



Welcome to this **CoGrammar** Q&A: HTML and CSS

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** throughout this session, should you wish to ask any follow-up questions.
- 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](#)

Safeguarding & Welfare

We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

If you are feeling upset or unsafe, are worried about a friend, student or family member, or you feel like something isn't right, speak to our safeguarding team:



Ian Wyles
Designated Safeguarding
Lead



Simone Botes



Nurhaan Snyman



Rafiq Manan



Ronald Munodawafa



Tevin Pitts

Scan to report a
safeguarding concern



or email the Designated
Safeguarding Lead:
Ian Wyles

safeguarding@hyperiondev.com

Stay Safe Series.

Mastering Online Safety One Week or Step at a Time

While the digital world can be a wonderful place to make education and learning accessible to all, it is unfortunately also a space where harmful threats like online radicalisation, extremist propaganda, phishing scams, online blackmail and hackers can flourish.

As a component of this BootCamp the *Stay Safe Series* is designed to guide you through essential measures in order to protect yourself & your community from online dangers, whether they target your privacy, personal information or even attempt to manipulate your beliefs.

Trustworthy Websites: How to Spot Secure Sites

- Look for the padlock.
- Check if there is a valid SSL/TLS certificate.
- Look for a site seal.
- Check if the URL is legitimate.
- **Pop-up and Redirection ads are a red flag.**



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HTML and CSS

Learning Outcomes

- Interact
- Have fun!

Polls



Poll

1. Which of the following is the correct order for an HTML document structure?
 - a. `<html>`, `<body>`, `<head>`, `<title>`
 - b. `<html>`, `<head>`, `<body>`
 - c. `<body>`, `<html>`, `<head>`
 - d. `<head>`, `<title>`, `<html>`, `<body>`

Poll

2. Which CSS selector targets all <p> elements inside a <div>?

- a. p div
- b. div p
- c. p > div
- d. div, p

Poll

3. In the CSS box model, which part comes directly outside the content?

- a. Margin
- b. Border
- c. Padding
- d. Width

Poll

4. Which HTML tag is used to link an external CSS file to a document?

- a. `<script>`
- b. `<style>`
- c. `<link>`
- d. `<css>`

Poll

5. Which attribute specifies an alternate text for an image if it cannot be displayed?
- a. title
 - b. src
 - c. alt
 - d. description

Poll

6. What attribute specifies where to open the linked document in an `<a>` tag?
- a. href
 - b. rel
 - c. target
 - d. type

Introduction



Similarities and Differences Between Python and HTML/CSS

- Both Python and HTML/CSS are fundamental building blocks for web development.
- **Python:** A high-level, general-purpose programming language used for various tasks like data analysis, automation, and back-end web development logic.
- **HTML/CSS:** Focus on web development presentation. HTML defines the structure and content of a webpage, while CSS styles its visual appearance.

