, and other multimedia content.

HTML Structure

- HTML elements are organised and nested within each other to create a structured hierarchy or tree-like arrangement.
- This hierarchy defines the relationships and dependencies between elements, determining how they are displayed and interact with each other on a webpage.

HTML Document Layout

- A DOCTYPE which indicates which version of HTML to load.
- A head which contains metadata about the page.
- A body which contains the actual content.
- Both the head and body are nested inside the html element.

```
<!DOCTYPE html>

<html>

    <head>


    </head>


    <body>


    </body>

</html>
```

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HTML Elements: Headings

- **Headings (<h1> to <h6>)**
- Headings are used to define the headings or titles of sections within a webpage.
- <h1> (most important) to <h6> (least important), moving down a substructure.

HTML Elements: Paragraphs

- Paragraphs (<p>)
- Paragraphs are used to define paragraphs of text.
- It separates blocks of text, making content easier to read and understand.

HTML Elements: Line Breaks

- Line Breaks (
)
- This element is used to insert a line break within a paragraph or other block-level element.
- It forces text or content to start on a new line without creating a new paragraph.

HTML Elements: Links

- Links (<a>)
- The anchor element, is used to create hyperlinks to locations within the same webpage, other webpages or other files.
- It allows users to navigate between different pages or resources on the internet.

HTML Elements: Images

- Images (<img>)
- The image element is used to insert images into a webpage.
- It specifies the location (URL) of the image file and includes optional attributes such as width, height, alt text, and more.

HTML Elements: Lists

- Lists (<ul>, <ol>, <li>)
- Lists are used to organise and present information in a structured format.
- (unordered list) represents a bulleted list.
- (ordered list) represents a numbered list.
- (list item) is used to define individual items within a list, whether it's a bullet point or a numbered item.

HTML Tags vs Attributes

- **Tags** are the fundamental building blocks of HTML and are used to define the structure and content of a webpage.
- **Attributes** provide additional information about the objects created by HTML elements and modify their behaviour or appearance such as size, colour, alignment, links, and more.
- Attributes are specified within the opening tag of an HTML element and are written as name-value pairs.
- While HTML itself does not dictate specific visual styles, attributes can be used to add certain functionalities or visual enhancements to HTML elements.

Attribute Examples: Anchor Tag

- **href:** Specifies the URL of the link destination.
- **target:** Specifies where to open the linked document (e.g., in a new window or tab).

```
<a href="https://www.example.com" target="_blank">Visit Example</a>
```

Attribute Examples: Image Tag

- **src:** Specifies the URL of the image file.
- **alt:** Provides alternative text for the image (useful for accessibility).
- **width:** Specifies the width of the image in pixels or as a percentage.
- **height:** Specifies the height of the image in pixels or as a percentage.

```
<img src="image.jpg" alt="Description of the image" width="300" height="200">
```

Attribute Examples: Paragraph Tag

- **id:** to uniquely identify an element.
- Other elements also have the id attribute.
- Each id attribute value must be unique within the HTML document.
- We can use the id element to jump to a different place in the document.

```
<!-- HTML -->
<p id="jump-to-me">This is the paragraph to which we want to jump.</p>

<!-- Anchor Link -->
<a href="#jump-to-me">Jump to Paragraph</a>
```

Text Formatting Tags

- Text formatting tags in HTML are essential for structuring and styling textual content on webpages.
- They allow developers to apply various formatting styles to improve readability and convey meaning.
- When conflicting styles are defined in both HTML and CSS, the more specific or recently defined CSS rules will override HTML formatting.

Text Formatting Tags: Heading

- Heading Tags (<h1> to <h6>)
- Heading tags are used to define headings or titles of sections within a webpage.
- Not only does the tag define the heading, but it also formats the header normally from large to smaller font size.

```
<h1>Main Heading</h1>
<h2>Subheading</h2>
```

Text Formatting Tags: Paragraph

- Paragraph Tag (<p>)
- The paragraph tag is used to define paragraphs of text.
- It separates blocks of text, making content easier to read and understand.
- In separating blocks of text, it also applies some line spacing as formatting.

```
<p>This is a paragraph of text.</p>
```

Text Formatting Tags: Emphasis

- Emphasis Tag ()
- The emphasis tag is used to apply emphasis or stress on text.
- It typically renders as italicised text in most browsers, although the exact styling may vary.

```
<p>This text is <em>emphasized</em>.</p>
```

