HTML

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1 Introduction

Definition: HTML (Hypertext Markup Language) is the standard markup language used to create web pages and web applications.
- It provides a structure for content on the World Wide Web, using a system of elements and attributes to define the layout and content of a document.
- HTML elements are represented by tags, which browsers interpret to render the visual and auditory elements of a web page.
- HTML works in conjunction with
  - CSS for styling
  - JavaScript for interactivity

2   Responsive Web Design

Summary:

Concept	Syntax
Open/close tag elements	`<tag>...</tag>`

- Text an element will display goes b/w its opening/closing tags.
- e.g. elements with o/c tags h# p, a, div, span, ul etc.
  - Text
    * h#: 1-6 to signify the importance of content below them in decreasing order.
    * em: Emphasize text (italicize).
    * strong: Strongly emphasize text (bold).
  - List:
    * ul: Unordered list to create a list of items w/o a specific order.
    * ol: Ordered list to create a list of items with a specific order.
    * li: List item to create an item in a list (ordered or unordered).
  - Form:
    * form: Create a form to collect user input.
    * button: Create a clickable button (default behavior of a button is to submit a form to the location in the form's action attribute).
    * label: used to help associate the text for an input element with the input element itself (helpful for assistive technologies).
    * fieldset: Group related inputs and labels together in a form. (block-level element → appear on new line)
    * legend: Caption for the content in the fieldset element.
  - figcaption: Caption to describe the image contained within the figure element.
  - a: Anchor tag to create hyperlinks (use href attribute) for text, images, etc.

Self-close tag elements	`<tag />`
Void elements	`<tag>`

- An element w/o a closing tag.
- e.g. img, br, hr, input, link, meta
  - img: Embed an image in a document.
  - input: Collect data from a web form.
  - meta: Provide metadata about the HTML document.

Commenting	`<!- - comment - ->`

- Comments to leave messages w/o affecting browser display
- Can make code inactive.

Content area elements	`<header>, <footer>, <nav>, <main>, <article>, <section>, <aside>`
	`</header>, </footer>, </nav>, </main>, </article>, </section>, </aside>`

- Identify different content areas for modularity, Search Engine Optimization (SEO), and accessibility.
- Nesting: For readability, nest content by indenting.
- Examples:
  - body: All page content elements that should be rendered to the page go inside the body element.
    * main: Represent main content of the body of a document.
    * section: Define sections in a document, such as chapters, headers, footers, or any other sections of the document.
      · Content inside should be unique and not repeated elsewhere on the page.
    * figure: Represents self-contained content and will allow you to associate a caption with an image.
    * footer: Represent a footer for a document or section, which contains info about the author of the document, copyright data, links to term of service, contact info, etc.
  - header: contain metadata about the document, such as its title, links to stylesheets, and scripts. Metadata is information about the page that isn't displayed directly on the page.
    * nav: Contains navigation links that appear on every page of a website.
    * title: Title of the document, which appears in the browser tab.
  - html: Root element of an HTML document and wraps all content on the page.
    * lang: Specifies the primary language of the document.
  - `<!DOCTYPE html>`: Tells browsers that the document is an HTML5 document which is the latest version of HTML.

Summary:

Concept	Syntax
Attributes	`<tag attribute="value">`

- Special words inside the opening tag of an element to control the element's behavior.
- e.g. id, class, src, alt, href, style, target etc.
    - Image:
        * src: Specifies the URL of an image.
        * alt: Specifies an alternate text for an image to improve accessibility and is displayed if the image cannot be loaded.
    - a:
        * href: Specifies the URL of the page the link goes to.
        * target: Specifies where to open the linked document (e.g. "_blank" opens in a new tab).
    - Form:
        * action: Where form data should be sent.
    - Input:
        * type: Specifies the type of form element (e.g. text, password, submit, radio (circle), checkbox (square)).
        * name: For a form's data to be accessed by the location specified by action, you must give the text input a name attribute and assign it a value to represent the data being submitted.
        * value: Specify the data sent to the server when the form is submitted.
            · Radio: W/o value attribute, the default is "On" regardless of which button is clicked (use value to differentiate).
        * placeholder: Provides a hint to the user of what can be entered in the field.
        * required: Prevent a user from submitting a form without filling out a required field (no value needed).
        * checked: Pre-select a radio button or checkbox.
    - Button:
        * type: Specifies the type of button (e.g. submit, reset, button, checkbox).
    - General
        * id: Used to identify specific HTML elements. This must be unique from all other id values for the entire page.
    - label
        * for: Used to associate the label with a form control (input, textarea, select, etc.).
            · id of the input matches the for attribute of the label.
    - meta
        * charset: Specifies the character encoding for the HTML document (e.g. UTF-8).

Warning: Best practice is to include the value attribute to match the id with any checkboxes or radio buttons.