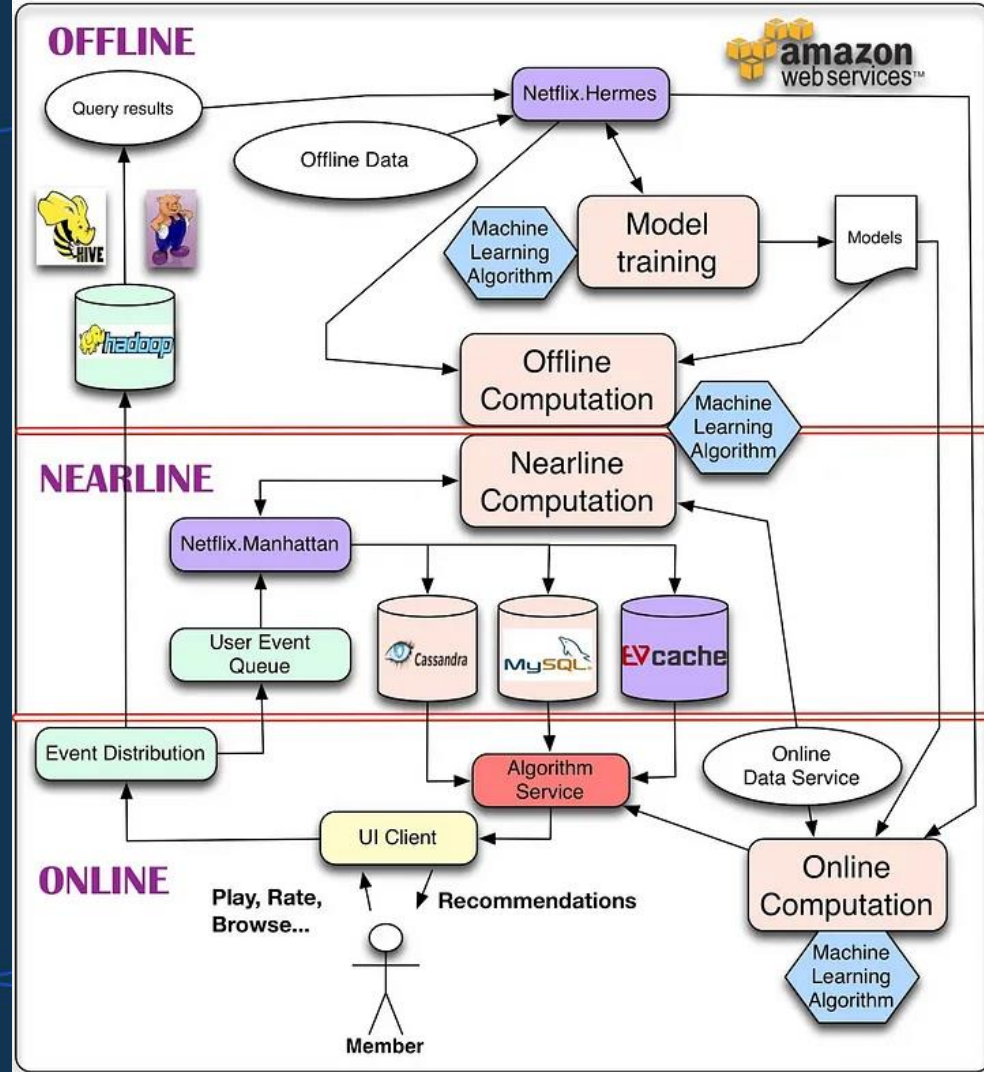
Similarities and Differences Between Python and HTML/CSS

- Both require writing code, but Python has a more complex syntax compared to HTML/CSS.
- **They work together:** Python code can generate dynamic HTML content or interact with data displayed on a webpage styled with CSS.

Front-End vs. Back-End Development

- **Front-End Development:** Deals with the user interface (UI) and user experience (UX) of a website, including HTML, CSS, and JavaScript for interactivity.
(This session focuses on front-end development)
- **Back-End Development:** Handles server-side logic, databases, and application functionality, often using languages like Python.

Software Design Example



Characters



Popular



Everyone's Watching



HTML Basics



Dive into HTML : The Language of the Web

- What is the Web?
 - The **Web** or **World Wide Web** is a system of interconnected documents and resources (software) that are accessed over the internet using web browsers.
- What is HTML?
 - **HTML** (HyperText Markup Language) is the code that is used to structure a web page and its content.
- Why is HTML important?
 - HTML is the fundamental language for structuring and defining the content of webpages.

Decoding the Language: HTML Tags & Attributes

Anatomy of an HTML element

The diagram illustrates the structure of an HTML element using the example `<p class="nice">Hello world!</p>`. Brackets and labels identify the following components:

- Opening tag:** A bracket above the `<p` portion of the code.
- Closing tag:** A bracket above the `</p>` portion of the code.
- An attribute and its value:** A bracket below the `class="nice"` portion of the code.
- Enclosed text content:** A bracket below the `Hello world!` text within the element.

Organising Your Content: Basic HTML Structure

```
<!DOCTYPE html>
<html lang="en">
  <head>

  </head>
  <body>

  </body>
</html>
```

Building Blocks of Your Webpage

- **Headings** (<h1> to <h6>): Define different heading levels for titles and subtitles.
- **Paragraphs** (<p>): Used for the main body text content.
- **Lists** (for unordered, for ordered): Create bulleted or numbered lists.
- **Images** (): Embed images with proper alt text for accessibility.
- **Links** (<a>): Create hyperlinks for navigation or external references.

