**HTML & CSS**

1. **HTML Basics**

• What is HTML? Explain its structure.

* HTML (Hypertext Markup Language) is the language used to create web page documents.
* HTML stands for Hyper Text Markup Language
* An HTML file is a text file containing small markup **tags  <>  <h1> </h1>**  
  The markup tags tell the Web browser how to display the page  
  An HTML file must have an .htm or **.html** file extension  
  An HTML file can be created using a simple **text editor**

**<html>  
 <head>  
 <title>Title of Page</title>  
 </head>  
<body>  
 This is my first homepage.<b> This text is bold</b>  
</body>  
</html>**

* The first tag in your HTML document is <html>. This tag tells your browser that this is the start of an HTML document. The last tag in your document is </html>. This tag tells your browser that this is end of the HTML document.
* The text between the <head> tag and the </head> tag is header information. Header information is not displayed in the browser window. Title tag & favicon & external files
* The text between the <body> tags is the text that will be displayed in your browser.

• Describe the purpose of HTML tags and provide examples of commonly used tags.

HTML tags are the fundamental building blocks of web pages, providing structure and meaning to content. They act as instructions for web browsers, dictating how different elements should be displayed. Essentially, tags define the purpose and formatting of content, such as headings, paragraphs, links, and images.

Here's a breakdown of common HTML tags:

Structural Tags:

<html>: Defines the root of an HTML document.

<head>: Contains meta-information about the HTML document, like the title and links to stylesheets.

<body>: Encloses the visible content of the webpage

• What are the differences between block-level and inline elements? Give examples of each.

**Block-level Elements**

A block-level element always starts on a new line, and the browsers automatically add some space (a margin) before and after the element.

A block-level element always takes up the full width available (stretches out to the left and right as far as it can).

Two commonly used block elements are: <p> and <div>.

The <p> element defines a paragraph in an HTML document.

The <div> element defines a division or a section in an HTML document.

**Inline Elements**

An inline element does not start on a new line.

An inline element only takes up as much width as necessary.

This is a <span> element inside a paragraph.

• Explain the concept of semantic HTML and why it is important.

Semantic HTML refers to using HTML elements that describe the meaning of the content they contain, rather than just their appearance. This means using tags like <article>, <nav>, <header>, and <footer> instead of just relying on generic <div> elements with CSS classes. Semantic HTML is crucial for improved accessibility, better SEO, and enhanced code maintainability.

Here's a breakdown of why it's important:

1. **Improved Accessibility:Semantic**

HTML elements are recognized by screen readers, allowing them to provide meaningful information to users with visual impairments. For example, a screen reader can clearly announce "This is a navigation section" when encountering a <nav> element, making it easier for users to understand the page structure.

Assistive Technologies:

Other assistive technologies can also leverage semantic HTML to better understand and interact with web content.

**2. Better SEO (Search Engine Optimization):**

Search Engine Understanding:

Search engines like Google use semantic HTML to understand the structure and context of a webpage. By using semantic elements, you help search engines understand what your content is about, which can improve your website's ranking in search results.

Rich Snippets:

Semantic HTML can be used to enhance schema markup, which helps search engines display rich snippets (like ratings, prices, or event dates) in search results.

**3. Enhanced Code Maintainability:**

Clarity and Readability:

Semantic HTML makes your code more readable and understandable for other developers. By using descriptive elements, it's easier to understand the purpose of each section of your website.

Easier Updates and Maintenance:

Clearer code structure makes it easier to update and maintain your website over time.

**4. Future-Proofing:**

Web Standards: Semantic HTML follows web standards, making your code more compatible with future web technologies.

What Is Semantic HTML? (And Why You Should Use It)

In essence, semantic HTML is about using the right tool for the job. Instead of relying solely on visual presentation, you're also conveying the meaning and structure of your content to both humans and machines.

Examples of semantic elements: <img>, <table>, and <article> - Clearly defines its content.

**2. CSS Fundamentals**

• What is CSS? How does it differ from HTML?

CSS stands for Cascading Style Sheets

CSS describes how HTML elements/tag are to be displayed on screen,

paper, or in other media

CSS saves a lot of work. It can control the layout of multiple

web pages all at once

HTML (HyperTextMarkup Language) is a markup language used to structure the content of a web page, while CSS (Cascading Style Sheets) is used to style and visually lay out the content on a web page. HTML provides the structure and content of a web page, while CSS provides the visual design.

• Explain the three ways to apply CSS to a web page.

There are three ways of inserting a style sheet:

* External CSS
* Internal CSS
* Inline CSS

**External CSS**

With an external style sheet, you can change the look of an entire website by changing just one file!

Each HTML page must include a reference to the external style sheet file inside the <link> element, inside the head section.

**Internal CSS**

An internal style sheet may be used if one single HTML page has a unique style.

The internal style is defined inside the <style> element, inside the head section.

## Inline CSS

An inline style may be used to apply a unique style for a single element.

To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

• What are CSS selectors? List and describe the different type of selectors.

**CSS Selectors**

CSS selectors are used to "find" (or select) the HTML elements you want to style.

## The CSS id Selector

The id selector uses the id attribute of an HTML element to select a specific element.

The id of an element is unique within a page, so the id selector is used to select one unique element!

To select an element with a specific id, write a hash (#) character, followed by the id of the element.

## The CSS class Selector

The class selector selects HTML elements with a specific class attribute.

To select elements with a specific class, write a period (.) character, followed by the class name.

## The CSS Universal Selector

The universal selector (\*) selects all HTML elements on the page.

## The CSS Grouping Selector

The grouping selector selects all the HTML elements with the same style definitions.

Look at the following CSS code (the h1, h2, and p elements have the same style definitions):

• What is the box model in CSS? Explain its components.

## The CSS Box Model

In CSS, the term "box model" is used when talking about design and layout.

The CSS box model is essentially a box that wraps around every HTML element. It consists of: content, padding, borders and margins. The image below illustrates the box model:

Explanation of the different parts:

* **Content** - The content of the box, where text and images appear
* **Padding** - Clears an area around the content. The padding is transparent
* **Border** - A border that goes around the padding and content
* **Margin** - Clears an area outside the border. The margin is transparent

The box model allows us to add a border around elements, and to define space between elements

**3. Responsive Web Design**

• What is responsive web design? Why is it important?

Responsive web design makes your web page look good on all devices.

Responsive web design uses only HTML and CSS.

Responsive web design is not a program or a JavaScript.

It's crucial because it enhances user satisfaction, improves accessibility, boosts SEO, and reduces development and maintenance

• Explain the use of media queries in CSS. Provide an example.

Media queries in CSS allow you to apply styles based on device characteristics like screen size, orientation, and resolution, enabling responsive web design that adapts to different devices. Essentially, you can tailor the look and feel of your webpage based on the user's device, providing an optimal experience across various platforms.

• What are the benefits of using a mobile-first approach in web design?

A mobile-first approach in web design prioritizes the user experience on mobile devices, offering several benefits. It leads to improved user experience, better SEO performance, faster loading times, and increased conversion rates. It also fosters a more accessible and future-proof website, as it naturally adapts to emerging technologies and various screen sizes.