Text Formatting Tags: Strong

- Strong Tag ()
- The strong tag is used to apply strong importance or importance of greater significance than the surrounding text.
- It typically renders as bold text in most browsers, although the exact styling may vary.

```
<p>This text is <strong>strongly emphasized</strong>.</p>
```

Importance of HTML Structure

- Now that we have a little taste of the different components of and HTML page, let's consider the importance of proper structure.
- Proper document structure is fundamental to creating well-organised, accessible, and maintainable web content.
- **Accessibility:** Essential for ensuring accessibility for all users, including those with disabilities who may rely on assistive technologies such as screen readers.
- **Search Engine Optimisation (SEO):** Search engines rely on well-structured HTML documents to understand and index webpage content effectively.

Importance of HTML Structure ...

- **Consistency and Maintainability:** A proper structure promotes consistency and maintainability in web development projects.
- **Responsive Design:** A proper structure lays the foundation for creating responsive web designs that adapt to different screen sizes and devices.
- **Performance Optimisation:** Can improve website performance by reducing page load times and enhancing user experience.
- **Future Scalability:** Proper structure lays the groundwork for future scalability and extensibility of web projects.

Separation of Concerns (SoC)

- HTML plays a crucial role in separating content from presentation in web development.
- This concept, known as "separation of concerns," is essential for creating maintainable, scalable, and accessible web content.

How HTML achieves SoC

- **Semantic Markup:** HTML provides a set of semantic elements that describe the structure and meaning of content rather than its presentation.
- Semantic elements like <header>, <nav>, <main>, <article>, <section>, and <footer> allow developers to structure content in a meaningful way that conveys its purpose and relationship to other elements on the webpage.
- **Content Layer:** HTML serves as the foundation or "content layer" of webpages, housing the actual content of the website, including text, images, videos, links, and other media.

How HTML achieves SoC ...

- **Separation of Style:** HTML delegates the task of styling and layout to CSS (Cascading Style Sheets). While HTML defines the structure and semantics of content, CSS controls how that content is displayed and formatted on the webpage.
- **Responsive Design:** HTML's separation of content from presentation enables the creation of responsive web designs that adapt to different screen sizes and devices.
- **Accessibility:** Semantic markup enhances accessibility by providing clear, structured content that can easily be navigated and be understandable by both humans and assistive technologies.

Let’s take a short break

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Let’s get coding!

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Polls

- *Refer to the polls section to vote for you option.*

1. Which of the following is NOT a valid HTML tag?
    a.
    b. <h1>
    c. class
    d. <a>

Polls

- *Refer to the polls section to vote for you option.*

2. What is the purpose of HTML attributes?
    a. Define the structure of a web page
    b. Style web page elements
    c. Provide additional information about HTML elements
    d. Execute JavaScript code

Polls

- *Refer to the polls section to vote for you option.*

3. How does HTML contribute to web development?
    a. By providing server-side functionality
    b. By defining the structure and content of web pages
    c. By handling database operations
    d. By managing user authentication

Questions and Answers

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Summary

- In this lesson, we covered the fundamentals of HTML, the standard markup language for creating webpages. HTML stands for Hypertext Markup Language, and it serves as the foundation of the web, defining the structure and content of web documents.

Summary

- We introduced various HTML tags, including:
  - Heading tags (<h1> to <h6>) for defining headings and titles.
  - Paragraph tag (<p>) for structuring paragraphs of text.
  - Emphasis tag () for denoting emphasis or stress on text.
  - Strong tag () for denoting strong importance or significance.

Summary

- Additionally, we discussed HTML attributes, which provide additional information or instructions for elements.
- Attributes like id, href, src, and alt, allow developers to customise the behaviour, appearance, and accessibility of HTML elements.

Summary

- We emphasised the importance of proper document structure in HTML, highlighting its role in:
  - Accessibility
  - SEO
  - Consistency and Maintainability
  - Responsive Design
- HTML serves as the backbone of webpages, defining the content and structure of web documents independently of their visual presentation.

Encouragement

- Learning HTML is just the beginning of a journey into the world of web development, and there are countless resources available to expand your skills and knowledge in HTML, CSS, JavaScript, and other web technologies.
- By practicing regularly and staying curious, you can become a proficient web developer capable of creating dynamic, engaging, and accessible web experiences.

Homework

- **Interests or Hobbies:**
  - Create a simple webpage using HTML to showcase personal interests or hobbies.
  - Experiment with different HTML tags and attributes to enhance the structure and appearance of the webpage.

Thank you for attending

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