The Versatile *div*: A Powerful Container

- The `<div>` tag defines a division or a section in an HTML document.
- The `<div>` tag is used as a container for grouping related HTML elements.
- **Organisation Power:** Improves webpage structure and simplifies styling later.
- **CSS Makes it Shine:** Paired with CSS, div lets you control layout and appearance.

CSS Fundamentals



Unveiling CSS: The Stylist for Your Webpages

- CSS (Cascading Style Sheets) is a **styling language** specifically designed for webpages.
- It **controls the presentation of HTML elements**, including font styles, colours, backgrounds, and layout.
- This **separation of concerns** keeps HTML focused on structure and CSS focused on styling, promoting cleaner and more maintainable code.

Targeting Elements with Selectors

- Selectors are used to target specific HTML elements within your webpage for styling.
- Common types of selectors include:
 - **Tag/Element Selectors:** target elements by their HTML tag (e.g., h1, p, img).
 - **Class Selectors:** target elements with a specific class attribute (e.g., .important, .highlight).
 - **ID Selectors:** target a unique element with a specific ID attribute (e.g., #banner, #footer).

Applying Styles: Inline, Internal, and External Stylesheets

- There are **three ways** to apply CSS styles to HTML elements:
 - **Inline Styles:** Styles are added directly to the HTML element using the style attribute (less preferred, can make code messy).
 - `<h1 style="color: blue; text-align: center;">Welcome to Inline Styling</h1>`
 - **Internal Styles:** Styles are defined within the `<head>` section of the HTML document using a `<style>` tag (more organised approach).
 - `<style> h1 { color: blue; text-align: center; } </style>`
 - **External Stylesheets:** Styles are placed in a separate CSS file (.css) that is linked to the HTML document (preferred method for larger projects, promotes code reusability).
 - `<link rel="stylesheet" href="styles.css">`

The Box Model:

Understanding Element Size and Positioning

- The box model is a concept in CSS that defines how elements are sized and positioned.
- It consists of four layers:
 - **Content**: The actual content of the element (text, image, etc.).
 - **Padding**: The space between the content and the border (optional).
 - **Border**: The decorative line around the element (optional, can have width and style).
 - **Margin**: The space around the border of the element (can be used for spacing).

**Let's take a short
break**

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Learner Challenge

Create a responsive webpage using Bootstrap that includes the following elements:

- Include a responsive Bootstrap **navbar** with a brand name and at least three navigation links.
 - The navbar should collapse into a "hamburger menu" on smaller screens.
- Create a **hero section** using a large header area with a background image.
 - Include a headline and a call-to-action button with Bootstrap button classes (e.g., btn-primary).
- Add a section with a 3-column layout for medium and larger screens, and a single-column layout for small screens using the Bootstrap **grid system**.
 - Each column should contain an image, a heading, and some text.

Learner Challenge ...

- Create a section with three Bootstrap **cards**, each with:
 - An image, A card title, A description, A button
- Add a **contact form** with: Fields for name, email, and message
 - A submit button styled with btn-success and Validation using Bootstrap's was-validated class.
- Include a responsive **footer** with:
 - Links arranged in a grid or flex layout.
 - Social media icons using Bootstrap icons or placeholders.

Let's get coding!



Lesson Conclusion and Recap



Lesson Conclusion and Recap

- **HTML:** The Web's Content Backbone: We learned HTML, the language that structures website content like headings, paragraphs, lists, images, and links.
- **CSS:** Styling the Web Experience: We explored CSS, which controls the visual presentation of web pages with properties like fonts, colours, layouts, and spacing.
- **Separation of Concerns:** We emphasised the importance of separating HTML's structure from CSS's styling for cleaner and more maintainable code.
- **The Box Model in Play:** We delved into the box model, a key concept in CSS, which determines how elements are positioned and spaced.
- **Responsive Design:** We briefly introduced responsive design, ensuring websites adapt to different screen sizes for optimal viewing.

Thank you for attending



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Further Resources

- <https://learnlearn.uk/edexcel-igcse-computer-science/components-of-the-world-wide-web/>
- https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/HTML_basics
- <https://developer.mozilla.org/en-US/docs/Glossary/Element>
- https://html.com/#What_are_Tags_and_Attributes
- <https://www.codewizardshq.com/html-for-kids/>
- <https://netflixtechblog.com/system-architectures-for-personalization-and-recommendation-e081aa94b5d8>